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Department of
Agriculture



Natural Resources
Conservation
Service

Oregon Basin Outlook Report

February 1, 2018



Ross Twiss prepares to measure the below average snowpack at Ochoco Meadows SNOTEL site in the Crooked River basin

Photo courtesy of Russ Rhoden (Snow Surveyor, Ochoco Irrigation District)

The warm temperatures and below average precipitation of December persisted throughout the month of January, leaving most of Oregon with well below normal snowpacks on February 1st. Basin snowpack levels range from 40-50% of normal in the southern part of the state, up to near 70% in northeastern Oregon. Because of these conditions, summertime streamflows are currently forecasted to be below average across the state.

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General Outlook

February 1st, 2018

SUMMARY

Just as no two snowflakes are identical, neither are any two winters in the mountains of Oregon. This year, a cold and snowy start to winter was followed by meager snowfall and warm temperatures in December and January, stunting mountain snowpack and resulting in well below normal snowpack levels throughout the state. Out of the 137 long-term snowpack monitoring sites measured for this report, all recorded less than normal snowpack and most were less than 50% of normal as of February 1st. With about half of winter behind us, chances for a full snowpack recovery are low, but there is still time left for conditions to improve before the typical peak of the snowpack season in March and April.

The long range weather forecast from NOAA's Climate Prediction Center (CPC) is calling for cooler and wetter than normal conditions throughout most of Oregon over the next three months, which brings a bright spot of hope for snowpack improvement:

<http://www.cpc.ncep.noaa.gov/>. The cooler and wetter trend forecasted by the CPC is typical of the current La Nina conditions and has helped improve meager snowpack levels in past similar years, such as 2012. However, in order for the majority of Oregon's snowpack to catch up to normal levels by the first of April, the next two months would have to bring well above average precipitation (125% to 225% of average depending on location) and all would need to fall as snow.

Due to the lack of significant snowfall in January, summer streamflow forecasts decreased compared to the January report for most streams and rivers in Oregon. Currently, forecasts continue to predict well below average streamflows throughout the state based on February 1st snowpack conditions. Water managers will need to carefully evaluate water supplies this summer if the snowpack and spring rains fail to bring relief.

SNOWPACK

An overall warm and dry winter has led to well below normal snowpack conditions throughout Oregon as of February 1st. During the last week in January, a significant storm cycle moved through the state, bringing several feet of new snowfall, especially in the Cascade Mountains. However, temperatures turned warm towards the end of the storm cycle, bringing rain to the mountains in some areas, causing snowmelt at some of the lower elevations.

All snowpack measuring sites across the state are measuring below normal snow levels as of February 1st. The northern tier of Oregon is faring slightly better in the snowpack department, ranging from 59% of normal near Mt. Hood up to 68% of normal in the northeastern basins of the state. Elsewhere, basin snowpack levels are less than 50% of normal, with the Rogue and Umpqua basins having the lowest in the state at 41% of normal. About a quarter of the snow monitoring network in Oregon is currently reporting snow levels that are among the lowest few years on record. As of February 1st, 17 long-term monitoring sites in Oregon are recording their 2nd or 3rd lowest snowpack on record and two SNOTEL sites set new record lows for February 1st snow measurements.

History tells us that there are still a variety of possible outcomes for this winter's peak snowpack and summer water supply. Other years with similarly low February 1st snowpacks (1981, 2012, and 2015) each ended with different results. Back in 1981, snowpacks hit record low levels and did not recover; however, spring rainfall helped offset the impacts of the low snow year. In 2012, most areas of the state rebounded with plentiful snowfall during February and March and summer streamflows actually ended up higher than normal. In 2015, the snowpack was the lowest on record throughout the season, and drought conditions prevailed during the water supply season.

PRECIPITATION

The first half of January continued the dry spell that began during the month of December. By mid-January, storm systems made their way into Oregon again, bringing copious amounts of moisture. However, only the northern tier of the state received near average amounts with most basins totaling 85-100% of average for January precipitation. The southern half of the state was noticeably drier and most basins received only 70-85% of normal January amounts.

Two consecutive months of below average precipitation have impacted the water year totals (Oct 1st - Feb 1st). Following the January pattern, only northern Oregon received near average water year-to-date precipitation, while the rest of the state is lagging behind. The lowest amounts have fallen in the Rogue and Umpqua basins where only 73% of average amounts have been received since the water year began on October 1st.

RESERVOIRS

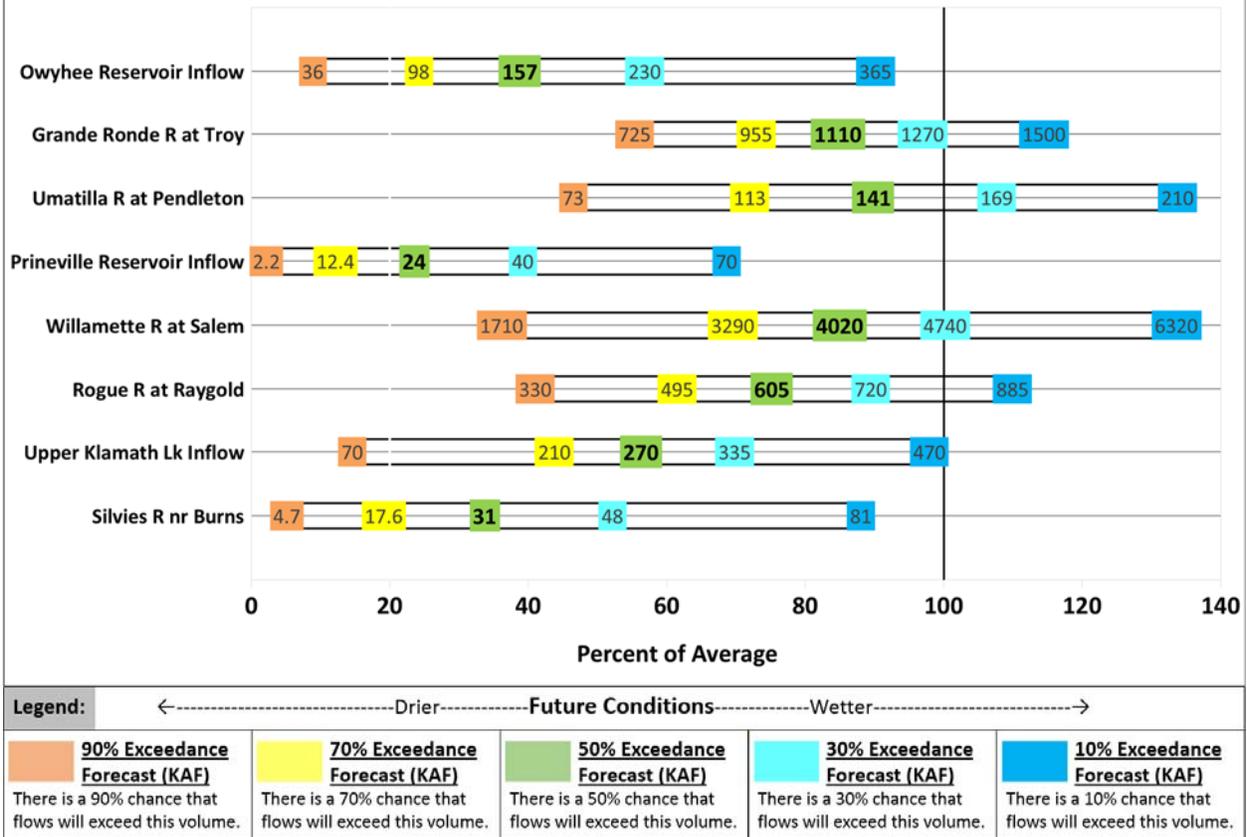
With a few exceptions, most reservoirs throughout the state are storing near average to above average amounts of water for February 1st, which will provide a much-needed buffer this summer if snowpacks remain below average and streamflows are low. The lowest reservoir storage for basins as a whole is 98% of average in the Rogue and Umpqua basins, and the highest is 139% of average in the Owyhee and Malheur basins. Individual reservoirs have a wider range of values, but the overall picture is of near to above average reservoir storage as of February 1st.

STREAMFLOW

During the month of January, streamflows were near average in northwestern Oregon and above average in the northeastern corner of the state. These are the same locations that received near average amounts of precipitation over the month. Elsewhere in the state, precipitation was below average, which led to below average January streamflows.

Similarly, the summer streamflow forecasts are best where the February 1st snowpack is best. Northern Oregon is holding onto the best snowpack in the state, albeit still below normal. The most promising streamflow forecasts range from near normal in the Umatilla and Walla Walla basins to slightly below normal in the rivers flowing from Mt. Hood. The lowest streamflow forecasts in the state are currently in southern and southeastern Oregon where conditions have been driest. Here, forecasts are all less than 60% of normal. Water managers are advised to carefully manage summer water supplies if there is not improvement in snowpack over the next couple of months.

Summary of Streamflow Forecasts across Oregon
 April through September Forecast Volumes at a Selection of Streamflow Points
 (Volumes listed in KAF)



To accompany the above forecast summary graphic, here are some helpful reminders about interpreting streamflow forecasts published in this document. For each forecast point, five possible streamflow volumes are predicted. Where the observed streamflow occurs within this spectrum depends on the range of future weather conditions. If water users wish to plan conservatively, they may lean toward using the 70% chance of exceedance forecast, or the drier forecast (which may be below average depending on the region). Conversely, if a water user believes future conditions will provide more water to the system, they could choose to use the 30% chance of exceedance forecast (the wetter forecast). These arrays of forecasts are shown in this forecast graphic and explained in more detail in the “Interpreting Water Supply Forecasts” section at the end of this report.

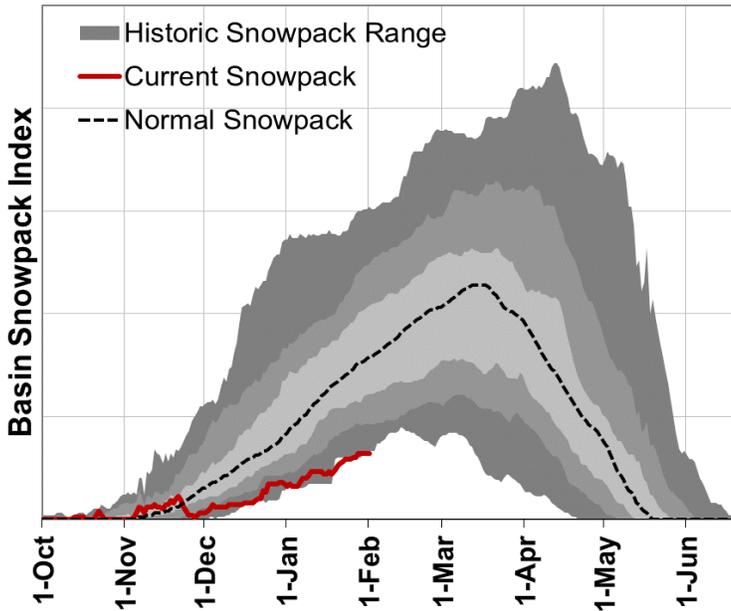
All forecasts are listed with units of 1000 acre-feet (KAF). This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators. This report will be updated monthly, January through June.



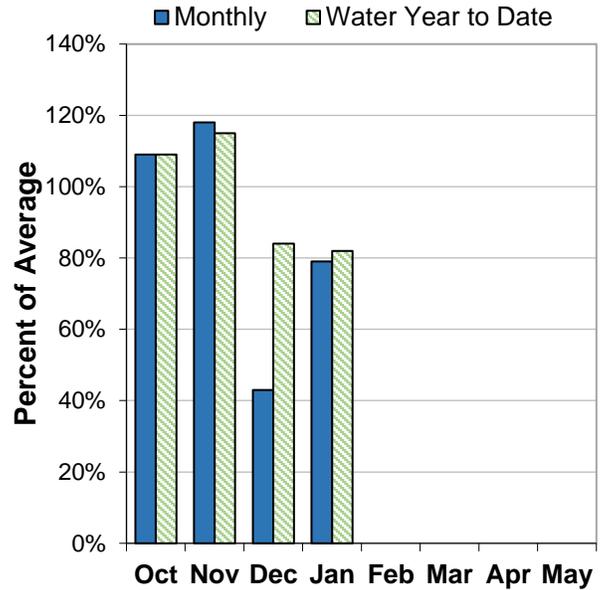
Owyhee and Malheur Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 42% of normal. This is similar to last month when the snowpack was also 42% of normal. Two SNOTEL sites in the basin, each with over 35 years of measurements, set new record lows for February 1 snowpack levels. Blue Mountain Spring SNOTEL (5870 ft elev) recorded 6.1" of SWE (54% of normal) and Fawn Creek (NV) SNOTEL (7000 ft elev) recorded 3.4" of SWE (33% of normal).

PRECIPITATION

January precipitation was 79% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 82% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 87% of average at Bully Creek Reservoir to 150% of average at Warm Springs Reservoir.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 32% to 53% of average. Overall, forecasts decreased slightly from last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

Owyhee And Malheur Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Owyhee R nr Rome	FEB-JUL	42	118	192	33%	285	450	580
	FEB-SEP	48	127	205	34%	295	465	595
	APR-JUL	9.6	54	105	30%	172	300	345
	APR-SEP	14.0	63	117	32%	187	320	365
Owyhee R bl Owyhee Dam ²	FEB-JUL	64	152	235	37%	335	510	635
	FEB-SEP	80	175	260	39%	360	545	665
	APR-JUL	22	76	132	35%	200	335	375
	APR-SEP	36	98	157	39%	230	365	405
Malheur R nr Drewsey	FEB-JUL	14.6	31	46	40%	64	96	116
	APR-SEP	5.3	14.9	24	34%	36	57	70
NF Malheur R at Beulah ²	FEB-JUL	20	32	42	49%	53	72	85
	APR-SEP	15.6	25	33	53%	41	56	62

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

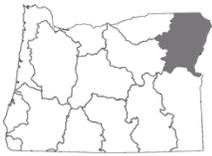
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Beulah	24.7	15.9	26.0	95%	59.2
Bully Creek	10.8	6.2	12.5	87%	23.7
Lake Owyhee	490.6	246.8	345.3	142%	715.0
Warm Springs	102.9	11.8	68.5	150%	169.6

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
East Little Owyhee Basin	2	53%	161%
South Fork Owyhee Basin	5	34%	149%
Upper Malheur Basin	3	48%	128%
Upper Owyhee Basin	5	40%	145%

Owyhee And Malheur Basins Summary for February 1, 2018

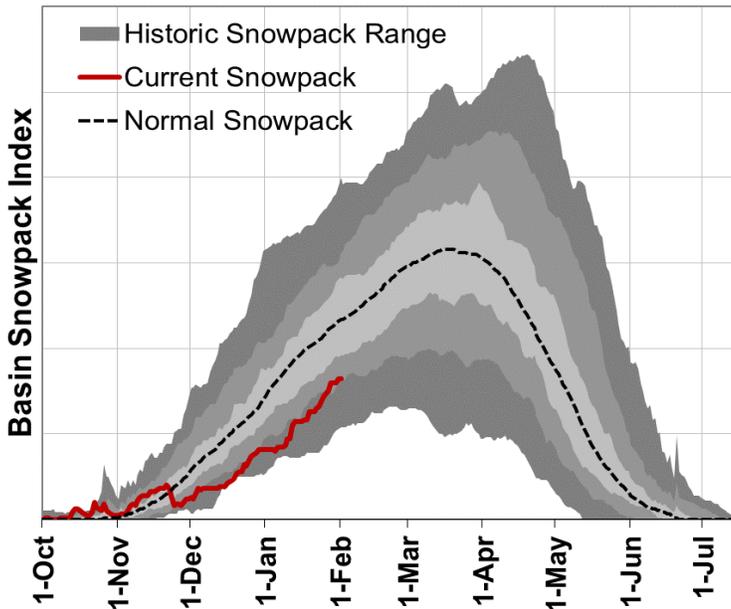
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Granite Peak SNOTEL	8543	1-Feb	24	6.4	20.2	12.1	53%
Trout Creek AM	7890	1-Feb	9	3.2	9.6	8.2	39%
Toe Jam SNOTEL	7700	1-Feb	27	7.1	21.9		
Govt Corrals AM	7400	1-Feb	16	4.3	14.3	7.5	57%
Jack Creek Upper SNOTEL	7250	1-Feb	22	4.8	12.8	9.4	51%
Fawn Creek SNOTEL	7000	1-Feb	20	3.4	13.2	10.2	33%
Merritt Mountain AM	7000	30-Jan	8	1.7	8.6	4.7	36%
Buckskin Lower SNOTEL	6915	1-Feb	13	3.5	9.8	6.5	54%
Gold Creek Snow Course	6707	30-Jan	3	0.7	8.4	4.2	17%
Big Bend SNOTEL	6700	1-Feb	8	2.9	11.3	5.5	53%
Fry Canyon SNOTEL	6700	1-Feb	7	1.7	7.2		
Fry Canyon Snow Course	6700	30-Jan	11	2.7	9.0	6.2	44%
Laurel Draw SNOTEL	6697	1-Feb	12	3.4	10.5	7.7	44%
Columbia Basin AM	6650	30-Jan	6	1.3	11.2	7.8	17%
South Mtn. SNOTEL	6500	1-Feb	11	4.0	14.7	11.5	35%
Taylor Canyon SNOTEL	6200	1-Feb	1	0.4	10.4	4.0	10%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	6.1	12.2	11.2	54%
Barney Creek (New) Snow Course	5830	2-Feb	10	2.8	9.4		
Mud Flat SNOTEL	5730	1-Feb	2	0.8	7.3	5.1	16%
Reynolds Creek SNOTEL	5600	1-Feb	3	1.3	10.5	2.8	46%
Dooley Mountain Snow Course	5440	2-Feb	10	2.6	9.2	6.6	39%
Rock Springs SNOTEL	5290	1-Feb	5	1.5	8.6	4.7	32%
Lake Creek R.S. SNOTEL	5240	1-Feb	16	4.5	11.7	9.4	48%
Eldorado Pass Snow Course	4630	2-Feb	0	0.0		2.8	0%



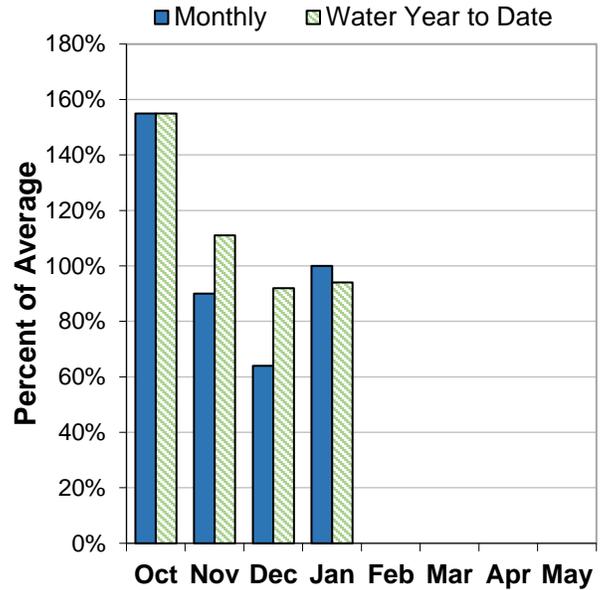
Grande Ronde, Powder, Burnt and Imnaha Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 68% of normal. This is higher than last month when the snowpack was 55% of normal. Aneroid Lake SNOTEL (7400 ft elev) set a new record low for February 1 snowpack level since measurements begun 36 years ago. Also, Bourne SNOTEL (5850 ft elev) and West Eagle Meadows AM (5500 ft elev) recorded the second lowest snowpack measurements in over 40 years of record.

PRECIPITATION

January precipitation was 100% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 94% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 89% of average at Wolf Creek Reservoir to 175% of average at Wallowa Lake.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 44% to 91% of average. Overall, forecasts remain similar to last month's report. If conditions remain similar, water supplies in the basin are likely to be well below normal to below normal this summer.

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Burnt R nr Hereford ²	FEB-JUL	12.6	21	27	53%	35	48	51
	APR-SEP	4.6	10.3	15.5	44%	22	33	35
Powder R nr Sumpter ²	FEB-JUL	25	35	43	64%	52	66	67
	APR-SEP	17.8	27	34	63%	42	55	54
Pine Ck nr Oxbow	FEB-JUL	85	126	153	70%	181	220	220
	APR-SEP	47	81	105	64%	128	162	163
Imnaha R at Imnaha	APR-JUL	117	165	198	78%	230	280	255
	APR-SEP	129	180	215	77%	250	300	280
Catherine Ck nr Union	APR-JUL	29	40	47	78%	55	66	60
	APR-SEP	31	43	51	80%	58	70	64
Lostine R nr Lostine	APR-JUL	78	88	95	90%	102	113	106
	APR-SEP	82	94	102	89%	110	121	115
Bear Ck nr Wallowa	APR-JUL	41	51	57	90%	64	74	63
	APR-SEP	42	52	59	91%	66	76	65
Grande Ronde R at Troy	MAR-JUL	885	1130	1300	86%	1470	1710	1510
	APR-SEP	725	955	1110	85%	1270	1500	1310

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

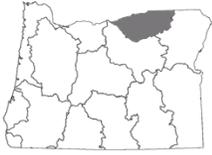
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Phillips Lake	34.9	4.9	32.0	109%	73.5
Thief Valley	14.1	7.8	12.4	113%	13.3
Unity	11.3	7.5	11.7	97%	25.5
Wallowa Lake	26.5	24.1	15.1	175%	37.5
Wolf Creek	2.5		2.8	89%	11.1

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Burnt Basin	3	65%	135%
Imnaha Basin	5	63%	79%
Lower Grande Ronde Basin	4	72%	99%
Powder Basin	11	64%	110%
Upper Grande Ronde Basin	8	72%	106%
Wallowa Basin	5	69%	81%

Grande Ronde, Powder, Burnt And Innaha Basins Summary for February 1, 2018

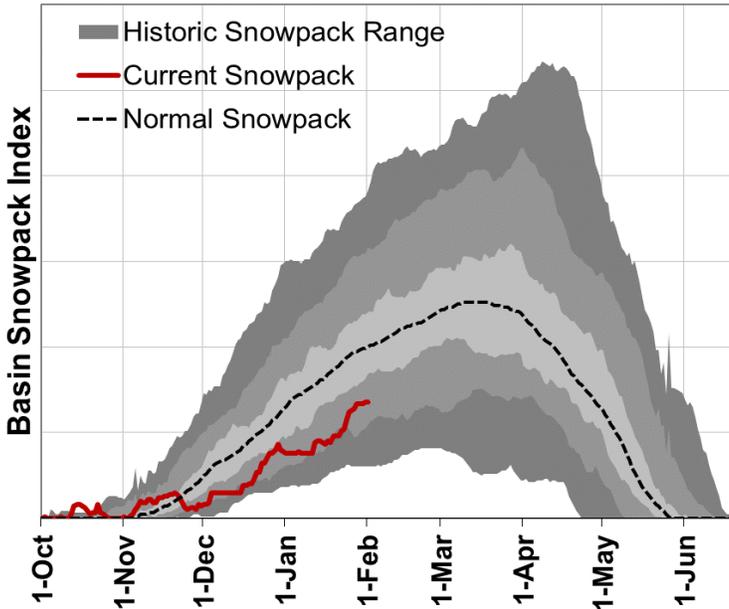
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Mt. Howard SNOTEL	7910	1-Feb	22	6.6	6.3	10.2	65%
Aneroid Lake #2 SNOTEL	7400	1-Feb	31	8.7	10.1	14.4	60%
Anthony Lake (Rev) Snow Course	7160	1-Feb	41	12.0	18.3	15.8	76%
TV Ridge AM	7050	1-Feb	25	7.0	8.1	9.9	71%
Little Alps Snow Course	6360	31-Jan	22	5.0	10.8	7.8	64%
Big Sheep AM	6230	1-Feb	32	9.3	9.9	17.2	54%
Bear Saddle SNOTEL	6180	1-Feb	34	8.8	14.3	15.2	58%
Bourne SNOTEL	5850	1-Feb	22	6.4	12.6	11.1	58%
Barney Creek (New) Snow Course	5830	2-Feb	10	2.8	9.4		
Moss Springs SNOTEL	5760	1-Feb	45	14.3	15.3	16.2	88%
Taylor Green SNOTEL	5740	1-Feb	33	8.5	12.8	14.5	59%
Spruce Springs SNOTEL	5700	1-Feb	24	7.0	8.8	11.9	59%
Wolf Creek SNOTEL	5630	1-Feb	26	6.9	10.0	11.6	59%
Milk Shakes SNOTEL	5580	1-Feb	79	24.1	21.0		
West Branch SNOTEL	5560	1-Feb	40	9.6	10.0	14.1	68%
Touchet SNOTEL	5530	1-Feb	56	17.0	20.3	20.4	83%
Eilertson Meadows SNOTEL	5510	1-Feb	14	4.5	10.2	7.9	57%
West Eagle Meadows AM	5500	1-Feb	44	12.3		21.8	56%
Dooley Mountain Snow Course	5440	2-Feb	10	2.6	9.2	6.6	39%
Gold Center SNOTEL	5410	1-Feb	18	4.9	10.1	7.3	67%
Schneider Meadows SNOTEL	5400	1-Feb	52	14.3	17.8	19.6	73%
Beaver Reservoir SNOTEL	5150	1-Feb	20	4.9	8.2	6.6	74%
Tipton SNOTEL	5150	1-Feb	22	7.0	11.0	8.5	82%
High Ridge SNOTEL	4920	1-Feb	43	13.1	19.3	16.1	81%
County Line SNOTEL	4830	1-Feb	3	1.3	4.8	3.9	33%
Eldorado Pass Snow Course	4630	2-Feb	0	0.0		2.8	0%
Little Antone (Alt.) Snow Course	4560	31-Jan	16	4.0	8.8	6.8	59%
Bowman Springs SNOTEL	4530	1-Feb	14	4.7	7.3	6.2	76%
East Eagle Snow Course	4400	2-Feb	31	9.0	15.8	14.6	62%
Sourdough Gulch SNOTEL	4000	1-Feb	1	0.2	5.5	0.9	22%



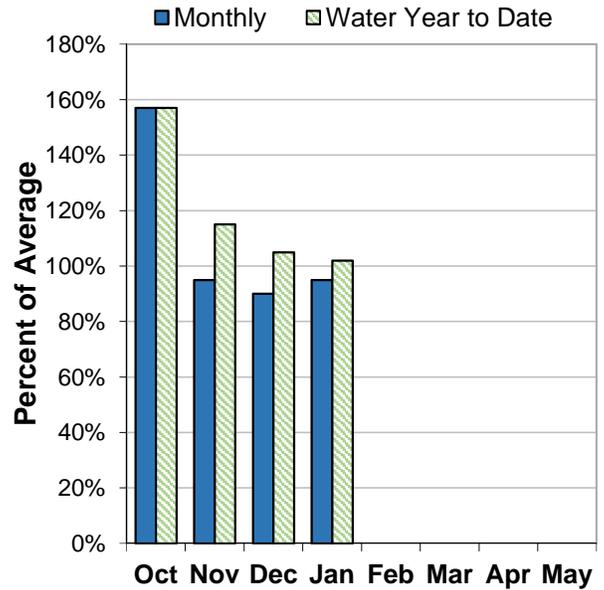
Umatilla, Walla Walla and Willow Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 68% of normal. This is slightly higher than last month when the snowpack was 59% of normal.

PRECIPITATION

January precipitation was 95% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 102% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 83% of average at Willow Creek Reservoir to 125% of average at Cold Springs Reservoir.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 62% to 102% of average. Overall, forecasts decreased slightly from last month's report. If conditions remain similar, water supplies in the basin are likely to be well below normal in the Willow and Butter Creek drainages, and between slightly below to near normal in the Umatilla and Walla Walla basins this summer.

Umatilla, Walla Walla And Willow Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
SF Walla Walla R nr Milton-Freewater	MAR-JUL	53	62	69	101%	75	84	68
	APR-SEP	52	61	67	102%	73	82	66
Umatilla R ab Meacham nr Gibbon	MAR-JUL	61	81	94	93%	107	127	101
	APR-SEP	44	61	73	91%	85	103	80
Umatilla R at Pendleton	MAR-JUL	130	175	205	91%	235	280	225
	APR-SEP	73	113	141	90%	169	210	157
McKay Ck nr Pilot Rock	MAR-JUL	19.8	31	40	82%	51	68	49
	APR-SEP	8.1	16.4	24	83%	32	48	29
Butter Ck nr Pine City	MAR-JUL	5.2	8.1	10.3	69%	12.9	17.2	14.9
	APR-SEP	3.2	5.3	7.0	71%	9.0	12.3	9.8
Willow Ck ab Willow Lk nr Heppner	MAR-JUL	2.7	4.7	6.3	62%	8.2	11.5	10.1
	APR-SEP	1.45	3.0	4.4	62%	6.1	9.0	7.1
Rhea Ck nr Heppner	MAR-JUL	2.8	5.0	6.9	62%	9.0	12.7	11.1
	APR-SEP	1.53	3.2	4.7	63%	6.5	9.7	7.5

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Cold Springs	16.4	4.6	13.1	125%	38.6
Mckay	34.5	15.5	29.8	116%	71.5
Willow Creek	3.5	2.8	4.2	83%	9.8

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Umatilla Basin	5	65%	124%
Walla Walla Basin	7	68%	120%

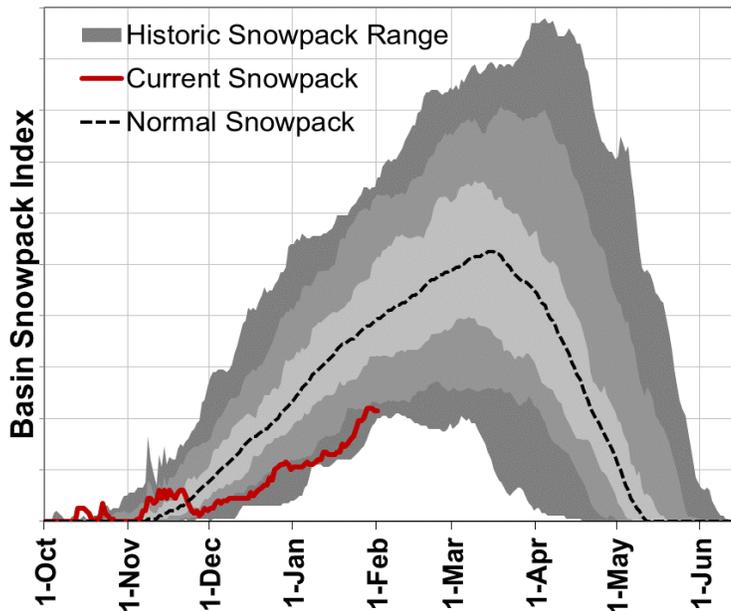
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Arbuckle Mtn SNOTEL	5770	1-Feb	26	7.1	12.4	12.2	58%
Spruce Springs SNOTEL	5700	1-Feb	24	7.0	8.8	11.9	59%
Milk Shakes SNOTEL	5580	1-Feb	79	24.1	21.0		
Touchet SNOTEL	5530	1-Feb	56	17.0	20.3	20.4	83%
Madison Butte SNOTEL	5150	1-Feb	2	0.6	7.1	3.8	16%
Lucky Strike SNOTEL	4970	1-Feb	7	3.4	8.1	5.9	58%
High Ridge SNOTEL	4920	1-Feb	43	13.1	19.3	16.1	81%
Indian Ridge Snow Course	4908	30-Jan	44	13.3			
Bowman Springs SNOTEL	4530	1-Feb	14	4.7	7.3	6.2	76%
Emigrant Springs SNOTEL	3800	1-Feb	5	1.4	9.8	5.4	26%



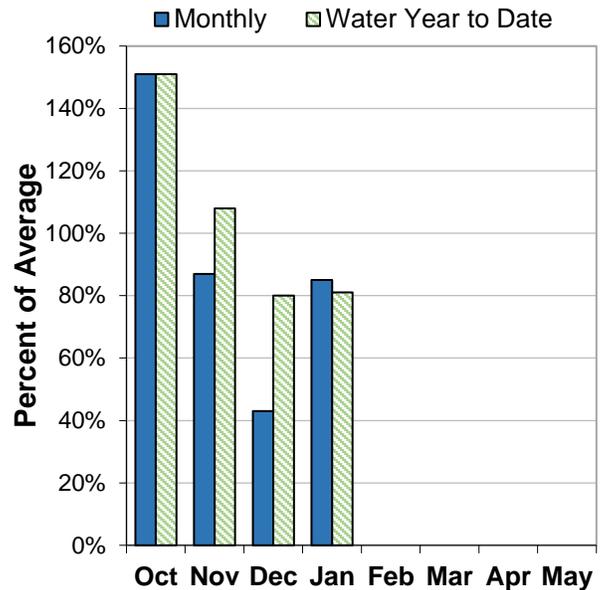
John Day Basin

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 54% of normal. This is higher than last month when the snowpack was 42% of normal. Blue Mountain Spring SNOTEL (5870 ft elev) set a new record low for February 1 snowpack since measurements begun 40 years ago.

PRECIPITATION

January precipitation was 85% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 81% of average.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 39% to 89% of average. Overall, forecasts remain similar to last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

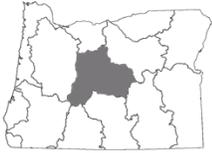
John Day Basin Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Strawberry Ck nr Prairie City	MAR-JUL	4.1	5.9	7.2	85%	8.4	10.2	8.5
	APR-SEP	4.2	6.0	7.2	82%	8.5	10.3	8.8
Mountain Ck nr Mitchell	MAR-JUL	1.14	2.0	2.8	44%	3.6	5.1	6.3
	APR-SEP	0.60	1.29	1.91	39%	2.6	4.0	4.9
Camas Ck nr Ukiah	MAR-JUL	26	36	43	90%	50	60	48
	APR-SEP	13.1	24	31	89%	38	49	35
MF John Day R at Ritter	MAR-JUL	41	79	105	67%	131	169	156
	APR-SEP	27	61	84	67%	107	142	126
NF John Day R at Monument	MAR-JUL	225	390	495	65%	605	765	765
	APR-SEP	143	290	390	65%	490	635	600

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Lower John Day Basin	6	43%	155%
North Fork John Day Basin	8	62%	123%
Upper John Day Basin	6	50%	138%

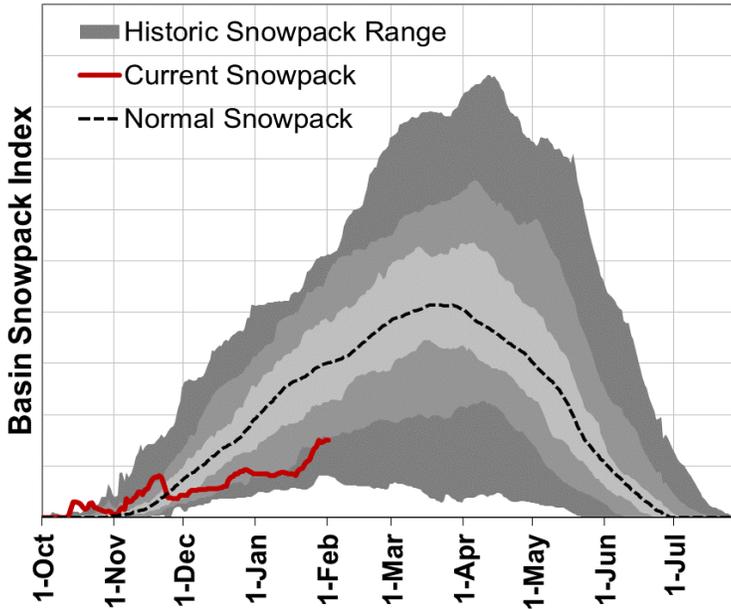
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Anthony Lake (Rev) Snow Course	7160	1-Feb	41	12.0	18.3	15.8	76%
Little Alps Snow Course	6360	31-Jan	22	5.0	10.8	7.8	64%
Snow Mountain SNOTEL	6230	1-Feb	12	4.1	10.3	6.3	65%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	6.1	12.2	11.2	54%
Derr Snow Course	5860	30-Jan	9	3.5	11.2	7.9	44%
Bourne SNOTEL	5850	1-Feb	22	6.4	12.6	11.1	58%
Derr. SNOTEL	5850	1-Feb	16	4.4	14.1	9.8	45%
Barney Creek (New) Snow Course	5830	2-Feb	10	2.8	9.4		
Arbuckle Mtn SNOTEL	5770	1-Feb	26	7.1	12.4	12.2	58%
Ochoco Meadows SNOTEL	5430	1-Feb	13	3.4	13.2	7.4	46%
Gold Center SNOTEL	5410	1-Feb	18	4.9	10.1	7.3	67%
Starr Ridge SNOTEL	5250	1-Feb	7	2.4	9.6	5.3	45%
Lake Creek R.S. SNOTEL	5240	1-Feb	16	4.5	11.7	9.4	48%
Ochoco Meadows Snow Course	5190	31-Jan	14	4.8	10.8	8.5	56%
Madison Butte SNOTEL	5150	1-Feb	2	0.6	7.1	3.8	16%
Tipton SNOTEL	5150	1-Feb	22	7.0	11.0	8.5	82%
Lucky Strike SNOTEL	4970	1-Feb	7	3.4	8.1	5.9	58%
County Line SNOTEL	4830	1-Feb	3	1.3	4.8	3.9	33%
Marks Creek Snow Course	4580	31-Jan	3	0.7	6.7	3.4	21%
Little Antone (Alt.) Snow Course	4560	31-Jan	16	4.0	8.8	6.8	59%



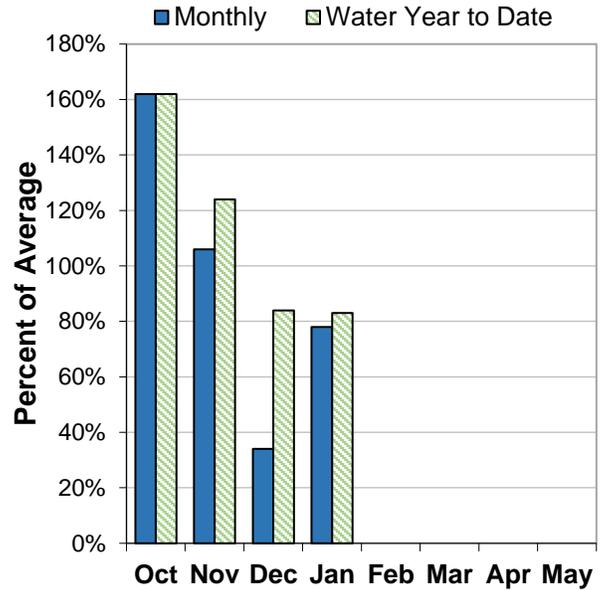
Upper Deschutes and Crooked Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 48% of normal. This is slightly higher than last month when the snowpack was 43% of normal.

PRECIPITATION

January precipitation was 78% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 83% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 96% of average at Prineville Reservoir to 168% of average at Crescent Lake.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 24% to 89% of average. Overall, forecasts decreased slightly from last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

Upper Deschutes And Crooked Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Deschutes R bl Snow Ck	FEB-JUL	25	32	37	90%	42	49	41
	FEB-SEP	36	48	56	89%	63	75	63
	APR-JUL	17.1	23	27	90%	30	36	30
	APR-SEP	27	38	45	87%	52	63	52
Crane Prairie Reservoir Inflow ²	FEB-JUL	47	60	68	89%	76	88	76
	FEB-SEP	64	82	95	89%	108	127	107
	APR-JUL	32	42	49	88%	56	66	56
	APR-SEP	48	65	76	86%	88	105	88
Crescent Lake Inflow ²	FEB-JUL	5.3	11.5	15.6	80%	19.8	26	19.6
	FEB-SEP	4.3	12.0	17.2	78%	22	30	22
	APR-JUL	3.0	7.3	10.2	68%	13.2	17.5	15.0
	APR-SEP	2.1	7.9	11.8	68%	15.7	22	17.4
Little Deschutes R nr La Pine ²	FEB-JUL	18.3	44	61	69%	79	104	89
	FEB-SEP	15.8	44	64	68%	83	112	94
	APR-JUL	4.9	23	36	57%	48	67	63
	APR-SEP	2.3	24	38	55%	53	75	69
Deschutes R at Benham Falls ²	FEB-JUL	335	380	410	89%	445	490	460
	FEB-SEP	465	525	560	90%	600	660	625
	APR-JUL	230	260	280	88%	300	325	320
	APR-SEP	360	400	430	89%	455	500	485
Wychus Ck nr Sisters	FEB-JUL	26	33	37	86%	41	47	43
	FEB-SEP	34	41	46	84%	51	59	55
	APR-JUL	22	26	29	83%	32	36	35
	APR-SEP	29	35	38	81%	42	48	47
Prineville Reservoir Inflow ²	FEB-JUL	22	47	69	34%	96	144	205
	FEB-SEP	21	46	68	33%	95	143	205
	APR-JUL	2.8	13.5	25	25%	41	71	102
	APR-SEP	2.2	12.4	24	24%	40	70	102
Ochoco Reservoir Inflow ²	FEB-JUL	5.1	10.4	15.1	38%	21	30	40
	FEB-SEP	4.4	9.5	14.2	36%	19.7	30	40
	APR-JUL	1.62	4.6	7.4	35%	11.0	17.5	21
	APR-SEP	1.13	3.8	6.6	33%	10.0	16.5	20

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

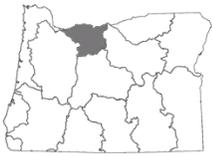
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Upper Deschutes And Crooked Basins Summary for February 1, 2018

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Crane Prairie	42.5	39.2	37.7	113%	55.3
Crescent Lake	77.5	54.0	46.1	168%	86.9
Ochoco	20.5	21.3	18.8	109%	44.2
Prineville	83.5	67.1	86.8	96%	148.6
Wickiup	174.7	137.3	161.7	108%	200.0

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Little Deschutes Basin	4	57%	127%
Upper Crooked Basin	5	45%	151%
Upper Deschutes Basin	12	49%	116%

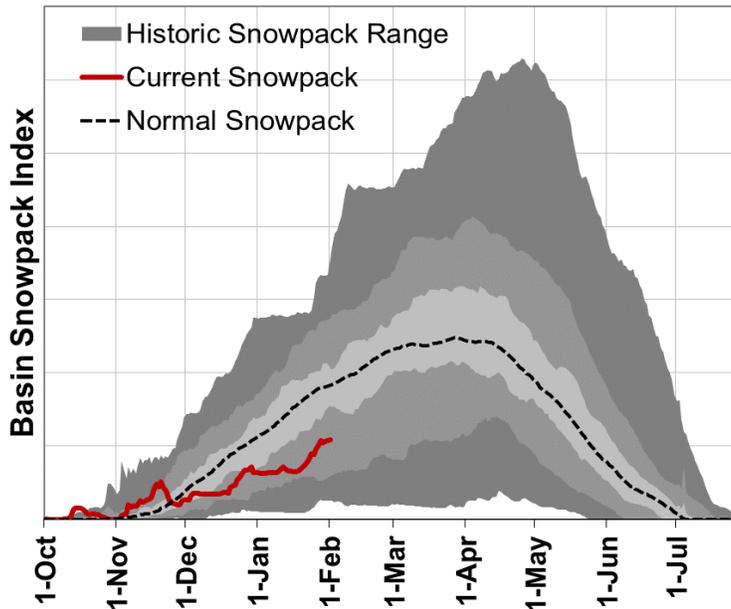
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
New Dutchman #3 Snow Course	6320	1-Feb	61	19.8	31.8	31.9	62%
Snow Mountain SNOTEL	6230	1-Feb	12	4.1	10.3	6.3	65%
Derr Snow Course	5860	30-Jan	9	3.5	11.2	7.9	44%
Derr. SNOTEL	5850	1-Feb	16	4.4	14.1	9.8	45%
Three Creeks Meadow SNOTEL	5690	1-Feb	11	3.8	15.2	12.4	31%
Summit Lake SNOTEL	5610	1-Feb	50	18.5	28.7	23.7	78%
Irish Taylor SNOTEL	5540	1-Feb	45	13.7	23.7	22.7	60%
Tangent Snow Course	5470	1-Feb	12	3.8	16.0	14.5	26%
Ochoco Meadows SNOTEL	5430	1-Feb	13	3.4	13.2	7.4	46%
Ochoco Meadows Snow Course	5190	31-Jan	14	4.8	10.8	8.5	56%
Cascade Summit SNOTEL	5100	1-Feb	42	13.5	23.7	20.4	66%
Roaring River SNOTEL	4950	1-Feb	25	8.4	22.5	18.6	45%
New Crescent Lake SNOTEL	4910	1-Feb	6	2.4	15.7	10.7	22%
Chemult Alternate SNOTEL	4850	1-Feb	4	1.3	11.1	7.6	17%
Hogg Pass SNOTEL	4790	1-Feb	28	9.3	22.1	13.9	67%
McKenzie SNOTEL	4770	1-Feb	41	14.3	29.1	29.8	48%
Marks Creek Snow Course	4580	31-Jan	3	0.7	6.7	3.4	21%
Hungry Flat Snow Course	4400	1-Feb	0	0.0	8.2	2.3	0%
Salt Creek Falls SNOTEL	4220	1-Feb	6	2.8	18.9	13.9	20%
Santiam Jct. SNOTEL	3740	1-Feb	16	4.2	15.0	13.5	31%



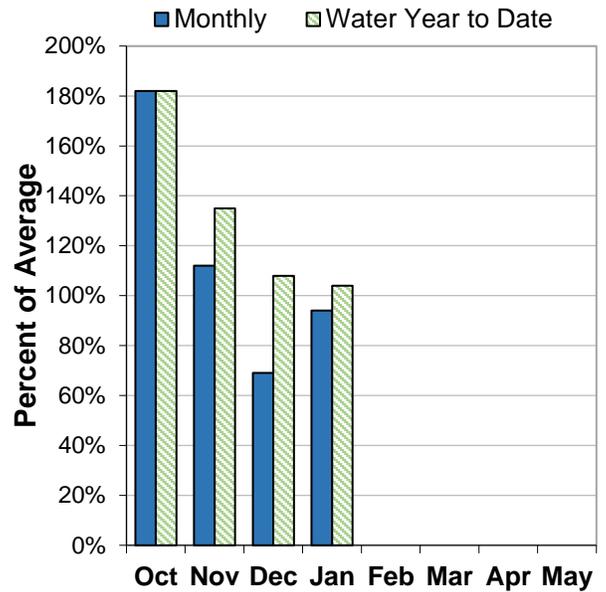
Hood, Sandy and Lower Deschutes Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 59% of normal. This is similar to last month when the snowpack was 56% of normal.

PRECIPITATION

January precipitation was 94% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 104% of average.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 85% to 92% of average. Overall, forecasts remain similar to last month's report. If conditions remain similar, water supplies in the basin are likely to be below normal this summer.

Hood, Sandy And Lower Deschutes Basins Summary for February 1, 2018

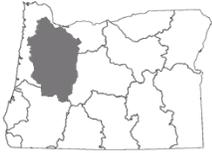
Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
WF Hood R nr Dee	APR-JUL	68	91	106	88%	121	143	120
	APR-SEP	82	106	122	88%	139	163	139
Hood R at Tucker Bridge	APR-JUL	123	164	192	85%	220	260	225
	APR-SEP	150	195	225	85%	255	300	265
Sandy R nr Marmot	APR-JUL	184	245	285	92%	325	390	310
	APR-SEP	225	285	330	92%	375	440	360

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Clear Lake	3.0	1.0	3.0	99%	13.1

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Lower Columbia - Sandy Basin	7	62%	109%
Lower Deschutes Basin	4	55%	96%
Middle Columbia - Hood Basin	6	70%	102%

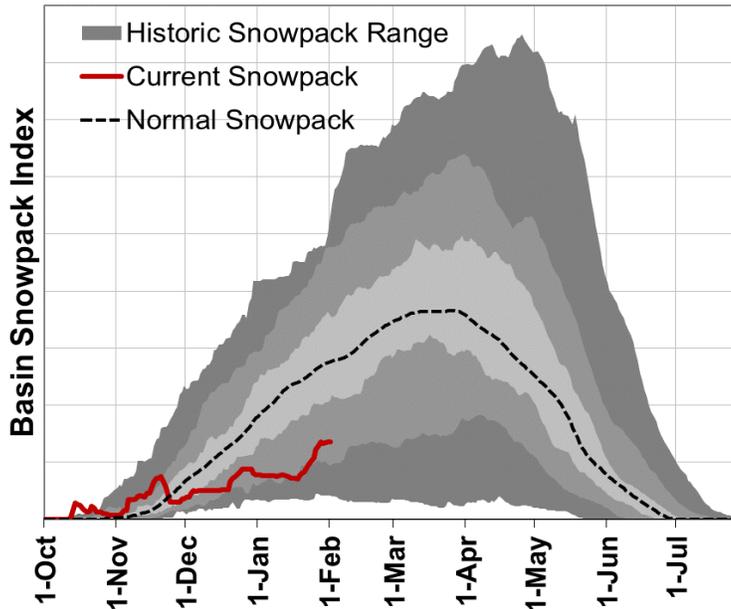
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Mt Hood Test Site SNOTEL	5370	1-Feb	74	23.4	28.8	38.4	61%
Red Hill SNOTEL	4410	1-Feb	54	21.3	32.1	30.9	69%
Surprise Lakes SNOTEL	4290	1-Feb	85	32.2	32.3	33.3	97%
Mud Ridge SNOTEL	4070	1-Feb	34	11.7	20.0	18.5	63%
Clear Lake SNOTEL	3810	1-Feb	7	2.2	11.2	9.7	23%
Blazed Alder SNOTEL	3650	1-Feb	51	16.3	25.9	21.4	76%
Clackamas Lake SNOTEL	3400	1-Feb	14	4.6	12.6	9.2	50%
Greenpoint SNOTEL	3310	1-Feb	13	4.0	15.1	13.2	30%
North Fork SNOTEL	3060	1-Feb	22	8.4	18.8	13.2	64%
South Fork Bull Run SNOTEL	2690	1-Feb	0	0.0	9.1	1.3	0%



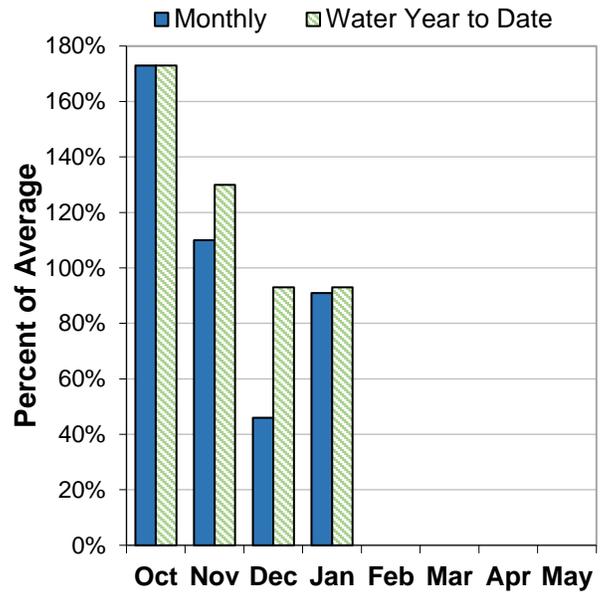
Willamette Basin

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 48% of normal. This is slightly higher than last month when the snowpack was 44% of normal.

PRECIPITATION

January precipitation was 91% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 93% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 39% of average at Fern Ridge Reservoir to 139% of average at Blue River Reservoir.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 81% to 89% of average. Overall, forecasts remain similar to last month's report. If conditions remain similar, water supplies in the basin are likely to be below normal this summer.

Willamette Basin Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Hills Creek Reservoir Inflow ^{1,2}	APR-JUN	81	159	195	80%	230	310	245
	APR-SEP	123	215	255	81%	295	390	315
Lookout Point Reservoir Inflow ^{1,2}	APR-JUN	225	425	520	80%	610	815	650
	APR-SEP	335	565	670	81%	775	1000	825
McKenzie R bl Trail Bridge	APR-JUN	128	165	182	87%	198	235	210
	APR-SEP	225	275	300	87%	325	380	345
Cougar Lake Inflow ^{1,2}	APR-JUN	67	125	152	82%	178	235	185
	APR-SEP	99	164	194	83%	225	290	235
Blue Lake Inflow ^{1,2}	APR-JUN	18.2	52	67	84%	82	115	80
	APR-SEP	21	56	71	83%	87	121	86
McKenzie R nr Vida ^{1,2}	APR-JUN	410	620	715	86%	805	1010	830
	APR-SEP	670	920	1040	87%	1150	1400	1190
Detroit Lake Inflow ^{1,2}	APR-JUN	188	330	390	83%	455	595	470
	APR-SEP	285	445	520	85%	595	755	610
North Santiam R at Mehama ^{1,2}	APR-JUN	235	455	560	84%	660	880	665
	APR-SEP	345	600	710	85%	825	1080	840
Green Peter Lake Inflow ^{1,2}	APR-JUN	80	185	235	89%	280	385	265
	APR-SEP	103	210	260	88%	310	420	295
Foster Lake Inflow ^{1,2}	APR-JUN	159	355	445	89%	535	730	500
	APR-SEP	198	405	495	88%	590	795	565
South Santiam R at Waterloo ²	APR-JUN	169	375	470	90%	565	775	525
	APR-SEP	210	425	525	89%	620	835	590
Willamette R at Salem ^{1,2}	APR-JUN	1250	2690	3340	85%	3990	5440	3950
	APR-SEP	1710	3290	4020	85%	4740	6320	4730
Oak Grove Fk ab Powerplant	APR-JUL	65	85	98	85%	112	131	115
	APR-SEP	93	119	136	88%	153	178	155
Clackamas R ab Three Lynx	APR-JUL	245	320	375	83%	425	505	450
	APR-SEP	315	395	455	85%	510	595	535
Clackamas R at Estacada	APR-JUL	315	440	520	83%	605	730	625
	APR-SEP	405	535	620	85%	710	840	730

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

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

Willamette Basin Summary for February 1, 2018

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Blue River	13.2	7.4	9.5	139%	82.3
Cottage Grove	6.1	4.1	4.9	124%	31.8
Cougar	46.5	42.8	55.3	84%	174.9
Detroit	205.6	161.5	180.5	114%	426.8
Dorena	13.0	8.3	11.7	111%	72.1
Fall Creek	8.1	1.2	16.5	49%	116.0
Fern Ridge	6.3	9.6	16.0	39%	97.3
Foster	26.9	23.3	22.8	118%	46.2
Green Peter	213.6	183.1	182.9	117%	402.8
Hills Creek	90.8	90.8	105.8	86%	279.2
Lookout Point	137.1	125.5	143.9	95%	433.2
Timothy Lake	61.7	51.9	51.0	121%	63.6
Henry Hagg Lake	40.1	37.2	38.0	106%	53.3

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Clackamas Basin	9	59%	111%
McKenzie Basin	17	48%	122%
Middle Fork Willamette Basin	7	53%	120%
North Santiam Basin	4	44%	155%
South Santiam Basin	4	43%	164%

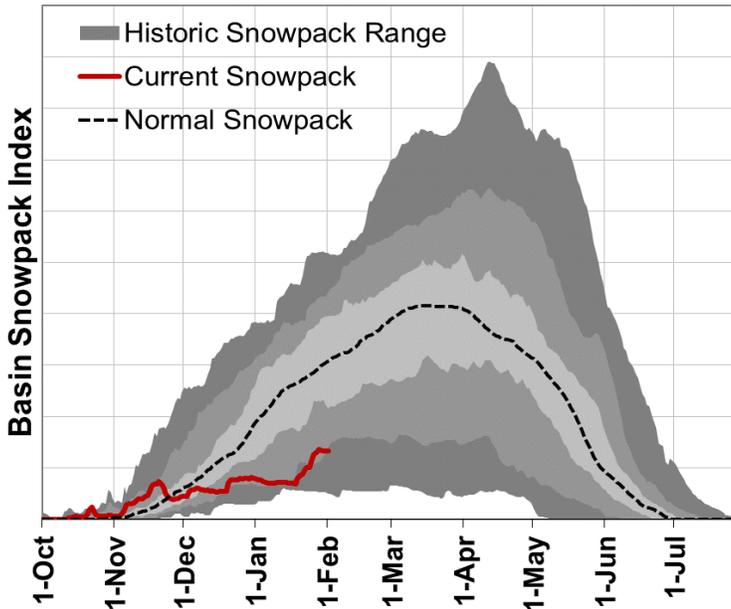
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Summit Lake SNOTEL	5610	1-Feb	50	18.5	28.7	23.7	78%
Irish Taylor SNOTEL	5540	1-Feb	45	13.7	23.7	22.7	60%
Cascade Summit SNOTEL	5100	1-Feb	42	13.5	23.7	20.4	66%
Roaring River SNOTEL	4950	1-Feb	25	8.4	22.5	18.6	45%
Holland Meadows SNOTEL	4930	1-Feb	15	3.9	20.6	16.0	24%
McKenzie SNOTEL	4770	1-Feb	41	14.3	29.1	29.8	48%
Bear Grass SNOTEL	4720	1-Feb	60	22.8	38.7		
Salt Creek Falls SNOTEL	4220	1-Feb	6	2.8	18.9	13.9	20%
Mud Ridge SNOTEL	4070	1-Feb	34	11.7	20.0	18.5	63%
Little Meadows SNOTEL	4020	1-Feb	32	11.1	29.0	16.6	67%
Clear Lake SNOTEL	3810	1-Feb	7	2.2	11.2	9.7	23%
Santiam Jct. SNOTEL	3740	1-Feb	16	4.2	15.0	13.5	31%
Daly Lake SNOTEL	3690	1-Feb	6	2.9	15.4	10.0	29%
Marys Peak (Rev.) Snow Course	3580	2-Feb	2	0.6	6.2		
Jump Off Joe SNOTEL	3520	1-Feb	5	1.9	12.2	9.1	21%
Peavine Ridge SNOTEL	3420	1-Feb	10	3.5	15.0	10.3	34%
Clackamas Lake SNOTEL	3400	1-Feb	14	4.6	12.6	9.2	50%
Smith Ridge SNOTEL	3270	1-Feb	3	1.1	14.0		
Saddle Mountain SNOTEL	3110	1-Feb	5	2.4	8.5		
Railroad Overpass SNOTEL	2680	1-Feb	0	0.0	0.0	0.0	
Marion Forks SNOTEL	2590	1-Feb	10	2.3	12.4	6.3	37%
Seine Creek SNOTEL	2060	1-Feb	0	0.0	0.0	0.2	0%
Miller Woods SNOTEL	420	1-Feb	0	0.0	0.0		



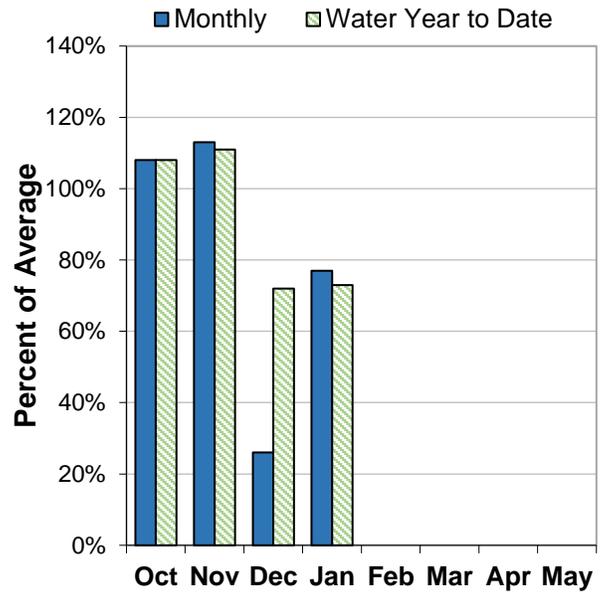
Rogue and Umpqua Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 41% of normal. This is similar to last month when the snowpack was 44% of normal. Three long-term snow monitoring sites in the basin recorded the 2nd lowest measurement with at least 35 years of record.

PRECIPITATION

January precipitation was 77% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 73% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 72% of average at Hyatt Prairie Reservoir to 118% of average at Fish Lake.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 50% to 92% of average. Overall, forecasts decreased slightly from last month's report. If conditions remain similar, water supplies in the basin are likely to be well below normal to below normal this summer.

Rogue And Umpqua Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
South Umpqua R at Tiller	APR-JUL	60	121	162	84%	205	265	193
	APR-SEP	67	128	170	85%	210	275	200
Cow Ck ab Galesville Reservoir	APR-JUL	2.1	7.8	11.7	84%	15.5	21	13.9
	APR-SEP	2.9	8.7	12.7	85%	16.7	23	15.0
South Umpqua R nr Brockway	APR-JUL	72	220	320	82%	420	565	390
	APR-SEP	83	230	335	82%	435	585	410
North Umpqua R at Winchester	APR-JUL	410	590	710	92%	825	1000	775
	APR-SEP	510	690	815	92%	940	1120	890
Lost Creek Lk Inflow ²	FEB-JUL	450	570	655	82%	740	860	795
	FEB-SEP	540	675	765	83%	855	990	920
	APR-JUL	275	360	420	81%	475	560	520
	APR-SEP	365	465	530	82%	595	695	645
Rogue R at Raygold ²	APR-JUL	250	400	500	74%	600	750	675
	APR-SEP	330	495	605	75%	720	885	805
Rogue R at Grants Pass ²	APR-JUL	220	400	520	72%	640	820	725
	APR-SEP	290	485	615	73%	750	945	845
Applegate Lake Inflow ²	FEB-JUL	4.3	64	104	53%	145	205	195
	FEB-SEP	6.6	67	109	55%	150	210	200
	APR-JUL	2.2	31	54	50%	77	111	109
	APR-SEP	1.15	35	58	50%	82	117	115
Sucker Ck bl Ltl Grayback nr Holland	APR-JUL	6.2	26	39	71%	52	71	55
	APR-SEP	8.5	28	42	71%	55	75	59
Illinois R nr Kerby	APR-JUL	17.0	89	139	74%	188	260	188
	APR-SEP	20	93	143	74%	192	265	193

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume
 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Applegate	9.9	11.3	10.8	92%	75.2
Emigrant Lake	16.4	23.3	21.6	76%	39.0
Fish Lake	5.6	4.0	4.8	118%	7.9
Fourmile Lake	6.3	3.4	6.9	92%	15.6
Howard Prairie	40.1	31.4	36.1	111%	62.1
Hyatt Prairie	7.4	9.0	10.2	72%	16.2
Lost Creek	160.7	155.5	161.8	99%	315.0

Rogue And Umpqua Basins Summary for February 1, 2018

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Applegate Basin	5	19%	140%
Middle Rogue Basin	8	18%	176%
North Umpqua Basin	9	42%	154%
South Umpqua Basin	10	31%	294%
Upper Rogue Basin	11	44%	117%

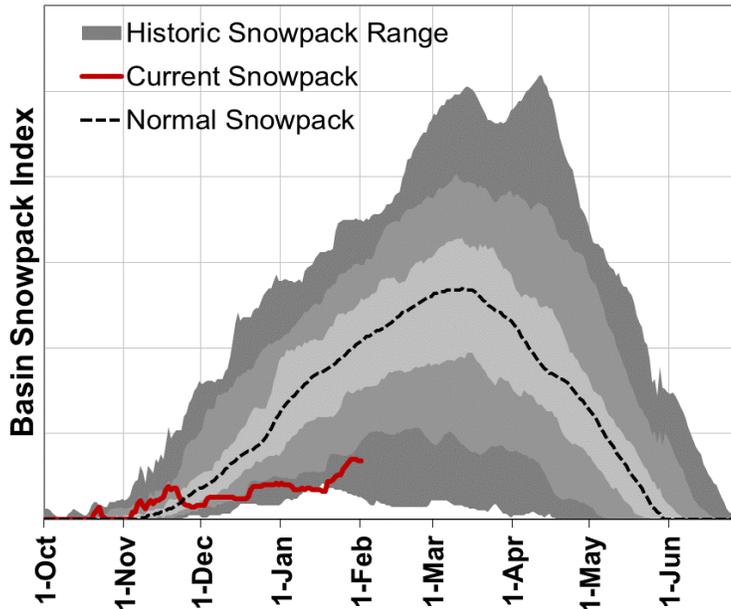
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Park H.Q. Rev Snow Course	6570	1-Feb	78	28.8	46.8	36.9	78%
Caliban (Alt.) Snow Course	6500	31-Jan	14	3.8	26.8	20.2	19%
Mt. Ashland Switchback Snow Course	6430	1-Feb	12	2.3	24.7	21.2	11%
Ski Bowl Road Snow Course	6070	1-Feb	8	2.0	18.8	15.0	13%
Big Red Mountain SNOTEL	6050	1-Feb	10	3.0	24.4	17.6	17%
Annie Springs SNOTEL	6010	1-Feb	55	16.9	32.4	26.8	63%
Fourmile Lake SNOTEL	5970	1-Feb	23	6.0	18.2	21.2	28%
Cold Springs Camp SNOTEL	5940	1-Feb	17	6.8	19.9	22.5	30%
Sevenmile Marsh SNOTEL	5700	1-Feb	31	10.1	25.5	20.0	51%
Summit Lake SNOTEL	5610	1-Feb	50	18.5	28.7	23.7	78%
Billie Creek Divide SNOTEL	5280	1-Feb	17	6.0	18.3	16.7	36%
Diamond Lake SNOTEL	5280	1-Feb	10	3.4	17.0	12.2	28%
Bigelow Camp SNOTEL	5130	1-Feb	11	4.5	21.3	8.9	51%
Beaver Dam Creek Snow Course	5120	1-Feb	4	1.0	13.1	10.2	10%
King Mountain 1 Snow Course	4760	1-Feb	8	2.2	18.0	3.8	58%
Deadwood Junction Snow Course	4660	1-Feb	4	1.2	9.8	6.2	19%
Fish Lk. SNOTEL	4660	1-Feb	6	1.9	8.5	9.1	21%
Howard Prairie SNOTEL	4580	1-Feb	2	0.5	7.3		
Howard Prairie Snow Course	4580	1-Feb	2	0.4	8.4	5.9	7%
Siskiyou Summit Rev. 2 Snow Course	4560	1-Feb	2	0.6	12.5	5.5	11%
Red Butte 1 Snow Course	4460	31-Jan	8	2.5	17.0	7.4	34%
King Mountain SNOTEL	4340	1-Feb	3	1.6	14.1	2.5	64%
North Umpqua Snow Course	4200	30-Jan	3	0.9	9.8	8.4	11%
Red Butte 2 Snow Course	4050	31-Jan	0	0.0	5.3	2.3	0%
Trap Creek Snow Course	3830	30-Jan	7	1.7	11.7	5.9	29%
Silver Burn Snow Course	3680	1-Feb	8	2.4	14.2	8.2	29%
King Mountain 3 Snow Course	3680	1-Feb	0	0.0	4.8	0.0	
Red Butte 3 Snow Course	3500	31-Jan	0	0.0	3.0	0.4	0%
Toketee Airstrip SNOTEL	3240	1-Feb	0	0.0	5.8	3.4	0%
King Mountain 4 Snow Course	3050	1-Feb	0	0.0	0.0	0.0	
Red Butte 4 Snow Course	3000	31-Jan	0	0.0	0.0	0.0	



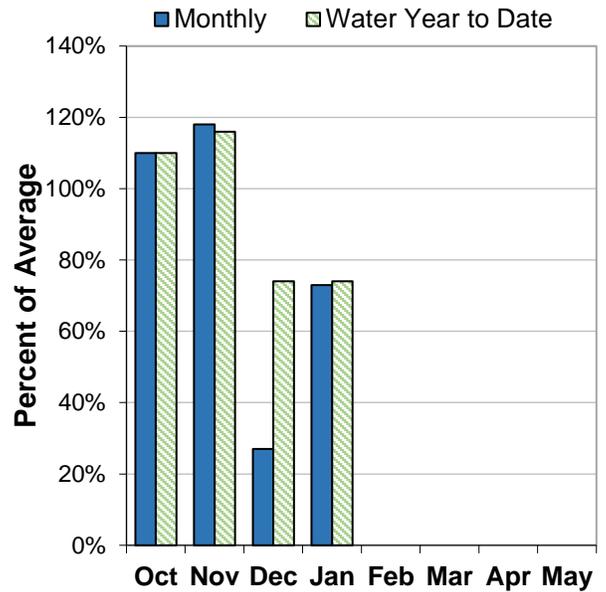
Klamath Basin

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 42% of normal. This is similar to last month when the snowpack was 43% of normal. Two long-term snow monitoring sites in the basin recorded the 2nd lowest measurement with at least 35 years of record.

PRECIPITATION

January precipitation was 73% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 74% of average.

RESERVOIR

Reservoir storage across the basin is currently above average. As of February 1, storage at major reservoirs in the basin ranges from 102% of average at Clear Lake to 141% of average at Gerber Reservoir.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 23% to 61% of average. Overall, forecasts decreased significantly from last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

Klamath Basin Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Gerber Reservoir Inflow ²	FEB-JUL	2.2	7.9	13.8	34%	21	35	41
	APR-SEP	0.00	0.83	3.3	23%	7.4	16.4	14.4
Sprague R nr Chiloquin	FEB-JUL	70	109	141	48%	177	235	295
	FEB-SEP	82	124	158	49%	196	260	320
	APR-JUL	40	65	85	45%	108	146	188
	APR-SEP	52	80	102	49%	127	168	210
Williamson R bl Sprague nr Chiloquin	FEB-JUL	115	210	270	57%	335	425	475
	FEB-SEP	160	260	325	61%	390	490	530
	APR-JUL	57	119	162	55%	205	265	295
	APR-SEP	101	169	215	61%	260	330	355
Upper Klamath Lake Inflow ^{1,2}	FEB-JUL	130	330	420	58%	510	710	720
	FEB-SEP	164	380	480	60%	580	800	800
	APR-JUL	35	156	210	53%	265	390	400
	APR-SEP	70	210	270	56%	335	470	480

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

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

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Clear Lake	202.6	86.5	199.0	102%	513.3
Gerber	61.4	20.9	43.5	141%	94.3
Upper Klamath Lake	330.2	318.1	319.0	104%	523.7

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Lost Basin	3	16%	144%
Sprague Basin	6	39%	135%
Upper Klamath Lake Basin	8	47%	112%
Williamson River Basin	5	57%	130%

Klamath Basin Summary for February 1, 2018

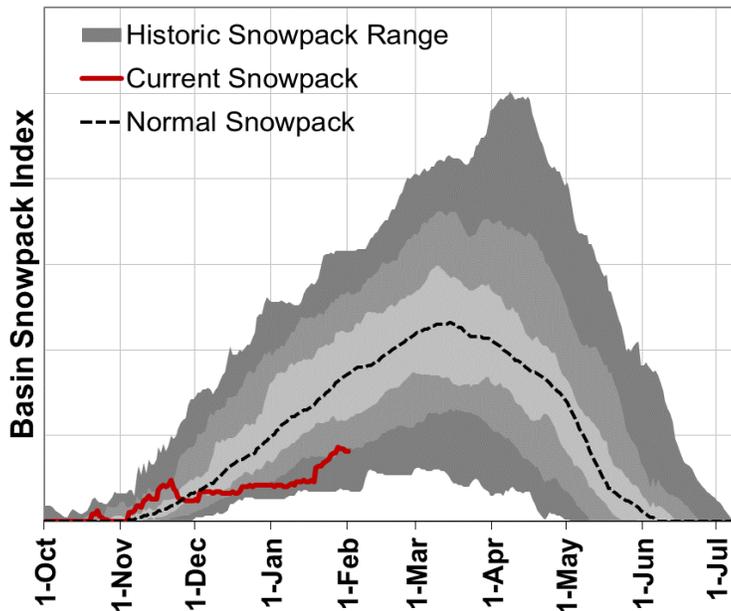
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Summer Rim SNOTEL	7080	1-Feb	16	5.8	12.4	11.1	52%
Swan Lake Mtn SNOTEL	6830	1-Feb	15	5.4	18.6		
Park H.Q. Rev Snow Course	6570	1-Feb	78	28.8	46.8	36.9	78%
Crazyman Flat SNOTEL	6180	1-Feb	11	5.0	13.3	10.9	46%
Ski Bowl Road Snow Course	6070	1-Feb	8	2.0	18.8	15.0	13%
Annie Springs SNOTEL	6010	1-Feb	55	16.9	32.4	26.8	63%
Finley Corrals AM	6000	1-Feb	14	5.0	13.4	9.8	51%
Fourmile Lake SNOTEL	5970	1-Feb	23	6.0	18.2	21.2	28%
Cold Springs Camp SNOTEL	5940	1-Feb	17	6.8	19.9	22.5	30%
Strawberry SNOTEL	5770	1-Feb	2	0.9	6.7	4.4	20%
Cox Flat AM	5750	1-Feb	3	1.1	9.5	5.4	20%
Silver Creek SNOTEL	5740	1-Feb	7	2.1	11.3	8.1	26%
Quartz Mountain SNOTEL	5720	1-Feb	1	0.2	4.2	1.5	13%
Sevenmile Marsh SNOTEL	5700	1-Feb	31	10.1	25.5	20.0	51%
State Line SNOTEL	5680	1-Feb	3	1.2	6.5		
Sun Pass SNOTEL	5400	1-Feb	9	2.8	18.7		
Billie Creek Divide SNOTEL	5280	1-Feb	17	6.0	18.3	16.7	36%
Diamond Lake SNOTEL	5280	1-Feb	10	3.4	17.0	12.2	28%
Crowder Flat SNOTEL	5170	1-Feb	0	0.1	4.1	3.7	3%
Beaver Dam Creek Snow Course	5120	1-Feb	4	1.0	13.1	10.2	10%
Taylor Butte SNOTEL	5030	1-Feb	2	0.6	8.7	5.5	11%
Gerber Reservoir SNOTEL	4890	1-Feb	2	0.5	3.0	1.5	33%
Chemult Alternate SNOTEL	4850	1-Feb	4	1.3	11.1	7.6	17%
Deadwood Junction Snow Course	4660	1-Feb	4	1.2	9.8	6.2	19%
Fish Lk. SNOTEL	4660	1-Feb	6	1.9	8.5	9.1	21%
Howard Prairie SNOTEL	4580	1-Feb	2	0.5	7.3		
Howard Prairie Snow Course	4580	1-Feb	2	0.4	8.4	5.9	7%
Siskiyou Summit Rev. 2 Snow Course	4560	1-Feb	2	0.6	12.5	5.5	11%



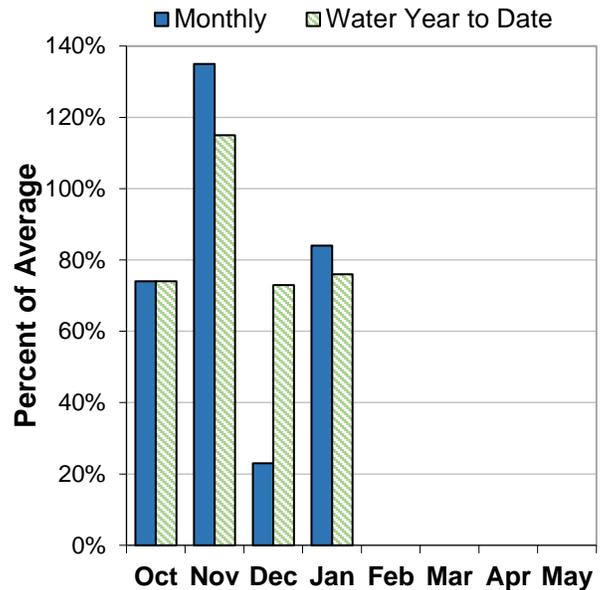
Lake County and Goose Lake Basins

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 42% of normal. This is similar to last month when the snowpack was 43% of normal. Silver Creek SNOTEL (5740 ft elev) recorded the 2nd lowest snowpack measurement in 38 years of records. The only year that was lower was February 1, 2015.

PRECIPITATION

January precipitation was 84% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 76% of average.

RESERVOIR

As of February 1, storage at major reservoirs in the basin ranges from 50% of average at Cottonwood Reservoir to 125% of average at Drews Reservoir.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 37% to 51% of average. Overall, forecasts decreased significantly from last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

Lake County And Goose Lake Basins Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Twentymile Ck nr Adel	MAR-JUL	1.65	5.1	8.6	32%	13.0	21	27
	APR-SEP	1.27	3.9	6.4	37%	9.6	15.5	17.4
Deep Ck ab Adel	MAR-JUL	17.6	29	38	48%	49	67	79
	APR-SEP	13.2	23	31	48%	40	56	65
Honey Ck nr Plush	MAR-JUL	1.89	4.6	7.0	41%	10.0	15.4	17.1
	APR-SEP	1.49	3.7	5.8	41%	8.4	13.0	14.1
Chewaucan R nr Paisley	MAR-JUL	21	33	43	51%	54	72	84
	APR-SEP	18.4	29	38	51%	47	64	75

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	Current	Last Year	Average	% of	Useable
	(KAF)	(KAF)	(KAF)	Average	Capacity (KAF)
Cottonwood	2.0	4.4	3.9	50%	9.3
Drews	35.4	26.3	28.4	125%	63.5

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
	Goose Lake Basin	6	43%
Lake Abert Basin	5	40%	138%
Summer Lake Basin	13	42%	131%
Upper Pit Basin	3	37%	129%

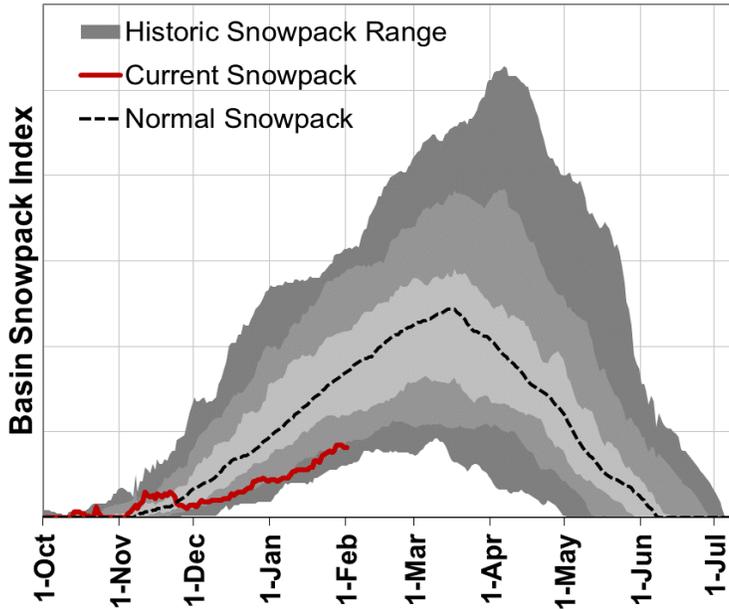
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Dismal Swamp SNOTEL	7360	1-Feb	34	12.9	23.1	18.0	72%
Summer Rim SNOTEL	7080	1-Feb	16	5.8	12.4	11.1	52%
Cedar Pass Snow Course	7050	31-Jan	17	4.9	15.6	10.2	48%
Cedar Pass SNOTEL	7030	1-Feb	17	5.8	13.1	11.3	51%
Blue Lake Ranch Snow Course	6830	1-Feb	5	1.0	8.3	6.3	16%
Patton Meadows AM	6800	1-Feb	8	2.9	12.3	10.2	28%
Sherman Valley AM	6640	1-Feb	7	2.5	10.9	8.0	31%
Hart Mountain AM	6430	1-Feb	0	0.0	2.8	1.4	0%
Rogger Meadow AM	6360	1-Feb	7	2.5	11.8	7.7	32%
Adin Mtn Snow Course	6190	2-Feb	12	3.3	13.4	8.8	38%
Adin Mtn SNOTEL	6190	1-Feb	9	2.8	13.3	8.6	33%
Crazyman Flat SNOTEL	6180	1-Feb	11	5.0	13.3	10.9	46%
Finley Corrals AM	6000	1-Feb	14	5.0	13.4	9.8	51%
Camas Creek #3 Snow Course	5860	1-Feb	15	3.0	13.1	8.8	34%
Sheldon SCAN	5860	1-Feb	0	0.0	1.0	0.4	0%
Strawberry SNOTEL	5770	1-Feb	2	0.9	6.7	4.4	20%
Cox Flat AM	5750	1-Feb	3	1.1	9.5	5.4	20%
Silver Creek SNOTEL	5740	1-Feb	7	2.1	11.3	8.1	26%
State Line SNOTEL	5680	1-Feb	3	1.2	6.5	3.7	26%
Crowder Flat SNOTEL	5170	1-Feb	0	0.1	4.1	3.7	3%



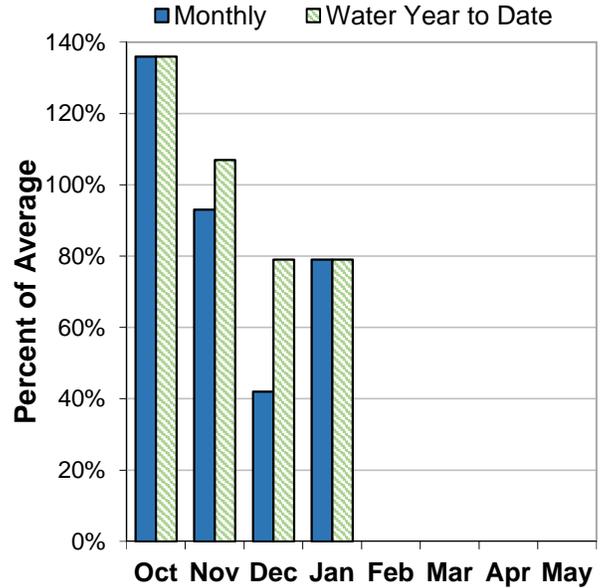
Harney Basin

February 1, 2018

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 48% of normal. This is similar to last month when the snowpack was 47% of normal. Blue Mountain Spring SNOTEL (5870 ft elev) set a new record low for February 1 snowpack since measurements begun 40 years ago.

PRECIPITATION

January precipitation was 79% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 79% of average.

STREAMFLOW FORECAST

The April through September streamflow forecasts in the basin range from 24% to 66% of average. Overall, forecasts decreased slightly from last month's report. Water managers in the basin should prepare for significantly reduced water supplies in the coming summer if conditions do not improve.

Harney Basin Summary for February 1, 2018

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts February 1, 2018	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Silvies R nr Burns	MAR-JUL	9.5	28	45	37%	67	107	123
	APR-SEP	4.7	17.6	31	34%	48	81	92
Donner Und Blitzen R nr Frenchglen	MAR-JUL	24	36	46	64%	57	76	72
	APR-SEP	23	35	45	66%	55	73	68
Trout Ck nr Denio	MAR-JUL	0.12	1.07	2.2	25%	3.9	7.0	8.7
	APR-SEP	0.06	0.86	1.95	24%	3.5	6.5	8.0

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Alvord Lake Basin	4	49%	125%
Donner und Blitzen River Basin	3	47%	101%
Silvies River Basin	4	49%	156%
Upper Quinn Basin	5	44%	153%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Granite Peak SNOTEL	8543	1-Feb	24	6.4	20.2	12.1	53%
Trout Creek AM	7890	1-Feb	9	3.2	9.6	8.2	39%
Fish Creek SNOTEL	7660	1-Feb	36	9.6	15.9	15.8	61%
Govt Corrals AM	7400	1-Feb	16	4.3	14.3	7.5	57%
Silvies SNOTEL	6990	1-Feb	16	4.1	9.2	9.6	43%
Buckskin Lower SNOTEL	6915	1-Feb	13	3.5	9.8	6.5	54%
V Lake AM	6600	1-Feb	2	0.7	5.9	5.2	13%
Disaster Peak SNOTEL	6500	1-Feb	2	0.4	9.2	5.6	7%
Hart Mountain AM	6430	1-Feb	0	0.0	2.8	1.4	0%
Snow Mountain SNOTEL	6230	1-Feb	12	4.1	10.3	6.3	65%
Lamance Creek SNOTEL	6000	1-Feb	3	1.1	10.7	8.0	14%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	6.1	12.2	11.2	54%
Sheldon SCAN	5860	1-Feb	0	0.0	1.0	0.4	0%
Rock Springs SNOTEL	5290	1-Feb	5	1.5	8.6	4.7	32%
Starr Ridge SNOTEL	5250	1-Feb	7	2.4	9.6	5.3	45%
Lake Creek R.S. SNOTEL	5240	1-Feb	16	4.5	11.7	9.4	48%

Recession Forecasts for Oregon

Recession flow forecasts are presented below for key streamflow sites where reliable daily streamflow data are available. The recession flow forecasts use exceedance probabilities in a format similar to the standard water supply forecasts presented in this document. Each forecast provides a range of possible outcomes representing the uncertainty of forecasting models.

The types of forecasts in the table below are:

- 1) Threshold flow -- Date that the daily streamflow rate falls below the given threshold flow
- 2) Peak flow -- Maximum daily flow
- 3) Date of peak flow -- Date of occurrence of maximum daily flow
- 4) Average daily flow on a given date

OWYHEE AND MALHEUR BASINS					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
Owyhee R nr Rome	2000 cfs	Feb 25	Apr 8	May 19	May 6
Owyhee R nr Rome	1000 cfs	Feb 28	Apr 14	May 24	May 18
Owyhee R nr Rome	500 cfs	Mar 19	Apr 29	Jun 9	Jun 2

UPPER JOHN DAY BASIN					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
John Day R at Service Creek	Average Daily Flow on Aug. 1st	25	185	345	271

UPPER DESCHUTES AND CROOKED BASINS					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
Crane Prairie Inflow *	Date of Peak		May 25		May 25
Crane Prairie Inflow	Peak Flow	205	355	505	403
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	125	200	270	269
Prineville Reservoir Inflow	150 cfs	Apr 23	May 18	Jun 12	May 30
Prineville Reservoir Inflow	80 cfs	Apr 27	May 22	Jun 16	June 7
Whychus Creek nr Sisters	100 cfs	Jul 4	Aug 2	Aug 27	August 16

*No prediction possible until April 1. Historic values are shown for reference prior to the April 1 report.

ROGUE AND UMPQUA BASINS					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
South Umpqua R nr Brockway *	90 cfs	Jul 10	Jul 28	Aug 17	August 8
South Umpqua R at Tiller	140 cfs	Jun 11	Jul 3	Jul 23	July 11
South Umpqua R at Tiller	90 cfs	Jun 30	Jul 23	Aug 17	August 1
South Umpqua R at Tiller	60 cfs	Jul 23	Aug 22	Sep 21	August 28

*Dates are based on streamflow data adjusted for releases from Galesville Reservoir to reflect natural flow conditions and do not match observed gage data. There is an approximately 20% chance in any given year that the flow will not recede below 90 cfs; the dates given here are for the event that the flow does recede below 90 cfs.

LAKE COUNTY AND GOOSE LAKE BASINS					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Deep Ck ab Adel	100 cfs	May 15	Jun 4	Jun 24	June 17
Honey Ck nr Plush	100 cfs	Mar 17	Apr 21	May 26	May 16
Honey Ck nr Plush	50 cfs	Apr 1	May 3	Jun 4	June 4
Twentymile Ck nr Adel	50 cfs	Apr 5	May 5	Jun 4	May 30
Twentymile Ck nr Adel	10 cfs	May 31	Jun 23	Jul 16	July 7

HARNEY BASIN					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Silvies R nr Burns	400 cfs	Apr 5	May 2	May 29	May 21
Silvies R nr Burns	200 cfs	Apr 11	May 9	Jun 6	June 2
Silvies R nr Burns	100 cfs	Apr 21	May 20	Jun 18	June 13
Silvies R nr Burns	50 cfs	May 8	Jun 12	Jul 17	July 3
Donner Und Blitzen R nr Frenchglen	200 cfs	May 10	Jun 1	Jun 23	June 20
Donner Und Blitzen R nr Frenchglen	100 cfs	May 31	Jun 20	Jul 10	July 9

Basin Outlook Reports: How Forecasts Are Made

Federal – State – Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

USDA, Natural Resources Conservation Service
Snow Survey Office
1201 NE Lloyd Suite 900
Portland, OR 97232
Phone: (503) 414-3271
Web site <http://www.or.nrcs.usda.gov/snow>

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 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 prepare 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.

Interpreting Water Supply Forecasts

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Streamflow forecasts help users make risk-based decisions. Water users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for. Users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin. AF stands for acre-feet. Forecasted volumes of water are typically in thousands of acre-feet.

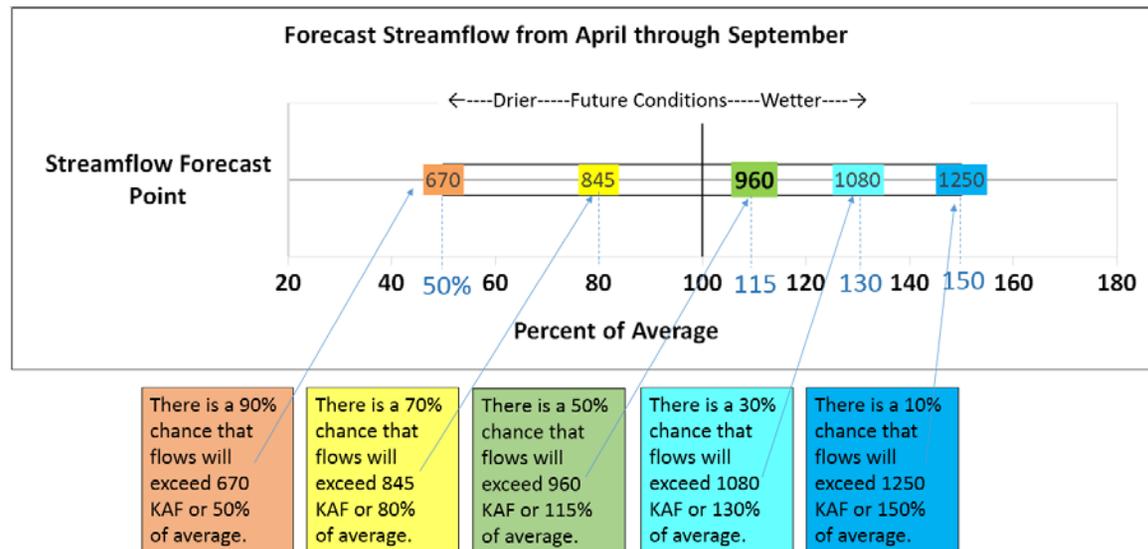
30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1981-2010. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

To Decrease the Chance of Having Less Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Graphical Representation of Streamflow Forecast Range:

This type of graphic is used in the state-wide streamflow forecast summary



Using the Forecasts - an Example

Using the 50 Percent Exceedance Forecast. Using the example forecasts shown here, there is a 50% chance that actual streamflow volume at the Mountain Creek near Mitchell will be less than 4.4 KAF between April 1 and Sept 30. There is also a 50% chance that actual streamflow volume will be greater than 4.4 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 3.3 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 3.3 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 1.7 KAF (from the 90 percent exceedance forecast). There is 10% chance of receiving less than 1.7 KAF.

JOHN DAY BASIN Streamflow Forecasts - February 1, 2013									
Forecast Point	Forecast Period	Future Conditions Chance Of Exceeding *				Wetter		30-Yr Avg. (1000AF)	
		90% (1000AF)	70% (1000AF)	50% (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)			
Strawberry Ck nr Prairie City	MAR-JUL	5.0	6.6	7.6	89	8.6	10.2	8.5	
	APR-SEP	5.2	6.8	7.9	90	9.0	10.6	8.8	
Mountain Ck nr Mitchell	FEB-JUL	3.2	5.4	6.9	99	8.4	10.6	7.0	
	APR-SEP	1.7	3.3	4.4	90	5.5	7.1	4.9	

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

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 5.5 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 5.5 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 7.1 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 7.1 KAF.

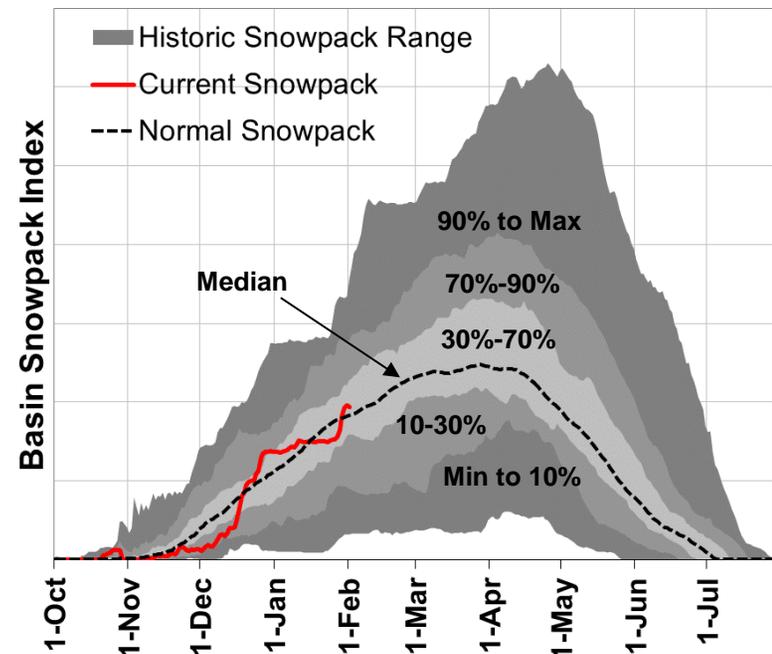
Interpreting Snowpack Plots

The basin snowpack plots display an index calculated using daily SNOTEL data for many sites in each basin. They show how the current year's snowpack data compares to historical data in the basin. The "Current Snowpack" line can be compared with the "Normal Snowpack" (median) line, as well as the historic range of snowpack in the basin.

The grey shaded areas represent different percentiles of the historical range of the snowpack index for each day. The dark grey shading indicates the extreme lows and highs in the SNOTEL record (minimum to the 10th percentile and the 90th percentile to maximum). The medium grey shading indicates the range from the 10th to 30th percentiles and the 70th to 90th percentiles. The light grey shading indicates the range between the 30th to 70th percentiles, while the median is the 50th percentile. A percentile is the value of the snowpack index below which the given percent of historical years fall. For instance, the 90th percentile line indicates that the snowpack index has been below this line for 90 percent of the years of record.

** Please note: These plots only use daily data from SNOTEL sites in the basin. Because snow course data is collected monthly, it cannot be included in these plots. The official snowpack percent of normal for the basin incorporates both SNOTEL and snow course data, so occasionally there might be slight discrepancies between the plot and official basin percent of normal (stated in basin summary below each plot).

Mountain Snowpack



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Official Business



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<http://www.or.nrcs.usda.gov/snow>

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