



United States
Department of
Agriculture



Natural Resources
Conservation
Service

Oregon Basin Outlook Report

January 1, 2016



Fresh tracks at Camas Creek #3 snow course

Photo courtesy of Alan Grubb (Snow Surveyor, Lakeview USFS)

Snow surveyors around Oregon enjoyed fresh tracks in deep powder as they took January 1st measurements. Powerful December storms brought abundant snowfall to even low and mid-elevation sites, causing most snow measurement sites across the state to report above normal snowpack as of January 1st, 2016. The photo above was taken on December 30th by surveyors skiing into Camas Creek #3 snow course near Lakeview, Oregon. They measured 35 inches of snow depth and 8.9 inches of snow water content, which is more than double the typical January 1st snowpack. A welcome start to the new year!

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General Outlook

January 1st, 2016

SUMMARY

Cold mountain temperatures and copious amounts of precipitation joined forces in December to bring a much anticipated return of winter to Oregon. Following a year punctuated by record-low snowpack, water shortages, fires and widespread drought across the Pacific Northwest, it is refreshing to start 2016 with an above normal snowpack throughout Oregon's mountains. As of January 1st, the state-wide snowpack is 138% of normal compared to last year at this time when it was 53% of normal. The January 1st snowpack this year is greater than the snowpack at any time last year.

While a snowy start to the winter season gives both water users and skiers reason to rejoice, it is critical to point out that the effects of drought are cumulative and cannot be reversed with one good month of precipitation. The high demand on the reservoir storage last summer left minimal amounts of reservoir water to carry-over into this season. For example, Lake Owyhee ended December with only 22% of average reservoir storage despite the basin receiving 138% of normal fall precipitation. Currently, most reservoirs in Oregon are storing below normal amounts for this time of year, except in the Willamette basin where fall rain boosted many of those reservoirs back up to normal levels. Despite the recent storms, the latest drought monitor indicates that most of eastern Oregon remains in an extreme drought status:

<http://droughtmonitor.unl.edu/>. For information on how NRCS can help land owners plan for and mitigate the impacts of drought, visit www.or.nrcs.usda.gov.

Given the abundant snowpack in the mountains, streamflow forecasts currently predict near normal to well above normal flows for the 2016 summer. However, it is still very early in the snowpack accumulation season. NOAA's Climate Prediction Center (CPC) is calling for increased likelihood of above normal temperatures in Oregon for the next 3 months, which will affect whether the winter precipitation continues to fall as snow in the mountains. For now, it is comforting to know that snowpack levels have already surpassed the peak levels of last year's snow season. Hopefully, winter will bring more snow, further boosting mountain snowpack, so that water users can experience some relief from last year's drought conditions.

SNOWPACK

After a remarkably snowy December, all of Oregon's mountains have an above normal snowpack. The current snowpack gives reason for a collective sigh of relief (if only for the moment) following last year's snow drought that rattled the state with the lowest snowpack on record. As of January 1st, the Harney basin has a 186% of normal snowpack, the highest with respect to normal in the state. The lowest snowpack is in the Hood, Sandy and Lower Deschutes basin at 117% of normal.

Most of the snow monitoring stations have more snow on January 1st than they did at any time last year. The west and central Cascades have dramatically more snow than last year, ranging from 5 to 14 times the amount of snow water content stored in the snowpack. Bigelow Camp SNOTEL site, located in the Rogue basin takes the cake for measuring 14 times more snow than last year. On January 1st of this year, the site had 12.2 inches of snow water content and last season, the snow peaked at a mere 0.9 inches of snow water content.

The NOAA CPC long-range winter precipitation forecast varies throughout the state, ranging from an increased chance of above normal precipitation in SW Oregon to below normal precipitation for NE Oregon: <http://www.cpc.ncep.noaa.gov/>. Keep in mind that these forecasts are for the overall pattern expected and do not predict individual storms. In other words, there can still be cold storms that bring snow to the mountains even though the overall conditions will likely not provide for a repeat of December's weather.

PRECIPITATION

A very moist, cold and persistent storm cycle impacted Oregon in December, bringing up to twice the normal amount of precipitation for the month. These storms brought near record high amounts of precipitation throughout most of the state's mountains. Landslides and localized flooding occurred in many streams and rivers on the west side of the Cascades causing major damage to homes and many of the state's western cities.

The wettest locations in the state in December were in the Rogue and Umpqua basins where 200% of average precipitation fell in the basins. The lightest amounts of December precipitation fell in the Grande Ronde, Powder, Burnt and Imnaha basin, where the precipitation was still well above average at 160%. With December's notable contribution to the water year total, now all of Oregon's mountains have received above average amounts of precipitation since October 1st.

RESERVOIRS

Last summer's hot and dry conditions created a high demand for reservoir storage, therefore many of Oregon's reservoirs are currently below January 1st average amounts. Most reservoirs in the southern and eastern regions of the state are reporting less than half of normal water levels. The low reservoir storage is one factor for the continuation of drought status in eastern Oregon. The one exception is the Willamette basin which benefitted from significant fall rains to bring most reservoirs back up to normal storage levels.

STREAMFLOW

The stormy month of December not only brought heavy snowfall to the mountains, but also heavy rainfall on the west side of the Cascades in the valleys. The heavy precipitation drove many rivers to flood stage and swollen rivers closed roads and caused major damage. Most rivers draining from the west side of the Cascades experienced nearly double the normal observed streamflows for the month, while Oregon's coastal rivers flowed more than double their normal amounts.

Currently, abundant snowpack and precipitation across Oregon is driving streamflow forecasts to predict near normal to well above normal streamflows for the 2016 summer water supply season. If winter continues to bring snow to the mountains and the snowpack hovers near normal for the season, then the water supply outlook will remain good for the coming summer. However, there are several months of winter left in the season and quite a bit of uncertainty with future weather patterns. As springtime and the peak of the snow season approach, snowpack conditions will provide a more definitive outlook on the summer water supply picture throughout the state.

A summary of streamflow forecasts for Oregon follows:

STREAM	Median Forecast (April through September)	
	Volume (Acre-Feet)	Percent of Average
Owyhee Reservoir Inflow	495,000	122
Grande Ronde R at Troy	1,440,000	110
Umatilla R at Pendleton	197,000	129
Deschutes R at Benham Falls	530,000	109
Willamette R at Salem	5,530,000	117
Rogue R at Raygold	960,000	119
Upper Klamath Lake Inflow	520,000	108
Silvies R nr Burns	140,000	152

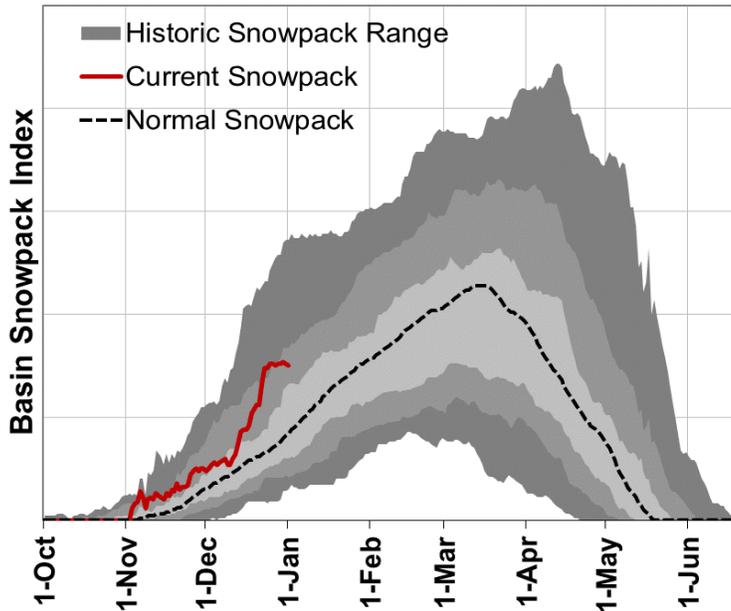
Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period. This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators. This report will be updated monthly, January through June.



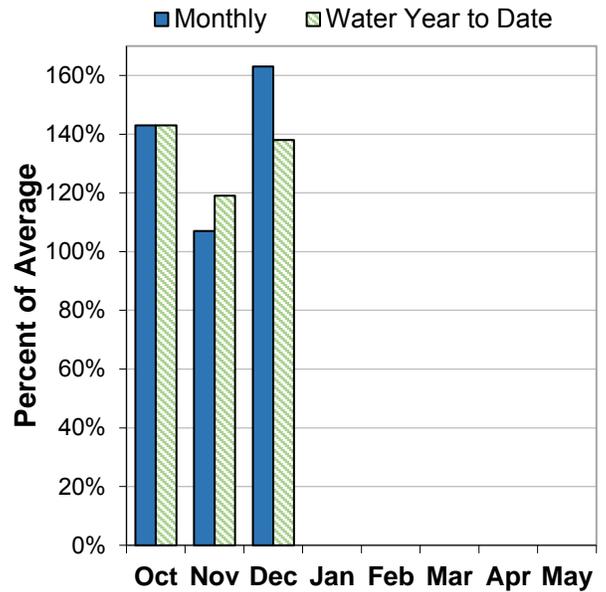
Owyhee and Malheur Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 185% of normal. This is significantly higher than last year when the basin snowpack was 103% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 163% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 138% of average.

RESERVOIR

Reservoir storage across the basin is currently well below average. As of January 1, storage at major reservoirs in the basin ranges from 16% of average at Warm Springs Reservoir to 47% of average at Beulah Reservoir.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 122% to 138% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Owyhee And Malheur Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	440	670	825	142%	980	1210	580
	FEB-SEP	455	685	845	142%	1000	1240	595
	APR-SEP	192	355	465	127%	575	740	365
Owyhee R bl Owyhee Dam ²	FEB-JUL	455	690	875	138%	1080	1430	635
	FEB-SEP	485	720	905	136%	1110	1460	665
	APR-SEP	235	380	495	122%	630	855	405
Malheur R nr Drewsey	FEB-JUL	94	134	165	129%	200	255	128
	APR-JUL	53	85	112	149%	142	192	75
	APR-SEP	54	81	102	138%	125	164	74
NF Malheur R at Beulah	FEB-JUL	62	94	120	141%	149	197	85

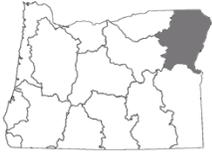
* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume
 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Useable Capacity				
	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	(KAF)
Beulah	9.9	12.8	21.0	47%	59.2
Bully Creek	4.5	3.4	10.8	42%	23.7
Lake Owyhee	69.5	75.3	312.7	22%	715.0
Warm Springs	9.5	12.6	60.4	16%	169.6

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
East Little Owyhee Basin	2	194%	87%
South Fork Owyhee Basin	4	191%	122%
Upper Malheur Basin	3	165%	107%
Upper Owyhee Basin	5	192%	119%

Owyhee And Malheur Basins Summary for January 1, 2016

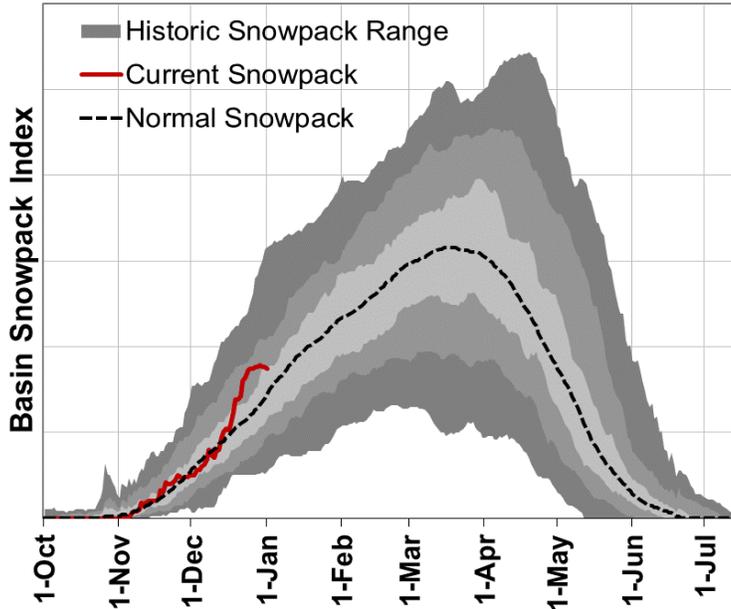
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Granite Peak SNOTEL	8543	1-Jan	50	12.3	7.4	7.0	176%
Trout Creek AM	7890	1-Jan	26	6.5	7.4		
Toe Jam SNOTEL	7700	1-Jan	42	10.8	7.2		
Govt Corrals AM	7400	1-Jan	33	8.3	4.8		
Jack Creek Upper SNOTEL	7250	1-Jan	42	11.0	8.2	5.4	204%
Dobson Creek Snow Course	7084	6-Jan	52	14.0	9.1	11.1	126%
Reynolds-Dobson Divide Snow Course	7064	6-Jan	51	15.0	10.3	9.8	153%
Fawn Creek SNOTEL	7000	1-Jan	43	11.0	8.1	5.9	186%
Buckskin Lower SNOTEL	6915	1-Jan	30	7.7	1.6	3.3	233%
Reynolds West Fork #2 Snow Course	6798	6-Jan	52	14.6	10.2	9.1	160%
Big Bend SNOTEL	6700	1-Jan	27	8.1	3.8	3.0	270%
Fry Canyon SNOTEL	6700	1-Jan	18	3.3	0.6		
Laurel Draw SNOTEL	6697	1-Jan	25	6.3	4.0	4.1	154%
South Mtn. SNOTEL	6500	1-Jan	36	9.1	5.5	6.2	147%
Taylor Canyon SNOTEL	6200	1-Jan	19	3.9	0.3	1.5	260%
Blue Mountain Spring SNOTEL	5870	1-Jan	42	10.5	7.4	6.9	152%
Mud Flat SNOTEL	5730	1-Jan	18	3.9	0.8	2.6	150%
Reynolds Creek SNOTEL	5600	1-Jan		6.0	1.3	2.0	300%
Rock Springs SNOTEL	5290	1-Jan	20	4.5	1.2	1.9	237%
Lake Creek R.S. SNOTEL	5240	1-Jan	29	7.5	5.9	4.8	156%



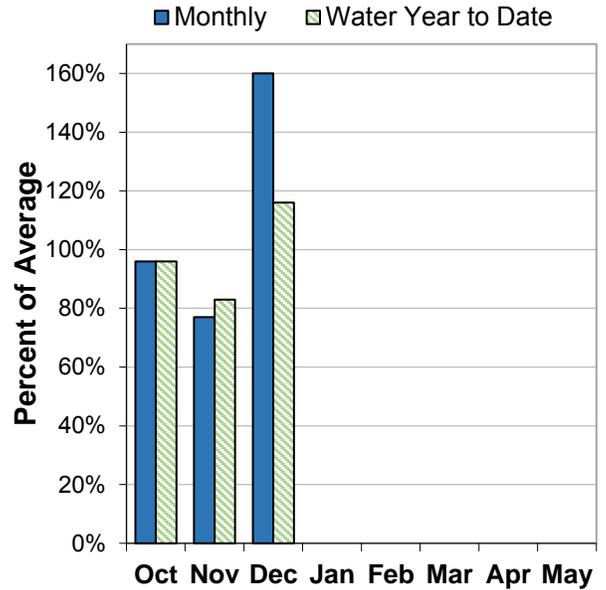
Grande Ronde, Powder, Burnt and Imnaha Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 121% of normal. This is significantly higher than last year when the basin snowpack was 85% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 160% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 116% of average.

RESERVOIR

As of January 1, storage at major reservoirs in the basin ranges from 13% of average at Phillips Lake to 106% of average at Wallowa Lake.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 98% to 134% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Burnt R nr Hereford	FEB-JUL	40	55	66	129%	76	92	51
	APR-SEP	23	37	47	134%	56	70	35
Deer Ck nr Sumpter	FEB-JUL	14.8	18.9	22	112%	25	29	19.7
Powder R nr Sumpter	FEB-JUL	52	69	80	119%	92	109	67
	APR-JUL	39	54	64	121%	74	89	53
	APR-SEP	39	55	65	120%	76	91	54
Wolf Ck Reservoir Inflow ²	MAR-JUN	12.2	16.9	20	110%	23	28	18.1
Pine Ck nr Oxbow	FEB-JUL	144	196	230	105%	265	320	220
	APR-JUL	101	139	164	104%	190	230	157
	APR-SEP	106	145	171	105%	197	235	163
Imnaha R at Imnaha	APR-JUL	184	240	280	110%	320	375	255
	APR-SEP	200	260	305	109%	345	405	280
Catherine Ck nr Union	APR-JUL	48	59	66	110%	73	84	60
	APR-SEP	52	63	70	109%	78	89	64
Lostine R nr Lostine	APR-JUL	93	104	111	105%	118	129	106
	APR-SEP	100	112	120	104%	128	140	115
Bear Ck nr Wallowa	APR-SEP	50	58	64	98%	70	78	65
Grande Ronde R at Troy ¹	MAR-JUL	1250	1500	1670	111%	1840	2090	1510
	APR-SEP	1040	1280	1440	110%	1600	1840	1310

* 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	Useable Capacity				
	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	(KAF)
Phillips Lake	3.8	13.9	30.2	13%	73.5
Thief Valley	5.9	9.5	10.5	56%	13.3
Unity	6.5	7.1	9.5	68%	25.5
Wallowa Lake	15.6	23.5	14.7	106%	37.5
Wolf Creek		2.7	2.6		11.1

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for January 1, 2016

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Burnt Basin	2	155%	103%
Imnaha Basin	4	129%	95%
Lower Grande Ronde Basin	3	105%	62%
Powder Basin	8	138%	89%
Upper Grande Ronde Basin	7	121%	83%
Wallowa Basin	4	118%	101%

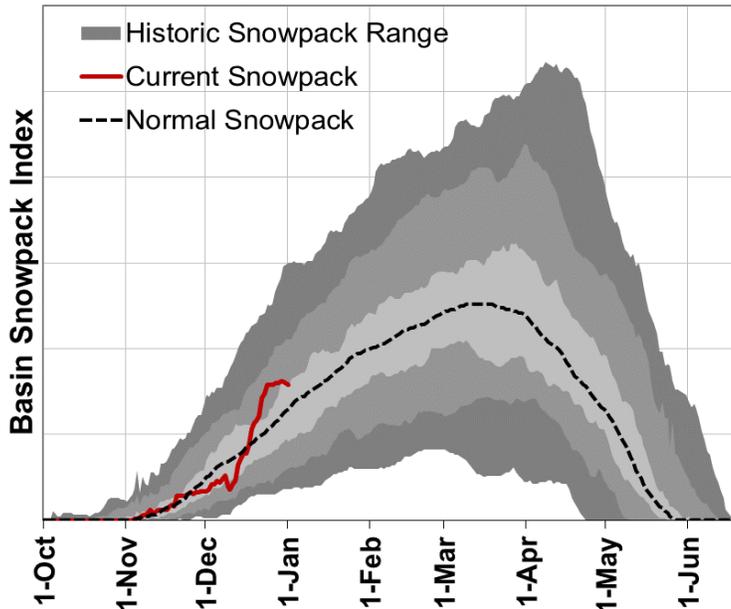
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Mt. Howard SNOTEL	7910	1-Jan	27	7.4	8.6	7.5	99%
Aneroid Lake #2 SNOTEL	7400	1-Jan	36	10.0	8.1	9.1	110%
TV Ridge AM	7050	1-Jan	21	5.9	4.9		
Big Sheep AM	6230	1-Jan	43	12.0	8.6		
Bear Saddle SNOTEL	6180	1-Jan	59	16.3	9.2	9.4	173%
Bourne SNOTEL	5850	1-Jan	35	8.8	6.6	6.8	129%
Moss Springs SNOTEL	5760	1-Jan	41	12.3	10.1	10.2	121%
Taylor Green SNOTEL	5740	1-Jan	39	11.1	8.2	7.7	144%
Spruce Springs SNOTEL	5700	1-Jan	22	5.3	4.5	7.1	75%
Wolf Creek SNOTEL	5630	1-Jan	31	6.7	4.6	6.0	112%
Milk Shakes SNOTEL	5580	1-Jan	65	17.6	10.6		
West Branch SNOTEL	5560	1-Jan	45	11.5	7.7	9.2	125%
Touchet SNOTEL	5530	1-Jan	51	14.7	7.7	12.9	114%
Eilertson Meadows SNOTEL	5510	1-Jan	25	6.3	3.2	4.8	131%
Gold Center SNOTEL	5410	1-Jan	31	7.4	4.9	4.7	157%
Schneider Meadows SNOTEL	5400	1-Jan	63	18.0	11.5	12.3	146%
Beaver Reservoir SNOTEL	5150	1-Jan	18	4.7	2.4	4.2	112%
Tipton SNOTEL	5150	1-Jan	33	7.8	5.2	5.1	153%
High Ridge SNOTEL	4920	1-Jan	44	13.2	8.3	11.0	120%
County Line SNOTEL	4830	1-Jan	11	2.4	1.5	2.4	100%
Bowman Springs SNOTEL	4530	1-Jan	18	4.1	2.2	3.7	111%
East Eagle Snow Course	4400	31-Dec	51	13.2	7.6	8.7	152%
Sourdough Gulch SNOTEL	4000	1-Jan	8	1.6	0.5	0.6	267%



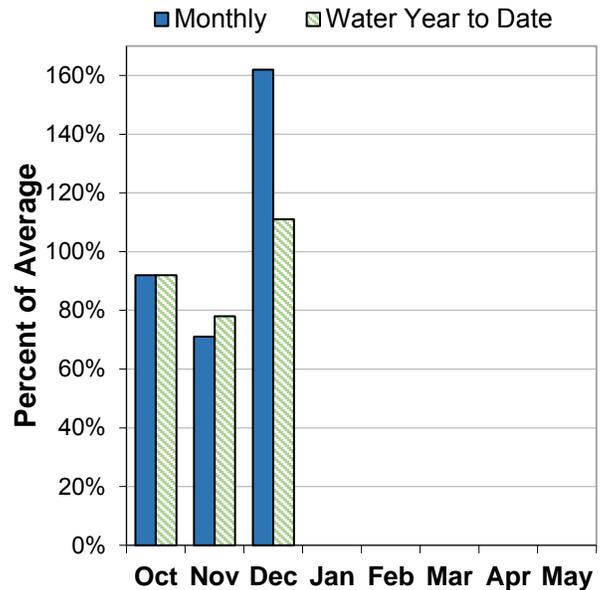
Umatilla, Walla Walla and Willow Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 122% of normal. This is significantly higher than last year when the basin snowpack was 71% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 162% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 111% of average.

RESERVOIR

Reservoir storage across the basin is currently well below average. As of January 1, storage at major reservoirs in the basin ranges from 61% of average at Willow Creek Reservoir to 77% of average at Cold Springs Reservoir.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 109% to 129% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Umatilla, Walla Walla And Willow Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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-SEP	73	81	86	108%	91	99	80
	APR-JUL	49	55	59	109%	63	69	54
	APR-SEP	60	67	72	109%	76	83	66
Umatilla R ab Meacham Ck Gibbon	MAR-SEP	102	119	130	123%	141	157	106
	APR-JUL	68	82	91	123%	100	113	74
	APR-SEP	74	87	97	121%	106	119	80
Umatilla R at Pendleton	MAR-SEP	225	265	290	129%	320	360	225
	APR-JUL	136	168	190	129%	210	245	147
	APR-SEP	142	175	197	129%	220	255	153
McKay Ck nr Pilot Rock	APR-SEP	16.9	29	37	119%	44	56	31
Butter Ck nr Pine City	MAR-JUL	9.8	14.2	17.2	115%	20	25	14.9
	APR-SEP	6.0	8.9	10.8	110%	12.8	15.7	9.8
Willow Ck ab Willow Lk nr Heppner	FEB-JUL	6.9	10.9	13.6	115%	16.3	20	11.8
	APR-JUL	3.0	5.7	7.6	109%	9.4	12.2	7.0
Rhea Ck nr Heppner	FEB-JUL	8.6	13.1	16.2	119%	19.3	24	13.6

* 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	5.3	7.4	6.9	77%	38.6
Mckay	14.5	19.6	20.0	73%	71.5
Willow Creek	2.6	2.9	4.2	61%	9.8

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Umatilla Basin	5	123%	76%
Walla Walla Basin	7	122%	71%

Umatilla, Walla Walla And Willow Basins Summary for January 1, 2016

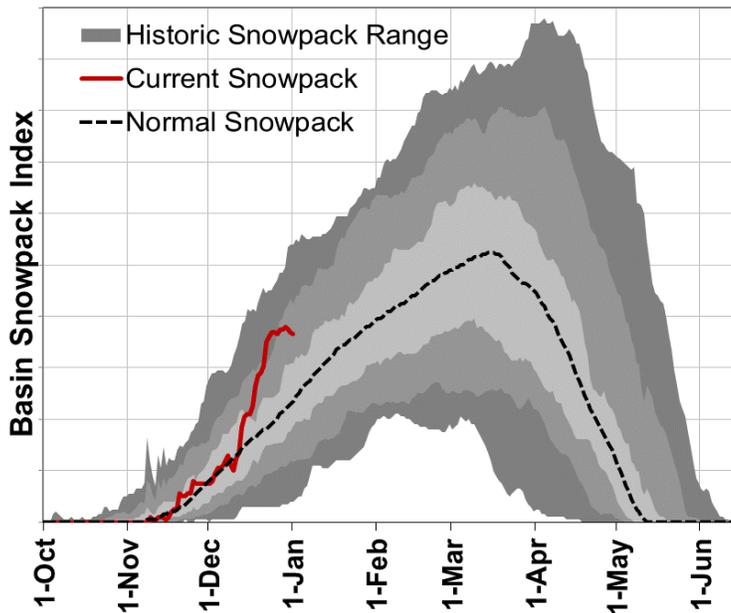
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Arbuckle Mtn SNOTEL	5770	1-Jan	35	9.4	6.4	8.1	116%
Spruce Springs SNOTEL	5700	1-Jan	22	5.3	4.5	7.1	75%
Milk Shakes SNOTEL	5580	1-Jan	65	17.6	10.6		
Touchet SNOTEL	5530	1-Jan	51	14.7	7.7	12.9	114%
Madison Butte SNOTEL	5150	1-Jan	14	3.9	1.9	2.7	144%
Lucky Strike SNOTEL	4970	1-Jan	17	4.9	3.7	3.9	126%
High Ridge SNOTEL	4920	1-Jan	44	13.2	8.3	11.0	120%
Bowman Springs SNOTEL	4530	1-Jan	18	4.1	2.2	3.7	111%
Emigrant Springs SNOTEL	3800	1-Jan	13	5.3	2.3	3.3	161%



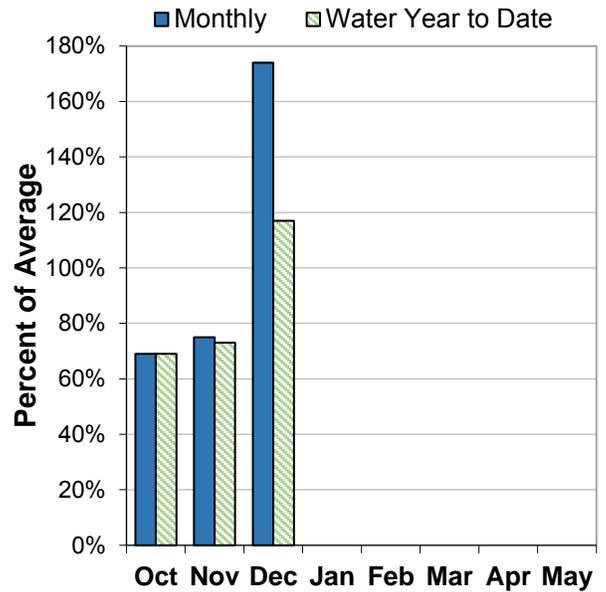
John Day Basin

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 159% of normal. This is significantly higher than last year when the basin snowpack was 95% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 174% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 117% of average.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 113% to 137% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

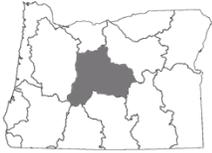
John Day Basin Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	7.8	9.7	11.0	129%	12.2	14.1	8.5
	APR-SEP	8.3	10.2	11.5	131%	12.8	14.8	8.8
Mountain Ck nr Mitchell	FEB-JUL	5.2	7.8	9.6	137%	11.4	14.1	7.0
	APR-SEP	3.7	5.5	6.7	137%	7.9	9.7	4.9
Camas Ck nr Ukiah	MAR-JUL	40	50	57	116%	64	74	49
	APR-SEP	24	34	40	114%	47	56	35
MF John Day R at Ritter	MAR-JUL	118	156	181	116%	205	245	156
	APR-SEP	91	123	144	114%	166	198	126
NF John Day R at Monument	MAR-JUL	585	760	880	115%	1000	1170	765
	APR-SEP	435	580	675	113%	775	915	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	4	185%	69%
North Fork John Day Basin	7	132%	90%
Upper John Day Basin	5	189%	120%

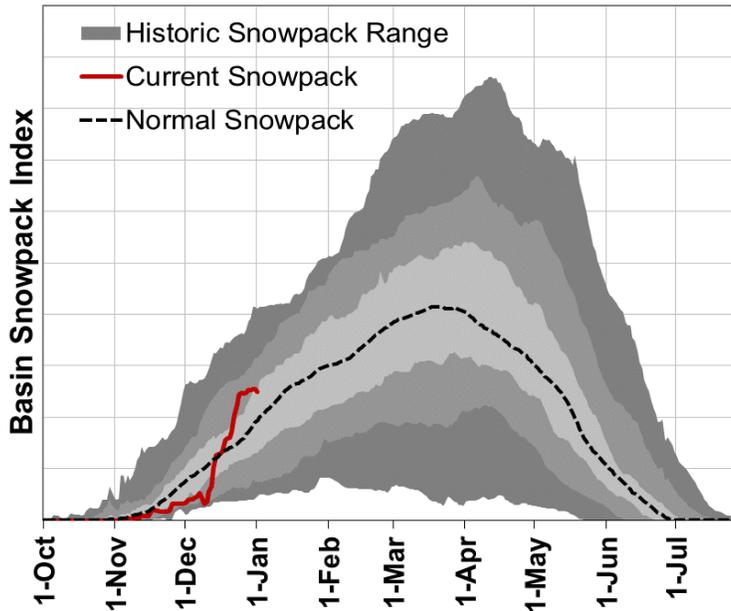
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Snow Mountain SNOTEL	6230	1-Jan	28	8.6	5.8	3.3	261%
Blue Mountain Spring SNOTEL	5870	1-Jan	42	10.5	7.4	6.9	152%
Bourne SNOTEL	5850	1-Jan	35	8.8	6.6	6.8	129%
Derr. SNOTEL	5850	1-Jan	41	11.1	6.1	5.7	195%
Arbuckle Mtn SNOTEL	5770	1-Jan	35	9.4	6.4	8.1	116%
Ochoco Meadows SNOTEL	5430	1-Jan	29	7.3	1.9	4.4	166%
Gold Center SNOTEL	5410	1-Jan	31	7.4	4.9	4.7	157%
Starr Ridge SNOTEL	5250	1-Jan	22	6.6	2.9	2.8	236%
Lake Creek R.S. SNOTEL	5240	1-Jan	29	7.5	5.9	4.8	156%
Madison Butte SNOTEL	5150	1-Jan	14	3.9	1.9	2.7	144%
Tipton SNOTEL	5150	1-Jan	33	7.8	5.2	5.1	153%
Lucky Strike SNOTEL	4970	1-Jan	17	4.9	3.7	3.9	126%
County Line SNOTEL	4830	1-Jan	11	2.4	1.5	2.4	100%
Marks Creek Snow Course	4580	30-Dec	22	5.8	0.6	2.4	242%



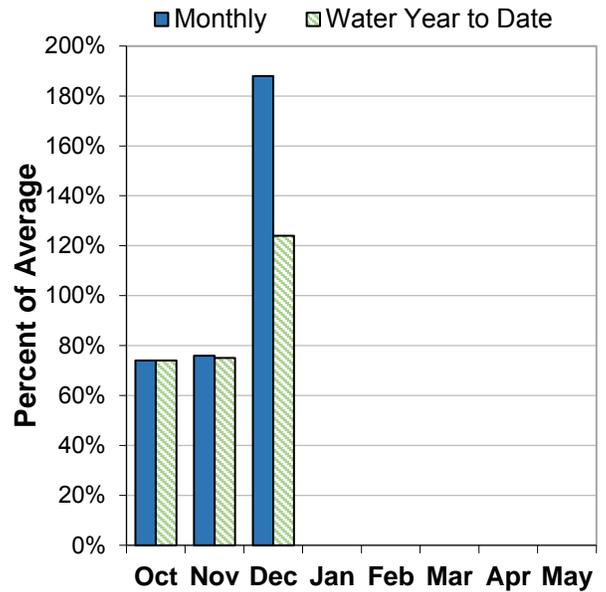
Upper Deschutes and Crooked Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 134% of normal. This is significantly higher than last year when the basin snowpack was 45% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 188% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 124% of average.

RESERVOIR

As of January 1, storage at major reservoirs in the basin ranges from 62% of average at Prineville Reservoir to 119% of average at Crescent Lake.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 94% to 146% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Upper Deschutes And Crooked Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	33	42	48	117%	54	63	41
	FEB-SEP	56	67	75	119%	83	94	63
	APR-JUL	26	32	37	123%	42	48	30
	APR-SEP	47	57	63	121%	69	79	52
Crane Prairie Reservoir Inflow ²	FEB-JUL	63	77	87	114%	97	111	76
	FEB-SEP	91	109	121	113%	133	151	107
	APR-JUL	46	57	65	116%	73	84	56
	APR-SEP	73	89	100	114%	111	127	88
Crescent Lake Inflow ²	FEB-JUL	16.1	22	26	133%	30	36	19.6
	FEB-SEP	19.0	26	30	136%	34	41	22
	APR-JUL	12.2	16.9	20	133%	23	28	15.0
	APR-SEP	15.4	21	24	138%	27	33	17.4
Little Deschutes R nr La Pine	FEB-JUL	75	98	114	128%	130	153	89
	FEB-SEP	80	105	122	130%	139	164	94
	APR-JUL	59	75	85	135%	95	111	63
	APR-SEP	64	81	93	135%	105	122	69
Deschutes R at Benham Falls ²	FEB-JUL	440	480	510	111%	540	580	460
	FEB-SEP	590	640	675	108%	710	765	625
	APR-JUL	305	335	355	111%	370	400	320
	APR-SEP	465	505	530	109%	555	595	485
Wychus Ck nr Sisters	FEB-JUL	30	37	41	95%	45	52	43
	FEB-SEP	39	47	52	95%	57	65	55
	APR-JUL	26	30	33	94%	36	40	35
	APR-SEP	34	40	44	94%	48	54	47
Prineville Reservoir Inflow ²	FEB-JUL	167	235	280	137%	330	395	205
	FEB-SEP	166	235	280	137%	330	400	205
	APR-JUL	92	125	148	145%	171	205	102
	APR-SEP	92	126	149	146%	172	205	102
Ochoco Reservoir Inflow ²	FEB-JUL	34	46	55	138%	64	76	40
	FEB-SEP	33	46	55	138%	64	77	40
	APR-JUL	18.3	25	29	138%	33	40	21
	APR-SEP	17.7	24	29	145%	34	40	20

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

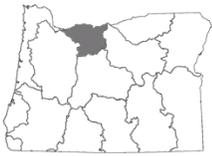
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Upper Deschutes And Crooked Basins Summary for January 1, 2016

Reservoir Storage	Current	Last Year	Average	% of	Useable
	(KAF)	(KAF)	(KAF)	Average	Capacity (KAF)
Crane Prairie	31.9	45.9	35.6	90%	55.3
Crescent Lake	52.4	69.2	44.0	119%	86.9
Ochoco	10.9	20.9	17.1	64%	44.2
Prineville	51.2	93.5	82.6	62%	148.6
Wickiup	109.5	139.7	140.8	78%	200.0

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Little Deschutes Basin	4	138%	37%
Upper Crooked Basin	3	194%	69%
Upper Deschutes Basin	10	121%	39%

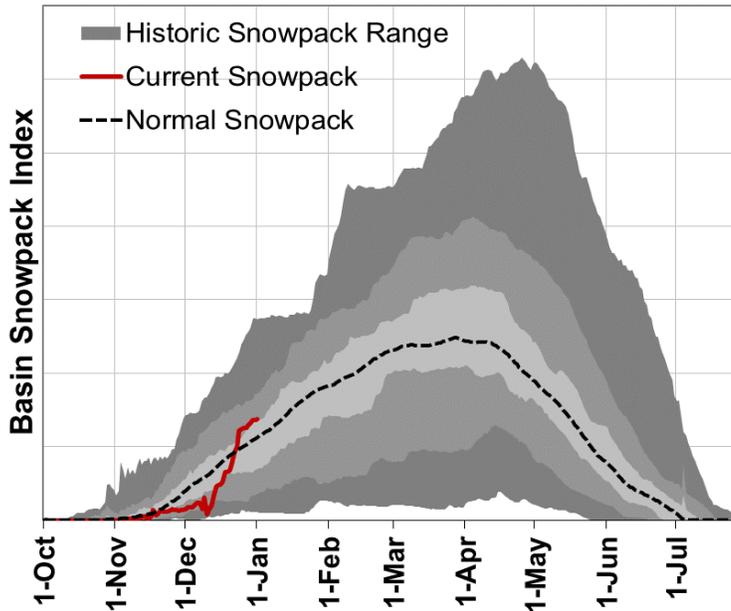
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Snow Mountain SNOTEL	6230	1-Jan	28	8.6	5.8	3.3	261%
Derr. SNOTEL	5850	1-Jan	41	11.1	6.1	5.7	195%
Three Creeks Meadow SNOTEL	5690	1-Jan	31	8.8	4.2	6.9	128%
Summit Lake SNOTEL	5610	1-Jan	75	23.0	6.6	16.3	141%
Irish Taylor SNOTEL	5540	1-Jan	59	16.2	8.3	14.6	111%
Ochoco Meadows SNOTEL	5430	1-Jan	29	7.3	1.9	4.4	166%
Racing Creek Snow Course	5160	30-Dec	30	7.2	1.6	6.0	120%
Cascade Summit SNOTEL	5100	1-Jan	63	13.9	6.5	14.1	99%
Roaring River SNOTEL	4950	1-Jan	54	13.8	2.9	12.6	110%
New Crescent Lake SNOTEL	4910	1-Jan	44	11.1	1.0	6.1	182%
Chemult Alternate SNOTEL	4850	1-Jan	36	8.6	1.0	4.6	187%
Hogg Pass SNOTEL	4790	1-Jan	43	11.1	2.7	11.6	96%
McKenzie SNOTEL	4770	1-Jan	63	18.6	6.5	18.5	101%
Marks Creek Snow Course	4580	30-Dec	22	5.8	0.6	2.4	242%
Salt Creek Falls SNOTEL	4220	1-Jan	50	13.4	4.3	8.6	156%
Santiam Jct. SNOTEL	3740	1-Jan	38	10.5	1.9	9.0	117%



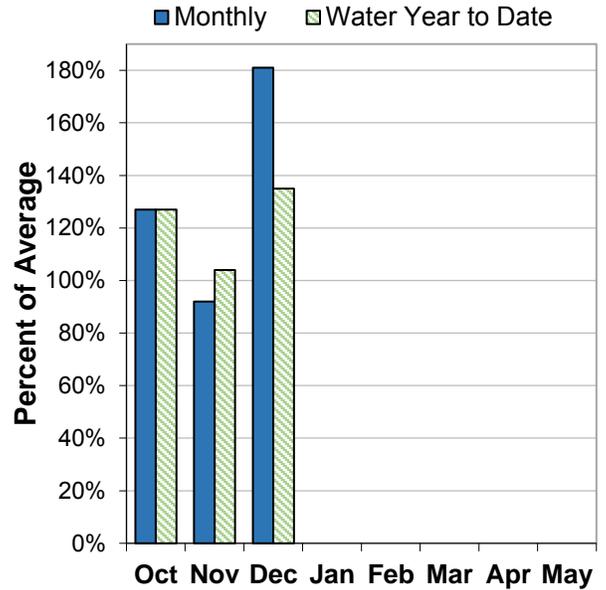
Hood, Sandy and Lower Deschutes Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 117% of normal, the lowest in the state. This is significantly higher than last year when the basin snowpack was 38% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 181% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 135% of average.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 104% to 119% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Hood, Sandy And Lower Deschutes Basins Summary for January 1, 2016

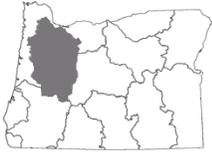
Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
WF Hood River nr Dee	APR-JUL	94	117	134	112%	150	174	120
	APR-SEP	112	137	154	111%	171	197	139
Hood R at Tucker Bridge	APR-JUL	215	245	270	120%	290	325	225
	APR-SEP	255	290	315	119%	340	380	265
Sandy R nr Marmot	APR-JUL	250	295	325	105%	355	400	310
	APR-SEP	300	345	375	104%	410	455	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	1.1	3.7	2.8	38%	13.1

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Lower Columbia - Sandy Basin	7	116%	41%
Lower Deschutes Basin	7	107%	41%
Middle Columbia - Hood Basin	6	111%	38%

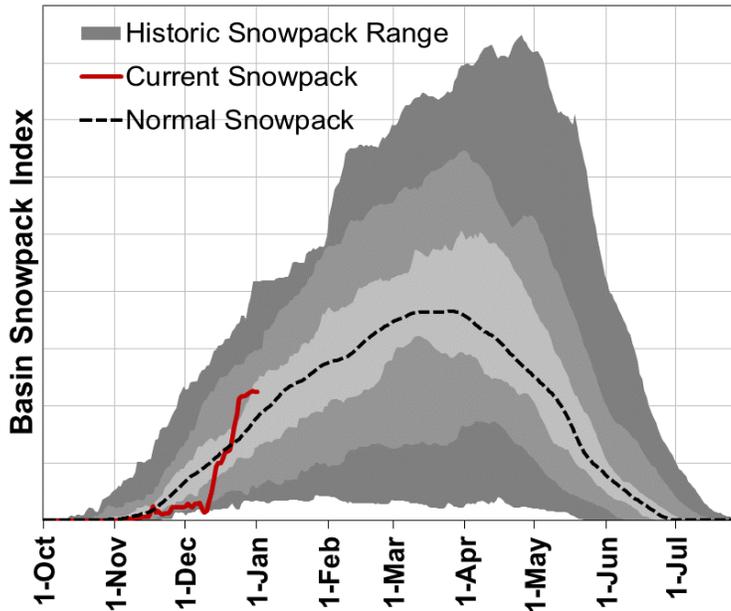
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
High Prairie Snow Course	6080	30-Dec	71	21.1		16.4	129%
Mt Hood Test Site SNOTEL	5370	1-Jan	76	21.7	12.0	25.3	86%
Racing Creek Snow Course	5160	30-Dec	30	7.2	1.6	6.0	120%
Red Hill SNOTEL	4410	1-Jan	67	18.7	5.7	18.7	100%
Mill Creek Meadow Snow Course	4400	30-Dec	32	7.0		6.4	109%
Surprise Lakes SNOTEL	4290	1-Jan	75	23.8	8.3	19.9	120%
Beaver Creek #2 Snow Course	4220	29-Dec	27	5.4	2.0	4.6	117%
Beaver Creek #1 Snow Course	4210	29-Dec	31	6.8	3.0	5.9	115%
Mud Ridge SNOTEL	4070	1-Jan	48	13.6	4.0	11.0	124%
Clear Lake SNOTEL	3810	1-Jan	34	7.5	2.0	6.3	119%
Blazed Alder SNOTEL	3650	1-Jan	54	14.5	4.8	12.3	118%
Clackamas Lake SNOTEL	3400	1-Jan	27	6.6	1.7	5.4	122%
Greenpoint SNOTEL	3310	1-Jan	40	11.0	1.3	9.2	120%
North Fork SNOTEL	3060	1-Jan	44	12.2	3.0	6.8	179%
South Fork Bull Run SNOTEL	2690	1-Jan	22	5.8	2.0	0.5	1160%



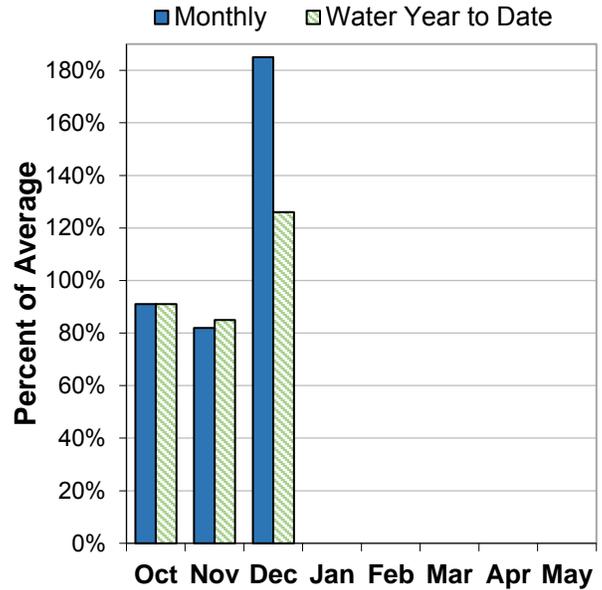
Willamette Basin

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 126% of normal. This is significantly higher than last year when the basin snowpack was 38% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 185% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 126% of average.

RESERVOIR

As of January 1, storage at major reservoirs in the basin ranges from 30% of average at Fall Creek Reservoir to 266% of average at Fern Ridge Reservoir.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 96% to 131% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Willamette Basin Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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}	FEB-MAY	295	410	460	121%	515	630	380
	APR-JUL	240	315	350	127%	390	465	275
	APR-SEP	285	365	405	129%	440	525	315
MF Willamette R bl NF nr Oakridge ^{1,2}	FEB-MAY	765	1020	1140	120%	1260	1520	950
	APR-JUL	610	795	875	126%	960	1140	695
	APR-SEP	725	920	1010	128%	1100	1290	790
Lookout Point Reservoir Inflow ^{1,2}	FEB-MAY	770	1050	1180	118%	1310	1600	1000
	APR-JUL	620	815	905	125%	995	1190	725
	APR-SEP	730	950	1050	127%	1150	1370	825
Fall Creek Reservoir Inflow ^{1,2}	FEB-MAY	160	215	240	126%	265	320	190
	APR-JUL	84	125	144	132%	163	205	109
	APR-SEP	87	129	148	131%	167	210	113
Cottage Grove Lake Inflow ^{1,2}	FEB-MAY	64	89	101	122%	113	139	83
	APR-JUL	28	45	53	129%	61	78	41
	APR-SEP	31	48	56	130%	64	82	43
Dorena Lake Inflow ^{1,2}	FEB-MAY	168	245	275	112%	310	385	245
	APR-JUL	95	144	166	122%	188	235	136
	APR-SEP	99	148	170	122%	193	240	139
McKenzie R bl Trail Bridge	FEB-MAY	240	270	295	104%	320	355	285
	APR-JUL	215	250	275	106%	300	340	260
	APR-SEP	295	330	360	104%	385	430	345
Cougar Lake Inflow ^{1,2}	FEB-MAY	225	295	325	116%	355	425	280
	APR-JUL	131	189	220	107%	250	330	205
	APR-SEP	152	200	225	96%	245	295	235
Blue Lake Inflow ^{1,2}	FEB-MAY	120	164	186	119%	210	265	156
	APR-JUL	42	68	80	95%	92	119	84
	APR-SEP	47	73	84	98%	96	122	86
McKenzie R nr Vida ¹	FEB-MAY	1070	1300	1400	111%	1500	1730	1260
	APR-JUL	700	905	1000	103%	1100	1300	970
	APR-SEP	880	1100	1200	101%	1300	1520	1190
Detroit Lake Inflow ^{1,2}	FEB-MAY	595	730	790	108%	850	980	730
	APR-JUL	380	515	575	108%	640	775	530
	APR-SEP	460	605	670	110%	735	880	610
Little North Santiam R nr Mehama ¹	FEB-MAY	174	220	245	111%	265	315	220
	APR-JUL	79	124	145	109%	165	210	133
	APR-SEP	91	135	155	110%	175	220	141

Willamette Basin Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
North Santiam R at Mehama ¹	FEB-MAY	825	1070	1180	108%	1290	1530	1090
	APR-JUL	540	710	785	106%	860	1030	740
	APR-SEP	635	810	890	106%	970	1140	840
Green Peter Lake Inflow ^{1,2}	FEB-MAY	335	465	530	110%	600	765	480
	APR-JUL	176	270	320	114%	370	500	280
	APR-SEP	196	290	340	115%	390	520	295
Foster Lake Inflow ^{1,2}	FEB-MAY	625	885	1020	111%	1160	1500	915
	APR-JUL	335	510	605	114%	700	945	530
	APR-SEP	375	550	645	114%	740	980	565
South Santiam R at Waterloo ²	FEB-MAY	760	950	1090	110%	1230	1470	990
	APR-JUL	410	540	635	114%	745	915	555
	APR-SEP	450	580	680	115%	785	950	590
Willamette R at Salem ^{1,2}	FEB-MAY	5950	7810	8740	117%	9720	12100	7490
	APR-JUL	3210	4400	5010	116%	5660	7220	4310
	APR-SEP	3660	4900	5530	117%	6190	7780	4730
Scoggins Reservoir Inflow ²	FEB-JUL	42	53	60	150%	68	79	40
Oak Grove Fk ab Powerplant	APR-JUL	102	122	135	117%	149	168	115
	APR-SEP	133	157	173	112%	190	215	155
Clackamas R above Three Lynx	APR-JUL	350	430	485	108%	540	620	450
	APR-SEP	430	515	575	107%	635	720	535
Clackamas R at Estacada	APR-JUL	450	565	645	103%	725	840	625
	APR-SEP	560	680	760	104%	845	965	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

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Blue River	4.1	4.0	9.6	43%	82.3
Cottage Grove	3.9	4.3	4.8	82%	31.8
Cougar	40.4	57.4	53.5	75%	174.9
Detroit	180.3	163.8	174.7	103%	426.8
Dorena	18.3	22.4	13.9	131%	72.1
Fall Creek	4.6	15.0	15.0	30%	116.0
Fern Ridge	38.3	5.0	14.4	266%	97.3
Foster	23.4	21.9	22.3	105%	46.2
Green Peter	185.5	173.2	182.3	102%	402.8
Hills Creek	89.5	106.9	104.8	85%	279.2
Lookout Point	146.4	213.9	144.2	101%	433.2
Timothy Lake	53.7	54.6	50.3	107%	63.6
Henry Hagg Lake	41.2	36.8	31.9	129%	53.3

Willamette Basin Summary for January 1, 2016

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Clackamas Basin	9	117%	38%
McKenzie Basin	14	134%	45%
Middle Fork Willamette Basin	7	128%	41%
North Santiam Basin	4	132%	30%
South Santiam Basin	4	142%	38%

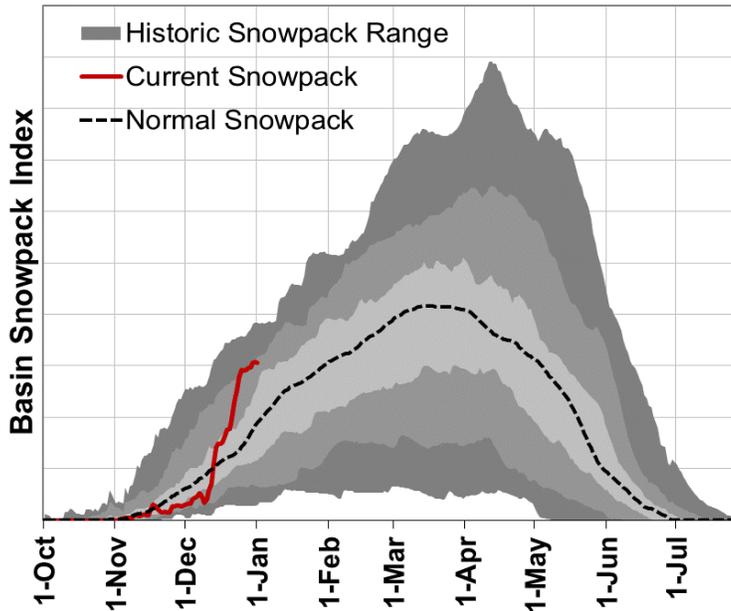
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Summit Lake SNOTEL	5610	1-Jan	75	23.0	6.6	16.3	141%
Irish Taylor SNOTEL	5540	1-Jan	59	16.2	8.3	14.6	111%
Cascade Summit SNOTEL	5100	1-Jan	63	13.9	6.5	14.1	99%
Roaring River SNOTEL	4950	1-Jan	54	13.8	2.9	12.6	110%
Holland Meadows SNOTEL	4930	1-Jan	55	14.8	2.8	10.8	137%
McKenzie SNOTEL	4770	1-Jan	63	18.6	6.5	18.5	101%
Bear Grass SNOTEL	4720	1-Jan	73	21.6	5.3		
Beaver Creek #2 Snow Course	4220	29-Dec	27	5.4	2.0	4.6	117%
Salt Creek Falls SNOTEL	4220	1-Jan	50	13.4	4.3	8.6	156%
Beaver Creek #1 Snow Course	4210	29-Dec	31	6.8	3.0	5.9	115%
Mud Ridge SNOTEL	4070	1-Jan	48	13.6	4.0	11.0	124%
Little Meadows SNOTEL	4020	1-Jan	50	14.4	3.7	10.8	133%
Clear Lake SNOTEL	3810	1-Jan	34	7.5	2.0	6.3	119%
Santiam Jct. SNOTEL	3740	1-Jan	38	10.5	1.9	9.0	117%
Daly Lake SNOTEL	3690	1-Jan	36	9.1	3.0	6.8	134%
Jump Off Joe SNOTEL	3520	1-Jan	34	8.1	2.9	5.2	156%
Peavine Ridge SNOTEL	3420	1-Jan	32	7.6	2.6	6.3	121%
Clackamas Lake SNOTEL	3400	1-Jan	27	6.6	1.7	5.4	122%
Smith Ridge SNOTEL	3270	1-Jan	28	7.5	1.5		
Saddle Mountain SNOTEL	3110	1-Jan	23	5.4	0.5		
Railroad Overpass SNOTEL	2680	1-Jan	11	3.1	0.1	0.0	
Marion Forks SNOTEL	2590	1-Jan	18	6.2	0.5	3.8	163%
Seine Creek SNOTEL	2060	1-Jan	6	1.5	0.0	0.0	
Miller Woods SNOTEL	420	1-Jan	0	0.0	0.0		



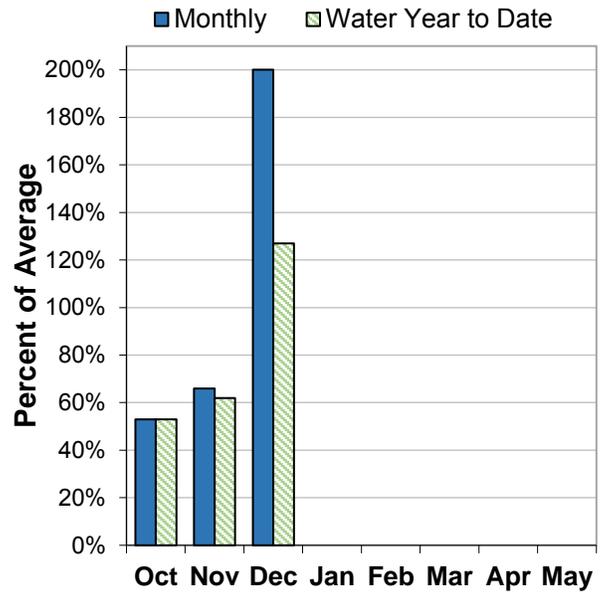
Rogue and Umpqua Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 169% of normal. This is significantly higher than last year when the basin snowpack was 37% of normal on January 1. Two long-term measuring sites in the basin had record high January 1 snowpack. Diamond Lake SNOTEL (measured since 1981) reported 47" of depth and 14.4" of snow water content, which is 218% of normal. Deadwood Junction snow course (measured since 1960) recorded 40" of snow depth and 11.1" of snow water content, which is 264% of normal.

PRECIPITATION

December precipitation was 200% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 127% of average.

RESERVOIR

Reservoir storage across the basin is currently below average. As of January 1, storage at major reservoirs in the basin ranges from 21% of average at Hyatt Prairie Reservoir to 92% of average at Lost Creek Reservoir.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 111% to 132% of average. If conditions remain similar, water supplies are likely to be above normal this summer. Southwest Oregon has been delineated in the "drought removal likely" category by the drought outlook from NOAA (http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png).

Rogue And Umpqua Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	Forecast Period	←-----Drier-----Future Conditions-----Wetter-----→						Average (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Hyatt Reservoir Inflow ²	APR-JUL	2.9	4.5	5.6	156%	6.8	8.4	3.6
South Umpqua R at Tiller	APR-JUL	148	200	240	124%	275	330	193
	APR-SEP	157	210	250	125%	285	340	200
Cow Ck nr Azalea ²	FEB-JUL	19.7	37	48	133%	60	77	36
	APR-JUL	7.7	14.7	19.4	132%	24	31	14.7
	APR-SEP	8.6	15.9	21	132%	26	33	15.9
South Umpqua R nr Brockway	APR-JUL	280	410	500	128%	590	720	390
	APR-SEP	300	435	525	128%	615	750	410
North Umpqua R at Winchester	APR-JUL	665	820	925	119%	1030	1180	775
	APR-SEP	790	950	1060	119%	1170	1330	890
Lost Creek Lk Inflow ²	FEB-JUL	715	845	935	118%	1020	1150	795
	FEB-SEP	835	980	1080	117%	1170	1310	920
	APR-JUL	470	555	610	117%	665	750	520
	APR-SEP	595	690	750	116%	815	910	645
Rogue R at Raygold ²	APR-JUL	535	695	805	119%	915	1080	675
	APR-SEP	670	845	960	119%	1080	1250	805
Rogue R at Grants Pass ²	APR-JUL	565	750	875	121%	1000	1180	725
	APR-SEP	690	885	1020	121%	1150	1350	845
Applegate Lake Inflow ²	FEB-JUL	93	172	225	115%	280	360	195
	FEB-SEP	98	179	235	118%	290	370	200
	APR-JUL	57	98	125	115%	153	194	109
	APR-SEP	62	104	132	115%	161	205	115
Sucker Ck bl Ltl Grayback Ck nr Holland	APR-JUL	35	54	67	122%	80	99	55
	APR-SEP	39	58	72	122%	85	105	59
Illinois R nr Kerby	APR-JUL	85	158	210	112%	260	330	188
	APR-SEP	91	164	215	111%	265	340	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

Rogue And Umpqua Basins Summary for January 1, 2016

Reservoir Storage	Current	Last Year	Average	% of	Useable
	(KAF)	(KAF)	(KAF)	Average	Capacity (KAF)
Applegate	6.8	6.8	10.2	67%	75.2
Emigrant Lake	8.0	9.3	17.2	47%	39.0
Fish Lake	2.5	3.2	4.7	54%	7.9
Fourmile Lake	2.6	4.4	6.7	39%	15.6
Howard Prairie	10.3	18.1	35.5	29%	62.1
Hyatt Prairie	2.0	2.8	9.6	21%	16.2
Lost Creek	126.4	164.6	137.6	92%	315.0

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Applegate Basin	2	183%	31%
Middle Rogue Basin	5	657%	72%
North Umpqua Basin	3	176%	35%
South Umpqua Basin	6	463%	49%
Upper Rogue Basin	11	158%	37%

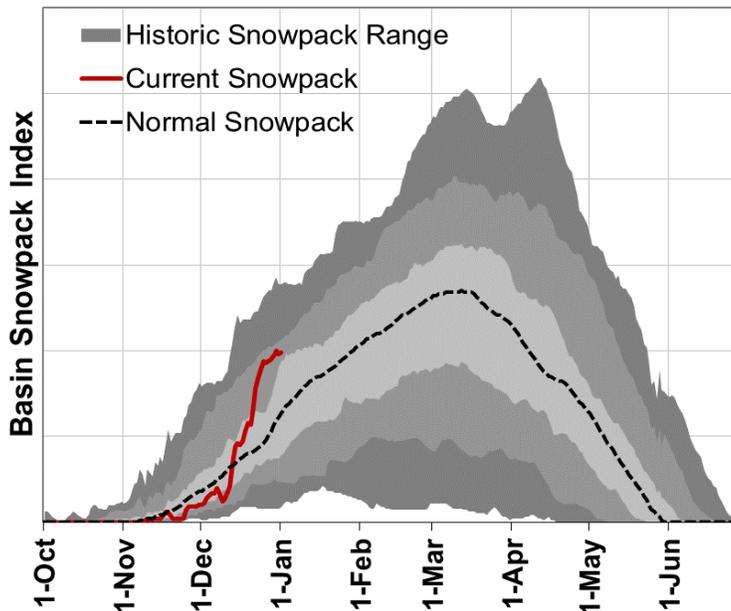
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Park H.Q. Rev Snow Course	6570	30-Dec	118	35.4	15.8	20.6	172%
Big Red Mountain SNOTEL	6050	1-Jan	57	14.6	4.0	10.0	146%
Annie Springs SNOTEL	6010	1-Jan	82	21.0	8.0	17.3	121%
Fourmile Lake SNOTEL	5970	1-Jan	73	18.7	4.7	13.4	140%
Cold Springs Camp SNOTEL	5940	1-Jan	60	16.6	2.1	14.0	119%
Sevenmile Marsh SNOTEL	5700	1-Jan	63	15.7	2.4	12.5	126%
Summit Lake SNOTEL	5610	1-Jan	75	23.0	6.6	16.3	141%
Billie Creek Divide SNOTEL	5280	1-Jan	67	19.9	2.4	10.4	191%
Diamond Lake SNOTEL	5280	1-Jan	47	14.4	1.5	6.6	218%
Bigelow Camp SNOTEL	5130	1-Jan	48	13.1	0.7	5.1	257%
Beaver Dam Creek Snow Course	5120	30-Dec	42	9.4	1.9	6.3	149%
King Mountain 1 Snow Course	4760	30-Dec	47	11.0	1.5	2.2	500%
Deadwood Junction Snow Course	4660	30-Dec	40	11.1	1.8	4.2	264%
Fish Lk. SNOTEL	4660	1-Jan	44	11.8	1.2	5.1	231%
Howard Prairie SNOTEL	4580	1-Jan	27	6.6	0.6		
Howard Prairie Snow Course	4580	29-Dec	22	6.0	0.4	3.1	194%
Siskiyou Summit Rev. Snow Course	4560	31-Dec	36	9.0	0.4	2.3	391%
King Mountain SNOTEL	4340	1-Jan	32	9.2	1.5	1.5	613%
Silver Burn Snow Course	3680	30-Dec	47	12.2	0.7	5.3	230%
King Mountain 3 Snow Course	3680	30-Dec	26	5.2	0.7	0.0	
Toketee Airstrip SNOTEL	3240	1-Jan	20	5.1	0.4	1.3	392%
King Mountain 4 Snow Course	3050	30-Dec	8	5.0	0.2	0.0	



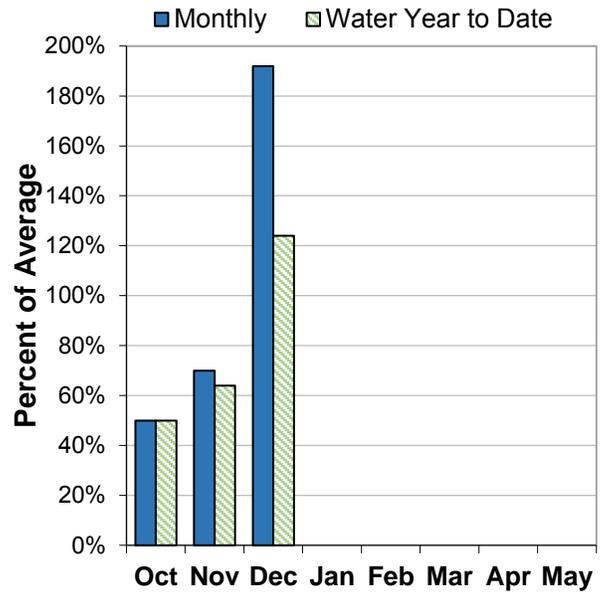
Klamath Basin

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 152% of normal. This is significantly higher than last year when the basin snowpack was 37% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 192% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 124% of average.

RESERVOIR

Reservoir storage across the basin is currently below average. As of January 1, storage at major reservoirs in the basin ranges from 6% of average at Gerber Reservoir to 85% of average at Upper Klamath Lake.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 102% to 118% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Klamath Basin Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	8.7	31	50	122%	62	84	41
	APR-SEP	1.15	9.9	17.0	118%	24	35	14.4
Sprague R nr Chiloquin	JAN-SEP	210	310	380	107%	450	555	355
	FEB-JUL	137	230	295	100%	360	455	295
	FEB-SEP	154	255	320	100%	385	485	320
	APR-JUL	86	148	190	101%	230	295	188
	APR-SEP	106	171	215	102%	259	324	210
Williamson bl Sprague nr Chiloquin	JAN-SEP	435	565	650	109%	745	875	595
	FEB-JUL	305	425	505	106%	590	710	475
	APR-SEP	255	335	390	110%	445	525	355
Upper Klamath Lake Inflow ^{1,2}	JAN-SEP	565	880	1020	109%	1160	1480	940
	FEB-JUL	370	640	760	106%	885	1150	720
	MAR-SEP	295	540	655	100%	765	1010	655
	APR-SEP	260	440	520	108%	600	780	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	Useable Capacity				
	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	(KAF)
Clear Lake	23.2	28.6	187.7	12%	513.3
Gerber	2.2	10.6	39.6	6%	94.3
Upper Klamath Lake	232.8	283.2	275.4	85%	523.7

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Lost Basin	3	184%	10%
Sprague Basin	4	128%	49%
Upper Klamath Lake Basin	8	149%	39%
Williamson River Basin	5	158%	51%

Klamath Basin Summary for January 1, 2016

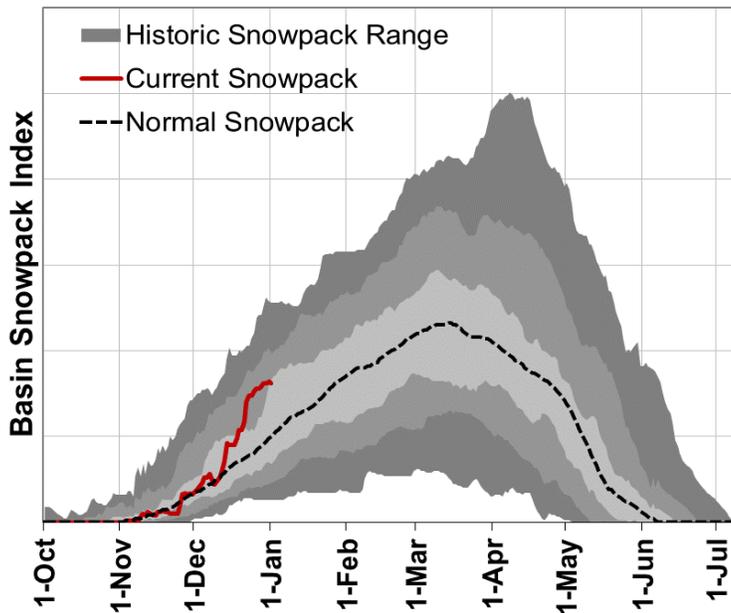
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Summer Rim SNOTEL	7080	1-Jan	27	8.2	5.2	7.2	114%
Swan Lake Mtn SNOTEL	6830	1-Jan	48	13.6	7.4		
Park H.Q. Rev Snow Course	6570	30-Dec	118	35.4	15.8	20.6	172%
Crazyman Flat SNOTEL	6180	1-Jan	38	9.6	3.6	8.4	114%
Annie Springs SNOTEL	6010	1-Jan	82	21.0	8.0	17.3	121%
Finley Corrals AM	6000	1-Jan	36	8.3			
Fourmile Lake SNOTEL	5970	1-Jan	73	18.7	4.7	13.4	140%
Cold Springs Camp SNOTEL	5940	1-Jan	60	16.6	2.1	14.0	119%
Strawberry SNOTEL	5770	1-Jan	17	3.3	0.5	2.2	150%
Cox Flat AM	5750	1-Jan	24	5.5			
Silver Creek SNOTEL	5740	1-Jan	30	7.9	2.1	4.0	198%
Quartz Mountain SNOTEL	5720	1-Jan	12	2.8	0.3	0.9	311%
Sevenmile Marsh SNOTEL	5700	1-Jan	63	15.7	2.4	12.5	126%
State Line SNOTEL	5680	1-Jan	20	4.5	0.0		
Sun Pass SNOTEL	5400	1-Jan	58	14.0	2.0		
Billie Creek Divide SNOTEL	5280	1-Jan	67	19.9	2.4	10.4	191%
Diamond Lake SNOTEL	5280	1-Jan	47	14.4	1.5	6.6	218%
Crowder Flat SNOTEL	5170	1-Jan	16	3.5	0.0	1.6	219%
Beaver Dam Creek Snow Course	5120	30-Dec	42	9.4	1.9	6.3	149%
Taylor Butte SNOTEL	5030	1-Jan	19	4.1	0.4	3.6	114%
Gerber Reservoir SNOTEL	4890	1-Jan	14	2.4	0.0	1.2	200%
Chemult Alternate SNOTEL	4850	1-Jan	36	8.6	1.0	4.6	187%
Deadwood Junction Snow Course	4660	30-Dec	40	11.1	1.8	4.2	264%
Fish Lk. SNOTEL	4660	1-Jan	44	11.8	1.2	5.1	231%
Howard Prairie SNOTEL	4580	1-Jan	27	6.6	0.6		
Howard Prairie Snow Course	4580	29-Dec	22	6.0	0.4	3.1	194%
Siskiyou Summit Rev. Snow Course	4560	31-Dec	36	9.0	0.4	2.3	391%



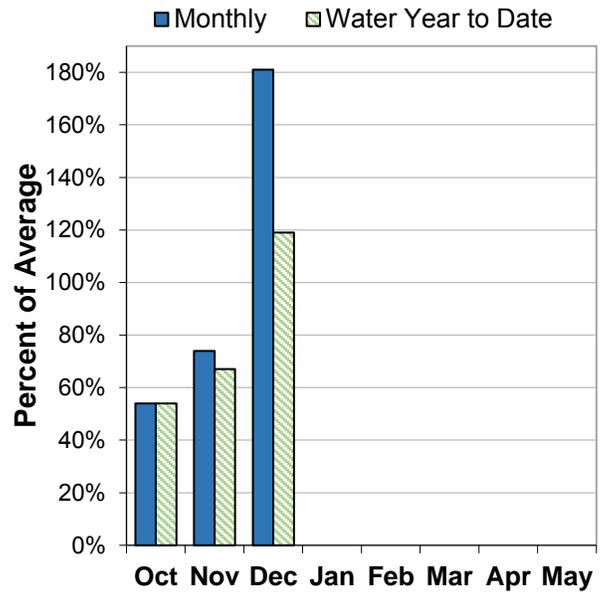
Lake County and Goose Lake Basins

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 168% of normal. This is significantly higher than last year when the basin snowpack was 73% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 181% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 119% of average.

RESERVOIR

Reservoir storage across the basin is currently well below average. As of January 1, storage at major reservoirs in the basin ranges from 7% of average at Drews Reservoir to 45% of average at Cottonwood Reservoir.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 109% to 128% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Lake County And Goose Lake Basins Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	11.0	21	30	111%	38	54	27
	APR-SEP	7.8	13.0	19.0	109%	23	33	17.4
Deep Ck ab Adel	MAR-JUL	43	69	87	110%	105	131	79
	APR-SEP	38	58	72	111%	86	106	65
Honey Ck nr Plush	MAR-JUL	11.0	17.0	22	129%	26	34	17.1
	APR-SEP	8.6	13.5	18.0	128%	22	28	14.1
Chewaucan R nr Paisley	MAR-JUL	51	77	95	113%	113	139	84
	APR-SEP	48	70	85	113%	100	122	75

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

Reservoir Storage					Useable Capacity
	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	(KAF)
Cottonwood	1.5	2.1	3.3	45%	9.3
Drews	1.8	6.2	25.6	7%	63.5

Snowpack Summary by Basin	Basin Snowpack % of Median		
	# of Sites	Current Yr	Last Yr
Goose Lake Basin	3	184%	98%
Lake Abert Basin	2	154%	80%
Summer Lake Basin	9	168%	72%
Upper Pit Basin	3	223%	53%

Lake County And Goose Lake Basins Summary for January 1, 2016

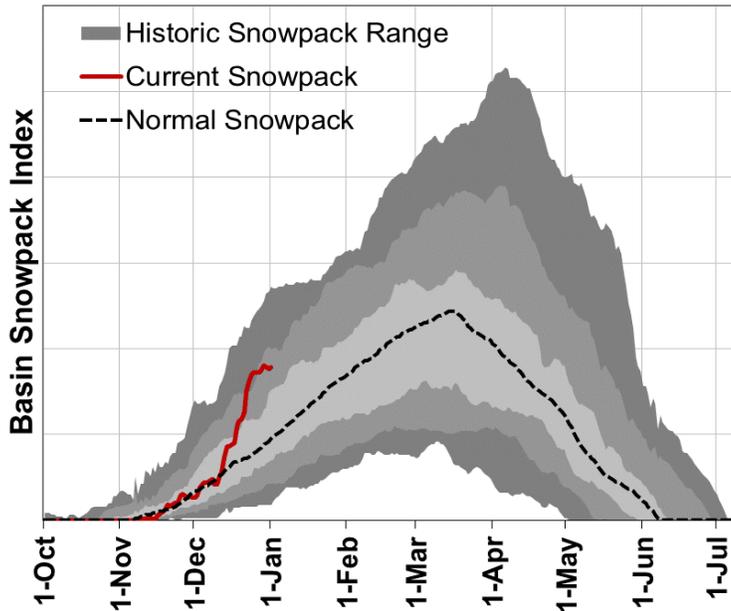
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Dismal Swamp SNOTEL	7360	1-Jan	55	16.1	10.9	9.3	173%
Summer Rim SNOTEL	7080	1-Jan	27	8.2	5.2	7.2	114%
Cedar Pass SNOTEL	7030	1-Jan	48	13.7	4.8	6.5	211%
Patton Meadows AM	6800	1-Jan	29	6.7	3.1		
Sherman Valley AM	6640	1-Jan	18	4.1	7.0		
Hart Mountain AM	6430	1-Jan	3	0.8	0.9		
Rogger Meadow AM	6360	1-Jan	21	4.8	1.8		
Adin Mtn SNOTEL	6190	1-Jan	36	11.3	2.0	4.7	240%
Crazyman Flat SNOTEL	6180	1-Jan	38	9.6	3.6	8.4	114%
Finley Corrals AM	6000	1-Jan	36	8.3			
Camas Creek #3 Snow Course	5860	30-Dec	35	8.9	3.7	3.9	228%
Sheldon SCAN	5860	1-Jan	5	1.0	0.4	0.0	
Strawberry SNOTEL	5770	1-Jan	17	3.3	0.5	2.2	150%
Cox Flat AM	5750	1-Jan	24	5.5			
Silver Creek SNOTEL	5740	1-Jan	30	7.9	2.1	4.0	198%
State Line SNOTEL	5680	1-Jan	20	4.5	0.0		
Crowder Flat SNOTEL	5170	1-Jan	16	3.5	0.0	1.6	219%



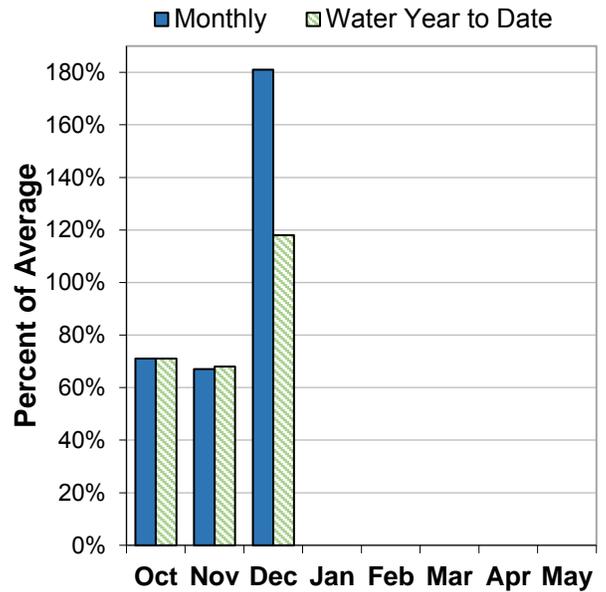
Harney Basin

January 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of January 1, the basin snowpack was 186% of normal, the highest in the state. This is significantly higher than last year when the basin snowpack was 121% of normal on January 1, 2015.

PRECIPITATION

December precipitation was 181% of average. Precipitation since the beginning of the water year (October 1 - January 1) has been 118% of average.

STREAMFLOW FORECAST

As of January 1, summer streamflow forecasts in the basin range from 112% to 152% of average. If conditions remain similar, water supplies are likely to be near normal to above normal this summer.

Harney Basin Summary for January 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *								
Streamflow Forecasts January 1, 2016	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	99	150	185	150%	220	270	123
	APR-SEP	81	116	140	152%	164	199	92
Donner Und Blitzen R nr Frenchglen	MAR-JUL	51	69	82	114%	94	112	72
	APR-SEP	46	64	76	112%	88	106	68
Trout Ck nr Denio	MAR-JUL	5.3	8.7	11.0	126%	13.3	16.7	8.7
	APR-SEP	4.6	7.8	10.0	125%	12.2	15.4	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	1	184%	144%
Donner und Blitzen River Basin	2	174%	123%
Silvies River Basin	4	213%	123%
Upper Quinn Basin	3	187%	75%

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-Jan	50	12.3	7.4	7.0	176%
Trout Creek AM	7890	1-Jan	26	6.5	7.4		
Fish Creek SNOTEL	7660	1-Jan	60	19.3	15.1	10.5	184%
Govt Corrals AM	7400	1-Jan	33	8.3	4.8		
Silvies SNOTEL	6990	1-Jan	34	8.2	4.4	5.3	155%
Buckskin Lower SNOTEL	6915	1-Jan	30	7.7	1.6	3.3	233%
V Lake AM	6600	1-Jan	19	4.8	1.2		
Disaster Peak SNOTEL	6500	1-Jan	24	5.7	2.3	2.6	219%
Hart Mountain AM	6430	1-Jan	3	0.8	0.9		
Snow Mountain SNOTEL	6230	1-Jan	28	8.6	5.8	3.3	261%
Lamance Creek SNOTEL	6000	1-Jan	25	6.0	1.4	3.6	167%
Blue Mountain Spring SNOTEL	5870	1-Jan	42	10.5	7.4	6.9	152%
Sheldon SCAN	5860	1-Jan	5	1.0	0.4	0.0	
Rock Springs SNOTEL	5290	1-Jan	20	4.5	1.2	1.9	237%
Starr Ridge SNOTEL	5250	1-Jan	22	6.6	2.9	2.8	236%
Lake Creek R.S. SNOTEL	5240	1-Jan	29	7.5	5.9	4.8	156%

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	Apr 7	May 19	Jun 30	May 6
Owyhee R nr Rome	1000 cfs	Apr 15	Jun 1	Jul 18	May 18
Owyhee R nr Rome	500 cfs	May 5	Jun 20	Aug 7	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	173	420	665	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 9	May 25	Jun 10	May 25
Crane Prairie Inflow	Peak Flow	320	485	650	403
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	255	335	415	269
Prineville Reservoir Inflow	150 cfs	May 24	Jun 15	Jul 7	May 30
Prineville Reservoir Inflow	80 cfs	May 28	Jun 22	Jul 17	June 7
Whychus Creek nr Sisters	100 cfs	Jul 28	Sep 1	Oct 6	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 23	Aug 12	Sep 1	August 8
South Umpqua R at Tiller	140 cfs	Jun 25	Jul 18	Aug 12	July 11
South Umpqua R at Tiller	90 cfs	Jul 14	Aug 7	Sep 1	August 1
South Umpqua R at Tiller	60 cfs	Aug 2	Sep 1	Oct 1	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 30	Jun 22	Jul 15	June 17
Honey Ck nr Plush	100 cfs	Apr 15	May 21	Jun 26	May 16
Honey Ck nr Plush	50 cfs	May 8	Jun 9	Jul 11	June 4
Twentymile Ck nr Adel	50 cfs	Apr 30	Jun 3	Jul 7	May 30
Twentymile Ck nr Adel	10 cfs	Jun 13	Jul 11	Aug 7	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 29	May 24	Jun 18	May 21
Silvies R nr Burns	200 cfs	May 15	Jun 11	Jul 8	June 2
Silvies R nr Burns	100 cfs	May 30	Jun 29	Jul 28	June 13
Silvies R nr Burns	50 cfs	Jun 15	Jul 23	Sep 1	July 3
Donner Und Blitzen R nr Frenchglen	200 cfs	Jun 5	Jun 27	Jul 18	June 20
Donner Und Blitzen R nr Frenchglen	100 cfs	Jun 26	Jul 17	Aug 7	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.nrcs.usda.gov/wps/portal/nrcs/main/or/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. Water 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.

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.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. 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.

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.

Using the Forecasts - an Example

Using the 50 Percent Exceedance Forecast. Using the example forecasts shown on the next page, 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.

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.

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JOHN DAY BASIN

Streamflow Forecasts - February 1, 2013

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)	
		===== Chance Of Exceeding * =====						
		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

=====

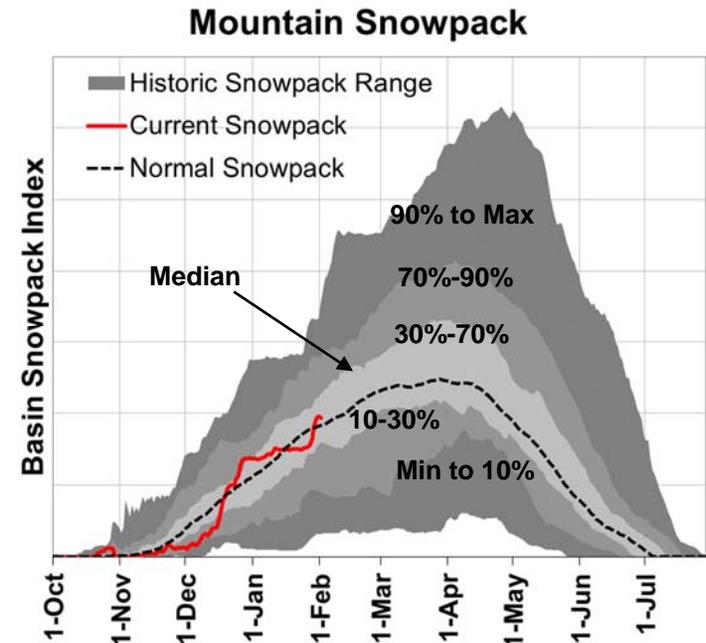
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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 for the basin. This gives users important context about the current year and historic variability 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).



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