United States
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Natural Resources
Conservation
Service

Oregon
Basin Outlook Report

February 1, 2015

Bare Ground at Silver Burn

Photo courtesy of Scott Robbins (NRCS Oregon Snow Surveyor)

Measured since 1938, Silver Burn snow course has only been snow-free on February 1st twice in 77 years: in 1940 and this year, 2015. This site near Crater Lake has one of the longest snow measurement records in the state, but it is not alone in record low snow this year. Forty percent of the long-term snow measurement sites in Oregon are at or near record low levels as of February 1. Oregon has received near average precipitation since the water year began on October 1, but warm temperatures have resulted in well below normal snowpacks. Summertime streamflows are expected to be below normal this summer.

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General Outlook

February 1, 2015

SUMMARY

For the 2nd year in a row, Oregon's mountains are experiencing record low snowpack levels. Across the state, near normal precipitation has fallen since the water year began on October 1, but temperatures have been unusually warm. As a result, Oregon has a well below normal February 1 snowpack. Most of the snow measurement sites in the Cascade and Siskiyou Mountains are at or near record low levels as of February 1. Without significant snowfall in February and March, streams and rivers that are typically fed by snowmelt will likely be well below normal this summer.

Very low mountain snowpack levels following consecutive drought years in parts of Oregon leaves water managers concerned. The snowpack is normally a frozen resource to be counted on in the summer to help fill reservoirs, replenish soil moisture and provide summertime streamflow for water users and wildlife. This year, rain across Oregon has helped provide relief for reservoir storage levels. Continued rain may help offset water supply concerns by adding more water to reservoirs, but potential rain is more of a wild card than a seasonal snowpack which brings known amounts of stored water already on the ground. If the snowpack does not improve throughout the rest of winter, there will likely be water shortages in parts of Oregon; especially for water users that do not have access to reservoir storage.

Past years with similarly low February 1 snowpack levels remind us that there is still time for improvement in the 2015 water supply picture. There is no perfectly matching year to compare this year to, but 1981 was similar. During that year, the fall was wet and warm, leading to record-setting low February snow. Springtime brought more precipitation (mostly rain) and alleviated water supply concerns throughout most of the state. In 2014, Oregon had a below normal snowpack and below normal precipitation going into February. Then, February and March brought above average precipitation which helped to boost snowpack levels and reservoir storage. While these two similar years were still drier than normal, the moisture that came in late winter and spring were critical to the summer water supplies.

In order for the majority of Oregon's snowpack to improve to normal levels, the next two months would have to bring well above average precipitation (150%-250% of average depending on location) and all would need to fall as snow. There is still time for improvement but full snowpack recovery is unlikely; especially given the warm, three-month climate outlook provided by NOAA's climate prediction center: http://www.cpc.ncep.noaa.gov/

Given current conditions, most of Oregon's streamflow forecasts are also below normal. At this point, all eyes are on February to bring improvement to Oregon's snowpack and water supply conditions.

SNOWPACK

Forty percent of the long term snow measurement sites in Oregon are at or near record low levels as of February 1. In 2014, western Oregon set new record lows for snowpack and many of those records are now being replaced by this February's lack of snow. Twenty snow measurement sites in western Oregon's Cascades and Siskiyou Ranges have set new record lows for February 1 snowpack. Half of these stations are snow free for the first time on record. In addition, 24 snow measurement sites are experiencing their 2nd, 3rd or 4th lowest February 1 snowpack on record. In summary, out of 110 Oregon snow measuring sites with at least 25 years of record, there are 44 new or near record lows set for February 1 snowpack. Comparable years with low February 1 snowpacks are: 1963, 1977, 1981, 2003, 2005 and 2014.

Eastern Oregon's snowpack is in better shape than last year at this time, but is still below normal. Temperatures remained cold enough during the moisture-laden December storms to bring snow to the eastern part of the state, but the lack of storms in January has led to below normal snowpacks there as well. In fact, there are only three SNOTEL sites in the state that have a near normal snowpack as of February 1: Mt. Howard, Snow Mountain, and Fish Creek. All of these sites are at elevations above 6000 feet and on the east side of the Cascade Range.

As of February 1, the Harney basin has the highest snowpack in the state at 78% of normal, while the lowest snowpack levels are less than 20% of normal in the Klamath basin and in all of western Oregon's headwaters. Snowpacks at higher elevations (above 5000 feet) within each basin are driving basin percentages up, while lower elevations have much below normal snowpack levels or are snow-free as of February 1.

PRECIPITATION

State-wide precipitation has been the bright spot in the water supply arena. Since the water year began on October 1, the mountains have received near normal amounts of precipitation, even though January was drier than normal. The wet fall brought hope for a better snow year than last year. Had temperatures remained colder during these storms, western Oregon's snowpack would be in much better shape, but instead more rain fell than snow. The limited January storms combined with warm temperatures have left the entire state with below normal snowpacks as of February 1. Statewide, January precipitation ranged from 31% of average in Lake County to 60% of average in the Hood, Sandy and lower Deschutes basins.

RESERVOIRS

Reservoirs located in the Upper Deschutes and Crooked Basins; Umatilla, Walla Walla and Willow basins; and the Willamette basins were able to capture recent rainfall and runoff from early snowmelt, resulting in near average to above average reservoir storage amounts as of the end of January. This is welcome news considering this season began with low carry-over storage and has low snowpack conditions as of February 1. Other reservoirs throughout the state were able to capture some of the moisture but need more to reach normal levels for summer water supplies. The biggest reservoir in the state, the Owyhee Reservoir, has some of the lowest amounts of storage at only 17% of capacity; 35% of average.

The February 1 storage at 26 major Oregon reservoirs analyzed in this publication was 72% percent of average. As of February 1, water storage at these reservoirs totaled 1195 thousand acre feet (kaf), representing 37% of useable capacity. Last year at this time these same reservoirs stored 1013 kaf of water, or 31% of useable capacity.

STREAMFLOW

Many of Oregon's streams and rivers depend on mountain snowpack to maintain runoff throughout the summertime. Once the snowpack has melted, streamflows diminish, often receding quickly to base flows. In a year such as this when there is limited snowpack to provide water late into the summer, summer streamflow volumes are expected be below normal and streams will likely peak earlier than normal. Winter rainfall can help improve reservoir storage and increase streamflows during the storm events, but it will not help with streamflow later in the season. The NRCS streamflow forecasts use historical snowpack, precipitation and streamflow relationships to predict summer streamflow; this year, some of the models are using record low snowpack to predict this summer's runoff volumes. However, not all of the models are forecasting record low streamflow. History shows that low February snowpacks can improve by the springtime and that there have been cases where late spring precipitation has swooped in at the last moment to save the day in a low snow year. This happens more often with rivers flowing from the Cascades, such as in the Willamette basin.

As of February 1, most of Oregon's streams are forecast to be below normal this summer and many water users should begin to prepare for limited water supplies this summer.

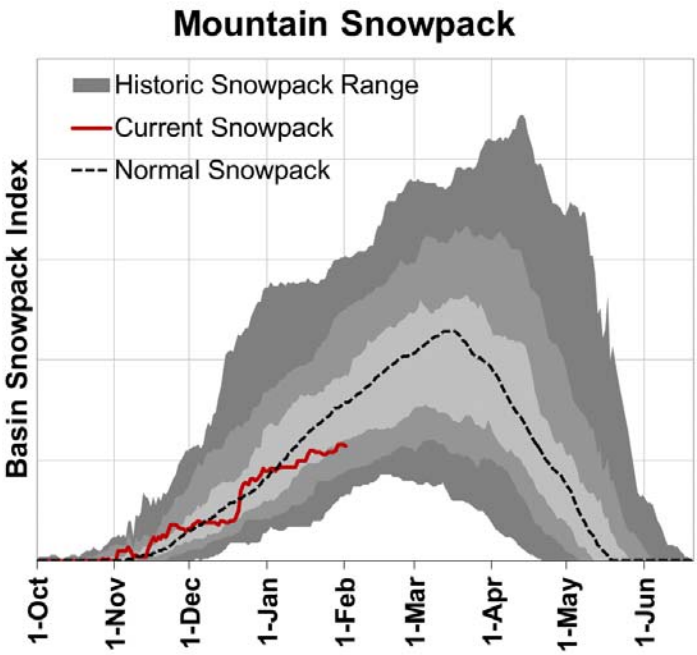
A summary of streamflow forecasts for Oregon follows:

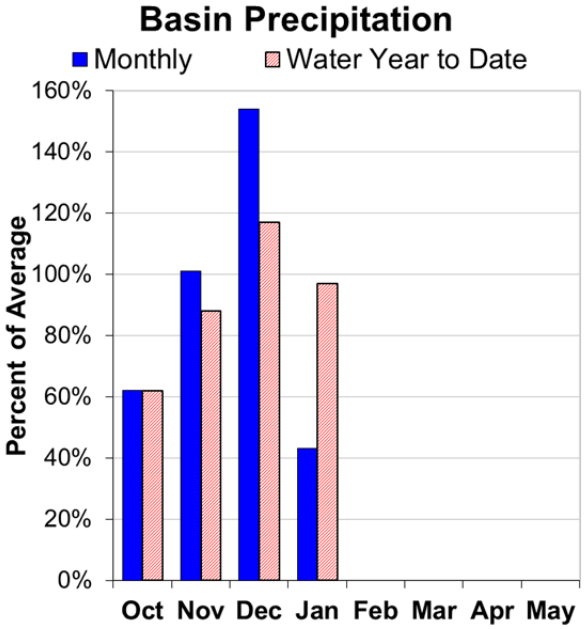
STREAM	Median Forecast (April through September)	
	Volume (Acre-Feet)	Percent of Average
Owyhee Reservoir Inflow	210,000	52
Grande Ronde R at Troy	1,210,000	92
Umatilla R at Pendleton	132,000	86
Deschutes R at Benham Falls	440,000	91
Willamette R at Salem	3,890,000	82
Rogue R at Raygold	610,000	76
Upper Klamath Lake Inflow	250,000	52
Silvies R nr Burns	40,000	43

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

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 71% of normal. This is significantly lower than last month when the basin snowpack was 103% of normal.

PRECIPITATION

January precipitation was 43% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 97% of average.

RESERVOIR

Reservoir storage across the basin improved since last month, but remains well below average. As of February 1, reservoir storage ranged from 27% of average (10% of capacity) at Warm Springs Reservoir to 67% of average (29% of capacity) at Beulah Reservoir.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 48% to 55% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for limited water supplies this summer.

Owyhee And Malheur Basins Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Owyhee R nr Rome	FEB-JUL	99	191	270	47%	365	525	580
	FEB-SEP	108	205	285	48%	380	545	595
	APR-SEP	48	115	176	48%	250	385	365
Owyhee R bl Owyhee Dam[2]	FEB-JUL	115	215	305	48%	410	585	635
	FEB-SEP	133	240	330	50%	435	615	665
	APR-SEP	74	147	210	52%	285	415	405
Malheur R nr Drewsey	FEB-JUL	36	57	75	59%	95	129	128
	APR-JUL	11.8	27	40	53%	56	85	75
	APR-SEP	16.4	30	41	55%	54	77	74
NF Malheur R at Beulah	FEB-JUL	22	36	48	56%	61	83	85

Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Beulah	17.4	15.8	26.0	60.0
Bully Creek	6.7	6.1	12.5	30.0
Lake Owyhee	119.7	77.8	345.3	715.0
Warm Springs	18.7	14.5	68.5	191.0

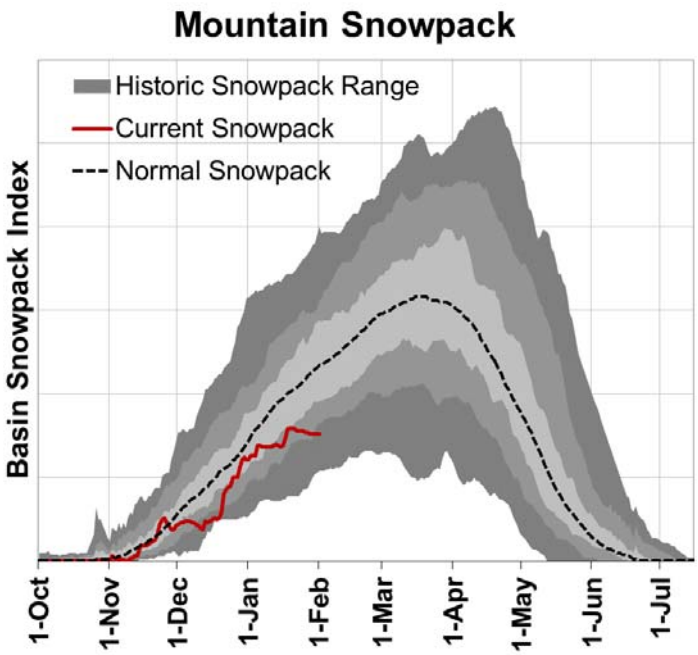
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
East Little Owyhee Basin	2	54%	40%
South Fork Owyhee Basin	5	76%	39%
Upper Malheur Basin	4	63%	37%
Upper Owyhee Basin	5	83%	47%

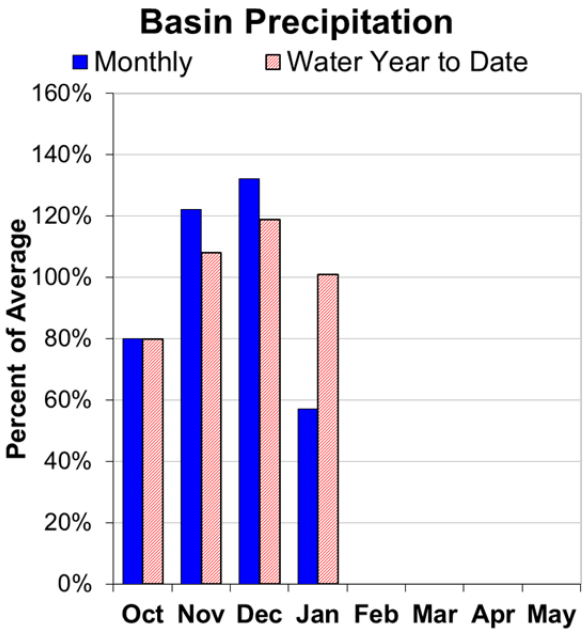
Owyhee And Malheur Basins Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Granite Peak SNOTEL	8543	1-Feb	32	8.3	4.1	12.1	69%
Trout Creek AM	7890	1-Feb	23	8.5	3.0	8.2	104%
Toe Jam SNOTEL	7700	1-Feb	30	8.7	5.2		
Govt Corrals AM	7400	1-Feb	20	7.4	2.7	7.5	99%
Jack Creek Upper SNOTEL	7250	1-Feb	32	10.0	6.1	9.4	106%
Dobson Creek Snow Course	7084	2-Feb	42	13.6	7.2	17.0	80%
Reynolds-Dobson Snow Course	7064	2-Feb	42	12.9	7.7	15.0	86%
Fawn Creek SNOTEL	7000	1-Feb	34	10.5	4.6	10.2	103%
Merritt Mountain AM	7000	1-Feb	3	1.0	0.4	4.7	21%
Buckskin Lower SNOTEL	6915	1-Feb	10	1.8	3.4	6.5	28%
Reynolds W Fork #2 Snow Course	6798	2-Feb	46	14.1	7.9	15.2	93%
Gold Creek Snow Course	6707	28-Jan	6	2.0	1.5	4.2	48%
Big Bend SNOTEL	6700	1-Feb	13	4.8	2.7	5.5	87%
Fry Canyon SNOTEL	6700	1-Feb	0	0.0			
Fry Canyon Snow Course	6700	28-Jan	6	1.6	2.4	6.2	26%
Laurel Draw SNOTEL	6697	1-Feb	14	5.5	3.0	7.7	71%
Columbia Basin AM	6650	1-Feb	11	3.6	0.2	7.8	46%
South Mtn. SNOTEL	6500	1-Feb	16	6.3	3.3	11.5	55%
Taylor Canyon SNOTEL	6200	1-Feb	0	0.0	1.2	4.0	0%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	8.0	6.2	11.2	71%
Barney Creek (New) Snow Course	5830	3-Feb	15	3.7	2.0		
Mud Flat SNOTEL	5730	1-Feb	4	0.7	1.4	5.1	14%
Democrat Creek Snow Course	5686	2-Feb	12	3.6	1.7	7.8	46%
Reynolds Creek SNOTEL	5600	1-Feb	1	0.6	1.5	2.8	21%
Dooley Mountain Snow Course	5440	3-Feb	14	3.2	1.2	6.6	48%
Rock Springs SNOTEL	5290	1-Feb	6	1.9	0.8	4.7	40%
Lake Creek R.S. SNOTEL	5240	1-Feb	18	6.4	3.3	9.4	68%
Taylor Butte SNOTEL	5030	1-Feb	0	0.0	0.2	5.5	0%
Eldorado Pass Snow Course	4630	3-Feb	7	1.5	0.0	2.8	54%

Grande Ronde, Powder, Burnt and Imnaha Basins

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 63% of normal. This is significantly lower than last month when the basin snowpack was 85% of normal.

PRECIPITATION

January precipitation was 57% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 101% of average.

RESERVOIR

Reservoir storage conditions vary widely across the basin. As of February 1, reservoir storage ranged from 52% of average (23% of capacity) at Phillips Lake to 169% of average (68% of capacity) at Wallowa Lake.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 63% to 95% of average. Overall, forecasts decreased significantly from last month's report.

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Burnt R nr Hereford	FEB-JUL	19.0	28	35	69%	43	57	51
	APR-SEP	9.0	16.3	22	63%	30	42	35
Deer Ck nr Sumpter	FEB-JUL	8.9	12.3	14.6	74%	16.9	20	19.7
Powder R nr Sumpter	FEB-JUL	33	46	56	84%	65	79	67
	APR-JUL	23	35	43	81%	52	63	53
	APR-SEP	23	36	44	81%	53	65	54
Wolf Ck Reservoir Inflow[2]	MAR-JUN	8.3	11.7	14.1	78%	16.4	19.8	18.1
Pine Ck nr Oxbow	FEB-JUL	107	148	175	80%	205	245	220
	APR-JUL	71	100	119	76%	139	168	157
	APR-SEP	75	104	124	76%	144	173	163
Imnaha R at Imnaha	APR-JUL	146	193	225	88%	255	300	255
	APR-SEP	160	210	240	86%	275	325	280
Catherine Ck nr Union	APR-JUL	40	48	54	90%	59	67	60
	APR-SEP	43	52	57	89%	63	72	64
Lostine R nr Lostine	APR-JUL	88	96	101	95%	107	115	106
	APR-SEP	93	103	109	95%	115	125	115
Bear Ck nr Wallowa	APR-SEP	45	53	58	89%	63	71	65
Grande Ronde R at Troy[1]	MAR-JUL	990	1280	1410	93%	1540	1820	1510
	APR-SEP	800	1080	1210	92%	1340	1620	1310

Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Phillips Lake	16.5	11.0	32.0	73.5
Thief Valley	13.9	3.1	14.1	17.4
Unity	9.8	3.8	11.7	25.2
Wallowa Lake	25.6	18.2	15.1	37.5
Wolf Creek	2.8	2.7	2.8	10.4

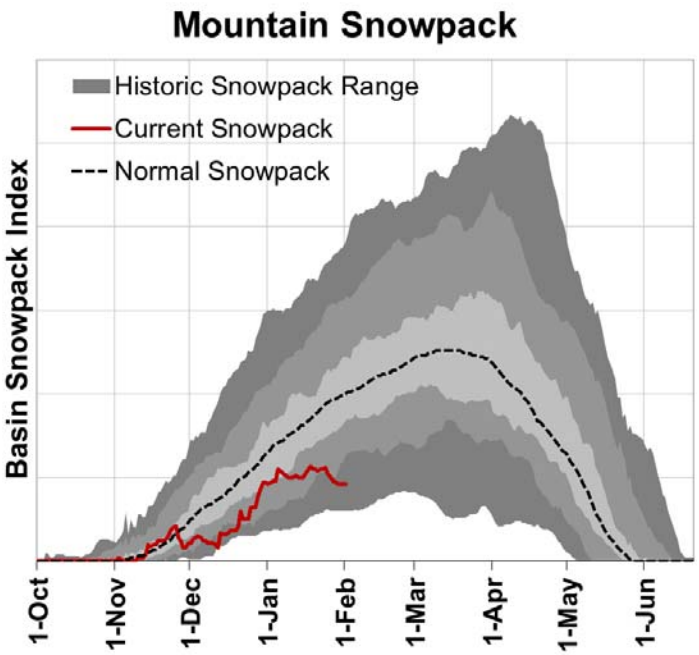
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Burnt Basin	4	66%	37%
Imnaha Basin	4	77%	69%
Lower Grande Ronde Basin	4	43%	61%
Powder Basin	10	71%	64%
Upper Grande Ronde Basin	8	68%	82%
Wallowa Basin	5	75%	86%

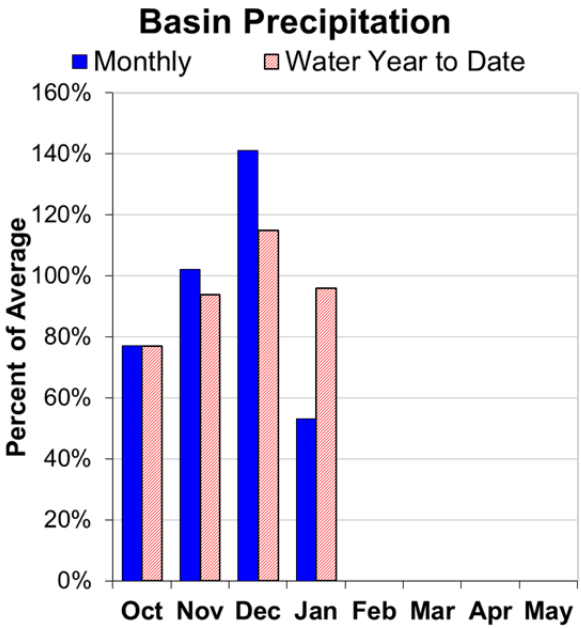
Grande Ronde, Powder, Burnt And Imnaha Basins Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Mt. Howard SNOTEL	7910	1-Feb	26	9.7	13.7	10.2	95%
Aneroid Lake #2 SNOTEL	7400	1-Feb	30	11.1	11.7	14.4	77%
Tv Ridge AM	7050	1-Feb	14	4.9	3.6	9.9	49%
Little Alps Snow Course	6360	30-Jan	17	5.2	5.8	7.8	67%
Big Sheep AM	6230	1-Feb	31	10.9	8.1	17.2	63%
Bear Saddle SNOTEL	6180	1-Feb	33	10.9	5.4	15.2	72%
Bourne SNOTEL	5850	1-Feb	21	7.8	6.7	11.1	70%
Barney Creek (New) Snow Course	5830	3-Feb	15	3.7	2.0		
Moss Springs SNOTEL	5760	1-Feb	37	12.8	16.0	16.2	79%
Taylor Green SNOTEL	5740	1-Feb	28	10.3	11.0	14.5	71%
Spruce Springs SNOTEL	5700	1-Feb	10	3.9	8.1	11.9	33%
Wolf Creek SNOTEL	5630	1-Feb	26	6.5	7.8	11.6	56%
Milk Shakes SNOTEL	5580	1-Feb	43	14.3	19.1		
West Branch SNOTEL	5560	1-Feb	33	10.7	8.4	14.1	76%
Touchet SNOTEL	5530	1-Feb	25	9.3	14.0	20.4	46%
Eilertson Meadows SNOTEL	5510	1-Feb	13	4.1	4.0	7.9	52%
Dooley Mountain Snow Course	5440	3-Feb	14	3.2	1.2	6.6	48%
Gold Center SNOTEL	5410	1-Feb	19	5.7	5.0	7.3	78%
Schneider Meadows SNOTEL	5400	1-Feb	51	15.8	8.9	19.6	81%
Beaver Reservoir SNOTEL	5150	1-Feb	13	4.1	6.7	6.6	62%
Tipton SNOTEL	5150	1-Feb	23	6.3	3.1	8.5	74%
High Ridge SNOTEL	4920	1-Feb	30	10.5	11.0	16.1	65%
County Line SNOTEL	4830	1-Feb	0	0.0	3.0	3.9	0%
Eldorado Pass Snow Course	4630	3-Feb	7	1.5	0.0	2.8	54%
Little Antone (Alt.) Snow Course	4560	30-Jan	14	3.8	3.0	6.8	56%
Bowman Springs SNOTEL	4530	1-Feb	6	2.7	6.1	6.2	44%
East Eagle Snow Course	4400	1-Feb	43	12.4		14.6	85%
Sourdough Gulch SNOTEL	4000	1-Feb	1	0.4	0.5	0.9	44%

Umatilla, Walla Walla, and Willow Basins

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 46% of normal. This is significantly lower than last month when the basin snowpack was 71% of normal.

PRECIPITATION

January precipitation was 53% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 96% of average.

RESERVOIR

Reservoir storage across the basin remains above average. As of February 1, storage at published reservoirs was 114% of average and 42% percent of capacity.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 73% to 86% of average. Overall, forecasts decreased significantly from last month's report.

Umatilla, Walla Walla And Willow Basins Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
		Forecast Exceedance Probabilities for Risk Assessment *						
SF Walla Walla R nr Milton-Freewater	MAR-SEP	54	62	68	85%	74	82	80
	APR-JUL	33	40	44	81%	48	55	54
	APR-SEP	44	51	56	85%	61	68	66
Umatilla R ab Meacham Ck nr Gibbon	MAR-SEP	67	82	92	87%	102	117	106
	APR-JUL	42	54	63	85%	72	84	74
	APR-SEP	47	59	68	85%	77	89	80
Umatilla R at Pendleton	MAR-SEP	141	175	198	88%	220	255	225
	APR-JUL	77	106	126	86%	146	175	147
	APR-SEP	82	112	132	86%	152	182	153
McKay Ck nr Pilot Rock	APR-SEP	7.4	18.5	26	84%	34	45	31
Butter Ck nr Pine City	MAR-JUL	4.4	8.2	10.7	72%	13.2	17.0	14.9
	APR-SEP	2.7	5.4	7.2	73%	9.0	11.7	9.8
Willow Ck ab Willow Ck Lake nr Heppner	FEB-JUL	2.9	6.3	8.6	73%	10.9	14.2	11.8
	APR-JUL	0.88	3.3	5.0	71%	6.7	9.1	7.0
Rhea Ck nr Heppner	FEB-JUL	3.2	7.0	9.6	71%	12.1	15.9	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)	Capacity (KAF)
Cold Springs	15.4	11.4	16.1	50.0
Mckay	36.9	23.1	29.8	73.8
Willow Creek	4.3	3.7	4.2	13.9

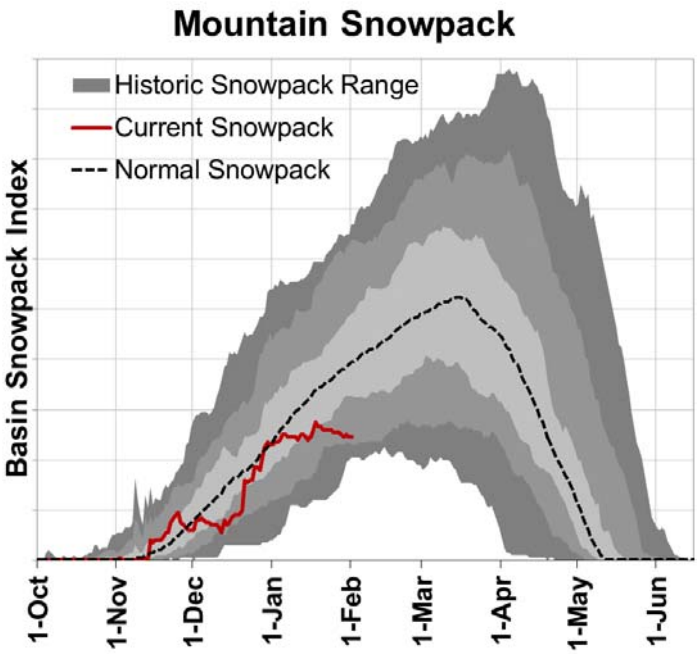
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Umatilla Basin	5	50%	72%
Walla Walla Basin	7	46%	70%

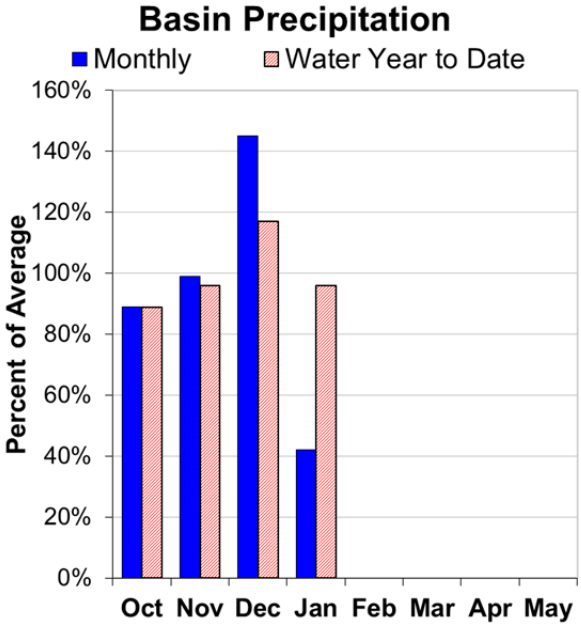
Umatilla, Walla Walla And Willow Basins Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Arbuckle Mtn SNOTEL	5770	1-Feb	23	7.0	7.3	12.2	57%
Spruce Springs SNOTEL	5700	1-Feb	10	3.9	8.1	11.9	33%
Milk Shakes SNOTEL	5580	1-Feb	43	14.3	19.1		
Touchet SNOTEL	5530	1-Feb	25	9.3	14.0	20.4	46%
Madison Butte SNOTEL	5150	1-Feb	0	0.0	2.1	3.8	0%
Lucky Strike SNOTEL	4970	1-Feb	6	2.9	4.3	5.9	49%
High Ridge SNOTEL	4920	1-Feb	30	10.5	11.0	16.1	65%
Indian Ridge Snow Course	4908	28-Jan	24	8.5			
Bowman Springs SNOTEL	4530	1-Feb	6	2.7	6.1	6.2	44%
Emigrant Springs SNOTEL	3800	1-Feb	0	0.0	4.1	5.4	0%

John Day Basin

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 60% of normal. This is significantly lower than last month when the basin snowpack was 95% of normal.

PRECIPITATION

January precipitation was 42% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 96% of average.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 55% to 79% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for limited water supplies this summer.

John Day Basin Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Strawberry Ck nr Prairie City	MAR-JUL	4.1	5.6	6.6	78%	7.7	9.2	8.5
	APR-SEP	4.2	5.8	6.9	78%	7.9	9.5	8.8
Mountain Ck nr Mitchell	FEB-JUL	2.1	3.2	4.2	60%	5.2	7.0	7.0
	APR-SEP	1.19	2.0	2.7	55%	3.6	4.9	4.9
Camas Ck nr Ukiah	MAR-JUL	22	31	37	76%	44	53	49
	APR-SEP	11.4	20	26	74%	32	41	35
MF John Day R at Ritter	MAR-JUL	67	98	120	77%	141	173	156
	APR-SEP	50	78	96	76%	115	142	126
NF John Day R at Monument	MAR-JUL	360	505	610	80%	710	860	765
	APR-SEP	265	390	475	79%	560	685	600

Forecast Exceedance Probabilities for Risk Assessment *

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

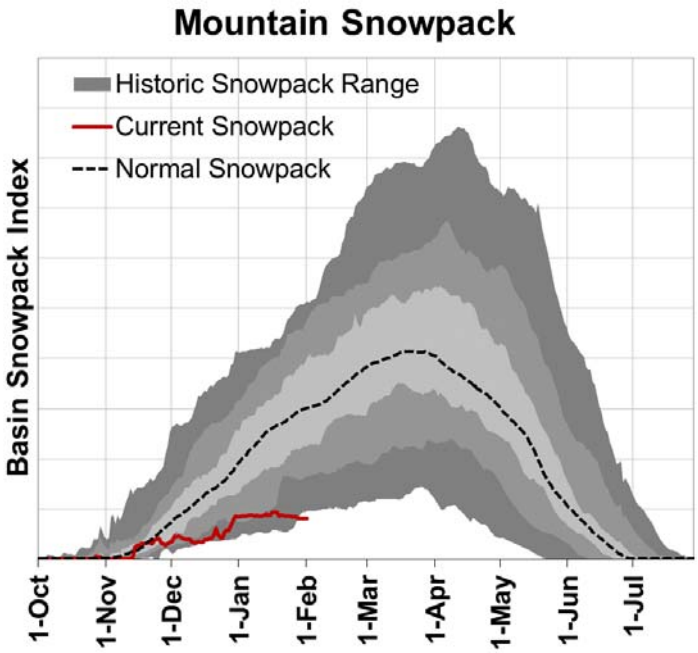
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Lower John Day Basin	6	34%	29%
North Fork John Day Basin	8	65%	65%
Upper John Day Basin	6	69%	37%

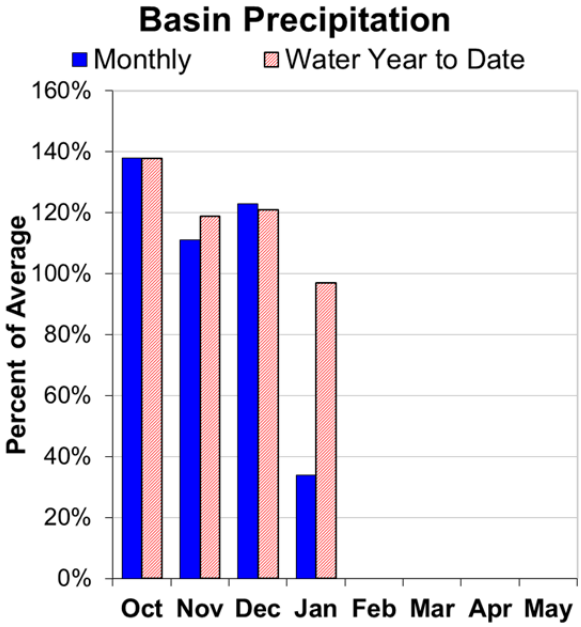
John Day Basin Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Anthony Lake (Rev) Snow Course	7160	30-Jan	43	14.7	12.8	15.9	92%
Little Alps Snow Course	6360	30-Jan	17	5.2	5.8	7.8	67%
Snow Mountain SNOTEL	6230	1-Feb	14	6.4	1.9	6.3	102%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	8.0	6.2	11.2	71%
Derr Snow Course	5860	30-Jan	8	2.6	1.8	7.9	33%
Bourne SNOTEL	5850	1-Feb	21	7.8	6.7	11.1	70%
Derr. SNOTEL	5850	1-Feb	23	7.3	2.7	9.8	74%
Arbuckle Mtn SNOTEL	5770	1-Feb	23	7.0	7.3	12.2	57%
Ochoco Meadows SNOTEL	5430	1-Feb	5	1.7	3.0	7.4	23%
Gold Center SNOTEL	5410	1-Feb	19	5.7	5.0	7.3	78%
Starr Ridge SNOTEL	5250	1-Feb	7	3.5	2.7	5.3	66%
Lake Creek R.S. SNOTEL	5240	1-Feb	18	6.4	3.3	9.4	68%
Ochoco Meadows Snow Course	5190	30-Jan	7	2.2	2.3	8.5	26%
Madison Butte SNOTEL	5150	1-Feb	0	0.0	2.1	3.8	0%
Tipton SNOTEL	5150	1-Feb	23	6.3	3.1	8.5	74%
Lucky Strike SNOTEL	4970	1-Feb	6	2.9	4.3	5.9	49%
County Line SNOTEL	4830	1-Feb	0	0.0	3.0	3.9	0%
Marks Creek Snow Course	4580	30-Jan	0	0.0	0.0	3.4	0%

Upper Deschutes and Crooked Basins

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 31% of normal. This is significantly lower than last month when the basin snowpack was 45% of normal. Ten of the 17 long-term snow measurement sites were at or near record low snowpack levels on February 1.

PRECIPITATION

January precipitation was 34% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 97% of average.

RESERVOIR

Reservoir storage across the basin is currently above average. As of February 1, storage at published reservoirs was 117% of average and 76% percent of capacity.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 46% to 91% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin that depend on snowmelt-driven streams should prepare for limited water supplies this summer.

Upper Deschutes And Crooked Basins Summary for February 1, 2015

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions----------Wetter--------→						
Streamflow Forecasts February 1, 2015	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**30-Yr Avg (KAF)**
Deschutes R bl Snow Ck	FEB-JUL	24	32	37	90%	42	50	41
	FEB-SEP	40	49	56	89%	62	71	63
	APR-JUL	16.6	22	26	87%	30	35	30
	APR-SEP	32	40	45	87%	50	58	52
Crane Prairie Reservoir Inflow[2]	FEB-JUL	48	58	65	86%	72	82	76
	FEB-SEP	67	80	89	83%	98	111	107
	APR-JUL	34	41	46	82%	51	58	56
	APR-SEP	52	63	70	80%	78	89	88
Crescent Lake Inflow[2]	FEB-JUL	6.4	13.0	17.5	89%	22	29	19.6
	FEB-SEP	7.7	14.6	19.3	88%	24	31	22
	APR-JUL	4.4	9.5	13.0	87%	16.5	22	15.0
	APR-SEP	5.9	11.2	14.7	84%	18.3	24	17.4
Little Deschutes R nr La Pine	FEB-JUL	26	43	57	64%	72	99	89
	FEB-SEP	25	44	59	63%	77	109	94
	APR-JUL	16.6	28	37	59%	47	65	63
	APR-SEP	15.5	28	40	58%	52	75	69
Deschutes R at Benham Falls[2]	FEB-JUL	375	410	440	96%	465	500	460
	FEB-SEP	510	555	590	94%	620	665	625
	APR-JUL	255	275	290	91%	305	330	320
	APR-SEP	385	420	440	91%	465	495	485
Wychus Ck nr Sisters	FEB-JUL	24	29	32	74%	35	39	43
	FEB-SEP	31	36	40	73%	44	49	55
	APR-JUL	21	24	25	71%	27	29	35
	APR-SEP	28	31	33	70%	36	39	47
Prineville Reservoir Inflow[2]	FEB-JUL	44	80	110	54%	144	205	205
	FEB-SEP	43	79	109	53%	144	205	205
	APR-JUL	12.3	30	48	47%	68	106	102
	APR-SEP	11.2	29	47	46%	68	106	102
Ochoco Reservoir Inflow[2]	FEB-JUL	10.9	17.8	23	58%	30	41	40
	FEB-SEP	10.1	16.9	22	55%	29	40	40
	APR-JUL	5.0	8.9	12.2	58%	16.0	23	21
	APR-SEP	4.3	8.1	11.2	56%	15.0	21	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, 2015

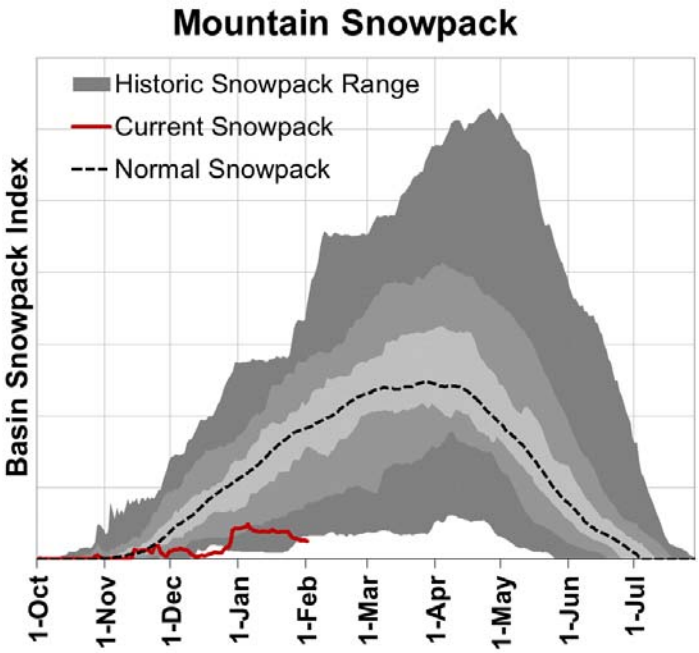
Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Crane Prairie	47.6	39.3	37.7	55.3
Crescent Lake	71.1	61.2	46.1	86.9
Ochoco	25.6	10.4	18.8	47.5
Prineville	95.5	79.9	86.8	153.0
Wickiup	171.4	165.9	161.7	200.0

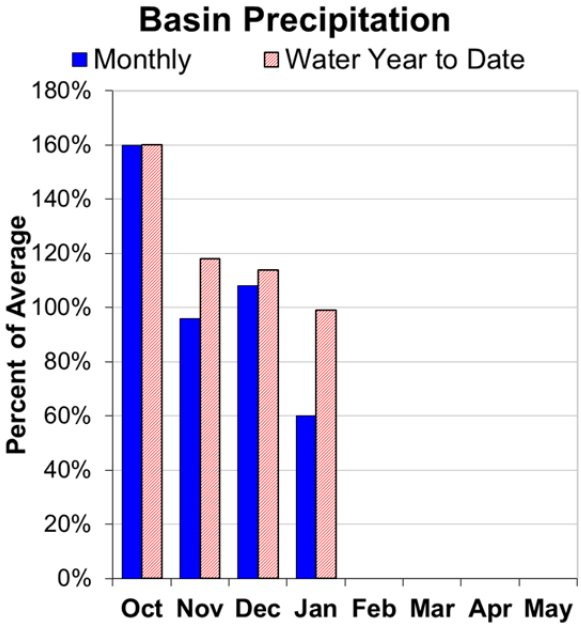
Snowpack Summary by Basin		Basin Snowpack % of 30-Year Median	
	# of Sites	Current Yr	Last Yr
Little Deschutes Basin	4	26%	33%
Upper Crooked Basin	5	37%	26%
Upper Deschutes Basin	14	26%	33%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
New Dutchman #3 Snow Course	6320	30-Jan	43	15.9	16.6	31.9	50%
Snow Mountain SNOTEL	6230	1-Feb	14	6.4	1.9	6.3	102%
Derr Snow Course	5860	30-Jan	8	2.6	1.8	7.9	33%
Derr. SNOTEL	5850	1-Feb	23	7.3	2.7	9.8	74%
Three Creeks Meadow SNOTEL	5690	1-Feb	10	4.2	3.5	12.4	34%
Summit Lake SNOTEL	5610	1-Feb	23	8.3	8.4	23.7	35%
Bald Peter Snow Course	5600	30-Jan	6	2.4	5.4	19.7	12%
Irish Taylor SNOTEL	5540	1-Feb	23	9.2	11.1	22.7	41%
Tangent Snow Course	5470	30-Jan	10	3.4	2.6	14.5	23%
Ochoco Meadows SNOTEL	5430	1-Feb	5	1.7	3.0	7.4	23%
Ochoco Meadows Snow Course	5190	30-Jan	7	2.2	2.3	8.5	26%
Racing Creek Snow Course	5160	30-Jan	0	0.0	0.8	10.5	0%
Cascade Summit SNOTEL	5100	1-Feb	18	7.0	8.9	20.4	34%
Roaring River SNOTEL	4950	1-Feb	4	1.9	6.2	18.6	10%
New Crescent Lake SNOTEL	4910	1-Feb	2	1.0	1.8	10.7	9%
Chemult Alternate SNOTEL	4850	1-Feb	1	0.1	1.2	7.6	1%
Hogg Pass SNOTEL	4790	1-Feb	0	0.0	5.1	13.9	0%
Mckenzie SNOTEL	4770	1-Feb	14	7.3	11.4	29.8	25%
Marks Creek Snow Course	4580	30-Jan	0	0.0	0.0	3.4	0%
Hungry Flat Snow Course	4400	30-Jan	0	0.0	0.0	2.3	0%
Salt Creek Falls SNOTEL	4220	1-Feb	4	2.3	2.6	13.9	17%
Santiam Jct. SNOTEL	3740	1-Feb	0	0.0	1.0	13.5	0%

Hood, Sandy, and Lower Deschutes Basins

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 13% of normal. This is significantly lower than last month when the basin snowpack was 38% of normal. Eight out of 10 long-term snow measurement sites were at or near record low snowpack levels on February 1.

PRECIPITATION

January precipitation was 60% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 99% of average.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 64% to 78% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin that depend on snowmelt-driven streams should prepare for limited water supplies this summer.

Hood, Sandy And Lower Deschutes Basins Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
WF Hood River nr Dee	APR-JUL	53	75	90	75%	105	127	120
	APR-SEP	62	85	100	72%	115	138	139
Hood R at Tucker Bridge	APR-JUL	91	122	142	63%	162	193	225
	APR-SEP	114	147	169	64%	192	225	265
Sandy R nr Marmot	APR-JUL	171	215	240	77%	270	315	310
	APR-SEP	205	250	280	78%	310	355	360

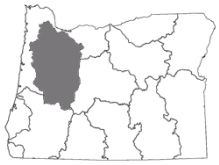
Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Clear Lake	4.6	3.7	3.0	11.9

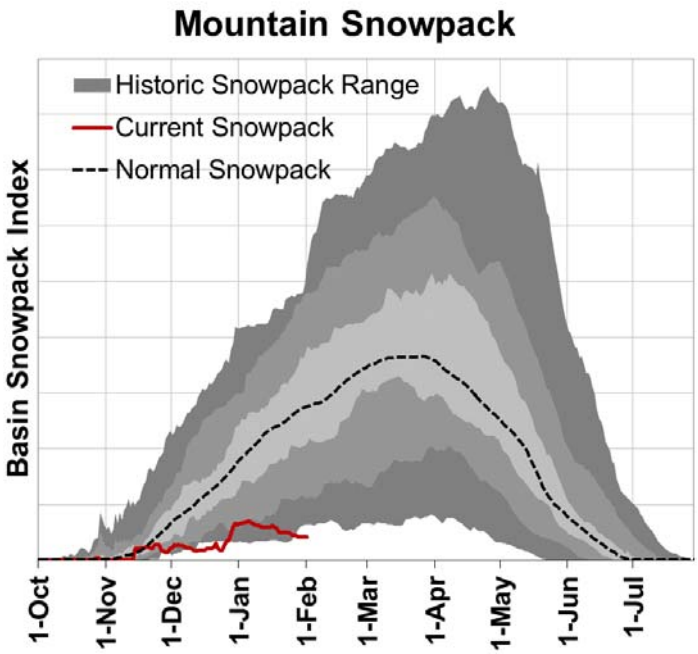
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Lower Columbia - Sandy Basin	7	15%	44%
Lower Deschutes Basin	8	15%	31%
Middle Columbia - Hood Basin	6	18%	44%

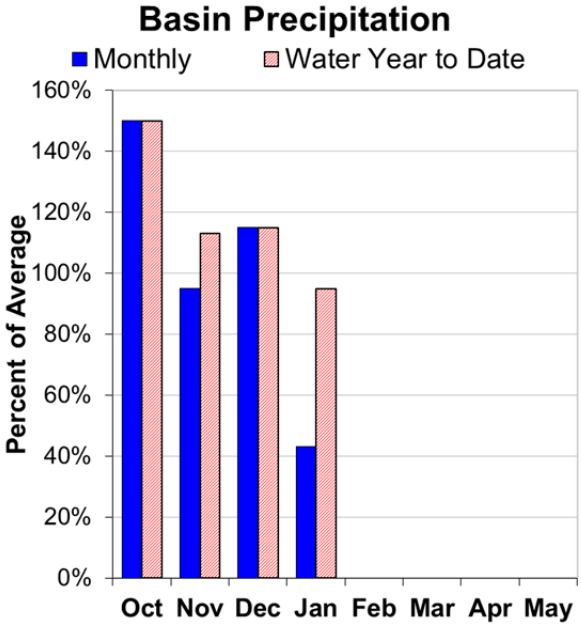
Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
High Prairie Snow Course	6080	28-Jan	27	9.4		29.7	32%
Bald Peter Snow Course	5600	30-Jan	6	2.4	5.4	19.7	12%
Mt Hood Test Site SNOTEL	5370	1-Feb	32	12.9	22.0	38.4	34%
Racing Creek Snow Course	5160	30-Jan	0	0.0	0.8	10.5	0%
Red Hill SNOTEL	4410	1-Feb	5	2.4	14.5	30.9	8%
Mill Creek Meadow Snow Course	4400	28-Jan	6	1.8		8.2	22%
Surprise Lakes SNOTEL	4290	1-Feb	24	10.8	15.6	33.3	32%
Beaver Creek #2 Snow Course	4220	30-Jan	0	0.0	0.2	8.0	0%
Beaver Creek #1 Snow Course	4210	30-Jan	0	0.0	1.2	10.0	0%
Mud Ridge SNOTEL	4070	1-Feb	11	3.8	6.3	18.5	21%
Clear Lake SNOTEL	3810	1-Feb	0	0.0	1.1	9.7	0%
Blazed Alder SNOTEL	3650	1-Feb	2	1.1	8.7	21.4	5%
Clackamas Lake SNOTEL	3400	1-Feb	0	0.0	1.3	9.2	0%
Greenpoint SNOTEL	3310	1-Feb	0	0.0	1.2	13.2	0%
North Fork SNOTEL	3060	1-Feb	0	0.0	4.5	13.2	0%
South Fork Bull Run SNOTEL	2690	1-Feb	0	0.0	1.8	1.3	0%



Willamette Basin

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 16% of normal. This is significantly lower than last month when the basin snowpack was 38% of normal. Eleven out of 20 long-term snow measurement sites were at or near record low snowpack levels on February 1.

PRECIPITATION

January precipitation was 43% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 95% of average.

RESERVOIR

Reservoir storage conditions vary widely across the basin. As of February 1, reservoir storage ranged from 54% of average (6% of capacity) at Blue River Reservoir to 106% of average (87% of capacity) at Timothy Lake.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 75% to 87% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin that depend on snowmelt-driven streams should prepare for limited water supplies this summer.

Willamette Basin Summary for February 1, 2015

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions----------Wetter--------→						
Streamflow Forecasts February 1, 2015	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**30-Yr Avg (KAF)**
Hills Creek Reservoir Inflow[1,2]	FEB-MAY	133	250	305	80%	360	475	380
	APR-JUL	96	181	220	80%	260	345	275
	APR-SEP	123	215	255	81%	295	385	315
MF Willamette R bl NF nr Oakridge[1,2]	FEB-MAY	370	650	780	82%	910	1190	950
	APR-JUL	270	475	565	81%	660	860	695
	APR-SEP	320	540	635	80%	735	950	790
Lookout Point Reservoir Inflow[1,2]	FEB-MAY	395	690	820	82%	955	1250	1000
	APR-JUL	265	485	580	80%	680	895	725
	APR-SEP	335	555	660	80%	760	985	825
Fall Creek Reservoir Inflow[1,2]	FEB-MAY	92	139	163	86%	190	255	190
	APR-JUL	35	67	85	78%	105	157	109
	APR-SEP	38	70	88	78%	109	160	113
Cottage Grove Lake Inflow[1,2]	FEB-MAY	34	57	69	83%	83	117	83
	APR-JUL	10.9	24	32	78%	41	65	41
	APR-SEP	11.8	25	33	77%	42	65	43
Dorena Lake Inflow[1,2]	FEB-MAY	102	167	200	82%	240	335	245
	APR-JUL	40	81	104	76%	130	197	136
	APR-SEP	41	82	105	76%	132	200	139
McKenzie R bl Trail Bridge	FEB-MAY	195	225	250	88%	275	310	285
	APR-JUL	185	210	230	88%	250	280	260
	APR-SEP	245	275	300	87%	325	360	345
Cougar Lake Inflow[1,2]	FEB-MAY	165	215	240	86%	265	330	280
	APR-JUL	104	150	174	85%	200	265	205
	APR-SEP	125	175	200	85%	225	295	235
Blue Lake Inflow[1,2]	FEB-MAY	83	116	132	85%	150	193	156
	APR-JUL	32	55	69	82%	83	120	84
	APR-SEP	35	59	72	84%	87	123	86
McKenzie R nr Vida[1]	FEB-MAY	770	985	1090	87%	1200	1470	1260
	APR-JUL	545	725	815	84%	910	1140	970
	APR-SEP	690	890	990	83%	1090	1340	1190
Detroit Lake Inlfow[1,2]	FEB-MAY	400	540	600	82%	660	800	730
	APR-JUL	205	325	385	73%	440	565	530
	APR-SEP	270	400	460	75%	520	650	610
Little North Santiam R nr Mehama[1]	FEB-MAY	111	158	180	82%	200	250	220
	APR-JUL	47	85	102	77%	119	157	133
	APR-SEP	55	94	111	79%	129	167	141
North Santiam R at Mehama[1]	FEB-MAY	545	780	890	82%	995	1230	1090
	APR-JUL	330	485	555	75%	625	780	740
	APR-SEP	400	560	635	76%	705	865	840

Willamette Basin Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Green Peter Lake Inflow[1,2]	FEB-MAY	280	365	410	85%	455	565	480
	APR-JUL	127	195	230	82%	270	365	280
	APR-SEP	142	210	245	83%	285	375	295
Foster Lake Inflow[1,2]	FEB-MAY	515	690	775	85%	870	1090	915
	APR-JUL	240	370	440	83%	510	690	530
	APR-SEP	270	400	470	83%	540	720	565
South Santiam R at Waterloo[2]	FEB-MAY	630	750	840	85%	935	1090	990
	APR-JUL	300	395	465	84%	545	665	555
	APR-SEP	330	425	495	84%	570	695	590
Willamette R at Salem[1,2]	FEB-MAY	4000	5500	6260	84%	7070	9020	7490
	APR-JUL	2000	2990	3510	81%	4070	5440	4310
	APR-SEP	2310	3350	3890	82%	4460	5870	4730
Scoggins Reservoir Inflow[2]	FEB-JUL	19.8	31	38	95%	45	56	40
Oak Grove Fk ab Powerplant	APR-JUL	70	86	97	84%	108	124	115
	APR-SEP	95	114	128	83%	141	160	155
Clackamas R above Three Lynx	APR-JUL	245	300	335	74%	375	430	450
	APR-SEP	315	370	410	77%	450	510	535
Clackamas R at Estacada	APR-JUL	330	415	470	75%	525	605	625
	APR-SEP	420	505	565	77%	620	705	730

Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Blue River	5.1	17.7	9.5	85.5
Cottage Grove	3.9	7.3	4.9	29.8
Cougar	42.2	37.6	55.3	155.2
Detroit	179.2	205.4	180.5	300.7
Dorena	11.2	23.9	11.7	70.5
Fall Creek	11.0	7.4	16.5	115.5
Fern Ridge	8.9	11.7	16.0	109.6
Foster	22.9	27.7	22.8	29.7
Green Peter	161.9	221.5	182.9	268.2
Hills Creek	91.2	106.5	105.8	200.2
Lookout Point	121.5	146.6	143.9	337.0
Timothy Lake	53.9	52.9	51.0	61.7
Henry Hagg Lake	38.1	36.0	38.0	53.0

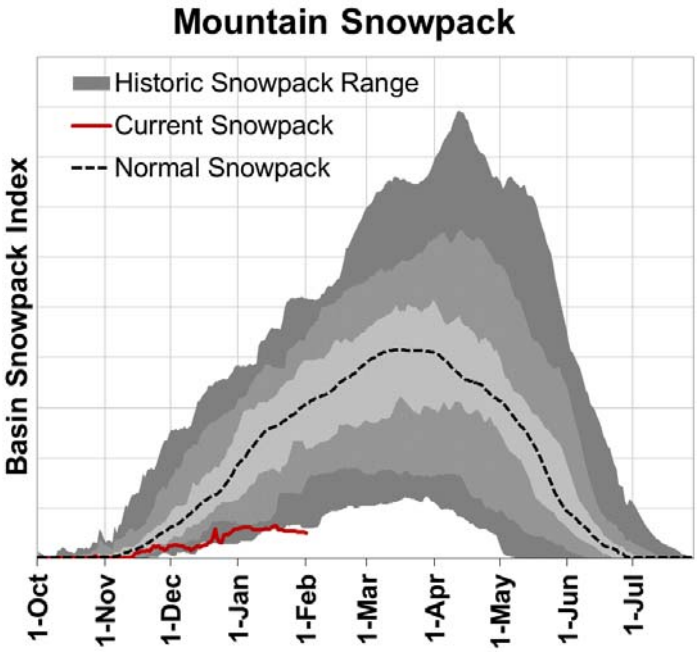
Willamette Basin Summary for February 1, 2015

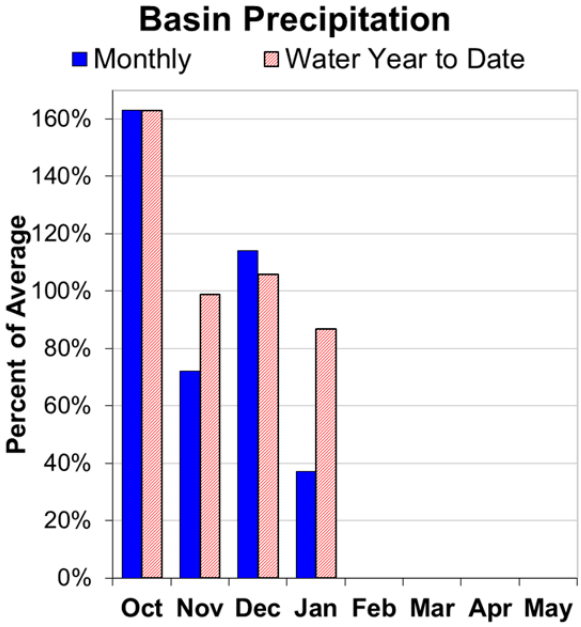
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Clackamas Basin	9	13%	39%
McKenzie Basin	6	18%	29%
Middle Fork Willamette Basin	7	25%	33%
North Santiam Basin	4	0%	11%
South Santiam Basin	4	0%	10%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Summit Lake SNOTEL	5610	1-Feb	23	8.3	8.4	23.7	35%
Irish Taylor SNOTEL	5540	1-Feb	23	9.2	11.1	22.7	41%
Cascade Summit SNOTEL	5100	1-Feb	18	7.0	8.9	20.4	34%
Roaring River SNOTEL	4950	1-Feb	4	1.9	6.2	18.6	10%
Holland Meadows SNOTEL	4930	1-Feb	0	0.0	0.5	16.0	0%
Hogg Pass SNOTEL	4790	1-Feb	0	0.0	5.1	13.9	0%
Mckenzie SNOTEL	4770	1-Feb	14	7.3	11.4	29.8	25%
Bear Grass SNOTEL	4720	1-Feb	8	3.3	9.9		
Beaver Creek #2 Snow Course	4220	30-Jan	0	0.0	0.2	8.0	0%
Salt Creek Falls SNOTEL	4220	1-Feb	4	2.3	2.6	13.9	17%
Beaver Creek #1 Snow Course	4210	30-Jan	0	0.0	1.2	10.0	0%
Mud Ridge SNOTEL	4070	1-Feb	11	3.8	6.3	18.5	21%
Little Meadows SNOTEL	4020	1-Feb	0	0.0	3.9	16.6	0%
Clear Lake SNOTEL	3810	1-Feb	0	0.0	1.1	9.7	0%
Santiam Jct. SNOTEL	3740	1-Feb	0	0.0	1.0	13.5	0%
Daly Lake SNOTEL	3690	1-Feb	0	0.0	0.3	10.0	0%
Marys Peak (Rev.) Snow Course	3580	29-Jan	0	0.0	0.0	1.2	0%
Jump Off Joe SNOTEL	3520	1-Feb	0	0.0	0.0	9.1	0%
Peavine Ridge SNOTEL	3420	1-Feb	0	0.0	0.4	10.3	0%
Clackamas Lake SNOTEL	3400	1-Feb	0	0.0	1.3	9.2	0%
Smith Ridge SNOTEL	3270	1-Feb	0	0.0	0.0		
Saddle Mountain SNOTEL	3110	1-Feb	0	0.0	0.2		
Railroad Overpass SNOTEL	2680	1-Feb	0	0.0	0.0	0.0	
Marion Forks SNOTEL	2590	1-Feb	0	0.0	0.0	6.3	0%
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, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 17% of normal. This is significantly lower than last month when the basin snowpack was 37% of normal. Twelve out of 19 long-term snow measurement sites were at or near record low snowpack levels on February 1.

PRECIPITATION

January precipitation was 37% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 87% of average.

RESERVOIR

Reservoir storage conditions vary widely across the basin. As of February 1, reservoir storage ranged from 36% of average (23% of capacity) at Hyatt Prairie Reservoir to 107% of average (55% of capacity) at Lost Creek Reservoir.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 61% to 86% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for limited water supplies this summer.

Rogue And Umpqua Basins Summary for February 1, 2015

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions----------Wetter--------→						
Streamflow Forecasts February 1, 2015	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**30-Yr Avg (KAF)**
Hyatt Reservoir Inflow[2]	APR-JUL	0.29	0.94	1.55	43%	2.3	3.8	3.6
South Umpqua R at Tiller	APR-JUL	65	116	150	78%	185	235	193
	APR-SEP	70	122	157	79%	192	245	200
Cow Ck nr Azalea[2]	FEB-JUL	1.35	17.7	29	81%	40	56	36
	APR-JUL	0.38	7.0	11.5	78%	15.9	23	14.7
	APR-SEP	0.57	7.5	12.1	76%	16.8	24	15.9
South Umpqua R nr Brockway	APR-JUL	102	225	305	78%	390	510	390
	APR-SEP	112	235	320	78%	405	530	410
North Umpqua R at Winchester	APR-JUL	410	560	660	85%	765	915	775
	APR-SEP	505	660	765	86%	875	1030	890
Lost Creek Lk Inflow[2]	FEB-JUL	430	540	615	77%	690	800	795
	FEB-SEP	515	635	720	78%	805	925	920
	APR-JUL	275	350	400	77%	450	525	520
	APR-SEP	360	450	505	78%	565	650	645
Rogue R at Raygold[2]	APR-JUL	255	400	500	74%	600	745	675
	APR-SEP	350	505	610	76%	715	870	805
Rogue R at Grants Pass[2]	APR-JUL	240	405	515	71%	630	795	725
	APR-SEP	310	490	615	73%	735	915	845
Applegate Lake Inflow[2]	FEB-JUL	52	88	119	61%	154	215	195
	FEB-SEP	19.7	82	124	62%	166	230	200
	APR-JUL	28	49	67	61%	88	123	109
	APR-SEP	18.2	49	70	61%	91	122	115
Sucker Ck bl Little Grayback Ck	APR-JUL	15.6	28	39	71%	51	72	55
	APR-SEP	17.9	31	42	71%	55	76	59
Illinois R nr Kerby	APR-JUL	7.4	72	115	61%	159	225	188
	APR-SEP	10.8	76	120	62%	164	230	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)**	**Capacity (KAF)**
Applegate	10.4	-0.8	10.8	75.2
Emigrant Lake	13.6	10.8	21.6	39.0
Fish Lake	3.7	3.7	4.8	8.0
Fourmile Lake	5.1	3.1	6.9	16.1
Howard Prairie	19.6	32.8	36.1	60.0
Hyatt Prairie	3.7	9.4	10.2	16.1
Lost Creek	172.5	143.5	161.8	315.0

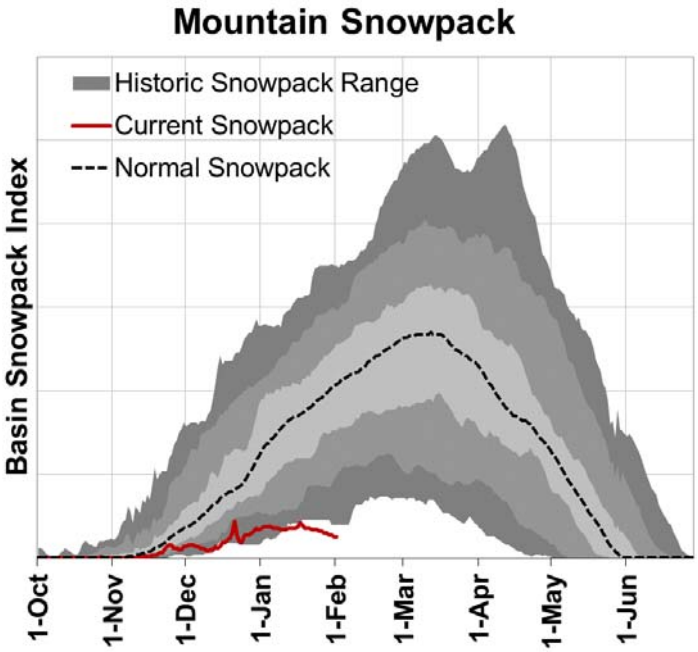
Rogue And Umpqua Basins Summary for February 1, 2015

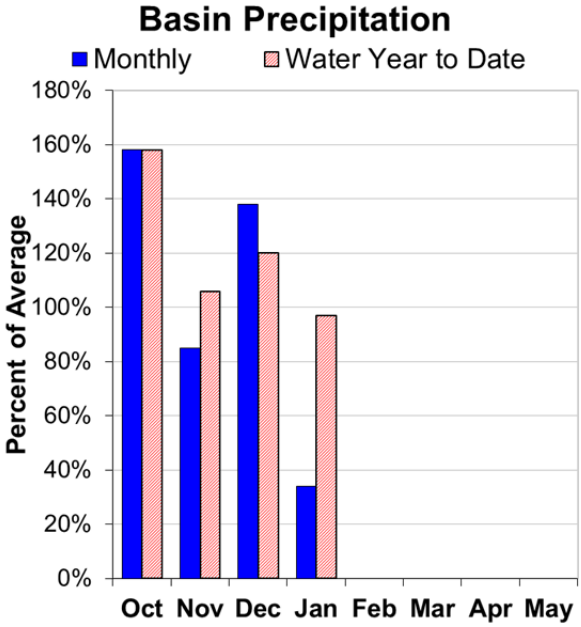
Snowpack Summary by Basin	# of Sites	Basin Snowpack Current Yr	Basin Snowpack Last Yr
Applegate Basin	5	9%	3%
Middle Rogue Basin	8	6%	2%
North Umpqua Basin	7	17%	20%
South Umpqua Basin	10	0%	9%
Upper Rogue Basin	11	19%	22%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Park H.Q. Rev Snow Course	6570	29-Jan	45	16.4	11.1	36.9	44%
Caliban (Alt.) Snow Course	6500	30-Jan	7	2.8	0.6	20.2	14%
Mt Ashland Switchback Snow Course	6430	30-Jan	3	1.3	0.3	21.2	6%
Ski Bowl Road Snow Course	6070	30-Jan	0	0.0	0.2	15.0	0%
Big Red Mountain SNOTEL	6050	1-Feb	8	3.3	1.0	17.6	19%
Annie Springs SNOTEL	6010	1-Feb	22	9.4	5.4	26.8	35%
Fourmile Lake SNOTEL	5970	1-Feb	14	4.7	4.6	21.2	22%
Cold Springs Camp SNOTEL	5940	1-Feb	2	1.2	3.7	22.5	5%
Sevenmile Marsh SNOTEL	5700	1-Feb	4	1.0	4.2	20.0	5%
Summit Lake SNOTEL	5610	1-Feb	23	8.3	8.4	23.7	35%
Billie Creek Divide SNOTEL	5280	1-Feb	6	2.4	4.2	16.7	14%
Diamond Lake SNOTEL	5280	1-Feb	0	0.0	1.5	12.2	0%
Bigelow Camp SNOTEL	5130	1-Feb	0	0.0	0.0	8.9	0%
Beaver Dam Creek Snow Course	5120	2-Feb	0	0.0	1.1	10.2	0%
King Mountain 1 Snow Course	4760	29-Jan	0	0.0	0.0	3.8	0%
Deadwood Junction Snow Course	4660	2-Feb	0	0.0	0.4	6.2	0%
Fish Lk. SNOTEL	4660	1-Feb	0	0.0	3.0	9.1	0%
Howard Prairie Snow Course	4580	2-Feb	0	0.0	0.2	5.9	0%
Howard Prairie SNOTEL	4580	1-Feb	0	0.0	0.0		
Siskiyou Summit (Rev.) Snow Course	4560	30-Jan	0	0.0	0.0	5.0	0%
Red Butte 1 Snow Course	4460	29-Jan	0	0.0	0.2	7.4	0%
King Mountain SNOTEL	4340	1-Feb	0	0.0	0.0	2.5	0%
Red Butte 2 Snow Course	4050	29-Jan	0	0.0	0.0	2.3	0%
King Mountain 3 Snow Course	3680	29-Jan	0	0.0	0.0	0.0	
Silver Burn Snow Course	3680	29-Jan	0	0.0	2.2	8.2	0%
Red Butte 3 Snow Course	3500	29-Jan	0	0.0	0.0	0.4	0%
Toketee Airstrip SNOTEL	3240	1-Feb	0	0.0	0.0	3.4	0%
King Mountain 4 Snow Course	3050	29-Jan	0	0.0	0.0	0.0	
Red Butte 4 Snow Course	3000	29-Jan	0	0.0	0.0	0.0	

Klamath Basin

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 19% of normal. This is significantly lower than last month when the basin snowpack was 37% of normal. Twelve out of 15 long-term snow measurement sites were at or near record low snowpack levels on February 1.

PRECIPITATION

January precipitation was 34% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 97% of average.

RESERVOIR

Reservoir storage conditions vary widely across the basin. As of February 1, reservoir storage ranged from 18% of average (7% of capacity) at Clear Lake (CA) Reservoir to 104% of average (63% of capacity) at Upper Klamath Lake.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 28% to 57% of average. Water users in the basin should prepare for limited water supplies this summer.

Klamath Basin Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Clear Lake Inflow[2]	FEB-JUL	1.86	12.7	38	41%	63	101	93
	APR-SEP	0.35	4.2	14.0	40%	24	38	35
Gerber Resvervoir Inflow[2]	FEB-JUL	0.41	4.8	16.0	39%	27	44	41
	APR-SEP	0.14	0.43	4.0	28%	10.3	19.5	14.4
Sprague R nr Chiloquin	FEB-JUL	27	100	150	51%	200	273	295
	FEB-SEP	39	115	167	52%	219	295	320
	APR-JUL	25	71	102	54%	133	179	188
	APR-SEP	40	88	120	57%	152	200	210
Williamson R bl Sprague nr Chiloquin	FEB-JUL	97	188	250	53%	310	405	475
	FEB-SEP	139	235	300	57%	365	461	530
	APR-SEP	96	158	200	56%	240	305	355
Upper Klamath Lake Inflow[1,2]	FEB-JUL	89	285	375	52%	465	660	720
	FEB-SEP	118	335	430	54%	525	740	800
	MAR-SEP	116	290	370	56%	450	625	655
	APR-SEP	76	196	250	52%	305	425	480

Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Clear Lake, CA	35.9	46.5	199.0	513.3
Gerber	12.7	10.2	43.5	94.3
Upper Klamath Lake	331.0	273.6	319.0	523.7

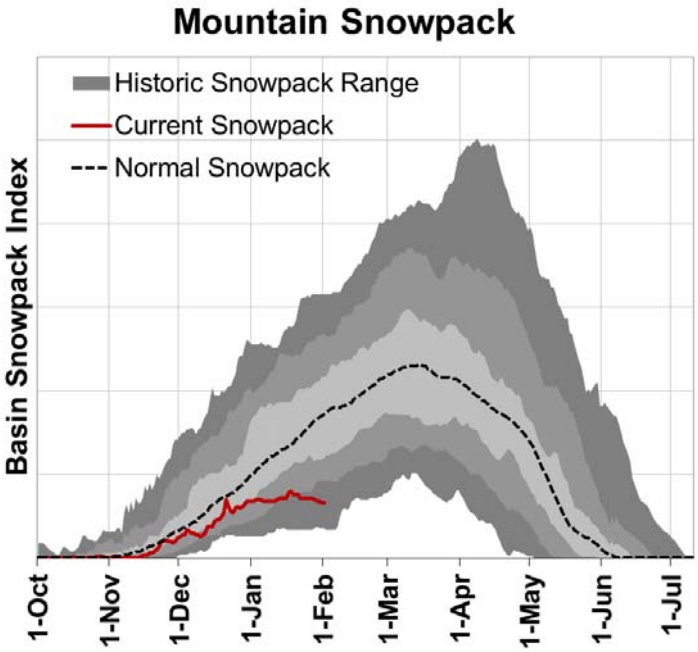
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Lost Basin	3	0%	0%
Sprague Basin	4	26%	20%
Upper Klamath Lake Basin	8	21%	23%
Williamson River Basin	5	29%	22%

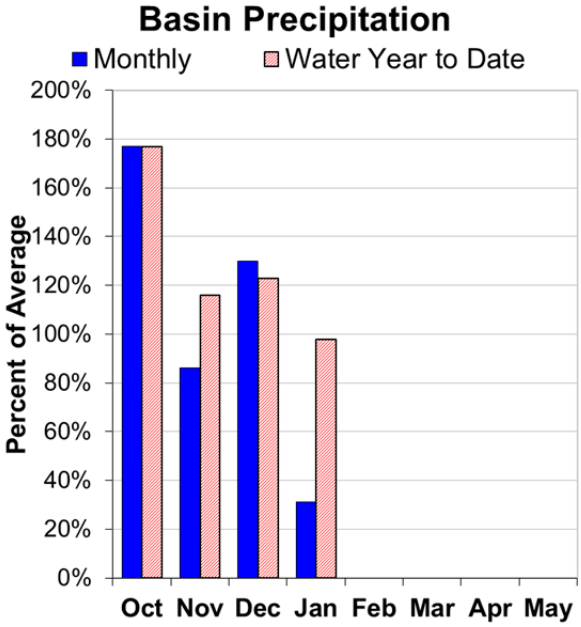
Klamath Basin Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Summer Rim SNOTEL	7080	1-Feb	15	5.2	3.7	11.1	47%
Swan Lake Mtn SNOTEL	6830	1-Feb	17	7.5	3.4		
Park H.Q. Rev Snow Course	6570	29-Jan	45	16.4	11.1	36.9	44%
Crazyman Flat SNOTEL	6180	1-Feb	5	2.6	1.1	10.9	24%
Ski Bowl Road Snow Course	6070	30-Jan	0	0.0	0.2	15.0	0%
Annie Springs SNOTEL	6010	1-Feb	22	9.4	5.4	26.8	35%
Fourmile Lake SNOTEL	5970	1-Feb	14	4.7	4.6	21.2	22%
Cold Springs Camp SNOTEL	5940	1-Feb	2	1.2	3.7	22.5	5%
Strawberry SNOTEL	5770	1-Feb	0	0.0	0.0	4.4	0%
Silver Creek SNOTEL	5740	1-Feb	4	1.6	2.2	8.1	20%
Quartz Mountain SNOTEL	5720	1-Feb	0	0.0	0.0	1.5	0%
Sevenmile Marsh SNOTEL	5700	1-Feb	4	1.0	4.2	20.0	5%
State Line SNOTEL	5680	1-Feb	0	0.0			
Sun Pass SNOTEL	5400	1-Feb	0	0.0	2.9		
Billie Creek Divide SNOTEL	5280	1-Feb	6	2.4	4.2	16.7	14%
Diamond Lake SNOTEL	5280	1-Feb	0	0.0	1.5	12.2	0%
Crowder Flat SNOTEL	5170	1-Feb	0	0.0	0.0	3.7	0%
Beaver Dam Creek Snow Course	5120	2-Feb	0	0.0	1.1	10.2	0%
Taylor Butte SNOTEL	5030	1-Feb	0	0.0	0.2	5.5	0%
Gerber Reservoir SNOTEL	4890	1-Feb	0	0.0	0.0	1.5	0%
Chemult Alternate SNOTEL	4850	1-Feb	1	0.1	1.2	7.6	1%
Deadwood Junction Snow Course	4660	2-Feb	0	0.0	0.4	6.2	0%
Fish Lk. SNOTEL	4660	1-Feb	0	0.0	3.0	9.1	0%
Howard Prairie SNOTEL	4580	1-Feb	0	0.0	0.0		
Howard Prairie Snow Course	4580	2-Feb	0	0.0	0.2	5.9	0
Siskiyou Summit Rev. Snow Course	4560	30-Jan	0	0.0	0.0	5.0	0%

Lake County and Goose Lake

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 34% of normal. This is significantly lower than last month when the basin snowpack was 73% of normal.

PRECIPITATION

January precipitation was 31% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 98% of average.

RESERVOIR

Reservoir storage across the basin improved since last month, but remains well below average. As of February 1, storage at published reservoirs was 35% of average and 16% percent of capacity.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 50% to 58% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for limited water supplies this summer.

Lake County And Goose Lake Basins Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Twentymile Ck nr Adel	MAR-JUL	3.0	8.0	12.8	47%	18.7	29	27
	APR-SEP	2.2	5.7	9.0	52%	13.0	20	17.4
Deep Ck ab Adel	MAR-JUL	23	36	46	58%	58	78	79
	APR-SEP	17.6	29	38	58%	48	66	65
Honey Ck nr Plush	MAR-JUL	2.6	5.8	8.6	50%	12.0	18.0	17.1
	APR-SEP	2.0	4.7	7.1	50%	10.0	15.3	14.1
Chewaucan R nr Paisley	MAR-JUL	21	33	43	51%	54	73	84
	APR-SEP	18.4	29	38	51%	48	65	75

Forecast Exceedance Probabilities for Risk Assessment *

* 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)	Capacity (KAF)
Cottonwood	2.6	0.2	3.9	8.7
Drews	8.5	11.0	28.4	63.0

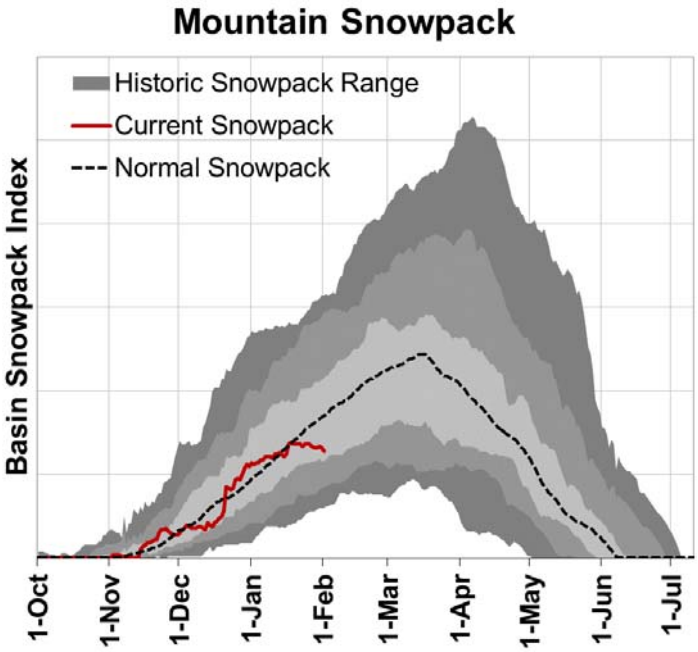
Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Goose Lake Basin	5	39%	16%
Lake Abert Basin	3	35%	15%
Summer Lake Basin	13	34%	17%
Upper Pit Basin	3	22%	11%

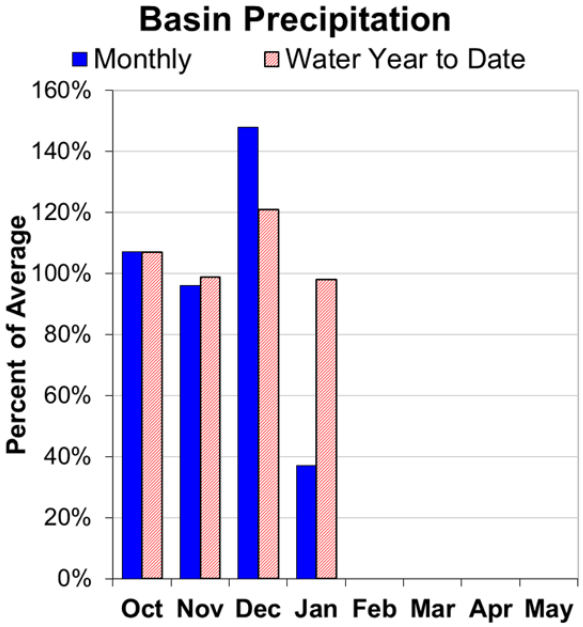
Lake County And Goose Lake Basins Summary for February 1, 2015

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Dismal Swamp SNOTEL	7360	1-Feb	34	12.2	4.8	18.0	68%
Summer Rim SNOTEL	7080	1-Feb	15	5.2	3.7	11.1	47%
Cedar Pass Snow Course	7050	29-Jan	12	4.4	1.2	10.2	43%
Cedar Pass SNOTEL	7030	1-Feb	12	4.5	2.5	11.3	40%
Patton Meadows AM	6800	1-Feb	12	4.0	1.8	10.2	39%
Sherman Valley AM	6640	1-Feb	7	2.3	0.0	8.0	29%
Hart Mountain AM	6430	1-Feb	0	0.0	0.0	1.4	0%
Rogger Meadow AM	6360	1-Feb	2	0.7	0.7	7.7	9%
Adin Mountains Snow Course	6190	29-Jan	2	0.6	0.1	8.8	7%
Adin Mtn SNOTEL	6190	1-Feb	2	0.7	0.0	8.6	8%
Crazyman Flat SNOTEL	6180	1-Feb	5	2.6	1.1	10.9	24%
Camas Creek #3 Snow Course	5860	2-Feb	7	2.4	0.4	8.8	27%
Sheldon SCAN	5860	1-Feb	0	0.0	0.0	0.4	0%
Strawberry SNOTEL	5770	1-Feb	0	0.0	0.0	4.4	0%
Silver Creek SNOTEL	5740	1-Feb	4	1.6	2.2	8.1	20%
Crowder Flat SNOTEL	5170	1-Feb	0	0.0	0.0	3.7	0%

Harney Basin

February 1, 2015





Summary of Water Supply Conditions

SNOWPACK

As of February 1, the basin snowpack was 78% of normal. This is significantly lower than last month when the basin snowpack was 121% of normal.

PRECIPITATION

January precipitation was 37% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 98% of average.

STREAMFLOW FORECAST

Summer streamflow forecasts in the basin range from 43% to 74% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for limited water supplies this summer.

Harney Basin Summary for February 1, 2015

Streamflow Forecasts February 1, 2015	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	30-Yr Avg (KAF)
		←--------Drier----------Future Conditions----------Wetter--------→						
Silvies R nr Burns	MAR-JUL	16.1	38	57	46%	81	123	123
	APR-SEP	8.1	24	40	43%	60	96	92
Donner Und Blitzen R nr Frenchglen	MAR-JUL	30	43	53	74%	64	83	72
	APR-SEP	27	40	50	74%	61	79	68
Trout Ck nr Denio	MAR-JUL	1.14	2.9	4.5	52%	6.5	10.1	8.7
	APR-SEP	0.84	2.4	4.0	50%	5.9	9.5	8.0

Forecast Exceedance Probabilities for Risk Assessment *

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

Snowpack Summary by Basin	# of Sites	Basin Snowpack % of 30-Year Median Current Yr	Last Yr
Alvord Lake Basin	4	96%	31%
Donner und Blitzen River Basin	3	79%	29%
Silvies River Basin	4	71%	34%
Upper Quinn Basin	5	61%	33%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Snow Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	30-Yr Median	% of 30-Yr Median
Granite Peak SNOTEL	8543	1-Feb	32	8.3	4.1	12.1	69%
Trout Creek AM	7890	1-Feb	23	8.5	3.0	8.2	104%
Fish Creek SNOTEL	7660	1-Feb	44	19.2	5.6	15.8	122%
Govt Corrals AM	7400	1-Feb	20	7.4	2.7	7.5	99%
Silvies SNOTEL	6990	1-Feb	17	5.1	3.2	9.6	53%
Buckskin Lower SNOTEL	6915	1-Feb	10	1.8	3.4	6.5	28%
V Lake AM	6600	1-Feb	0	0.0	0.0	5.2	0%
Disaster Peak SNOTEL	6500	1-Feb	3	1.0	0.5	5.6	18%
Hart Mountain AM	6430	1-Feb	0	0.0	0.0	1.4	0%
Snow Mountain SNOTEL	6230	1-Feb	14	6.4	1.9	6.3	102%
Lamance Creek SNOTEL	6000	1-Feb	0	0.0	0.6	8.0	0%
Blue Mountain Spring SNOTEL	5870	1-Feb	25	8.0	6.2	11.2	71%
Sheldon SCAN	5860	1-Feb	0	0.0	0.0	0.4	0%
Rock Springs SNOTEL	5290	1-Feb	6	1.9	0.8	4.7	40%
Starr Ridge SNOTEL	5250	1-Feb	7	3.5	2.7	5.3	66%
Lake Creek R.S. SNOTEL	5240	1-Feb	18	6.4	3.3	9.4	68%

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	Mar 10	Apr 20	May 31	**May 6**
Owyhee R nr Rome	1000 cfs	Mar 13	Apr 25	Jun 7	**May 18**
Owyhee R nr Rome	500 cfs	Apr 1	May 12	Jun 22	**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	30	189	415	**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	215	365	515	**403**
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	142	215	290	**269**
Prineville Reservoir Inflow	113 cfs	Apr 25	May 20	Jun 14	**June 3**
Prineville Reservoir Inflow	75 cfs	May 1	May 26	Jun 20	**June 11**
Prineville Reservoir Inflow	50 cfs	May 8	Jun 3	Jun 29	**June 19**
Whychus Creek nr Sisters	100 cfs	Jul 16	Aug 12	Sep 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					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------- ------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
South Umpqua R nr Brockway *	90 cfs	Jul 9	Jul 27	Aug 12	**August 8**
South Umpqua R at Tiller	140 cfs	Jun 10	Jul 2	Jul 23	**July 11**
South Umpqua R at Tiller	90 cfs	Jun 29	Jul 22	Aug 12	**August 1**
South Umpqua R at Tiller	60 cfs	Jul 23	Aug 20	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					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------- ------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Deep Ck ab Adel	100 cfs	May 13	Jun 2	Jun 22	**June 17**
Honey Ck nr Plush	100 cfs	Mar 18	Apr 22	May 27	**May 16**
Honey Ck nr Plush	50 cfs	Apr 2	May 4	Jun 5	**June 4**
Twentymile Ck nr Adel	50 cfs	Apr 6	May 6	Jun 5	**May 30**
Twentymile Ck nr Adel	10 cfs	Jun 1	Jun 24	Jul 17	**July 7**

HARNEY BASIN					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------- ------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Silvies R nr Burns	400 cfs	Apr 12	May 9	Jun 5	**May 21**
Silvies R nr Burns	200 cfs	Apr 20	May 18	Jun 15	**June 2**
Silvies R nr Burns	100 cfs	May 3	Jun 1	Jun 30	**June 13**
Silvies R nr Burns	50 cfs	May 20	Jun 24	Jul 28	**July 3**
Donner Und Blitzen R nr Frenchglen	200 cfs	May 20	Jun 11	Jul 3	**June 20**
Donner Und Blitzen R nr Frenchglen	100 cfs	Jun 11	Jul 1	Jul 23	**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.

JOHN DAY BASIN
Streamflow Forecasts - February 1, 2013

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (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

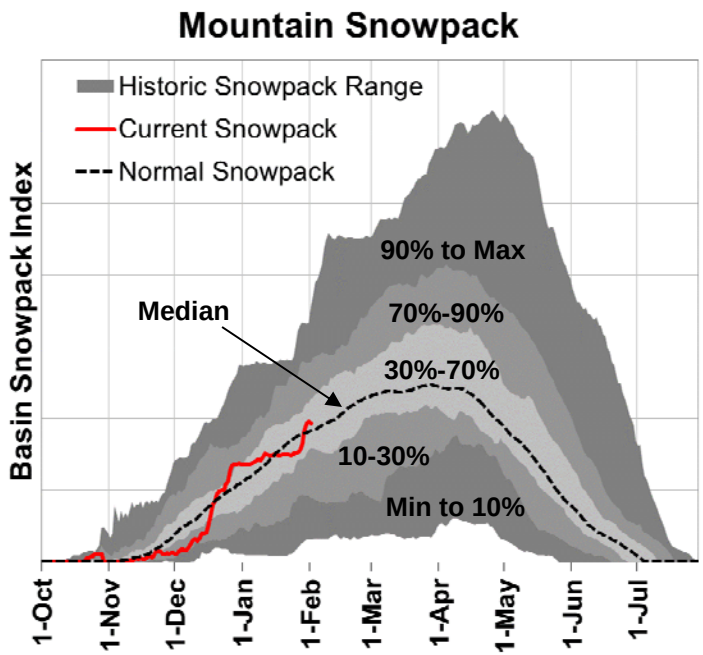
** 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.*

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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