



United States  
Department of  
Agriculture



Natural Resources  
Conservation  
Service

# Oregon Basin Outlook Report

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April 1, 2013



**Dust & Ash on Snow: A snowmelt accelerator**

*Photo courtesy of USDA-ARS NWRC*

In early March, a windstorm deposited a thick layer of dust and ash on the snowpack across the Owyhee basin. This dark layer on top of the snowpack accelerated melt rates across a wide area of eastern Oregon. Why does dark snow melt faster? The snow surface is generally white and reflects more sunlight than it absorbs; this ratio is known as albedo. Conversely, darker objects, such as trees and bare ground absorb more sunlight and warm up the snow around them. Dust on the snow surface behaves similarly; it decreases the albedo of the snow and accelerates spring snowmelt.

Aside from the month of December, the Owyhee basin has experienced a dry winter with a meager snowpack. As of April 1, the basin snowpack was 42% of normal and much of the basin is currently snow-free. The Owyhee River streamflow peak has already occurred from snowmelt and the streamflow forecasts project well below normal summer streamflows.

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# General Outlook

April 1, 2013

## SUMMARY

Oregon has experienced two months in a row of below average precipitation. These are very critical months for summer water supplies, and the lack of moisture during February and March led to below normal snowpacks as of April 1 for much of the state. In addition to below normal peak snowpack levels, spring snowmelt started a couple of weeks earlier than normal, especially in parts of southern and eastern Oregon. Only northwestern Oregon managed to maintain a near normal snowpack for this time of year.

Southern and eastern Oregon basins are expected to have the lowest summer streamflows in the state as a result of extended dry spells, low snowpacks and early snowmelt. Areas of concern for well below normal summer streamflows are the Owyhee, Malheur, Harney, Klamath, Lake County and Oregon's closed basins. The latest drought monitor update has outlined expected drought persistence in the regions of southern and southeastern Oregon. Updated information can be found on this website: <http://www.cpc.ncep.noaa.gov/>.

## SNOWPACK

The warm temperatures that occurred mid-March instigated the first round of pre-spring snowmelt in some areas. A short return of winter rolled in for the first day of spring, bringing substantial snow to parts of the Cascades. The last week in March brought record breaking warm mountain temperatures and the snow line began creeping up the hills, while some valley locations experienced record night-time lows. Even the elevations near 6000 feet in the Cascades couldn't resist a little spring fever as the snowpack in this elevation band just began melting on April 1. Many of the SNOTEL sites below 6000 feet in southeastern Oregon are snow free and the higher elevation snow is melting quickly in those areas.

As of April 1, only the Willamette, Hood, Sandy and Lower Deschutes basins have near normal snowpacks for this time of year, while the rest of the state has below normal snowpacks. The Rogue and Umpqua headwaters along with the mountains in parts of central and northeastern Oregon all have a snowpack of about 75-78% of normal. The snowpack in the Malheur and Owyhee basins is 42% of normal, the lowest in the state. Mountain snowpack in other parts of southern and eastern Oregon such as Lake County, Klamath, John Day, Harney and Oregon's closed basins are only slightly better, ranging from 55 to 67% of normal. Many SNOTEL sites in these areas are already snow free and the mid to upper elevations are melting off quickly. Many parts of these basins have melted about two weeks earlier than normal. Now, only cool temperatures and more snowfall could slow the snowmelt engine and preserve the snow that remains until later in the season.

## PRECIPITATION

The benefit of a wet fall is losing clout as extended dry spells lead to dryer soils in the snow-free areas. For the second consecutive month in a row, March delivered state-wide below average precipitation. Consequently, many of the drier basins have received below average water year precipitation (Oct 1-April 1). The lowest March totals fell in the Harney, Owyhee and Malheur basins, where precipitation was just shy of 40% of average; the water year to date precipitation ranges from 85% to 90% of average for those regions. The wettest basin in the state was the Hood, Sandy and Lower Deschutes where March precipitation was 72% of average and water year to date precipitation is 100% of average.

The valley locations have experienced even less precipitation with respect to the usual amounts. Lowland areas west of the Cascades have experienced one of the top 5 driest winters on record, in contrast to the Mt. Hood area which hangs on to a near normal snowpack and has had the normal amount precipitation for the year.

## RESERVOIRS

The April 1 storage at 26 major Oregon reservoirs analyzed in this publication was 84 percent of average. As of April 1, water storage at these reservoirs totaled 1,922 thousand acre feet (kaf), representing 59 percent of useable capacity. Last year at this time, these same reservoirs stored 2419 kaf of water, or 75 percent of useable capacity.

## STREAMFLOW

Runoff volumes in coastal drainages and lower Columbia River tributaries are expected to be near normal this spring and summer. Water supplies throughout the rest of the state are expected to be below normal to well below normal. From the John Day basin east to the Owyhee and south to Klamath, Lake, and Harney counties, water users should prepare for reduced irrigation water supplies. The flurry of storm activity at the end of February and into early March provided glimmers of hope that snowpacks would continue to increase and water supply conditions were on the mend. These glimmers didn't last and our hopes were dashed as March turned out to be an unseasonably dry and warm month. Southeastern Oregon was especially hard hit with water supply forecasts dropping 20-50% of average over the course of the March. At this stage in the season, these areas have little chance of recovering to near normal conditions and water users should prepare for inadequate water supplies for the coming summer.

A summary of streamflow forecasts for Oregon follows:

STREAM	Median Forecast (April through September)	
	Volume (Acre-Feet)	Percent of Average
Owyhee Reservoir Inflow	200,000	49
Grande Ronde R at Troy	1,180,000	90
Umatilla R at Pendleton	136,000	89
Deschutes R at Benham Falls	475,000	98
MF Willamette R bl NF	740,000	94
Rogue R at Raygold	710,000	88
Upper Klamath Lake Inflow	290,000	61
Silvies R nr Burns	30,000	33

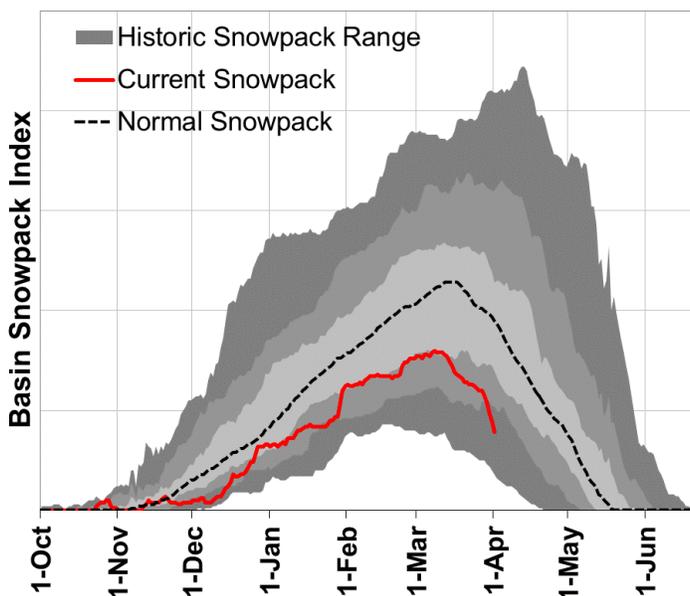
Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period. This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators. This report will be updated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



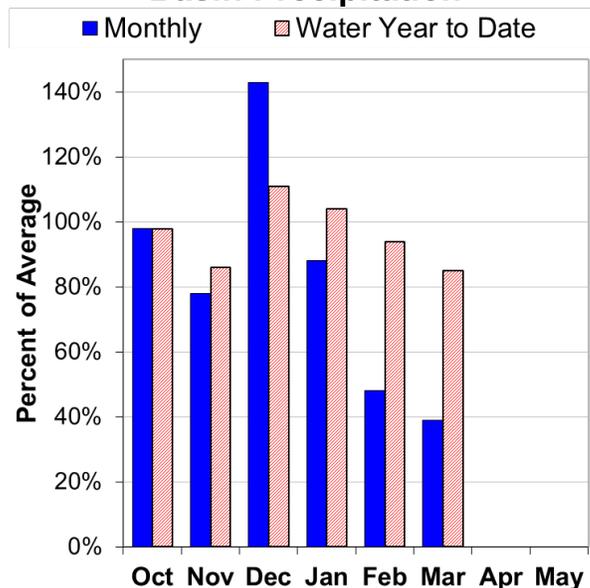
# Owyhee and Malheur Basins

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 42% of normal. This is significantly lower than last month when the snowpack was 79% of normal.

### PRECIPITATION

March precipitation was 39% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 85% of average.

### RESERVOIR

Reservoir storage across the basin is currently well below average. As of April 1, storage at published reservoirs was 74% of average and 50% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 41% to 49% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for well below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
 Ontario - (541) 889-7637

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

OWYHEE AND MALHEUR BASINS  
Streamflow Forecasts - April 1, 2013

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)		
Malheur R nr Drewsey	APR-JUL	11.2	21	29	39	39	55	75
	APR-SEP	12.1	22	30	41	40	56	74
NF Malheur R at Beulah (2)	APR-JUL	17.7	24	29	52	34	43	56
Owyhee R nr Rome	APR-JUL	6.0	95	156	45	215	305	345
	APR-SEP	16.0	107	168	46	229	320	365
Owyhee R bl Owyhee Dam (2)	APR-JUL	94	140	176	47	217	284	375
	APR-SEP	114	162	200	49	242	311	405

OWYHEE AND MALHEUR BASINS  
Reservoir Storage (1000 AF) - End of March

OWYHEE AND MALHEUR BASINS  
Watershed Snowpack Analysis - April 1, 2013

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
BEULAH RES	60.0	30.0	48.7	43.5	Owyhee	12	92	42
BULLY CREEK	30.0	16.2	20.5	23.8	Upper Malheur	4	36	36
OWYHEE	715.0	376.1	624.4	495.8	Jordan Creek	2	35	22
WARMSPRINGS	191.0	80.3	131.2	113.8	Bully Creek	0	0	0
					Willow Creek	2	69	55

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

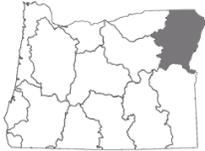
The average is computed for the 1981-2010 base period.

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For more information contact your local Natural Resources Conservation Service office:

Ontario - (541) 889-7637

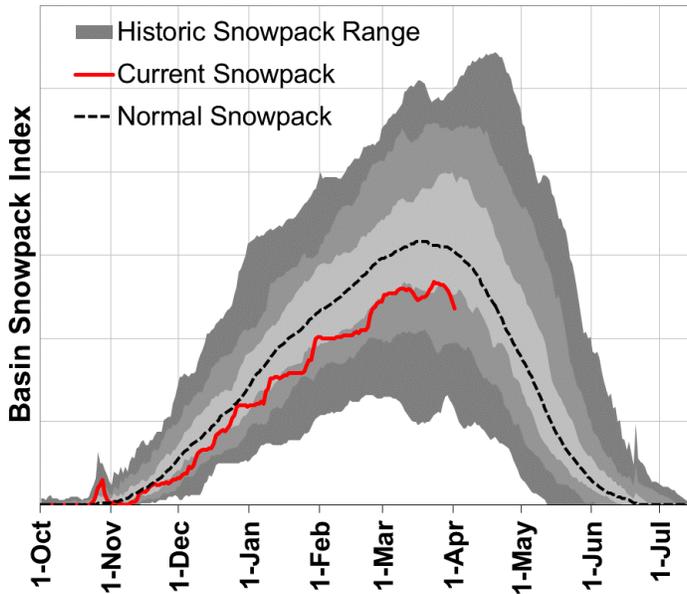
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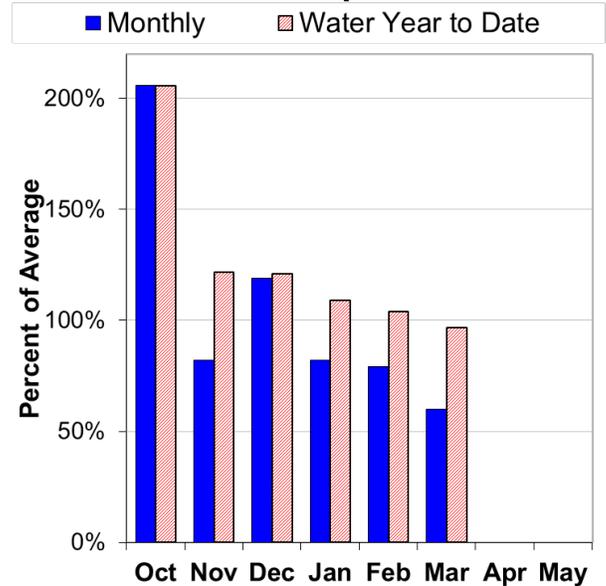
# Grande Ronde, Powder, Burnt and Imnaha Basins

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 77% of normal. This is significantly lower than last month when the snowpack was 87% of normal.

### PRECIPITATION

March precipitation was 60% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 97% of average.

### RESERVOIR

Reservoir storage across the basin is currently well below average. As of April 1, storage at published reservoirs was 80% of average and 54% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 68% to 91% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
 Enterprise- (541) 426-4588; Baker City - (541) 523-7121; LaGrande - (541) 963-4178  
 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

GRANDE RONDE, POWDER, BURNT AND IMNAHA BASINS  
Streamflow Forecasts - April 1, 2013

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)	
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (1000AF) (% AVG.)			30% (1000AF)
Burnt R nr Hereford (2)	APR-SEP	10.1	21	28	80	35	46	35	
Deer Ck nr Sumpter	APR-JUL	5.2	8.0	9.9	64	11.8	14.6	15.4	
Powder R nr Sumpter	APR-JUL	28	36	42	79	48	56	53	
	APR-SEP	27	36	42	78	48	57	54	
Wolf Ck Reservoir Inflow (2)	APR-JUN	5.7	8.9	11.0	70	13.1	16.3	15.8	
Pine Ck nr Oxbow	APR-JUL	65	90	107	68	124	149	157	
	APR-SEP	69	94	111	68	128	153	163	
Imnaha R at Imnaha	APR-JUL	159	198	225	88	250	290	255	
	APR-SEP	176	215	245	88	275	315	280	
Lostine R nr Lostine	APR-JUL	85	93	98	93	103	111	106	
	APR-SEP	90	99	105	91	111	120	115	
Bear Ck nr Wallowa	APR-SEP	48	55	59	91	63	70	65	
Catherine Ck nr Union	APR-JUL	41	49	54	90	59	67	60	
	APR-SEP	44	52	57	89	62	70	64	
Grande Ronde R at Troy (1)	APR-SEP	785	1060	1180	90	1300	1580	1310	

For more information contact your local Natural Resources Conservation Service office:  
Enterprise- (541) 426-4588; Baker City - (541) 523-7121; LaGrande - (541) 963-4178  
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GRANDE RONDE, POWDER, BURNT AND IMNAHA BASINS Reservoir Storage (1000 AF) - End of March					GRANDE RONDE, POWDER, BURNT AND IMNAHA BASINS Watershed Snowpack Analysis - April 1, 2013			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr Median	
		This Year	Last Year	Avg				
PHILLIPS LAKE	73.5	34.4	46.5	42.0	Upper Grande Ronde	9	75	81
THIEF VALLEY	17.4	13.7	13.7	15.5	Wallowa	4	79	84
UNITY	25.2	14.3	21.4	20.6	Imnaha	3	69	79
WALLOWA LAKE	37.5	21.7	19.2	17.0	Powder	10	72	71
WOLF CREEK		NO REPORT			Burnt	4	68	70

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

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

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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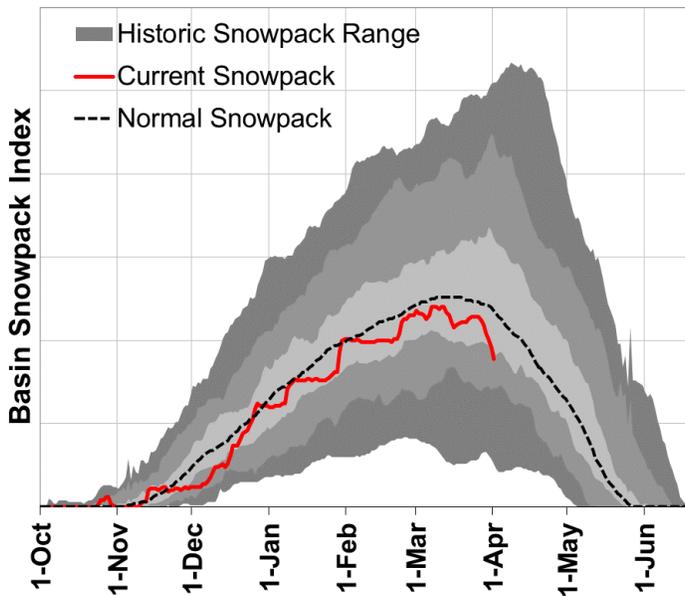
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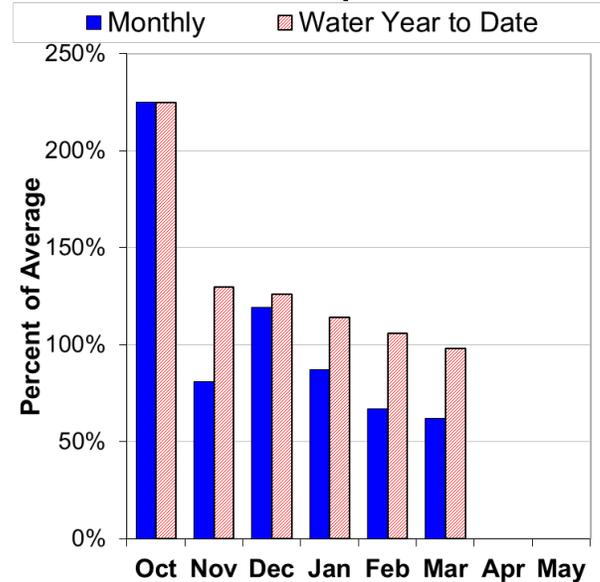
# Umatilla, Walla Walla, and Willow Basins

April 1, 2013

**Mountain Snowpack**



**Basin Precipitation**



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 75% of normal. This is significantly lower than last month when the snowpack was 98% of normal.

### PRECIPITATION

March precipitation was 62% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 98% of average.

### RESERVOIR

Reservoir storage across the basin is currently below average. As of April 1, storage at published reservoirs was 84% of average and 60% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 45% to 91% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
 Pendleton - (541) 278-8049; Heppner - (541) 676-5021; Condon - (541) 384-2671  
 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

UMATILLA, WALLA WALLA AND WILLOW BASINS  
Streamflow Forecasts - April 1, 2013

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)	
		90% (1000AF)		70% (1000AF)		50% (1000AF) (% AVG.)			30% (1000AF)
Butter Ck nr Pine City	APR-JUL	3.8	6.1	7.7	82	9.3	11.6	9.4	
	APR-SEP	4.1	6.5	8.1	83	9.7	12.1	9.8	
McKay Ck nr Pilot Rock	APR-SEP	4.0	7.1	14.0	45	21	31	31	
Rhea Ck nr Heppner	APR-JUL	1.4	4.0	5.8	82	7.6	10.2	7.1	
Umatilla R ab Meacham Ck nr Gibbon	APR-JUL	43	56	65	88	74	87	74	
	APR-SEP	48	61	70	88	79	92	80	
Umatilla R at Pendleton	APR-JUL	81	111	131	89	151	181	147	
	APR-SEP	85	115	136	89	157	187	153	
SF Walla Walla R nr Milton-Freewater	APR-JUL	39	45	49	91	53	59	54	
	APR-SEP	48	55	60	91	65	72	66	
Willow Ck ab Willow Ck Lake nr Heppn	APR-JUL	1.7	4.0	5.6	80	7.2	9.5	7.0	

UMATILLA, WALLA WALLA AND WILLOW BASINS  
Reservoir Storage (1000 AF) - End of March

UMATILLA, WALLA WALLA AND WILLOW BASINS  
Watershed Snowpack Analysis - April 1, 2013

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
COLD SPRINGS	44.6	26.0	23.8	33.7	Walla Walla	4	70	84
MCKAY	73.8	44.9	41.2	50.8	Umatilla	7	69	77
WILLOW CREEK	1.8	5.6	6.0	5.4	McKay Creek	4	41	45

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

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

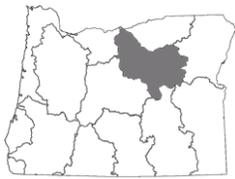
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For more information contact your local Natural Resources Conservation Service office:

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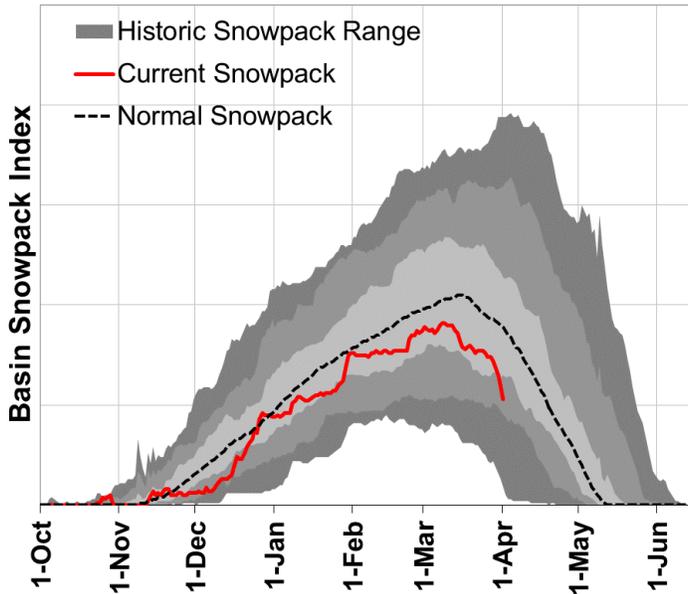
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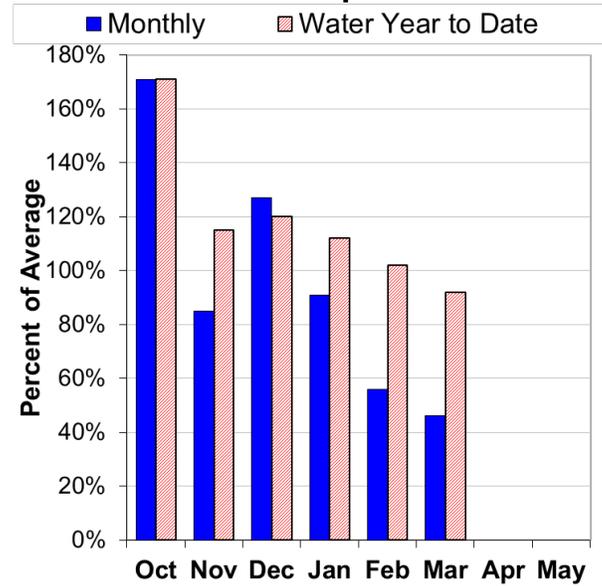
# John Day Basin

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 63% of normal. This is significantly lower than last month when the snowpack was 91% of normal.

### PRECIPITATION

March precipitation was 46% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 92% of average.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 65% to 82% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
John Day - (541) 575-0135

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

JOHN DAY BASIN  
Streamflow Forecasts - April 1, 2013

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	APR-JUL	2.8	4.3	5.3	65	6.3	7.8	8.1
	APR-SEP	3.1	4.6	5.7	65	6.8	8.3	8.8
Mountain Ck nr Mitchell	APR-JUL	1.2	2.3	3.1	65	3.9	5.0	4.8
	APR-SEP	1.3	2.4	3.2	65	4.0	5.2	4.9
Camas Ck nr Ukiah	APR-JUL	12.8	20	25	74	30	37	34
	APR-SEP	13.7	21	26	74	31	38	35
MF John Day R at Ritter	APR-JUL	56	80	96	79	112	136	121
	APR-SEP	59	83	100	79	117	141	126
NF John Day R at Monument	APR-JUL	305	405	475	82	545	645	580
	APR-SEP	315	420	490	82	560	665	600

JOHN DAY BASIN  
Reservoir Storage (1000 AF) - End of March

JOHN DAY BASIN  
Watershed Snowpack Analysis - April 1, 2013

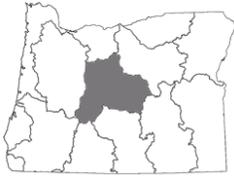
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
					North Fork John Day	7	69	67
					John Day above Kimberly	5	55	56

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

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

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

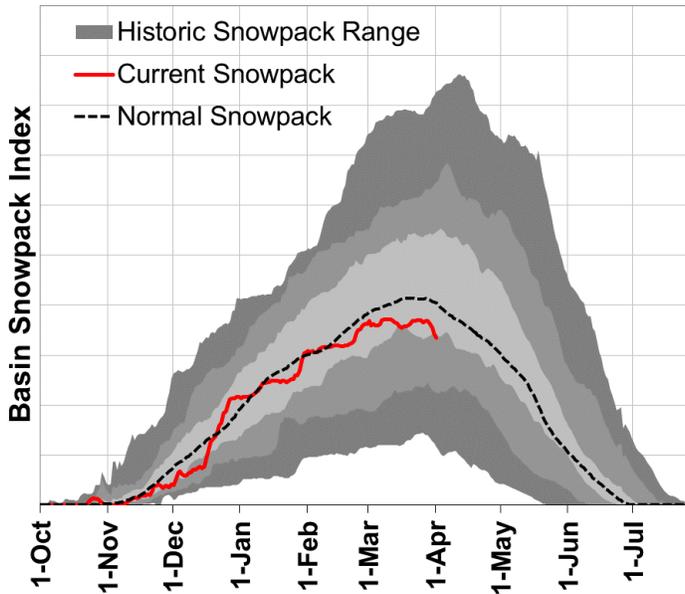
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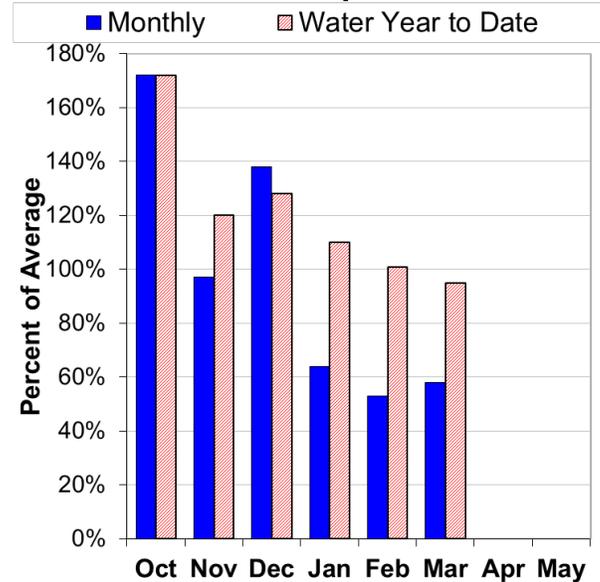
# Upper Deschutes and Crooked Basins

April 1, 2013

## Mountain Snowpack



## Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 84% of normal. This is significantly lower than last month when the snowpack was 93% of normal.

### PRECIPITATION

March precipitation was 58% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 95% of average.

### RESERVOIR

Reservoir storage across the basin is currently above average. As of April 1, storage at published reservoirs was 110% of average and 89% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 59% to 98% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should expect below average to near average streamflows for the coming summer.

For more information contact your local Natural Resources Conservation Service office:  
Redmond (541) 923-4358

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

UPPER DESCHUTES AND CROOKED BASINS  
Streamflow Forecasts - April 1, 2013

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Deschutes R bl Snow Ck nr La Pine	APR-JUL	14.2	21	25	83	29	36	30
	APR-SEP	31	39	44	85	49	57	52
Crane Prairie Reservoir Inflow (2)	APR-JUL	34	42	48	86	54	62	56
	APR-SEP	57	67	74	84	81	91	88
Crescent Ck nr Crescent (2)	APR-JUL	6.4	10.4	13.1	87	15.8	19.8	15.0
	APR-SEP	8.6	12.5	15.1	87	17.7	22	17.4
Little Deschutes R nr La Pine (2)	APR-JUL	37	45	50	79	55	63	63
	APR-SEP	40	48	54	78	60	68	69
Whychus Ck nr Sisters	APR-JUL	25	27	29	83	31	33	35
	APR-SEP	34	37	39	83	41	44	47
Prineville Reservoir Inflow (2)	APR-JUL	5.0	38	60	59	82	115	102
	APR-SEP	4.0	37	60	59	83	116	102
Ochoco Reservoir Inflow (2)	APR-JUL	4.4	10.8	15.2	72	19.6	26	21
	APR-SEP	4.1	10.3	14.6	73	18.9	25	20
Deschutes R at Benham Falls nr Bend	APR-JUL	295	305	315	98	325	335	320
	APR-SEP	450	465	475	98	485	500	485

For more information contact your local Natural Resources Conservation Service office:  
Redmond (541) 923-4358  
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

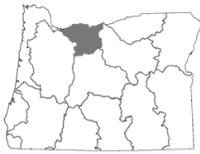
UPPER DESCHUTES AND CROOKED BASINS Reservoir Storage (1000 AF) - End of March					UPPER DESCHUTES AND CROOKED BASINS Watershed Snowpack Analysis - April 1, 2013			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Median
CRANE PRAIRIE	55.3	49.2	52.0	42.1	Crooked	3	77	64
CRESCENT LAKE	86.9	71.2	82.7	48.4	Little Deschutes	4	70	83
OCHOCO	47.5	29.5	37.3	30.2	Deschutes above Wickiup R	4	75	82
PRINEVILLE	153.0	134.9	136.8	130.4	Tumalo and Squaw Creeks	5	69	86
WICKIUP	200.0	199.1	200.7	189.2				

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

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

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

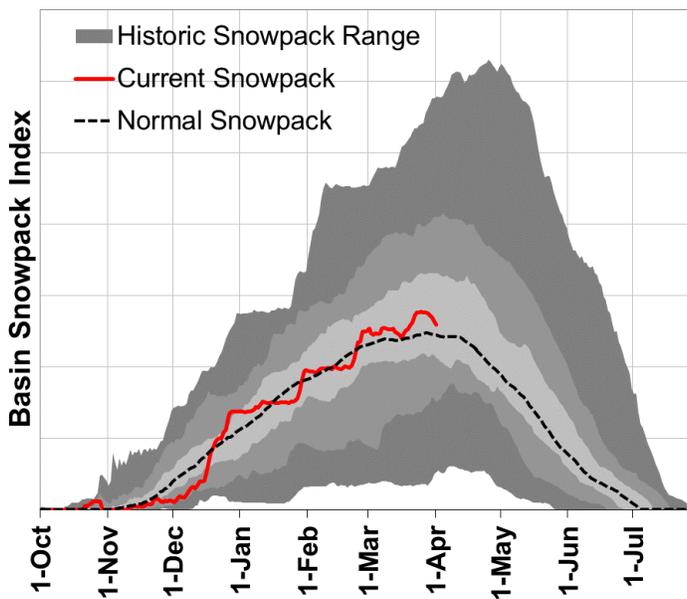
For more information contact your local Natural Resources Conservation Service office:  
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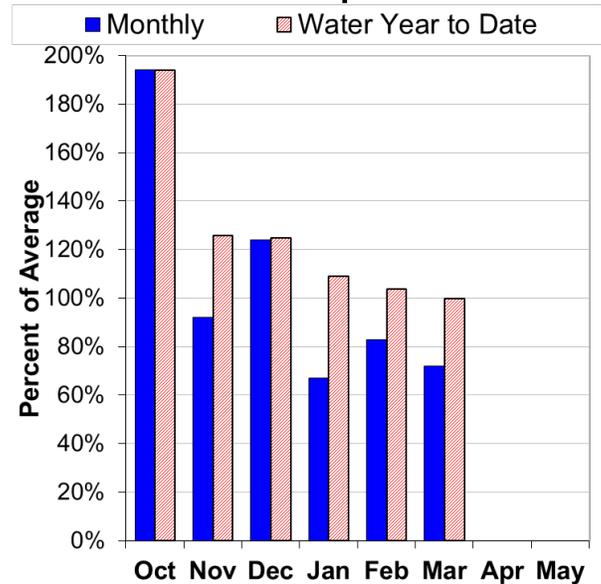
# Hood, Sandy, and Lower Deschutes Basins

April 1, 2013

**Mountain Snowpack**



**Basin Precipitation**



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 101% of normal. This is slightly lower than last month when the snowpack was 102% of normal.

### PRECIPITATION

March precipitation was 72% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 100% of average.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 85% to 94% of average. Overall, forecasts decreased slightly from last month's report. Water users in the basin should expect below average to slightly below average streamflows for the coming summer.

For more information contact your local Natural Resources Conservation Service office:  
The Dalles (541) 296-6178

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

HOOD, SANDY AND LOWER DESCHUTES BASINS  
Streamflow Forecasts - April 1, 2013

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90%		70%		50%			30%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)
WF Hood River nr Dee	APR-JUL	84	104	117	98	130	150	120		
Hood R At Tucker Bridge	APR-JUL	146	173	191	85	210	235	225		
	APR-SEP	176	205	225	85	245	275	265		
Sandy R nr Marmot	APR-JUL	230	270	295	95	320	360	310		
	APR-SEP	275	315	340	94	365	405	360		

HOOD, SANDY AND LOWER DESCHUTES BASINS  
Reservoir Storage (1000 AF) - End of March

HOOD, SANDY AND LOWER DESCHUTES BASINS  
Watershed Snowpack Analysis - April 1, 2013

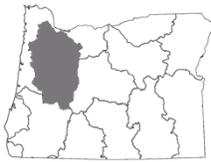
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
CLEAR LAKE (WASCO)	11.9	6.6	6.8	4.4	Hood River	7	72	92
					Mile Creeks	2	67	83
					White River	6	65	84

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

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

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

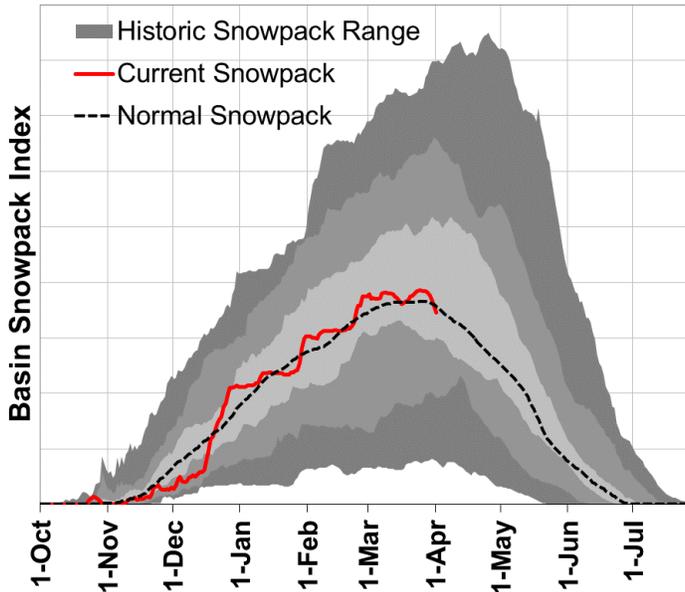
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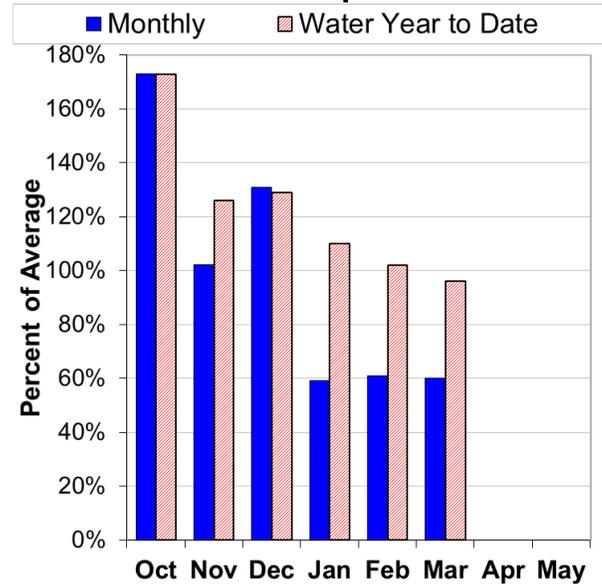
# Willamette Basin

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 101% of normal. This is significantly lower than last month when the snowpack was 113% of normal.

### PRECIPITATION

March precipitation was 60% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 96% of average.

### RESERVOIR

Reservoir storage across the basin is currently slightly below average. As of April 1, storage at published reservoirs was 97% of average and 87% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 90% to 105% of average. Overall, forecasts decreased slightly from last month's report. Water users in the basin should expect slightly below average to near average streamflows for the coming summer.

For more information contact your local Natural Resources Conservation Service office:

Eugene - (541) 465-6436; Portland - (503) 231-2270; Tangent - (541) 967-5925; Oregon City - (503) 656-3499;

Hillsboro - (503) 648-3174; McMinnville - (503) 472-1474

Salem - (503) 399-5746; Dallas - (503) 623-5534

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

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WILLAMETTE BASIN  
Streamflow Forecasts - April 1, 2013

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Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Oak Grove Fork Of Clackamas	APR-JUL	93	106	115	100	124	137	115
	APR-SEP	129	144	155	100	166	181	155
Clackamas R ab Three Lynx	APR-JUL	350	405	440	98	475	530	450
	APR-SEP	425	480	520	97	560	615	535
Clackamas R at Estacada	APR-JUL	465	545	600	96	655	735	625
	APR-SEP	555	640	695	95	750	835	730
Detroit Lake Inflow (1,2)	APR-JUN	305	400	440	94	480	575	470
	APR-JUL	355	455	500	94	545	645	530
	APR-SEP	435	535	585	96	635	735	610
Little North Santiam R nr Mehama (1)	APR-JUL	65	107	126	95	145	187	133
	APR-SEP	73	115	134	95	153	195	141
North Santiam R at Mehama (1,2)	APR-JUN	440	560	615	93	670	790	665
	APR-JUL	505	630	690	93	750	875	740
	APR-SEP	590	725	785	94	845	980	840
Green Peter Lake Inflow (1,2)	APR-JUN	154	240	280	106	320	405	265
	APR-JUL	164	255	295	105	335	425	280
	APR-SEP	180	270	310	105	350	440	295
Foster Lake Inflow (1,2)	APR-JUN	395	460	490	98	520	585	500
	APR-JUL	275	445	520	98	595	765	530
	APR-SEP	305	475	550	97	625	795	565
South Santiam R at Waterloo (2)	APR-JUL	295	420	505	91	590	715	555
	APR-SEP	335	455	540	92	625	745	590
McKenzie R bl Trail Bridge (2)	APR-JUL	205	230	245	94	260	285	260
	APR-SEP	280	305	325	94	345	370	345
Cougar Lake Inflow (1,2)	APR-JUN	128	162	178	96	194	230	185
	APR-JUL	146	182	198	97	215	250	205
	APR-SEP	173	210	225	96	240	275	235

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For more information contact your local Natural Resources Conservation Service office:  
 Eugene - (541) 465-6436; Portland - (503) 231-2270; Tangent - (541) 967-5925; Oregon City - (503) 656-3499; Hillsboro - (503) 648-3174; McMinnville - (503) 472-1474  
 Salem - (503) 399-5746; Dallas - (503) 623-5534  
 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

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WILLAMETTE BASIN  
Streamflow Forecasts - April 1, 2013

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Forecast Point	Forecast Period	<<===== Drier =====>>		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Blue Lake Inflow (1,2)	APR-JUN	38	62	73	91	84	108	80
	APR-JUL	39	64	75	89	86	111	84
	APR-SEP	42	66	77	90	88	112	86
McKenzie R nr Vida (1,2)	APR-JUN	590	730	795	96	860	1000	830
	APR-JUL	715	865	935	96	1000	1150	970
	APR-SEP	920	1090	1160	98	1230	1400	1190
Hills Creek Reservoir Inflow (1,2)	APR-JUN	142	200	230	94	260	320	245
	APR-JUL	167	230	260	95	290	355	275
	APR-SEP	205	270	300	95	330	395	315
MF Willamette R bl NF (1,2)	APR-JUN	370	520	590	94	660	810	625
	APR-JUL	420	580	655	94	730	890	695
	APR-SEP	405	635	740	94	845	1080	790
Lookout Point Lake Inflow (1,2)	APR-JUN	370	535	610	94	685	850	650
	APR-JUL	425	600	680	94	760	935	725
	APR-SEP	515	700	785	95	870	1060	825
Fall Creek Lake Inflow (1,2)	APR-JUN	53	85	99	96	113	145	103
	APR-JUL	56	90	105	96	120	154	109
	APR-SEP	52	92	111	98	130	170	113
Cottage Grove Lake Inflow (1,2)	APR-JUN	10.2	29	38	95	47	66	40
	APR-JUL	12.4	30	38	93	46	64	41
	APR-SEP	12.2	32	41	95	50	70	43
Dorena Lake Inflow (1,2)	APR-JUN	42	96	120	92	144	198	130
	APR-JUL	46	100	125	92	150	205	136
	APR-SEP	52	106	130	94	154	210	139
Scoggins Ck nr Gaston (2)	APR-JUL	3.7	8.5	11.8	89	15.1	19.9	13.2
Willamette R at Salem (1,2)	APR-JUL	2310	3590	4180	97	4770	6050	4310
	APR-SEP	2680	3990	4580	97	5170	6480	4730

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For more information contact your local Natural Resources Conservation Service office:

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Salem - (503) 399-5746; Dallas - (503) 623-5534

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

WILLAMETTE BASIN Reservoir Storage (1000 AF) - End of March					WILLAMETTE BASIN Watershed Snowpack Analysis - April 1, 2013			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Median
BLUE RIVER	85.5	63.7	69.1	56.3	Clackamas	5	55	91
COTTAGE GROVE	29.8	21.2	20.7	19.2	McKenzie	7	67	93
COUGAR	155.2	93.9	145.4	117.3	Row River	1	89	97
DETROIT	300.7	286.1	390.4	335.5	Santiam	6	66	114
DORENA	70.5	50.0	52.4	44.2	Middle Fork Willamette	7	81	90
FALL CREEK	115.5	72.3	92.3	81.3				
FERN RIDGE	109.6	46.3	96.6	73.0				
FOSTER	29.7	34.7	39.3	---				
GREEN PETER	268.2	340.0	350.1	---				
HILLS CREEK	200.2	187.5	244.3	202.8				
LOOKOUT POINT	337.0	286.9	381.6	---				
TIMOTHY LAKE	61.7	52.6	54.1	52.7				
HENRY HAGG LAKE	53.0	46.9	51.0	50.0				

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

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

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

For more information contact your local Natural Resources Conservation Service office:  
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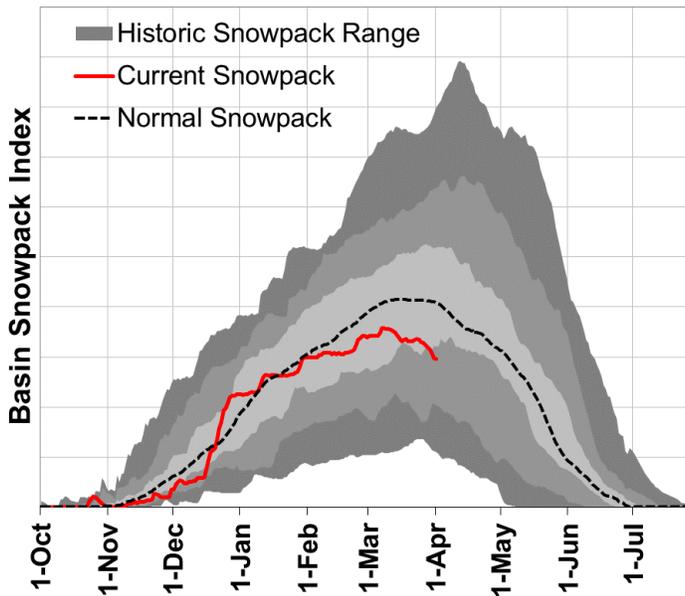
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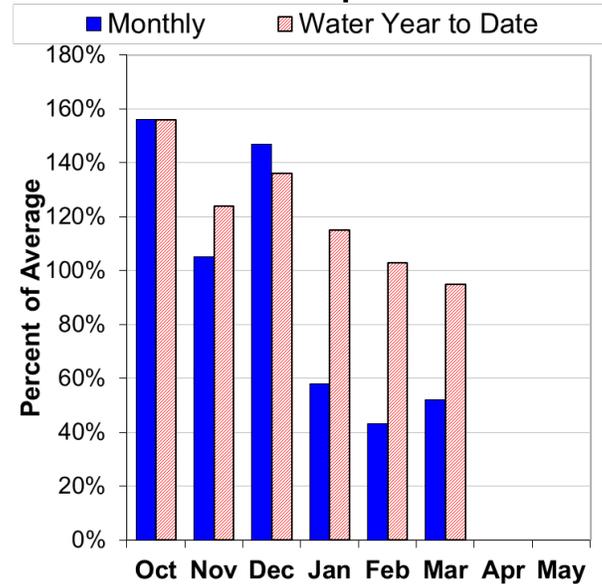
# Rogue and Umpqua Basins

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 78% of normal. This is significantly lower than last month when the snowpack was 91% of normal.

### PRECIPITATION

March precipitation was 52% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 95% of average.

### RESERVOIR

Reservoir storage across the basin is currently slightly above average. As of April 1, storage at published reservoirs was 103% of average and 74% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 80% to 105% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should expect below average to near average streamflows for the coming summer.

For more information contact your local Natural Resources Conservation Service office:  
 Roseburg - (541) 673-8316; Medford - (541) 776-4267  
 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

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ROGUE AND UMPQUA BASINS  
Streamflow Forecasts - April 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)	
Cow Ck nr Azalea (2)	APR-JUL	5.4	11.4	15.5	105	19.6	26	14.7
	APR-SEP	6.3	12.5	16.7	105	21	27	15.9
North Umpqua R at Winchester	APR-JUL	525	665	760	98	855	995	775
	APR-SEP	635	780	875	98	970	1110	890
South Umpqua R at Tiller	APR-JUL	111	160	194	101	230	275	193
	APR-SEP	121	171	205	103	240	290	200
South Umpqua R nr Brockway	APR-JUL	197	320	400	103	480	605	390
	APR-SEP	220	340	425	104	510	630	410
Hyatt Prairie Reservoir Inflow (2)	APR-JUL	0.0	1.4	2.4	67	3.4	4.8	3.6
Lost Creek Lake Inflow (2)	APR-JUL	370	425	460	89	495	550	520
	APR-SEP	470	535	575	89	615	680	645
Rogue R at Raygold (2)	APR-JUL	385	505	585	87	665	785	675
	APR-SEP	500	625	710	88	795	920	805
Rogue R at Grants Pass (2)	APR-JUL	395	530	625	86	720	855	725
	APR-SEP	480	630	730	86	830	980	845
Applegate Lake Inflow (2)	APR-JUL	56	74	87	80	100	118	109
	APR-SEP	60	79	92	80	105	124	115
Sucker Ck bl Ltl Grayback Ck nr Holl	APR-JUL	26	41	51	93	61	76	55
	APR-SEP	30	45	55	93	65	80	59
Illinois R at Kerby	APR-JUL	72	133	175	93	215	280	188
	APR-SEP	77	138	180	93	220	285	193

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For more information contact your local Natural Resources Conservation Service office:  
Roseburg - (541) 673-8316; Medford - (541) 776-4267  
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>

ROGUE AND UMPQUA BASINS Reservoir Storage (1000 AF) - End of March					ROGUE AND UMPQUA BASINS Watershed Snowpack Analysis - April 1, 2013			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Median
APPLEGATE	75.2	37.6	55.5	44.0	Applegate	5	84	78
EMIGRANT LAKE	39.0	33.2	35.6	33.6	Bear Creek	5	87	81
FISH LAKE	8.0	5.0	6.2	5.2	Little Butte Creek	6	60	70
FOURMILE LAKE	16.1	8.9	13.0	7.5	Illinois	2	51	71
HOWARD PRAIRIE	60.0	41.6	44.8	41.9	North Umpqua	9	66	99
HYATT PRAIRIE	16.1	14.5	15.1	12.1	Rogue River above Grants	21	73	79
LOST CREEK	315.0	280.8	284.8	---				

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

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

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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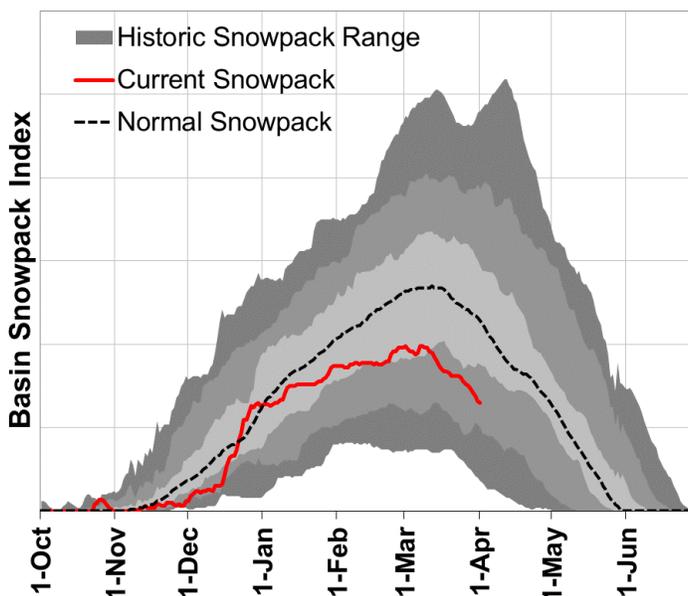
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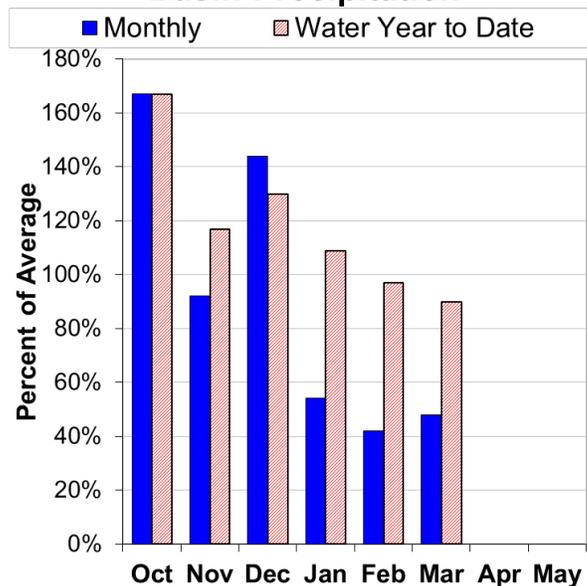
# Klamath Basin

April 1, 2013

## Mountain Snowpack



## Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 67% of normal. This is significantly lower than last month when the snowpack was 79% of normal.

### PRECIPITATION

March precipitation was 48% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 90% of average.

### RESERVOIR

Reservoir storage across the basin is currently well below average. As of April 1, storage at published reservoirs was 72% of average and 48% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 49% to 65% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for well below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
Klamath Falls - (541) 883-6932

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

KLAMATH BASIN  
Streamflow Forecasts - April 1, 2013

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)	
Clear Lake Inflow (2)	APR-JUL	1.0	7.7	18.0	56	30	47	32
	APR-SEP	1.0	11.5	22	63	32	48	35
Gerber Res Inflow (2)	APR-JUL	0.1	2.1	6.6	47	11.9	19.1	14.0
	APR-SEP	0.4	2.7	7.0	49	12.3	19.4	14.4
Sprague R nr Chiloquin	APR-JUL	66	94	113	60	134	162	188
	APR-SEP	82	112	132	63	152	182	210
Williamson R bl Sprague R nr Chiloqu	APR-JUL	125	158	180	61	202	235	295
	APR-SEP	171	206	230	65	254	289	355
Upper Klamath Lk Inflow (1)	APR-JUL	137	204	235	59	266	333	400
	APR-SEP	184	257	290	61	323	396	475

KLAMATH BASIN Reservoir Storage (1000 AF) - End of March					KLAMATH BASIN Watershed Snowpack Analysis - April 1, 2013			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
CLEAR LAKE (CALIF)	513.3	102.1	124.1	248.9	Lost	2	58	0
GERBER	94.3	44.4	56.9	62.5	Sprague	5	51	56
UPPER KLAMATH LAKE	523.7	400.1	481.4	448.2	Upper Klamath Lake	7	66	65
					Williamson River	5	62	71

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

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

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For more information contact your local Natural Resources Conservation Service office:

Klamath Falls - (541) 883-6932

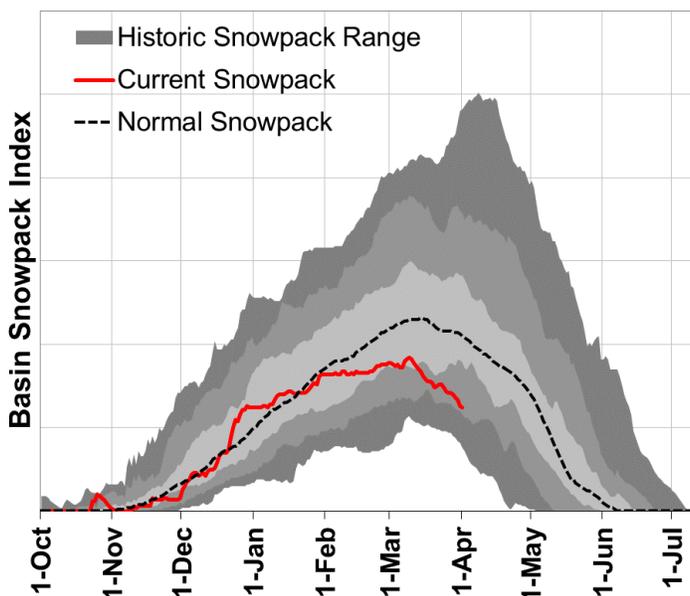
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



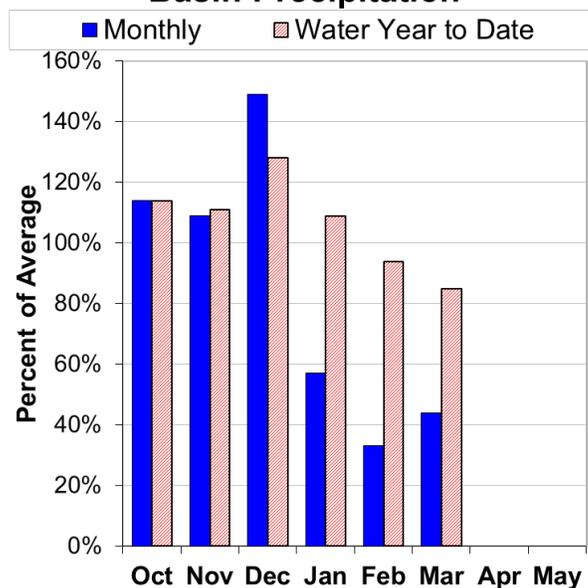
# Lake County and Goose Lake

April 1, 2013

### Mountain Snowpack



### Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 55% of normal. This is significantly lower than last month when the snowpack was 78% of normal.

### PRECIPITATION

March precipitation was 44% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 85% of average.

### RESERVOIR

Reservoir storage across the basin is currently above average. As of April 1, storage at published reservoirs was 109% of average and 73% percent of capacity.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 52% to 56% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for well below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
Lakeview - (541) 947-2202

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

LAKE COUNTY AND GOOSE LAKE BASINS  
Streamflow Forecasts - April 1, 2013

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)	
Twentymile Ck nr Adel	APR-JUL	0.7	3.2	8.8	52	14.4	23	17.0
	APR-SEP	1.2	3.5	9.1	52	14.7	23	17.4
Deep Ck ab Adel	APR-JUL	16.5	27	34	54	41	51	63
	APR-SEP	18.2	29	36	55	43	54	65
Honey Ck nr Plush	APR-JUL	1.4	5.0	7.5	54	10.0	13.6	14.0
	APR-SEP	1.5	5.1	7.6	54	10.1	13.7	14.1
Chewaucan R nr Paisley	APR-JUL	22	32	39	55	46	56	71
	APR-SEP	25	35	42	56	49	59	75

LAKE COUNTY AND GOOSE LAKE BASINS  
Reservoir Storage (1000 AF) - End of March

LAKE COUNTY AND GOOSE LAKE BASINS  
Watershed Snowpack Analysis - April 1, 2013

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Median
COTTONWOOD	8.7	6.6	5.4	6.3	Chewaucan River	3	65	73
DREWS	63.0	45.9	50.4	42.0	Deep Creek	1	34	25
					Drew Creek	2	6	8
					Honey Creek	1	34	25
					Silver Creek (Lake Co.)	4	46	56
					Twentymile Creek	1	34	25

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

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

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

For more information contact your local Natural Resources Conservation Service office:

Lakeview - (541) 947-2202

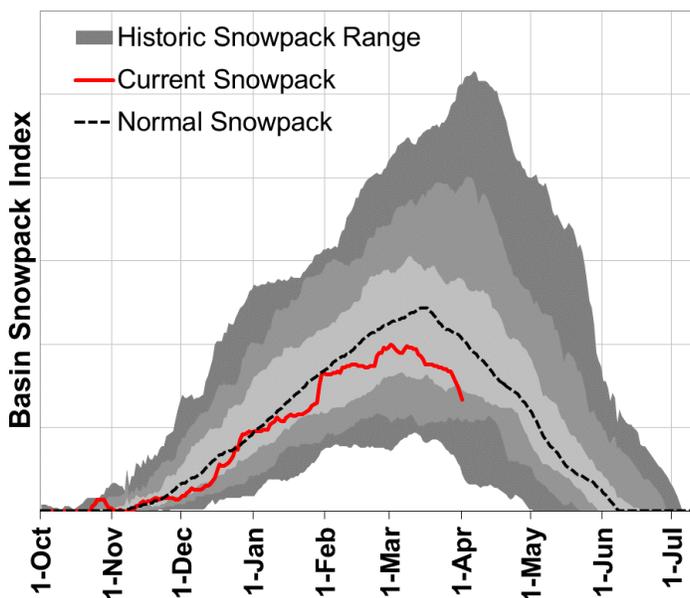
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



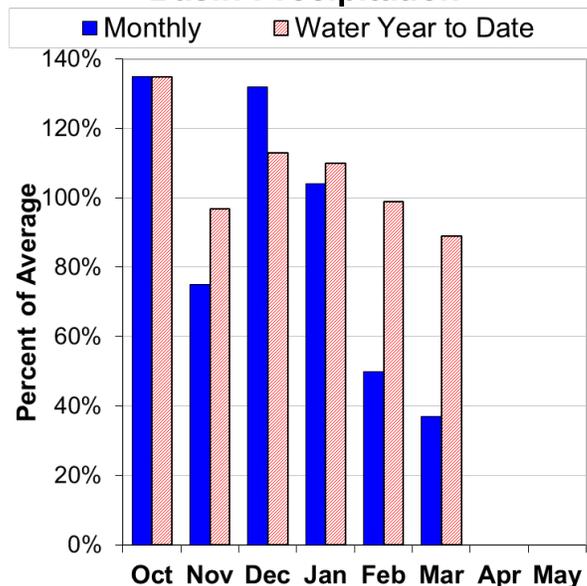
# Harney Basin

April 1, 2013

## Mountain Snowpack



## Basin Precipitation



## Summary of Water Supply Conditions

### SNOWPACK

As of April 1, the basin snowpack was 65% of normal. This is significantly lower than last month when the snowpack was 89% of normal.

### PRECIPITATION

March precipitation was 37% of average. Precipitation since the beginning of the water year (October 1 - April 1) has been 89% of average.

### STREAMFLOW FORECAST

April through September streamflow forecasts in the basin range from 33% to 77% of average. Overall, forecasts decreased significantly from last month's report. Water users in the basin should prepare for well below average streamflows this summer.

For more information contact your local Natural Resources Conservation Service office:  
Hines - (541) 573-6446

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

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HARNEY BASIN  
Streamflow Forecasts - April 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)	
Silvies R nr Burns	APR-JUL	0.5	11.3	29	33	47	73	89
	APR-SEP	1.0	11.9	30	33	48	75	92
Donner Und Blitzen R nr Frenchglen	APR-JUL	25	39	48	77	57	71	62
	APR-SEP	28	42	52	77	62	76	68
Trout Ck nr Denio	APR-JUL	0.2	2.7	4.5	59	6.3	8.8	7.6
	APR-SEP	0.4	3.0	4.8	60	6.6	9.2	8.0

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HARNEY BASIN  
Reservoir Storage (1000 AF) - End of March

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Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

=====

HARNEY BASIN  
Watershed Snowpack Analysis - April 1, 2013

=====

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Median
Donner und Blitzen River	2	127	87
Silver Creek (Harney Co.)	2	61	59
Silvies River	5	44	44
Trout Creek	2	144	98

=====

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

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

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

For more information contact your local Natural Resources Conservation Service office:

Hines - (541) 573-6446

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

# Recession Flow Forecasts

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

<b>OWYHEE AND MALHEUR BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Owyhee R nr Rome	2000 cfs	Observed March 19th			<b>May 6</b>
Owyhee R nr Rome	1000 cfs	Observed April 24th			<b>May 18</b>
Owyhee R nr Rome	500 cfs	April 5	April 7	April 15	<b>June 2</b>

<b>JOHN DAY BASIN</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
John Day R at Service Creek	Average Daily Flow on Aug. 1st	20	193	400	<b>271</b>

<b>UPPER DESCHUTES AND CROOKED BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Crane Prairie Inflow*	Date of Peak	May 4*	May 20*	June 5*	<b>May 25</b>
Crane Prairie Inflow	Peak Flow	210	340	470	<b>403</b>
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	176	210	245	<b>269</b>
Prineville Reservoir Inflow	113 cfs	May 1	May 22	June 12	<b>June 3</b>
Prineville Reservoir Inflow	75 cfs	May 8	May 29	June 19	<b>June 11</b>
Prineville Reservoir Inflow	50 cfs	May 14	June 6	June 29	<b>June 19</b>
Whychus Creek nr Sisters	100 cfs	July 15	August 7	Sept 1	<b>August 16</b>

<b>ROGUE AND UMPQUA BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
South Umpqua R nr Brockway	90 cfs	July 23	August 7	August 22	<b>August 8</b>
South Umpqua R at Tiller	140 cfs	June 21	July 11	August 2	<b>July 11</b>
South Umpqua R at Tiller	90 cfs	July 10	July 31	August 22	<b>August 1</b>
South Umpqua R at Tiller	60 cfs	July 28	August 23	Sept 16	<b>August 28</b>

<b>LAKE COUNTY AND GOOSE LAKE BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Deep Ck ab Adel	100 cfs	May 17	June 3	June 20	<b>June 17</b>
Honey Ck nr Plush	100 cfs	March 28	April 28	May 29	<b>May 16</b>
Honey Ck nr Plush	50 cfs	April 12	May 9	June 5	<b>June 4</b>
Twentymile Ck nr Adel	50 cfs	April 7	May 5	June 2	<b>May 30</b>
Twentymile Ck nr Adel	10 cfs	June 3	June 23	July 13	<b>July 20</b>

<b>HARNEY BASIN</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE</i> ----- <i>CHANCE OF EXCEEDING</i> ----- -----			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Silvies R nr Burns	400 cfs	April 8	April 29	May 20	<b>May 21</b>
	200 cfs	April 17	May 10	June 2	<b>June 2</b>
	100 cfs	April 29	May 23	June 16	<b>June 13</b>
	50 cfs	May 20	June 15	July 11	<b>July 3</b>
Donner Und Blitzen R nr Frenchglen	200 cfs	May 22	June 10	June 29	<b>June 20</b>
Donner Und Blitzen R nr Frenchglen	100 cfs	June 14	June 30	July 16	<b>July 9</b>

# Summary of Snowpack Data

## April 2013

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	MEDIAN 81-10
<b>Oregon</b>						
ALTHOUSE #3	5000	4/02/13	21	8.8	14.0	11.5
ANEROID LAKE SNOTEL	7400	4/01/13	59	20.1	23.7	24.1
ANNIE SPRING SNOTEL	6010	4/01/13	72	29.6	36.9	41.0
ANTHONY LAKE (REV)	7130	4/01/13	61	23.6	27.5	--
ARBUCKLE MTN SNOTEL	5770	4/01/13	34	13.9	14.6	18.8
BALD PETER	5400	4/02/13	50	20.2	40.0	31.4
BARNEY CREEK (NEW)	5840	3/28/13	20	6.2	6.9	--
BEAR GRASS SNOTEL	4720	4/01/13	95	44.7	58.4	--
BEAVER CREEK #1	4250	4/01/13	23	9.0	17.4	--
BEAVER CREEK #2	4250	4/01/13	9	3.4	10.2	6.8
BEAVER DAM CREEK	5100	4/01/13	21	10.0	10.3	8.0
BEAVER RES. SNOTEL	5150	4/01/13	19	8.1	12.0	8.6
BIG RED MTN SNOTEL	6050	4/01/13	54	22.4	26.8	27.8
BIGELOW CAMP SNOTEL	5130	4/01/13	10	7.0	17.0	10.8
BILLIE CK DVD SNOTEL	5280	4/01/13	28	12.0	22.0	21.2
BLAZED ALDER SNOTEL	3650	4/01/13	77	33.8	41.2	25.6
BLUE MTN SPGS SNOTEL	5870	4/01/13	17	7.0	17.0	15.9
BOURNE SNOTEL	5850	4/01/13	23	9.7	13.3	14.7
BOWMAN SPRNGS SNOTEL	4530	4/01/13	0	.8	5.3	5.5
CALIBAN ALT	6500	3/28/13	66	26.4	26.4	30.6
CAMAS CREEK #3	5850	3/29/13	8	2.8	8.3	11.0
CASCADE SUM. SNOTEL	5100	4/01/13	66	25.7	34.6	31.0
CHEMULT ALT SNOTEL	4850	4/01/13	0	.0	7.6	2.5
CLACKAMAS LK. SNOTEL	3400	4/01/13	17	6.8	16.1	8.6
CLEAR LAKE SNOTEL	3810	4/01/13	22	8.3	16.4	10.4
COLD SPRINGS SNOTEL	5940	4/01/13	38	16.3	29.0	28.8
COUNTY LINE SNOTEL	4830	4/01/13	0	.0	.0	.5
CRAZYMAN FLAT SNOTEL	6180	4/01/13	14	7.4	16.8	13.1
DALY LAKE SNOTEL	3690	4/01/13	25	10.4	19.9	7.7
DEADWOOD JUNCTION	4600	4/01/13	6	2.9	8.2	3.0
DERR SNOTEL	5850	4/01/13	26	11.1	12.8	12.0
DIAMOND LAKE SNOTEL	5280	4/01/13	14	8.0	18.1	10.2
DOOLEY MOUNTAIN	5430	3/28/13	13	4.4	6.4	8.0
EILERTSON SNOTEL	5510	4/01/13	12	4.2	6.2	6.7
ELDORADO PASS	4600	3/28/13	0	.0	.0	.0
EMIGRANT SPGS SNOTEL	3800	4/01/13	0	.0	.0	.0
FISH CREEK SNOTEL	7660	4/01/13	48	28.6	19.8	27.4
FISH LK. SNOTEL	4660	4/01/13	20	8.3	13.3	6.8
FOURMILE LAKE SNOTEL	5970	4/01/13	33	14.0	26.2	28.9
GERBER RES SNOTEL	4890	4/01/13	0	.0	.0	.0
GOLD CENTER SNOTEL	5410	4/01/13	9	4.2	8.8	3.9
GREENPOINT SNOTEL	3310	4/01/13	26	10.2	18.3	15.6
HIGH PRAIRIE	6100	3/28/13	85	34.8	52.7	42.2
HIGH RIDGE SNOTEL	4920	4/01/13	49	19.2	24.9	20.7
HOGG PASS SNOTEL	4790	4/01/13	49	18.9	32.0	26.0
HOLLAND MDWS SNOTEL	4930	4/01/13	41	20.4	23.0	21.1
HOWARD PRAIRIE	4500	4/01/13	6	3.3	4.1	4.2
HUNGRY FLAT	4400	3/28/13	0	.0	.0	.0
IRISH-TAYLOR SNOTEL	5540	4/01/13	74	27.7	37.3	37.2
JUMP OFF JOE SNOTEL	3520	4/01/13	32	12.0	15.0	7.8
KING MTN #1	4500	3/29/13	23	9.6	11.8	3.2
KING MTN #2 SNOTEL	4340	4/01/13	13	8.3	8.0	.5
KING MTN #3	3650	3/29/13	0	.0	.0	.0
KING MTN #4	3050	3/29/13	0	.0	.0	.0
LAKE CK R.S. SNOTEL	5240	4/01/13	4	2.0	8.3	8.6
LITTLE ALPS	6200	4/01/13	34	11.7	13.4	13.6
LITTLE ANTONE (ALT)	5000	4/01/13	12	4.0	6.8	6.8

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	MEDIAN 81-10
<b>Oregon (continued)</b>						
LITTLE MEADOW SNOTEL	4020	4/01/13	63	29.3	36.0	23.3
LUCKY STRIKE SNOTEL	4970	4/01/13	4	1.9	7.5	6.2
MADISON BUTTE SNOTEL	5150	4/01/13	0	.9	2.6	1.2
MARION FORKS SNOTEL	2590	4/01/13	18	9.3	17.3	5.4
MARY'S PEAK REV	3620	4/01/13	30	14.0	23.4	2.5
MCKENZIE SNOTEL	4770	4/01/13	74	35.3	50.3	37.4
MEACHAM	4300	3/29/13	10	4.2	4.0	3.7
MILKSHAKES SNOTEL	5580	4/01/13	86	37.6	46.1	--
MILL CREEK MDW	4400	3/28/13	26	9.3	13.4	10.8
MILLER WOODS SNOTEL	420	4/01/13	0	.0	.0	--
MOSS SPRINGS SNOTEL	5760	4/01/13	54	22.3	23.7	25.1
MT ASHLAND SWBK.	6400	3/28/13	62	26.1	26.0	32.4
MT HOOD	5370	3/29/13	126	57.0	68.8	58.0
MT HOOD TEST SNOTEL	5370	4/01/13	120	51.2	65.9	60.2
MT HOWARD SNOTEL	7910	4/01/13	39	15.2	22.1	15.5
MUD RIDGE SNOTEL	4070	4/01/13	58	23.0	31.5	23.4
NEW CRESCENT SNOTEL	4910	4/01/13	19	2.3	8.4	5.4
NEW DUTCHMAN #3	6320	3/28/13	99	41.9	53.4	44.8
NORTH FK RES SNOTEL	3060	4/01/13	68	29.0	33.3	14.4
NORTH UMPQUA	4220	4/02/13	7	2.3	8.4	5.4
OCHOCO MEADOW SNOTEL	5430	4/01/13	8	3.2	8.2	9.5
PARK H.Q. REV	6550	4/01/13	100	45.2	53.8	59.6
PEAVINE RIDGE SNOTEL	3420	4/01/13	24	11.4	20.1	8.9
QUARTZ MTN SNOTEL	5720	4/01/13	1	.1	.4	.0
RACING CREEK	4800	4/02/13	28	11.6	16.4	13.6
R.R. OVERPASS SNOTEL	2680	4/01/13	0	.0	.0	.0
RED BUTTE #1	4560	3/28/13	37	15.0	16.7	7.2
RED BUTTE #2	4000	3/28/13	0	.0	2.0	1.0
RED BUTTE #3	3500	3/28/13	0	.0	2.2	.0
RED BUTTE #4	3000	3/28/13	0	.0	.0	.0
RED HILL SNOTEL	4410	4/01/13	84	43.0	60.8	45.7
ROARING RIVER SNOTEL	4950	4/01/13	50	24.8	35.2	26.0
ROCK SPRINGS SNOTEL	5290	4/01/13	0	.2	.0	.9
SADDLE MTN SNOTEL	3110	4/01/13	0	.0	6.8	--
SALT CK FALLS SNOTEL	4220	4/01/13	40	19.2	19.8	17.5
SANTIAM JCT. SNOTEL	3740	4/01/13	24	11.7	19.0	9.8
SCHNEIDER MDW SNOTEL	5400	4/01/13	43	16.8	29.3	26.5
SEINE CREEK SNOTEL	2060	4/01/13	0	.0	.0	.0
SEVENMILE MARSH SNTL	5700	4/01/13	44	16.8	24.1	31.8
SILVER BURN	3720	4/01/13	16	7.2	9.5	7.5
SILVER CREEK SNOTEL	5740	4/01/13	0	.7	9.5	7.2
SILVIES SNOTEL	6990	4/01/13	22	8.7	9.5	15.6
SISKIYOU SUMMIT REV	4630	3/28/13	9	4.2	10.2	2.5
SKI BOWL ROAD	6000	3/28/13	41	16.0	19.8	23.6
SMITH RIDGE SNOTEL	3330	4/01/13	0	2.1	4.8	--
SNOW MTN SNOTEL	6220	4/01/13	23	7.2	7.0	12.2
SF BULL RUN SNOTEL	2690	4/01/13	22	9.2	10.9	.0
STARR RIDGE SNOTEL	5250	4/01/13	0	.0	4.8	.0
STRAWBERRY SNOTEL	5770	4/01/13	0	.0	1.3	1.2
SUMMER RIM SNOTEL	7080	4/01/13	39	14.0	15.8	16.4
SUMMIT LAKE SNOTEL	5610	4/01/13	80	34.7	39.1	37.1
SUN PASS SNOTEL	5400	4/01/13	10	5.2	19.6	--
SWAN LAKE MTN SNOTEL	6830	4/01/13	32	13.9	22.7	--
TANGENT	5400	3/28/13	30	12.4	26.8	18.1
TAYLOR BUTTE SNOTEL	5030	4/01/13	1	.2	6.4	3.0
TAYLOR GREEN SNOTEL	5740	4/01/13	41	13.6	20.3	19.6
THREE CK MEAD SNOTEL	5690	4/01/13	34	12.2	18.0	18.4
TIPTON SNOTEL	5150	4/01/13	20	7.8	9.0	11.6
TOKETEE AIRSTRIP SN	3240	4/01/13	0	.0	.0	.0
TOLLGATE	5070	3/29/13	58	22.2	33.8	25.6
TRAP CREEK	3800	4/02/13	13	4.7	10.8	4.5
WOLF CREEK SNOTEL	5630	4/01/13	36	12.1	12.7	16.8

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	MEDIAN 81-10
<b>California</b>						
ADIN MOUNTAIN	6350	4/02/13	9	3.7	6.2	12.2
ADIN MTN SNOTEL	6190	4/01/13	3	1.3	6.8	11.3
BLUE LAKE RANCH	6800	3/29/13	11	4.3	2.2	8.7
CEDAR PASS	7100	3/28/13	26	10.2	7.4	14.8
CEDAR PASS SNOTEL	7030	4/01/13	20	7.6	11.5	17.9
CROWDER FLAT SNOTEL	5170	4/01/13	0	.0	.3	.0
DISMAL SWAMP SNOTEL	7360	4/01/13	52	20.1	16.9	28.4
<b>Idaho</b>						
MUD FLAT SNOTEL	5730	4/01/13	0	.0	.0	2.5
SOUTH MTN SNOTEL	6500	4/01/13	9	4.3	12.3	17.3
<b>Nevada</b>						
BEAR CREEK SNOTEL	7800	4/01/13	46	17.4	13.9	18.5
BIG BEND SNOTEL	6700	4/01/13	5	2.0	2.8	7.7
BUCKSKIN,L SNOTEL	6700	4/01/13	17	5.2	6.1	8.5
COLUMBIA BASIN AM	6650	4/01/13	0	.0	.0	7.6
DISASTER PEAK SNOTEL	6500	4/01/13	0	.0	.0	1.9
FAWN CREEK SNOTEL	7050	4/01/13	26	10.9	8.7	15.8
FRY CANYON	6700	3/28/13	7	3.5	3.2	4.8
GOLD CREEK	6600	3/28/13	6	2.6	.0	2.0
GRANITE PEAK SNOTEL	7800	4/01/13	42	15.5	13.2	21.2
JACK CREEK, LOWER	6800	3/27/13	3	1.3	.0	.8
JACK CREEK, U SNOTEL	7280	4/01/13	32	10.4	11.7	16.7
LAMANCE CREEK SNOTEL	6000	4/01/13	0	.0	.0	6.6
LAUREL DRAW SNOTEL	6700	4/01/13	7	2.7	2.2	8.6
MERRIT MOUNTAIN AM	7000	4/01/13	0	.0	.0	5.5
MIDAS	7200	4/01/13	0	.0	.4	.0
SEVENTYSIX CK SNOTEL	7100	4/01/13	14	4.5	6.4	9.8
STAG MOUNTAIN AM	7700	4/01/13	0	.0	.4	4.3
TAYLOR CANYON SNOTEL	6200	4/01/13	0	.0	.0	1.3
TOE JAM AM	7700	4/01/13	29	11.2	7.4	8.8
TREMEWAN RANCH	5700	3/28/13	0	.0	.0	.0

# 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) 414-3270**

**Web site: <http://www.or.nrcs.usda.gov/snow/index.html>**

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)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(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.

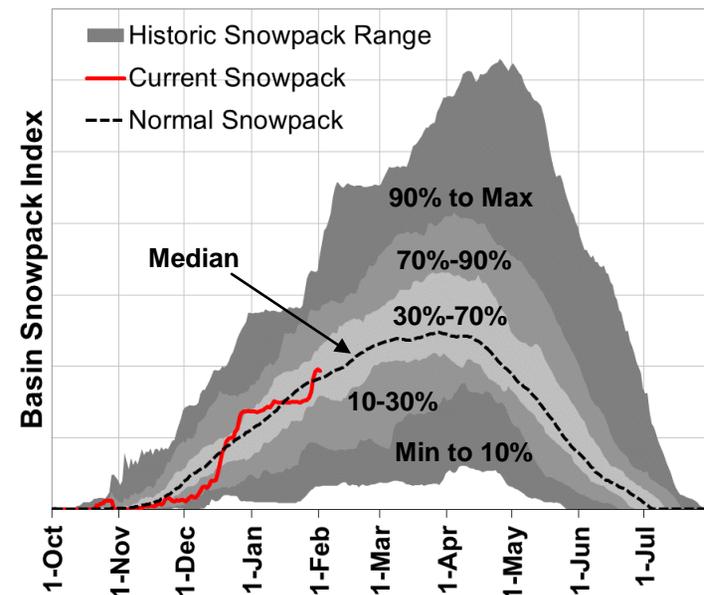
## Interpreting Snowpack Plots

The basin snowpack plots use daily SNOTEL data to show how the current year's snowpack data compares to historic snowpack 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 basin snowpack index is calculated using many sites in each basin. The dark gray shading indicates the historic range of the basin snowpack index, from minimum to maximum for the period of record. The medium gray shading indicates the 10% to 90% range of the basin snowpack index, while the light gray shading indicates the 30% to 70% range of the basin snowpack index. For instance, the 90% line indicates that the snowpack index has been below this line for 90% of the years of record.

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

### Mountain Snowpack



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Official Business



This publication may be found online at:  
<http://www.or.nrcs.usda.gov/snow/watersupply/>

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