



United States  
Department of  
Agriculture

# Oregon Basin Outlook Report

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March 1, 2012



*Photo courtesy of Nicholle Kovach, NRCS Redmond*

**Snow surveyors battled wintry conditions and deep powder to measure the snowpack on March 1. The Leap Day storm blanketed the mountains of Oregon with fresh snow, which was a boon to outdoor recreationists. While the end of February ended on a bright note for snowpack conditions, monthly precipitation totals across the state were below average. The water supply outlook for the summer of 2012 is still below normal for much of Oregon.**

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# General Outlook

March 1, 2012

## SUMMARY

Leap Day 2012 brought deep, powdery snow to the mountains of Oregon. While this was a welcome end to February for outdoor recreationists and gave a needed boost to snowpack levels, water supply conditions remain below normal across most of Oregon. As of March 1, the water supply outlook is highly variable across the state, and generally improves as you move from the southeast region to the northwest corner of Oregon.

Summer streamflow forecasts range from well below normal in the southeastern basins of Oregon, to near normal in the northwestern basins of the state. Generally by March 1, 80 to 95 percent of the maximum snowpack has accumulated at Oregon SNOTEL sites. While there is still a possibility of improvement to the water supply outlook, it is likely that many Oregon water users will experience below normal streamflow conditions during the coming spring and summer. In some basins, healthy reservoir storage levels, due to the runoff from last winter's abundant snowpack, may provide a buffer for below average snowmelt runoff that is anticipated for summer 2012.

## SNOWPACK

The first three weeks of February were abnormally dry for Oregon. A widespread storm system brought significant light-density snowfall to the Pacific Northwest during the last week of the month. This storm boosted snowpack conditions across the state, although the western and southern basins saw the biggest improvements overall.

Currently, there is considerable variability in snowpack conditions across the state. The Washington snowpack has fared very well this year and is near to above normal, while California and Nevada have extremely low snowpack levels compared to normal. So, it follows that variability in Oregon is significant from north to south. The southern part of the state has had a very dry winter and snowpacks in this region are currently storing about half of the normal water content for this point in the winter. As you move north, snowpack levels improve considerably. Snowpack conditions near the Washington border are near normal.

As of March 1, the snowpack ranged from 54 percent of average in the Harney, Lake County and Goose Lake basins to 92 percent of average in the Hood, Mile Creeks, and Lower Deschutes basins. Several snow survey teams were stymied by the deep, fluffy snow in the Cascade and Siskiyou mountains as they conducted March 1 snow surveys. They struggled with snow machines that got bogged down in the unusually low density snow. March 1 snow measurements were collected at 70 SNOTEL sites, 42 snow courses, and 26 aerial markers.

Meteorologists are still calling for continued weak to moderate La Niña conditions this spring, which often bring below normal temperatures to Oregon. If these models are on target, cool mountain temperatures could prolong the snowpack accumulation season and delay the spring snow melt.

## PRECIPITATION

What a difference one extra day in a month can make. Leap Day 2012 played a significant role in the monthly precipitation accumulation for Oregon. Most SNOTEL sites across the state picked up more than 10 percent of the month's precipitation on February 29. Several sites in the Klamath Basin picked up 25 to 30 percent of their February precipitation during this 24-hour period.

Despite the Leap Day boost, February was considerably dry across most of Oregon. Southeastern basins received 45 to 65 percent of normal precipitation in February, while the

rest of Oregon received 80 to 100 percent of normal precipitation for the month. Since October 1, water year precipitation has ranged from 61 percent of average in the Lake County and Goose Lake basins to 100 percent of average in the Hood, Mile Creeks, and Lower Deschutes basins.

## RESERVOIRS

A majority of the 26 major irrigation reservoirs published in this report had gains in water storage during February. The most notable gains in storage were recorded at Upper Klamath Lake and Lake Owyhee. In southeast Oregon near Lakeview, water managers reported having minimal reservoir inflows this month. However, carryover storage from last year is still creating near average to above average conditions for reservoirs in this locale.

Most Oregon irrigation reservoirs that are analyzed in this publication are holding more water at this time than one year ago. However, Cold Springs and McKay reservoirs in the Umatilla river basin are currently storing less water at this time than they were last year, but are in the process of re-filling for summer irrigation demands.

The March 1 storage at 26 major Oregon reservoirs analyzed in this publication was 99 percent of average. As of March 1, water storage at these reservoirs totaled 2,083 thousand acre-feet (kaf), representing 64 percent of useable capacity. Last year at this time, these same reservoirs stored 1,862 kaf of water, representing 58 percent of useable capacity.

## STREAMFLOW

Summer streamflow forecasts for most of Oregon have either remained unchanged or decreased since last month's publication. Due to continued dry conditions in the southeastern quadrant of the state, the forecasts in these basins were hit the hardest. There have been significant decreases to the forecasts in the Klamath, Owyhee, Malheur, Harney and Lake County basins since the February 1 report. Conversely, there was modest improvement in some of the forecasts that rely predominantly on snowpack runoff from the Cascade Mountains, due to snowpack increases during February.

Across Oregon, streamflow forecasts range from well below normal to near normal for the summer of 2012. Forecasts in the southeastern basins remain significantly lower than the basins in the northern and western parts of the state. Significantly limited water supplies are likely in the Klamath, Owyhee, Malheur, Harney and Lake County basins for the coming summer.

A summary of streamflow forecasts for Oregon follows:

STREAM	PERIOD	PERCENT OF AVERAGE
Owyhee Reservoir Inflow	Apr-Sep	35
Grande Ronde R at La Grande	Apr-Sep	82
Umatilla R at Pendleton	Apr-Sep	89
Deschutes R at Benham Falls	Apr-Sep	95
MF Willamette R bl NF	Apr-Sep	90
Rogue R at Raygold	Apr-Sep	75
Upper Klamath Lake Inflow	Apr-Sep	46
Silvies R nr Burns	Apr-Sept	64

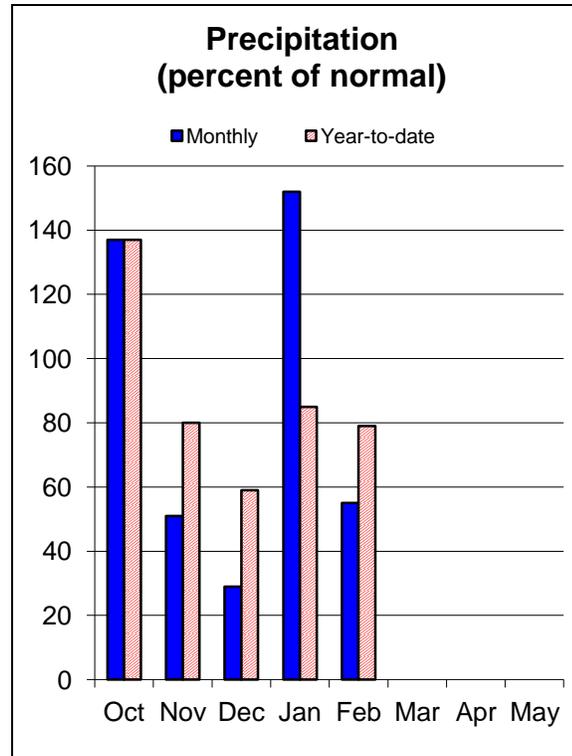
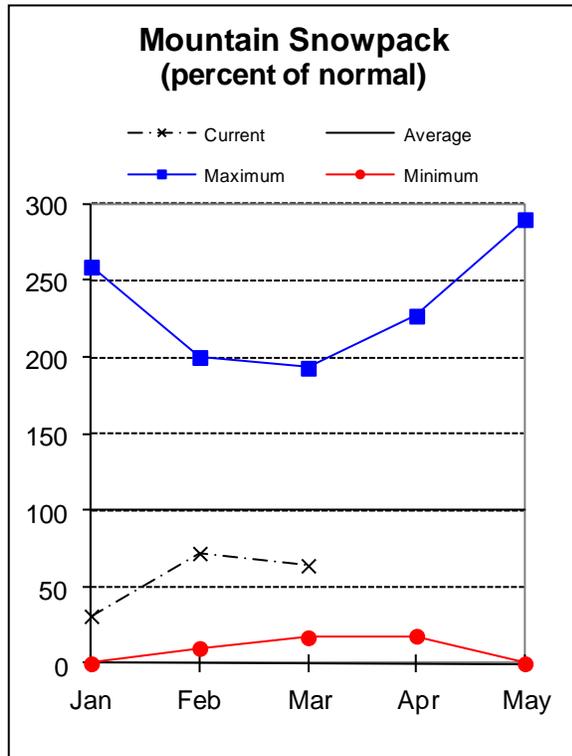
Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period. The forecasts in this bulletin are a result of coordinated activity between the Natural Resources Conservation Service and the National Weather Service as an effort to provide the best possible service to water users.

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

## March 1, 2012



### Water Supply Outlook

February was a very dry month for the Owyhee and Malheur basins. The basin snowpack decreased from 72 percent of average as of February 1, to 64 percent of average as of March 1. Precipitation during February was just above half of normal at 55 percent of average. Since October 1, the water year precipitation has been 79 percent of average.

Reservoir storage in the Owyhee and Malheur basins remains above average, which may provide a buffer for the very low streamflows that are anticipated for the coming summer. March 1 storage at the four irrigation reservoirs in the Owyhee and Malheur basins was 112 percent of average and 72 percent of capacity.

Streamflow forecasts in the Owyhee and Malheur basins decreased significantly from last month's report, due to drier than normal conditions in February. The April through September streamflow forecasts in the basin range from 32 percent of average for the Owyhee River near Rome to 51 percent of average for the Malheur River near Drewsey. Water users in the basin can expect well below normal streamflows for the summer of 2012.

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 - March 1, 2012

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)	
Malheur R nr Drewsey	MAR-JUL	24	42	57	52	74	103	110
	APR-JUL	9.3	23	35	47	50	77	74
	APR-SEP	15.3	28	39	51	52	74	76
NF Malheur R at Beulah (2)	MAR-JUL	22	34	43	53	53	71	81
Owyhee R bl Owyhee Dam (2)	MAR-JUL	57	114	163	27	220	325	615
	MAR-SEP	67	125	174	27	230	330	645
	APR-SEP	49	102	150	35	205	305	430
Owyhee R nr Rome	MAR-JUL	35	56	145	25	235	365	580
	MAR-SEP	36	63	153	26	245	375	600
	APR-SEP	24	41	126	32	210	335	400

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

OWYHEE AND MALHEUR BASINS  
Watershed Snowpack Analysis - March 1, 2012

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BEULAH RES	60.0	37.9	32.4	35.4	Owyhee	19	59	59
BULLY CREEK	30.0	16.4	14.5	17.5	Upper Malheur	8	59	57
OWYHEE	715.0	549.7	403.8	489.1	Jordan Creek	3	75	74
WARMSPRINGS	191.0	117.4	66.3	102.7	Bully Creek	3	35	35
					Willow Creek	4	40	43

\* 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 1971-2000 base period.

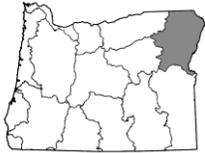
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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

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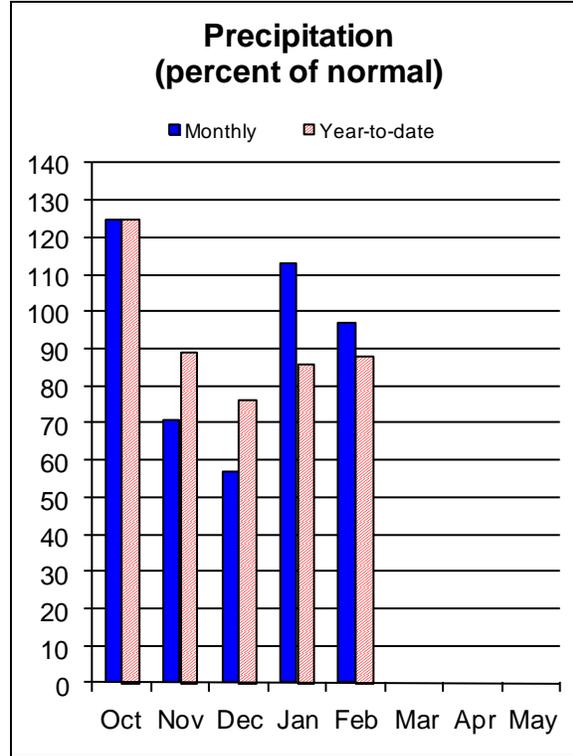
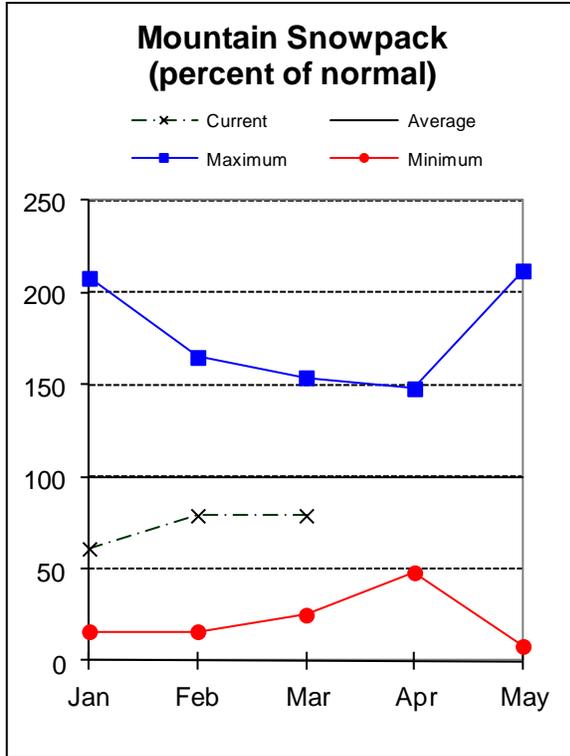
Ontario - (541) 889-7637

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



# Burnt, Powder, Grande Ronde, and Imnaha Basins

March 1, 2012



## Water Supply Outlook

The northern basins of Oregon fared much better than the rest of the state during February. The Burnt, Powder, Pine, Grande Ronde and Imnaha basins received 97 percent of normal precipitation this month. Since the beginning of water year 2012, precipitation in the basin has been 88 percent of average. As of March 1, the basin snowpack remained unchanged from last month at 79 percent of normal.

March 1 storage at Phillips Lake, Thief Valley and Unity reservoirs was 86 percent of average and 57 percent of capacity.

Streamflow forecasts in the Burnt, Powder, Pine, Grande Ronde, and Imnaha basins remain below average for the coming summer. The April through September streamflow forecasts range from 62 percent of average for the Burnt River near Hereford to 89 percent of average for the Catherine Creek near Union. Elsewhere in the basin, the Grande Ronde River at Troy is forecast to be 84 percent of average for the April through September period. Water users in the basin can expect below normal streamflows for the summer of 2012.

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/>

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BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS  
Streamflow Forecasts - March 1, 2012

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)
Bear Ck nr Wallowa	APR-SEP	43	52	57	88	62	71	65				
Burnt R nr Hereford (2)	MAR-JUL	17.3	27	33	65	39	49	51				
	APR-SEP	7.3	17.2	24	62	31	41	39				
Catherine Ck nr Union	APR-JUL	39	49	55	89	61	71	62				
	APR-SEP	43	52	59	89	66	75	66				
Deer Ck nr Sumpter	MAR-JUL	6.7	9.9	12.1	67	14.3	17.5	18.2				
Grande Ronde R at La Grande	MAR-JUL	130	175	205	83	235	280	247				
	APR-SEP	83	126	155	82	184	225	188				
Grande Ronde R at Troy (1)	MAR-JUL	905	1200	1330	84	1460	1760	1580				
	APR-SEP	715	1010	1150	84	1290	1580	1370				
Imnaha R at Imnaha	APR-JUL	140	188	220	82	250	300	270				
	APR-SEP	156	205	240	81	275	325	295				
Lostine R nr Lostine	APR-JUL	82	91	97	87	103	112	112				
	APR-SEP	88	97	104	86	111	120	121				
Pine Ck nr Oxbow	MAR-JUL	91	130	156	83	182	220	188				
	APR-JUL	67	98	120	81	142	173	148				
	APR-SEP	69	102	124	81	146	179	154				
Powder R nr Sumpter	MAR-JUL	28	39	47	67	55	66	70				
	APR-JUL	20	31	39	67	47	58	58				
	APR-SEP	19.9	32	40	68	48	60	59				
Wolf Ck Reservoir Inflow (2)	MAR-JUN	8.5	12.1	14.6	90	17.1	21	16.2				

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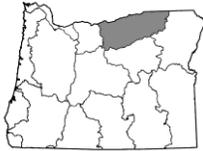
BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS Reservoir Storage (1000 AF) - End of February					BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
PHILLIPS LAKE	73.5	39.9	49.2	43.8	Upper Grande Ronde	9	94	87
THIEF VALLEY	17.4	13.7	13.8	17.3	Wallowa	4	96	82
UNITY	25.2	12.6	15.1	15.8	Imnaha	4	97	77
WALLOWA LAKE	37.5	22.8	15.4	18.8	Powder	11	95	80
WOLF CREEK	10.4	5.0	11.1	3.8	Burnt	5	59	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 1971-2000 base period.

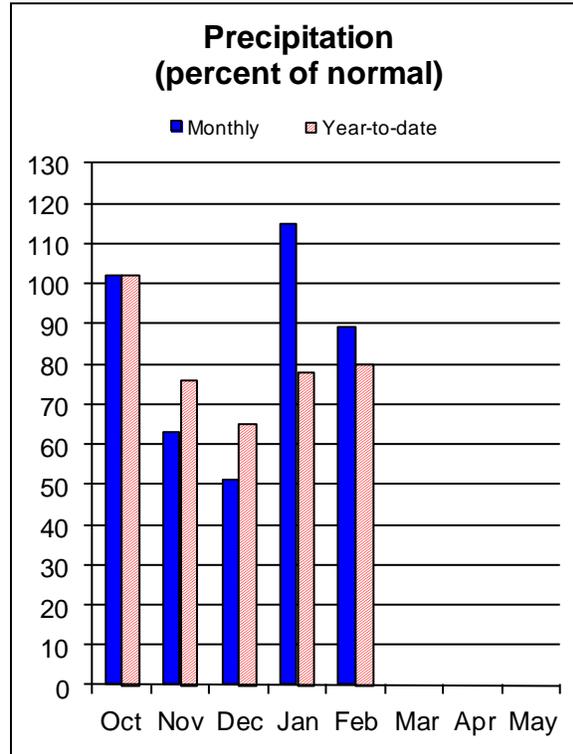
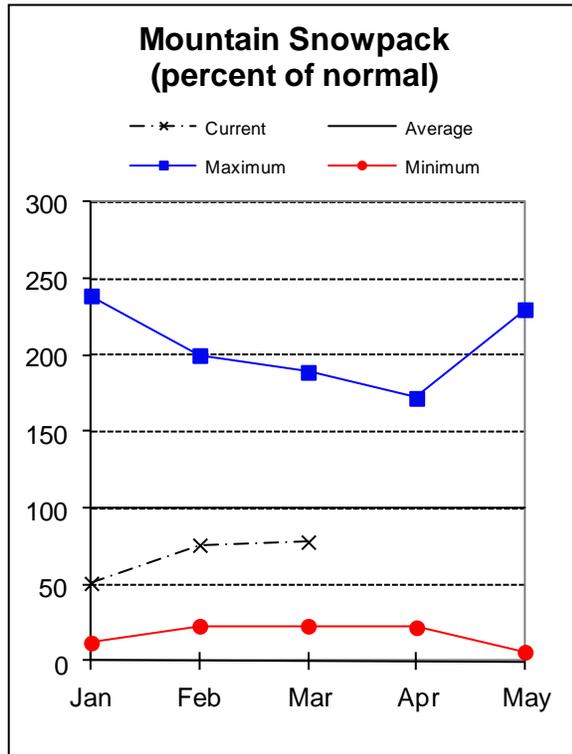
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# Umatilla, Walla Walla, Willow Rock, and Lower John Day Basins

March 1, 2012



## Water Supply Outlook

The late February storm brought much needed snow to the mountains of northern Oregon. As of March 1, the snowpack in the Umatilla, Walla Walla, Willow, Rock and Lower John Day Basins was 78 percent of average. Precipitation for the month of February was 89 percent of average in the basin. Since the beginning of water year 2012, precipitation in the basin has been 80 percent of average.

The March 1 storage at Cold Springs and MacKay reservoirs was 57 percent of average and 36 percent of capacity. Last year at this time, reservoir storage was 60 percent of capacity.

Streamflow forecasts in the Umatilla, Walla Walla, Willow, Rock and Lower John Day basins increased slightly from last month's report. The April through September streamflow forecasts range from 66 percent of average for Butter Creek near Pine City to 90 percent of average for the Umatilla River above Meacham Creek near Gibbon. Water users in the basin can expect below normal to near normal streamflows for the summer of 2012.

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, WILLOW, ROCK AND LOWER JOHN DAY BASINS  
Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<==== Drier ====		Future Conditions		==== Wetter =====>>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Butter Ck nr Pine City	MAR-JUL	2.8	6.7	9.3	62	11.9	15.8	15.0
	APR-SEP	1.8	4.7	6.7	66	8.7	11.6	10.2
McKay Ck nr Pilot Rock	APR-SEP	2.7	14.2	22	82	30	41	27
Rhea Ck nr Heppner	MAR-JUL	0.7	4.1	6.4	59	8.7	12.1	10.8
Umatilla R ab Meacham Ck nr Gibbon	APR-JUL	43	56	65	89	74	87	73
	MAR-SEP	71	86	96	91	106	121	106
	APR-SEP	49	62	71	90	80	93	79
Umatilla R at Pendleton	APR-JUL	80	111	131	88	151	182	149
	MAR-SEP	148	182	205	89	230	260	230
	APR-SEP	87	117	138	89	159	189	155
SF Walla Walla R nr Milton-Freewater	APR-JUL	37	43	47	87	51	57	54
	MAR-SEP	59	67	72	89	77	85	81
	APR-SEP	48	54	59	88	64	70	67
Willow Ck ab Willow Ck Lake nr Heppn	MAR-JUL	1.4	4.6	6.8	61	9.0	12.2	11.1
	APR-JUL	0.2	2.8	4.6	62	6.4	9.0	7.4

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS  
Reservoir Storage (1000 AF) - End of February

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS  
Watershed Snowpack Analysis - March 1, 2012

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COLD SPRINGS	44.6	14.2	22.7	29.5	Walla Walla	4	107	94
MCKAY	73.8	28.0	51.4	44.6	Umatilla	7	87	82
WILLOW CREEK	1.8	4.9	0.9	---	McKay Creek	4	68	65

\* 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 1971-2000 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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For more information contact your local Natural Resources Conservation Service office:

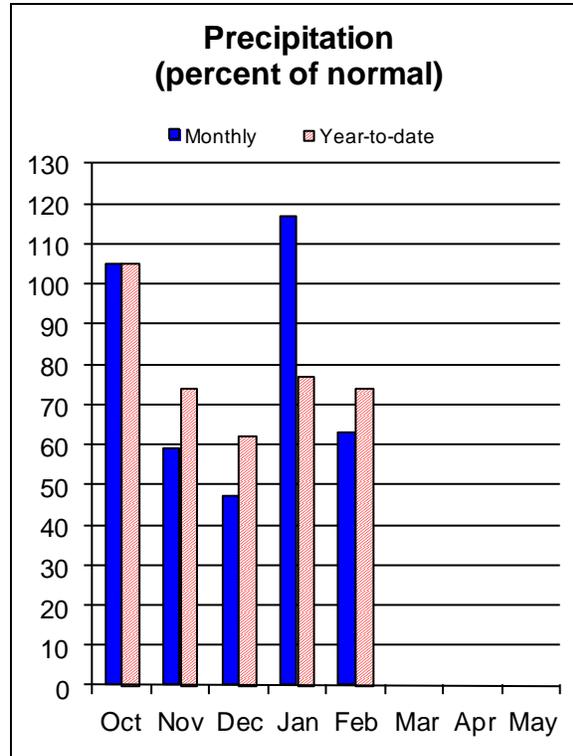
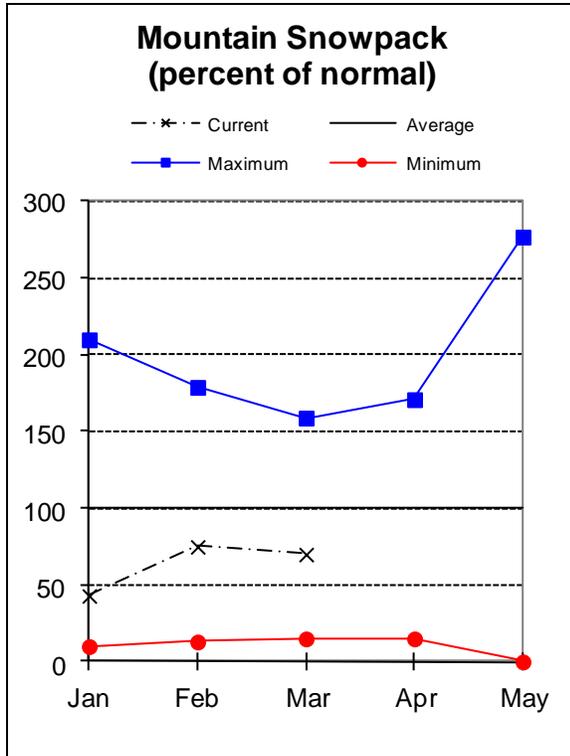
Pendleton - (541) 278-8049; Heppner - (541) 676-5021; Condon - (541) 384-2671

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



# Upper John Day Basin

March 1, 2012



## Water Supply Outlook

February was dry in the Upper John Day basin. The basin snowpack decreased slightly from last month to 70 percent of average as of March 1. February precipitation was only 63 percent of average in the Upper John Day basin. Since the beginning of water year 2012, precipitation in the basin has been 74 percent of average.

Streamflow forecasts in the Upper John Day basin decreased slightly from last month's report. The April through September streamflow forecasts range from 65 percent of average for Mountain Creek near Mitchell to 96 percent of average for Strawberry Creek near Prairie City. Water users in the basin can expect below normal to near normal streamflows for the summer of 2012.

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/>

UPPER JOHN DAY BASIN  
Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90%		70%		50%			30%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)
Camas Ck nr Ukiah	MAR-JUL	23	33	39	75	45	55	52		
	APR-SEP	12.2	22	28	74	34	44	38		
MF John Day R at Ritter	MAR-JUL	61	93	114	72	135	167	159		
	APR-SEP	44	73	93	73	113	142	128		
NF John Day R at Monument	MAR-JUL	335	480	575	73	670	815	790		
	APR-SEP	235	360	450	73	540	665	615		
Mountain Ck nr Mitchell	MAR-JUL	1.2	2.9	4.1	67	5.3	7.0	6.1		
	APR-SEP	0.5	2.0	3.0	65	4.0	5.6	4.6		
Strawberry Ck nr Prairie City	MAR-JUL	4.6	6.2	7.2	97	8.2	9.8	7.4		
	APR-SEP	4.8	6.4	7.5	96	8.6	10.2	7.8		

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

UPPER JOHN DAY BASIN  
Watershed Snowpack Analysis - March 1, 2012

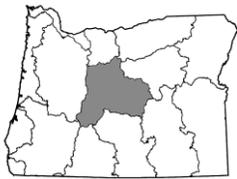
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					North Fork John Day	7	85	67
					John Day above Kimberly	5	78	72

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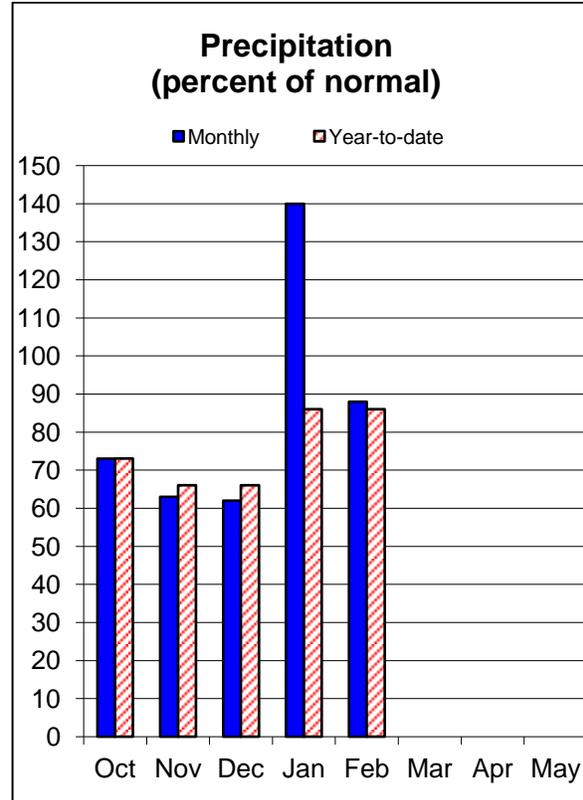
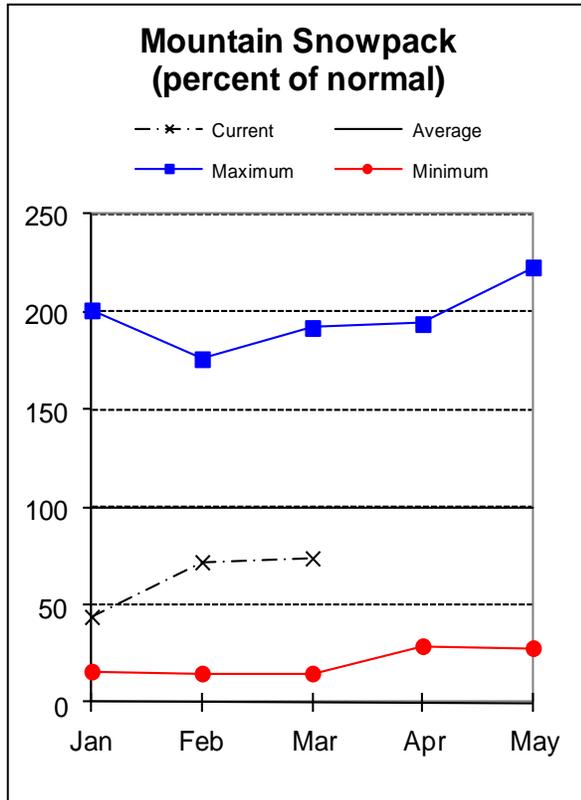
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For more information contact your local Natural Resources Conservation Service office:  
John Day - (541) 575-0135  
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



# Upper Deschutes and Crooked Basins

March 1, 2012



## Water Supply Outlook

The Leap Day 2012 storm brought significant snow to the Cascade Mountains. However, the storm did not deliver much precipitation to the Ochoco Mountains, so there is currently a large range in water supply conditions across the Upper Deschutes and Crooked River Basins. Basin-wide, February precipitation was 88 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 86 percent of average. As of March 1, snowpack in the basin is 74 percent of normal.

Reservoir storage in the Upper Deschutes and Crooked River basins remains above average, which may provide some relief from low water supply conditions. The March 1 storage at five irrigation reservoirs in the basin was 114 percent of average and at 84 percent of capacity.

The April through September streamflow forecasts range from 40 percent of average for the Prineville Reservoir Inflow to 95 percent of average for the Deschutes River at Benham Falls. Streamflow forecasts for the Upper Deschutes River and its tributaries have been bolstered recently by snowpack conditions at the Cascade Crest. In addition, these forecast points are influenced by carry-over conditions from last year. In contrast, the Crooked River Basin has remained unusually dry this winter, and the previous year's conditions don't significantly impact runoff in this part of the basin. Users that depend on water supplies from the east side of the basin are at much greater risk for limited water availability this 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 - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90%		70%		50%			30%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)
Crane Prairie Reservoir Inflow (2)	MAR-JUL	45	54	61	90	68	77	68		
	APR-JUL	40	48	53	90	58	66	59		
	MAR-SEP	71	82	90	88	98	109	102		
	APR-SEP	64	74	81	87	88	98	93		
Crescent Ck nr Crescent (2)	MAR-JUL	10.5	15.6	19.0	95	22	28	20		
	APR-JUL	8.9	13.2	16.2	94	19.2	24	17.2		
	MAR-SEP	13.2	18.4	22	92	26	31	24		
	APR-SEP	11.7	16.1	19.1	91	22	26	21		
Deschutes R at Benham Falls nr Bend	MAR-JUL	375	400	415	97	430	455	430		
	APR-JUL	305	325	335	96	345	365	350		
	MAR-SEP	530	560	580	96	600	630	605		
	APR-SEP	460	485	500	95	515	540	525		
Deschutes R bl Snow Ck nr La Pine	MAR-JUL	25	32	37	95	42	49	39		
	APR-JUL	21	27	31	94	35	41	33		
	MAR-SEP	46	54	60	92	66	74	65		
	APR-SEP	42	49	54	92	59	66	59		
Little Deschutes R nr La Pine (2)	MAR-JUL	56	69	77	89	85	98	87		
	APR-JUL	42	51	58	82	65	74	71		
	MAR-SEP	63	76	85	89	94	107	96		
	APR-SEP	46	58	66	83	74	86	80		
Ochoco Reservoir Inflow (2)	MAR-JUL	5.5	13.1	18.2	52	23	31	35		
	APR-JUL	0.3	6.9	11.4	52	15.9	22	22		
	MAR-SEP	4.7	12.3	17.5	50	23	30	35		
	APR-SEP	0.0	6.5	11.0	50	15.5	22	22		
Prineville Reservoir Inflow (2)	MAR-JUL	9.0	44	81	44	118	172	184		
	APR-JUL	5.0	18.0	44	41	70	108	108		
	MAR-SEP	9.0	43	80	43	117	172	185		
	APR-SEP	5.0	17.0	44	40	71	110	109		

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/>

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
Whychus Ck nr Sisters	MAR-JUL	32	35	37	95	39	42	39				
	APR-JUL	28	31	33	92	35	38	36				
	MAR-SEP	41	45	47	94	49	53	50				
	APR-SEP	39	42	44	90	46	49	49				

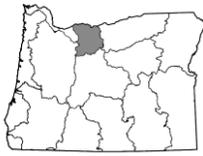
UPPER DESCHUTES AND CROOKED BASINS Reservoir Storage (1000 AF) - End of February					UPPER DESCHUTES AND CROOKED BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
CRANE PRAIRIE	55.3	47.9	41.8	41.9	Crooked	4	65	64
CRESCENT LAKE	86.9	80.7	70.2	52.3	Little Deschutes	4	71	75
OCHOCO	47.5	29.7	35.4	25.8	Deschutes above Wickiup R	4	66	71
PRINEVILLE	153.0	103.0	108.3	102.7	Tumalo and Squaw Creeks	5	90	81
WICKIUP	200.0	192.6	187.0	176.0				

\* 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 1971-2000 base period.

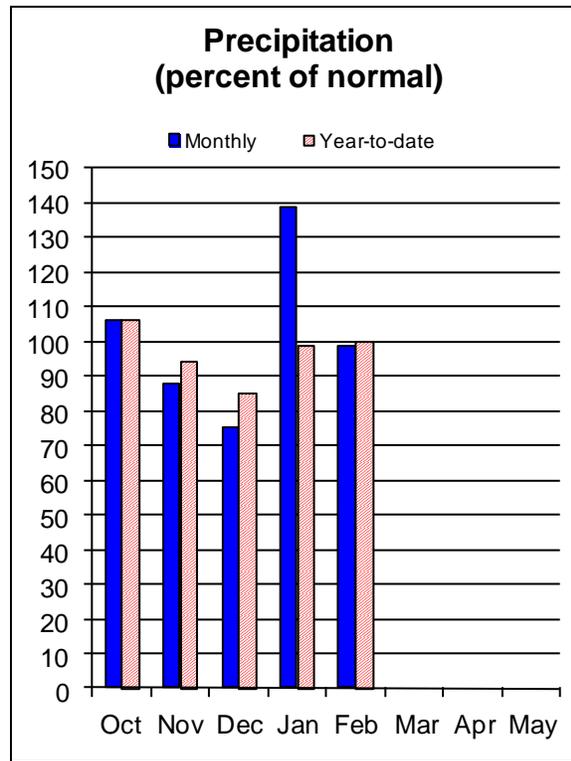
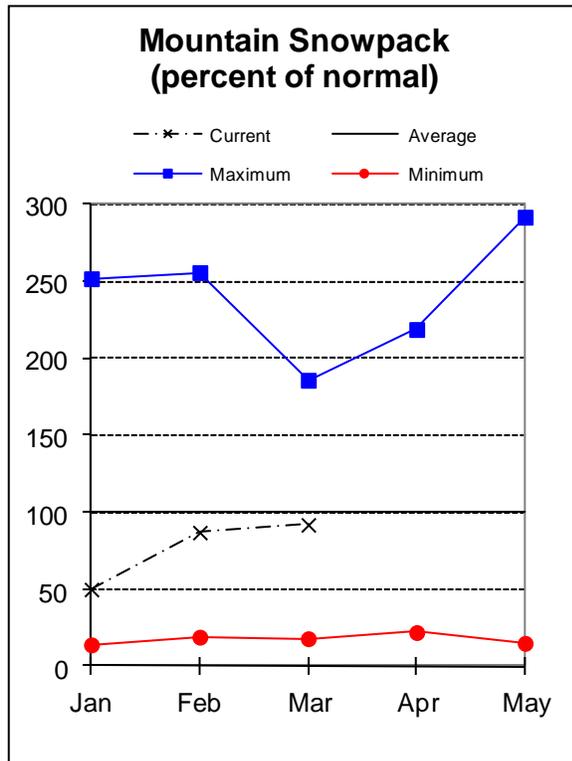
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# Hood, Mile Creeks, and Lower Deschutes Basins

March 1, 2012



## Water Supply Outlook

The northwest corner of Oregon remains in good shape for water supply conditions. As of March 1, the snowpack in the Hood, Mile Creeks and Lower Deschutes basins was 92 percent of average, the highest in the state. Precipitation for the month of February was 99 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 100 percent of average, the highest in the state.

The April through September streamflow for Hood River at Tucker Bridge is forecast to be 98 percent of average. Water users in the Hood, Mile Creeks and Lower Deschutes basin can expect near normal streamflows during the summer of 2012.

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, MILE CREEKS AND LOWER DESCHUTES BASINS  
Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)		(1000AF)		(1000AF)			(% AVG.)		(1000AF)	
WF Hood River nr Dee	APR-JUL	82	104	119	98	134	156	121				
Hood R At Tucker Bridge	APR-JUL	171	205	225	99	245	280	228				
	APR-SEP	205	240	265	98	290	325	271				

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS  
Reservoir Storage (1000 AF) - End of February

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS  
Watershed Snowpack Analysis - March 1, 2012

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CLEAR LAKE (WASCO)	11.9	5.7	4.6	4.3	Hood River	7	112	91
					Mile Creeks	2	123	87
					White River	5	123	93

\* 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 1971-2000 base period.

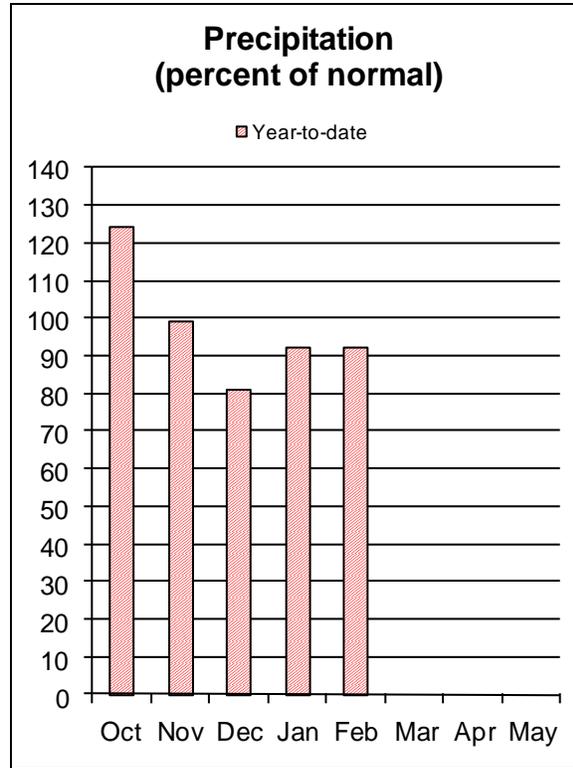
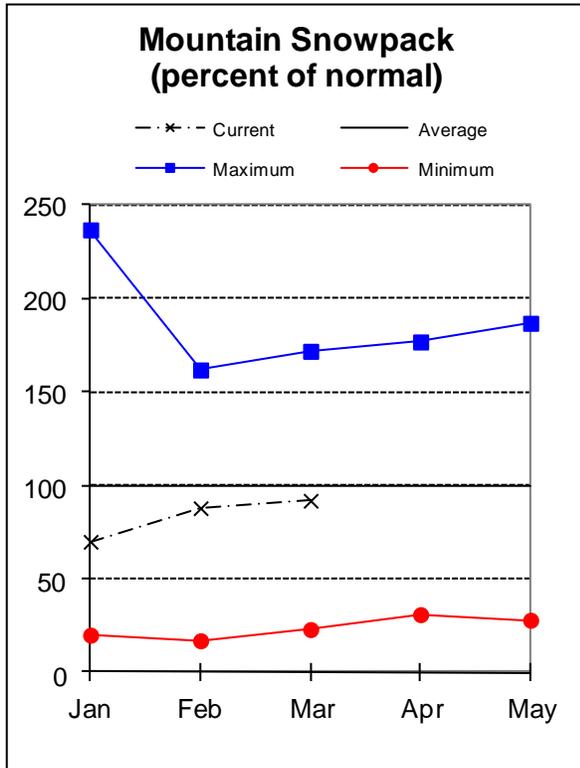
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For more information contact your local Natural Resources Conservation Service office:  
The Dalles (541) 296-6178  
Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



# Lower Columbia Basin

March 1, 2012



## Water Supply Outlook

On March 1, the snowpack in the Columbia River basin was 92 percent of average, as measured by 237 SNOTEL sites in the US portion of the basin. The Canadian portion of the Columbia basin has had much higher snowfall this winter, so the snowpack north of the border remains above average as of March 1.

Precipitation in the US portion of the basin since October 1 has been 92 percent of average. Locally, precipitation since October 1 in the Sandy basin has been 99 percent of average.

Locally, streamflow forecasts in the Lower Columbia River Basin have increased slightly from last month's report. The Columbia River at The Dalles is forecast to be 96 percent of average for the April through September period, and the Sandy River near Marmot is forecast to be 98 percent of average for the same period.

For more information contact your local Natural Resources Conservation Service office:  
Oregon City - (503) 656-3499

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

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LOWER COLUMBIA BASIN  
Streamflow Forecasts - March 1, 2012

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)		(1000AF)		(1000AF)			(% AVG.)		(1000AF)	
Columbia R at The Dalles (2)	APR-JUL	67900	75000	79800	94	84600	91600	84600				
	APR-SEP	80800	89000	94600	96	100000	108000	98600				
Sandy R nr Marmot	APR-JUL	235	275	305	97	335	375	313				
	APR-SEP	280	325	355	98	385	430	363				

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LOWER COLUMBIA BASIN  
Reservoir Storage (1000 AF) - End of February

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LOWER COLUMBIA BASIN  
Watershed Snowpack Analysis - March 1, 2012

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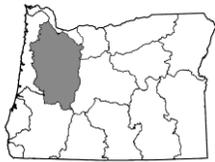
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Sandy	7	109	98

\* 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 1971-2000 base period.

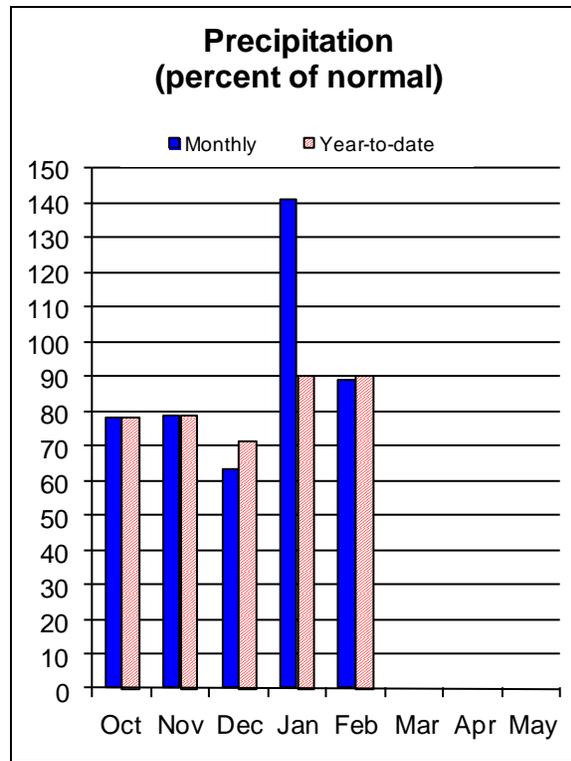
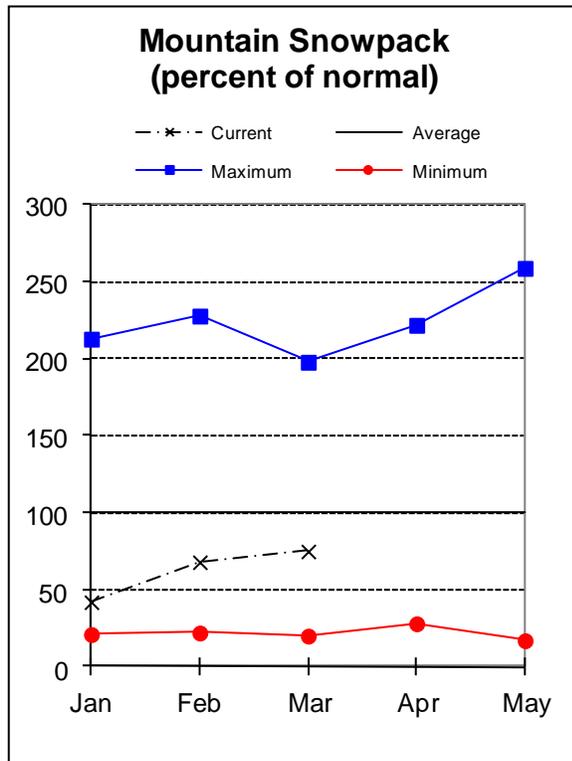
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For more information contact your local Natural Resources Conservation Service office:  
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Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



# Willamette Basin

March 1, 2012



## Water Supply Outlook

After a very dry start to February, the snowpack in the mountains of the Willamette basin rallied to a strong finish due to a widespread winter storm system late in the month. In fact, the basin snowpack gained 13 percentage points during the last week of February alone. While the snowpack levels remain below average across most of the basin, they have improved from last month's report. As of March 1, the Willamette basin snowpack was 75 percent of average. Precipitation for the month of February was 89 percent of average. Since the beginning of water year 2012, precipitation in the basin has been 90 percent of average.

The March 1 storage at Timothy Lake and Henry Hagg reservoirs was 105 percent of average and at 89 percent of capacity.

Summer streamflows in the Willamette basin are forecast to be near normal for the coming summer. The April through September streamflow forecasts for the Willamette basin range from 84 percent of average for Fern Ridge Lake Inflow to 98 percent of average for the South Santiam River at Waterloo. Elsewhere in the basin, the McKenzie near Vida is forecast to be 95 percent of average and the Willamette River at Salem is forecast to be 97 percent of average for the April through September period.

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/>

WILLAMETTE BASIN  
Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Blue Lake Inflow (1,2)	MAR-MAY	57	91	107	95	123	157	113
	APR-JUL	42	68	79	92	90	116	86
	APR-SEP	44	69	80	93	91	116	86
Clackamas R at Estacada	APR-JUL	475	560	620	97	680	765	640
	APR-SEP	575	665	725	97	785	875	748
Clackamas R ab Three Lynx (2)	APR-JUL	360	415	455	96	495	550	474
	APR-SEP	440	500	540	96	580	640	562
Cottage Grove Lake Inflow (1,2)	MAR-MAY	24	46	56	93	66	88	60
	APR-JUL	8.3	29	38	94	47	68	41
	APR-SEP	12.2	32	41	95	50	70	43
Cougar Lake Inflow (1,2)	MAR-MAY	126	176	198	93	220	270	212
	APR-JUL	132	171	188	92	205	245	204
	APR-SEP	159	197	215	94	235	270	230
Detroit Lake Inflow (1,2)	MAR-MAY	355	475	530	98	585	705	540
	APR-JUL	345	460	510	97	560	675	528
	APR-SEP	420	540	595	97	650	770	616
Dorena Lake Inflow (1,2)	MAR-MAY	89	145	171	94	197	255	182
	APR-JUL	49	103	127	97	151	205	131
	APR-SEP	51	108	133	97	158	215	137
Fall Creek Lake Inflow (1,2)	APR-JUL	46	82	99	93	116	152	106
	APR-SEP	37	82	103	92	124	169	112
Fern Ridge Lake Inflow (1,2)	MAR-MAY	36	73	90	84	107	144	107
	APR-JUL	4.5	30	41	84	52	78	49
	APR-SEP	4.9	30	42	84	54	79	50
Foster Lake Inflow (1,2)	MAR-MAY	435	505	535	87	565	635	613
	APR-SEP	380	435	460	87	485	540	527

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/>

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
Green Peter Lake Inflow (1,2)	MAR-MAY	210	315	365	88	415	520	417				
	APR-JUL	162	245	285	87	325	410	327				
	APR-SEP	181	265	305	86	345	430	354				
Hills Creek Reservoir Inflow (1,2)	MAR-MAY	151	235	270	94	305	390	288				
	APR-JUL	151	220	255	92	290	360	277				
	APR-SEP	187	260	295	92	330	405	320				
Little North Santiam R nr Mehama (1)	APR-JUL	70	111	129	97	147	188	133				
	APR-SEP	80	120	138	97	156	196	143				
Lookout Point Lake Inflow (1,2)	MAR-MAY	405	610	705	93	800	1000	759				
	APR-JUL	395	585	670	92	755	945	726				
	APR-SEP	485	685	775	94	865	1060	828				
MF Willamette R bl NF (1,2)	MAR-MAY	345	590	700	97	810	1060	725				
	APR-JUL	315	530	630	90	730	945	698				
	APR-SEP	370	610	720	90	830	1070	798				
McKenzie R bl Trail Bridge (2)	APR-JUL	205	230	245	92	260	285	266				
	APR-SEP	320	345	365	90	385	410	404				
McKenzie R nr Vida (1,2)	APR-JUL	710	865	935	96	1010	1160	977				
	APR-SEP	895	1060	1140	95	1220	1380	1201				
Mohawk R nr Springfield	MAR-JUL	87	113	130	97	147	173	134				
Oak Grove Fork Of Clackamas	APR-JUL	97	112	122	94	132	147	130				
	APR-SEP	128	145	157	94	169	186	167				
North Santiam R at Mehama (1,2)	APR-JUL	505	640	700	96	760	895	732				
	APR-SEP	600	735	800	96	865	1000	834				
South Santiam R at Waterloo (2)	APR-JUL	360	470	540	98	610	720	549				
	APR-SEP	395	505	575	98	645	755	587				
Scoggins Ck nr Gaston (2)	MAR-JUL	14.7	20	24	92	28	33	26				

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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)	
Thomas Ck nr Scio	MAR-JUL	91	109	121	100	133	151	121
Willamette R at Salem (1,2)	MAR-MAY	3280	4550	5130	95	5710	6980	5401
	APR-JUL	2510	3670	4200	97	4730	5890	4347
	APR-SEP	3000	4140	4660	97	5180	6320	4804

WILLAMETTE BASIN Reservoir Storage (1000 AF) - End of February					WILLAMETTE BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
BLUE RIVER	85.5	32.8	16.5	31.9	Clackamas	4	110	83
COTTAGE GROVE	29.8	12.0	7.8	10.2	McKenzie	8	85	70
COUGAR	155.2	90.7	23.5	114.3	Row River	1	66	46
DETROIT	300.7	271.4	58.0	141.8	Santiam	6	86	67
DORENA	70.5	24.5	15.7	26.7	Middle Fork Willamette	7	72	73
FALL CREEK	115.5	55.3	24.8	40.5				
FERN RIDGE	109.6	47.1	37.1	45.5				
FOSTER	29.7	29.3	3.1	9.6				
GREEN PETER	268.2	265.8	43.8	173.2				
HILLS CREEK	200.2	140.7	51.0	119.0				
LOOKOUT POINT	337.0	232.6	82.6	116.8				
TIMOTHY LAKE	61.7	54.9	54.0	51.5				
HENRY HAGG LAKE	53.0	46.7	45.8	45.4				

\* 90%, 70%, 50%, 30%, 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.

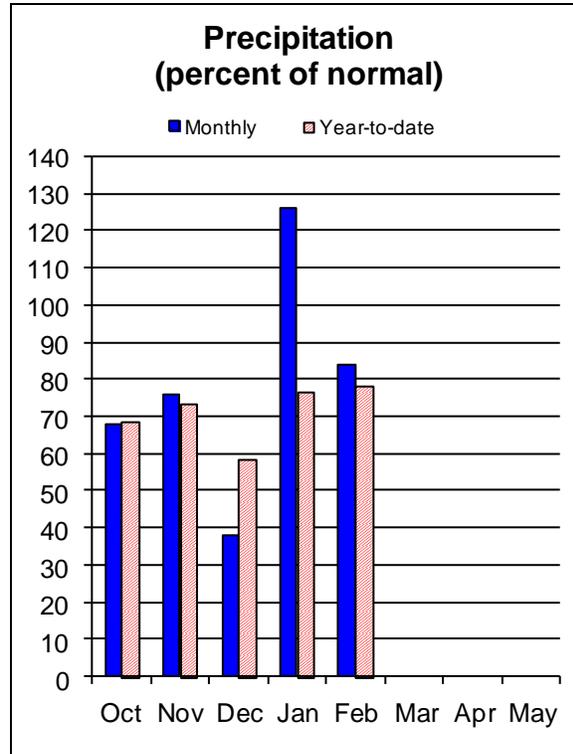
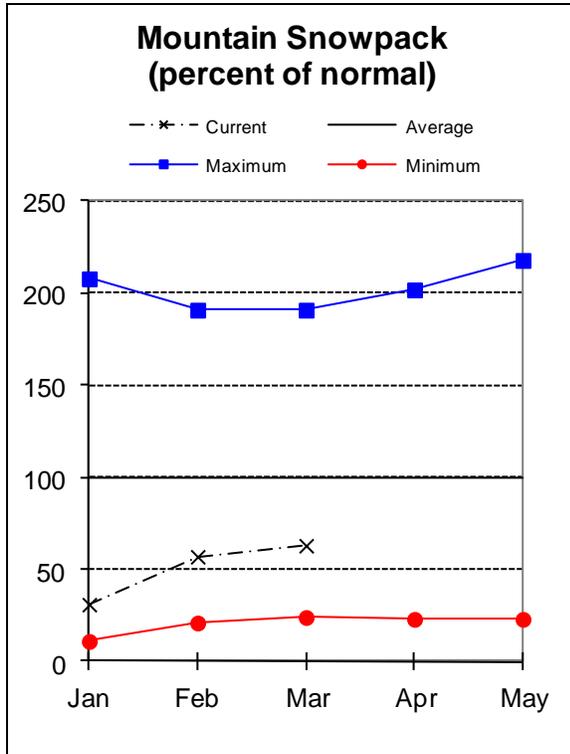
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 Salem - (503) 399-5746; Dallas - (503) 623-5534  
 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



# Rogue and Umpqua Basins

March 1, 2012



## Water Supply Outlook

The late February storm brought some relief to the very low snowpack levels in the Rogue and Umpqua basins. In the last week of the month, the basin snowpack increased 10 percentage points. As of March 1, the Rogue and Umpqua basin snowpack was 63 percent of average, a slight improvement from last month's report. Precipitation for February was 84 percent of average in the basin. Since the beginning of water year 2012, precipitation in the basin has been 78 percent of average.

The March 1 storage at 5 irrigation reservoirs in the Rogue and Umpqua basin was 107 percent of average and at 73 percent of capacity.

As of March 1, streamflows in the Rogue and Umpqua basins are forecast to be well below to near normal for the summer of 2012. The April through September streamflow forecasts for the basin range from 50 percent of average for Applegate Lake Inflow to 91 percent of average for the North Fork Little Butte Creek near Lakecreek. Elsewhere in the basin, the South Umpqua at Tiller is forecast to be 82 percent of average the same period.

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 - March 1, 2012

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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)	
Applegate Lake Inflow (2)	MAR-JUL	18.0	56	82	51	108	146	160
	APR-JUL	14.0	39	56	50	73	98	112
	MAR-SEP	21	60	86	51	112	151	170
	APR-SEP	17.0	43	60	50	77	103	119
SF Big Butte Ck nr Butte Falls	APR-JUL	15.4	23	28	82	33	41	34
	APR-SEP	22	30	36	83	42	50	44
Cow Ck nr Azalea (2)	MAR-JUL	2.8	13.0	20	69	27	37	29
	APR-JUL	1.3	7.7	12.0	73	16.3	23	16.5
	APR-SEP	1.6	8.2	12.7	72	17.2	24	17.7
Hyatt Prairie Reservoir Inflow (2)	APR-JUL	0.1	1.6	2.9	60	4.2	6.1	4.8
Illinois R at Kerby	APR-JUL	21	85	129	72	173	235	179
	APR-SEP	25	89	133	72	177	240	186
NF Little Butte Ck nr Lakecreek (2)	APR-JUL	21	26	29	91	32	37	32
	APR-SEP	32	38	42	91	46	52	46
Lost Creek Lake Inflow (2)	MAR-JUL	420	505	565	83	625	710	685
	APR-JUL	330	395	440	83	485	550	530
	MAR-SEP	520	615	680	82	745	840	825
	APR-SEP	425	500	550	83	600	675	665
Rogue R at Raygold (2)	APR-JUL	315	455	550	75	645	785	730
	APR-SEP	420	565	665	75	765	910	890
Rogue R at Grants Pass (2)	APR-JUL	315	475	585	79	695	855	740
	APR-SEP	410	585	700	79	815	990	885
Sucker Ck bl Ltl Grayback Ck nr Holl	APR-JUL	9.9	24	34	65	44	58	52
	APR-SEP	12.6	27	37	66	47	61	56
North Umpqua R at Winchester	APR-JUL	450	605	705	89	805	960	795
	APR-SEP	550	705	810	88	915	1070	920

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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/>

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)	
South Umpqua R nr Brockway	APR-JUL	116	240	325	81	410	535	400
	APR-SEP	128	255	340	81	425	550	420
South Umpqua R at Tiller	APR-JUL	75	126	161	83	196	245	193
	APR-SEP	83	134	169	82	205	255	205

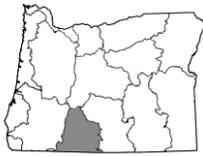
ROGUE AND UMPQUA BASINS Reservoir Storage (1000 AF) - End of February					ROGUE AND UMPQUA BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
APPLEGATE	75.2	14.7	20.8	27.3	Applegate	5	58	51
EMIGRANT LAKE	39.0	26.6	28.4	28.0	Bear Creek	5	66	57
FISH LAKE	8.0	6.2	4.3	5.6	Little Butte Creek	6	78	65
FOURMILE LAKE	16.1	11.9	8.3	9.4	Illinois	1	40	43
HOWARD PRAIRIE	60.0	43.0	41.2	41.2	North Umpqua	7	68	64
HYATT PRAIRIE	16.1	14.2	14.1	11.0	Rogue River above Grants	21	68	64
LOST CREEK	315.0	222.9	70.0	218.2				

\* 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 1971-2000 base period.

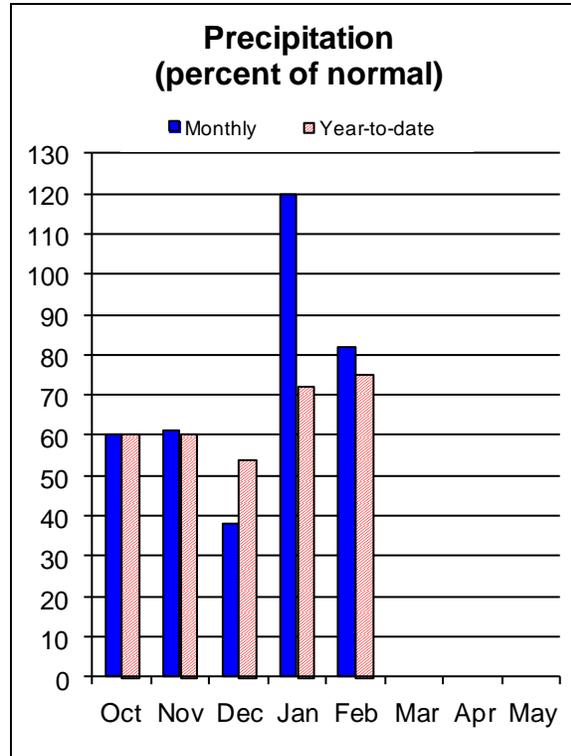
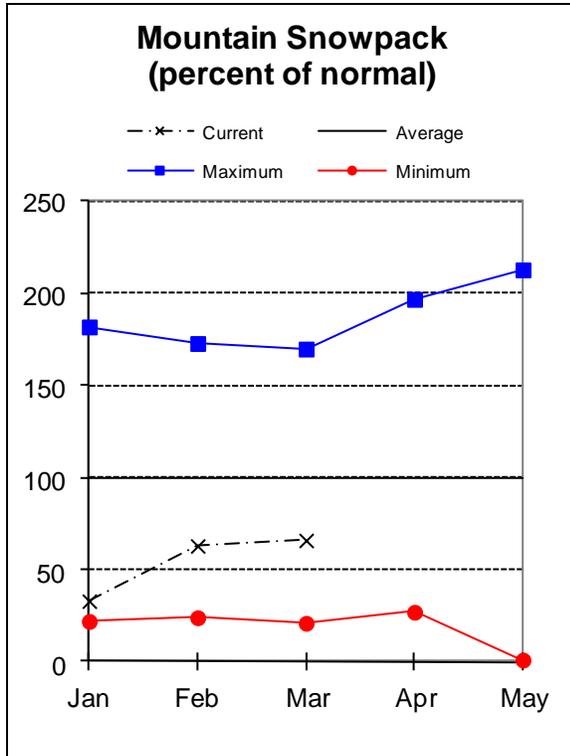
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

For more information contact your local Natural Resources Conservation Service office:  
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 Or visit: <http://www.or.nrcs.usda.gov/snow/watersupply/>



# Klamath Basin

March 1, 2012



## Water Supply Outlook

The late February storm brought much needed snow to the high elevations of the Klamath Basin. However, water supply conditions remain well below normal in this region of Oregon. As of March 1, the snowpack in the Klamath Basin was 66 percent of average, a slight improvement from last month's report. Several snow surveyors in the basin noted a very thick ice layer at the ground surface that made snow sampling very difficult. One survey team estimated the ice layer at Silver Burn snow course to be 1.5 to 2.5 inches thick. This ice layer was likely created by an earlier melt cycle of the shallow snowpack and then subsequent re-freezing at the ground surface.

Precipitation for the month of February was 82 percent of average in the Klamath basin. Since October 1, precipitation in the basin has been 75 percent of average.

The March 1 storage at Upper Klamath Lake, Clear Lake (CA) and Gerber reservoirs was 81 percent of average and 49 percent of capacity.

The streamflow forecasts in the Klamath basin decreased significantly since last month's report, due to the continued dry conditions in the basin. The April through September streamflow forecasts for the basin range from 42 percent of average for Clear Lake Inflow to 49 percent of average for the Williamson River below Sprague. Water users in the basin can expect well below normal streamflows for the summer of 2012.

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 - March 1, 2012

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ===== Wetter =====>>		Chance Of Exceeding *				30-Yr Avg. (1000AF)
		90%	70%	50%	30%	10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Clear Lake Inflow (2)	MAR-JUL	2.4	11.6	34	43	56	89	80
	APR-SEP	0.5	8.1	20	42	32	49	48
Gerber Res Inflow (2)	MAR-JUL	1.1	7.1	16.0	43	25	38	37
	APR-SEP	0.4	2.2	7.6	43	13.0	21	17.8
Sprague R nr Chiloquin	MAR-JUL	30	84	120	44	156	210	275
	MAR-SEP	41	97	135	44	173	230	305
	APR-SEP	34	76	105	46	134	176	230
Upper Klamath Lake Inflow (1)	MAR-JUL	99	235	300	48	365	500	625
	MAR-SEP	118	265	335	47	405	550	720
	APR-SEP	86	188	235	46	280	385	515
Williamson R bl Sprague R nr Chiloquin	MAR-JUL	105	170	215	49	260	325	440
	MAR-SEP	134	205	250	50	295	365	505
	APR-SEP	101	154	190	49	225	280	385

KLAMATH BASIN  
Reservoir Storage (1000 AF) - End of February

KLAMATH BASIN  
Watershed Snowpack Analysis - March 1, 2012

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CLEAR LAKE (CALIF)		NO REPORT			Lost	2	61	39
GERBER		NO REPORT			Sprague	5	69	68
UPPER KLAMATH LAKE		NO REPORT			Upper Klamath Lake	7	78	66
					Williamson River	5	77	72

\* 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 1971-2000 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:

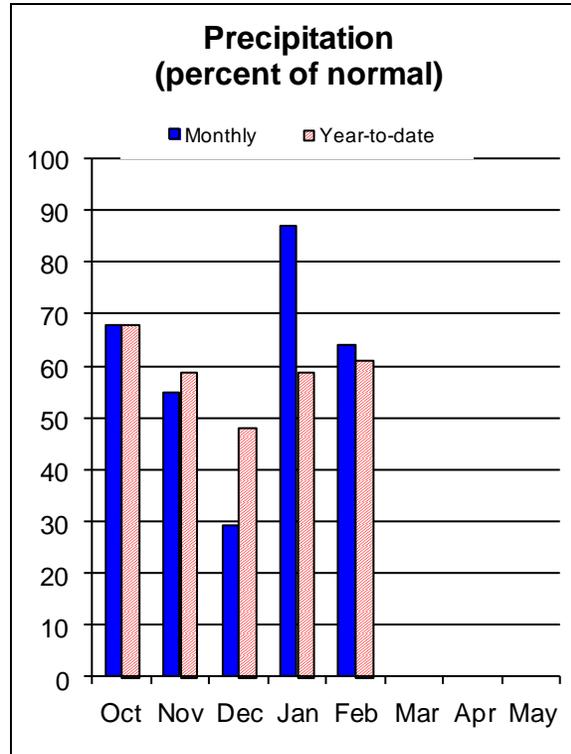
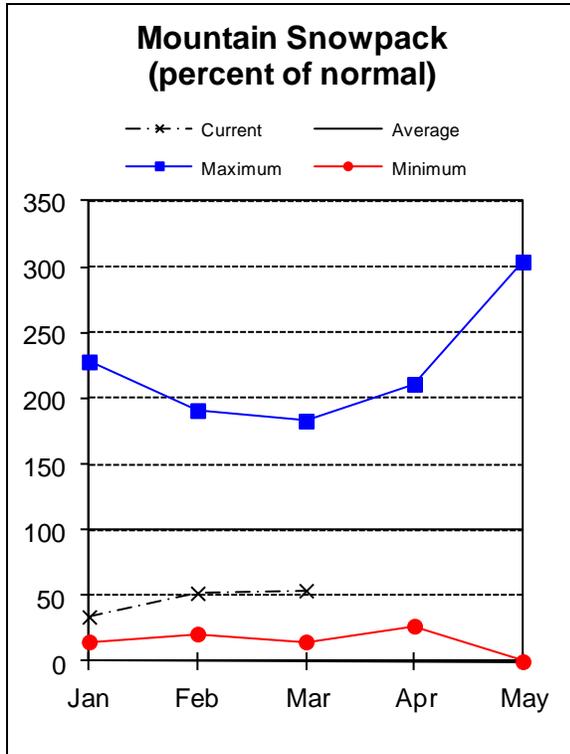
Klamath Falls - (541) 883-6932

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



# Lake County and Goose Lake

March 1, 2012



## Water Supply Outlook

February continued the very dry trend that has dominated this winter in the Lake County and Goose Lake basins. So far, every month of water year 2012 has had below normal precipitation. February brought only 64 percent of normal precipitation to the basin. Since October 1, water year precipitation in the basin has been 61 percent of average, the lowest in the state.

The snowpack levels in the basin remained below half of normal until the Leap Day 2012 storm. The snowfall on February 29 boosted the snowpack at most SNOTEL sites in the basin by 20 to 30 percent in a 24-hour period. As of March 1, the snowpack in the Lake County and Goose Lake basins was 54 percent of average, the lowest in the state.

Reservoir storage in the Lake County and Goose Lake basins remains above average, which may provide some relief from low water supply conditions. March 1 storage at Cottonwood and Drews reservoirs was 109 percent of average and at 63 percent of capacity.

Summer streamflow forecasts in the Lake County and Goose Lake basins declined significantly since February 1, due to the continued dry conditions in the region. The April through September streamflow forecasts for the basin range from 37 percent of average for Twentymile Creek near Adel to 60 percent of average for Silver Creek near Silver Lake. Water users in the basin can expect well below normal streamflows for the summer of 2012.

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 - March 1, 2012

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)	
Chewaucan R nr Paisley	MAR-JUL	10.8	27	38	43	49	65	89
	APR-SEP	10.8	25	35	45	45	59	78
Deep Ck ab Adel	MAR-JUL	5.4	22	34	41	46	63	84
	APR-SEP	2.9	17.8	28	41	38	53	69
Honey Ck nr Plush	MAR-JUL	0.4	5.1	8.3	42	11.5	16.2	20
	APR-SEP	0.3	3.6	6.7	40	9.8	14.5	16.6
Silver Ck nr Silver Lake (2)	MAR-JUL	2.4	6.2	8.8	60	11.4	15.2	14.6
	APR-SEP	0.7	4.2	6.7	60	9.2	12.7	11.2
Twentymile Ck nr Adel	MAR-JUL	0.6	1.5	9.4	34	17.3	29	28
	APR-SEP	0.3	0.8	6.5	37	12.2	20	17.4

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

LAKE COUNTY AND GOOSE LAKE BASINS  
Watershed Snowpack Analysis - March 1, 2012

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COTTONWOOD	8.7	3.7	7.9	3.8	Chewaucan River	3	71	63
DREWS	63.0	41.4	23.0	37.5	Deep Creek	1	49	45
					Drew Creek	2	57	45
					Honey Creek	1	49	45
					Silver Creek (Lake Co.)	4	70	70
					Twentymile Creek	1	49	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 1971-2000 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:

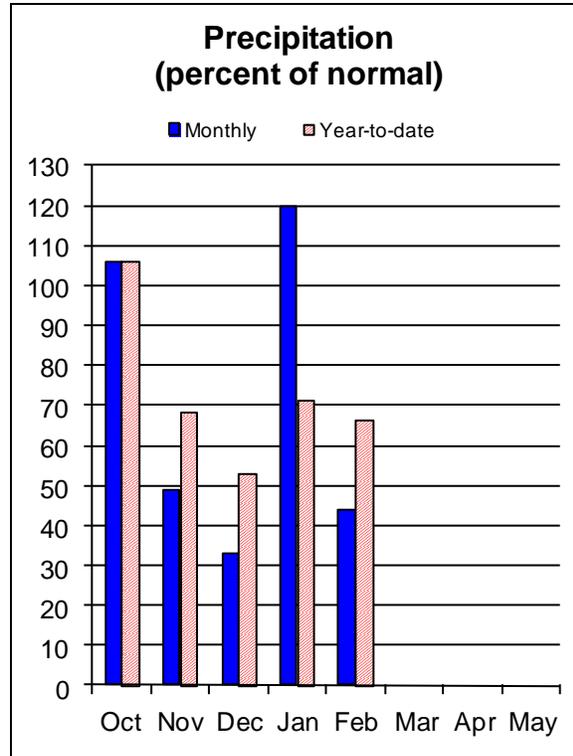
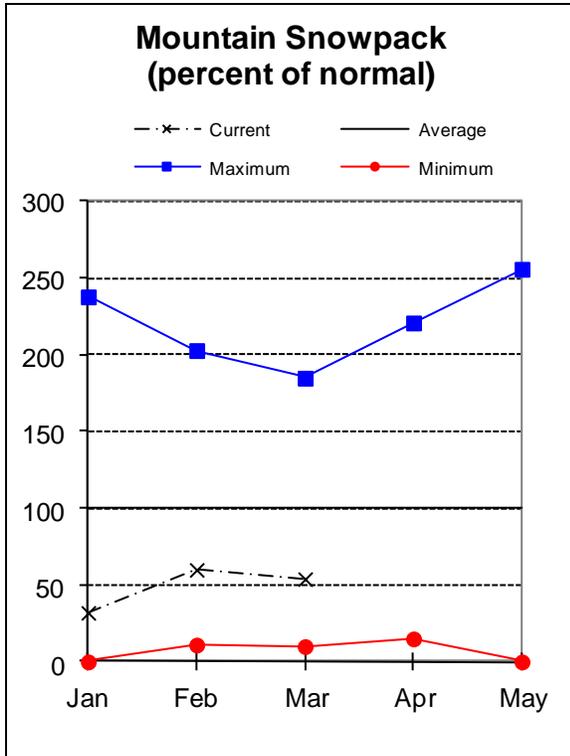
Lakeview - (541) 947-2202

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



# Harney Basin

March 1, 2012



## Water Supply Outlook

February was extremely dry in the Harney Basin. The basin received very little precipitation from the storm that hit the rest of the state in late February. Precipitation for the month of February was only 44 percent of average in the Harney basin, the lowest in the state. Since the beginning of water year 2012, precipitation in the basin has been 66 percent of average.

Snow has been scarce in the Harney Basin this year. The snowpack levels in the basin declined from last month's report. As of March 1, the basin snowpack was 54 percent of average, also the lowest in the state.

Summer streamflow forecasts in the Harney basin declined slightly from last month's report, due to the continued dry conditions. The April through September streamflow forecasts in the basin range from 39 percent of average for Trout Creek near Denio to 64 percent of average for the Silvies River near Burns. Water users in the basin can expect well below normal streamflows for the summer of 2012.

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 - March 1, 2012

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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)	
Donner Und Blitzen R nr Frenchglen	MAR-JUL	16.6	34	45	60	56	73	75
	APR-SEP	14.7	31	42	60	53	69	70
Silvies R nr Burns	MAR-JUL	12.0	54	83	64	112	154	129
	APR-SEP	4.0	36	63	64	90	129	99
Trout Ck nr Denio	MAR-JUL	0.3	2.3	4.4	40	6.5	9.5	11.1
	APR-SEP	0.3	1.9	4.0	39	6.1	9.2	10.3

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

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HARNEY BASIN  
Watershed Snowpack Analysis - March 1, 2012

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Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Donner und Blitzen River	4	37	39
					Silver Creek (Harney Co.)	2	58	64
					Silvies River	6	71	66
					Trout Creek	6	45	44

\* 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 1971-2000 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	Mar 01	Apr 12	May 24	<b>May 6</b>
Owyhee R nr Rome	1000 cfs	Mar 06	Apr 18	May 31	<b>May 18</b>
Owyhee R nr Rome	500 cfs	Mar 18	Apr 29	Jun 10	<b>Jun 2</b>

<b>UPPER 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	30	113	335	<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 09*	May 25*	Jun 10*	<b>May 25</b>
Crane Prairie Inflow	Peak Flow	260	400	540	<b>403</b>
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	200	250	300	<b>269</b>
Prineville Reservoir Inflow	113 cfs	Apr 24	May 17	Jun 03	<b>June 3</b>
Prineville Reservoir Inflow	75 cfs	Apr 29	May 23	Jun 16	<b>June 11</b>
Prineville Reservoir Inflow	50 cfs	May 07	Jun 01	Jun 26	<b>June 19</b>
Whychus Creek nr Sisters	100 cfs	Jul 23	Aug 17	Sep 11	<b>August 16</b>

\*Crane Prairie peak date forecast -- no prediction possible until April.  
Historical values are shown for reference prior to the April 1 report.

<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	Jul 10	Jul 29	Aug 17	<b>August 8</b>
South Umpqua R at Tiller	140 cfs	Jun 11	Jul 02	Jul 23	<b>July 11</b>
South Umpqua R at Tiller	90 cfs	Jun 30	Jul 22	Aug 12	<b>August 1</b>
South Umpqua R at Tiller	60 cfs	Jul 23	Aug 19	Sep 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 03	May 25	Jun 16	<b>June 17</b>
Honey Ck nr Plush	100 cfs	Mar 28	Apr 30	Jun 02	<b>May 16</b>
Honey Ck nr Plush	50 cfs	Apr 12	May 12	Jun 11	<b>June 4</b>
Twentymile Ck nr Adel	50 cfs	Mar 31	Apr 26	May 22	<b>May 30</b>
Twentymile Ck nr Adel	10 cfs	May 26	Jun 18	Jul 11	<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	Apr 05	May 04	Jun 02	<b>May 21</b>
	200 cfs	Apr 13	May 12	Jun 10	<b>June 2</b>
	100 cfs	Apr 22	May 24	Jun 25	<b>June 13</b>
	50 cfs	May 11	Jun 15	Jul 18	<b>July 3</b>
Donner Und Blitzen R nr Frenchglen	200 cfs	May 07	May 29	Jun 20	<b>June 20</b>
Donner Und Blitzen R nr Frenchglen	100 cfs	May 28	Jun 17	Jul 07	<b>July 9</b>

# Summary of Snow Course Data

## March 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
<b>Oregon</b>						
ANEROID LAKE SNOTEL	7400	3/01/12	55	14.0	14.1	21.0
ANNIE SPRING SNOTEL	6010	3/01/12	84	21.9	32.4	33.5
ANTHONY LAKE (REV)	7130	3/01/12	75	21.0	19.2	--
ARBUCKLE MTN SNOTEL	5770	3/01/12	41	12.2	13.9	18.5
BALD PETER	5400	3/05/12	65	21.8	24.4	26.6
BARNEY CREEK (NEW)	5840	2/28/12	20	6.4	9.1	--
BEAR GRASS SNOTEL	4720	3/01/12	116	35.1	--	--
BEAVER CREEK #1	4250	3/02/12	41	10.8	10.2	14.7
BEAVER CREEK #2	4250	3/02/12	28	6.2	5.2	9.8
BEAVER DAM CREEK	5100	3/01/12	30	6.5	11.7	11.4
BEAVER RES. SNOTEL	5150	3/01/12	32	9.3	7.9	8.6
BIG RED MTN SNOTEL	6050	3/01/12	52	10.7	20.5	22.5
BIGELOW CAMP SNOTEL	5130	3/01/12	37	5.4	13.6	12.7
BILLIE CK DVD SNOTEL	5280	3/01/12	55	16.0	18.7	21.4
BLAZED ALDER SNOTEL	3650	3/01/12	89	26.6	24.9	30.1
BLUE MTN SPGS SNOTEL	5870	3/01/12	48	13.2	14.2	15.7
BOULDER CREEK AM	5690	2/28/12	2	.7	2.6	3.8
BOURNE SNOTEL	5850	3/01/12	37	11.5	10.3	16.6
BOWMAN SPRNGS SNOTEL	4530	3/01/12	19	4.4	7.2	9.1
BUCK PASTURE AM	5700	2/28/12	1	.4	2.5	2.4
BULLY CREEK AM	5300	2/28/12	6	1.6	1.8	2.2
CALIBAN ALT	6500	2/27/12	42	13.8	23.0	25.2
CALL MEADOWS AM	5340	2/28/12	3	1.0	3.2	4.2
CAMAS CREEK #3	5850	2/29/12	19	5.3	10.9	11.9
CASCADE SUM. SNOTEL	5100	3/01/12	87	20.7	32.5	27.2
CHEMULT ALT SNOTEL	4850	3/01/12	29	7.4	9.0	8.1
CLACKAMAS LK. SNOTEL	3400	3/01/12	44	9.6	8.5	12.3
CLEAR LAKE SNOTEL	3810	3/01/12	45	9.6	8.1	13.2
COLD SPRINGS SNOTEL	5940	3/01/12	69	18.7	24.3	27.0
COUNTY LINE SNOTEL	4830	3/01/12	4	2.2	2.6	4.6
CRAZYMAN FLAT SNOTEL	6180	3/01/12	40	10.0	13.0	15.7
DALY LAKE SNOTEL	3690	3/01/12	43	9.4	8.6	15.0
DEADHORSE GRADE	3700	3/04/12	18	4.8	6.2	8.5
DEADWOOD JUNCTION	4600	3/01/12	24	3.6E	6.7	6.9
DERR	5670	2/29/12	19	6.4	8.7	9.7
DERR SNOTEL	5850	3/01/12	31	9.3	12.6	13.7
DIAMOND LAKE SNOTEL	5280	3/01/12	42	12.8	13.5	15.0
DOOLEY MOUNTAIN	5430	2/28/12	19	5.2	8.8	7.9
EAST EAGLE	4400	2/29/12	63	16.8	18.9	23.3
EILERTSON SNOTEL	5510	3/01/12	29	7.8	9.6	9.6
ELDORADO PASS	4600	2/28/12	0	.0	5.6	3.4
EMIGRANT SPGS SNOTEL	3800	3/01/12	12	3.9	7.2	5.7
FISH CREEK SNOTEL	7660	3/01/12	52	12.0	26.5	23.9
FISH LK. SNOTEL	4660	3/01/12	35	9.3	9.1	11.1
FLAG PRAIRIE AM	4750	2/28/12	5	1.4	6.1	4.5
FOURMILE LAKE SNOTEL	5970	3/01/12	64	17.1	18.9	27.1
GERBER RES SNOTEL	4890	3/01/12	0	.1	1.5	1.4
GOLD CENTER SNOTEL	5410	3/01/12	30	7.9	8.4	10.3
GOVT CORRALS AM	7450	2/28/12	24	8.9	13.4	--
GREENPOINT SNOTEL	3310	3/01/12	45	10.5	9.9	17.8
HIGH PRAIRIE	6100	2/27/12	102	36.8	27.7	41.1
HIGH RIDGE SNOTEL	4920	3/01/12	73	20.5	21.8	21.2
HOGG PASS SNOTEL	4790	3/01/12	73	17.5	18.3	34.0
HOLLAND MDWS SNOTEL	4930	3/01/12	41	9.7	14.7	21.0
HOWARD PRAIRIE	4500	3/01/12	18	2.7E	5.7	7.3
HUNGRY FLAT	4400	3/02/12	12	1.2	2.2	3.4

SNOW COURSE		ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
<b>Oregon (continued)</b>							
IRISH-TAYLOR	SNOTEL	5540	3/01/12	93	24.0	26.5	30.7
JUMP OFF JOE	SNOTEL	3520	3/01/12	40	6.1	12.4	11.4
KING MTN #1		4500	2/29/12	26	4.3E	9.3	6.7
KING MTN #2	SNOTEL	4340	3/01/12	17	2.7	6.5	3.8
KING MTN #3		3650	2/29/12	16	1.8E	4.2	1.0
KING MTN #4		3050	2/29/12	8	1.0	1.0	.1
LAKE CK R.S.	SNOTEL	5240	3/01/12	29	8.2	8.3	11.6
LITTLE ALPS		6200	3/01/12	40	9.6	10.3	11.1
LITTLE ANTONE (ALT)		5000	3/01/12	29	7.0	7.3	8.4
LITTLE MEADOW	SNOTEL	4020	3/01/12	76	20.5	27.3	22.8
LOOKOUT BUTTE	AM	5650	2/28/12	0	.0	1.3	.3
LOUSE CANYON	AM	6440	2/28/12	0	.0	8.3	5.8
LUCKY STRIKE	SNOTEL	4970	3/01/12	21	6.3	9.5	9.3
MADISON BUTTE	SNOTEL	5150	3/01/12	12	3.7	5.2	4.8
MARION FORKS	SNOTEL	2590	3/01/12	45	9.9	5.5	10.2
MARKS CREEK		4540	2/28/12	6	1.5	3.6	3.2
MARY'S PEAK REV		3620	3/02/12	36	7.6	6.4	5.8
MCKENZIE	SNOTEL	4770	3/01/12	107	32.4	36.7	37.5
MEACHAM		4300	3/02/12	24	6.6	7.2	8.5
MILKSHAKES	SNOTEL	5580	3/01/12	101	33.0	--	--
MILL CREEK MDW		4400	2/27/12	31	8.1	8.7	10.6
MILLER WOODS	SNOTEL	420	3/01/12	0	.3	.0	--
MOSS SPRINGS	SNOTEL	5760	3/01/12	63	18.8	20.1	22.2
MT ASHLAND SWBK.		6400	2/27/12	42	14.0	21.3	27.2
MT HOOD TEST	SNOTEL	5370	3/01/12	139	48.2	40.1	48.4
MT HOWARD	SNOTEL	7910	3/01/12	41	12.0	11.6	12.8
MUD RIDGE	SNOTEL	4070	3/01/12	86	22.5	18.7	21.9
NEW CRESCENT	SNOTEL	4910	3/01/12	41	6.3	11.4	11.0
NEW DUTCHMAN #3		6320	3/02/12	120	38.1	38.9	46.1
NORTH FK RES	SNOTEL	3060	3/01/12	60	19.8	18.1	16.4
NORTH UMPQUA		4220	3/02/12	26	6.4E	9.0	10.7
OCHOCO MEADOWS		5200	2/28/12	18	6.1	9.5	9.6
OCHOCO MEADOW	SNOTEL	5430	3/01/12	23	7.2	9.6	9.3
OREGON CANYON	AM	6950	2/28/12	5	2.0	5.4	5.5
PARK H.Q. REV		6550	2/28/12	95	31.5	45.4	48.0
PEAVINE RIDGE	SNOTEL	3420	3/01/12	46	8.7	10.6	13.2
PUEBLO SUMMIT	AM	6800	2/28/12	1	.4	5.4	2.5
QUARTZ MTN	SNOTEL	5720	3/01/12	3	.9	1.4	2.3
RACING CREEK		4800	3/02/12	28	7.6	11.2	12.3
R.R. OVERPASS	SNOTEL	2680	3/01/12	2	.5	3.0	.1
RED BUTTE #1		4560	2/28/12	21	4.5E	12.2	10.2
RED BUTTE #2		4000	2/28/12	6	.8	2.8	5.3
RED BUTTE #3		3500	2/28/12	6	1.0	3.5	2.3
RED BUTTE #4		3000	2/28/12	3	.3	1.5	.8
RED HILL	SNOTEL	4410	3/01/12	109	40.2	38.6	41.4
ROARING RIVER	SNOTEL	4950	3/01/12	73	21.4	25.6	25.5
ROCK SPRINGS	SNOTEL	5290	3/01/12	12	2.3	6.1	5.3
SADDLE MTN	SNOTEL	3110	3/01/12	31	5.9	21.4	--
SALT CK FALLS	SNOTEL	4220	3/01/12	53	10.0	22.4	16.5
SANTIAM JCT.	SNOTEL	3740	3/01/12	55	11.3	14.5	17.8
SCHNEIDER MDW	SNOTEL	5400	3/01/12	74	22.5	22.4	27.6
SEINE CREEK	SNOTEL	2060	3/01/12	15	2.4	4.1	2.9
SEVENMILE MARSH SNTL		5700	3/01/12	59	14.2	21.9	26.7
SILVER BURN		3720	2/28/12	15	6.2E	13.6	10.5
SILVER CREEK	SNOTEL	5740	3/01/12	27	7.1	11.1	9.8
SILVIES	SNOTEL	6990	3/01/12	21	5.8	13.2	15.6
SISKIYOU SUMMIT REV		4630	2/27/12	22	7.9	6.1	5.3
SKI BOWL ROAD		6000	2/27/12	37	11.7	17.5	22.0
SMITH RIDGE	SNOTEL	3330	3/01/12	30	2.8	--	--
SNOW MTN	SNOTEL	6220	3/01/12	24	5.2	10.1	10.3
SF BULL RUN	SNOTEL	2690	3/01/12	23	3.9	8.6	2.8
STARR RIDGE	SNOTEL	5250	3/01/12	19	5.2	7.8	6.0

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00	
<b>Oregon (continued)</b>							
STRAWBERRY	SNOTEL	5770	3/01/12	7	2.6	4.7	5.5
SUMMER RIM	SNOTEL	7080	3/01/12	42	9.9	14.8	15.2
SUMMIT LAKE	SNOTEL	5610	3/01/12	89	24.3	29.8	31.5
SUN PASS	SNOTEL	5400	3/01/12	50	15.8	15.2	--
SWAN LAKE MTN	SNOTEL	6830	3/01/12	45	12.6	18.7	--
TANGENT		5400	3/02/12	63	17.6	15.0	19.9
TAYLOR BUTTE	SNOTEL	5030	3/01/12	22	5.6	7.4	6.0
TAYLOR GREEN	SNOTEL	5740	3/01/12	53	16.9	18.3	18.9
THREE CK MEAD	SNOTEL	5690	3/01/12	61	11.3	19.1	16.9
TIPTON	SNOTEL	5150	3/01/12	32	7.6	10.9	12.8
TOKETEE AIRSTRIP	SN	3240	3/01/12	16	1.9	3.7	5.8
TOLLGATE		5070	3/02/12	79	25.6	24.4	24.5
TRAP CREEK		3800	3/02/12	30	6.5E	10.2	9.1
TROUT CREEK	AM	7800	2/28/12	24	8.9	10.9	9.7
V LAKE	AM	6600	2/28/12	3	1.1	10.1	7.3
WOLF CREEK	SNOTEL	5630	3/01/12	44	10.6	12.7	14.7
<b>California</b>							
ADIN MOUNTAIN		6350	2/27/12	8	2.6	12.7	11.7
ADIN MTN	SNOTEL	6190	3/01/12	16	5.2	13.2	12.2
CEDAR PASS	SNOTEL	7030	3/01/12	29	7.7	15.4	15.6
CROWDER FLAT	SNOTEL	5170	3/01/12	5	1.7	5.0	4.7
DISMAL SWAMP	SNOTEL	7360	3/01/12	49	11.3	26.5	23.7
<b>Idaho</b>							
BATTLE CREEK	AM	5720	2/28/12	3	1.1	5.9	3.9
BULL BASIN	AM	5460	2/28/12	0	.0	1.6	1.6
MUD FLAT	SNOTEL	5730	3/01/12	16	4.9	8.7	6.8
RED CANYON	AM	6650	2/28/12	12	4.4	9.0	7.3
SOUTH MTN	SNOTEL	6500	3/01/12	36	10.9	13.5	17.1
SUCCOR CREEK	AM	6100	2/28/12	24	7.2	8.7	7.4
VAUGHT RANCH	AM	5830	2/28/12	3	1.1	5.0	4.7
<b>Nevada</b>							
BEAR CREEK	SNOTEL	7800	3/01/12	47	11.6	18.8	17.1
BIG BEND	SNOTEL	6700	3/01/12	21	6.3	9.4	8.6
BUCKSKIN, L	SNOTEL	6700	3/01/12	28	5.3	9.5	8.5
COLUMBIA BASIN	AM	6650	3/01/12	19	6.1	6.1	8.8
DISASTER PEAK	SNOTEL	6500	3/01/12	4	1.6	6.4	9.7
FAWN CREEK	SNOTEL	7050	3/01/12	37	8.5	13.2	14.4
FRY CANYON		6700	2/28/12	14	4.6	7.4	7.3
GOLD CREEK		6600	2/28/12	14	4.5	6.2	5.6
GRANITE PEAK	SNOTEL	7800	3/01/12	39	7.3	19.6	19.7
JACK CREEK, U	SNOTEL	7280	3/01/12	41	10.0	11.7	15.7
LAMANCE CREEK	SNOTEL	6000	3/01/12	24	2.0	8.5	12.6
LAUREL DRAW	SNOTEL	6700	3/01/12	25	6.5	8.6	9.2
MERRIT MOUNTAIN	AM	7000	3/01/12	13	4.2	4.6	6.6
MIDAS	(d)	7200	3/01/12	8	2.6	3.5	3.7
QUINN RIDGE	AM	6300	2/28/12	0	.0	4.2	2.1
SEVENTYSIX CK	SNOTEL	7100	3/01/12	31	8.2	8.3	10.9
STAG MOUNTAIN	AM	7700	3/01/12	11	3.5	5.2	5.3
TAYLOR CANYON	SNOTEL	6200	3/01/12	3	.9	5.1	5.3
TOE JAM	AM	7700	2/28/12	20	6.4	7.8	9.4
TREMEWAN RANCH		5700	2/28/12	0	.0	.0	1.9

(d) denotes discontinued site.

# 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. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. 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 uncertain 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 1971-2000. 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 below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 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 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90**

percent exceedance forecast). There is 10% chance of receiving less than 443 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 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

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**OWYHEE AND MALHEUR BASINS**  
**Streamflow Forecasts - February 1, 2006**

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50% (Most Probable)			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	
MALHEUR near Drewsey	FEB-JUL	148	184	210	165	238	282	127				
	APR-SEP	87	110	128	168	147	177	76				
NF MALHEUR at Beulah	FEB-JUL	108	127	141	157	156	178	90				
OWYHEE RESV INFLOW (2)	FEB-JUL	602	792	935	134	1090	1340	700				
	APR-SEP	341	473	575	134	687	869	430				

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

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Official Business



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

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