



United States  
Department of  
Agriculture



Natural Resources  
Conservation  
Service

# Oregon Basin Outlook Report

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March 1, 2009



(photo courtesy of Chris Garvey)

The above photo was taken on February 26<sup>th</sup> at Grayback Peak snow course in the Applegate River basin. Measurements from six sites in the basin show that stored water in the snowpack is currently 71% of average. Many areas in Oregon have below average snowpack.

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# General Outlook

March 1, 2009

## SUMMARY

Precipitation and snow accumulation levels are below normal throughout Oregon as of March 1. Temperatures at Oregon SNOTEL sites were generally warmer than average for the month of February. While a small amount of snow did accumulate in February, gains were not enough to improve the water supply conditions in the state. Streamflow forecasts for many points in the state have dropped since the February 1 report.

Climatologically, most of the winter precipitation has fallen by March 1. The March 3 drought monitor (<http://drought.unl.edu/dm>) shows most of Oregon in an abnormally dry condition. Regions of south central and eastern Oregon are listed in moderate or severe drought condition. Most Oregon water users can expect below normal supplies this spring and summer. Early mitigation may help water users alleviate dry conditions and drought.

## SNOWPACK

The month of February was unseasonably dry and generally warmer than average in Oregon. While most snow measurement sites showed increased snow water from last month, the gains were not significant. Storms at the end of the month brought some improvement to the snowpack. February snow accumulation however, was well below normal.

The Oregon snowpack measured 87 percent of average on March 1. Most basins in the state reported below average snow water for March 1. Basin snowpacks ranged from 71 percent of average for the Harney basin to 100 percent of average in the Hood, Mile Creeks and Lower Deschutes basin.

## PRECIPITATION

Since the beginning of the water year, monthly precipitation has been below average for every month except December. February was no exception. Basin wide, February precipitation ranged from a low of 54 percent of average in the Umatilla, Walla Walla, Willow, Rock and Lower John Day basin to 76 percent of average in Lake County.

Most basins in the state are reporting below normal precipitation for the water year. Since the beginning of the water year, precipitation has ranged from 74 percent of average for Lake County to 93 percent of average for the Owyhee and Malheur basin.

## RESERVOIRS

Current reservoir storage levels reflect early season run off. In basins with below normal snowpacks, spring and summer reservoir storage is likely to fall further below average.

The February 1 storage at 26 major Oregon reservoirs analyzed in this publication was 71 percent of average. A total of 1,478,400 acre feet of water were stored on March 1, representing 47 percent of useable capacity. Last year at this time these same reservoirs stored 1,380,500 acre feet of water.

## **STREAMFLOW**

Projected summer streamflows have decreased in many basins since the February 1 report due to below average monthly precipitation and snowpack accumulation. April through September streamflow forecasts range from 49 percent of average for the Malheur River near Drewsey to 105 percent of average for the Umatilla River at Pendleton. In areas with below normal snowpacks, water users can expect that summer low flows will arrive earlier this season than normal.

Many Oregon water users will face reduced supply this coming summer. Through advance planning, it is hoped that water users can begin conservation measures early to limit the effects of the low water supply.

<b>STREAM</b>	<b>PERIOD</b>	<b>PERCENT OF AVERAGE</b>
Owyhee Reservoir Inflow	April-September	74
Grande Ronde R at La Grande	April-September	80
Umatilla R at Pendleton	April-September	105
Deschutes R at Benham Falls	April-September	88
MF Willamette bl NF	April-September	95
Rogue R at Raygold	April-September	83
Upper Klamath Lake Inflow	April-September	71
Silvies R nr Burns	April-September	74

Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period.

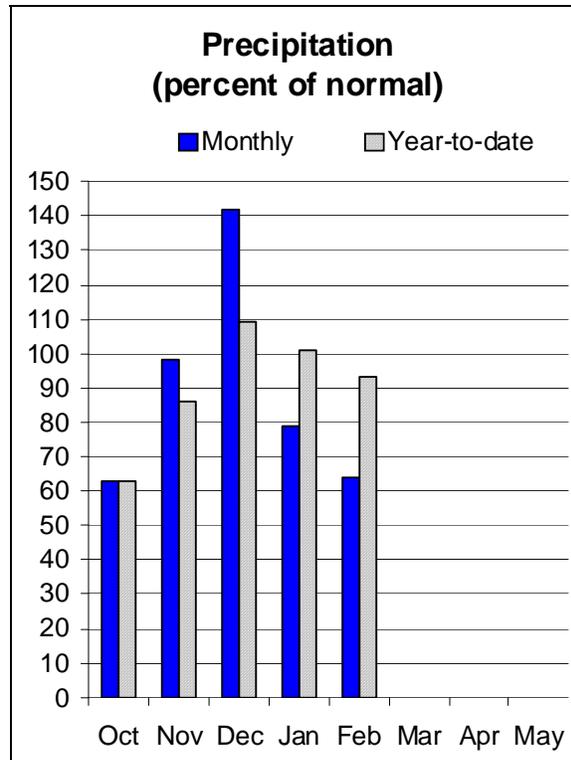
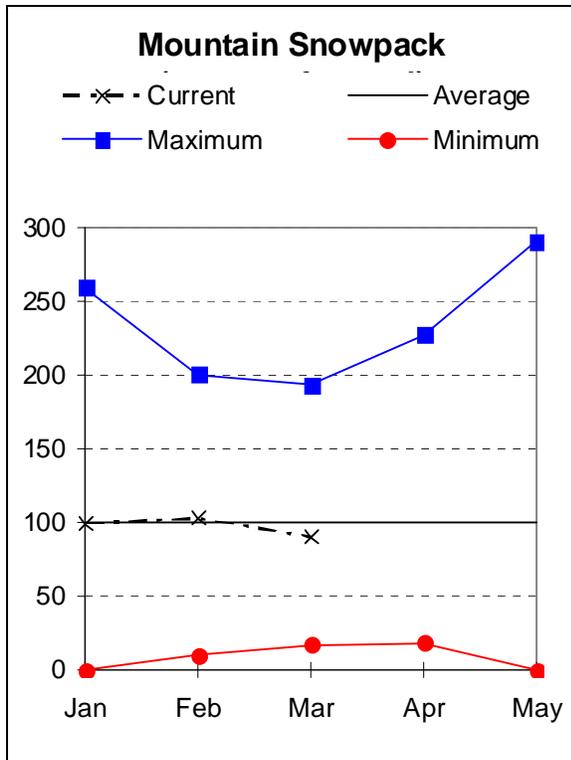
The forecasts in this bulletin are a result of coordinated activity between the Natural Resources Conservation Service and the National Weather Service as an effort to provide the best possible service to water users.

This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators.



# Owyhee and Malheur Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Owyhee and Malheur basins was 90 percent of average. This is a considerable decline from the February 1 report of 103 percent of average. While there was a net accumulation of snow in the mountains, it was far from average. When evaluated separately, the snowpack in the Upper Malheur basin is 68 percent of average and the Owyhee is 99 percent of average. Measurements were taken at 19 aerial markers, 11 SNOTEL sites and 5 snow courses.

February precipitation in the Owyhee and Malheur basin was 64 percent of average. Since the beginning of the water year, precipitation in the basin has been 93 percent of average, the highest in the state.

At the end of February, storage at Beulah, Bully Creek, Owyhee and Warm Springs reservoirs was 45 percent of average and 29 percent of capacity. The April through September streamflow forecasts range from 49 to 80 percent of average.

Water users in the basin can expect well below to slightly below average water supply conditions for the April through September period.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

OWYHEE AND MALHEUR BASINS  
Streamflow Forecasts - March 1, 2009

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	23	43	60	55	80	115	110
	APR-SEP	10.1	24	37	49	53	81	76
NF Malheur R at Beulah	MAR-JUL	21	33	42	52	52	70	81
Owyhee Reservoir Inflow (2)	MAR-JUL	104	328	480	78	632	856	615
	MAR-SEP	79	330	500	78	670	921	645
	APR-SEP	30	203	320	74	437	610	430
Owyhee R nr Rome	MAR-JUL	290	403	490	85	586	742	580
	MAR-SEP	298	412	500	83	597	754	600
	APR-SEP	184	261	320	80	385	493	400

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

OWYHEE AND MALHEUR BASINS  
Watershed Snowpack Analysis - March 1, 2009

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	19.7	17.3	35.4	Owyhee	20	76	99
BULLY CREEK	30.0	11.5	7.9	17.5	Upper Malheur	8	43	68
OWYHEE	715.0	232.6	215.8	489.1	Jordan Creek	4	67	85
WARMSPRINGS	191.0	25.8	22.1	102.7	Bully Creek	3	35	79
					Willow Creek	4	39	80

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

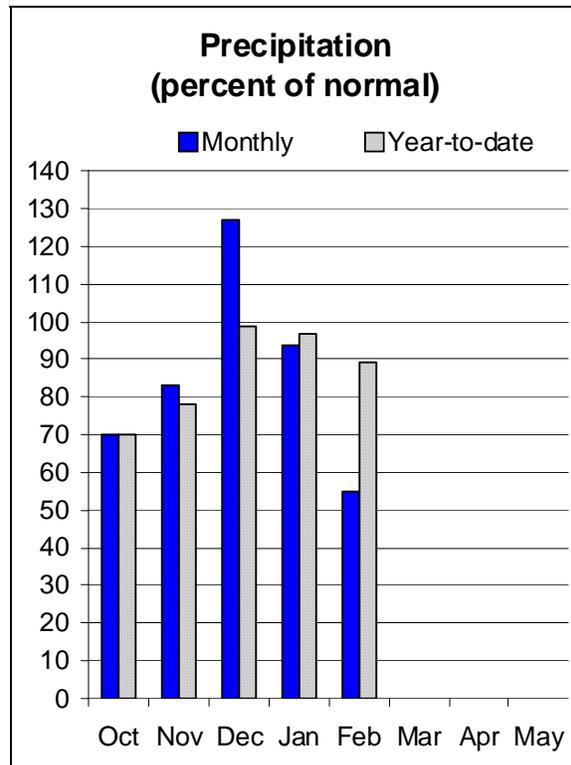
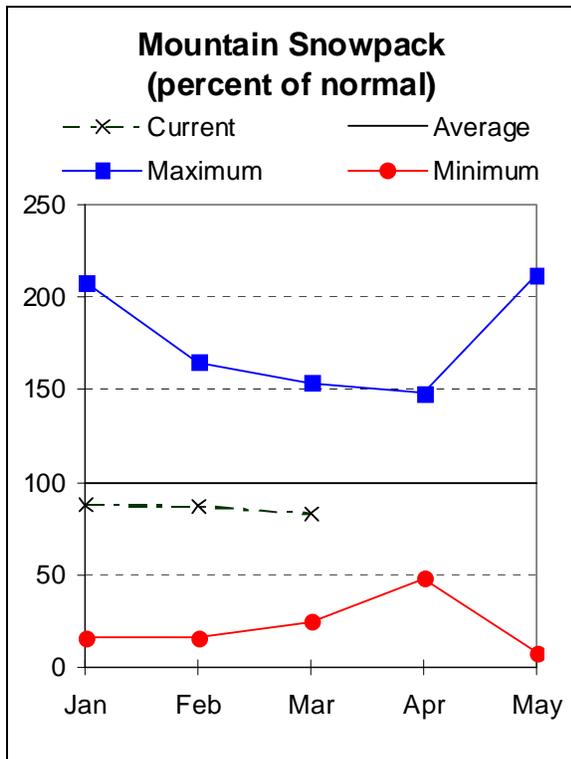
The average is computed for the 1971-2000 base period.

- (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.



# Burnt, Powder, Grand Ronde, and Imnaha Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the basin was 83 percent of average. This represents a decline from February 1 average conditions. Measurements were taken at 16 SNOTEL sites, 1 aerial marker and 7 snow courses.

February precipitation in the basin was only 55 percent of average. Since the beginning of the water year, precipitation in the basin has been 89 percent of average.

At the end of February, storage at Philips, Thief and Unity reservoirs was 83 percent of average and 55 percent of capacity.

The April through September streamflow forecasts range from 62 to 80 percent of average.

Water users in the basin can expect well below to slightly below average water supply conditions for the April through September period.

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.wcc.nrcs.usda.gov/cgibin/bor.pl>

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BURNT, POWDER, PINE, GRANDE RONDE AND IMNAHA BASINS  
Streamflow Forecasts - March 1, 2009

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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)
Bear Ck nr Wallowa	APR-SEP	32	43	50	77	57	68	65
Burnt R nr Hereford	MAR-JUL	17.4	26	32	63	39	51	51
	APR-SEP	10.9	18.1	24	62	31	42	39
Catherine Ck nr Union	APR-JUL	36	43	49	79	55	64	62
	APR-SEP	39	47	53	80	59	69	66
Deer Ck nr Sumpster	MAR-JUL	9.2	12.1	14.4	79	16.8	21	18.2
Grande Ronde R at La Grande	MAR-JUL	136	173	200	81	229	276	247
	APR-SEP	89	123	150	80	179	227	188
Grande Ronde R at Troy	MAR-JUL	840	1143	1280	81	1417	1720	1580
	APR-SEP	701	975	1100	80	1225	1499	1370
Imnaha R at Imnaha	APR-JUL	115	165	200	74	235	285	270
	APR-SEP	125	178	215	73	252	305	295
Lostine R nr Lostine	APR-JUL	68	80	88	79	97	111	112
	APR-SEP	70	83	92	76	102	117	121
Pine Ck nr Oxbow	MAR-JUL	79	118	144	77	170	209	188
	APR-JUL	57	88	110	74	132	163	148
	APR-SEP	60	93	115	75	137	170	154
Powder R nr Sumpster	MAR-JUL	33	42	50	71	58	71	70
	APR-JUL	24	33	40	69	47	59	58
	APR-SEP	25	34	41	70	48	61	59
Wolf Ck Reservoir Inflow (2)	MAR-JUN	9.0	11.9	13.8	85	15.7	18.6	16.2

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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.

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, 2009			
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	37.8	10.6	43.8	Upper Grande Ronde	9	71	89
THIEF VALLEY	17.4	13.7	13.1	17.3	Wallowa	4	71	80
UNITY	25.2	12.3	9.0	15.8	Imnaha	3	66	69
WALLOWA LAKE		NO REPORT			Powder	10	68	79
WOLF CREEK		NO REPORT			Burnt	5	52	76

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

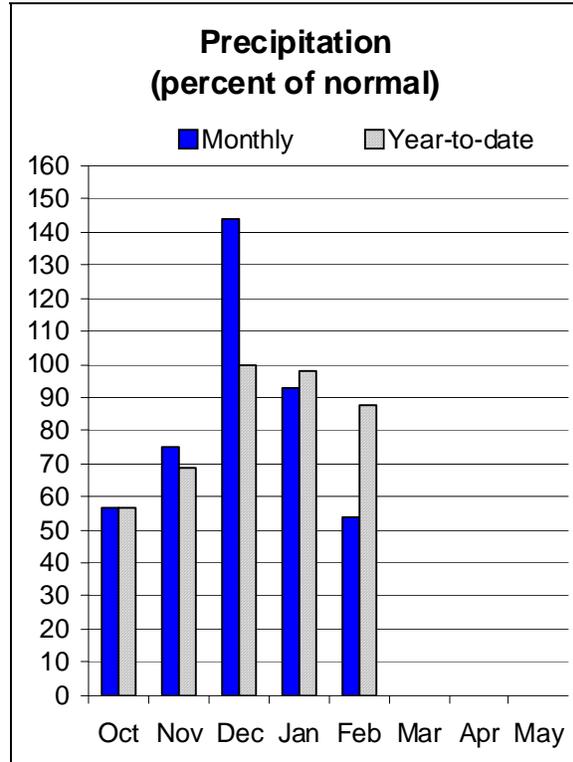
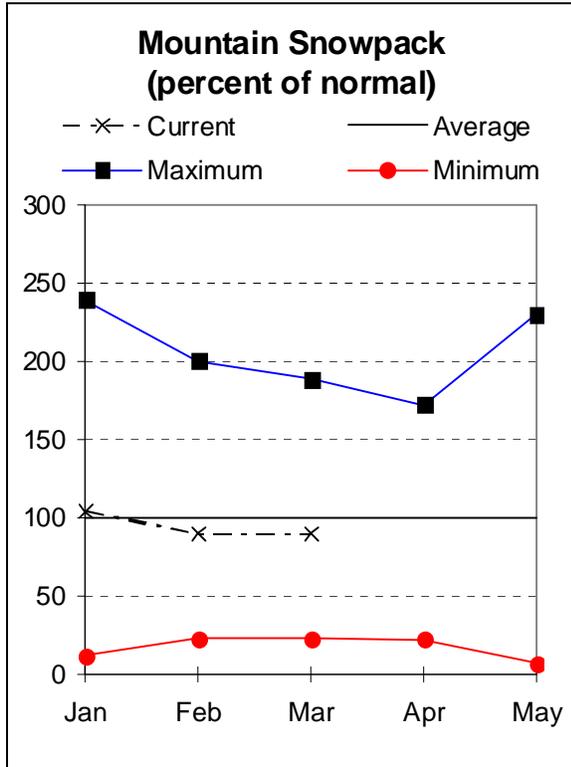
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# Umatilla, Walla Walla, Willow Rock, and Lower John Day Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the basin was 90 percent of average. The February snow accumulation was enough to keep the snow conditions from declining from last month. Measurements were taken at 7 SNOTEL sites and 2 snow courses.

February precipitation in the basin was only 54 percent of average, the lowest in the state. Since the beginning of the water year, precipitation in the basin has been 88 percent of average.

At the end of February, storage at McKay and Cold Springs reservoirs was 71 percent of average and 43 percent of capacity. The April through September streamflow forecasts range from 80 to 105 percent of average.

Most water users in the basin can expect near average water supply conditions for the April through September period.

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.wcc.nrcs.usda.gov/cgibin/bor.pl>

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS  
Streamflow Forecasts - March 1, 2009

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)
Butter Ck nr Pine City	MAR-JUL	5.5	9.4	12.0	80	14.6	18.5	15.0
	APR-SEP	3.3	6.2	8.2	80	10.2	13.1	10.2
McKay Ck nr Pilot Rock	APR-SEP	7.7	19.2	27	100	35	46	27
Rhea Ck nr Heppner	MAR-JUL	2.2	5.6	7.9	73	10.2	13.6	10.8
Umatilla R ab Meacham Ck nr Gibbon	APR-JUL	54	67	76	104	85	98	73
	MAR-SEP	85	100	110	104	120	135	106
	APR-SEP	60	73	82	104	91	104	79
Umatilla R at Pendleton	APR-JUL	105	136	156	105	176	205	149
	MAR-SEP	183	215	240	104	265	295	230
	APR-SEP	112	142	163	105	184	215	155
SF Walla Walla R nr Milton-Freewater	APR-JUL	41	47	51	94	55	61	54
	MAR-SEP	63	71	76	94	81	89	81
	APR-SEP	52	58	63	94	68	74	67
Willow Ck ab Willow Ck Lake nr Heppn	MAR-JUL	2.4	5.6	7.8	70	10.0	13.2	11.1
	APR-JUL	0.8	3.4	5.2	70	7.0	9.6	7.4

UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS					UMATILLA, WALLA WALLA, WILLOW, ROCK AND LOWER JOHN DAY BASINS			
Reservoir Storage (1000 AF) - End of February					Watershed Snowpack Analysis - March 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COLD SPRINGS	50.0	16.7	15.4	29.5	Walla Walla	3	66	92
MCKAY	73.8	36.0	24.1	44.6	Umatilla	7	73	91
WILLOW CREEK	1.8	0.4	0.7	---	McKay Creek	4	80	97

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

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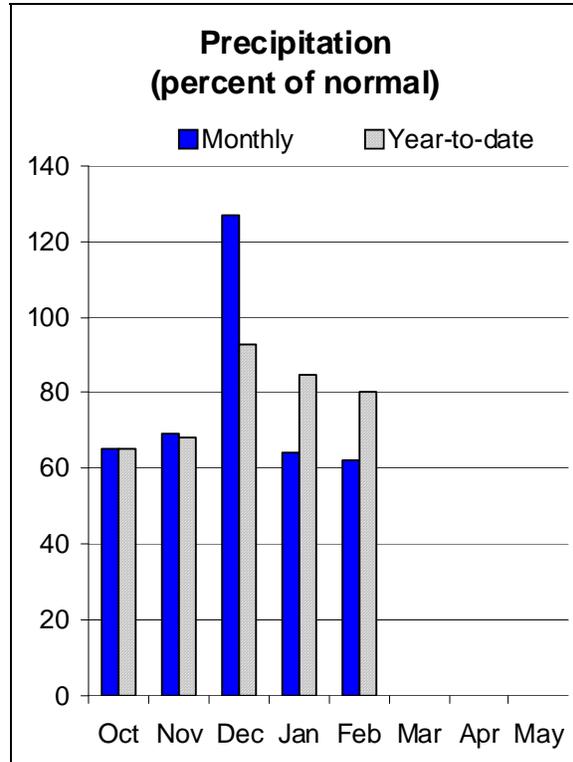
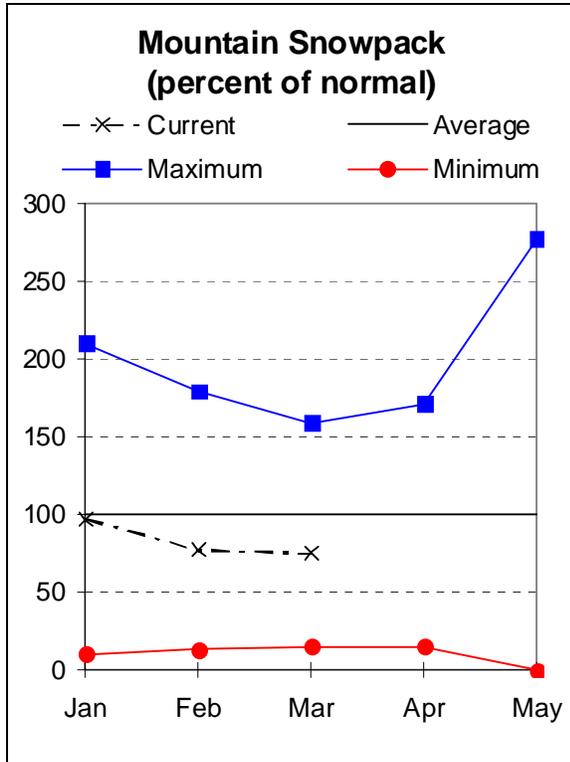
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# Upper John Day Basin

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Upper John Day basin was 75 percent of average. This represents a slight decline from last month. Measurements were taken at 13 SNOTEL sites and 5 snow courses.

Total precipitation since the beginning of the water year has been 80 percent of average. February precipitation in the Upper John Day basin was only 62 percent of average.

Water supply forecasts for the April through September period range from 78 percent of average to 86 percent of average, a significant drop from last month's report.

Upper John Day water users can expect below normal summer streamflow conditions.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

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UPPER JOHN DAY BASIN  
Streamflow Forecasts - March 1, 2009

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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)
Camas Ck nr Ukiah	MAR-JUL	28	38	44	85	50	60	52
	APR-SEP	16.2	26	32	84	38	48	38
MF John Day R at Ritter	MAR-JUL	71	103	124	78	145	177	159
	APR-SEP	51	80	100	78	120	149	128
NF John Day R at Monument	MAR-JUL	375	520	615	78	710	855	790
	APR-SEP	265	390	480	78	570	695	615
Mountain Ck nr Mitchell	MAR-JUL	2.3	4.0	5.2	85	6.4	8.1	6.1
	APR-SEP	1.5	3.0	4.0	86	5.0	6.6	4.6
Strawberry Ck nr Prairie City	MAR-JUL	3.8	5.4	6.4	87	7.4	9.0	7.4
	APR-SEP	4.0	5.6	6.7	86	7.8	9.4	7.8

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

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UPPER JOHN DAY BASIN  
Watershed Snowpack Analysis - March 1, 2009

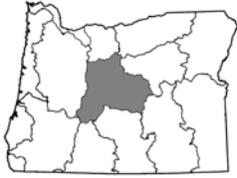
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Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					North Fork John Day	7	64	73
					John Day above Kimberly	5	63	72

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

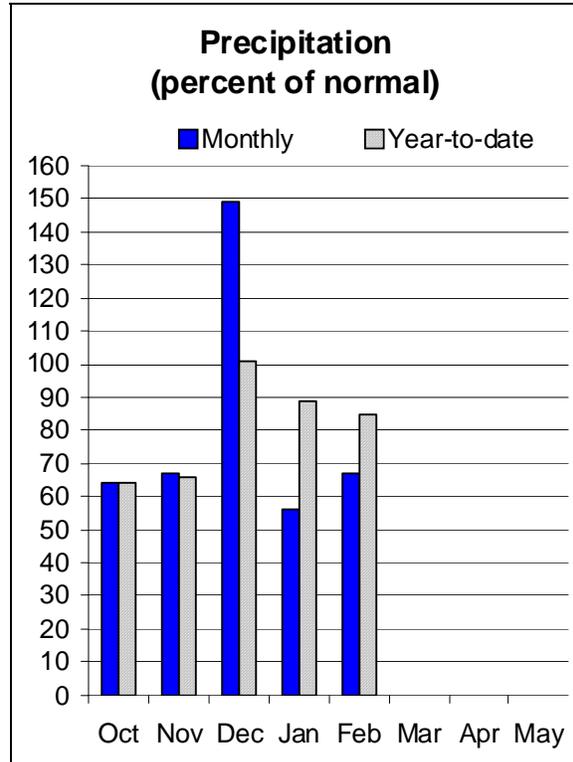
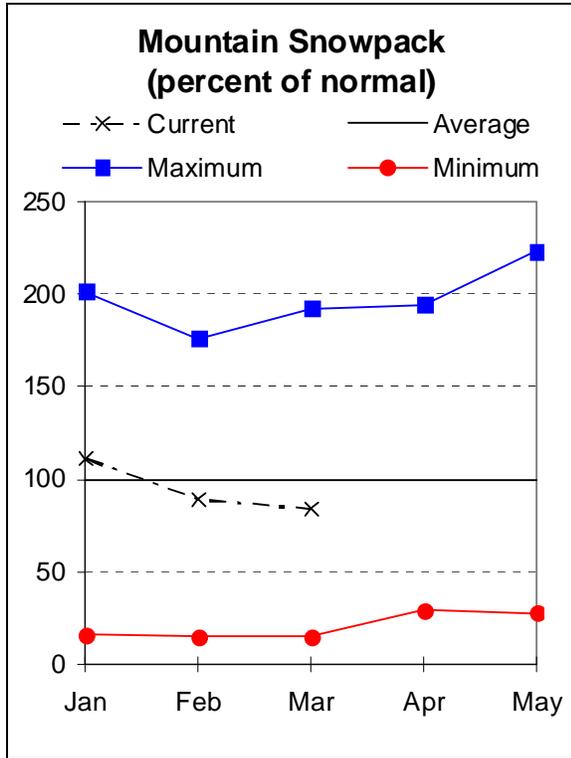
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# Upper Deschutes and Crooked Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Upper Deschutes and Crooked basin was 84 percent of average. This represents a slight decline in conditions from the February 1 report. Measurements were taken at 14 SNOTEL sites and 6 snow courses.

February precipitation in the basin was 67 percent of average. Since the beginning of the water year, precipitation in the basin has been 85 percent of average.

At the end of February, storage at 5 basin reservoirs was 106 percent of average or 78 percent of capacity. The April through September streamflow forecasts range from 82 to 88 percent of average, a decline since last month.

Water users in the Upper Deschutes and Crooked River basin can expect below normal streamflows this coming summer.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

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UPPER DESCHUTES AND CROOKED BASINS  
Streamflow Forecasts - March 1, 2009

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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)	
Crane Prairie Reservoir Inflow (2)	MAR-JUL	44	53	60	88	67	76	68
	APR-JUL	39	47	52	88	57	65	59
	MAR-SEP	71	82	90	88	98	109	102
	APR-SEP	65	75	82	88	89	99	93
Crescent Ck nr Crescent (2)	MAR-JUL	8.1	13.2	16.6	83	20	25	20
	APR-JUL	7.0	11.3	14.3	83	17.3	22	17.2
	MAR-SEP	11.2	16.4	20	83	24	29	24
	APR-SEP	10.1	14.5	17.5	83	20	25	21
Deschutes R at Benham Falls nr Bend	MAR-JUL	340	365	380	88	395	420	430
	APR-JUL	280	300	310	89	320	340	350
	MAR-SEP	480	510	530	88	550	580	605
	APR-SEP	420	445	460	88	475	500	525
Deschutes R bl Snow Ck nr La Pine	MAR-JUL	21	28	33	85	38	45	39
	APR-JUL	18.3	24	28	85	32	38	33
	MAR-SEP	41	49	55	85	61	69	65
	APR-SEP	38	45	50	85	55	62	59
Little Deschutes R nr La Pine (2)	MAR-JUL	54	66	74	85	82	94	87
	APR-JUL	44	53	60	85	67	76	71
	MAR-SEP	60	73	82	85	91	104	96
	APR-SEP	48	60	68	85	76	88	80
Ochoco Reservoir Inflow (2)	MAR-JUL	16.3	24	29	83	34	42	35
	APR-JUL	6.9	13.5	18.0	82	22	29	22
	MAR-SEP	16.2	24	29	83	34	42	35
	APR-SEP	6.9	13.5	18.0	82	22	29	22
Prineville Reservoir Inflow (2)	MAR-JUL	62	116	153	83	190	245	184
	APR-JUL	26	64	90	83	116	154	108
	MAR-SEP	62	117	154	83	191	245	185
	APR-SEP	24	63	90	83	117	156	109
Whychus Ck nr Sisters	MAR-JUL	27	30	32	83	34	37	39
	APR-JUL	25	28	30	83	32	35	36
	MAR-SEP	35	39	41	81	43	47	50
	APR-SEP	35	38	40	82	42	45	49

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UPPER DESCHUTES AND CROOKED BASINS Reservoir Storage (1000 AF) - End of February					UPPER DESCHUTES AND CROOKED BASINS Watershed Snowpack Analysis - March 1, 2009			
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	45.1	45.2	41.9	Crooked	4	60	73
CRESCENT LAKE	86.9	63.8	48.3	52.3	Little Deschutes	4	64	90
OCHOCO	47.5	24.4	22.6	25.8	Deschutes above Wickiup R	4	61	94
PRINEVILLE	153.0	94.9	90.3	102.7	Tumalo and Squaw Creeks	5	66	85
WICKIUP	200.0	194.7	182.9	176.0				

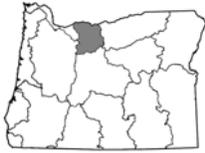
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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

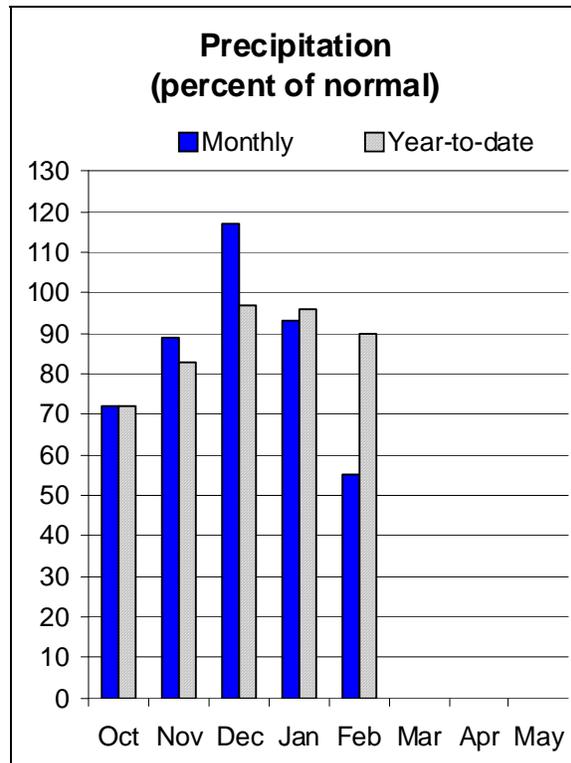
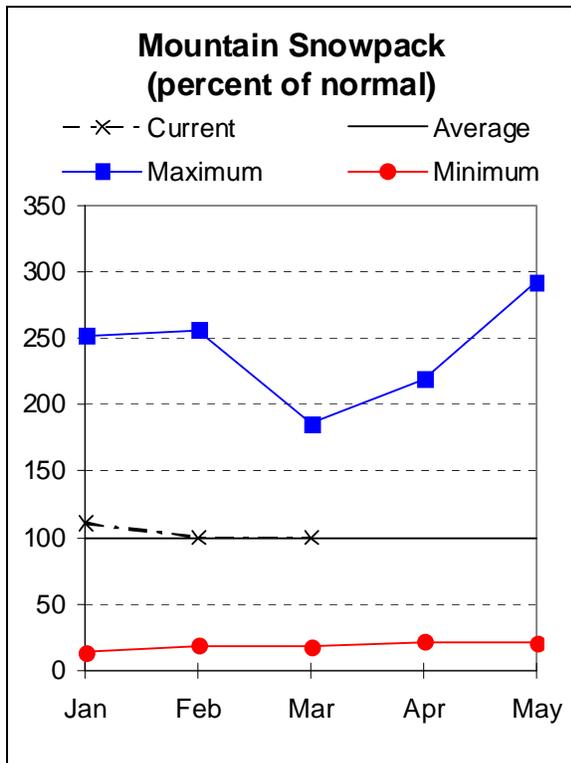
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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# Hood, Mile Creeks, and Lower Deschutes Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Hood, Mile Creeks and Lower Deschutes basin was the most abundant in the state at 100 percent of average. January 1 and February 1 measurements were also near average. Snow measurements were recorded at 8 SNOTEL sites and 2 snow courses in the basin.

Despite maintaining an average snowpack, February precipitation in the basin was only 55 percent of average. Since the beginning of the water year, precipitation in the basin has been 90 percent of average.

The April through September streamflow forecast for Hood River at Tucker Bridge is 96 percent of average.

Water users in the Hood, Mile Creeks, and Lower Deschutes basin can expect near normal streamflows this coming summer.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

HOOD, MILE CREEKS AND LOWER DESCHUTES BASINS  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>					30-Yr Avg. (1000AF)					
		90%		70%		50%		30%		10%		
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)
		Chance Of Exceeding *										
Hood R at Tucker Bridge	APR-JUL	174	200	220	97	240	265	228				
	APR-SEP	210	240	260	96	280	310	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, 2009

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	5.4	1.2	4.3	Hood River	5	59	99
					Mile Creeks	2	68	93
					White River	4	63	99

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

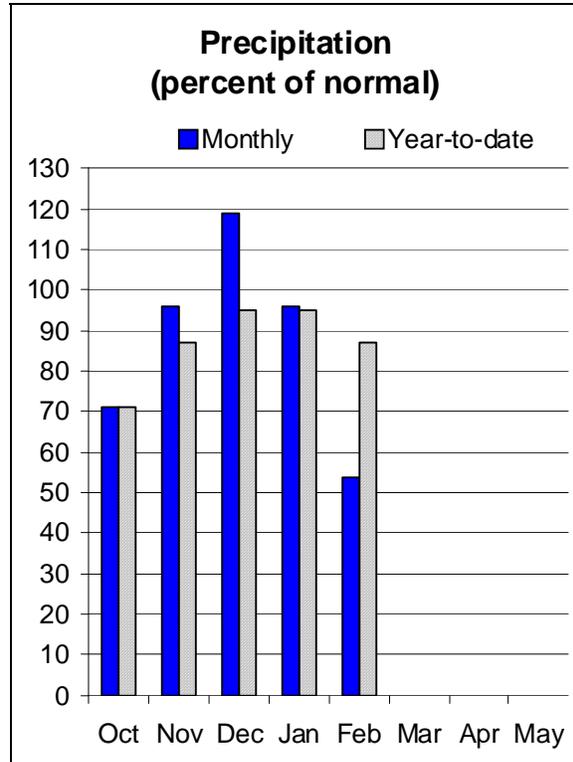
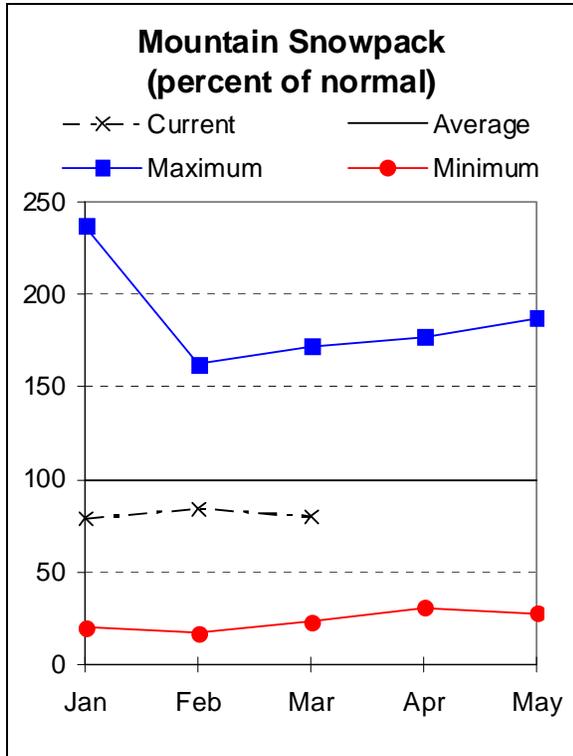
The average is computed for the 1971-2000 base period.

- (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.



# Lower Columbia Basin

March 1, 2009



## Water Supply Outlook

The March 1 combined Columbia basin snowpack above The Dalles was 80 percent of average. This represents a slight decline from the February 1 basin average. In normal years, 85 percent of the seasonal snowpack has accumulated by March 1 in the Columbia basin.

Precipitation was below normal over the entire Columbia Basin. The driest conditions were recorded in the Northern Cascades, Clearwater, and Salmon basins. Since the beginning of the water year, basin wide precipitation has been 87 percent of average.

The April through September streamflow forecast for the Columbia at The Dalles is 80 percent of average. The April through September streamflow forecast for the Sandy near Marmot is 101 percent of average.

Columbia basin water users above The Dalles can expect below normal water supplies this coming season.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

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LOWER COLUMBIA BASIN  
Streamflow Forecasts - March 1, 2009

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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)	
Columbia R at The Dalles (2)	APR-JUL	52800	63300	68100	81	72900	83400	84600
	APR-SEP	61400	73700	79300	80	84900	97200	98600
Sandy R nr Marmot	APR-JUL	255	290	315	101	340	375	313
	APR-SEP	300	340	365	101	390	430	363

LOWER COLUMBIA BASIN Reservoir Storage (1000 AF) - End of February					LOWER COLUMBIA BASIN Watershed Snowpack Analysis - March 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Sandy	8	56	106

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

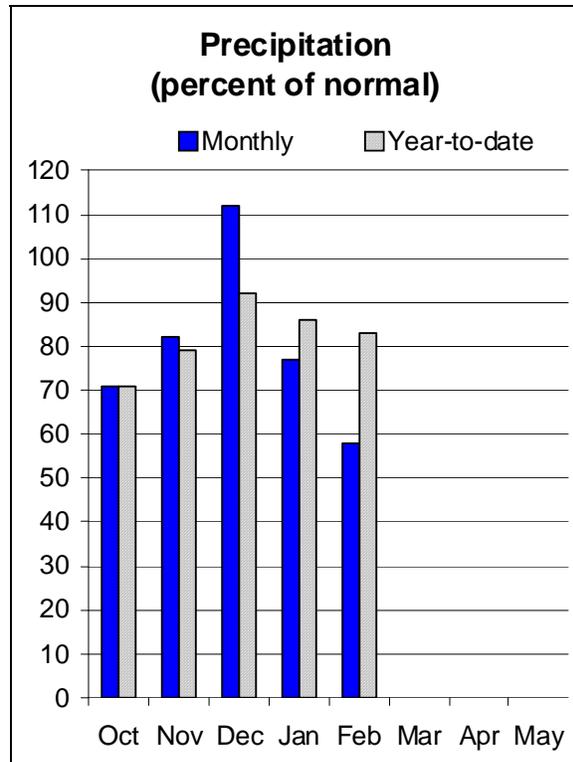
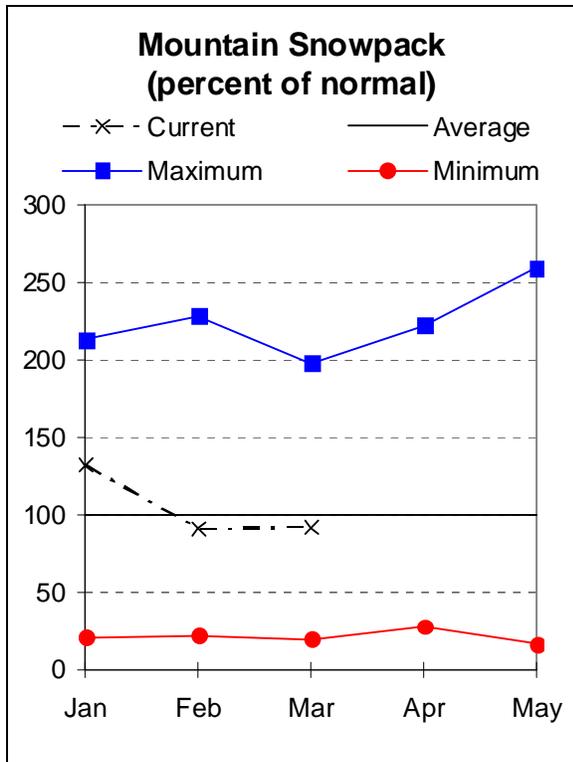
The average is computed for the 1971-2000 base period.

- (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.



# Willamette Basin

March 1, 2009



## Water Supply Outlook

The Willamette basin water supply conditions are currently better than most other basins in the state. The March 1 snowpack in the Willamette basin was 92 percent of average. Modest snow accumulation over the month helped the Willamette maintain near average snow pack. Snow measurements were taken at 21 SNOTEL sites and 3 snow courses.

February precipitation in the Willamette basin was only 58 percent of average. Since the beginning of the water year, precipitation in the basin has been 83 percent of average.

At the end of February, storage at Henry Hagg and Timothy Lake reservoirs was near average. April through September streamflow forecasts in the Willamette basin range from 78 to 100 percent of average.

Water users in the Willamette basin can expect below average to average water supply conditions 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.wcc.nrcs.usda.gov/cgibin/bor.pl>

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WILLAMETTE BASIN  
Streamflow Forecasts - March 1, 2009

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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 River Lake Inflow (1,2)	MAR-MAY	74	93	102	90	111	130	113
	APR-SEP	45	66	76	88	86	107	86
Clackamas R at Estacada (2)	APR-JUL	470	555	615	96	675	760	640
	APR-SEP	570	660	720	96	780	870	748
Clackamas R ab Three Lynx (2)	APR-JUL	360	415	455	96	495	550	474
	APR-SEP	435	495	535	95	575	635	562
Cottage Grove Lake Inflow (1,2)	MAR-MAY	37	57	62	103	75	95	60
	APR-SEP	23	38	43	100	52	67	43
Cougar Lake Inflow (1,2)	MAR-MAY	159	187	200	94	215	240	212
	APR-SEP	158	194	210	91	225	260	230
Detroit Lake Inflow (1,2)	MAR-MAY	335	450	505	94	560	675	540
	APR-JUL	350	445	490	93	535	630	528
	APR-SEP	400	515	565	92	615	730	616
Dorena Lake Inflow (1,2)	MAR-MAY	98	152	177	97	200	255	182
	APR-SEP	52	96	116	95	136	180	122
Fall Creek Lake Inflow (1,2)	MAR-MAY	71	109	126	90	143	181	140
Fern Ridge Lake Inflow (1,2)	MAR-MAY	29	68	86	80	104	143	107
	APR-SEP	9.5	30	39	78	48	68	50
Foster Lake Inflow (1,2)	MAR-MAY	295	485	570	93	655	845	613
	APR-JUL	200	365	440	90	515	680	490
	APR-SEP	230	395	470	89	545	710	527
Green Peter Lake Inflow (1,2)	MAR-MAY	165	285	340	82	395	515	417
	APR-JUL	108	210	260	80	310	410	327
	APR-SEP	128	235	280	79	325	430	354
Hills Creek Lake Inflow (1,2)	MAR-MAY	174	240	270	94	300	365	288
	APR-JUL	141	215	250	90	285	360	277
	APR-SEP	184	255	285	89	315	385	320
	JUN-OCT	75	109	124	76	139	173	164

(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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WILLAMETTE BASIN  
Streamflow Forecasts - March 1, 2009

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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)	
Little North Santiam R nr Mehama (1)	APR-JUL	64	98	113	85	128	162	133
	APR-SEP	69	104	120	84	136	171	143
Lookout Point Lake Inflow (1,2)	MAR-MAY	445	625	705	93	785	965	759
	APR-JUL	375	570	660	91	750	945	726
	APR-SEP	435	655	755	91	855	1080	828
	JUN-OCT	177	275	320	80	365	465	402
McKenzie R bl Trail Bridge (2)	APR-JUL	205	220	235	88	250	265	266
	APR-SEP	320	340	350	87	360	380	404
McKenzie R nr Vida (1,2)	APR-JUL	675	815	880	90	945	1080	977
	APR-SEP	845	1000	1070	89	1140	1300	1201
Mohawk R nr Springfield	MAR-JUL	68	93	110	82	127	152	134
Oak Grove Fork R ab Power Intake	APR-JUL	103	116	124	95	132	145	130
	APR-SEP	134	148	157	94	166	180	167
North Santiam R at Mehama (1,2)	APR-JUL	415	575	645	88	715	875	732
	APR-SEP	485	655	735	88	815	985	834
South Santiam R at Waterloo (2)	APR-JUL	290	410	495	90	580	700	549
	APR-SEP	315	440	525	89	610	735	587
Scoggins Ck nr Gaston (2)	MAR-JUL	13.5	18.0	21	81	24	29	26
Thomas Ck nr Scio	MAR-JUL	45	73	91	75	109	137	121
MF Willamette R bl NF (1,2)	MAR-MAY	465	645	725	100	805	985	725
	APR-JUL	470	605	665	95	725	860	698
	APR-SEP	550	695	760	95	825	970	798
	JUN-OCT	193	285	330	84	375	465	391
Willamette R at Salem (1,2)	MAR-MAY	2960	4230	4810	89	5390	6660	5401
	APR-JUL	2090	3250	3780	87	4310	5470	4347
	APR-SEP	2470	3610	4130	86	4650	5790	4804

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\* 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.

WILLAMETTE BASIN Reservoir Storage (1000 AF) - End of February					WILLAMETTE BASIN Watershed Snowpack Analysis - March 1, 2009			
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	23.5	29.5	31.9	Clackamas	5	56	109
COTTAGE GROVE	29.8	8.1	7.0	10.2	McKenzie	8	52	87
COUGAR	155.2	28.7	34.5	114.3	Row River	1	53	84
DETROIT	300.7	73.8	62.3	141.8	Santiam	6	41	81
DORENA	70.5	18.7	15.7	26.7	Middle Fork Willamette	7	60	91
FALL CREEK	115.5	16.5	39.6	40.5				
FERN RIDGE	109.6	35.7	25.0	45.5				
FOSTER	29.7	1.0	1.9	9.6				
GREEN PETER	268.2	85.6	92.3	173.2				
HILLS CREEK	200.2	50.2	57.1	119.0				
LOOKOUT POINT	337.0	59.8	81.9	116.8				
TIMOTHY LAKE	61.7	53.3	38.7	51.5				
HENRY HAGG LAKE	53.0	41.4	44.1	45.4				

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

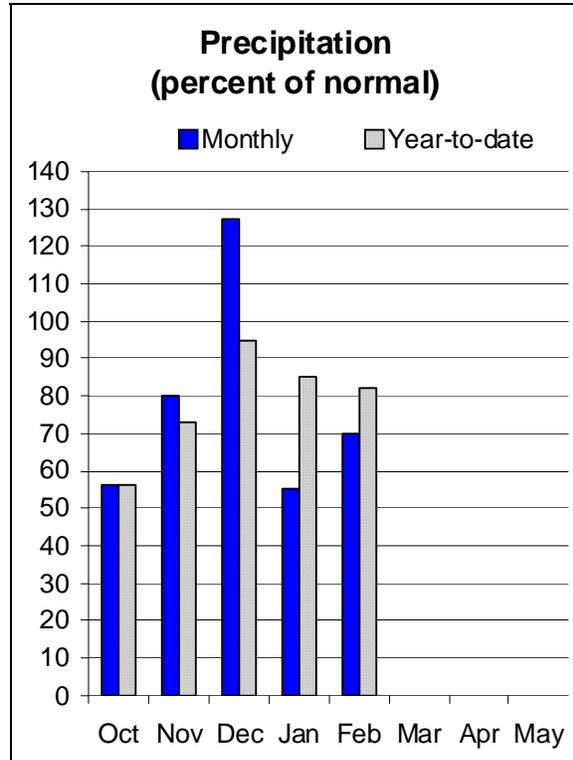
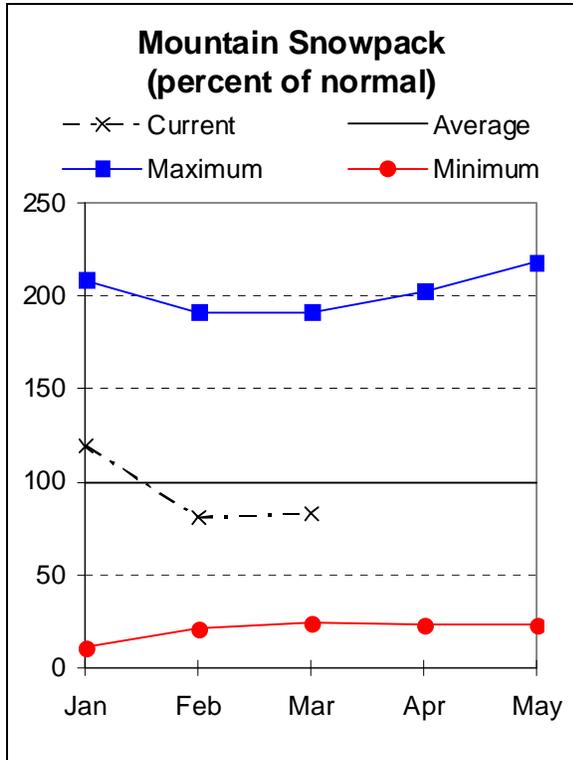
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# Rogue and Umpqua Basins

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Rogue and Umpqua basin was 83 percent of average. Modest snow accumulation over the month helped the Rogue and Umpqua basin to maintain a similar state to last month. Measurements were taken at 12 SNOTEL sites and 12 snow courses.

February precipitation in the Rogue and Umpqua basin was 70 percent of average. Since the beginning of the water year, precipitation in the basin has been 82 percent of average.

At the end of February, storage at five Rogue and Umpqua basin reservoirs was 107 percent of average or 73 percent of capacity. April through September streamflow forecasts for the basin range from 65 to 102 percent of average.

Depending on their source, water users in the basin can expect well below to average water availability this 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.wcc.nrcs.usda.gov/cgibin/bor.pl>

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ROGUE AND UMPQUA BASINS  
Streamflow Forecasts - March 1, 2009

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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)	
Applegate Lake Inflow (2)	MAR-JUL	43	81	107	65	133	171	164
	APR-JUL	31	56	73	65	90	115	112
	MAR-SEP	46	85	111	65	137	176	171
	APR-SEP	34	60	77	65	94	120	119
SF Big Butte Ck nr Butte Falls	APR-JUL	21	29	34	100	39	47	34
	APR-SEP	29	37	43	99	49	57	44
Cow Ck nr Azalea (2)	MAR-JUL	6.8	17.0	24	83	31	41	29
	APR-JUL	3.2	9.6	13.9	84	18.2	25	16.5
	APR-SEP	3.7	10.3	14.8	84	19.3	26	17.7
Hyatt Prairie Reservoir Inflow (2)	APR-JUL	0.8	2.7	4.0	83	5.3	7.2	4.8
Illinois R at Kerby	APR-JUL	31	95	139	78	183	245	179
	APR-SEP	35	99	143	77	187	250	186
NF Little Butte Ck nr Lakecreek (2)	APR-JUL	25	30	33	104	36	41	32
	APR-SEP	37	43	47	102	51	57	46
Lost Creek Lake Inflow (2)	MAR-JUL	480	565	625	91	685	770	685
	APR-JUL	375	440	485	92	530	595	530
	MAR-SEP	585	680	745	90	810	905	825
	APR-SEP	480	555	605	91	655	730	665
Rogue R at Raygold (2)	APR-JUL	370	510	605	83	700	840	730
	APR-SEP	495	640	740	83	840	985	890
Rogue R at Grants Pass (2)	APR-JUL	375	535	645	87	755	915	740
	APR-SEP	480	655	770	87	885	1060	885
Sucker Ck bl Ltl Grayback Ck nr Holl	APR-JUL	12.9	27	37	71	47	61	52
	APR-SEP	16.6	31	41	73	51	65	56
North Umpqua R at Winchester	APR-JUL	485	640	740	93	840	995	795
	APR-SEP	595	750	855	93	960	1120	920
South Umpqua R nr Brockway	APR-JUL	156	280	365	91	450	575	400
	APR-SEP	173	300	385	92	470	595	420
South Umpqua R at Tiller	APR-JUL	93	144	179	93	215	265	193
	APR-SEP	101	152	187	91	220	275	205

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ROGUE AND UMPQUA BASINS Reservoir Storage (1000 AF) - End of February					ROGUE AND UMPQUA BASINS Watershed Snowpack Analysis - March 1, 2009			
Reservoir	Usable Capacity	*** Usable Storage This Year	Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
APPLEGATE	75.2	9.3	15.7	27.3	Applegate	6	51	72
EMIGRANT LAKE	39.0	25.8	28.5	28.0	Bear Creek	5	47	64
FISH LAKE	8.0	6.3	4.8	5.6	Little Butte Creek	6	61	95
FOURMILE LAKE	16.1	11.6	10.2	9.4	Illinois	5	43	89
HOWARD PRAIRIE	60.0	43.5	43.2	41.2	North Umpqua	6	45	87
HYATT PRAIRIE	16.1	14.6	14.3	11.0	Rogue River above Grants	21	55	83
LOST CREEK	315.0	65.6	63.1	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.

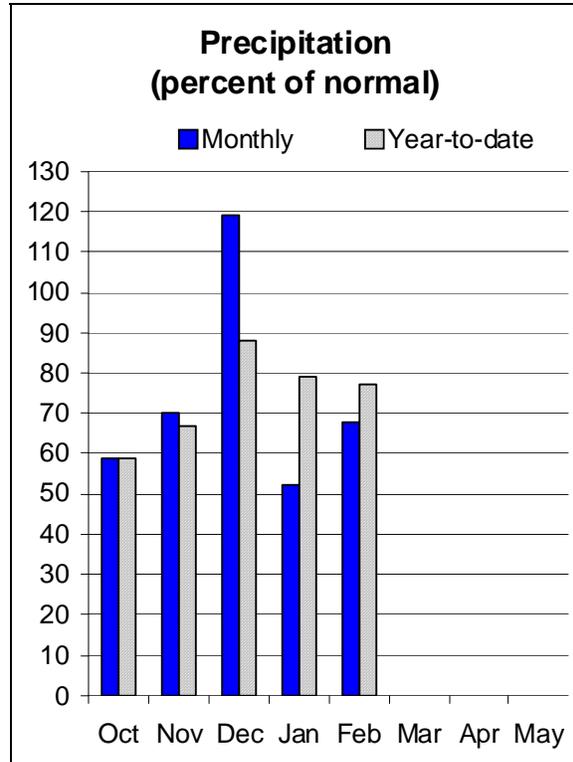
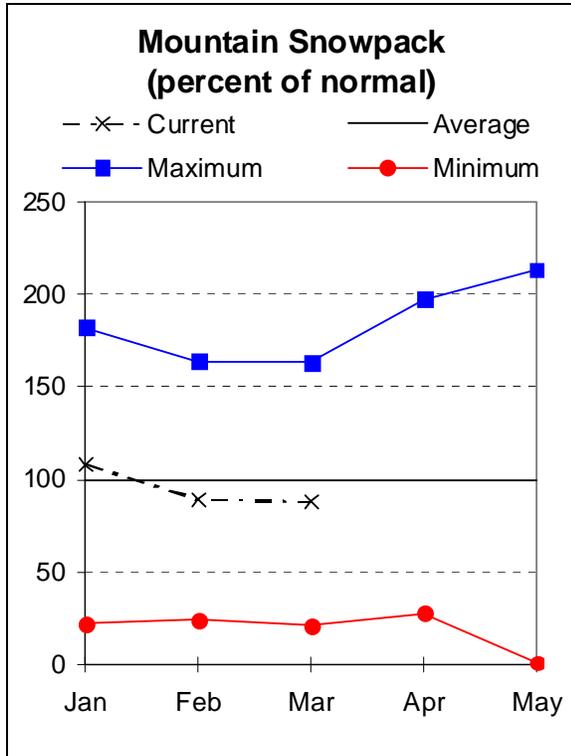
(2) - The value is natural volume - actual volume may be affected by upstream water management.

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# Klamath Basin

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in the Klamath basin was 88 percent of average. Measurements were taken at 6 aerial markers, 16 SNOTEL sites and 6 snow courses.

Water year 2009 has been dry so far in the Klamath basin, with below normal precipitation every month except December.

February precipitation in the Klamath basin was 68 percent of average. Since the beginning of the water year, precipitation in the basin has been 77 percent of average.

At the end of February, storage at Upper Klamath Lake, Clear Lake (CA) and Gerber reservoirs was 66 percent of average or 40 percent of capacity. The April through September streamflow forecasts for the Klamath basin range from 59 to 73 percent of average, a slight decline since February 1.

Water users in the Klamath basin can expect reduced water availability this coming summer.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

KLAMATH BASIN  
Streamflow Forecasts - March 1, 2009

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)	MAR-JUL	1.0	26	48	60	70	103	80
	APR-SEP	0.5	17.1	29	60	41	58	48
Gerber Reservoir Inflow (2)	MAR-JUL	1.0	13.1	22	60	31	44	37
	APR-SEP	0.5	5.0	10.5	59	16.0	24	17.8
Sprague R nr Chiloquin	MAR-JUL	78	130	165	60	200	250	275
	MAR-SEP	95	149	185	61	220	275	304
	APR-SEP	71	112	140	61	168	210	230
Upper Klamath Lake Inflow (1,2)	MAR-JUL	250	385	445	71	505	640	625
	MAR-SEP	300	445	510	71	575	720	720
	APR-SEP	220	320	365	71	410	510	515
Williamson R bl Sprague R nr Chiloquin	MAR-JUL	210	275	320	73	365	430	440
	MAR-SEP	255	325	370	73	415	485	504
	APR-SEP	192	245	280	73	315	370	385

KLAMATH BASIN Reservoir Storage (1000 AF) - End of February					KLAMATH BASIN Watershed Snowpack Analysis - March 1, 2009			
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)	513.3	82.4	95.4	224.2	Lost	2	62	75
GERBER	94.3	47.3	44.2	54.5	Sprague	9	77	87
UPPER KLAMATH LAKE	523.7	323.2	308.2	402.6	Upper Klamath Lake	7	70	87
					Williamson River	5	73	89

\* 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.

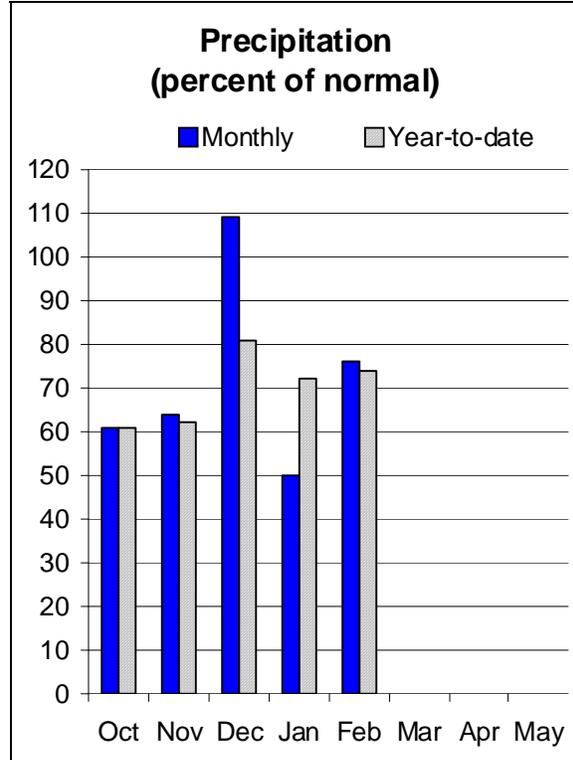
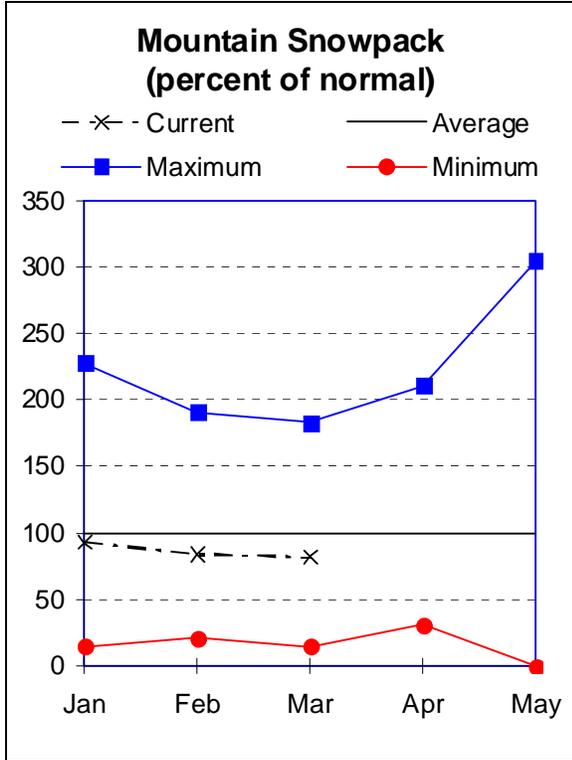
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

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



# Lake County and Goose Lake

March 1, 2009



## Water Supply Outlook

The March 1 snowpack in Lake County and Goose Lake basin was 82 percent of average. Modest snow accumulation over the month helped the basin to maintain similar conditions to last month. Measurements were taken at 12 aerial markers, 9 SNOTEL sites and 1 snow course.

February precipitation in the Lake County and Goose Lake basin was 76 percent of average. Since the beginning of the water year, precipitation in the basin has been 74 percent of average, the lowest in the state.

At the end of February, storage at Drews and Cottonwood reservoirs was 27 percent of average or 16 percent of capacity. Spring inflows are expected to be well below average. April through September streamflow forecasts for the basin range from 69 to 75 percent of average, a significant decrease since last month.

Water users in Lake County and Goose Lake basin can expect reduced water availability this coming summer.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

LAKE COUNTY AND GOOSE LAKE BASINS  
Streamflow Forecasts - March 1, 2009

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Chewaucan R nr Paisley	MAR-JUL	35	51	62	70	73	89	89
	APR-SEP	31	45	55	71	65	79	78
Deep Ck ab Adel	MAR-JUL	31	48	60	71	72	89	84
	APR-SEP	24	39	49	71	59	74	69
Honey Ck nr Plush	MAR-JUL	6.2	10.9	14.1	71	17.3	22	20
	APR-SEP	3.7	8.4	11.5	69	14.6	19.3	16.6
Silver Ck nr Silver Lake (2)	MAR-JUL	3.8	7.6	10.2	70	12.8	16.6	14.6
	APR-SEP	1.8	5.4	7.8	70	10.2	13.8	11.2
Twentymile Ck nr Adel	MAR-JUL	1.6	13.1	21	75	29	40	28
	APR-SEP		7.4	13.0	75	18.6	27	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, 2009

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	6.3	5.3	3.8	Chewaucan River	6	77	77
DREWS	63.0	5.0	10.2	37.5	Deep Creek	3	78	85
					Drew Creek	4	78	95
					Honey Creek	3	73	79
					Silver Creek (Lake Co.)	5	80	98
					Twentymile Creek	3	78	85

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

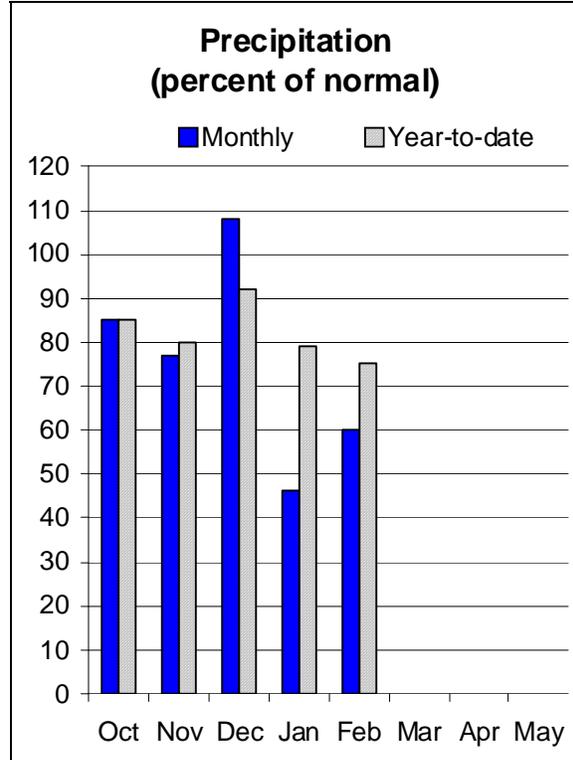
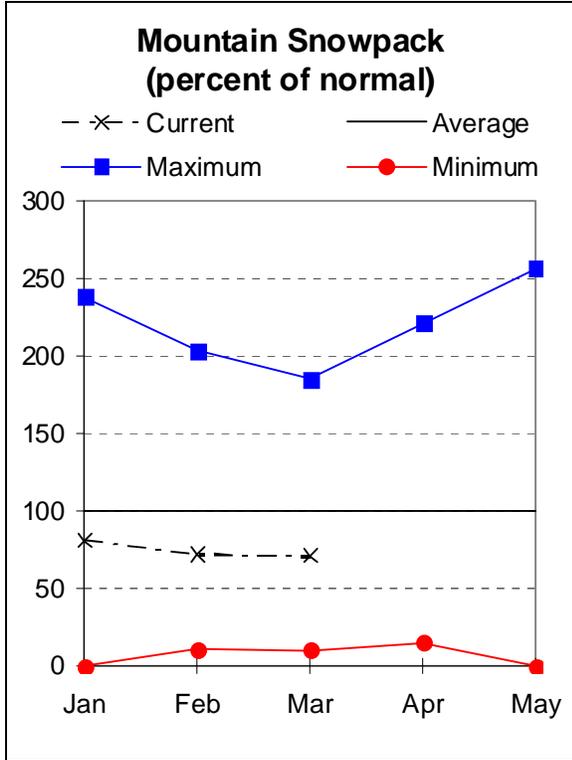
The average is computed for the 1971-2000 base period.

- (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.



# Harney Basin

March 1, 2009



## Water Supply Outlook

Harney basin has had the lowest average snowpack in Oregon all winter long. The March 1 snowpack in the Harney basin was 71 percent of average. Measurements for March 1 were taken at 8 aerial markers and 9 SNOTEL sites.

February precipitation in the Harney basin was 60 percent of average. Since the beginning of the water year, precipitation in the basin has been 75 percent of average.

April through September streamflow forecasts for the basin range from 74 to 80 percent of average. This represents a significant decline from last month.

Water users in the Harney basin can expect reduced water availability this coming summer.

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

Or visit: <http://www.wcc.nrcs.usda.gov/cgibin/bor.pl>

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HARNEY BASIN  
Streamflow Forecasts - March 1, 2009

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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	28	45	56	75	67	84	75
	APR-SEP	26	42	53	76	64	80	70
Silvies R nr Burns	MAR-JUL	25	67	96	74	125	167	129
	APR-SEP	7.5	46	73	74	100	139	99
Trout Ck nr Denio	MAR-JUL	3.8	6.8	8.9	80	11.0	14.0	11.1
	APR-SEP	3.0	6.1	8.2	80	10.3	13.4	10.3

HARNEY BASIN Reservoir Storage (1000 AF) - End of February					HARNEY BASIN Watershed Snowpack Analysis - March 1, 2009			
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	5	59	70
					Silver Creek (Harney Co.)	2	80	86
					Silvies River	6	55	69
					Trout Creek	7	69	73

\* 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.

# Recession Forecasts for Oregon

## NEW – Changes to Low Flow and Peak Flow Forecasts

Recession flow forecasts will be presented in a new format starting this year. Each forecast provides a range of possible outcomes representing the uncertainty of forecasting models. Forecast models have been redeveloped using post 1970 data and as a result average values have changed from previous years. The recession flow forecasts use exceedance probabilities in a format similar to the standard water supply forecasts presented in this document.

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

Forecasts are included at key streamflow sites within the state that have reliable daily streamflow data. If you have questions, comments, or concerns about changes to forecasts, please contact the Snow Survey Data Collection Office.

OWYHEE AND MALHEUR BASINS					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
Owyhee R nr Rome	2000 cfs	Mar 13	Apr 24	Jun 5	<b>May 6</b>
Owyhee R nr Rome	1000 cfs	Mar 18	Apr 30	Jun 12	<b>May 18</b>
Owyhee R nr Rome	500 cfs	Apr 5	May 17	Jun 28	<b>Jun 2</b>

UPPER JOHN DAY BASIN					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
John Day R at Service Creek	Average Daily Flow on Aug. 1st	20	174	398	<b>271</b>

UPPER DESCHUTES AND CROOKED BASINS					
FORECAST POINT	FORECAST THRESHOLD	FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----			LONG-TERM AVERAGE VALUE
		90%	50%	10%	
Crane Prairie Inflow	Date of Peak *	May 9	May 25	Jun 10	<b>May 25</b>
Crane Prairie Inflow	Peak Flow	282	420	558	<b>403</b>
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	187	235	283	<b>269</b>
Prineville Reservoir Inflow	113 cfs	May 2	May 25	Jun 17	<b>Jun 3</b>
Prineville Reservoir Inflow	75 cfs	May 8	Jun 1	Jun 25	<b>Jun 11</b>
Prineville Reservoir Inflow	50 cfs	May 15	Jun 9	Jul 4	<b>Jun 19</b>
Whychus Creek nr Sisters	100 cfs	Jul 15	Aug 10	Sep 5	<b>Aug 16</b>

\* Crane Prairie date of peak -- no prediction possible until April. Historical values shown.

<b>ROGUE AND UMPQUA BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
South Umpqua R nr Brockway *	90 cfs	Jul 16	Aug 4	Aug 23	<b>Aug 8</b>
South Umpqua R at Tiller	140 cfs	Jun 17	Jul 8	Jul 29	<b>Jul 11</b>
South Umpqua R at Tiller	90 cfs	Jul 6	Jul 28	Aug 19	<b>Aug 1</b>
South Umpqua R at Tiller	60 cfs	Jul 31	Aug 28	Sep 25	<b>Aug 28</b>

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

<b>LAKE COUNTY AND GOOSE LAKE BASINS</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Deep Ck ab Adel	100 cfs	May 15	Jun 6	Jun 28	<b>Jun17</b>
Honey Ck nr Plush	100 cfs	Apr 6	May 9	Jun 11	<b>May 16</b>
Honey Ck nr Plush	50 cfs	Apr 22	May 22	Jun 21	<b>Jun 4</b>
Twentymile Ck nr Adel	50 cfs	Apr 18	May 14	Jun 9	<b>May 30</b>
Twentymile Ck nr Adel	10 cfs	Jun 6	Jun 29	Jul 22	<b>Jul 7</b>

<b>HARNEY BASIN</b>					
<i>FORECAST POINT</i>	<i>FORECAST THRESHOLD</i>	<i>FORECAST VALUE ----- CHANCE OF EXCEEDING ----- -----</i>			<i>LONG-TERM AVERAGE VALUE</i>
		90%	50%	10%	
Silvies R nr Burns	400 cfs	Apr 9	May 8	Jun 6	<b>May 21</b>
	200 cfs	Apr 18	May 17	Jun 15	<b>Jun 2</b>
	100 cfs	Apr 28	May 30	Jul 1	<b>Jun 13</b>
	50 cfs	May 18	Jun 22	Jul 27	<b>Jul 3</b>
Donner Und Blitzen R nr Frenchglen	200 cfs	May 13	Jun 4	Jun 26	<b>Jun 20</b>
Donner Und Blitzen R nr Frenchglen	100 cfs	Jun 4	Jun 24	Jul 14	<b>Jul 9</b>

# Summary of Snow Course Data

March 2009

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
<b>Oregon</b>						
ALTHOUSE #2	4530	3/02/09	8	3.0	16.1	4.7
ALTHOUSE #3	5000	3/02/09	22	8.0	24.6	13.2
ANEROID LAKE SNOTEL	7400	3/01/09	50	12.4	23.3	21.0
ANNIE SPRING SNOTEL	6010	3/01/09	78	24.9	35.7	33.5
ANTHONY LAKE (REV)	7130	3/02/09	54	18.9	22.8	--
ARBUCKLE MTN SNOTEL	5770	3/01/09	42	12.7	15.5	18.5
BARLEY CAMP AM	6900	2/27/09	44	12.8	14.3	14.9
BEAR FLAT MEADOW AM	5900	2/27/09	37	12.6	13.1	11.1
BEAVER DAM CREEK	5100	3/02/09	29	12.9	23.0	11.4
BEAVER RES. SNOTEL	5150	3/01/09	31	6.3	13.4	8.6
BIG RED MTN SNOTEL	6050	3/01/09	50	15.7	29.8	22.5
BIGELOW CAMP SNOTEL	5130	3/01/09	27	12.3	27.4	12.7
BILLIE CK DVD SNOTEL	5280	3/01/09	55	20.1	28.8	21.4
BLAZED ALDER SNOTEL	3650	3/01/09	83	28.7	66.1	30.1
BLUE MTN SPGS SNOTEL	5870	3/01/09	35	11.0	18.3	15.7
BOULDER CREEK AM	5690	2/27/09	8	2.8	--	3.8
BOURNE SNOTEL	5850	3/01/09	34	11.7	18.6	16.6
BOWMAN SPRNGS SNOTEL	4530	3/01/09	20	8.5	8.5	9.1
BUCK PASTURE AM	5700	2/27/09	12	4.2	6.5	2.4
BUCKSKIN LAKE AM	5200	2/27/09	1	.2	4.2	.5
BULLY CREEK AM	5300	2/27/09	4	1.4	6.0	2.2
CALIBAN ALT	6500	2/27/09	52	15.2	31.2	25.2
CALL MEADOWS AM	5340	2/27/09	12	3.2	9.8	4.2
CAMAS CREEK #3	5850	2/27/09	31	10.4	14.9	11.9
CASCADE SUM. SNOTEL	5100	3/01/09	74	23.9	39.3	27.2
CHEMULT ALT SNOTEL	4850	3/01/09	20	7.3	12.0	8.1
CLACKAMAS LK. SNOTEL	3400	3/01/09	37	12.2	20.7	12.3
CLEAR LAKE SNOTEL	3810	3/01/09	43	10.4	23.8	13.2
COLD SPRINGS SNOTEL	5940	3/01/09	64	25.5	33.7	27.0
COLVIN CREEK AM	6550	2/27/09	0	.0	2.0	4.2
COUNTY LINE SNOTEL	4830	3/01/09	6	3.8	6.5	4.6
COX FLAT AM	5750	2/27/09	31	10.5	11.5	7.1
CRAZYMEN FLAT AM	6100	2/27/09	21	5.5	11.5	9.1
CRAZYMEN FLAT SNOTEL	6180	3/01/09	32	8.2	13.9	15.7
DALY LAKE SNOTEL	3690	3/01/09	39	13.9	39.3	15.0
DEADHORSE GRADE	3700	2/27/09	19	5.4	25.3	8.5
DEADWOOD JUNCTION	4600	3/02/09	15	7.0	17.9	6.9
DERR	5670	2/27/09	27	8.5	12.6	9.7
DERR SNOTEL	5850	3/01/09	33	10.1	15.4	13.7
DIAMOND LAKE SNOTEL	5280	3/01/09	35	16.8	18.2	15.0
DOOLEY MOUNTAIN	5430	2/27/09	30	8.1	15.8	7.9
EILERTSON SNOTEL	5510	3/01/09	27	8.0	10.7	9.6
ELDORADO PASS	4600	2/27/09	6	1.6	7.0	3.4
EMIGRANT SPGS SNOTEL	3800	3/01/09	19	7.5	10.3	5.7
FINLEY CORRALS AM	6000	2/27/09	30	7.8	11.5	14.8
FISH CREEK SNOTEL	7660	3/01/09	55	15.4	19.6	23.9
FISH LK. SNOTEL	4660	3/01/09	31	10.9	20.1	11.1
FLAG PRAIRIE AM	4750	2/27/09	13	4.1	9.6	4.5
FOURMILE LAKE SNOTEL	5970	3/01/09	67	23.3	29.4	27.1
GERBER RES SNOTEL	4890	3/01/09	3	1.0	5.1	1.4
GOLD CENTER SNOTEL	5410	3/01/09	26	8.1	13.5	10.3
GOVT CORRALS AM	7450	2/27/09	27	7.6	13.8	13.8
GRAYBACK PEAK	6000	2/26/09	57	18.8	30.3	14.6
GREENPOINT SNOTEL	3310	3/01/09	46	16.8	31.6	17.8
HIGH PRAIRIE	6100	3/03/09	82	29.9	50.0	41.1
HIGH RIDGE SNOTEL	4920	3/01/09	62	21.0	30.4	21.2
HOGG PASS SNOTEL	4790	3/01/09	69	19.9	36.3	34.0
HOLLAND MDWS SNOTEL	4930	3/01/09	50	17.6	33.3	21.0
HOWARD PRAIRIE	4500	3/02/09	17	6.9	13.6	7.3
HUNGRY FLAT	4400	3/02/09	2	.8	7.8	3.4
IRISH-TAYLOR SNOTEL	5540	3/01/09	79	27.3	38.2	30.7

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
<b>Oregon Continued</b>						
JUMP OFF JOE	SNOTEL 3520	3/01/09	33	11.8	31.0	11.4
KING MTN #1	4500	3/01/09	---	4.5E	27.1	6.7
KING MTN #2	SNOTEL 4340	3/01/09	7	2.4	18.3	3.8
KING MTN #3	3650	3/01/09	---	.0E	11.0	1.0
KING MTN #4	3050	3/01/09	---	.0E	.0	.1
LAKE CK R.S.	SNOTEL 5240	3/01/09	23	6.3	14.0	11.6
LITTLE ALPS	6200	3/02/09	34	9.7	13.2	11.1
LITTLE ANTONE (ALT)	5000	3/02/09	27	8.7	13.0	8.4
LITTLE MEADOW	SNOTEL 4020	3/01/09	72	22.3	52.3	22.8
LOOKOUT BUTTE	AM 5650	2/27/09	2	.7	1.9	.3
LOUSE CANYON	AM 6440	2/27/09	16	4.6	10.9	5.8
LUCKY STRIKE	SNOTEL 4970	3/01/09	20	6.8	9.9	9.3
MADISON BUTTE	SNOTEL 5150	3/01/09	---	4.3	9.3	4.8
MARION FORKS	SNOTEL 2590	3/01/09	18	7.2	28.4	10.2
MARKS CREEK	4540	2/26/09	5	1.4	7.6	3.2
MARY'S PEAK REV	3620	3/02/09	16	6.9	33.7	5.8
MCKENZIE	SNOTEL 4770	3/01/09	93	40.1	51.2	37.5
MEACHAM	4300	2/27/09	27	8.8	10.6	8.5
MILL CREEK MDW	4400	3/03/09	43	18.1	21.0	10.6
MILLER WOODS	SNOTEL 420	3/01/09	0	.0	.0	--
MOSS SPRINGS	SNOTEL 5760	3/01/09	55	19.4	21.8	22.2
MT ASHLAND SWBK.	6400	2/27/09	52	15.2	31.5	27.2
MT HOOD TEST	SNOTEL 5370	3/01/09	120	41.9	64.8	48.4
MT HOWARD	SNOTEL 7910	3/01/09	37	13.0	17.2	12.8
MUD RIDGE	SNOTEL 4070	3/01/09	76	30.5	40.7	21.9
NEW CRESCENT	SNOTEL 4910	3/01/09	40	11.7	19.5	11.0
NEW DUTCHMAN #3	6400	3/02/09	104	38.2	51.6	46.1
NORTH FK RES	SNOTEL 3060	3/01/09	66	22.6	--	16.4
OCHOCO MEADOWS	5200	2/26/09	27	7.2	11.2	9.6
OCHOCO MEADOW	SNOTEL 5430	3/01/09	26	9.0	13.2	9.3
OREGON CANYON	AM 6950	2/27/09	19	5.5	6.1	5.5
PAGE MTN	4050	3/02/09	0	.0	.0	2.1
PARK H.Q. REV	6550	2/26/09	123	42.6	59.6	48.0
PATTON MEADOWS	AM 6800	2/27/09	38	12.9	14.1	15.1
PEAVINE RIDGE	SNOTEL 3420	3/01/09	40	15.3	32.3	13.2
PUEBLO SUMMIT	AM 6800	2/27/09	9	3.1	1.3	2.5
QUARTZ MTN	SNOTEL 5720	3/01/09	1	1.0	2.6	2.3
R.R. OVERPASS	SNOTEL 2680	3/01/09	0	.0	.0	.1
RED BUTTE #1	4560	3/01/09	---	10.0E	34.1	10.2
RED BUTTE #2	4000	3/01/09	---	3.0E	12.0	5.3
RED BUTTE #3	3500	3/01/09	---	.0E	13.9	2.3
RED BUTTE #4	3000	3/01/09	---	.0E	6.2	.8
RED HILL	SNOTEL 4410	3/01/09	105	45.2	68.3	41.4
ROARING RIVER	SNOTEL 4950	3/01/09	64	24.8	47.5	25.5
ROCK SPRINGS	SNOTEL 5290	3/01/09	15	1.9	7.1	5.3
ROGGER MEADOWS	AM 6500	2/27/09	26	8.8	11.8	10.9
SADDLE MTN	SNOTEL 3110	3/01/09	10	4.7	20.0	6.2
SALT CK FALLS	SNOTEL 4220	3/01/09	50	17.8	34.6	16.5
SANTIAM JCT.	SNOTEL 3740	3/01/09	34	14.5	31.6	17.8
SCHNEIDER MDW	SNOTEL 5400	3/01/09	58	17.2	23.8	27.6
SEINE CREEK	SNOTEL 2060	3/01/09	1	.2	.4	2.9
SEVENMILE MARSH SNTL	5700	3/01/09	70	21.6	34.7	26.7
SHERMAN VALLEY	AM 6600	2/27/09	39	11.3	12.8	11.3
SILVER BURN	3720	2/26/09	35	12.2	23.9	10.5
SILVER CREEK	SNOTEL 5740	3/01/09	26	9.9	13.4	9.8
SILVIES	SNOTEL 6990	3/01/09	25	8.7	14.9	15.6
SISKIYOU SUMMIT REV	4630	2/27/09	17	6.8	19.7	5.3
SKI BOWL ROAD	6000	2/27/09	42	12.5	26.3	22.0
SNOW MTN	SNOTEL 6220	3/01/09	26	6.2	8.5	10.3
SF BULL RUN	SNOTEL 2690	3/01/09	24	7.7	23.4	2.8
STARR RIDGE	SNOTEL 5250	3/01/09	20	7.8	9.0	6.0
STRAWBERRY	SNOTEL 5770	3/01/09	6	4.2	8.4	5.5
SUMMER RIM	SNOTEL 7080	3/01/09	36	11.1	13.7	15.2
SUMMIT LAKE	SNOTEL 5610	3/01/09	79	27.1	39.1	31.5
SUN PASS	SNOTEL 5400	3/01/09	49	17.4	23.0	--
SWAN LAKE MTN	SNOTEL 6830	3/01/09	46	16.5	21.7	--
SYCAN FLAT	AM 5500	2/27/09	42	14.7	12.6	5.5
TANGENT	5400	3/02/09	39	14.0	26.0	19.9

SNOW COURSE		ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 71-00
<b>Oregon Continued</b>							
TAYLOR BUTTE	SNOTEL	5030	3/01/09	16	7.0	10.1	6.0
TAYLOR GREEN	SNOTEL	5740	3/01/09	45	15.4	22.3	18.9
THREE CK MEAD	SNOTEL	5690	3/01/09	49	12.5	23.0	16.9
TIMOTHY LAKE		3300	2/27/09	31	9.2	20.2	10.4
TIPTON	SNOTEL	5150	3/01/09	33	8.5	14.4	12.8
TOKETTE AIRSTRIP	SN	3240	3/01/09	7	4.0	12.4	--
TOLLGATE		5070	2/27/09	71	22.6	34.8	24.5
TROUT CREEK	AM	7800	2/27/09	30	8.4	12.5	9.7
V LAKE	AM	6600	2/27/09	18	6.3	13.3	7.3
WOLF CREEK	SNOTEL	5630	3/01/09	37	12.5	17.3	14.7
<b>California</b>							
ADIN MOUNTAIN		6350	2/26/09	34	10.4	13.8	11.7
ADIN MTN	SNOTEL	6190	3/01/09	35	11.3	13.2	12.2
CEDAR PASS	SNOTEL	7030	3/01/09	41	13.2	15.4	15.6
CROWDER FLAT	AM	5200	2/27/09	0	.0	8.2	2.3
CROWDER FLAT	SNOTEL	5170	3/01/09	6	2.9	7.7	4.7
DISMAL SWAMP	SNOTEL	7360	3/01/09	62	18.0	20.7	23.7
STATE LINE	AM	5750	2/27/09	9	3.1	14.0	6.8
<b>Idaho</b>							
BATTLE CREEK	AM	5720	2/27/09	10	3.7	7.4	3.9
BULL BASIN	AM	5460	2/27/09	9	3.3	5.9	1.6
MUD FLAT	SNOTEL	5730	3/01/09	15	6.2	9.1	6.8
RED CANYON	AM	6650	2/27/09	21	7.1	9.8	7.3
SILVER CITY		6400	2/28/09	40	14.4	19.8	14.9
SOUTH MTN	SNOTEL	6500	3/01/09	33	11.1	17.0	17.1
SUCCOR CREEK	AM	6100	2/27/09	21	7.6	12.6	7.4
VAUGHT RANCH	AM	5830	2/27/09	17	6.5	6.5	4.7
<b>Nevada</b>							
BEAR CREEK	SNOTEL	7800	3/01/09	52	16.8	15.5	17.1
BIG BEND	SNOTEL	6700	3/01/09	32	9.5	10.2	8.6
BUCKSKIN,L	SNOTEL	6700	3/01/09	25	7.3	9.5	8.5
COLUMBIA BASIN	AM	6650	2/25/09	24	8.2	9.5	8.8
DISASTER PEAK	SNOTEL	6500	3/01/09	17	6.7	10.4	9.7
FAWN CREEK	SNOTEL	7050	3/01/09	46	12.5	10.8	14.4
FRY CANYON		6700	2/24/09	27	9.3	9.4	7.3
GOLD CREEK		6600	2/24/09	22	7.7	8.8	5.6
GRANITE PEAK	SNOTEL	7800	3/01/09	38	10.5	16.0	19.7
JACK CREEK, U	SNOTEL	7280	3/01/09	44	11.6	11.4	15.7
LAMANCE CREEK	SNOTEL	6000	3/01/09	18	6.8	16.3	12.6
LAUREL DRAW	SNOTEL	6700	3/01/09	35	10.5	11.7	9.2
MERRIT MOUNTAIN	AM	7000	2/25/09	24	8.2	9.5	6.6
MIDAS	(d)	7200	2/25/09	15	5.1	7.6	3.7
QUINN RIDGE	AM	6300	2/27/09	7	2.0	8.6	2.1
SEVENTYSIX CK	SNOTEL	7100	3/01/09	30	7.5	10.4	10.9
STAG MOUNTAIN	AM	7700	2/25/09	11	3.7	3.4	5.3
TAYLOR CANYON	SNOTEL	6200	3/01/09	18	7.0	8.9	5.3
TOE JAM	AM	7700	2/25/09	24	8.2	10.9	9.4
TREMEWAN RANCH		5700	2/24/09	11	4.0	4.0	1.9

# Basin Outlook Reports; How Forecasts Are Made

## And 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 snowcourses 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)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (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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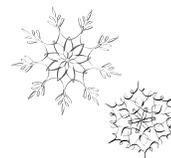
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