

Washington Water Supply Outlook Report February 1, 2015



Photo taken of the Olympic Mountain range from Hurricane Ridge on January 27th. Hurricane Ridge snow course reported zero snow which has only happened twice since 1960 (1977 & 2005). Photo by Bill Baccus, Olympic National Park.

Reminder: We are soliciting field work photos from our snow surveyors again this year. Each month we pick one to grace the cover of this report. The photographer will be given proper credit of course. Please include all specific information when submitting photos.

Water Supply Outlook Reports and Federal - State – Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

Local Natural Resources Conservation Service Field Office

or

**Scott Pattee
Water Supply Specialist
Natural Resources Conservation Service
2021 E. College Way, Suite 214
Mt. Vernon, WA 98273-2873
(360) 428-7684**

or

**Larry Johnson
State Conservation Engineer
Natural Resources Conservation Service
W 316 Boone Ave., Suite 450
Spokane, WA 99201
(509) 323-2955**

How forecasts are made

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.

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Washington Water Supply Outlook

February 2015

General Outlook

Again rain and warm temperatures dominated the region over the oh-so desired snow. With mountain temperatures once again reaching new highs and setting new records our already meager snowpack took a crushing sack in the backfield for a net loss of over 15% from last month. Streamflow forecasts also took a 10-20% hit. Snow Surveyors from around the state were reporting grim conditions with many long term snow sites showing little or no snow during last week's field campaign. Several sites that would normally have 5-8 feet of snow and only be accessible by helicopter were driven or walked to by surveyors. We would have to receive well over 200% of normal snowfall between now and April 1 to even have a chance of catching up. Short term forecasts call for warm and wet through the middle of February however the trend of warm and dry is still forecasted for several months beyond that. <http://www.cpc.ncep.noaa.gov/>

Snowpack

The February 1 statewide SNOTEL readings were 39% of normal but vary across the state. So far we should have received about 70% of our annual total snowfall however we fall well short of that with most areas measuring roughly 25% of annual totals. The Tolt River data reported the lowest readings at 3% of the 30-year median for February 1, the lowest year on record since 1977. Several other basins follow closely behind including a new record low snowpack in the Olympics. Readings from the Methow River Basin reported the highest at 98% of normal for February 1. Westside medians from SNOTEL, and February 1 snow surveys, included the North Puget Sound river basins with 58% of normal, the Central and South Puget river basins with 14% and 35% respectively, and the Lower Columbia basins with 27% of normal. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 42% and the Wenatchee area with 65%. Snowpack in the Spokane River Basin was at 56% and the Walla Walla River Basin had 54% of the long term median.

BASIN	PERCENT OF NORMAL	PERCENT OF LAST YEAR
Spokane	56	72
Newman Lake	52	58
Pend Oreille	99	103
Okanogan	93	78
Methow	98	70
Conconully Lake	92	33
Central Columbia	65	54
Upper Yakima	42	55
Lower Yakima	42	57
Ahtanum Creek	37	52
Walla Walla	55	68
Lower Snake	68	78
Cowlitz	36	70
Lewis	15	33
White	47	58
Green	16	30
Puyallup	41	60
Cedar	13	40
Snoqualmie	17	59
Skykomish	21	61
Skagit	67	62
Nooksack	21	72
Olympic Peninsula	11	32

Washington Snow Measurement Summary

February 1, 2015

Station Name	Elevation		Snow Depth		Last Yr		Median SWE (1981-2010) (in)
	(ft)	Date	(in)	SWE (in)	SWE(in)		
Aberdeen Lake	4140	3-Feb	25	7.1	4.9		
Alpine Meadow	3500	28-Jan	4	1.4	17.9		
Azure River Pillow	4298	1-Feb	83	31.4	23.1		
Baird #2	3159	30-Jan	16	3.3			6.1
Barnes Creek Pillow	5315	1-Feb		13.6	14.6		
Beaver Creek Trail	2200	31-Jan	0	0	2.6		10.4
Beaver Pass	3621	31-Jan	22	6.3	4.5		18.2
Beaverfoot	6312	3-Feb	22	5.6	5.9		
Big White Mountain	5486	3-Feb	44	11.1	12		
Blackwall Peak Pillow	6365	1-Feb	54	18.5	18.5		
Bonaupart South	4740	30-Jan	10	2.2			
Boyer Mountain	5250	27-Jan	22	6.5			
Brenda Mine Pillow	4790	1-Feb		8.1	6.8		
Brown Top Ridge AM	6000	30-Jan	71	27	25.4		41.4
Browns Pass	3940	30-Jan	8	1	0.4		
Bumping Lake New	3400	2-Feb	17	5.6			12.8
Bush River	6503	4-Feb	66	21	16.6		
Buttermilk Butte	5250	28-Jan	28	7.6			
Char Creek	4232	1-Feb	33	8.8	10.2		
Chewelah 2	4925	27-Jan	15	3.4			
City Cabin	2390	27-Jan	0	0	0		
Cold Creek Strip	6020	27-Jan	20	4.8			5.5
Cox Valley	4500	26-Jan	7	2.4	3.9		23.6
Deer Park	5346	29-Jan	0	0	2.2		10.6
Devils Park	5900	30-Jan	61	21	24.8		28.2
Disautel Pass	3310	28-Jan	10	2.3	0.4		
Duncan Lake No. 2	2172	30-Jan	18	5.6	4.1		
Duncan Ridge	5370	27-Jan	18	4			3.9
East Creek Pillow	6660	1-Feb		20.8	18.7		
Farron	4032	29-Jan	26	6.9	7.2		
Ferguson	3048	26-Jan	66	15.8	14.3		
Fernie East	3980	29-Jan	11	6.6	7.3		
Fidelity Mountain	6076	28-Jan	88	28	29.2		
Field	4298	29-Jan	21	5.7	5.2		
Fish Lake	3300	29-Jan	44	13.8	14.2		21.8
Floe Lake	6847	4-Feb	64	18.8	16.6		

Floe Lake Pillow	6857	1-Feb		16.2	16.2	
Freezeout Cr. Tr.	3500	29-Jan	13	3.6	5.8	7.9
Goat Creek	3600	29-Jan	17	3.9		5
Gold Mtn Lookout	4650	2-Feb	18	3	2	
Granite Creek	3500	30-Jan	37	10.8	9.9	12.6
Grass Mtn. No. 2	2900	27-Jan	0	0		4.2
Gray Creek Lower	5112	29-Jan	33	9.2	13.7	
Gray Creek Upper	6319	29-Jan	54	16.3	19.9	
Hamilton Hill	4846	29-Jan	23	6.9	4.2	
Harts Pass	6200	30-Jan	71	23.8	20.8	26.4
Hurricane	5228	26-Jan	0	0	0.2	10
Irene's Camp	5530	27-Jan	25	6.3		6.8
Islaht Lake	4895	30-Jan	27	7.2	4.9	
Keller Ridge	3700	28-Jan	7	1.7	0.7	
Keystone Creek	6033	29-Jan	59	21.8	15.7	
Kicking Horse	5407	30-Jan	29	8	8.8	
Kirbyville Lake	5705	29-Jan	89	33.5	25.4	
Klesilkwa	3720	29-Jan	2	0.4	2.4	
Lamb Butte	4900	29-Jan	29	8		
Lost Horse Mountain	6522	30-Jan	25	7	6	
Lost Lake	4077	30-Jan	17	3.5		
Loup Loup Campground (N	4120	28-Jan	22	4.7		
Lynn Lake	3885	30-Jan	0	0		13.2
Mazama	2180	28-Jan	28	7.6		
Mc Culloch	4154	1-Feb	21	5.7	6.6	
Meadow Cabins	1900	31-Jan	0	0	0.5	3.6
Meteor	2220	26-Jan	11	2	1	
Missezula Mountain	5256	30-Jan	20	5.2	5.3	
Mission Creek Pillow	5840	1-Feb	34	11.2	16.1	
Mission Ridge Pillow	6070	1-Feb		9.4	11.5	
Morrissey Ridge Pillow	5906	1-Feb		11.1	15.9	
Moses Mtn #2	4800	29-Jan	15	3.8		9.1
Moses Peak	6650	29-Jan	29	7.1	5	11.8
Mount Abbot	6663	27-Jan	81	27.2	27.2	
Mount Assiniboine	7316	4-Feb	52	14.7		
Mount Cook Pillow	5085	1-Feb	90	33.3	31.1	
Mount Joffre	5784	3-Feb	33	8.5	8.9	
Mount Kobau	5961	31-Jan	24	7.2	3.3	
Mount Tolman	2400	27-Jan	4	1.2	0	3.1
Moyie Mountain Pillow	6332	1-Feb	24	7.5	11.4	
Mt. Gardner	3300	27-Jan	0	0	0	
Mutton Creek No. 1	5700	26-Jan	26	7.2		8.4
Nelson	3123	28-Jan	24	6.6	6.4	
New Lake Hozomeen	2800	29-Jan	3	0.9	1.7	7.2
Oyama Lake	4478	2-Feb	24	3.6	1.7	
Pettijohn Creek	4309	30-Jan	17	4		
Postill Lake	4455	29-Jan	20	5.6	4.8	

Ragged Ridge	3333	26-Jan	8	2.4	2.5	6.9
Rainy Pass	4780	29-Jan	62	20	13.8	
Record Mountain	6253	27-Jan	41	12.1	9.4	
Round Top Mtn	4020	26-Jan	16	5	6.8	
Rusty Creek	4000	26-Jan	14	3.5		4.2
Satus Pass	4030	30-Jan	0	0	2.6	8.2
Shovelnose Mountain	4777	30-Jan	21	5.8	4.8	
Skookum Lakes	4227	28-Jan	15	4.4	6.4	
South Baldy	4920	28-Jan	25	6.6	10.2	
St. Leon Creek Pillow	5906	1-Feb		27.4	25.9	
Sullivan Mine	5184	31-Jan	15	4.3	7.5	
Sumallo River West	2628	29-Jan	4	1.2	2.3	
Summit G.S. #2	4600	29-Jan	22	5.1		6.1
Summit Trail	3840	26-Jan	9	1	0.9	4.6
Sunbeam Lake	6778	4-Feb	80	24.3	21.9	
Thompson Creek	2500	26-Jan	9	2.5	1.5	4.2
Thompson Ridge	4650	28-Jan	30	7.7		
Thunder Basin	2400	31-Jan	30	9.6		13.6
Thunder Creek	6765	3-Feb	22	5.4	7.7	
Toats Coulee	2845	27-Jan	12	2.8		2.4
Tunnel Avenue	2433				3.3	13.5
Vaseux Creek	4603	31-Jan	17	4.1	4.4	
Vermont Creek	5030	3-Feb	32	8.6	9.1	
Vulcan Mtn	4660	29-Jan	23	5.8		
Vulcan Road	3840	29-Jan	19	4.6		
West Smay Creek	3600	27-Jan	10	3.5		
Whiterocks Mountain	5869	27-Jan	36	10.9		
Yellowhead Pillow	6102	1-Feb	46	13.3	14.3	

Precipitation

Except for a few individual sites all river basins reported below normal precipitation for the month of January. Even so the water-year to date precipitation remain near to slightly above normal in all basins. The Olympic Peninsula was the by far the driest at only 46% of normal precipitation for January. Quillayute State Airport only measured 79% of normal rainfall. Elbow Lake SNOTEL in the South Fork Nooksack River Basin continues to rein over the entire SNOTEL network with a water-year accumulation of 96.8 inches, 14 inches above normal or 117% of average for the water-year.

RIVER BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	77	90
Pend Oreille	83	107
Upper Columbia	68	114
Central Columbia	74	106
Upper Yakima	71	92
Lower Yakima	62	101
Walla Walla	56	94
Lower Snake	71	95
Lower Columbia	62	104
South Puget Sound	71	101
Central Puget Sound	81	100
North Puget Sound	82	112
Olympic Peninsula	46	104

Reservoir

Seasonal reservoir levels in Washington can vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation, municipal demands and flood control. More rainfall than snow has helped buffer many reservoirs to above normal levels for this time of year. In most cases managers are electing to hold this excess water due to the uncertainty of the snowpack. February 1 Reservoir storage in the Yakima Basin was 678,000-acre feet, 168% of average for the Upper Reaches and 194,000-acre feet or 159% of average for Rimrock and Bumping Lakes. The power generation reservoirs included the following: Coeur d'Alene Lake, 154,000 acre feet, 160% of average and 65% of capacity; and the Skagit River reservoirs at 79% of average and 56% of capacity. Recent climate impacts and management procedures may affect these numbers on a daily or weekly basis.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	65	160
Pend Oreille	35	72
Upper Columbia	125	113
Central Columbia		
Upper Yakima	81	168
Lower Yakima	84	159
Lower Snake	75	111
North Puget Sound	56	79

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

Streamflow

April to September runoff forecasts for February 1 dropped considerably since the January forecasts were issued due to the obvious lack of snowfall. However January streamflows were mostly well above normal due to heavy rains and snow melt. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 64%; White River, 88%; and Skagit River, 90%. Some Eastern Washington streams include the Yakima River near Parker 61%, Wenatchee River at Plain 71%; and Spokane River near Post Falls 67%.

Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions since governing conditions are likely to change for the better or the worse. **The 50% chance of exceedance of average flows is normally used for planning purposes however with the current uncertainty in weather forecasts and the current lack of snow in most locations it may be advisable to use the 70-90% chance of exceedance to ensure adequate water supply this summer.**

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	66-70
Pend Oreille	69-105
Upper Columbia	62-100
Central Columbia	65-98
Upper Yakima	44-58
Lower Yakima	59-76
Walla Walla	81-85
Lower Snake	74-104
Lower Columbia	59-95
South Puget Sound	63-88
Central Puget Sound	59-79
North Puget Sound	88-91
Olympic Peninsula	73-77

STREAM	PERCENT OF AVERAGE JANUARY STREAMFLOWS
Pend Oreille at Albeni Fall Dam	128
Kettle at Laurier	187
Columbia at Birchbank	120
Spokane at Spokane	137
Similkameen at Nighthawk	200
Okanogan at Tonasket	135
Methow at Pateros	189
Chelan at Chelan	190
Wenatchee at Pashastin	201
Cle Elum near Roslyn	191
Yakima at Parker	192
Naches at Naches	209
Grande Ronde at Troy	174
Snake below Lower Granite Dam	106
Columbia River at The Dalles	112
Lewis at Merwin Dam	97
Cowlitz below Mayfield Dam	126
Skagit at Concrete	143
Dungeness near Sequim	118

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

Soil Moisture

Near to above normal fall precipitation provided for wet and nearly saturated soils (60-70% saturation) as the snow finally began to accumulate in mid-January. Great fall soil conditions can help buffer low snowpack runoff come spring however it is too early in the season to count those chickens. Current soil moisture data is available from a limited number of SNOTEL sites scattered throughout each basin. As the effort continues to install additional sensors and more years of data are acquired this information will become invaluable to the streamflow forecasting community.



Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

Program Contacts

Washington:

Roylene Rides At The Door
State Conservationist
Spokane State Office
W. 316 Boone Ave., Suite 450
Spokane, WA 99201-2348
phone: 509-323-2961
roylene.rides-at-the-door@wa.usda.gov

Scott Pattee
Water Supply Specialist
Washington Snow Survey Office
2021 E. College Way, Suite 214
Mount Vernon, WA 98273-2873
phone: 360-428-7684
scott.pattee@wa.usda.gov

Oregon:

Scott Oviatt
Supervising Hydrologist
Oregon Data Collection Office
1201 NE Lloyd Blvd., STE 900
Portland, OR 97232
Phone: 503-414-3271
scott.oviatt@or.usda.gov

Rashawn Tama
Forecast Hydrologist
National Water and Climate Center
1201 NE Lloyd Blvd., STE 800
Portland, OR 97232
phone: 503-414-3010
rashawn.tama@por.usda.gov

Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/wa/snow/>

Oregon:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

Idaho:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/id/snow/>

National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

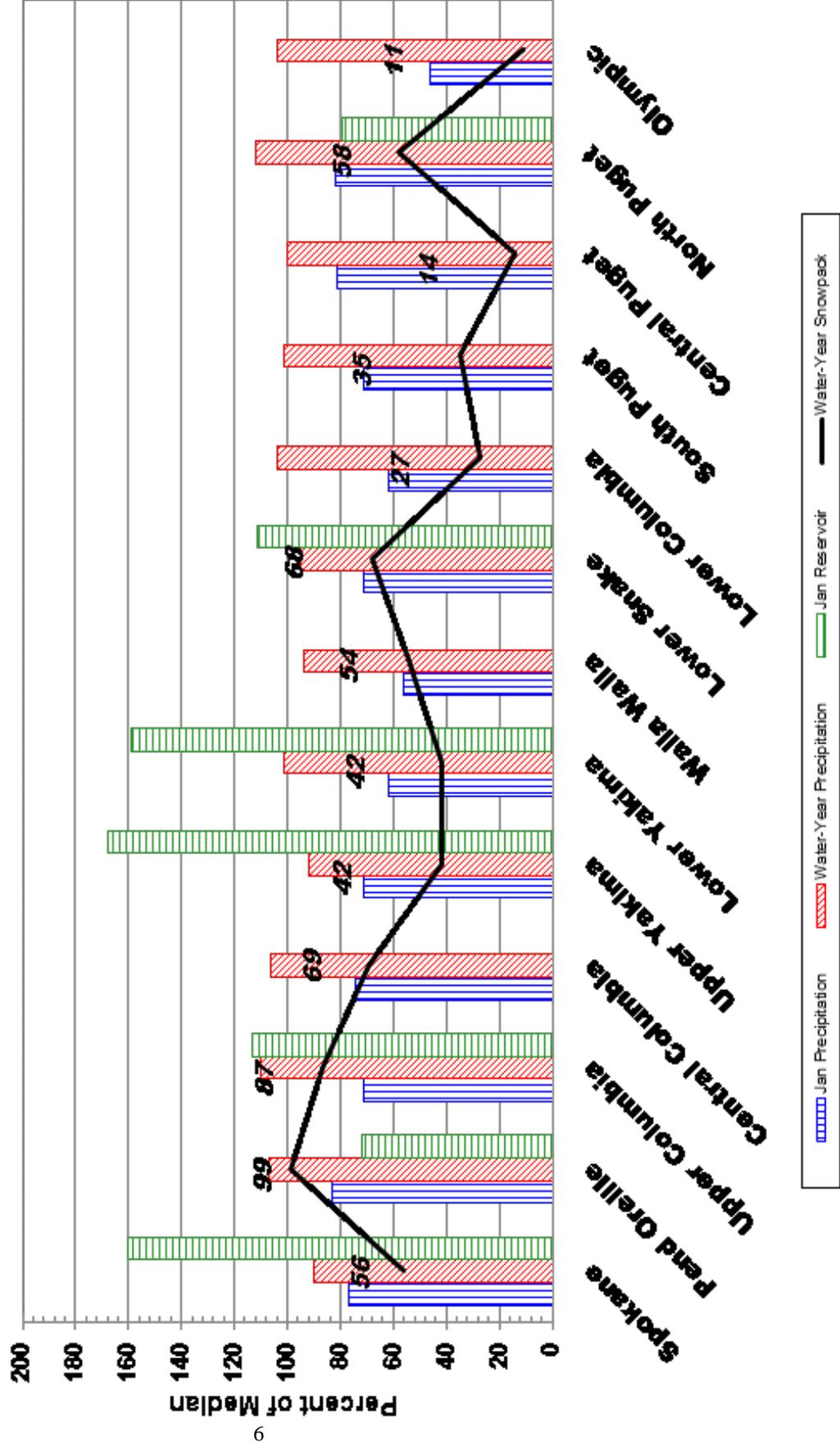
USDA-NRCS Agency Homepages

Washington:
<http://www.nrcs.usda.gov/wps/portal/nrcs/site/wa/home/>

NRCS National:
<http://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/>

February 1, 2015 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2014 - Current Date)



Western Snow Conference

The Western Snow Conference is an annual tradition which started in 1932 as an international forum for individuals and organizations to share scientific, management and socio-political information on snow and runoff. The principal aim of the Western Snow Conference is to advance snow and hydrological sciences. The South Pacific Area Committee is making plans for the 83rd Annual Western Snow Conference in 2015.

Mark your calendar and start thinking about submitting a paper to attend the 2015 Western Snow Conference:

Dates: April 20-24, 2015

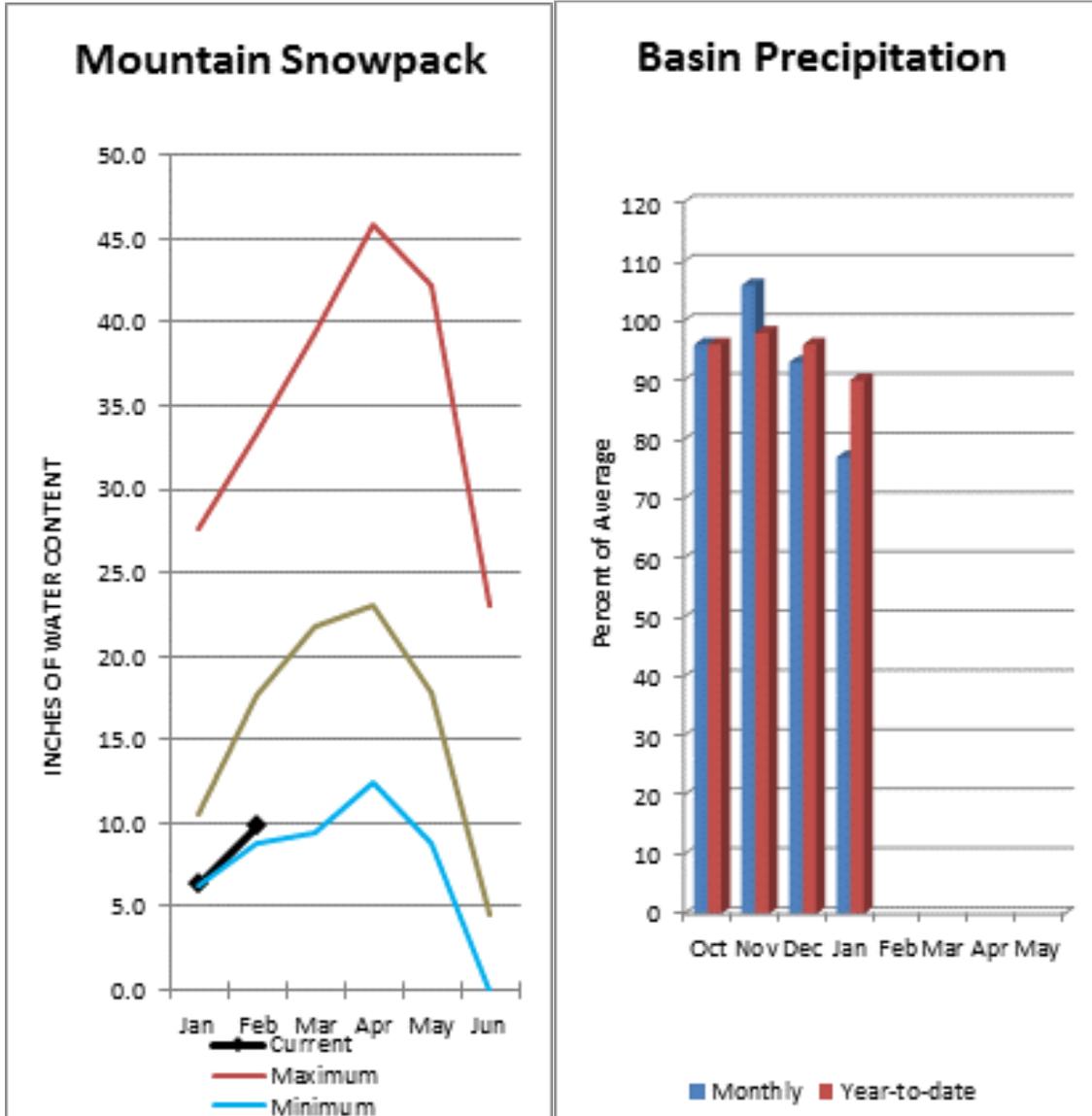
Location: Grass Valley, California

The Conference will begin Monday, April 20th with a short course and panel discussion on " LIDAR Basics, Applications, and Use in Snow Hydrology and Field Studies " with several invited experts in the field. Tuesday and Wednesday will include formal paper and poster presentations on a variety of topics, including climate variability, climate change impacts on snow and runoff, water management, water supply forecasting, and modeling and climatology of snow. Thursday will include a technical tour to visit hydrologic and gold mining points of interest around Grass Valley

Additional information about the conference and the Call for Papers will be posted on the WSC web page at <http://www.westernsnowconference.org/>.

Also find Western Snow Conference on Facebook and Twitter.

Spokane River Basin



The February 1 forecasts for summer runoff within the Spokane River Basin are 67% of average near Post Falls and 70% at Long Lake. The Chamokane River near Long Lake forecasted to have 66% of average flows for the May-August period. The forecast is based on a basin snowpack that is 54% of normal and precipitation that is 90% of average for the water year. Precipitation for January was near normal at 77% of average. Streamflow on the Spokane River at Spokane was 137% of average for January. February 1 storage in Coeur d'Alene Lake was 154,000 acre feet, 160% of average and 65% of capacity. Snowpack at Quartz Peak SNOTEL site was 58% of average with 8.6 inches of water content. Average temperatures in the Spokane basin were 4-6 degrees above normal for January and 3-5 degrees above normal for the water year.

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

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Spokane Streamflow Forecasts - February 1, 2015

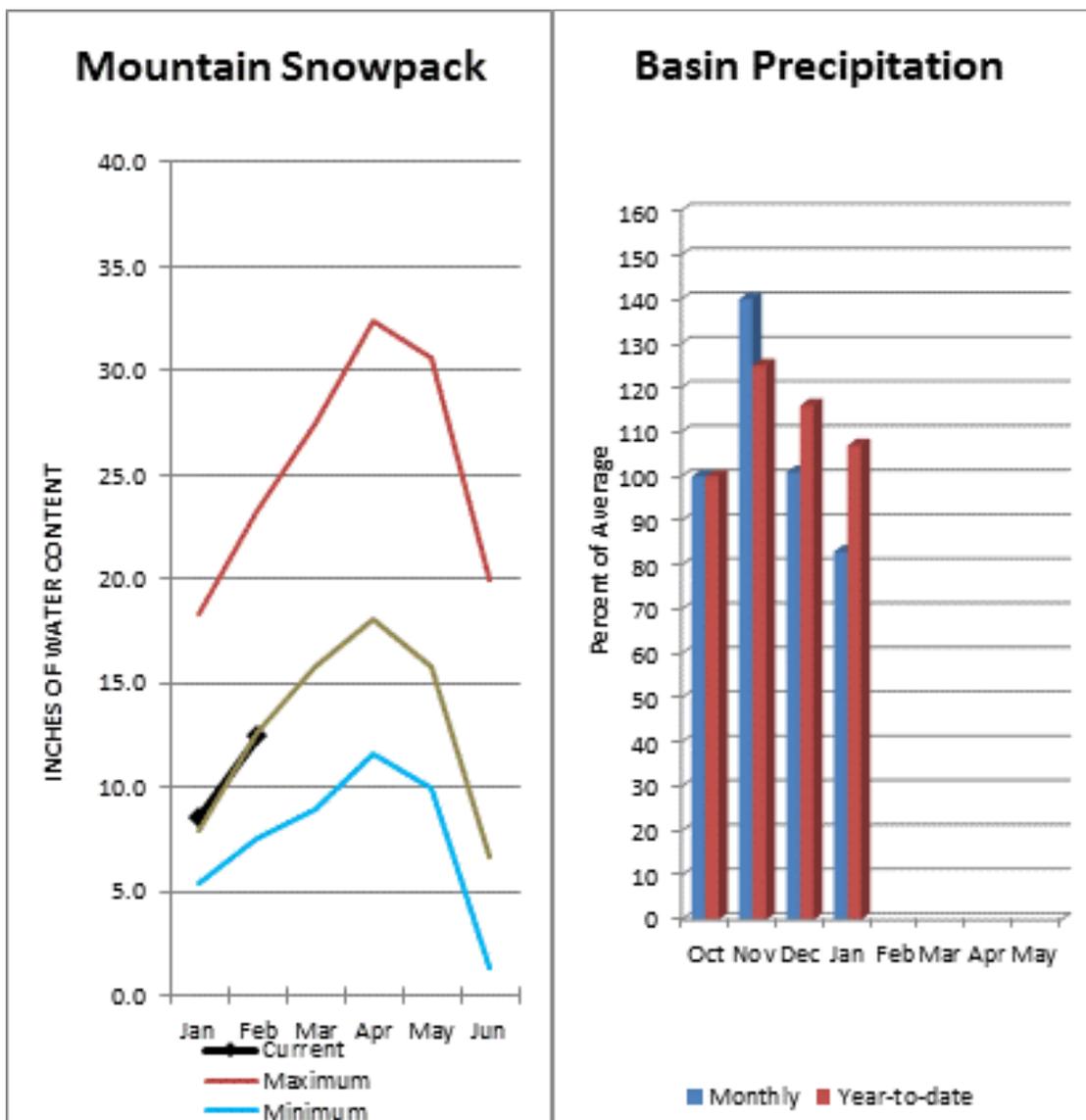
Spokane	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Spokane R nr Post Falls ²	APR-JUL	985	1350	1600	67%	1850	2220	2390
	APR-SEP	1040	1410	1660	67%	1910	2280	2480
Spokane R at Long Lake ²	APR-JUL	1150	1550	1830	70%	2110	2510	2620
	APR-SEP	1310	1720	2000	70%	2280	2690	2850
Chamokane Ck nr Long Lake	MAY-AUG	0.4	3.8	6.1	66%	8.4	11.8	9.3

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Coeur d' Alene	154.1	43.4	96.3	238.5
Basin-wide Total	154.1	43.4	96.3	238.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Spokane	13	54%	73%
Newman Lake	3	52%	58%



The April – September average forecast for the Priest River near the town of Priest River is 69% and the Pend Orielle below Box Canyon is 105%. January streamflow was 128% of average on the Pend Oreille River and 120% on the Columbia at Birchbank. February 1 snow cover was 99% of normal in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 10.4 inches of snow water on the snow pillow. Normally Bunchgrass would have 18 inches on February 1. Precipitation during January was 83% of average, dropping the year-to-date precipitation at 107% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 72% of normal. Average temperatures were 4-6 degrees above normal for January and 3-5 degrees above normal for the water year.

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

Pend Oreille River Basins

Data Current as of: 2/4/2015 10:38:42 PM

Pend Oreille Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

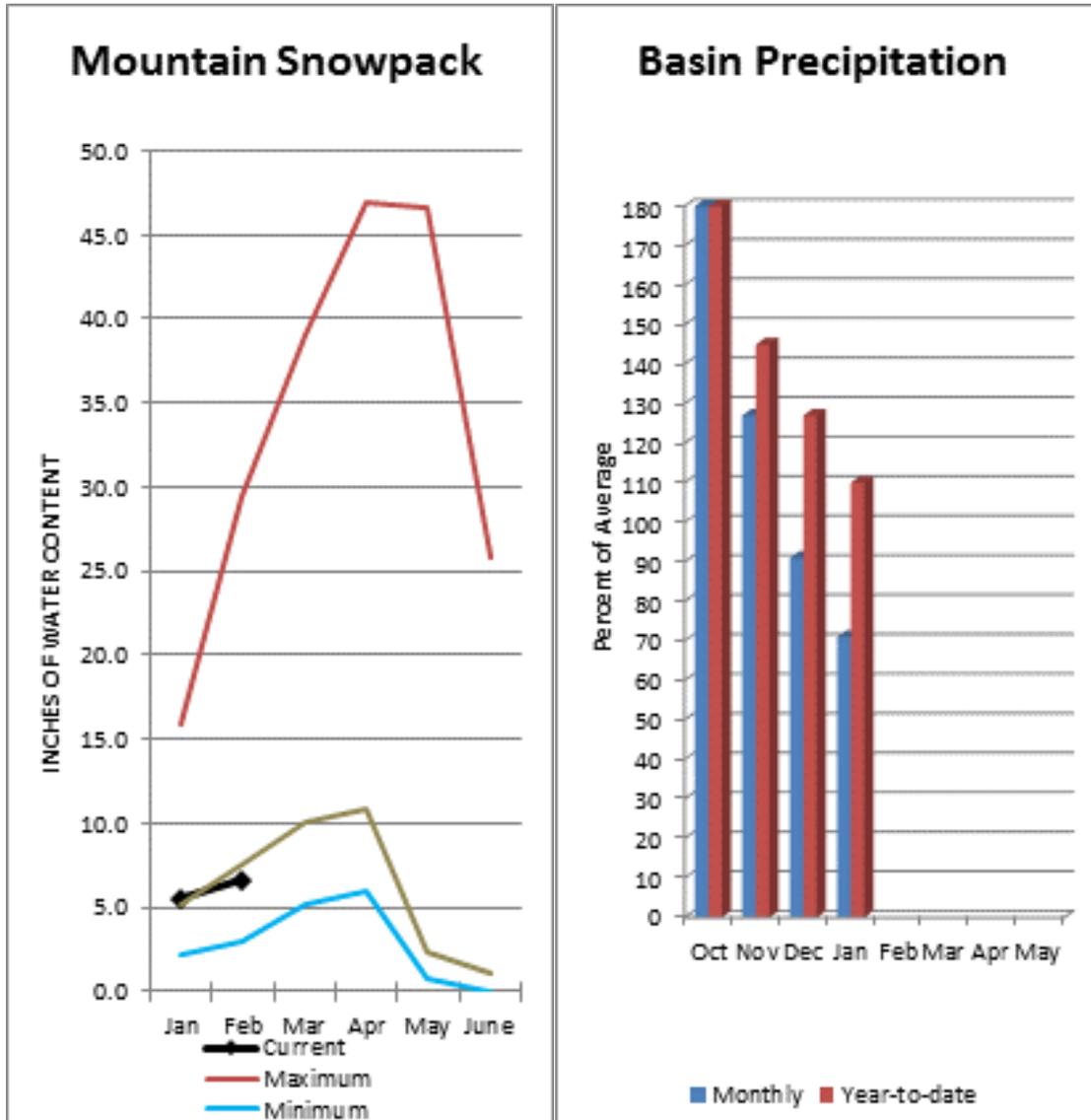
Pend Oreille Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pend Oreille Lake Inflow ²	APR-JUL	10400	11600	12500	106%	13300	14600	11800
	APR-SEP	11300	12600	13500	105%	14400	15700	12800
Priest R nr Priest River ^{1,2}	APR-JUL	330	475	540	69%	610	755	780
	APR-SEP	345	505	575	69%	650	810	830
Pend Oreille R bl Box Canyon ²	APR-JUL	10500	11800	12700	107%	13500	14800	11900
	APR-SEP	11400	12800	13700	105%	14600	15900	13000

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Pend Oreille	534.8	569.9	753.9	1561.3
Priest Lake	50.4	60.6	56.7	119.3
Basin-wide Total	585.1	630.5	810.6	1680.6
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Pend Oreille Basins	57	99%	103%
Colville River	0		
Pend Oreille River	57	99%	103%
Kettle River	3	80%	87%



Summer runoff average forecast for the Okanogan River is 85%, Similkameen River is 91%, Kettle River 95% and Methow River is 100%. February 1 snow cover on the Okanogan was 93% of normal, Omak Creek was 58% and the Methow was 98%. January precipitation in the Upper Columbia was 68% of average, with precipitation for the water year at 114% of average. January streamflow for the Methow River was 189% of average, 135% for the Okanogan River and 200% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 6.1 inches or 92% of normal for February 1. Combined storage in the Conconully Reservoirs was 16.2,000 acre-feet or 113% of normal. Temperatures were 4-6 degrees above normal for January and 3-5 degrees above for the water year.

Upper Columbia River Basins

Data Current as of: 2/4/2015 10:38:44 PM

Upper Columbia Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

Upper Columbia Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Kettle R nr Laurier	APR-JUL	1350	1560	1700	94%	1850	2060	1800
	APR-SEP	1400	1630	1790	95%	1940	2170	1880
Colville R at Kettle Falls	APR-JUL	3.1	44	72	61%	100	141	119
	APR-SEP	5.4	50	81	62%	112	157	131
Columbia R at Grand Coulee ^{1,2}	APR-JUL	39000	46200	49500	97%	52800	60000	51015
	APR-SEP	45800	54400	58300	97%	62200	70800	60110
Similkameen R nr Nighthawk ¹	APR-JUL	710	965	1080	90%	1200	1450	1200
	APR-SEP	780	1040	1160	91%	1270	1530	1280
Okanogan R nr Tonasket ¹	APR-JUL	650	1030	1200	81%	1380	1760	1480
	APR-SEP	725	1140	1330	81%	1520	1930	1650
Okanogan R at Malott ¹	APR-JUL	655	1060	1240	86%	1420	1830	1450
	APR-SEP	735	1170	1370	85%	1570	2010	1620
Methow R nr Pateros	APR-JUL	675	770	835	100%	900	995	835
	APR-SEP	720	825	895	100%	965	1070	895
Columbia R at Birchbank ^{1,2}	APR-JUL	26700	30700	32500	96%	34300	38300	33840
	APR-SEP	32900	37800	40100	96%	42400	47300	41750

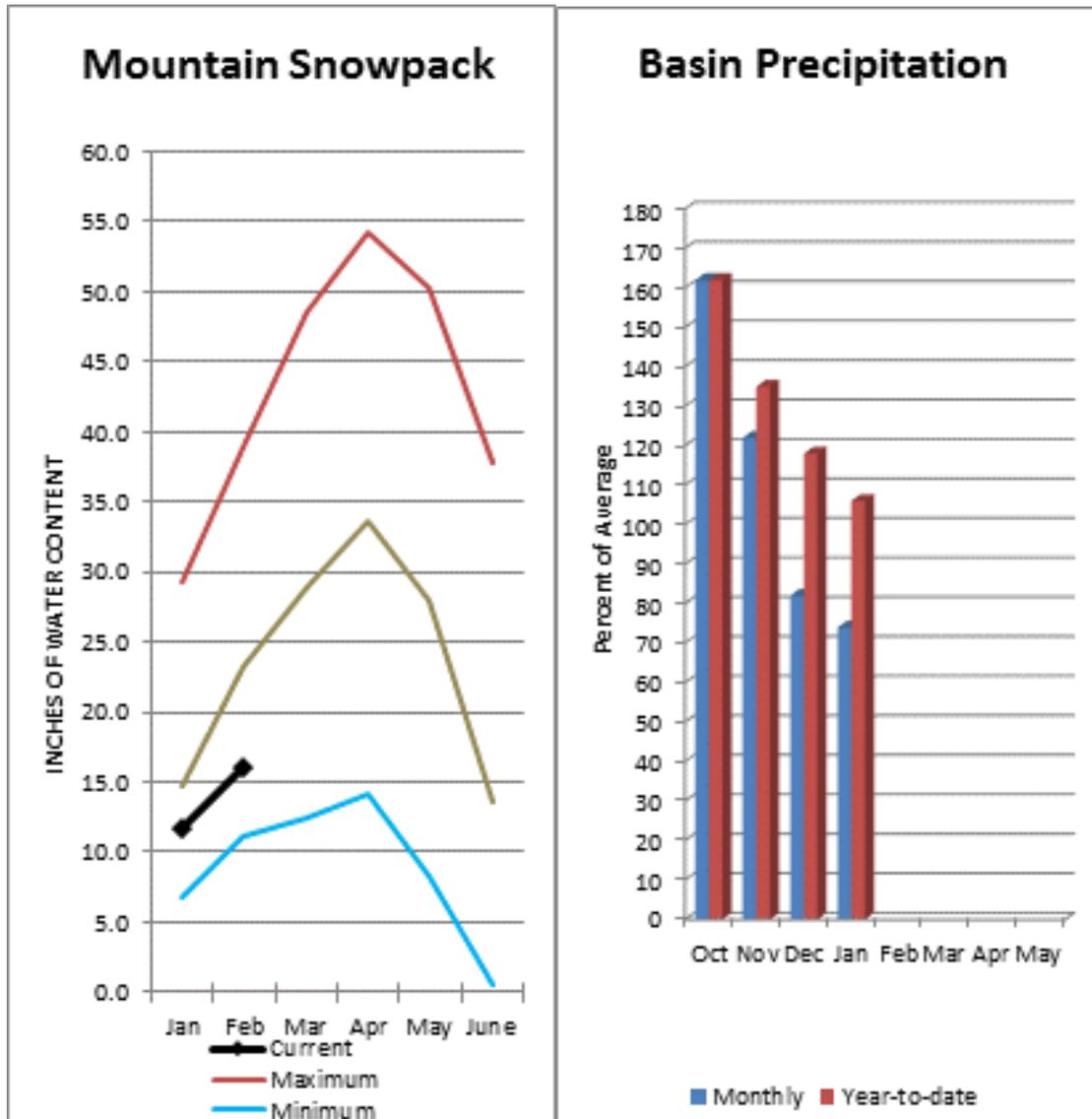
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conconully Lake (Salmon Lake Dam)	6.9	9.3	7.3	10.5
Conconully Reservoir	9.3	11.7	7.0	13.0
Basin-wide Total	16.2	20.9	14.3	23.5
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Columbia Basins	15	87%	73%
Okanogan River	7	93%	78%
Omak Creek	2	58%	41%
Sanpoil River	1	39%	0%
Similkameen River	4	91%	82%
Toats Coulee Creek	0		
Conconully Lake	1	92%	33%
Methow River	4	98%	70%

Central Columbia River Basins



Precipitation during January was 74% of average in the basin and 106% for the year-to-date. Runoff for Entiat River is forecast to be 79% of average for the summer. The April-September average forecast for Chelan River is 81%, Wenatchee River at Plain is 71%, Stehekin River is 91% and Icicle Creek is 65%. January average streamflows on the Chelan River were 190% and on the Wenatchee River 201%. February 1 snowpack in the Wenatchee River Basin was 60% of normal; the Chelan, 76%; the Entiat, 70%; Stemilt Creek, 68% and Colockum Creek, 55%. Reservoir storage in Lake Chelan was not available. Lyman Lake SNOTEL had the most snow water with 31.6 inches of water. This site would normally have 40.1 inches on February 1. Temperatures were 4-6 degrees above normal for January and 2-3 degrees above normal for the water year.

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

Central Columbia River Basins

Data Current as of: 2/4/2015 10:38:47 PM

Central Columbia Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

Central Columbia Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Stehekin R at Stehekin	APR-JUL	515	580	625	92%	665	730	680
	APR-SEP	605	675	720	91%	765	830	790
Chelan R at Chelan	APR-JUL	710	775	820	82%	865	930	1000
	APR-SEP	765	845	905	81%	960	1040	1120
Entiat R nr Ardenvoir	APR-JUL	129	147	160	80%	172	190	200
	APR-SEP	140	160	173	79%	187	205	220
Wenatchee R at Plain	APR-JUL	585	660	710	72%	760	840	990
	APR-SEP	610	700	765	71%	825	915	1080
Icicle Ck nr Leavenworth	APR-JUL	148	167	180	65%	193	210	275
	APR-SEP	155	178	194	65%	210	235	300
Wenatchee R at Peshastin	APR-JUL	800	905	975	71%	1050	1150	1370
	APR-SEP	835	960	1050	70%	1130	1260	1490
Columbia R bl Rock Island Dam ²	APR-JUL	45300	50900	54700	98%	58500	64100	55770
	APR-SEP	52800	59400	63900	98%	68400	75000	65200

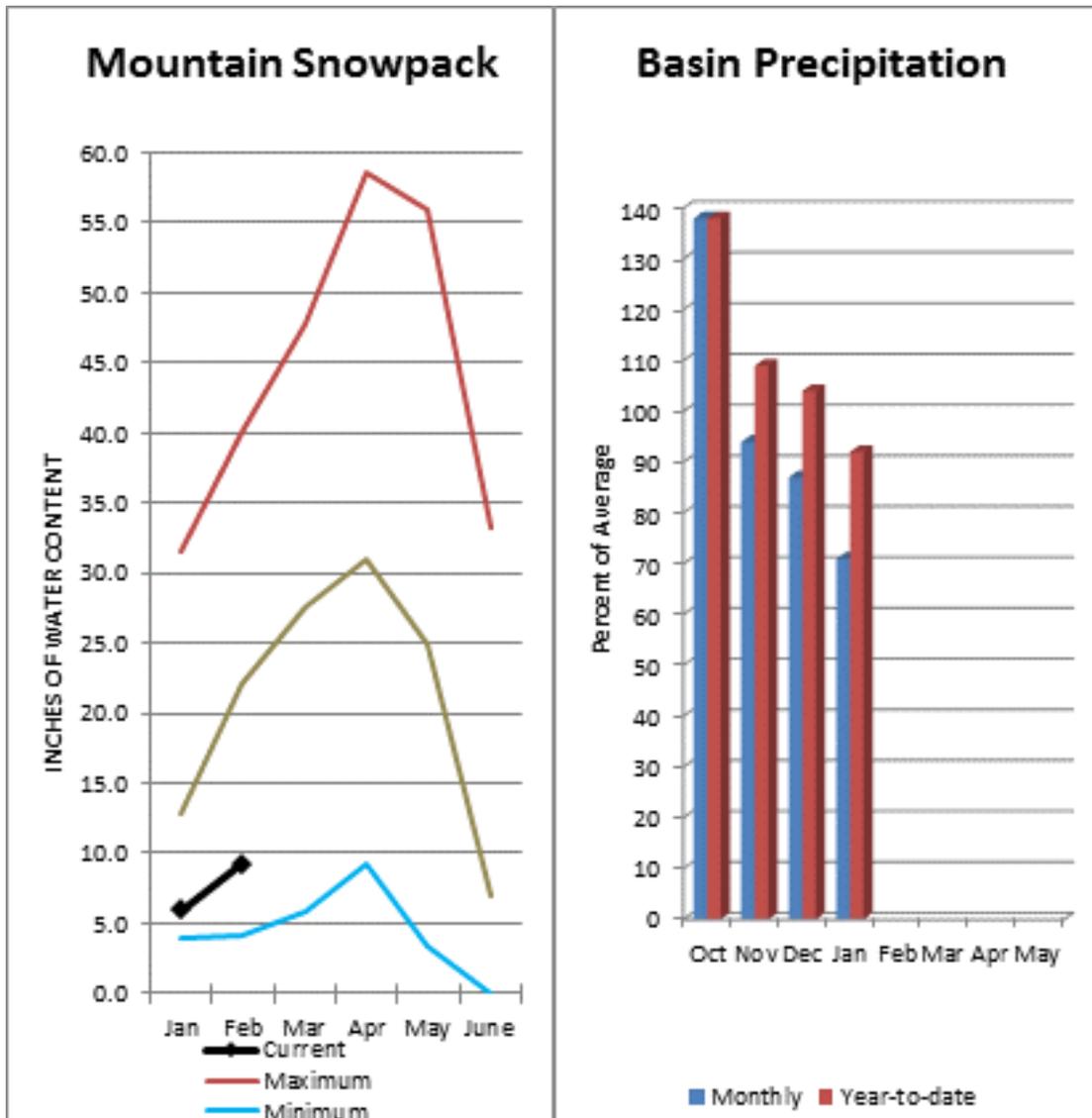
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Chelan			343.1	676.1
Basin-wide Total			0.0	0.0
# of reservoirs	0	0	0	0

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Central Columbia Basins	3	76%	56%
Chelan Lake Basin	3	76%	56%
Entiat River	1	70%	36%
Wenatchee River	7	60%	56%
Stemilt Creek	1	68%	43%
Colockum Creek	1	55%	69%

Upper Yakima River Basin



February 1 reservoir storage for the Upper Yakima reservoirs was 678,000-acre feet, 168% of average. Forecasts for the Yakima River at Cle Elum are 56% of average and the Teanaway River near Cle Elum is at 44%. Lake inflows are all forecasted to be below average this summer as well. January streamflows within the basin were Cle Elum River near Roslyn at 191%. February 1 snowpack was 42% based upon 6 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 71% of average for January and 92% for the water-year. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

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

Upper Yakima River Basin

Data Current as of: 2/4/2015 10:38:50 PM

Upper Yakima River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Upper Yakima River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Keechelus Reservoir Inflow ²	APR-JUL	32	52	65	56%	79	98	116
	APR-SEP	38	58	72	57%	86	106	126
Kachess Reservoir Inflow ²	APR-JUL	27	44	54	52%	65	82	104
	APR-SEP	33	49	60	53%	71	88	113
Cle Elum Lake Inflow ²	APR-JUL	149	192	220	57%	250	295	385
	APR-SEP	155	205	240	58%	275	325	415
Yakima R at Cle Elum ²	APR-JUL	215	335	420	56%	500	620	755
	APR-SEP	240	375	465	56%	555	690	830
Teanaway R bl Forks nr Cle Elum	APR-JUL	18.5	42	58	45%	73	97	130
	APR-SEP	20	43	59	44%	75	98	133

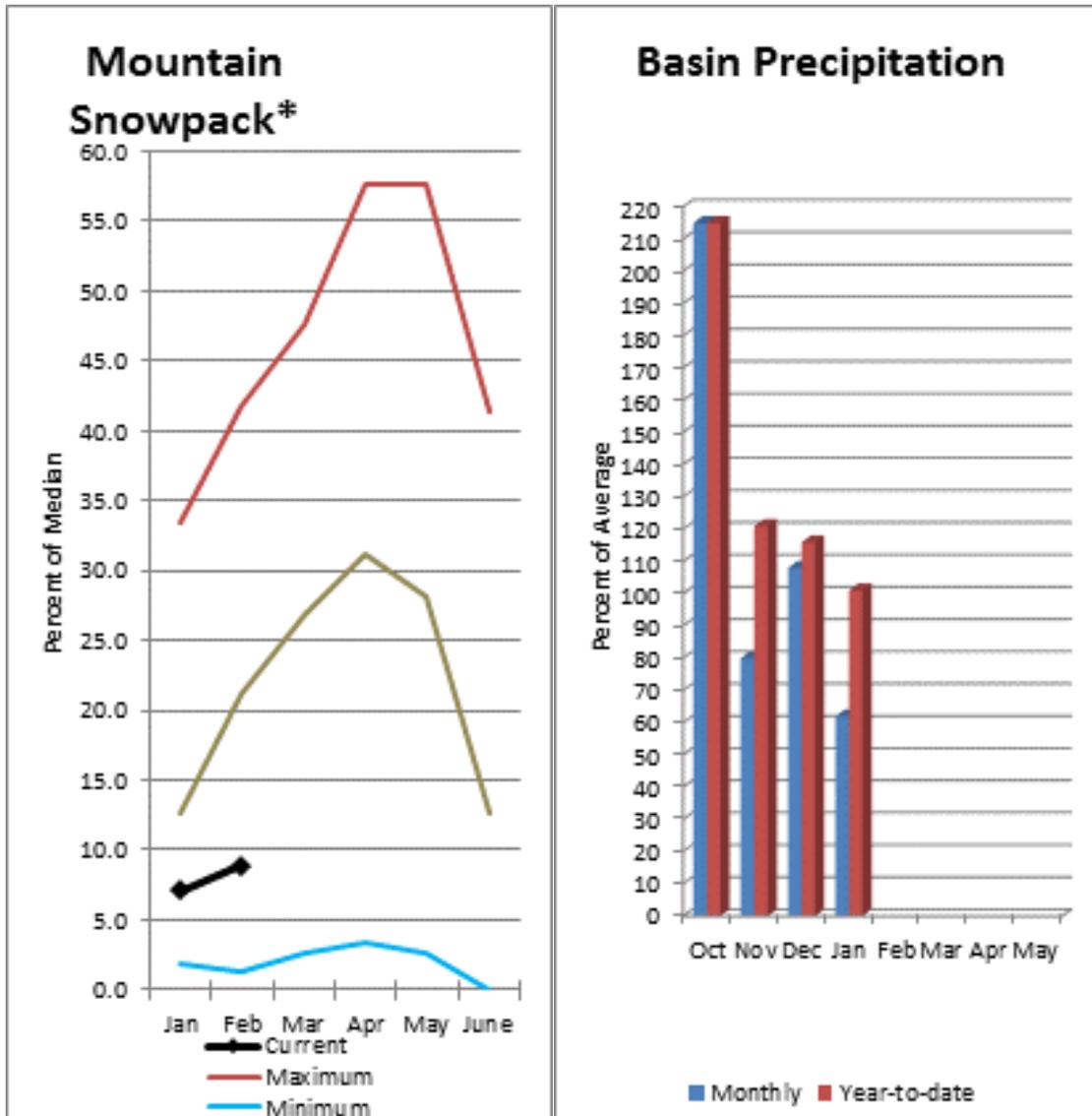
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Keechelus	139.6	99.8	82.1	157.8
Kachess	201.2	176.8	130.8	239.0
Cle Elum	337.6	185.6	191.5	436.9
Basin-wide Total	678.4	462.2	404.4	833.7
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Yakima River	6	42%	55%

Lower Yakima River Basin



January average streamflows within the basin were: Yakima River near Parker, 192% and the Naches River near Naches, 209%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 194,000-acre feet, 159% of average. Forecast averages for Yakima River near Parker are 61%; American River near Nile, 65%; Ahtanum Creek, 76%; and Klickitat River near Glenwood, 59%. February 1 snowpack was 42% based upon 6 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 54% of normal. Precipitation was 62% of average for January and 101% for the water-year. Temperatures were 4-6 degrees above normal for January and for 2-4 degrees above normal for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they February differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

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

Lower Yakima River Basin

Data Current as of: 2/5/2015 2:42:04 PM

Lower Yakima River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

Lower Yakima River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Bumping Lake Inflow ²	APR-JUL	61	75	84	74%	93	107	114
	APR-SEP	65	80	90	73%	100	115	123
American R nr Nile	APR-JUL	48	60	68	67%	76	88	102
	APR-SEP	49	63	72	65%	82	96	110
Rimrock Lake Inflow ²	APR-JUL	116	130	140	75%	150	165	187
	APR-SEP	134	153	165	75%	178	196	220
Naches R nr Naches	APR-JUL	335	410	465	66%	520	595	700
	APR-SEP	350	440	500	66%	560	650	760
Ahtanum Ck at Union Gap	APR-JUL	10.6	16.3	20	74%	24	30	27
	APR-SEP	12.3	18.1	22	76%	26	32	29
Yakima R nr Parker ²	APR-JUL	685	880	1010	61%	1140	1330	1660
	APR-SEP	755	965	1110	61%	1250	1460	1820
Klickitat R nr Glenwood	APR-JUL	50	64	73	58%	82	95	126
	APR-SEP	56	72	82	59%	92	108	139
Klickitat R nr Pitt	APR-JUL	220	265	295	68%	330	375	435
	APR-SEP	260	315	355	68%	395	450	520

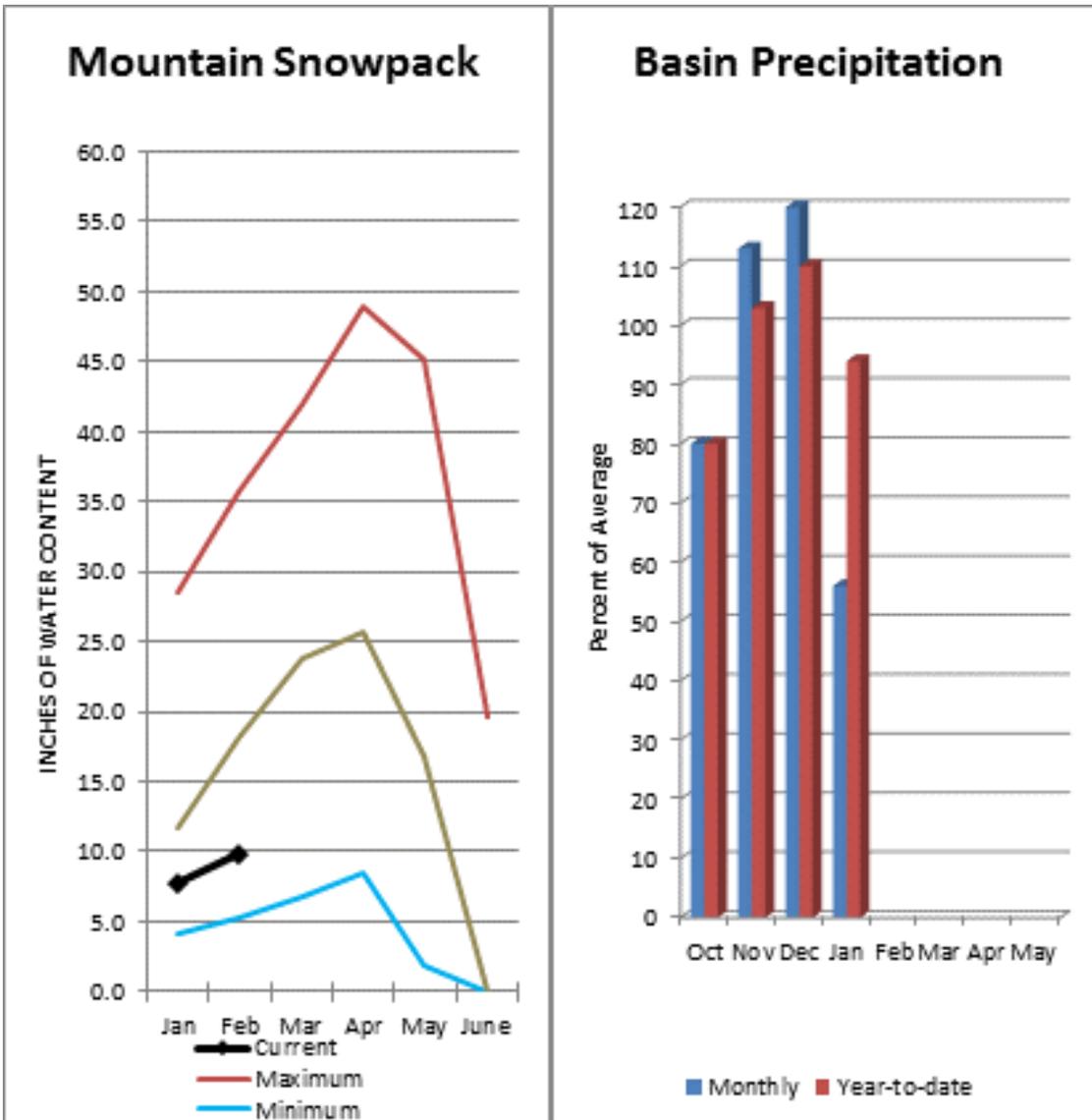
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bumping Lake	26.3	18.6	12.7	33.7
Rimrock	168.2	129.7	109.6	198.0
Basin-wide Total	194.5	148.3	122.3	231.7
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Yakima River	6	42%	57%
Ahtanum Creek	2	37%	52%

Walla Walla River Basin



January precipitation was 56% of average, maintaining the year-to-date precipitation at 94% of average. Snowpack in the basin was 54% of normal. Streamflow forecasts are 81% of average for Mill Creek and 85% for the SF Walla Walla near Milton-Freewater. Average temperatures were 4-6 degrees above normal for January and 3-5 degrees above normal for the water year.

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

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Walla Walla River Streamflow Forecasts - February 1, 2015

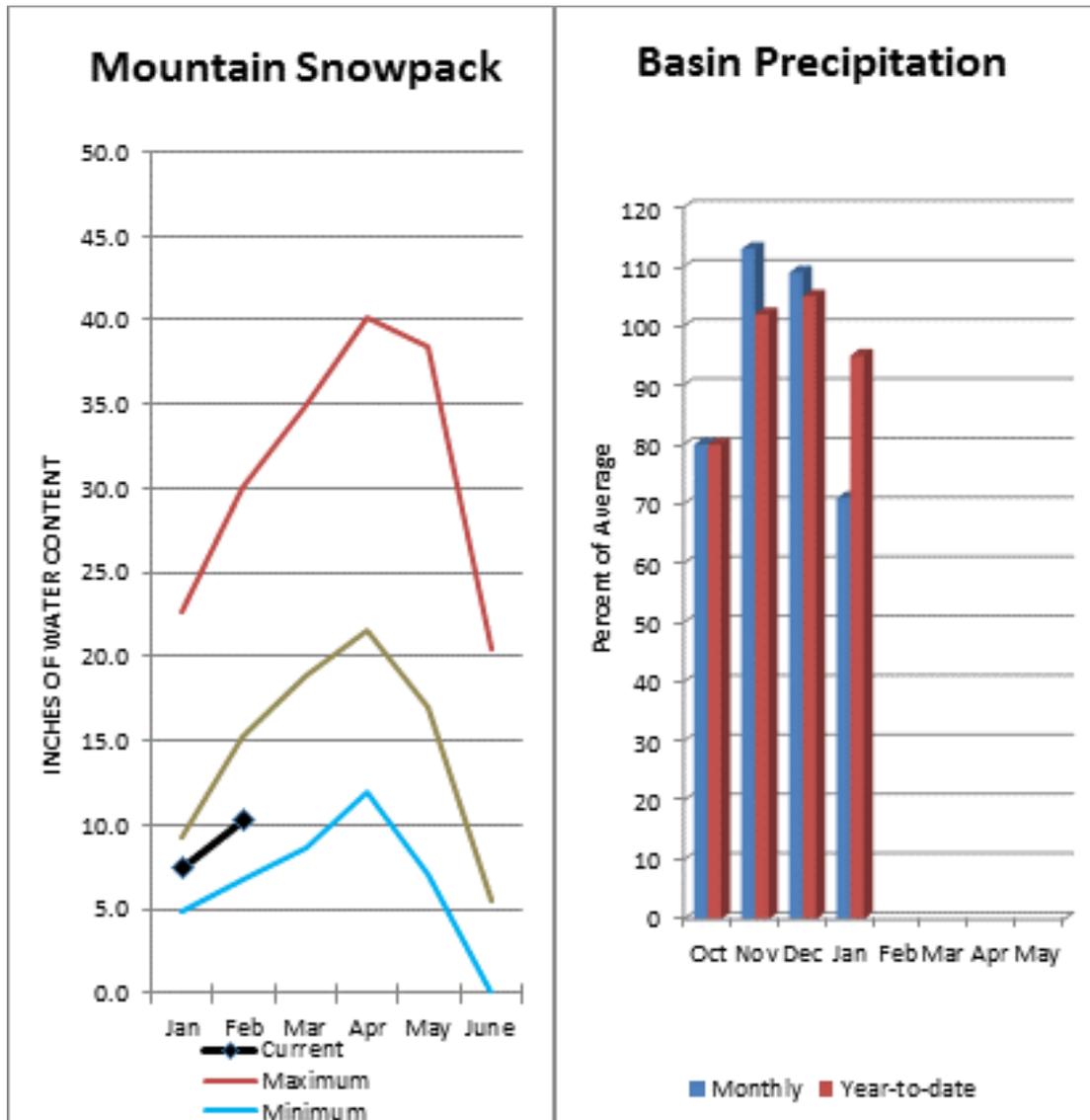
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Walla Walla River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
<hr/>								
SF Walla Wall R nr Milton-Freewater	MAR-SEP	54	62	68	85%	74	82	80
	APR-JUL	33	40	44	81%	48	55	54
	APR-SEP	44	51	56	85%	61	68	66
Mill Ck nr Walla Walla	APR-JUL	12.8	16.5	19	79%	22	25	24
	APR-SEP	15.8	19.8	22	81%	25	29	27

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Walla Walla River	2	54%	68%



The Grande Ronde River can expect summer flows to be about 92% of normal. The forecast for Asotin Creek at Asotin predicts 74% of average flows for the April – July runoff period. January precipitation was 71% of average, bringing the year-to-date precipitation to 95% of average. February 1 snowpack readings averaged 68% of normal. January streamflow was 106% of average for Snake River below Lower Granite Dam and 174% for Grande Ronde River near Troy. Dworshak Reservoir storage was 111% of average. Average temperatures were 4-6 degrees above normal for January and 3-4 degrees above for the water year.

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

Lower Snake River Basin

Data Current as of: 2/4/2015 10:38:58 PM

Lower Snake, Grande Ronde, Clearwater Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

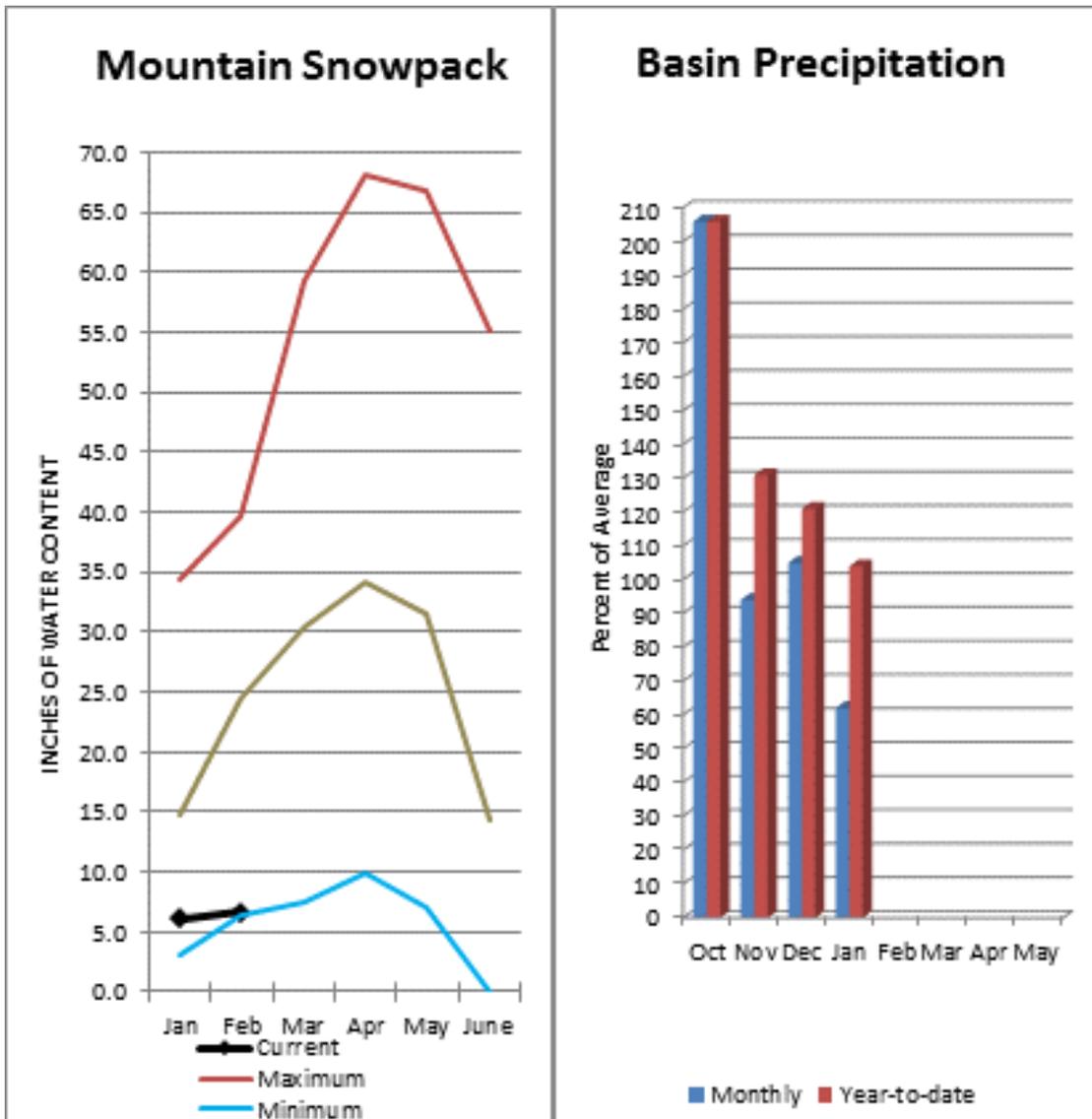
Lower Snake, Grande Ronde, Clearwater Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Grande Ronde R at Troy ¹								
Asotin Ck at Asotin								
Clearwater R at Spalding ^{1,2}	APR-JUL	11.2	20	26	74%	32	42	35
	APR-SEP	5190	6570	7200	104%	7830	9220	6890
Snake R bl Lower Granite Dam ^{1,2}	APR-SEP	5490	6910	7560	104%	8200	9630	7270
	APR-JUL	9990	16400	19300	97%	22200	28600	19848
	APR-SEP	11100	18300	21600	97%	24900	32100	22280

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Dworshak Reservoir	2599.9	2334.6	2335.0	3468.0
Basin-wide Total	2599.9	2334.6	2335.0	3468.0
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Snake, Grande Ronde, Clearwater Basins	14	68%	78%



Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 73% and Cowlitz River at Castle Rock, 88% of average. The Columbia at The Dalles is forecasted to have 95% of average flows this summer according to the River Forecast Center. January average streamflow for Cowlitz River was 137%. The Columbia River at The Dalles was 112% of average. January precipitation was 62% of average and the water-year average was 104%. February 1 snow cover for Cowlitz River was 36%, and Lewis River was 15% of normal. Temperatures were 2-4 degrees above normal during January and for the water year.

Lower Columbia River Basins

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Lower Columbia Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

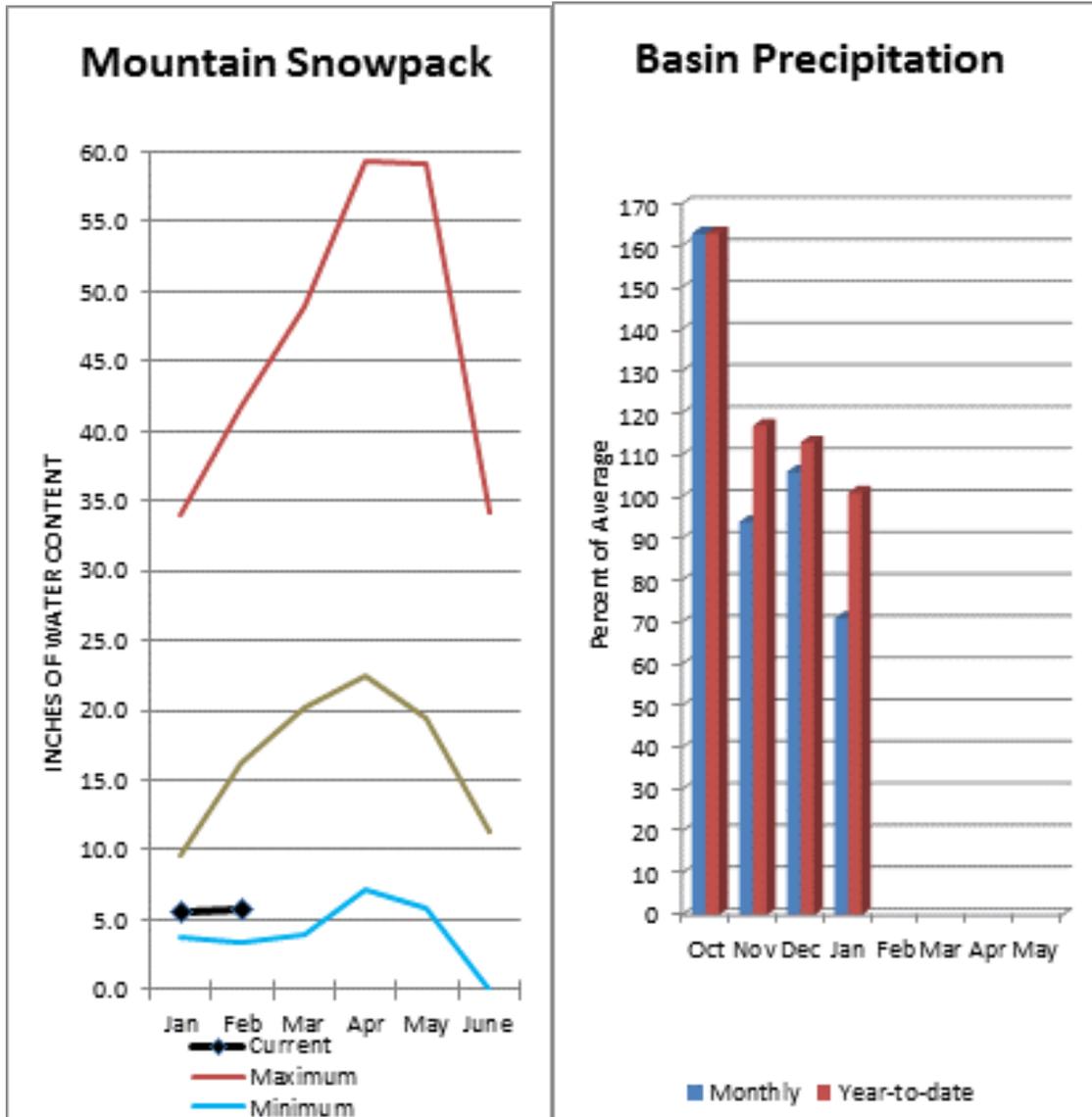
Lower Columbia Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Columbia R at The Dalles ²	APR-JUL	60900	69800	75900	95%	82000	90900	79855
	APR-SEP	70600	81000	88100	95%	95200	106000	92704
Klickitat R nr Glenwood	APR-JUL	50	64	73	58%	82	95	126
	APR-SEP	56	72	82	59%	92	108	139
Klickitat R nr Pitt	APR-JUL	220	265	295	68%	330	375	435
	APR-SEP	260	315	355	68%	395	450	520
Lewis R at Ariel	APR-JUL	425	600	715	74%	830	1000	970
	APR-SEP	510	695	820	73%	945	1130	1120
Cowlitz R bl Mayfield ²	APR-JUL	1010	1210	1350	83%	1490	1690	1620
	APR-SEP	1160	1390	1550	84%	1710	1940	1840
Cowlitz R at Castle Rock ²	APR-JUL	1570	1800	1950	87%	2110	2340	2230
	APR-SEP	2020	2140	2220	88%	2300	2420	2520

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Columbia Basins	10	27%	54%
Lewis River	4	15%	33%
Cowlitz River	6	36%	70%

South Puget Sound River Basins



Summer runoff is forecast to be 63% of normal for the Green River below Howard Hanson Dam and 88% for the White River near Buckley. February 1 snowpack was 47% of average for the White River, 41% for Puyallup River and 16% in the Green River Basin. January precipitation was 76% of average, bringing the water year-to-date to 99% of average for the basins. Average temperatures in the area were 2-4 degrees above normal for January and for the water-year.

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

South Puget Sound River Basins

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South Puget Sound Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

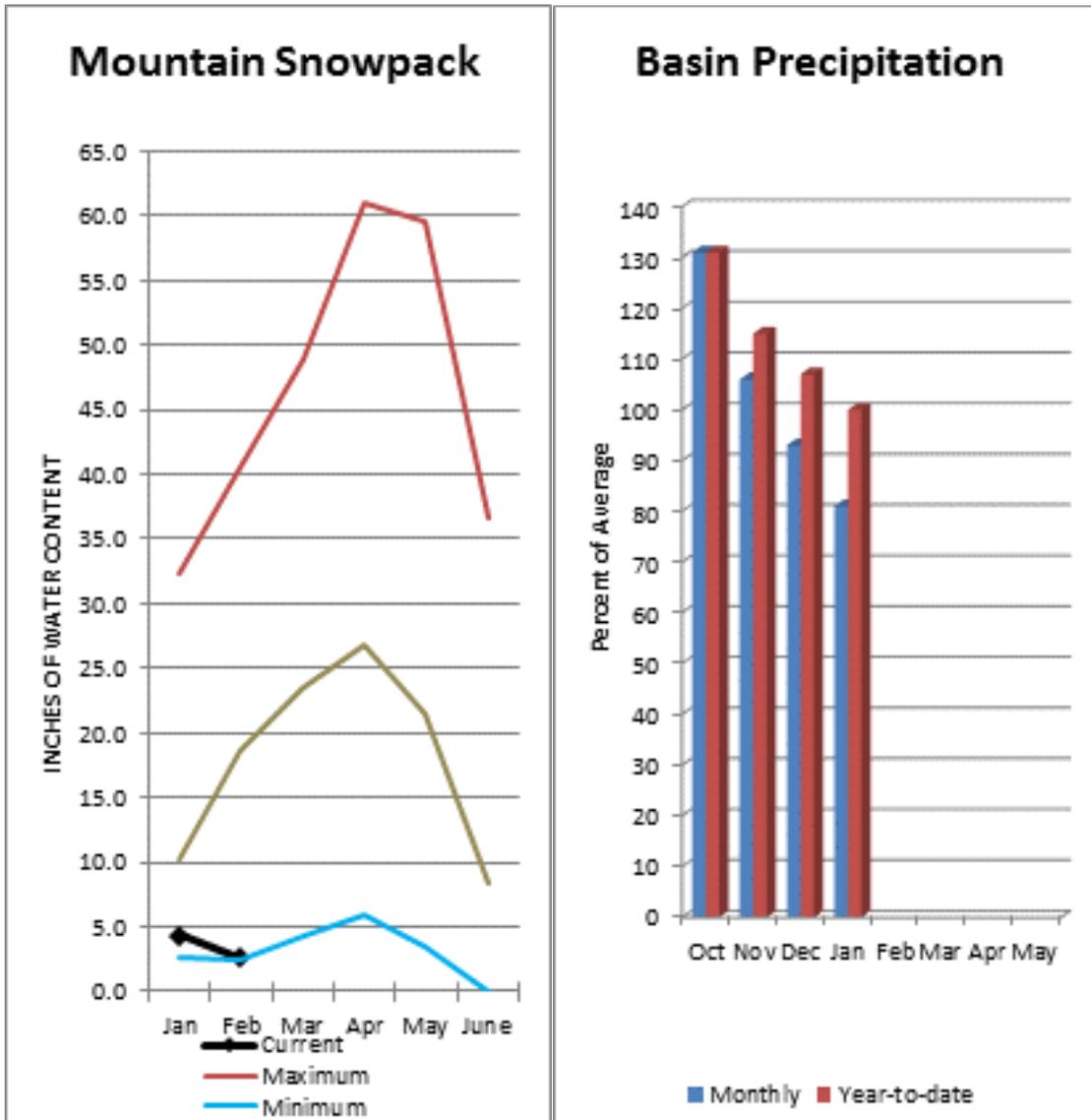
South Puget Sound Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
White R nr Buckley ^{1,2}	APR-JUL	265	340	375	87%	410	485	430
	APR-SEP	325	415	455	88%	495	585	515
Green R bl Howard A Hanson Dam ^{1,2}	APR-JUL	46	112	142	60%	172	240	235
	APR-SEP	67	134	164	63%	194	260	260

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
South Puget Sound Basins	10	37%	52%
White River	3	47%	58%
Green River	2	16%	30%

Central Puget Sound River Basins



Forecast for spring and summer flows are: 64% for Cedar River near Cedar Falls; 62% for Rex River; 59% for South Fork of the Tolt River; and 79% for Taylor Creek near Selleck. Basin-wide precipitation for January was 81% of average, bringing water-year-to-date to 100% of average. February 1 median snow cover in Cedar River Basin was 13%, Tolt River Basin was 3%, Snoqualmie River Basin was 17%, and Skykomish River Basin was 21%. Temperatures were 2-4 degrees above normal for January and for the water-year.

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

Central Puget Sound River Basins

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Central Puget Sound Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

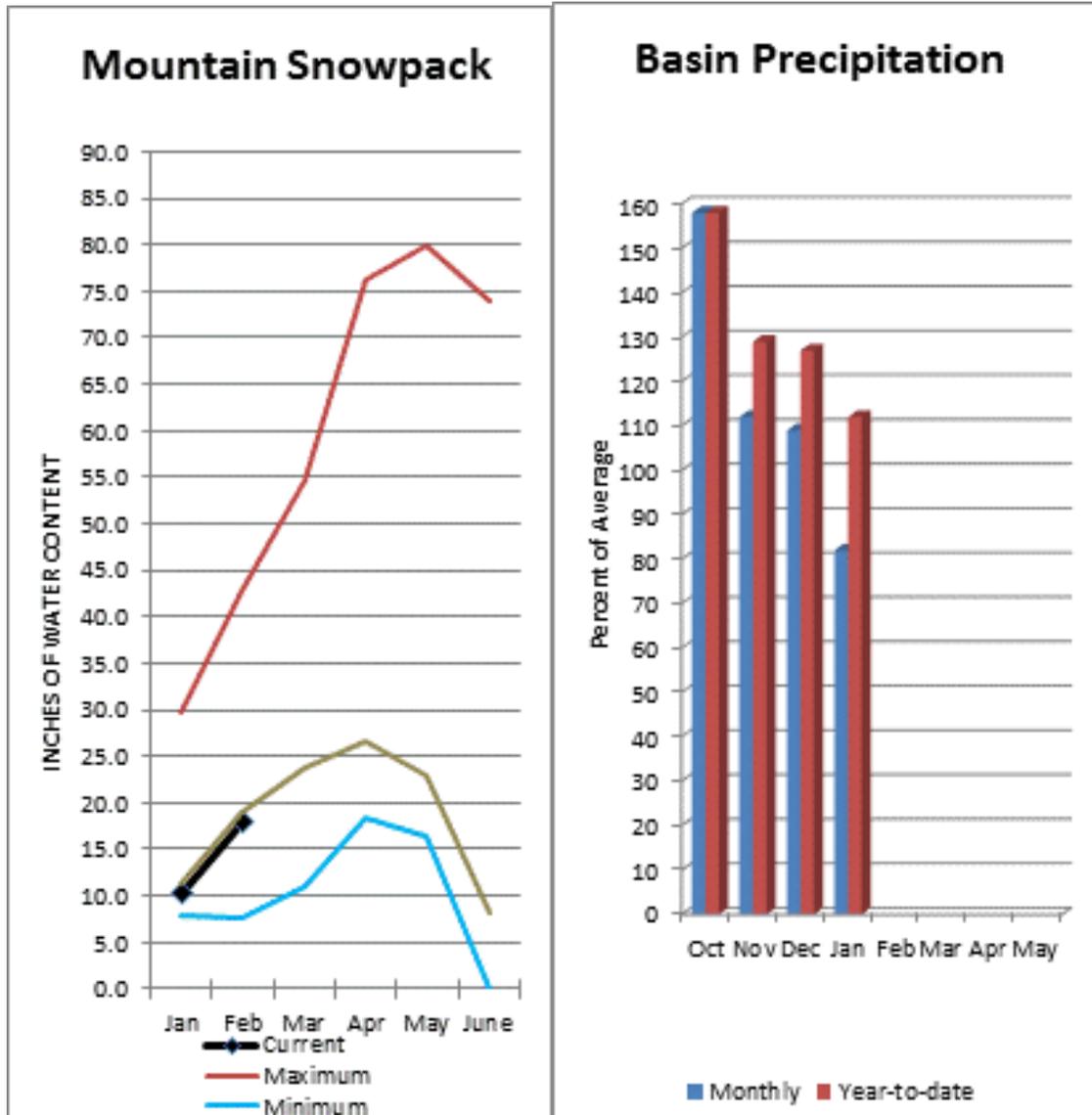
Central Puget Sound Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Cedar R nr Cedar Falls	APR-JUL	25	36	43	61%	50	61	70
	APR-SEP	30	41	49	64%	57	68	76
Rex R nr Cedar Falls	APR-JUL	6	10.9	14.3	60%	17.7	23	24
	APR-SEP	8.3	13.3	16.7	62%	20	25	27
Taylor Ck nr Selleck	APR-JUL	10.1	13.2	15.3	77%	17.4	21	20
	APR-SEP	13.4	16.7	19	79%	21	25	24
SF Tolt R nr Index	APR-JUL	4.1	6.4	8	56%	9.6	11.9	14.2
	APR-SEP	5.3	7.8	9.5	59%	11.2	13.7	16.1

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Central Puget Sound Basins	14	24%	54%
Puyallup River	5	41%	60%
Cedar River	4	13%	40%
Tolt River	2	3%	63%
Snoqualmie River	4	17%	59%
Skykomish River	2	21%	61%

North Puget Sound River Basins



Forecast for Skagit River streamflow at Newhalem is 90% of average for the spring and summer period. January streamflow in Skagit River was 143% of average. Other forecast points included Baker River at 88% and Thunder Creek at 91% of average. Basin-wide precipitation for January was 88% of average, bringing water-year-to-date to 112% of average. February 1 average snow cover in Skagit River Basin was 68%, Nooksack River Basin was 21% and Baker River Basin was not available. February 1 Skagit River reservoir storage was 79% of average and 56% of capacity. Average temperatures were 2-4 degrees above normal for January and 1-3 degrees above for the water year.

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

North Puget Sound River Basins

Data Current as of: 2/4/2015 10:39:08 PM

North Puget Sound Basins Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

North Puget Sound Basins	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Thunder Ck nr Newhalem	APR-JUL	186	205	215	91%	225	245	235
	APR-SEP	265	285	300	91%	315	335	330
Skagit R at Newhalem ²	APR-JUL	1300	1440	1530	91%	1620	1760	1680
	APR-SEP	1570	1730	1830	90%	1930	2090	2030
Baker R at Concrete	APR-JUL	535	620	675	87%	730	815	780
	APR-SEP	710	805	865	88%	925	1020	980

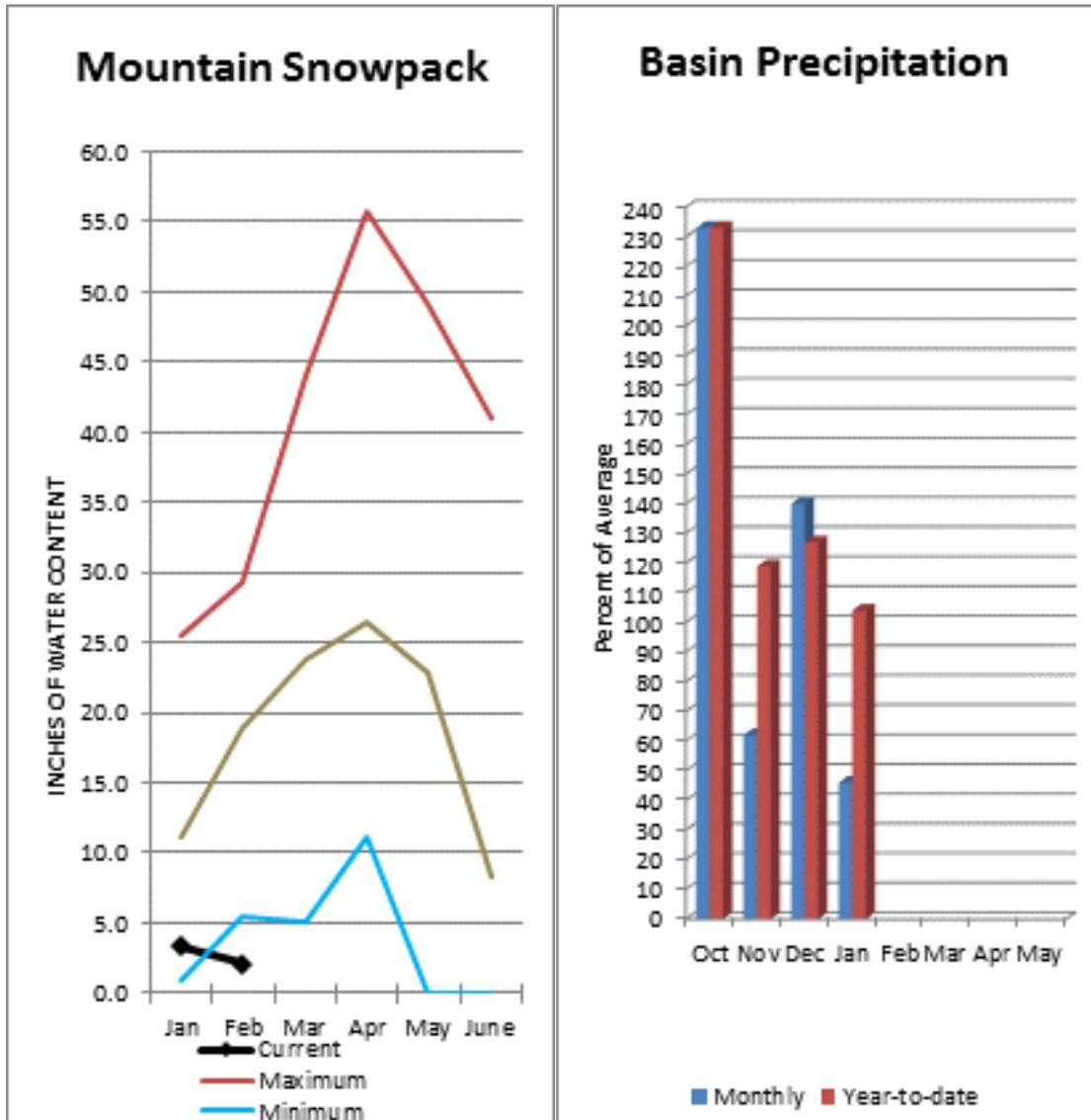
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ross	787.6	581.1	996.3	1404.1
Diablo Reservoir			85.8	90.6
Basin-wide Total	787.6	581.1	996.3	1404.1
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
North Puget Sound Basins	15	59%	65%
Skagit River	13	69%	63%
Baker River	0		
Nooksack River	2	21%	72%

Olympic Peninsula River Basins



Forecasted average runoff for streamflow for the Dungeness River is 77% and Elwha River is 73%. January runoff in the Dungeness River was 118% of normal. Big Quilcene and Wynoochee rivers may expect below average runoff this summer as well. January precipitation was 46% of average. Precipitation has accumulated at 104% of average for the water year. January precipitation at Quillayute was 79% of normal. Olympic Peninsula snowpack averaged a dismal 9% of normal on February 1, the lowest region in the state and falling within the driest 5% of data records. Temperatures were 4-6 degrees above average for January and 2-3 degrees above normal for the water year.

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

Olympic Peninsula River Basins

Data Current as of: 2/4/2015 10:39:11 PM

Olympic Peninsula Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

Olympic Peninsula	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dungeness R nr Sequim	APR-JUL	75	87	95	79%	103	115	120
	APR-SEP	86	102	112	77%	122	138	145
Elwha R at McDonald Bridge nr Port Angeles	APR-JUL	225	265	295	74%	325	365	400
	APR-SEP	265	310	345	73%	380	425	470

1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Olympic Peninsula	6	9%	25%

Issued by

Jason Weller
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Roylene Rides At The Door
State Conservationist
Natural Resources Conservation Service
Spokane, Washington

The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada	Snow Survey Network Program – British Columbia Ministry of Environment River Forecast Center – British Columbia Ministry of Forests, Lands and Natural Resource Operations
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs Recourse Conservation & Development Councils
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Energy Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County Kalispel Tribe of Indians Spokane Indian Tribe Jamestown S'klallum Tribe
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



Washington Snow Survey Office
2021 E. College Way, Suite 214
Mount Vernon, WA 98273-2873



Washington Water Supply Outlook Report

Natural Resources Conservation Service
Spokane, WA

