

Washington Water Supply Outlook Report January 1, 2012



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

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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

January 2012

General Outlook

The water year started off great with near to above average precipitation for both October and November. Healthy snow came early which helped most local ski areas open by or before the holidays but just when conditions were looking bright someone turned off the faucet. With one of the driest and warmest Decembers in recent history we really fell behind until the very last week of the month. Even then the North Cascades was the only region that experienced significant snowpack increases. Several rain-on-snow events actually caused snowpack loss at lower elevations. Short term forecasts indicate mostly dry conditions through mid month however national climate forecasters are sticking to their original La Nina forecast for cold and wet through March.

Snowpack

The January 1 statewide SNOTEL readings were 85% but vary greatly across the state. So far we have received about 37% of our annual total snowfall. Normally we would have received 40-42% by this time of year. The Entiat River data near Wenatchee reported the lowest readings at 36% of average. Readings from the Cedar River reported the highest at 116% of average. Westside averages from SNOTEL, and January 1 snow surveys, included the North Puget Sound river basins with 95% of average, the Central Puget river basins with 94%, and the Lewis-Cowlitz basins with 72% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 89% and the Wenatchee area with 66%. Snowpack in the Spokane River Basin was at 68% and the Walla Walla River Basin had 63% of average. Maximum snow cover in Washington was at Lyman Lake SNOTEL, with water content of 25.2 inches. The 30-year average for Lyman Lake on January 1 is 29.7 inches leaving the site at only 85% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	73	68
Newman Lake	70	79
Pend Oreille	77	78
Okanogan	91	80
Methow	101	90
Conconully Lake	60	62
Wenatchee	99	80
Chelan	119	89
Upper Yakima	96	87
Lower Yakima	80	91
Ahtanum Creek	81	85
Walla Walla	51	63
Lower Snake	65	62
Cowlitz	72	79
Lewis	49	64
White	80	93
Green	82	82
Puyallup	92	97
Cedar	103	119
Snoqualmie	120	92
Skykomish	111	76
Skagit	100	98
Baker	104	N/A
Nooksack	104	92
Olympic Peninsula	49	86

Precipitation

During the month of December, the National Weather Service and Natural Resources Conservation Service climate stations reported much below average precipitation totals throughout Washington river basins. The highest percent of average in the state was at Rainy Pass SNOTEL in the North Cascades which reported 77% of average for a total of 6.8 inches. The average for Rainy Pass is 8.85 inches for December. The wettest spot in the state was reported at June Lake SNOTEL with a December accumulation of 13.7 inches, only 48% of normal. Record low precipitation accumulation was set at 5 SNOTEL sites, with at least 10-years worth of data, in the state last month: Mount Crag; 3.6"/normally 10.10", Dungeness; 2.7"/5.8", Alpine Meadows; 10.6"/23.2", Elbow Lake; 9.9"/21.9" and Swift Creek; 11.2"/27.9".

RIVER BASIN	DECEMBER PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	51	74
Pend Oreille	49	86
Upper Columbia	49	83
Central Columbia	56	82
Upper Yakima	60	87
Lower Yakima	58	83
Walla Walla	58	67
Lower Snake	61	80
Lower Columbia	49	81
South Puget Sound	51	85
Central Puget Sound	53	86
North Puget Sound	53	89
Olympic Peninsula	51	89

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. Reservoir storage in the Yakima Basin was 527,000-acre feet, 132% of average for the Upper Reaches and 144,000-acre feet or 130% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 116% of average for January 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 51,000 acre feet, 46% of average and 21% of capacity; Chelan Lake, 310,000-acre feet, 78% of average and 46 of capacity; and the Skagit River reservoirs at 98% of average and 81% 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	21	46
Pend Oreille	41	95
Upper Columbia	80	116
Central Columbia	46	78
Upper Yakima	63	132
Lower Yakima	62	130
Lower Snake	65	91
North Puget Sound	81	98

Streamflow

Forecasts vary from 62% of average for the Similkameen near Nighthawk to 98% of average for Thunder Creek near Newhalem. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 91%; White River, 90%; and Skagit River, 90%. Some Eastern Washington streams include the Yakima River near Parker, 84%; Wenatchee River at Plain, 78%; and Spokane River near Post Falls, 83%. 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.

Due to an extremely dry month runoff was much below average throughout the state. The Methow River had the highest reported flows with only 86% of average. The Spokane at Spokane with 42% of average was the lowest in the state however that could be due to reservoir control. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 57%; the Stehekin at Stehekin, 37%; the Columbia below Rock Island Dam, 70%; and the Cle Elum near Roslyn, 50%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
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Spokane	66-84
Pend Oreille	71-85
Upper Columbia	62-92
Central Columbia	77-97
Upper Yakima	81-90
Lower Yakima	75-86
Walla Walla	82-84
Lower Snake	79-86
Lower Columbia	83-88
South Puget Sound	78-90
Central Puget Sound	76-96
North Puget Sound	86-98
Olympic Peninsula	84-85

STREAM	PERCENT OF AVERAGE DECEMBER STREAMFLOWS
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Pend Oreille Below Box Canyon	70
Kettle at Laurier	50
Columbia at Birchbank	85
Spokane at Long Lake	42
Similkameen at Nighthawk	78
Okanogan at Tonasket	77
Methow at Pateros	86
Chelan at Chelan	46
Wenatchee at Pashastin	47
Cle Elum near Roslyn	50
Yakima at Parker	56
Naches at Naches	53
Grande Ronde at Troy	42
Snake below Lower Granite Dam	78
SF Walla Walla near Milton Freewater	52
Columbia River at The Dalles	75
Cowlitz below Mayfield Dam	61
Skagit at Concrete	65
Dungeness near Sequim	56

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Rain-on-snow events of late December also boosted levels to near saturation at some sites for several days which is good and bad in that it helps the profile but also means a reduction in snow water content by early melt.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	57
Pend Oreille	52
Upper Columbia	29
Central Columbia	47
Upper Yakima	64
Lower Yakima	79
Walla Walla	67
Lower Snake	69
Lower Columbia	82
South Puget Sound	82
Central Puget Sound	N/A
North Puget Sound	88
Olympic Peninsula	39

BASIN SUMMARY OF SNOW COURSE DATA

JANUARY 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ALPINE MEADOWS SNTL	3500	1/01/12	34	14.7	13.9	20.1	MARTEN RIDGE SNOTEL	3520	1/01/12	60	23.6	22.8	--
ASHLEY DIVIDE	4820	12/28/11	8	1.9	5.2	3.4	MEADOWS CABIN	1900	12/26/11	0	.0	1.2	--
BADGER PASS SNOTEL	6900	1/01/12	56	15.4	12.3	15.2	MEADOWS PASS SNOTEL	3230	1/01/12	38	14.5	12.7	9.6
BARKER LAKES SNOTEL	8250	1/01/12	24	5.3	6.3	6.7	M F NOOKSACK SNOTEL	4970	1/01/12	52	25.5	20.7	26.1
BARNES CREEK CAN.	5320	12/31/11	28	6.7	9.3	10.9	MICA CREEK SNOTEL	4510	1/01/12	21	6.9	8.7	11.7
BASIN CREEK SNOTEL	7180	1/01/12	14	2.6	3.9	3.7	MISSION CREEK CAN.	5840	1/01/12	27	6.1	8.1	9.3
BEAVER CREEK TRAIL	2200	12/29/11	19	5.8	11.0	--	MONASHEE PASS CAN.	4500	12/31/11	19	4.3	--	6.6
BEAVER PASS	3680	12/31/11	47	11.8	16.5	--	MORSE LAKE SNOTEL	5410	1/01/12	73	22.4	25.9	23.4
BEAVER PASS SNOTEL	3630	1/01/12	---	20.5	18.4	18.8	MOSES MTN SNOTEL	5010	1/01/12	19	4.6	6.3	7.1
BLACK PINE SNOTEL	7100	1/01/12	23	4.7	5.6	5.2	MOSQUITO RDG SNOTEL	5200	1/01/12	49	13.6	15.6	15.5
BLACKWALL PILL CAN.	6370	1/01/12	48	12.8	16.4	15.4	MOUNT CRAG SNOTEL	3960	1/01/12	32	7.8	21.1	11.6
BLEWETT PASS#2SNOTEL	4240	1/01/12	24	6.3	8.1	8.2	MT. KOBAY SNOTEL	5500	12/31/11	22	4.9	--	5.4
BROWN TOP AM	6000	12/26/11	62	19.0	24.5	--	MOWICH SNOTEL	3160	1/01/12	1	.3	.4	.4
BUCKINGHORSE SNOTEL	4870	1/01/12	53	19.7	36.8	--	MOUNT GARDNER SNOTEL	2920	1/01/12	15	5.9	9.7	7.4
BUMPING LAKE (NEW)	3400	1/04/12	23	6.8	10.0	7.2	N.F. ELK CR SNOTEL	6250	1/01/12	21	4.7	6.3	5.1
BUMPING GRASS SNOTEL	4610	1/01/12	41	11.4	13.2	12.1	NEVADA RIDGE SNOTEL	7020	1/01/12	31	6.7	7.6	6.8
BUNCHGRASS MDWSNOTEL	5000	1/01/12	40	10.0	10.3	12.6	NEW HOZOMEEN LAKE	2800	12/26/11	16	5.0	4.2	--
BURNT MOUNTAIN PIL	4170	1/01/12	23	7.1	6.4	5.7	NEZ PERCE CMP SNOTEL	5650	1/01/12	23	5.5	6.0	6.1
CALAMITY SNOTEL	2500	1/01/12	0	.0	3.4	--	NOISY BASIN SNOTEL	6040	1/01/12	36	9.0	28.1	19.8
CAYUSE PASS SNOTEL	5240	1/01/12	65	18.6	28.5	--	OLALLIE MDWS SNOTEL	4030	1/01/12	62	24.5	19.4	22.2
CHESSMAN RESERVOIR	6200	12/27/11	11	2.1	1.5	1.5	OPHIR PARK	7150	1/01/12	24	5.1	7.6	6.6
COMBINATION SNOTEL	5600	1/01/12	8	2.1	2.5	2.2	PARADISE SNOTEL	5130	1/01/12	57	24.4	29.0	32.8
COPPER BOTTOM SNOTEL	5200	1/01/12	11	3.3	5.6	5.3	PARK CK RIDGE SNOTEL	4600	1/01/12	68	19.9	16.7	22.5
CORRAL PASS SNOTEL	5800	1/01/12	50	14.3	14.8	15.8	PEPPER CREEK SNOTEL	2140	1/01/12	3	1.7	5.1	--
COUGAR MTN. SNOTEL	3200	1/01/12	17	5.1	7.8	8.5	PETERSON MDW SNOTEL	7200	1/01/12	21	4.2	4.2	4.4
COYOTE HILL	4200	12/29/11	10	2.4	4.6	4.3	PIGTAIL PEAK SNOTEL	5800	1/01/12	70	20.9	22.9	23.1
DALY CREEK SNOTEL	5780	1/01/12	19	5.0	5.1	4.9	PIKE CREEK SNOTEL	5930	1/01/12	25	5.3	8.7	12.0
DEVILS PARK	5900	12/28/11	90	23.6	20.1	--	PIPESTONE PASS	7200	12/30/11	7	1.3	2.1	2.2
DISCOVERY BASIN	7050	12/30/11	18	3.3	4.7	4.2	POPE RIDGE SNOTEL	3590	1/01/12	34	3.5	7.5	9.8
DIX HILL	6400	1/01/12	21	4.6	6.1	4.5	POTATO HILL SNOTEL	4510	1/01/12	41	10.4	15.7	12.4
DOMMERIE FLATS	2200	1/04/12	8	2.5	6.2	3.9	QUARTZ PEAK SNOTEL	4700	1/01/12	25	8.1	11.5	10.2
DUNGENESS SNOTEL	4010	1/01/12	6	2.6	9.3	3.5	RAGGED MOUNTAIN	4200	12/31/11	21	8.1	10.6	9.9
ELBOW LAKE SNOTEL	3200	1/01/12	32	12.6	14.7	15.4	RAGGED MTN SNOTEL	4210	1/01/12	22	7.5	11.7	--
EMERY CREEK SNOTEL	4350	1/01/12	14	4.3	7.7	7.0	RAINY PASS SNOTEL	4890	1/01/12	69	19.1	14.3	19.9
FARRON CAN.	4000	12/31/11	28	5.6	--	6.1	RAINY PASS	4780	12/28/11	52	14.4	12.7	--
FISH LAKE SNOTEL	3430	1/01/12	52	12.9	10.9	15.0	REX RIVER SNOTEL	3810	1/01/12	43	16.6	13.2	13.0
FLATTOP MTN SNOTEL	6300	1/01/12	67	16.8	19.0	21.4	ROCKER PEAK SNOTEL	8000	1/01/12	31	6.5	6.9	6.4
FOURTH OF JULY SUM	3200	12/30/11	7	2.2	3.9	3.7	SADDLE MTN SNOTEL	7900	1/01/12	46	9.3	12.7	11.7
FREEZEOUT CK. TRAIL	3500	12/31/11	30	7.6	6.6	--	SALMON MDWS SNOTEL	4460	1/01/12	11	3.3	5.5	5.3
FROHNER MDWS SNOTEL	6480	1/01/12	20	4.5	3.9	3.4	SASSE RIDGE SNOTEL	4340	1/01/12	57	14.1	12.0	14.7
GRAVE CRK SNOTEL	4300	1/01/12	20	4.9	7.2	7.7	SAVAGE PASS SNOTEL	6170	1/01/12	46	11.0	11.8	11.7
GRAYSTOKE LAKE CAN.	5500	12/30/11	19	5.5	--	--	SAWMILL RIDGE SNOTEL	4640	1/01/12	---	12.9	17.4	--
GREEN LAKE SNOTEL	5920	1/01/12	38	9.6	10.6	10.7	SENTINEL BT SNOTEL	4680	1/01/12	15	2.4	4.9	4.0
GROUSE CAMP SNOTEL	5390	1/01/12	29	6.9	9.1	9.6	SHEEP CANYON SNOTEL	3990	1/01/12	32	11.0	24.0	15.4
HAND CREEK SNOTEL	5030	1/01/12	17	3.9	6.4	5.9	SHERWIN SNOTEL	3200	1/01/12	---	2.7	5.2	5.1
HARTS PASS SNOTEL	6490	1/01/12	72	19.8	22.0	21.7	SKALKAHO SNOTEL	7260	1/01/12	42	9.3	9.9	10.3
HARTS PASS	6500	12/29/11	65	19.4	20.8	--	SKOOKUM CREEK SNOTEL	3310	1/01/12	30	12.8	7.9	10.8
HELL ROARING DIVIDE	5770	12/27/11	24	4.9	13.9	13.4	SOURDOUGH GUL SNOTEL	4000	1/01/12	1	.5	1.3	--
HIGH RIDGE SNOTEL	4920	1/01/12	29	6.9	16.8	10.4	SPENCER MDW SNOTEL	3400	1/01/12	20	7.6	16.9	12.5
HOLBROOK	4530	12/31/11	10	1.9	3.9	4.2	SPIRIT LAKE SNOTEL	3520	1/01/12	2	1.9	3.5	3.6
HOODOO BASIN SNOTEL	6050	1/01/12	66	16.4	17.5	19.3	SPRUCE SPGS SNOTEL	5700	1/01/12	16	4.2	5.1	7.4
HUCKLEBERRY SNOTEL	2250	1/01/12	1	.8	1.2	1.0	STAHL PEAK SNOTEL	6030	1/01/12	40	11.1	19.8	17.1
HUMBOLDT GLCH SNOTEL	4250	1/01/12	---	6.4	5.5	6.0	STAMPEDE PASS SNOTEL	3850	1/01/12	44	14.5	14.4	19.4
INDIAN ROCK SNOTEL	5360	1/01/12	27	10.0	21.8	--	STEVENS PASS SNOTEL	3950	1/01/12	63	15.1	12.9	19.1
ISINTOK LAKE CAN.	5100	12/29/11	13	2.4	2.3	3.4	STORM LAKE	7780	12/30/11	24	5.7	5.0	5.5
JUNE LAKE SNOTEL	3440	1/01/12	30	10.1	23.5	17.1	SUMMERLAND RES CAN.	4200	12/29/11	19	4.2	3.2	4.5
KELLOGG PEAK	5560	12/30/11	24	6.2	15.7	11.7	SUNSET SNOTEL	5540	1/01/12	---	7.6	8.9	13.6
KLESILKA CAN.	3450	12/30/11	17	4.4	3.3	4.6	SURPRISE LKS SNOTEL	4290	1/01/12	43	13.4	24.6	20.3
KRAFT CREEK SNOTEL	4750	1/01/12	15	4.9	7.1	6.9	SWAMP CREEK SNOTEL	3930	1/01/12	41	10.5	6.6	9.6
LOLO PASS SNOTEL	5240	1/01/12	49	11.2	11.6	13.0	SWIFT CREEK SNOTEL	4440	1/01/12	44	17.9	32.4	24.0
LONE PINE SNOTEL	3930	1/01/12	27	10.8	22.7	16.2	TEN MILE LOWER	6600	12/27/11	18	3.5	3.1	3.0
LOOKOUT SNOTEL	5140	1/01/12	39	10.2	13.6	13.7	THUNDER BASIN SNOTEL	4320	1/01/12	46	14.4	12.7	15.7
LOST HORSE SNOTEL	5120	1/01/12	22	6.6	9.3	8.3	TINKHAM CREEK SNOTEL	2990	1/01/12	36	13.4	13.2	12.3
LOST LAKE SNOTEL	6110	1/01/12	57	16.0	20.4	27.1	TOUCHET SNOTEL	5530	1/01/12	26	8.8	13.7	14.7
LUBRECHT FOREST NO 3	5450	12/27/11	8	1.3	3.8	2.7	TROUGH #2 SNOTEL	5480	1/01/12	15	3.9	6.6	5.3
LUBRECHT FOREST NO 4	4650	12/27/11	3	.8	2.7	1.4	TRUMAN CREEK	4060	12/28/11	9	2.5	4.1	2.0
LUBRECHT FOREST NO 6	4040	12/27/11	10	1.7	3.3	1.6	TUNNEL AVENUE	2450	1/04/12	24	6.0	11.3	8.3
LUBRECHT HYDROPLT	4200	12/27/11	12	1.9	3.7	2.5	TWELVEMILE SNOTEL	5600	1/01/12	30	7.9	6.1	7.5
LUBRECHT SNOTEL	4680	1/01/12	12	2.9	3.5	2.6	TWIN LAKES SNOTEL	6400	1/01/12	55	15.6	15.0	17.5
LYMAN LAKE SNOTEL	5980	1/01/12	91	25.2	22.6	29.7	TWIN SPIRIT DIVIDE	3480	12/31/11	7	3.2	3.6	6.6
LYNN LAKE	4000	1/01/12	30	10.0E	--	8.2	UPPER WHEELER SNOTEL	4330	1/01/12	11	3.0	6.0	5.9
LYNN LAKE SNOTEL	3900	1/01/12	29	10.0	7.7	--	WARM SPRINGS SNOTEL	7800	1/01/12	38	8.5	9.7	9.4
MARIAS PASS	5250	12/23/11	16	4.1	7.7	7.3	WATERHOLE SNOTEL	5010	1/01/12	42	14.6	20.8	14.0
							WEASEL DIVIDE	5450	1/04/12	43	11.7	13.7	15.2
							WELLS CREEK SNOTEL	4030	1/01/12	44	13.4	14.0	14.2
							WHITE PASS ES SNOTEL	4440	1/01/12	23	9.2	11.2	10.7



Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

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

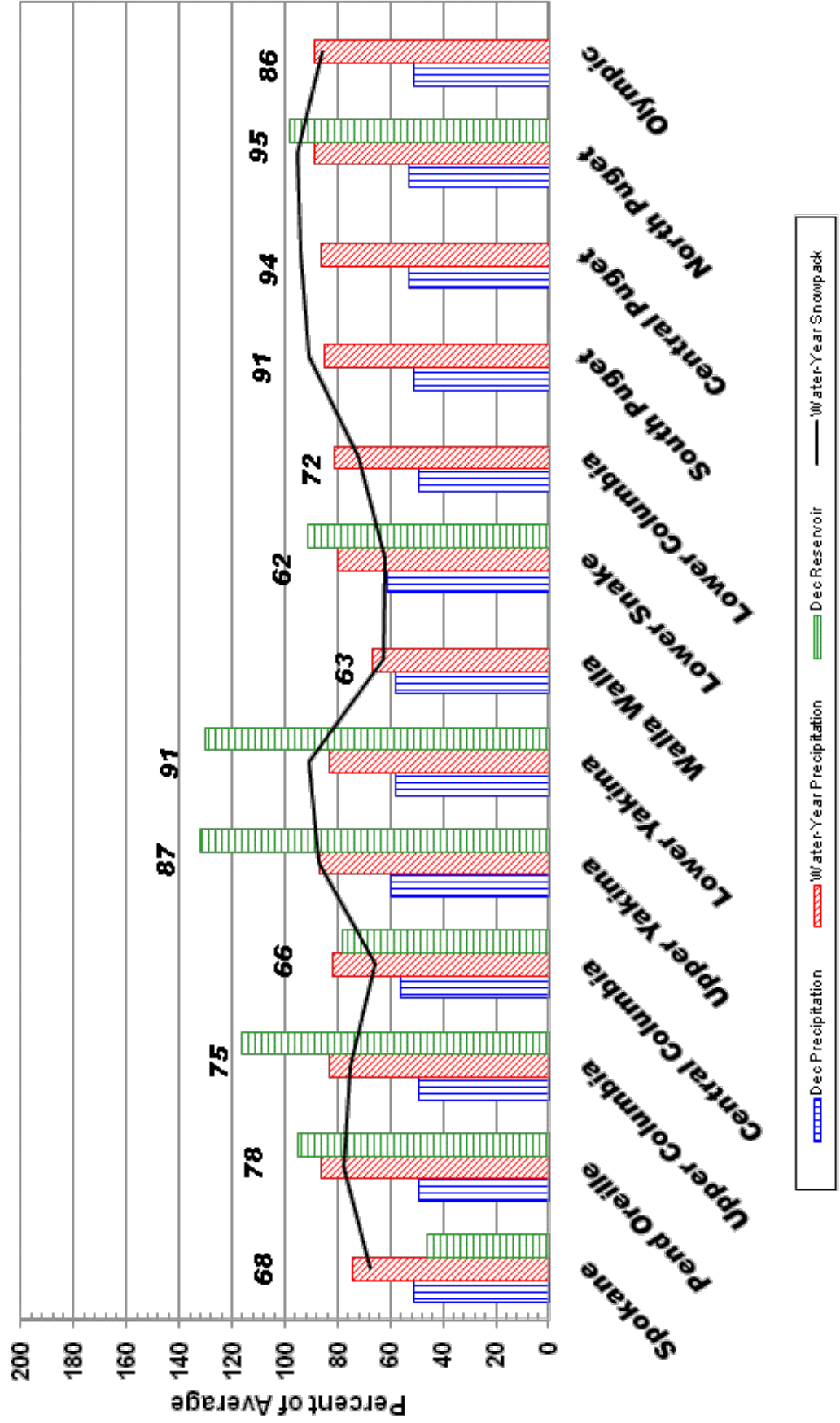
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

NRCS National:
<http://www.nrcs.usda.gov>

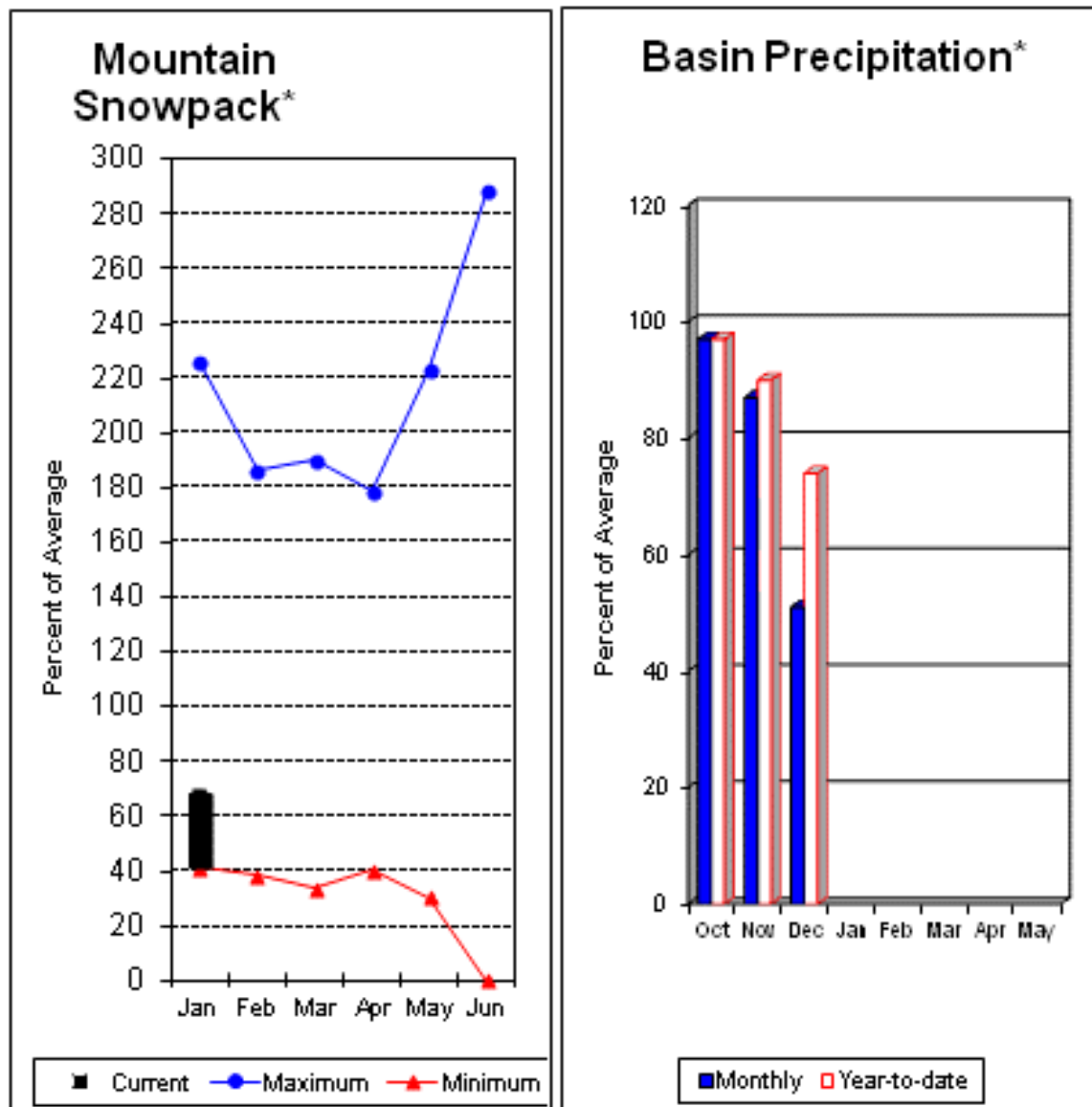
January 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2011 - Current Date)



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Spokane River Basin



*Based on selected stations

The January 1 forecasts for summer runoff within the Spokane River Basin are 83% of average near Post Falls and 84% 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 68% of average and precipitation that is 74% of average for the water year. Precipitation for December was below normal at 51% of average. Streamflow on the Spokane River at Long Lake was 46% of average for December. January 1 storage in Coeur d'Alene Lake was 51,000 acre feet, 46% of average and 21% of capacity. Snowpack at Quartz Peak SNOTEL site was 79% of average with 8.1 inches of water content. Average temperatures in the Spokane basin were 1-3 degrees above normal for December and slightly above normal for the water year.

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

Spokane River Basin

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spokane R nr Post Falls (2)	APR-JUL	1210	1750	2120	83	2480	3020	2550
	APR-SEP	1280	1830	2200	83	2570	3120	2650
Spokane R at Long Lake (2)	APR-JUL	1370	1980	2390	84	2800	3410	2850
	APR-SEP	1530	2160	2590	84	3020	3650	3070
Chamokane Ck nr Long Lake	MAY-AUG	3.3	5.3	6.7	66	8.1	10.1	10.2

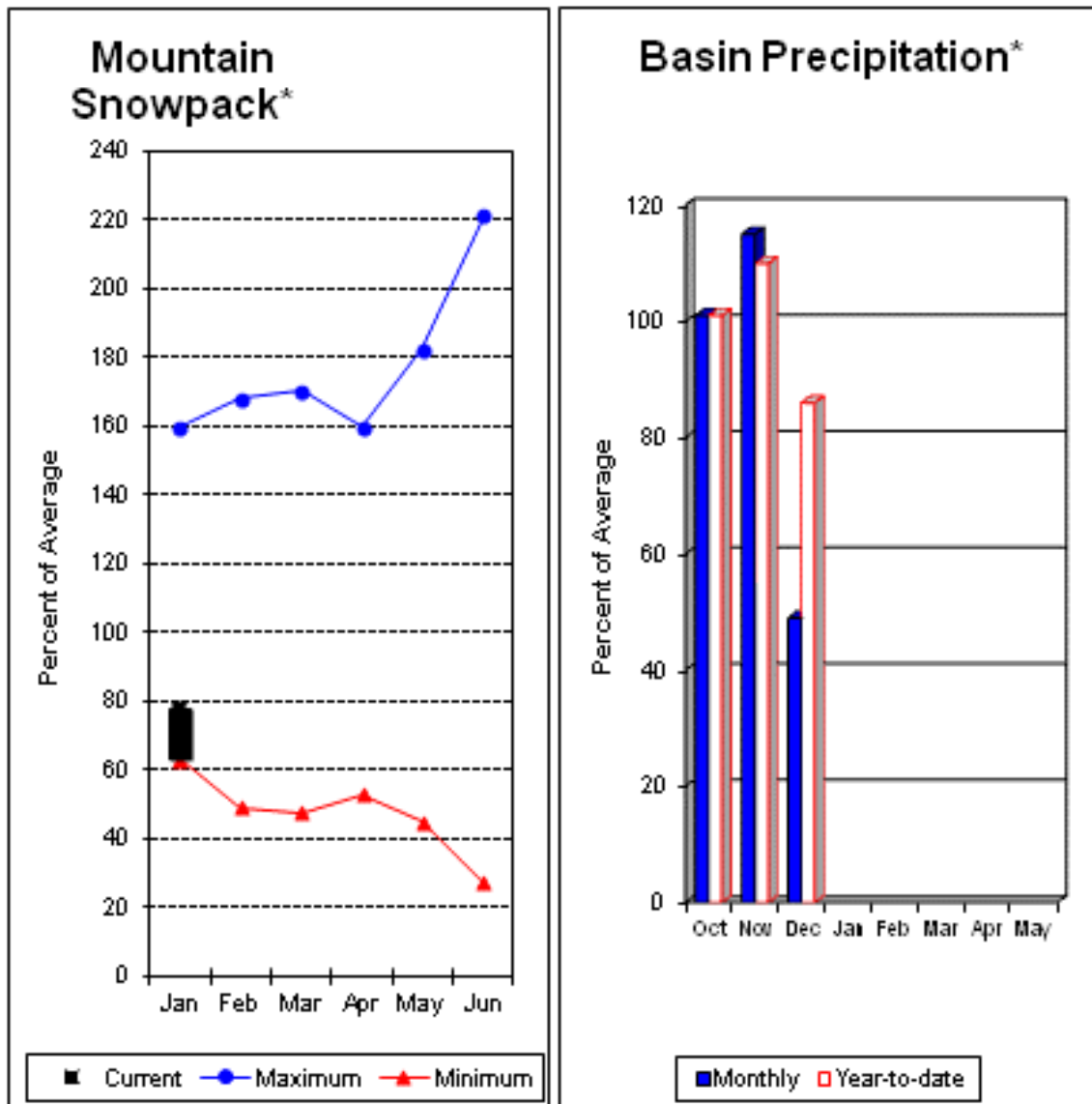
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of December					SPOKANE RIVER BASIN Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COEUR D'ALENE	238.5	50.9	134.2	110.1	SPOKANE RIVER	12	73	68
					NEWMAN LAKE	1	70	79

* 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.

Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Priest River near the town of Priest River is 71% and the Pen Orielle below Box Canyon is 85%. December streamflow was 70% of average on the Pend Oreille River and 85% on the Columbia Birchbank. January 1 snow cover was 78% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 10 inches of snow water on the snow pillow. Normally Bunchgrass would have 12.6 inches on January 1. Precipitation during December was 49% of average, dropping the year-to-date precipitation to 86% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 95% of normal. Average temperatures were slightly below normal for December and near normal for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Pend Oreille Lake Inflow (2)	APR-JUL	7790	9480	10600	84	11800	13500	12700
	APR-SEP	8670	10400	11600	84	12800	14600	13900
Priest R nr Priest River (1,2)	APR-JUL	345	485	580	71	675	815	815
	APR-SEP	370	520	620	71	720	870	870
Pend Oreille R bl Box Canyon (2)	APR-JUL	8110	9830	11000	85	12200	13900	12900
	APR-SEP	8970	10800	12000	85	13200	15000	14100

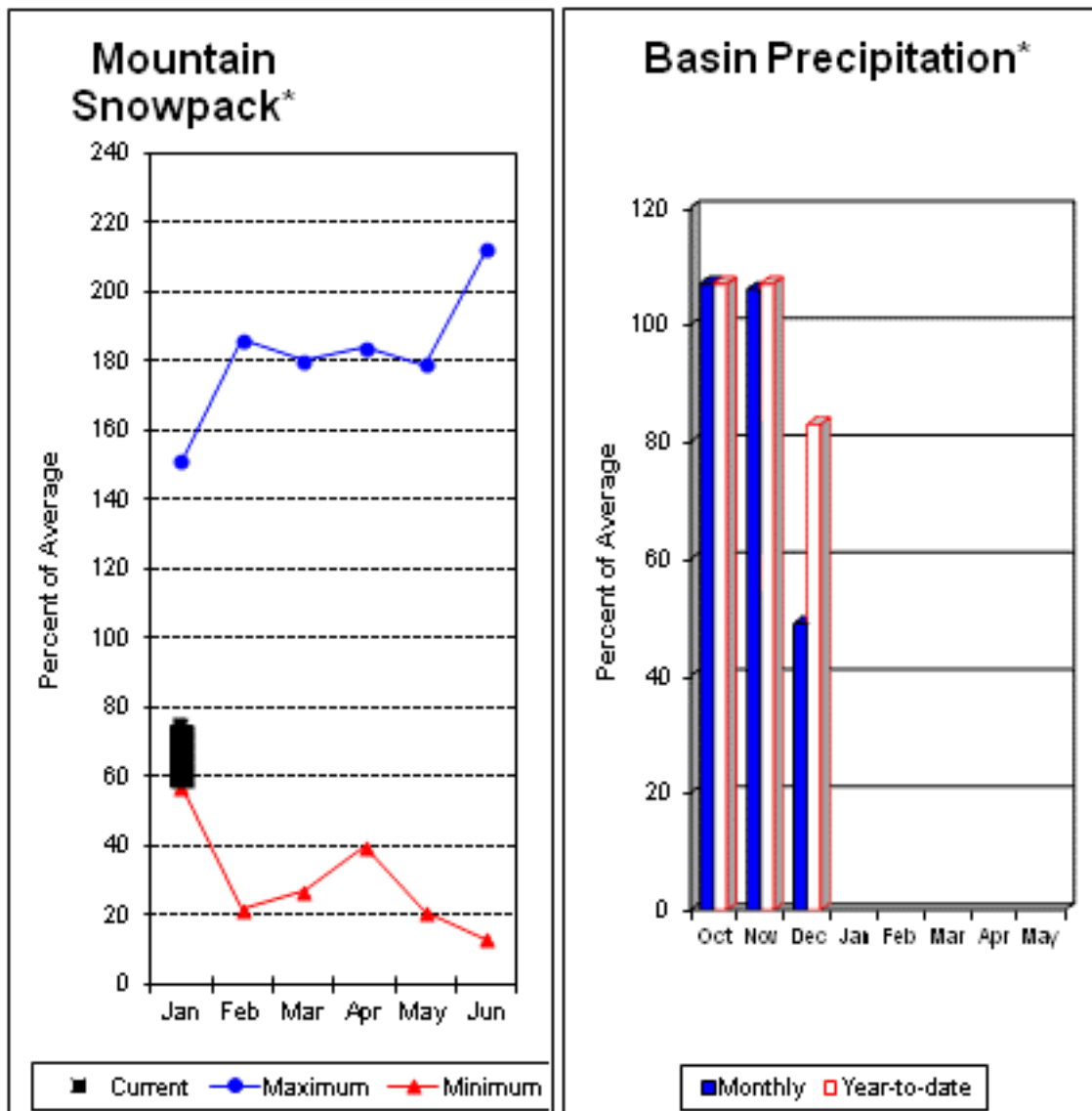
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of December					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
PEND OREILLE	1561.3	641.0	880.5	673.4	COLVILLE RIVER	0	0	0
PRIEST LAKE	119.3	53.2	53.6	55.7	PEND OREILLE RIVER	8	89	81
					KETTLE RIVER	1	49	60

* 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.

Upper Columbia River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 90%, Similkameen River is 62%, Kettle River 85% and Methow River is 83%. January 1 snow cover on the Okanogan was 80% of average, Omak Creek was 65% and the Methow was 90%. December precipitation in the Upper Columbia was 49% of average, with precipitation for the water year at 83% of average. December streamflow for the Methow River was 86% of average, 77% for the Okanogan River and 78% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 3.3 inches. Average for this site is 5.3 inches on January 1. Combined storage in the Conconully Reservoirs was 19,000-acre feet, which is 80% of capacity and 116% of the January 1 average. Temperatures were 2-3 degrees above normal for December and near average for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Colville R at Kettle Falls	APR-JUL	10.0	54	84	66	114	158	128
	APR-SEP	12.0	60	93	66	126	174	141
Kettle R nr Laurier	APR-JUL	1070	1390	1600	86	1810	2130	1870
	APR-SEP	1120	1450	1680	85	1910	2240	1970
Columbia R at Birchbank (1,2)	APR-JUL	23300	29000	31600	91	34100	39800	34900
	APR-SEP	29700	36900	40100	92	43300	50500	43500
Columbia R at Grand Coulee (2)	APR-JUL	41700	44900	46400	86	47900	51100	53800
	APR-SEP	38400	50800	56500	88	62200	74700	64000
Similkameen R nr Nighthawk (1)	APR-JUL	400	710	850	63	990	1300	1350
	APR-SEP	420	755	905	62	1060	1390	1450
Okanogan R nr Tonasket (1)	APR-JUL	685	1200	1430	91	1660	2180	1580
	APR-SEP	740	1320	1590	90	1860	2440	1770
Okanogan R at Malott (1)	APR-JUL	700	1240	1480	91	1720	2260	1630
	APR-SEP	755	1360	1640	90	1920	2530	1830
Methow R nr Pateros	APR-SEP	520	695	815	83	935	1110	985
	APR-JUL	480	645	760	84	875	1040	910

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of December					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
SALMON LAKE	10.5	8.4	8.6	8.5	OKANOGAN RIVER	2	90	86
CONCONULLY RESERVOIR	13.0	10.4	11.3	7.7	OMAK CREEK	1	73	65
					SANPOIL RIVER	0	0	0
					SIMILKAMEEN RIVER	0	0	0
					TOATS COULEE CREEK	0	0	0
					CONCONULLY LAKE	1	60	62
					METHOW RIVER	3	101	90

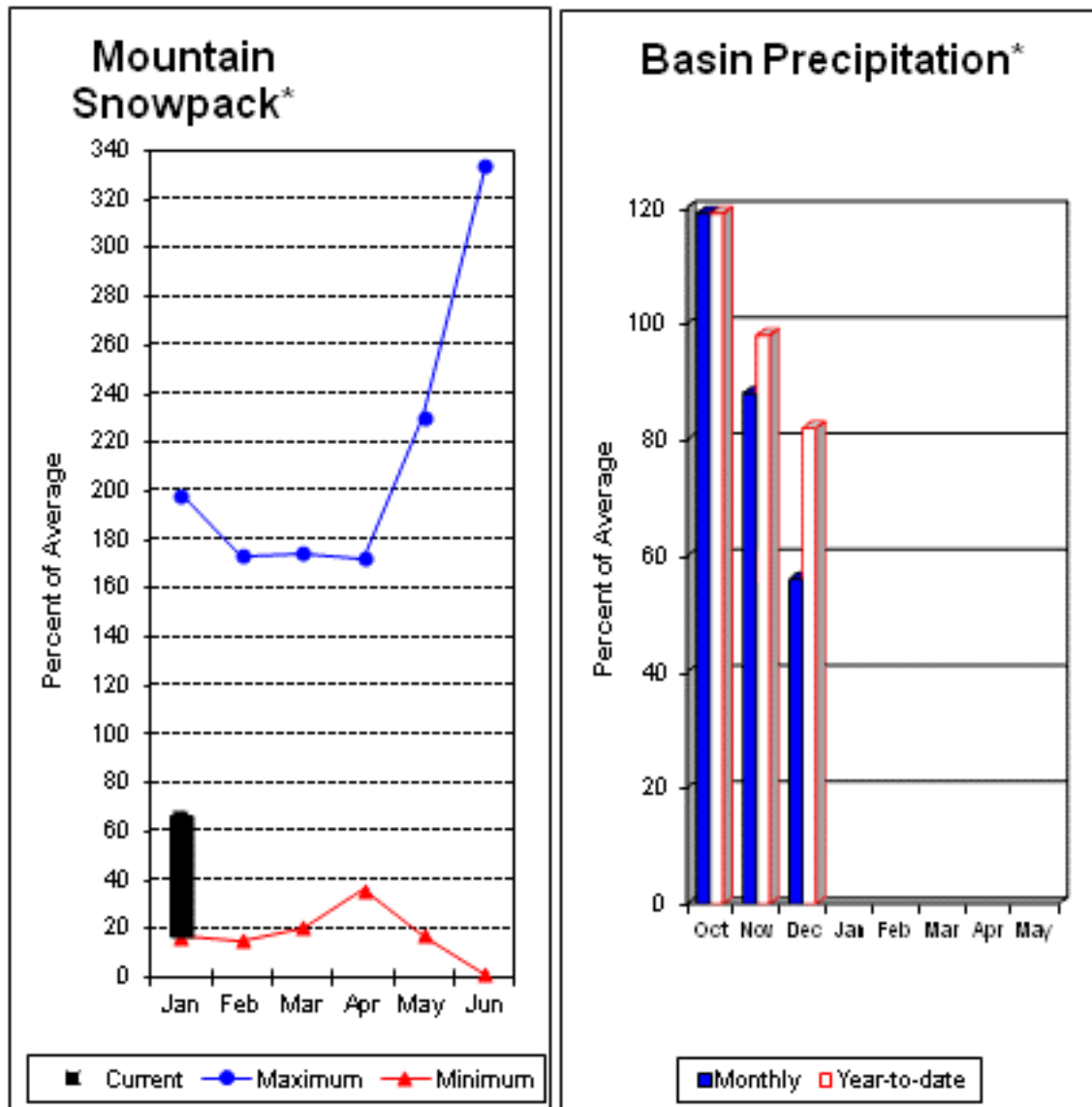
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

Central Columbia River Basins



*Based on selected stations

Precipitation during December was 56% of average in the basin and 82% for the year-to-date. Runoff for Entiat River is forecast to be 69% of average for the summer. The January-September average forecast for Chelan River is 87%, Wenatchee River at Plain is 78%, Stehekin River is 97% and Icicle Creek is 77%. December average streamflows on the Chelan River were 46% and on the Wenatchee River 47%. January 1 snowpack in the Wenatchee River Basin was 80% of average; the Chelan, 89%; the Entiat, 36%; Stemilt Creek, 51% and Colockum Creek, 74%. Reservoir storage in Lake Chelan was 310,000-acre feet, 78% of January 1 average and 46% of capacity. Lyman Lake SNOTEL had the most snow water with 25.2 inches of water. This site would normally have 29.7 inches on January 1. Temperatures were slightly above normal for December and near normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Stehekin R at Stehekin	APR-JUL	525	615	680	97	745	835	700
	APR-SEP	635	735	805	97	875	975	830
Chelan R at Chelan (2)	APR-JUL	710	830	910	87	990	1110	1050
	APR-SEP	800	945	1040	87	1140	1280	1190
Entiat R nr Ardenvoir	APR-JUL	93	127	150	70	173	205	215
	APR-SEP	104	140	165	69	190	225	240
Wenatchee R at Plain	APR-JUL	585	735	835	78	935	1080	1070
	APR-SEP	645	810	920	78	1030	1190	1180
Icicle Ck nr Leavenworth	APR-JUL	173	215	240	77	265	305	310
	APR-SEP	190	230	260	77	290	330	340
Wenatchee R at Peshastin	APR-JUL	825	1020	1160	78	1300	1500	1480
	APR-SEP	895	1120	1270	78	1420	1640	1630
Columbia R bl Rock Island Dam (2)	APR-JUL	37500	45500	50900	86	56300	64200	59000
	APR-SEP	46000	55400	61700	89	68100	77400	69500

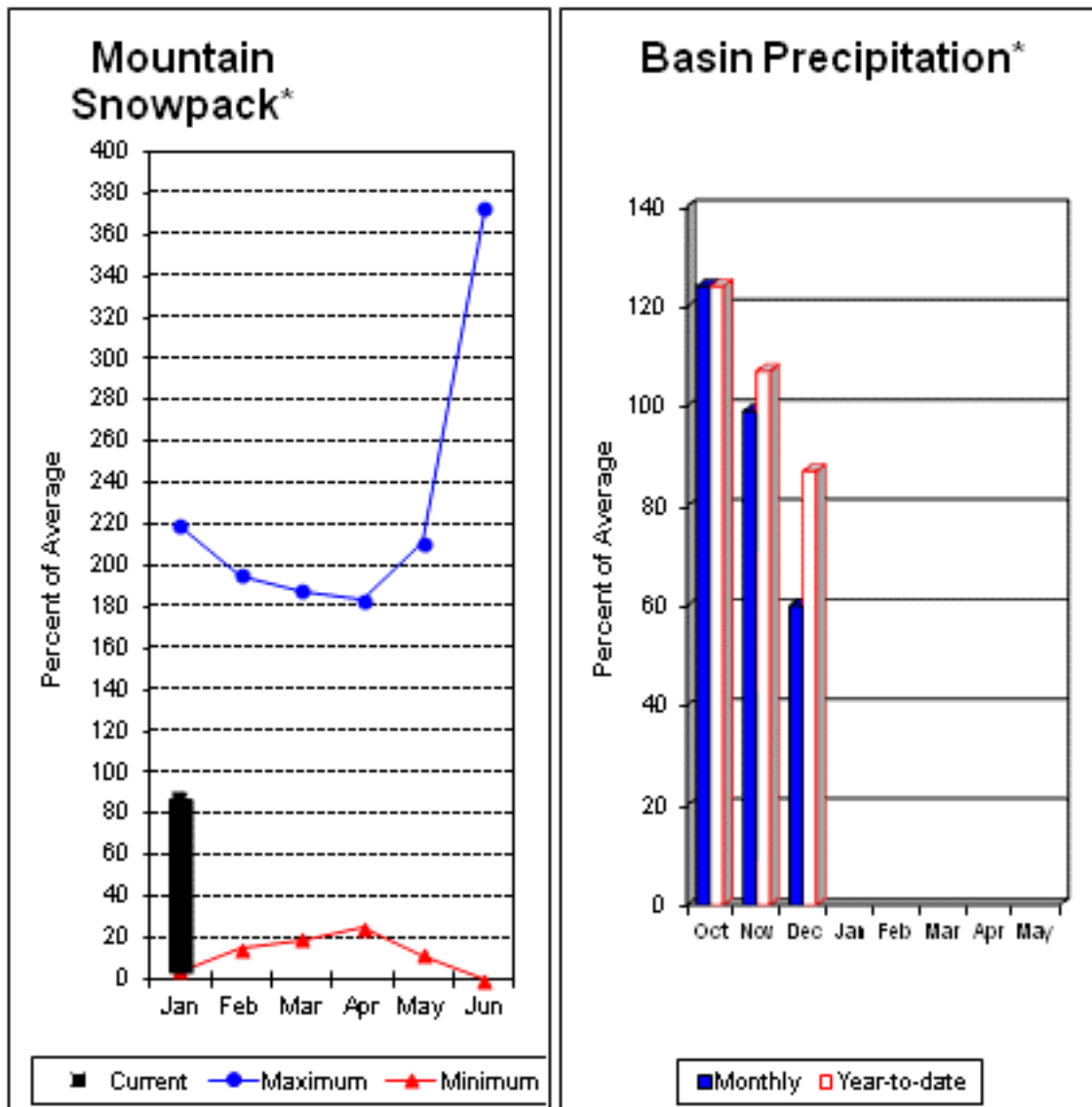
CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of December					CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	309.9	322.8	396.9	CHELAN LAKE BASIN	3	119	89
					ENTIAT RIVER	1	47	36
					WENATCHEE RIVER	6	99	80
					STEMILT CREEK	1	50	51
					COLOCKUM CREEK	1	59	74

* 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.

Upper Yakima River Basin



*Based on selected stations

January 1 reservoir storage for the Upper Yakima reservoirs was 527,000-acre feet, 132% of average. Forecasts for the Yakima River at Cle Elum are 86% of average and the Teanaway River near Cle Elum is at 81%. Lake inflows are all forecasted to be slightly below this summer. December streamflows within the basin were Cle Elum River near Roslyn at 99%. January 1 snowpack was 87% based upon 8 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 60% of average for December and 87% year-to-date for water. 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

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Keechelus Reservoir Inflow (2)	APR-JUL	72	95	110	91	125	148	121
	APR-SEP	81	104	120	90	136	159	133
Kachess Reservoir Inflow (2)	APR-JUL	63	84	99	89	114	135	111
	APR-SEP	71	92	106	88	120	141	120
Cle Elum Lake Inflow (2)	APR-JUL	260	325	370	90	415	480	410
	APR-SEP	285	355	400	89	445	515	450
Yakima R at Cle Elum (2)	APR-JUL	470	610	705	86	800	940	820
	APR-SEP	520	670	770	86	870	1020	900
Teanaway R bl Forks nr Cle Elum	APR-JUL	59	93	116	81	139	173	143
	APR-SEP	61	95	118	81	141	175	146

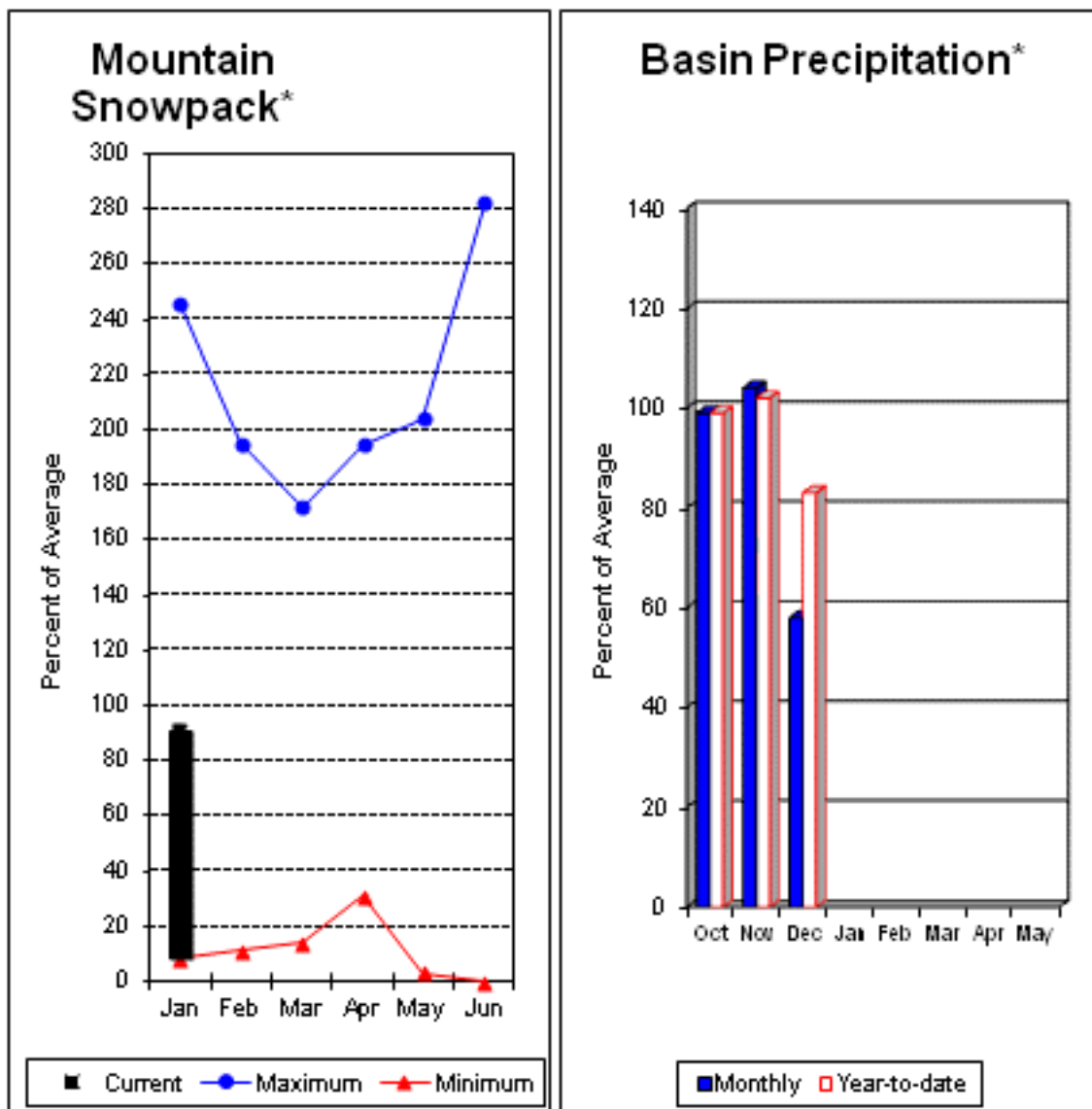
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of December					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	91.3	83.3	78.0	UPPER YAKIMA RIVER	8	96	87
KACHESS	239.0	146.8	150.9	125.5				
CLE ELUM	436.9	288.5	220.3	194.7				

* 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 Yakima River Basin



*Based on selected stations

December average streamflows within the basin were: Yakima River near Parker, 56%; Naches River near Naches, 54%; and Yakima River at Kiona, 52%. January 1 reservoir storage for Bumping and Rimrock reservoirs was 144,000-acre feet, 130% of average. Forecast averages for Yakima River near Parker are 84%; American River near Nile, 86%; Ahtanum Creek, 75%; and Klickitat River near Glenwood, 83%. January 1 snowpack was 91% based upon 7 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 85% of average. Precipitation was 58% of average for December and 83% year-to-date for water. Temperatures were near normal for December and for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they January 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

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bumping Lake Inflow (2)	APR-JUL	75	94	106	87	118	137	122
	APR-SEP	81	101	114	86	127	147	132
American R nr Nile	APR-JUL	68	84	95	88	106	122	108
	APR-SEP	72	90	102	86	114	132	118
Rimrock Lake Inflow (2)	APR-JUL	129	155	173	84	191	215	205
	APR-SEP	155	185	205	85	225	255	240
Naches R nr Naches (2)	APR-JUL	435	550	630	88	710	825	720
	APR-SEP	465	595	680	87	765	895	780
Ahtanum Ck at Union Gap	APR-JUL	7.8	16.8	23	77	29	38	30
	APR-SEP	8.4	17.7	24	75	30	40	32
Yakima R nr Parker (2)	APR-JUL	1000	1300	1510	84	1720	2020	1800
	APR-SEP	1110	1440	1660	84	1880	2210	1980
Klickitat R nr Glenwood	APR-JUL	68	89	104	83	119	140	126
	APR-SEP	96	119	135	83	151	174	163
Klickitat R nr Pitt	APR-JUL	280	345	390	85	435	500	460
	APR-SEP	345	425	475	86	525	605	550

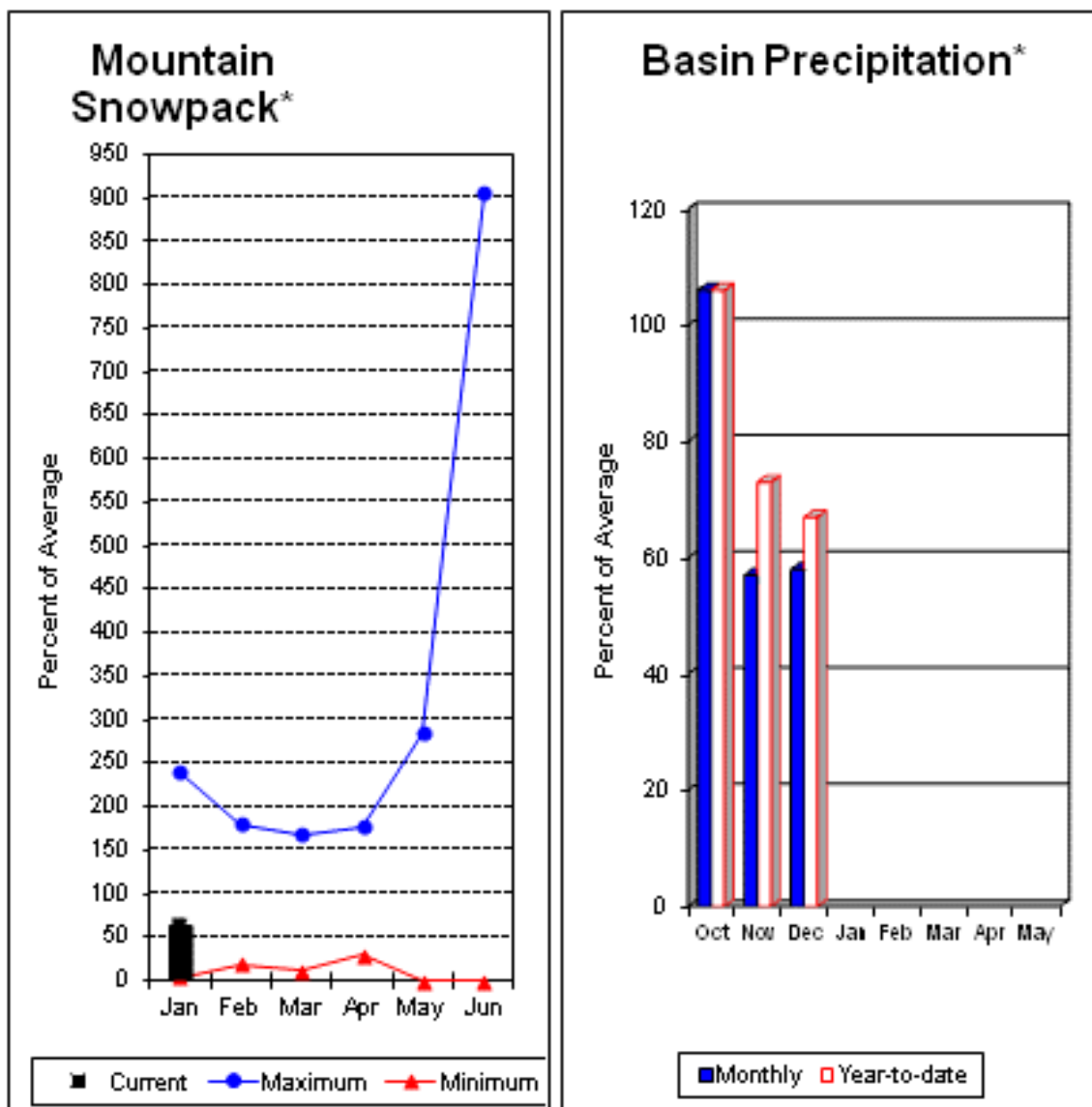
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of December					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
BUMPING LAKE	33.7	18.6	19.2	10.3	LOWER YAKIMA RIVER	7	80	91
RIMROCK	198.0	125.8	121.8	101.1	AHTANUM CREEK	2	81	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.

Walla Walla River Basin



*Based on selected stations

December precipitation was 58% of average, maintaining the year-to-date precipitation at 67% of average. Snowpack in the basin was 63% of average. Streamflow forecasts are 82% of average for Mill Creek and 84% for the SF Walla Walla near Milton-Freewater. December streamflow was 52% of average for the SF Walla Walla River. Average temperatures were slightly below normal for December and near normal for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - January 1, 2012

		<<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *		Chance Of Exceeding *		Chance Of Exceeding *		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SF Walla Walla R nr Milton-Freewater	MAR-SEP	57	65	70	86	75	83	81
	APR-JUL	35	41	45	83	49	55	54
	APR-SEP	45	51	56	84	61	67	67
Mill Ck nr Walla Walla	APR-JUL	13.2	17.2	20	83	23	27	24
	APR-SEP	15.8	20	23	82	26	30	28

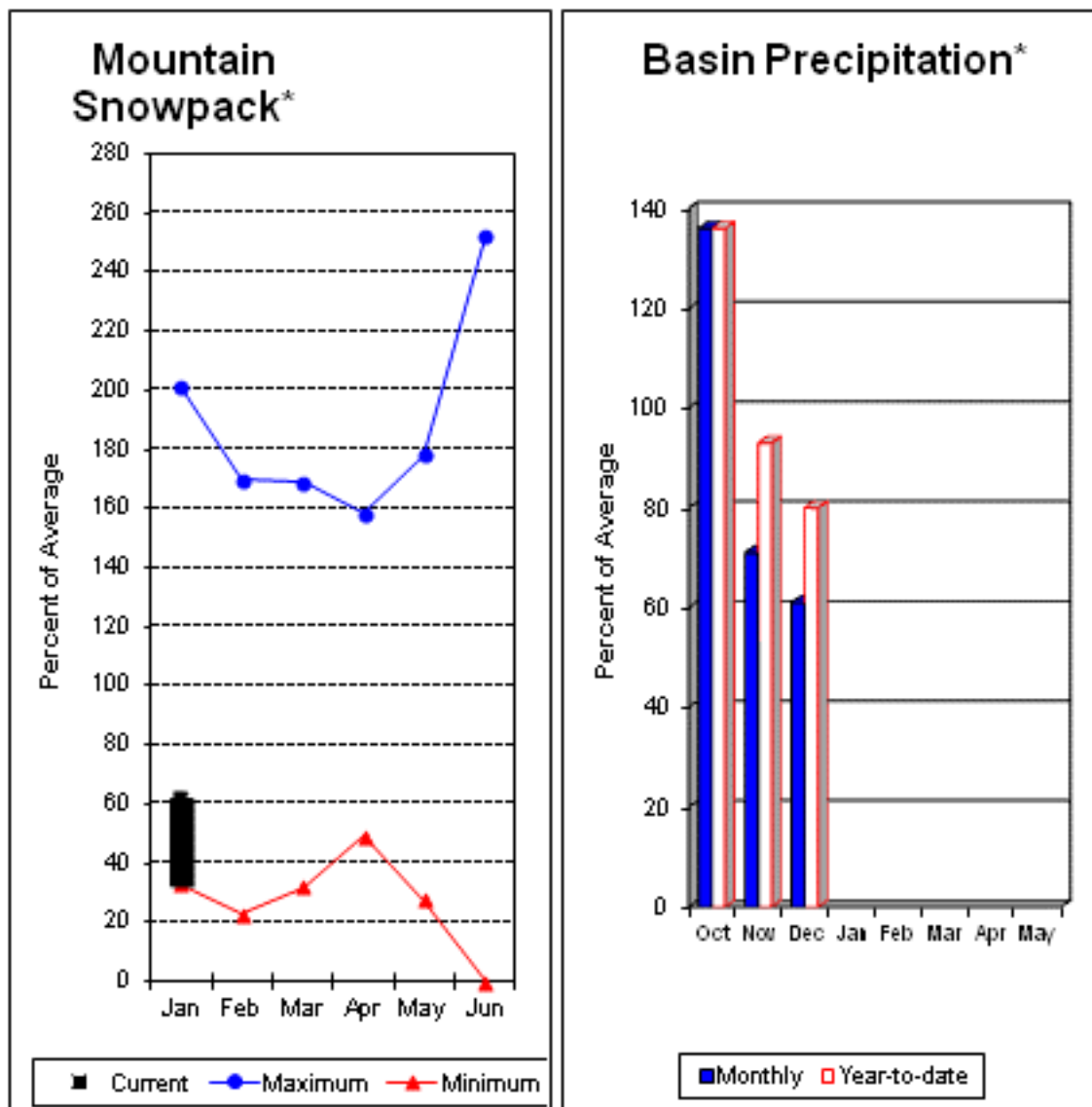
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of December					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	51	63

* 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 Snake River Basin



*Based on selected stations

The April - September forecast is for 83% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 81% and 79% of normal respectively. The forecast for Asotin Creek at Asotin predicts 86% of average flows for the April – July runoff period. December precipitation was 61% of average, bringing the year-to-date precipitation to 80% of average. January 1 snowpack readings averaged 62% of average. December streamflow was 78% of average for Snake River below Lower Granite Dam and 42% for Grande Ronde River near Troy. Dworshak Reservoir storage was 91% of average. Average temperatures were near normal for December and for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *					30-Yr Avg.	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	(1000AF)
Grande Ronde R at Troy (1)	MAR-JUL	710	1080	1250	79	1420	1790	1580
	APR-SEP	565	920	1080	79	1240	1590	1370
Asotin Ck at Asotin	APR-JUL	11.7	23	30	86	37	48	35
Clearwater R at Spalding (1,2)	APR-JUL	2410	4980	6150	83	7320	9890	7430
	APR-SEP	2760	5330	6490	83	7660	10200	7850
Snake R bl Lower Granite Dam (1,2)	APR-JUL	6250	13700	17100	79	20500	28000	21550
	APR-SEP	7340	15700	19600	81	23400	31800	24140

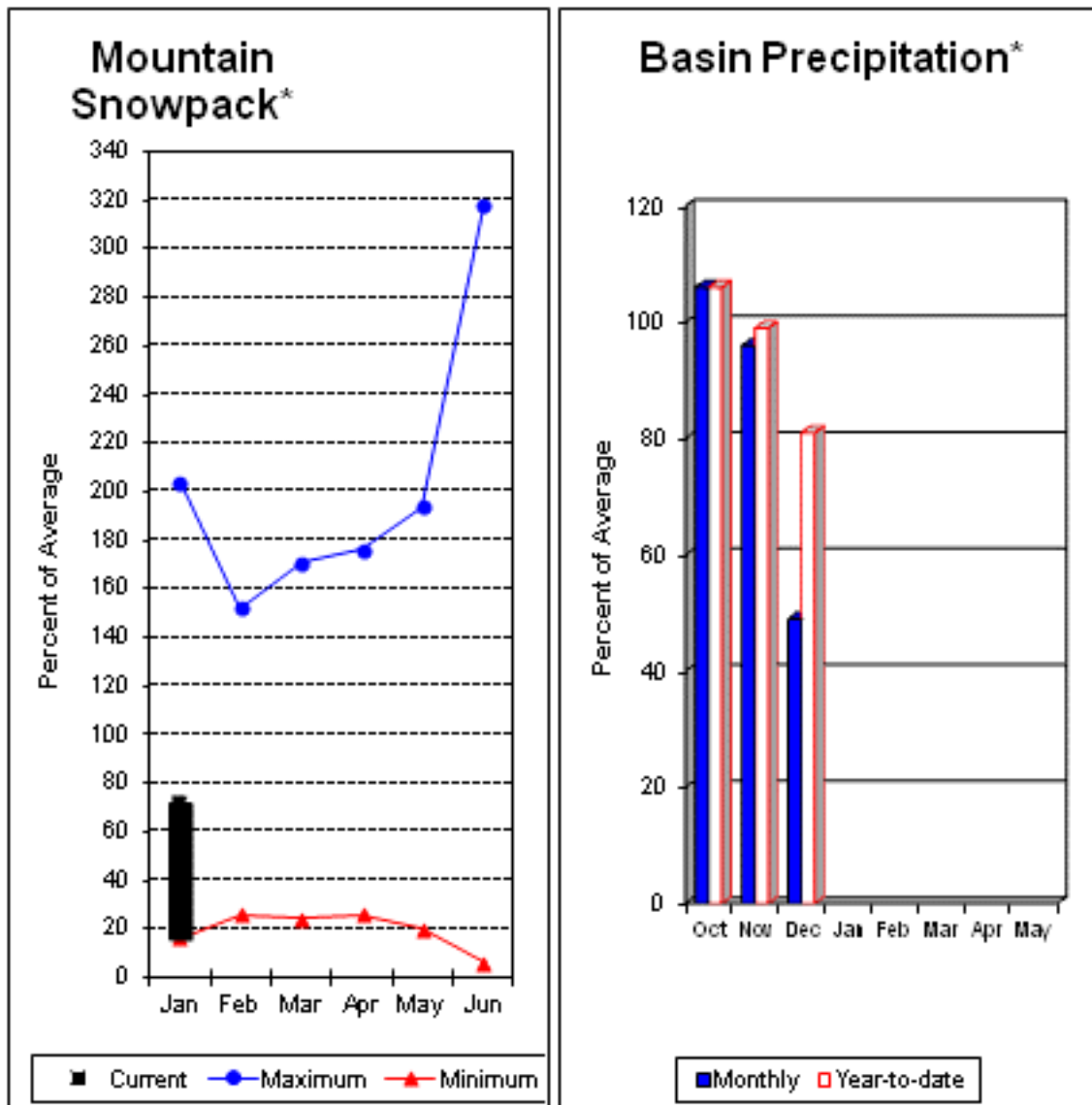
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of December					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DWORSHAK	3468.0	2256.3	2333.8	2481.4	LOWER SNAKE, GRANDE RONDE	11	65	62

* 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 River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 85% and Cowlitz River at Castle Rock, 85% of average. The Columbia at The Dalles is forecasted to have 88% of average flows this summer. December average streamflow for Cowlitz River was 61%. The Columbia River at The Dalles was 75% of average. December precipitation was 49% of average and the water-year average was 81%. January 1 snow cover for Cowlitz River was 79%, and Lewis River was 64% of average. Swift Creek SNOTEL set a new period of record low monthly precipitation accumulation of only 11.2 inches. Normally Swift would get 27.9 inches of precipitation in December. Temperatures were 1-3 degrees below normal during December and for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Columbia R at The Dalles (2)	APR-JUL	52400	64100	72000	85	80000	91700	84600
	APR-SEP	64200	77800	87100	88	96300	110000	98600
Klickitat R nr Glenwood	APR-JUL	68	89	104	83	119	140	126
	APR-SEP	96	119	135	83	151	174	163
Klickitat R nr Pitt	APR-JUL	280	345	390	85	435	500	460
	APR-SEP	345	425	475	86	525	605	550
Lewis R at Ariel (2)	APR-JUL	590	765	885	86	1000	1180	1031
	APR-SEP	690	875	1000	85	1120	1310	1176
Cowlitz R bl Mayfield Dam (2)	APR-JUL	920	1220	1430	85	1640	1940	1689
	APR-SEP	990	1370	1630	85	1890	2270	1922
Cowlitz R at Castle Rock (2)	APR-JUL	1440	1740	1950	85	2160	2460	2295
	APR-SEP	1670	2020	2250	85	2480	2830	2639

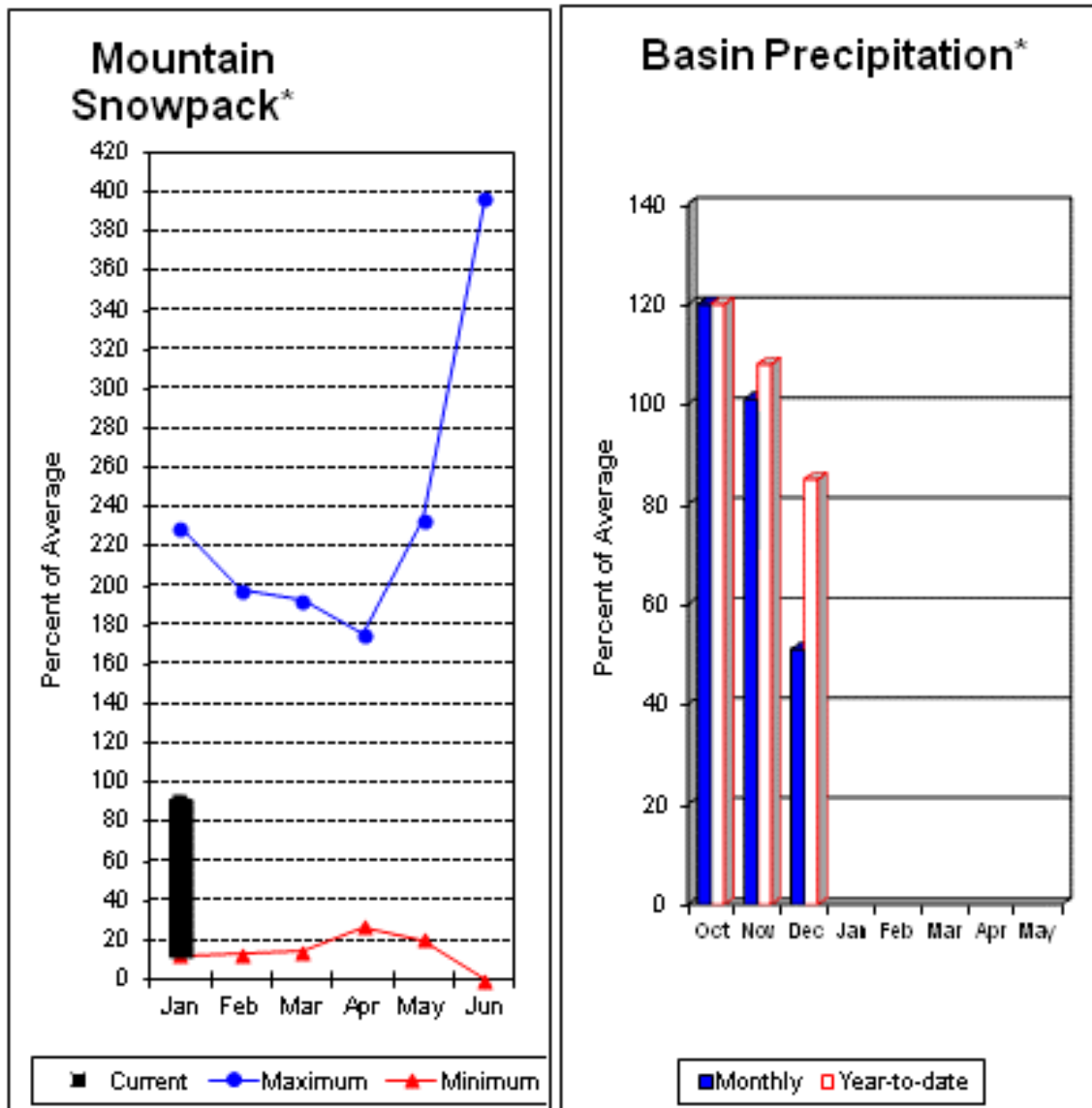
LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of December					LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
MOSSYROCK	0.0	1253.7	1263.9	---	LEWIS RIVER	5	49	64
SWIFT	0.0	709.9	702.4	---	COWLITZ RIVER	6	72	79
YALE	0.0	383.2	360.8	---				
MERWIN	0.0	396.5	414.5	---				

* 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.

South Puget Sound River Basins



*Based on selected stations

Summer runoff is forecast to be 78% of normal for the Green River below Howard Hanson Dam and 90% for the White River near Buckley. January 1 snowpack was 93% of average for the White River, 97% for Puyallup River and 82% in the Green River Basin. Water content on January 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 14.3 inches. This site has a January 1 average of 15.8 inches. December precipitation was 51% of average, bringing the water year-to-date to 85% of average for the basins. Average temperatures in the area were 1-2 degrees below normal for December and for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
White R nr Buckley (1)	APR-JUL	280	360	395	90	430	510	440
	APR-SEP	350	440	480	90	520	610	534
Green R bl Howard Hanson Dam (1,2)	APR-JUL	105	165	192	78	220	280	245
	APR-SEP	123	183	210	78	235	295	268

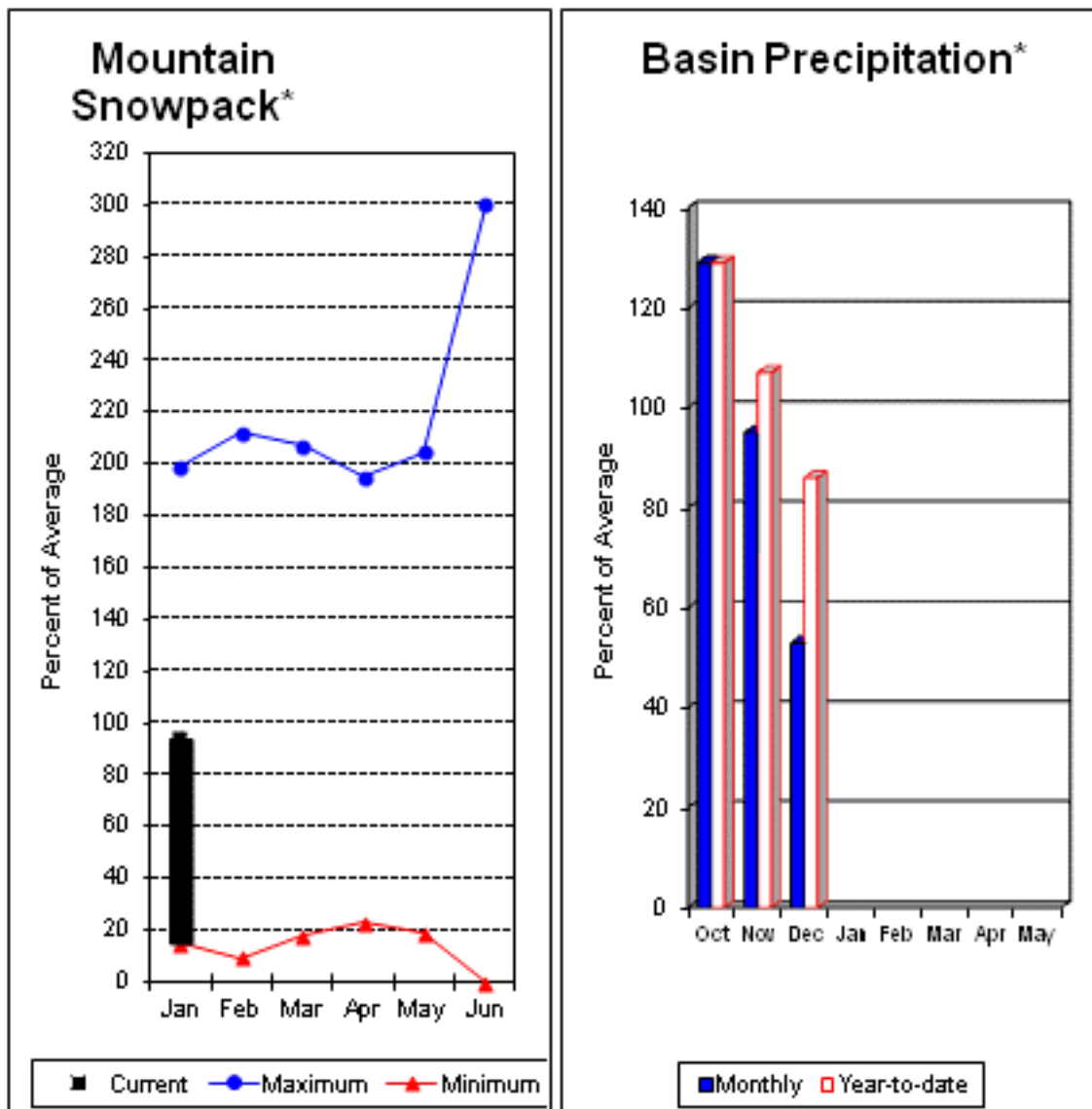
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of December					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	80	93
					GREEN RIVER	3	82	82
					PUYALLUP RIVER	5	92	97

* 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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 91% for Cedar River near Cedar Falls; 89% for Rex River; 76% for South Fork of the Tolt River; 96% for Taylor Creek near Selleck, and 86% for Cedar River at Cedar Falls. Basin-wide precipitation for December was 53% of average, bringing water-year-to-date to 86% of average. January 1 average snow cover in Cedar River Basin was 119%, Tolt River Basin was 89%, Snoqualmie River Basin was 92%, and Skykomish River Basin was 76%. Olallie Meadows SNOTEL site, at 3960 feet, had 24.5 inches of water content. Average January 1 water content is 22.2 inches at Olallie Meadows. Temperatures were near normal for December and 1 degree below for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Cedar R nr Cedar Falls	APR-JUL	42	57	67	92	77	92	73
	APR-SEP	48	63	73	91	83	98	80
Rex R nr Cedar Falls	APR-JUL	12.6	18.8	23	92	27	33	25
	APR-SEP	14.5	21	25	89	29	35	28
Cedar R At Cedar Falls	APR-JUL	25	48	64	87	80	103	74
	APR-SEP	25	48	63	86	78	101	73
Taylor Creek Near Selleck	APR-JUL	13.0	16.5	18.8	94	21	25	20
	APR-SEP	16.9	21	23	96	25	29	24
SF Tolt R nr Index	APR-JUL	6.5	9.2	11.1	76	13.0	15.7	14.7
	APR-SEP	8.0	10.9	12.8	76	14.7	17.6	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of December

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - January 1, 2012

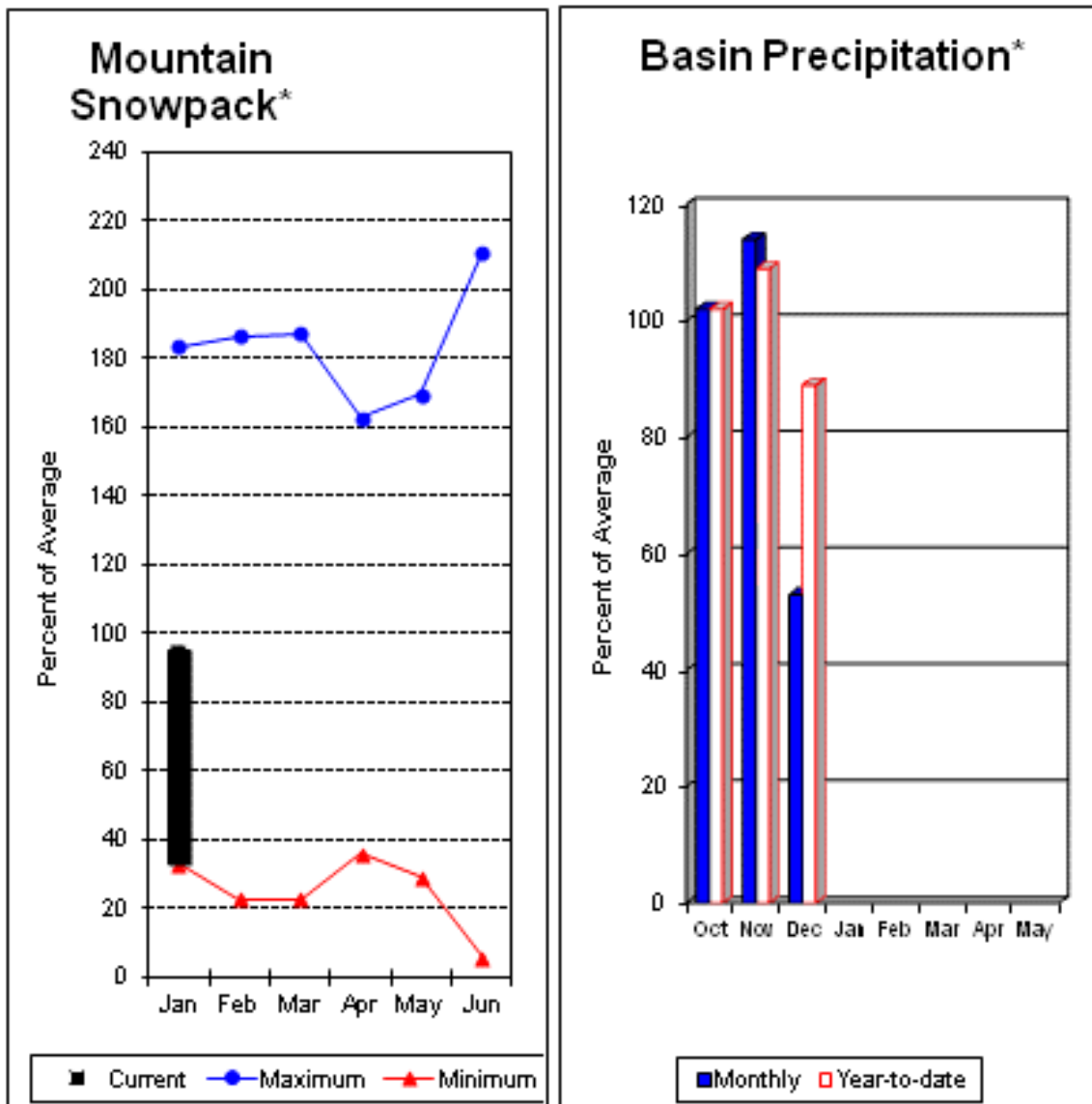
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	103	119
					TOLT RIVER	2	126	89
					SNOQUALMIE RIVER	4	120	92
					SKYKOMISH RIVER	2	111	76

* 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.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 90% of average for the spring and summer period. December streamflow in Skagit River was 65% of average. Other forecast points included Baker River at 86% and Thunder Creek at 98% of average. Basin-wide precipitation for December was 53% of average, bringing water-year-to-date to 89% of average. January 1 average snow cover in Skagit River Basin was 98% and Nooksack River Basin was 92% of average. Baker River Basin data was not available at this time. Rainy Pass SNOTEL, at 4,780 feet, had 19.1 inches of water content. Average January 1 water content is 19.9 inches at Rainy Pass. January 1 Skagit River reservoir storage was 98% of average and 81% of capacity. Average temperatures for December were slightly above normal for the basin and slightly below average for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Thunder Ck Nr Newhalem	APR-JUL	196	215	230	98	245	265	234
	APR-SEP	285	310	325	98	340	365	333
Skagit R At Newhalem	APR-JUL	1370	1560	1690	91	1820	2010	1864
	APR-SEP	1630	1850	2000	90	2150	2370	2217
Baker R nr Concrete (2)	APR-JUL	535	640	710	86	780	885	828
	APR-SEP	665	805	900	86	995	1130	1050

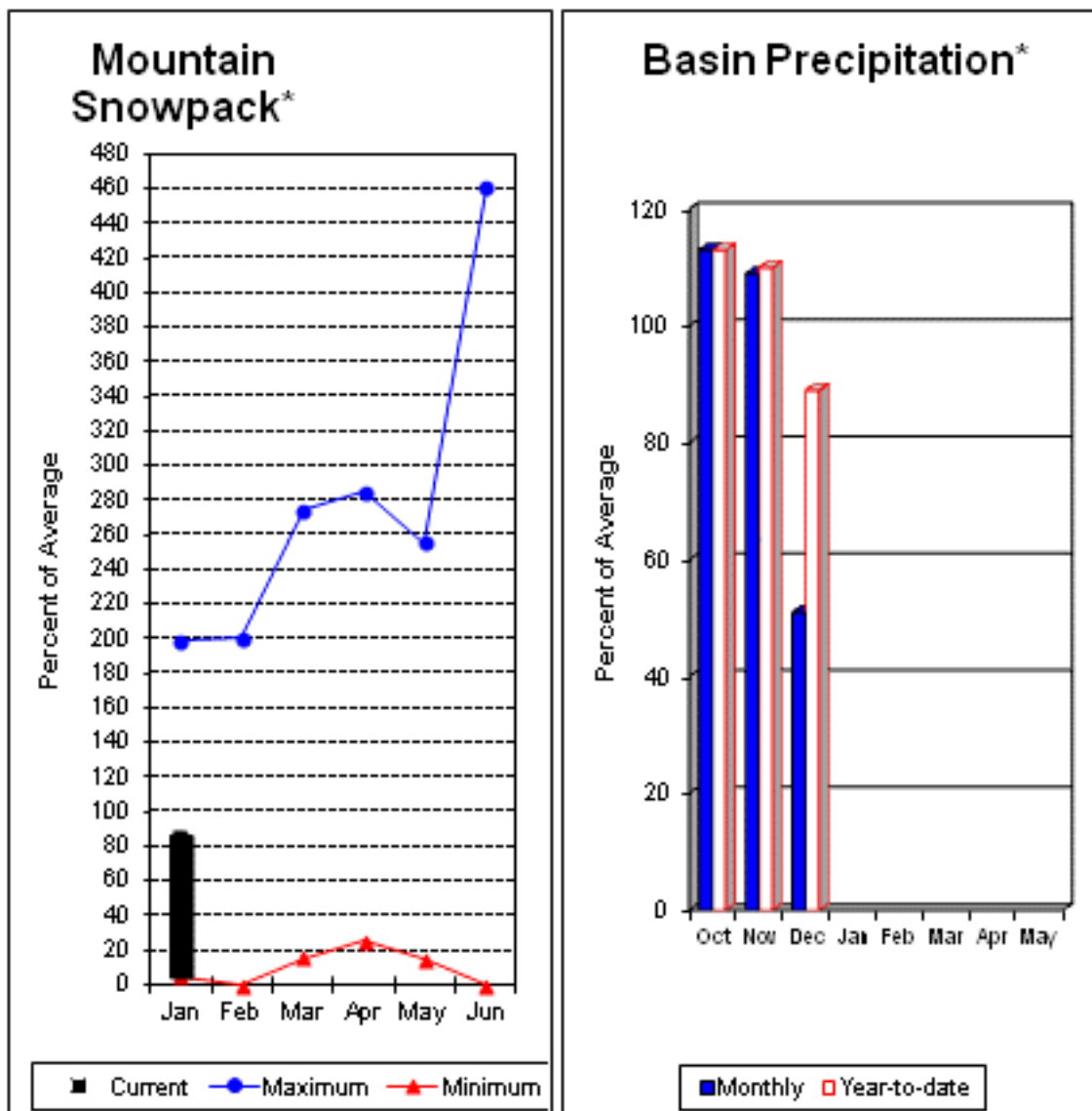
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of December					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
ROSS	1404.1	1118.5	1138.8	1142.1	SKAGIT RIVER	5	100	98
DIABLO RESERVOIR	90.6	85.7	85.7	85.3	BAKER RIVER	0	104	0
					NOOKSACK RIVER	3	104	92

* 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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 85% and Elwha River is 84%. December runoff in the Dungeness River was 56% of normal. Big Quilcene and Wynoochee rivers should expect slightly below average runoff this summer. December precipitation was 51% of average. Precipitation has accumulated at 89% of average for the water year. December precipitation at Quillayute was 7.9 inches. The thirty-year average for December is 14.5 inches. Olympic Peninsula snowpack averaged 86% of normal on January 1. Temperatures were near average for December and for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - January 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Dungeness R Nr Sequim	APR-JUL	78	94	105	85	116	132	124
	APR-SEP	96	116	129	85	142	162	152
Elwha R At Mcdonald Bridge	APR-JUL	265	320	355	85	390	445	419
	APR-SEP	315	380	420	84	460	525	503

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of December					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - January 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	3	49	86

* 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.

Issued by

Dave White
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	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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**



Washington Water Supply Outlook Report February 1, 2011



Photo by Corey Bonsen, NRCS Yakima, WA

Quartz Mountain, WA 3/28/11

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

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Natural Resources Conservation Service
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(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 2012

General Outlook

January really turned it on at times with incredible snowfall totals which increased on-the-ground snowpack by about 20% overall. Statewide we surpassed all other states (except Alaska) in average snowpack. These increases also dramatically helped increase projected summer runoff to the point of being above average in some locations. However as we head into another drying trend, caused by a stubborn high pressure system to the north, we can expect to see a dramatic drop in average snowpack for most every day without snowfall in the mountains. Climate and weather forecasters are predicting a continuation of La Nina with below average temperatures and above average precipitation, though I have trouble drinking the Kool-aid as I look out at sunny and warm conditions.

Snowpack

The February 1 statewide SNOTEL readings were 100% but vary greatly across the state. So far we have received about 67% of our annual total snowfall which is just about where we should be. The Sanpoil River snow survey data near Nespelem reported the lowest readings at 36% of average. Snow surveys from the Cedar River reported the highest at 121% of average. Westside averages from SNOTEL, and February 1 snow surveys, included the North Puget Sound river basins with 113% of average, the Central Puget river basins with 104%, and the Lewis-Cowlitz basins with 94% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 100% and the Wenatchee area with 91%. Snowpack in the Spokane River Basin was at 79% and the Walla Walla River Basin had 85% of average. Maximum snow cover in Washington was at Easy Pass, with water content of 78 inches. The 30-year average for Easy Pass on February 1 is 46.2 inches, coming in at 167% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	86	79
Newman Lake	64	84
Pend Oreille	83	91
Okanogan	96	88
Methow	117	103
Conconully Lake	99	82
Wenatchee	134	92
Chelan	137	102
Upper Yakima	149	96
Lower Yakima	120	105
Ahtanum Creek	141	102
Walla Walla	106	85
Lower Snake	98	84
Cowlitz	113	102
Lewis	101	87
White	113	107
Green	182	97
Puyallup	140	112
Cedar	204	121
Snoqualmie	169	98
Skykomish	149	98
Skagit	133	115
Baker	132	116
Nooksack	123	108
Olympic Peninsula	90	98

Precipitation

During the month of January, the National Weather Service and Natural Resources Conservation Service climate stations reported near to above average precipitation totals throughout Washington river basins. The highest percent of average in the state was at Winthrop which reported 230% of average for a total of 4.6 inches. The average for Winthrop is 2.0 inches for January. The wettest spot in the state was reported at June Lake SNOTEL with a January accumulation of 25.4 inches, 105% of normal.

RIVER BASIN	JANUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	100	70
Pend Oreille	95	88
Upper Columbia	89	84
Central Columbia	120	94
Upper Yakima	106	92
Lower Yakima	121	95
Walla Walla	125	81
Lower Snake	112	88
Lower Columbia	116	91
South Puget Sound	102	90
Central Puget Sound	106	91
North Puget Sound	128	99
Olympic Peninsula	125	99

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. Reservoir storage in the Yakima Basin was 567,000-acre feet, 128% of average for the Upper Reaches and 163,000-acre feet or 134% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 116% of average for February 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 50,000 acre feet, 43% of average and 21% of capacity; Chelan Lake, 273,000-acre feet, 86% of average and 40% of capacity; and the Skagit River reservoirs at 102% of average and 73% 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	21	43
Pend Oreille	41	85
Upper Columbia	82	116
Central Columbia	40	86
Upper Yakima	68	128
Lower Yakima	70	134
Lower Snake	66	98
North Puget Sound	73	102

Streamflow

Forecasts vary from 69% of average for Chamokane Creek near Long Lake to 106% of average for Skagit River at Newhalem. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 99%; White River, 100%; and Dungeness River, 92%. Some Eastern Washington streams include the Yakima River near Parker, 93%; Wenatchee River at Plain, 89%; and Spokane River near Post Falls, 94%. 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.

With near to above average rainfall along with some contributing snowmelt there were varying runoff amount recorded. The Similkameen River had the highest reported flows with 124% of average. The Spokane at Spokane with 46% of average was the lowest in the state however that could be due to reservoir control. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 112%; the Lewis at Ariel, 118%; the Columbia below Rock Island Dam, 74%; and the Cle Elum near Roslyn, 79%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
-------	---

Spokane	69-99
Pend Oreille	85
Upper Columbia	80-106
Central Columbia	81-104
Upper Yakima	87-97
Lower Yakima	93-100
Walla Walla	88-89
Lower Snake	83-97
Lower Columbia	87-96
South Puget Sound	93-100
Central Puget Sound	85-104
North Puget Sound	93-106
Olympic Peninsula	92

STREAM	PERCENT OF AVERAGE JANUARY STREAMFLOWS
--------	---

Pend Oreille Below Box Canyon	80
Kettle at Laurier	51
Columbia at Birchbank	88
Spokane at Long Lake	50
Similkameen at Nighthawk	124
Okanogan at Tonasket	96
Methow at Pateros	91
Chelan at Chelan	72
Wenatchee at Pashastin	78
Cle Elum near Roslyn	79
Yakima at Parker	70
Naches at Naches	70
Grande Ronde at Troy	81
Snake below Lower Granite Dam	78
SF Walla Walla near Milton Freewater	118
Columbia River at The Dalles	80
Cowlitz below Mayfield Dam	107
Skagit at Concrete	103
Dungeness near Sequim	98

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

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Storms in early and mid-January helped preserve soil moisture levels to near level conditions from last month.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	55
Pend Oreille	61
Upper Columbia	25
Central Columbia	50
Upper Yakima	60
Lower Yakima	73
Walla Walla	66
Lower Snake	66
Lower Columbia	77
South Puget Sound	81
Central Puget Sound	N/A
North Puget Sound	87
Olympic Peninsula	38

BASIN SUMMARY OF SNOW COURSE DATA

FEBRUARY 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	KELLER RIDGE KELLO66 PEAK SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	2/01/12	17	3.5	--	4.7		3700	1/26/12	14	3.0	3.7	--
AHTANUM R.S.	3100	1/30/12	10	4.8	4.4	7.1		5560	1/27/12	41	12.2	18.1	20.7
ALPINE MEADOWS	3500	1/26/12	69	22.8	15.9	--							
ALPINE MEADOWS SNTL	3500	2/01/12	62	27.6	18.5	29.2	KLESILKWA CAN.	3450	2/02/12	33	9.0	4.7	7.6
ASHLEY DIVIDE	4820	1/27/12	20	4.4	7.4	5.1	KRAFT CREEK SNOTEL	4750	2/01/12	34	9.4	10.9	10.9
BADGER PASS SNOTEL	6900	2/01/12	76	24.6	22.0	22.3	LAMB BUTTE		1/30/12	48	12.1	8.4	--
BAIRD #2	3220	1/25/12	19	7.0	6.6	--	LOLO PASS SNOTEL	5240	2/01/12	81	20.8	21.3	20.9
BARKER LAKES SNOTEL	8250	2/01/12	29	6.8	8.4	9.2	LONE PINE SNOTEL	3930	2/01/12	60	21.9	24.2	24.1
BARNES CREEK CAN.	5320	2/01/12	---	12.8E	--	14.4	LOOKOUT SNOTEL	5140	2/01/12	71	19.0	20.1	21.5
BASIN CREEK SNOTEL	7180	2/01/12	17	3.5	5.1	4.9	LOST HORSE MTN CAN.	6300	1/30/12	26	6.1	5.7	6.5
BEAVER CREEK TRAIL	2200	1/31/12	49	16.2	12.0	10.3	LOST HORSE SNOTEL	5120	2/01/12	42	13.3	8.9	13.1
BEAVER PASS	3680	1/30/12	72	27.2	17.9	19.3	LOST LAKE SNOTEL	6110	2/01/12	100	30.1	35.4	40.6
BEAVER PASS SNOTEL	3630	2/01/12	98	35.6	24.3	26.2	LOST LAKE	4070	2/01/12	19	3.4	4.9	--
BLACK PINE SNOTEL	7100	2/01/12	32	8.3	8.9	8.0	LOUP LOUP CAMPGROUND		1/27/12	24	4.2	5.4	--
BLACKWALL PILL CAN.	6370	2/01/12	89	29.0	21.2	23.8	LUBRECHT FOREST NO 3	5450	1/30/12	20	4.2	5.8	4.6
BLEWETT PASS#2SNOTEL	4240	2/01/12	31	11.6	7.1	12.4	LUBRECHT FOREST NO 4	4650	1/30/12	12	2.8	2.7	2.5
BONAUPART SOUTH	4660	2/01/12	17	3.2	3.2	--	LUBRECHT FOREST NO 6	4040	1/30/12	22	5.0	5.4	2.8
BRENDA MINE CAN.	4450	2/01/12	---	8.6E	--	8.9	LUBRECHT HYDROPLOT	4200	1/30/12	25	5.7	6.1	4.2
BROWN TOP AM	6000	1/30/12	140	46.7	39.4	42.5	LUBRECHT SNOTEL	4680	2/01/12	25	6.5	5.0	4.2
BROWNS PASS		1/30/12	9	2.0	2.5	--	LYMAN LAKE SNOTEL	5980	2/01/12	127	40.3	34.4	43.4
BUCKINGHORSE SNOTEL	4870	2/01/12	105	41.5	43.3	--	LYNN LAKE	4000	2/01/12	---	18.4E	6.4	14.5
BUMPING LAKE (NEW)	3400	1/31/12	48	13.9	12.2	13.3	LYNN LAKE SNOTEL	3900	2/01/12	52	18.4	6.4	--
BUMPING RIDGE SNOTEL	4610	2/01/12	69	20.7	16.5	19.4	MARIAS PASS	5250	1/30/12	47	11.3	11.7	11.7
BUNCHGRASS MDWSNOTEL	5000	2/01/12	59	15.8	16.3	18.6	MARTEN LAKE AM	3600	1/27/12	140	43.4	49.2	46.8
BURNT MOUNTAIN PIL	4170	2/01/12	43	14.1	5.1	9.0	MARTEN RIDGE SNOTEL	3520	2/01/12	109	42.3	35.1	--
BUTTERMILK BUTTE	5250	1/27/12	44	9.4	9.1	--	MAZAMA		1/27/12	50	9.6	6.0	--
CALAMITY SNOTEL	2500	2/01/12	3	1.7	1	--	MCCULLOCH CAN.	4200	1/30/12	22	4.6	5.4	4.9
CAYUSE PASS SNOTEL	5240	2/01/12	115	37.3	38.5	--	MEADOWS CABIN	1900	1/31/12	16	5.1	2.0	5.0
CHESSMAN RESERVOIR	6200	1/30/12	19	3.7	3.0	2.5	MEADOWS PASS SNOTEL	3230	2/01/12	65	25.3	13.4	19.1
CHEWALAH #2	4930	1/30/12	44	11.8	11.2	--	METEOR		1/25/12	17	3.5	6.0	--
CHICKEN CREEK	4060	1/26/12	41	8.2	13.2	11.5	M F NOOKSACK SNOTEL	4970	2/01/12	100	43.6	34.8	39.4
CITY CABIN	2390	1/26/12	42	14.0	0	--	MICA CREEK SNOTEL	4510	2/01/12	55	14.7	14.6	18.3
COLD CREEK STRIP	6020	1/31/12	26	5.4	4.5	--	MISSEZULA MTN CAN.	5080	1/30/12	27	6.0	5.6	6.5
COMBINATION SNOTEL	5600	2/01/12	15	3.8	3.8	3.4	MISSION CREEK CAN.	5840	2/01/12	38	10.7	--	13.6
COPPER BOTTOM SNOTEL	5200	2/01/12	24	6.4	5.6	8.0	MORSE LAKE SNOTEL	5410	2/01/12	106	37.3	31.7	36.9
COPPER MOUNTAIN	7700	2/01/12	23	5.0	6.1	7.0	MOSES MOUNTAIN (2)	4800	1/31/12	26	6.4	5.2	12.0
CORRAL PASS SNOTEL	5800	2/01/12	74	24.0	20.2	22.1	MOSES MTN SNOTEL	5010	2/01/12	28	7.2	8.2	10.4
COUGAR MTN. SNOTEL	3200	2/01/12	31	13.5	5.0	13.7	MOSES PEAK	6650	1/31/12	37	10.1	15.6	9.6
COX VALLEY	4500	1/31/12	69	22.8	22.9	24.2	MOSQUITO RDG SNOTEL	5200	2/01/12	85	24.4	25.9	24.6
COYOTE HILL	4200	1/26/12	33	6.6	8.1	7.3	MOULTON RESERVOIR	6850	1/26/12	19	3.8	5.8	5.2
DALY CREEK SNOTEL	5780	2/01/12	31	7.8	7.5	7.4	MOUNT CRAG SNOTEL	3960	2/01/12	61	14.6	26.0	19.3
DEER PARK	5200	1/30/12	46	14.8	11.0	12.2	MT. KOBAU CAN.	5500	1/28/12	25	5.2	6.5	7.9
DEVILS PARK	5900	1/30/12	119	37.2	27.3	30.7	MOUNT TOLMAN	2000	1/26/12	9	1.3	1.6	3.6
DISAULT PASS		1/30/12	14	3.0	3.4	--	MOWICH SNOTEL	3160	2/01/12	1	5	0	1.2
DISCOVERY BASIN	7050	1/26/12	29	6.4	6.5	6.6	MOUNT GARDNER	3300	1/26/12	38	11.6	8.0	--
DIX HILL	6400	1/29/12	36	9.9	7.9	7.6	MOUNT GARDNER SNOTEL	2920	2/01/12	34	12.1	7.9	12.0
DOCK BUTTE AM	3800	1/27/12	110	34.1	28.8	37.2	MUTTON CREEK #1	5700	1/26/12	45	9.4	8.0	9.4
DOMMERIE FLATS	2200	1/30/12	25	7.6	3.3	6.4	N.F. ELK CR SNOTEL	6250	2/01/12	37	8.8	10.3	8.0
DUNCAN RIDGE	5370	1/31/12	19	3.7	3.7	--	NEVADA RIDGE SNOTEL	7020	2/01/12	52	12.8	12.1	10.1
DUNGENESS SNOTEL	4010	2/01/12	20	6.5	9.3	5.9	NEW HOZOMEEN LAKE	2800	1/30/12	---	4.5e	4.2	7.8
EASY PASS AM	5200	1/27/12	223	78.0	43.7	46.2	NEZ PERCE CMP SNOTEL	5650	2/01/12	41	9.4	10.0	9.9
ELBOW LAKE SNOTEL	3200	2/01/12	73	25.4	20.1	24.5	NOISY BASIN SNOTEL	6040	2/01/12	64	16.9	44.5	27.0
EMERY CREEK SNOTEL	4350	2/01/12	27	7.8	13.5	10.5	OLALLIE MDWS SNOTEL	4030	2/01/12	101	40.2	24.6	39.2
FARRON CAN.	4000	2/02/12	28	5.9	--	8.7	OPHIR PARK	7150	1/29/12	41	11.3	11.6	10.6
FISH CREEK	8000	1/26/12	22	4.6	6.6	5.8	OYAMA LAKE CAN.	4100	2/01/12	18	3.7	3.5	5.0
FISH LAKE	3370	1/30/12	72	24.0	15.9	24.5	PARADISE SNOTEL	5130	2/01/12	112	44.9	41.5	48.1
FISH LAKE SNOTEL	3430	2/01/12	66	22.4	15.2	24.7	PARK CK RIDGE SNOTEL	4600	2/01/12	101	35.2	24.1	35.0
FLATTOP MTN SNOTEL	6300	2/01/12	103	28.8	33.6	31.8	PEPPER CREEK SNOTEL	2140	2/01/12	13	5.6	4.4	--
FOURTH OF JULY SUM	3200	1/27/12	22	5.6	4.5	7.1	PETERSON MDW SNOTEL	7200	2/01/12	25	5.8	5.7	6.1
FREEZEOUT CK. TRAIL	3500	1/30/12	47	12.0	7.1	8.8	PETTIJOHN CREEK	4300	2/01/12	22	4.0	3.7	--
FROHNER MDWS SNOTEL	6480	2/01/12	26	6.8	5.4	5.0	PIGTAIL PEAK SNOTEL	5800	2/01/12	116	40.3	31.7	34.3
FROST MEADOWS	4630	2/02/12	48	13.4	9.7	--	PIKE CREEK SNOTEL	5930	2/01/12	34	8.7	12.9	17.8
GOAT CREEK	3600	1/31/12	16	3.8	4.6	5.1	PIPESTONE PASS	7200	2/01/12	11	2.2	3.0	3.2
GOLD MTN LOOKOUT		1/27/12	31	7.1	6.4	--	POPE RIDGE SNOTEL	3590	2/01/12	50	14.5	10.3	14.9
GRAVE CRK SNOTEL	4300	2/01/12	36	9.9	12.6	11.7	POSTILL LAKE CAN.	4200	1/31/12	22	5.7	5.2	5.8
GREEN LAKE SNOTEL	5920	2/01/12	60	18.2	12.5	15.4	POTATO HILL SNOTEL	4510	2/01/12	71	19.0	18.0	18.5
GREYBACK RES CAN.	4700	1/31/12	23	6.1	--	6.3	QUARTZ PEAK SNOTEL	4700	2/01/12	42	12.9	16.6	15.4
GROUSE CAMP SNOTEL	5390	2/01/12	47	12.8	11.1	14.0	RAGGED MOUNTAIN	4200	1/29/12	37	10.8	16.4	14.1
HAMILTON HILL CAN.	4550	1/29/12	39	11.1	5.6	9.9	RAGGED MTN SNOTEL	4210	2/01/12	39	13.3	16.1	--
HAND CREEK SNOTEL	5030	2/01/12	29	6.8	9.0	8.6	RAGGED RIDGE	3330	1/27/12	11	2.2	4.8	--
HARTS PASS SNOTEL	6490	2/01/12	97	32.6	32.8	31.3	RAINY PASS SNOTEL	4890	2/01/12	95	33.3	22.5	30.2
HARTS PASS	6500	1/30/12	102	31.8	30.2	29.5	RAINY PASS	4780	1/31/12	97	29.9	20.5	27.6
HELL ROARING DIVIDE	5770	1/31/12	62	17.4	25.3	20.7	REX RIVER SNOTEL	3810	2/01/12	72	29.8	12.2	21.7
HERRIG JUNCTION	4850	1/26/12	55	13.2	18.8	18.1	ROCKER PEAK SNOTEL	8000	2/01/12	38	9.0	10.3	9.1
HIGH RIDGE SNOTEL	4920	2/01/12	61	16.6	18.3	16.9	ROCKY CREEK AM	2100	1/27/12	68	21.8	18.9	20.2
HOLBROOK	4530	2/01/12	21	5.5	6.7	7.2	ROUND TOP MTN	4020	1/27/12	25	5.6	9.4	--
HOODOO BASIN SNOTEL	6050	2/01/12	106	29.5	31.1	30.1	RUSTY CREEK	4000	1/26/12	18	2.9	3.6	4.9
HUCKLEBERRY SNOTEL	2250	2/01/12	9	3.7	0	2.0	SF THUNDER CK AM	2200	1/27/12	50	16.0	1.6	5.9
HUMBOLDT GLCH SNOTEL	4250	2/01/12	---	11.4	8.6	9.5	SADDLE MTN SNOTEL	7900	2/01/12	66	16.2	20.2	17.3
HURRICANE	4500	1/26/12	42	9.0	10.7	11.7	SALMON MDWS SNOTEL	4460	2/01/12	21	5.5	6.4	7.5
INDIAN ROCK SNOTEL	5360	2/01/12	62	22.5	22.1	--	SASSE RIDGE SNOTEL	4340	2/01/12	73	23.5	17.6	23.8
INTERGAARD	6450	1/29/12	20	5.8	4.8	4.8	SATUS PASS	4030	1/30/12	24	8.0	8.2	8.7
IRENE'S CAMP	5530	1/31/12	33	7.2	5.3	--	SAVAGE PASS SNOTEL	6170	2/01/12	68	18.9	19.4	17.6
ISINTOK LAKE CAN.	5100	1/27/12	24	4.3	4.1	5.2	SAWMILL RIDGE SNOTEL	4640	2/01/12	93	32.5	22.2	--
JUNE LAKE SNOTEL	3440	2/01/12	59	23.4	25.0	28.4	SCHREIBERS MDW AM	3400	1/27/12	96	31.7	27.0	32.4
							SENTINEL BT SNOTEL	4680	2/01/12	20	3.7	6.5	6.1

SHEEP CANYON SNOTEL	3990	2/01/12	61	22.0	22.7	23.9
SHERWIN SNOTEL	3200	2/01/12	---	8.4	7.7	8.4
SILVER STAR MTN CAN.	5600	1/29/12	53	15.6	20.7	20.0
SKALKAHO SNOTEL	7260	2/01/12	60	15.7	17.2	16.0
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
SKOOKUM CREEK SNOTEL	3310	2/01/12	50	23.6	8.1	20.2
SKOOKUM LAKES	4230	1/26/12	32	7.4	9.8	--
SOURDOUGH GUL SNOTEL	4000	2/01/12	3	1.5	.0	--
SOUTH BALDY	4920	1/26/12	45	11.3	14.8	--
SPENCER MDW SNOTEL	3400	2/01/12	45	17.2	15.0	21.9
SPIRIT LAKE SNOTEL	3520	2/01/12	5	4.8	.3	5.1
SPOTTED BEAR MTN.	7000	2/03/12	41	9.4	10.2	10.1
SPRUCE SPGS SNOTEL	5700	2/01/12	40	9.6	4.8	13.0
STARVATION MOUNTAIN	6750	1/28/12	46	12.0	12.2	13.0
STAHL PEAK SNOTEL	6030	2/01/12	69	19.2	30.3	24.1
STAMPEDE PASS SNOTEL	3850	2/01/12	75	25.3	15.6	31.0
STEVENS PASS SNOTEL	3950	2/01/12	90	28.0	18.2	30.2
STORM LAKE	7780	1/26/12	31	7.8	7.1	8.3
STRYKER BASIN	6180	1/26/12	60	14.7	24.9	21.3
STUART MOUNTAIN	7400	2/03/12	74	22.1	31.3	--
SUMMERLAND RES CAN.	4200	1/27/12	31	5.8	7.1	6.9
SUMMIT G.S. #2	4600	1/31/12	22	4.3	6.9	6.3
SUNSET SNOTEL	5540	2/01/12	---	13.0	16.5	20.9
SURPRISE LKS SNOTEL	4290	2/01/12	85	29.2	27.7	32.2
SWAMP CREEK SNOTEL	3930	2/01/12	62	18.9	11.6	13.9
SWIFT CREEK SNOTEL	4440	2/01/12	86	34.9	36.3	38.5
TEN MILE LOWER	6600	1/31/12	26	5.8	4.3	4.7
TEN MILE MIDDLE	6800	1/30/12	31	7.0	6.2	7.1
THUNDER BASIN SNOTEL	4320	2/01/12	63	22.9	18.2	24.3
THUNDER BASIN	4200	1/31/12	55	16.4	10.8	14.5
THOMPSON CREEK	2500	1/27/12	8	1.9	4.6	--

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
THOMPSON RIDGE	4650	1/27/12	45	8.4	7.3	--
TINKHAM CREEK SNOTEL	2990	2/01/12	67	24.3	15.8	22.7
TOATS COULEE	2850	1/31/12	11	1.9	2.1	2.6
TOUCHET SNOTEL	5530	2/01/12	62	18.1	14.5	23.8
TRINKUS LAKE	6100	2/03/12	80	23.7	38.5	26.6
TROUGH #2 SNOTEL	5480	2/01/12	25	7.1	6.8	7.5
TRUMAN CREEK	4060	1/27/12	16	4.4	4.8	3.5
TUNNEL AVENUE	2450	2/01/12	46	15.2	11.5	14.8
TV MOUNTAIN	6800	2/03/12	43	10.5	17.4	11.8
TWELVEMILE SNOTEL	5600	2/01/12	54	15.1	10.6	12.8
TWIN LAKES SNOTEL	6400	2/01/12	95	25.8	28.5	27.5
TWIN SPIRIT DIVIDE	3480	1/29/12	15	3.9	5.2	10.5
UPPER HOLLAND LAKE	6200	2/03/12	70	19.4	24.8	23.7
UPPER WHEELER SNOTEL	4330	2/01/12	21	6.3	6.6	9.2
VASEUX CREEK CAN.	4250	2/01/12	13	3.5	--	4.3
VULCAN MTN	4660	1/31/12	24	5.8	7.3	--
VULCAN ROAD	3840	1/31/12	19	4.0	5.8	--
WARM SPRINGS SNOTEL	7800	2/01/12	54	13.6	15.5	13.8
WATSON LAKES AM	4500	1/27/12	100	35.0	24.5	35.6
WATERHOLE SNOTEL	5010	2/01/12	72	26.8	25.5	23.2
WEASEL DIVIDE	5450	1/30/12	73	20.2	23.2	21.5
WELLS CREEK SNOTEL	4030	2/01/12	74	23.8	20.7	22.0
WHITE PASS ES SNOTEL	4440	2/01/12	54	19.1	12.6	17.1
WHITE ROCKS MTN CAN.	7200	1/27/12	46	11.6	14.1	15.7



Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

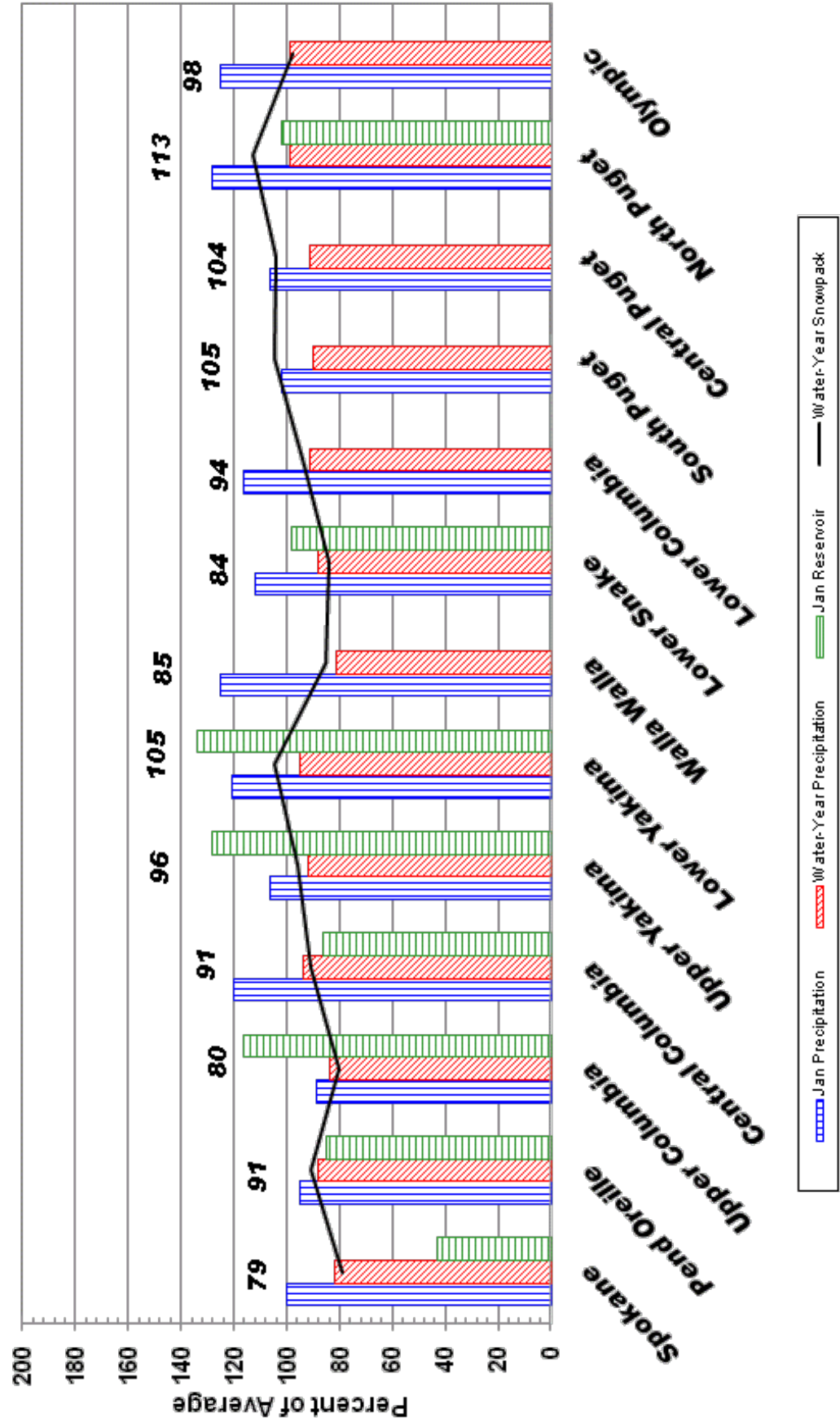
National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

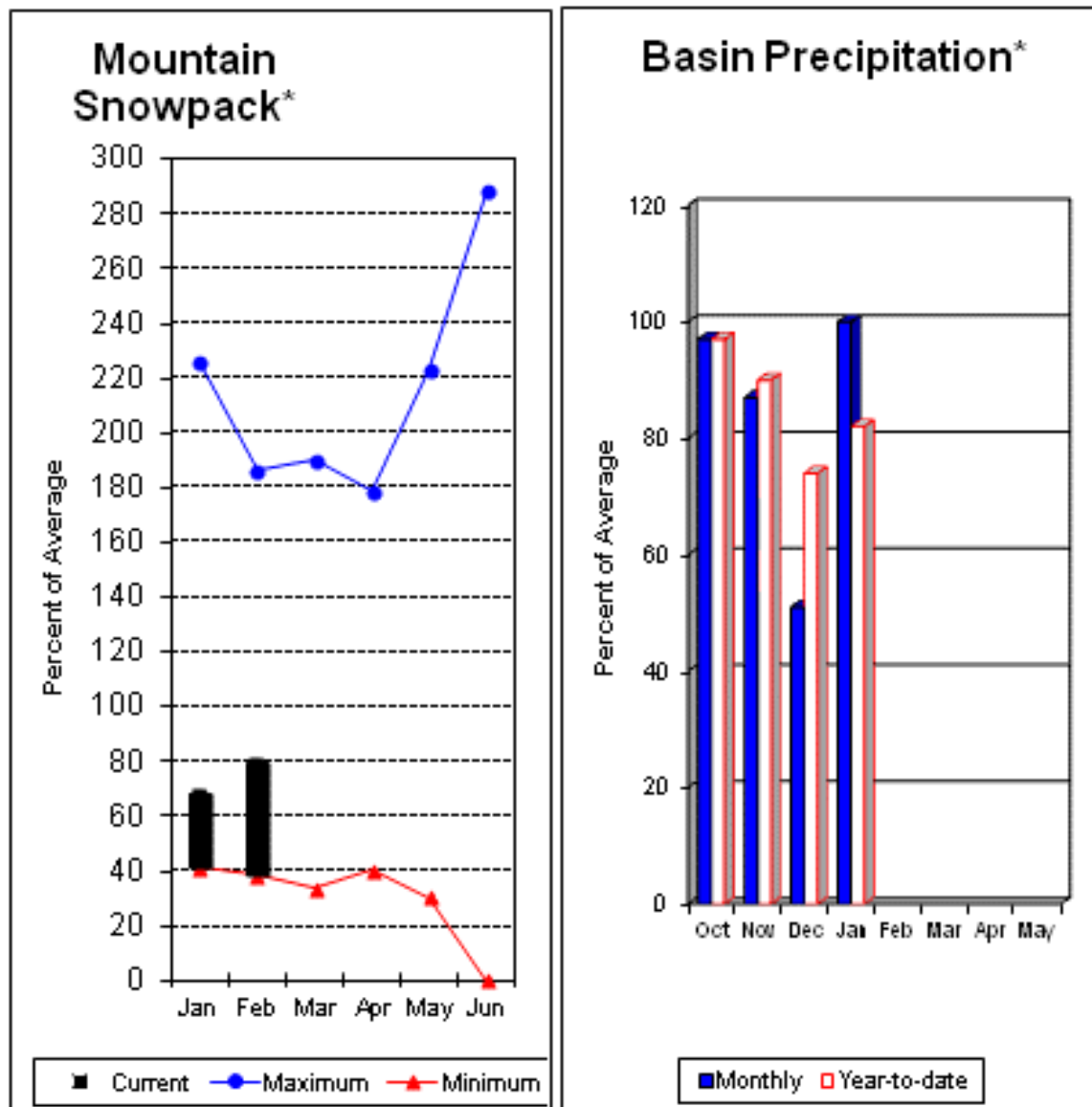
NRCS National:
<http://www.nrcs.usda.gov>

February 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance (Water Year = October 1, 2011 - Current Date)



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Spokane River Basin



*Based on selected stations

The February 1 forecasts for summer runoff within the Spokane River Basin are 94% of average near Post Falls and 99% at Long Lake. The Chamokane River near Long Lake forecasted to have 69% of average flows for the May-August period. The forecast is based on a basin snowpack that is 79% of average and precipitation that is 82% of average for the water year. Precipitation for January was normal. Streamflow on the Spokane River at Long Lake was 50% of average for January. February 1 storage in Coeur d'Alene Lake was 50,000 acre feet, 43% of average and 21% of capacity. Snowpack at Quartz Peak SNOTEL site was 84% of average with 12.9 inches of water content. Average temperatures in the Spokane basin were 1-3 degrees above normal for January and slightly above normal for the water year.

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

Spokane River Basin

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spokane R nr Post Falls (2)	APR-JUL	1800	2150	2400	94	2650	2800	2550
	APR-SEP	1880	2250	2500	94	2750	2910	2650
Spokane R at Long Lake (2)	APR-JUL	2140	2540	2820	99	3100	3500	2850
	APR-SEP	2350	2760	3040	99	3320	3730	3070
Chamokane Ck nr Long Lake	MAY-AUG	1.3	4.7	7.0	69	9.3	12.7	10.2

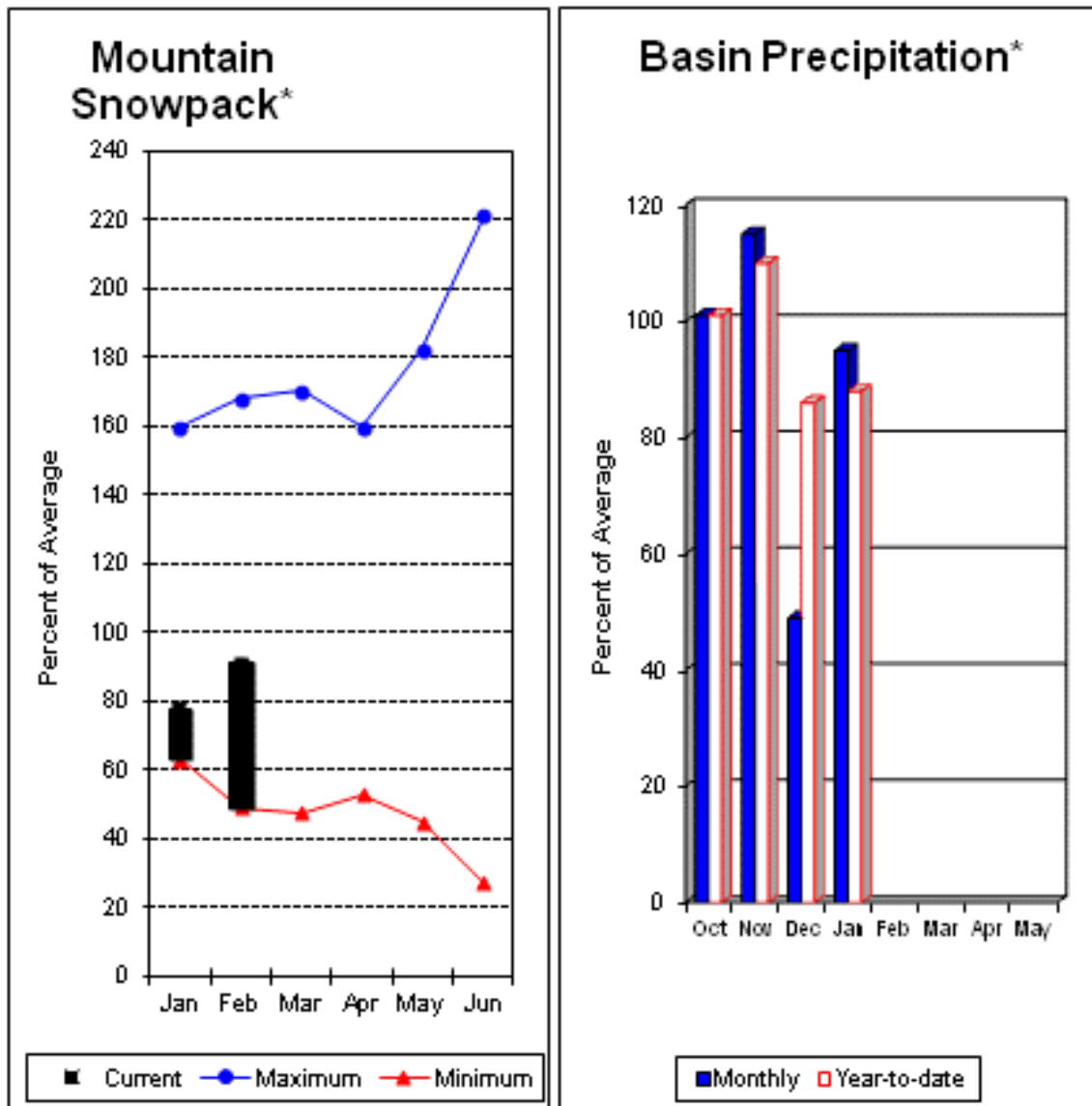
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of January					SPOKANE RIVER BASIN Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COEUR D'ALENE	238.5	49.6	210.8	115.6	SPOKANE RIVER	12	86	79
					NEWMAN LAKE	1	64	84

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

The average is computed for the 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.

Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Priest River near the town of Priest River is 72% and the Pen Orielle below Box Canyon is 85%. January streamflow was 80% of average on the Pend Oreille River and 88% on the Columbia Birchbank. February 1 snow cover was 91% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 15.8 inches of snow water on the snow pillow. Normally Bunchgrass would have 18.6 inches on February 1. Precipitation during January was 95% of average, bringing the year-to-date precipitation to 88% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 85% of normal. Average temperatures were 1-3 degrees above normal for January and near normal for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Pend Oreille Lake Inflow (2)	APR-JUL	8770	9960	10800	85	11600	12900	12700
	APR-SEP	9810	10900	11800	85	12700	14200	13900
Pend Oreille R bl Box Canyon (2)	APR-JUL	8780	10000	10900	85	11800	13000	12900
	APR-SEP	9770	11100	12000	85	12900	14200	14100

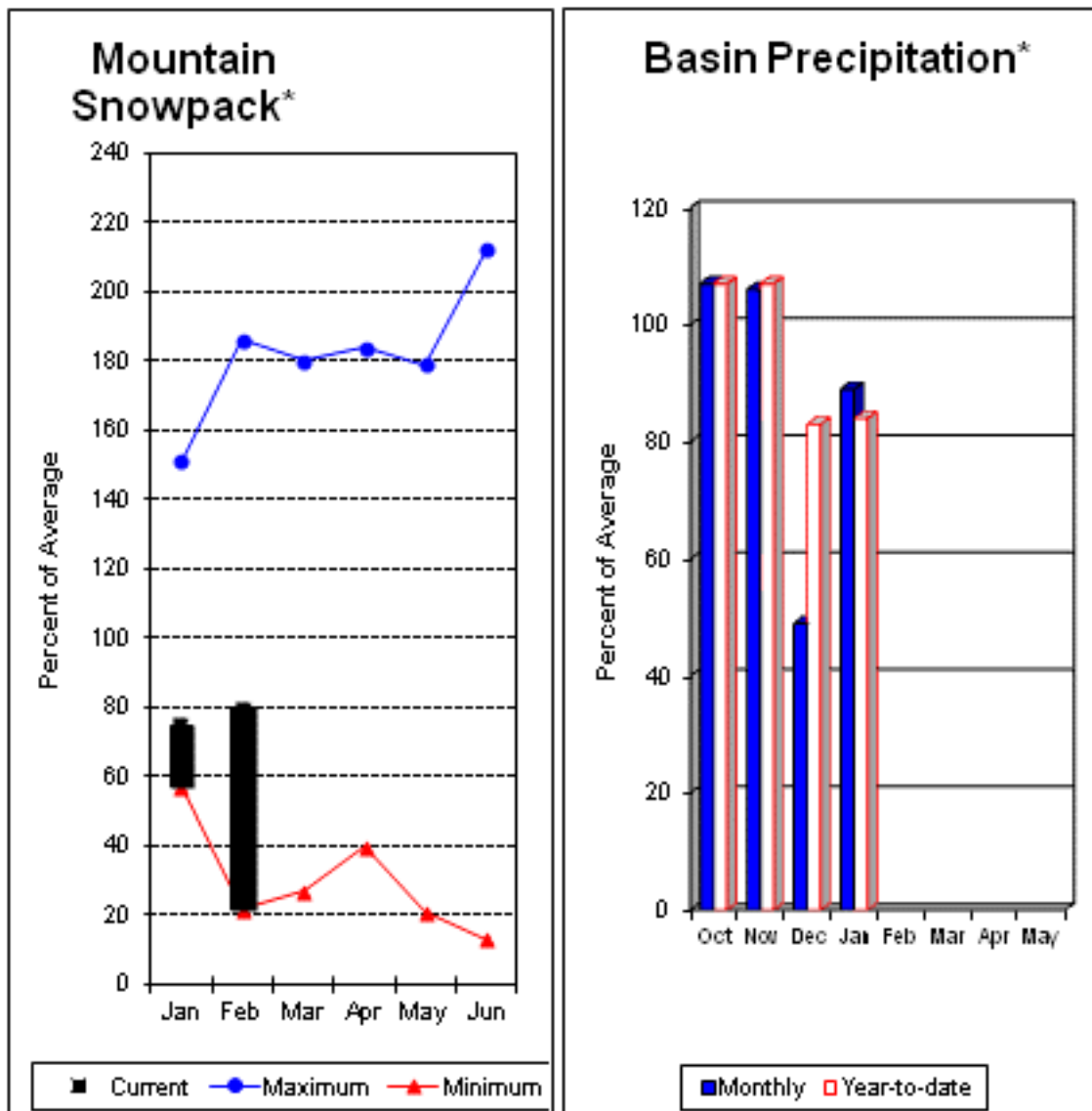
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of January					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
PEND OREILLE	1561.3	632.2	827.0	749.3	COLVILLE RIVER	0	106	0
PRIEST LAKE	119.3	55.5	53.2	55.5	PEND OREILLE RIVER	8	92	92
					KETTLE RIVER	3	69	67

* 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.

Upper Columbia River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 93%, Similkameen River is 106%, Kettle River 80% and Methow River is 94%. February 1 snow cover on the Okanogan was 88% of average, Omak Creek was 74% and the Methow was 103%. January precipitation in the Upper Columbia was 89% of average, with precipitation for the water year at 84% of average. January streamflow for the Methow River was 91% of average, 96% for the Okanogan River and 124% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 5.5 inches. Average for this site is 7.5 inches on February 1. Combined storage in the Conconully Reservoirs was 19,000-acre feet, which is 82% of capacity and 116% of the February 1 average. Temperatures were slightly below normal for January and near average for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Colville R at Kettle Falls	APR-JUL	35	76	104	81	132	173	128
	APR-SEP	38	83	114	81	145	190	141
Kettle R nr Laurier	APR-JUL	1140	1360	1500	80	1640	1860	1870
	APR-SEP	1200	1420	1580	80	1740	1960	1970
Columbia R at Birchbank (1,2)	APR-JUL	30300	33400	34400	99	35400	39700	34900
	APR-SEP	38500	42700	43800	101	44900	50200	43500
Columbia R at Grand Coulee (2)	APR-JUL	44700	46800	50100	93	53400	57400	53800
	APR-SEP	54800	57300	61200	96	65100	69400	64000
Similkameen R nr Nighthawk (1)	APR-JUL	1070	1320	1440	107	1560	1810	1350
	APR-SEP	1170	1420	1540	106	1660	1910	1450
Okanogan R nr Tonasket (1)	APR-JUL	915	1300	1470	93	1640	2020	1580
	APR-SEP	1040	1450	1640	93	1830	2240	1770
Okanogan R at Malott (1)	APR-JUL	935	1340	1520	93	1700	2110	1630
	APR-SEP	1050	1490	1690	92	1890	2330	1830
Methow R nr Pateros	APR-SEP	740	845	915	93	985	1090	985
	APR-JUL	695	790	855	94	920	1020	910

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of January					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
SALMON LAKE	10.5	8.3	8.6	8.4	OKANOGAN RIVER	5	108	101
CONCONULLY RESERVOIR	13.0	11.0	12.0	8.2	OMAK CREEK	3	82	74
					SANPOIL RIVER	1	84	36
					SIMILKAMEEN RIVER	0	0	0
					TOATS COULEE CREEK	1	117	73
					CONCONULLY LAKE	3	99	82
					METHOW RIVER	8	117	103

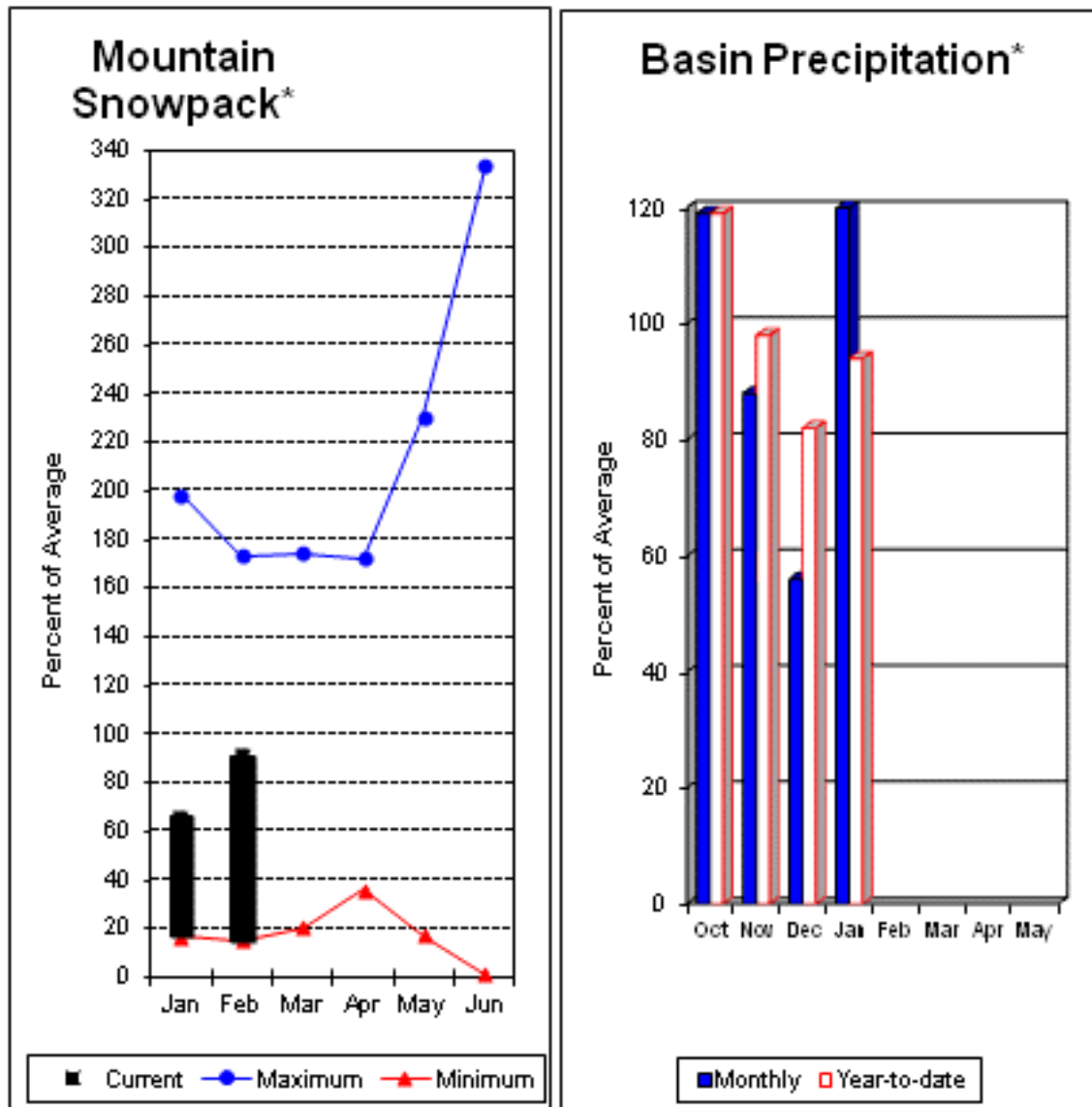
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

Central Columbia River Basins



*Based on selected stations

Precipitation during January was 120% of average in the basin and 94% for the year-to-date. Runoff for Entiat River is forecast to be 88% of average for the summer. The February-September average forecast for Chelan River is 97%, Wenatchee River at Plain is 89%, Stehekin River is 104% and Icicle Creek is 81%. January average streamflows on the Chelan River were 72% and on the Wenatchee River 78%. February 1 snowpack in the Wenatchee River Basin was 92% of average; the Chelan, 102%; the Entiat, 97%; Stemilt Creek, 68% and Colockum Creek, 95%. Reservoir storage in Lake Chelan was 273,000-acre feet, 86% of February 1 average and 40% of capacity. Lyman Lake SNOTEL had the most snow water with 40.3 inches of water. This site would normally have 43.4 inches on February 1. Temperatures were slightly above normal for January and near normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)		
		Chance Of Exceeding *						
		(% AVG.)						
Stehekin R at Stehekin	APR-JUL	630	695	740	106	785	850	700
	APR-SEP	745	815	860	104	905	975	830
Chelan R at Chelan (2)	APR-JUL	910	975	1020	97	1070	1130	1050
	APR-SEP	1010	1090	1150	97	1210	1290	1190
Entiat R nr Ardenvoir	APR-JUL	160	178	190	88	200	220	215
	APR-SEP	177	197	210	88	225	245	240
Wenatchee R at Plain	APR-JUL	840	915	965	90	1020	1090	1070
	APR-SEP	900	990	1050	89	1110	1200	1180
Icicle Ck nr Leavenworth	APR-JUL	220	235	250	81	265	280	310
	APR-SEP	235	260	275	81	290	315	340
Wenatchee R at Peshastin	APR-JUL	1150	1250	1320	89	1390	1490	1480
	APR-SEP	1220	1340	1430	88	1520	1640	1630
Columbia R bl Rock Island Dam (2)	APR-JUL	48800	50200	54000	92	57800	63300	59000
	APR-SEP	59200	61500	66000	95	70500	75700	69500

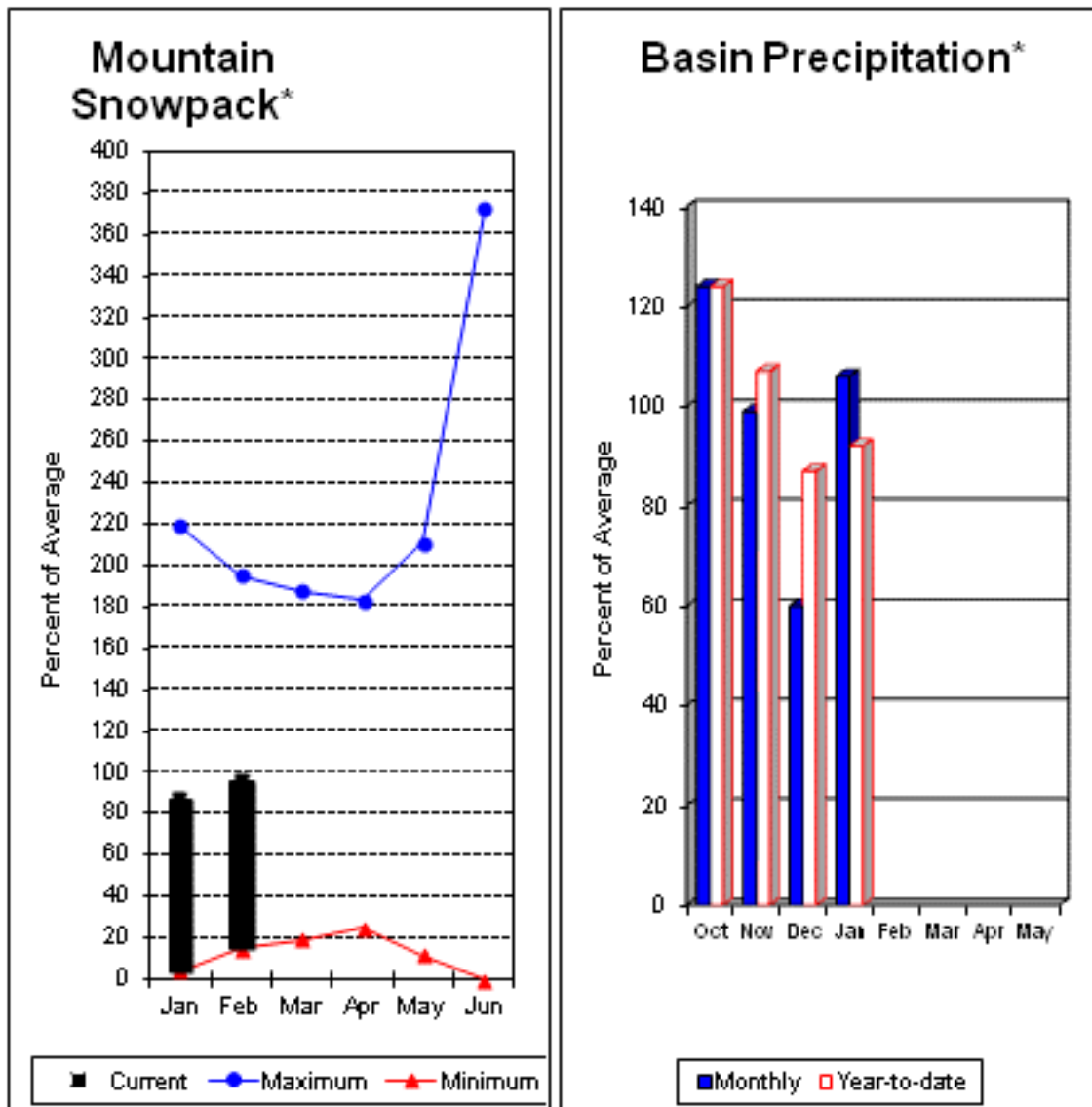
CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of January					CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	272.6	289.6	315.5	CHELAN LAKE BASIN	4	137	102
					ENTIAT RIVER	1	141	97
					WENATCHEE RIVER	7	134	92
					STEMILT CREEK	1	95	68
					COLOCKUM CREEK	1	104	95

* 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.

Upper Yakima River Basin



*Based on selected stations

February 1 reservoir storage for the Upper Yakima reservoirs was 567,000-acre feet, 128% of average. Forecasts for the Yakima River at Cle Elum are 91% of average and the Teanaway River near Cle Elum is at 87%. Lake inflows are all forecasted to be slightly below this summer. January streamflows within the basin were Cle Elum River near Roslyn at 79%. February 1 snowpack was 96% based upon 9 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 106% of average for January and 92% year-to-date for water. 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

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Keechelus Reservoir Inflow (2)	APR-JUL	84	104	117	97	130	150	121
	APR-SEP	95	115	129	97	143	163	133
Kachess Reservoir Inflow (2)	APR-JUL	78	94	105	95	116	132	111
	APR-SEP	86	102	113	94	124	140	120
Cle Elum Lake Inflow (2)	APR-JUL	310	355	385	94	415	460	410
	APR-SEP	335	385	420	93	455	505	450
Yakima R at Cle Elum (2)	APR-JUL	545	665	745	91	825	945	820
	APR-SEP	590	725	815	91	905	1040	900
Teanaway R bl Forks nr Cle Elum	APR-JUL	86	109	125	87	141	164	143
	APR-SEP	88	111	127	87	143	166	146

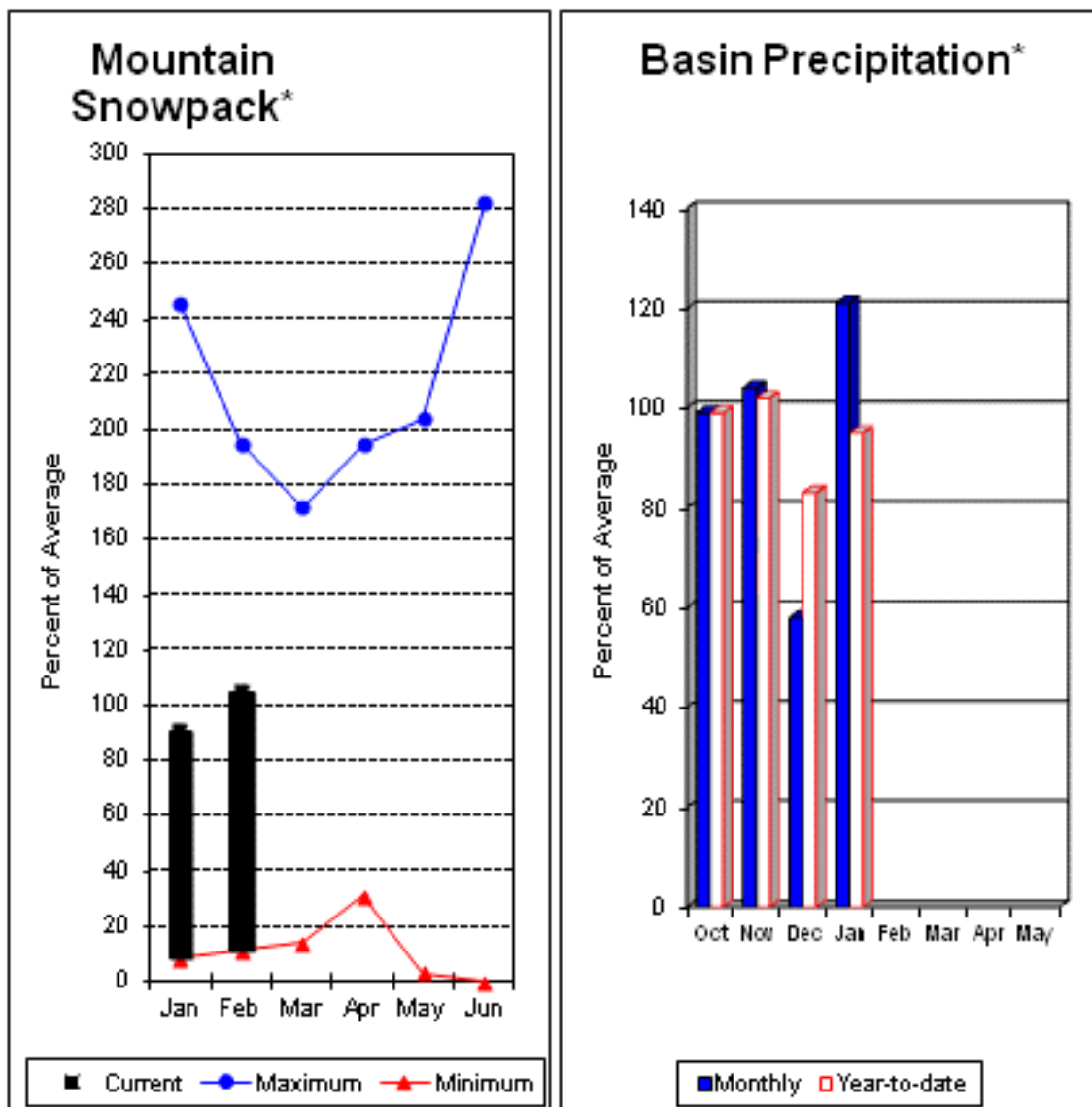
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	102.4	128.1	89.9	UPPER YAKIMA RIVER	9	150	96
KACHESS	239.0	158.6	193.4	139.4				
CLE ELUM	436.9	306.2	311.2	215.4				

* 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 Yakima River Basin



*Based on selected stations

January average streamflows within the basin were: Yakima River near Parker, 70%; Naches River near Naches, 70%; and Yakima River at Kiona, 60%. February 1 reservoir storage for Bumping and Rimrock reservoirs was 163,000-acre feet, 134% of average. Forecast averages for Yakima River near Parker are 93%; American River near Nile, 93%; Ahtanum Creek, 97%; and Klickitat River near Glenwood, 95%. February 1 snowpack was 105% based upon 8 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 102% of average. Precipitation was 121% of average for January and 95% year-to-date. Temperatures were near normal for January and for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they 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

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bumping Lake Inflow (2)	APR-JUL	98	112	121	99	130	144	122
	APR-SEP	106	121	131	99	141	156	132
American R nr Nile	APR-JUL	82	94	102	94	110	122	108
	APR-SEP	87	101	110	93	119	133	118
Rimrock Lake Inflow (2)	APR-JUL	173	188	198	97	210	225	205
	APR-SEP	199	215	230	96	245	260	240
Naches R nr Naches (2)	APR-JUL	590	665	720	100	775	850	720
	APR-SEP	630	720	780	100	840	930	780
Ahtanum Ck at Union Gap	APR-JUL	19.4	25	29	97	33	39	30
	APR-SEP	21	27	31	97	35	41	32
Yakima R nr Parker (2)	APR-JUL	1360	1550	1680	93	1810	2000	1800
	APR-SEP	1500	1710	1850	93	1990	2200	1980
Klickitat R nr Glenwood	APR-JUL	99	112	121	96	130	143	126
	APR-SEP	129	145	155	95	165	181	163
Klickitat R nr Pitt	APR-JUL	360	410	440	96	470	520	460
	APR-SEP	435	490	530	96	570	625	550

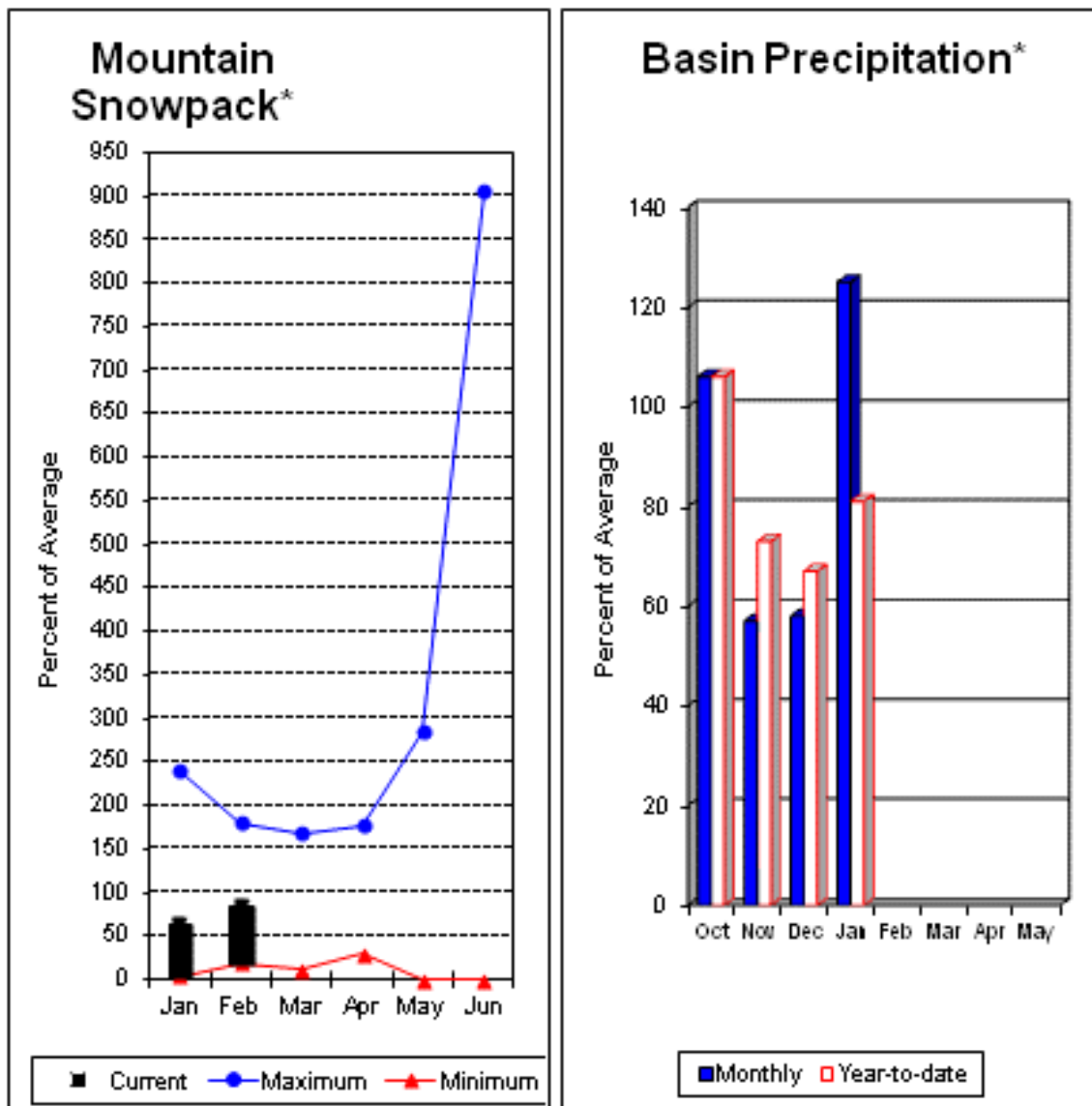
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
BUMPING LAKE	33.7	20.5	21.0	9.9	LOWER YAKIMA RIVER	7	120	105
RIMROCK	198.0	142.1	162.5	111.8	AHTANUM CREEK	3	141	102

* 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.

Walla Walla River Basin



*Based on selected stations

January precipitation was 125% of average, maintaining the year-to-date precipitation at 81% of average. Snowpack in the basin was 85% of average. Streamflow forecasts are 89% of average for Mill Creek and 88% for the SF Walla Walla near Milton-Freewater. January streamflow was 118% of average for the SF Walla Walla River. Average temperatures were 204 degrees above normal for January and 1-2 above for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - February 1, 2012

Forecast Point		Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
			Chance Of Exceeding *						
			90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SF Walla Walla R nr Milton-Freewater		MAR-SEP	58	66	72	89	78	86	81
		APR-JUL	36	43	47	87	51	58	54
		APR-SEP	47	54	59	88	64	71	67
Mill Ck nr Walla Walla		APR-JUL	14.8	18.5	21	88	24	27	24
		APR-SEP	18.4	22	25	89	28	32	28

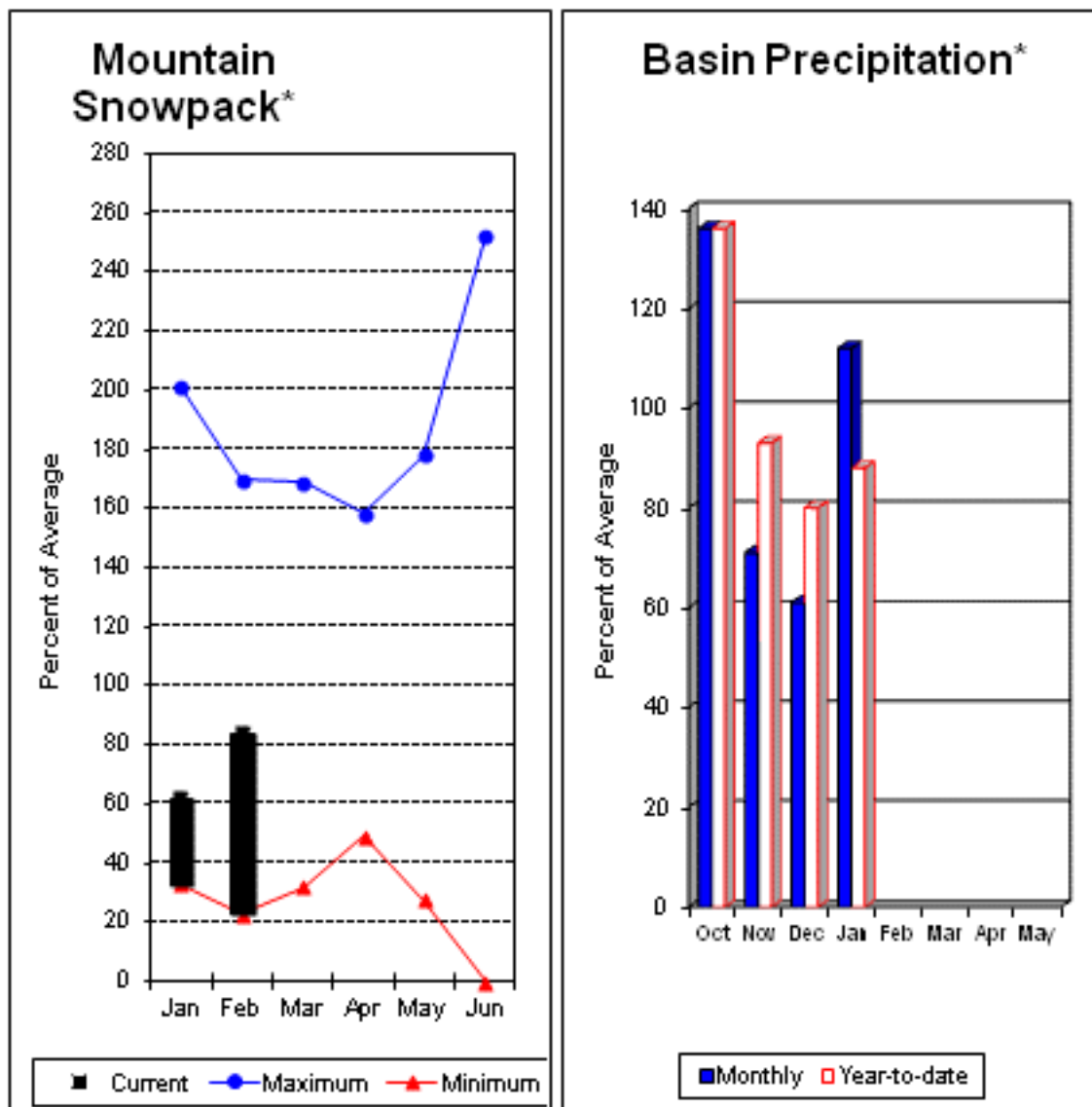
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of January					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	106	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.

Lower Snake River Basin



*Based on selected stations

The April - September forecast is for 89% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 85% and 83% of normal respectively. The forecast for Asotin Creek at Asotin predicts 97% of average flows for the April – July runoff period. January precipitation was 112% of average, bringing the year-to-date precipitation to 88% of average. February 1 snowpack readings averaged 84% of average. January streamflow was 78% of average for Snake River below Lower Granite Dam and 81% for Grande Ronde River near Troy. Dworshak Reservoir storage was 98% of average. Average temperatures were 2-4 degrees above normal for January and 1-2 degrees above for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Grande Ronde R at Troy (1)	MAR-JUL	895	1180	1310	83	1440	1730	1580
	APR-SEP	720	1000	1130	83	1260	1540	1370
Asotin Ck at Asotin	APR-JUL	18.8	28	34	97	40	49	35
Clearwater R at Spalding (1,2)	APR-JUL	5120	5700	6630	89	7560	7830	7430
	APR-SEP	5420	6070	7000	89	7930	8250	7850
Snake R bl Lower Granite Dam (1,2)	APR-JUL	14600	15400	18300	85	21200	21600	21550
	APR-SEP	16800	17300	20600	85	23900	24300	24140

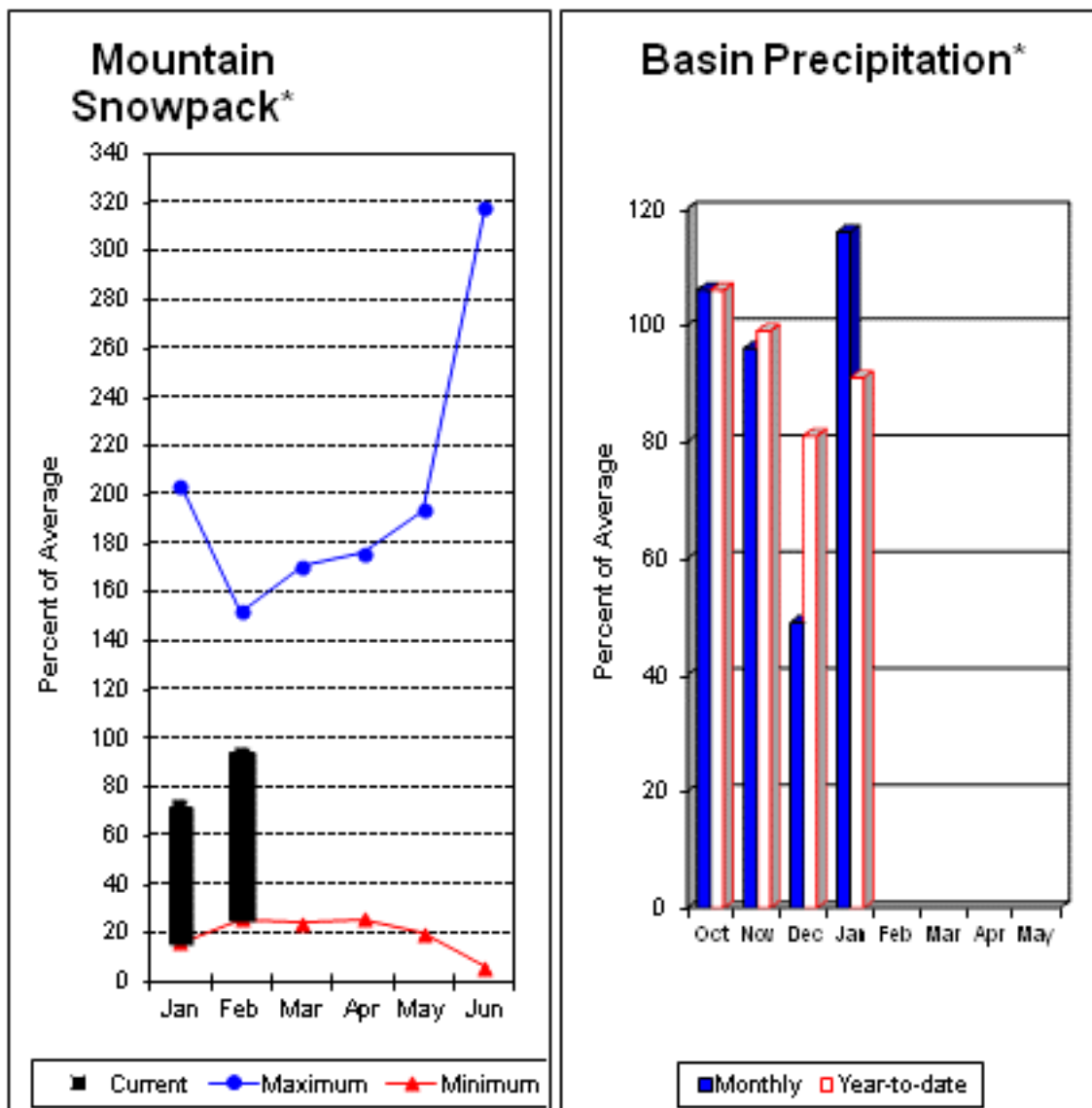
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of January					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DWORSNAK	3468.0	2288.9	2326.8	2324.3	LOWER SNAKE, GRANDE RONDE	11	98	84

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

The average is computed for the 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 River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 87% and Cowlitz River at Castle Rock, 94% of average. The Columbia at The Dalles is forecasted to have 92% of average flows this summer. January average streamflow for Cowlitz River was 107%. The Columbia River at The Dalles was 80% of average. January precipitation was 116% of average and the water-year average was 91%. June Lake SNOTEL had the highest rainfall total in the basin with 27.6 inches which is 105% of average. February 1 snow cover for Cowlitz River was 102%, and Lewis River was 87% of average. Temperatures were near normal during January and slightly below for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		90% 70%		Chance Of Exceeding *		30% 10%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Columbia R at The Dalles (2)	APR-JUL	66000	69300	75400	89	81500	87500	84600
	APR-SEP	80300	83300	90400	92	97500	102000	98600
Klickitat R nr Glenwood	APR-JUL	99	112	121	96	130	143	126
	APR-SEP	129	145	155	95	165	181	163
Klickitat R nr Pitt	APR-JUL	360	410	440	96	470	520	460
	APR-SEP	435	490	530	96	570	625	550
Lewis R at Ariel (2)	APR-JUL	605	780	895	87	1010	1180	1031
	APR-SEP	710	895	1020	87	1140	1330	1176
Cowlitz R bl Mayfield Dam (2)	APR-JUL	1210	1410	1550	92	1690	1890	1689
	APR-SEP	1380	1610	1770	92	1930	2160	1922
Cowlitz R at Castle Rock (2)	APR-JUL	1770	2000	2160	94	2320	2550	2295
	APR-SEP	2280	2400	2480	94	2560	2680	2639

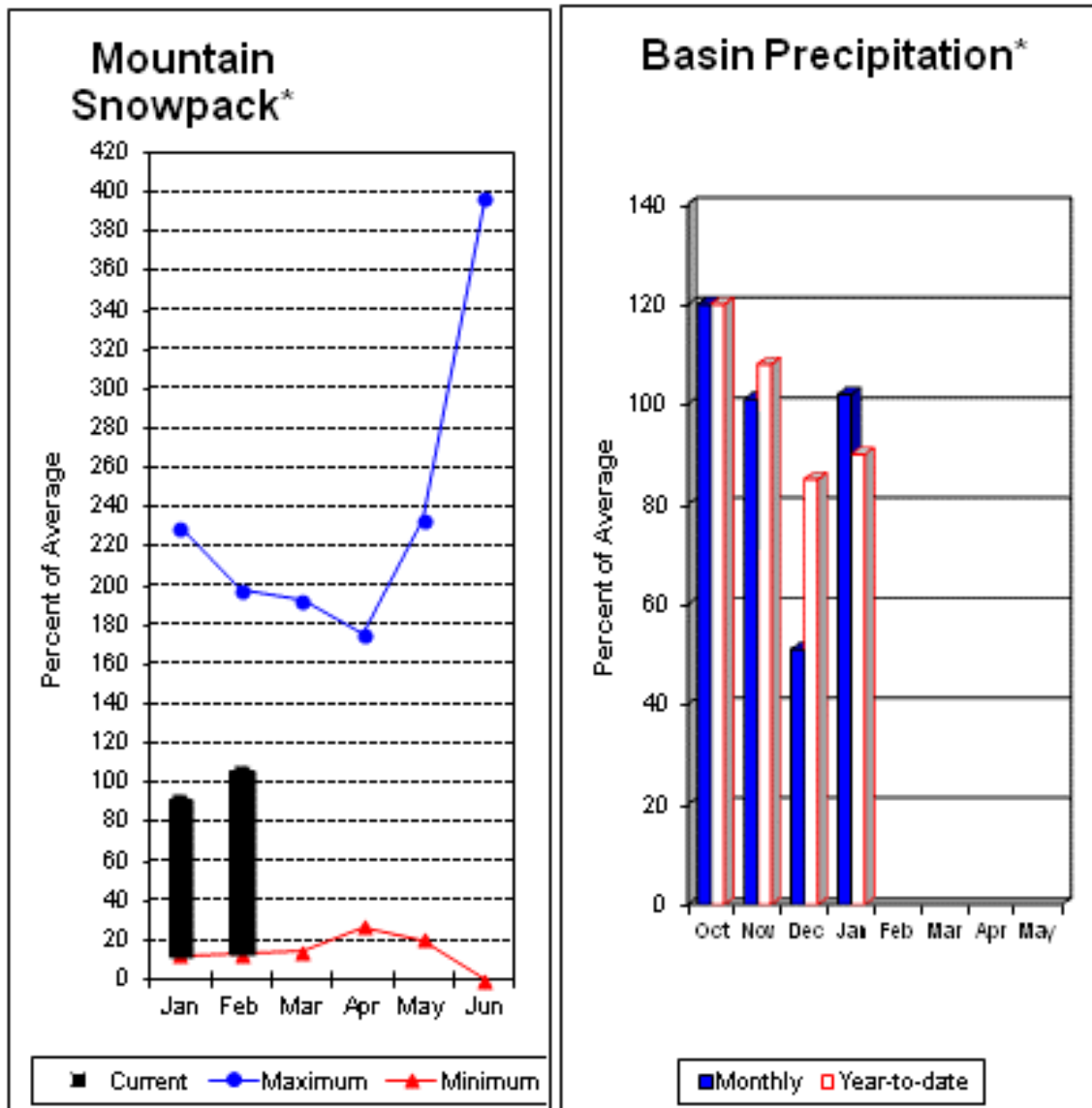
LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of January					LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
MOSSYROCK	0.0	1277.4	1386.5	---	LEWIS RIVER	5	101	87
SWIFT	0.0	661.6	738.8	---	COWLITZ RIVER	6	113	102
YALE	0.0	394.0	365.7	---				
MERWIN	0.0	412.3	394.4	---				

* 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.

South Puget Sound River Basins



*Based on selected stations

Summer runoff is forecast to be 93% of normal for the Green River below Howard Hanson Dam and 100% for the White River near Buckley. February 1 snowpack was 107% of average for the White River, 112% for Puyallup River and 97% in the Green River Basin. Water content on February 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 24 inches. This site has a February 1 average of 22.1 inches. January precipitation was 102% of average, bringing the water year-to-date to 90% of average for the basins. Average temperatures in the area were near normal for January and slightly below for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
White R nr Buckley (1)	APR-JUL	335	410	445	101	480	555	440
	APR-SEP	405	495	535	100	575	665	534
Green R bl Howard Hanson Dam (1,2)	APR-JUL	134	200	230	94	260	325	245
	APR-SEP	153	220	250	93	280	345	268

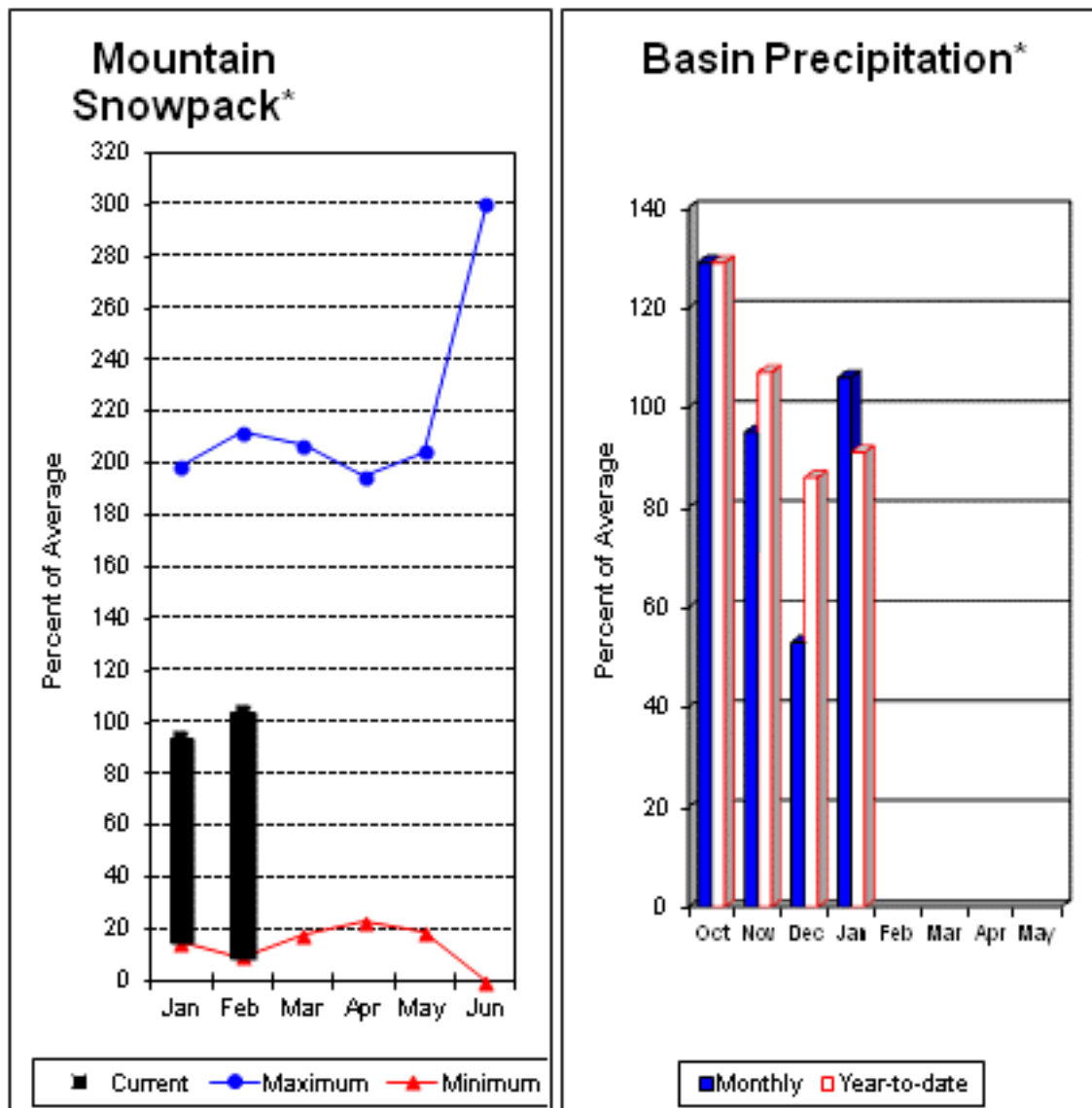
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	113	107
					GREEN RIVER	3	182	97
					PUYALLUP RIVER	5	140	112

* 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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 99% for Cedar River near Cedar Falls; 104% for Rex River; 85% for South Fork of the Tolt River; 100% for Taylor Creek near Selleck, and 95% for Cedar River at Cedar Falls. Basin-wide precipitation for January was 106% of average, bringing water-year-to-date to 91% of average. February 1 average snow cover in Cedar River Basin was 121%, Tolt River Basin was 104%, Snoqualmie River Basin was 98%, and Skykomish River Basin was 94%. Olallie Meadows SNOTEL site, at 3960 feet, had 40.2 inches of water content. Average February 1 water content is 39.2 inches at Olallie Meadows. Temperatures were near normal for January and 1 degree below for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Cedar R nr Cedar Falls	APR-JUL	54	65	72	99	79	90	73
	APR-SEP	60	71	79	99	87	98	80
Rex R nr Cedar Falls	APR-JUL	17.7	23	26	104	29	34	25
	APR-SEP	21	26	29	104	32	37	28
Cedar R At Cedar Falls	APR-JUL	39	57	70	95	83	101	74
	APR-SEP	40	57	69	95	81	98	73
Taylor Creek Near Selleck	APR-JUL	14.6	17.7	19.8	99	22	25	20
	APR-SEP	18.4	22	24	100	26	30	24
SF Tolt R nr Index	APR-JUL	8.6	10.9	12.5	85	14.1	16.4	14.7
	APR-SEP	10.2	12.7	14.4	85	16.1	18.6	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2012

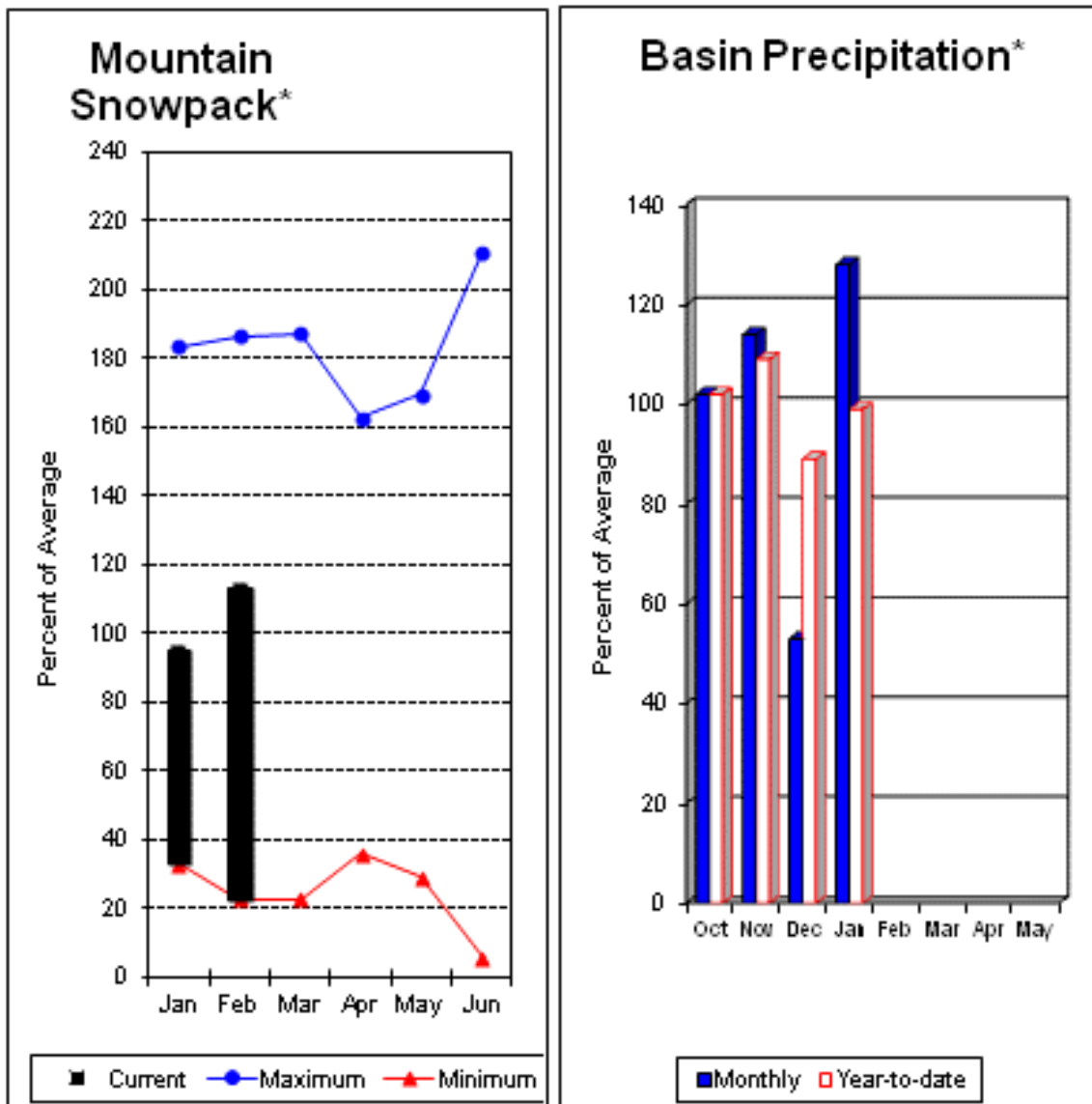
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	204	121
					TOLT RIVER	2	174	104
					SNOQUALMIE RIVER	4	169	98
					SKYKOMISH RIVER	2	149	94

* 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.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 106% of average for the spring and summer period. January streamflow in Skagit River was 103% of average. Other forecast points included Baker River at 93% and Thunder Creek at 104% of average. Basin-wide precipitation for January was 128% of average, bringing water-year-to-date to 99% of average. February 1 average snow cover in Skagit River Basin was 115%, Nooksack River Basin was 108% and Baker River Basin was 116% of average. Rainy Pass SNOTEL, at 4,780 feet, had 33.3 inches of water content. Average February 1 water content is 30.2 inches at Rainy Pass. February 1 Skagit River reservoir storage was 102% of average and 73% of capacity. Average temperatures for January were slightly below normal for the basin and for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Thunder Ck Nr Newhalem	APR-JUL	215	235	245	105	255	275	234
	APR-SEP	310	330	345	104	360	380	333
Skagit R At Newhalem	APR-JUL	1740	1880	1970	106	2060	2200	1864
	APR-SEP	2080	2240	2340	106	2440	2600	2217
Baker R nr Concrete (2)	APR-JUL	630	715	770	93	825	910	828
	APR-SEP	825	920	980	93	1040	1130	1050

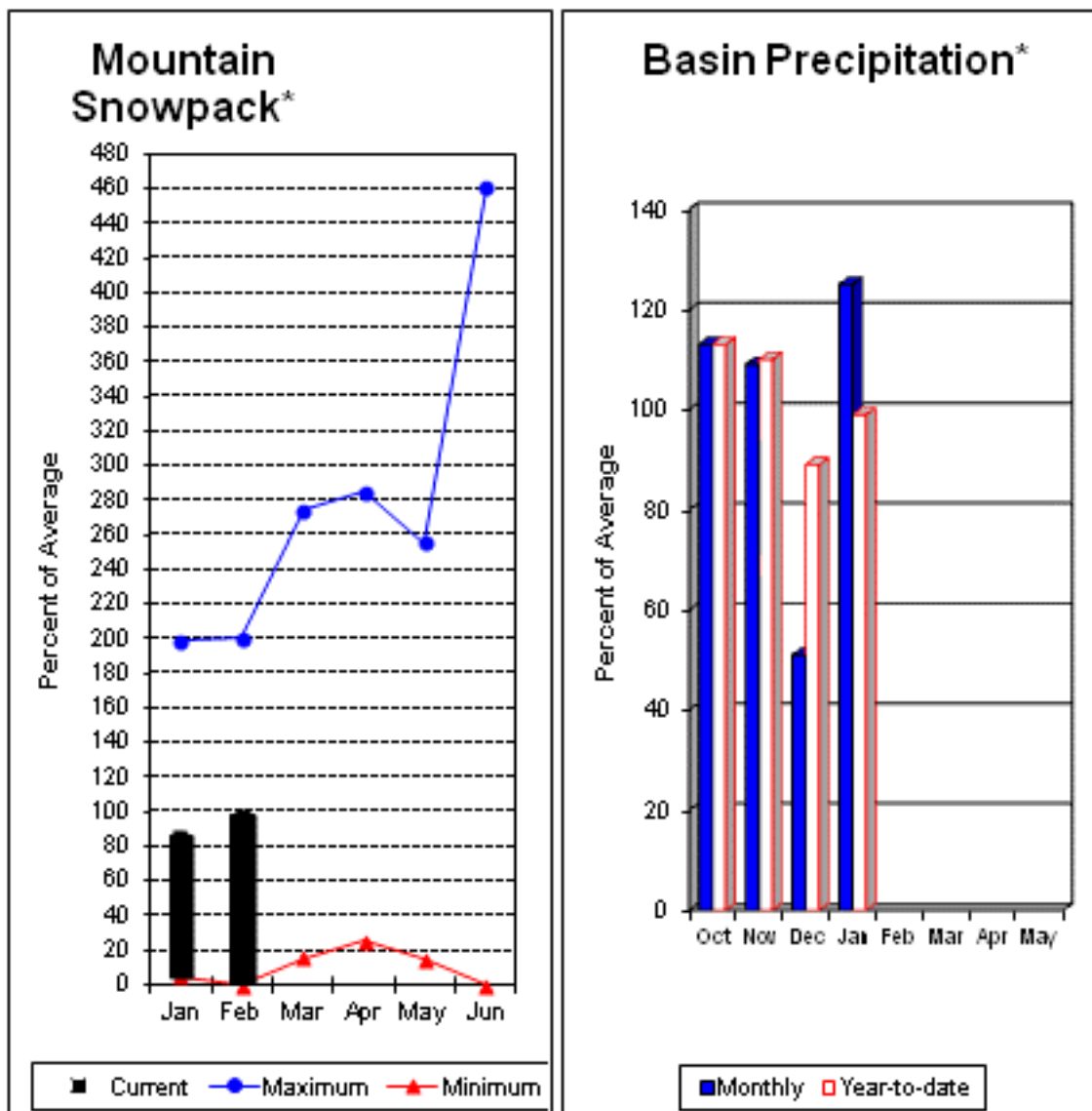
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
ROSS	1404.1	1003.9	1092.6	978.3	SKAGIT RIVER	15	132	115
DIABLO RESERVOIR	90.6	85.7	87.2	85.5	BAKER RIVER	7	132	116
					NOOKSACK RIVER	3	123	108

* 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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 92% and Elwha River is 92%. January runoff in the Dungeness River was 98% of normal. Big Quilcene and Wynoochee rivers should expect slightly below average runoff this summer as well. January precipitation was 125% of average. Precipitation has accumulated at 99% of average for the water year. January precipitation at Quillayute was 15.59 inches. The thirty-year average for January is 13.65 inches. Olympic Peninsula snowpack averaged 98% of normal on February 1. Temperatures were near average for January and for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - February 1, 2012

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====		===== Wetter =====>				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Dungeness R Nr Sequim	APR-JUL	95	107	115	93	123	135	124
	APR-SEP	114	130	140	92	150	166	152
Elwha R At Mcdonald Bridge	APR-JUL	315	355	385	92	415	455	419
	APR-SEP	380	425	460	92	495	540	503

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - February 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	6	90	98

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

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

- (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.

Issued by

Dave White
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	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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**

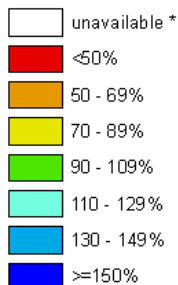


Washington Water Supply Outlook Report March 1, 2012

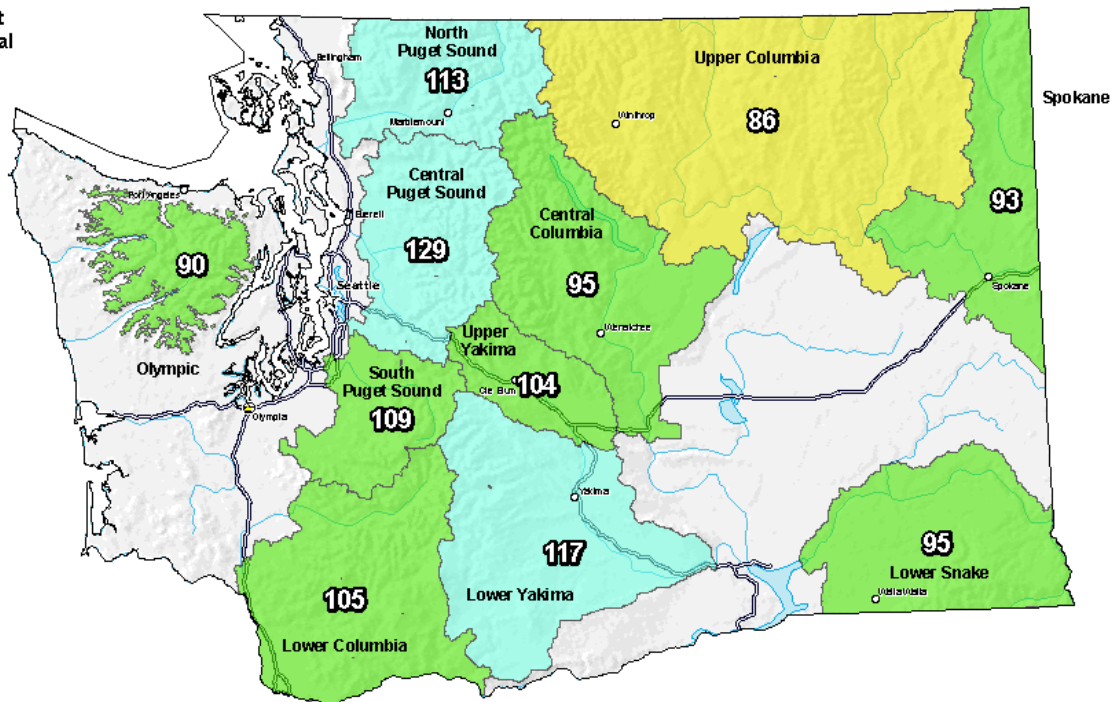
Washington SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Mar 07, 2012

Current Snow Water
Equivalent (SWE)
Basin-wide Percent
of 1971-2000 Normal



* Data unavailable at time
of posting or measurement
is not representative at this
time of year



Provisional Data
Subject to Revision



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

0 10 20 40 60 80 100 Miles

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.nrcs.usda.gov/igis/>
Based on data from <http://www.nrcs.usda.gov/reports/>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

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

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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

March 2012

General Outlook

Big snow fall at times throughout the month helped bolster what were below and near average snowpacks to near and above average in most areas of state except the Upper Columbia and Olympic Peninsula where notable decreases were experienced. Unfortunately big snow sometimes brings big tragedy and our thoughts go with those lost in the avalanches of last month. Total precipitation values and average temperatures were near normal for the month. As we get further through the season streamflow forecast confidence gets better thus we are seeing an increase in most all runoff forecasts over last month's predictions. Weather forecasters are still predicting cooler and wetter conditions for the next couple of months however confidence levels are low for any quantitative forecast more than a week out.

Snowpack

The March 1 statewide SNOTEL readings were 109% but generally the east side is a little drier overall. So far we have received about 70-90% of our annual total snowfall. Normally we would be seeing about 85% with only a month or so left in the normal accumulation season. The Sanpoil River snow survey data near Nespelem reported the lowest readings at 58% of average. Snow surveys from the Cedar River reported the highest at 149% of average. Westside averages from SNOTEL, and March 1 snow surveys, included the North Puget Sound river basins with 111% of average, the Central Puget river basins with 128%, and the Lewis-Cowlitz basins with 110% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 106% and the Wenatchee area with 90%. Snowpack in the Spokane River Basin was at 92% and the Walla Walla River Basin had 92% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	98	92
Newman Lake	89	92
Pend Oreille	85	95
Okanogan	103	93
Methow	109	97
Conconully Lake	76	61
Wenatchee	128	96
Chelan	127	101
Upper Yakima	144	103
Lower Yakima	123	108
Ahtanum Creek	139	106
Walla Walla	104	92
Lower Snake	92	89
Cowlitz	115	116
Lewis	98	100
White	114	109
Green	176	106
Puyallup	129	115
Cedar	175	149
Snoqualmie	167	118
Skykomish	155	110
Skagit	124	110
Baker	127	109
Nooksack	128	114
Olympic Peninsula	88	95

Precipitation

During the month of February, the National Weather Service and Natural Resources Conservation Service climate stations reported varied precipitation totals throughout Washington river basins. The highest percent of average in the state was at Skookum Creek SNOTEL in the Tolt River Basin which reported 179% of average for a total of 26.2 inches. The average for Skookum is 14.6 inches for February. Skookum Creek also happened to be the wettest spot in the state last month. The driest spot was at Winthrop with only 1.08 inches of total precipitation.

RIVER BASIN	FEBRUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	108	87
Pend Oreille	73	85
Upper Columbia	68	81
Central Columbia	103	96
Upper Yakima	116	96
Lower Yakima	114	99
Walla Walla	104	87
Lower Snake	102	91
Lower Columbia	107	95
South Puget Sound	109	95
Central Puget Sound	129	98
North Puget Sound	87	97
Olympic Peninsula	81	95

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. Reservoir storage in the Yakima Basin was 614,000-acre feet, 123% of average for the Upper Reaches and 175,000-acre feet or 127% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 116% of average for March 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 83,000 acre feet, 57% of average and 35% of capacity; Chelan Lake, 185,000-acre feet, 74% of average and 27% of capacity; and the Skagit River reservoirs at 94% of average and 57% 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	35	57
Pend Oreille	37	74
Upper Columbia	84	116
Central Columbia	27	74
Upper Yakima	74	123
Lower Yakima	75	127
Lower Snake	68	104
North Puget Sound	57	94

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

Streamflow

Forecasts vary from 73% of average for Kettle River near Laurier to 116% of average for Ahtanum Creek at Union Gap. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 112%; White River, 106%; and Dungeness River, 95%. Some Eastern Washington streams include the Yakima River near Parker, 104%; Wenatchee River at Plain, 96%; and Spokane River near Post Falls, 103%. 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.

Runoff for February was only one-half to three-quarters of normal in most streams, probably due to seasonably cool temperatures and just average or less precipitation. The Cowlitz River had the highest reported flows with 117% of average. The Kettle River with 22% of average was the lowest in the state however this gage could be influenced by ice. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Snake below Ice Harbor Dam, 62%; the Lewis at Ariel, 29%; the Columbia below Rock Island Dam, 58%; and the Cle Elum near Roslyn, 74%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
-------	---

Spokane	85-108
Pend Oreille	80-96
Upper Columbia	73-113
Central Columbia	88-104
Upper Yakima	96-103
Lower Yakima	98-116
Walla Walla	88-96
Lower Snake	84-106
Lower Columbia	88-106
South Puget Sound	99-106
Central Puget Sound	104-114
North Puget Sound	87-102
Olympic Peninsula	94-95

STREAM	PERCENT OF AVERAGE FEBRUARY STREAMFLOWS
--------	--

Pend Oreille Below Box Canyon	52
Kettle at Laurier	22
Columbia at Birchbank	85
Spokane at Long Lake	42
Similkameen at Nighthawk	69
Okanogan at Tonasket	50
Methow at Pateros	52
Chelan at Chelan	62
Wenatchee at Pashastin	59
Cle Elum near Roslyn	74
Yakima at Parker	77
Naches at Naches	77
Grande Ronde at Troy	51
SNAKE below Lower Granite Dam	55
SF Walla Walla near Milton Freewater	81
Columbia River at The Dalles	67
Cowlitz below Mayfield Dam	108
Skagit at Concrete	72
Dungeness near Sequim	73

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

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Storms in early and mid-February helped preserve soil moisture levels to near level conditions from last month.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	58
Pend Oreille	64
Upper Columbia	27
Central Columbia	53
Upper Yakima	62
Lower Yakima	78
Walla Walla	71
Lower Snake	71
Lower Columbia	82
South Puget Sound	81
Central Puget Sound	N/A
North Puget Sound	87
Olympic Peninsula	37

BASIN SUMMARY OF SNOW COURSE DATA

MARCH 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	GROUSE CAMP GUNSIGHT LAKE SNOW COURSE	SNOTEL ELEVATION	3/01/12 DATE	65 SNOW DEPTH	18.4 WATER CONTENT	15.0 LAST YEAR	17.6 AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	3/01/12	25	5.7	--	5.7	HAMILTON HILL CAN.	4550	2/25/12	44	12.8	8.8	12.7
AHTANUM R.S.	3100	3/01/12	12	3.8	4.2	7.0	HAND CREEK SNOTEL	5030	3/01/12	40	9.2	12.4	9.9
ALPINE MEADOWS	3500	2/28/12	103	39.0e	22.0	33.8	HARTS PASS SNOTEL	6490	3/01/12	105	39.4	42.4	39.7
ALPINE MEADOWS SNTL	3500	3/01/12	110	42.9	30.3	36.5	HARTS PASS	6500	2/27/12	112	39.0	--	36.8
AMBROSE	6480	2/24/12	41	10.6E	12.6	10.5	HELL ROARING DIVIDE	5770	2/28/12	78	21.8E	28.5	25.8
ASHLEY DIVIDE	4820	2/28/12	23	5.0E	10.1	6.2	HERRIG JUNCTION	4850	2/28/12	79	21.2E	26.9	22.2
BADGER PASS SNOTEL	6900	3/01/12	83	29.9	30.4	29.7	HIGH RIDGE SNOTEL	4920	3/01/12	73	20.5	21.8	21.2
BAIRD #2	3220	2/28/12	32	6.4	8.4	--	HOODOO BASIN SNOTEL	6050	3/01/12	118	36.2	40.5	38.6
BAREE MIDWAY	4600	2/29/12	79	21.2E	34.4	28.7	HUCKLEBERRY SNOTEL	2250	3/01/12	14	4.0	3.4	1.8
BAREE TRAIL	3800	2/29/12	33	9.9E	12.3	8.2	HUMBOLDT GLCH SNOTEL	4250	3/01/12	--	14.5	13.6	11.7
BARKER LAKES SNOTEL	8250	3/01/12	40	9.2	11.2	11.1	HURRICANE	4500	3/01/12	55	13.6	13.8	15.6
BARNES CREEK CAN.	5320	2/27/12	61	15.8	--	17.3	INDIAN ROCK SNOTEL	5360	3/01/12	76	26.8	29.0	--
BASIN CREEK SNOTEL	7180	3/01/12	21	4.4	6.4	6.1	INTERGAARD	6450	2/24/12	24	5.9E	5.9	6.2
BASSOO PEAK	5150	3/05/12	32	8.0	11.2	9.0	IRENE'S CAMP	5530	2/27/12	33	7.8	7.6	--
BEAVER CREEK TRAIL	2200	2/28/12	50	17.0	15.3	13.0	ISINTOK LAKE CAN.	5100	2/29/12	28	6.7	6.1	6.5
BEAVER PASS	3680	2/28/12	80	28.6	22.1	24.9	JASPER PASS AM	5400	3/03/12	196	66.6	--	74.0
BEAVER PASS SNOTEL	3630	3/01/12	115	41.6	33.2	33.9	JUNE LAKE SNOTEL	3440	3/01/12	108	35.5	39.3	33.9
BLACK MOUNTAIN	7750	2/29/12	42	10.7E	10.3	11.4	KELLER RIDGE	3700	2/27/12	16	3.3	3.7	--
BLACK PINE SNOTEL	7100	3/01/12	41	10.6	11.8	10.1	KELLOGG PEAK	5560	3/01/12	63	17.2	23.0	25.8
BLACKWALL PILL CAN.	6370	3/01/12	96	33.9	29.7	30.0	KISHENEH	3890	2/28/12	30	6.7E	8.8	7.3
BLEWETT PASS#2SNOTEL	4240	3/01/12	46	16.3	9.5	15.7	KIT CARSON PASTURE	4950	2/23/12	25	6.8	6.9	8.2
BLUE LAKE	5900	2/28/12	66	18.4E	19.2	21.1	KLESILKWA CAN.	3450	2/28/12	38	10.4	--	10.5
BONAUPART SOUTH	4660	2/29/12	22	4.6	4.8	--	KRAFT CREEK SNOTEL	4750	3/01/12	51	14.4	15.3	13.6
BRENDA MINE CAN.	4450	2/28/12	40	8.9	9.4	11.3	LAMB BUTTE		2/28/12	46	15.0	11.5	--
BROCKMERE CAN.	3000	2/26/12	31	7.5	7.0	7.6	LIGHTNING LAKE CAN.	3700	2/25/12	52	14.0	9.9	10.3
BROWN TOP AM	6000	2/27/12	159	55.6	50.4	53.4	LOGAN CREEK	4300	2/29/12	25	5.0E	8.1	6.2
BROWNS PASS		2/27/12	12	2.4	3.0	--	LOLO PASS SNOTEL	5240	3/01/12	86	26.1	27.2	26.8
BRUSH CREEK TIMBER	5000	2/29/12	42	13.3E	15.1	7.5	LONE PINE SNOTEL	3930	3/01/12	100	30.9	36.3	31.7
BUCKINGHORSE SNOTEL	4870	3/01/12	140	55.1	56.7	--	LOOKOUT SNOTEL	5140	3/01/12	83	24.0	26.0	27.2
BULL MOUNTAIN	6600	2/27/12	24	5.0E	5.4	5.1	LOST HORSE MTN CAN.	6300	3/01/12	30	7.4	--	8.0
BUMPING LAKE (NEW)	3400	2/29/12	51	16.2	--	16.9	LOST HORSE SNOTEL	5120	3/01/12	56	18.3	13.0	18.3
BUMPING RIDGE SNOTEL	4610	3/01/12	94	28.0	22.2	24.9	LOST LAKE SNOTEL	6110	3/01/12	136	42.2	48.7	50.7
BUNCHGRASS MDWSNOTEL	5000	3/01/12	80	21.8	20.1	24.4	LOST LAKE	4070	2/29/12	27	5.4	5.9	--
BURN MOUNTAIN PIL	4170	3/01/12	65	19.6	10.0	13.4	LOUP LOUP CAMPGROUND		2/24/12	22	5.2	6.4	--
BUTTERMILK BUTTE	5250	2/24/12	38	11.7	12.1	--	LOWER SANDS CREEK #2	3120	2/28/12	65	16.6	19.8	16.6
CALAMITY SNOTEL	2500	3/01/12	17	3.3	7.4	--	LUBRECHT FOREST NO 3	5450	2/27/12	23	5.4E	7.3	5.6
CAYUSE PASS SNOTEL	5240	3/01/12	166	52.8	51.0	--	LUBRECHT FOREST NO 4	4650	2/27/12	13	3.4E	3.5	2.7
CHAMOKANE 2	3520	2/29/12	31	8.0	5.6	--	LUBRECHT FOREST NO 6	4040	2/27/12	22	5.8E	6.2	3.2
CHESSMAN RESERVOIR	6200	2/24/12	22	4.4	4.8	3.1	LUBRECHT HYDROPLT	4200	2/28/12	21	6.2E	7.5	5.1
CHEWALAH #2	4930	2/27/12	56	15.8	14.0	--	LUBRECHT SNOTEL	4680	3/01/12	26	7.7	7.1	5.3
CHICKEN CREEK	4060	2/28/12	59	15.4E	15.8	14.4	LYMAN LAKE SNOTEL	5980	3/01/12	156	50.6	46.4	55.1
CHIWAUKUM G.S.	2500	2/27/12	35	10.0	8.0	10.8	LYNN LAKE	4000	3/01/12	74	25.2E	12.1	16.1
CITY CABIN	2390	2/27/12	39	14.8e	3.3	10.2	LYNN LAKE SNOTEL	3900	3/01/12	74	25.2	12.5	--
CLOUDY PASS AM	6500	2/28/12	108	36.7	32.3	39.4	MARIAS PASS	5250	2/28/12	53	15.0E	16.1	14.9
COLD CREEK STRIP	6020	2/27/12	28	6.7	6.1	--	MARTEN LAKE AM	3600	3/03/12	205	73.4	--	61.9
COLOCKUM PASS	5370	2/28/12	40	11.4	11.6	14.6	MARTEN RIDGE SNOTEL	3520	3/01/12	157	59.7	47.1	--
COMBINATON SNOTEL	5600	3/01/12	17	5.0	4.4	4.5	MAZAMA		2/24/12	33	9.6	7.4	--
COPPER BOTTOM SNOTEL	5200	3/01/12	28	7.7	7.1	9.9	MEADOWS CABIN	1900	2/28/12	20	5.7	2.5	5.5
COPPER MOUNTAIN	7700	3/01/12	30	7.0E	8.0	8.9	MEADOWS PASS SNOTEL	3230	3/01/12	96	36.0	19.2	19.8
CORRAL PASS SNOTEL	5800	3/01/12	93	32.0	26.0	29.5	METEOR		2/23/12	14	3.5	3.1	--
COTTONWOOD CREEK	6400	2/29/12	27	5.5E	5.2	6.0	M F NOOKSACK SNOTEL	4970	3/01/12	149	61.2	47.0	52.8
COUGAR MTN. SNOTEL	3200	3/01/12	51	17.3	9.7	17.1	MICA CREEK SNOTEL	4510	3/01/12	77	20.4	19.5	23.2
COX VALLEY	4500	2/24/12	83	29.1	30.0	31.7	MINERAL CREEK	4000	2/28/12	60	14.6	16.6	15.8
COYTE HILL	4200	2/29/12	39	10.0E	11.3	9.1	MISSEZULA MTN CAN.	5080	3/01/12	32	8.3	7.9	8.4
DALY CREEK SNOTEL	5780	3/01/12	39	9.9	9.9	9.4	MISSION CREEK CAN.	5840	3/01/12	57	15.6	13.0	17.1
DEER PARK	5200	2/25/12	57	18.7	14.4	15.1	MISSION RIDGE	5000	2/27/12	44	12.0	11.5	15.2
DEVILS PARK	5900	2/27/12	130	43.9	38.1	37.9	MONASHEE PASS CAN.	4500	2/27/12	44	11.1	--	11.8
DISAUTEL PASS		2/24/12	13	3.1	3.2	--	MORSE LAKE SNOTEL	5410	3/01/12	136	49.5	41.0	47.0
DISCOVERY BASIN	7050	2/28/12	34	8.3E	10.2	8.4	MOSES MOUNTAIN (2)	4800	2/29/12	35	9.1	8.0	17.5
DIX HILL	6400	2/26/12	43	11.6E	10.8	10.0	MOSES MTN SNOTEL	5010	3/01/12	37	9.4	10.1	13.4
DOCK BUTTE AM	3800	3/03/12	152	54.7	--	52.6	MOSES PEAK	6650	2/29/12	53	14.8	16.1	11.7
DOMMERIE FLATS	2200	2/27/12	21	8.4	5.3	7.2	MOSQUITO RDG SNOTEL	5200	3/01/12	104	32.3	33.1	31.1
DUNCAN RIDGE	5370	2/27/12	21	4.3	4.9	--	MOULTON RESERVOIR	6850	2/29/12	23	5.9E	9.8	6.2
DUNGENSEN SNOTEL	4010	3/01/12	35	7.6	10.1	8.9	MOUNT BLUM AM	5800	3/03/12	150	51.0	--	54.1
EAST FORK R.S.	5400	2/29/12	26	5.6E	5.0	5.6	MOUNT CRAG SNOTEL	3960	3/01/12	90	18.0	34.1	26.8
EASY PASS AM	5200	3/03/12	144	78.0	--	65.1	MT. KOBAYASHI CAN.	5500	2/27/12	28	6.5	8.5	10.2
EL DORADO MINE	7800	2/24/12	38	10.2E	11.4	15.8	MOUNT TOLMAN	2000	2/24/12	6	1.9	2.1	3.3
ELBOW LAKE SNOTEL	3200	3/01/12	113	38.7	25.0	32.5	MOWICH SNOTEL	3160	3/01/12	14	2.0	2.4	1.5
EMERY CREEK SNOTEL	4350	3/01/12	47	10.9	16.7	13.3	MOUNT GARDNER	3300	2/27/12	46	17.5e	7.8	13.0
ESPERON CK. UP CAN.	5050	2/27/12	48	11.2	10.9	14.6	MOUNT GARDNER SNOTEL	2920	3/01/12	53	17.6	11.9	14.1
FARRON CAN.	4000	2/27/12	37	7.8	9.8	11.3	MUTTON CREEK #1	5700	2/23/12	38	6.4	10.2	12.0
FATTY CREEK	5500	2/28/12	70	19.0E	24.9	20.4	N.F. ELK CR SNOTEL	6250	3/01/12	43	11.1	13.6	10.2
FISH CREEK	8000	2/29/12	26	7.0E	9.2	7.8	NEVADA RIDGE SNOTEL	7020	3/01/12	57	16.0	14.9	13.2
FISH LAKE	3370	2/28/12	100	33.0	23.4	29.9	NEW HOZOMEEN LAKE	2800	2/29/12	24	7.2E	2.2	10.3
FISH LAKE SNOTEL	3430	3/01/12	103	31.4	21.6	30.6	NEZ PERCE CMP SNOTEL	5650	3/01/12	47	12.1	12.1	12.7
FLATTOP MTN SNOTEL	6300	3/01/12	134	37.0	42.5	39.2	NEZ PERCE PASS	6570	2/23/12	65	15.2	15.4	15.7
FLEEGER RIDGE	7500	2/27/12	36	8.0E	9.4	9.2	NOISY BASIN SNOTEL	6040	3/01/12	110	30.2	53.0	33.8
FOURTH OF JULY SUM	3200	3/01/12	42	10.8	6.8	8.2	NORTH FORK JOCKO	6330	2/28/12	114	33.8E	47.5	36.5
FREEZEOUT CK. TRAIL	3500	2/29/12	55	16.1	9.1	11.3	OLLALLIE MDWS SNOTEL	4030	3/01/12	140	55.2	36.3	48.9
FROHNER MDWS SNOTEL	6480	3/01/12	34	8.6	7.1	6.3	OPHIR PARK	7150	2/26/12	50	13.7	15.0	14.1
GOAT CREEK	3600	2/24/12	23	5.3	4.9	6.1	OYAMA LAKE CAN.	4100	2/29/12	27	4.6	3.5	6.2
GOLD MTN LOOKOUT		2/28/12	37	9.5	8.8	--	PARADISE SNOTEL	5130	3/01/12	164	64.5	56.6	59.7
GRAVE CRK SNOTEL	4300	3/01/12	67	15.0	16.8	14.5	PARK CK RIDGE SNOTEL	4600	3/01/12	139	45.5	32.3	44.1
GREEN LAKE SNOTEL	5920	3/01/12	88	25.7	17.3	19.7							
GRIFFIN CR DIVIDE	5150	3/05/12	29	7.3	15.0	9.5							

PEPPER CREEK SNOTEL	2140	3/01/12	33	7.5	9.8	--
PETERSON MDW SNOTEL	7200	3/01/12	33	7.2	7.7	7.8
PETTIJOHN CREEK	4300	2/29/12	27	5.3	6.1	--
PIGTAIL PEAK SNOTEL	5800	3/01/12	168	58.6	41.7	44.6
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
PIKE CREEK SNOTEL	5930	3/01/12	43	11.3	14.9	22.8
PIPESTONE PASS	7200	3/01/12	15	2.9E	4.0	4.1
POPE RIDGE SNOTEL	3590	3/01/12	56	17.1	12.5	18.5
POSTILL LAKE CAN.	4200	2/28/12	32	7.3	6.7	7.3
POTATO HILL SNOTEL	4510	3/01/12	102	28.1	25.7	23.6
QUARTZ PEAK SNOTEL	4700	3/01/12	75	21.0	19.9	19.5
RAGGED MTN SNOTEL	4210	3/01/12	75	22.4	19.6	--
RAGGED RIDGE	3330	2/23/12	16	4.2	4.8	7.8
RAINY PASS SNOTEL	4890	3/01/12	112	38.7	29.5	38.2
RAINY PASS	4780	2/29/12	108	38.2	27.1	33.8
REX RIVER SNOTEL	3810	3/01/12	108	42.1	27.3	23.9
ROCKER PEAK SNOTEL	8000	3/01/12	48	11.8	12.7	11.2
ROCKY CREEK AM	2100	3/03/12	90	34.2	--	26.5
ROLAND SUMMIT	5120	2/28/12	96	31.4	29.2	29.2
ROUND TOP MTN	4020	2/23/12	38	10.2	12.2	--
RUSTY CREEK	4000	2/23/12	15	3.7	4.1	6.2
SADDLE MTN SNOTEL	7900	3/01/12	78	21.0	23.5	21.8
SALMON MDWS SNOTEL	4460	3/01/12	30	7.2	8.4	10.1
SASSE RIDGE SNOTEL	4340	3/01/12	105	33.5	20.2	30.3
SATUS PASS	4030	2/27/12	25	8.0	8.7	9.6
SAVAGE PASS SNOTEL	6170	3/01/12	76	23.9	25.7	22.5
SAWMILL RIDGE SNOTEL	4640	3/01/12	124	44.1	--	--
SCHREIBERS MDW AM	3400	3/03/12	138	52.4	--	43.5
SENTINEL BT SNOTEL	4680	3/01/12	36	6.5	7.9	8.4
SHEEP CANYON SNOTEL	3990	3/01/12	103	32.3	35.0	31.6
SHERWIN SNOTEL	3200	3/01/12	--	11.3	12.9	10.8
SILVER STAR MTN CAN.	5600	3/01/12	72	23.2	24.2	25.0
SKALKAHO SNOTEL	7260	3/01/12	72	20.0	21.7	20.2
SKITWISH RIDGE	5110	2/28/12	89	27.8	27.2	27.2
SKOOKUM CREEK SNOTEL	3310	3/01/12	100	38.1	15.0	18.9
SKOOKUM LAKES	4230	2/28/12	49	12.8	12.7	--
SLIDE ROCK MOUNTAIN	7100	2/24/12	48	14.2E	13.2	12.6
SOURDOUGH GUL SNOTEL	4000	3/01/12	3	.8	5.4	--
SOUTH BALDY	4920	2/28/12	66	16.6	20.0	--
SPENCER MDW SNOTEL	3400	3/01/12	78	24.4	23.7	28.6
SPIRIT LAKE SNOTEL	3520	3/01/12	23	7.6	8.1	6.2
SPOTTED BEAR MTN.	7000	2/28/12	44	12.2E	15.8	12.7
SPRUCE SPGS SNOTEL	5700	3/01/12	48	13.4	11.2	15.9
STARVATION MOUNTAIN	6750	2/24/12	48	15.5	15.2	16.6
STAHL PEAK SNOTEL	6030	3/01/12	105	27.6	37.2	29.9

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
STAMPEDE PASS SNOTEL	3850	3/01/12	105	34.8	22.1	39.8
STEMPLE PASS	6600	2/27/12	41	10.3E	10.0	8.3
STEVENS PASS SNOTEL	3950	3/01/12	128	38.1	24.9	38.3
STORM LAKE	7780	2/28/12	40	10.3E	11.2	10.2
STRYKER BASIN	6180	2/28/12	89	25.4E	33.6	26.9
STUART MOUNTAIN	7400	2/28/12	84	28.8E	39.0	--
SUMMERLAND RES CAN.	4200	2/29/12	37	9.2	8.5	8.4
SUMMIT G.S. #2	4600	2/24/12	35	6.7	7.8	8.1
SUNSET SNOTEL	5540	3/01/12	--	19.5	24.1	26.0
SURPRISE LKS SNOTEL	4290	3/01/12	122	41.4	39.2	40.1
SWAMP CREEK SNOTEL	3930	3/01/12	82	23.8	16.9	17.2
SWIFT CREEK SNOTEL	4440	3/01/12	134	47.9	51.8	47.1
TEN MILE LOWER	6600	2/23/12	35	7.8	7.5	5.9
TEN MILE MIDDLE	6800	2/23/12	40	9.1	7.9	8.9
THUNDER BASIN SNOTEL	4320	3/01/12	96	29.2	24.2	29.7
THOMPSON CREEK	2500	2/23/12	10	2.6	6.0	--
THOMPSON RIDGE	4650	2/27/12	41	11.2	10.5	--
TINKHAM CREEK SNOTEL	2990	3/01/12	96	32.4	22.3	26.7
TOATS COULEE	2850	2/27/12	10	2.0	2.9	3.4
TOGO	3370	2/29/12	30	7.8	6.6	8.6
TOUCHET SNOTEL	5530	3/01/12	81	25.0	21.8	28.5
TRINKUS LAKE	6100	2/28/12	109	34.0E	41.8	36.4
TROUGH #2 SNOTEL	5480	3/01/12	35	9.1	9.1	9.3
TROUT CREEK CAN.	5650	2/29/12	37	9.0	7.5	6.7
TRUMAN CREEK	4060	2/27/12	19	5.2E	7.3	4.4
TUNNEL AVENUE	2450	2/29/12	54	18.1	15.6	18.6
TV MOUNTAIN	6800	2/28/12	50	14.4E	20.2	15.0
TWELVEMILE SNOTEL	5600	3/01/12	60	18.9	14.6	16.0
TWIN CREEKS	3580	2/28/12	37	10.0E	9.9	10.2
TWIN LAKES SNOTEL	6400	3/01/12	109	36.5	36.2	34.7
TWIN SPIRIT DIVIDE	3480	2/26/12	30	7.8	5.8	13.1
UPPER HOLLAND LAKE	6200	2/28/12	81	22.6E	34.3	30.0
UPPER WHEELER SNOTEL	4330	3/01/12	33	8.2	8.8	11.7
VULCAN MTN	4660	2/24/12	37	8.1	8.3	--
VULCAN ROAD	3840	2/24/12	31	6.4	6.2	--
WARM SPRINGS SNOTEL	7800	3/01/12	69	17.7	19.7	17.0
WATERHOLE SNOTEL	5010	3/01/12	100	35.3	37.1	30.0
WEASEL DIVIDE	5450	2/28/12	94	27.9E	35.0	28.7
WELLS CREEK SNOTEL	4030	3/01/12	115	29.2	28.8	28.4
WHITE PASS ES SNOTEL	4440	3/01/12	72	26.0	17.2	21.8
WHITE ROCKS MTN CAN.	7200	2/27/12	61	16.8	17.2	19.6



Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

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

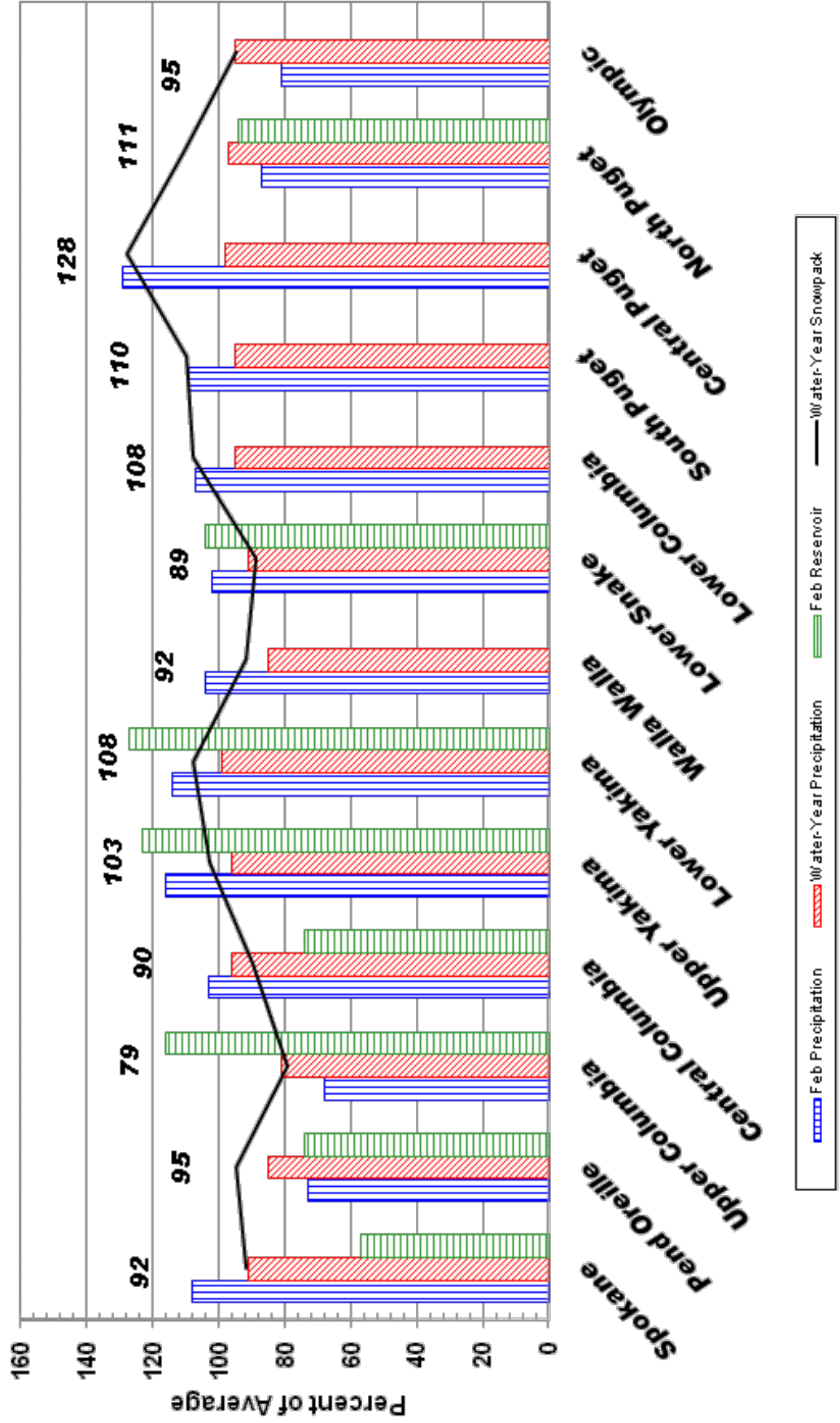
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

NRCS National:
<http://www.nrcs.usda.gov>

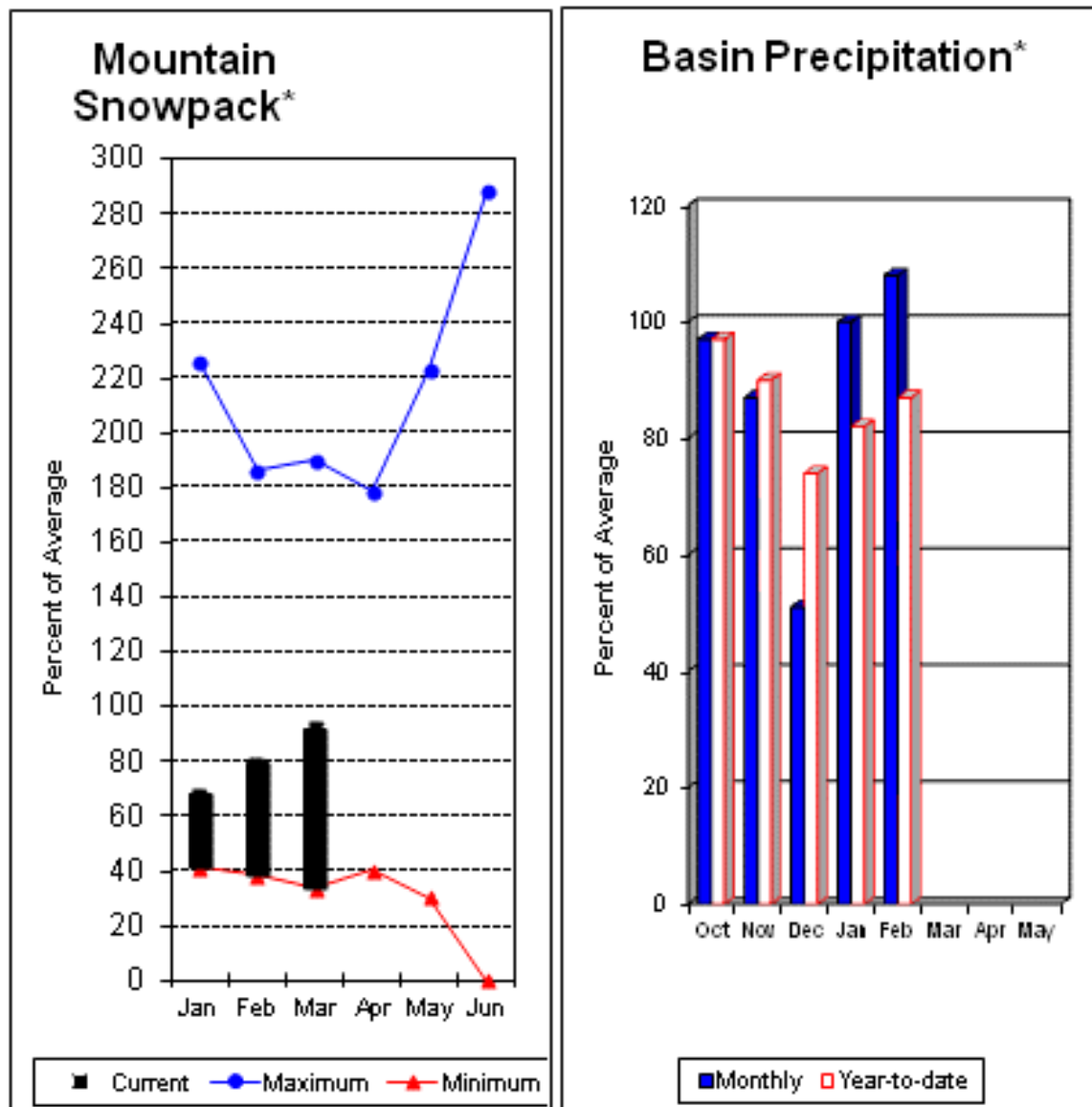
March 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2011 - Current Date)



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Spokane River Basin



*Based on selected stations

The March 1 forecasts for summer runoff within the Spokane River Basin are 103% of average near Post Falls and 108% at Long Lake. The Chamokane River near Long Lake forecasted to have 85% of average flows for the May-August period. The forecast is based on a basin snowpack that is 92% of average and precipitation that is 87% of average for the water year. Precipitation for February was 108% of normal. Streamflow on the Spokane River at Long Lake was 42% of average for February. March 1 storage in Coeur d'Alene Lake was 83,000 acre feet, 57% of average and 35% of capacity. Snowpack at Quartz Peak SNOTEL site was 108% of average with 21 inches of water content. Average temperatures in the Spokane basin were 1 degree below normal for February and slightly above normal for the water year.

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

Spokane River Basin

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spokane R nr Post Falls (2)	APR-JUL	1920	2340	2620	103	2900	3320	2550
	APR-SEP	2010	2430	2720	103	3010	3430	2650
Spokane R at Long Lake (2)	APR-JUL	2320	2770	3080	108	3390	3840	2850
	APR-SEP	2540	3010	3320	108	3630	4100	3070
Chamokane Ck nr Long Lake	MAY-AUG	3.5	6.6	8.7	85	10.8	13.9	10.2

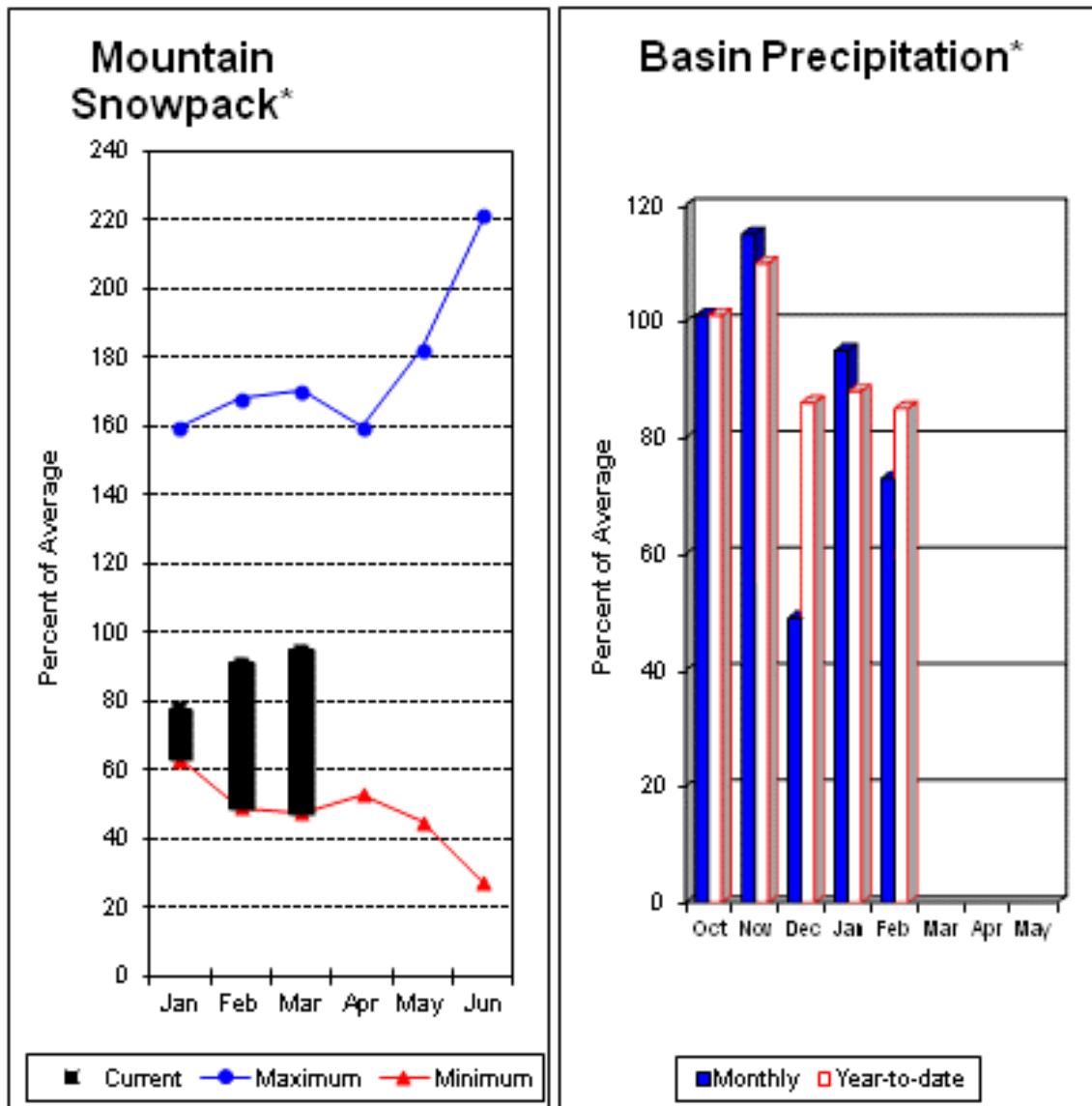
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of February					SPOKANE RIVER BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Coeur d'Alene	238.5	82.5	87.1	144.9	SPOKANE RIVER	16	98	92
					NEWMAN LAKE	2	89	92

* 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.

Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Priest River near the town of Priest River is 80% and the Pen Orielle below Box Canyon is 96%. February streamflow was 52% of average on the Pend Oreille River and 85% on the Columbia Birchbank. March 1 snow cover was 95% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 21.8 inches of snow water on the snow pillow. Normally Bunchgrass would have 24.4 inches on March 1. Precipitation during February was 73% of average, bringing the year-to-date precipitation to 85% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 74% of normal. Average temperatures were 1 degree below normal for February and near normal for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Pend Oreille Lake Inflow (2)	APR-JUL	10000	11300	12100	95	12900	14200	12700
	APR-SEP	11100	12400	13300	96	14200	15500	13900
Priest R nr Priest River (1,2)	APR-JUL	505	590	650	80	710	795	815
	APR-SEP	540	630	695	80	760	850	870
Pend Oreille R bl Box Canyon (2)	APR-JUL	10200	11500	12300	95	13100	14400	12900
	APR-SEP	11200	12600	13500	96	14400	15800	14100

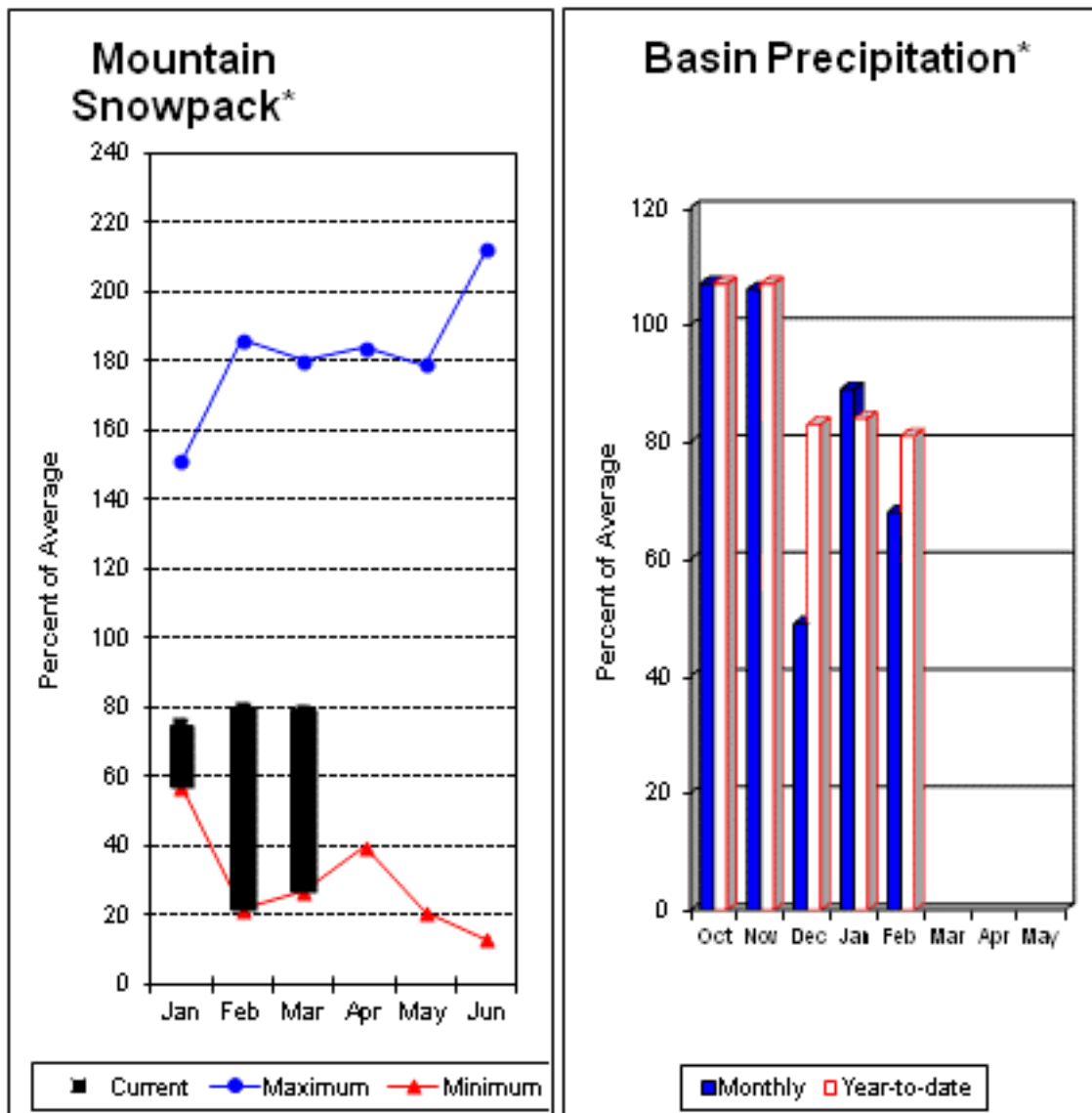
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of February					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
Pend Oreille	1561.3	562.1	835.9	778.8	COLVILLE RIVER	0	99	0
Priest Lake	119.3	56.0	48.9	56.8	PEND OREILLE RIVER	11	94	95
					KETTLE RIVER	6	91	84

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

The average is computed for the 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.

Upper Columbia River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 113%, Similkameen River is 110%, Kettle River 73% and Methow River is 89%. March 1 snow cover on the Okanogan was 93% of average, Omak Creek was 78% and the Methow was 97%. February precipitation in the Upper Columbia was 68% of average, with precipitation for the water year at 81% of average. February streamflow for the Methow River was 52% of average, 50% for the Okanogan River and 69% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 7.2 inches. Average for this site is 10.1 inches on March 1. Combined storage in the Conconully Reservoirs was 20,000-acre feet, which is 84% of capacity and 116% of the March 1 average. Temperatures were slightly below normal for February and near average for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Colville R at Kettle Falls	APR-JUL	35	72	97	76	122	159	128
	APR-SEP	39	79	107	76	135	175	141
Kettle R nr Laurier	APR-JUL	1010	1220	1370	73	1520	1730	1870
	APR-SEP	1040	1280	1440	73	1600	1840	1970
Columbia R at Birchbank (1,2)	APR-JUL	30000	33400	35000	100	36600	40000	34900
	APR-SEP	38900	43200	45200	104	47200	51500	43500
Columbia R at Grand Coulee (2)	APR-JUL	43900	49800	52500	98	55200	61100	53800
	APR-SEP	53900	61000	64200	100	67400	74400	64000
Similkameen R nr Nighthawk (1)	APR-JUL	1140	1370	1480	110	1590	1820	1350
	APR-SEP	1240	1480	1590	110	1700	1940	1450
Okanogan R nr Tonasket (1)	APR-JUL	1310	1640	1790	113	1940	2270	1580
	APR-SEP	1470	1840	2000	113	2160	2530	1770
Okanogan R at Malott (1)	APR-JUL	1360	1700	1850	114	2000	2340	1630
	APR-SEP	1510	1890	2060	113	2230	2610	1830
Methow R nr Pateros	APR-SEP	715	810	875	89	940	1040	985
	APR-JUL	660	755	815	90	875	970	910

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of February					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
SALMON LAKE	10.5	8.3	8.6	8.4	OKANOGAN RIVER	19	103	93
CONCONULLY RESERVOIR	13.0	11.5	12.6	8.7	OMAK CREEK	3	96	78
					SANPOIL RIVER	1	109	58
					SIMILKAMEEN RIVER	5	117	105
					TOATS COULEE CREEK	1	97	59
					CONCONULLY LAKE	3	76	61
					METHOW RIVER	8	109	97

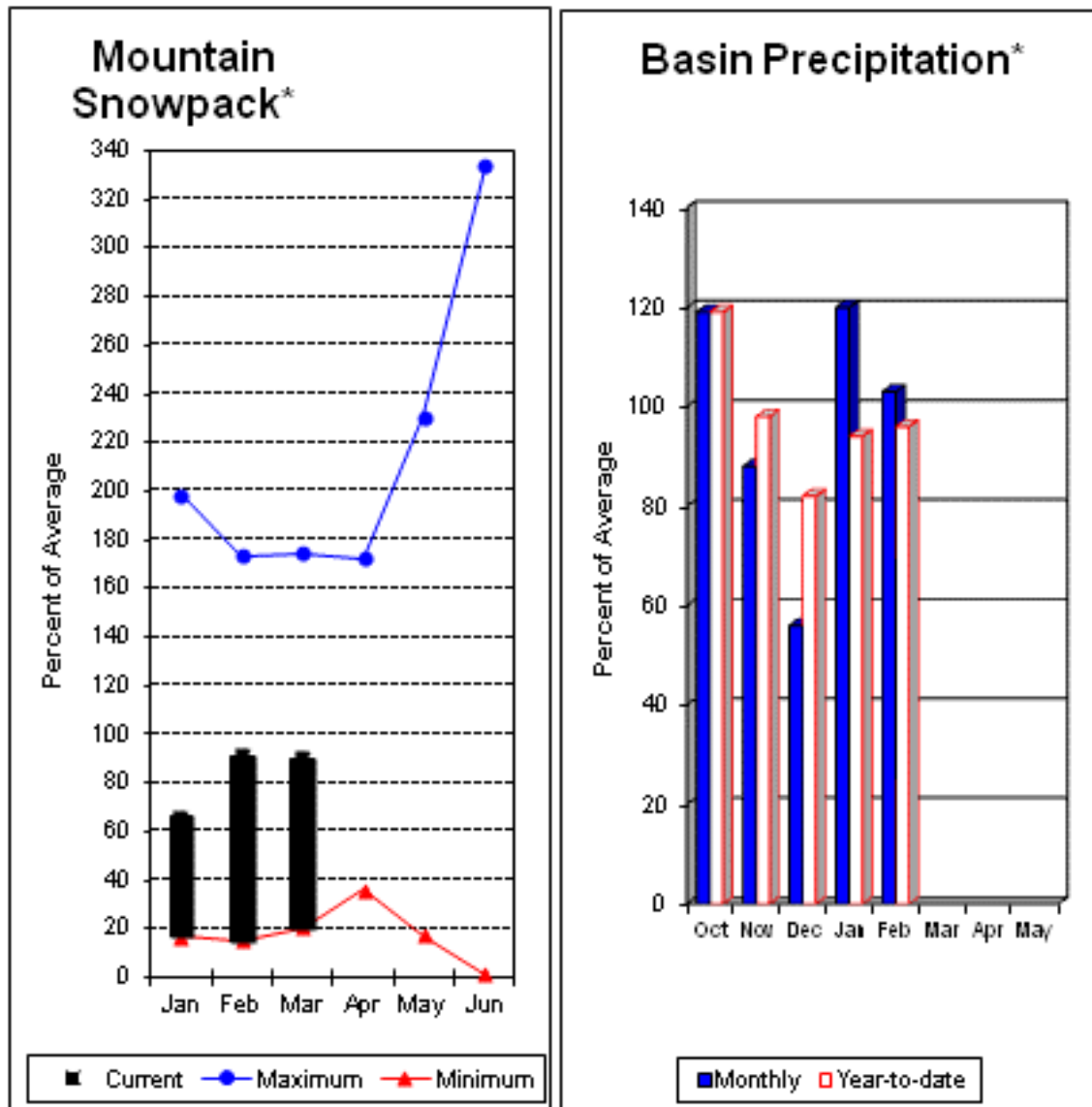
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

Central Columbia River Basins



*Based on selected stations

Precipitation during February was 103% of average in the basin and 96% for the year-to-date. Runoff for Entiat River is forecast to be 88% of average for the summer. The March-September average forecast for Chelan River is 97%, Wenatchee River at Plain is 96%, Stehekin River is 104% and Icicle Creek is 90%. February average streamflows on the Chelan River were 62% and on the Wenatchee River 59%. March 1 snowpack in the Wenatchee River Basin was 96% of average; the Chelan, 101%; the Entiat, 92%; Stemilt Creek, 75% and Colockum Creek, 86%. Reservoir storage in Lake Chelan was 185,000-acre feet, 74% of March 1 average and 27% of capacity. Lyman Lake SNOTEL had the most snow water with 50.63 inches of water. This site would normally have 55.1 inches on March 1. Temperatures were slightly below normal for February and near normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *					30-Yr Avg.	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	(1000AF)
Stehekin R at Stehekin	APR-JUL	610	680	730	104	780	850	700
	APR-SEP	735	810	860	104	910	985	830
Chelan R at Chelan (2)	APR-JUL	870	955	1010	96	1070	1150	1050
	APR-SEP	995	1090	1150	97	1210	1310	1190
Entiat R nr Ardenvoir	APR-JUL	158	178	191	89	205	225	215
	APR-SEP	177	196	210	88	225	245	240
Wenatchee R at Plain	APR-JUL	875	970	1030	96	1090	1180	1070
	APR-SEP	970	1060	1130	96	1200	1290	1180
Icicle Ck nr Leavenworth	APR-JUL	240	265	280	90	295	320	310
	APR-SEP	260	285	305	90	325	350	340
Wenatchee R at Peshastin	APR-JUL	1210	1340	1420	96	1500	1630	1480
	APR-SEP	1330	1460	1550	95	1640	1770	1630
Columbia R bl Rock Island Dam (2)	APR-JUL	49700	54400	57500	98	60600	65300	59000
	APR-SEP	60900	66300	70000	101	73700	79200	69500

CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of February

CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - March 1, 2012

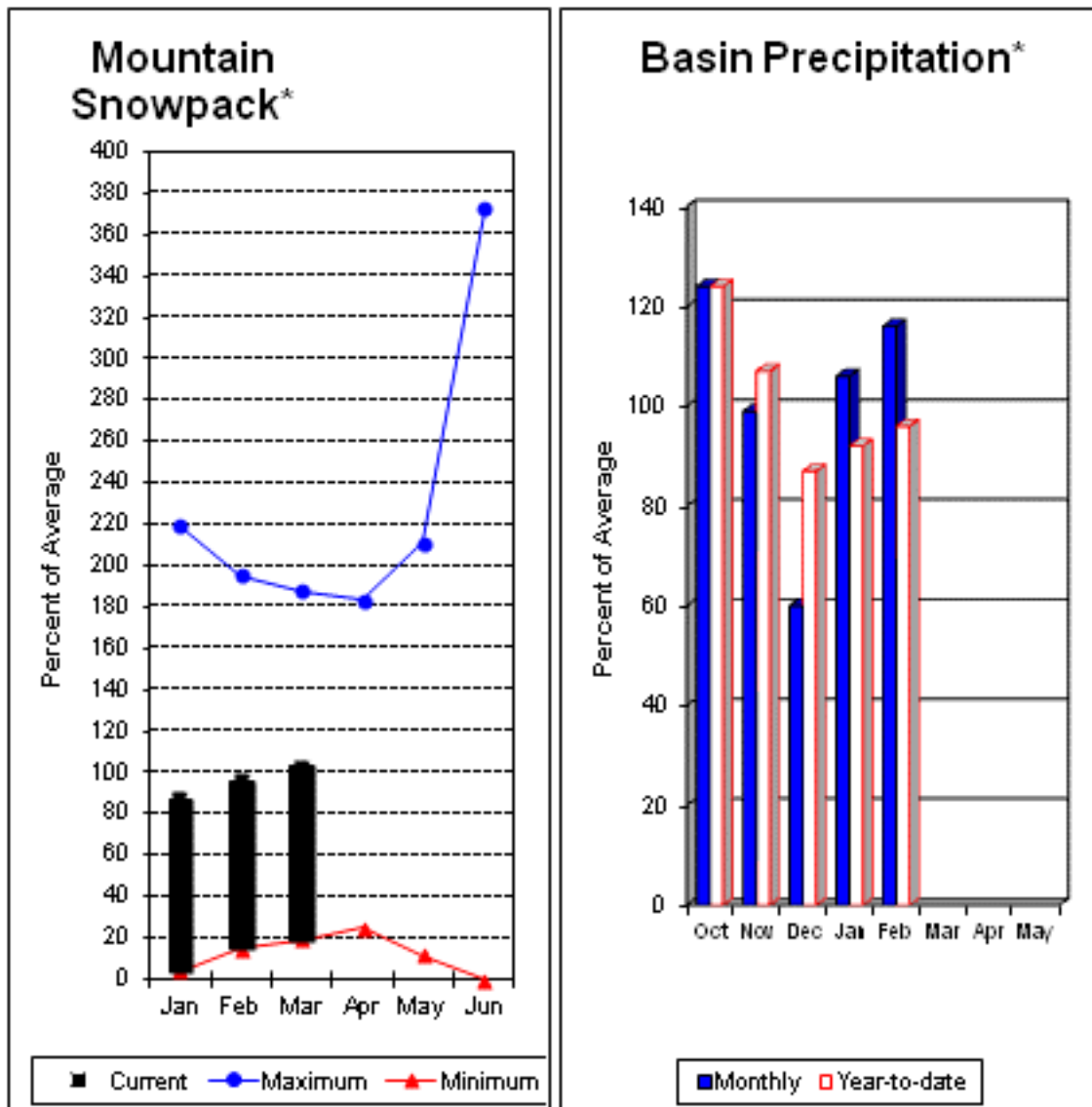
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	185.0	236.8	250.1	CHELAN LAKE BASIN	6	127	101
					ENTIAT RIVER	1	137	92
					WENATCHEE RIVER	9	128	96
					STEMILT CREEK	2	100	75
					COLOCKUM CREEK	2	99	86

* 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.

Upper Yakima River Basin



*Based on selected stations

March 1 reservoir storage for the Upper Yakima reservoirs was 614,000-acre feet, 123% of average. Forecasts for the Yakima River at Cle Elum are 96% of average and the Teanaway River near Cle Elum is at 103%. Lake inflows are all forecasted to be near normal this summer. February streamflows within the basin were Cle Elum River near Roslyn at 74%. March 1 snowpack was 103% based upon 10 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 116% of average for February and 96% year-to-date for water. 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

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Keechelus Reservoir Inflow (2)	APR-JUL	95	112	124	103	136	153	121
	APR-SEP	104	122	134	101	146	164	133
Kachess Reservoir Inflow (2)	APR-JUL	88	102	112	101	122	136	111
	APR-SEP	96	110	120	100	130	144	120
Cle Elum Lake Inflow (2)	APR-JUL	350	385	410	100	435	470	410
	APR-SEP	380	420	445	99	470	510	450
Yakima R at Cle Elum (2)	APR-JUL	610	720	795	97	870	980	820
	APR-SEP	660	780	865	96	950	1070	900
Teanaway R bl Forks nr Cle Elum	APR-JUL	116	134	147	103	160	178	143
	APR-SEP	119	137	150	103	163	181	146

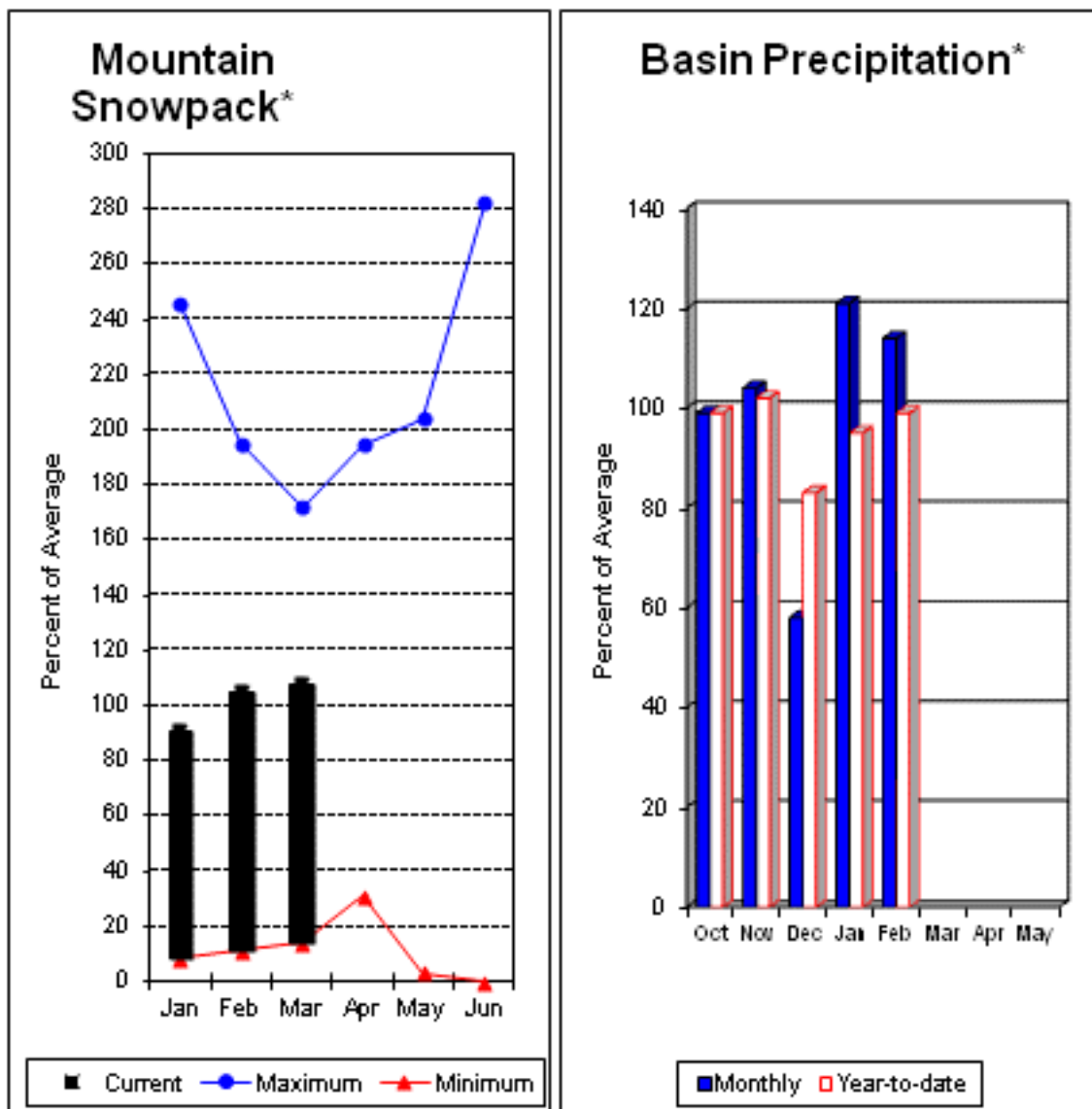
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	115.2	142.7	102.4	UPPER YAKIMA RIVER	10	144	103
KACHESS	239.0	172.7	211.5	154.7				
CLE ELUM	436.9	326.1	345.7	241.4				

* 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 Yakima River Basin



*Based on selected stations

February average streamflows within the basin were: Yakima River near Parker, 77%; Naches River near Naches, 77%; and Yakima River at Kiona, 78%. March 1 reservoir storage for Bumping and Rimrock reservoirs was 175,000-acre feet, 127% of average. Forecast averages for Yakima River near Parker are 104%; American River near Nile, 98%; Ahtanum Creek, 116%; and Klickitat River near Glenwood, 103%. March 1 snowpack was 108% based upon 8 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 106% of average. Precipitation was 114% of average for February and 99% year-to-date. Temperatures were slightly above normal for February and for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they March 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

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bumping Lake Inflow (2)	APR-JUL	110	124	133	109	142	156	122
	APR-SEP	117	131	145	110	151	165	132
American R nr Nile	APR-JUL	87	99	107	99	115	127	108
	APR-SEP	95	107	116	98	125	137	118
Rimrock Lake Inflow (2)	APR-JUL	187	205	215	105	225	245	205
	APR-SEP	225	240	255	106	270	285	240
Naches R nr Naches (2)	APR-JUL	635	715	770	107	825	905	720
	APR-SEP	690	775	830	106	895	980	780
Ahtanum Ck at Union Gap	APR-JUL	25	31	35	117	39	45	30
	APR-SEP	27	33	37	116	41	47	32
Yakima R nr Parker (2)	APR-JUL	1530	1740	1880	104	2020	2230	1800
	APR-SEP	1690	1900	2050	104	2200	2410	1980
Klickitat R nr Glenwood	APR-JUL	106	120	130	103	140	154	126
	APR-SEP	142	157	168	103	179	194	163
Klickitat R nr Pitt	APR-JUL	400	445	480	104	515	560	460
	APR-SEP	485	540	580	106	620	675	550

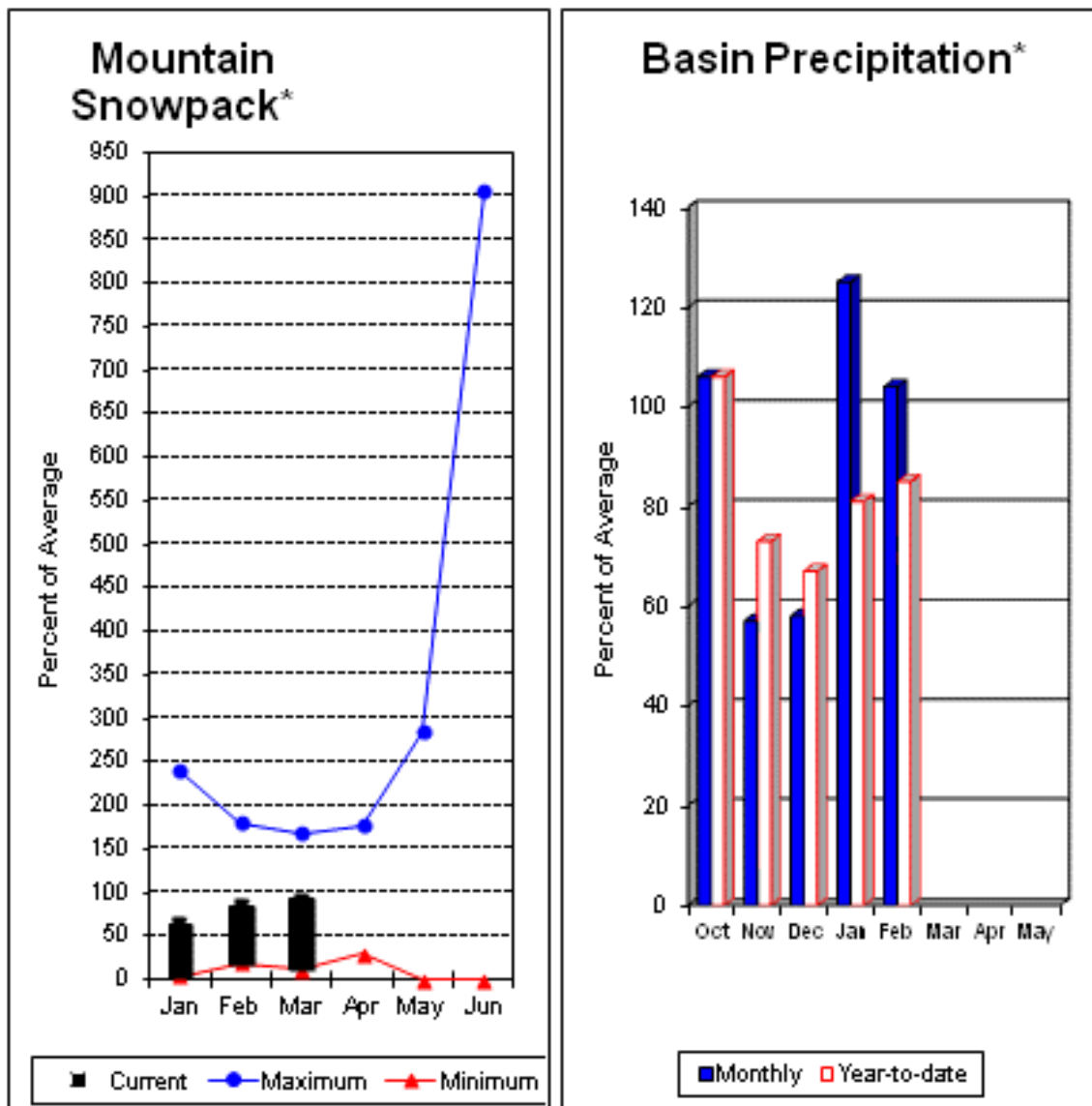
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
BUMPING LAKE	33.7	18.0	16.0	11.5	LOWER YAKIMA RIVER	8	123	108
RIMROCK	198.0	156.5	162.8	126.1	AHTANUM CREEK	3	139	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.

Walla Walla River Basin



*Based on selected stations

February precipitation was 104% of average, maintaining the year-to-date precipitation at 85% of average. Snowpack in the basin was 92% of average. Streamflow forecasts are 96% of average for Mill Creek and 88% for the SF Walla Walla near Milton-Freewater. February streamflow was 81% of average for the SF Walla Walla River. Average temperatures were 1-2 degrees below normal for February and 1-2 above for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SF Walla Walla R nr Milton-Freewater	MAR-SEP	59	67	72	89	77	85	81
	APR-JUL	37	43	47	87	51	57	54
	APR-SEP	48	54	59	88	64	70	67
Mill Ck nr Walla Walla	APR-JUL	16.1	20	23	96	26	30	24
	APR-SEP	19.7	24	27	96	30	34	28

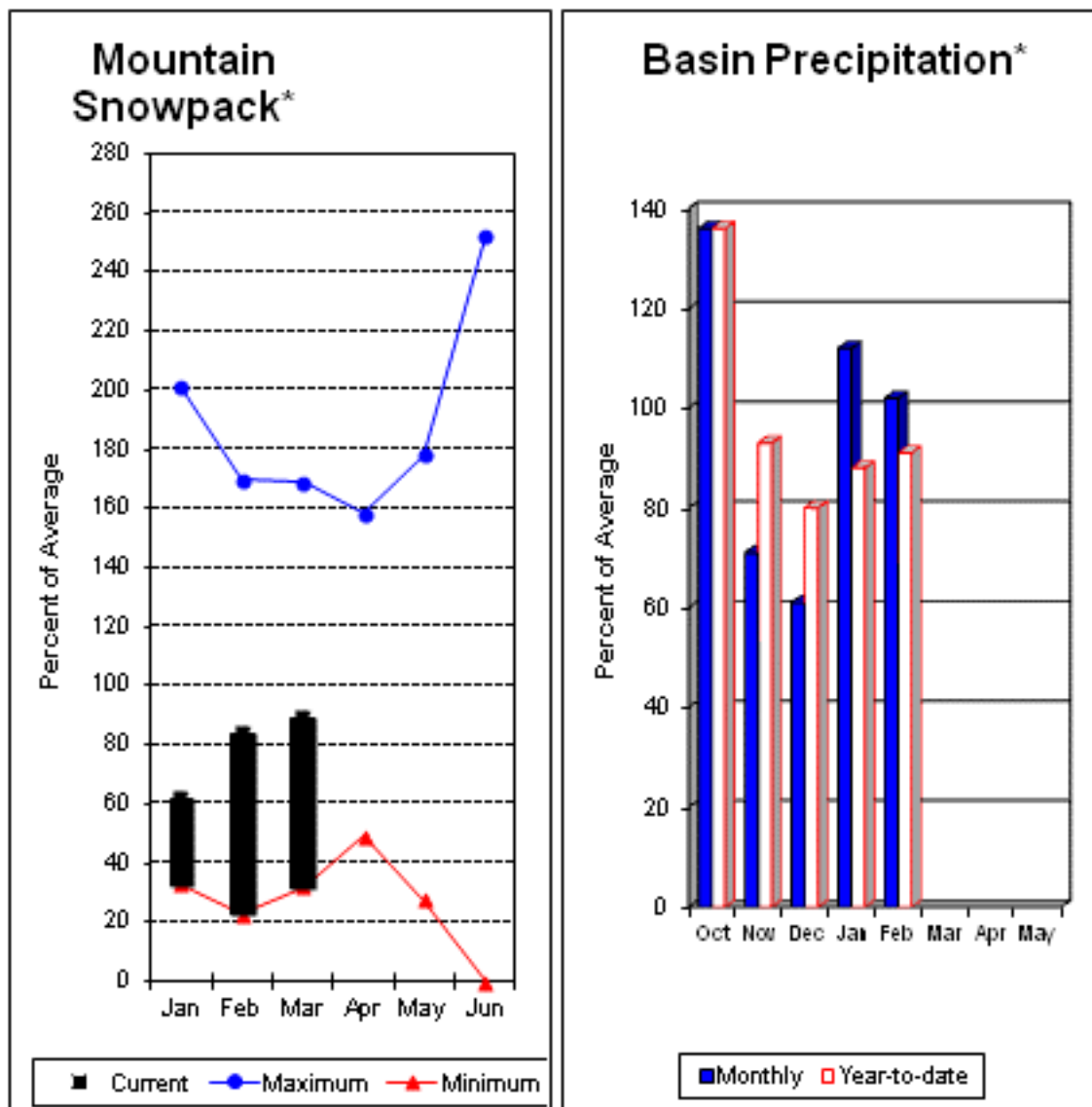
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of February					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year as % of =====	
							Last Yr	Average
					WALLA WALLA RIVER	2	104	92

* 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 Snake River Basin



*Based on selected stations

The April - September forecast is for 102% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 87% and 84% of normal respectively. The forecast for Asotin Creek at Asotin predicts 106% of average flows for the April – July runoff period. February precipitation was 102% of average, bringing the year-to-date precipitation to 91% of average. March 1 snowpack readings averaged 89% of average. February streamflow was 55% of average for Snake River below Lower Granite Dam and 51% for Grande Ronde River near Troy. Dworshak Reservoir storage was 104% of average. Average temperatures were near normal for February and for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *					30-Yr Avg.	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	(1000AF)
Grande Ronde R at Troy (1)	MAR-JUL	905	1200	1330	84	1460	1760	1580
	APR-SEP	715	1010	1150	84	1290	1580	1370
Asotin Ck at Asotin	APR-JUL	22	31	37	106	43	52	35
Clearwater R at Spalding (1,2)	APR-JUL	5100	6750	7500	101	8250	9900	7430
	APR-SEP	5570	7220	7970	102	8720	10400	7850
Snake R bl Lower Granite Dam (1,2)	APR-JUL	11300	16300	18500	86	20800	25800	21550
	APR-SEP	12800	18400	20900	87	23500	29100	24140

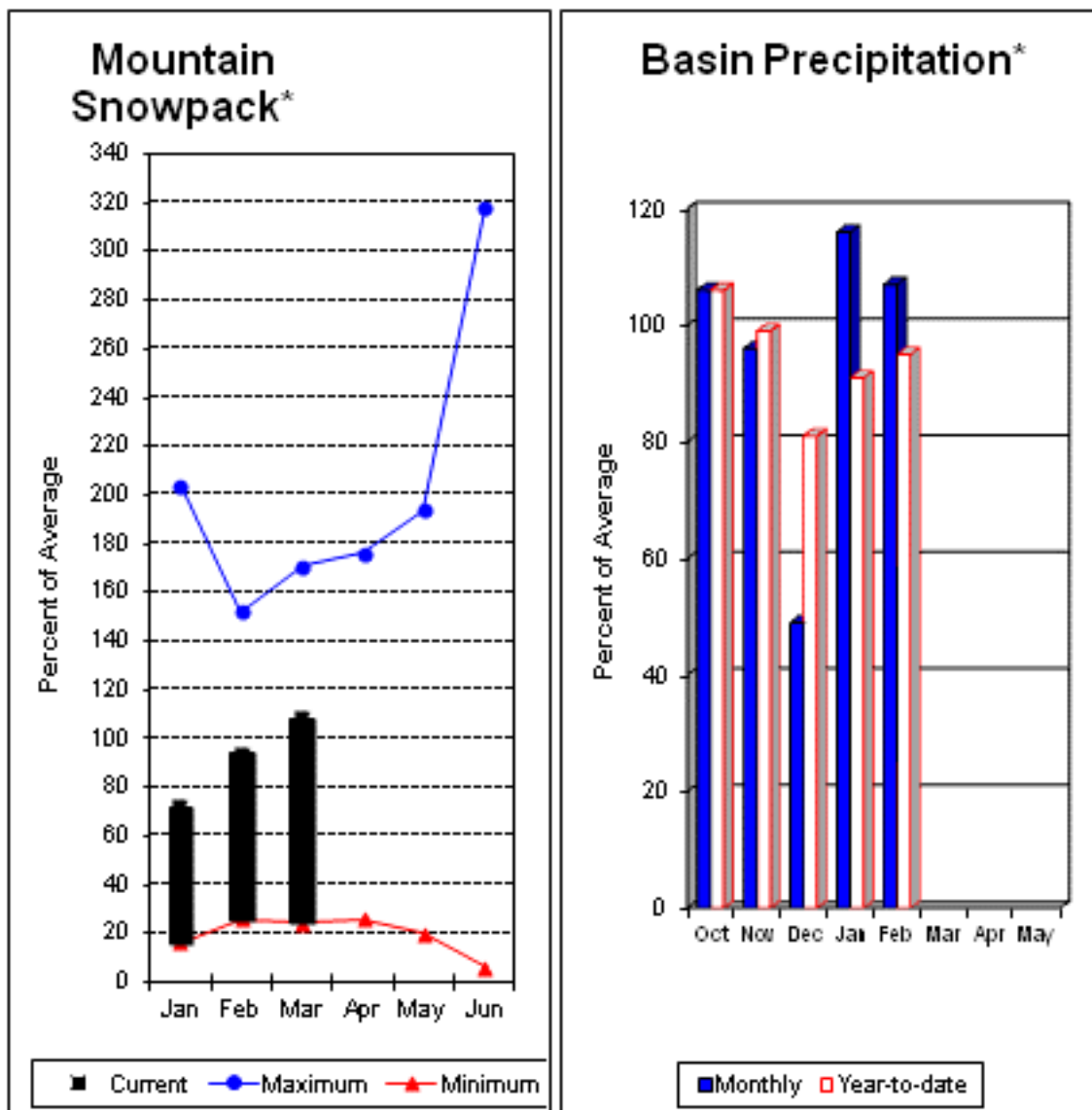
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of February					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Dworshak	3468.0	2362.2	2043.4	2281.7	LOWER SNAKE, GRANDE RONDE	11	92	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.

Lower Columbia River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 88% and Cowlitz River at Castle Rock, 98% of average. The Columbia at The Dalles is forecasted to have 96% of average flows this summer. February average streamflow for Cowlitz River was 108%. The Columbia River at The Dalles was 67% of average. February precipitation was 107% of average and the water-year average was 95%. June Lake SNOTEL had the highest rainfall total in the basin with 21 inches which is 91% of average. March 1 snow cover for Cowlitz River was 116%, and Lewis River was 100% of average. Temperatures were slightly below normal during February and near normal for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Columbia R at The Dalles (2)	APR-JUL	67900	75000	79800	94	84600	91600	84600
	APR-SEP	80800	89000	94600	96	100000	108000	98600
Klickitat R nr Glenwood	APR-JUL	106	120	130	103	140	154	126
	APR-SEP	142	157	168	103	179	194	163
Klickitat R nr Pitt	APR-JUL	400	445	480	104	515	560	460
	APR-SEP	485	540	580	106	620	675	550
Lewis R at Ariel (2)	APR-JUL	640	805	920	89	1030	1200	1031
	APR-SEP	745	920	1040	88	1160	1330	1176
Cowlitz R bl Mayfield Dam (2)	APR-JUL	1210	1460	1630	97	1800	2050	1689
	APR-SEP	1360	1660	1860	97	2060	2360	1922
Cowlitz R at Castle Rock (2)	APR-JUL	1790	2070	2260	99	2450	2730	2295
	APR-SEP	2080	2380	2590	98	2800	3100	2639

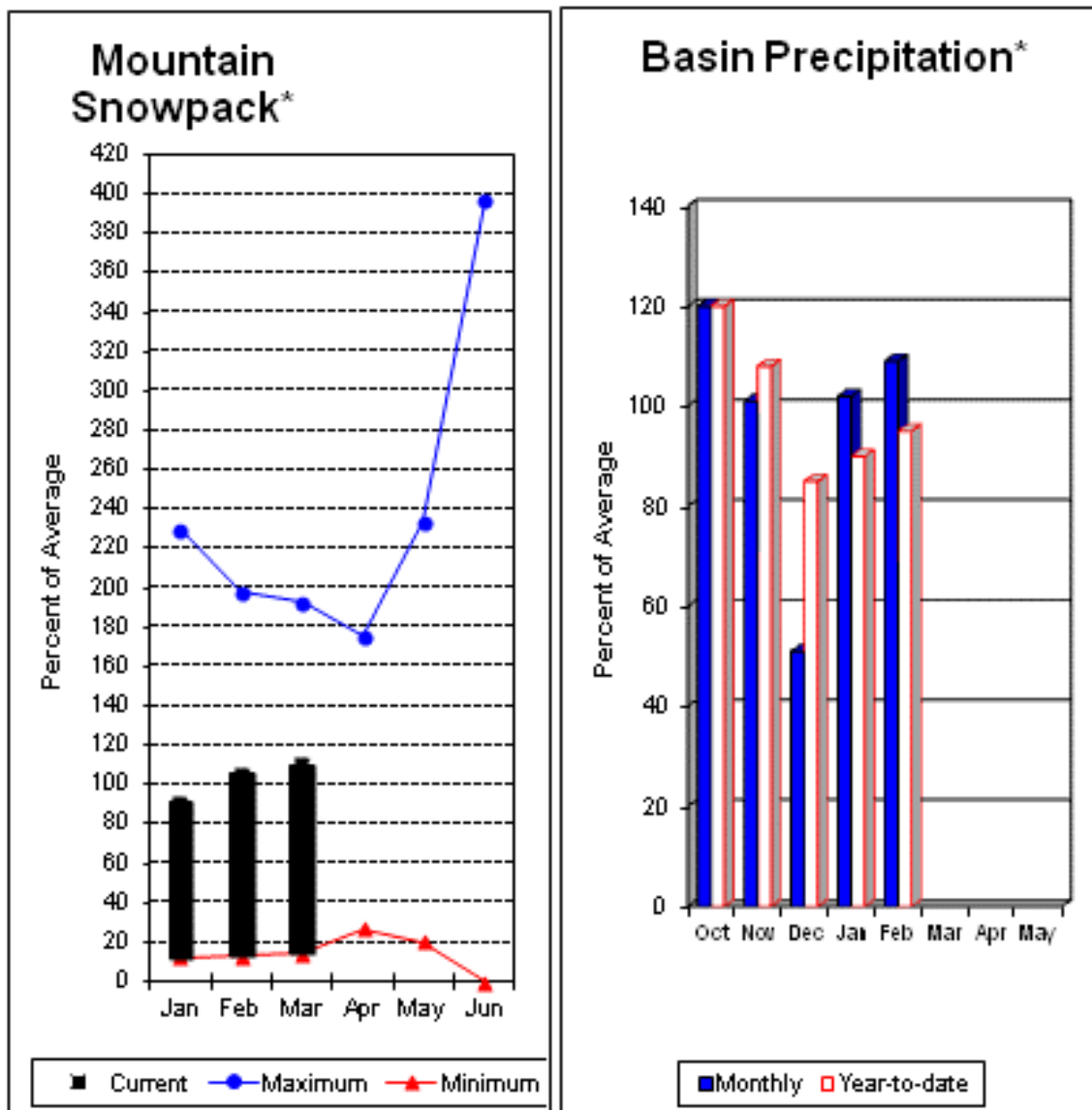
LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of February					LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
MOSSYROCK	0.0	1320.9	1243.2	---	LEWIS RIVER	5	98	100
SWIFT	0.0	596.0	700.1	---	COWLITZ RIVER	6	115	116
YALE	0.0	380.3	358.1	---				
MERWIN	0.0	237.5	417.9	---				

* 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.

South Puget Sound River Basins



*Based on selected stations

Summer runoff is forecast to be 99% of normal for the Green River below Howard Hanson Dam and 106% for the White River near Buckley. March 1 snowpack was 109% of average for the White River, 115% for Puyallup River and 106% in the Green River Basin. Water content on March 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 32 inches. This site has a March 1 average of 29.5 inches. February precipitation was 109% of average, bringing the water year-to-date to 95% of average for the basins. Average temperatures in the area were near normal for February and slightly below for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
White R nr Buckley (1)	APR-JUL	355	435	470	107	505	585	440
	APR-SEP	435	525	565	106	605	695	534
Green R bl Howard Hanson Dam (1,2)	APR-JUL	147	215	245	100	275	345	245
	APR-SEP	165	235	265	99	295	365	268

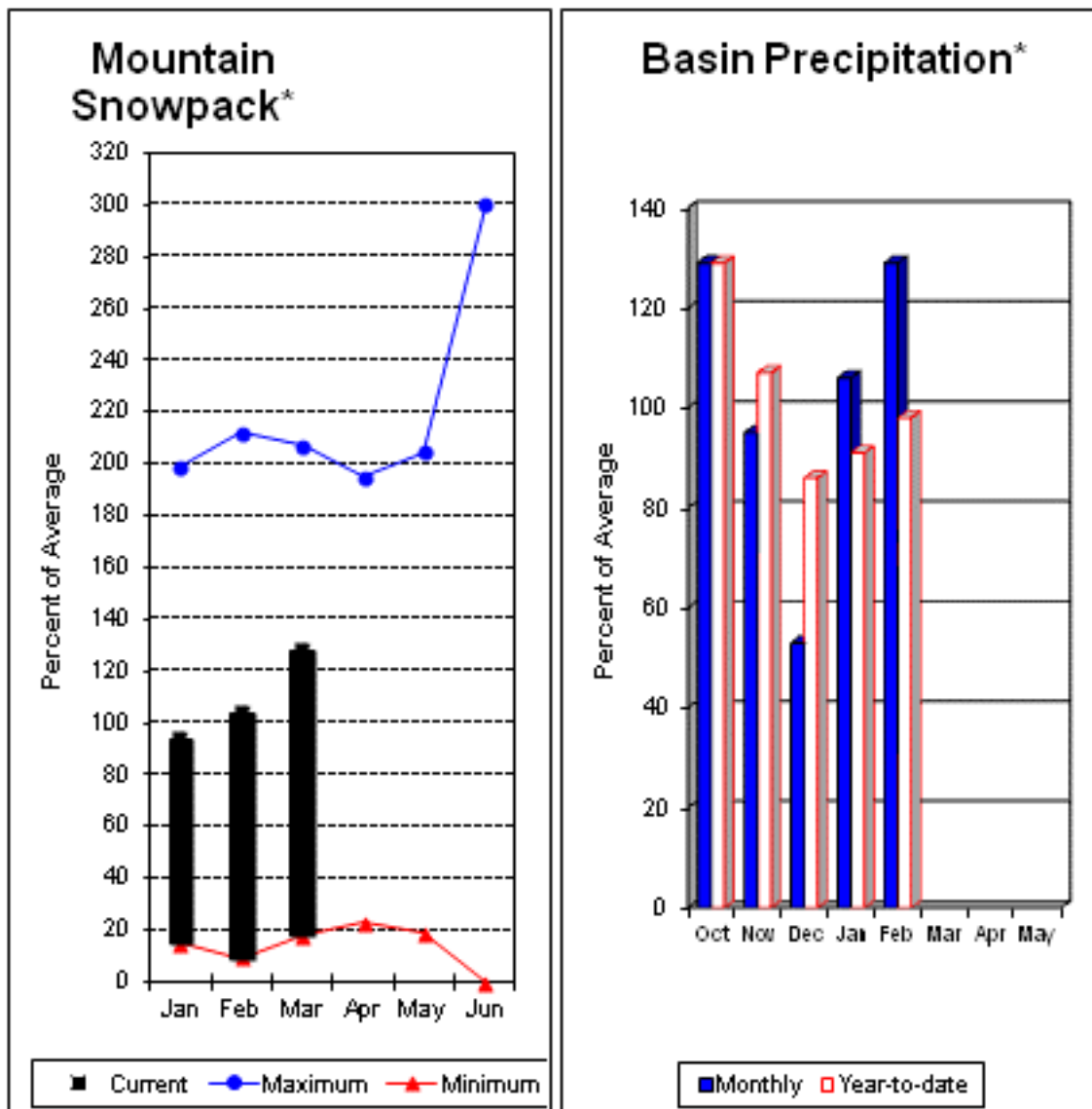
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	114	109
					GREEN RIVER	3	176	106
					PUYALLUP RIVER	5	129	115

* 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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 109% for Cedar River near Cedar Falls; 114% for Rex River; 108% for South Fork of the Tolt River; 104% for Taylor Creek near Selleck, and 112% for Cedar River at Cedar Falls. Basin-wide precipitation for February was 129% of average, bringing water-year-to-date to 98% of average. March 1 average snow cover in Cedar River Basin was 149%, Tolt River Basin was 135%, Snoqualmie River Basin was 118%, and Skykomish River Basin was 110%. Olallie Meadows SNOTEL site, at 3960 feet, had 55.2 inches of water content. Average March 1 water content is 48.9 inches at Olallie Meadows. Temperatures were near normal for February and 1 degree below for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Cedar R nr Cedar Falls	APR-JUL	63	73	80	110	87	97	73
	APR-SEP	69	80	87	109	94	105	80
Rex R nr Cedar Falls	APR-JUL	21	26	29	116	32	37	25
	APR-SEP	24	29	32	114	35	40	28
Cedar R At Cedar Falls	APR-JUL	54	71	83	112	95	112	74
	APR-SEP	56	71	82	112	93	108	73
Taylor Creek Near Selleck	APR-JUL	16.0	19.0	21	105	23	26	20
	APR-SEP	19.5	23	25	104	27	30	24
SF Tolt R nr Index	APR-JUL	12.1	14.5	16.1	110	17.7	20	14.7
	APR-SEP	13.8	16.5	18.3	108	20	23	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2012

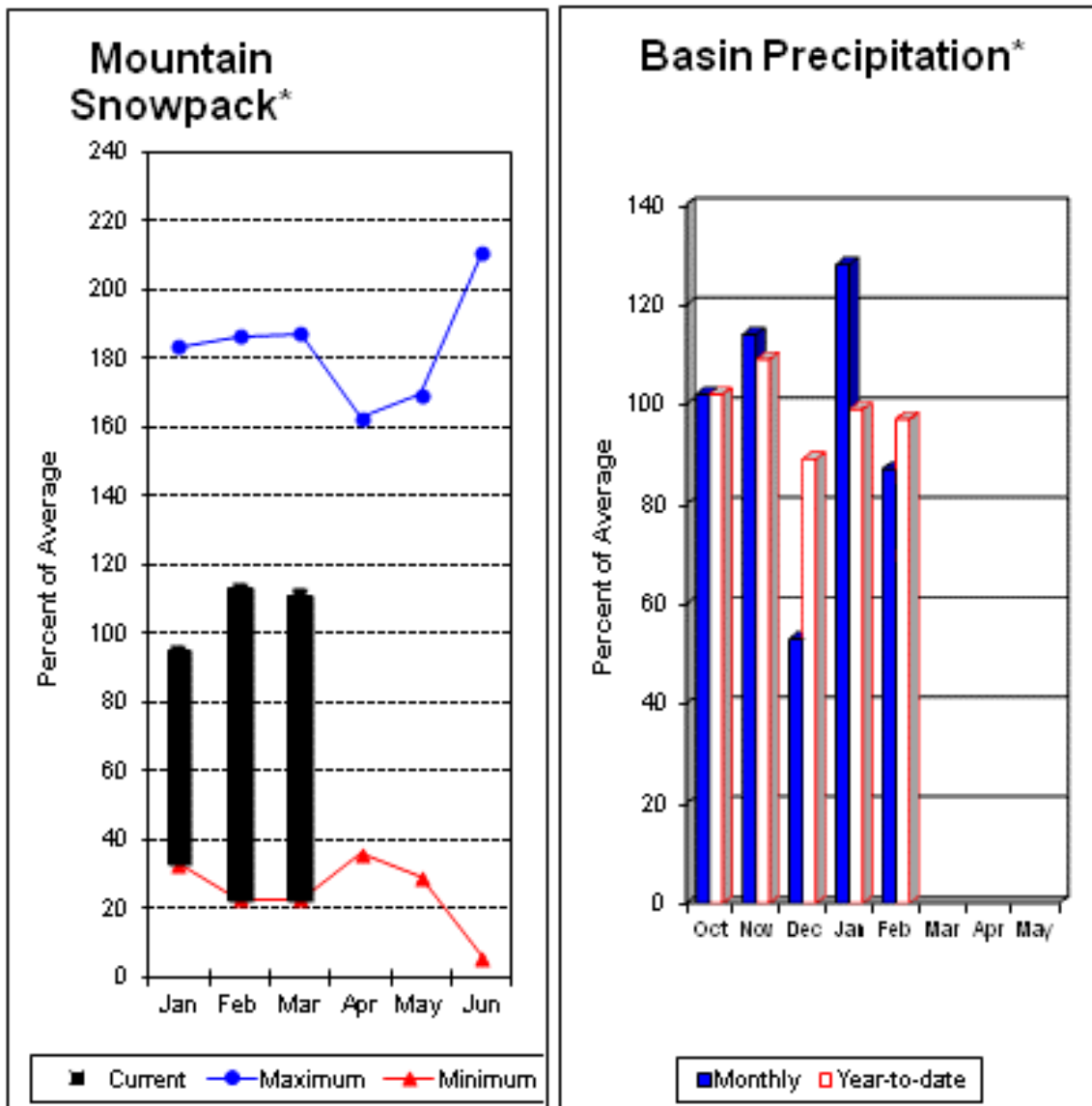
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	6	175	149
					TOLT RIVER	3	178	135
					SNOQUALMIE RIVER	5	167	118
					SKYKOMISH RIVER	3	155	110

* 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.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 102% of average for the spring and summer period. February streamflow in Skagit River was 72% of average. Other forecast points included Baker River at 87% and Thunder Creek at 102% of average. Basin-wide precipitation for February was 87% of average, bringing water-year-to-date to 97% of average. March 1 average snow cover in Skagit River Basin was 110%, Nooksack River Basin was 114% and Baker River Basin was 109% of average. Rainy Pass SNOTEL, at 4,780 feet, had 38.7 inches of water content. Average March 1 water content is 33.8 inches at Rainy Pass. March 1 Skagit River reservoir storage was 94% of average and 57% of capacity. Average temperatures for February were slightly below normal for the basin and for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Thunder Ck Nr Newhalem	APR-JUL	205	225	240	103	255	275	234
	APR-SEP	300	325	340	102	355	380	333
Skagit R At Newhalem	APR-JUL	1660	1810	1910	103	2010	2160	1864
	APR-SEP	1970	2140	2250	102	2360	2530	2217
Baker R nr Concrete (2)	APR-JUL	575	670	735	89	800	895	828
	APR-SEP	700	830	915	87	1000	1130	1050

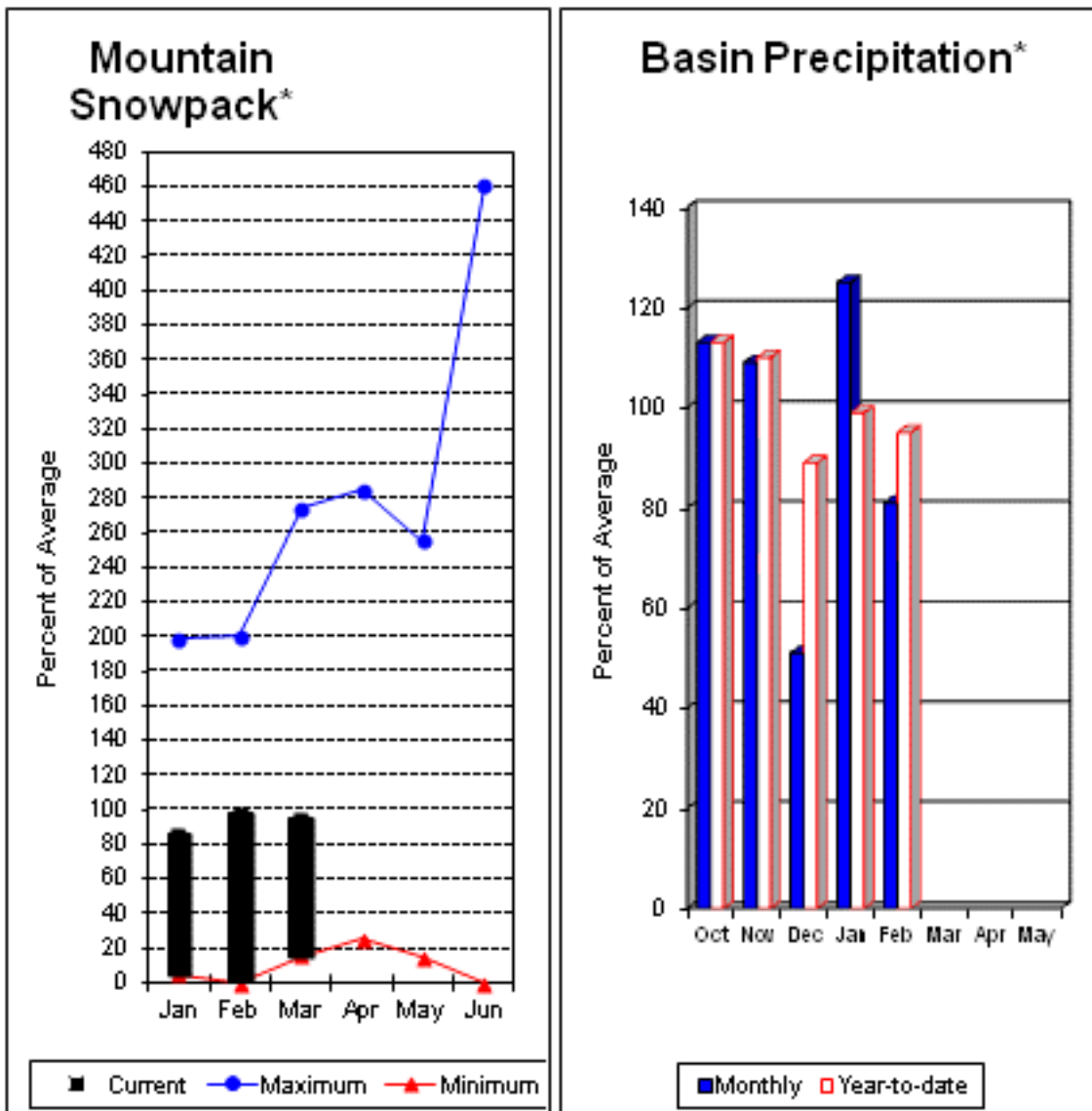
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	766.6	907.9	818.3	SKAGIT RIVER	16	124	110
DIABLO RESERVOIR	90.6	85.7	86.2	85.7	BAKER RIVER	7	127	109
					NOOKSACK RIVER	3	128	114

* 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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 95% and Elwha River is 94%. February runoff in the Dungeness River was 73% of normal. Big Quilcene and Wynoochee rivers should expect near average runoff this summer as well. February precipitation was 81% of average. Precipitation has accumulated at 95% of average for the water year. February precipitation at Quillayute was 11.4 inches. The thirty-year average for February is 12.35 inches. Olympic Peninsula snowpack averaged 95% of normal on March 1. Temperatures were near average for February and for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - March 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Dungeness R Nr Sequim	APR-JUL	97	110	119	96	128	141	124
	APR-SEP	116	133	144	95	155	172	152
Elwha R At Mcdonald Bridge	APR-JUL	330	370	400	96	430	470	419
	APR-SEP	385	440	475	94	510	565	503

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of February					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - March 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	6	88	95

* 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.

Issued by

Dave White
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	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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**



Washington Water Supply Outlook Report April 1, 2012



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

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Natural Resources Conservation Service
316 W. Boone Ave., Ste 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

April 2012

General Outlook

Last month was another record breaker with a least two sites in the North Cascades setting new monthly snow water accumulation records. March storms dumped a ton of snow and increased basin averages by nearly 60% in some cases. For starting the year with a so-so snowpack we're rounding the final bases with a statewide grand slam. With almost 200% of normal total precipitation for the month it seemed like it would never quit raining. Again all areas of the state have caught up or exceeded normal precipitation averages for the water year. Weather forecasters are predicting a continuation of below average temperatures for April however exact precipitation forecasts are still up in the air. They are still looking at the possibility of a warm and dry summer, once we get through the next month or two.

Snowpack

The April 1 statewide SNOTEL readings were 137% of average, 28% higher than last month. No major basin in the state should be lacking for water this year. The Stemilt Creek basin is the only anomaly with 89% of average. Snow surveys from the Cedar River reported the highest at 177% of average followed closely by the Tolt with 165% and the Olympics with 153%. Westside averages from SNOTEL, and April 1 snow surveys, included the North Puget Sound river basins with 146% of average, the Central Puget river basins with 156%, and the Lewis-Cowlitz basins with 144% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 127% and the Wenatchee area with 112%. Snowpack in the Spokane River Basin was at 114% and the Walla Walla River Basin had 108% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	99	114
Newman Lake	108	138
Pend Oreille	88	105
Okanogan	99	109
Methow	101	117
Conconully Lake	82	112
Wenatchee	114	112
Chelan	111	114
Upper Yakima	129	120
Lower Yakima	119	134
Ahtanum Creek	132	142
Walla Walla	108	108
Lower Snake	96	104
Cowlitz	118	143
Lewis	105	144
White	114	130
Green	156	135
Puyallup	132	141
Cedar	166	177
Snoqualmie	146	144
Skykomish	138	137
Skagit	115	137
Baker	N/A	N/A
Nooksack	107	151
Olympic Peninsula	99	153

Precipitation

During the month of March, the National Weather Service and Natural Resources Conservation Service climate stations reported above average precipitation totals throughout Washington river basins. The highest percent of average in the state was at Trough SNOTEL near Wenatchee which reported 326% of average for a total of 7.6 inches. The average for Trough is 2.33 inches for March. Swift Creek SNOTEL near Mt. St. Helens was the wettest spot in the state last month with 33.1 inches, that's over 1 inch per day as another way to look at it.

RIVER BASIN	MARCH PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	211	104
Pend Oreille	248	108
Upper Columbia	206	99
Central Columbia	188	107
Upper Yakima	159	104
Lower Yakima	205	114
Walla Walla	176	98
Lower Snake	174	104
Lower Columbia	183	107
South Puget Sound	153	103
Central Puget Sound	154	105
North Puget Sound	181	108
Olympic Peninsula	206	112

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. Reservoir storage in the Yakima Basin was 639,000-acre feet, 115% of average for the Upper Reaches and 179,000-acre feet or 118% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 116% of average for April 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 303,000 acre feet, 179% of average and 127% of capacity; Chelan Lake, 124,000-acre feet, 66% of average and 21% of capacity; and the Skagit River reservoirs at 86% of average and 45% of capacity. Currently most reservoir operations are gearing up for an above average runoff from melting snow so downstream flows may be increasing beyond normal amounts. 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	127	179
Pend Oreille	46	94
Upper Columbia	87	116
Central Columbia	21	66
Upper Yakima	77	115
Lower Yakima	77	118
Lower Snake	66	103
North Puget Sound	45	86

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

Streamflow

Forecasts vary from 90% of average for Kettle and S.F Walla Walla rivers to 138% of average for Ahtanum Creek and Cedar River. April-September forecasts for some Western Washington streams include the S.F. Tolt River near Index, 124%; White River, 113%; and Dungeness River, 114%. Some Eastern Washington streams include the Yakima River near Parker, 121%; Wenatchee River at Plain, 110%; and Spokane River near Post Falls, 119%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. April 1 forecasts are typically based on seasonal maximum or near maximum snowpack allowing for the best accuracy and correlation to historic runoff.

Runoff for March varied greatly throughout the state. The cause most likely being the difference in uncontrolled and reservoir controlled streams. The S.F. Walla Walla River had the highest reported flows with 179% of average. The Kettle River with 30% of average was the lowest in the state however this gage could be influenced by ice. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Snake below Ice Harbor Dam, 106%; the Lewis at Ariel, 107%; the Columbia below Rock Island Dam, 95%; and the Bumping River near Nile, 74%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
-------	---

Spokane	102-119
Pend Oreille	102-107
Upper Columbia	90-116
Central Columbia	104-113
Upper Yakima	109-121
Lower Yakima	118-138
Walla Walla	90-104
Lower Snake	101-123
Lower Columbia	111-128
South Puget Sound	113-116
Central Puget Sound	117-138
North Puget Sound	106-117
Olympic Peninsula	114-117

STREAM	PERCENT OF AVERAGE MARCH STREAMFLOWS
--------	---

Pend Oreille Below Box Canyon	106
Kettle at Laurier	30
Columbia at Birchbank	93
Spokane at Long Lake	121
Similkameen at Nighthawk	70
Okanogan at Tonasket	53
Methow at Pateros	60
Chelan at Chelan	81
Wenatchee at Pashastin	62
Cle Elum near Roslyn	69
Yakima at Parker	78
Naches at Naches	77
Grande Ronde at Troy	105
Snake below Lower Granite Dam	95
SF Walla Walla near Milton Freewater	179
Columbia River at The Dalles	97
Cowlitz below Mayfield Dam	118
Skagit at Concrete	81
Dungeness near Sequim	90

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

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Rain-on-snow events during the month actually didn't hurt the snowpack but did help increase soil moisture levels by as much as 10% in some basins, others stayed about the same as last month. With soil moisture level this high we should generally see slight increases to an already elevated forecast.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	68
Pend Oreille	69
Upper Columbia	37
Central Columbia	54
Upper Yakima	61
Lower Yakima	79
Walla Walla	79
Lower Snake	79
Lower Columbia	81
South Puget Sound	81
Central Puget Sound	N/A
North Puget Sound	87
Olympic Peninsula	37

Western Snow Conference May 2012

The 80th annual Western Snow Conference is in Anchorage, Alaska. The conference is May 21-24 at the Millennium Alaska Hotel. The theme for this year's conference is "Bright lights and winter nights – working with extremes". There will be a Short Course on Monday covering "Remote Data Collection Communication Options". Much progress has been made from the original telegraph and line of site radio systems to the current use of satellite, cell and meteor burst technology. A combined panel of vendors, developers and end users will present lively discussions of four current communications options including meteor burst, GOES satellite, cell phone and Iridium satellite technology. Additional conference information is available at:

<http://www.westernsnowconference.org/>

BASIN SUMMARY OF SNOW COURSE DATA

APRIL 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	GOLD MTN LOOKOUT GRAVE CRK SNOTEL SNOW COURSE	ELEVATION	3/29/12 4/01/12	52 51	15.2 18.3	13.9 21.1	-- 15.6
									DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	4/02/12	23	6.0	--	5.6							
AHTANUM R.S.	3100	3/30/12	0	.0	4.8	5.3							
ALPINE MEADOWS	3500	4/02/12	146	60.3	44.1	42.3	GREEN LAKE SNOTEL	5920	4/01/12	120	38.1	25.6	23.0
ALPINE MEADOWS SNTL	3500	4/01/12	140	67.4	46.3	43.6	GRIFFIN CR DIVIDE	5150	3/29/12	34	9.7	14.1	10.3
AMBROSE	6480	3/28/12	11	14.2	16.5	12.4	GROUSE CAMP SNOTEL	5390	4/01/12	87	26.4	21.9	19.8
ASHLEY DIVIDE	4820	3/30/12	21	6.6	11.0	6.0	GUNSIGHT LAKE	6300	3/27/12	103	37.4	45.3	39.3
BADGER PASS SNOTEL	6900	4/01/12	100	42.3	37.7	35.3	HAMILTON HILL CAN.	4550	3/27/12	44	14.4	11.6	14.0
BAIRD #2	3220	3/30/12	23	6.4	8.4	--	HAND CREEK SNOTEL	5030	4/01/12	40	12.9	14.9	11.7
BAREE CREEK	5500	3/27/12	115	42.7	51.7	43.1	HARTS PASS SNOTEL	6490	4/01/12	132	52.7	57.3	46.3
BAREE MIDWAY	4600	3/27/12	102	36.0	35.2	33.0	HELL ROARING DIVIDE	5770	3/28/12	88	29.8	35.1	29.5
BAREE TRAIL	3800	3/27/12	36	12.2	14.3	7.7	HERRIG JUNCTION	4850	3/27/12	79	27.1	30.9	26.0
BARKER LAKES SNOTEL	8250	4/01/12	47	13.6	15.3	14.6	HIGH RIDGE SNOTEL	4920	4/01/12	72	24.9	27.4	23.1
BARNES CREEK CAN.	5320	4/01/12	---	22.3	20.7	20.4	HOODOO BASIN SNOTEL	6050	4/01/12	137	48.6	49.7	45.3
BASIN CREEK SNOTEL	7180	4/01/12	20	6.4	8.2	8.7	HUCKLEBERRY SNOTEL	2250	4/01/12	8	3.4	.2	.4
BASSOO PEAK	5150	3/29/12	33	10.5	14.3	9.7	HUMBOLDT GLCH SNOTEL	4250	4/01/12	---	18.4	15.8	11.2
BEAVER CREEK TRAIL	2200	3/31/12	66	25.3	18.3	11.7	INDIAN ROCK SNOTEL	5360	4/01/12	108	42.6	40.6	--
BEAVER PASS	3680	4/02/12	126	42.2	35.8	28.8	INTERGAARD	6450	3/24/12	26	7.8	8.1	7.7
BEAVER PASS SNOTEL	3630	4/01/12	156	60.4	50.3	38.6	IRENE'S CAMP	5530	3/26/12	40	10.2	12.8	--
BTG WHITE MTN CAN.	5510	3/31/12	60	18.8	20.0	20.0	ISINTOK LAKE CAN.	5100	3/30/12	30	7.9	6.7	7.2
BLACK MOUNTAIN	7750	3/28/12	49	15.5	16.2	14.6	JUNE LAKE SNOTEL	3440	4/01/12	134	60.2	60.1	35.7
BLACK PINE SNOTEL	7100	4/01/12	35	13.2	15.1	12.5	KELLER RIDGE	3700	3/28/12	16	4.7	2.8	--
BLACKWALL PILL CAN.	6370	4/01/12	120	44.7	37.2	35.1	KELLOGG PEAK	5560	3/29/12	70	25.7	34.4	29.2
BLEWETT PASS#2SNOTEL	4240	4/01/12	44	19.5	13.8	16.4	KISHENEHN	3890	3/28/12	27	9.5	10.5	6.8
BLUE LAKE	5900	3/27/12	65	23.2	26.8	23.7	KIT CARSON PASTURE	4950	3/27/12	19	6.6	5.8	8.1
BONAUPART SOUTH	4660	3/28/12	22	5.7	6.8	--	KRAFT CREEK SNOTEL	4750	4/01/12	33	13.4	16.3	14.1
BRENDA MINE CAN.	4450	3/29/12	38	11.6	--	12.5	LAMB BUTTE		3/30/12	64	20.5	17.0	--
BROOKMERE CAN.	3000	3/30/12	34	8.8	16.5	7.9	LIGHTNING LAKE CAN.	3700	3/27/12	56	17.5	13.6	12.0
BROWN TOP AM	6000	3/30/12	215	73.1	86.4	60.8	LOGAN CREEK	4300	3/27/12	29	7.8	11.4	6.7
BROWNS PASS		3/28/12	7	2.1	6.1	--	LOLO PASS SNOTEL	5240	4/01/12	83	32.0	32.3	30.3
BRUSH CREEK TIMBER	5000	3/27/12	42	15.7	19.9	8.1	LONE PINE SNOTEL	3930	4/01/12	143	57.2	55.2	36.4
BUCKINGHORSE SNOTEL	4870	4/01/12	213	84.3	83.3	--	LOOKOUT SNOTEL	5140	4/01/12	92	34.0	33.4	31.8
BULL MOUNTAIN	6600	3/29/12	14	4.4	7.6	5.9	LOST HORSE MTN CAN.	6300	3/25/12	33	9.6	11.5	9.4
BUMPING LAKE (NEW)	3400	3/30/12	69	24.0	21.5	17.6	LOST HORSE SNOTEL	5120	4/01/12	84	27.9	19.7	18.3
BUMPING RIDGE SNOTEL	4610	4/01/12	118	37.8	32.6	28.6	LOST LAKE SNOTEL	6110	4/01/12	157	58.7	61.4	60.0
BUNCHGRASS MDWSNOTEL	5000	4/01/12	103	33.6	29.2	30.2	LOST LAKE	4070	3/28/12	26	6.4	7.9	--
BURNT MOUNTAIN PIL	4170	4/01/12	79	28.9	15.4	13.7	LOUP LOUP CAMPGROUND		3/30/12	31	8.2	11.8	--
BUTTE CREEK #2		3/27/12	30	7.8	9.1	--	LOWER SANDS CREEK #2	3120	4/02/12	63	23.8	23.6	18.9
BUTTERMILK BUTTE	5250	3/29/12	53	15.5	15.8	--	LUBRECHT FOREST NO 3	5450	3/31/12	16	4.8	7.1	5.7
CALAMITY SNOTEL	2500	4/01/12	10	3.9	5.1	--	LUBRECHT FOREST NO 4	4650	3/31/12	2	.6	2.5	1.3
CARMI CAN.	4100	3/30/12	18	5.3	5.2	5.6	LUBRECHT FOREST NO 6	4040	3/31/12	4	1.1	4.9	1.6
CAYUSE PASS SNOTEL	5240	4/01/12	220	75.7	72.4	--	LUBRECHT HYDROPLOT	4200	3/31/12	12	3.7	6.7	2.9
CEDAR GROVE	3760	3/30/12	40	13.0	13.4	11.4	LUBRECHT SNOTEL	4680	4/01/12	11	4.0	6.8	3.6
CHAMOKANE 2	3520	3/29/12	28	9.8	4.3	--	LYMAN LAKE SNOTEL	5980	4/01/12	191	66.2	66.8	65.4
CHESSMAN RESERVOIR	6200	3/26/12	17	5.5	6.4	3.5	LYNN LAKE	4000	4/01/12	96	37.6E	--	20.4
CHEWALAH #2	4930	3/26/12	70	20.5	21.0	--	LYNN LAKE SNOTEL	3900	4/01/12	96	37.6	18.3	--
CHICKEN CREEK	4060	3/27/12	55	18.6	20.8	15.2	MARTEN RIDGE SNOTEL	3520	4/01/12	189	88.2	74.6	--
CITY CABIN	2390	4/02/12	44	21.0	6.8	11.1	MAZAMA		3/30/12	25	9.6	8.3	--
CLOUDY PASS AM	6500	3/30/12	155	54.0	55.8	50.1	MEADOWS CABIN	1900	4/01/12	22	8.4	1.8	4.0
COLD CREEK STRIP	6020	3/26/12	38	9.5	12.0	--	MEADOWS PASS SNOTEL	3230	4/01/12	104	46.5	29.6	23.9
COLOCKUM PASS	5370	4/03/12	60	16.2	19.1	16.3	METEOR		3/27/12	10	3.3	.0	--
COMBINATION SNOTEL	5600	4/01/12	8	2.9	6.0	4.9	MICA CREEK SNOTEL	4510	4/01/12	74	25.5	24.7	25.1
COPPER BOTTOM SNOTEL	5200	4/01/12	14	5.5	7.0	11.0	MINERAL CREEK	4000	3/29/12	40	15.4	21.2	17.4
COPPER MOUNTAIN	7700	3/27/12	31	8.7	14.0	11.2	MISSEZULA MTN CAN.	5080	3/25/12	33	9.7	9.2	9.5
CORRAL PASS SNOTEL	5800	4/01/12	128	44.0	36.9	34.9	MISSION CREEK CAN.	5840	4/01/12	70	21.6	20.0	20.0
COTTONWOOD CREEK	6400	3/28/12	27	8.0	8.0	8.3	MISSION RIDGE	5000	3/26/12	52	15.6E	19.2	17.4
COUGAR MTN. SNOTEL	3200	4/01/12	64	27.3	15.4	17.7	MORSE LAKE SNOTEL	5410	4/01/12	187	70.8	60.3	55.5
COX VALLEY	4500	3/30/12	154	50.9	49.3	38.7	MOSES MOUNTAIN (2)	4800	4/02/12	61	21.0	13.9	22.7
COYOTE HILL	4200	3/30/12	26	9.1	11.2	8.7	MOSES MTN SNOTEL	5010	4/01/12	61	18.5	16.8	15.9
DALY CREEK SNOTEL	5780	4/01/12	33	11.2	12.4	11.1	MOSES PEAK	6650	4/02/12	93	29.3	27.9	15.0
DESERT MOUNTAIN	5600	3/27/12	48	14.8	17.7	14.7	MOSQUITO RDG SNOTEL	5200	4/01/12	125	47.8	44.4	35.8
DEVILS PARK	5900	4/01/12	146	57.9	50.6	44.2	MOULTON RESERVOIR	6850	3/29/12	20	4.6	10.3	6.9
DISAUTEL PASS		4/02/12	17	5.8	4.0	--	MOUNT CRAG SNOTEL	3960	4/01/12	145	52.2	47.6	30.8
DISCOVERY BASIN	7050	3/26/12	38	11.8	12.7	10.4	MT. KOBAY CAN.	5500	3/31/12	46	12.3	15.9	12.5
DIX HILL	6400	4/01/12	28	10.4	12.1	10.3	MOUNT TOLMAN	2000	3/27/12	0	.0	.0	--
DOMMERIE FLATS	2200	3/27/12	14	6.1	.0	3.8	MOWICH SNOTEL	3160	4/01/12	2	1.3	.0	.6
DUNCAN RIDGE	5370	3/26/12	27	7.0	9.0	--	MOUNT GARDNER	3300	4/02/12	63	25.0	15.0	12.5
DUNGENESS SNOTEL	4010	4/01/12	57	15.6	21.9	8.6	MOUNT GARDNER SNOTEL	2920	4/01/12	61	24.5	15.6	13.0
EAST FORK R.S.	5400	3/26/12	15	5.0	4.9	4.7	MUTTON CREEK #1	5700	3/29/12	63	16.6	19.2	13.9
EL DORADO MINE	7800	3/24/12	54	16.3	12.1	20.2	N.F. ELK CR SNOTEL	6250	4/01/12	45	14.2	15.9	12.4
ELBOW LAKE SNOTEL	3200	4/01/12	131	57.7	--	37.1	NEVADA RIDGE SNOTEL	7020	4/01/12	54	20.3	19.4	15.5
EMERY CREEK SNOTEL	4350	4/01/12	38	14.6	19.4	15.3	NEW HOZOMEEN LAKE	2800	4/01/12	51	16.9	--	10.0
ESPERON CK. MID CAN.	4250	3/30/12	39	11.6	12.7	14.6	NEZ PERCE CMP SNOTEL	5650	4/01/12	42	14.4	15.0	14.7
ESPERON CK. UP CAN.	5050	3/30/12	50	15.1	14.8	17.1	NEZ PERCE PASS	6570	3/27/12	50	18.6	16.0	17.8
FATTY CREEK	5500	3/27/12	71	26.8	35.2	24.3	NOISY BASIN SNOTEL	6040	4/01/12	111	39.5	62.4	40.9
FISH CREEK	8000	3/29/12	30	7.9	10.7	9.9	NORTH FORK JOCKO	6330	3/27/12	106	40.4	52.4	42.3
FISH LAKE	3370	3/29/12	113	39.1	31.1	31.5	OLALLIE MDWS SNOTEL	4030	4/01/12	170	75.1	58.9	55.9
FISH LAKE SNOTEL	3430	4/01/12	103	41.1	30.8	34.5	OPHIR PARK	7150	4/01/12	36	15.8	18.2	16.7
FLATTOP MTN SNOTEL	6300	4/01/12	160	53.4	53.5	45.1	OYAMA LAKE CAN.	4100	3/30/12	28	6.8	6.4	6.7
FLEECER RIDGE	7500	3/29/12	35	10.2	12.3	10.9	PARADISE SNOTEL	5130	4/01/12	197	82.2	76.0	71.9
FOURTH OF JULY SUM	3200	3/29/12	30	10.6	7.9	5.7	PARK CK RIDGE SNOTEL	4600	4/01/12	150	59.1	48.2	47.6
FREEZEOUT CK. TRAIL	3500	4/01/12	64	21.9	12.9	11.3	PEPPER CREEK SNOTEL	2140	4/01/12	23	9.9	9.2	--
FROHNER MDWS SNOTEL	6480	4/01/12	24	9.1	8.5	8.0	PETERSON MDW SNOTEL	7200	4/01/12	34	10.2	10.5	10.5
FROST MEADOWS	4630	3/27/12	69	24.4	18.3	--	PETTITJOHN CREEK	4300	3/28/12	24	6.1	7.0	--
GOAT CREEK	3600	3/27/12	24	6.4	7.6	3.6	PIGHTAIL PEAK SNOTEL	5800	4/01/12	195	75.8	57.8	53.2
GOLD CREEK LAKE	7200	3/24/12	72	22.4	20.1	14.7	PIKE CREEK SNOTEL	5930	4/01/12	47	16.5	21.7	--

PIPESTONE PASS	7200	3/27/12	15	3.8	7.8	5.7
POPE RIDGE SNOTEL	3590	4/01/12	58	21.9	17.9	18.4
POSTILL LAKE CAN.	4200	3/29/12	35	9.5	8.0	8.8
POTATO HILL SNOTEL	4510	4/01/12	130	43.6	37.7	25.3
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
QUARTZ PEAK SNOTEL	4700	4/01/12	78	28.0	26.3	21.2
RAGGED MTN SNOTEL	4210	4/01/12	73	29.8	26.1	--
RAGGED RIDGE	3330	3/29/12	19	6.9	5.3	4.1
RAINY PASS SNOTEL	4890	4/01/12	130	50.3	44.0	44.0
RAINY PASS	4780	3/31/12	137	51.1	37.7	39.2
REX RIVER SNOTEL	3810	4/01/12	126	58.0	35.4	31.2
ROCKER PEAK SNOTEL	8000	4/01/12	49	15.2	16.4	14.3
ROLAND SUMMIT	5120	3/30/12	87	36.4	43.6	36.4
ROUND TOP MTN	4020	3/29/12	51	17.0	16.3	--
RUSTY CREEK	4000	3/29/12	19	5.5	8.8	5.5
SADDLE MTN SNOTEL	7900	4/01/12	75	26.1	29.4	25.8
SALMON MDWS SNOTEL	4460	4/01/12	39	12.1	13.7	11.1
SASSE RIDGE SNOTEL	4340	4/01/12	116	43.1	32.8	37.3
SATUS PASS	4030	3/29/12	34	12.0	14.9	--
SAVAGE PASS SNOTEL	6170	4/01/12	80	30.6	32.2	26.5
SAWMILL RIDGE SNOTEL	4640	4/01/12	142	57.6	--	--
SENTINEL BT SNOTEL	4680	4/01/12	39	9.8	11.9	9.0
SHEEP CANYON SNOTEL	3990	4/01/12	136	55.6	50.2	37.8
SHERWIN SNOTEL	3200	4/01/12	---	10.4	9.9	10.1
SILVER STAR MTN CAN.	5600	3/31/12	80	29.1	31.3	29.9
SKALKAHO SNOTEL	7260	4/01/12	71	24.7	26.7	24.3
SKITWISH RIDGE	5110	4/02/12	101	39.6	43.6	30.2
SKOOKUM CREEK SNOTEL	3310	4/01/12	113	57.2	28.2	26.3
SKOOKUM LAKES	4230	3/27/12	54	17.6	17.7	--
SLIDE ROCK MOUNTAIN	7100	3/25/12	54	18.4	15.2	15.5
SOURDOUGH GUL SNOTEL	4000	4/01/12	0	.0	.0	--
SOUTH BALDY	4920	3/27/12	76	25.0	28.0	--
SPENCER MDW SNOTEL	3400	4/01/12	103	43.0	36.9	30.8
SPIRIT LAKE SNOTEL	3520	4/01/12	---	18.2	11.4	3.9
SPOTTED BEAR MTN.	7000	3/27/12	42	15.0	19.3	14.1
SPRUCE SPGS SNOTEL	5700	4/01/12	54	20.2	15.7	19.7
STARVATION MOUNTAIN	6750	3/28/12	65	22.1	26.1	19.5
STAHL PEAK SNOTEL	6030	4/01/12	114	38.9	47.9	35.3
STAMPEDE PASS SNOTEL	3850	4/01/12	117	47.6	32.6	45.3
STEMPLE PASS	6600	3/27/12	45	12.7	12.7	10.2
STEVENS PASS SNOTEL	3950	4/01/12	147	48.1	37.0	42.6
STORM LAKE	7780	3/27/12	44	13.1	14.8	13.3
STRANGER MOUNTAIN	4230	3/26/12	48	14.7	12.0	12.2

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
STRYKER BASIN	6180	3/27/12	97	35.9	40.9	31.9
STUART MOUNTAIN	7400	3/27/12	87	32.0	--	--
SUMMERLAND RES CAN.	4200	4/01/12	34	9.4	12.0	8.9
SUMMIT G.S. #2	4600	3/27/12	39	10.2	12.5	8.4
SUNSET SNOTEL	5540	4/01/12	---	27.2	30.2	31.5
SURPRISE LKS SNOTEL	4290	4/01/12	158	60.6	57.4	46.1
SWAMP CREEK SNOTEL	3930	4/01/12	80	30.7	25.2	16.2
SWIFT CREEK SNOTEL	4440	4/01/12	190	81.5	80.1	56.1
TEN MILE LOWER	6600	3/27/12	28	8.9	8.6	7.0
TEN MILE MIDDLE	6800	3/27/12	40	11.4	11.0	11.4
THUNDER BASIN SNOTEL	4320	4/01/12	112	39.6	32.8	33.7
THUNDER BASIN	4200	4/01/12	92	29.6	22.7	21.9
THOMPSON CREEK	2500	3/29/12	12	3.3	3.2	--
THOMPSON RIDGE	4650	3/29/12	49	14.6	16.1	--
TINKHAM CREEK SNOTEL	2990	4/01/12	102	41.0	27.7	30.0
TOATS COULEE	2850	3/26/12	9	2.6	1.0	1.4
TOGO	3370	3/29/12	33	10.4	6.6	10.7
TOUCHET SNOTEL	5530	4/01/12	92	37.3	30.4	34.7
TRINKUS LAKE	6100	3/27/12	111	42.6	54.1	42.0
TROUGH #2 SNOTEL	5480	4/01/12	58	16.6	13.8	10.0
TROUT CREEK CAN.	5650	3/30/12	35	9.8	--	7.2
TRUMAN CREEK	4060	3/30/12	16	5.9	7.0	3.7
TUNNEL AVENUE	2450	3/28/12	57	21.7	19.8	19.2
TV MOUNTAIN	6800	3/27/12	53	17.1	23.1	18.3
TWELVEMILE SNOTEL	5600	4/01/12	50	21.5	17.7	17.5
TWIN CREEKS	3580	3/27/12	27	8.1	11.7	9.6
TWIN LAKES SNOTEL	6400	4/01/12	100	43.0	41.9	39.7
TWIN SPIRIT DIVIDE	3480	4/01/12	73	28.6	--	12.1
UPPER HOLLAND LAKE	6200	3/27/12	82	30.5	46.5	34.6
UPPER WHEELER SNOTEL	4330	4/01/12	42	11.6	13.2	13.1
VULCAN MTN	4660	3/27/12	40	11.4	12.7	--
VULCAN ROAD	3840	3/27/12	31	8.2	8.1	--
WARM SPRINGS SNOTEL	7800	4/01/12	72	23.6	25.3	21.2
WATERHOLE SNOTEL	5010	4/01/12	155	55.3	56.6	35.3
WEASEL DIVIDE	5450	3/29/12	102	37.9	40.5	32.9
WELLS CREEK SNOTEL	4030	4/01/12	134	49.0	45.7	33.6
WHITE PASS ES SNOTEL	4440	4/01/12	93	34.4	22.5	23.9
WHITE ROCKS MTN CAN.	7200	3/30/12	65	22.2	21.7	23.1



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Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

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

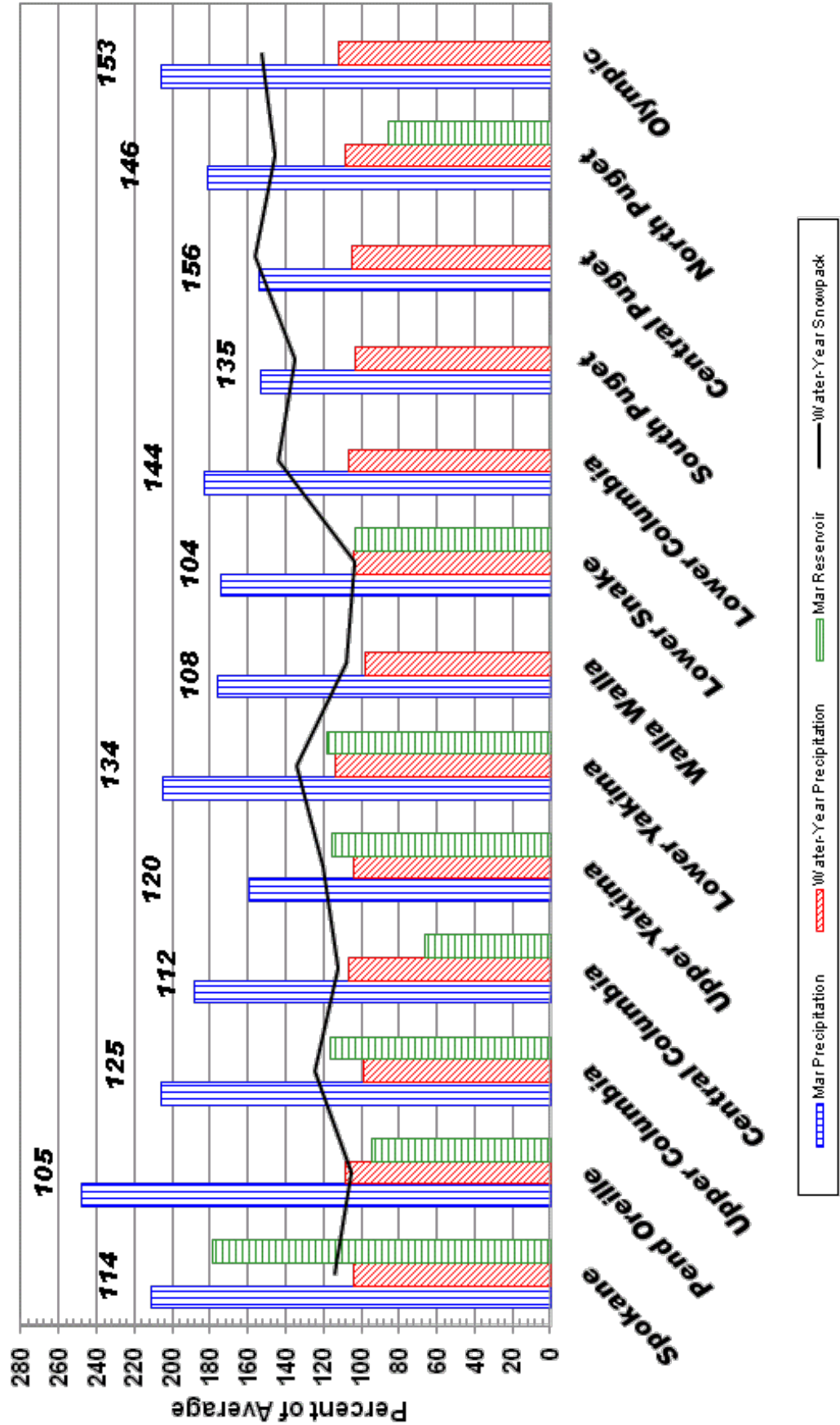
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

NRCS National:
<http://www.nrcs.usda.gov>

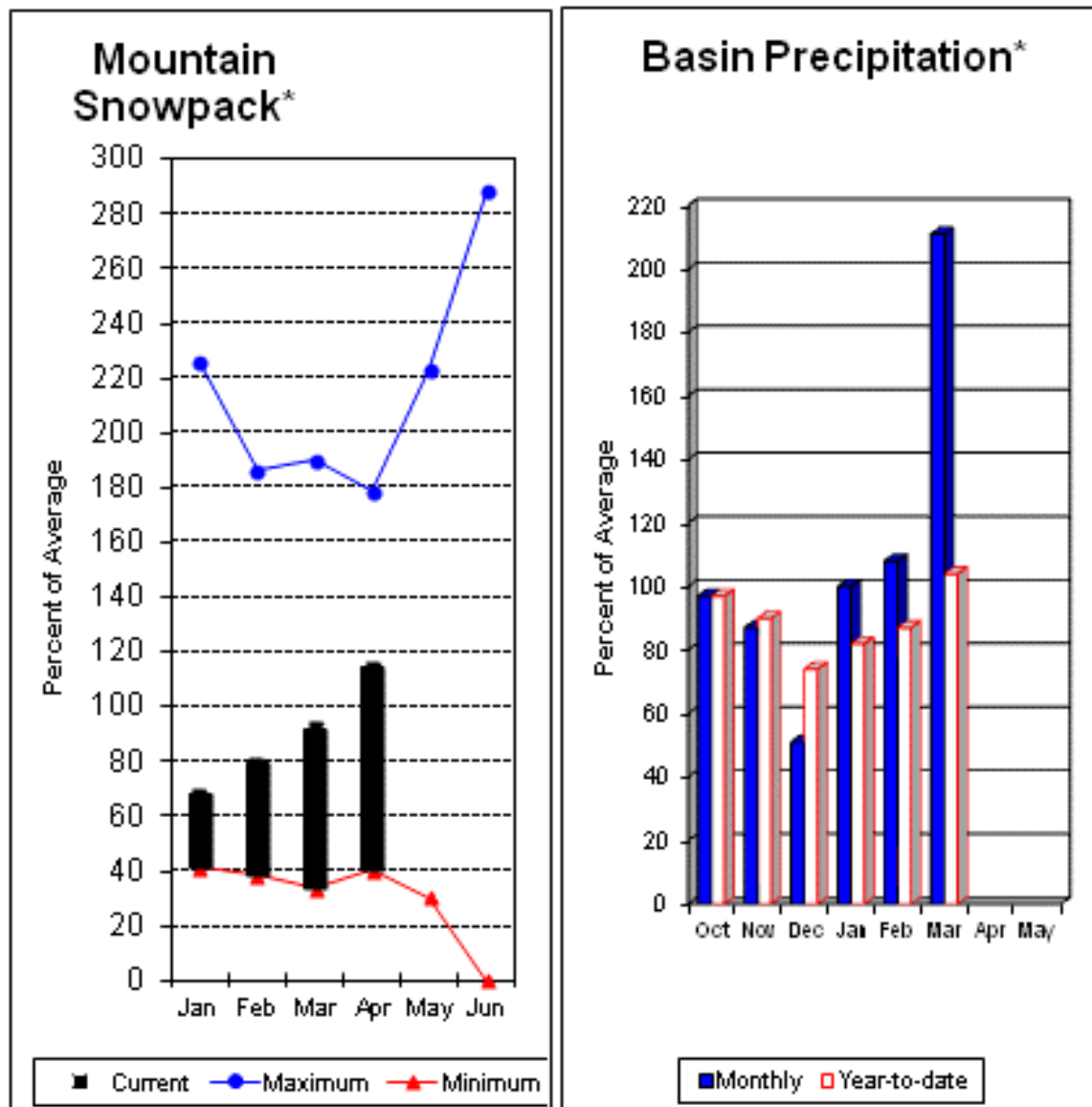
April 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2011 - Current Date)



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Spokane River Basin



*Based on selected stations

The April 1 forecasts for summer runoff within the Spokane River Basin are 119% of average near Post Falls and at Long Lake. The Chamokane River near Long Lake forecasted to have 102% of average flows for the May-August period. The forecast is based on a basin snowpack that is 114% of average and precipitation that is 104% of average for the water year. Precipitation for March was 211% of normal. Streamflow on the Spokane River at Long Lake was 121% of average for March. April 1 storage in Coeur d'Alene Lake was 303,000 acre feet, 179% of average and 127% of capacity. Snowpack at Quartz Peak SNOTEL site was 132% of average with 28 inches of water content. Average temperatures in the Spokane basin were near normal for March and for the water year.

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

Spokane River Basin

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spokane R nr Post Falls (2)	APR-JUL	2480	2810	3040	119	3270	3600	2550
	APR-SEP	2570	2920	3150	119	3380	3730	2650
Spokane R at Long Lake (2)	APR-JUL	2780	3140	3390	119	3640	4000	2850
	APR-SEP	3010	3390	3650	119	3910	4290	3070
Chamokane Ck nr Long Lake	MAY-AUG	6.7	8.9	10.4	102	11.9	14.1	10.2

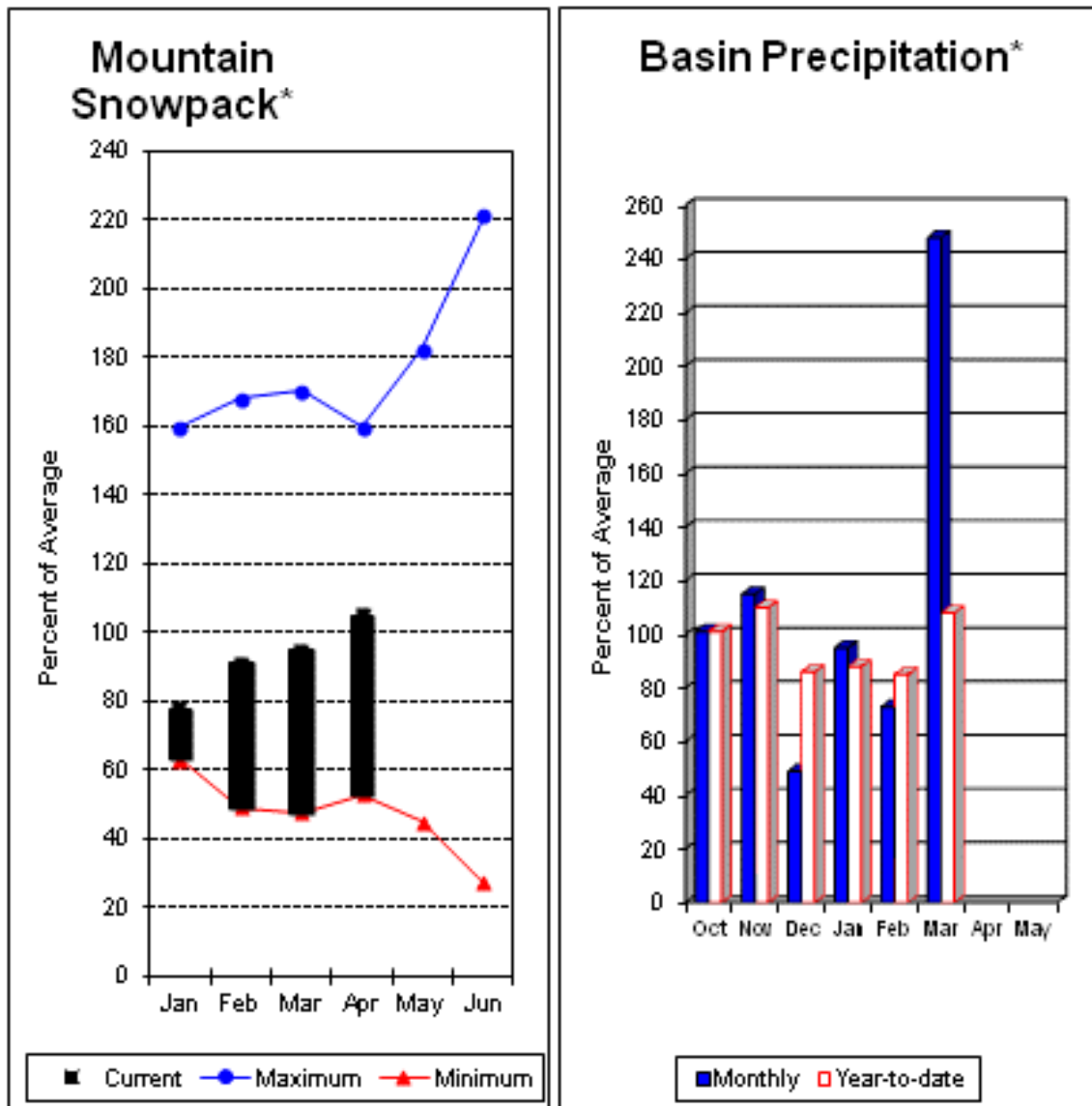
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of March					SPOKANE RIVER BASIN Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Coeur d'Alene	238.5	302.7	178.1	169.5	SPOKANE RIVER	17	99	114
					NEWMAN LAKE	2	108	138

* 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.

Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Priest River near the town of Priest River is 102% and the Pen Orielle below Box Canyon is 106%. March streamflow was 106% of average on the Pend Oreille River and 93% on the Columbia Birchbank. April 1 snow cover was 105% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 33.6 inches of snow water on the snow pillow. Normally Bunchgrass would have 30.2 inches on April 1. Precipitation during March was 248% of average, bringing the year-to-date precipitation to 108% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 94% of normal. Average temperatures were near for March and for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Pend Oreille Lake Inflow (2)	APR-JUL	11700	12800	13500	106	14200	15200	12700
	APR-SEP	12900	14000	14800	107	15700	16800	13900
Priest R nr Priest River (1,2)	APR-JUL	705	780	830	102	880	955	815
	APR-SEP	745	830	885	102	940	1030	870
Pend Oreille R bl Box Canyon (2)	APR-JUL	11900	13000	13700	106	14400	15500	12900
	APR-SEP	12900	14100	14900	106	15700	16900	14100

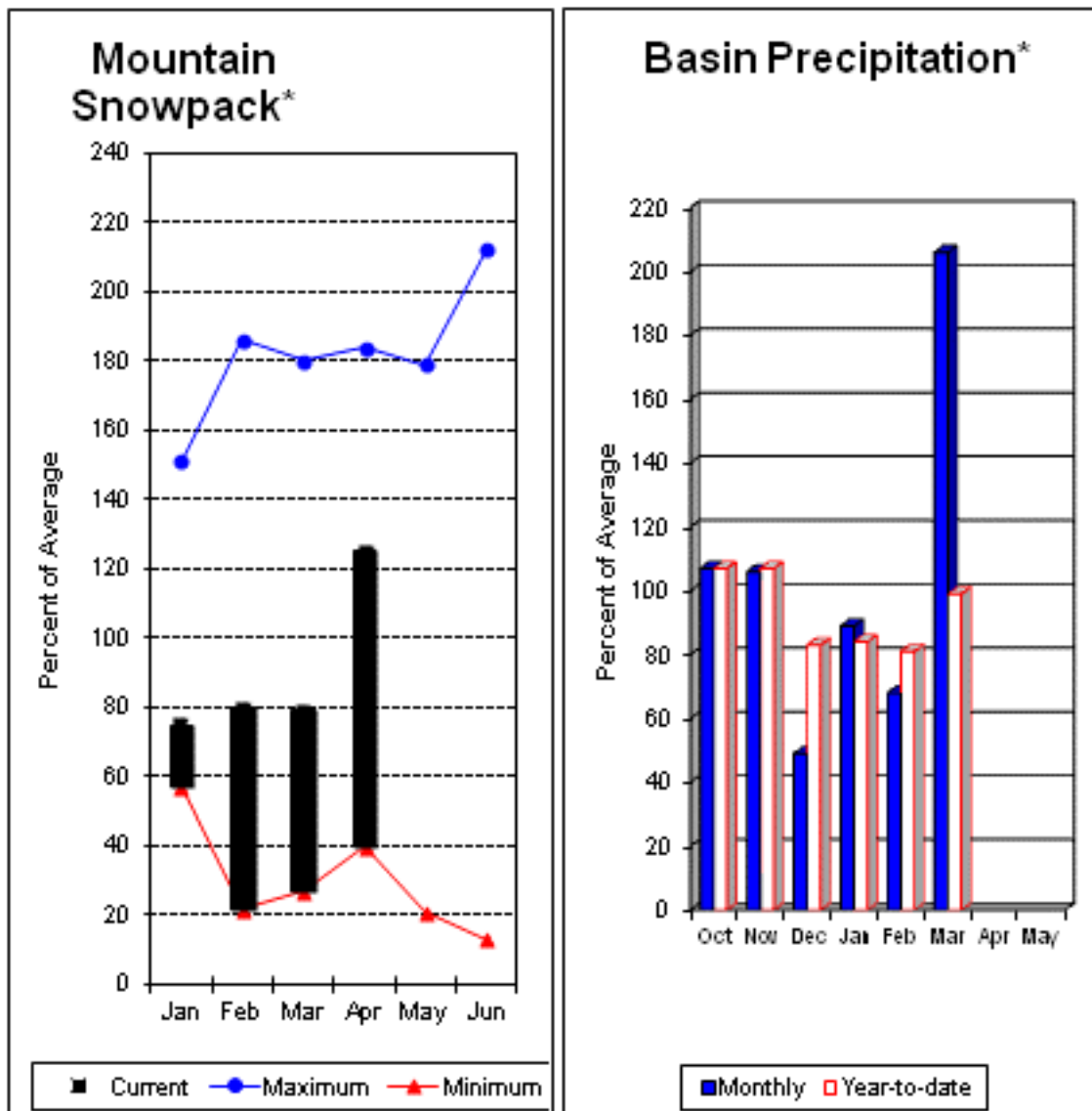
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of March					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Pend Oreille	1561.3	711.4	818.1	763.6	COLVILLE RIVER	1	100	120
Priest Lake	119.3	69.1	54.1	65.5	PEND OREILLE RIVER	11	99	110
					KETTLE RIVER	7	92	107

* 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.

Upper Columbia River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 114%, Similkameen River is 116%, Kettle River 90% and Methow River is 112%. April 1 snow cover on the Okanogan was 109% of average, Omak Creek was 128% and the Methow was 117%. March precipitation in the Upper Columbia was 206% of average, with precipitation for the water year at 99% of average. March streamflow for the Methow River was 60% of average, 53% for the Okanogan River and 70% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 12.1 inches. Average for this site is 11.1 inches on April 1. Combined storage in the Conconully Reservoirs was 20,000-acre feet, which is 87% of capacity and 116% of the April 1 average. Temperatures were slightly below normal for March and near average for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Colville R at Kettle Falls	APR-JUL	86	122	147	115	172	210	128
	APR-SEP	93	133	160	114	187	225	141
Kettle R nr Laurier	APR-JUL	1380	1560	1690	90	1820	2000	1870
	APR-SEP	1440	1640	1780	90	1920	2120	1970
Columbia R at Birchbank (1,2)	APR-JUL	34300	37200	38500	110	39800	42700	34900
	APR-SEP	44800	48400	50100	115	51700	55300	43500
Columbia R at Grand Coulee (2)	APR-JUL	52100	57000	59200	110	61500	66400	53800
	APR-SEP	63300	69200	71900	112	74500	80400	64000
Similkameen R nr Nighthawk (1)	APR-JUL	1310	1490	1570	116	1650	1830	1350
	APR-SEP	1410	1600	1680	116	1760	1950	1450
Okanogan R nr Tonasket (1)	APR-JUL	1390	1670	1800	114	1930	2210	1580
	APR-SEP	1540	1860	2010	114	2160	2480	1770
Okanogan R at Malott (1)	APR-JUL	1450	1730	1860	114	1990	2270	1630
	APR-SEP	1600	1920	2070	113	2220	2540	1830
Methow R nr Pateros	APR-SEP	950	1040	1100	112	1160	1250	985
	APR-JUL	880	965	1020	112	1080	1160	910

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of March					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
SALMON LAKE	10.5	8.4	8.7	8.4	OKANOGAN RIVER	20	99	109
CONCONULLY RESERVOIR	13.0	12.0	11.5	9.2	OMAK CREEK	3	112	128
					SANPOIL RIVER	0	139	0
					SIMILKAMEEN RIVER	5	101	115
					TOATS COULEE CREEK	1	84	186
					CONCONULLY LAKE	3	82	112
					METHOW RIVER	7	101	117

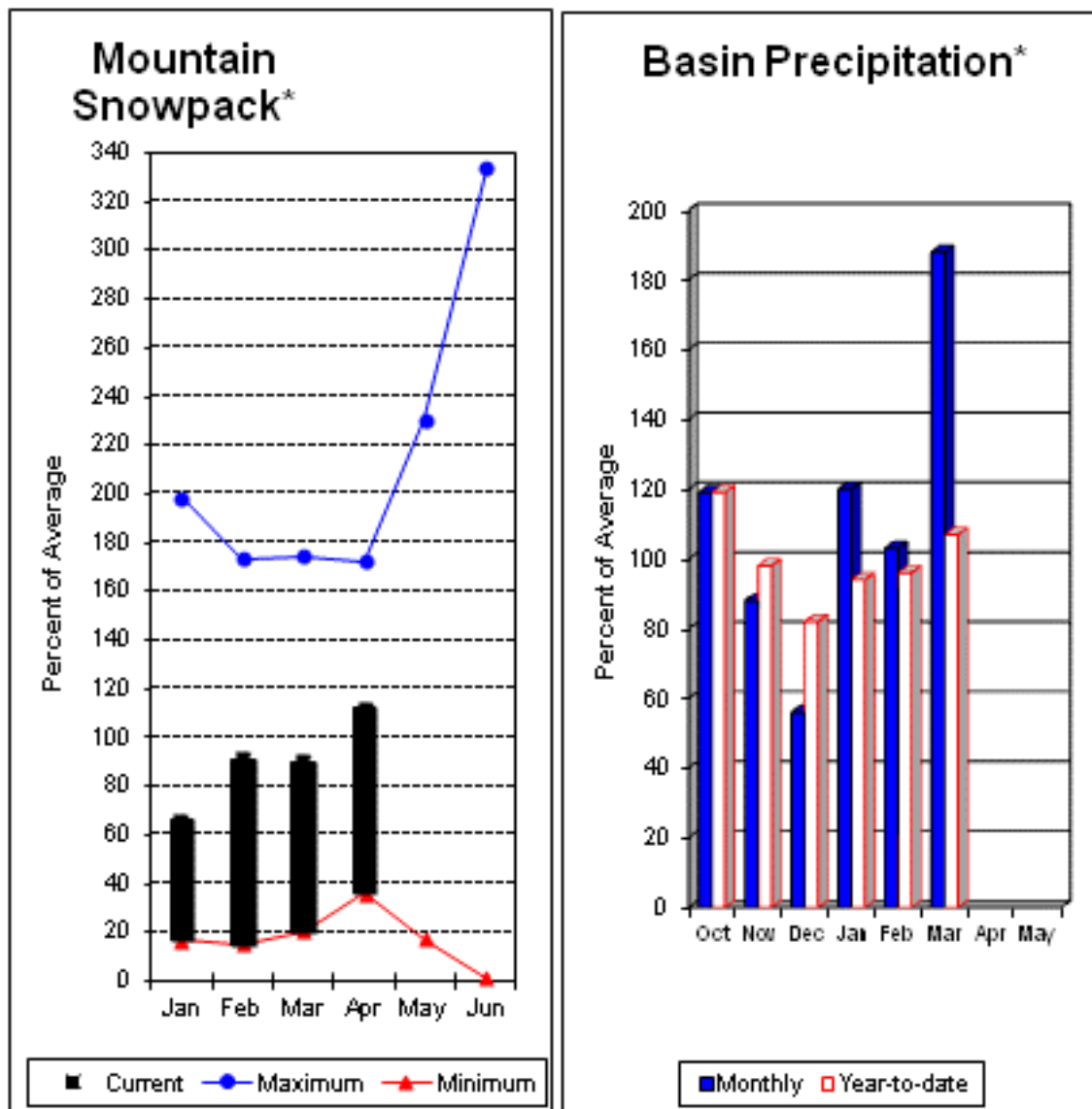
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

Central Columbia River Basins



*Based on selected stations

Precipitation during March was 88% of average in the basin and 107% for the year-to-date. Runoff for Entiat River is forecast to be 104% of average for the summer. The April-September average forecast for Chelan River is 108%, Wenatchee River at Plain is 110%, Stehekin River is 112% and Icicle Creek is 102%. March average streamflows on the Chelan River were 81% and on the Wenatchee River 62%. April 1 snowpack in the Wenatchee River Basin was 112% of average; the Chelan, 114%; the Entiat, 119%; Stemilt Creek, 89% and Colockum Creek, 125%. Reservoir storage in Lake Chelan was 142,000-acre feet, 66% of April 1 average and 22% of capacity. Lyman Lake SNOTEL had the most snow water with 66.2 inches of water. This site would normally have 65.4 inches on April 1. Temperatures were slightly below normal for March and near normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Stehekin R at Stehekin	APR-JUL	685	750	790	113	830	895	700
	APR-SEP	830	890	930	112	970	1030	830
Chelan R at Chelan (2)	APR-JUL	1040	1090	1130	108	1170	1220	1050
	APR-SEP	1190	1240	1280	108	1320	1370	1190
Entiat R nr Ardenvoir	APR-JUL	200	215	225	105	235	250	215
	APR-SEP	225	240	250	104	260	275	240
Wenatchee R at Plain	APR-JUL	1080	1140	1190	111	1240	1300	1070
	APR-SEP	1180	1250	1300	110	1350	1420	1180
Icicle Ck nr Leavenworth	APR-JUL	280	300	315	102	330	350	310
	APR-SEP	305	330	345	102	360	385	340
Wenatchee R at Peshastin	APR-JUL	1480	1570	1630	110	1690	1780	1480
	APR-SEP	1610	1710	1780	109	1840	1940	1630
Columbia R bl Rock Island Dam (2)	APR-JUL	58900	62600	65100	110	67600	71300	59000
	APR-SEP	71100	75400	78400	113	81300	85600	69500

CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
CHELAN LAKE	676.1	142.1	171.0	216.3

CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - April 1, 2012

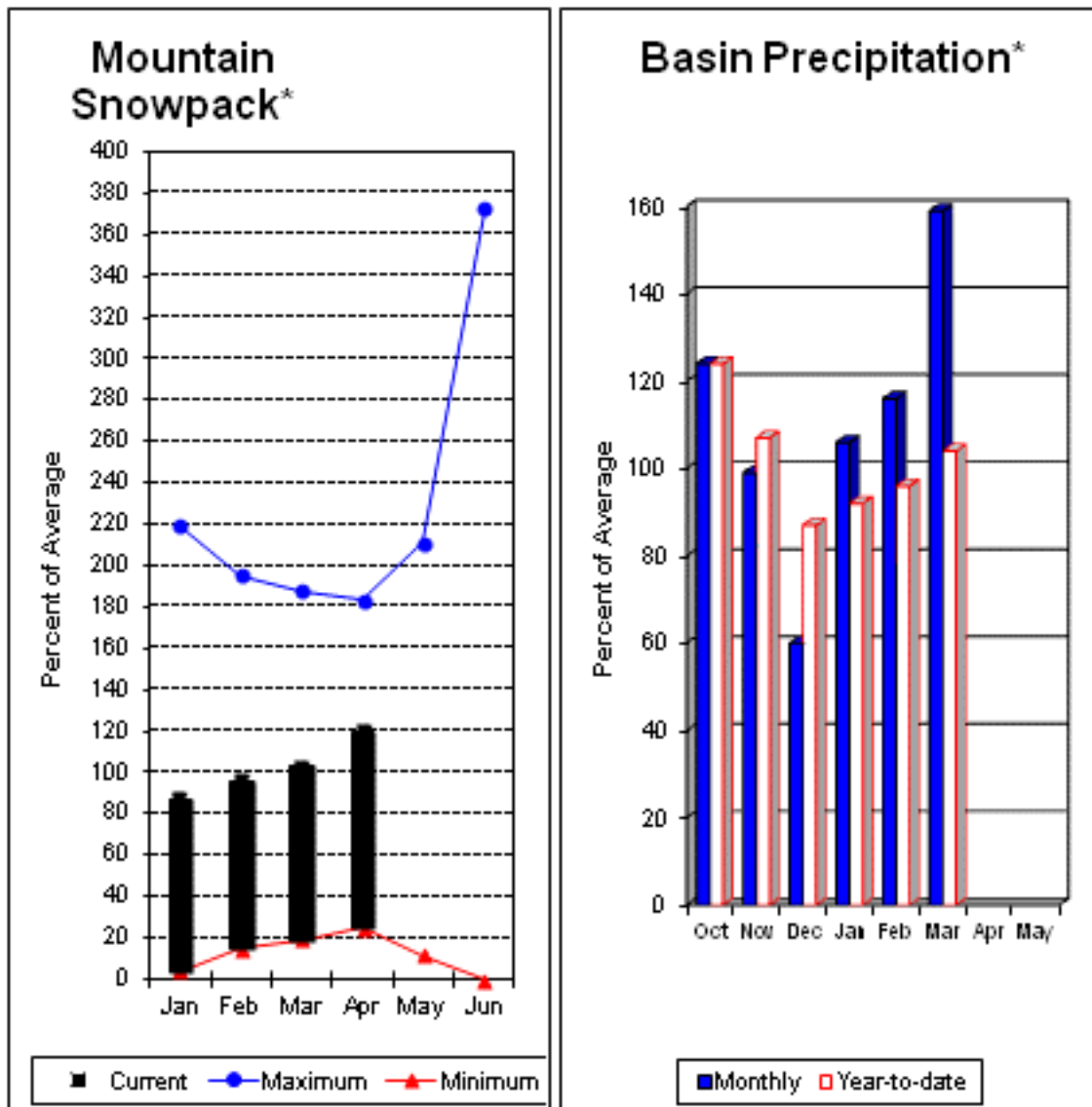
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
CHELAN LAKE BASIN	5	111	114
ENTIAT RIVER	1	122	119
WENATCHEE RIVER	8	114	112
STEMILT CREEK	2	84	89
COLOCKUM CREEK	2	100	125

* 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.

Upper Yakima River Basin



*Based on selected stations

April 1 reservoir storage for the Upper Yakima reservoirs was 639,000-acre feet, 115% of average. Forecasts for the Yakima River at Cle Elum are 109% of average and the Teanaway River near Cle Elum is at 121%. Lake inflows are all forecasted to be above normal this summer. March streamflows within the basin were Cle Elum River near Roslyn at 69%. April 1 snowpack was 120% based upon 10 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 159% of average for March and 104% year-to-date for water. 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

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Keechelus Reservoir Inflow (2)	APR-JUL	122	133	141	117	149	160	121
	APR-SEP	135	147	155	117	163	175	133
Kachess Reservoir Inflow (2)	APR-JUL	113	122	128	115	134	143	111
	APR-SEP	123	132	138	115	144	153	120
Cle Elum Lake Inflow (2)	APR-JUL	425	445	460	112	475	495	410
	APR-SEP	455	480	500	111	520	545	450
Yakima R at Cle Elum (2)	APR-JUL	780	850	900	110	950	1020	820
	APR-SEP	835	920	980	109	1040	1130	900
Teanaway R bl Forks nr Cle Elum	APR-JUL	144	161	173	121	185	200	143
	APR-SEP	147	164	176	121	188	205	146

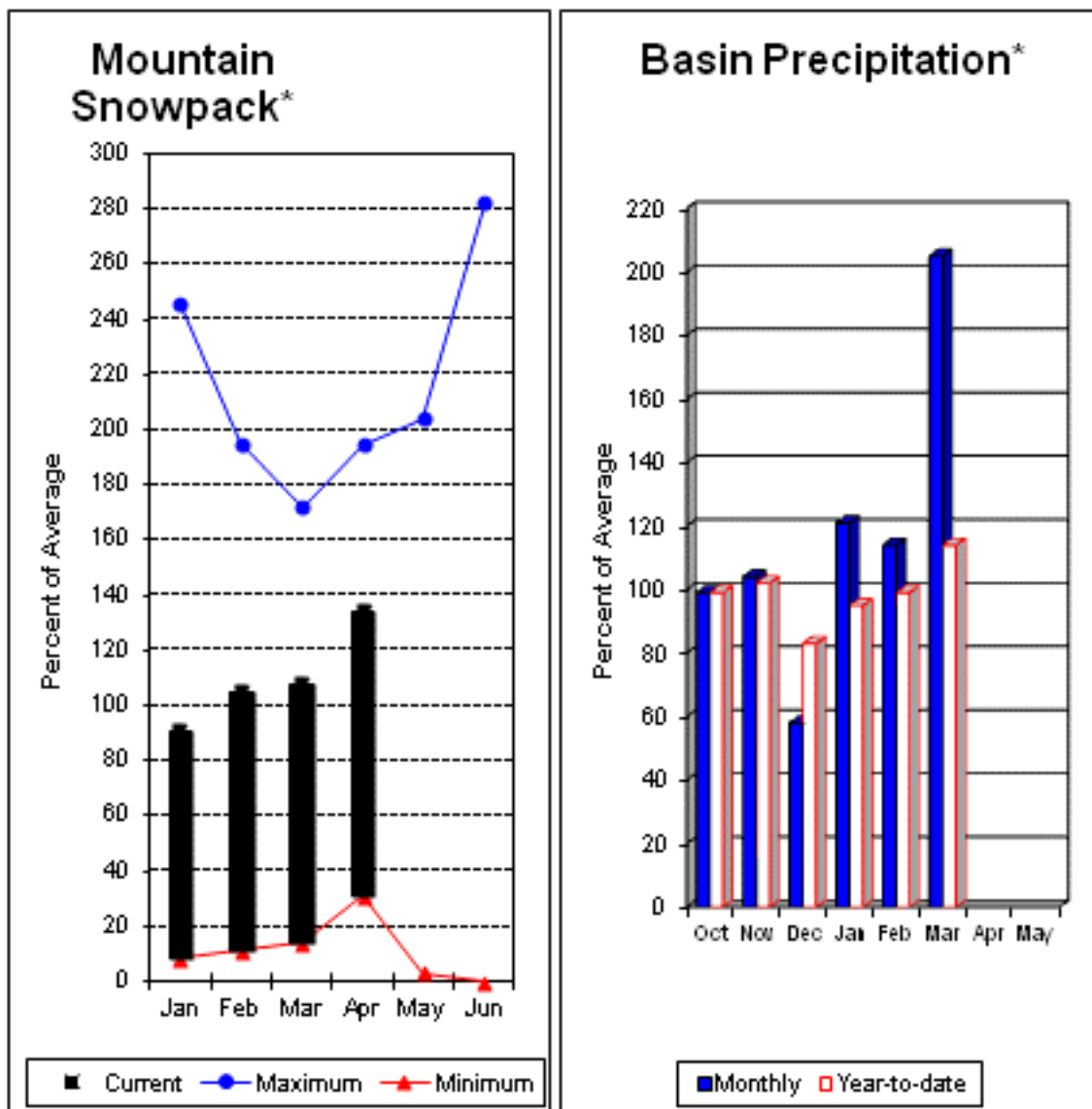
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of March					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	118.4	146.7	114.1	UPPER YAKIMA RIVER	10	129	120
KACHESS	239.0	181.9	226.7	169.4				
CLE ELUM	436.9	338.3	369.9	270.1				

* 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 Yakima River Basin



*Based on selected stations

March average streamflows within the basin were: Yakima River near Parker, 78%; Naches River near Naches, 77%; and Yakima River at Kiona, 82%. April 1 reservoir storage for Bumping and Rimrock reservoirs was 179,000-acre feet, 118% of average. Forecast averages for Yakima River near Parker are 121%; American River near Nile, 118%; Ahtanum Creek, 138%; and Klickitat River near Glenwood, 135%. April 1 snowpack was 134% based upon 8 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 142% of average. Precipitation was 205% of average for March and 114% year-to-date. Temperatures were slightly 1-5 degrees below normal for March and slightly below for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they 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

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bumping Lake Inflow (2)	APR-JUL	130	141	148	121	155	166	122
	APR-SEP	141	152	160	121	168	179	132
American R nr Nile	APR-JUL	113	121	127	118	133	141	108
	APR-SEP	125	133	139	118	145	153	118
Rimrock Lake Inflow (2)	APR-JUL	225	235	245	120	255	265	205
	APR-SEP	260	275	285	119	295	310	240
Naches R nr Naches (2)	APR-JUL	815	870	910	126	950	1000	720
	APR-SEP	885	950	990	127	1030	1090	780
Ahtanum Ck at Union Gap	APR-JUL	34	38	41	137	44	48	30
	APR-SEP	37	41	44	138	47	51	32
Yakima R nr Parker (2)	APR-JUL	1970	2100	2180	121	2260	2390	1800
	APR-SEP	2180	2310	2400	121	2490	2620	1980
Klickitat R nr Glenwood	APR-JUL	151	163	171	136	179	191	126
	APR-SEP	197	210	220	135	230	245	163
Klickitat R nr Pitt	APR-JUL	510	555	590	128	625	670	460
	APR-SEP	610	665	705	128	745	800	550

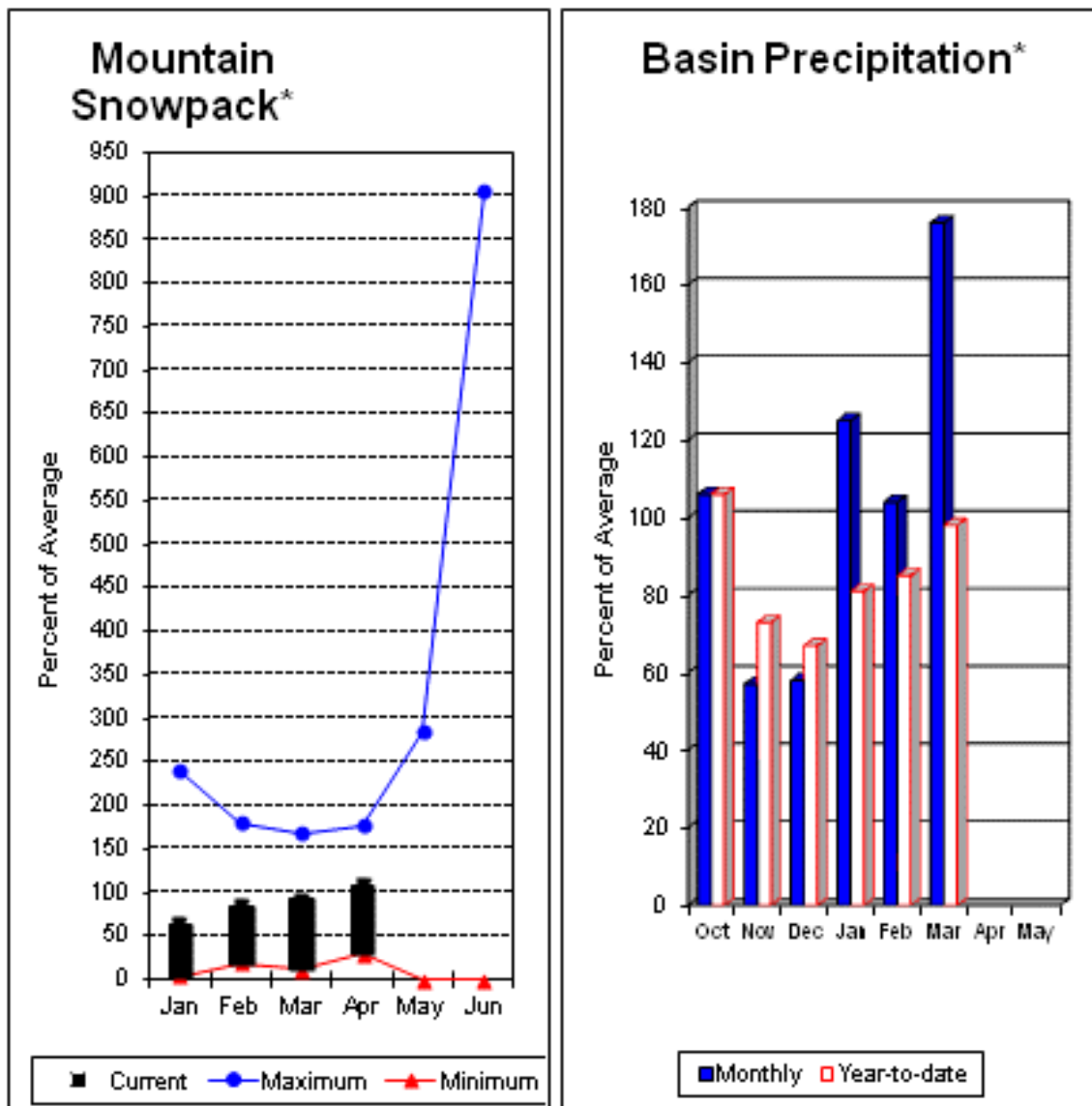
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of March					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUMPING LAKE	33.7	14.5	14.7	13.1	LOWER YAKIMA RIVER	8	119	134
RIMROCK	198.0	164.2	165.8	138.5	AHTANUM CREEK	3	132	142

* 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.

Walla Walla River Basin



*Based on selected stations

March precipitation was 176% of average, maintaining the year-to-date precipitation at 98% of average. Snowpack in the basin was 108% of average. Streamflow forecasts are 104% of average for Mill Creek and 90% for the SF Walla Walla near Milton-Freewater. March streamflow was 179% of average for the SF Walla Walla River. Average temperatures were 1-2 degrees below normal for March and for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - April 1, 2012

		<<===== Drier =====		Future Conditions		===== Wetter =====>		
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
SF Walla Walla R nr Milton-Freewater	APR-JUL	38	44	48	89	52	58	54
	APR-SEP	48	55	60	90	65	72	67
Mill Ck nr Walla Walla	APR-JUL	19.4	23	25	104	27	31	24
	APR-SEP	23	27	29	104	31	35	28

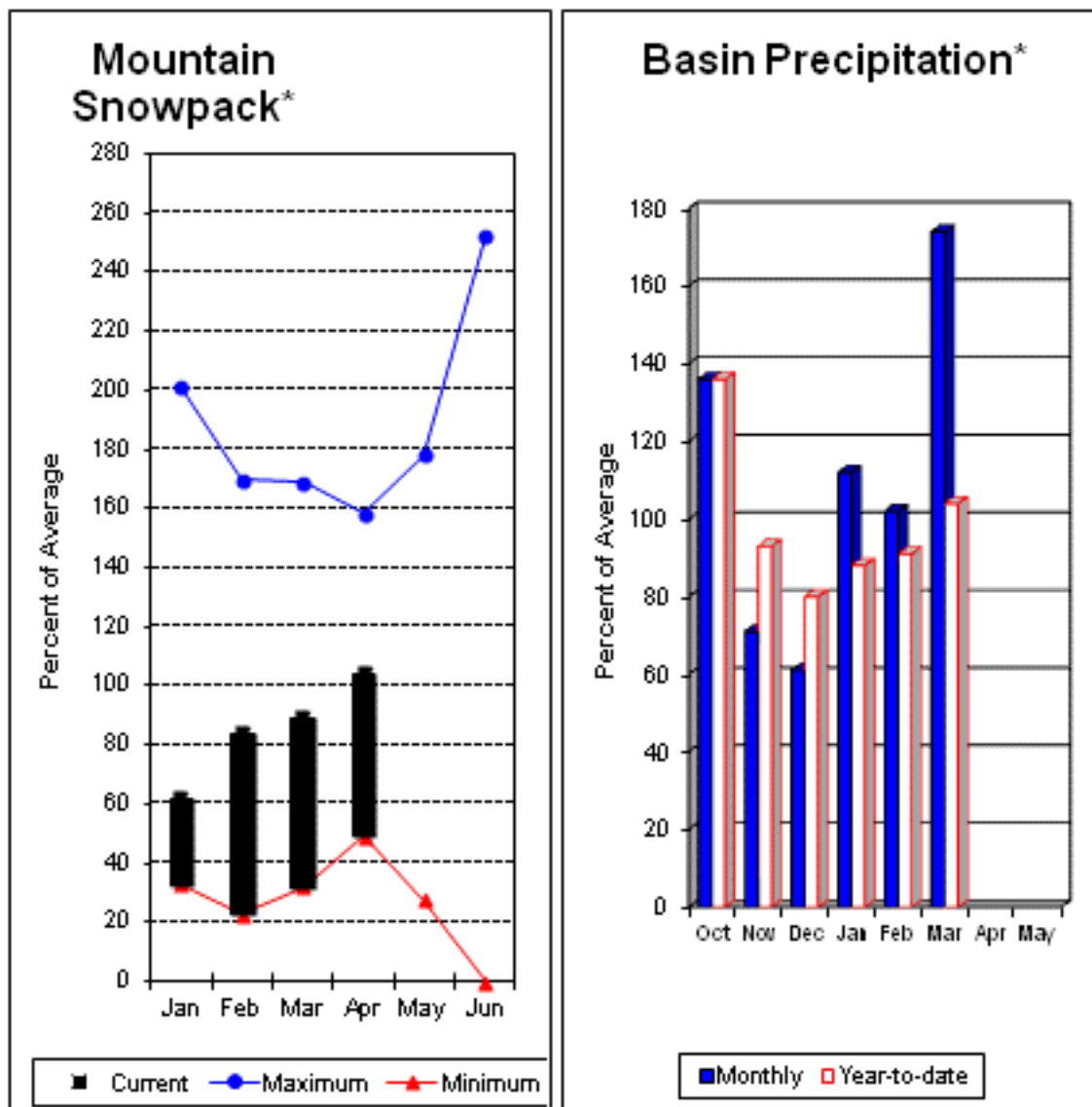
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of March					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	108	108

* 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 Snake River Basin



*Based on selected stations

The April - September forecast is for 117% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 106% and 101% of normal respectively. The forecast for Asotin Creek at Asotin predicts 123% of average flows for the April – July runoff period. March precipitation was 174% of average, bringing the year-to-date precipitation to 104% of average. April 1 snowpack readings averaged 104% of average. March streamflow was 95% of average for Snake River below Lower Granite Dam and 105% for Grande Ronde River near Troy. Dworshak Reservoir storage was 103% of average. Average temperatures were 1-2 degrees below normal for March and for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Grande Ronde R at Troy (1)	APR-SEP	985	1260	1380	101	1500	1780	1370
Asotin Ck at Asotin	APR-JUL	30	38	43	123	48	56	35
Clearwater R at Spalding (1,2)	APR-JUL	8720	8770	8800	118	8830	8880	7430
	APR-SEP	9120	9170	9200	117	9230	9280	7850
Snake R bl Lower Granite Dam (1,2)	APR-JUL	17800	21200	22700	105	24300	27700	21550
	APR-SEP	20100	23900	25600	106	27300	31100	24140

LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of March					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Dworshak	3468.0	2305.0	1619.2	2244.1	LOWER SNAKE, GRANDE RONDE	11	96	104

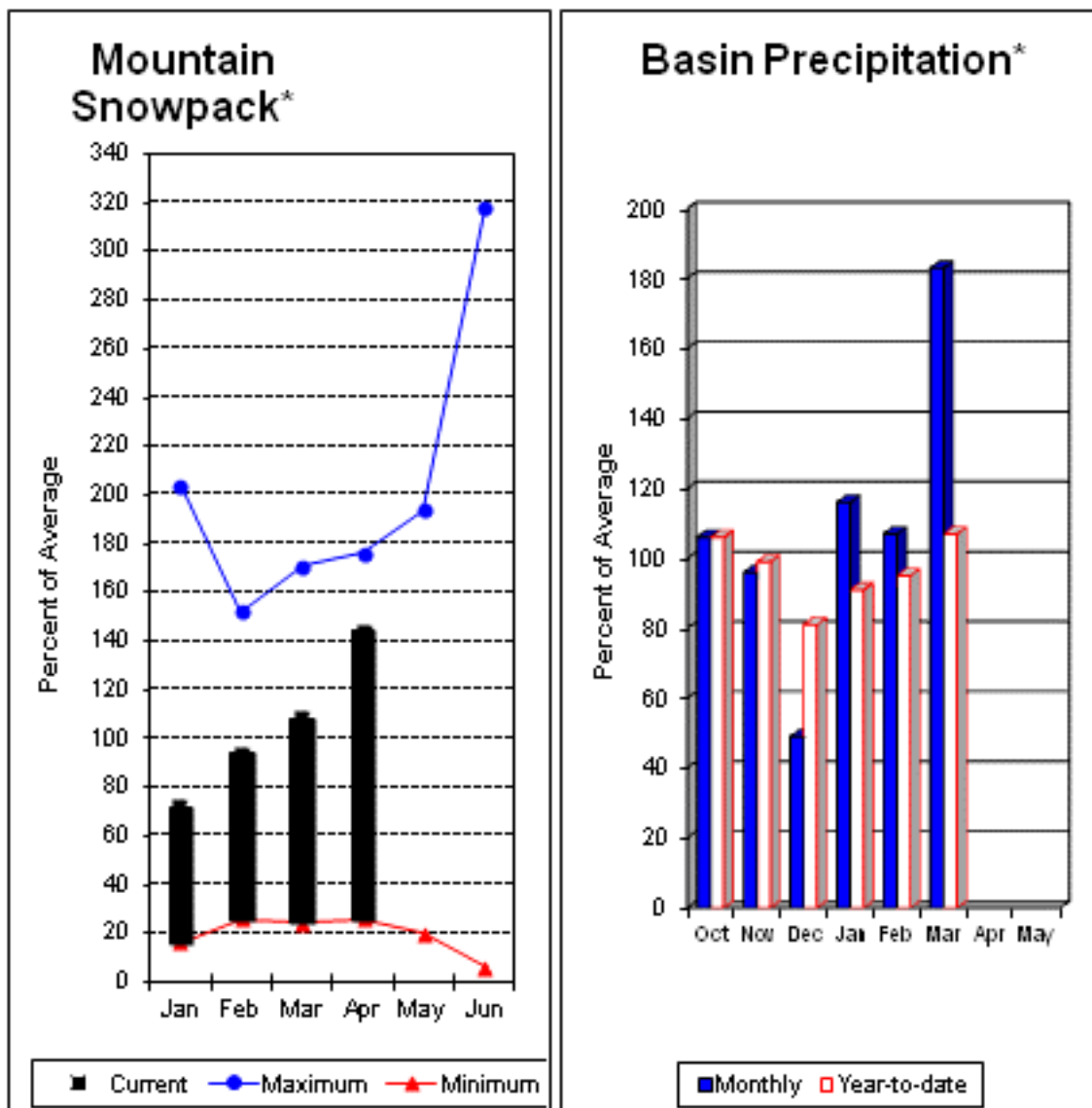
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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 River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 112% and Cowlitz River at Castle Rock, 113% of average. The Columbia at The Dalles is forecasted to have 111% of average flows this summer. March average streamflow for Cowlitz River was 118%. The Columbia River at The Dalles was 97% of average. March precipitation was 183% of average and the water-year average was 107%. Swift Creek SNOTEL had the highest rainfall total in the basin with 33.1 inches. April 1 snow cover for Cowlitz River was 143%, and Lewis River was 144% of average. Temperatures were 3-4 degrees below normal during March and 1-2 degrees below normal for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Columbia R at The Dalles (2)	APR-JUL	82800	88200	91900	109	95600	101000	84600
	APR-SEP	98500	105000	109000	111	113000	120000	98600
Klickitat R nr Glenwood	APR-JUL	151	163	171	136	179	191	126
	APR-SEP	197	210	220	135	230	245	163
Klickitat R nr Pitt	APR-JUL	510	555	590	128	625	670	460
	APR-SEP	610	665	705	128	745	800	550
Lewis R at Ariel (2)	APR-JUL	875	1040	1150	112	1260	1430	1031
	APR-SEP	1030	1200	1320	112	1440	1610	1176
Cowlitz R bl Mayfield Dam (2)	APR-JUL	1520	1770	1940	115	2110	2360	1689
	APR-SEP	1710	2010	2210	115	2410	2710	1922
Cowlitz R at Castle Rock (2)	APR-JUL	2120	2400	2590	113	2780	3060	2295
	APR-SEP	2480	2780	2990	113	3200	3500	2639

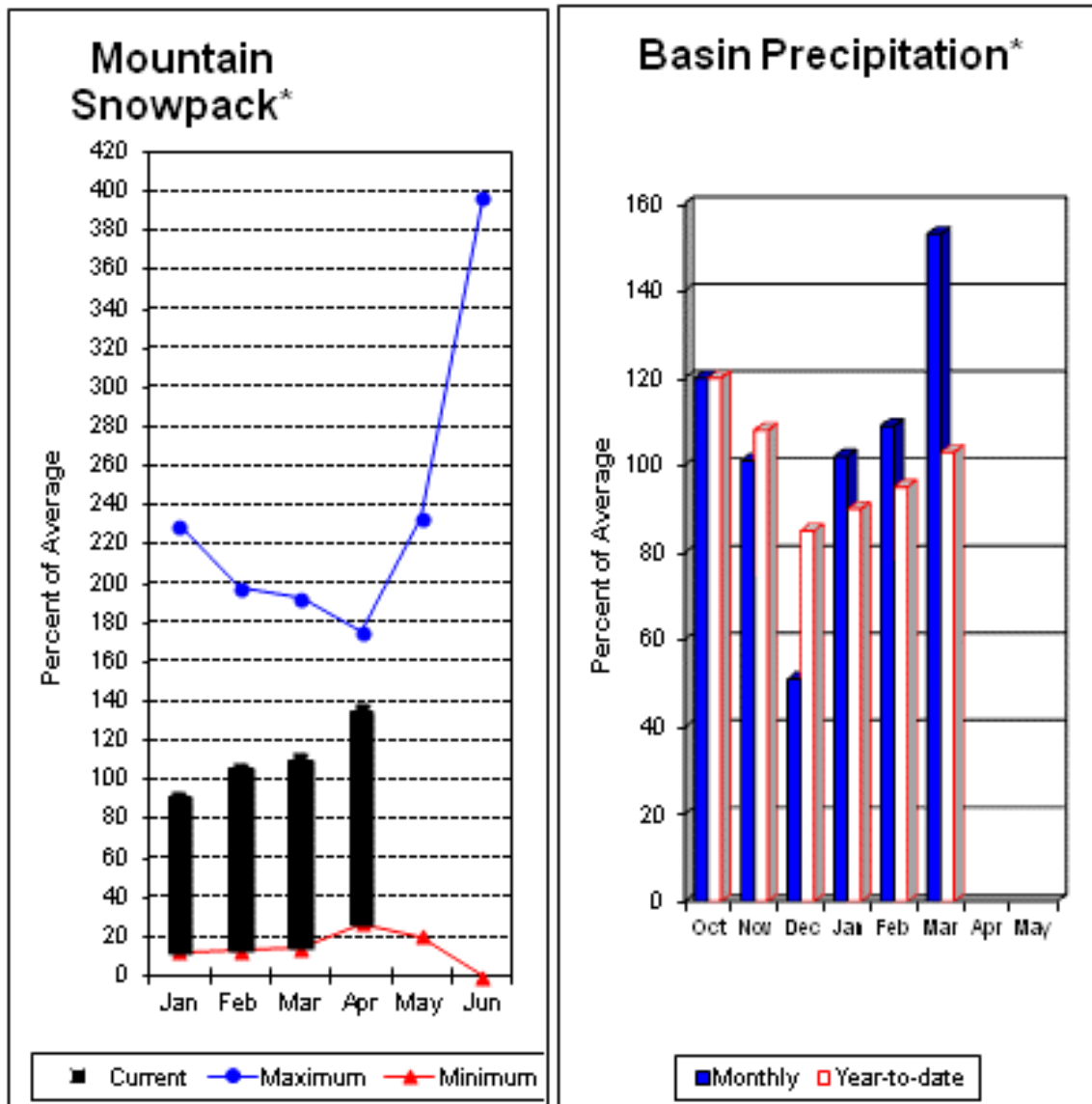
LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of March					LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
MOSSYROCK	0.0	1308.3	1333.2	---	LEWIS RIVER	5	105	144
SWIFT	0.0	511.2	715.9	---	COWLITZ RIVER	6	118	143
YALE	0.0	353.2	381.6	---				
MERWIN	0.0	409.0	384.9	---				

* 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.

South Puget Sound River Basins



*Based on selected stations

Summer runoff is forecast to be 116% of normal for the Green River below Howard Hanson Dam and 113% for the White River near Buckley. April 1 snowpack was 130% of average for the White River, 141% for Puyallup River and 135% in the Green River Basin. Water content on April 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 44 inches. This site has an April 1 average of 34.9 inches. March precipitation was 153% of average, bringing the water year-to-date to 103% of average for the basins. Average temperatures in the area were 3-5 degrees below normal for March and 1-2 degrees below for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
White R nr Buckley (1)	APR-JUL	395	465	500	114	535	605	440
	APR-SEP	480	565	605	113	645	730	534
Green R bl Howard Hanson Dam (1,2)	APR-JUL	215	265	285	116	305	355	245
	APR-SEP	235	285	310	116	335	385	268

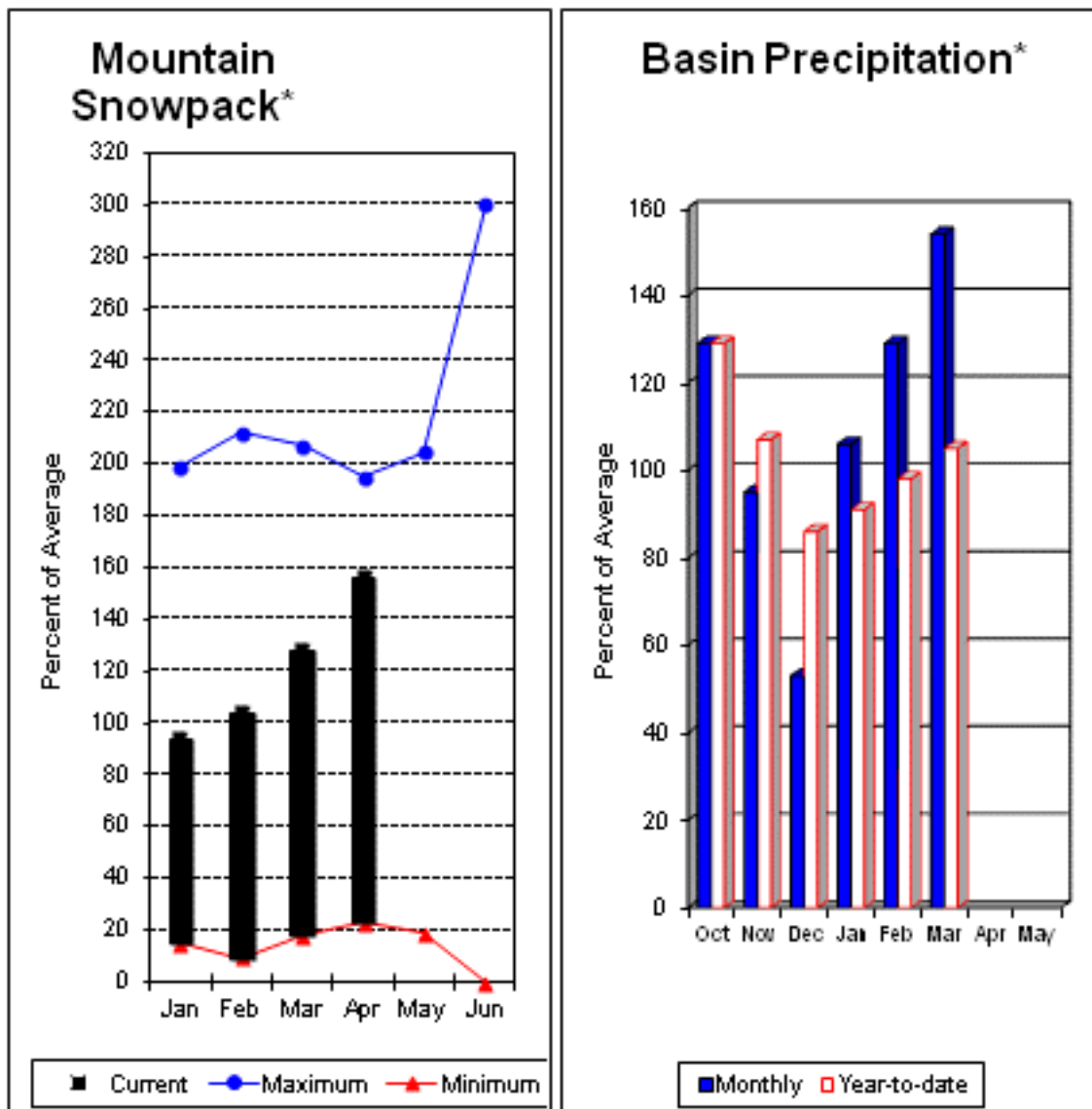
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of March					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	114	130
					GREEN RIVER	3	156	135
					PUYALLUP RIVER	5	132	141

* 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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 129% for Cedar River near Cedar Falls; 132% for Rex River; 124% for South Fork of the Tolt River; 117% for Taylor Creek near Selleck, and 138% for Cedar River at Cedar Falls. Basin-wide precipitation for March was 154% of average, bringing water-year-to-date to 105% of average. April 1 average snow cover in Cedar River Basin was 177%, Tolt River Basin was 165%, Snoqualmie River Basin was 144%, and Skykomish River Basin was 137%. Olallie Meadows SNOTEL site, at 3960 feet, had 75.1 inches of water content. Average April 1 water content is 55.9 inches at Olallie Meadows. Temperatures were 3-4 degrees below normal for March and 1-2 degrees below for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Cedar R nr Cedar Falls	APR-JUL	80	88	94	129	100	108	73
	APR-SEP	88	97	103	129	109	118	80
Rex R nr Cedar Falls	APR-JUL	27	30	33	132	36	39	25
	APR-SEP	30	34	37	132	40	44	28
Cedar R At Cedar Falls	APR-JUL	78	93	103	139	113	128	74
	APR-SEP	77	91	101	138	111	125	73
Taylor Creek Near Selleck	APR-JUL	19.8	22	24	120	26	28	20
	APR-SEP	23	26	28	117	30	33	24
SF Tolt R nr Index	APR-JUL	15.2	17.3	18.7	127	20	22	14.7
	APR-SEP	16.8	19.3	21	124	23	25	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of March

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - April 1, 2012

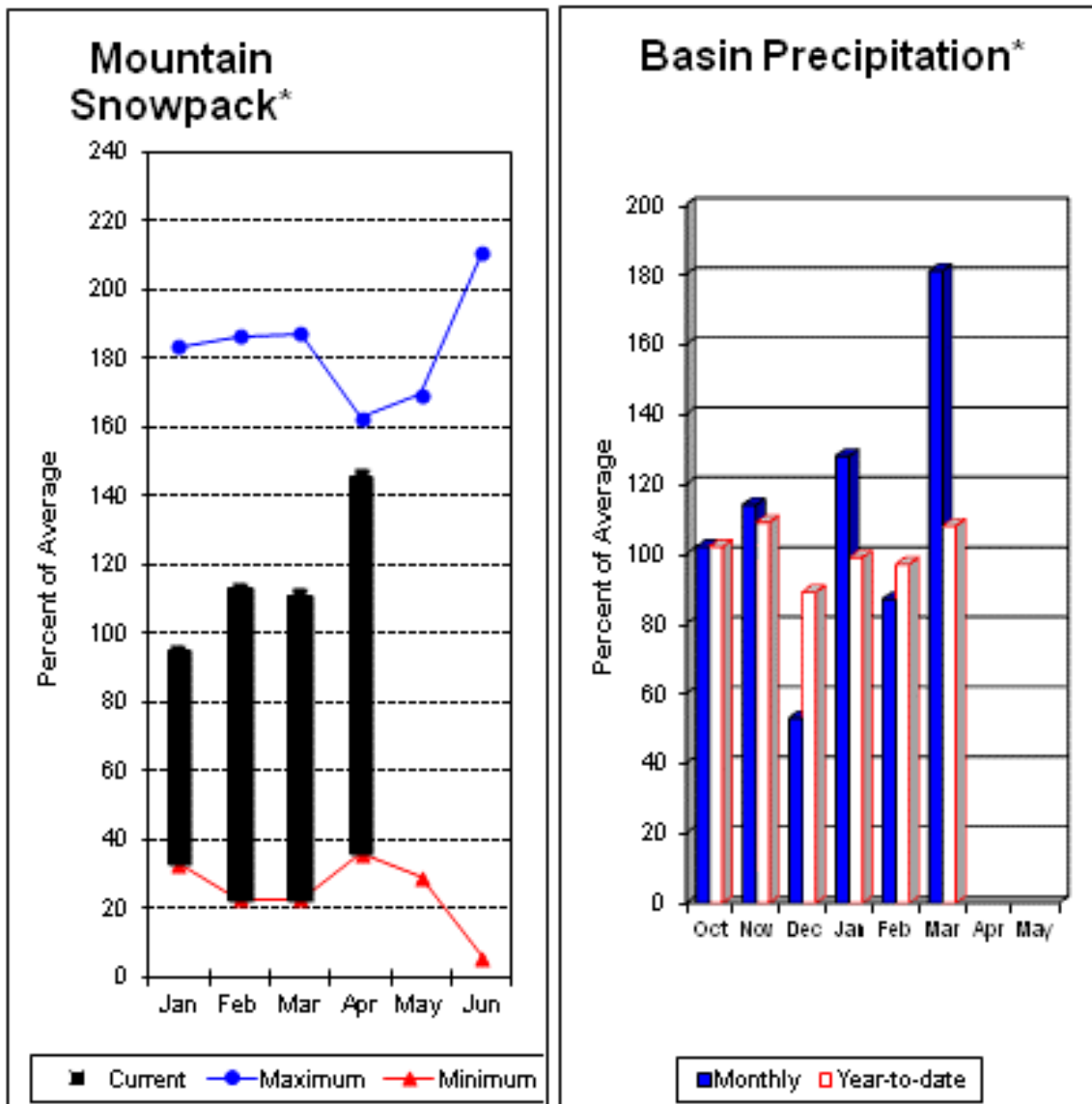
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	6	166	177
					TOLT RIVER	3	156	165
					SNOQUALMIE RIVER	5	146	144
					SKYKOMISH RIVER	3	138	137

* 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.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 117% of average for the spring and summer period. March streamflow in Skagit River was 81% of average. Other forecast points included Baker River at 106% and Thunder Creek at 107% of average. Basin-wide precipitation for March was 181% of average, bringing water-year-to-date to 108% of average. April 1 average snow cover in Skagit River Basin was 137%, Nooksack River Basin was 151% and Baker River Basin was estimated at 150% of average. Rainy Pass SNOTEL, at 4,780 feet, had 50.3 inches of water content. Average April 1 water content is 39.2 inches at Rainy Pass. April 1 Skagit River reservoir storage was 86% of average and 45% of capacity. Average temperatures for March were 3-5 degrees below normal for the basin and 1-2 degrees below for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Thunder Ck Nr Newhalem	APR-JUL	225	240	255	109	270	285	234
	APR-SEP	320	340	355	107	370	390	333
Skagit R At Newhalem	APR-JUL	2030	2140	2210	119	2280	2390	1864
	APR-SEP	2380	2510	2590	117	2670	2800	2217
Baker R nr Concrete (2)	APR-JUL	735	820	875	106	930	1020	828
	APR-SEP	895	1020	1110	106	1200	1320	1050

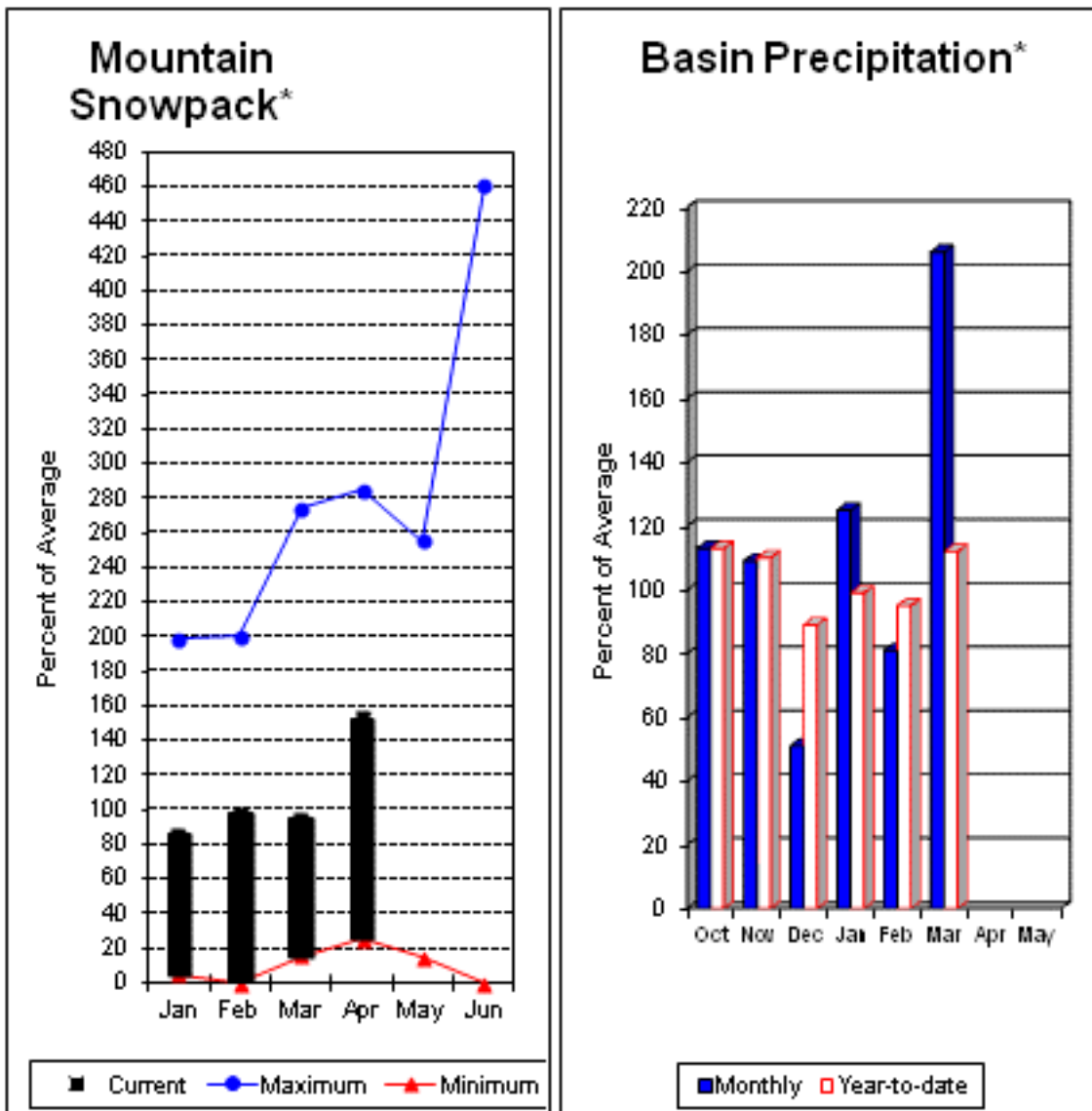
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of March					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	583.2	675.0	693.0	SKAGIT RIVER	15	115	137
DIABLO RESERVOIR	90.6	85.7	84.0	86.2	BAKER RIVER	0	118	0
					NOOKSACK RIVER	2	107	151

* 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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 114% and Elwha River is 117%. March runoff in the Dungeness River was 90% of normal. Big Quilcene and Wynoochee rivers should expect near to slightly above average runoff this summer as well. March precipitation was 206% of average. Precipitation has accumulated at 112% of average for the water year. March precipitation at Quillayute was 21 inches, almost double the thirty-year average for March of 10.98 inches. Olympic Peninsula snowpack averaged 153% of normal on April 1. Temperatures were 2-3 degrees below average for March and 1-2 degrees below for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - April 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Dungeness R Nr Sequim	APR-JUL	119	133	142	115	151	165	124
	APR-SEP	144	161	173	114	185	200	152
Elwha R At Mcdonald Bridge	APR-JUL	430	470	495	118	520	560	419
	APR-SEP	510	555	590	117	625	670	503

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of March					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - April 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	4	99	153

* 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.

Issued by

Dave White
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	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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**



Washington Water Supply Outlook Report May 1, 2012



Photo by Corey Bonsen, NRCS Yakima, WA

Quartz Mountain, WA 3/28/11

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

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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

May 2012

General Outlook

It wasn't snow water or precipitation accumulation but rather high temperatures breaking records last month. With daytime temperatures reaching nearly 70 degrees Fahrenheit and night time temperatures staying well above freezing at most all SNOTEL sites many new high temperature records were set. This factor, in conjunction with a couple of warm rain events, helped push most all basins over the top and into the melt cycle. Most snow surveys this month indicated snow pack densities in the 40-48% range which means that most sites are on the verge of a major thaw. Even though the first few days of May have been cold and wet, short term weather forecasts indicate a trend toward warming and drying with freezing levels rising above 10,000 feet. The 90-day long range and summer forecasts predict drier than normal conditions however temperature forecasts are still up in the air.

Snowpack

The May 1 statewide SNOTEL readings were 140% of average, only slightly higher than last month. All basins have passed the normal peak accumulation period, generally April 1-15, and have entered the melt cycle. Current percentages should be used cautiously and should be accompanied by the actual water content of the snowpack as analysis using percentages this late in the season could cause bias in the outcome. The following percentages are provided as point information only. As temperatures warm the melt rate will increase, rapidly changing percentages on a daily basis. Numerous lower and mid elevation sites have already melted out and by the time this article is published even more will have melted. That's not to forget the higher elevation sites that still have over 20 feet of snow and won't melt out until late July or August, providing fresh runoff throughout the entire summer. Easy Pass SNOTEL has the highest swe ever recorded by a Washington SNOTEL site. On May 3, it recorded 124.6 inches of SWE, eclipsing the old record set by Paradise SNOTEL back on May 7, 1997 of 123.1 inches.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	62	107
Newman Lake	35	103
Pend Oreille	55	90
Okanogan	77	110
Methow	91	112
Conconully Lake	77	110
Wenatchee	88	109
Chelan	104	117
Upper Yakima	100	120
Lower Yakima	97	126
Ahtanum Creek	103	137
Walla Walla	61	94
Lower Snake	57	91
Cowlitz	88	135
Lewis	80	152
White	96	124
Green	94	138
Puyallup	101	140
Cedar	95	244
Snoqualmie	108	147
Skykomish	101	133
Skagit	97	130
Baker	93	150
Nooksack	105	151
Olympic Peninsula	83	146

Precipitation

During the month of April, the National Weather Service and Natural Resources Conservation Service climate stations reported above average precipitation totals throughout most Washington river basins. The highest percent of average in the state was at Mill Creek Dam near Walla Walla which reported 230% of average for a total of 3.95 inches. The average for Mill Creek Dam is 1.79 inches for April. Swift Creek SNOTEL near Mt. St. Helens was the wettest spot in the state last month with 13.4 inches. Also note worthy was a one-day accumulation at Moses Mtn. SNOTEL near Omak which netted 1.6 inches, almost 10% of the total annual rainfall that this site normally receives.

RIVER BASIN	APRIL PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	139	108
Pend Oreille	148	112
Upper Columbia	122	101
Central Columbia	112	107
Upper Yakima	92	103
Lower Yakima	110	114
Walla Walla	145	108
Lower Snake	113	105
Lower Columbia	108	108
South Puget Sound	119	107
Central Puget Sound	107	106
North Puget Sound	119	110
Olympic Peninsula	110	113

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. Reservoir storage in the Yakima Basin was 737,000-acre feet, 119% of average for the Upper Reaches and 187,000-acre feet or 110% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 115% of average for May 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 489,000 acre feet, 196% of average and 205% of capacity; Chelan Lake, 273,000-acre feet, 103% of average and 40% of capacity; and the Skagit River reservoirs at 100% of average and 53% of capacity. Currently most reservoir operations are gearing up for an above average runoff from melting snow so downstream flows may be increasing beyond normal amounts. 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	205	196
Pend Oreille	31	51
Upper Columbia	93	115
Central Columbia	40	103
Upper Yakima	88	119
Lower Yakima	81	110
Lower Snake	69	94
North Puget Sound	53	100

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

Streamflow

Forecasts were refined this month but still vary from 93% of average for Icicle Creek to 139% of average for Ahtanum Creek, but for the most remain unchanged from last month. May-September forecasts for some Western Washington streams include the S.F. Tolt River near Index, 125%; White River, 110%; and Dungeness River, 114%. Some Eastern Washington streams include the Yakima River near Parker, 117%; Wenatchee River at Plain, 108%; and Spokane River near Post Falls, 103%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. May 1 forecasts are typically based on seasonal maximum or near maximum snowpack allowing for the best accuracy and correlation to historic runoff.

Above average rainfall, snowmelt and normal reservoir operations led to mostly above normal runoff throughout the state. The S.F. Walla Walla River had the highest reported flows with 226% of average. The Kettle River with 89% of average was the lowest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Snake below Ice Harbor Dam, 170%; the Lewis at Ariel, 144%; the Columbia below Rock Island Dam, 143%; and the Bumping River near Nile, 142%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
-------	---

Spokane	103-119
Pend Oreille	105-109
Upper Columbia	108-120
Central Columbia	93-120
Upper Yakima	105-117
Lower Yakima	112-139
Walla Walla	94-97
Lower Snake	97-101
Lower Columbia	116-125
South Puget Sound	97-110
Central Puget Sound	118-137
North Puget Sound	107-118
Olympic Peninsula	114-119

STREAM	PERCENT OF AVERAGE APRIL STREAMFLOWS
--------	---

Pend Oreille Below Box Canyon	167
Kettle at Laurier	89
Columbia at Birchbank	132
Spokane at Long Lake	184
Similkameen at Nighthawk	134
Okanogan at Tonasket	112
Methow at Pateros	133
Chelan at Chelan	124
Wenatchee at Pashastin	103
Cle Elum near Roslyn	124
Yakima at Parker	162
Naches at Naches	178
Grande Ronde at Troy	138
Snake below Lower Granite Dam	145
SF Walla Walla near Milton Freewater	226
Columbia River at The Dalles	150
Cowlitz below Mayfield Dam	157
Skagit at Concrete	127
Dungeness near Sequim	148

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

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Rain-on-snow events during the month actually didn't hurt the snowpack but did help increase soil moisture levels by as much as 10% in some basins, others stayed about the same as last month. With soil moisture level this high we should generally see slight increases to an already elevated forecast.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	67
Pend Oreille	75
Upper Columbia	66
Central Columbia	68
Upper Yakima	67
Lower Yakima	83
Walla Walla	81
Lower Snake	81
Lower Columbia	85
South Puget Sound	85
Central Puget Sound	N/A
North Puget Sound	97
Olympic Peninsula	50

Spring Recreation

As winter turns to spring so does the thought of snow recreation change to water recreation. As the ripening snow pack begins to melt and fill the rivers and streams to bank full we need to remember the power and unforgiving nature of ice cold snow melt water. Every year, whether fly fishing Spring Chinook, rafting the rapids or just cooling off during that first hot spell of the season, folks get caught in the extra swift currents of our mountain fed streams. Many times it's way too late by the time they realize that they had stepped too far into the current or can't catch their breath when submerged in the icy cold water and they are gone. The reminder is that it may be 80 or even 100 degrees outside but that water is still ice cold and until the majority of the mountain snow is gone and water levels subside it will remain that way. Keep you and yours safe by always wearing a life preserver when in or near cold and rapid water. Children and pets are especially susceptible since they really know no better.

Western Snow Conference May 2012

The 80th annual Western Snow Conference is in Anchorage, Alaska. The conference is May 21-24 at the Millennium Alaska Hotel. The theme for this year's conference is "Bright lights and winter nights – working with extremes". There will be a Short Course on Monday covering "Remote Data Collection Communication Options". Much progress has been made from the original telegraph and line of site radio systems to the current use of satellite, cell and meteor burst technology. A combined panel of vendors, developers and end users will present lively discussions of four current communications options including meteor burst, GOES satellite, cell phone and Iridium satellite technology. Additional conference information is available at:
<http://www.westernsnowconference.org/>

BASIN SUMMARY OF SNOW COURSE DATA

MAY 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	LUBRECHT FOREST NO 3 SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ALPINE MEADOWS SNTL	3500	5/01/12	118	68.1	66.0	45.8	LUBRECHT FOREST NO 4	4650	4/30/12	0	.0	3.8	1.7
ASHLEY DIVIDE	4820	4/26/12	0	.0	7.6	1.1							
BADGER PASS SNOTEL	6900	5/01/12	78	38.9	52.5	36.2							
BAREE CREEK	5500	4/25/12	93	44.8	57.4	40.3							
BAREE MIDWAY	4600	4/25/12	74	33.6	40.9	27.4							
BAREE TRAIL	3800	4/25/12	3	1.2	10.8	1.3							
BARKER LAKES SNOTEL	8250	5/01/12	38	12.6	21.1	16.2							
BARNES CREEK CAN.	5320	4/28/12	48	19.0	26.0	19.7							
BASIN CREEK SNOTEL	7180	5/01/12	13	4.3	12.3	10.0							
BASSOO PEAK	5150	4/26/12	4	1.4	13.0	3.2							
BEAVER CREEK TRAIL	2200	4/28/12	30	12.9	14.4	4.4							
BEAVER PASS	3680	4/27/12	96	37.7	44.0	27.2							
BEAVER PASS SNOTEL	3630	5/01/12	117	58.8	54.6	35.5							
BIG WHITE MTN CAN.	5510	4/29/12	49	19.0	25.4	19.4							
BLACK MOUNTAIN	7750	4/27/12	43	15.3	22.3	16.9							
BLACK PINE SNOTEL	7100	5/01/12	8	3.0	18.0	11.0							
BLACKWALL PILL CAN.	6370	5/01/12	95	46.0	41.0	34.9							
BLEWETT PASS#2SNOTEL	4240	5/01/12	0	.7	8.4	5.0							
BRENDA MINE CAN.	4450	4/27/12	25	9.0	--	9.3							
BROOKMERE CAN.	3000	4/29/12	14	5.0	8.6	4.0							
BROWN TOP AM	6000	4/27/12	164	72.7	72.2	62.1							
BRUSH CREEK TIMBER	5000	4/25/12	9	5.4	18.6	3.6							
BUCKINGHORSE SNOTEL	4870	5/01/12	158	76.5	95.0	--							
BUMPING RIDGE SNOTEL	4610	5/01/12	77	30.0	36.4	27.5							
BUNCHGRASS MDWSNOTEL	5000	5/01/12	75	31.7	36.6	28.6							
BURNT MOUNTAIN PIL	4170	5/01/12	57	22.4	27.1	5.6							
CALAMITY SNOTEL	2500	5/01/12	0	.0	4.0	--							
CAYUSE PASS SNOTEL	5240	5/01/12	163	71.9	85.1	--							
CHESSMAN RESERVOIR	6200	4/26/12	0	.0	7.6	1.7							
CHICKEN CREEK	4060	4/26/12	24	10.1	20.9	5.4							
COMBINATION SNOTEL	5600	5/01/12	0	.0	4.5	1.2							
COPPER BOTTOM SNOTEL	5200	5/01/12	0	.0	4.8	4.5							
COPPER MOUNTAIN	7700	4/25/12	21	7.6	15.5	10.0							
CORRAL PASS SNOTEL	5800	5/01/12	101	44.5	44.3	35.3							
COTTONWOOD CREEK	6400	4/27/12	2	.5	9.8	7.3							
COUGAR MTN. SNOTEL	3200	5/01/12	25	19.1	24.4	11.0							
COX VALLEY	4500	4/27/12	110	50.0	40.0	37.1							
COYOTE HILL	4200	4/27/12	0	.0	8.2	2.6							
DALY CREEK SNOTEL	5780	5/01/12	0	.0	12.7	5.3							
DEER PARK	5200	5/01/12	57	24.7	30.9	15.2							
DEVILS PARK	5900	4/27/12	121	53.1	54.3	44.7							
DISCOVERY BASIN	7050	4/28/12	22	7.8	16.6	9.4							
DOMMERIE FLATS	2200	4/30/12	0	.0	.0	--							
DUNGENESS SNOTEL	4010	5/01/12	22	7.7	22.7	.9							
ELBOW LAKE SNOTEL	3200	5/01/12	96	47.0	--	27.7							
EMERY CREEK SNOTEL	4350	5/01/12	8	3.8	22.2	7.4							
ESPERON CK. UP CAN.	5050	4/27/12	39	14.0	16.4	15.4							
FARRON CAN.	4000	4/27/12	22	8.0	15.7	8.1							
FISH LAKE	3370	4/30/12	66	31.6	30.1	23.1							
FISH LAKE SNOTEL	3430	5/01/12	71	31.7	31.3	28.8							
FLATTOP MTN SNOTEL	6300	5/01/12	129	53.1	64.7	46.7							
FLEECER RIDGE	7500	4/27/12	10	2.4	13.6	8.7							
FOURTH OF JULY SUM	3200	5/01/12	0	.0	1.4	.3							
FREEZEOUT CK. TRAIL	3500	4/29/12	40	15.4	12.3	6.4							
FROHNER MDWS SNOTEL	6480	5/01/12	0	.0	11.3	6.5							
FROST MEADOWS	4630	5/02/12	40	15.6	--	--							
GRAVE CRK SNOTEL	4300	5/01/12	24	10.4	25.2	7.0							
GREEN LAKE SNOTEL	5920	5/01/12	77	31.5	29.6	24.6							
GRIFFIN CR DIVIDE	5150	4/26/12	0	.0	14.1	4.9							
GROUSE CAMP SNOTEL	5390	5/01/12	49	17.6	21.3	11.1							
HAMILTON HILL CAN.	4550	4/26/12	25	10.0	--	10.6							
HAND CREEK SNOTEL	5030	5/01/12	12	3.8	16.4	6.8							
HARTS PASS SNOTEL	6490	5/01/12	104	53.5	66.1	47.7							
HARTS PASS	6500	4/27/12	115	47.4	58.0	44.4							
HELL ROARING DIVIDE	5770	4/26/12	68	30.1	48.3	29.0							
HERRIG JUNCTION	4850	4/28/12	56	25.6	35.8	22.9							
HIGH RIDGE SNOTEL	4920	5/01/12	30	13.2	29.6	15.9							
HOODOO BASIN SNOTEL	6050	5/01/12	110	46.2	59.2	45.7							
HUCKLEBERRY SNOTEL	2250	5/01/12	0	.0	.0	.0							
HUMBOLDT GLCH SNOTEL	4250	5/01/12	---	8.1	17.7	5.5							
HURRICANE	4500	4/26/12	53	22.7	30.9	17.9							
INDIAN ROCK SNOTEL	5360	5/01/12	63	30.7	45.2	--							
INTERGAARD	6450	4/29/12	0	.0	7.4	6.1							
ISINTOK LAKE CAN.	5100	4/26/12	17	6.0	8.1	5.4							
JUNE LAKE SNOTEL	3440	5/01/12	101	57.5	70.3	29.6							
KRAFT CREEK SNOTEL	4750	5/01/12	0	.0	14.8	5.2							
LIGHTNING LAKE CAN.	3700	4/26/12	43	17.0	--	9.9							
LOGAN CREEK	4300	4/25/12	2	.9	10.4	1.7							
LOLO PASS SNOTEL	5240	5/01/12	44	21.7	37.4	24.5							
LONE PINE SNOTEL	3930	5/01/12	102	53.9	65.3	34.2							
LOOKOUT SNOTEL	5140	5/01/12	58	25.8	41.6	27.2							
LOST HORSE MTN CAN.	6300	4/27/12	33	9.0	--	9.7							
LOST HORSE SNOTEL	5120	5/01/12	32	16.9	17.3	10.7							
LOST LAKE SNOTEL	6110	5/01/12	132	57.1	75.8	59.7							
LOWER SANDS CREEK #2	3120	4/27/12	49	22.0	26.9	15.8							
							LUBRECHT FOREST NO 6	4040	4/30/12	0	.0	.0	.0
							LUBRECHT HYDROPLOT	4200	4/30/12	0	.0	.0	.1
							LUBRECHT SNOTEL	4680	5/01/12	0	.0	.0	.5
							LYMAN LAKE SNOTEL	5980	5/01/12	145	68.5	74.9	67.2
							LYNN LAKE	4000	5/01/12	75	32.2E	--	14.5
							LYNN LAKE SNOTEL	3900	5/01/12	75	32.2	34.6	--
							MARIAS PASS	5250	4/25/12	32	14.1	26.9	12.5
							MARTEN RIDGE SNOTEL	3520	5/01/12	147	79.7	85.8	--
							MEADOWS CABIN	1900	4/28/12	0	.0	.0	1.1
							MEADOWS PASS SNOTEL	3230	5/01/12	73	35.3	35.2	10.8
							M F NOOKSACK SNOTEL	4970	5/01/12	146	91.2	83.2	69.9
							MICA CREEK SNOTEL	4510	5/01/12	41	19.2	30.3	15.3
							MISSEZULA MTN CAN.	5080	4/27/12	20	7.0	--	5.5
							MISSION CREEK CAN.	5840	5/01/12	56	23.0	25.9	21.3
							MONASHEE PASS CAN.	4500	4/28/12	31	12.0	17.0	11.4
							MORSE LAKE SNOTEL	5410	5/01/12	134	70.3	65.0	57.0
							MOSES MTN SNOTEL	5010	5/01/12	32	14.6	20.5	10.9
							MOSQUITO RDG SNOTEL	5200	5/01/12	87	44.0	55.9	32.2
							MOUNT CRAG SNOTEL	3960	5/01/12	94	39.5	48.7	27.8
							MT. KOBAU CAN.	5500	4/29/12	33	11.0	17.2	12.8
							MOWICH SNOTEL	3160	5/01/12	0	.0	.0	.0
							MOUNT GARDNER SNOTEL	2920	5/01/12	29	13.2	20.0	4.8
							N.F. ELK CR SNOTEL	6250	5/01/12	25	9.2	18.6	8.0
							NEVADA RIDGE SNOTEL	7020	5/01/12	34	15.9	25.0	14.4
							NEW HOZOMEEN LAKE	2800	4/27/12	12	5.9E	.0	3.9
							NEZ PERCE CMP SNOTEL	5650	5/01/12	19	8.5	16.8	10.8
							NEZ PERCE PASS	6570	4/25/12	22	10.6	23.4	14.2
							NOISY BASIN SNOTEL	6040	5/01/12	96	39.9	76.6	43.8
							OLALLIE MDWS SNOTEL	4030	5/01/12	137	75.6	65.1	55.1
							OYAMA LAKE CAN.	4100	4/27/12	7	3.0	6.9	2.6
							PARADISE SNOTEL	5130	5/01/12	161	81.4	95.8	74.8
							PARK CK RIDGE SNOTEL	4600	5/01/12	108	55.0	52.3	39.8
							PEPPER CREEK SNOTEL	2140	5/01/12	0	.0	4.2	--
							PETERSON MDW SNOTEL	7200	5/01/12	21	6.7	15.3	11.0
							PIGTAIL PEAK SNOTEL	5800	5/01/12	160	78.2	64.9	56.5
							PIKE CREEK SNOTEL	5930	5/01/12	14	6.9	27.7	--
							PIPESTONE PASS	7200	4/25/12	0	.0	9.2	4.8
							POPE RIDGE SNOTEL	3590	5/01/12	22	9.3	14.5	7.0
				</									

UPPER WHEELER	SNOTEL	4330	5/01/12	15	5.2	12.0	6.3
WATERHOLE	SNOTEL	5010	5/01/12	116	53.5	65.9	36.4
WELLS CREEK	SNOTEL	4030	5/01/12	107	50.4	52.1	26.9
WHITE PASS ES	SNOTEL	4440	5/01/12	61	28.4	23.4	21.4



Natural Resources Conservation Service

Washington State
Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

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

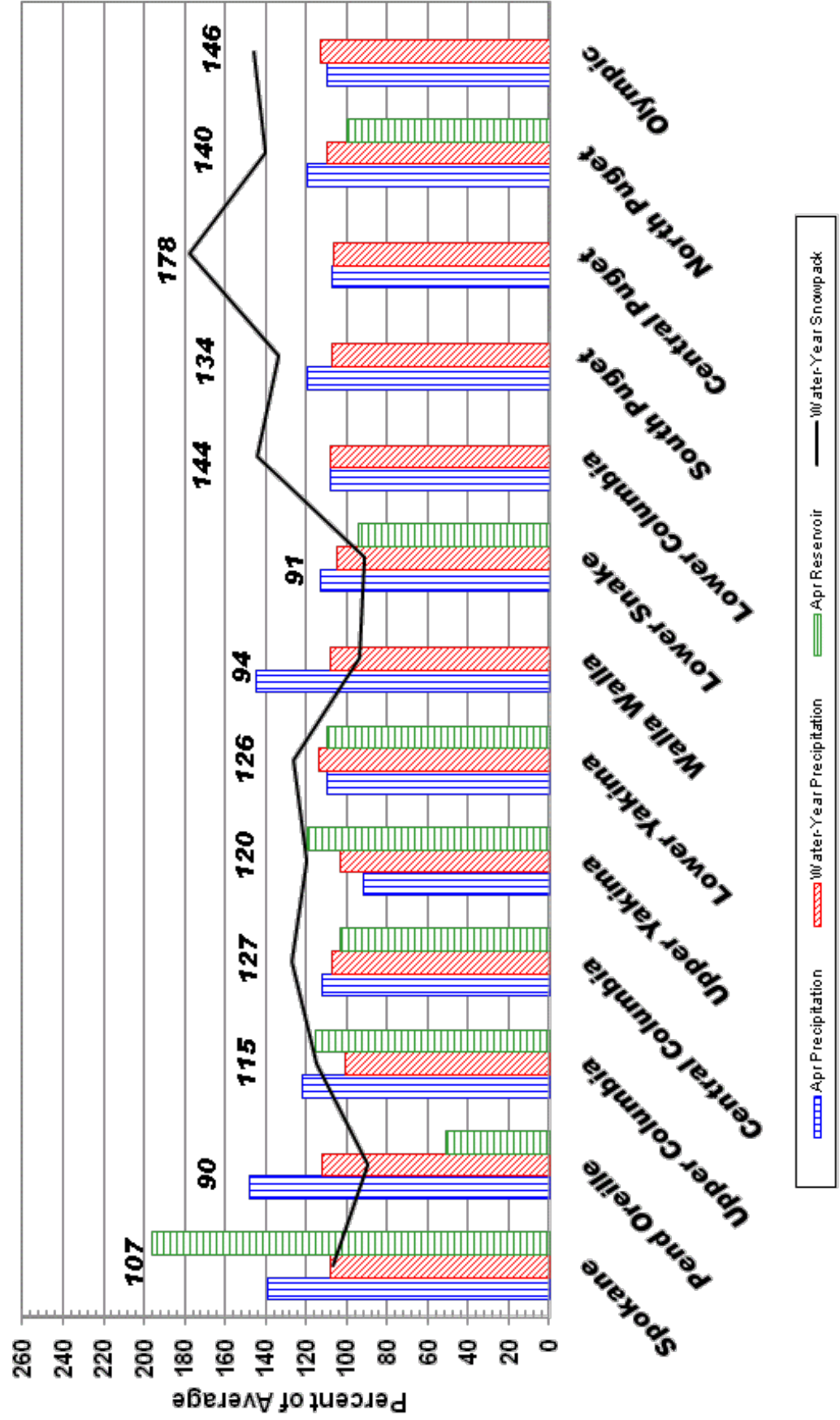
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

NRCS National:
<http://www.nrcs.usda.gov>

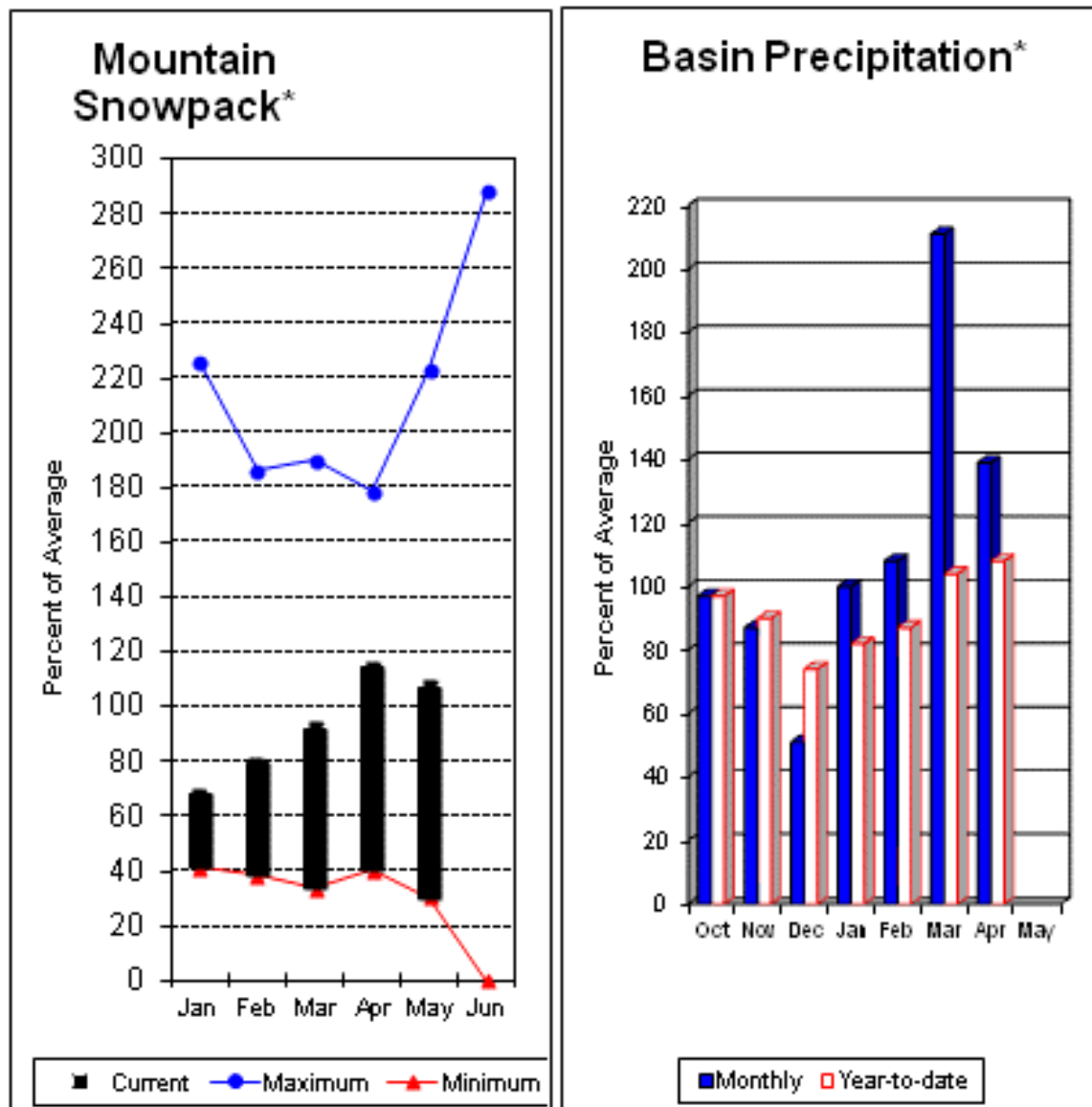
May 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2011 - Current Date)



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Spokane River Basin



*Based on selected stations

The May 1 forecasts for summer runoff within the Spokane River Basin are 103% of average near Post Falls and 114% at Long Lake. The Chamokane River near Long Lake forecasted to have 119% of average flows for the May-August period. The forecast is based on a basin snowpack that is 107% of average and precipitation that is 108% of average for the water year. Precipitation for April was 139% of normal. Streamflow on the Spokane River at Long Lake was 184% of average for April. May 1 storage in Coeur d'Alene Lake was 489,000 acre feet, 196% of average and 205% of capacity. Snowpack at Quartz Peak SNOTEL site was 103% of average with 15.3 inches of water content. Average temperatures in the Spokane basin were 1-2 degrees above normal for April and for the water year.

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

Spokane River Basin

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Spokane R nr Post Falls (2)	MAY-JUL	1260	1540	1720	103	1900	2180	1670
	MAY-SEP	1320	1620	1820	103	2020	2320	1770
Spokane R at Long Lake (2)	MAY-JUL	1630	1960	2180	114	2400	2730	1910
	MAY-SEP	1840	2180	2420	114	2660	3000	2130
Chamokane Ck nr Long Lake	MAY-AUG	7.5	10.2	12.1	119	14.0	16.7	10.2

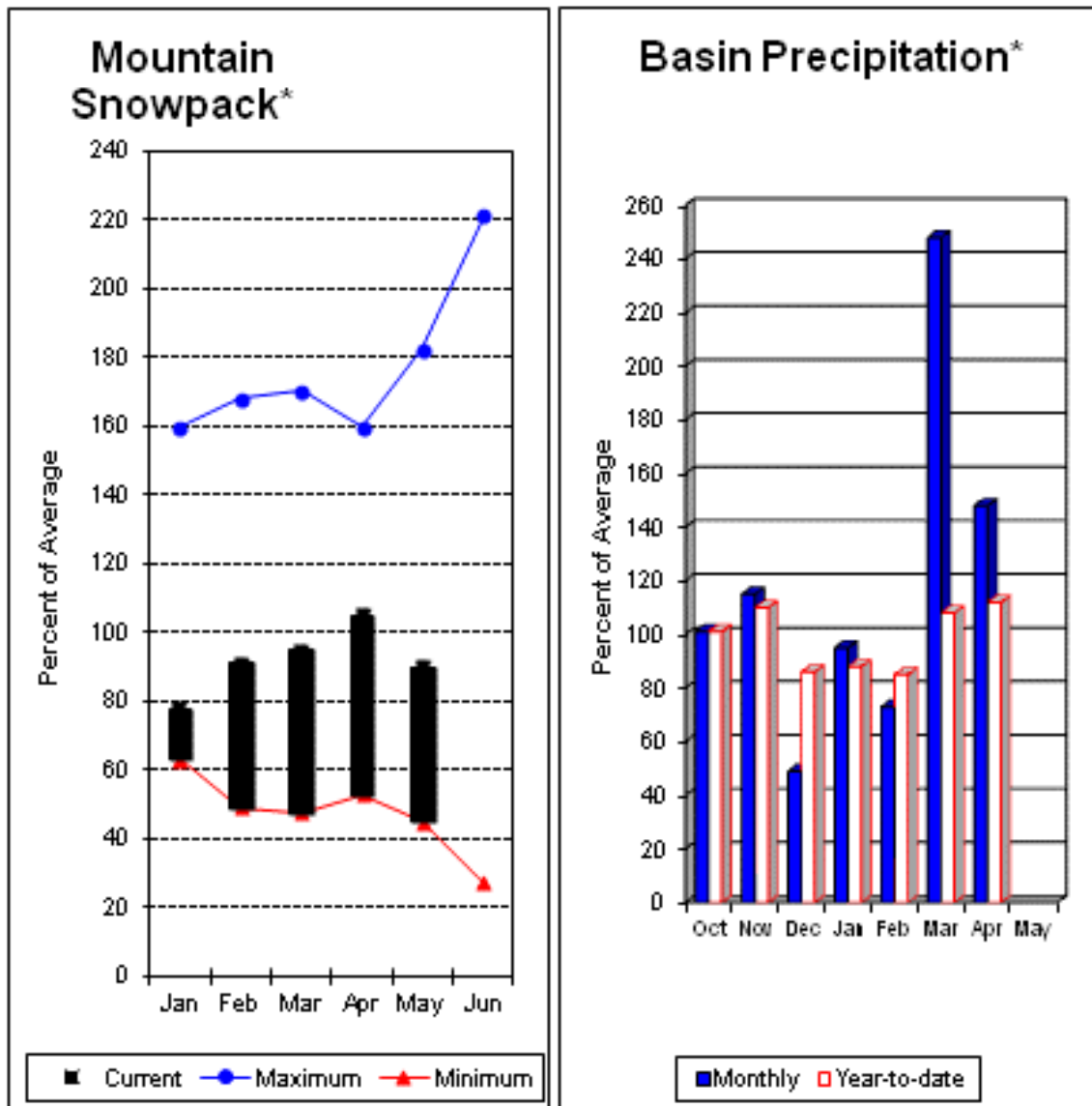
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of April					SPOKANE RIVER BASIN Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Coeur d'Alene		NO REPORT			SPOKANE RIVER	0	0	0
					NEWMAN LAKE	0	0	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.

Pend Oreille River Basins



*Based on selected stations

The May – September average forecast for the Priest River near the town of Priest River is 105% and the Pend Oreille below Box Canyon is 109%. April streamflow was 167% of average on the Pend Oreille River and 132% on the Columbia Birchbank. May 1 snow cover was 90% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 31.7 inches of snow water on the snow pillow. Normally Bunchgrass would have 28.6 inches on May 1. Precipitation during April was 148% of average, bringing the year-to-date precipitation to 112% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 51% of normal. Average temperatures were 1-2 degrees above normal for April and for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Pend Oreille Lake Inflow (2)	MAY-JUL	9950	10900	11600	109	12200	13200	10600
	MAY-SEP	11100	12200	12900	109	13700	14800	11800
Priest R nr Priest River (1,2)	MAY-JUL	540	605	650	106	695	760	615
	MAY-SEP	580	655	705	105	755	830	670
Pend Oreille R bl Box Canyon (2)	MAY-JUL	10100	11100	11700	109	12300	13300	10700
	MAY-SEP	11200	12300	13000	109	13700	14800	11900

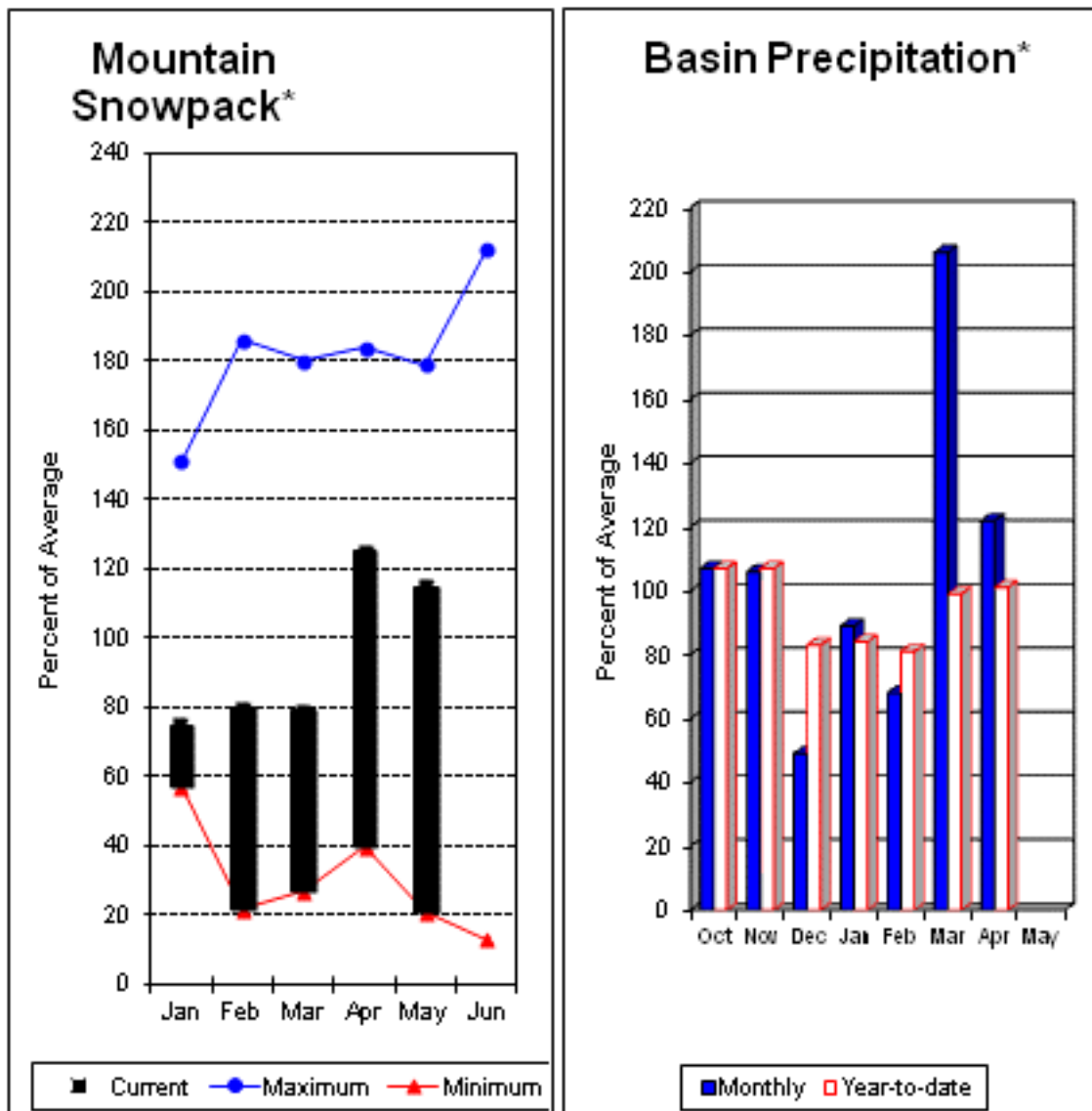
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of April					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Pend Oreille		NO REPORT			COLVILLE RIVER	0	0	0
Priest Lake		NO REPORT			PEND OREILLE RIVER	0	0	0
					KETTLE RIVER	0	0	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.

Upper Columbia River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River is 118%, Similkameen River is 127%, Kettle River 102% and Methow River is 108%. May 1 snow cover on the Okanogan was 110% of average, Omak Creek was 134% and the Methow was 112%. April precipitation in the Upper Columbia was 122% of average, with precipitation for the water year at 101% of average. April streamflow for the Methow River was 133% of average, 112% for the Okanogan River and 134% for the Similkameen. Snow-water content at Moses Mountain SNOTEL was 14.6 inches. Average for this site is 10.9 inches on May 1. Combined storage in the Conconully Reservoirs was 22,000-acre feet, which is 93% of capacity and 115% of the May 1 average. Temperatures were near normal for April and slightly below average for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Colville R at Kettle Falls	MAY-JUL	55	78	94	119	110	133	79
	MAY-SEP	64	91	109	119	127	154	92
Kettle R nr Laurier	MAY-JUL	1320	1470	1580	103	1690	1840	1540
	MAY-SEP	1370	1550	1670	102	1790	1970	1640
Columbia R at Birchbank (1,2)	MAY-JUL	32800	36000	37500	119	39000	42200	31600
	MAY-SEP	42500	46400	48200	120	50000	53900	40200
Columbia R at Grand Coulee (2)	MAY-JUL	50900	53600	54800	118	56000	58700	46600
	MAY-SEP	63200	66100	67500	119	68800	71800	56700
Similkameen R nr Nighthawk (1)	MAY-JUL	1310	1480	1560	128	1640	1810	1220
	MAY-SEP	1410	1590	1680	127	1770	1950	1320
Okanogan R nr Tonasket (1)	MAY-JUL	1210	1520	1660	119	1800	2110	1400
	MAY-SEP	1380	1730	1890	119	2050	2400	1590
Okanogan R at Malott (1)	MAY-JUL	1240	1560	1710	118	1860	2180	1450
	MAY-SEP	1410	1770	1940	118	2110	2470	1640
Methow R nr Pateros	MAY-SEP	820	895	950	108	1000	1080	880
	MAY-JUL	750	825	875	108	925	1000	810

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of April					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	as % of Average
SALMON LAKE	10.5	8.9	9.0	8.9	OKANOGAN RIVER	13	77	110
CONCONULLY RESERVOIR	13.0	13.0	10.8	10.1	OMAK CREEK	1	71	134
					SANPOIL RIVER	0	0	0
					SIMILKAMEEN RIVER	5	103	119
					TOATS COULEE CREEK	0	0	0
					CONCONULLY LAKE	1	6	15
					METHOW RIVER	5	91	112

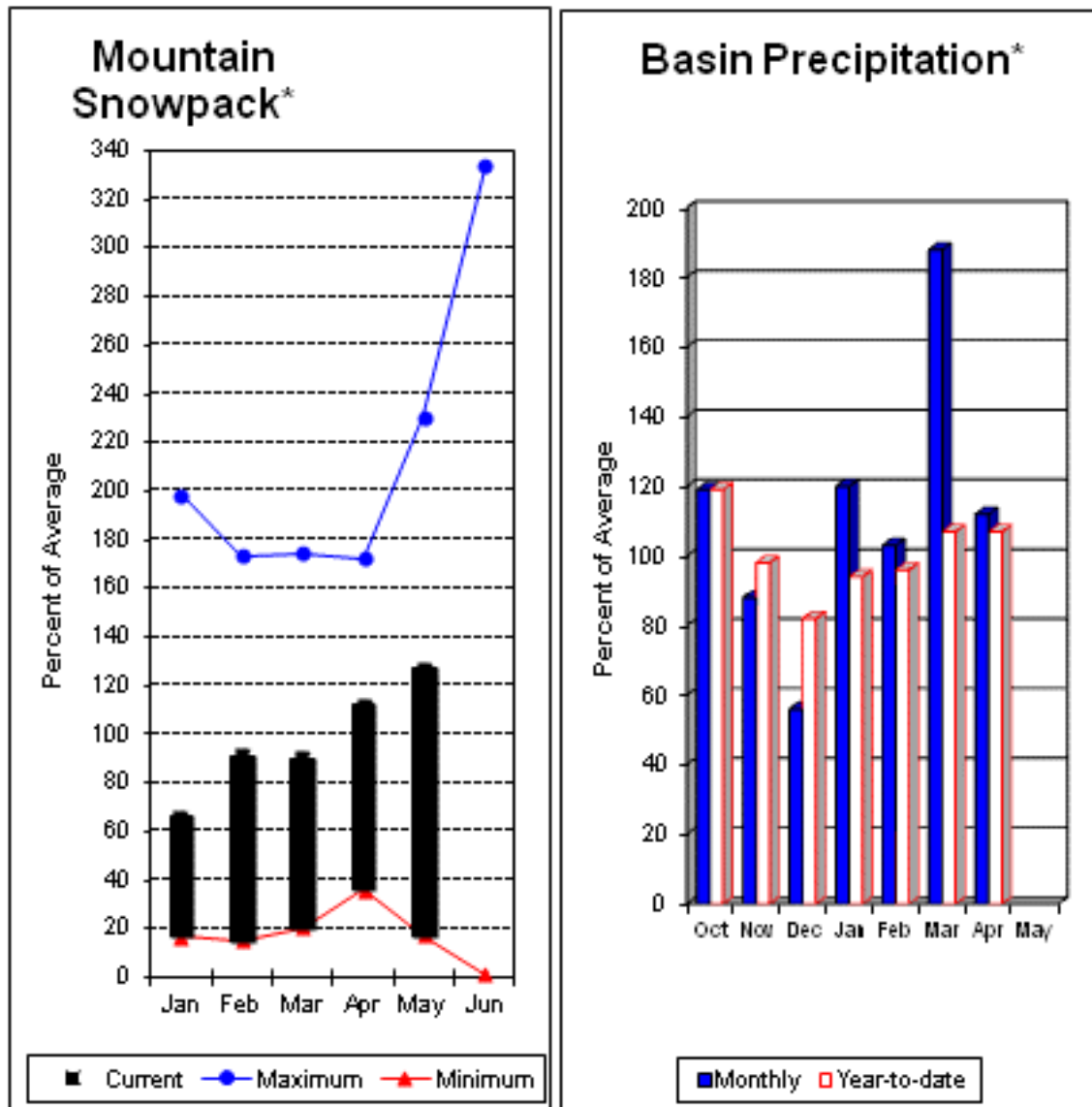
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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.

Central Columbia River Basins



*Based on selected stations

Precipitation during April was 112% of average in the basin and 107% for the year-to-date. Runoff for Entiat River is forecast to be near average for the summer. The May-September average forecast for Chelan River is 109%, Wenatchee River at Plain is 108%, Stehekin River is 114% and Icicle Creek is 93%. April average streamflows on the Chelan River were 124% and on the Wenatchee River 103%. May 1 snowpack in the Wenatchee River Basin was 109% of average; the Chelan, 117%; the Entiat, 133%; Stemilt Creek, 83% and Colockum Creek, 193%. Reservoir storage in Lake Chelan was 273,000-acre feet, 103% of May 1 average and 40% of capacity. Lyman Lake SNOTEL had the most snow water with 68.5 inches of water. This site would normally have 67.2 inches on May 1. Temperatures were near normal for April and slightly below normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Stehekin R at Stehekin	MAY-JUL	600	665	710	115	755	820	620
	MAY-SEP	745	810	850	114	890	955	745
Chelan R at Chelan (2)	MAY-JUL	900	955	990	109	1030	1080	910
	MAY-SEP	1050	1100	1140	109	1180	1230	1050
Entiat R nr Ardenvoir	MAY-JUL	172	186	196	101	205	220	195
	MAY-SEP	190	205	215	100	225	240	215
Wenatchee R at Plain	MAY-JUL	880	940	985	109	1030	1090	905
	MAY-SEP	985	1050	1100	108	1150	1210	1020
Icicle Ck nr Leavenworth	MAY-JUL	215	240	255	94	270	295	270
	MAY-SEP	235	265	280	93	295	325	300
Wenatchee R at Peshastin	MAY-JUL	1190	1270	1330	106	1390	1470	1250
	MAY-SEP	1330	1420	1480	105	1540	1630	1410
Columbia R bl Rock Island Dam (2)	MAY-JUL	55600	58600	60600	119	62600	65600	51100
	MAY-SEP	67800	71400	73800	120	76200	79800	61600

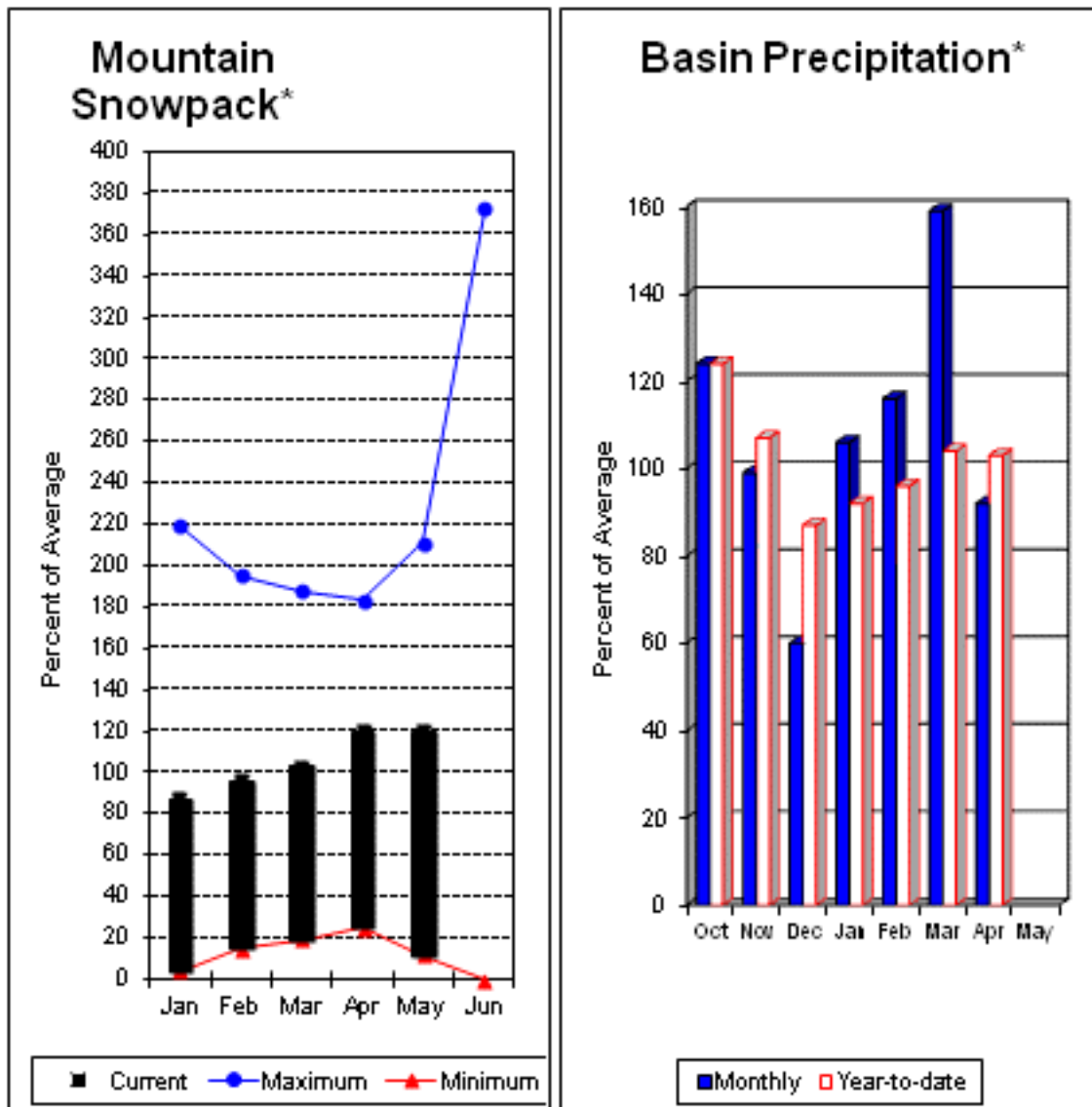
CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of April					CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of =====	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE		NO REPORT			CHELAN LAKE BASIN	0	0	0
					ENTIAT RIVER	0	0	0
					WENATCHEE RIVER	0	0	0
					STEMILT CREEK	0	0	0
					COLOCKUM CREEK	0	0	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.

Upper Yakima River Basin



*Based on selected stations

May 1 reservoir storage for the Upper Yakima reservoirs was 737,000-acre feet, 119% of average. Forecasts for the Yakima River at Cle Elum are 105% of average and the Teanaway River near Cle Elum is at 117%. Lake inflows are all forecasted to be above normal this summer as well. April streamflows within the basin were Cle Elum River near Roslyn at 124%. May 1 snowpack was 120% based upon 8 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 92% of average for April and 103% year-to-date for water. 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

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *					30-Yr Avg.	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	(1000AF)
Keechelus Reservoir Inflow (2)	MAY-JUL	91	99	104	113	109	117	92
	MAY-SEP	99	108	115	112	122	131	103
Kachess Reservoir Inflow (2)	MAY-JUL	85	90	94	112	98	103	84
	MAY-SEP	91	97	102	111	107	113	92
Cle Elum Lake Inflow (2)	MAY-JUL	335	355	365	111	375	395	330
	MAY-SEP	375	395	410	109	425	445	375
Yakima R at Cle Elum (2)	MAY-JUL	605	645	675	106	705	745	635
	MAY-SEP	650	710	750	105	790	850	715
Teanaway R bl Forks nr Cle Elum	MAY-JUL	83	98	108	119	118	133	91
	MAY-SEP	86	101	111	117	121	136	95

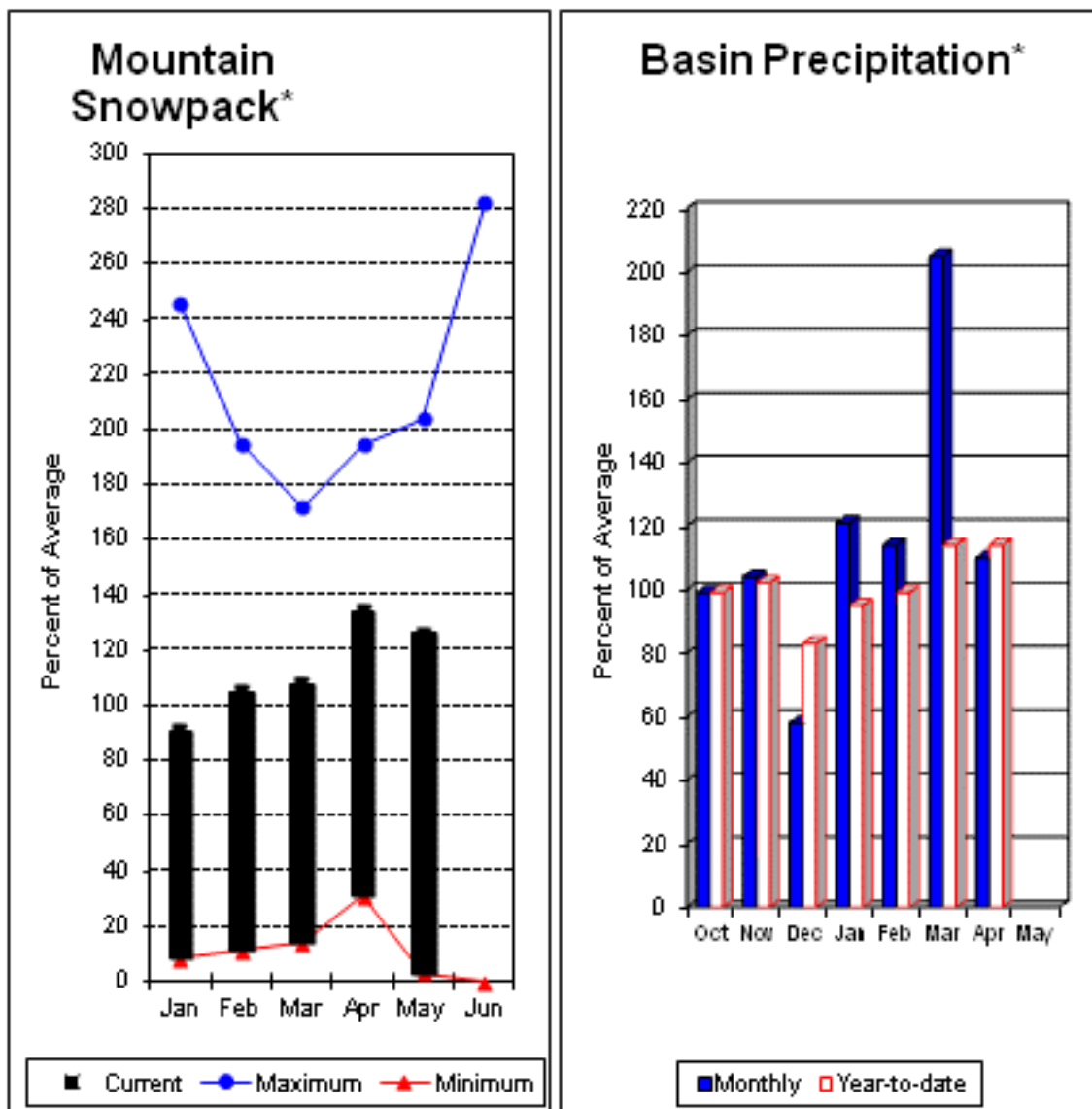
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of April					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS		NO REPORT			UPPER YAKIMA RIVER	0	0	0
KACHESS		NO REPORT						
CLE ELUM		NO REPORT						

* 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 Yakima River Basin



*Based on selected stations

April average streamflows within the basin were: Yakima River near Parker, 162%; Naches River near Naches, 178%; and Yakima River at Kiona, 159%. May 1 reservoir storage for Bumping and Rimrock reservoirs was 187,000-acre feet, 110% of average. Forecasted runoff for Yakima River near Parker is 117%; American River near Nile, 113%; Ahtanum Creek, 139%; and Klickitat River near Glenwood, 122%. May 1 snowpack was 126% based upon 6 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 137% of average. Precipitation was 110% of average for April and 114% year-to-date. Temperatures were slightly above normal for April and slightly below for the water year. Volume forecasts for 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.

Lower Yakima River Basin

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Bumping Lake Inflow (2)	MAY-JUL	98	111	120	117	129	142	103
	MAY-SEP	108	122	131	116	140	154	113
American R nr Nile	MAY-JUL	86	95	102	113	109	118	90
	MAY-SEP	95	106	113	113	120	131	100
Rimrock Lake Inflow (2)	MAY-JUL	168	182	191	114	200	215	168
	MAY-SEP	205	220	230	112	240	255	205
Naches R nr Naches (2)	MAY-JUL	575	640	685	120	730	795	570
	MAY-SEP	630	705	755	120	805	880	630
Ahtanum Ck at Union Gap	MAY-JUL	23	27	30	143	33	37	21
	MAY-SEP	25	29	32	139	35	39	23
Yakima R nr Parker (2)	MAY-JUL	1430	1530	1600	118	1670	1770	1360
	MAY-SEP	1610	1720	1800	117	1880	1990	1540
Klickitat R nr Glenwood	MAY-JUL	118	128	134	122	140	150	110
	MAY-SEP	147	158	165	122	172	183	135
Klickitat R nr Pitt	MAY-JUL	365	395	415	126	435	465	330
	MAY-SEP	465	500	525	125	550	585	420

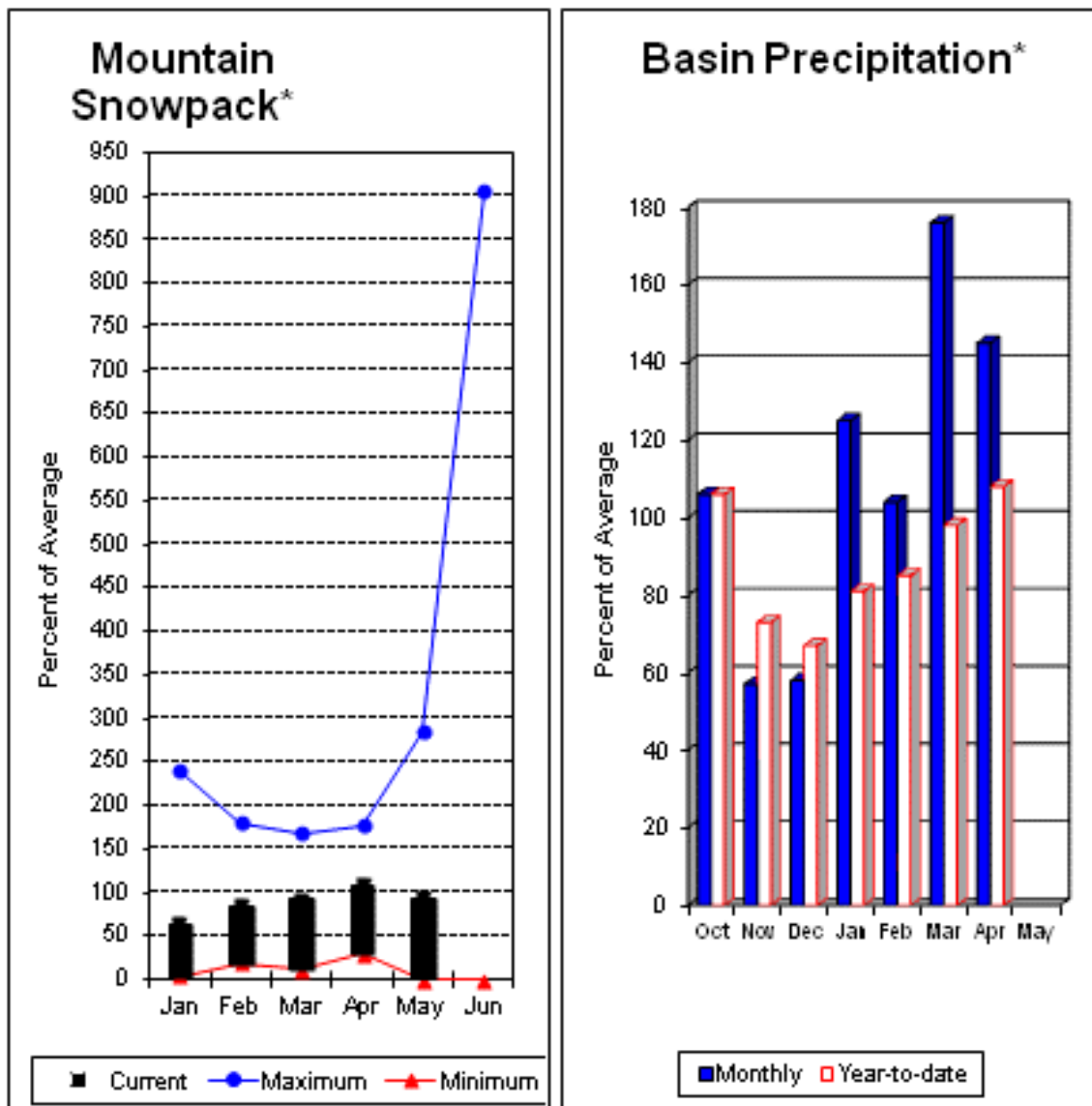
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of April					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUMPING LAKE		NO REPORT			LOWER YAKIMA RIVER	0	0	0
RIMROCK		NO REPORT			AHTANUM CREEK	0	0	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.

Walla Walla River Basin



*Based on selected stations

April precipitation was 145% of average, maintaining the year-to-date precipitation at 108% of average. Snowpack in the basin was 94% of average. Streamflow forecasts are 97% of average for Mill Creek and 94% for the SF Walla Walla near Milton-Freewater. April streamflow was 226% of average for the SF Walla Walla River. Average temperatures were 1-2 degrees above normal for April and near normal for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SF Walla Walla R nr Milton-Freewater	MAY-JUL	26	32	35	92	38	44	38
	MAY-SEP	38	44	48	94	52	58	51
Mill Ck nr Walla Walla	MAY-JUL	10.5	12.8	14.3	97	15.8	18.1	14.7
	MAY-SEP	13.7	16.1	17.8	97	19.5	22	18.4

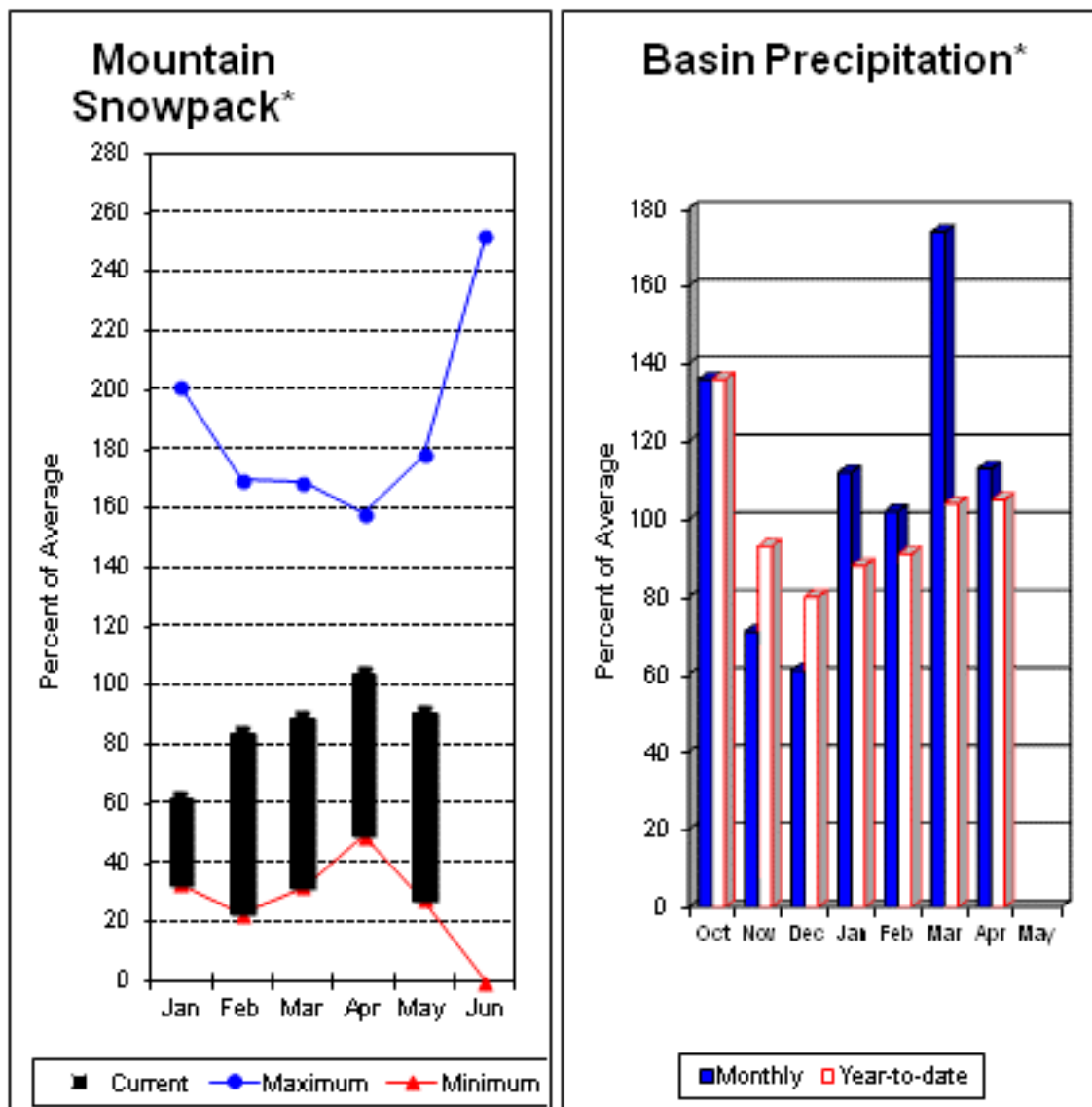
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of April					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	0	0	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.

Lower Snake River Basin



*Based on selected stations

The May - September forecast is for 102% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 102% and 97% of normal respectively. The forecast for Asotin Creek at Asotin is 104% of average flows for the May – July runoff period. April precipitation was 113% of average, bringing the year-to-date precipitation to 105% of average. May 1 snowpack readings averaged 91% of average. April streamflow was 145% of average for Snake River below Lower Granite Dam and 138% for Grande Ronde River near Troy. Dworshak Reservoir storage was 94% of average. Average temperatures were 1-2 above below normal for April and for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Grande Ronde R at Troy (1)	MAY-JUL	580	795	890	98	985	1200	910
	MAY-SEP	665	880	980	97	1080	1290	1010
Asotin Ck at Asotin	MAY-JUL	16.4	22	25	104	28	34	24
Clearwater R at Spalding (1,2)	MAY-JUL	4690	5490	5850	101	6210	7010	5770
	MAY-SEP	5060	5920	6310	102	6700	7560	6190
Snake R bl Lower Granite Dam (1,2)	MAY-JUL	13300	15600	16600	99	17600	19900	16700
	MAY-SEP	15700	18300	19500	101	20600	23300	19300

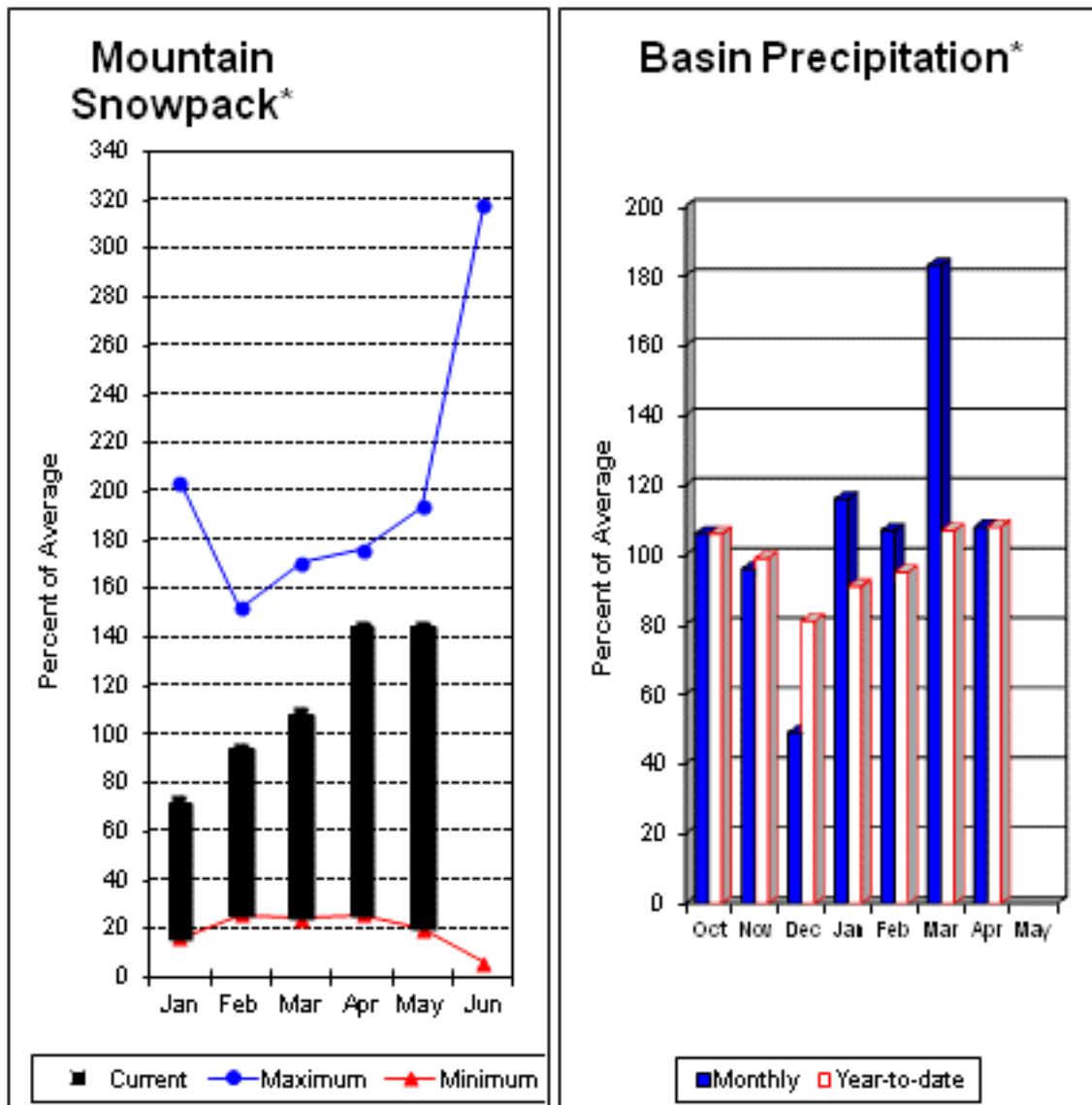
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of April					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
Dworshak	3468.0	2401.0	1502.8	2560.7	LOWER SNAKE, GRANDE RONDE	10	57	91

* 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 River Basins



*Based on selected stations

Forecasts for May – September streamflows within the basin are Lewis River at Ariel, 116% and Cowlitz River at Castle Rock, 116% of average. The Columbia at The Dalles is forecasted to have 116% of average flows this summer. April average streamflow for Cowlitz River was 157%. The Columbia River at The Dalles was 150% of average. April precipitation was 108% of average and the water-year average was 108%. May 1 snow cover for Cowlitz River was 135%, and Lewis River was 152% of average. Temperatures were 1-2 degrees above normal during April and 1-2 degrees below normal for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Columbia R at The Dalles (2)	MAY-JUL	73400	77600	80400	114	83200	87400	70500
	MAY-SEP	89600	94600	98000	116	101000	106000	84500
Klickitat R nr Glenwood	MAY-JUL	118	128	134	122	140	150	110
	MAY-SEP	147	158	165	122	172	183	135
Klickitat R nr Pitt	MAY-JUL	365	395	415	126	435	465	330
	MAY-SEP	465	500	525	125	550	585	420
Lewis R at Ariel (2)	MAY-JUL	640	725	785	118	845	930	667
	MAY-SEP	780	875	940	116	1000	1100	812
Cowlitz R bl Mayfield Dam (2)	MAY-JUL	1160	1330	1450	116	1570	1740	1247
	MAY-SEP	1330	1560	1720	116	1880	2110	1478
Cowlitz R at Castle Rock (2)	MAY-JUL	1560	1760	1890	116	2020	2220	1629
	MAY-SEP	1920	2130	2280	116	2430	2640	1972

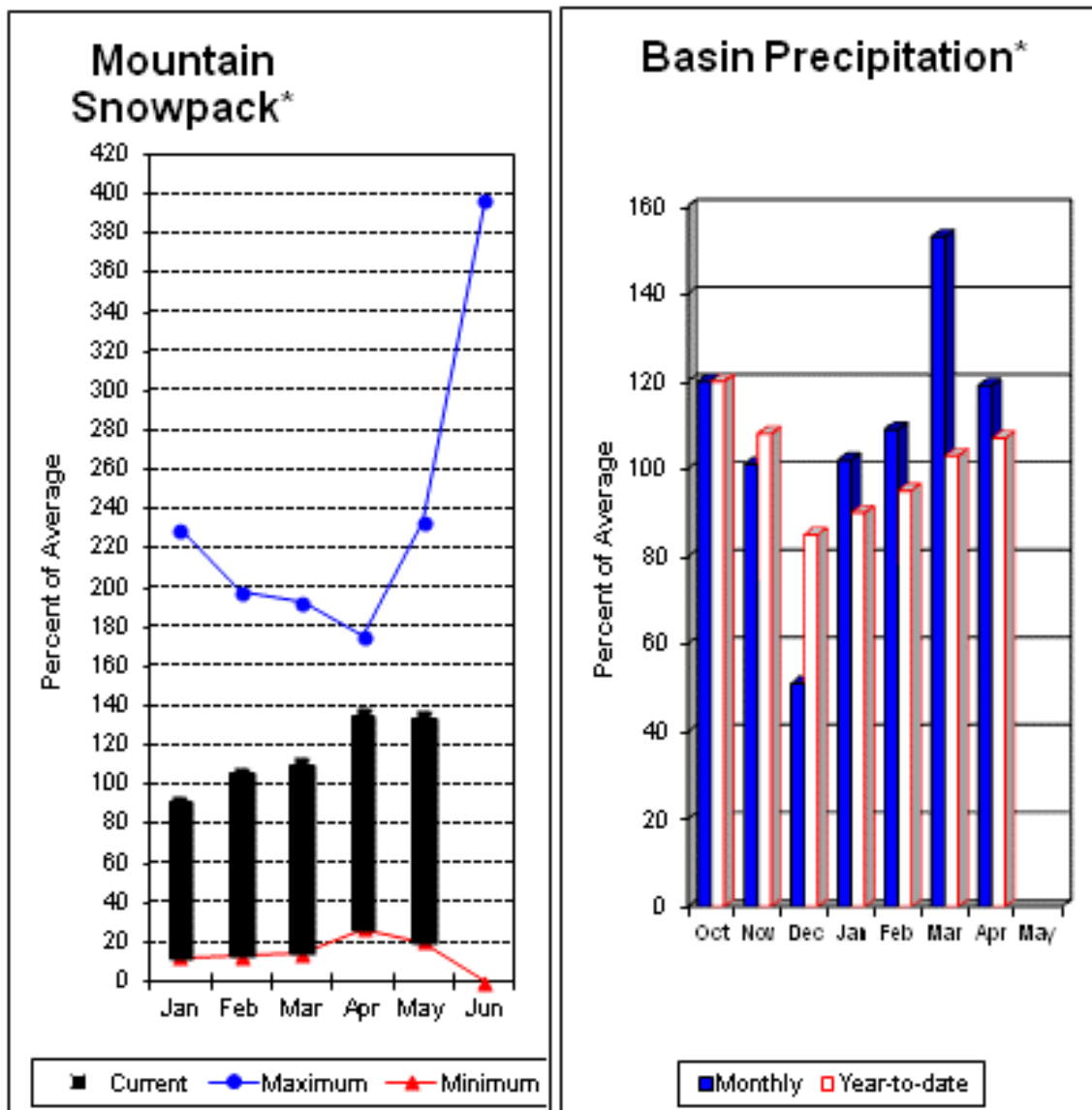
LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of April					LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** This Year	Usable Storage Last Year	*** Avg	Watershed	Number of Data Sites	This Year Last Yr	as % of Average
MOSSYROCK	0.0	1424.0	1310.0	---	LEWIS RIVER	5	80	152
SWIFT	0.0	747.7	723.4	---	COWLITZ RIVER	6	88	135
YALE	0.0	380.7	371.7	---				
MERWIN	0.0	408.5	395.3	---				

* 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.

South Puget Sound River Basins



*Based on selected stations

Summer runoff is forecast to be 97% of normal for the Green River below Howard Hanson Dam and 110% for the White River near Buckley. May 1 snowpack was 124% of average for the White River, 140% for Puyallup River and 138% in the Green River Basin. Water content on May 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 44.5 inches. This site has a May 1 average of 35.3 inches. April precipitation was 119% of average, bringing the water year-to-date to 107% of average for the basins. Average temperatures in the area were 1-2 degrees above normal for April and 1-2 degrees below for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
White R nr Buckley (1)	MAY-JUL	290	355	385	111	415	480	348
	MAY-SEP	370	450	485	110	520	600	442
Green R bl Howard Hanson Dam (1,2)	MAY-JUL	123	157	173	98	189	225	176
	MAY-SEP	137	177	195	97	215	255	202

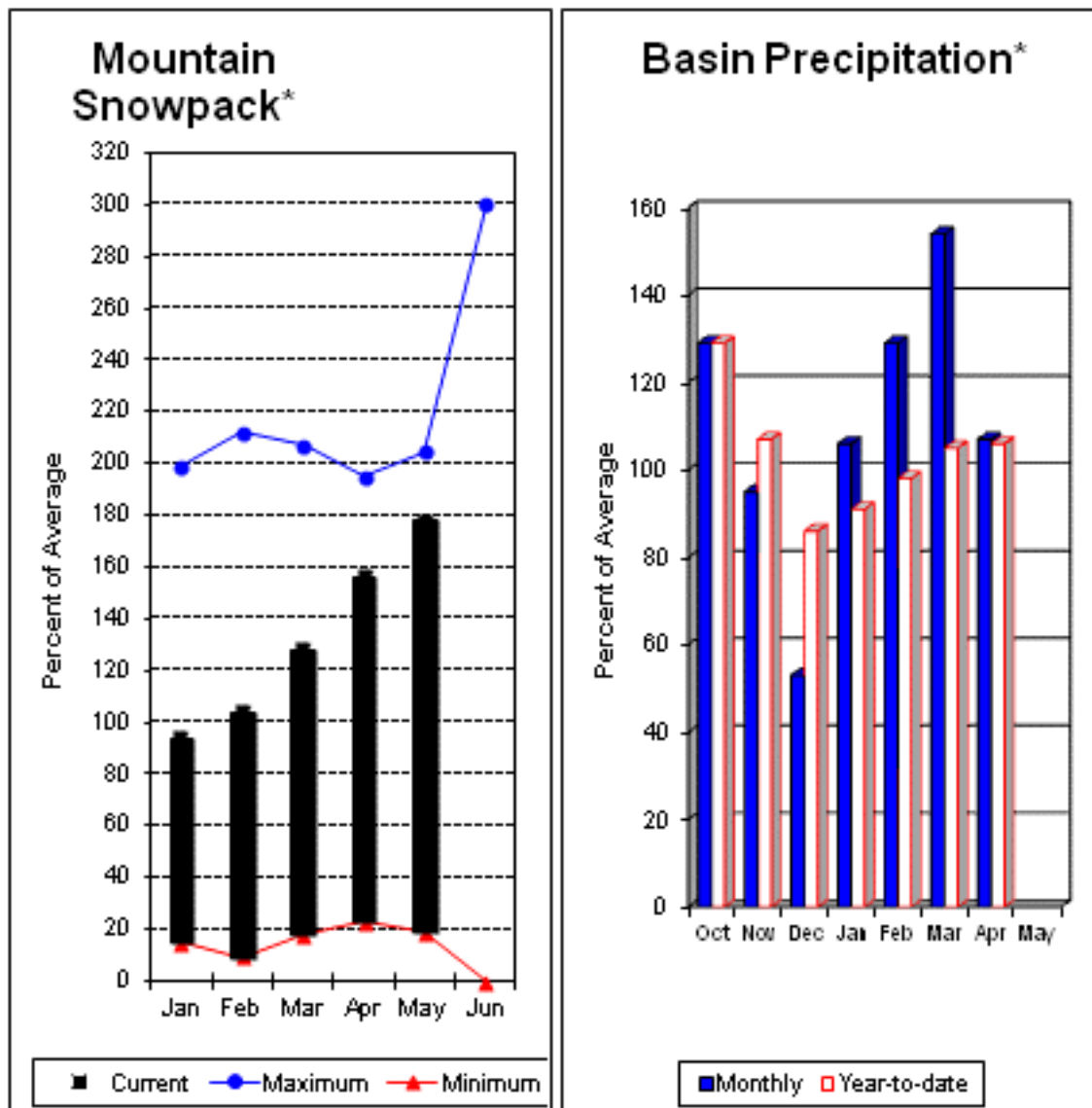
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of April					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	96	124
					GREEN RIVER	3	94	138
					PUYALLUP RIVER	5	101	140

* 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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 127% for Cedar River near Cedar Falls; 130% for Rex River; 125% for South Fork of the Tolt River; 118% for Taylor Creek near Selleck, and 137% for Cedar River at Cedar Falls. Basin-wide precipitation for April was 107% of average, bringing water-year-to-date to 106% of average. May 1 average snow cover in Cedar River Basin was 244%, Tolt River Basin was 188%, Snoqualmie River Basin was 147%, and Skykomish River Basin was 133%. Olallie Meadows SNOTEL site, at 3960 feet, had 75.6 inches of water content. Average May 1 water content is 55.1 inches at Olallie Meadows. Temperatures were near normal for April and 1-2 degrees below for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Cedar R nr Cedar Falls	MAY-JUL	57	63	67	129	71	77	52
	MAY-SEP	63	70	75	127	80	87	59
Rex R nr Cedar Falls	MAY-JUL	18.5	21	23	132	25	28	17.4
	MAY-SEP	21	24	26	130	28	31	20
Cedar R At Cedar Falls	MAY-JUL	50	59	65	138	71	80	47
	MAY-SEP	46	56	63	137	70	80	46
Taylor Creek Near Selleck	MAY-JUL	13.2	14.6	15.6	120	16.6	18.0	13.0
	MAY-SEP	16.9	18.8	20	118	21	23	17.0
SF Tolt R nr Index	MAY-JUL	10.6	12.6	14.0	127	15.4	17.4	11.0
	MAY-SEP	12.0	14.7	16.5	125	18.3	21	13.2

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of April

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - May 1, 2012

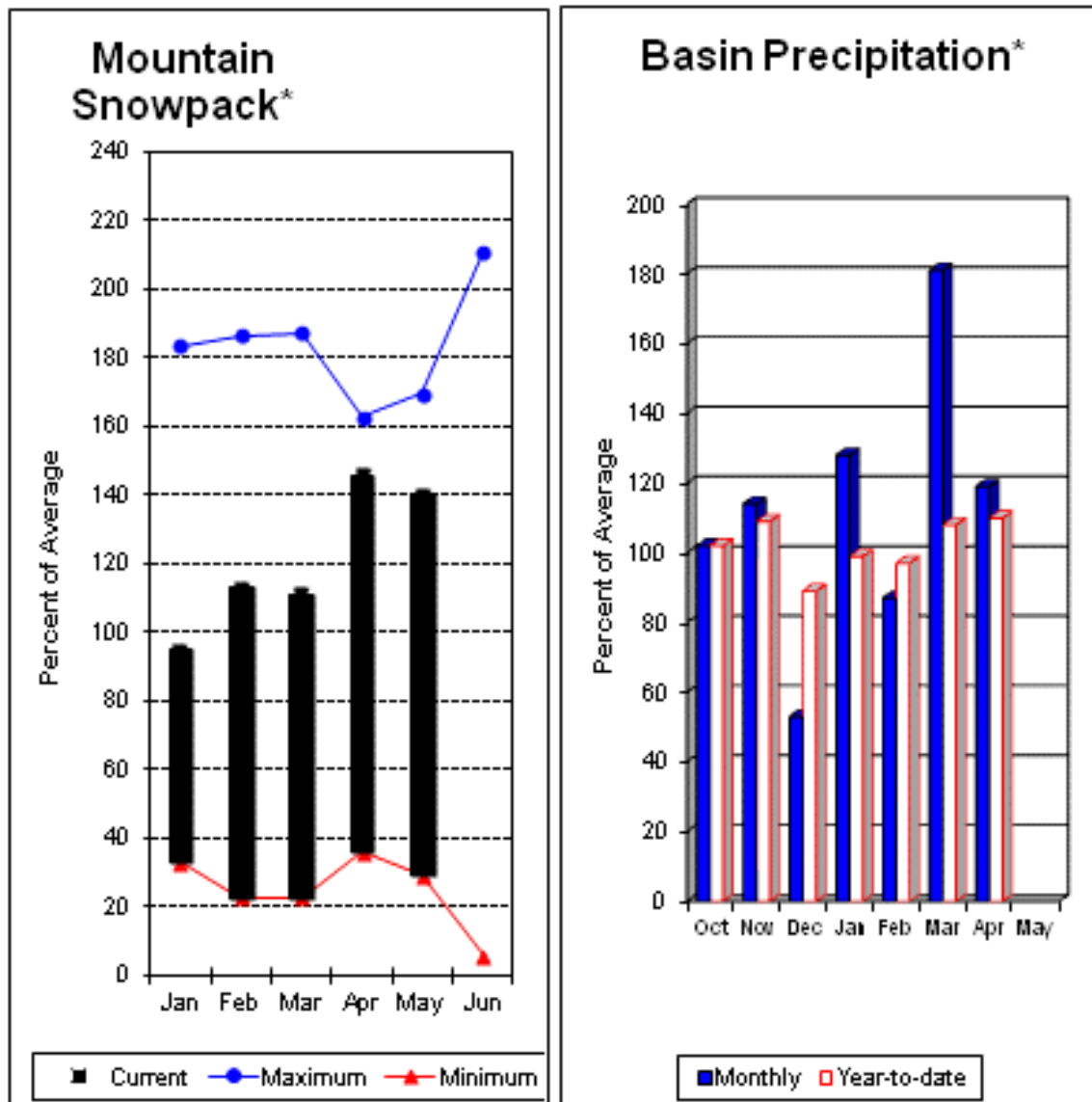
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	95	244
					TOLT RIVER	2	103	188
					SNOQUALMIE RIVER	4	108	147
					SKYKOMISH RIVER	2	101	133

* 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.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 118% of average for the spring and summer period. April streamflow in Skagit River was 127% of average. Other forecast points included Baker River and Thunder Creek both at 107% of average. Basin-wide precipitation for April was 119% of average, bringing water-year-to-date to 110% of average. May 1 average snow cover in Skagit River Basin was 126%, Nooksack River Basin was 146% and Baker River Basin was estimated at 150% of average. Easy Pass SNOTEL has the highest swe ever recorded by a Washington SNOTEL site (maybe by any site in the network??). On May 3, it recorded 124.6 inches of SWE, eclipsing the old record set by Paradise SNOTEL back on May 7, 1997 of 123.1 inches SWE. May 1 Skagit River reservoir storage was 100% of average and 53% of capacity. Average temperatures for April were near normal for the basin and 1-2 degrees below for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Thunder Ck Nr Newhalem	MAY-JUL	199	215	230	109	245	260	212
	MAY-SEP	295	315	330	107	345	365	310
Skagit R At Newhalem	MAY-JUL	1750	1850	1920	119	1990	2090	1611
	MAY-SEP	2110	2230	2310	118	2390	2510	1964
Baker R nr Concrete (2)	MAY-JUL	610	680	730	107	780	850	684
	MAY-SEP	770	885	965	107	1040	1160	906

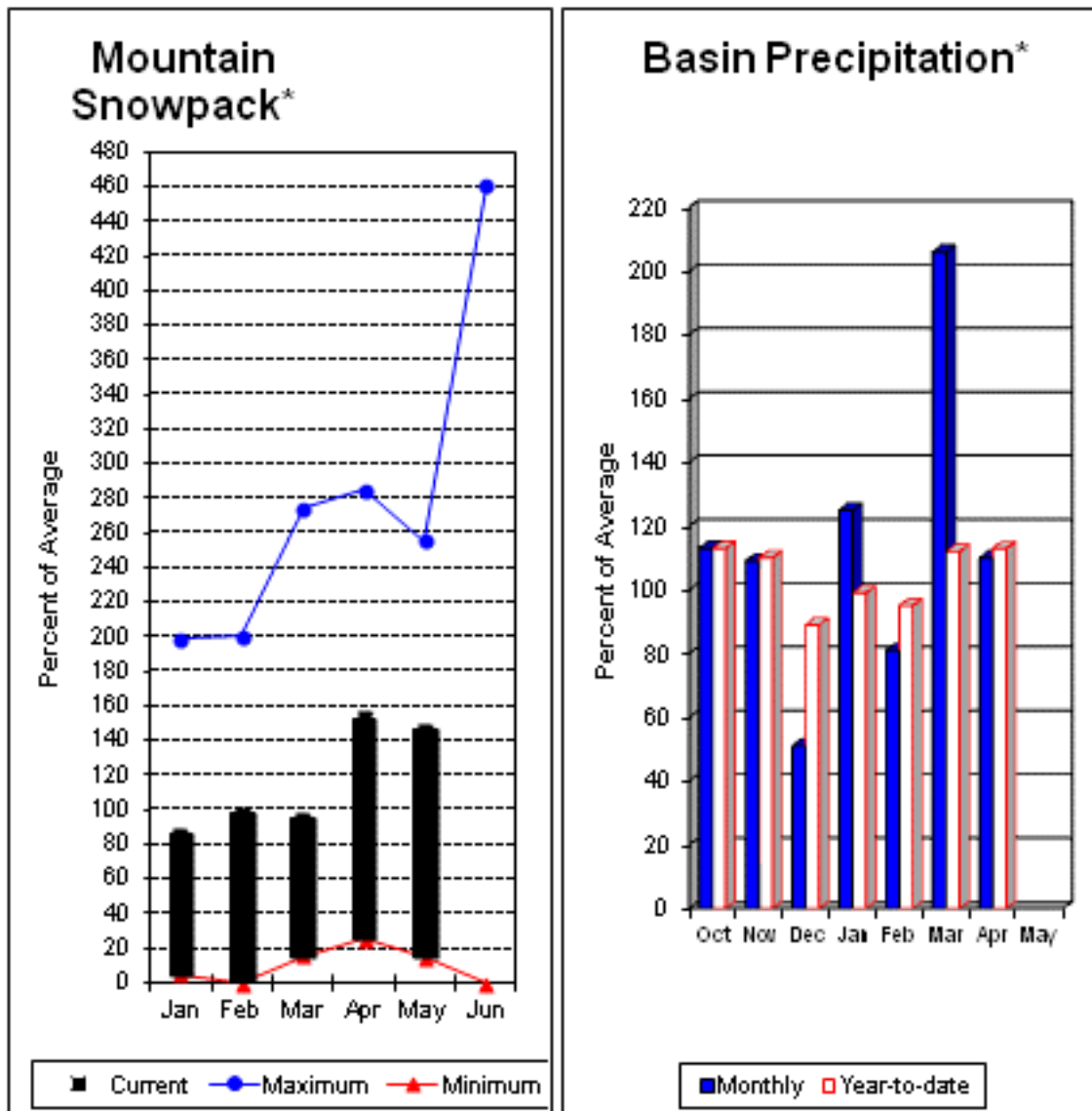
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of April					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	709.8	561.4	708.8	SKAGIT RIVER	16	97	130
DIABLO RESERVOIR	90.6	85.7	85.5	85.9	BAKER RIVER	0	93	0
					NOOKSACK RIVER	3	105	151

* 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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 114% and Elwha River is 119%. April runoff in the Dungeness River was 148% of normal. Big Quilcene and Wynoochee rivers should expect near to slightly above average runoff this summer as well. April precipitation was 110% of average. Precipitation has accumulated at 113% of average for the water year. April precipitation at Quillayute was 10.29 inches; the thirty-year average for April is 7.44 inches. Olympic Peninsula snowpack averaged 146% of normal on May 1. Temperatures were near average for April and 1-2 degrees below for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - May 1, 2012

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>				30-Yr Avg. (1000AF)		
		=====		Chance Of Exceeding *			=====	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)		30% (1000AF)	10% (1000AF)
Dungeness R Nr Sequim	MAY-JUL	102	113	120	114	127	138	105
	MAY-SEP	129	142	151	114	160	173	132
Elwha R At Mcdonald Bridge	MAY-JUL	360	385	405	120	425	450	338
	MAY-SEP	445	480	505	119	530	565	423

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of April					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - May 1, 2012			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	6	83	146

* 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.

Issued by

Dave White
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	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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**



Washington Water Supply Outlook Report June 1, 2012



Palouse Falls in flood stage, January 2009, photographer unknown

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

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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

June 2012

General Outlook

Ode to the roller coaster ride called spring. One week it's record breaking sun and high temperatures, another it's record breaking rainfall and just for good measure let's throw in a few snow flurries as well. For the most part we experienced above average temperatures and dry conditions the first half of the month with the second half bringing wetter and cooler than normal west side weather and dry and cool on the east side of the state. The snow is melting at a pace to rival "watching paint dry" however we still have only 50-75% of what we had on the ground at this time last year. Short term weather forecasts indicate a continuation of cool and wet until the second week of June where warm and dry takes over for spell. The Climate Prediction Center is forecasting abnormally warm and dry conditions, for most of the Pacific Northwest through the next several months, once we get through a cool dry phase this month. The North Cascades National Park has conducted preliminary glacier studies for this season. Attached is their report of the on-going inventory and analysis of four glaciers within the park.

Snowpack

The June 1 statewide SNOTEL readings were 182% of average, however this may not provide a true indication of total conditions. Current percentages should be used cautiously and should be accompanied by the actual water content of the snowpack as analysis using percentages this late in the season could cause bias in the outcome. The following percentages are provided as point information only. As temperatures warm the melt rate will increase, rapidly changing percentages on a daily basis. Numerous lower and mid elevation sites have already melted out and by the time this article is published even more will have melted. That's not to forget the higher elevation sites that still have over 20 feet of snow and won't melt out until late July or August, providing fresh runoff throughout the entire summer.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	37	105
Newman Lake	0	0
Pend Oreille	46	110
Okanogan	58	*117
Methow	77	149
Wenatchee	74	128
Chelan	82	140
Upper Yakima	78	156
Lower Yakima	76	161
Ahtanum Creek	59	204
Walla Walla	0	0
Lower Snake	27	88
Cowlitz	76	169
Lewis	59	227
White	81	163
Green	52	112
Puyallup	77	172
Cedar	70	536
Snoqualmie	72	174
Skykomish	85	186
Skagit	84	174
Baker	84	*175
Nooksack	97	169
Olympic Peninsula	66	290

*Most data compliments of River Forecast Centre, British Columbia

Precipitation

During the month of May, the National Weather Service and Natural Resources Conservation Service climate stations reported a wide array of precipitation totals throughout Washington river basins. The highest percent of average in the state was at Alpine Meadows SNOTEL in the Tolt River Basin which reported 160% of average for a total of 13.3 inches. The average for Alpine Meadows is 8.3 inches for May. Alpine Meadows was also the wettest spot in the state last month. Also note worthy was the May 26 thunderstorm event that hit the Portland – Vancouver area, breaking both cities long standing one day precipitation records; Portland airport with 1.03 inches topping the 1953 record of .93 inches and .84 inches smashing Vancouver’s 103 year old record of .65 inches. Minor local flooding was reported.

RIVER BASIN	MAY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	100	107
Pend Oreille	98	111
Upper Columbia	53	96
Central Columbia	64	105
Upper Yakima	103	103
Lower Yakima	116	114
Walla Walla	65	105
Lower Snake	84	103
Lower Columbia	113	108
South Puget Sound	132	107
Central Puget Sound	133	106
North Puget Sound	77	106
Olympic Peninsula	85	111

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. Reservoir storage in the Yakima Basin was 812,000-acre feet, 112% of average for the Upper Reaches and 218,000-acre feet or 107% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 111% of average for June 1. The power generation reservoirs included the following: Coeur d’Alene Lake, 207,000 acre feet, 76% of average and 87% of capacity; Chelan Lake, 484,000-acre feet, 102% of average and 72% of capacity; and the Skagit River reservoirs at 98% of average and 73% of capacity. Currently most reservoir operations are gearing up for an above average runoff from melting snow so downstream flows may be higher than normal for this time of year. 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	87	76
Pend Oreille	80	180
Upper Columbia	100	111
Central Columbia	72	102
Upper Yakima	97	112
Lower Yakima	94	107
Lower Snake	89	100
North Puget Sound	73	98

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

Streamflow

Forecasts were refined this month but still vary from 80% of average for Snake River to 139% of average for S.F. Tolt River, but for the most part remain unchanged from last month. June-September forecasts for some Western Washington streams include Taylor Creek near Selleck, 118%; White River, 115%; and Dungeness River, 117%. Some Eastern Washington streams include the Yakima River near Parker, 119%; Wenatchee River at Plain, 113%; and Spokane River near Post Falls, 107%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. June 1 forecasts are typically based on seasonal maximum snowpack accumulation and spring precipitation forecasts allowing for the best accuracy and correlation to historic runoff.

A warm spell early in the month got the snow melting and the rivers flowing however temperatures dropped back to below normal which brought flows back into check at near to slightly above normal levels for the month. The Naches River had the highest reported flows with 147% of average. The S.F. Walla Walla River with 93% of average was the lowest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Snake below Ice Harbor Dam, 111%; the Lewis at Ariel, 132%; the Columbia below Rock Island Dam, 107%; and the Bumping River near Nile, 122%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
-------	---

Spokane	105-107
Pend Oreille	94-125
Upper Columbia	96-128
Central Columbia	100-123
Upper Yakima	106-120
Lower Yakima	117-125
Walla Walla	89-100
Lower Snake	80-96
Lower Columbia	113-125
South Puget Sound	98-115
Central Puget Sound	118-139
North Puget Sound	107-119
Olympic Peninsula	117-118

STREAM	PERCENT OF AVERAGE MAY STREAMFLOWS
--------	---------------------------------------

Pend Oreille Below Box Canyon	110
Kettle at Laurier	106
Columbia at Birchbank	105
Spokane at Long Lake	111
Similkameen at Nighthawk	120
Okanogan at Tonasket	137
Methow at Pateros	128
Chelan at Chelan	105
Wenatchee at Pashastin	105
Cle Elum near Roslyn	118
Yakima at Parker	131
Naches at Naches	147
Grande Ronde at Troy	96
Snake below Lower Granite Dam	104
SF Walla Walla near Milton Freewater	93
Columbia River at The Dalles	110
Cowlitz below Mayfield Dam	137
Skagit at Concrete	113
Dungeness near Sequim	119

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

Soil Moisture

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. Moderate fall precipitation helped bolster soil moisture profiles in most locations of the state. Rapid warming jump started snow melt which led to considerable increases in soil moisture in some areas. Other areas actually witnessed a slight decrease from last month after meltout. With soil moisture level this high we should generally see additional confidence in most streamflow forecasts.

BASIN	ESTIMATED PERCENT SATURATION
Spokane	76
Pend Oreille	64
Upper Columbia	64
Central Columbia	58
Upper Yakima	88
Lower Yakima	70
Walla Walla	77
Lower Snake	77
Lower Columbia	79
South Puget Sound	85
Central Puget Sound	N/A
North Puget Sound	105
Olympic Peninsula	49

Spring Recreation

As winter turns to spring so does the thought of snow recreation change to water recreation. As the ripening snow pack begins to melt and fill the rivers and streams to bank full we need to remember the power and unforgiving nature of ice cold snow melt water. Every year, whether fly fishing Spring Chinook, rafting the rapids or just cooling off during that first hot spell of the season, folks get caught in the extra swift currents of our mountain fed streams. Many times it's way too late by the time they realize that they had stepped too far into the current or can't catch their breath when submerged in the icy cold water and they are gone. The reminder is that it may be 80 or even 100 degrees outside but that water is still ice cold and until the majority of the mountain snow is gone and water levels subside it will remain that way. Keep you and yours safe by always wearing a life preserver when in or near cold and rapid water. Children and pets are especially susceptible since they really know no better.

Western Snow Conference 2013

After a successful Alaska based conference the North Continental team announced the location of the 2013 conference. Mark your calendar for April 14-19, 2013 in Jackson, WY. Follow the conference web site for updates as they become available. <http://www.westernsnowconference.org/>

BASIN SUMMARY OF SNOW COURSE DATA

JUNE 2012

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ALPINE MEADOWS SNTL	3500	6/01/12	84	53.9	63.0	31.4	MOWICH SNOTEL	3160	6/01/12	0	.0	.0	.0
BADGER PASS SNOTEL	6900	6/01/12	60	31.6	49.3	22.9	MOUNT GARDNER SNOTEL	2920	6/01/12	0	.0	5.0	.0
BARKER LAKES SNOTEL	8250	6/01/12	27	8.6	25.6	9.5	N.F. ELK CR SNOTEL	6250	6/01/12	0	.0	3.1	.6
BARNES CREEK CAN.	5320	6/01/12	---	8.7	--	--	NEVADA RIDGE SNOTEL	7020	6/01/12	5	3.1	19.2	3.4
BASIN CREEK SNOTEL	7180	6/01/12	1	.8	8.1	4.1	NEZ PERCE CMP SNOTEL	5650	6/01/12	0	.0	4.3	.3
BEAVER PASS SNOTEL	3630	6/01/12	79	41.3	39.0	16.8	NOISY BASIN SNOTEL	6040	6/01/12	72	31.3	69.7	30.1
BIG WHITE MTN CAN.	5510	6/02/12	16	10.9	20.8	--	NORTH FORK JOCKO	6330	5/31/12	41	20.6	51.4	23.3
BLACK PINE SNOTEL	7100	6/01/12	0	.0	8.1	1.9	OLALLIE MDWS SNOTEL	4030	6/01/12	103	53.2	56.7	31.8
BLACKWALL PILL CAN.	6370	6/01/12	56	32.5	37.0	--	PARADISE SNOTEL	5130	6/01/12	127	75.8	99.5	61.6
BLEWETT PASS#2SNOTEL	4240	6/01/12	0	.0	.0	.0	PARK CK RIDGE SNOTEL	4600	6/01/12	48	28.3	30.5	11.5
BRENDA MINE CAN.	4450	6/01/12	---	.2	--	--	PEPPER CREEK SNOTEL	2140	6/01/12	0	.0	.0	--
BUCKINGHORSE SNOTEL	4870	6/01/12	112	60.8	85.2	--	PETERSON MDW SNOTEL	7200	6/01/12	0	.0	11.4	2.7
BUMPING RIDGE SNOTEL	4610	6/01/12	23	12.0	23.0	11.6	PIGTAIL PEAK SNOTEL	5800	6/01/12	125	70.2	67.2	39.9
BUNCHGRASS MDWSNOTEL	5000	6/01/12	36	13.6	26.5	9.7	PIKE CREEK SNOTEL	5930	6/01/12	0	.0	13.5	--
BURNT MOUNTAIN PIL	4170	6/01/12	14	5.5	19.4	.4	POPE RIDGE SNOTEL	3590	6/01/12	0	.0	.0	.0
CALAMITY SNOTEL	2500	6/01/12	0	.0	.0	--	POTATO HILL SNOTEL	4510	6/01/12	39	16.7	32.4	2.7
CAYUSE PASS SNOTEL	5240	6/01/12	128	60.8	81.7	--	QUARTZ PEAK SNOTEL	4700	6/01/12	0	.0	18.0	.0
CHICKEN CREEK	4060	5/31/12	0	.0	.0	.0	RAGGED MTN SNOTEL	4210	6/01/12	0	.0	2.5	--
COMBINATION SNOTEL	5600	6/01/12	0	.0	.0	.0	RAINY PASS SNOTEL	4890	6/01/12	62	35.1	37.4	24.3
COPPER BOTTOM SNOTEL	5200	6/01/12	0	.0	.0	.0	REX RIVER SNOTEL	3810	6/01/12	46	23.5	33.0	6.1
CORRAL PASS SNOTEL	5800	6/01/12	77	36.5	47.0	23.1	ROCKER PEAK SNOTEL	8000	6/01/12	25	9.0	23.1	11.7
COUGAR MTN. SNOTEL	3200	6/01/12	0	.0	11.7	1.5	SADDLE MTN SNOTEL	7900	6/01/12	32	12.4	33.2	16.3
DALY CREEK SNOTEL	5780	6/01/12	0	.0	.0	.0	SALMON MDWS SNOTEL	4460	6/01/12	0	.0	.0	.0
DISCOVERY BASIN	7050	5/31/12	1	.5	10.7	2.4	SASSE RIDGE SNOTEL	4340	6/01/12	36	16.6	21.3	5.9
DUNGENESS SNOTEL	4010	6/01/12	0	.0	6.2	.0	SAVAGE PASS SNOTEL	6170	6/01/12	14	7.9	26.4	10.4
EMERY CREEK SNOTEL	4350	6/01/12	0	.0	.0	.0	SAWMILL RIDGE SNOTEL	4640	6/01/12	42	23.8	46.8	--
FTSH LAKE SNOTEL	3430	6/01/12	19	7.7	10.9	7.5	SENTINEL BT SNOTEL	4680	6/01/12	0	.0	.0	.0
FLATTOP MTN SNOTEL	6300	6/01/12	104	46.1	62.0	36.5	SHEEP CANYON SNOTEL	3990	6/01/12	69	34.9	60.1	13.7
FROHNER MDWS SNOTEL	6480	6/01/12	0	.0	.7	.7	SHERWIN SNOTEL	3200	6/01/12	---	.0	.0	.0
GRAVE CRK SNOTEL	4300	6/01/12	0	.0	8.7	.0	SILVER STAR MTN CAN.	5600	6/02/12	39	20.2	33.0	--
GREEN LAKE SNOTEL	5920	6/01/12	34	13.9	23.5	6.6	SKALKAHO SNOTEL	7260	6/01/12	18	7.5	25.1	14.6
GROUSE CAMP SNOTEL	5390	6/01/12	0	.0	8.3	.2	SKOOKUM CREEK SNOTEL	3310	6/01/12	23	13.9	30.5	1.5
HAND CREEK SNOTEL	5030	6/01/12	0	.0	.0	.0	SOURDOUGH GUL SNOTEL	4000	6/01/12	0	.0	.0	--
HARTS PASS SNOTEL	6490	6/01/12	71	44.5	65.7	29.2	SPENCER MDW SNOTEL	3400	6/01/12	17	10.6	28.9	3.0
HELL ROARING DIVIDE	5770	5/31/12	42	21.1	41.4	10.8	SPIRIT LAKE SNOTEL	3520	6/01/12	0	.0	.0	.0
HERRIG JUNCTION	4850	5/31/12	20	9.6	26.8	5.4	SPRUCE SPGS SNOTEL	5700	6/01/12	0	.0	5.0	--
HIGH RIDGE SNOTEL	4920	6/01/12	0	.0	18.6	1.2	STAHL PEAK SNOTEL	6030	6/01/12	78	36.3	57.4	28.0
HOODOO BASIN SNOTEL	6050	6/01/12	79	39.8	53.8	28.4	STAMPEDE PASS SNOTEL	3850	6/01/12	43	22.5	31.4	18.6
HUCKLEBERRY SNOTEL	2250	6/01/12	0	.0	.0	.0	STEVENS PASS SNOTEL	3950	6/01/12	49	21.1	24.9	9.0
HUMBOLDT GLCH SNOTEL	4250	6/01/12	---	.0	2.2	.0	STRYKER BASIN	6180	5/31/12	59	30.1	46.8	19.4
INDIAN ROCK SNOTEL	5360	6/01/12	0	.0	26.9	--	STUART MOUNTAIN	7400	5/31/12	42	20.8	44.5	--
JUNE LAKE SNOTEL	3440	6/01/12	57	35.3	59.9	10.1	SUNSET SNOTEL	5540	6/01/12	---	7.7	29.5	13.5
KRAFT CREEK SNOTEL	4750	6/01/12	0	.0	.0	.0	SURPRISE LKS SNOTEL	4290	6/01/12	75	36.2	58.3	19.0
LOLO PASS SNOTEL	5240	6/01/12	0	.0	20.1	4.9	SWAMP CREEK SNOTEL	3930	6/01/12	0	.0	.7	.0
LONE PINE SNOTEL	3930	6/01/12	66	39.3	60.4	18.4	SWIFT CREEK SNOTEL	4440	6/01/12	118	70.1	100.6	40.0
LOOKOUT SNOTEL	5140	6/01/12	7	3.2	25.1	8.0	THUNDER BASIN SNOTEL	4320	6/01/12	30	17.5	22.3	9.3
LOST HORSE SNOTEL	5120	6/01/12	0	.0	.0	.2	TINKHAM CREEK SNOTEL	2990	6/01/12	46	20.9	23.3	2.9
LOST LAKE SNOTEL	6110	6/01/12	99	43.9	67.2	41.5	TOUCHET SNOTEL	5530	6/01/12	0	.0	20.6	2.5
LUBRECHT SNOTEL	4680	6/01/12	0	.0	.0	.0	TROUGH #2 SNOTEL	5480	6/01/12	0	.0	.0	.0
LYMAN LAKE SNOTEL	5980	6/01/12	103	57.6	80.5	50.8	TV MOUNTAIN	6800	5/31/12	12	4.8	18.8	6.8
LYNN LAKE SNOTEL	3900	6/01/12	38	16.9	26.2	--	TWELVEMILE SNOTEL	5600	6/01/12	0	.0	.0	.4
MARTEN RIDGE SNOTEL	3520	6/01/12	101	62.7	74.9	--	TWIN LAKES SNOTEL	6400	6/01/12	42	24.5	38.8	22.3
MEADOWS PASS SNOTEL	3230	6/01/12	20	8.7	14.7	.9	UPPER WHEELER SNOTEL	4330	6/01/12	0	.0	.0	.0
M F NOOKSACK SNOTEL	4970	6/01/12	109	84.0	86.2	49.6	WARM SPRINGS SNOTEL	7800	6/01/12	49	20.6	32.5	17.0
MICA CREEK SNOTEL	4510	6/01/12	0	.0	21.4	.0	WATERHOLE SNOTEL	5010	6/01/12	74	40.0	58.5	15.0
MISSION CREEK CAN.	5840	6/01/12	29	13.8	24.4	--	WHITE PASS ES SNOTEL	4440	6/01/12	24	11.1	13.8	5.6
MORSE LAKE SNOTEL	5410	6/01/12	101	56.2	61.0	33.6	WHITE ROCKS MTN CAN.	7200	5/28/12	20	8.6	15.7	--
MOSES MTN SNOTEL	5010	6/01/12	0	.0	7.6	.1							
MOSQUITO RDG SNOTEL	5200	6/01/12	40	22.7	41.9	11.0							
MOUNT CRAIG SNOTEL	3960	6/01/12	61	26.2	35.4	7.8							
MT. KOBAU CAN.	5500	5/30/12	9	3.2	15.6	--							



Natural Resources Conservation Service

Washington State
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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

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

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

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

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

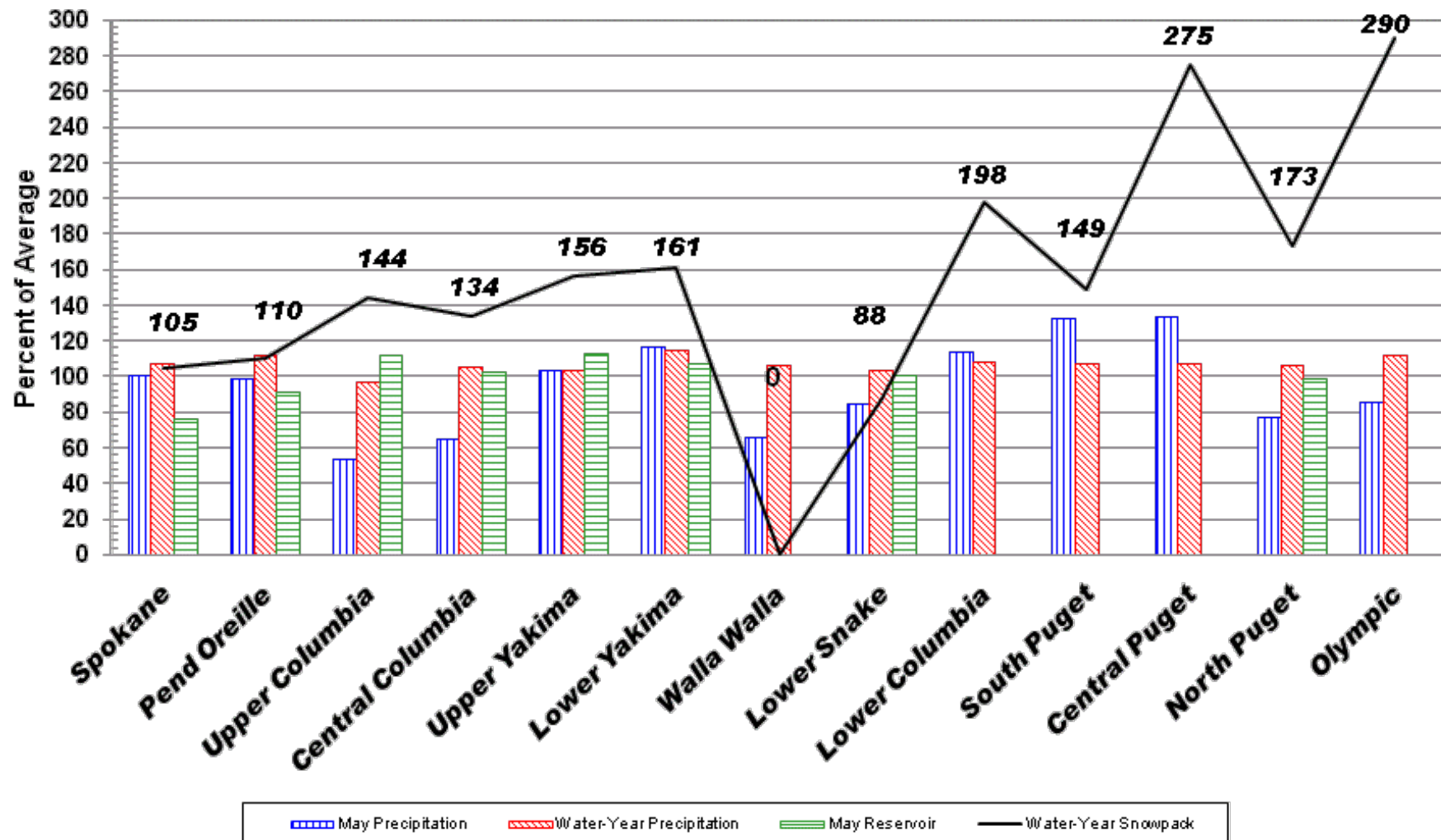
USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov>

NRCS National:
<http://www.nrcs.usda.gov>

June 1, 2012 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2011 - Current Date)



6/01/12

SPOKANE RIVER BASIN

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Spokane R nr Post Falls (2)	JUN-JUL	720	107	865	780	660	575	675
	JUN-SEP	830	107	1020	910	755	635	775
Spokane R at Long Lake (2)	JUN-JUL	890	106	1050	955	825	730	840
	JUN-SEP	1130	107	1350	1220	1040	905	1060
Chamokane Ck nr Long Lake	JUN-AUG	6.00	105	7.60	6.70	5.30	4.40	5.70

PEND OREILLE RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Pend Oreille Lake Inflow (2)	JUN-JUL	5720	94	6700	6110	5330	4740	6120
	JUN-SEP	7000	96	8170	7470	6530	5830	7280
Priest R nr Priest River (1,2)	JUN-JUL	365	126	445	395	335	285	290
	JUN-SEP	430	125	525	470	390	335	345
Pend Oreille R bl Box Canyon (2)	JUN-JUL	5780	93	6770	6180	5380	4790	6190
	JUN-SEP	7080	96	8280	7560	6600	5880	7370

UPPER COLUMBIA RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Colville R at Kettle Falls	JUN-JUL	42.0	120	56.0	48.0	36.0	28.0	35.0
	JUN-SEP	58.0	121	75.0	65.0	51.0	41.0	48.0
Kettle R nr Laurier	JUN-JUL	750	96	990	845	655	510	780
	JUN-SEP	840	96	1110	950	730	570	880
Columbia R at Birchbank (1,2)	JUN-JUL	27800	126	32100	29200	26400	23500	22000
	JUN-SEP	39000	128	44600	40800	37300	33400	30600
Columbia R at Grand Coulee (2)	JUN-JUL	36500	121	40800	37800	35200	32200	30200
	JUN-SEP	50100	124	55000	51600	48600	45200	40300
Similkameen R nr Nighthawk (1)	JUN-JUL	940	128	1100	990	890	780	735
	JUN-SEP	1070	128	1280	1140	1000	855	835
Okanogan R nr Tonasket (1)	JUN-JUL	1060	123	1350	1150	970	775	860
	JUN-SEP	1280	122	1630	1390	1170	930	1050
Okanogan R at Malott (1)	JUN-JUL	1100	123	1400	1190	1010	795	895
	JUN-SEP	1330	122	1700	1440	1220	965	1090
Methow R nr Pateros	JUN-SEP	620	111	710	655	585	530	560
	JUN-JUL	545	111	620	575	515	470	490

CENTRAL COLUMBIA RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Stehekin R at Stehekin	JUN-JUL	490	120	565	520	460	415	410
	JUN-SEP	635	119	710	665	605	560	535
Chelan R at Chelan (2)	JUN-JUL	675	114	735	700	650	615	590
	JUN-SEP	840	115	905	865	815	775	730
Entiat R nr Ardenvoir	JUN-JUL	131	103	147	138	124	115	127
	JUN-SEP	152	102	173	160	144	131	149
Wenatchee R at Plain	JUN-JUL	640	112	730	675	605	550	570

	JUN-SEP	780	113	880	820	740	680	690
Icicle Ck nr Leavenworth	JUN-JUL	166	100	196	178	154	136	166
	JUN-SEP	194	100	230	210	180	158	195
Wenatchee R at Peshastin	JUN-JUL	865	110	990	915	815	740	785
	JUN-SEP	1020	109	1170	1080	960	875	935
Columbia R bl Rock Island Dam (2)	JUN-JUL	40100	122	44400	41800	38400	35800	33000
	JUN-SEP	54800	126	60500	57100	52500	49200	43500

UPPER YAKIMA RIVER BASIN

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Keechelus Reservoir Inflow (2)	JUN-JUL	55.0	117	65.0	59.0	51.0	45.0	47.0
	JUN-SEP	69.0	117	82.0	74.0	64.0	56.0	59.0
Kachess Reservoir Inflow (2)	JUN-JUL	49.0	114	55.0	52.0	46.0	43.0	43.0
	JUN-SEP	58.0	114	66.0	61.0	55.0	50.0	51.0
Cle Elum Lake Inflow (2)	JUN-JUL	215	112	265	235	195	166	192
	JUN-SEP	255	111	315	280	230	195	230
Yakima R at Cle Elum (2)	JUN-JUL	365	107	455	400	330	275	340
	JUN-SEP	445	106	560	490	400	330	420
Teanaway R bl Forks nr Cle Elum	JUN-JUL	45.0	122	62.0	52.0	38.0	28.0	37.0
	JUN-SEP	48.0	120	66.0	55.0	41.0	30.0	40.0

LOWER YAKIMA RIVER BASIN

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Bumping Lake Inflow (2)	JUN-JUL	77.0	126	89.0	82.0	72.0	65.0	61.0
	JUN-SEP	90.0	125	102	95.0	85.0	78.0	72.0
American R nr Nile	JUN-JUL	63.0	117	74.0	67.0	59.0	52.0	54.0
	JUN-SEP	74.0	118	87.0	79.0	69.0	61.0	63.0
Rimrock Lake Inflow (2)	JUN-JUL	123	117	139	130	116	107	105
	JUN-SEP	168	117	185	175	161	151	144
Naches R nr Naches (2)	JUN-JUL	395	125	460	420	370	330	315
	JUN-SEP	465	124	540	495	435	390	375
Ahtanum Ck at Union Gap	JUN-JUL	15.9	149	19.4	17.3	14.5	12.4	10.7
	JUN-SEP	18.2	142	22.0	19.7	16.7	14.4	12.8
Yakima R nr Parker (2)	JUN-JUL	845	119	970	895	795	720	710
	JUN-SEP	1070	119	1220	1130	1010	920	900
Klickitat R nr Glenwood	JUN-JUL	71.0	118	82.0	75.0	67.0	60.0	60.0
	JUN-SEP	92.0	118	105	97.0	87.0	79.0	78.0
Klickitat R nr Pitt	JUN-JUL	225	125	255	235	215	195	180
	JUN-SEP	350	125	395	365	335	305	280

WALLA WALLA RIVER BASIN

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
SF Walla Walla R nr Milton-Freewater	JUN-JUL	19.2	100	24.0	21.0	17.2	14.2	19.2
	JUN-SEP	33.0	100	39.0	36.0	30.0	27.0	33.0
Mill Ck nr Walla Walla	JUN-JUL	6.00	90	8.20	6.90	5.10	3.80	6.70
	JUN-SEP	9.3	89	11.8	10.3	8.30	6.80	10.4

LOWER SNAKE RIVER BASIN

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----

Grande Ronde R at Troy (1)	JUN-JUL	400	85	550	445	355	250	470
	JUN-SEP	485	86	640	535	435	330	565
Asotin Ck at Asotin	JUN-JUL	10.6	96	14.4	12.1	9.1	6.80	11.0
Clearwater R at Spalding (1,2)	JUN-JUL	2650	90	3620	2950	2350	1680	2960
	JUN-SEP	3100	92	4210	3450	2760	2000	3370
Snake R bl Lower Granite Dam (1,2)	JUN-JUL	6840	73	8460	7350	6330	5220	9340
	JUN-SEP	9530	80	11600	10200	8890	7480	11900

LOWER COLUMBIA RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg

Columbia R at The Dalles (2)	JUN-JUL	48500	111	54100	50800	46200	42900	43800
	JUN-SEP	66800	116	74200	69800	63800	59400	57800
Klickitat R nr Glenwood	JUN-JUL	71.0	118	82.0	75.0	67.0	60.0	60.0
	JUN-SEP	92.0	118	105	97.0	87.0	79.0	78.0
Klickitat R nr Pitt	JUN-JUL	225	125	255	235	215	195	180
	JUN-SEP	350	125	395	365	335	305	280
Lewis R at Ariel (2)	JUN-JUL	405	120	475	435	375	335	338
	JUN-SEP	580	120	705	630	530	455	483
Cowlitz R bl Mayfield Dam (2)	JUN-JUL	860	121	1030	930	790	685	710
	JUN-SEP	1130	121	1330	1210	1050	925	938
Cowlitz R at Castle Rock (2)	JUN-JUL	1060	115	1220	1120	995	905	920
	JUN-SEP	1450	115	1620	1520	1380	1280	1259

SOUTH PUGET SOUND RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg

White R nr Buckley (1)	JUN-JUL	255	116	315	275	235	194	220
	JUN-SEP	360	115	440	385	335	280	313
Green R bl Howard Hanson Dam (1,2)	JUN-JUL	80.0	99	111	90.0	70.0	49.0	81.1
	JUN-SEP	106	98	145	118	94.0	67.0	108

CENTRAL PUGET SOUND RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg

Cedar R nr Cedar Falls	JUN-JUL	37.0	137	45.0	40.0	34.0	29.0	27.0
	JUN-SEP	47.0	138	57.0	51.0	43.0	37.0	34.0
Rex R nr Cedar Falls	JUN-JUL	9.80	120	12.7	11.0	8.60	6.90	8.20
	JUN-SEP	13.0	120	15.9	14.2	11.8	10.1	10.8
Cedar R At Cedar Falls	JUN-JUL	25.0	137	36.0	30.0	20.0	13.8	18.2
	JUN-SEP	24.0	137	39.0	30.0	17.8	8.70	17.5
Taylor Creek Near Selleck	JUN-JUL	8.70	118	10.7	9.5	7.90	6.70	7.40
	JUN-SEP	13.2	118	16.0	14.3	12.1	10.4	11.2
SF Tolt R nr Index	JUN-JUL	8.50	139	10.6	9.3	7.70	6.40	6.10
	JUN-SEP	11.50	139	13.9	12.5	10.5	9.1	8.30

NORTH PUGET SOUND RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg

Thunder Ck Nr Newhalem	JUN-JUL	170	108	196	181	159	144	158
	JUN-SEP	275	107	310	290	260	240	257

Skagit R At Newhalem	JUN-JUL	1270	121	1410	1330	1210	1130	1054
	JUN-SEP	1670	119	1850	1740	1600	1490	1407
Baker R nr Concrete (2)	JUN-JUL	510	110	625	555	465	395	465
	JUN-SEP	750	109	950	830	670	550	687

OLYMPIC PENINSULA RIVER BASINS

Forecast Point	period	50% (KAF)	% of avg	max (KAF)	30% (KAF)	70% (KAF)	min (KAF)	30-yr avg
-----	-----	-----	-----	-----	-----	-----	-----	-----
Dungeness R Nr Sequim	JUN-JUL	84.0	118	99.0	90.0	78.0	69.0	71.0
	JUN-SEP	116.0	117	136	124	108	96.0	99.0
Elwha R At Mcdonald Bridge	JUN-JUL	265	119	295	280	250	235	222
	JUN-SEP	360	118	405	380	340	315	306

Max is 90 percentile and min is 10 percentile except with footnote 1 below.
Averages are for the 1971-2000 period.
All volumes are in KAF.

footnotes:

- 1) max is 95 percentile and min is 5 percentile
- 2) streamflow is adjusted for upstream storage

NORTH CASCADES GLACIER PAGE 2012

North Cascades National Park Glacier Monitoring Program

The National Park Service began monitoring glaciers in North Cascades National Park in 1993 and Mount Rainier glaciers in 2003 (see the Mount Rainier Glacier Page). Goals for this program and additional data can be found at North Cascades National Park home page at <http://www.nps.gov/noca/naturescience/glacial-mass-balance1.htm> or contact Jon_Riedel@nps.gov or Mike_Larrabee@nps.gov.

The four glaciers monitored are located at the headwaters of four watersheds, each with large hydroelectric dams (Figure 1). The glaciers represent a range in elevation from 8300 to 5600 feet, and a range in climatic conditions from maritime to continental. Methods include three visits annually to each glacier to measure winter accumulation and summer melt. Measurements are taken at a series of points down the centerline of the glacier (Table 1), and then integrated across the entire glacier surface to determine mass balance for the entire glacier. In 2011, positive net balances were recorded at all four index glaciers (Figure 2). This was a result of above average winter accumulation and below average summer melt in 2011.

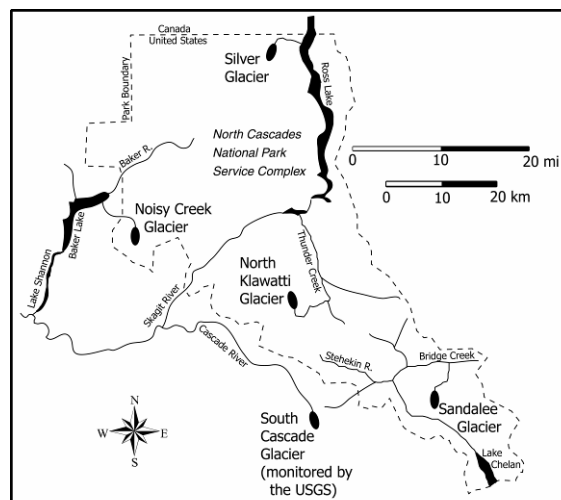


Figure 1. Glaciers monitored in North Cascades N.P.S. Complex.

Table 1		Average	2012	2012
Glacier:	Elev.	Accumulation	Accumulation	Percent
	(feet)	(inches W.E.)	(inches W.E.)	of
				Average
Noisy Creek Density = 0.5	Entire Glacier	121	161	133
	5932	131	---	---
	5925	136	---	---
	5814	122	163	134
	5709	113	155	137
	5591	115	153	133
Silver Density = 0.45	Entire Glacier	86	98	114
	8327	108	120	111
	7946	90	95	106
	7507	109	107	97
	7211	63	68	107
North Klawatti Density = 0.50	Entire Glacier	113	111	98
	7585	115	126	110
	7205	118	94	79
	6824	118	89	76
	6286	104	133	128
	5997	93	122	131
Sandalee Density = 0.44	Entire Glacier	107	118	110
	7395	109	123	113
	7146	117	120	103
	6778	109	110	101
	6549	131	---	---

Table 1. Table 1 presents this spring's provisional winter accumulation data, along with average values and percent of the 19-year average. The 2012 snow depths were measured on April 23th and May 7th on the four glaciers. The provisional data show 2012 winter accumulation as near or above average, depending on the glacier. However, difficulty in probing the snowpack depth resulted in fewer measurements than normal. These data are tentative and will be revised after a July visit. Based on historical field data, a snow density of 0.46 was assumed for Silver Glacier, 0.44 for Sandalee Glacier and 0.50 for Noisy and North Klawatti glaciers. Densities are in fraction of water density. Snow density values will be checked against South Cascade Glacier and nearby SNOTEL values.

The 2011 estimates of glacial contribution to runoff for four watersheds are based on the mass balance measurements and GIS analyses to determine glacier area within 165 ft (50-meter) elevation bands (Table 2). Glaciers reduce the variation of flow in these watersheds by providing melt water from firm and ice during summer drought, in dry/warm years, and by storing water in excess snowpack during wet/cool years. Glacial contribution to stream flow in these watersheds varies by as much as 100% annually. Magnitude of glacial contribution to streamflow is large, but varies by the amount of glacial cover in each watershed. Thunder Creek is 13% glacierized; Baker River, 5%; Stehekin River, 3%; and Ross Lake, 0.9% (Post and others, 1971; Granshaw, 2002).

The glacierized area of a watershed primarily dictates the glacier contribution to runoff. However, the relative importance of glacial contribution to streamflow also generally increases from west to east. For example, glaciers annually contribute a higher percentage of meltwater to streamflow in the Stehekin watershed than in the Baker, despite the fact that the Baker is more highly glacierized. This is due to lower snowfall east of the hydrologic crest of the North Cascades.

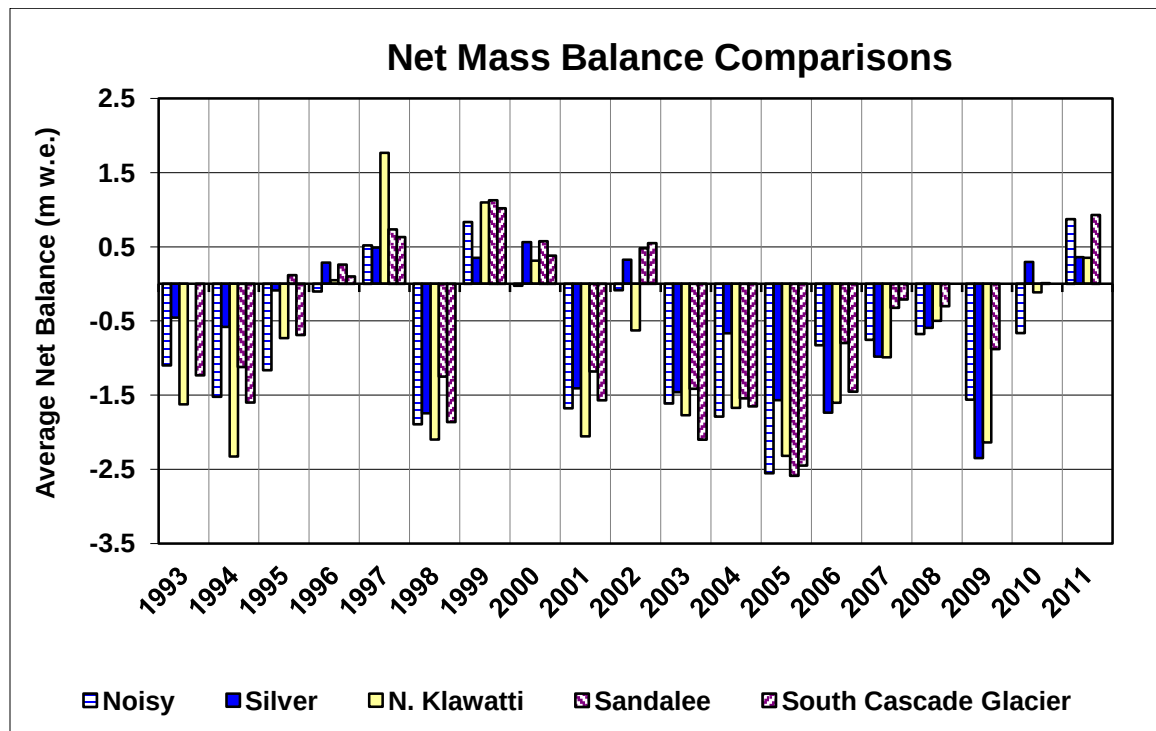


Figure 2. Net annual mass balance for the five glaciers monitored in the North Cascades.

Table 2 Provisional Data	May-September Runoff (thousands acre-feet)				Percent Glacial Runoff to Total Summer Runoff		
	2011	mean	min	max	2011	min	max
Noisy Creek Glacier	1.2	1.5	1.2	1.9			
Baker River Watershed	98.1	134.2	89.5	171.5	10.1	10.1	28.7
North Klawatti Glacier	3.4	4.0	2.8	5.1			
Thunder Creek Watershed	71.8	96.8	66.5	118.8	22.4	20.7	47.7
Sandalee Glacier	0.3	0.5	0.3	0.7			
Stehekin River Watershed	52.1	71.0	51.6	88.1	5.7	5.4	22.9
Silver Glacier	0.5	1.0	0.5	1.3			
Ross Lake Watershed	47.4	63.6	43.8	80.5	2.6	2.5	13.5

Table 2. Glacial contribution to summer stream flow (May 1 to Sept. 30) for four watersheds. Runoff units are thousands of acre-feet. Data from 1993-2011 except the Sandalee Glacier and Stehekin River Watershed (1995-2011).

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

Canada	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
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 Power and Light Company 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.



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Washington Water Supply Outlook Report

**Natural Resources Conservation Service
Spokane, WA**

