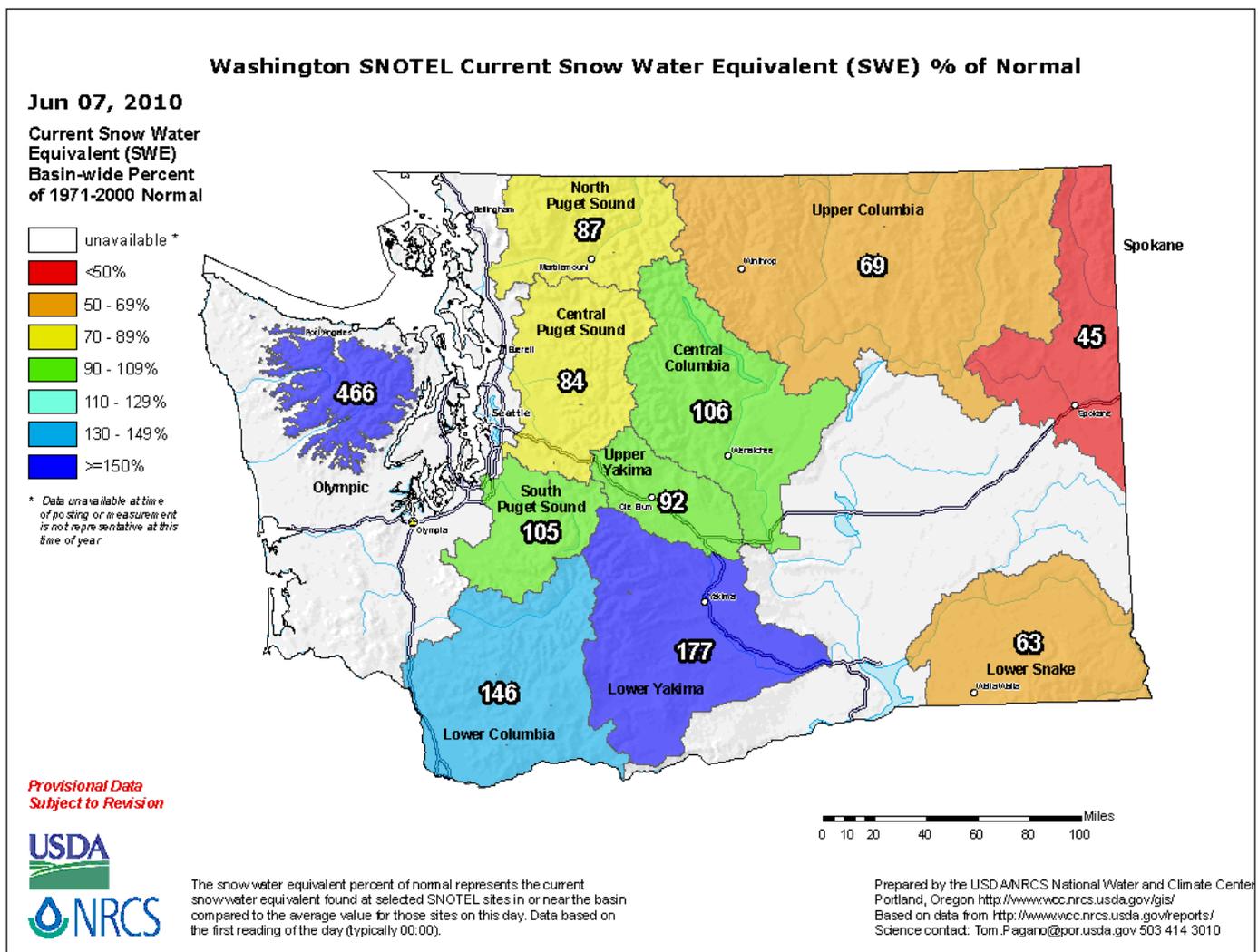


Washington Water Supply Outlook Report June 1, 2010



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

June 2010

General Outlook

May brought many surprises in that what was supposed to be a relatively dry month ended up being one of the wettest of the year with over 200% of average rainfall in some areas. Temperatures were below normal all month and made it feel like early winter with some snow accumulation in the high country. Mostly it came as rain but it was cold enough to maintain the snowpack and flatten the normal melt curve so that many areas appear to have gained considerable snow. For the most part all snow below 4000 feet is gone. Heavy rains also helped fill reservoirs and soil moisture profiles. With these conditions stored irrigation supplies were spared, leaving that water for later in the season. Predicted runoff jumped by 10-40% state wide. Short term climate forecasts are for near normal conditions for the rest of June but then warming to above average temperatures the rest of the summer, so this extra water may become very useful later in the season.

Snowpack

The June 1 statewide SNOTEL readings were 128% of average, up from 89% a month ago. Out of the remaining snowpack the Cedar River reported the lowest at 32% of average. Readings from the Olympic Peninsula basins reported the highest at 320% of average. Westside averages from SNOTEL included the North Puget Sound river basins with 80% of average, the Central Puget Sound river basins with 96%, and the Lewis-Cowlitz basins with 148% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 122% and the Wenatchee area with 95%. Snowpack in the Spokane River Basin was at 51% and the Walla Walla River Basin had zero snow remaining. Maximum snow cover in Washington was at Paradise SNOTEL, with water content of 65.8 inches. Paradise would normally have 61.6 inches of water content on June 1.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	75	51
Newman Lake	0	0
Pend Oreille	101	99
Okanogan	0	0
Methow	110	70
Conconully Lake	0	0
Wenatchee	130	97
Chelan	132	93
Upper Yakima	96	97
Lower Yakima	133	81
Ahtanum Creek	146	225
Walla Walla	0	0
Lower Snake	132	105
Cowlitz	99	137
Lewis	121	160
White	96	133
Green	68	58
Puyallup	96	133
Cedar	9	32
Snoqualmie	60	96
Skykomish	62	99
Skagit	139	87
Baker	N/A	N/A
Nooksack	91	95
Olympic Peninsula	480	320

Precipitation

During the month of May, the National Weather Service and Natural Resources Conservation Service climate stations reported much above average precipitation for the entire state. The highest percent of average in the state was at Rimrock reservoir which reported 342% of average for a total of 3.42 inches. The average for Rim Rock is 1.0 inch for May. The wettest spot in the state was reported at Alpine Meadows SNOTEL in the Tolt watershed, with a May accumulation of 18 inches. Highest basin-wide percentage was 216% in the Central Columbia Basin.

RIVER BASIN	MAY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	139	79
Pend Oreille	132.....	86
Upper Columbia	157.....	95
Central Columbia	216.....	91
Upper Yakima	187.....	84
Lower Yakima	204.....	97
Walla Walla	161.....	87
Lower Snake	133.....	85
Lower Columbia	166.....	95
South Puget Sound	166.....	89
Central Puget Sound	175.....	92
North Puget Sound	146.....	98
Olympic Peninsula	198.....	138

Reservoir

Seasonal reservoir levels in Washington 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 676,000-acre feet, 93% of average for the Upper Reaches and 203,000-acre feet or 99% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 109% of average for June 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 229,000 acre feet, 85% of average and 96% of capacity; Chelan Lake, 524,000-acre feet, 111% of average and 78% of capacity; and the Skagit River reservoirs at 102% of average and 76% 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	96	85
Pend Oreille	82	93
Upper Columbia	98	109
Central Columbia	78	111
Upper Yakima	81	93
Lower Yakima	87	99
Lower Snake	90	101
Lower Columbia	N/A	N/A
North Puget Sound	76	102

Glacier Monitoring

In cooperation with the North Cascades National Park we take this opportunity to provide the annual report on the on-going glacier monitoring program for glaciers in the North Cascades and on Mt. Rainier. The Park Service has provided copies of their report which are attached at the end of this document. Be sure to view their work at the

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

Glacier Monitoring web sites at: <http://www.nps.gov/noca/naturescience/glacial-mass-balance1.htm> and <http://www.nps.gov/archive/mora/ncrd/glacier/index.html>

Streamflow

Forecasts vary from 131% of average for the Elwha River to 55% of average for Spokane River. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 68%; White River, 97%; and Skagit River, 96%. Some Eastern Washington streams include the Yakima River near Parker, 88%; Wenatchee River at Plain, 77%; and Spokane River at Long Lake, 63%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Statewide May streamflows were mostly below average due to lack of spring snow melt. Below average temperatures and above normal precipitation helped hold snowpack in place. The SF Walla Walla River near Milton, OR had the highest reported flows with 126% of average. The Priest River with 54% of average was the lowest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 100%; the Spokane at Spokane, 62%; the Columbia below Rock Island Dam, 66%; and the Cle Elum near Roslyn, 81%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane	56-97
Pend Oreille	80-86
Upper Columbia	60-94
Central Columbia	67-88
Upper Yakima	58-77
Lower Yakima	88-110
Walla Walla	79-81
Lower Snake	58-80
Lower Columbia	73-105
South Puget Sound	78-97
Central Puget Sound	62-68
North Puget Sound	78-96
Olympic Peninsula	111-113

STREAM	PERCENT OF AVERAGE MAY STREAMFLOWS
Pend Oreille Below Box Canyon	58
Kettle at Laurier	73
Columbia at Birchbank	65
Spokane at Long Lake	62
Similkameen at Nighthawk	76
Okanogan at Tonasket	74
Methow at Pateros	95
Chelan at Chelan	84
Wenatchee at Pashastin	76
Yakima at Cle Elum	82
Yakima near Parker	87
Naches near Naches	82
Grande Ronde at Troy	74
Snake below Lower Granite Dam	63
SF Walla Walla near Milton Freewater	126
Columbia River at The Dalles	66
Lewis at Ariel	91
Cowlitz below Mayfield Dam	93
Skagit at Concrete	75
Dungeness near Sequim	95

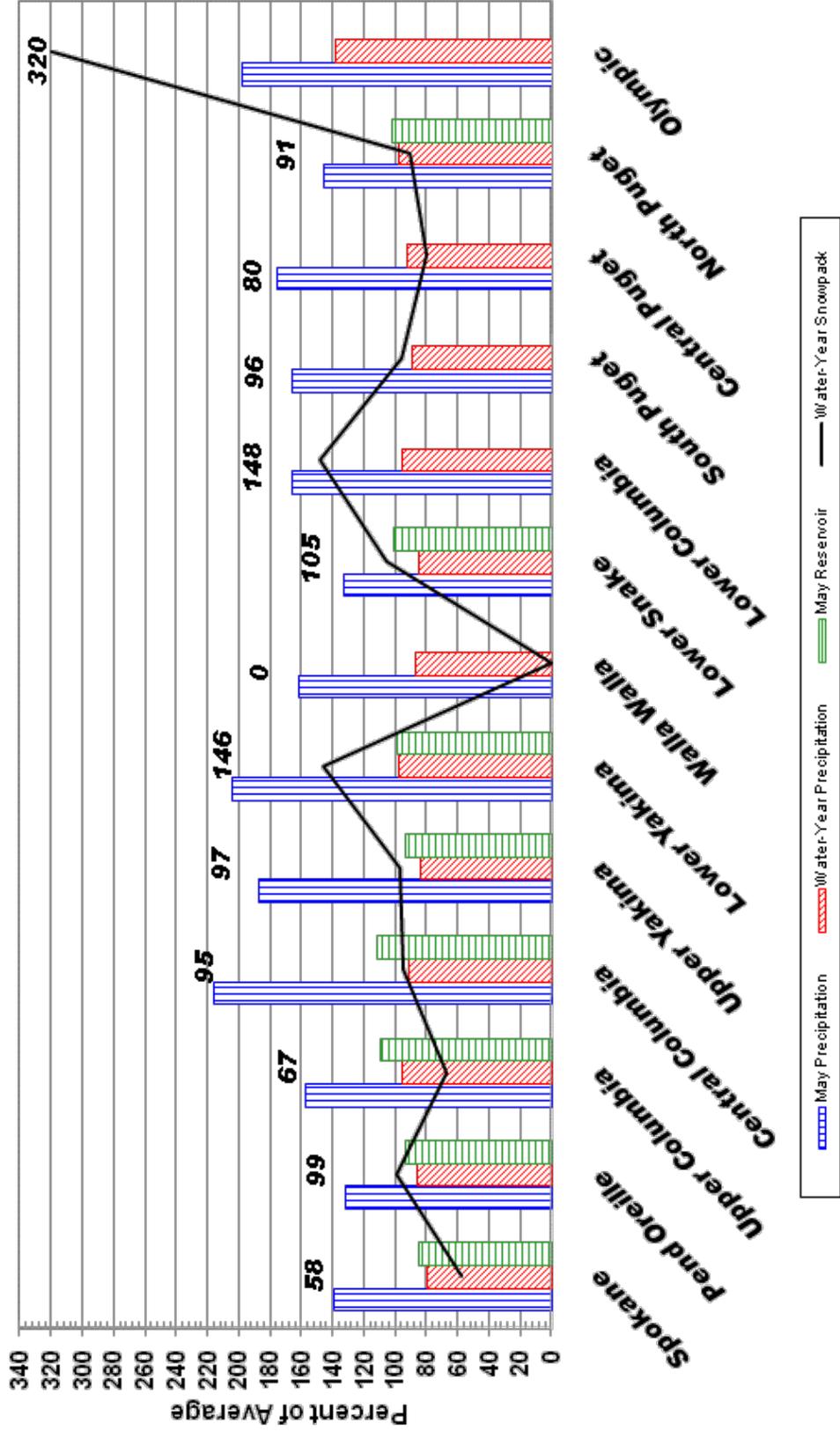
BASIN SUMMARY OF
SNOW COURSE DATA

JUNE 2010

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	6/01/10	46	29.8	54.4	31.4	MOUNT CRAG SNOTEL	3960	6/01/10	60	26.1	.0	7.8
BADGER PASS SNOTEL	6900	6/01/10	58	26.2	20.9	22.9	MOWICH SNOTEL	3160	6/01/10	0	.0	.0	.0
BARKER LAKES SNOTEL	8250	6/01/10	57	20.0	15.2	9.5	MOUNT GARDNER SNOTEL	2920	6/01/10	0	.0	.0	.0
BASIN CREEK SNOTEL	7180	6/01/10	14	3.4	.0	4.1	N.F. ELK CR SNOTEL	6250	6/01/10	0	.0	.0	.6
BEAVER PASS SNOTEL	3630	6/01/10	42	22.1	12.4	16.8	NEVADA RIDGE SNOTEL	7020	6/01/10	12	3.8	2.4	3.4
BLACK PINE SNOTEL	7100	6/01/10	0	.0	.0	1.9	NEZ PERCE CMP SNOTEL	5650	6/01/10	0	.0	.0	.3
BLEWETT PASS#2SNOTEL	4240	6/01/10	0	.0	.0	.0	NOISY BASIN SNOTEL	6040	6/01/10	105	38.2	31.0	30.1
BUCKINGHORSE SNOTEL	4870	6/01/10	137	64.5	24.7	--	NORTH FORK JOCKO	6330	5/26/10	61	22.7	32.0	23.3
BUMPING RIDGE SNOTEL	4610	6/01/10	33	13.5	10.5	11.6	OLALLIE MDWS SNOTEL	4030	6/01/10	79	38.6	36.2	31.8
BUNCHGRASS MDWSNOTEL	5000	6/01/10	27	10.9	8.9	9.7	OPHIR PARK	7150	6/01/10	12	4.9	2.0	--
BURNT MOUNTAIN PIL	4170	6/01/10	0	.0	14.3	.4	PARADISE SNOTEL	5130	6/01/10	119	65.8	76.8	61.6
CALAMITY SNOTEL	2500	6/01/10	0	.0	.0	--	PARK CK RIDGE SNOTEL	4600	6/01/10	26	14.4	2.7	11.5
CAYUSE PASS SNOTEL	5240	6/01/10	109	47.4	35.6	--	PEPPER CREEK SNOTEL	2140	6/01/10	0	.0	.0	--
CHICKEN CREEK	4060	5/26/10	0	.0	.0	.0	PETERSON MDW SNOTEL	7200	6/01/10	29	10.6	7.1	2.7
COMBINATION SNOTEL	5600	6/01/10	0	.0	.0	.0	PIGTAIL PEAK SNOTEL	5800	6/01/10	100	53.7	58.2	39.9
COPPER BOTTOM SNOTEL	5200	6/01/10	0	.0	.0	.0	PIKE CREEK SNOTEL	5930	6/01/10	0	.0	.0	7.3
CORRAL PASS SNOTEL	5800	6/01/10	73	30.7	31.9	23.1	POPE RIDGE SNOTEL	3590	6/01/10	0	.0	.0	.0
COUGAR MTN. SNOTEL	3200	6/01/10	0	.0	3.0	1.5	POTATO HILL SNOTEL	4510	6/01/10	46	17.8	11.0	2.7
COYTE HILL	4200	5/24/10	0	.0	.0	--	QUARTZ PEAK SNOTEL	4700	6/01/10	0	.0	.0	.0
DALY CREEK SNOTEL	5780	6/01/10	0	.0	.0	.0	RAGGED MTN SNOTEL	4210	6/01/10	0	.0	.0	--
DISCOVERY BASIN	7050	5/26/10	16	5.7	10.9	2.4	RAINY PASS SNOTEL	4890	6/01/10	28	18.5	12.5	24.3
DIX HILL	6400	6/01/10	0	.0	.0	--	REX RIVER SNOTEL	3810	6/01/10	6	3.2	17.9	6.1
DUNGENESS SNOTEL	4010	6/01/10	0	.0	.0	.0	ROCKER PEAK SNOTEL	8000	6/01/10	43	15.0	14.1	11.7
ELBOW LAKE SNOTEL	3200	6/01/10	0	.0	4.1	8.5	SADDLE MTN SNOTEL	7900	6/01/10	37	12.6	16.7	16.3
EMERY CREEK SNOTEL	4350	6/01/10	0	.0	.0	.0	SALMON MDWS SNOTEL	4460	6/01/10	0	.0	.0	.0
FISH LAKE SNOTEL	3430	6/01/10	0	.0	.0	7.5	SASSE RIDGE SNOTEL	4340	6/01/10	30	11.8	5.0	5.9
FLATTOP MTN SNOTEL	6300	6/01/10	97	38.5	26.9	36.5	SAVAGE PASS SNOTEL	6170	6/01/10	11	4.3	10.6	10.4
FROHNER MDWS SNOTEL	6480	6/01/10	0	.0	.0	.7	SAWMILL RIDGE SNOTEL	4640	6/01/10	35	24.6	26.8	--
GRAVE CRK SNOTEL	4300	6/01/10	0	.0	.0	.0	SENTINEL BT SNOTEL	4680	6/01/10	0	.0	.0	.0
GREEN LAKE SNOTEL	5920	6/01/10	40	15.3	10.5	6.6	SHEEP CANYON SNOTEL	3990	6/01/10	57	24.5	27.6	13.7
GROUSE CAMP SNOTEL	5390	6/01/10	0	.2	.0	.2	SHERWIN SNOTEL	3200	6/01/10	---	.0	.0	.0
HAND CREEK SNOTEL	5030	6/01/10	0	.0	.0	.0	SKALKAHO SNOTEL	7260	6/01/10	18	6.9	7.1	14.6
HARTS PASS SNOTEL	6490	6/01/10	65	18.8	21.4	29.2	SKOOKUM CREEK SNOTEL	3310	6/01/10	0	.0	.0	18.3
HELL ROARING DIVIDE	5770	5/27/10	35	16.3	18.7	10.8	SOURDOUGH GUL SNOTEL	4000	6/01/10	0	.0	.0	--
HERRIG JUNCTION	4850	5/26/10	21	8.7	8.7	5.4	SPENCER MDW SNOTEL	3400	6/01/10	---	.7	.0	3.0
HIGH RIDGE SNOTEL	4920	6/01/10	0	.0	1.7	1.2	SPIRIT LAKE SNOTEL	3520	6/01/10	0	.0	.0	.0
HOODOO BASIN SNOTEL	6050	6/01/10	44	19.6	30.3	28.4	SPRUCE SPGS SNOTEL	5700	6/01/10	0	.0	.0	--
HUCKLEBERRY SNOTEL	2250	6/01/10	0	.0	.0	.0	STAHL PEAK SNOTEL	6030	6/01/10	79	34.8	25.7	28.0
HUMBOLDT GLCH SNOTEL	4250	6/01/10	---	.0	.0	.0	STAMPEDE PASS SNOTEL	3850	6/01/10	23	11.6	23.4	18.6
INDIAN ROCK SNOTEL	5360	6/01/10	22	10.6	.0	--	STEVENS PASS SNOTEL	3950	6/01/10	27	10.1	9.9	9.0
JUNE LAKE SNOTEL	3440	6/01/10	31	16.1	19.8	10.1	STRYKER BASIN	6180	5/26/10	59	26.9	24.5	19.4
KRAFT CREEK SNOTEL	4750	6/01/10	0	.0	.0	.0	SUNSET SNOTEL	5540	6/01/10	---	4.8	3.2	13.5
LOLO PASS SNOTEL	5240	6/01/10	0	.0	.5	4.9	SURPRISE LKS SNOTEL	4290	6/01/10	68	32.0	25.5	19.0
LONE PINE SNOTEL	3930	6/01/10	55	30.6	21.5	18.4	SWAMP CREEK SNOTEL	3930	6/01/10	0	.0	.0	.0
LOOKOUT SNOTEL	5140	6/01/10	0	.0	1.6	8.0	SWIFT CREEK SNOTEL	4440	6/01/10	129	74.1	38.9	40.0
LOST HORSE SNOTEL	5120	6/01/10	0	.0	.0	.2	THUNDER BASIN SNOTEL	4320	6/01/10	12	10.2	3.7	9.3
LOST LAKE SNOTEL	6110	6/01/10	52	23.0	35.9	41.5	TINKHAM CREEK SNOTEL	2990	6/01/10	0	.0	10.8	2.9
LUBRECHT SNOTEL	4680	6/01/10	0	.0	.0	.0	TOUCHET SNOTEL	5530	6/01/10	0	.0	.0	2.5
LYMAN LAKE SNOTEL	5980	6/01/10	110	55.0	40.0	50.8	TROUGH #2 SNOTEL	5480	6/01/10	0	.0	.0	.0
LYNN LAKE SNOTEL	3900	6/01/10	5	.9	23.7	--	TV MOUNTAIN	6800	5/26/10	17	6.9	9.6	6.8
MARTEN RIDGE SNOTEL	3520	6/01/10	62	33.4	32.5	--	TWELVEMILE SNOTEL	5600	6/01/10	0	.0	.0	.4
MEADOWS PASS SNOTEL	3230	6/01/10	0	.0	5.8	.9	TWIN LAKES SNOTEL	6400	6/01/10	27	12.4	22.0	22.3
M F NOOKSACK SNOTEL	4970	6/01/10	89	49.2	59.0	49.6	UPPER WHEELER SNOTEL	4330	6/01/10	0	.0	.0	.0
MICA CREEK SNOTEL	4510	6/01/10	0	.0	.0	.0	WARM SPRINGS SNOTEL	7800	6/01/10	60	24.1	23.3	17.0
MINERS RIDGE SNOTEL	6110	6/01/10	108	32.4	36.2	42.5	WATERHOLE SNOTEL	5010	6/01/10	81	46.9	15.2	15.0
MORSE LAKE SNOTEL	5410	6/01/10	105	50.5	27.0	33.6	WELLS CREEK SNOTEL	4030	6/01/10	36	14.3	6.8	8.9
MOSES MTN SNOTEL	5010	6/01/10	0	.0	.0	.1	WHITE PASS ES SNOTEL	4440	6/01/10	17	7.6	8.7	5.6
MOSQUITO RDG SNOTEL	5200	6/01/10	---	9.6	9.5	11.0							

June 1, 2010 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2009 - Current Date)





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>

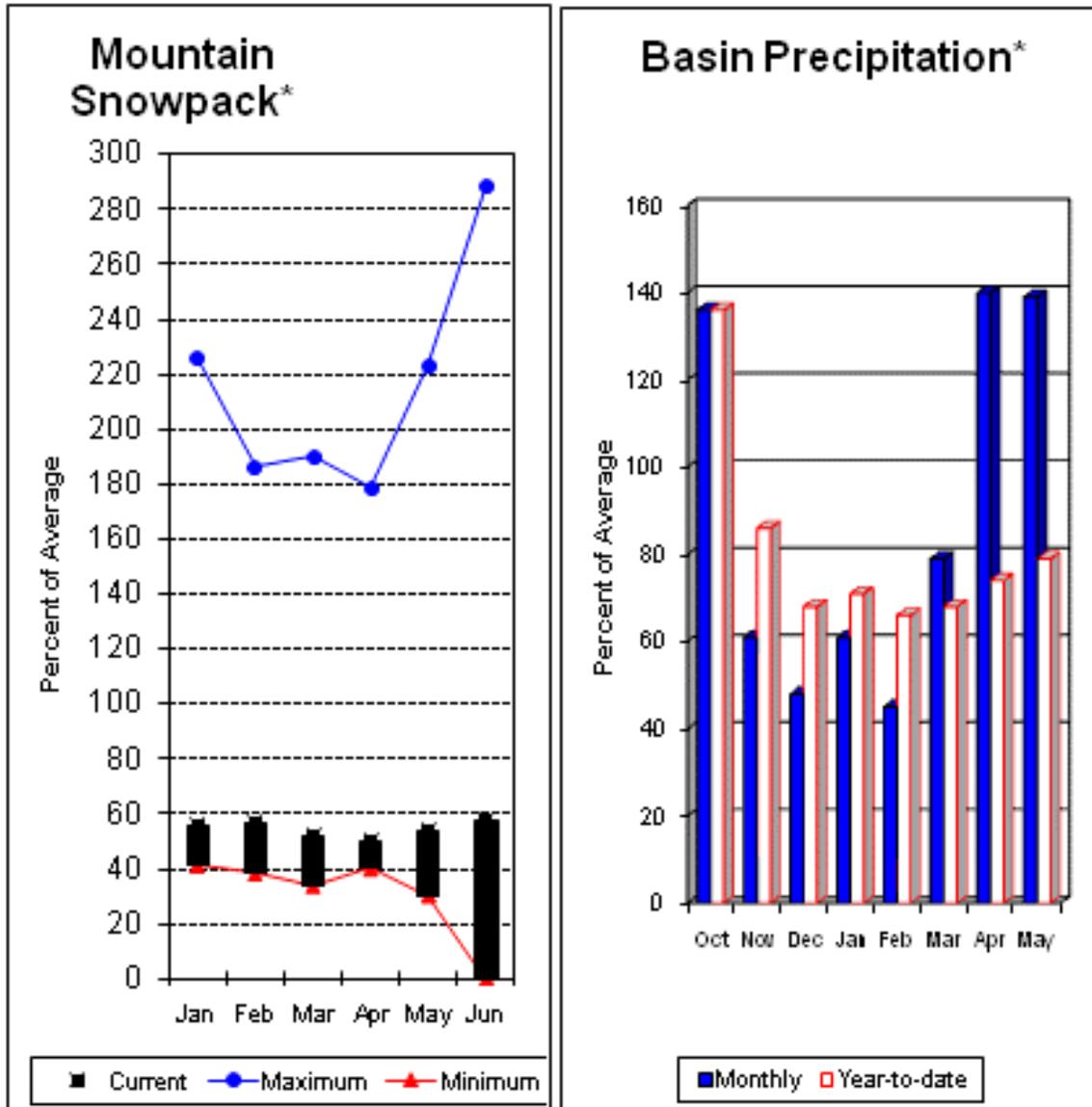
National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

USDA-NRCS Agency Homepages

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

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

Spokane River Basin



*Based on selected stations

The June 1 forecasts for summer runoff within the Spokane River Basin are 55% of average near Post Falls and 63% at Long Lake. The Chamokane River near Long Lake forecasted to have 97% of average flows for the May-August period. The forecast is based on a basin snowpack that is 51% of average and precipitation that is 79% of average for the water year. Precipitation for May was much above normal at 139% of average. Streamflow on the Spokane River at Long Lake was 62% of average for May. June 1 storage in Coeur d'Alene Lake was 229,000 acre feet, 81% of average and 96% of capacity. Snowpack at Quartz Peak SNOTEL site was meted out by June 1st. Average temperatures in the Spokane basin were 2-3 degrees below for May and 1 degree above normal for the water year.

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

Spokane River Basin

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
SPOKANE near Post Falls (2)	JUN-JUL	235	320	380	56	440	525	675
	JUN-SEP	230	345	425	55	505	620	775
SPOKANE at Long Lake (2)	JUN-JUL	365	460	525	63	590	685	840
	JUN-SEP	447	580	670	63	760	893	1060
CHAMOKANE CREEK near Long Lake	JUL-AUG	2.6	3.1	3.4	97	3.7	4.2	3.5

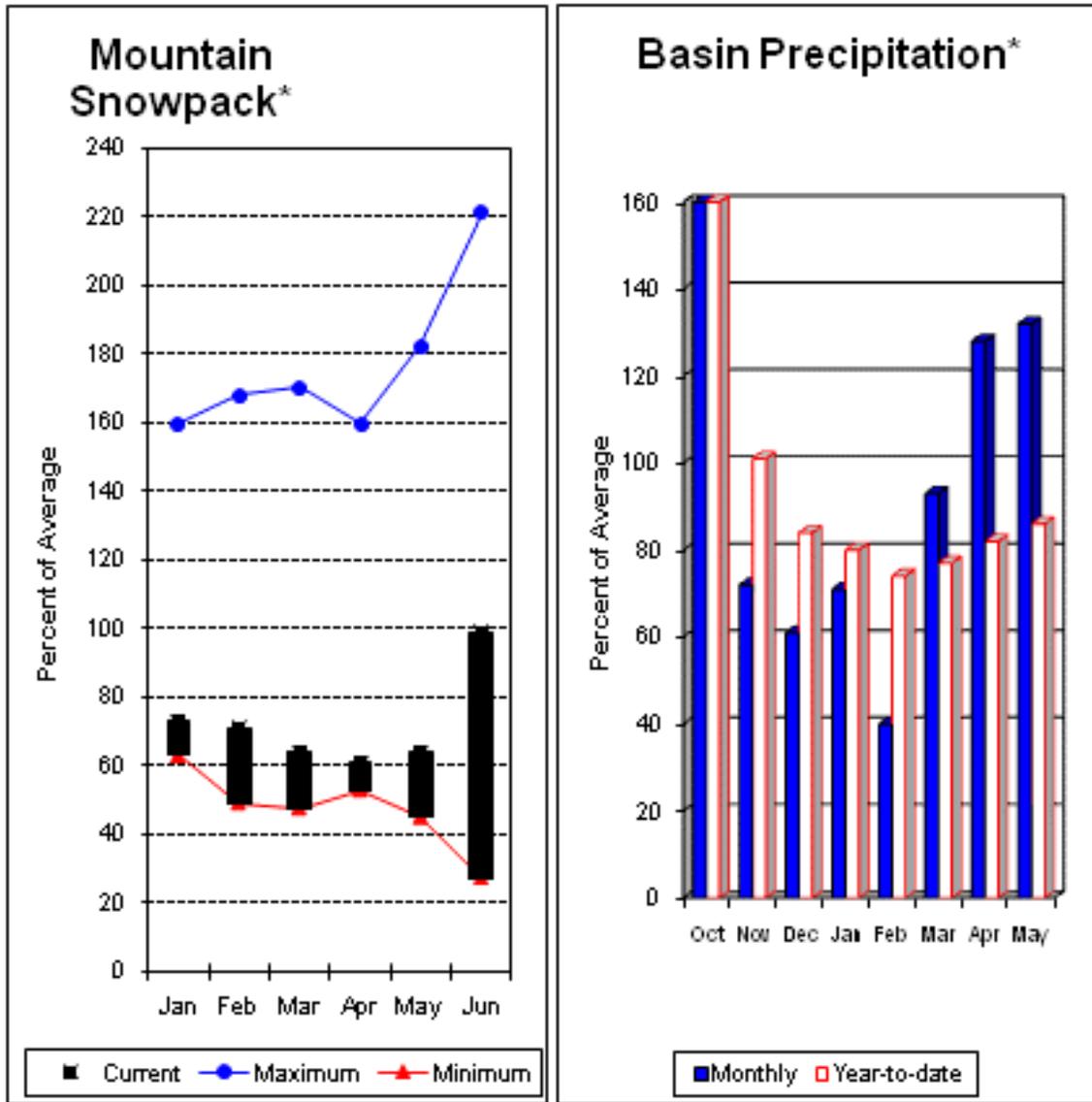
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of May					SPOKANE RIVER BASIN Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
COEUR D'ALENE	238.5	229.0	262.7	270.4	SPOKANE RIVER	8	75	51
					NEWMAN LAKE	1	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 April – September average forecast for the Priest River near the town of Priest River is 86% and the Pen Orielle below Box Canyon is 80%. May streamflow was 58% of average on the Pend Oreille River and 65% on the Columbia Birchbank. June 1 snow cover was 99% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 10.9.1 inches of snow water on the snow pillow. Normally Bunchgrass would have 9.7 inches on June 1. Precipitation during May was 132% of average, bringing the year-to-date precipitation to 86% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 93% of normal. Average temperatures were 1 degree below normal for May and 1 degree above for the water year.

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

Pend Oreille River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90%		70%		50%			30%	
		(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)	(1000AF)		(1000AF)	(1000AF)
PEND OREILLE Lake Inflow (2)	JUN-JUL	3830	4460	4890	80	5320	5950	6120		
	JUN-SEP	4490	5280	5820	80	6360	7150	7280		
PRIEST near Priest River (1,2)	JUN-JUL	182	230	250	86	270	320	290		
	JUN-SEP	210	270	295	86	320	380	345		
PEND OREILLE bl Box Canyon (2)	JUN-JUL	4577	4954	5210	84	5466	5843	6190		
	JUN-SEP	5412	5875	6190	84	6505	6968	7370		

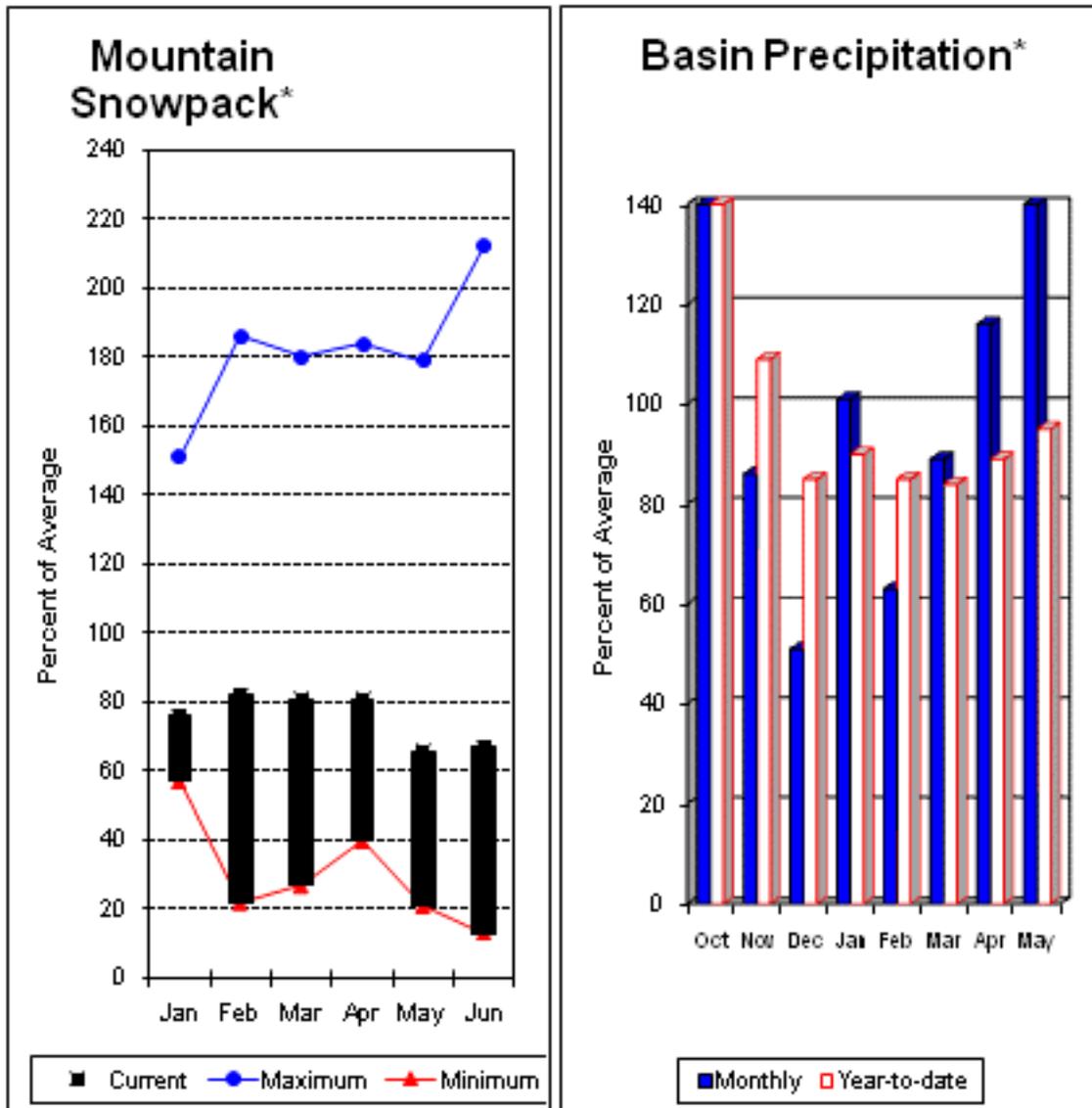
PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of May					PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
PEND OREILLE	1561.3	1243.9	1356.9	1333.1	COLVILLE RIVER	0	0	0
PRIEST LAKE	119.3	126.4	129.2	138.5	PEND OREILLE RIVER	8	93	51
					KETTLE RIVER	2	76	119

* 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 61%, Similkameen River is 73%, Kettle River 60% and Methow River is 72%. June 1 snow cover on the Okanogan was 64% of average and the Methow was 70%. May precipitation in the Upper Columbia was 157% of average, with precipitation for the water year at 95% of average. May streamflow for the Methow River was 95% of average, 74% for the Okanogan River and 76% for the Similkameen. Combined storage in the Conconully Reservoirs was 23,000-acre feet, which is 98% of capacity and 109% of the June 1 average. Temperatures were 3-5 degrees below normal for May and 1-3 degrees above for the water year.

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

Upper Columbia River Basins

Streamflow Forecasts - June 1, 2010

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)	
COLVILLE at Kettle Falls	JUN-JUL	19.3	27	33	94	39	47	35
	JUN-SEP	28	38	45	94	52	62	48
KETTLE near Laurier	JUN-JUL	270	390	470	60	550	670	780
	JUN-SEP	290	435	530	60	625	770	880
COLUMBIA at Birchbank (1,2)	JUN-JUL	14800	17700	19100	87	20500	23400	22000
	JUN-SEP	20400	24200	26000	85	27800	31600	30600
COLUMBIA at Grand Coulee Dm (1,2)	JUN-JUL	20700	23700	25000	83	26300	29300	30200
	JUN-SEP	27500	30900	32400	80	33900	37300	40300
Similkameen R nr Nighthawk (1)	JUN-JUL	370	480	530	72	580	690	735
	JUN-SEP	390	540	605	73	670	820	835
Okanogan R nr Tonasket (1)	JUN-JUL	240	435	525	61	615	810	860
	JUN-SEP	290	530	640	61	750	990	1050
Okanogan R at Malott (1)	JUN-JUL	240	450	545	61	640	850	895
	JUN-SEP	305	555	670	62	785	1040	1090
Methow R nr Pateros	JUN-SEP	315	370	405	72	440	495	560
	JUN-JUL	280	325	355	72	385	430	490

UPPER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of May					UPPER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
SALMON LAKE	10.5	9.9	9.0	9.7	OKANOGAN RIVER	8	133	99
CONCONULLY RESERVOIR	13.0	13.1	9.6	11.4	OMAK CREEK	1	0	0
					SANPOIL RIVER	0	0	0
					SIMILKAMEEN RIVER	0	159	0
					TOATS COULEE CREEK	0	0	0
					CONCONULLY LAKE	1	0	0
					METHOW RIVER	3	110	70

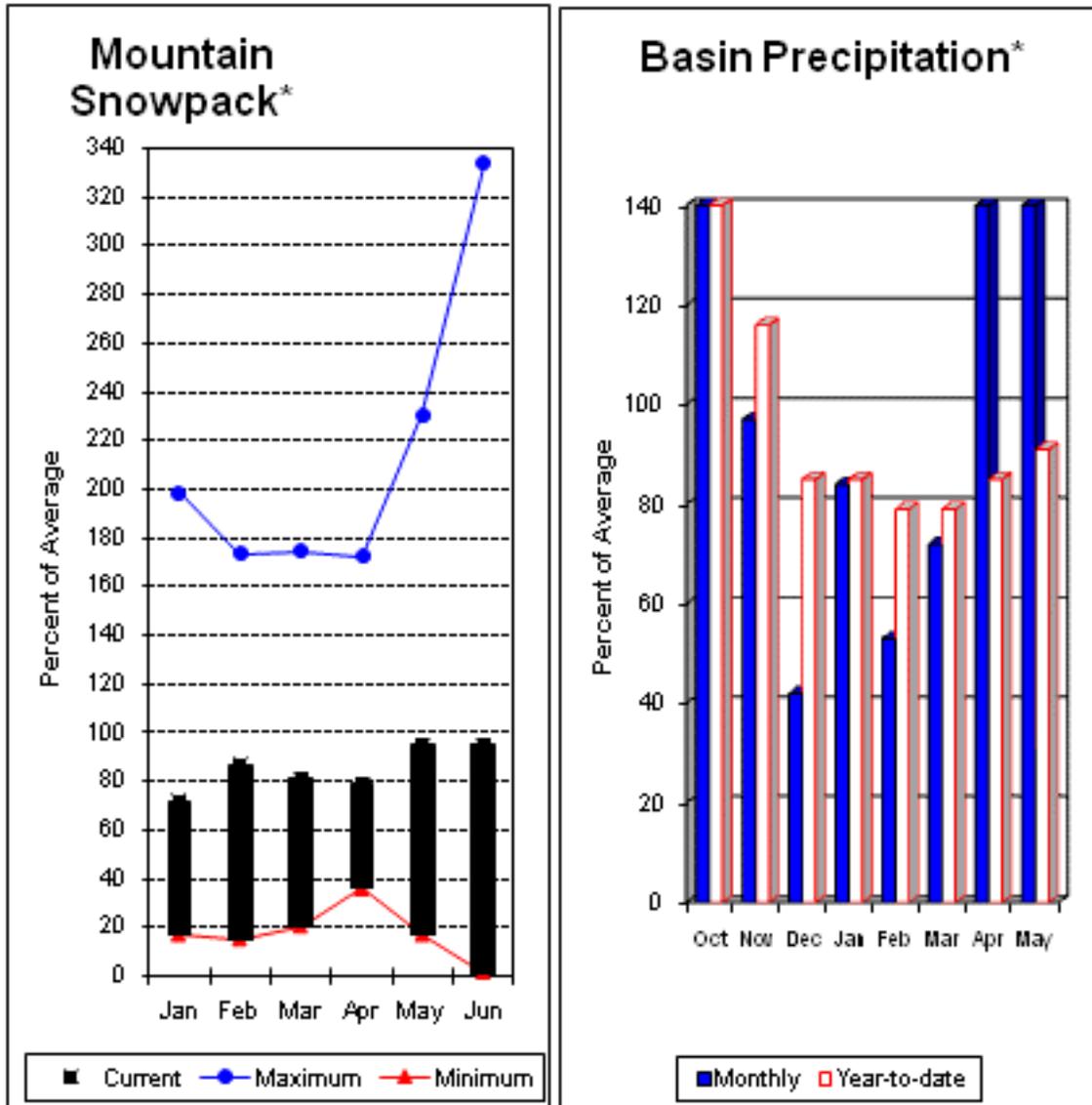
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 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 May was 216% of average in the basin and 91% for the year-to-date. Runoff for Entiat River is forecast to be 80% of average for the summer. The April-September average forecast for Chelan River is 88%, Wenatchee River at Plain is 77%, Stehekin River is 77% and Icicle Creek is 67%. May average streamflows on the Chelan River were 84% and on the Wenatchee River 76%. June 1 snowpack in the Wenatchee River Basin was 97% of average; the Chelan, 93%; the Entiat, Stemilt Creek, and Colockum Creek were all melted out. Reservoir storage in Lake Chelan was 524,000-acre feet, 111% of June 1 average and 78% of capacity. Lyman Lake SNOTEL had the most snow water with 55 inches of water. This site would normally have 50.8 inches on June 1. Temperatures were 2-3 degrees below normal for May and near normal for the water year.

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

Central Columbia River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions					30-Yr Avg. (1000AF)	
		Drier		Wetter		Chance Of Exceeding * 50% (1000AF) (% AVG.)		
		90% (1000AF)	70% (1000AF)	30% (1000AF)	10% (1000AF)			
Stehekin R at Stehekin	JUN-JUL JUN-SEP	240 335	285 380	315 410	77 77	345 440	390 485	410 535
Chelan R at Chelan (2)	JUN-JUL JUN-SEP	460 575	495 615	520 640	88 88	545 665	580 705	590 730
Entiat R nr Ardenvoir	JUN-JUL JUN-SEP	86 98	95 111	102 119	80 80	109 127	118 140	127 149
Wenatchee R at Plain	JUN-JUL JUN-SEP	350 430	405 490	440 530	77 77	475 570	530 630	570 690
Icicle Ck nr Leavenworth	JUN-JUL JUN-SEP	82 95	100 117	112 131	68 67	124 145	142 167	166 195
Wenatchee R at Peshastin	JUN-JUL JUN-SEP	455 545	530 630	580 690	74 74	630 750	705 835	785 935
Columbia R bl Rock Island Dam (2)	JUN-JUL JUN-SEP	23300 29900	25900 33200	27600 35500	84 82	29300 37800	31900 41100	33000 43500

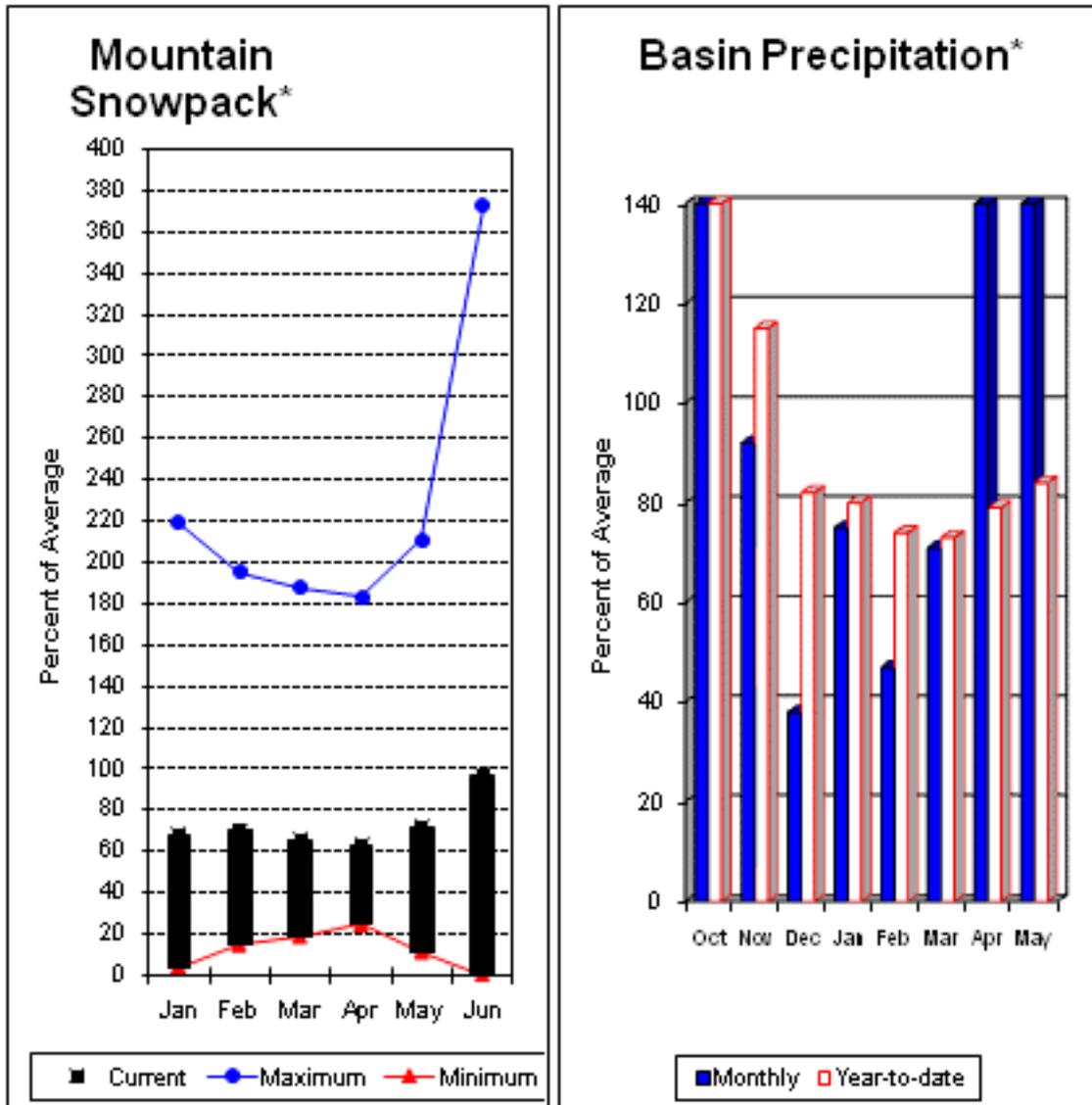
CENTRAL COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of May					CENTRAL COLUMBIA RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	524.0	470.8	473.0	CHELAN LAKE BASIN	4	132	93
					ENTIAT RIVER	1	0	0
					WENATCHEE RIVER	6	130	97
					STEMILT CREEK	1	0	0
					COLOCKUM CREEK	1	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

June 1 reservoir storage for the Upper Yakima reservoirs was 676,000-acre feet, 93% of average. Forecasts for the Yakima River at Cle Elum are 74% of average and the Teanaway River near Cle Elum is at 58%. Lake inflows are all forecasted to be below normal this summer as well. May streamflows within the basin were Yakima at Cle Elum at 82% and Cle Elum River near Roslyn at 81%. June 1 snowpack was 97% based upon 6 SNOTEL readings within the Upper Yakima Basin. Precipitation was 187% of average for May and 84% 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 - June 1, 2010

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (1000AF) (% AVG.)			30% (1000AF)		10% (1000AF)	
Keechelus Reservoir Inflow (2)	JUN-JUL	25	31	35	75	39	45	47				
	JUN-SEP	31	39	44	75	49	57	59				
Kachess Reservoir Inflow (2)	JUN-JUL	25	28	31	72	34	37	43				
	JUN-SEP	29	34	37	73	40	45	51				
Cle Elum Lake Inflow (2)	JUN-JUL	98	127	147	77	167	196	192				
	JUN-SEP	116	152	176	77	200	235	230				
Yakima R at Cle Elum (2)	JUN-JUL	161	215	250	74	285	340	340				
	JUN-SEP	193	265	310	74	355	425	420				
Teanaway R bl Forks nr Cle Elum	JUN-JUL	3.6	14.0	21	57	28	38	37				
	JUN-SEP	5.5	15.9	23	58	30	41	40				

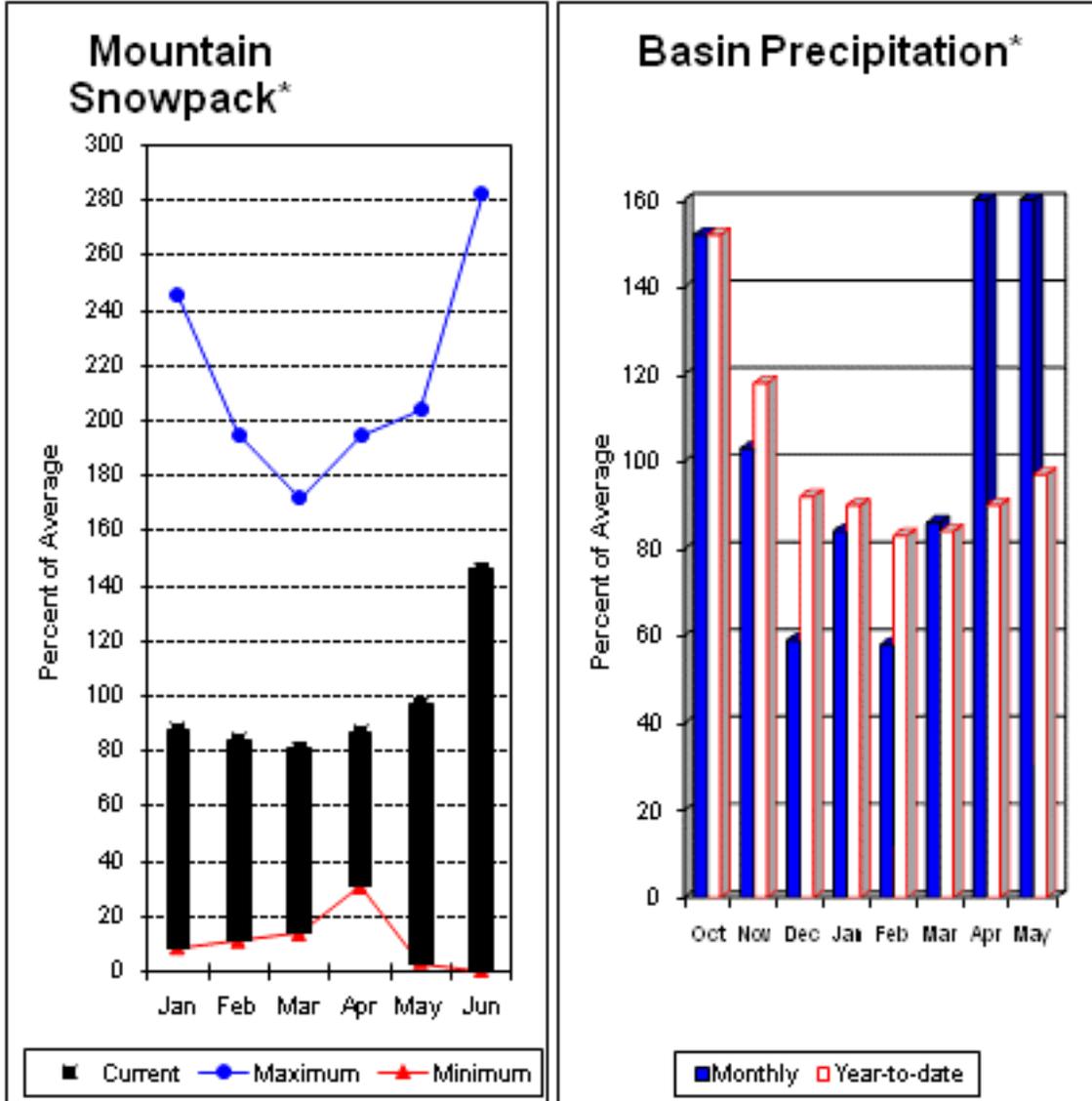
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of May					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	125.7	155.0	140.5	UPPER YAKIMA RIVER	6	96	97
KACHESS	239.0	207.0	236.9	207.6				
CLE ELUM	436.9	343.0	434.3	379.3				

* 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.

Lower Yakima River Basin



*Based on selected stations

May average streamflows within the basin were: Yakima River near Parker, 87%; Naches River near Naches, 82%; and Yakima River at Kiona, 59%. June 1 reservoir storage for Bumping and Rimrock reservoirs was 203,000-acre feet, 99% of average. Forecast averages for Yakima River near Parker are 88%; American River near Nile, 108%; Ahtanum Creek, 110%; and Klickitat River near Glenwood, 95%. June 1 snowpack was 146% based upon 6 SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 225% of average. Precipitation was 204% of average for May and 97% year-to-date for water. Temperatures were 2-3 degrees below normal for May and near normal 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 - June 1, 2010

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * 50% (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
Bumping Lake Inflow (2)	JUN-JUL	50	57	62	102	67	74	61		
	JUN-SEP	61	68	73	101	78	85	72		
American R nr Nile	JUN-JUL	48	55	59	109	63	70	54		
	JUN-SEP	55	63	68	108	73	81	63		
Rimrock Lake Inflow (2)	JUN-JUL	84	93	100	95	107	116	105		
	JUN-SEP	119	129	136	94	143	153	144		
Naches R nr Naches (2)	JUN-JUL	265	305	330	105	355	395	315		
	JUN-SEP	320	365	395	105	425	470	375		
Ahtanum Ck at Union Gap	JUN-JUL	8.3	10.4	11.8	110	13.2	15.3	10.7		
	JUN-SEP	10.3	12.6	14.1	110	15.6	17.9	12.8		
Yakima R nr Parker (2)	JUN-JUL	500	575	625	88	675	750	710		
	JUN-SEP	640	730	790	88	850	940	900		
Klickitat R nr Glenwood	JUN-JUL	46	53	57	95	61	68	60		
	JUN-SEP	61	69	74	95	79	87	78		
Klickitat R nr Pitt	JUN-JUL	159	177	189	105	200	220	180		
	JUN-SEP	250	280	295	105	310	340	280		

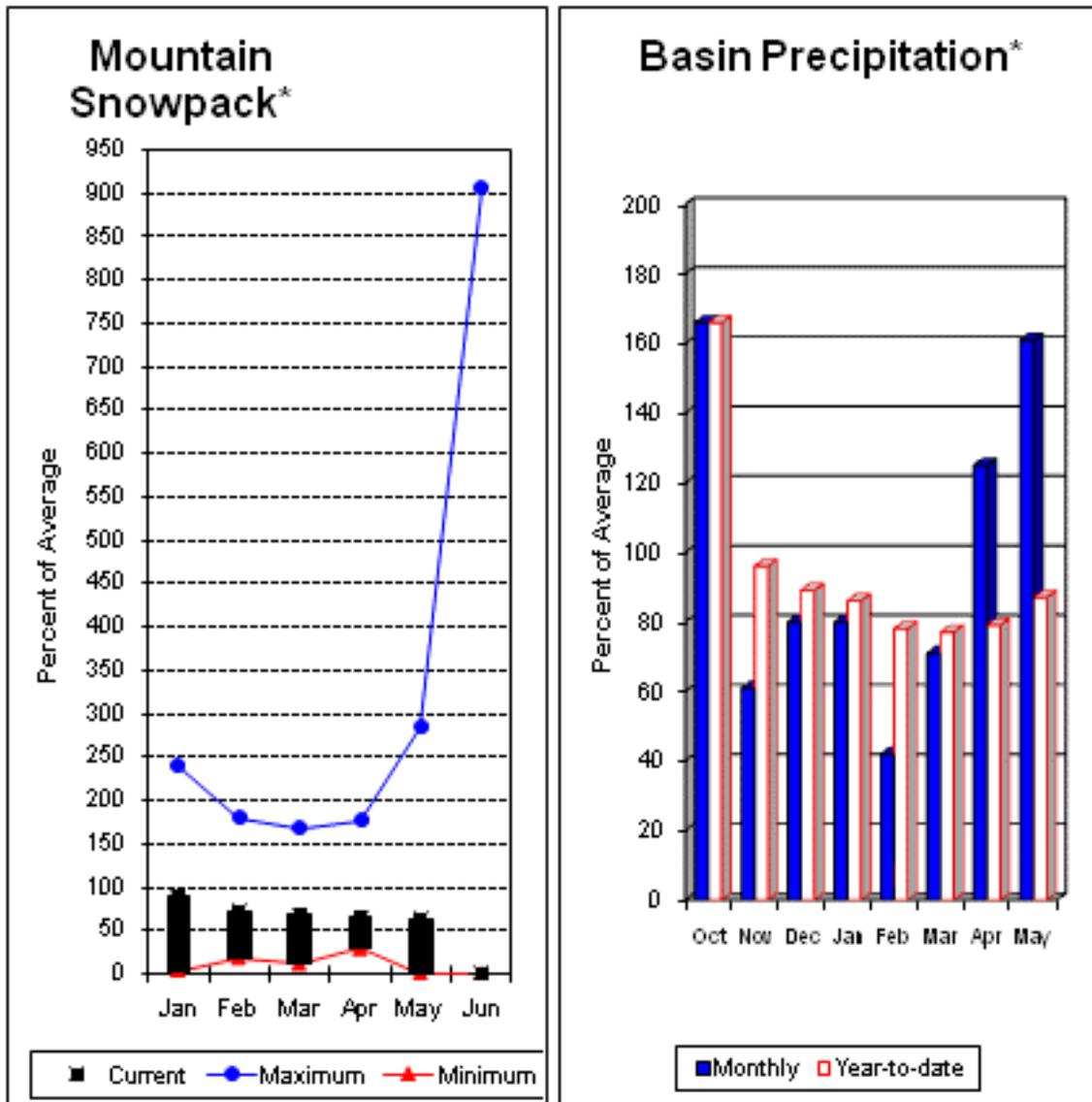
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of May					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUMPING LAKE	33.7	30.3	33.2	30.4	LOWER YAKIMA RIVER	6	133	146
RIMROCK	198.0	172.4	197.2	173.5	AHTANUM CREEK	2	146	225

* 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

May precipitation was 161% of average, maintaining the year-to-date precipitation at 87% of average. Milkshakes SNOTEL site had about 15 inches of snow water and 2 feet of depth on the 1st but all of the other stations were snow free. Streamflow forecasts are 79% of average for Mill Creek and 81% for the SF Walla Walla near Milton-Freewater. May streamflow was 126% of average for the SF Walla Walla River, which was most likely rain driven. Average temperatures were 4 degrees below normal for May and 1 degree below average for the water year.

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

Walla Walla River Basin

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>								
		90%		70%		50%		30%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)		
SF Walla Walla R nr Milton-Freewater	JUN-JUL	10.4	13.4	15.4	80	17.4	20	19.2		
	JUN-SEP	19.5	23	26	79	29	32	33		
Mill Ck nr Walla Walla	JUN-JUL	3.2	4.5	5.4	80	6.3	7.6	6.8		
	JUN-SEP	5.9	7.4	8.4	81	9.4	10.9	10.4		

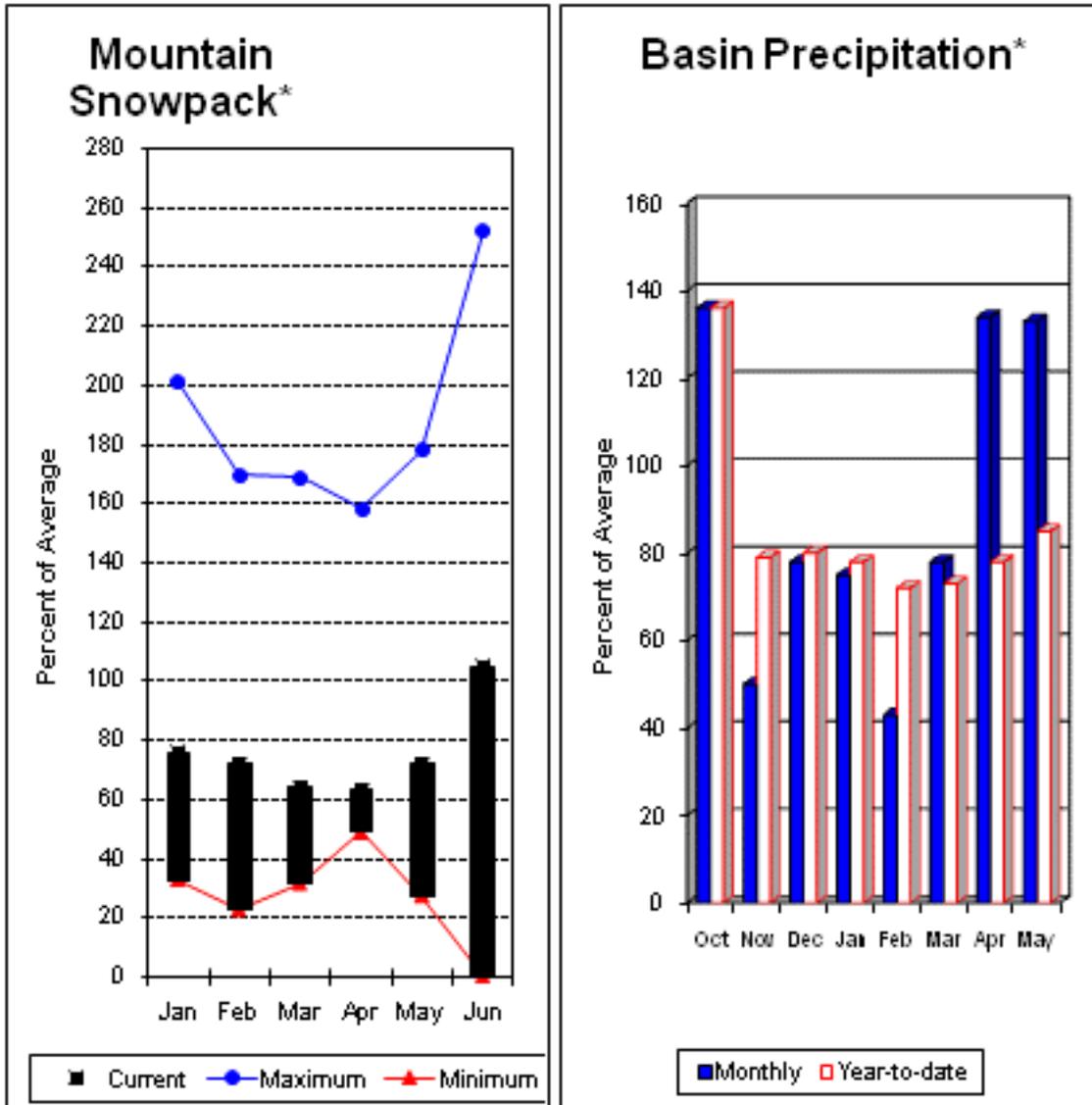
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of May					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	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 April - September forecast is for 58% for Clearwater River at Spalding. The Grande Ronde river can expect summer flows to be about 80% of normal. May precipitation was 133% of average, bringing the year-to-date precipitation to 85% of average. June 1 snowpack readings averaged 105% of normal. May streamflow was 63% of average for Snake River below Lower Granite Dam and 74% for Grande Ronde River near Troy. Average temperatures were 4-5 degrees below normal for May and 1 degree below normal for the water year.

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

Lower Snake River Basin

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions					30-Yr Avg. (1000AF)	
		<<==== Drier =====		===== Wetter =====>>		Chance Of Exceeding * 50% (1000AF) (% AVG.)		
		90% (1000AF)	70% (1000AF)	30% (1000AF)	10% (1000AF)			
Grande Ronde R at Troy	JUN-JUL JUN-SEP	240 290	330 400	370 450	79 80	410 500	500 610	470 565
CLEARWATER R at Spalding (1,2)	JUN-JUL JUN-SEP	680 845	1350 1610	1650 1950	56 58	1950 2290	2620 3050	2960 3370
SNAKE blw Lower Granite Dam (1,2)	JUN-JUL JUN-SEP	5460 6740	6570 8150	7080 8790	76 74	7590 9430	8700 10800	9340 11900

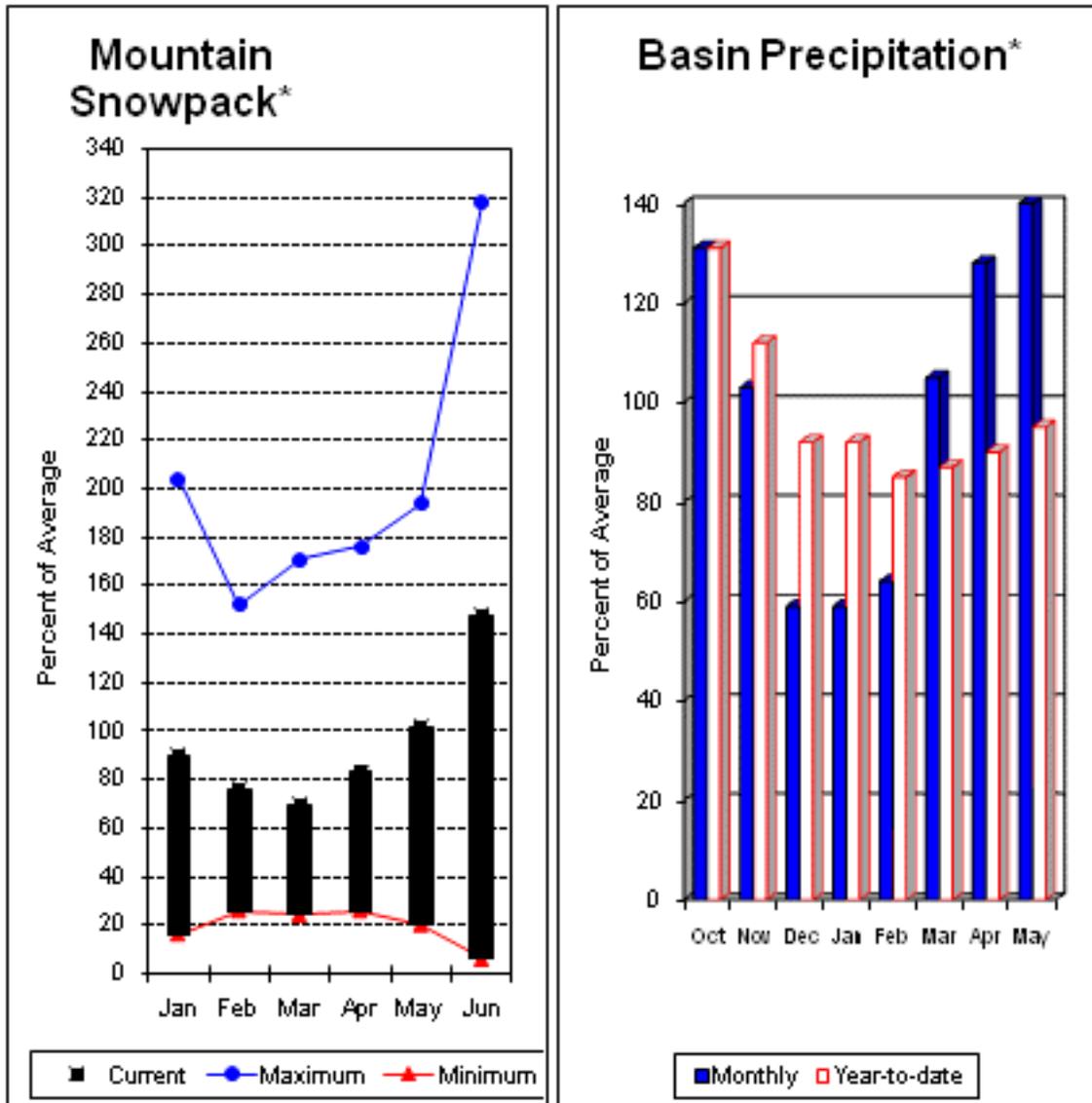
LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of May					LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DWORSHAK	3468.0	3115.1	3113.9	3085.8	LOWER SNAKE, GRANDE RONDE	9	132	105

* 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, 100% and Cowlitz River at Castle Rock, 99% of average. May average streamflow for Cowlitz River was 93% and 91% for Lewis River. The Columbia River at The Dalles was 66% of average. May precipitation was 166% of average and the water-year average was 95%. June 1 snow cover for Cowlitz River was 137%, and Lewis River was 160% of average. Average temperatures were 2 degrees below normal during May and near normal for the water year.

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

Lower Columbia River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	30% (1000AF)	10% (1000AF)	50% (% AVG.)	50% (% AVG.)	
Columbia R at The Dalles (2)	JUN-JUL	26700	30000	32300	74	34600	37900	43800
	JUN-SEP	34600	39000	42000	73	45000	49400	57800
Klickitat R nr Glenwood	JUN-JUL	46	53	57	95	61	68	60
	JUN-SEP	61	69	74	95	79	87	78
Klickitat R nr Pitt	JUN-JUL	159	177	189	105	200	220	180
	JUN-SEP	250	280	295	105	310	340	280
Lewis R at Ariel (2)	JUN-JUL	270	310	340	101	370	410	338
	JUN-SEP	360	435	485	100	535	610	483
Cowlitz R bl Mayfield Dam (2)	JUN-JUL	490	595	665	94	735	840	710
	JUN-SEP	675	795	880	94	965	1080	938
Cowlitz R at Castle Rock (2)	JUN-JUL	745	835	900	98	965	1060	920
	JUN-SEP	1070	1170	1240	99	1310	1410	1259

LOWER COLUMBIA RIVER BASINS Reservoir Storage (1000 AF) - End of May

LOWER COLUMBIA RIVER BASINS Watershed Snowpack Analysis - June 1, 2010

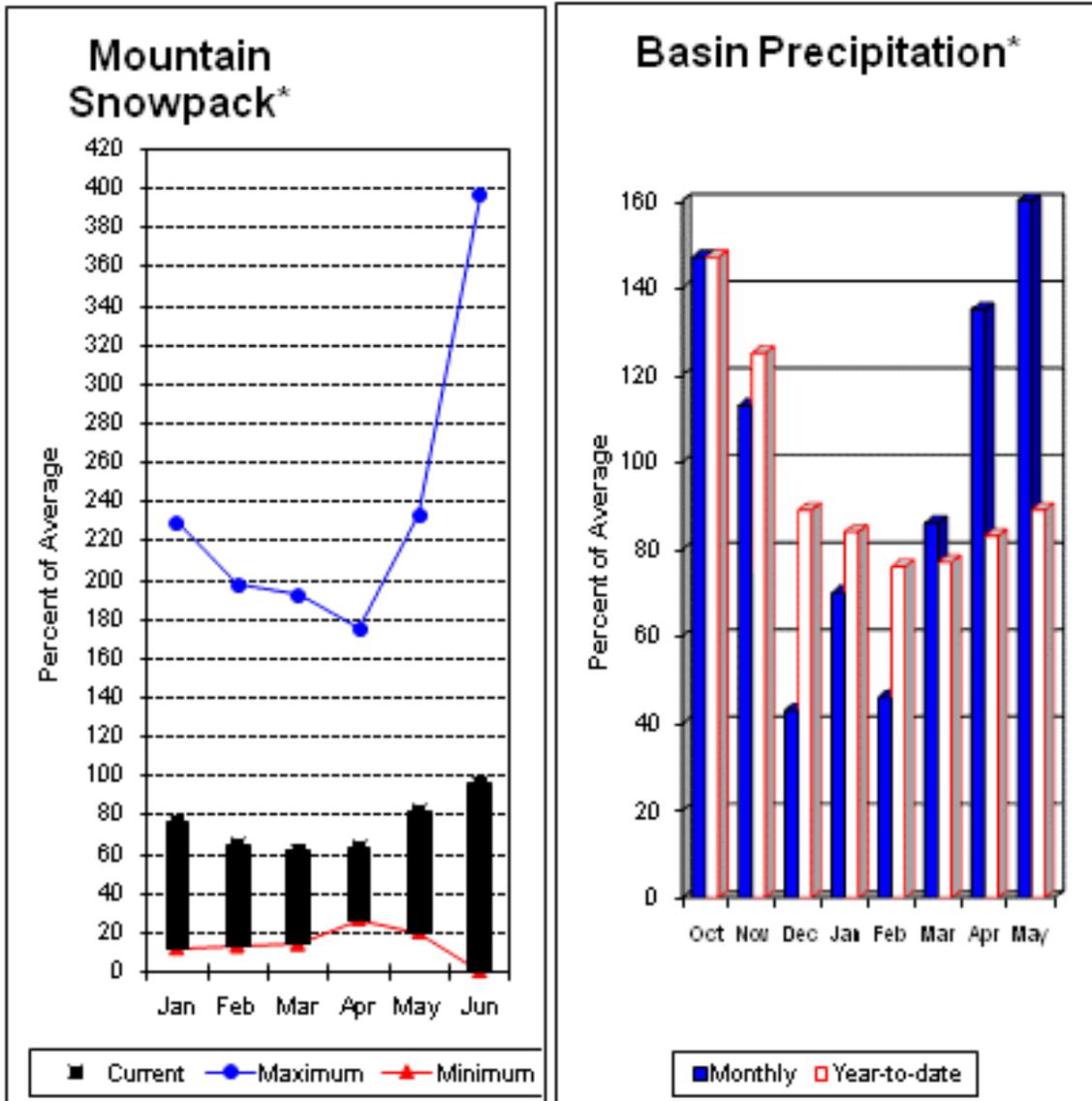
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MOSSYROCK	0.0	1481.8	1645.1	---	LEWIS RIVER	5	121	160
SWIFT	0.0	740.7	745.0	---	COWLITZ RIVER	6	99	137
YALE	0.0	394.2	395.0	---				
MERWIN	0.0	418.7	415.0	---				

* 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.

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 97% for the White River near Buckley. June 1 snowpack was 133% of average for the White and Puyallup rivers and 58% in the Green River Basin. Water content on June 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 30.7 inches. This site has a June 1 average of 3.1 inches. May precipitation was 166% of average, bringing the water year-to-date to 89% of average for the basins. Average temperatures in the area were 2 degrees below normal for May and 1 degree above normal for the water-year.

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

South Puget Sound River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter		Chance Of Exceeding *		
		90% (1000AF)	70% (1000AF)	30% (1000AF)	10% (1000AF)	50% (1000AF)	(% AVG.)	
WHITE near Buckley (1,2)	JUN-JUL	154	196	215	98	235	275	220
	JUN-SEP	225	280	305	97	330	385	313
GREEN R below Howard Hansen (1,2)	JUN-JUL	35	54	63	78	72	91	81
	JUN-SEP	51	74	84	78	94	117	108

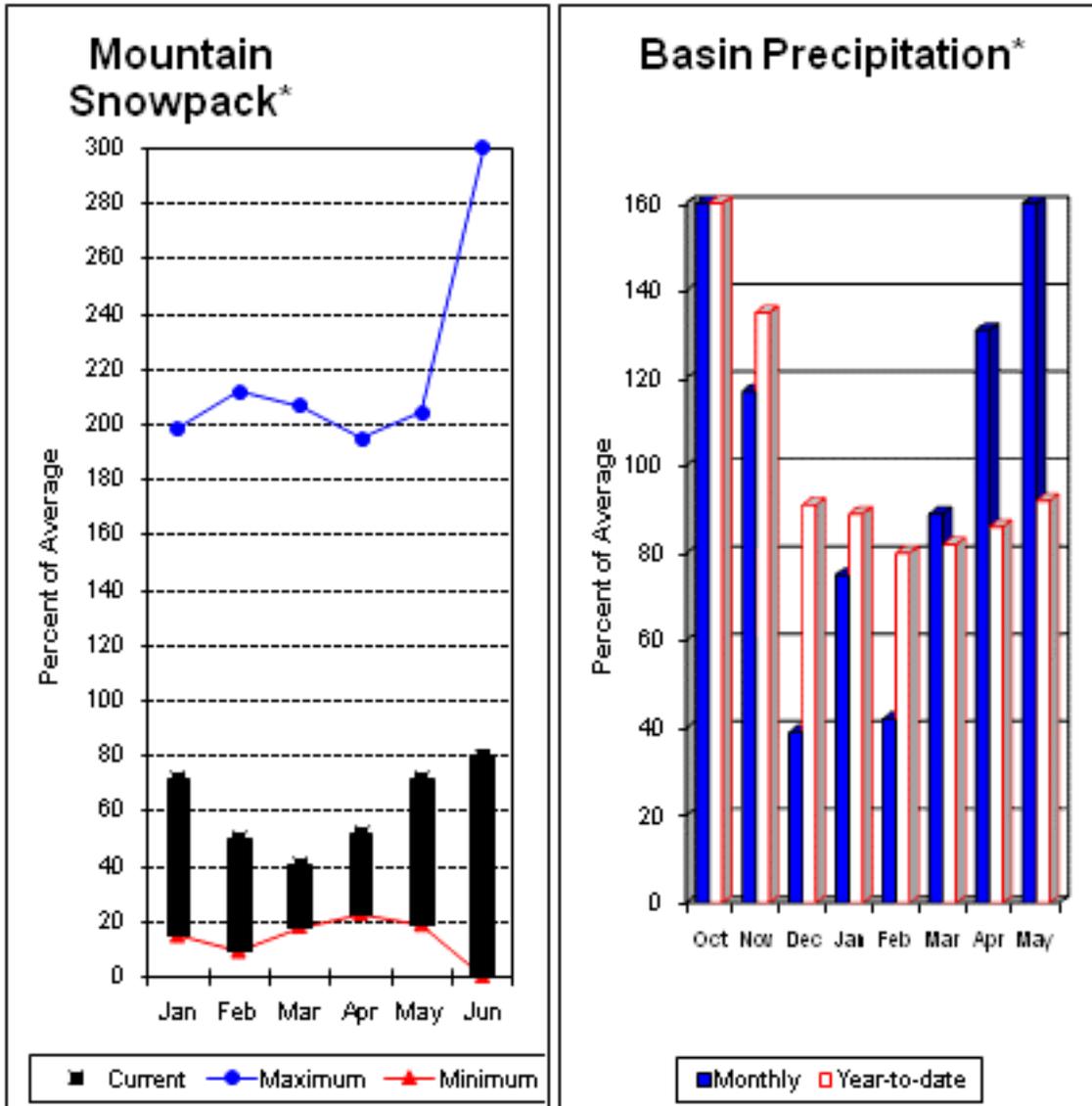
SOUTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of May					SOUTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	136	143
					GREEN RIVER	2	68	58
					PUYALLUP RIVER	5	111	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.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 62% for Cedar River near Cedar Falls; 65% for Rex River; 64% for South Fork of the Tolt River; and 68% for Cedar River at Cedar Falls. Basin-wide precipitation for May was 175% of average, bringing water-year-to-date to 92% of average. June 1 average snow cover in Cedar River Basin was 32%, Tolt River Basin was 91%, Snoqualmie River Basin was 96%, and Skykomish River Basin was 99%. Increases in snowpack last month are more a function of the lack of normal snow melt more than accumulation. Olallie Meadows SNOTEL site, at 3960 feet, had 38.6 inches of water content. Average June 1 water content is 31.4 inches at Olallie Meadows. Temperatures were 2 degrees below normal for May and near normal for the water-year.

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

Central Puget Sound River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions				30-Yr Avg. (1000AF)		
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	10% (1000AF)			
		Chance Of Exceeding *						
				50% (% AVG.)				
CEDAR near Cedar Falls	JUN-JUL	9.2	13.9	17.0	63	20	25	27
	JUN-SEP	11.2	17.0	21	62	25	31	34
REX near Cedar Falls	JUN-JUL	2.1	4.0	5.3	65	6.6	8.5	8.2
	JUN-SEP	2.7	5.2	7.0	65	8.8	11.3	10.8
CEDAR RIVER at Cedar Falls	JUN-JUL	2.0	8.2	12.3	68	16.4	23	18.2
SOUTH FORK TOLT near Index	JUN-JUL	1.8	3.1	3.9	64	4.7	6.0	6.1
	JUN-SEP	2.9	4.3	5.3	64	6.3	7.7	8.3

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

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - June 1, 2010

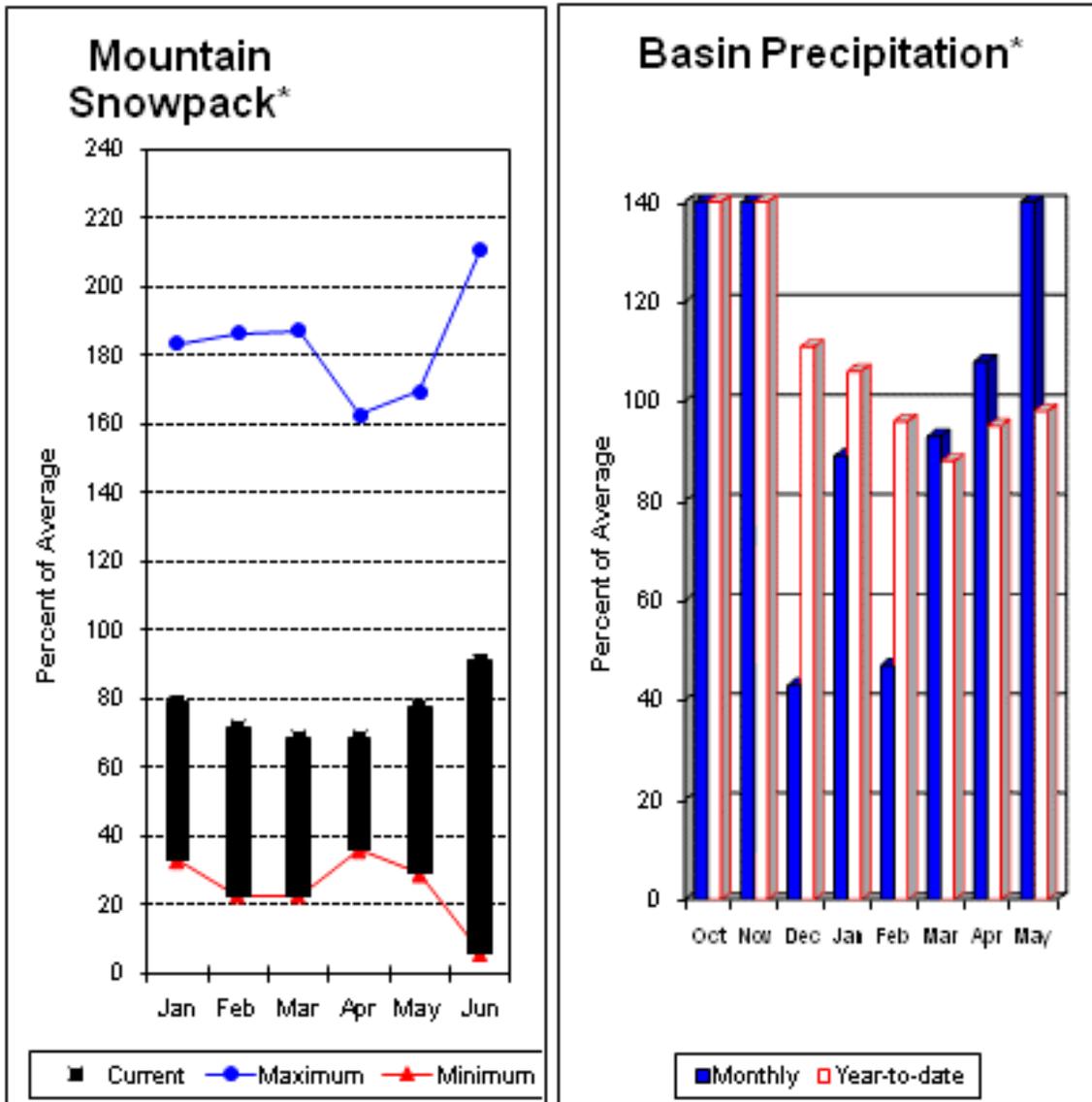
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	4	9	32
					TOLT RIVER	2	41	91
					SNOQUALMIE RIVER	4	60	96
					SKYKOMISH RIVER	2	62	99

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

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

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

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 96% of average for the spring and summer period. May streamflow in Skagit River was 75% of average. Other forecast points included Baker River at 78% and Thunder Creek at 91% of average. Basin-wide precipitation for May was 146% of average, bringing water-year-to-date to 98% of average. June 1 average snow cover in Skagit River Basin was 87% and the Nooksack River Basin was 95%. No data was available for the Baker River Basin. Rainy Pass SNOTEL, at 4,780 feet, had 18.5 inches of water content. Average June 1 water content is 24.3 inches at Rainy Pass. June 1 Skagit River reservoir storage was 102% of average and 76% of capacity. Average temperatures for May were 2 degrees below normal for the basin and near average for the water year.

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

North Puget Sound River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
THUNDER CREEK near Newhalem	JUN-JUL	119	135	146	92	157	173	158
	JUN-SEP	200	220	235	91	250	270	257
SKAGIT at Newhalem (2)	JUN-JUL	850	950	1020	97	1090	1190	1054
	JUN-SEP	1120	1260	1350	96	1440	1580	1407
BAKER RIVER near Concrete	JUN-JUL	250	320	365	79	410	480	465
	JUN-SEP	335	455	535	78	615	735	687

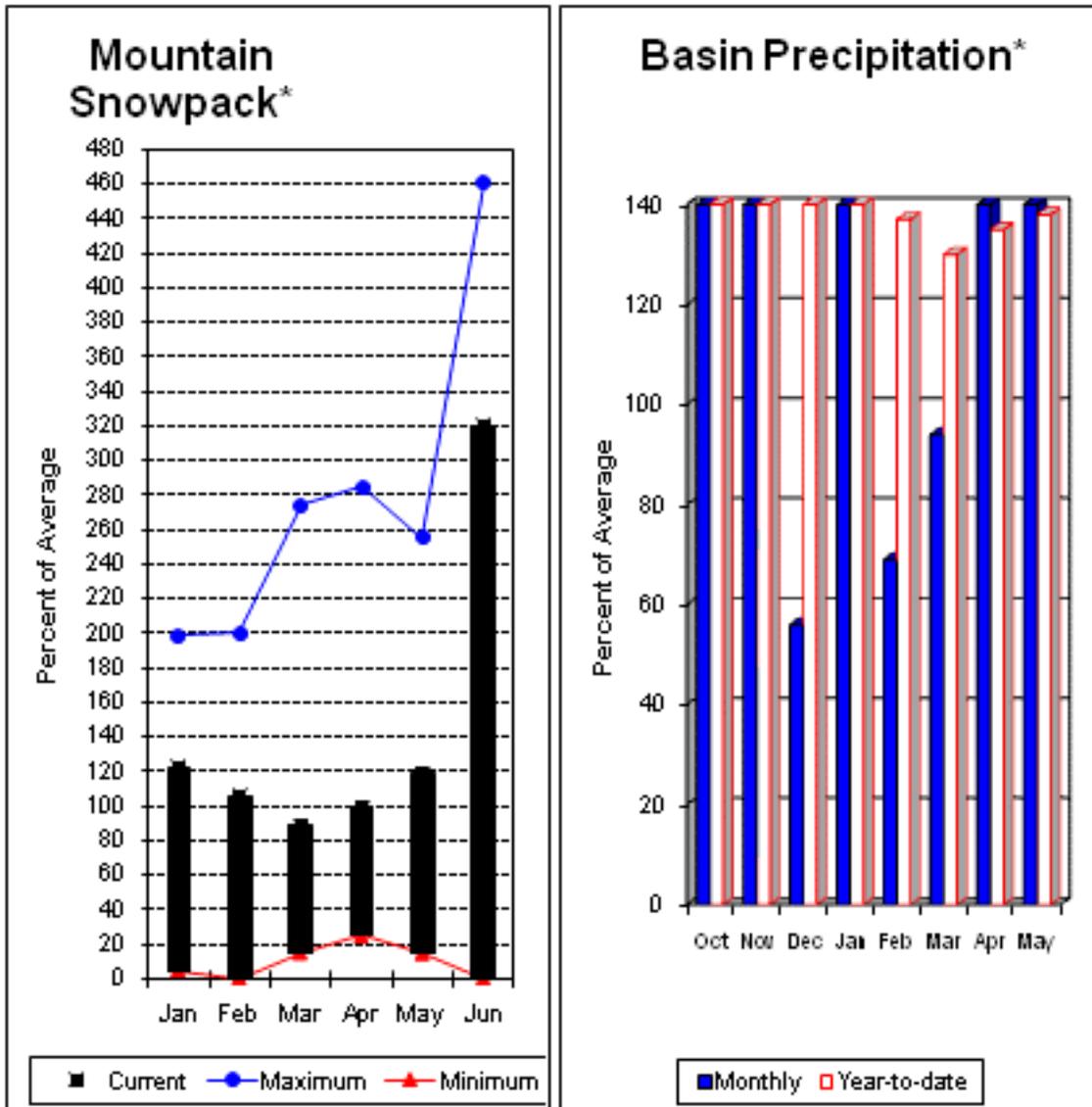
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of May					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	1052.5	1161.3	1031.4	SKAGIT RIVER	5	139	87
DIABLO RESERVOIR	90.6	86.6	87.0	86.9	BAKER RIVER	0	103	0
					NOOKSACK RIVER	3	91	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.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow for the Dungeness River is 111% and Elwha River is 131%. May runoff in the Dungeness River was 95% of normal. The Wynoochee and Big Quilcene rivers should expect near average runoff this summer as well. May precipitation was 198% of average. Precipitation has accumulated at 138% of average for the water year. May precipitation at Quillayute was 8.12 inches. The thirty-year average for May is 5.51 inches. Olympic Peninsula snowpack averaged 320% of normal on June 1. Temperatures were 1-2 degrees below average for May and 1 degree above for the water year.

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

Olympic Peninsula River Basins

Streamflow Forecasts - June 1, 2010

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
DUNGENESS near Sequim	JUN-JUL	61	72	79	111	86	97	71
	JUN-SEP	85	100	110	111	120	135	99
ELWHA near Port Angeles	JUN-JUL	255	275	290	131	305	325	222
	JUN-SEP	350	380	400	131	420	450	306

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of May					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - June 1, 2010			
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	480	320

* 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 CASCADES GLACIER PAGE 2010

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 8800 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. Figure 2 shows 2009 was the seventh consecutive year to have a negative net balance for all glaciers.

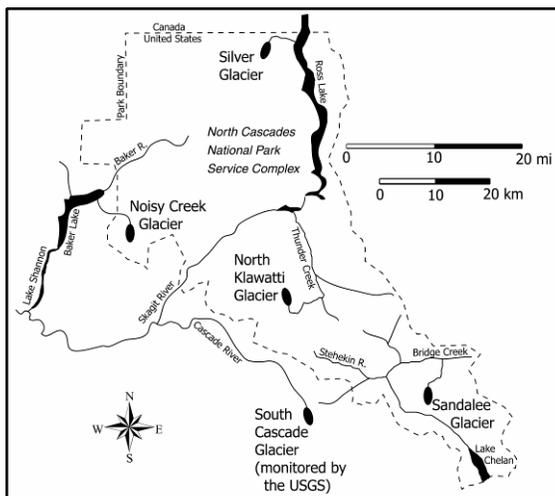


Figure 1. Glaciers monitored in North Cascades N.P.S. Complex.

Table 1		Average	2010	2010
Glacier:	Elev.	Accumulation	Accumulation	Percent of Average
	(feet)	(inches W.E.)	(inches W.E.)	
Noisy Creek Density = 0.5	Entire Glacier	104	123	118
	6101	111	120	108
	6035	110	108	99
	5904	118	100	85
	5756	131	142	109
Silver Density = 0.46	Entire Glacier	85	72	85
	8420	58	86	149
	7938	109	91	84
	7606	89	89	99
North Klawatti Density = 0.46	Entire Glacier	112	103	92
	7669	90	99	110
	7301	101	100	99
	6901	118	103	88
	6396	118	103*	87
Sandalee Density = 0.46	Entire Glacier	108	94	87
	7360	112	107	95
	7203	98	99	102
	6868	102	104	102
	6521	96	82	86

Table 1. Table 1 presents this spring's provisional winter accumulation data, along with average values and percent of the 17-year average. The 2010 snow depths were measured on April 19th and 26th on the four glaciers. The provisional data show 2010 as a below average snow year except perhaps for Noisy Glacier. These data are tentative and will be revised after a July visit. Snow density of 0.46 was measured at North Klawatti Glacier(6901ft). Based on historical field data, a snow density of 0.46 was assumed for Silver and Sandalee glaciers and 0.50 for Noisy Glacier. Densities are in fraction of water density.

* Field data for lower North Klawatti glacier were not collected. Values provided are estimates determined from historical relationships.

The 2009 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 firn 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, 3%; Stehekin River, 6%; 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.

Table 2 Provisional Data	May-September Runoff (thousands acre-feet)				Percent Glacial Runoff to Total Summer Runoff		
	2009	mean	min	max	2009	min	max
Noisy Creek Glacier	1.9	1.5	1.2	1.9			
Baker River Watershed	84.2	70.6	50.1	87.2	NA	5.6	14.6
North Klawatti Glacier	5.1	4.1	2.8	5.1			
Thunder Creek Watershed	134.4	101.0	71.8	134.4	44.0	20.7	47.7
Sandalee Glacier	0.6	0.5	0.4	0.7			
Stehekin River Watershed	85.9	71.0	51.6	88.1	14.0	5.4	22.9
Silver Glacier	1.1	1.0	0.7	1.3			
Ross Lake Watershed	78.4	65.7	47.4	80.5	5.2	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 1993-2009 except the Sandalee Glacier and Stehekin River Watershed (1995-2009).

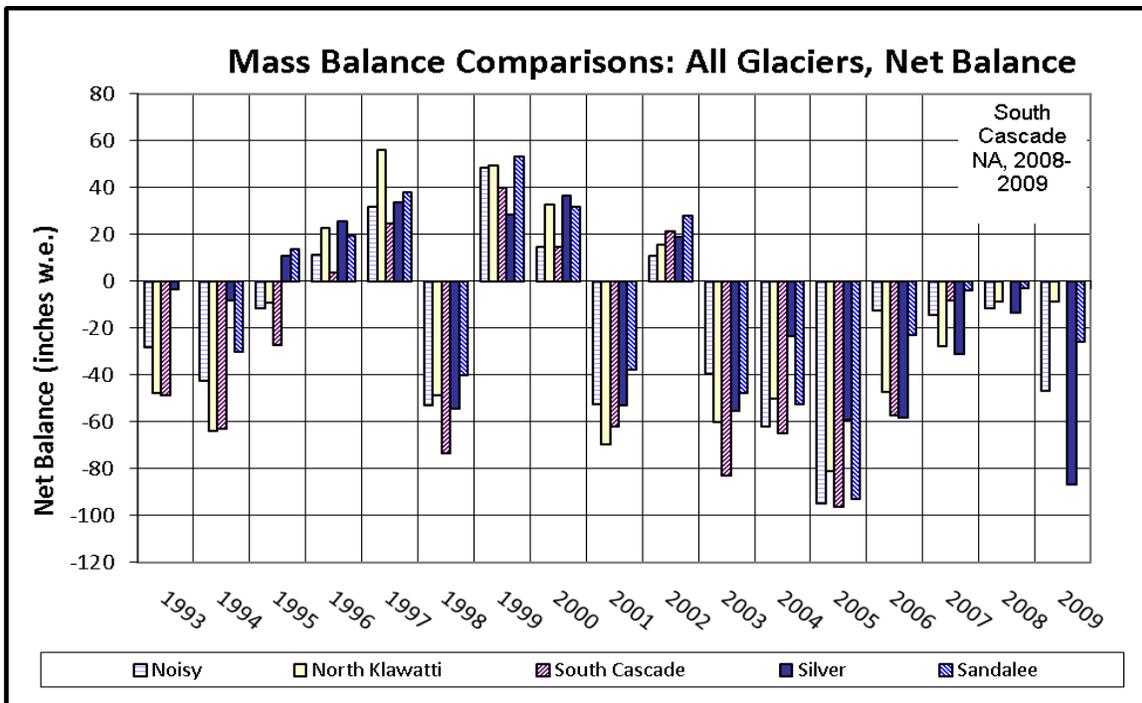


Figure 2. Net annual mass balance for the five glaciers monitored in the North Cascades.

Issued by

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U.S. Department of Agriculture

Released by

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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.



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Washington Water Supply Outlook Report

Natural Resources Conservation Service
Spokane, WA

