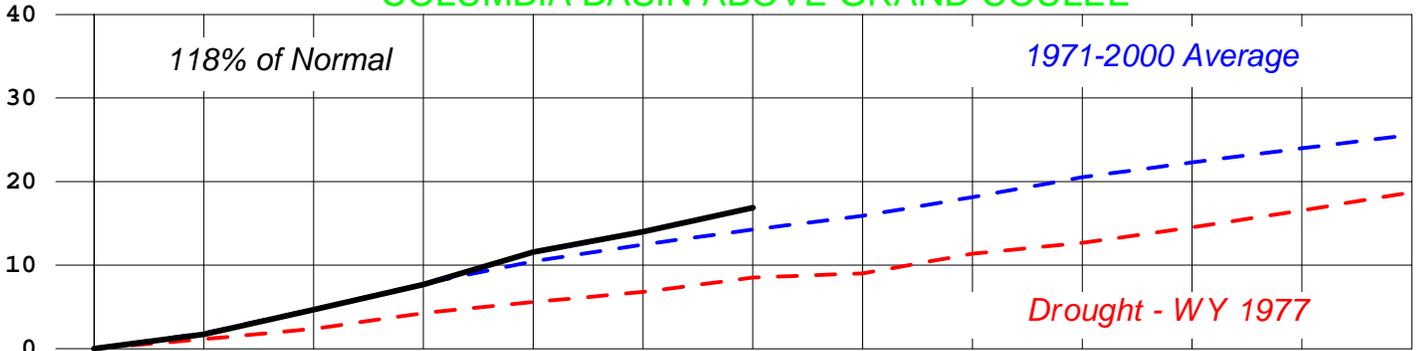
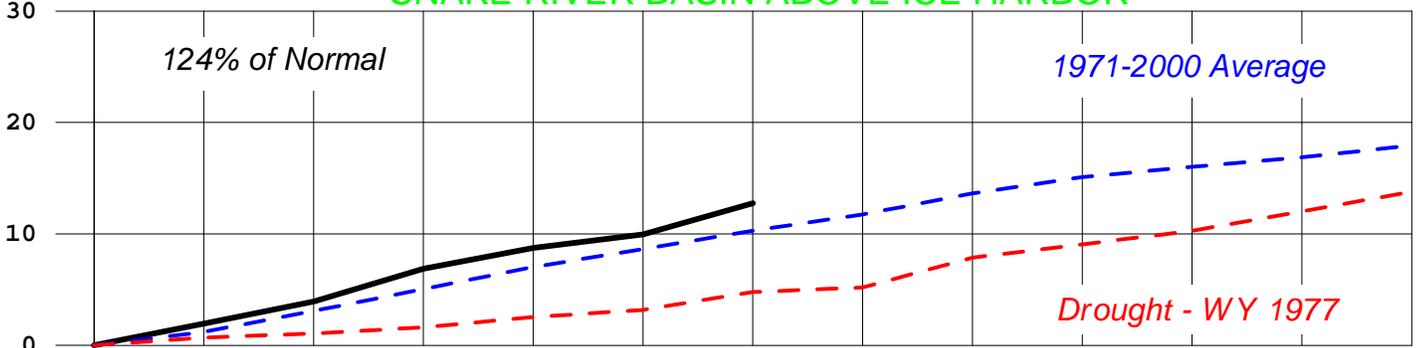


CUMULATIVE PRECIPITATION WATER YEAR 2011

COLUMBIA BASIN ABOVE GRAND COULEE



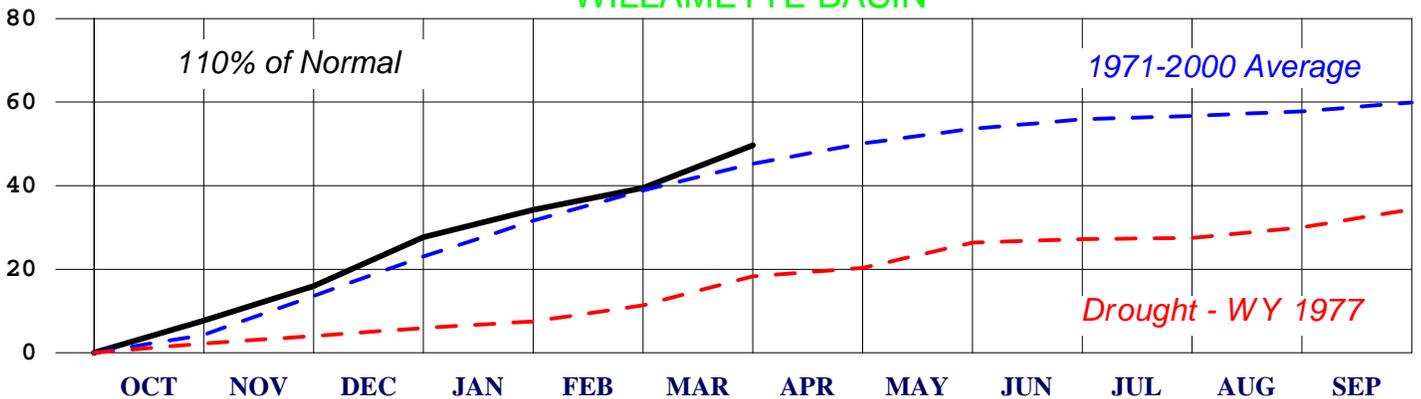
SNAKE RIVER BASIN ABOVE ICE HARBOR



COLUMBIA BASIN ABOVE THE DALLES



WILLAMETTE BASIN



ACCUMULATED PRECIPITATION IN INCHES

OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP



Northwest River Forecast Center

Seasonal Divisional Precipitation Summary

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Monthly Divisional Precipitation Summary

Columbia Basin Seasonal Precipitation Division Averages
Northwest River Forecast Center

(Monthly Summary - mar 2011)

DIVISION	..MAR TO DAY 31..		OCT - MAR....		
	OBSD	DEP	PCT AV	OBSD	DEP	PCT AV
COLUMBIA ABOVE COULEE	2.85	1.06	159.	16.86	2.61	118.
SNAKE RV AB ICE HARBOR	2.80	1.15	170.	12.75	2.46	124.
COLUMBIA AB THE DALLES	3.32	1.40	173.	17.04	2.75	119.
COLUMBIA AB CASTLEGAR	3.83	1.41	158.	22.29	1.91	109.
KOOTENAI	3.26	1.48	183.	16.95	2.36	116.
CLARK FORK	1.72	0.52	143.	11.29	2.30	126.
FLATHEAD	2.34	0.71	144.	15.85	3.67	130.
PEND OREILLE/ SPOKANE	4.42	1.65	159.	23.82	3.63	118.
NORTHEAST WASHINGTON	2.94	1.32	181.	12.54	1.72	116.
OKANOGAN	2.66	1.55	240.	10.72	1.75	120.
EAST SLOPES WASH CASC.	7.42	3.97	215.	31.35	-0.26	99.
CENTRAL WASHINGTON	1.56	0.73	188.	6.29	0.38	106.
UPPER SNAKE	2.48	0.75	143.	14.39	3.05	127.
SNAKE RIVER PLAIN	1.70	0.57	151.	7.85	1.74	128.
OWYHEE/ MALHEUR	2.10	0.97	186.	9.33	2.78	142.
SALMON/ BOISE/ PAYETTE	3.33	1.39	171.	14.46	1.69	113.
BURNT/ GRANDE RONDE	2.64	1.25	190.	11.43	1.82	119.
CLEARWATER	4.03	1.23	144.	22.61	4.00	122.
SOUTHEAST WASHINGTON	2.94	1.03	154.	14.70	2.23	118.
UPPER JOHN DAY	2.77	1.37	198.	11.69	3.00	135.
UMATILLA/ LWR JOHN DAY	2.87	1.25	177.	13.67	3.32	132.
UPR DESCHUTES/ CROOKED	3.28	1.91	240.	14.00	4.05	141.
HOOD/ LOWER DESCHUTES	4.82	2.13	179.	25.70	4.18	119.
NW SLOPE WASH CASCADES	13.14	4.49	152.	71.46	6.00	109.
SW WA CASCADES/COWLITZ	11.38	4.30	161.	57.65	4.18	108.
WILLAMETTE VALLEY	10.21	3.82	160.	49.68	4.41	110.
ROGUE/ UMPQUA	8.33	4.20	202.	31.77	3.95	114.
KLAMATH BASIN	4.07	2.03	200.	16.22	2.57	119.
LAKE COUNTY-GOOSE LAKE	2.38	1.09	184.	10.25	2.61	134.
HARNEY/ MALHEUR BASIN	2.04	0.82	167.	9.43	2.76	141.

Columbia River Basin division values are computed by utilizing un-weighted precipitation amounts from key stations in each area.

Precipitation normals are based on 1971-2000 historical data.

Please contact NWRFC for further information: (503) 326-7291.

NORTHWEST RIVER FORECAST CENTER PORTLAND OR

PRECIPITATION, TEMPERATURE, SNOW, AND STREAMFLOW SUMMARIES

MAR 11

WEATHER SUMMARY

PROGRESSIVE UPPER LEVEL FLOW BROUGHT ONE STORM SYSTEM AFTER ANOTHER TO THE NORTHWEST U.S. AND SOUTHERN BRITISH COLUMBIA THROUGH THE MONTH OF MARCH. SOME STORM SYSTEMS WERE STRONG IN NATURE...BREAKING PRECIPITATION RECORDS. TEMPERATURES REMAINED NEAR NORMAL FOR THIS TIME OF YEAR.

PRECIPITATION SUMMARY

MARCH PRECIPITATION WAS: 159 PERCENT OF NORMAL (1971-2000) AT COLUMBIA ABOVE COULEE, 170 PERCENT OF NORMAL AT THE SNAKE RIVER ABOVE ICE HARBOR, AND 173 PERCENT OF NORMAL AT COLUMBIA ABOVE THE DALLES.

SEASONAL (OCTOBER THROUGH MARCH) PRECIPITATION WAS: 118 PERCENT OF NORMAL (1971-2000) AT COLUMBIA ABOVE COULEE, 124 PERCENT OF NORMAL AT THE SNAKE RIVER ABOVE ICE HARBOR, AND 119 PERCENT OF NORMAL AT COLUMBIA ABOVE THE DALLES.

TEMPERATURE SUMMARY

THE 37 STATION TEMPERATURE INDEX FOR THE PACIFIC NORTHWEST DEPARTED -0.3 DEGREES FROM NORMAL RELATIVE TO THE 1971-2000 NORMALS. MEAN TEMPERATURE DEPARTURES RANGED FROM -2.6 TO 1.8 DEGREES.

GENERAL SUMMARY

COOL WET CONDITIONS DURING MARCH IMPROVED FORECAST STREAMFLOWS IN ALL AREAS. SNOW-WATER EQUIVALENTS (SWE'S) ACCUMULATED AT A GREATER THAN AVERAGE RATE IN ALL AREAS. MARCH WAS A VERY WET MONTH WITH MOST SUB-AREAS OF THE COLUMBIA-SNAKE DRAINAGE OBSERVING GREATER THAN 150 PERCENT OF AVERAGE PRECIPITATION. APRIL 1ST STREAM FLOW FORECASTS HAVE IMPROVED 5 TO 20 PERCENT IN ALL DRAINAGES.

SNOW SUMMARY

SWE'S IMPROVED SHARPLY DURING MARCH. APRIL 1ST VALUES RANGE FROM NEAR AVERAGE TO 115 TO 130 PERCENT IN WESTERN MONTANA AND UPPER SNAKE AND LOWER COLUMBIA

BASINS. WEST OF THE CASCADES APRIL 1ST SWE'S RANGED FROM NEAR AVERAGE IN WESTERN WASHINGTON TO 120 PERCENT IN THE WILLAMETTE RIVER AREA.

STREAMFLOW SUMMARY

MOST OF THE COLUMBIA-SNAKE DRAINAGE HAD BELOW AVERAGE STREAMFLOW (70-100 PERCENT) DURING MARCH. ONLY PARTS OF THE MIDDLE SNAKE AREA WERE ABOVE AVERAGE DUE TO RAINFALL AND SNOWMELT.

FROM NEAR MID MONTH TO MONTH'S END SEVERAL ACTIVE PACIFIC STORMS BROUGHT RAIN TO RIVERS WEST OF THE CASCADES. THE SNOQUALMIE RIVER AT CARNATION HAD A PEAK ABOVE MAJOR FLOOD LEVEL. AT THE END OF THE MONTH WARMING AND RAIN MOVED EAST OF THE CASCADES AND THE YAKIMA, ST. JOE AND PALOUSE RIVERS HAD SOME MINOR FLOODING.

BECAUSE OF THE NEW SWE ACCUMULATIONS AND WET CONDITIONS DURING MARCH STREAMFLOW FORECASTS HAVE IMPROVED BY 5 TO 15 PERCENT OVER THE COLUMBIA-SNAKE BASINS. THE COLUMBIA RIVER AT THE DALLES IS NOW FORECAST TO BE NEAR 109 PERCENT OF THE 30-YEAR AVERAGE.

SEE [HTTP://WWW.NWRFC.NOAA.GOV/WATER_SUPPLY/WS_FCST.CGI](http://www.nwrfc.noaa.gov/water_supply/ws_fcst.cgi) FOR DETAILED WATER SUPPLY FORECASTS.

MONTHLY PRECIPITATION AND TEMPERATURE RECORDS

PARTIAL LIST OF RECORD HIGH AND LOW TEMPERATURES IN DEGREES (F) ARE LISTED BELOW. PRECIPITATION IS REPORTED IN INCHES.

PLEASE SEE THE COMPLETE LIST OF RECORDS AT THE NATIONAL WEATHER SERVICE FIELD OFFICES CLIMATOLOGY WEB PAGES.

03/01 RECORD RAINFALL OF 1.18 INCHES WAS SET AT MULLAN PASS ID.

03/05 RECORD RAINFALL OF 0.76 INCHES WAS SET AT MEDFORD OR.

03/09 RECORD RAINFALL OF 1.47 INCHES WAS SET AT SEATAC WA.

RECORD RAINFALL OF 1.82 INCHES WAS SET AT OLYMPIA WA.

03/10 RECORD RAINFALL OF 0.68 INCHES WAS SET AT PORTLAND OR.

03/13 RECORD RAINFALL OF 0.78 INCHES WAS SET AT OMAK WA.

03/16 RECORD RAINFALL OF 0.40 INCHES WAS SET AT POCATELLO ID.

03/18 RECORD RAINFALL OF 0.59 INCHES WAS SET AT WENATCHEE WA.

03/22 RECORD RAINFALL OF 0.49 INCHES WAS SET AT SPOKANE WA AIRPORT.

03/28 RECORD RAINFALL OF 2.55 INCHES WAS SET AT PORTLAND OR.

RECORD RAINFALL OF 1.75 INCHES WAS SET AT EUGENE OR.

RECORD RAINFALL OF 1.67 INCHES WAS SET AT SALEM OR.

03/29 RECORD RAINFALL OF 1.37 INCHES WAS SET AT QUILLAYUTE WA.

03/30 RECORD RAINFALL OF 3.58 INCHES WAS SET AT QUILLAYUTE WA.