



Office of the Washington State Climatologist Newsletter

April 18, 2008



Washington CoCoRaHS

Beginning in June, Washington will join the nationwide effort to establish a Community Collaborative Rain, Hail and Snow Network or CoCoRaHS (pronounced *Cocoa Rawz*). CoCoRaHS is a non-profit community-based network of volunteers of all ages and backgrounds working together to measure and report precipitation.

How it started and its purpose? CoCoRaHS originated in the late-1990's due in part to a devastating flash flood that occurred in Fort Collins, Colorado that dumped over a foot of rain in several hours, causing several fatalities and millions in damages. Analysis of the event proved difficult as the rainfall that led to the flooding missed all the official rain gauges. Thus, CoCoRaHS was developed to supplement existing observation networks and to fill in the gaps of the official gauges. This will aide researchers studying precipitation variability and for analysis of extreme precipitation events (much like the December flood event in western Washington).

How it works? Volunteers take measurements of precipitation using their own rain gauge (which can be purchased through CoCoRaHS for less than \$30) and enter their observations via the Internet. The data are then displayed on maps that are available to anyone 24/7 on the Internet.

Interested? Washington state CoCoRaHS will be managed by the Office of the Washington State Climatologist, the University of Washington Atmospheric Sciences Department, and the National Weather Service offices in Seattle, Spokane, Portland, and Pendleton. We will not be officially collecting and processing reports until June, however, those interested can get a jump start now by learning more about the program and reading the training material on the CoCoRaHS website at www.cocorahs.org.

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CoCoRaHS rain gauge.

Depressed Microsoft Workers Reason for Windows Vista Problems?

With Microsoft's home town, Redmond, WA receiving more than 80 inches of rain annually, perhaps it is obvious why Microsoft's latest operating system, Windows Vista, wasn't completed as originally planned and is plagued by bugs. Those familiar with western Washington know that in the winter, or for the better part of the year it seems, the sun hides out behind the clouds with only brief glimpses in what we call "sun-breaks" until July 5th, when it makes a prominent appearance for 2 months. Combine that with over 80 inches of rain a year and that makes for a pretty depressing place. Or perhaps, due to the extreme drought Redmond is experiencing - receiving only about 50% of their annual average rainfall the last decade - maybe they were too busy searching for water instead of concentrating on Vista. This our theory based on climate data released by the U.S. Census Bureau.

It was recently brought to our attention that a recent news article announcing the release of the U.S. Census Bureau's *County and City Data Book*, listed Redmond, WA as receiving more rain annually (82.86") than any other city with a population of 25,000 or more people. Those familiar with the area know that even for western Washington, that is extremely wet, unless you are located on the Coast or in the Mountains. So where did the information come from? The U.S. Census Bureau apologetically told us that the climate information for their *County and City Data Book* comes from the National Climatic Data Center, and for locations without a weather station they select the nearest weather station, for which they mistakenly chose Stampede Pass instead of Sea-tac airport, which receives a comparable amount of precipitation as Redmond. The U.S. Census Bureau said they will fix the error in future revisions.

Our intent is not to ridicule the U.S. Census bureau, but rather we see this as an opportunity to suggest that picking your closest neighbor for climate data may not be the best choice, especially if you are unfamiliar with the area. Further, if you are familiar with the climate in your region, you may want to check for additional errors. Who knows maybe the data you find can explain why people are switching to Apple. (By the way, I'm one of the few who likes Vista)

Newsletter Survey

It has been a little over a year since we released the first issue of the newsletter and we are interested in your feedback. Please take a few minutes to answer the questions on our short survey located at:

<https://catalysttools.washington.edu/webq/survey/jamault/53545>

If you fill out the survey and choose to participate, you will have a chance of receiving 1 CoCoRaHS rain gauge and 1 of 5 OWSC mugs we will be giving out.

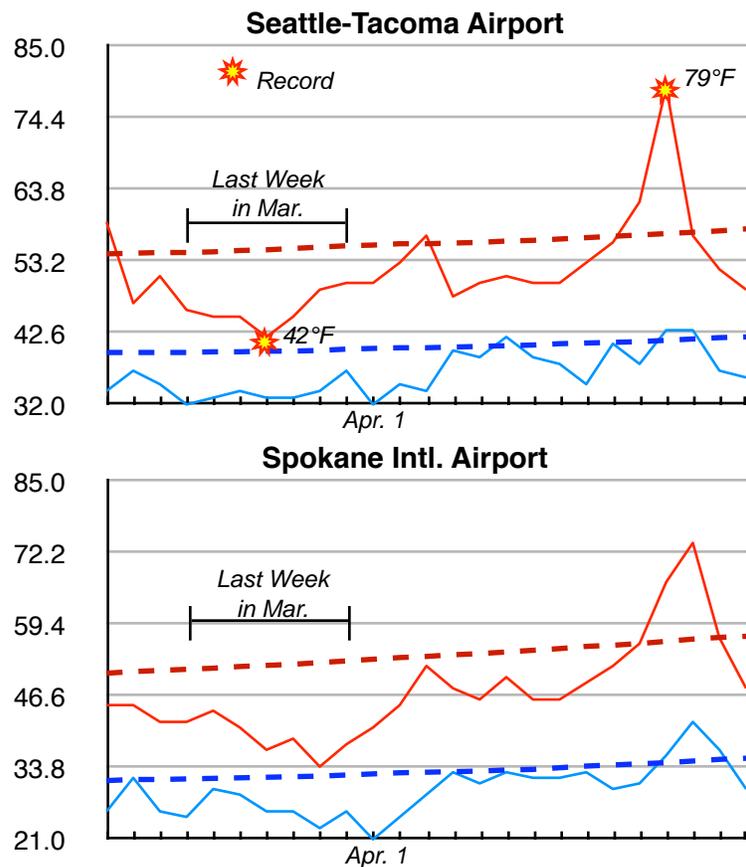


Climate Summary

According to NOAA, La Niña contributed to the coolest winter (2008) since the last La Niña episode in 2001, for the globe and the United States. The average temperature for the contiguous United States of 33.2°F was 0.2°F above the 20th century average. For Washington, the mild February offset the cooler than normal temperatures during December and January, leading to a statewide average winter temperature of 32.5°F, 0.1 degrees warmer than average. Winter precipitation varied throughout the state and was near normal overall. Compared to average, the wettest month was December and January for western Washington and eastern Washington, respectively.

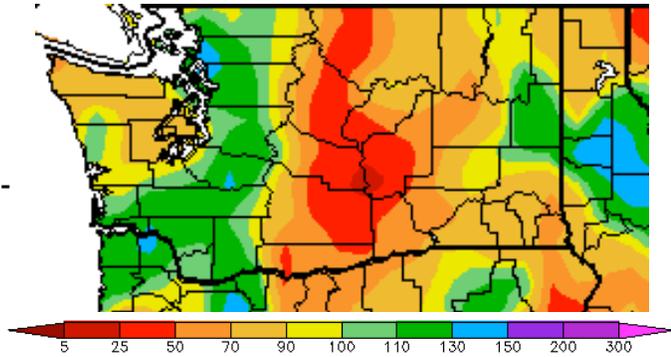
March and Beyond

The statewide average temperature for March was 39.1°F, 1.6°F cooler than the 20th century average. Despite the passage of winter and the onset of the spring equinox, cold temperatures persist. According to the NWS, the average high temperature for the last week in March, was the coldest on record for Sea-Tac Airport. The average high temperature for the last 7-days was 46.0°F, breaking the previous record of 47.1°F set in 1967. Not overlooking the minimum temperatures for the same period, the average minimum temperature was 33.7°F, which is tied for 2nd with 1975, behind the record of 30.4°F set in 1954. Similarly, Spokane's maximum average temperature for the last week in March was 39.2°F, 1.5°F behind the record of 37.7°F set in 1936. Also during the last week of March, many locations throughout the state set daily record low maximum temperature records, including Holden Village by 8°F and Satus Pass by 10°F with temperatures of 29°F and 33°F respectively. Even into the beginning of April, temperatures have consistently been below normal. The only glimpse of Spring thus far was April 13th when statewide temperatures surpassed 70°F in many locations including Seattle, which set a record of 79°F.



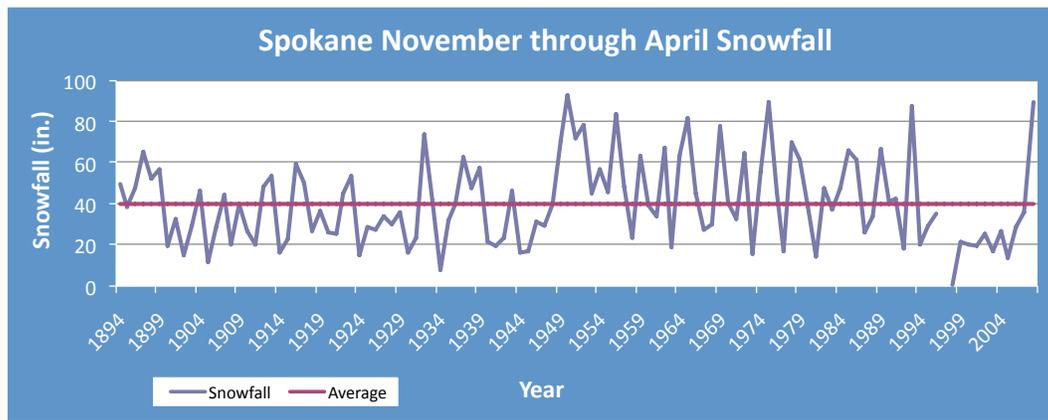
Seattle (top) and Spokane (bottom) maximum (red) and minimum (blue) temperatures compared to normal (dashed lines) from March 22nd - April 15th.

Precipitation amounts in western Washington improved compared to February, adding more snow to the above average snowpack. The percent of normal precipitation ranged from 70-90% for the Olympic Peninsula and 100-130% elsewhere. However, eastern Washington continued to receive below normal precipitation with amounts ranging from 25-50% of normal along the lee-side of the Cascades to 70-90% elsewhere. The one exception was the Spokane valley which received above normal precipitation, partly due to heavy snow showers during the second half of the month.



March percent of normal precipitation.
 Source: High Plains Regional Climate Center
<http://www.hprcc.unl.edu>

During the period of March 15th-31st, Spokane received 15.5” of snow, exceeding the previous high total of 8.1” recorded during the same period in 1985. Spokane typically averages 2.8” of snow for the month of March, but this year’s snowfall total makes it the second snowiest March with 15.8”. The record is 16.4” set in 1897. As of April 15th, the snowfall total in Spokane this winter is 2nd all-time at 89.5”, only 4” behind the all-time record set in the winter of 1949-1950.



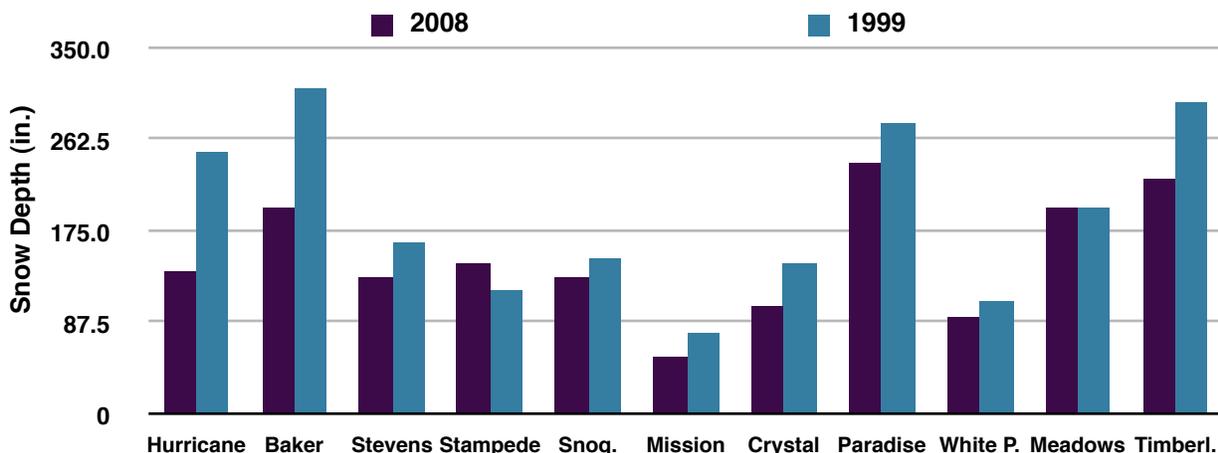
March Climate Summary for Various Locations

City	Temperature (°F)			Precipitation (inches)		
	Average	Normal	Departure from Normal	Total	Normal	% of Normal
Coast						
Hoquiam	45.0	46.1	-1.1	6.98	7.24	96%
Long Beach	-	45.8	-	-	9.02	-
Quillayute	41.5	43.8	-2.3	8.45	10.98	77%
Western WA						
Bellingham	41.3	44.4	-3.1	3.70	2.91	127%
Everett	44.3	45.3	-1.0	4.91	3.84	128%
Olympia	41.0	44.2	-3.2	4.83	5.29	91%
Puyallup	42.5	45.8	-3.3	3.39	4.23	80%
Seattle	43.5	46.2	-2.7	3.65	3.75	97%
Vancouver	44.8	46.2	-1.4	3.73	4.21	89%
Cascades						
Mt. Rainier (Paradise)	26.2	29.4	-3.2	13.22	12.87	103%
Ross Dam	38.4	40.6	-2.2	4.77	5.14	93%
Stampede Pass	-	32.0	-	-	7.38	-
Eastern WA						
Lind	-	42.8	-	-	1.02	-
Omak	37.8	44.0	-6.2	0.73	1.12	65%
Spokane	36.3	39.5	-3.2	1.86	1.53	122%
Walla Walla	43.9	46.3	-2.4	1.70	2.19	78%
Wenatchee	41.5	43.6	-2.1	0.24	0.68	35%
Yakima	40.1	43.3	-3.2	0.27	0.70	39%

Normal is defined as the 1971-2000 average. The data above is preliminary and subject to change. The latest official data can be obtained from the National Climatic Data Center (NCDC).

Mountain Snowpack

In December, snowpack began building well through January, with February 1st snow depth totals the highest since 1974 in many locations. However, the April 1st snow depth totals are less remarkable than in previous years, which may be due to the mild and dry February. For many of those locations, the April 1st snow depth totals are less than the April 1, 1999 totals (the winter of 1998-1999 was marked by a strong La Nina and was the year Mt. Baker set a new all-time high snowfall record).

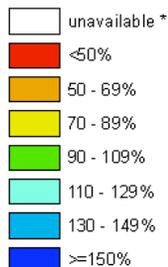


However, snow water equivalent continues to be well above average in most areas. The temperatures observed from the Snowpack Telemetry network (SNOTEL) were 4-6 degrees below normal for the month of March, which helped to maintain and build upon the snowpack. The NRCS (Natural Resources Conservation Service) reported that Paradise on Mt. Rainier, exceeded 100 inches of snow-water-content for only the 3rd time since records began in 1981 and that the Central Puget Sound area set a new April 1st record high snow-water-content of 204% above average (previous record was 197% in 1974). 15 SNOTEL stations across the state are in record territory.

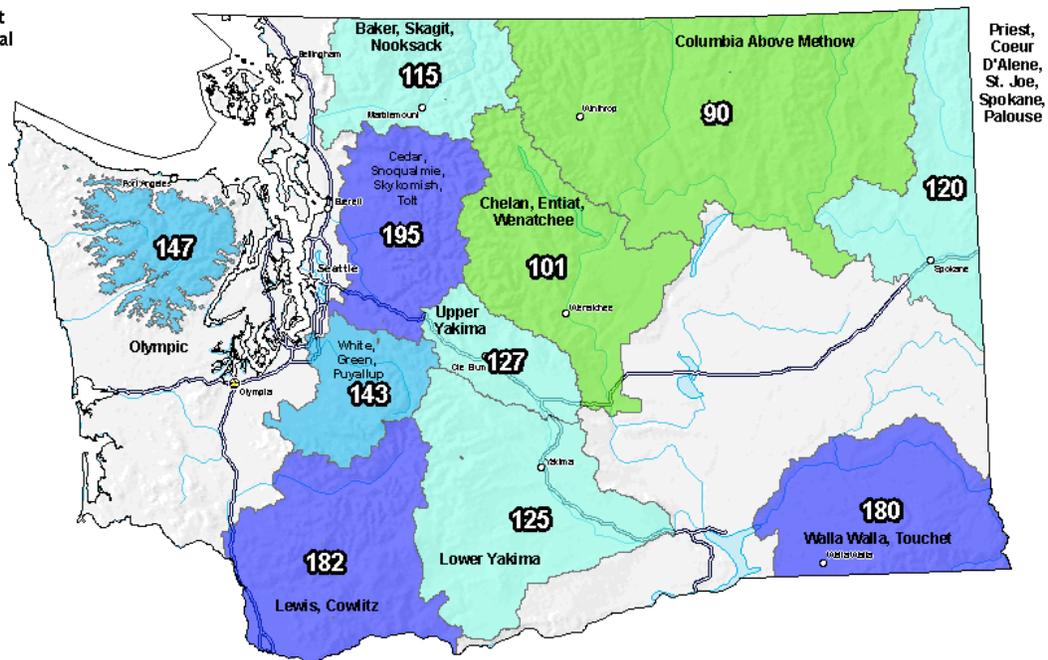
The water supply and streamflow outlook this year is expected to be at or above average in most locations. The only basins expected to have below normal flows are around the Okanogan and Wenatchee basin areas. Further, temperatures are expected to remain below normal for the month, and therefore will help prevent the early snow-melt pattern observed in recent years.

Apr 16, 2008

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*

April 15th snow water equivalent percentage of normal (1971-2000 average).
Source: NRCS <http://www.wa.nrcs.usda.gov/>

Outlook

Temperatures are expected to be near normal to slightly above normal through the remainder of the month, with precipitation likely to remain below normal. The Climate Prediction Center's (CPC) outlook for next month, calls for an increased probability of below normal temperatures statewide, with equal chances for above, below, and normal precipitation. For the next 3-months, May-June-July, CPC suggests temperatures will be below normal for western Washington and equal chances elsewhere. The precipitation outlook calls for equal chances for above, below, and normal precipitation statewide.

Sea-surface temperatures (SSTs) in the tropical Pacific warmed some in March, reducing La Niña to moderate strength. According to current model forecasts, La Niña is expected diminish, but remain present through the summer. Thereafter, the models remain somewhat split between a weak La Niña and neutral ENSO conditions.

