



# Office of the Washington State Climatologist

March 4, 2009

## CoCoRaHS March Madness!



The Community Collaborative Rain, Hail, and Snow (CoCoRaHS) Network is holding a nationwide contest between each participating state to see who can gain the most new volunteers in the month of March. Last year, South Carolina won the competition, gaining 122 new volunteers in one month. Illinois won in 2007, and Indiana in 2006. Washington joined the network in June 2008, making this the first year of the March Madness competition for our state. CoCoRaHS hopes to gain 1,000 new observers nationwide. To get into the spirit of the competition, the stats will be posted weekly on [www.cocorahs.org](http://www.cocorahs.org).

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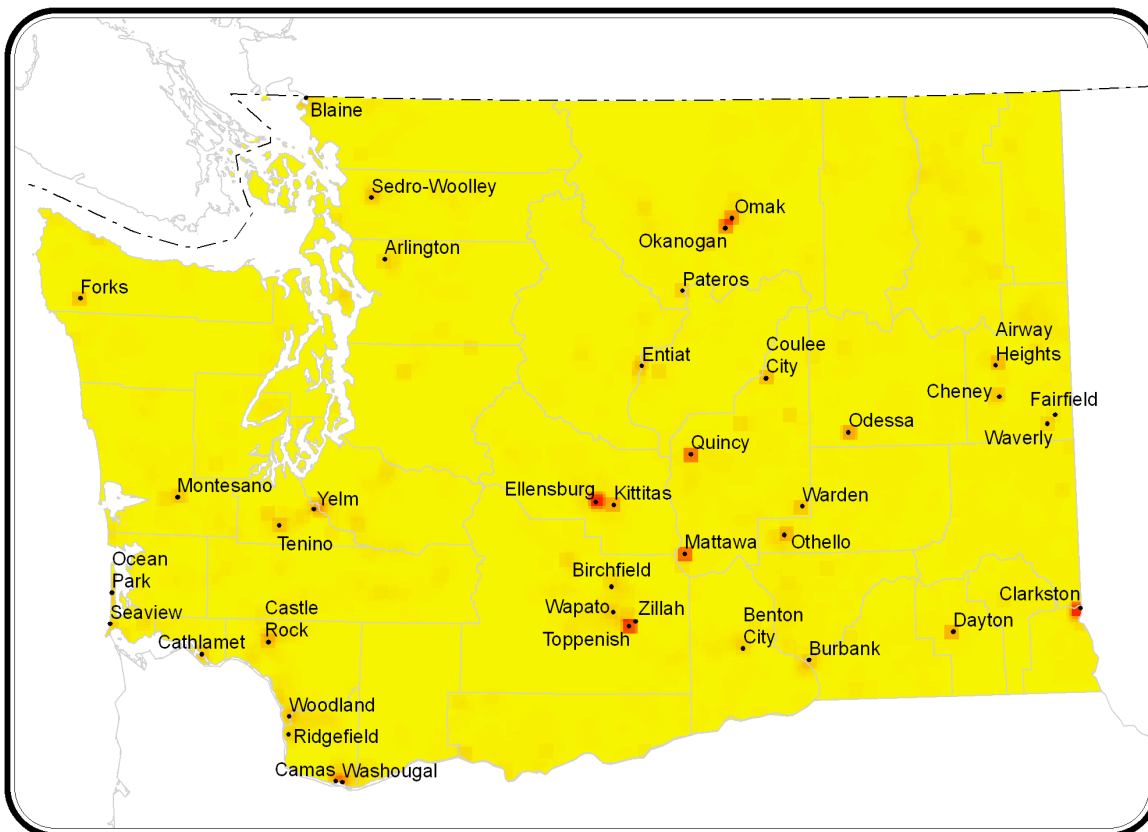


Figure 1: Holes in the CoCoRaHS observing network are denoted by the red squares.

Now is the time to join CoCoRaHS if you've been on the fence, or to invite your friends and relatives to consider becoming an observer. The under-served areas in the state have been identified, denoted by the red squares in Figure 1. If you're living in an under-served area, you may qualify for a free rain gauge (supplies are limited, however). Email Eliza ([wash.cocorahs@gmail.com](mailto:wash.cocorahs@gmail.com)) after registering at [www.cocorahs.org](http://www.cocorahs.org) to see if you qualify for a free gauge. A gauge can be purchased for under \$30 from two different vendors if you do not qualify.

## MODIS Utility Updated

The MODIS Cloud Fraction utility (<http://climate.washington.edu/modis/>) has been updated to include Aqua and Terra satellite data through the end of 2008. The utility enables the user to pick a time period (starting in 2000 for Terra and 2002 for Aqua), pick a satellite (Terra, Aqua, or both), pick a time of day (day only, night only, day and night), and pick a month or a series of months to be averaged, and then produces a map of the cloud fraction for the time period desired. Figure 2 shows Terra and Aqua cloud fraction for the day only for November and December 2008. Note the high cloud fraction, indicating (not surprisingly for the time of year) many clouds.

MODIS Terra and Aqua Cloud Fraction  
Day Only November 2008 - December 2008

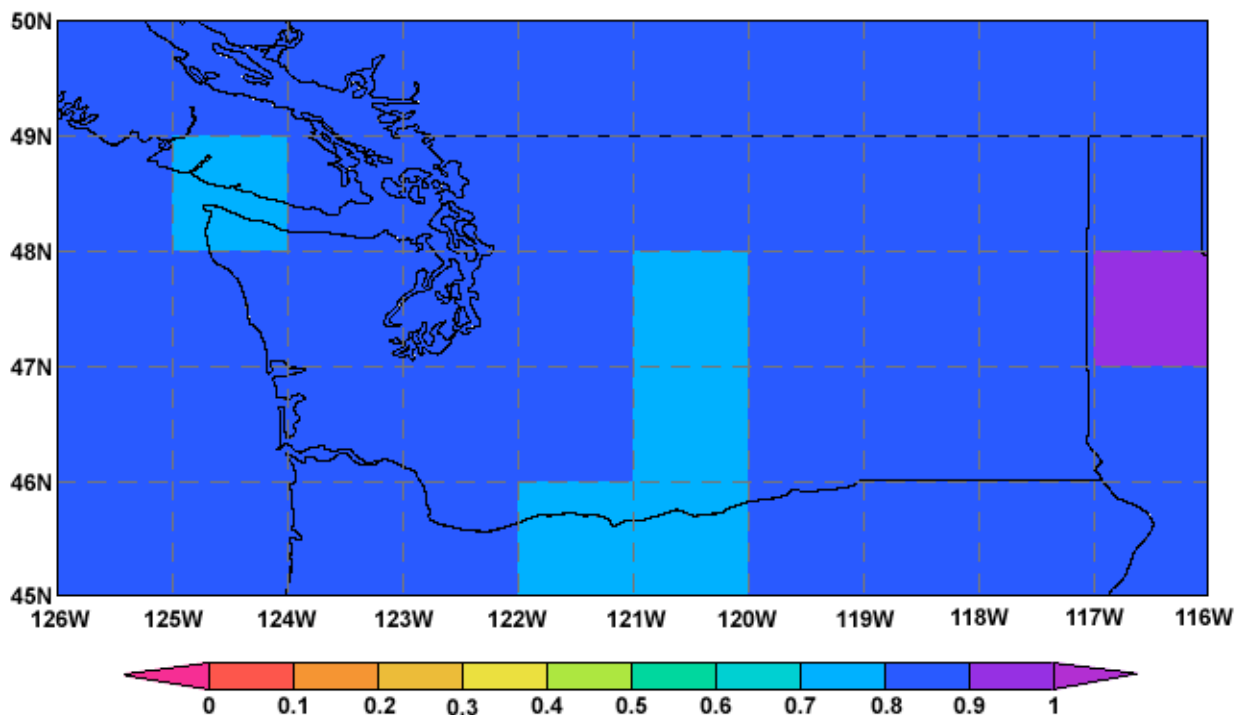
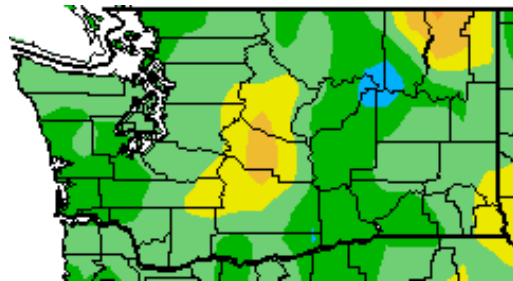


Figure 2: Day-only cloud fraction from November through December 2008 from the Terra and Aqua satellite.

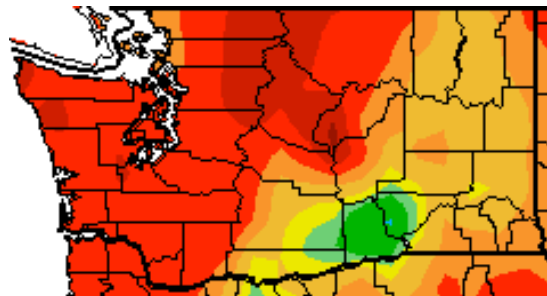
## Climate Summary

While the beginning of the month started off with warm temperatures in the western half of the state (SeaTac Airport had a record daily high temperature of 63°F tied on February 4th), February temperatures ended up near-normal for much of the state. Some stations in eastern WA and southwestern WA reported cooler than normal temperatures for the month by anywhere from 2-6°F, but the majority of the state was within ±2°F of normal.

Precipitation ranged from 5-50% of normal for western WA, and was still below normal for eastern WA (see Table 1). Western WA was dry in the beginning of the month (continuing the dry spell at the end of January), but saw some relief on the 9th and 10th with a mix of rain and snow, and some more relief in the last week of the month as some low pressure systems moved through the state. Still, the precipitation didn't add up - leaving the state much drier than normal. A few stations near Tri-Cities had above normal precipitation for the month. The normal baseline on the charts below is from 1971-2000.



Temperature (°F)



Precipitation (%)



*(February temperature (°F) departure from normal (top) and February precipitation % of normal (bottom). Source: High Plains Regional Climate Center (<http://www.hprcc.unl.edu>).*

	Temperature (°F)			Precipitation (inches)		
	Avg	Normal	Departure from Normal	Total	Normal	% of Normal
Olympia	38.3	40.5	-2.2	1.60	6.17	26
Seattle	41.9	43.0	-1.1	1.74	3.67	47
Sea-Tac	41.6	43.3	-1.7	1.51	4.18	36
Vancouver	40.9	42.0	-1.1	1.55	4.86	32
Pasco	35.9	39.1	-3.2	0.64	0.79	81
Yakima	34.8	35.1	-0.3	0.67	0.80	84

Table 1 - February Climate Summaries from locations in western Washington and eastern Washington (highlighted in orange) from NWS (climate normal baseline is 1971-2000).

## Federal Disaster Declared for December Storms

On March 2, 2009, President Obama declared 33 counties in Washington a federal disaster area from the heavy snow that fell between December 12, 2008 and January 5, 2009. Some of the impacts are described in the January 2009 OWSC newsletter. To learn more about the counties that will be receiving federal assistance and what was requested, visit <http://www.governor.wa.gov/news/news-view.asp?pressRelease=1157&newsType=1>.

## Low Snowpack

The snowpack situation has worsened throughout Washington. The snow water content (SWE) in the Cascades range from 63-88% of normal. The SWE hasn't actually decreased since last month, but it also hasn't built significantly, leaving the percentages of normal lower than they were at this time last month. The only improvement from last month is in south-eastern WA where the SWE is currently 99% of normal (it was 81% of normal last month) and in the southern-most eastern flank of the Cascades (closest to Tri-Cities where the precipitation was above normal for February) where the SWE is currently 81% of normal which is up from 66% of normal last month. The Olympic range is still at about 50% of normal. There is still about a month left to build snowpack, but at this late in the season, preparations for a low summer water supply should be considered. Figure 3 shows the percent of average snow water content in Washington and the west from the Natural Resources Conservation Service (NRCS).

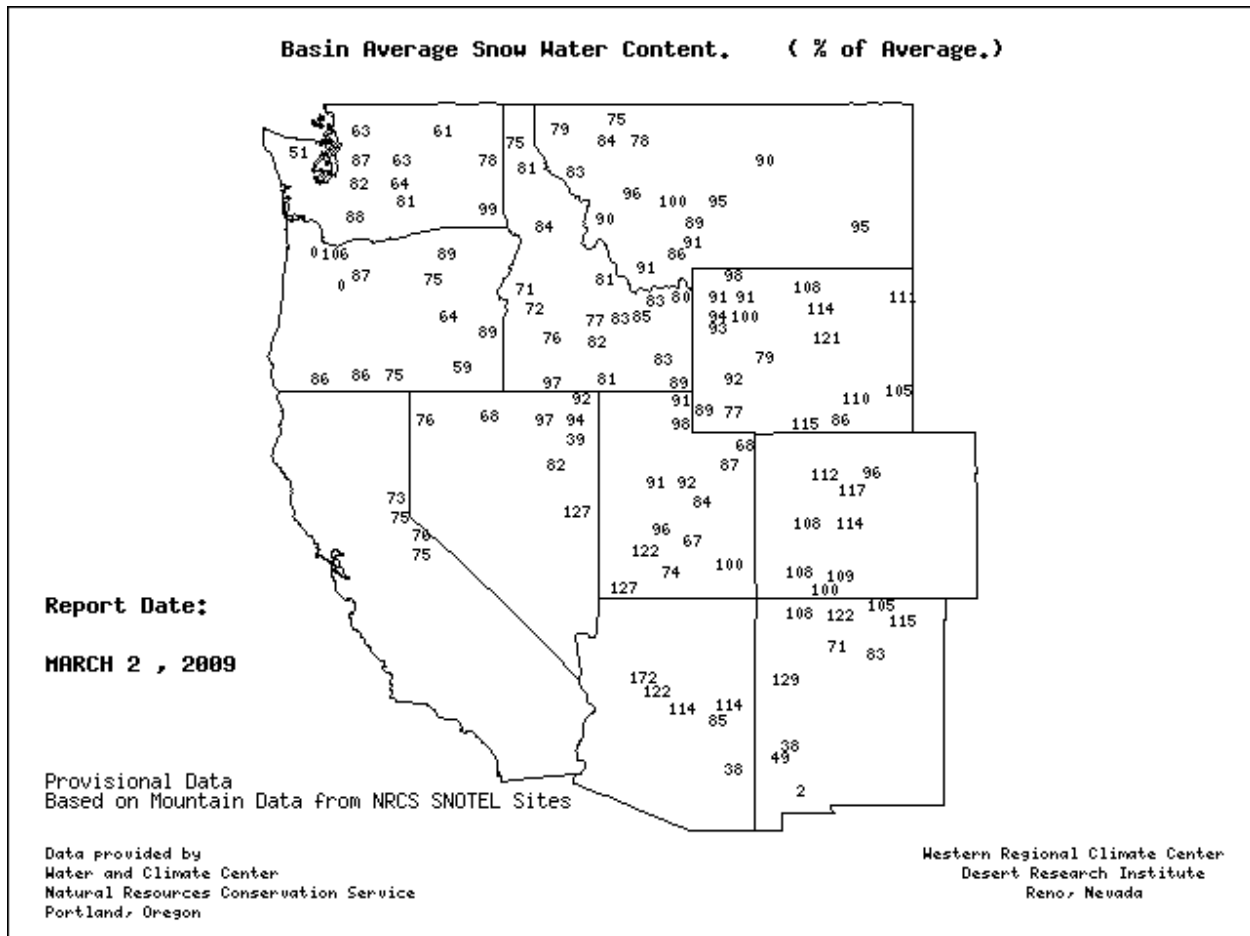


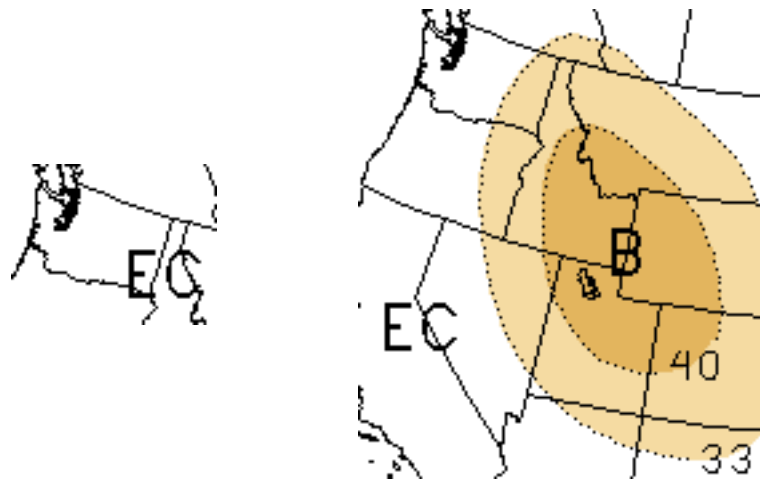
Figure 3: Percent of average snow water content in the West (from NRCS).

## Outlook

The seasonal climate forecast by the NOAA Climate Prediction Center for March-April-May (MAM) calls for at least a 40% chance of below normal temperatures for all of Washington. The MAM outlook calls for an equal chance of below, equal to, or above normal precipitation. The outlook for the rest of spring, April-May-June, calls for equal chances of above, equal to, or below normal temperatures. The AMJ precipitation outlook calls for at least a 33% chance of below average precipitation for eastern WA.



*(March-April-May outlook for temperature (left) and precipitation (right) from the CPC).*



*(April-May-June outlook for temperature (left) and precipitation (right) from the CPC).*

The below average temperatures for MAM are likely a result of the continued La Niña characteristics in the Pacific Ocean that are expected to last through the spring. The Climate Prediction Center has come up with a new alert system, and we are currently in a La Niña advisory. An advisory means that the La Niña conditions have developed and are expected to last (<http://www.cpc.noaa.gov/products/precip/CWlink/MJO/enso.shtml>).