



# Office of the Washington State Climatologist

September 3, 2009

## August Summary

The beginning of August started out warm throughout the state, as the conditions that caused the July heat wave lingered.

Record daily high temperatures were broken across the state.

For example, on August 1, Omak reached 106°F, Wenatchee

reached 107°F, and Walla Walla hit 108°F. On August 2,

Olympia warmed to 92°F and SeaTac reached 89°F, also

breaking daily records. Temperatures cooled by August 5, with

some precipitation falling in northeastern WA due to thunderstorms. More thunderstorm-

associated precipitation fell through the 7th on the east side of the Cascades, with Spokane

measuring 0.24 inches on the 6th. Western WA finally received precipitation on August 10

through 13 associated with two passing low pressure systems. The first 24 hrs of rainfall at

SeaTac (starting August 10) measured 0.31 inches, which was more rain than what fell

between May 20th and August 9th at that station. Some high daily rainfall records were bro-

ken on August 10th, including 0.22 inches at SeaTac and 1.01 inches at Quillayute.

A strong, upper-level ridge began to build on the 14th, warming and drying out the state.

Temperatures in southwestern WA climbed into the 90's on August 18 & 19, and the Yakima

Region experienced temperatures in the triple-digits on August 20 (Walla Walla had a record

daily high of 107°F). Another system moved through on the 21st, cooling temperatures across

the state. More rain fell on western WA on the 24th, bringing the monthly totals close to

normal for many locations. Warm temperatures returned to the majority of eastern WA

through the remainder of the month (record high daily temperature at Pullman of 100°F on

Aug 28), and more rain fell in the southern Puget Sound on August 28.

The statewide fuel moisture (percent water content of vegetation) has fluctuated this month as

weather has alternated between cool/wet and warm/dry conditions. As of August 31, the fuel

moisture was below normal for all 3 regions of the state: coastal, interior, and eastern. The

WA Department of Natural Resources (DNR) has currently classified the fire danger as

“Moderate” in Adams, Pacific, Thurston, and Whitman counties, “High” in 34 counties, and

“Extreme” in Okanogan county. More fire information can be found at the DNR website

([http://www.dnr.wa.gov/RecreationEducation/Topics/FireInformation/Pages/rp\\_fire\\_fireinformation.aspx](http://www.dnr.wa.gov/RecreationEducation/Topics/FireInformation/Pages/rp_fire_fireinformation.aspx)).

### In this Issue

August Summary.....	1
CoCoRaHS.....	2
Climate Summary.....	3
Continued Drought.....	4
Climate Outlook.....	6



## Community Collaborative Rain, Hail, and Snow Network

Thank you, observers, for your participation! The photo below (taken by our National Coordinator himself - Henry Reges) illustrates our favorite saying, "Rain doesn't fall the same on all". The precipitation amounts are estimated, but illustrate how variable precipitation can be, especially during convective thunderstorms like what is often observed in eastern WA at this time of year. If you have any questions about CoCoRaHS, then please contact [wash.cocorahs@gmail.com](mailto:wash.cocorahs@gmail.com) or your regional coordinator. If you are interested in observing or know someone who is, please register at [www.cocorahs.org](http://www.cocorahs.org).

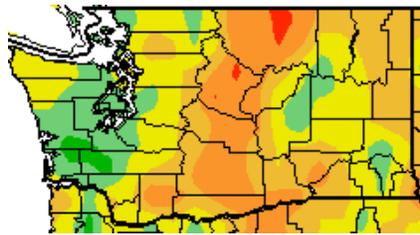


Photo by: Henry Reges

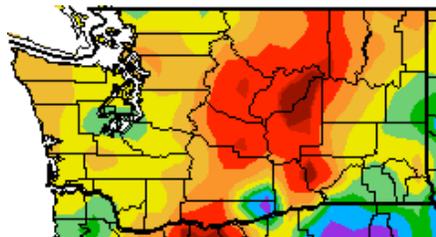
## Climate Summary

Unlike June and July, the last month of meteorological summer (August) experienced temperatures in western and southeastern WA that were below normal or normal for the month. SeaTac International Airport, for example, had exactly normal average temperature for the month, and Ephrata and Olympia were within  $\pm 0.2^\circ\text{F}$  of normal (Table 2). August temperatures in central WA were above normal (for example,  $2.8^\circ\text{F}$  above normal in Omak), however, similar to the conditions seen in the beginning of the summer. More of eastern WA saw above normal temperatures for the month as well, with the exception of the Blue Mountains.

Precipitation in August was below normal and near-normal in western WA, but the percentages of normal precipitation were much higher than the patterns seen in June and July where precipitation was less than 50% of normal. In August, SeaTac, Olympia, and Seattle Sandpoint saw 114, 111, and 81% of normal precipitation, respectively. Central WA was very dry in August, with the exception of a station in Klickitat county. Ephrata saw 0% of its normal 0.25 inches of precipitation and Omak was only at 25% of normal. Areas of eastern WA (Spokane through the Blue Mountains) had near-normal precipitation. Pullman was a wet spot, with 178% of normal precipitation for August (Table 2).



Temperature ( $^\circ\text{F}$ )



Precipitation (%)



*(August temperature ( $^\circ\text{F}$ ) departure from normal (top) and August 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	63.1	63.3	-0.2	1.22	1.10	111
Seattle	66.7	66.2	0.5	0.79	0.97	81
Sea-Tac	65.6	65.6	0.0	1.16	1.02	114
Vancouver	69.5	65.5	4.0	0.74	1.07	69
Spokane	70.3	68.6	1.7	0.74	0.68	109
Omak	73.3	70.5	2.8	0.16	0.65	25
Pullman	68.3	66.8	1.5	1.58	0.89	178
Ephrata	74.1	74.0	0.1	Trace	0.25	0
Pasco	74.0	74.4	-0.4	0.07	0.36	19
Yakima	70.7	68.3	2.4	0.09	0.36	25

Table 2 - August Climate Summaries from locations in western Washington and eastern Washington (highlighted in orange) from NWS (climate normal baseline is 1971-2000).

## Continued Drought

Despite the cooler and wetter conditions experienced in some parts of the state this month, most of the state is still experiencing long-term dry conditions. The most affected areas are the northern Olympic Peninsula and the north central Cascade regions as a result of the lower than normal snowpack this winter compounded with the dry and warm summer. The United States Drought Monitor's August 25 edition had portions of the state classified as "Abnormally Dry", "Moderate Drought", and "Severe Drought" as shown in Figure 1.

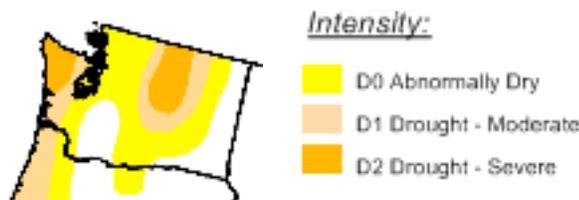


Figure 1: The August 25 edition of the US Drought Monitor ([www.drought.gov](http://www.drought.gov)).

Impacts from these dry conditions include low streamflows in the affected areas. The 28-day average streamflow map from USGS shows streams throughout the state, but mainly in the Olympic Peninsula, ranking as “much below normal”, meaning that the August streamflow ranked below the 10th percentile for this time of year (Figure 2). Throughout parts of the Puget Sound (from Whatcom through Thurston counties) average streamflow is ranked as “below normal” or between the 10-24th percentile. The flow is compared to a 30-year average flow for this time of year. Even areas that were not affected by low snowpack this winter are still seeing low streamflows because of the warm and dry conditions earlier this summer. The recent precipitation in many of these areas was not enough to make up the deficit.

Monday, August 31, 2009

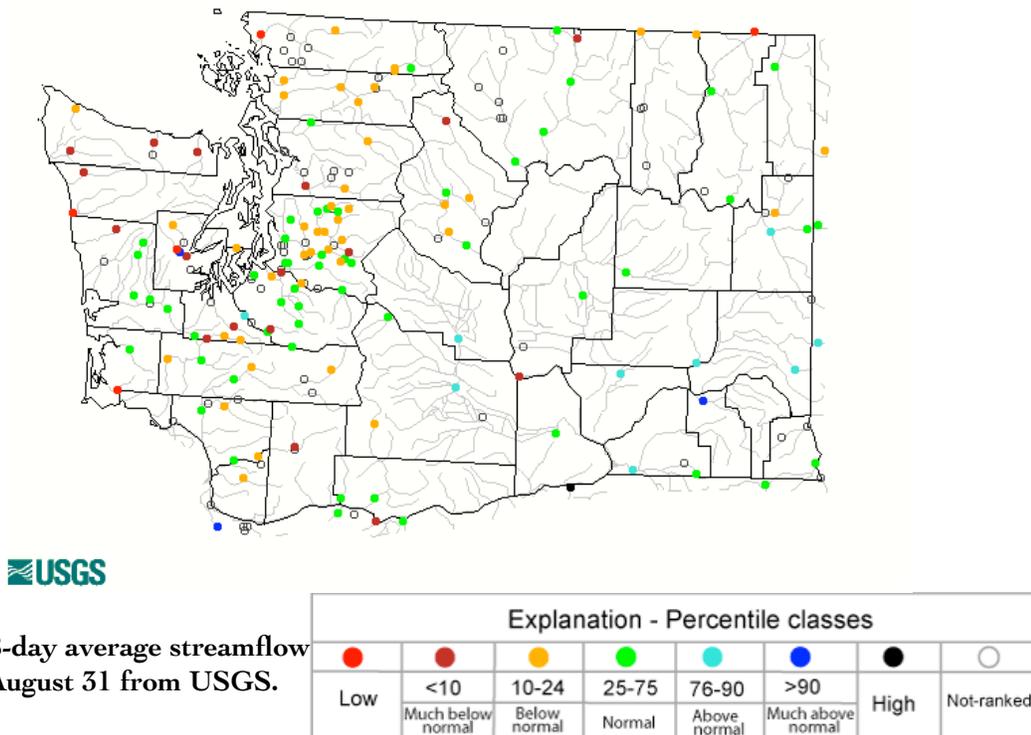


Figure 2: 28-day average streamflow through August 31 from USGS.

The state is currently regulating water used for irrigation on the Wenatchee, Okanogan, Methow, and Similkameen Rivers. Some other impacts have been reported on the Olympic Peninsula. According to the Peninsula Daily News (Aug 12), the dry conditions have facilitated loss of honeybees on the Olympic Peninsula which impacts the pollination of the crops in the region. The Peninsula Daily News (Aug 31) also reported that Morse Creek’s flow fell below 25 cfs causing restrictions of water usage (such as outdoor watering) to be put on residents of Fairview (east of Port Angeles).

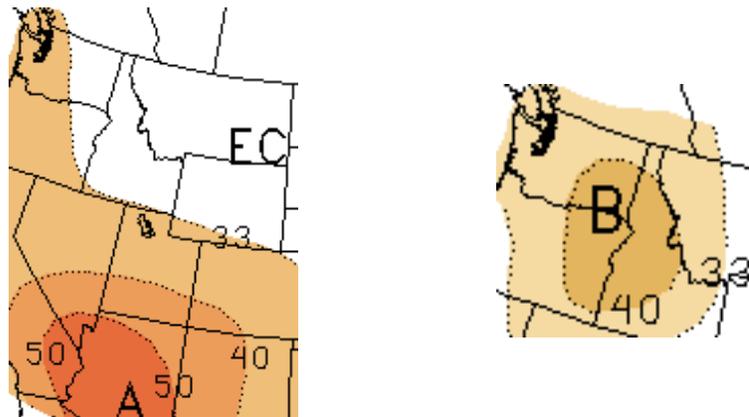
While the Governor has not made any regional drought declarations, she did release a statement on August 3rd reminding the public to conserve water during these dry conditions. The full statement can be found here:

<http://www.governor.wa.gov/news/news-view.asp?pressRelease=1303&newsType=1>.

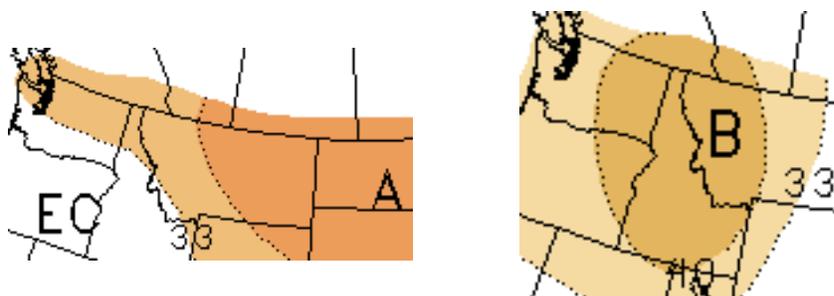
## Outlook

The seasonal climate forecast by the NOAA Climate Prediction Center for September-October-November (SON) calls for at least a 33% chance of above normal temperatures for the western half of the state. Eastern WA has an equal chance of below, equal to, or above normal temperatures for the fall. There is at least a 33% chance of below normal precipitation for most of the state for SON, and at least a 40% chance of below normal precipitation for the southeastern portion of the state.

The outlook for October-November-December (OND) calls for at least a 33% chance of above normal temperatures for the northern half of the state. The OND outlook calls for an equal chance of below, equal to, or above normal temperatures for southern WA. OND precipitation is predicted to be at least 33% below normal for the western half of the state, and at least 40% below normal for eastern WA.



*(September-October-November outlook for temperature (left) and precipitation (right) from the CPC).*



*(October-November-December outlook for temperature (left) and precipitation (right) from the CPC).*

According to the Climate Prediction Center, El Niño conditions are present in the Pacific Ocean. The El Niño is expected to strengthen through the fall and persist into the winter (<http://www.cpc.noaa.gov/products/precip/CWlink/MJO/enso.shtml>). The below normal precipitation that is forecasted for WA in the outlook is a result of the expected continuation of the warm ENSO conditions.

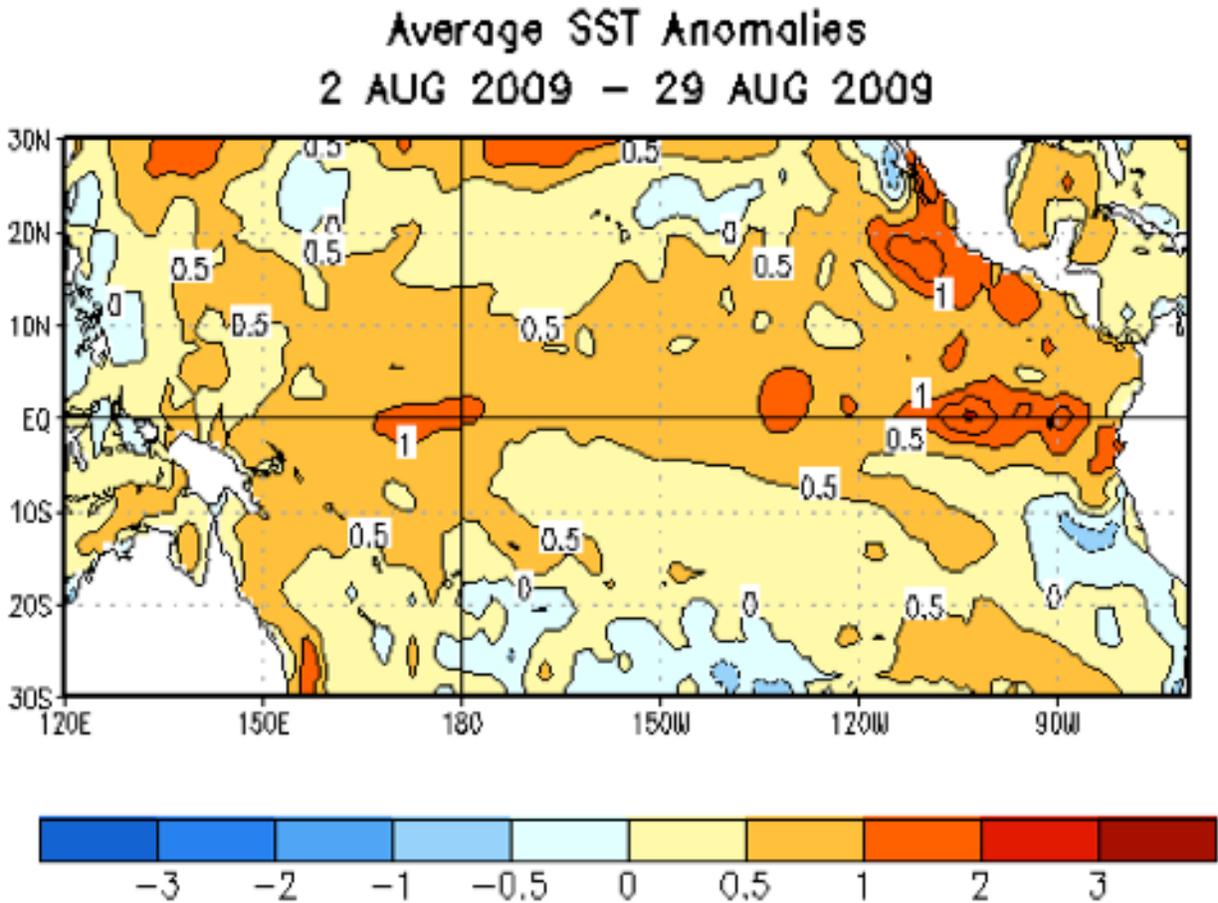


Figure 3: Average Sea Surface Temperature (SST) anomalies for August (from the Climate Prediction Center).