



Office of the Washington State Climatologist

August 3, 2011

July Event Summary

July was colder than normal statewide, on average, while precipitation varied throughout the state. To summarize July:

The minor flooding that began in June continued into July in northeastern WA as the higher than normal snowpack continued to melt. Skies were generally sunny for the first part of the month, causing July 4th to be pleasant across the state. A slow-moving front brought cloud cover and showers on the 7th (8th) for western (eastern) WA that lingered before clearing out statewide for the weekend of July 9 and 10. The sunny skies didn't last long, however, as a series of low pressure systems

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brought clouds and showers through the week of the 11th, mainly affecting areas west of the Cascades. Cooler temperatures and scattered showers continued into the next week statewide until a ridge built into the region on the 23rd. A marine push subsequently followed a few days later (July 25), bringing thunderstorms and showers. Record daily precipitation fell in Wenatchee (0.31") and Yakima (0.29") on the 25th as a result. Figure 1 shows additional observations in northeastern Yakima County for that event. A more typical summer pattern returned for the remainder of the month, however, in which morning clouds gave way to sunshine in the afternoon on the west side of the Cascades, and sunny skies persisted in central and eastern WA.

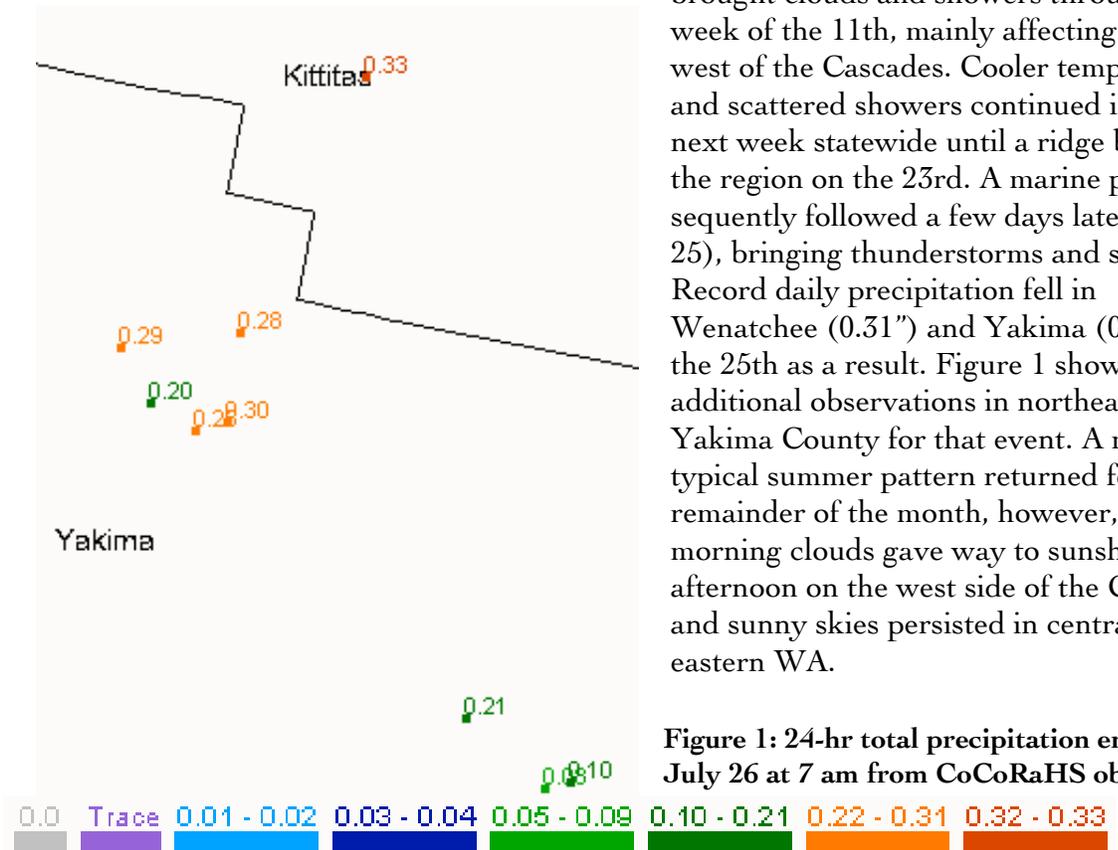


Figure 1: 24-hr total precipitation ending on July 26 at 7 am from CoCoRaHS observers.

AASC Annual Meeting and Climate Tools Catalog

Assistant State Climatologist, Karin Bumbaco, attended the annual meeting of the American Association of State Climatologists (AASC) in combination with the American Meteorological Society's Applied Climate Conference last month. The week-long conference was held in Asheville, NC and had good representation from many of the states in the AASC. Karin presented results from a project she is spearheading for the AASC that involves documenting all of the web-based climate tools offered by the membership. This project is summarized below.

OWSC received State Climatologist Exchange Program (SCEP) funds in February to write monthly features on the AASC website highlighting climate tools that have been developed by either a state climate office (SCO) or a regional climate center (RCC). The funding conditions specified that special emphasis be placed on writing the features so that they are free of technical jargon and understandable to those that are unfamiliar with the tools. In an attempt to solicit examples from SCOs, a previous effort by Mark Brooks of the Office of the NC State Climatologist to catalog these sorts of tools was unearthed. Karin and Mark joined forces, and have been working on a climate tools database to be hosted on the AASC site.

The database is a work in progress, but is already available on the AASC website: <http://stateclimate.org/productsurvey/list.php>. The table lists the provider of the tool, the link to access it, and gives a brief description of the tool's capabilities. The table can also be organized by region, making it easy to find relevant tools for a given location. The monthly features will be drawn from this database, and a more detailed description of the product will be given in those highlights. The monthly highlight series has yet to be launched, as the current primary project goal is to further populate the table.

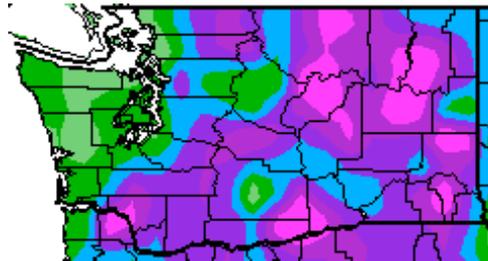
The comprehensive database that is being constructed will serve multiple purposes. It will provide "one-stop shopping" for climate utilities offered by AASC-members and showcase the applied climate expertise of the organization. It will also aid in collaboration between AASC members. For example, many SCOs are unaware of what is offered by other offices and this database will provide that information as well as illuminate any holes in products provided so that those needs can be filled. It will also be a great resource to those in the wider climate community and a thorough starting point for those that are not as familiar with climate services.

The project is still a work-in-progress, but there are currently 48 climate tools catalogued. Check back for future additions as the database is growing rapidly.

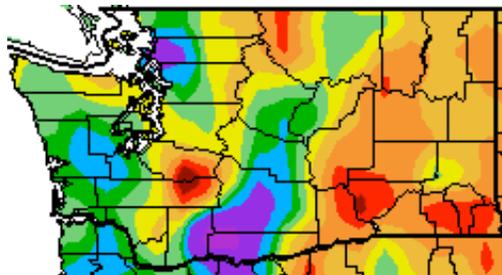
Climate Summary

As mentioned above, the average July temperatures were cooler than normal statewide. Note that the maps below compare the temperatures to the 1971-2000 normals, not the updated 1981-2010 normals. Temperatures east of the Cascades were especially cool, with temperature departures ranging between 2 and 5°F below normal. Most of the areas west of the Cascades were between 1 and 2°F below normal with others close to normal.

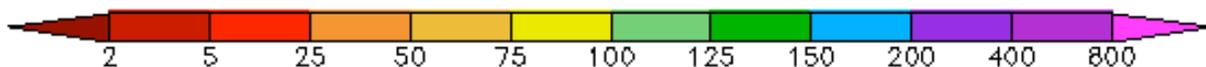
Precipitation was below normal in most of eastern WA (e.g., Spokane Airport; 70% of normal), with some extremely dry areas in southeastern WA. Pullman, for example, received a measly 4% of normal precipitation and Ephrata only 59% (Table 1). Several portions of the Cascade Mountains were also below normal as illustrated in the map below. Central WA, however, and the remaining portions of western WA had either normal or above normal precipitation. The above normal precipitation mostly resulted from thunderstorms - Yakima and Wenatchee, for example, had 209 and 163% of normal precipitation, respectively (Table 1).



Temperature (°F)



Precipitation (%)



July temperature (°F) departure from normal (top) and July precipitation % of normal (bottom).

Source: High Plains Regional Climate Center (<http://www.hprec.unl.edu>).

	Mean Temperature (°F)			Precipitation (inches)		
	Average	Normal	Departure from Normal	Total	Normal	% of Normal
Western Washington						
Olympia	61.8	62.8	-1.0	1.42	0.82	173
Seattle WFO	63.5	65.2	-1.7	0.61	0.97	63
Sea-Tac	64.2	65.3	-1.1	0.71	0.79	90
Quillayute	57.3	58.6	-1.3	2.28	2.34	97
Bellingham Airport	61.6	62.6	-1.0	1.37	1.37	100
Vancouver	66.4	68.2	-1.8	1.08	0.40	270
Eastern Washington						
Spokane AP	66.7	68.6	-1.9	0.53	0.76	70
Wenatchee	69.5	73.3	-3.8	0.49	0.30	163
Omak	66.6	71.0	-4.4	0.84	0.80	105
Pullman	62.3	65.9	-3.6	0.03	0.79	4
Ephrata	69.8	74.7	-4.9	0.26	0.44	59
Pasco AP	70.5	73.5	-3.0	0.05	0.28	18
Yakima	68.0	69.0	-1.0	0.46	0.22	209

Table 1 - July climate summaries for locations around Washington. The climate normal baseline is 1971-2000 except for Seattle WFO (1986-2000), Vancouver (1998-2010), and Pasco (1981-2010). Please be aware that the Seattle WFO and Vancouver climate normal periods are shorter than the 30-year period that is typically used for climatology.

Climate Outlook

Neutral ENSO conditions are still present in the equatorial Pacific Ocean, with normal sea-surface temperature anomalies across most of the equatorial Pacific during the last 4 weeks (<http://www.cpc.noaa.gov/products/precip/CWlink/MJO/enso.shtml>), according to the Climate Prediction Center. Model forecasts indicate that the neutral ENSO conditions will continue through the summer and likely persist through the 2011-12 winter. The NCEP Coupled Forecast Systems (CFS) model, however, has just been released indicating an ensemble mean with weak La Niña conditions for the 2011-12 winter. These results point towards a higher likelihood that the equatorial Pacific will be on the cooler side and a lower likelihood of an El Niño developing for next winter. These predictions will be fine-tuned in the coming months and by early fall, more definitive forecasts for ENSO should be available.

The latest iteration of seasonal forecasts for the state are not very revealing as the odds are not tilted one way or the other. The August-September-October (ASO) temperature and precipitation outlook have equal odds of below, equal to, or above normal temperatures and precipitation for the entire state.

The fall (September-October-November; SON) outlook also has even odds of below, equal to, or above normal temperatures and precipitation, as shown below. It bears emphasizing that this does not imply that the upcoming weather/seasonal climate is necessarily going to be normal, and instead that there are not strong predictors tilting the odds one way or the other!



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



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