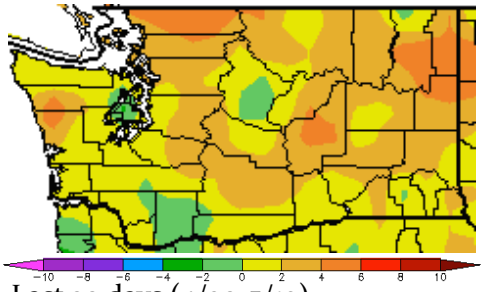
Washington State
Weekly Drought Monitoring Report

Thursday, May 21, 2015 Issue 6

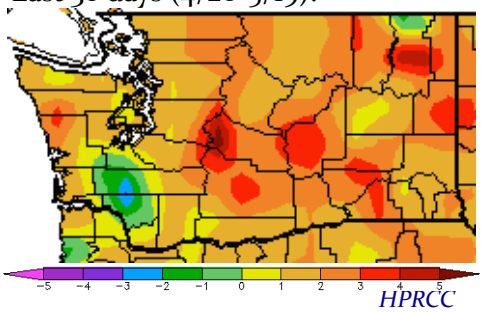
Statewide Overview

Mean Temperature Anomalies (°F)

Weekly (5/13-5/19):



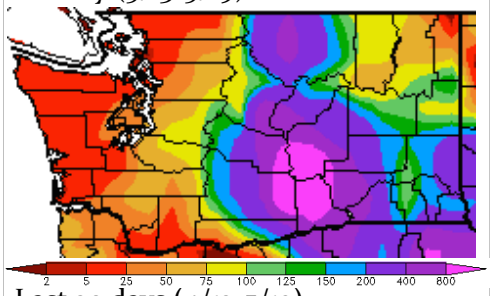
Last 30 days (4/20-5/19):



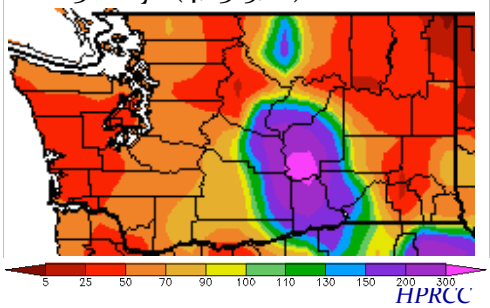
HPRCC

Precipitation Percent of Normal (%)

Weekly (5/13-5/19):



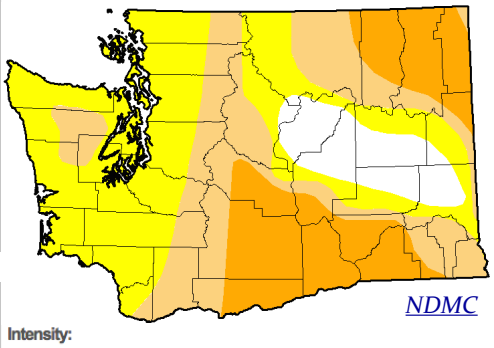
Last 30 days (4/13-5/12):



HPRCC

Drought Monitor, Streamflow, Reservoir Storage

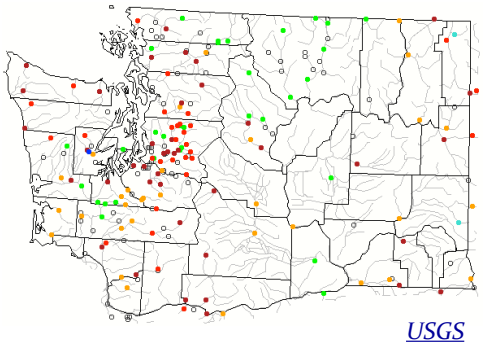
US Drought Monitor (5/19):



NDMC

Intensity:
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

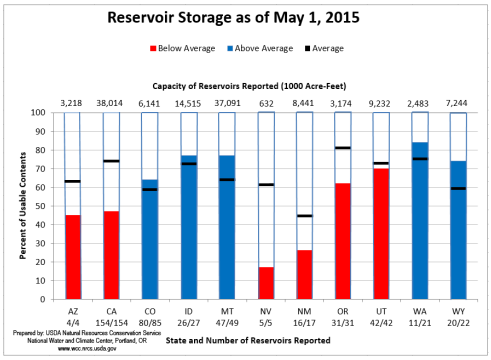
7-day Average Streamflow (5/19):



USGS

Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Western Reservoir Storage (5/1):



NRCS

A snapshot of recent conditions for WA State is shown on this page using statewide temperature, precipitation, streamflow and reservoir storage over varying time frames. The last 7 days (5/13-5/19) began on a wet note with precipitation statewide on the 13th. Aside from showers on the 14th, some central WA locations also received precipitation on the 17th. Wenatchee received a total of 0.89" over the 7 day period, which is over their monthly May normal (0.68"), and Omak received 0.68" over the period. On the other hand, except for the rain on the 13th, western WA was dry over the last 7 days, only receiving between 5 and 50% of normal. Longer time scales (last 30 days) show between 25 and 70% of normal precipitation in western WA while the rain in the Lower Columbia Basin and Okanogan over the last week is reflected on the 30-day map. Temperatures have remained warmer than normal for nearly the entire state over the last 7 and last 30 days.

The 7-day average streamflow shows record low streamflows throughout western WA (bright red) and in northeastern WA. These historically low streamflows prompted more degradations to the US Drought Monitor, with "abnormally dry" introduced throughout western WA and "severe drought" added into northeastern WA; most impacts in the northeast are ecological. Despite these dismal streamflows, the total statewide reservoir storage is still above normal, mainly due to prudent management of water during the winter. Specifically, relatively high water levels were maintained in anticipation of potential drought problems later in the dry season.

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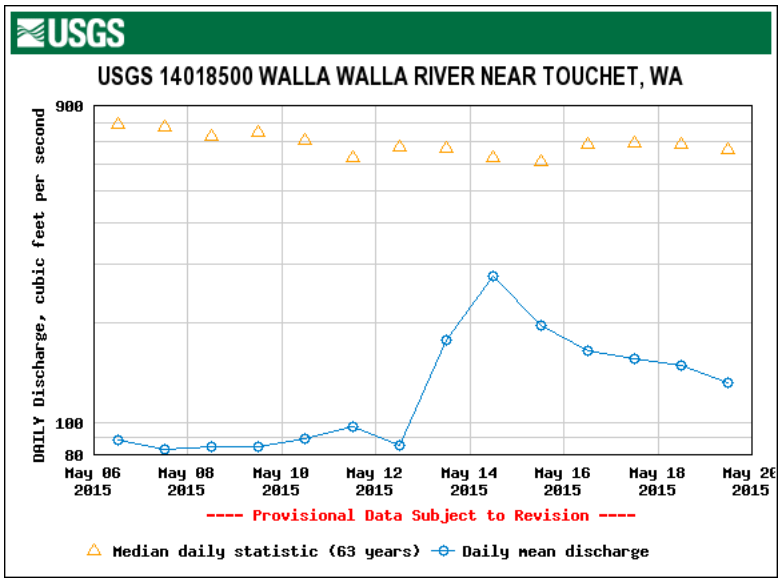
Statewide Drought Declared

On May 15, Governor Inslee declared a statewide drought; more information can be found at WA State Department of Ecology. This section had been used to focus on the areas of declared drought, but with the whole state in a drought emergency, its focus will rotate weekly.

Chelan/Kittitas/Yakima Region, Walla Walla Watershed, and Okanogan

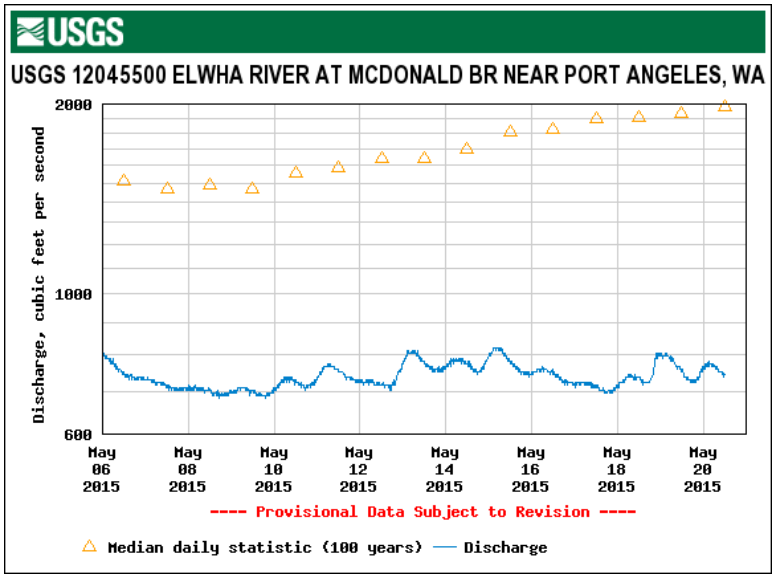
These regions have all received above normal rainfall over the last 7 days, with Walla Walla seeing 1.00" over the last week. Even with this heavy precipitation (mostly on the 13th), Walla Walla is still running below normal for the month. Yakima received 0.54" on the 13th, and with the few wet days prior (total: 0.75"), the Bureau of Reclamation was actually able to temporarily go off storage control since the rain reduced demand. That is not the case anymore, however, and the proratable water users allotment has been reduced to 44% of typical supply. Senior water users still expect to get 100% of their allotment. The hydrograph on the right for the Walla Walla River near Touchet shows a response on the river from the precipitation on the 12th and 13th, but the streamflow quickly drops in the following days, illustrating the importance of the snowmelt for consistent streamflow at this time of year. 7-day average streamflow in the Okanogan region is depicted as normal in the plot on page 1 with the help from Canadian snowmelt, but these are unfortunately not representative of the whole region as stream gauges are limited to main stem rivers.



USGS

Olympic Peninsula

Very little precipitation fell over the Olympic Peninsula in the last week. The unusual atmospheric circulation pattern featuring flow from the east brought more rain to eastern WA than the normally wetter west side. As shown on the 7-day average streamflow map on page 1, streamflows are extremely low on the Peninsula. The instantaneous flows on May 20 show several record lows at sites with long records. Examples include the Elwha River at McDonald (100-yr record; previous record in 1899), the Quinault River at Quinault Lake (99-yr record; previous record in 2003), and the Skokomish River near Hoodsport (90-yr record; previous record in 2003). The Elwha River hydrograph over the last two weeks shows the streamflow at about 40% of normal; the low flow on May 20 of 746 cfs is about 130 cfs below the next lowest value in 1899.



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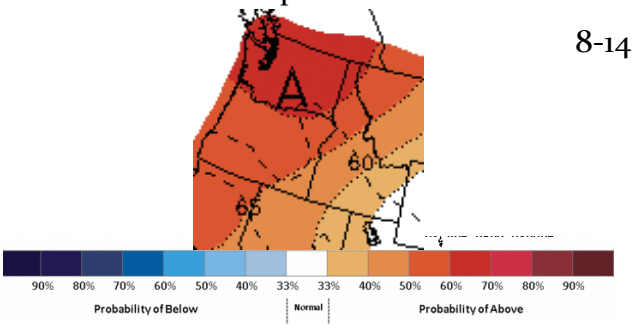
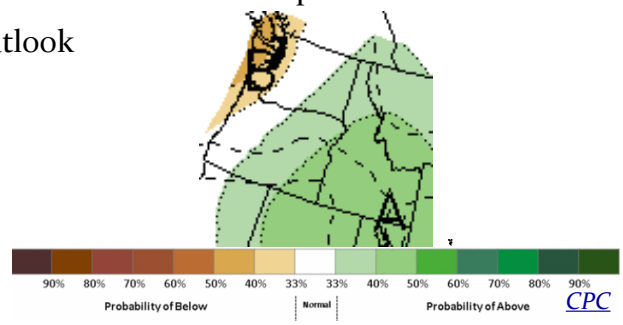
Extended Outlook

Temperature



8-14 Day CPC Outlook

Precipitation

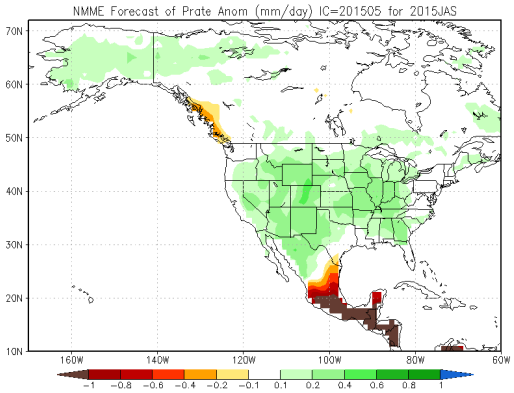


CPC

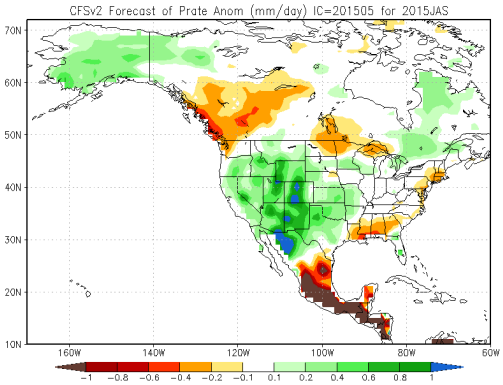
The 8-14 day forecast from NOAA/CPC indicates a very high probability of above normal temperatures in Washington state for the period of 28 May – 3 June. This forecast indicates slightly higher odds of below normal precipitation in western WA and above normal precipitation for the eastern one-third of WA.

This report has included maps of projected seasonal precipitation anomalies based on simulations from global climate models (e.g., Issue 3; 30 April). It is important to realize that there is often a great deal of uncertainty in these kinds of projections, with those for the Pacific Northwest for the upcoming summer being a good example. Reproduced below are precipitation anomaly maps from 3 of the 7 individual models used in the National Multi-Model Ensemble (NMME), and a map representing the multi-model average of these projections, for the period of July-September (JAS) 2015, based on initial conditions during May 2015. Note that the models as a group are indicating below-normal precipitation in coastal British Columbia, and relatively wet weather stretching from the interior west to across most of the continental US, with negligible precipitation anomalies for WA. The results from the individual models include both below-normal and above normal precipitation amounts for WA for JAS 2015, suggesting that there is little predictability at the present time. On the other hand, the models are unanimous in their projections for above-normal temperatures during the upcoming summer, and so there is high confidence that the warm weather that the state has been experiencing will persist.

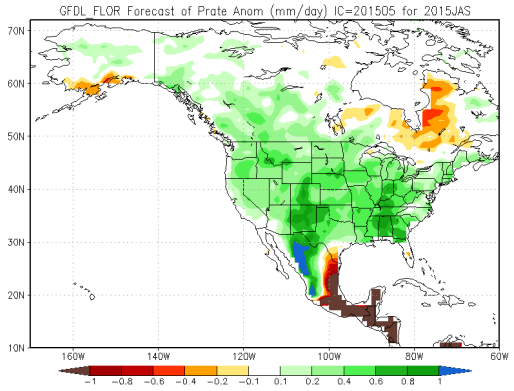
JAS 2015 NMME (average) precipitation forecast:



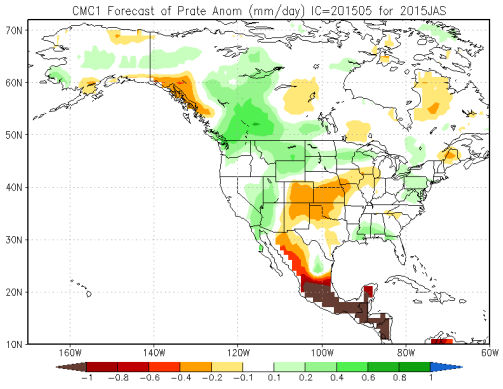
JAS 2015 CFSv2 (individual) precipitation forecast:



JAS 2015 GFDL FLOR (individual) precipitation forecast:



JAS 2015 CMC1 (individual) precipitation forecast:



CPC

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