Office of the Washington State Climatologist Newsletter

August 7, 2007

New at OWSC

eWaCH.net - Update

The workshop summary and current action plan for enhancing Washington's Climate-Hydrology networks, as well as a mailing list is available at: *http://www.ewach.net*.

Current action list:

1. HCN modernization: provide recommendations to NCDC on the list of HCN sites slated for modernization.
    a. photo documentation of all 48 HCN sites – WFOs may have some
    b. rating them by quality and value
    c. considering additional needs (e.g. mountain sites) for recommendation to the State for modernization
    d. which sites need to be moved to be climate-quality
    e. GIS study – where they could be moved
2. Homogenize HCN and Coop precipitation records
    a. apply to the State for funding – would support Columbia Basin water supply planning
3. Soil moisture/SNOTEL/groundwater sensors
    d. Evaluate where best to deploy new sensors using VIC forecasting
    e. Approximate priority list
4. Quality check the citizen weather observers to determine which might be worth considering for climate monitoring purposes
5. Use gridded analysis to redesign network
6. Perform economic analysis to estimate the cost/benefit ratio for various levels of effort (NRCS has an economist who does this for SNOTEL/water supply forecasting)
7. Engage with federal and tribal partners

Historical PNW Windstorms

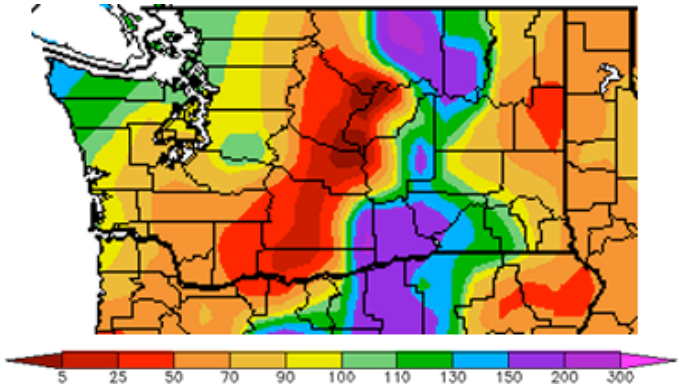
We are delighted to announce that Wolf Read's Storm King website is now being hosted on the OWSC website. Wolf has put in a great deal of personal time researching historical Pacific Northwest windstorms and has catalogued the information online. This wonderful resource is available on the "Climate Events" page and at: *http://climate.washington.edu/stormking/*

In this Issue

Climate Summaries

June

Cold air over the region in late June produced an unusual early summer snowfall in the Cascade Mountains (*http://www.atmos.washington.edu/marka/25june2007.snow.html*); Paradise at Mt. Rainier received 3". Near normal temperatures prevailed for the month with an average statewide temperature of 60.4°F, which was 0.4°F warmer than the 1901-2000 average. Heavy rain and penny sized hail fell over parts in Eastern Washington as some severe thunderstorms moved through in late June. Despite the rain, precipitation remains lacking and eastern Washington was recently given a D0 status (abnormally dry) by the Drought Monitor. Precipitation varied widely throughout the state with the percentage of normal precipitation ranging from 82 in the southwest interior, 135 for the Olympics, 52 for the northeast region, < 25% along the east slopes of the Cascades, and 143 for the Okanogan region.



June Percent of Normal Precipitation.
Source: High Plains Regional Climate Center
http://www.hprcc.unl.edu

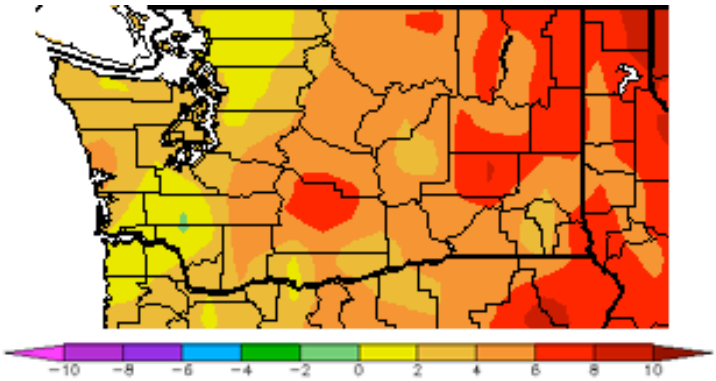
June Climate Summary for Various Cities

	Temperature (°F)			Precipitation (inches)		
City	Average	Normal	Departure from Normal	Total	Normal	% of Normal
Bellingham	57.6	58.6	-1.0	2.05	1.90	108%
Hoquiam	58.2	56.8	1.4	2.22	2.32	96%
Lind	64.4	63.4	1.0	0.54	0.59	92%
Mt. Rainier (Paradise)	44.9	44.3	0.6	4.43	3.90	114%
Quillayute	54.4	55.2	-0.8	4.57	3.50	131%
Republic	57.6	58.0	-0.4	1.22	1.75	70%
Seattle	60.3	60.6	-0.3	1.34	1.49	90%
Stampede Pass	49.9	48.9	1.0	3.45	3.87	89%
Spokane	62.2	61.6	0.6	0.59	1.18	50%
Walla Walla	67.8	67.3	0.5	1.48	1.16	128%
Wenatchee	66.1	66.3	-0.2	0.03	0.64	5%
Yakima	63.4	64.0	-0.6	0.21	0.62	34%

Normal is defined as the 1971-2000 average.

July

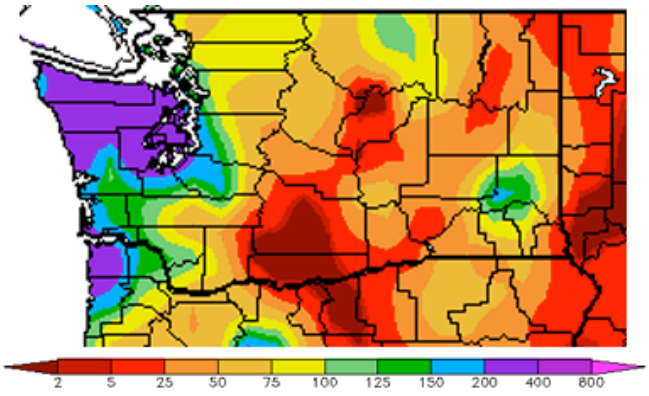
Record heat was the story for the first half of the month. Two separate heat waves during the 4-7th and 10-15th broke record high temperatures and some record high minimum temperatures across the state, making July 2007 one of the hottest July's on record for many locations. On July 10th, Hoquiam set a new all-time record high of 99°F, breaking the previous record of 98°F set 7/11/1961 (was also tied on 8/9/1981). Similarly, Seattle was poised to break its all-time record high, but in the end fell short by 3 degrees. Instead it was the 5th hottest on record (98°F) and despite the record heat of last July (98°F July 21, 2006), it was the hottest day on record since July 20, 1994, when the all-time record high of 100°F was set.



July Temperature (F) Departure from Normal.
Source: High Plains Regional Climate Center
http://www.hprcc.unl.edu

On July 13, thunderstorms sparked several wildfires in eastern Washington which were then fueled by high winds. Winds were in excess of 50 mph in Spokane (35-45 mph in many areas elsewhere) and blew dust from the West Plains into Spokane greatly reducing visibility.

By the second half of the month a storm typically reminiscent of November tapped into some tropical moisture in the southern Pacific and brought 7 consecutive days of rain for much of western Washington. A complete opposite from last years record lack of precipitation; Seattle (as recorded at Sea-Tac Airport) had its 5th wettest July with 1.44" of precipitation, Hoquiam's 6th wettest with 2.83", and Quillayute's 6th wettest with 4.38". Eastern Washington however, remained dry and although Spokane only received 57% of its normal precipitation, it was the 2nd wettest July in 10 years.



July Percent of Normal Precipitation.
Source: High Plains Regional Climate Center
http://www.hprcc.unl.edu

July Climate Summary for Various Cities

	Temperature (°F)				Precipitation (inches)		
City	Average	Rank (1 = hottest)	Normal	Departure from Normal	Total	Normal	% of Normal
Bellingham	64.0	n/a	62.4	1.6	0.86	1.35	64%
Hoquiam	64.7	1	60.1	4.6	2.83	1.30	218%
Lind	75.0	5	70.1	4.9	0.00	0.39	0%
Mt. Rainier (Paradise)	56.3	7	51.3	5.0	0.67	2.10	32%
Quillayute	61.3	2	59.0	2.3	4.38	2.34	187%
Republic	70.1	1	63.8	6.3	0.22	1.28	17%
Seattle	67.8	8	65.3	2.5	1.44	0.79	182%
Stampede Pass	60.5	5	55.4	5.1	0.21	1.89	11%
Spokane	75.6	2	68.6	7.0	0.43	0.76	57%
Walla Walla	79.8	n/a	74.8	5.0	0.29	0.72	40%
Wenatchee	78.2	4	73.2	5.0	0.00	0.30	0%
Yakima	75.4	2	70.1	5.3	0.01	0.22	5%

Normal is defined as the 1971-2000 average.

Selected July Temperature (°F) Records

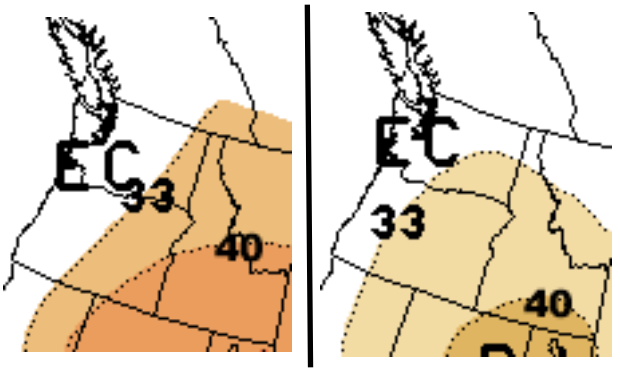
City	Record	Type	Previous Record	Record Began
Lacrosse	108 on July 5	max.	102 in 1968	1931
Spokane	101 on July 5	max.	100 in 1975	1881
Walla Walla	110 on July 5	max.	106 in 1968	1949
Boundary Dam	99 on July 6	max.	90 in 1985	1965
Priest Rapids Dam	106 on July 7	max.	103 in 1970	1956
Hoquiam	99 on July 10	max.	77 in 1961	1953
Sea-Tac AP	64 on July 10	high min.	62 in 1985	1948
Bellingham	94 on July 12	max.	89 in 1951	1949
Sea-Tac AP	98 on July 12	max.	95 in 1951	1948
Ritzville	72 on July 13	high min.	71 in 1930	1899
Colville	67 on July 15	high min.	63 in 1910	1899

Outlook

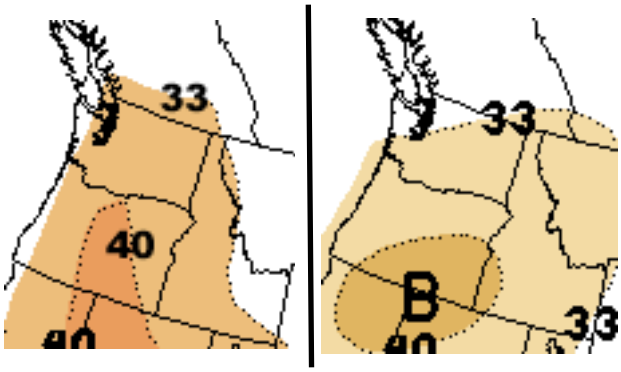
The Climate Prediction Center's 1-month outlook (see images below) for August indicates equal chances for above, below, or normal temperatures for Washington, except for the far eastern side of Washington where there is a slightly increased probability of above normal temperatures. Other than the slightly increased probability for below normal precipitation stretching from the Yakima Valley to Spokane, equal chance conditions are expected for the remainder of the state. The 3-month outlook for August-September-October suggests a slightly increased chance for above normal temperatures, except along the coast where equal chance conditions are expected. Equal chance precipitation conditions are expected in the Northwest quadrant of the state with a slightly increased probability of below normal precipitation for the remainder of the state.

In the tropical Pacific, sea-surface temperatures (SST) continue to remain consistent with ENSO neutral conditions in the central equatorial Pacific, where the correlation of SST and Pacific Northwest climate is strongest. The majority of the models are predicting below normal SST through next winter with a continuation of ENSO neutral conditions through summer and ENSO neutral to weak La Niña conditions thereafter. For other seasonal outlooks, including local temperature outlooks, see *http://climate.washington.edu/outlook.html*.

August Outlook
Temperature - Precipitation



Aug.-Sept.-Oct. Outlook
Temperature - Precipitation



EC Means equal chances for A, N, B.
A means above, N means normal, B means below.