Office of the Washington State Climatologist Newsletter

January 30, 2007

# Welcome!

Welcome to the first edition of the Office of the Washington State Climatologist Newsletter. This newsletter will be produced toward the end of each month with information on the current state of Washington's climate, including the current outlook and a review of notable weather events. The newsletter will be available on our website (*http://climate.washington.edu*) and by e-mail subscription.

## In this Issue



# New at OWSC

Recently, our FAQ has been updated and a few new products have been released, which are available on our website. One, is the ability to rank monthly precipitation totals by calendar year, water year or by season and view a graph of the results, for several cities scattered around the state. Another product is a map that displays all of the WA Dept. of Ecology and USGS streamflow gauges one one map. Simply click on a streamflow gauge to view its data page. Finally, use the NCDC file clean-up utility to remove all but the raw data from NCDC daily and monthly data sets.

# December Windstorms

After record breaking precipitation in November and an early season snowfall, December started out relatively calm for the first 10 days before several wind storms affected Western Washington (W. WA) on the 11th. Winds along the coast and north Puget Sound region were between 60 and 90 mph with the strongest recorded wind gust of 91 mph on Tatoosh Island. The interior region of W. WA had more moderate wind speeds of 35 to 50 mph in most areas with stronger gusts along the sound.

*Mercer Island Wind Damage 12/15/06, taken by Clifford Mass, University of Washington Atmospheric Sciences Dept.*

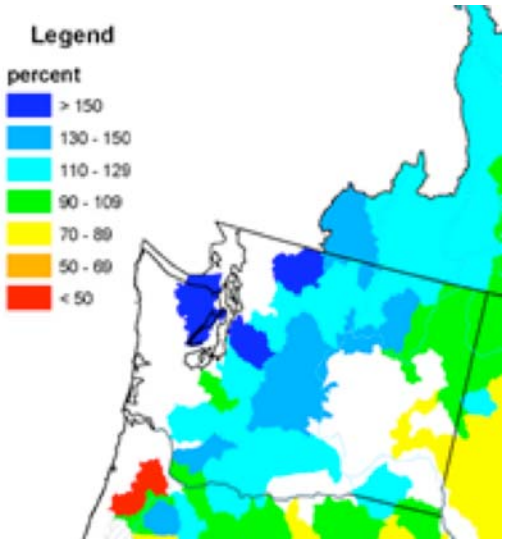
The windstorm on the 11th was only the beginning of the windy weather. Beginning on December 13th, a deep low pressure cyclone began propagating just to the northern tip of Neah Bay. By the night of the 14th and 15th, the storm had hit the “bulls-eye” in terms of its location for producing record winds in the Puget Sound region with a record pressure gradient of 22.3mb from Portland to Bellingham. The result, wind gusts between 60-80 mph along the coast, 40-70 mph for the W. WA interior, and 70-113 mph in the cascades.

It was the worst windstorm to strike the Northwest since the Inauguration Day storm on January 20, 1993. There was widespread damage from downed trees, close to 1.5 million electrical customers lost power forcing the electrical companies to bring additional support from states as far as Missouri, and 15 fatalities (10 of which were carbon monoxide poisoning due to generators).

**December 14-15 Max. Wind Gusts (mph)**

| Coast | | North Interior | | Puget Sound Region | |
|---|---|---|---|---|---|
| Destruction Island | 81 | Bellingham | 55 | Boeing Field | 56 |
| Grays Harbor | 65 | Ferndale | 45 | Everett (Paine Field) | 66 |
| Humptulips | 66 | Friday Harbor AP | 55 | Seattle-Tacoma AP | 69 |
| Ocean Shores | 73 | Padilla Bay | 85 | Tacoma (McChord AFB) | 69 |
| Quillayute | 59 | Oak Harbor | 69 | University of WA | 45 |
| Tatoosh Island | 78 | Smith Island | 76 | West point | 70 |
| **Strait of Juan De Fuca** | | **Cascades** | | **Southwest Interior** | |
| Buoy 88 N. of Dungeness Spit | 67 | Chinook Pass | 113 | Centralia | 48 |
| Ediz Hook (Port Angeles) | 68 | Crystal Mtn. | 85 | Montesano | 68 |
| Port Angeles AP | 52 | Mt. Rainier - Sunrise | 100 | Olympia AP | 53 |
| Port Townsend | 44 | Snoqualmie Pass | 75 | Thurston | 76 |

# December Climate Summary




*Percent of Normal Mountain Snow-pack as of January 1, 2007. Source: USDA, Natural Resources Conservation Service http://www.wcc.nrcs.usda.gov*

Statewide, temperature and precipitation was at or close to normal for the the month of December with an average temperature of 32.5F and 6.04 inches of precipitation. The wettest regions were the Puget Sound lowlands with 126% percent of normal and 155% for the Blue Mountains in Eastern Washington.

With record precipitation in November, the mountain snow-pack continued to be well above normal for much of the state. Most areas have received 50-70% of their normal peak accumulations with more than half the winter remaining.

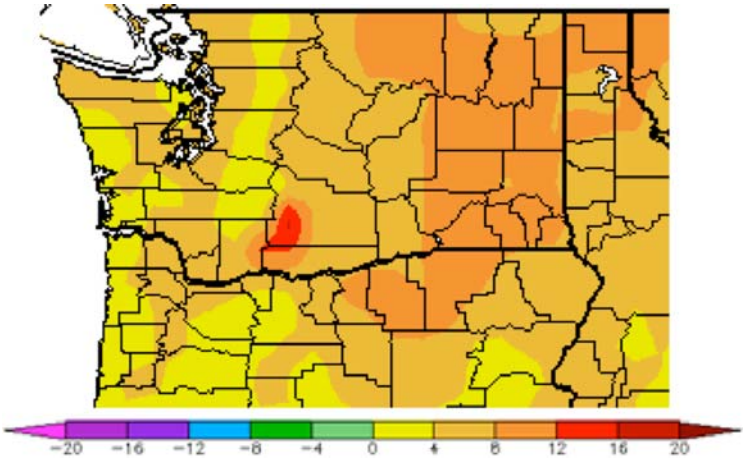
*Continued on page 3...*

## December Climate Summary for Various Cities

| | Temperature (F) | | | Precipitation (inches) | | |
|---|---|---|---|---|---|---|
| **City** | Average | Normal | Departure from Normal | Total | Normal | % of Normal |
| Bellingham | 41 | 39 | +2 | 3.91 | 4.75 | 82% |
| Hoquiam | 44 | 42 | +2 | 10.81 | 10.47 | 103% |
| Seattle | 41 | 41 | 0 | 7.30 | 5.62 | 130% |
| Spokane | 29 | 27 | +2 | 2.39 | 2.25 | 106% |
| Wenatchee | 27 | 28 | -1 | 2.52 | 1.42 | 177% |
| Yakima | 27 | 30 | -3 | 2.56 | 1.38 | 186% |

# 2006 In Review

### January




*January Temperature Departure from Normal. Source: High Plains Regional Climate Center http://www.hprcc.unl.edu/index.html*

Much of January was mild and wet, making it one of the wettest and warmest months on record. Out of 112 years, Washington had the 110th warmest and 111th wettest month on record. Storm after storm continued to bring rain to the state from mid December through much of January. In fact in Seattle, it rained (0.01" or more) a consecutive 27 days (Dec. 19 - Jan. 15) in a row, making it the second longest consecutive rain streak behind 33 days set in 1953. Likewise, from December 19th - January 17th, Spokane received 6.58" of precipitation making it the wettest 30-day period on record, breaking the old record set in 1897 with 6.56".

### February

The wet, mild pattern came to an end in early February giving way to cold windy weather. On February 3-4, strong winds battered the Puget Sound region with wind gust in excess of 65 mph causing over 200,000 electrical customers to lose power and the closing of the 520-Evergreen Point Floating bridge for the first time in 7-years.

Twice, on the 10th and 17th, high pressure east of the cascades combined with low pressure offshore, allowing easterly winds to approach 55 mph. Power was knocked out to thousands of customers, mainly in the cascade foothills.

Finally, towards the end of of the month, cold arctic air made its way over the entire state bringing temperatures down into the low 20's and teens in outlying areas in Western Washington and even colder east of the cascades.

**March**

Similar to last month, March began the month with two windstorms. The first windstorm on March 2nd, produced winds in the central sound between 40 to 50 mph power, knocking power out to a few thousand customers. On March 8th, sustained winds exceeded 50 mph, once again forcing the 520-Evergreen Floating Point Bridge to close. The storm also produced heavy snow in the mountains where up to 2 feet of snow fell.

Meanwhile, on March 8th, Eastern Washington finally saw its first significant snowfall of the year. Spokane received 2 to 4 inches of snow while areas north and east of Spokane received 6 to 8 inches. About a week later, a few inches of snow would fall, mainly confined to the valleys in the Northeast before giving way to spring-like weather for the remainder of the month.

**April**

A relatively calm and normal month this year for the entire state. However, snow levels managed to drop to about 500 ft and combined with the Puget Sound Convergence Zone, snow had fallen in the outlying areas north and east of Seattle. No major accumulations were reported.

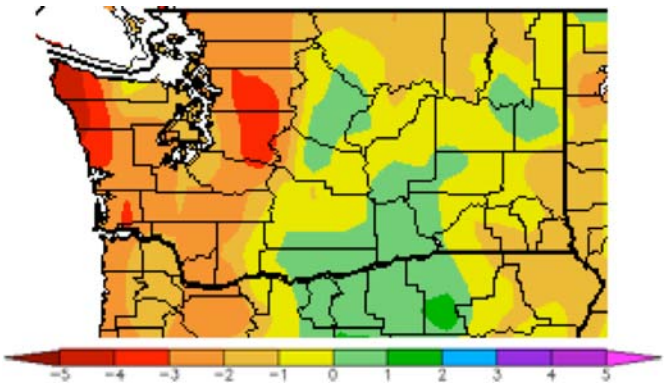
**May**

A large ridge of high pressure moved over the state inducing a heat wave between May 15 and 18. The most significant effects were felt in Eastern Washington where many record high temperatures were broken, some by almost 10 degrees as highs reached the 90's. The heat wave led to the rapid melting of mountain snow, causing rivers to spill their banks, flooding areas nearby.

**June**

June started out wet for much of the state as precipitation was above normal throughout the region. While Seattle received a healthy 1.67 inches, Spokane, with the help of some thunderstorms, had its 6th wettest June out of 126 years with 3.09 inches. A damaging thunderstorm made its way through Pullman up through Spokane producing hail up to 1" and heavy rains causing floods which washed out a road in Spokane and caused at least $2.5 million dollars in agricultural damage.

This would be the bulk of the rain as the rest of the summer was unusually dry.




*June - August Precipitation Departure from Normal.*
*Source: High Plains Regional Climate Center*
*http://www.hprcc.unl.edu/index.html*

**July - October**

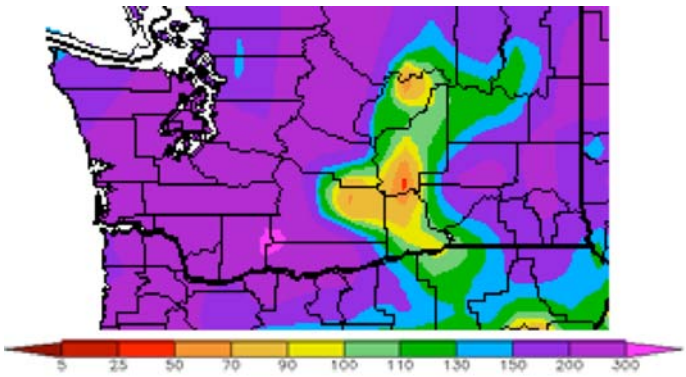
While thunderstorms brought large hail and rain to Eastern Washington in early July, dry weather would be the story through mid-September. The summer was unusually dry, prompting the governor to declare a drought in the Neah Bay region as their local reservoirs dried up (more information is available on our website *http://climate.washington.edu/events.html* ). Seattle had the second driest July-August period with only .08 inches precipitation.

**November**

After one of the driest summers in state history, record setting rainfall fell throughout Western Washington. Early in the month, a slow moving "pineapple express" storm brought heavy rains and mild temperatures causing twelve rivers to reach all-time record high flood crest levels.

While Eastern Washington was relatively unaffected by the initial rains in the beginning of the month, a line of storms would hit the state bringing heavy precipitation. By the end of the month, Seattle (15.63”), Hoquiam (21.38”), and Stampede Pass (21.38”) recorded all-time record monthly precipitation totals. While many areas in Eastern Washington did not break any monthly precipitation records, most areas were above normal. Spokane (4.38”) had measurable rain 20 of the 30 days in November. Only 1973 and 1983 had more days of rain for the month.

Besides the record rain, several wind storms battered the state. The first on November 3rd, affected the coast and northern sound with gusts up to 54 mph. The strongest storm, produced damaging winds from the 12th through 15th. Winds up to 86 mph on the coast and 60 mph around the western interior knocked hundreds of trees down and disrupted power for more then 100,000 people. Even east of the cascade was affected by the windstorm, which according to the Spokane NWS office, it “was the strongest windiest November since 1990”. Spokane recorded a maximum wind gust of 59 mph while other regions had gusts greater than 60 mph.




*November Percent of Normal Precipitation*
*Source: High Plains Regional Climate Center*
*http://www.hprcc.unl.edu/index.html*

To get further details regarding the November record rain and other wild weather that hit various parts of the state, visit our website at: *http://www.climate.washington.edu/events.html*

**December**

A fairly normal month when the strongest wind storm to hit the Northwest since the Inauguration Day storm of 1993 is taken out of the mix. Seattle set a new record wind gust of 69 mph while in a few areas, 100 mph gusts were observed. Widespread damage knocked out power to millions and major roads were blocked due thousands of fallen trees. Additional details about the storm and December weather, will be found above on previous pages.

* Special thanks to the Spokane NWS office for their great online newsletters and review of 2006 weather, where much of the Eastern Washington related information came from! Visit their website for more information: *http://www.wrh.noaa.gov/otx/*

# Outlook

The Climate Prediction Center's seasonal outlooks (see images below) for the winter and spring continue to suggest a chance of above normal temperatures for Washington (likely dominated by the current warming trend, despite El Niño). Even though precipitation has been above normal the last few months, the affects of El Niño are likely going to set in and tilt the odds towards below normal precipitation for the conclusion of winter and the beginning of spring.