YOUR NATIONAL WEATHER SERVICE SPOKANE QUARTERLY REPORT

VOL XIII, ISSUE 4
SEPTEMBER 2009

The Weather Watcher

of the Inland Northwest

www.weather.gov/Spokane

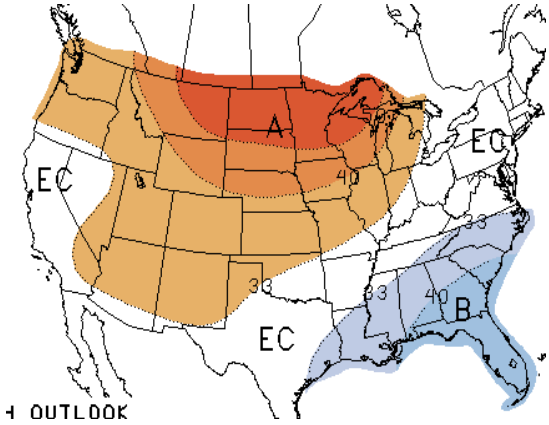
Winter Snow and El Nino

The past two winters delivered more snow to the Spokane area, and much of the Inland Northwest, than has ever been recorded in a two-year period. The winter total from October 2007 through May 2009 was just over 190" of snow. The previous two-year record was 165" set between October 1948 and May 1950. The question that begs to be asked is, what will this winter bring? Are we going to see another snowy winter? Can this coming year exceed the record for three-year snow accumulations? The current three-year record stands at 245", spanning from October 1949 and May 1952. If we do our calculations right, that means approximately 55" of snow needs to fall this winter to break this record. This is just a bit above the 46" average for the Spokane area. While achieving that total is possible, it becomes less likely with time as the region enter into a moderately-strong El Nino episode.

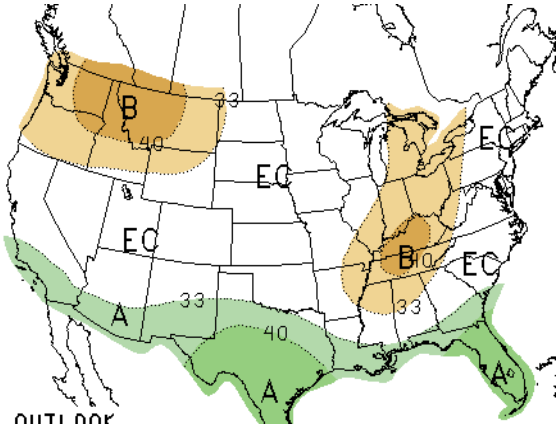
El Nino refers to the state of the ocean-atmosphere system in the tropical Pacific ocean, specifically to the unusually warm waters off the coast of Equator and Peru. So how does this relate to the weather in the Pacific Northwest, especially east of the Cascades? Even though this phenomenon is located thousands of miles south of our area, a moderate to strong El Nino often brings significant changes to our winter weather. Temperatures over the Inland Northwest usually surge above seasonal normals with higher snow levels, while precipitation amounts remain at or slightly below normal. The images below show how winters from December to February rank during a strong El Nino year. For more details and larger images, visit the Climate Prediction Center at http://www.cpc.noaa.gov/products/predictions/threats2/enso/elnino/.

So does this guarantee our upcoming winter will be warmer than normal with normal or below normal precipitation? The last moderate El Nino we saw was in the winter of 2002-03. That year saw 21.2" inches of snow. The last strong El Nino was in 1997-98 and that year the area received a paltry 18.3". While there are no guarantees in weather, the upcoming El Nino episode suggests our chances for breaking the three-year snowfall record are remote. ☼ *Jon Fox*

Climate Prediction Center
3-month Temperature Outlook for December-February



Climate Prediction Center
3-month Precipitation Outlook for December-February



Inland Northwest Winter Outlook 2009-10

- Better chance of above normal temperatures
- Better chance of at or below normal precipitation

INSIDE THIS ISSUE:

Editor's Notes

Mark your calendars. The first day of fall or the autumnal equinox is September 22, 2009 @ 21:18 GMT or 2:18 pm PDT. Daylight Savings Time will end on Sunday, November 1st.

September is also National Preparedness Month and NOAA Weather Radio Month. It's time to prepare for winter. Remember NOAA Weather Radio - your source of weather information 24/7.

We made changes to our newsletter distribution. With each issue available online, we limited our mailing list. We encourage you to read our newsletter on our web page. But if you would prefer a paper copy, please contact us and we will keep you on the mailing list.

For any questions or comments on the newsletter, please contact Robin @ (509) 244-0110 ext. 223 or email nws.spokane@noaa.gov.

The main purpose of this publication is to keep our readers informed about our services and programs, and to recognize those who help us with our mission, including weather spotters, co-op observers, media, and emergency management.

All articles are written by the NWS staff. A big thanks goes to Jon Fox, Ron Miller, Kerry Jones, & Bob Bonner.

Are your gauges ready?

With winter just around the corner, we would like to remind all our observers to review the correct procedures for measuring snowfall, snow depth, and the water equivalent of snow. Remember to winterize your gauges before the first big freeze or first snow. Whether you have a 4 or 8 inch rain gauge, remember to **remove the funnel and the measuring inner tube**. Set out your snow board and have your ruler or yard stick ready.

The NWS Spokane has a VHS tape or a DVD on the correct procedures of measuring the water equivalent of snow. If you would like to obtain a copy to review, please contact Bob Bonner at the NWS office.

There is also online training on measuring winter weather precipitation; it's available on the CoCoRaHS web page at http://www.cocorahs.org. Click on training slide shows at the right. Also NWS Spokane will host remote CoCoRaHS winter refresher courses over the next several months. Look for the latest schedule on our web page or via email in the coming weeks. ☼ *Robin Fox & Bob Bonner*

Staff News

Hydrologist, Royce Fontenot has set his sights on warmer climates. He transferred to Slidell, LA this summer to the Lower Mississippi River Forecast Center.

Warning Coordination Meteorologist, Kerry Jones, will be moving south as well. He and his family will return to the Albuquerque, NM where he will take on the position of NWS Warning Coordination Meteorologist in his home state. He plans to depart Spokane by mid October.

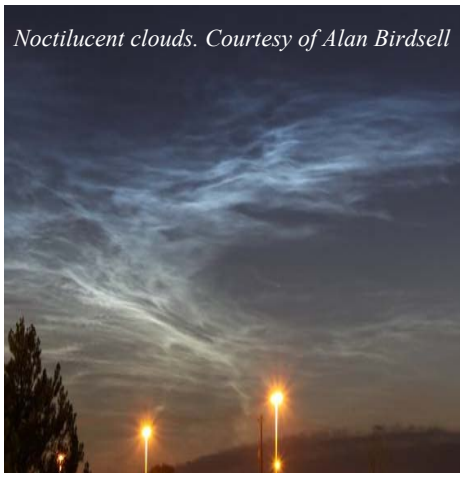
We wish Royce, Kerry and their families the best of luck in their new NWS positions. ☼ *Robin Fox*

Summer Weather Statistics

Wenatchee Water Plant	Jun	Jul	Aug	Total
Avg High Temp	82.3	91.6	88.9	87.6
Departure from Norm	+2.2	+3.8	+1.7	+2.6
Avg Low Temp	57.0	62.8	61.4	60.4
Departure from Norm	+1.5	+1.9	+1.2	+1.5
Total Precip	0.35	0.19	0.00	0.54
Departure from Norm	-0.34	-0.11	-0.41	-0.86
Total Snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0
Lewiston Airport	**Jun**	**Jul**	**Aug**	**Total**
Avg High Temp	79.9	91.6	88.3	86.6
Departure from Norm	+2.0	+4.1	+0.7	+2.3
Avg Low Temp	54.3	61.1	61.2	58.9
Departure from Norm	+0.7	+1.9	+1.9	+1.5
Total Precip	0.82	0.48	1.76	3.06
Departure from Norm	-0.34	-0.24	+1.01	+0.43
Total Snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0
Spokane Airport	**Jun**	**Jul**	**Aug**	**Total**
Avg High Temp	75.1	85.5	83.1	81.2
Departure from Norm	+1.2	+3.0	+0.5	+1.6
Avg Low Temp	51.3	58.8	57.6	55.9
Departure from Norm	+2.1	+4.2	+3.1	+3.1
Total Precip	1.18	0.48	0.74	2.40
Departure from Norm	0.00	-0.28	+0.06	-0.22
Total snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0

Answer: Sept. 23, 1926

The Strange and Unusual in Weather



Noctilucent clouds. Courtesy of Alan Birdsell

On the evening of July 23rd, Alan Birdsell spotted this unusual sight outside his window in western Spokane. The streaks of clouds in the sky were glowing in a pale blue! The same "night-shining" clouds were seen at the NWS office in the wee morning hours before the weather balloon launch. This wasn't from street lights, passing cirrus clouds, or the Northern Lights. The phenomena are called noctilucent clouds. These clouds are located much higher (about 50 miles) in the sky than typical clouds (0-12 miles). They're the Earth's highest clouds, found in the mesosphere where the atmosphere meets space. Noctilucent clouds are most frequently visible at higher latitudes during the summer, at about 50-70º N. These clouds are composed of ice on dust, and are faint to see during the day. What makes them visible is the reflection of sunlight from the other side of the globe. The best time to view them is after sunset or before sunrise during twilight. ☼ *Ron Miller* http://www.wrh.noaa.gov/otx/photo_gallery/Noctilucent_Clouds.php

Summer 2009 in Review

This past summer saw the usual number of warm, sunny days and mild nights. Overall, it was a bit warmer than normal. The summer of 2009 ranks 10 out of 85 for Wenatchee, 36 out of 129 for Lewiston, and 27 out of 129 for Spokane. But in general, it was still cooler than the recent summers of 2003-2007. Meanwhile Seattle and Phoenix were experiencing their hottest July ever, while folks from Iowa to Pennsylvania saw their coldest July ever.

June started out on the warm side with temperatures reaching near 90º on the 3rd and 4th. This warm spell came to a quick end as a cooler and unstable air mass moved into the area. Strong thunderstorms were prevalent on the 5th through the 7th. The storms on the 6th were noteworthy as 4 tornadoes were spawned between Creston and Wilbur in eastern Washington. These tornadoes were fairly weak and did not cause any damage, but there were several impressive photos taken of them. They can be seen at: http://www.wrh.noaa.gov/otx/photo_gallery/Jun6_Creston_tornadoes.php .

Creston twin tornadoes. Courtesy of Dawn Nelson

There were more strong thunderstorms on the 12th with nickel-sized hail and funnel clouds reported near Ephrata and Moses Lake. Heavy rain from thunderstorms dropped 1.41" in 40 minutes near Northport, WA on the 15th. An observer at Inchelium picked up 2.90" from storms. The heavy rains caused some road washouts in the area. A very cold Pacific storm then moved into the area with heavy rains on the 19th. Spokane Airport only reached a high temperature of 55º on the 21st. But warmer weather quickly returned with near normal temperatures to finish out the month.

While many **July** 4th weekends in the Inland Northwest are less than summer-like, this year the holiday weekend was, with temperatures in the 90s across the much of the region. A cold front for the start of the new work week brought rain and much cooler temperatures to the region. Some locations struggled to reach 70º on the 8th. After a brief warm spell, an even colder air mass moved into the area. Thunderstorms that moved in with the front brought 1 inch hail stones to Kettle Falls. Behind the front, Pullman and Kellogg only reached a high of 62º on the 13th; not exactly mid-July weather. But after this cold episode, summer took hold on the Inland Northwest. Temperatures for the remainder of the month would be in the 80s and 90s with a few 100ºs in the usual places like Lewiston, which hit 101º on the 22nd. Thunderstorms on the 25th brought more heavy rain and small hail to the communities of northeast Washington. On the evening of the 27th, thunderstorms from Canada moved across the northern Panhandle. One of these storms produced strong winds knocking down trees in the town of Priest River. The next afternoon, another strong thunderstorm developed near Priest Lake. This storm dropped 1 inch hail near Coolin. Damaging winds from the storm knocked down trees from Priest Lake to Newport. The worst damage occurred in a small community just east of Newport, where numerous trees were blown down, four of which landed on a house.

August started off with the hottest weather of the summer. Readings on the 1st included 107º at Wenatchee, 106º at Lewiston, Omak, Moses Lake, Ephrata and La Crosse, and 103º at Ritzville and Colville. A weak cool front provided some relief, as temperatures dropped back into the 90s for the remainder of the first week of August. A heavy rainstorm moved into the area from the south on the 6th and 7th. This storm brought widespread rain to the Panhandle and extreme eastern Washington. Lewiston received a total of 1.41" of rain from the event and had a high temperature of only 68º on the 7th, well below the normal of 89º. Before summer heat could return, another cold front moved into the region a week later. Once again a number of locations had highs only in the 60s on the 14th. But the heat would return. Temperatures quickly jumped back into the 90s and lower 100ºs. But a couple of weaker cool fronts would provide breaks in the heat on the 23rd and 29th. As a result, while the average temperatures for the summer would show it to be warmer than normal, the frequent Pacific fronts and associated rainfall would provide breaks in the heat about every 7 to 10 days. ☼ *Ron Miller*

SPOTTER REPORTS: 509- 244-0435 or *espotter.weather.gov*

Remember your Fall Spotter Checklist

Snow: first event and then... 2"+ valleys and 4"+ mountains
Strong Winds: 30 mph+ or damage
Reduced Visibility: under a mile due to rain, dust, fog, snow, etc.
Any Flooding
Hail: pea size or larger
Heavy Rain: Showery: 1/2" + in 1 hr Steady Rain: 1"+ in 12 hrs or 1.5"+ in 24 hrs
Any mixed precipitation
Travel Problems or Any Damage: due to severe or hazardous weather.

You are invited to the

National Weather Service Spokane

Open House

Saturday, October 3rd
10am-4pm

Free tour of the facility...Watch a weather balloon launch...
Meet the meteorologists.

Winter Weather Awareness

Winter weather awareness week is scheduled for Oct 18-24th across Washington, Idaho and Oregon. This will be a great time to start preparing your home, office, vehicle and property for the upcoming winter storms of wind, snow, rain and cold. Here are things to keep in mind and add to your preparedness list for this fall:

- Weatherize your vehicle now. Make sure you have adequate tires, chains or sand. Remember your ice scraper and brush.
- Stock up on your winter safety kit- including a blanket, batteries, food, and water in your car.
- Winterize your home - including storm windows, doors, weather stripping, and insulation.

The Weather Watcher
Of the Inland Northwest

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Trivia: When was Spokane's earliest first snowfall?