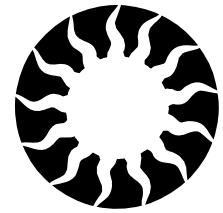


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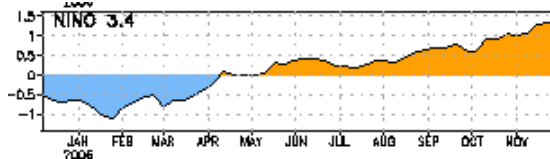


El Niño is Still Here

The National Oceanic and Atmospheric Administration's (NOAA) Climate Prediction Center (CPC) is currently forecasting the weak El Niño conditions to intensify to a moderate El Niño as sea surface temperatures across the eastern equatorial Pacific continue to rise. The unusual events of November were not typical El Niño conditions, which included flooding at the beginning of the month and a cold snap at the end of the month. Yet, more typical El Niño conditions are expected to develop for the second half of the winter. This includes above average temperatures and a greater chance of below average precipitation, not only for the Inland Northwest but for much of the northern tier U.S., as seen in the images below.

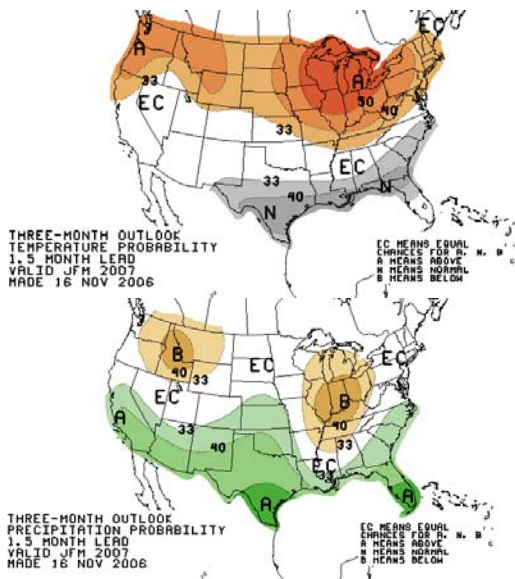
El Niño is a disruption of the ocean-atmosphere system in the Tropical Pacific having important consequences for weather and climate around the globe. NOAA has primary responsibilities for providing forecasts to the Nation, and a leadership role in sponsoring El Niño observations and research. NOAA operates a network of ocean buoys that measure temperature, currents and wind in the equatorial band of the Pacific Ocean. These buoys transmit the data to forecasters and researchers around the globe in real time.

Sea Surface Temperature Anomalies



The graph above shows the temperature trends of the sea surface temperatures (SST) in the eastern equatorial Pacific Ocean. Notice the positive anomaly or warming trend (ridge) after June 2006 in the graph. This is indicative of warming ocean water off the Pacific coast of Peru, and the sign that El Niño is underway. Anticipate the weather patterns over the Pacific Northwest to respond to the El Niño signal through the rest of the winter.

For more information on El Niño and the long range forecasts, see <http://www.elnino.noaa.gov/> & http://www.cpc.ncep.noaa.gov/products/prediction/slong_range/lead02/off_index.html for details. ☀
Laurie Koch



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Editor's Notes

It doesn't matter if it's snowing, raining or just foggy, when temperatures hover around the freezing mark, the roadways get slick and icy. It is important to remember your winter driving rules. Reduce your speed and drive defensively. Having chains and a winter survival kit with you is also important, especially if you plan to go over the passes. A winter survival kit can simply be a flashlight, extra food and water, matches, blankets and warm clothes. A NOAA weather radio is also handy to have as well!

For any questions or comments on the newsletter, please contact Robin or Kerry at (509)244-0110 extension 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, coop observers, media, and emergency management.

All articles are written by the NWS staff. A special thanks to Laurie Koch, Ron Miller, Kerry Jones, Robert Tobin, and Bob Bonner for their contributions.

Ten years since Ice Storm

It was over ten years ago when a devastating ice storm brought much of Spokane and Kootenai counties to a virtual standstill. Several hours of freezing rain occurred on November 19, 1996, and Spokane was among the hardest hit areas. Up to an inch of ice was deposited or accreted on trees, roads, buildings and vehicles. The severe ice storm resulted in four fatalities, and damage was estimated at over 22 million dollars. Needless to say, transportation corridors were extremely affected, many structures collapsed or were otherwise severely damaged, and businesses and schools were shut down for weeks. Over 100,000 homes and businesses lost power, and many people were with-

Ice Storm 1996 @ NWS Spokane Office



out power for up to two weeks. It remains one of the most severe ice storms on record. For more information on the Ice Storm and freezing rain, see <http://www.wrh.noaa.gov/otx/cases/19Nov1996/icestorm.php> ☀ Kerry Jones

Skywarn Recognition Day



It was a chilly day on Friday, December 1st, 2006, when the local ARES/RACES group set up their equipment at the Spokane NWS office for the 7th annual Skywarn Recognition Day. Antennas were hoisted on the weather office property, while amateur radios units were assembled in the office's conference room. Amateur radio operators, otherwise known as Hams, staffed the radios for 24 hours from 4 pm Friday until 4 pm Saturday. This exercise was performed in over 150 other weather offices across the country. The goal of the event is to make as many radio contacts as possible across the U.S. and world to retrieve weather observations; it is like a contest. The Spokane ARES/RACES group was able to make around 119 contacts, including one to American Samoa and the NWS Honolulu office. This annual event promotes a better working relationships between the NWS and Ham radio groups, who are a vital source of communication in times of hazardous or extreme weather. Thanks to the Spokane ARES/RACES group for their dedication and service. For more, see <http://www.arrl.org> and <http://www.crh.noaa.gov/hamradio/index.php>.

☼ Robin Fox and Kerry Jones

Staff News

There have been a few more changes in the NWS Spokane office in the past several months. Meteorologist Intern, Steve Bodnar arrived in October from Norman, OK, where he worked at Weather Bank, Inc. He enjoys skiing and playing disc golf and looks forward to settling in Spokane.

With the departure of Hydrologist, Charles Ross to Portland, OR, a new hydrologist will be arriving by February 2007. He is Royce Fontenot, and he will be moving to Spokane from Barrow, AK with a specialty in climatology.

Lastly, forecasters Laurie Koch and Robin Fox will be job sharing a Forecaster position in the Spokane office in order to spend more time with their families. We welcome the new staff and changes to the Spokane Weather office. ☼ Robin Fox

November Rain Records

A series of strong, very wet, and warm Pacific weather storms brought copious amounts of precipitation to portions of eastern the Inland Northwest during November 2006. The most active period was observed from November 2nd through the 7th, when well over a foot of rain fell along the east slopes of the north Cascades and the mountains of North Idaho, leading to significant runoff and flooding. Other notable precipitation totals for the month are included in the table below. ☼ Kerry Jones

	NOV 2006	% of normal
Bear Mountain SNOTEL	37.00	264%
Stevens Pass	31.10	n/a
Holden Village	19.96	299%
Stehekin	18.71	n/a
Lake Wenatchee S.P.	14.78	483%
Leavenworth	12.76	304%
Plain	12.20	261%
Sandpoint	11.35	239%
Newport	8.19	240%
Bonnors Ferry	7.94	n/a
Mazama	7.57	218%
Coeur d'Alene	7.47	223%
Entiat	5.78	281%
Boundary Dam	5.75	177%
Pullman	4.87	172%
Winthrop	4.68	235%
Spokane Int'l Arpt	4.38	196%
Rosalia	3.82	162%
Colville	3.73	164%
Wenatchee	3.04	224%

Answer: El Niño is Spanish for the "little boy" or "Christ child", which was coined by South American fishermen for the tendency of the event arriving around Christmas.

Coop corner

We are asking all coop observers to transmit their observations to the NWS Spokane office. This will allow forecasters to access the data in real time and have an input to the forecast process.

We have two methods in which this can be accomplished. **1.** One way requires a phone, you call a toll free telephone number and input your temperature and precipitation data. **2.** Another way requires a computer and access to the internet; you can log into WxCoder and input your data.

This is not mandatory, however we strongly recommend that you participate. Please contact Bob Bonner at 509-244-0110 x225 for more information or to leave a message. You can also send an email to Robert.bonner@noaa.gov ☼ Robert Bonner

Autumn in the Inland Northwest

While the days get shorter, the sunny skies and mild temperatures made this autumn the best time of year. **September** started off in the usual fashion: hot. The first week of September is typically summer's last gasp, and this year was no different. Most locations saw temperatures reaching the 90s, with Lewiston topping out at 97° on the 5th. But the warm weather eventually gave way to the first cool Pacific air mass in the middle of the month. Daytime temperatures dropped into the 60s and even the mid 50s. What little precipitation we had during the month fell in this period. High pressure built back into the area for some beautiful weather by the end of September. Temperatures warmed back into the 70s and lower 80s, which is as much as 15°s above average for that time of year.

October is typically the month where the Pacific "storm door" starts to open for our region. While the weather systems are typically not very wet, they are more frequent, which was the case in 2006. Aside from a few warm days to start the month, temperatures generally remained near normal for the month, with daytime readings typically in the 50s and 60s. A fairly strong storm on the 15th and 16th brought the bulk of the month's precipitation. Deer Park (near Spokane) picked up 1.58" of rain while Sandpoint received 0.92". The 0.48" of rain at Spokane Airport tied a daily rainfall record for the 15th of October. Temperatures remained near normal through the rest of the month until Halloween approached. Once again, a cold weather system moved into the region dropping our temperatures significantly below normal. Mountain sites picked up their first significant snowfall of the season. While the past 2 years have seen fairly mild Halloween's, 2002 and 2003 both saw a pattern similar to 2006, with temperatures at the end of October dropping into the 30s with overnight lows in the teens and single digits.

The weather pattern became much more active during **November**. A persistent and strong jet stream from the southwest brought abundant moisture into the Pacific Northwest. Record flooding occurred west of the Cascades. The strong winds resulted in a significant rain shadow for much of eastern Washington and north Idaho, while the mountainous Cascades and Panhandle regions saw copious rainfall. In the Cascades, the lack of a snow pack allowed nearly all of the rain to runoff into the streams and rivers. Typically with a winter snow pack, much of the rainfall would have been absorbed by the snow and retained within the pack. The heaviest rainfall occurred in the central Cascades of Washington, causing the Stehekin and Wenatchee rivers to flood. The NWS observer in Plain, Washington recorded 3.78" of rainfall in 24 hours on the 6th of November. This broke the all-time 24-hour precipitation record in Plain of 3.36" set on October 29th of 1967. The 3-day total rainfall for the event was 5.96" at Plain.

In the Idaho Panhandle, flooding also occurred in a few locations in Bonner County. Lightning Creek flooded and washed out a road, cutting off several residents. A mountain sensor at 5400 feet elevation measured 8.4" of rain on the 6th, with a 2 day total of 14.2 inches. The total precipitation for the month was 37", which compares to an average of 14" for this site.

Even after this event wound down, the parade of storms continued. Spokane Airport had measurable rain on 20 of the 30 days in November. Only 2 other years (1973 and 1983) had more days of rain during this month. In addition to precipitation, many of these storms

brought a great deal of wind. For Spokane, this was the windiest November since 1990. The strongest winds occurred on the 13th. Several locations experienced wind gusts greater than 60 mph! Some of the strongest wind gusts included 71 mph near Moscow, 62 mph in western Whitman County, and 59 mph at the Spokane Airport.

By the end of the month, the somewhat mild and windy weather had definitely taken a turn towards more colder and snowy. A very strong Pacific storm moved across the area on the 26th, interrupting travelers attempting to return home at the end of the Thanksgiving weekend. It brought heavy snow to much of the area, with as much as 5 to 10" of snowfall to valley locations. In it's wake, cold arctic air came howling down the Okanogan Valley. Wind gusts up to 59 mph were observed. Temperatures on the morning of the 29th were the coldest of the year thus far. Priest Lake reported a low temperature of -7 while Mazama and the Waterville Plateau dropped to -11.

When it was all over, November 2006 will go down in the books as one of the stormier months in the Inland Northwest. The 4.38" of precipitation at Spokane made it the wettest November since 1983!

☀ *Ron Miller*

Autumn Weather Statistics

Wenatchee Airport	Sep	Oct	Nov	Total
Avg High Temp	78.9	62.8	42.2	61.3
Departure from Norm	+2.4	+1.1	-1.7	+0.6
Avg Low Temp	52.7	41.1	29.0	40.9
Departure from Norm	+1.8	+1.0	-1.4	+0.4
Total Precip	0.04	0.46	2.02	2.52
Departure from Norm	-0.39	+0.01	+0.87	+0.49
Lewiston Airport	Sep	Oct	Nov	Total
Avg High Temp	79.7	62.2	50.3	64.1
Departure from Norm	+3.0	+0.3	+3.5	+2.3
Avg Low Temp	51.1	39.2	35.3	41.9
Departure from Norm	+0.2	-2.0	+1.2	-0.2
Total Precip	0.67	0.42	2.41	3.50
Departure from Norm	-0.14	-0.54	+1.20	+0.52
Spokane Airport	Sep	Oct	Nov	Total
Avg High Temp	74.5	57.5	42.6	58.2
Departure from Norm	+2.0	-1.0	+1.5	+0.8
Avg Low Temp	47.9	36.5	29.4	37.9
Departure from Norm	+2.0	+0.7	+0.7	+1.1
Total Precip	0.32	0.93	4.38	5.63
Departure from Norm	-0.44	-0.13	+2.14	+1.57
Total Snowfall	0.0	Trace	8.4	8.4
Departure from Norm	0.0	-0.3	+2.0	+1.7

Remember your Winter Spotter Checklist

Snow—2" in valleys
6" in mountains

Mixed or freezing precipitation

Reduced Visibility — under a mile due to snow, fog or rain, etc.

Flooding—of any kind

Strong Winds—30 mph+ or damage

Hail— pea size or larger

Heavy Rain— Showery— 1/2+" an hour
Steady Rain- 1" in 12 hrs or 1.5"+ in 24 hrs

Travel Problems or Any Damage due to hazardous weather.

Fire Season 2006



A view of the Tripod fire that burned in western Okanogan county for much of the summer.

The Inland Northwest experienced generally wet conditions from last winter into the early spring with an abundant snow pack under weak La Niña conditions. This can delay the onset of fire season by several weeks, but warm late spring weather canceled the effects of winter and early spring precipitation. Surges of moisture from the south produced numerous thunderstorms with abundant lightning across the region late in June and into early July. The fuels, that would carry fire, did not reach critically dry levels until around the middle of July, which is about normal. Then by this time, the thunderstorm track had shifted south of the region, spanning across southeast Oregon, southern Idaho and into Montana.

Fun Weather Events

Mark your calendars for the **Kids Love Clean Air** event at Mobius—the Spokane Children’s Museum on February 3, 2007 from 1-4 pm. It will be an interactive, hands-on event for kids of all ages with representatives from the National Weather Service, Spokane County Air Pollution Control Authority (SCAPCA), the American Lung Association and the Spokane Transit Association (STA).

The **Spokane Ag Expo** is scheduled for February 6-8, 2007 at the Spokane Arena. Stop by and visit us at the National Weather Service booth. ☀ *Robin Fox*

While the Inland Northwest had fewer thunderstorms and fewer fire starts, we did experience one of the longest lasting fires. The Tripod Complex in the Pasayten Wilderness, part of the Loomis State Forest, was started by lightning in late July and was still being fought in late October that burned over 111,000 acres. Another large fire in Washington was the Columbia Complex near Pomeroy that burned over 109,000 acres of farmland and forest in the Blue Mountains. For the state of Washington as a whole, there were 1541 wild-fires reported and a total of 427,546 acres burned. In the Idaho Panhandle, there were over 10 major wild-fires with over 58,000 acres burned. ☀ *Robert Tobin*

The Weather Watcher

Of the Inland Northwest



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Trivia: What does the term El Niño mean?

Happy Holidays from NWS Spokane

