YOUR NATIONAL WEATHER SERVICE SPOKANE QUARTERLY REPORT

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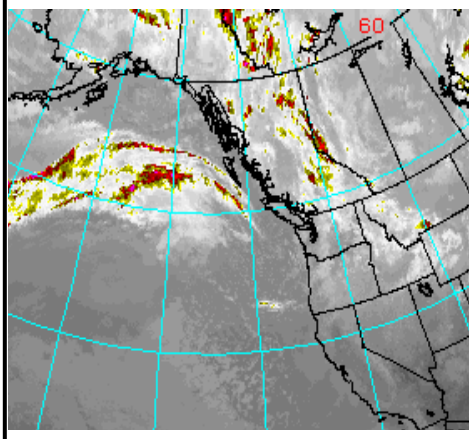
The Weather Watcher

of the Inland Northwest

www.wrh.noaa.gov/Spokane

Heavy Rains Slow Down the Fire Season

August is one of Spokane's driest months, normally receiving less than 4% of the annual precipitation. It might seem odd then for a spotter to find water in his rain gauge day after day. This is exactly what happened to many people across the region since late August. As the persistent summer high pressure ridge broke down, a moist westerly flow set up and allowed a series of weather systems to roll across the Inland Northwest. In some places, this produced over 300% of August's average rainfall! The largest rainfall amount compared to



Infrared satellite showing the storm track heading into the Pacific Northwest late this summer.

normal was in Deer Park, Washington; the observer received 2.54 inches of rain, which is 1.91 inches above average. Both the Spokane and Lewiston areas each ended up an inch over normal in August. The heaviest rain events occurred on August 19th, when reports of flooding were received across extreme eastern Washington. The city of Colville at one point reported up to two feet of water on portions of Hwy 20 and mudslides due to the rain trapped 65 people near milepost 150. The increased showers were a welcome sight, helping to slow down the wildfire season. Hopefully, this wet trend will continue through the autumn, giving a head start on accumulating our water reserves for this coming winter. ☼
Jeremy Harbeck

While the focus for wildfires in the U.S. was along the east slopes of the Washington Cascades late in the summer, it could have been much worse. Overall there were 1432 fires reported in the state of Washington in 2004 that burned 92,021 acres. By comparison the 10 year average is 1371 fires for 130,943 acres. In addition, over 6 million acres were burned by wildfire in the state of Alaska this summer.

Mill Canyon fire near Coulee Dam on Aug 3 by Eric Wisch, Fire Behavior Analyst

The 2004 fire season was shaping up to be a very active one. The winter snow pack across the region was below normal, and what snow was available melted 2-4 weeks ahead of schedule due to above normal temperatures in March and April. Spring moisture was below normal from the coast through the Cascades. This put a bulls-eye of large fire potential mainly along the east slopes of the Cascades. Thunderstorms in late June and early July did indeed start many fires.

So what happened? Initial attack by fire crews suppressed many fires while they were still very small. Although a few, like the Pot Peak fire and the Fischer fire did grow large. Wet thunderstorms in late July and August brought welcomed rains to the northeastern portions of the region, suppressing an already quiet fire season in those areas. Late in August, a deep low pressure system arrived. This system brought ample moisture to the east slopes of the Cascades, helping fire fighters to contain the large fires. ☼ *Bob Tobin*

Smoke plumes from the Pot Peak Fire in the Northern Cascades courtesy of Wenatchee National Forest

INSIDE THIS ISSUE:

Editor's Notes

In one month, we were talking about dust storms and then heavy rain. Our wacky summer is coming to a close with autumn weather well underway. It won't be long before our mountains get a thick blanket of snow!

Just a reminder, Winter Awareness Week for the Inland Northwest runs from Oct 4-8. Please visit our web site or listen to your weather radio for daily statements during that week.

If there is something you would like to see in the next newsletter or if you have comments about a past issue of the Weather Watcher, please contact Robin Fox or Ken Holmes (509) 244-0110 extension 223.

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

All articles are written by the NWS staff and close contacts. A special thanks to Ron Miller, Bob Bonner, Bob Tobin, John Werner, Ken Holmes and Jeremy Harbeck for their contributions.

An Action Packed Summer

Answer: A Blue Moon is the 2nd full moon in calendar month. The last one was observed in July 2004. It occurs about every 2 1/2 years.

As with many summers in the Inland Northwest, the summer of 2004 will likely be known for its variety. It ranged from hot and dusty days to cool and wet ones; there were thunderstorms with hail, tornadoes, flooding, and even a dust storm or two.

JUNE was a tale of 2 different months. The first half was mainly cool and showery. Nearly all of the first 15 days saw below normal temperatures, with most of the precipitation for the month falling in the first 2 weeks. But the weather pattern changed by mid-month, and the area was dominated by high pressure for the remainder of June. Temperatures soared into the 90s with Lewiston reaching the century mark on the 23rd, two weeks ahead of normal. The 25th was an active day. Very wet thunderstorms caused flash flooding in Republic, along with hailstones nearly 2" in diameter. Just a few hours later a tornado touched down near Priest Lake.

In **JULY**, the hot weather pattern persisted. Aside from a brief cool down during the 2nd week of the month, every day in July was warmer than normal. Temperatures in the 90s were commonplace, with Lewiston reaching triple digits 5 times. Thunderstorms on the 18th and 19th brought most of the total rainfall for the month to the area. Meanwhile, wildfires in the Cascades kept the skies smoky for residents along the east slopes.

AUGUST started off with a few more hot days, but then a very cool Pacific weather system moved into the area. Temperatures dropped about 25 degrees, with Wenatchee and Spokane unable to even reach 70° on the 6th. Spokane also picked up an inch of rain from wet thunderstorms on that day, while Wenatchee had a 3-day total of 0.39". While this cool spell was welcome relief for firefighters, it was short-lived. Only 3 days later temperatures were once again above normal and would remain so for the next 2 weeks. In fact, this period saw some of the hottest weather of the summer. Wenatchee hit 101° on the 13th for its only triple digit day of the summer. Spokane's mercury reached 97° two days in a row with low temperatures barely making it below 70° at night. Once again, very wet thunderstorms affected the area at times. Colville was the recipient of one such storm on the 18th, with 1.90" of rain falling in just a few hours!

If the first cool spell was a quick-hitter, the second one came to stay. Temperatures dropped into the 60s and lower 70s as three Pacific storms moved through the area. To give an idea of the rarity of this pattern, Spokane remained below 70° for 5 consecutive days. Only 2 other Augusts (dating back to 1881) had longer cool spells than this. Also, measurable rain fell in Spokane on those 5 consecutive days, second only to August of 1903 which saw 6 rainy days in a row. While the rain and cool weather was a welcome relief to some, dry-land wheat farmers suffered significant crop damage.

Overall this past summer was a warm one. If not for the cool spell at the end of August, it might have gone down in the books as downright hot! Spokane had 25 days of 90° or better, well above the normal of 18, but short of last year's 33 days. Wenatchee had 41 days of 90° or hotter, compared to a normal of 29 days. Meanwhile, Lewiston exactly matched its normal of 44 days. One of the more interesting indicators of the summer was actually in the minimum temperatures. Three factors will typically keep overnight temperatures warm: wind, clouds, and humidity. The Wenatchee airport is typically mild during summer nights due to the persistent northwest wind that blows on most nights. The mild nights this summer was more than normal. In fact, the average low temperature for the summer months at Wenatchee of 61.6° was the warmest on record (since 1959). On average Wenatchee only has 3 nights above 70°, but this summer saw 11 such nights. Spokane Airport typically cools down into the 50s at night, with an average of 16 nights of 60° or warmer. But this year the mercury remained above 60° for 38 nights, which was second only to the very hot summer of 1958 (47 nights above 60°).

While there were some cloudy nights, the main contributor to the warm nights this summer was humidity. The weather pattern for much of the summer allowed large amounts of subtropical moisture from the desert southwest to move northward into our area. This also contributed to a very active thunderstorm season this year. ☼ *Ronald Miller*

Summer Weather Statistics

Wenatchee Airport	June	July	Aug	Total
Avg High Temp	82.0	89.5	87.5	86.4
Departure from Norm	+3.3	+2.8	+1.4	+2.5
Avg Low Temp	57.0	63.9	63.7	61.6
Departure from Norm	+3.0	+4.1	+4.0	+3.7
Total Precip	0.14	0.30	0.62	1.06
Departure from Norm	-0.50	0.00	+0.27	-0.23
Lewiston Airport	**June**	**July**	**Aug**	**Total**
Avg High Temp	81.0	92.8	89.5	87.8
Departure from Norm	+3.0	+5.2	+1.9	+3.4
Avg Low Temp	54.7	62.3	62.0	59.7
Departure from Norm	+1.1	+3.0	+2.7	+3.3
Total Precip	1.14	0.29	1.81	3.24
Departure from Norm	-0.02	-0.43	+1.06	+0.61
Spokane Airport	**June**	**July**	**Aug**	**Total**
Avg High Temp	75.2	85.5	82.7	81.2
Departure from Norm	+1.3	+3.0	+0.1	+1.5
Avg Low Temp	52.0	59.0	59.2	56.8
Departure from Norm	+2.8	+4.4	+4.7	+4.0
Total Precip	1.05	0.08	1.88	3.01
Departure from Norm	-0.13	-0.68	+1.20	+0.39

NWS Spokane

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Meg Layh

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Ken Holmes

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Ron Miller

Data Acquisition Program Manager
Robert Bonner

Service Hydrologist
Charles Ross

Information Technology Officer
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Lead Forecasters
Jon Fox Claudia Cox
Robin Fox
Matt Fugazzi
Bob Tobin

General Forecasters
Lyle Hammer
Tracy Cox
Rocco Pelatti
Paul Bos
Todd Lericos
John Werner

Hydro-Meteorological Technicians & Intern
Stan Savoy Milt Maas
Verne Ballard
Jeffrey Coté

Electronic System Analyst
Robert Cummings

Electronic Technicians
Paul Kozan
Robert Sumpter

Facilities Technician
Mike Belarde

Coop Awards

(L-R) Troy Moore, Jean Moore and John Livingston.

On July 21st, **Jean Moore** of Plain, WA received the "John Campanius Holm Award", a national honor for her dedication to observing and reporting weather for over 36 years! The award was presented by MIC John Livingston and DAPM Robert Bonner at a ceremony at her home. Jean Moore has a long distinguished record as an observer, and the Holm Award is one of the most prestigious awards presented each year by the NOAA National Weather Service. Mrs. Moore's award was only one of 25 Holm Awards presented nationally this year! The award is named after the Reverend John Campanius Holm, who was the first person known to have taken systematic weather observations in the American Colonies back in the mid 17th century.

Mrs. Moore arrived to Plain in the 1940s with her husband Troy. She signed on as a cooperative weather observer in April 1968, and she has been dedicated to it ever since. She has provided dependable, accurate and timely weather observations which have helped define the climate near Plain. From the heat waves of August 1977 and August 1981 to the big snows of December 1968, Jean has always understood the importance of good, accurate weather observations.

Enaville, ID	Francis Kuisti	10 year award
Winchester, ID	Tim Dorgan	10 year award
4 mi N Prichard, ID	Hank Odegard	15 year award
Calder, ID	Leron Sibert	20 year award
4 mi NNE Tonasket, WA	Mrs. Dan Coe	20 year award
Lacrosse, WA	Nancy Taylor	30 year award
Rosalia, WA	William Hofmann	35 year award
Cabinet Gorge Dam, ID	Avista	50 year award

There are 8 additional Cooperative Observers who have earned individual Length of Service awards. Congratulations to all award recipients on their excellent service, dedication and passion for weather. We appreciate your efforts! ☼ *Bob Bonner*

Staff News

Meg Layh has recently joined the ranks of the National Weather Service Spokane as the new Administrative Assistant. She has been in the Spokane area for about 2 years with previous work experience at Fairchild Air Force Base and the IRS. She and her husband Kris have 2 kids and 3 dogs. When you stop by the office, you will find Meg greeting you at the front desk. Welcome Meg.

Jeremy Harbeck has finished up his second summer with the NWS Spokane as a Student Summer Intern. His duties included launching the weather balloon, answering the phone and keeping the weather radio running, along with other assigned projects. He returned to UW in Seattle to complete his BS in Meteorology. Good Luck and thanks Jeremy. ☼ *Robin Fox*

Weather Radio On Lake Coeur d'Alene

For a few years now, the Spokane National Weather Service has been working to provide direct weather information to boaters on Lake Coeur d'Alene. Many of those with a marine radio on board receive this information directly when needed, but others without these devices have no access to current forecasts or warnings. Events fell into place this summer as the Coeur d'Alene City Parks Department began construction on a new restroom facility at the 3rd Street boat launch. The National Weather Service worked with Kootenai County Emergency Manger Sandy Von Behren on a proposal to the Parks Department which would incorporate a weather information into the new facility.

The collaborating efforts from all three of these organizations resulted in the installation of a weather radio receiver at the facility, that can be activated by boaters to get current weather information before they depart onto the lake. Over 8000 boaters use this boat launch each year. It is anticipated that the new radio and the information it provides will greatly enhance boater safety in the years to come. ☼ *Ken Holmes*.

The facility at the 3rd Street boat launch

Please call the NWS with spotter reports at (509) 244-0435 or 1-800-483-4532

Remember your Fall Spotter Checklist

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

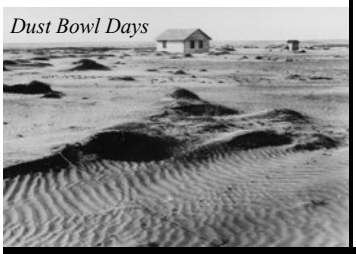
Reduced Visibility
under a mile due to dust, smoke, etc.

Strong Winds
30 mph+ or damage

Hail—pea size or larger

Snow—the first inch

Travel Problems or **Any Damage** due to wx



Dust Bowl Days

The Weather Watcher
Of the Inland Northwest

National
Weather Service
2601 N Rambo Rd
Spokane, WA 99224
(509)-244-0110

Trivia:What is a Blue Moon and how often does it occur?

Summer Dust Storms

One of the more interesting weather events during the summer was the wind and dust storm on the evening of August 2nd . After a month of dry hot weather, and with summer harvest and plowing going on across the Palouse, the conditions were set for a dust storm. Most such storms in this area are more prevalent in the fall when Pacific storms generate sufficient dry winds to result in blowing dust. But on August 2nd, the source of the wind wasn't a Pacific storm, but rather a large thunderstorm near Lewiston. The strong gust front that was generated by the thunderstorm traveled north across the Palouse, gathering dust along the way. When it reached the Spokane metro area, visibilities were reduced to less than a mile as the winds gusted to over 50 mph. The wall of dust approaching from the south was reminiscent of pictures from the dust bowl days of the 1930s.

A more typical dust event took place on September 1st. Gusty southwest winds behind a cold front pushed dust into the Spokane vicinity from the eastern Columbia Basin and Palouse. Again visibilities were reduced to a mile or less. ☼ *Ronald Miller*

El Niño's Back

The Climate Prediction Center's (CPC) Long-Lead Seasonal Outlooks released in early September projected a slight increase in the chance of above normal temperatures and below normal precipitation for the fall and winter seasons across the Inland Northwest. Although still slight, the greatest increase in the chance of above normal temperatures and below normal precipitation for the region is forecasted for the winter season. The CPC seasonal outlooks rely heavily on current sea-surface temperature (SST) trends in the East-Equatorial Pacific as well as model predictions.

The warming sea surface temperature trends over the East-Equatorial Pacific indicate we are in the early stages of a weak El Niño. According to the CPC, there still exists a slight chance that the El Niño could reach moderate intensity or weaken back to a neutral status.

Undoubtedly, there is a great deal of uncertainty with long-range predictions. In the Inland Northwest, a prediction of above normal temperatures and below normal precipitation has shown skill during a moderate to strong El Niño event, however, it has not been demonstrated during a weak El Niño.

The CPC updates their Long-Lead Seasonal Outlooks every month. The next update is scheduled for October 21, 2004 at http://www.wrcc.dri.edu/longrang/longrange90.
☼ *John Werner*