The Inland Northwest Informer
Information For Storm Spotters, Cooperative Observers And Everyone
A Publication Of WFO Pendleton, Oregon
Fall/Winter 2012 - Volume 11

# Widespread Severe Weather In July

By Mary Wister, Science and Operations Officer

The weather was extremely active during the month of July in eastern Washington and eastern Oregon. A severe weather outbreak occurred on July 8 when storms produced high winds, large hail, and heavy rain. Trees limbs as large as 12 inches in diameter were ripped off by strong winds near College Place, Washington. In Dayton, fallen trees were reported over power lines and also damaged a residential home. Damaging winds were also observed that day in Yakima. Thunderstorms over central Oregon produced large hail and heavy rain. While most spotters measured hail up to 1 inch in diameter in places like Prineville and La Pine, one spotter located four miles southwest of Camp Sherman reported hail at 1.5 inches in diameter. This was only the beginning of widespread severe weather in NWS Pendleton's forecast area that month.

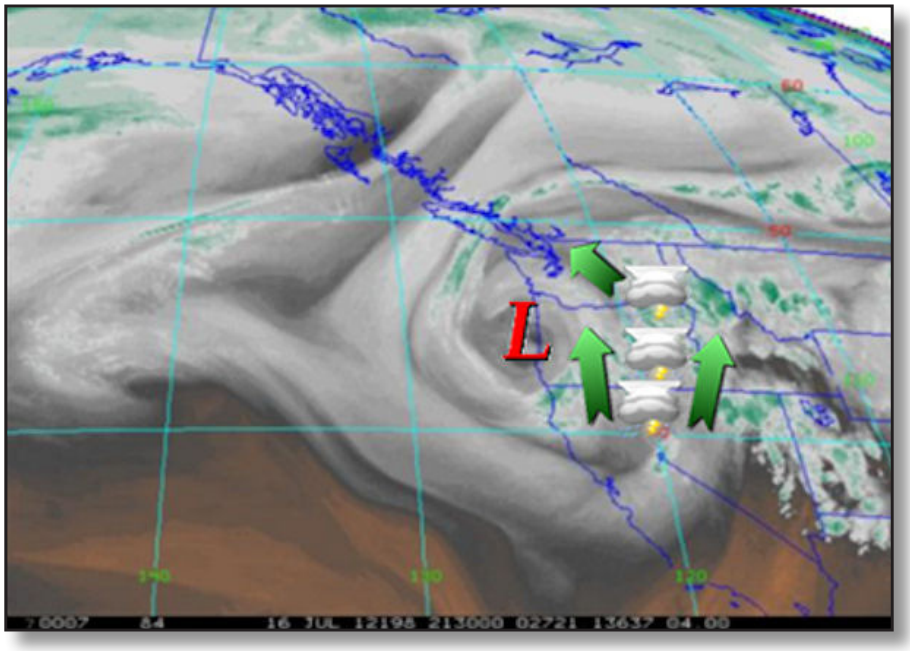


*Figure 1. Water vapor image on July 16. The low pressure system remained off the Oregon coast for several days. The complex upper level flow pattern (green arrows) resulted in slow-moving and "training" thunderstorms.*

The National Weather Service received reports of large hail and very heavy rain almost every day during the week of July 13-20th. Thanks to everyone for submitting your reports via phone calls, SKYWARN Net, E-Spotter, Facebook and Twitter. Utilizing social media has proven extremely helpful when getting actual photos of large hail and wall clouds. For example, the photos we have included (page 7) were submitted by Jeff Stohr from Sunnyside (very large hail on July 20) and weather spotter, Tesmond Hurd, from La Grande (wall cloud on July 18) via Facebook. It was very difficult to select the photos to use for the newsletter. They were all amazing!

On July 13th, a low pressure system traversed south along the Washington and Oregon coast then swung inland across the forecast area on July 14th. This system tapped into monsoonal moisture that was spreading northward across Idaho. Storms began during the early morning hours of July 14th with a weather spotter in Kennewick reporting 1-inch hail at 3:10 AM. Hail the size of quarters and very heavy rain were reported in Union and Cove (one inch of rain in 2 hours in Cove). At Lake Billy Chinook Campground near Culver, Oregon, a weather spotter reported quarter-size hail and six inches of standing water. One thunderstorm produced enough rainfall in a short duration of time to cause mud and water along Highway 14 in Klickitat County. An Amtrak train was halted for three hours while tracks could be inspected before continuing.

A deep low pressure system took a similar track as the first system and moved south along the coast on July 16th. The second

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## In This Issue

# Climate Outlook 2012-2013

By Diana Hayden, Meteorologist

The Climate Prediction Center (CPC) had issued an El Niño Watch for the winter 2012-2013 earlier this fall. At the time, it meant that the climate models were indicating the potential for El Niño conditions during the Northern Hemisphere winter. In a November update, CPC ended the El Niño Watch as conditions were becoming less favorable for an El Niño event.

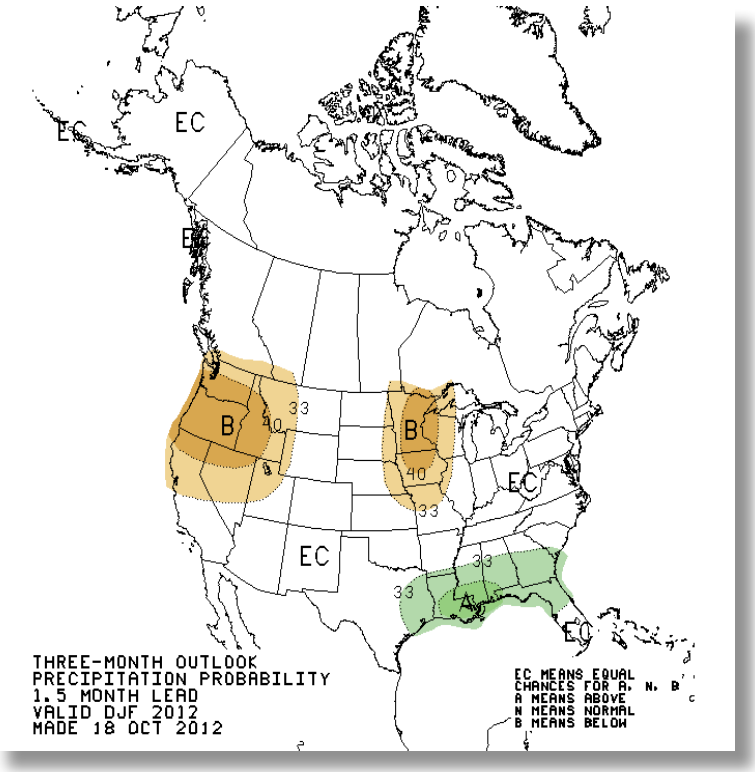
So what happens during a typical 'El Niño' event? During El Niño, the easterly trade winds that blow across the tropical Pacific Ocean become weaker than usual and sea surface temperatures in the central and eastern Pacific become warmer than usual. These warmer waters lead to an increase in thunderstorms in the eastern tropical Pacific, contributing at times to well above normal precipitation on the West Coast. El Niño events also increase the odds of unusually wet and cold winters across the southern tier of the United States, while the Pacific Northwest tends to experience milder winter temperatures than usual.

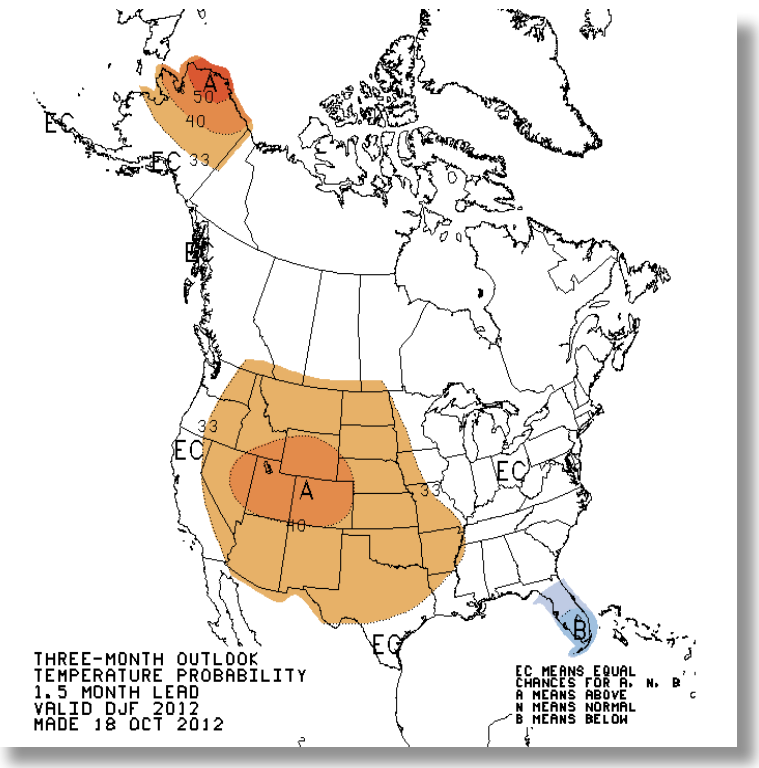
While ocean conditions are currently showing equatorial sea surface temperatures above average across the western and central Pacific Ocean, the atmospheric component of the cycle is showing near neutral conditions. El Niño - Southern Oscillation models run by the Climate Prediction Center as well as the International Research Institute for Climate and Society, show that this winter will see neutral conditions through the winter and into the spring.

What does this mean for our winter in eastern Oregon and southeastern Washington? CPC seasonal outlooks for the three month period of December through February show a greater chance of above normal average temperatures and a greater chance of below normal average precipitation amounts. These outlooks take into consideration a wide variety of climate variables, including the El Niño - Southern Oscillation. Please remember, that these are probabilities of averages, and that the day-to-day weather can still vary throughout the winter. ▪▪

For more information on El Niño, and current ocean and atmospheric conditions, please refer to CPC's website at:

http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml



# Regional Dry Spell In Review

By Diana Hayden , Meteorologist

Weather systems moving through the region during the middle of October brought rainfall to eastern Oregon and Washington after a very dry summer. Many locations hadn't reported measurable precipitation since July, and some locations hadn't reported precipitation since June. Measurable precipitation is defined as 0.01 inches or greater. While some locations across the region reported precipitation in August and September due to showers associated with thunderstorms, many locations in the lower elevations didn't report precipitation until October.

Nine weather reporting stations reported the dry streak in 2012 in their top 5 longest consecutive days without measurable rainfall on record. The following table lists the weather station, the number of days without rainfall, the ranking and the current record number of days without precipitation for that station. ▪▪

**Top 5 Longest Dry Spells For Some Locations**

| Location | Days | Start Date | Rank | Record (Previous) |
|---|---|---|---|---|
| Bickleton, WA | 87 | 7/18/12 | 4 | 135 days in 1932 |
| Bend, OR | 70 | 8/07/12 | 5 | 94 days in 1994 |
| Dayton, WA | 87 | 7/19/12 | 1 | 80 days in 1969 |
| Goldendale, WA | 108 | 6/27/12 | 1 | 88 days in 2009 |
| Heppner, OR | 86 | 7/19/12 | 2 | 95 days in 1929 |
| Moro, OR | 84 | 7/21/12 | 3 | 100 days in 1974 |
| The Dalles, OR (Airport) | 108 | 6/26/12 | 1 | 101 days in 2003/1974 |
| Meacham, OR | 50 | 7/21/12 | 3 | 69 days in 1969 |
| Pendleton, OR (Airport) | 84 | 7/20/12 | 2 | 109 days in 1974 |

# Active Fire Season For Pacific Northwest

By Rachel Trimarco, Incident Meteorologist / Fire Weather Program Leader

Fire season in the Pacific Northwest ramped up in July and August, and peaked in September with approximately 1.6 million acres burned. The active fire season was in part due to the fact that there had not been widespread wetting rain since the middle of July. The warm and very dry conditions this summer lead to critically dry fuels that easily ignited, allowing fires to spread rapidly. Further exacerbating the situation, several strong wind events associated with dry cold fronts slowed firefighter efforts to contain the blazes. Over the course of the season there were several large fires in Pendleton's local forecast area that consumed nearly 200,000 acres of land and destroyed almost 300 structures.

*Cache Creek wildfire in the Hells Canyon National Recreation Area, August 28, 2012. Photo by: Rachel Trimarco NWS Incident Meteorologist.*

Numerous thunderstorms with abundant lightning sparked several small grass fires through the first three weeks of July. However, these storms were also very wet with significant rainfall amounts that prohibited large wildland fires. Drier thunderstorms occurred the first week of August which started the Waterfalls 2 fire 5 miles northeast of Mt. Jefferson on the Warm Springs Reservation in Oregon. This fire burned 12,265 acres in high elevation timber and was not contained until September 15. The Geneva 12 grass fire also resulted from dry thunderstorms on August 6 on the Crooked River National Grasslands of Jefferson County, Oregon, but it was contained August 9 after only burning 1,337 acres.

On August 13 the Taylor Bridge fire began 4 miles southeast of Cle Elum, WA. This human caused fire spread rapidly to consume 23,500 acres as it was pushed by strong Kittitas Valley winds that at times exceeded 30 mph. Several evacuation orders were issued during this incident as the fire burned through a well-populated wildland-urban interface. Unfortunately, 272 structures were lost, which included many homes, with property damage estimated at $8.3 million.

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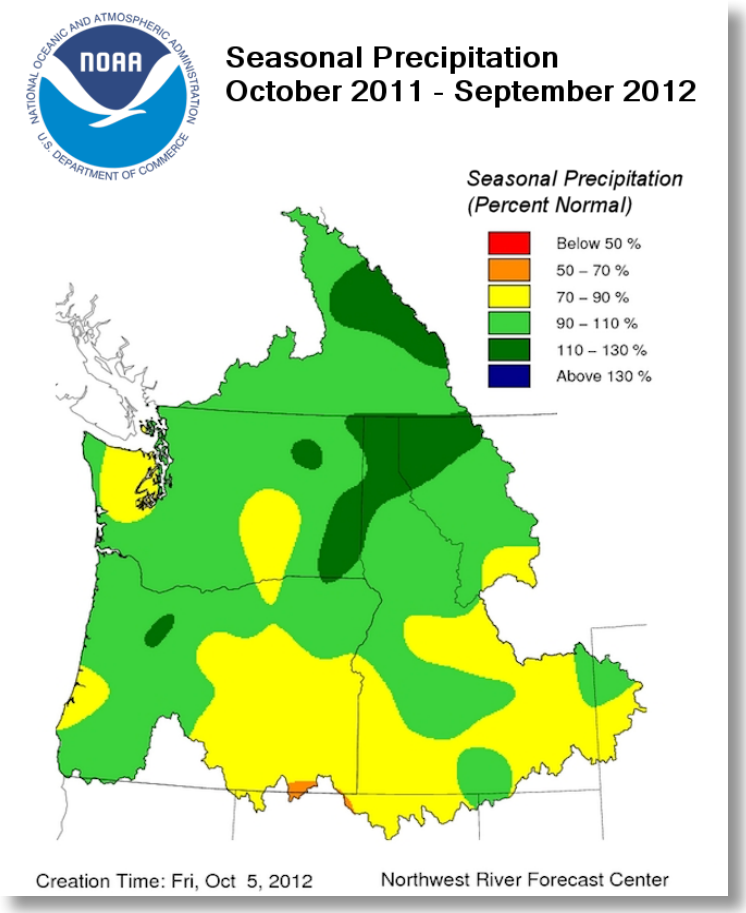
*Firefighters conduct burnout operations on the Cache Creek Wildfire in the Hells Canyon National Recreation Area on August 24, 2012. Photos by: Rachel Trimarco, NWS Incident Meteorologist*

# Water Year Precipitation
# October 2011 - September 2012

By Marilyn Lohmann, Service Hydrologist

| Location | Amount In Inches | Percent of Normal |
|---|---|---|
| Bend | 11.12 | 98% |
| Condon | 15.69 | 108% |
| Dufur | 12.73 | 92% |
| Heppner | 13.18 | 94% |
| John Day City | 9.28 | 70% |
| La Grande | 18.40 | 111% |
| Madras | 8.77 | 84% |
| Meacham | 36.81 | 115% |
| McNary Dam | 7.08 | 86% |
| Milton-Freewater | 15.42 | 94% |
| Mitchell | 10.10 | 94% |
| Moro | 10.38 | 91% |
| Pelton Dam | 9.62 | 86% |
| Pendleton - Airport | 12.38 | 94% |
| Pilot Rock | 12.91 | 96% |
| Prineville | 9.59 | 90% |
| Redmond - Airport | 9.05 | 102% |
| Seneca | 10.32 | 75% |
| The Dalles | 10.64 | 73% |
| Wallowa | 18.70 | 107% |
| Wickiup Dam | 19.31 | 91% |
| Cle Elum | 20.48 | 92% |
| Dayton | 22.93 | 120% |
| Ellensburg | 7.82 | 87% |
| Hanford | 5.96 | 85% |
| Mill Creek Dam | 22.03 | 118% |
| Mt Adams RS | 50.72 | 111% |
| Selah | 8.97 | 103% |
| Sunnyside | 7.00 | 93% |
| Whitman Mission | 14.95 | 103% |
| Yakima Airport | 7.24 | 88% |

The water year started off with near to above normal precipitation occurring in September, followed by dry conditions during November and December. In January and February, central Oregon remained dry, while the rest of the region saw near to above normal precipitation. There was above normal precipitation during March and April and dry conditions for May. June was much wetter than normal, with July seeing above normal precipitation as well. August and September, normally dry months, were very dry with little measurable rainfall. ▪▪



# SKYWARN Net Activation

## & Email Notification for Long-Fused Events

By Alan Polan, Meteorologist, KE4TRR SKYWARN Net Coordinator

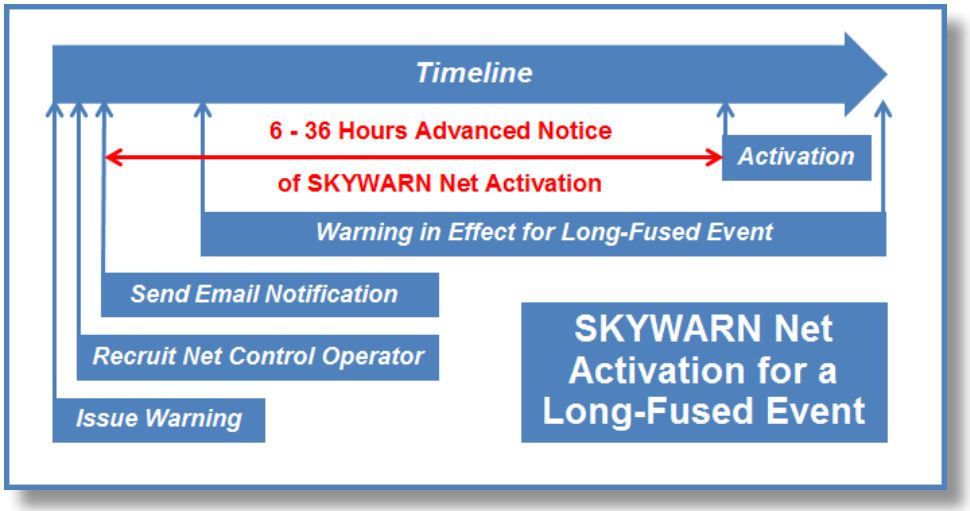
Beginning this fall, NWS Pendleton forecasters will have the option of requesting SKYWARN Net activation for Long-Fused Severe Weather Events. A Long-Fused Event is defined as a storm impacting a wide area, which produces hazardous or severe weather over an extended period of time, roughly 6 to 36 hours in duration. Major winter storms, high wind events, and dust storms are examples of a Long-Fused Event. SKYWARN Net activation for a Long-Fused Event would occur in areas where a significant number of Ham Radio SKYWARN Spotters are geographically clustered.

SKYWARN Net activation for a Long-Fused Event will enable us to efficiently collect multiple weather reports, which will give us a better idea of the magnitude and impact of a storm and thus its severity. A forecaster's decision regarding whether or not to request SKYWARN Net activation will be based on the forecaster's level of confidence that a Long-Fused Event will impact a significant number of Ham Radio SKYWARN Spotters. For those Long-Fused Events that are likely to impact a large number of Ham Radio SKYWARN Spotters, forecasters will request a SKYWARN Net lasting one hour well ahead of the time of activation and schedule the activation so that it occurs when the storm has had sufficient time to impact an area and is starting to wind down.

Also starting this fall, NWS Pendleton forecasters will use email to notify Ham Radio SKYWARN Spotters that activation of a SKYWARN Net is being requested for expected severe weather. Email notification will provide sufficient lead time to Ham Radio SKYWARN Spotters that SKYWARN Net activation is scheduled to occur. Advanced notice of activation through email will increase the level of participation in a SKYWARN Net and should thus result in more weather reports being obtained from Ham Radio SKYWARN Spotters. Forecasters will send email notification of SKYWARN Net activation for a Long-Fused Event with sufficient lead time to alert our Ham Radio SKYWARN Spotters that a SKYWARN Net has been scheduled. ▪▪

Email notification will provide the following information for the SKYWARN Net:

- Headline for Long-Fused Event
- Event Synopsis, Weather Hazards, and Impacts
- Areas Impacted
- Event Timing
- Watches in Effect
- Warnings In Effect
- Frequency of NOAA Weather Radio Station for Watches & Warnings
- SKYWARN Net Activation Schedule:
  1. Day & Date
  2. Start Time
  3. End Time
- Net Control Station Identification:
  1. SKYWARN Spotter ID
  2. Call Sign
  3. Name of Ham Radio Operator
- What to Report
- Primary Repeater Output Frequency and PL Tone
- Backup Repeater Output Frequency and PL Tone



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system remained off the Oregon coast for several days, spreading moisture and instabity throughout the region. Flash flood watches were issued for portions of the forecast area on July 15th and the 16th then were extended to include all of the forecast area on the 17th. During the night of July 15th ,a line of thunderstorm training back-to-back caused debris flows in Walla Walla County. County officials in Walla Walla reported numerous road closures and road damage, mainly between Touchet and Lowden. A large rock slide resulted in a road closure along State Route 263 near Kahlotus. Heavy rain that was observed on the night of July 15th and again on July 16th resulted in major mud flows in Helix and Holdman, Oregon. The last reported debris flow during that week occurred on the evening of July 17 when a mud slide estimated at 15-feet deep and 100-feet long was observed along Highway 821 located about six miles south of Ellensburg.

What was the cause of all the flooding and debris flows? Simply stated, most storms were slow moving or developed in a line with back-to-back heavy rainfall. The low pressure system off the coast circulated a lot of moisture east of the Cascades, and the upper level flow pattern was just perfect for this type of flash flooding.

It was not uncommon to receive reports of quarter-size hail and even golf-ball size hail during the latter half of the week. We received reports and/or photos of golfball-size hail in Camp Wooten near Ski Bluewood, Sunnyside, Lexington, Meacham and Bingham Springs. Several storms had deep rotation with wall cloud reports in some areas. A Tornado Warning was issued on Wedneday, July 18 in the Grande Ronde Valley based upon wall cloud reports received by a couple of weather spotters and the rotating signature on Doppler Radar.

The persistent low finally moved out of the region on July 20th but did not leave without producing another day of severe weather. Not only did the low provide strong upper level support as it moved northeast across Oregon and Washington, it also tapped in moisture from the remnants of Hurricane Fabio. This combination brought several hours of severe weather, mainly over the Yakima Valley and the Lower Columbia Basin during the afternoon. Sunnyside, Washington, was hit particularly hard that day. The Yakima Herald Republic newspaper reported an unoccupied mobile home had washed away in Sunnyside, and a 6-mile stretch of Highway 241 was closed just north of Sunnyside. Hail as large as tennis balls was also reported in Sunnyside, Washington.

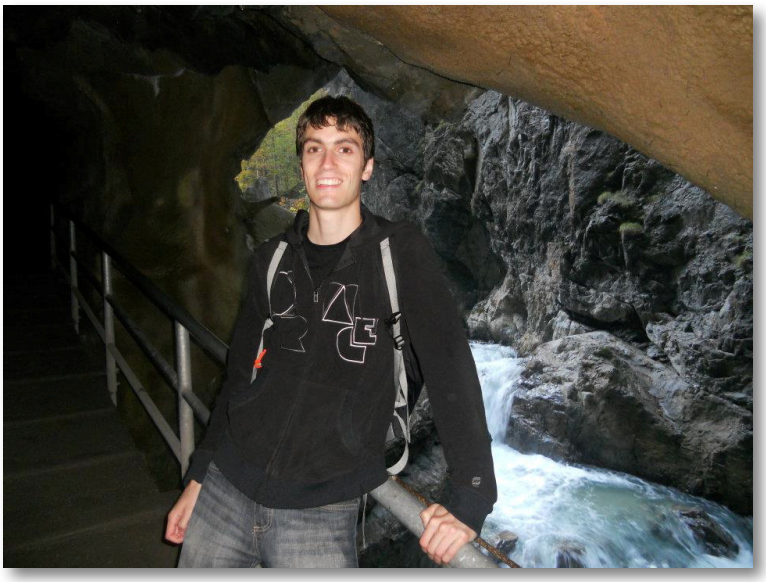
*Figure 2.*
*1.5 to 2.0-inch hail in Sunnyside, WA. Photo by J. Stohr*

*Wall cloud over Grande Ronde Valley Photo by T. Hurd.*

Once again, the reports that were received by weather spotters and Ham Radio operators were valuable during the month of July. This was definitely a month to remember! ▪▪

# STAFF SPOTLIGHT!

## Josh Smith, Meteorologist Intern



Josh recently joined the weather forecasting team in Pendleton after moving to the area from Seattle. Previously, Josh had spent most of his life in the Seattle area, attending the University of Washington and graduating with a double major in Atmospheric Sciences and Applied and Computational Math Sciences. In addition to his education, Josh has experience doing research in atmospheric science as well as two years assisting forecasters in the Seattle weather forecast office.

Josh spends most of his free time traveling. He has been to 26 different countries and 29 of the 50 states. Last fall, Josh bought a roundtrip plane ticket to Helsinki, Finland, for three months, bringing only a single backpack worth of supplies and not having any set plans. The trip turned out to be quite an adventure to say the least, and Josh made many friends in Europe along the way.

In addition to traveling, Josh volunteers as a swing dance instructor and he loves the outdoors. He is an avid Husky football fan. ▪▪

*Continued from Wildfires Page 3*

The need to adequately prepare your property against the threat of a wildfire cannot be understated, particularly in light of the number of homes burned in the local area and across the country this year. At a minimum, clear the area around your home of debris including twigs, dry grasses, and fallen leaves or needles. For more information on preparing your property, visit the firewise.org website.

Scattered thunderstorms the third week of August started two more wildfires in the local area. On August 19 the Diamond Butte fire began on the Yakama Nation Reservation in Washington and consumed 285 acres. The much larger Cache Creek fire then began on August 20 in the Hells Canyon National Recreation Area. This area adjacent to the Snake River on the Oregon/Washington border has very steep, rugged terrain and is prone to gusty afternoon winds. These conditions and the very dry weather that prevailed through the middle of the summer contributed to the fire growing to 73,697 acres before it was contained on September 26.

Other fires that occurred during the very dry period in August and September were the Parish Cabin fire 15 miles northeast of Seneca, OR, and the Highway 141 fire 2 miles north of White Salmon, WA. The causes of both of these fires are under investigation, but they were likely human caused. Parish Cabin was reported on August 28 and burned through 6,481 acres of the Malheur National Forest. Highway 141 began on September 5 on the east side of Washington State Highway 141 and burned 1,644 acres.

On September 8 a significant lightning storm brought over 3,000 strikes to eastern Washington igniting well over 100 fires. Just in Yakima and Kittitas Counties there were approximately 75 fires managed together as the Yakima Complex that burned 2,300 acres. There were also several fires farther north in the Okanogan-Wanatchee National Forest during this period, including the Table Mountain fire near Cle Elum that charred 42,312 acres. Not only did these fires in the central Washington Cascades burn thousands of acres of land, but the smoke reduced air quality in and around the area through the beginning of October. Another large fire that caused notable air quality concerns was the Pole Creek fire which began September 9, and burned 26,795 acres 6 miles southwest of Sisters, OR in the Deschutes National Forest.

There were many other fires in other portions of the Pacific Northwest this year, but by the beginning of October the fire season was quickly winding down throughout the region as cooler weather returned. However, a widespread wetting rain did not finally occur until the middle of October when a series of low pressure systems brought several days of rain beginning October 13. ▪▪

## Wildfire App from American Red Cross

The American Red Cross has released version 4 of their Wildfire App for iPhone and Android smartphones. The application allows users to stay informed of wildfires that may affect them. The Blaze Tracker feature sends users warning, alerts and information based on their location. This app also provides social connectivity through a one-touch "I'm Safe" messaging system, to broadcast status to family and friends. Other useful features include shelter locations, family emergency plans, as well as a toolkit with flashlight, stroble light and audible alarm.

For more information on this app, visit
http://www.redcross.org/mobile-apps/wildfire-app

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