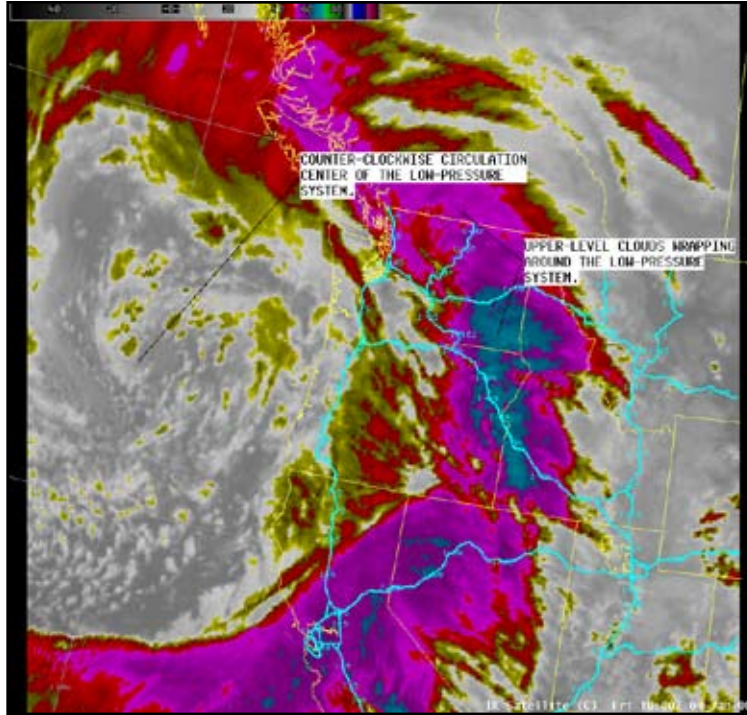


# January 2008 Windstorm

By Jon Mittelstadt, Science and Operations Officer

On January 4, 2008, a strong low-pressure system created areas of heavy precipitation and/or damaging winds at several areas in the western United States. The central sea-level pressure offshore was around 958 mb (28.29 inches of mercury), similar to the surface low of a category 2 hurricane. The Sierra Nevada Mountains in California were experiencing extreme blizzard conditions at the time of the infrared satellite image shown below (10 am PST on January 4).



forecast area at elevations above 5000 feet reported peak wind gusts in the 40 to 60 mph range. (Round Mountain in central Oregon at elevation 5900 feet was the exception with a single gust to 70 mph.) Instead, the strongest winds were observed at relatively lower elevations. This is one indication that local terrain effects played an important role in the acceleration of wind during this event. The following table shows selected peak wind gusts from January 4.

On the morning of January 4th, the low-pressure system was strengthening offshore of the Pacific Northwest coast. A very strong “low-level jet” of southerly wind at around 10,000 feet MSL was crossing the Cascades into eastern Oregon.

## Severe Winds in Eastern Oregon and Southeast Washington

For Eastern Oregon and southeast Washington, the primary impact of the storm was damaging pre-frontal winds. For a list of storm reports in the Pendleton Weather Forecast Office area, [click here](#).

A somewhat unusual aspect of this storm is that the strongest winds were not observed at higher elevations. Observations in the WFO Pendleton

Location	Strongest Gust (mph)	Strongest Sustained Wind (mph)	Direction of Strongest Sustained Wind	Elevation (feet)
Walla Walla Airport, WA	78	55	S-SE	1204
La Grande Airport, OR	61	49	S	2717
Joseph, OR	85	47	S-SE	3984
Helix, OR	72	52	E	1896
Pendleton Airport, OR	53	35	SE	1493
John Day Airport, OR	71	48	S-SE	3697
Upper Wildhorse Mesonet Station (9 mi. W of Tollgate, OR)	80	40	SE	3581

...continued from page 1.

## A Downslope Windstorm for the Northern Foothills of the Blue Mountains

Terrain effects were especially important during this event, and for the northern foothills of the Blue Mountains, local wind acceleration was created by a downslope wind storm. A zone of higher wind speed near the base of a mountain barrier on the downwind side characterizes downslope windstorms. These types of wind storms are more common along the front range of the Rocky Mountains, for example near Boulder, CO. On January 4th the greatest density of damage in the Pendleton forecast area was from a downslope wind storm over an area from Adams, Oregon northeast into the Walla Walla Valley. The Veterans Affairs Medical Center in Walla Walla, WA reported 28 structures, 4 vehicles and 50 trees damaged just on their campus.

In summary, the January 4 wind storm in eastern Oregon and southeast Washington was attributable to a powerful low-pressure system leading to record low sea-level pressures, along with the interaction of a very strong low-level jet and local complex terrain. A downslope windstorm created a zone of damaging winds along the northern foothills of the Blue Mountains; emergency managers estimate 3.9 million dollars damage in Umatilla County and 4.9 million in Walla Walla County. In the Walla Walla valley, it is estimated that 4 in 10 home received damage.

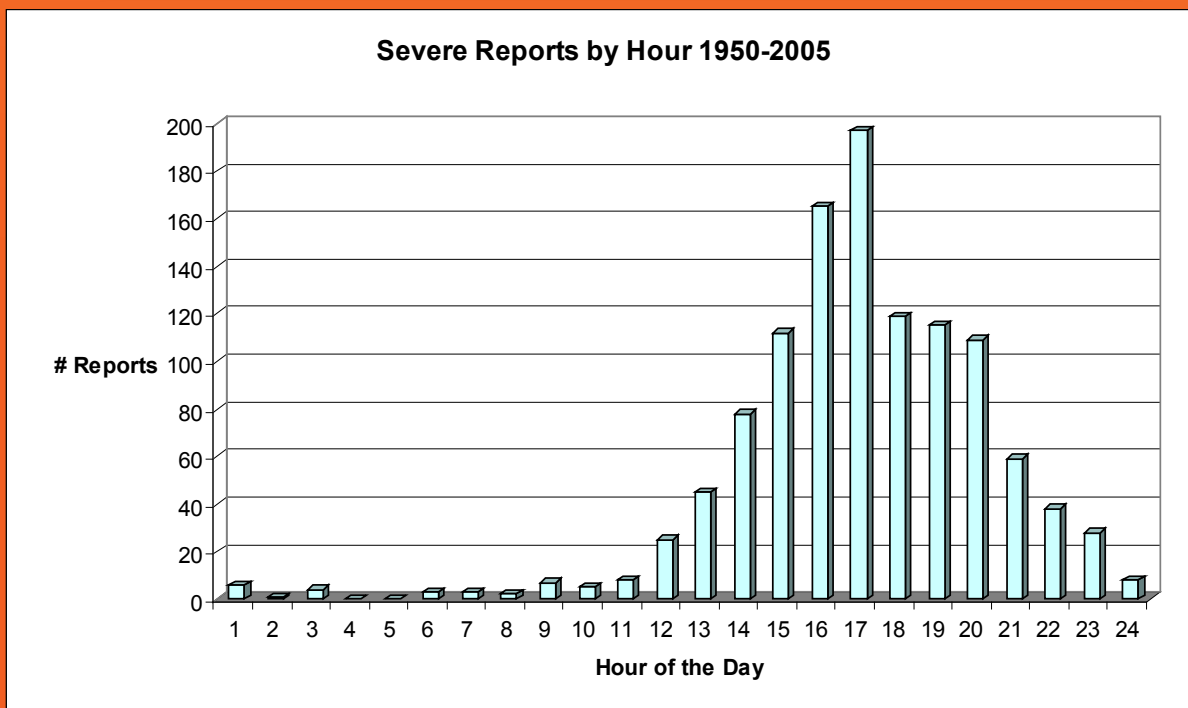
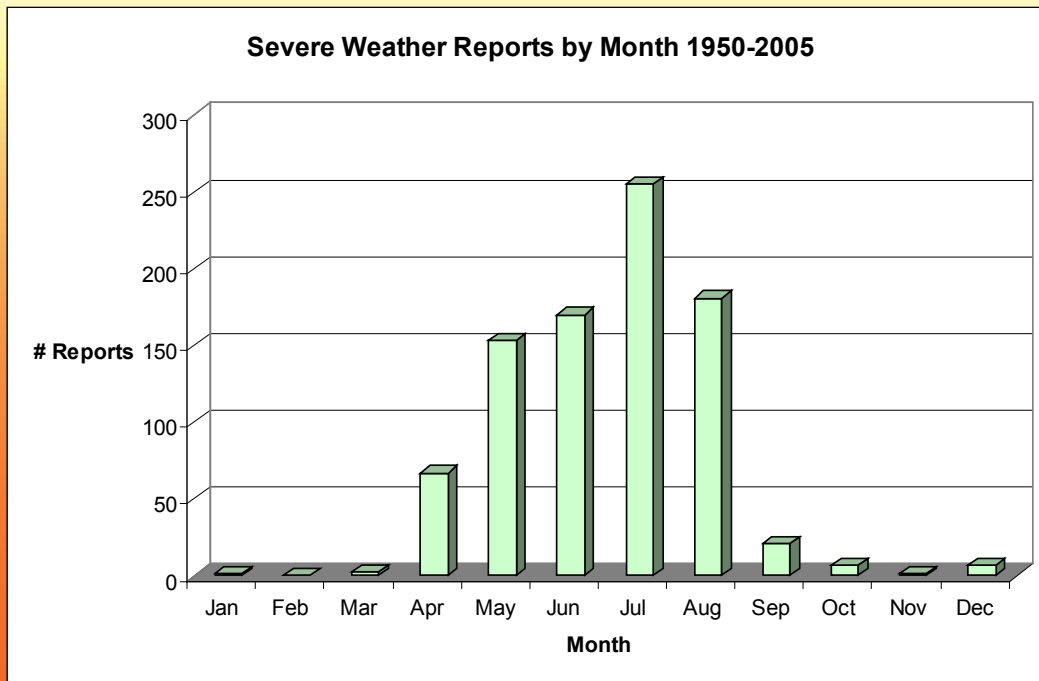


Fallen Tree In Walla Walla, WA

# Severe Weather Season Starts

By Mike Vescio, Meteorologist-in-Charge

Severe weather season has begun and there is a very distinct climatology of severe weather reports across the Pendleton forecast area. Although tornadoes are not unheard of in this region, they are relatively rare across interior Washington and Oregon. Therefore, the severe weather database for the Pendleton forecast area is dominated by large hail and damaging wind reports. Severe weather is almost entirely a warm season phenomenon with the frequency steadily increasing through the spring, peaking in July, then rapidly diminishing by September (Fig. 1). There is also a pronounced diurnal trend in severe weather occurrences with severe weather peaking in the afternoon and evening hours (maximum around 5 pm local time; Fig. 2). So if you are out and about during the afternoon and early evening from now through the end of August and you see the familiar thunderstorms building up, be on the lookout for gusty winds and hail since we are now in severe weather season.



# Water Year Precipitation

## October 2007 - March 2008

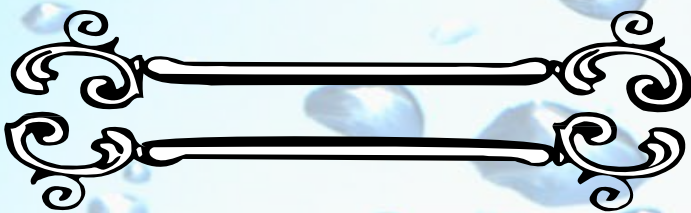
By Marilyn Lohmann, Service Hydrologist

Station	Amount In Inches	Percent of Normal
Bend .....	6.12 .....	80%
Condon.....	8.52 .....	95%
Dayville .....	4.97 .....	88%
Dufur.....	8.82.....	91%
John Day City .....	7.52.....	106%
Joseph.....	14.10 .....	187%
LaGrande .....	9.48.....	94%
Madras 2N .....	5.23 .....	68%
Mitchell 2NE.....	7.80.....	144%
Moro.....	6.83.....	87%
Pelton Dam .....	6.90.....	94%
Pendleton, WFO .....	7.81 .....	97%
Pilot Rock.....	8.58 .....	105%
Prineville.....	5.38.....	85%
Redmond Airport .....	3.50.....	72%
Seneca .....	6.31 .....	83%
The Dalles .....	11.49.....	99%
Union Exp Stn .....	5.74 .....	82%
Wallowa .....	10.82.....	109%
Wickiup Dam.....	16.35.....	102%
Ellensburg.....	5.56.....	90%
Glenwood.....	27.32 .....	106%
Hanford.....	3.90.....	84%
Ice Harbor Dam.....	5.84.....	81%
McNary Dam.....	5.36.....	99%
Mill Creek Dam.....	7.51.....	59%
Mt Adams RS.....	35.76 .....	100%
Prosser .....	5.17.....	100%
Sunnyside .....	4.82.....	101%
Whitman Mission .....	8.17.....	91%
Yakima Airport .....	4.90.....	87%

After a hot dry summer, everyone was looking with anticipation at the coming wet season. October and November 2007 did not disappoint with most locations seeing normal to well above normal precipitation. December 2007 was quite busy weather wise with lots of snow for the mountains, but the lower elevations saw 45 to 95 percent of normal precipitation with the driest areas being central Oregon and the Lower Yakima Valley. January 2008 was very wet across the Blue Mountains, but elsewhere locations report slightly below normal precipitation. February was cold but dry with precipitation 30 to 70 percent of normal. March was once again fairly wet in the Blue Mountains with amounts 150 to 180 percent of normal, elsewhere amounts were 35 to 70 percent of normal.

### Did you know...

The winter of 2007-2008 produced a lot of snow for the Pendleton Airport. With a season total of 34.6 inches, the airport experienced its 6th highest seasonal snowfall total on record. The highest seasonal snowfall total is 53.9 inches that fell in the 1949-1950 winter season. The last large seasonal snowfall total was the winter season of 2003-2004, where a total of 26.2 inches fell. The winter of 2003-2004 is the 15th highest seasonal snowfall total on record for the Pendleton Airport.





# CoCoRaHS Is Coming To Washington!

By Rachel Calder, Meteorologist

On June 1, 2008, a new volunteer weather watcher organization will be making its debut in Washington. CoCoRaHS (the Community Collaborative Rain, Hail, & Snow

Network) is continuing its expansion into the Pacific Northwest as a part of its push to have 20,000 observers by 2010. Currently, CoCoRaHS has 31 states in its network (Oregon joined in December 2007), and we need your help to make Washington just as successful as the other participating states.

What is CoCoRaHS? It is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive Web site ([www.cocorahs.org](http://www.cocorahs.org)), our aim is to provide the highest quality data for natural resource, education and research applications.

Why is CoCoRaHS important? Precipitation is essential for life. As most Washingtonians know, it can vary greatly with topography, storm type and season. It really is true that it can pour on one side of the street and be dry on the other. A portion of a field may be pounded by hail while others nearby receive no damage. Snowfall may pile up in one neighborhood and only dust another. Meteorologists, engineers, hydrologists, entomologists, insurance experts, and building

contractors are all very interested in precipitation. And for some, like the many farmers of eastern Washington, it is their very livelihood.

Why join CoCoRaHS? CoCoRaHS is a fun activity for our volunteers. If you have an interest in weather



and would like to help your local community, as well as scientists and others interested in precipitation, then CoCoRaHS is for you. Many of you already record daily precipitation amounts. By inputting your data into our interactive website, you will now be able to see a map of how your rainfall compares to your neighbor across town. It only takes a few minutes a day and gives you a chance to participate in real “hands-on” science. You may be amazed at what you will learn as you become more aware of the weather that impacts you and your neighbors.

How to become a volunteer? You can become a volunteer by signing up via our Web site: [www.cocorahs.org](http://www.cocorahs.org) The Washington web page will become official on June 1, 2008. However, you can begin signing up as early as mid-May. Online training materials are available, as well as links to purchase the official 4” rain gauges.

You may also inquire about upcoming local training sessions in your area by contacting your local coordinator at

[Rachel.T.Calder@noaa.gov](mailto:Rachel.T.Calder@noaa.gov)

**eSpotter** Online Weather Reporting System

You can now go online and send your spotter reports directly to us in real time. Many Spotters have already signed up, why not be the next?

In the past you were able to send us an email with your report but it may have been days before anyone saw it. With E-Spotter we will get your report as soon as you send it. We will then be able to use the report in our local storm report.

To sign up for E-Spotter, go to [espotter.weather.gov](http://espotter.weather.gov) and register by following the instructions. Don't forget to use Pendleton, OR as your local Weather Forecast Office.

# Pendleton SKYWARN HF Net Returns

By Alan Polan, KE4TRR, Meteorologist

This past fall and winter coincided with the low point in solar sunspot activity in sunspot cycle 23. Consequently, band conditions on the amateur radio High Frequency (HF) bands were dismal. By the end of September and through October band conditions progressively worsened on the 80-meter band. Consequently, as October drew to a close, we decided to give the Pendleton SKYWARN HF Net on the 80-meter band a rest and wait for better band conditions come this spring. The beginning of sunspot cycle 24 was confirmed in early January, spring is here, and days are considerably longer now, so HF band conditions have markedly improved and are no longer an issue with respect to the viability of the Pendleton SKYWARN HF Net. I am confident that participation in the Pendleton SKYWARN HF Net from this point forward should be a rewarding experience in terms of signal propagation on the 80-meter and 40-meter bands.

As such, it is time to revive the Pendleton SKYWARN HF Net, just in time for this year's thunderstorm season and the severe weather that thunderstorms produce. After a hiatus over the past six months, the Pendleton amateur radio SKYWARN HF Training Net will return in May of 2008.



The Pendleton SKYWARN HF Net will operate at a frequency of 3838.0 kHz on the 80-meter band for the weekly Training Net held on Wednesdays at 7:00 PM. We will also use this frequency for activations of actual Standby and Active Emergency SKYWARN HF Nets, which are driven by the risk of severe weather events.

This year we'll be recruiting more hams to membership in a pool of net control operators. A sizeable pool of net control operators is needed so we can assign net control duties in accordance with a "duty schedule". With enough hams as members of the net control operator pool, we plan to assign each ham to a recurring weekly slot in a net control operations "duty schedule" that repeats itself every four weeks. So a ham only needs to commit to being available and "on-call" for net control operations for a period of seven days approximately once per month.

I'll be sending out information in e-mails to ham spotters about the Pendleton SKYWARN HF Net. This information will touch on net frequencies, net activation preamble, net protocols and net discipline, net traffic handling, and general background information about net control operations, procedures, and duties.

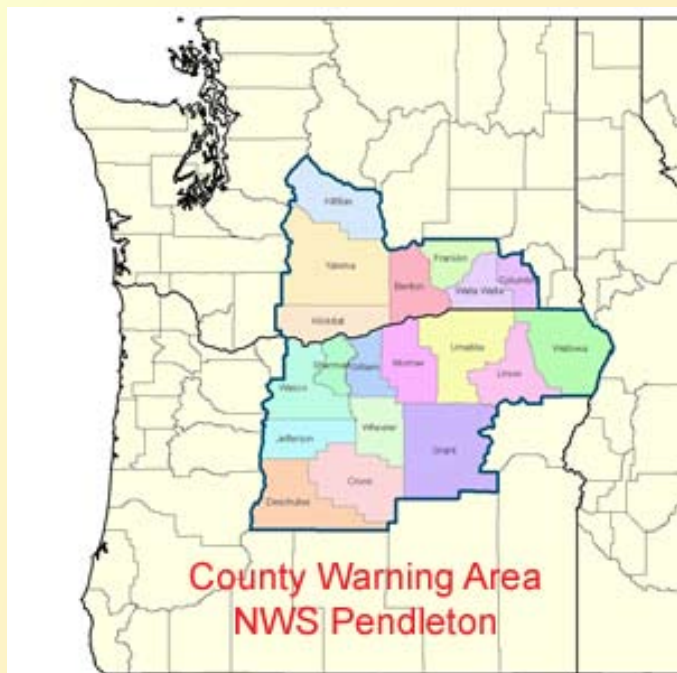
Of all the possible threats to life and property that nature poses, which natural phenomena pose the greatest risk to life and property in terms of the scope of impacts and in terms of frequency of occurrence? The answer is the weather, when it becomes hazardous or severe. Thus, hazardous and severe weather is where the action is for amateur radio operators who want to be involved in operational emergency communications. The Pendleton SKYWARN HF Net provides the framework for hams to get involved. Participation in the Pendleton SKYWARN HF Net is a great way for amateur radio operators to apply their communications skills, operate their amateur radio stations under emergency net conditions, and to realize their potential for public service, by supporting the Pendleton SKYWARN Program and thereby supporting the National Weather Service (NWS) Weather Forecast Office (WFO) in Pendleton in its mission to protect life and property.

The Pendleton SKYWARN HF Net helps the Pendleton NWS WFO by providing ground truth weather reports and thus helps NWS forecasters to more accurately assess current weather conditions in their quest to provide timely weather warnings to the public in the nineteen counties in Pendleton's County Warning Area (CWA).

We have 205 spotters in NWS Pendleton's CWA who have a General Class Amateur Radio Licenses or higher. I invite all of you to support and participate in the Pendleton SKYWARN HF Net.

...continued from page 6.

Volunteer hams will use the new club station vanity



call sign WX7PDT while operating amateur radios at the Pendleton NWS WFO during SKYWARN Nets (2-meter nets and HF nets) as well as during other emergency communications, emergency drills, and amateur radio special events such as SKYWARN Recognition Day.

I'll be giving a talk on the Pendleton SKYWARN HF Net at 1:00 PM on May 31, 2008 at the

SEA-PAC Ham Convention in Seaside, Oregon. I hope to see you there!

# Moderate La Niña Conditions Continue

By Diana Koester, Forecaster

La Niña refers to the periodic cooling of ocean surface temperatures in the central and east-central equatorial Pacific Ocean. La Niña is the cool phase of the El Niño/Southern Oscillation (ENSO) cycle, while its counterpart, El Niño, is the warm phase. Currently, a moderate La Niña is in place, with cooler than average ocean surface temperatures in the equatorial Pacific Ocean. NOAA climate scientists expect these La Niña conditions to continue for at least the next three months (May through July).

The effects of ENSO are typically the strongest during December through April because the equatorial Pacific sea-surface temperatures are normally warmest at that time of the year. Consequently, a slight warming of the waters due to El Niño can result in a major redistribution of tropical convective rainfall along the equator, whereas a slight cooling due to La Niña can restrict the tropical convection to Indonesia. This in turn affects the wind patterns and storm tracks across the Pacific Ocean.

The NOAA Climate Prediction Center outlook for the summer of 2008 calls for above normal temperatures and below normal precipitation in the Pacific Northwest.



## Protecting Your Home From Wildfires

By Joe Solomon, Senior Meteorologist

Every year millions of acres burn across the United States due to wildfires started by man and nature. And, every year there are hundreds of homes that are lost due to Wildfires. As the interface between urban and wildland becomes more intertwined the issue of protecting your home from Wildfires become more vital. Oregon and Washington are no exceptions. If you live in an urban wildland interface there are steps you can take to minimize your exposure to loss of property. The National Interagency Fire Center (NIFC) has a website that provides education on steps you can take to prevent losing your home in a wildfire. Preventative measures taken by homeowners are often the determining factor as to whether fire crews have a chance to save a home. To learn more about what you can do to protect your home from the dangers of Wildfires, visit the NIFC website at [www.nifc.gov/preved](http://www.nifc.gov/preved)



## Yakima, WA Observer Honored

A special service award was presented to cooperative observer Ken Kohagen (Yakima 2) on March 12. This award is in recognition and appreciation for his dedication to the program, as well as going above and beyond the normal duties of an observer by maintaining and updating detailed climate records of the local area. When the weather office at the Yakima Airport closed in 1998, Ken agreed to maintain official daily temperature and precipitation observations, including snowfall measurements, from his home. In addition to the cooperative observing duties, Ken has been updating several binders of climate records which he rescued from the closing weather office. These records span almost a century, and he has translated the data into several graphs and charts. His attention to detail, and keen interest in climate history and trends are commendable.

## Articles Needed

Would you like to tell us the unique weather tales of your area? Do you know weather trivia? Has your family been observing weather for decades or do you have an interesting tale to tell about your experiences?

If you do, we would like to know about them. Please send us your stories and pictures, if you have any. We will use your stories in this newsletter and also forward them to be in the National Cooperative Observer newsletter.

Please send all articles and pictures to [ann.adams@noaa.gov](mailto:ann.adams@noaa.gov).