



The Inland Northwest Informer

Information For Storm Spotters, Cooperative Observers And Everyone

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Fall/Winter 2016 - Volume 19

Winter and La Niña Outlook

By Michael Murphy, Meteorologist and Climate Focal Point

What will the upcoming winter of 2016-2017 bring to the interior Pacific Northwest? Can we expect above or below average temperatures through the winter months? How about precipitation totals; will it be a wet and stormy winter? Perhaps the mountains or even the valleys will see above average snowfall? Read on to see what NOAA's Climate Prediction Center believes 'Old Man Winter' has in store for the Northwest.

So exactly what is La Niña and what does it mean for our day to day weather patterns? La Niña is simply the opposite of the warm phase, El Nino. A La Niña is declared when water temperatures in the tropical

Niña event to be declared. The Climate Prediction Center believes that sea surface temperatures in this region of the tropical Pacific will hover right around or just below the negative 0.5 degree threshold into mid-winter.

By late winter or early spring, current model projections show that the La Niña may begin fading toward neutral conditions. In a 'typical' La Niña event much of the Pacific Northwest would expect above average precipitation amounts and slightly cooler than average temperatures through the winter months.

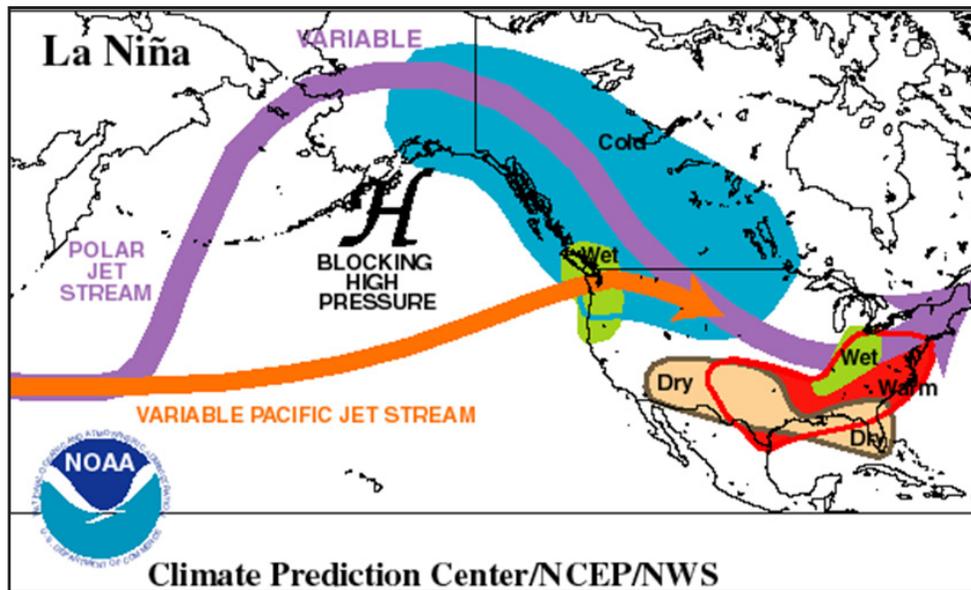


Figure 1. Winter weather pattern during a 'typical' La Niña event, show above average precipitation and cooler than average temperatures for most of the Northwest.

The Climate Prediction Center (CPC) has now officially reissued a La Niña watch, with a 70 percent chance of La Niña development during late fall, fading to a 55 percent chance through the mid and late winter months. If La Niña conditions do develop, and persist, a La Niña Advisory would need to be issued.

Pacific Ocean cool to below average levels, more specifically, at least 0.5 degrees Celsius below average.

These below average sea surface temperatures must persist for a minimum of three months for a La

There are other factors that go into creating a winter weather outlook, including the overall climatic trends and analog years (other similar past years). One must also factor in shorter term climate patterns such as the Arctic Oscillation (AO),

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Madden-Julian Oscillation (MJO), Pacific North American pattern (PNA) and even the North Atlantic Oscillation (NAO), just to name a few. Here in the Northwest our weather patterns can also be significantly affected by ocean surface temperatures in the northern Pacific Ocean as well. There is still ongoing research on a feature that has, in recent years, become more prevalent. This feature, which is colloquially known as ‘The Blob’ is an area of unusually warm water in the Gulf of Alaska that has had a large impact on our winter weather patterns, especially in 2014-2015. This ‘Blob’ feature appears to be making an early resurgence this fall, and it remains to be seen if it will carry on into the winter months. Even if it

does continue through the winter months, current research is still unclear on exactly how this may affect our weather. However, during the winter of 2014-2015 the ‘Blob’ is believed to have caused more persistent upper level ridging and high pressure along the west coast which at times shifted over the Pacific Northwest. This led to above average temperatures, and several extended dry periods.

Keeping all of the above factors in mind, the Climate Prediction Center has now issued their official winter outlook for 2016-2017. The outlook calls for equal chances of above, below or near normal temperatures through the three month period of December, January and February across all of Washington and much of northern and central Oregon.

For southeast Oregon the odds are slightly tilted toward above average temperatures during this time. For northern Oregon and Washington this essentially means that one should not expect the coldest, or the warmest winter on record, but likely somewhere in between, within a few degrees of normal. For example Kennewick, Washington’s average average high and low temperature for December is 40.1 and 28.5, respectively.

The CFS.v2 ensemble mean (black dashed line) favors La Niña during the Northern Hemisphere fall and winter 2016-17.

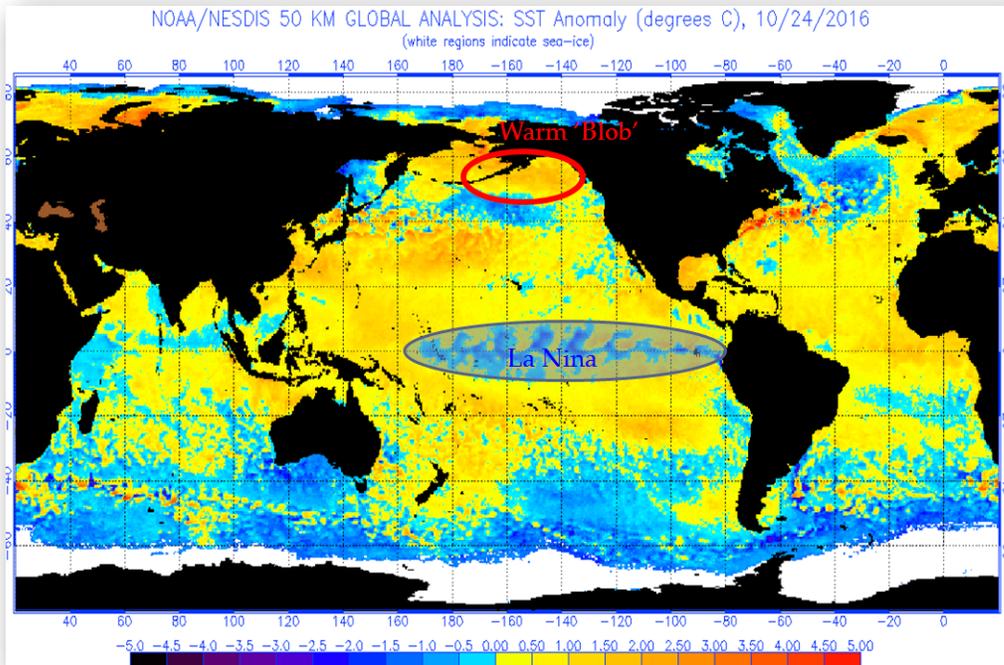
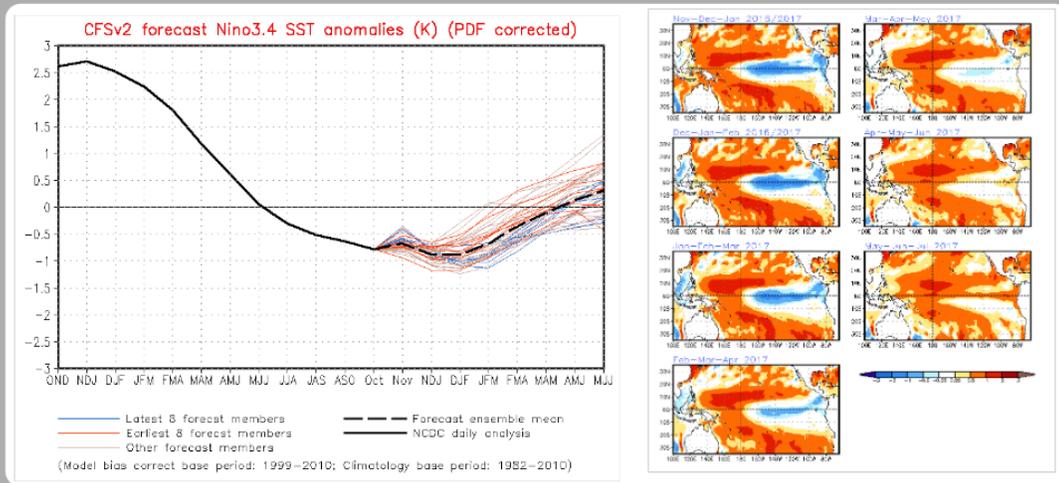


Figure 3. Global sea surface temperature anomalies from the end of October show the colder than average conditions over the Nino region of the tropical Pacific. Also note the ‘Warm Blob’ south of Alaska. In recent weeks some cooler than average water has emerged over the north-central Pacific in response to up well under large storm systems.

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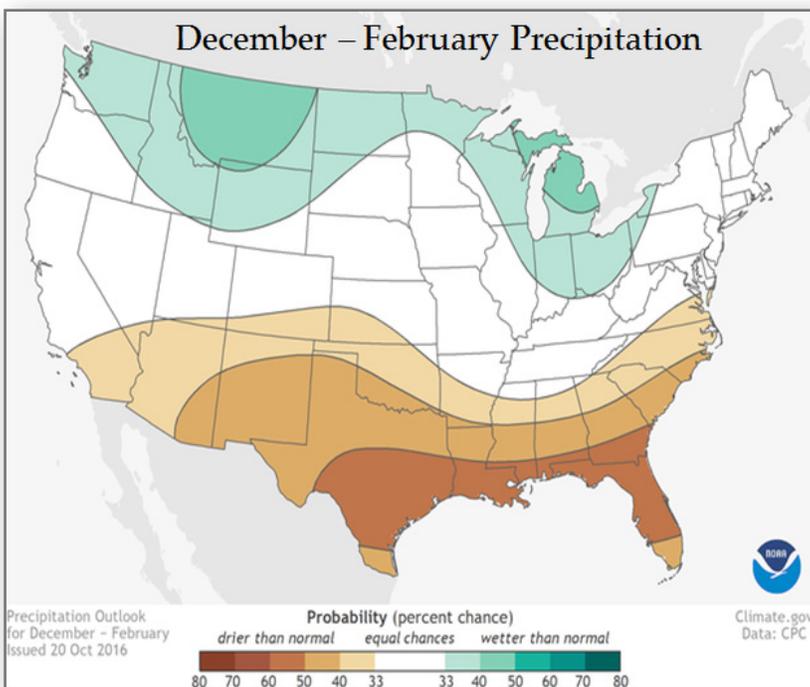
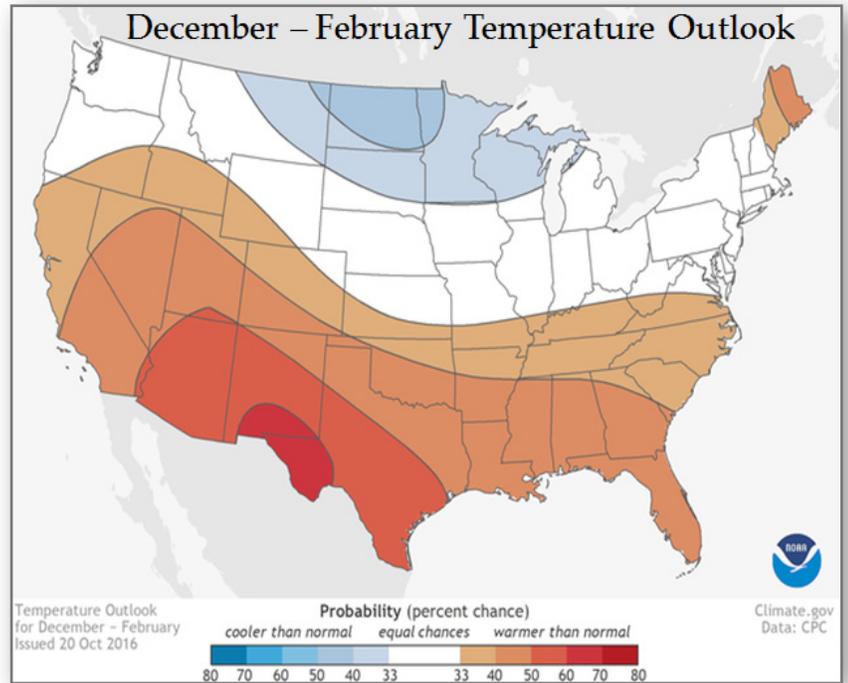
For January the average high and low is 41.8/29.2 and for February, 48.3/30.4 degrees. Temperatures will likely end very close to these numbers here this winter; with other local locations following a similar pattern.

In the precipitation department, conditions are expected to be wetter than normal across just about all of Washington and much of northeast Oregon. For perspective, average precipitation for the three month period (Dec-Jan-Feb) at Pendleton over the most recent 30 year climate period is 3.86 inches.

With temperatures expected to be near average levels through the winter months and precipitation amounts near to above average, there is a good chance that mountain snowfall will end up near to above average for the winter season. As for snow totals in the lower basins and valleys, it is much more difficult to predict. As is typically the case, there will likely be several cold air intrusions from Canada and Alaska...which may combine with the wetter La Nina weather pattern to bring even the lower elevations several accumulation of snow and ice through the winter months. At this point, the outlook would call for near average snowfall in the lower elevations, which would be an increase from the previous two winter's totals.

As with all seasonal outlooks it is important to keep in mind that the day to day weather patterns

are expected to fluctuate quite extensively (which is typical). Therefore, even if the outlook is calling for above average precipitation for the three month period between December and February, there will be, undoubtedly several periods of dry weather. The same goes for temperature, even though temperatures are expected to average out near normal levels for the three month period, there will be, undoubtedly, periods of very cold weather and also mild weather through the winter months. ❖



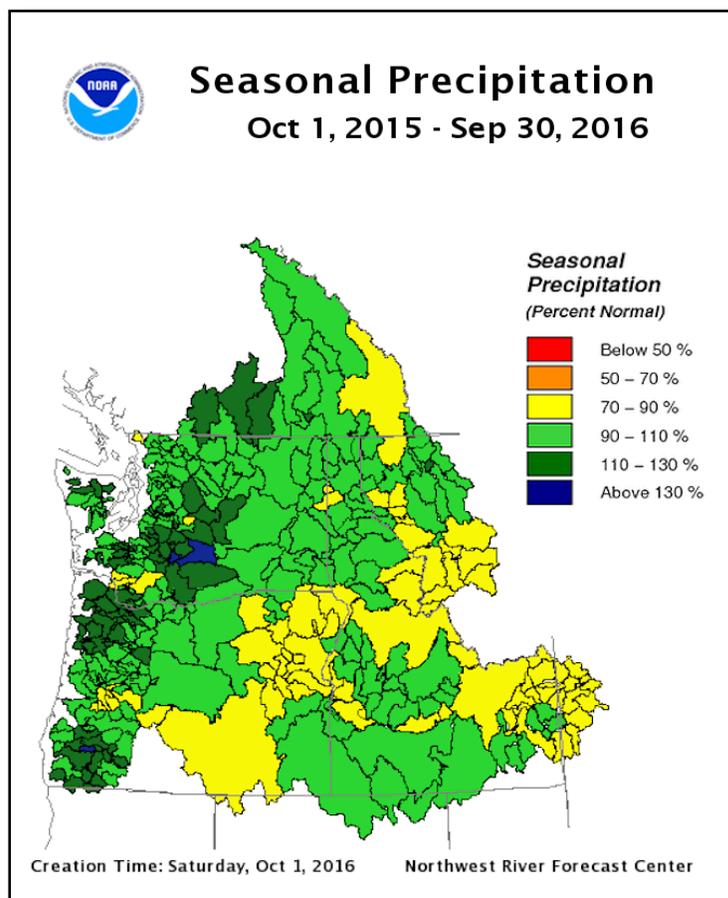
Seasonal Outlooks for Temperature (above) and Precipitation (left) covering the months of December 2016 through February 2017. Courtesy of the Climate Prediction Center.

Water Year Precipitation October 2015 - September 2016

By Marilyn Lohmann, Service Hydrologist

Location	Amount In Inches	Percent of Normal
Bend	10.81	95%
Heppner	11.73	84%
John Day City	9.21	70%
La Grande	15.37	93%
Madras	7.37	71%
Meacham	35.82	112%
McNary Dam	7.75	92%
Milton-Freewater	14.53	88%
Mitchell	15.14	108%
Moro	12.23	107%
Pelton Dam	10.46	94%
Pendleton Airport	12.53	96%
Pilot Rock	13.52	91%
Prineville	11.68	109%
Redmond Airport	9.11	102%
The Dalles	16.73	115%
Wallowa	12.84	73%
Wickiup Dam	17.71	83%
Cle Elum	28.70	129%
Dayton	19.45	102%
Ellensburg	13.77	154%
Hanford	6.92	99%
Mill Creek Dam	21.04	113%
Mt Adams RS	59.07	129%
Selah	11.65	135%
Sunnyside	9.11	121%
Whitman Mission	15.43	106%
Yakima Airport	10.71	130%

precipitation. Above normal precipitation was reported in March. April and May saw near to slightly below normal precipitation. June had below normal precipitation, followed by above normal precipitation for July. August and September had below normal precipitation. Mountain snowpack over the winter months was fairly good with near normal amounts at the end of March, but warm temperatures in April caused most the snowpack to melt out about one month earlier than normal. ❖



The water year began with below normal precipitation in October, followed by above normal precipitation in November. There was well above normal precipitation in December with most stations reporting 150 to 200 percent of normal precipitation. January saw above normal precipitation with February having slightly below normal



2016 Fire Season Recap

By Mary Wister, Incident Meteorologist / Fire Weather Program Leader

The number of wildfires and the acres burned across Washington and Oregon in 2016 were considerably less compared to 2015. According to the Northwest Interagency Coordination Center (NWCC), there were 2,464 reported fires totaling 498,507 acres in 2016. Last year, there were 4,603 reported fires and 1,823,473 acres burned. The first large fire in NWS Pendleton's forecast area began in the middle of spring. A 3000-acre grass fire quickly spread west of Hermiston on May 23 which caused Interstate 82 to close. Four motorcycles and three vehicles were involved in an accident due to heavy smoke. There were injuries but no fatalities. After the unfortunate incident, many grass fires were reported across the Columbia Basin during the remainder of spring--a good indicator of how dry the fine fuels were in the forecast area at the start of the fire weather season.

The Akawana Fire, ignited by lightning on June 7, required the attention of Oregon Department of Forestry's Type I Incident Management Team. The fire was located about 13 miles east of Sisters and burned 2,094 acres before it was contained around June 13. Typically, wildfire season in eastern Washington and eastern Oregon begins around July 1, so the Akawana Fire was an early-season wildfire. As you may recall, there was a heat wave in early June with record high temperatures and some locations reaching the 100-degree mark.

The hot and dry conditions in early June followed by

thunderstorms with cloud-to-ground lightning on June 7 contributed to the wildfire. Fortunately, temperatures during the last two weeks of June were more seasonal with occasional showers and thunderstorms that helped alleviate the threat of additional wildfires.

July was cooler and wetter than average for most locations, especially during the first half of the month. Any fires that developed were quickly contained. By the end of July and early August, fire season took off throughout the western U.S. when it became hot and dry. Eastern Washington and eastern Oregon were no exception.

On July 30, the Weigh Station Fire near Meacham forced the closure of Interstate 84 on both westbound and eastbound lanes for almost 24 hours as well as Level

3 evacuations for homes near Deadman Pass. Although the cause of the fire is unknown, dry vegetation, low humidity and gusty winds created extreme fire behavior and rapid fire spread. The 688-acre fire was contained around August 5.

Another fire began on July 30 and became the largest wildfire in Washington in 2016. The Range 12 fire, located 12 miles north of Sunnyside, quickly grew to 176,600 acres in dry sage and grass under gusty winds. The Range 12 fire covered more than half of all of the wildfires in Washington (308,219 acres) in 2016. The fire was contained on August 7. The cause of the fire is unknown.



*The Weigh Station Fire near Meacham, Oregon, on July 30-31 forced the closure of I-84 for over 24 hours as well as Level 3 evacuations for homes near Deadman Pass.
Photo courtesy of InciWeb*

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The largest wildfire in Oregon in 2016 was also in NWS Pendleton's fire weather forecast area. The Rail Fire, located five miles west of Unity, grew to 41,716 acres. Suppression efforts were difficult due to the excessive heavy dead and down fuels and steep terrain. The fire began on July 31 and was under mop-up on September 7. The cause of the Rail Fire is under investigation.

One interesting (and unsettling) statistic regarding the wildfires in Washington and Oregon--most were human-caused or under investigation. Out of the 1,184 large fires in Oregon, only 274 were caused by lightning. Out of the 1,280 large fires in Washington, only 140 were caused by lightning. In other words, most of the fires this past season could have been prevented. ❖



Remember—You can help minimize damage from wildfires by maintaining your landscaping. Here are a few tips for cleaning your property and preventing fire spread:

1. Remove dead vegetation at least 10 feet away from your home.
2. Remove flammable material such as propane tanks and firewood stacks at least 30 feet away from your home and outbuildings.
3. If you have trees on your property, prune so the lowest branches are 6 to 10 feet from the ground.
4. Keep your lawn hydrated and maintained.
5. Clear leaves and other debris from gutters, eaves, porches and decks. This prevents embers from igniting your home.

For more information and helpful tips on wildfire preventative maintenance for home or property owners, visit <http://firewise.org/wildfire-preparedness/be-firewise/home-and-landscape.aspx>



Photo by Jon Bonk, NWS

Cooperative Program Highlights

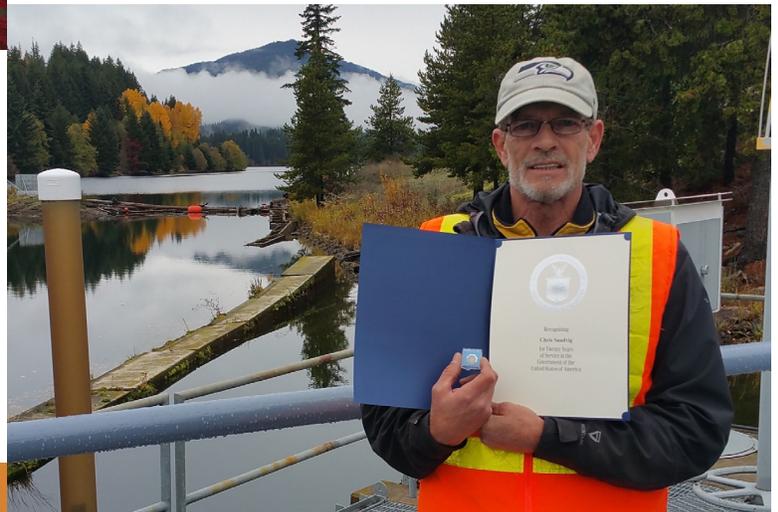
The Cooperative Observation Program continues to be a vital part of the Weather Service's data acquisition and input to global modeling systems. At the heart of the program, the dedicated volunteers that continue the daily record keeping tradition which, in some cases, began several generations prior. NWS Pendleton

presented a number of observers with service awards in appreciation for their continued dedication and support of providing those daily weather observations. Some of the presentations were made at our Open House event in October, while others were made at the weather station's locale. Congratulations and thank you for your service!❖



Curtis Wood (right), representing the Bureau of Reclamation's North Unit Irrigation District in Deschutes County OR, was presented an institutional award for 75 years of service in the NWS Cooperative Program by Meteorologist-in-charge Mike Vescio. Curtis' station is Wickiup Dam on the Deschutes River at Wickiup Reservoir in the Deschutes National Forest in central Oregon.

Chris Sandvig of Easton, WA was presented an award for 20 years of service in the NWS Cooperative Program. Chris' station is Easton Dam, located on the Yakima River in northwest Kittitas County.



Sam Rufener (right) was presented an award for 20 years of service in the NWS Cooperative Program. Weather observations have been a long standing tradition in the Rufener family, beginning with Sam's grandfather, George Rufener Sr, in the late 1930s. Sam's station is Grizzly OR located at his ranch in southeast Jefferson County.

Cooperative Program Highlights



Pat Perry (right) of Mitchell, OR was presented an award for 20 years of service in the NWS Cooperative Program. The award was presented by NWS Meteorologist-in-charge Mike Vescio at our October Open House event. Pat's station is Mitchell 2E, located in southern Wheeler County.

John McNamee (right) of Antelope, OR was presented an award for 15 years of service in the NWS Cooperative Program. John's father, Frank McNamee, was the cooperative observer for Antelope OR from 1983 until his passing in 2000. John became the observer shortly after, continuing the tradition of providing the Weather Service with important weather data. Presenting the award was NWS Meteorologist Mike Vescio. John's station is Antelope 6SSW, just outside of Antelope, OR in southeast Wasco County..



Garey Fischer (left) of Spray, OR was presented an award for 10 years of service in the NWS Cooperative Program. The award was presented by Meteorologist-in-charge Mike Vescio (middle) and Observation Program Leader Jim Smith (right). Garey's station is located at his farm just outside of Spray, in eastern Wheeler County.

Rain & Wind Didn't Stop Our Open House!



WFO Pendleton held an Open House October 13th, 2016. The date was shifted from our normal late spring to avoid potential stormy spring weather and increase our attendance, we met half our goals. Attendance increased from around 200 to nearly 600 people braving the less than ideal weather to visit the WFO. Several Deep Core partners participated in our event to include; ODOT, OR Dept. of Environmental Quality, Umatilla County OR and Benton & Franklin Counties WA Emergency Managers. We also had presenters from the local Life Flight facility and the Pendleton UAS Range (Aerial Drones). Staff members demonstrated the various activities that represent our daily operations and severe weather processes. Our Fire Weather Incident Meteorologists demonstrated a weather balloon launch. Visitors also had the opportunity to see how the RADAR, HAM radio, and COOP partners enhance the capabilities of our forecasters. Despite the inclement weather our Open House was a success! ❖ Photo and caption by Johnny Blagg, NWS.

