



The Inland Northwest Informer

Information For Storm Spotters, Cooperative Observers And Everyone

A Publication Of WFO Pendleton, Oregon

Spring/Summer 2021 - Volume 28

The March 28th Wind Storm

By Marcus Austin, Warning Coordination Meteorologist

On Sunday, March 28, a powerful spring storm system swept across the Inland Northwest. This occurred as a significant upper trough and cold front surged eastward across the region, resulting in widespread blowing dust, sporadic wind damage, and power outages.

Winds picked up speed by mid-afternoon as an intense band of low level southwesterly winds developed across portions of the Columbia Basin. Ample daytime heating allowed some of these winds aloft to mix down to the surface across parts of northern Oregon and southern Washington where wind gusts topping 55 to 75 mph occurred in some locations. A few locations at the foot of the Northern Blue Mountains also saw localized downslope wind gusts of 55 to 65 mph ahead of the main frontal passage.

More widespread intense winds occurred immediately behind the fast moving cold front. While the early day



Figure 1. A massive cloud of dust blowing across the Columbia River near Rufus, OR. Photo courtesy of Sherman County Sheriff's Office.

winds were generally south to southwest, the post frontal winds were from the west and northwest. These winds were aided by a shield of light to moderate precipitation that acted to mix down severe wind gusts from just above the surface. The result was a protracted period of wind gusts on the order of 65 to 85 mph from the eastern Columbia Gorge across the Columbia Basin. Even some of the more protected areas of central and southern Oregon, including John Day,

saw high winds with this event.

While these winds were rather widespread, it may come as a surprise that only a few locations reported wind damage. This may be due to a number of factors including the recency of a similar event in January, the lack of foliage on trees as we weren't too far into spring, and the commonality of a west or southwest wind direction. Despite this, there were some reports of damage to roofs, trees, and power lines and poles.

This combined with an abnormally dry March created a perfect storm for lofting of dust in some areas. While it's not something people think about too often, blowing dust is a significant hazard to motorists with rapid reductions in visibility over short distances. This shortens the reaction time for drivers and has historically led to some nasty pileup accidents in the Columbia Basin.

Continued on page 2

In This Issue

- March 2021 Wind Storm
- Fire Season Outlook
- 2021 Summer Outlook

- Drought Outlook
- Staff Spotlight
- Cooperative Program Highlights

- Photo Album
- Banner Image by T.W. Earle

In the wake of the front, much colder air moved into the region. This coupled with additional precipitation led to moderate mountain snow, especially over the Cascades including some mountain passes. While it's not uncommon to have snow events into March, this event was somewhat rare in how rapidly

freezing air moved in and snow levels fell. Within a matter of a few hours, some mountain areas that were in the upper 50s to mid 60s tumbled into the 20s, allowing liquid precipitation to rapidly transition to snow. ❖

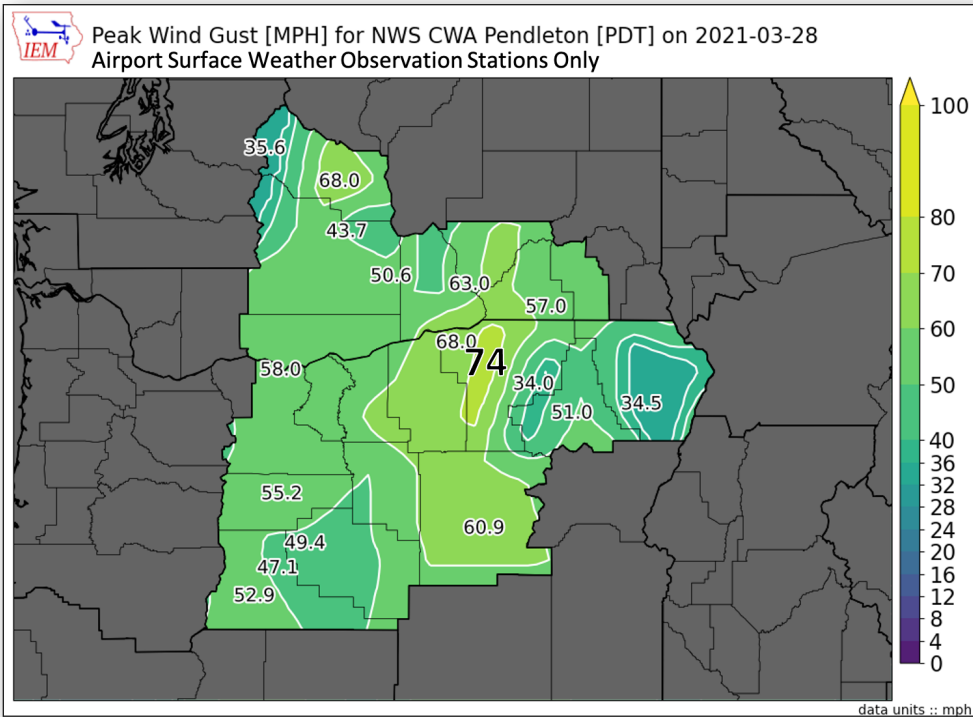


Figure 2 (left). Graphic analysis of recorded peak wind gusts from regional airport stations on March 28, 2021.

Figure 3 (right). Peak wind gust reports from various monitoring and observing networks including NWS/FAA, ODOT and WSDOT, Hanford Meteorological Monitoring Network (HMMN), and RAWS. The highest report of 85 mph was recorded by an ODOT sensor on Interstate 84 just east of Pendleton.

24HR Peak Winds (mph)			
184 Eb At Mission Mp214		85	
Umatilla 1387ft			
Maryhill	84	North Pole Ridge	81
Grayback	79	4.2 S Fossil (ODOT)	76
High Bridge	76	19.1 N West Richland (HMMN)	76
5 WSW Rufus	75	8.9 N Benton City (HMMN)	75
Pendleton, OR (Airport)	74	13.5 NW West Richland (HMMN)	73
Board Hollow	73	4.9 E Rufus (ODOT)	70
Benton City	70	Echo	69
8.7 E Echo (ODOT)	68	4.9 W Shaniko (ODOT)	68
Hermiston Municipal Airport	68	Ellensburg Airport	68
15.3 SE Desert Aire (HMMN)	68	Pendleton	68
Hehe 1	65	Bend	65
Kahlotus	65	12.2 SE Grass Valley (ODOT)	64
1.8 NW Wasco (ODOT)	63	Tri Cities Airport	63
0.7 E Pasco (HMMN)	62	14.8 SE Desert Aire (HMMN)	62
Sisters	62	19.3 NW West Richland (PDTWFO)	61
John Day Regional Airport	61	16.8 S Royal City (HMMN)	61
Umatilla	60	Sedge Ridge	60
4.8 W Arlington (UPR)	59	10.5 W Antelope (ODOT)	59
8.9 E Desert Aire (HMMN)	59	Clyde	59

Fire Season Outlook 2021

By Mary Wister, Incident Meteorologist / Fire Weather Program Leader

Hot and dry weather is inevitable in July and August across eastern Washington and eastern Oregon. Wildfires are common every year during the hottest months. The fire season greatly depends on how much precipitation fell in the winter and spring, the total mountain snowpack, and whether or not the temperatures were cool enough to maintain the snowpack through the spring months. In other words, fire season in the Pacific Northwest greatly depends on how the vegetation (i.e. fuels) has responded to temperatures and precipitation in the winter and spring.

Unfortunately, a large portion of eastern Washington and eastern Oregon is starting off June with dry grassy fuels—dry enough that human-caused wildfires proved difficult to contain due to gusty winds. On June 1, the Oregon Department of Forestry (ODF) posted on Facebook that the total number of fires and the total acres burned have more than doubled the average in ODF protected lands. Abandoned campfires were reported in several locations on Memorial Day weekend.

The Northwest Coordination Center in Portland provides a seasonal wildland fire potential outlook each month for Washington and Oregon. From July through September, the potential for large wildland fires remains the same for both states. Figures 4 and 5 (below and on page 4) show the outlooks for July and August (September not shown). While the Blue Mountains and Wallowa County down to southeast Oregon are expected to have an average season, the remainder of eastern Washington and eastern Oregon may have an above average season for large wildfires.

Snowpack was above average for most of the winter and early spring in the northeast mountains, mainly in the higher elevations. This has helped to keep fuel moistures high in the timber areas. However, most of Washington and Oregon is abnormally dry. The Columbia Basin is under severe to extreme drought. The fine fuels are dry, and the continued hot and dry conditions of July and August will lower the fuel moistures of the larger vegetation such as timber and slash. The Desert

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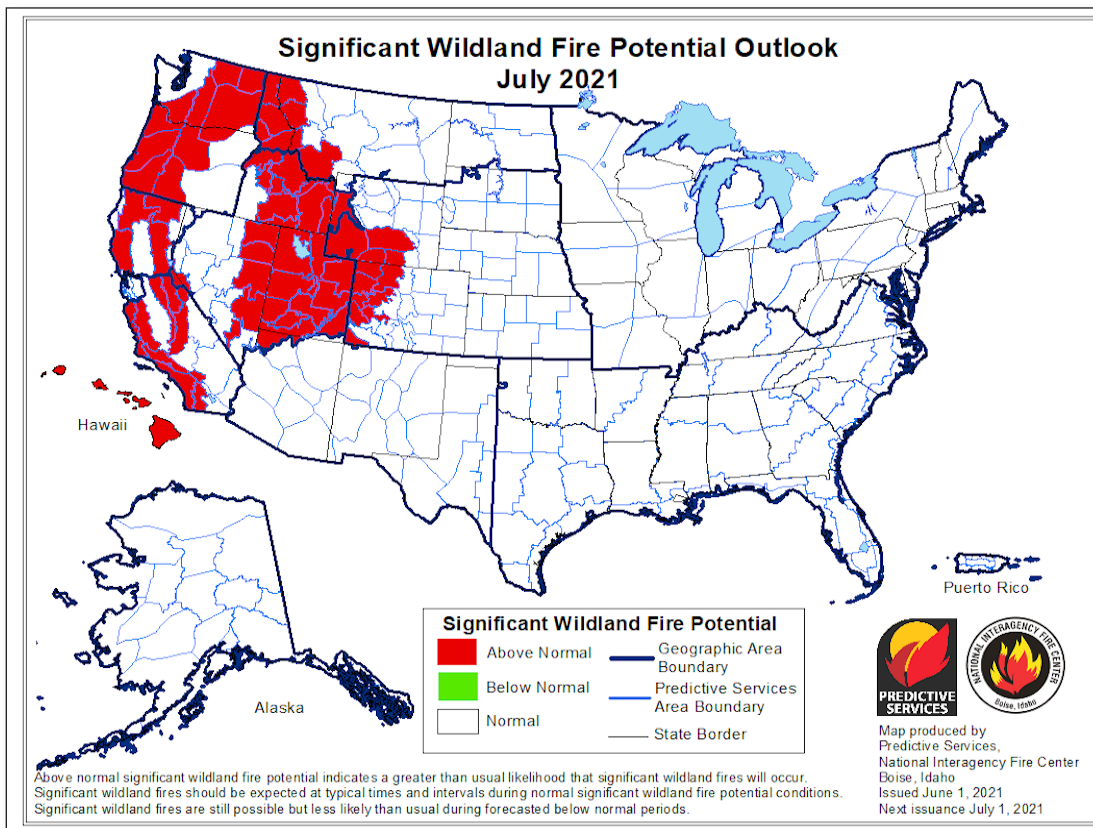


Figure 4. Wildfire Potential Outlook for July 2021. From the National Interagency Fire Center (NIFC) at www.nifc.gov

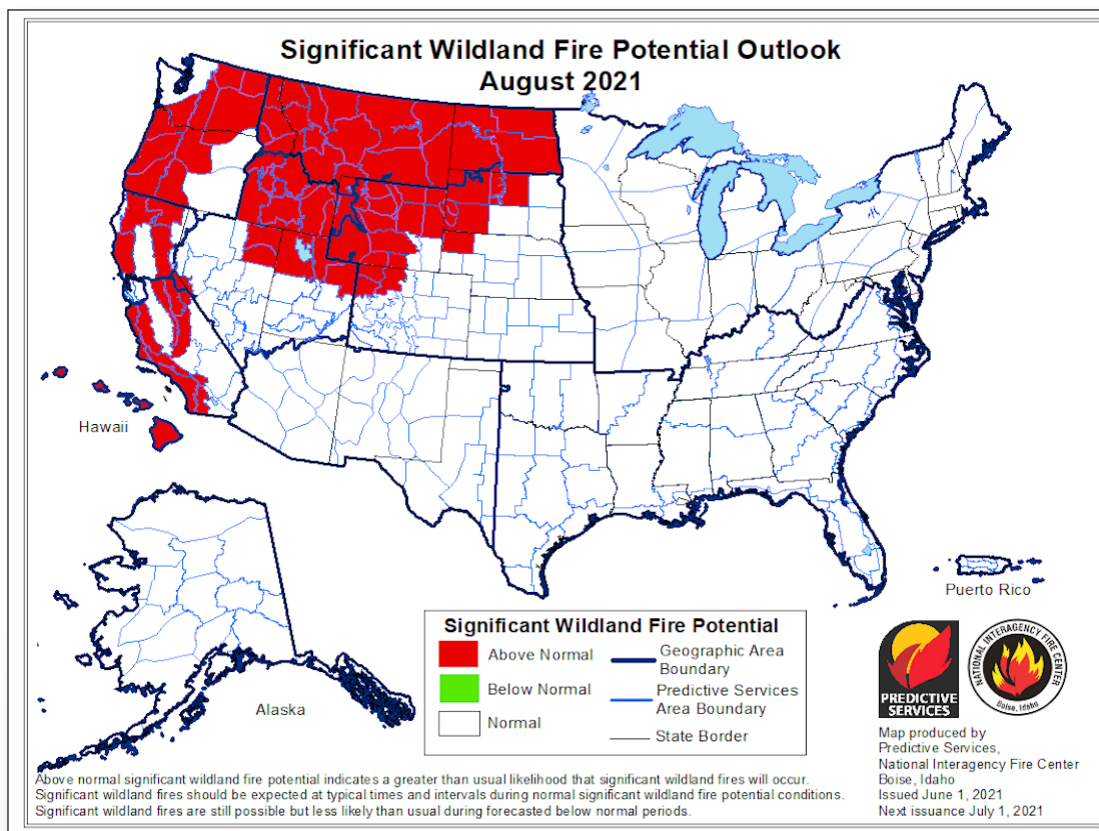
Southwest is expected to have an average monsoon season in July which will increase the potential for thunderstorms in eastern Oregon and eastern Washington. Of course, there is always the human factor when it comes to large wildfires.

The phrase “one less spark, one less wildfire” says it all. One can never be too careful when it comes to preventing wildfires. Never leave fires unattended and completely extinguish any fires. Make sure you have a shovel and a bucket of dirt handy

when camping outdoors. If traveling with trailers or campers, ensure the chain is secured and not dangling beneath the trailer hitch. Avoid parking a vehicle with a hot exhaust near tall dry grass. Report to law enforcement when you observe anyone carelessly burning outdoors.

For more prevention tips, www.smokeybear.com is a great website. After all, Smokey Bear has been an expert on this topic for over 75 years. ❖

Figure 5. Wildfire Potential Outlook for August 2021. From the National Interagency Fire Center (NIFC) at www.nifc.gov



- 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 6-10 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.

Summer 2021 Seasonal Outlook

By Roger Cloutier, Meteorologist

The recent La Niña Advisory has ended and the ENSO (El Niño Southern Oscillation) status has become “Neutral” or “Not Active”. There is a 78 percent chance that the ENSO status will remain neutral through this summer into the fall. Near-average sea surface temperatures were recently observed across most of the equatorial Pacific Ocean. Effects of ENSO neutral conditions typically mean closer to normal conditions in both temperature and precipitation, in part because surface trade winds would typically blow westward across the equatorial Pacific, which helps push the warm water by a westward current on the ocean surface with these ocean temperatures closer to average. While a shift in the conditions in the equatorial Pacific with either a La Niña or El Niño can affect our weather, ENSO neutral conditions mean we don’t have that predictable influence.

However, this past spring has been exceptionally drier than normal, with many stations ranking in the top ten driest 3 month periods of March, April and May. Conditions do not appear that there will be a significant change from this scenario, and that persistence is

avored. This would mean a continuation of above normal temperatures and below normal precipitation. There have already been several major project wildfires as a result in northeast Oregon and south central Washington. These fires include the Joseph Canyon and Dry Creek wildfires in northeast Wallowa County, and also there was a major wildfire in April at the Yakima River Delta in south central Washington, which burned in a marshy area near the Tri-Cities, in the Lower Columbia Basin. Live fine fuel vegetation has begun to cure considerably earlier this spring than in a normal spring. If these conditions do actually continue through the summer, one can expect a more active fire season than normal. Below is a graphic that depicts forecast ENSO conditions in the northern hemisphere through the summer, with some chances of La Niña conditions returning in the fall and winter 2021-2022.

In figure 6 (below), the red bars indicate El Niño probabilities, the blue bars indicate La Niña probabilities, and the gray bars indicate ENSO-neutral probabilities. While the chances of El Niño conditions remain very low,

there is near a 10 percent chance of El Niño conditions developing during the summer and fall. However, La Niña probabilities are significantly higher, but are mostly below 50 percent during the summer, and then rise to above the 50 percent line (the black line) during October, November and December. ENSO neutral condition probabilities range from over 70 percent during the summer, and then gradually decrease to near 40 percent during the fall.

Figure 7 (page 6), is an ensemble mean (thick black dashed line), which predicts ENSO conditions for Nino region 3.4. Nino region 3.4 is generally the central equatorial Pacific Ocean. In this image, the CFS.v2 ensemble mean (thick black dashed line) shows

ENSO-neutral is favored through the Northern Hemisphere summer, with chances of La Niña increasing into fall and winter 2021-22.

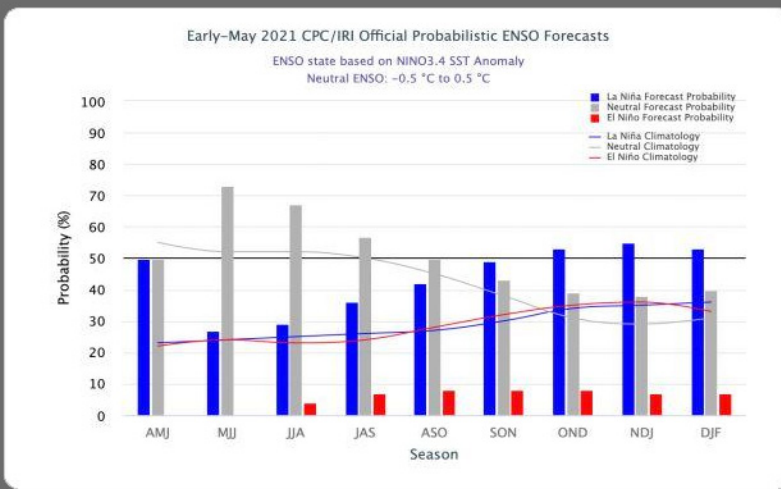


Figure 6. Probabilistic ENSO Forecast.

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ENSO-neutral conditions (SST anomalies near or at the zero line) to persist during the summer with SST's near normal. Then, sea surface temperatures begin to lower again during the fall and winter of 2021-2022, which shows some chance of La Nina conditions returning in the fall and winter. However, the amount of decrease of SST's here is small, and therefore the chances of a

return of La Nina conditions is only a slight chance (a sea surface temperature anomaly average decrease of only 0.5 degrees). There is some spread among the ensemble members that increase with time, but this amount of spread is not unusual, and the mean is in the middle of the spread.

Continued on page 7

Figure 7. The CFS.v2 Ensemble Mean.

The CFS.v2 ensemble mean (black dashed line) predicts ENSO-neutral to continue into winter 2021-22.

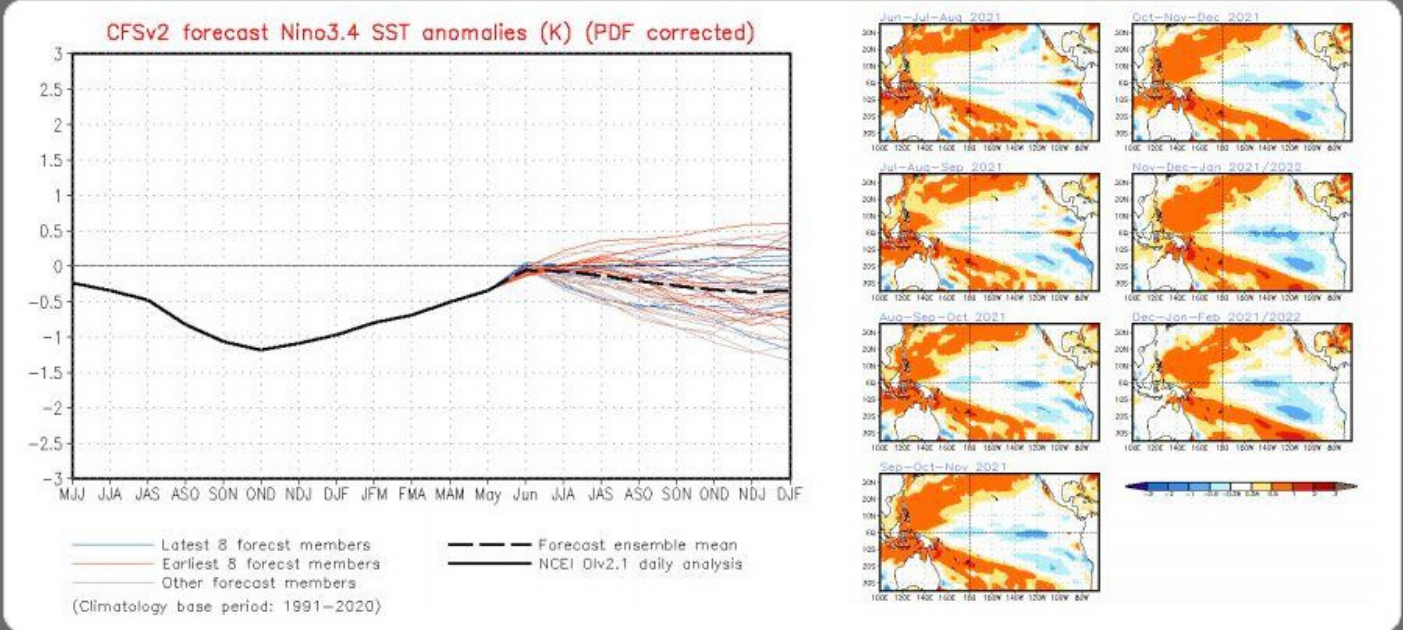


Figure 8 (right) represents the Three-month seasonal temperature outlook for the U.S. during the period of June, July, and August. This indicates above normal temperatures over the Pacific Northwest. This is consistent with recent trends of above normal temperature anomalies during the past spring, especially so far in June.

Figure 9 (below) represents the Three-month seasonal precipitation forecast for the U.S. during the period June, July, and August. This indicates that the Pacific Northwest is expected to have below-normal precipitation, with the forecast area being in the darker brown in the image (the 40 percent area of a greater chance of having drier than normal conditions). This image combined with the previous image indicates that this summer will likely be hotter and drier, leading to a more active fire season and other effects such as a continuation of the major drought that currently exists over the Pacific Northwest, an earlier ban on campfires, smoking bans, BBQs, ATV/four-wheeling activities in dry areas, agricultural burning bans, backyard burn bans, and other activities or operations which involve fire or fire ignitions sources such as sparks from trains igniting new wildfires. ❖

Figure 8. Seasonal Temperature Outlook From the Climate Prediction Center.

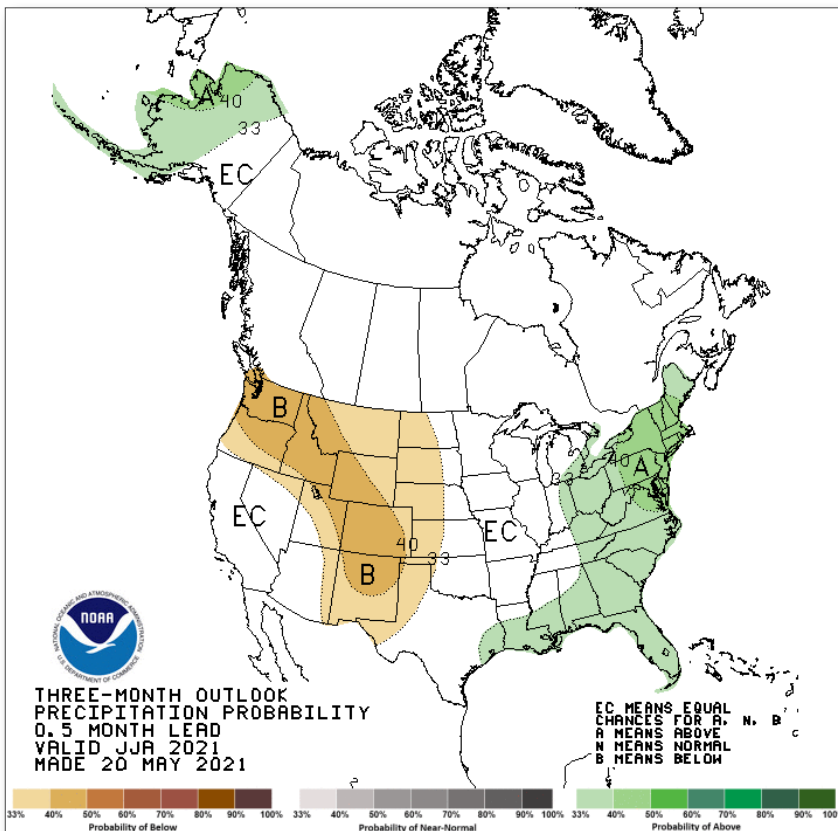
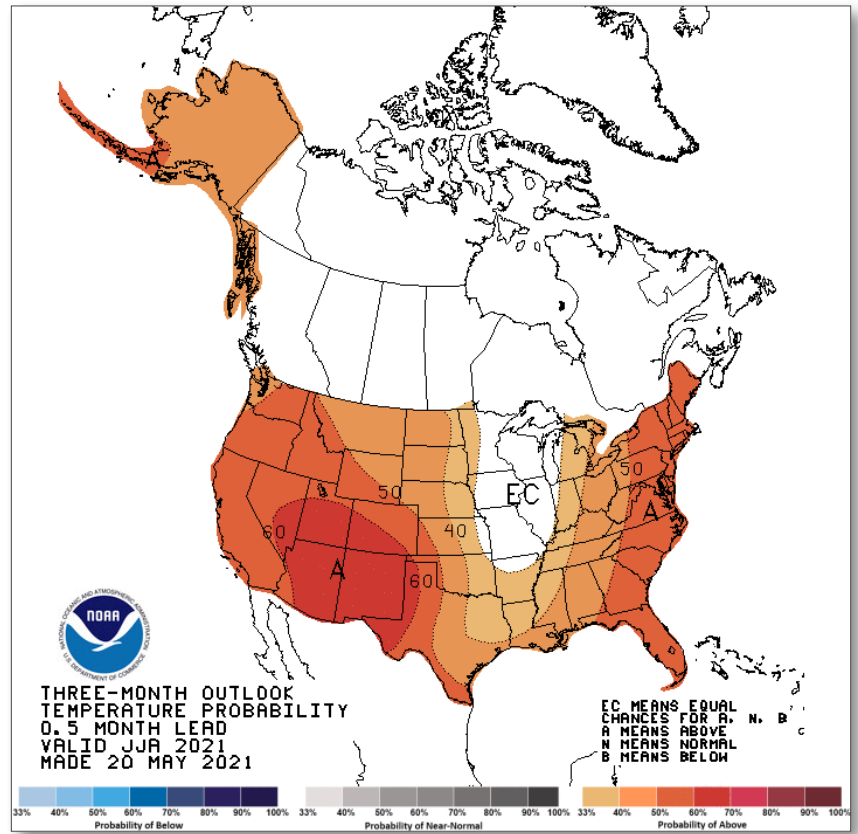


Figure 9. Seasonal Precipitation Outlook. From the Climate Prediction Center.

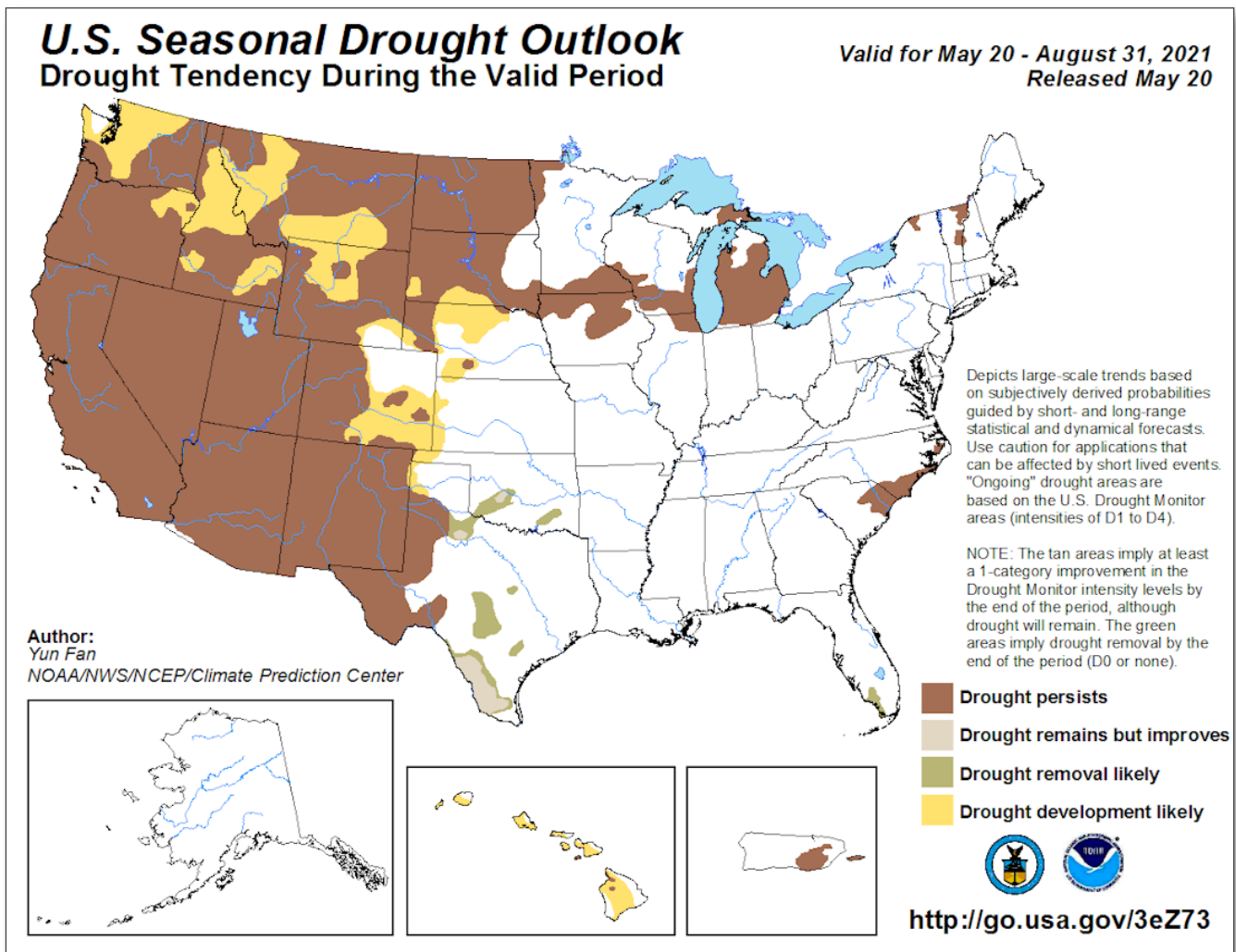
Drought Outlook For Eastern Washington and Oregon

By Marilyn Lohmann, Service Hydrologist

Drought conditions have worsened across many parts of Washington and Oregon over the past few months with record dryness reported for the March through May timeframe. Over the past 18 months, only 2 months, November 2020 and February 2021 had above normal precipitation. For many locations extending from central Oregon through southeast Washington this has led to a continuation or intensification of drought conditions that took hold last summer. Washington State has issued a Drought Advisory for most of the state and numerous drought declarations are in effect for counties in

Central and Northeast Oregon.

The seasonal outlook for drought show no improvement expected through the next several months with drought persisting in areas already experiencing drought and development of drought over those areas not currently in drought. The longer range climate outlooks from the NOAA's Climate Prediction Center show increased chances of above normal temperatures and below normal precipitation through the summer and into the fall months. ❖



For the latest Seasonal Drought Outlook map and assessment, go to <https://go.usa.gov/3eZ73>

Staff Spotlight

Getting to know the scientists and technicians at NWS Pendleton.

Larry Nierenberg was born in New York City and spent most of his life in New Jersey. Larry had an early interest in weather and his mother remembers him asking many questions about weather. So, it seemed natural that he pursued meteorology as a career choice. Larry studied meteorology at Pennsylvania State University, from where he obtained a Bachelor's Degree. While on spring break his senior year of college, the 1993 east coast blizzard occurred and it delayed student's return to campus.

After completing his education, Larry began his career in the National Weather Service and this lifelong east coast resident went to Salt Lake City, Utah. From there, it was on to Dallas/Fort Worth, the Washington DC area and then back to the Philadelphia/New Jersey area where he spent most of his career...a total of 12 years. While in the Philadelphia area office, Larry experienced many career highlights including forecasting for and working during Hurricane Sandy in 2012, which caused a lot of flooding and devastation as well as providing weather support for Pope Francis' visit to Philadelphia in 2015 and the Democratic National Convention in 2016.

However, after 12 years, it was time to move on, and he accepted a promotion and a unique opportunity to go to the US territory of Guam, where Larry spent 2 years forecasting tropical weather and typhoons.

After two years in Guam, the inland northwest came calling and Larry moved to Pendleton Oregon, where he is a Lead Meteorologist. Larry has over 26 years of experience in the National Weather Service and Pendleton is his fifth office. At this point he has probably forecast for almost every type of weather. Larry enjoys working with our partners and the public to promote weather safety, preparedness and resilience.

Outside of work, Larry enjoys travelling. He has been to Australia, New Zealand, China, Japan (many times), Hong Kong, Macau, South Korea, numerous countries in Europe, Canada and is likely forgetting to mention a few. He also likes to jog, walk, bike, hike and used to run half-marathons, though those days are likely over. Larry also looks forward to being able to explore more of the Pacific Northwest. ❖



Cooperative Program Highlights

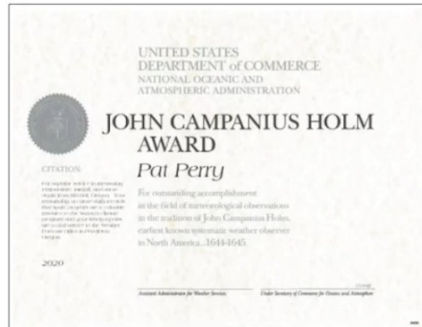
2020 was a challenging year for everyone. The National Weather Service continued to provide data and services to the public and partners. Volunteers of the Cooperative Observation Program also continued to take and submit daily weather observations throughout the year. When it comes to acknowledging our observers with awards, normally, we travel to the stations and present the awards in person. However with travel and gathering restrictions in place, the National Weather Service, for the first time, held virtual award

ceremonies. On January 25, 2021, Dr. Louis Uccellini (Director, National Weather Service) and Tom Cuff (Director, Office of Observations) along with regional directors and local staff virtually presented numerous national awards to observers from the Alaska, Pacific and Western regions. Two of the awards were presented to observers from NWS Pendleton's area. Our third recipient of an award, not present for the ceremony, was the City of Arlington, Oregon Treatment Plant. They received a 25-year Honored Institution Award. ❖

Pat Perry of Mitchell, OR



Photo of Pat Perry



Presenter: Jim Smith of the Pendleton, OR Weather Forecast Office

Screen captures of online virtual award presentations of the John Campanius Holm Award to Pat Perry of Mitchell, OR (left), and a 75-year Family Heritage Award to the Kennedy-Richardson Family of Lower Hay Creek, OR. (below).

The Kennedy-Richardson Family of Madras, OR 75 Years

Bonnie Richardson
(top right)

Norma
Kennedy-Richardson
(lower left)

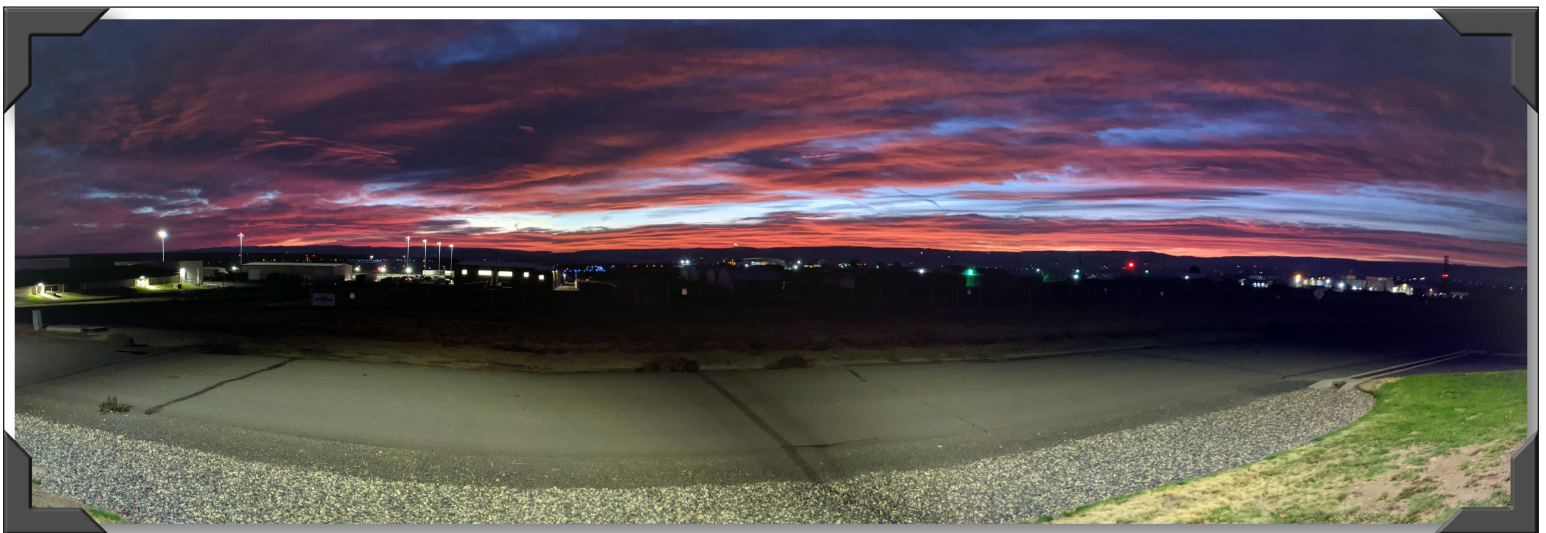


Presenter: Jim Smith of the Pendleton, OR Weather Forecast Office

Photo Album



Afternoon sun behind Cirrus and Cirrostratus clouds produced Sun Dogs (parhelia) and a very faint halo. Photo by A. Adams



Panorama of dawn sky over the Eastern Oregon Regional Airport. Photo by A. Adams



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