



# The Inland Northwest Informer

Information For Storm Spotters, Cooperative Observers And Everyone

A Publication Of WFO Pendleton, Oregon

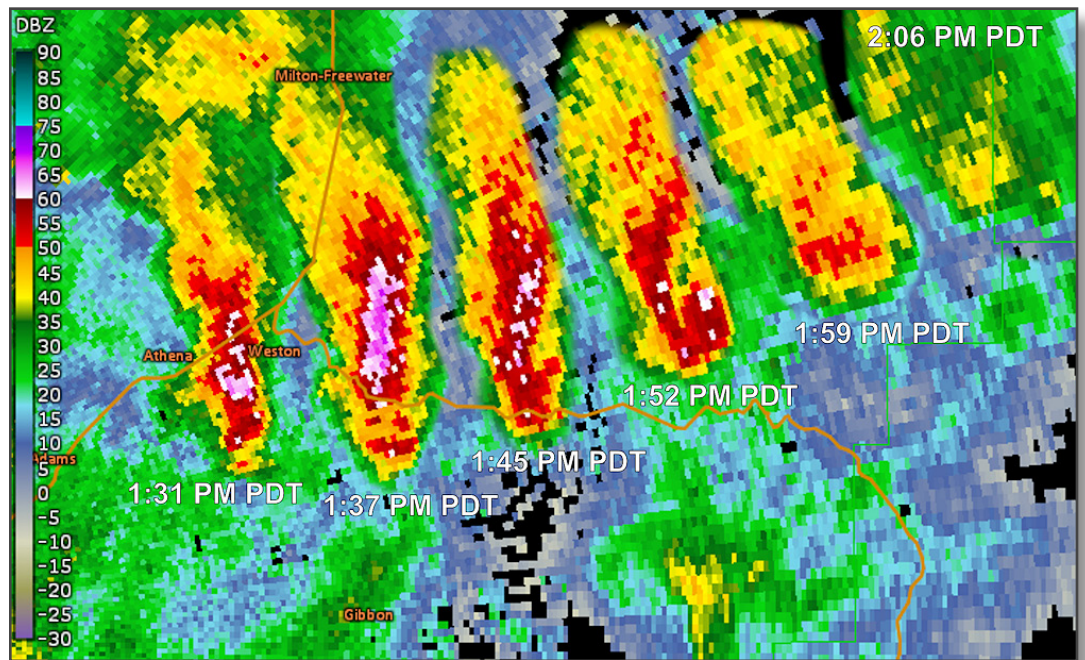
Spring/Summer 2022 - Volume 30

## May 6 Tollgate Tornado

By Ed Townsend, Science and Operations Officer

The Interior Northwest sees many different forms of hazardous weather ranging from winter snow storms to atmospheric rivers that can result in extensive flooding, and extreme heat. Severe thunderstorms also occur in our area with the main threats being damaging wind and large hail. Case in point, the May 30th, 2020 episode stands out as it featured a wide coverage of storms that were high-impact in nature. Extreme straight line winds were observed with peak thunderstorm wind gusts reaching 70-115 mph in central OR, along with large hail reaching lime size (2 inches). Tornadoes, however, are not a common occurrence in either Washington or Oregon and are considered to be infrequent.

In general, both Washington and Oregon see two tornadoes per state on average (30 years) annually. While there are a few different reasons why their formation is not as favorable, they can and do happen. Leading us to our most recent example, in which a tornado occurred this past May 6th between Weston and Tollgate in Umatilla County. Originally the NWS Damage Survey concluded two tornado tracks in their assessment. However, additional information and photographic evidence was relayed to the NWS that showed the first track was longer



**Figure 1** Radar composite image summary from May 6, 2022 depicting the 35 minute evolution of the severe storm that produced a tornado between Weston, OR and Tollgate, OR. Times in Pacific Daylight Time.

resulting in an update. As such, the two paths are now treated as one tornado with a small break between the two tornado damage paths of less than one mile. This determination was also based on the evidence stemming from the overall analysis and a lack of eyewitness reports to conclude there were two distinct tornadoes. Many myths exist surrounding tornadoes. One common myth is that mountains inhibit tornadoes, which is easily dispelled with the fact that many have crossed high elevations in the mountains. The aforementioned tornado occurred on May 6th in the northern Blue Mountains of Oregon with an average elevation around 3600 ft. In the early afternoon,

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Banner Image by A. Adams

a severe storm produced a tornado between Weston and Tollgate that moved roughly east along Oregon route 204. This tornado occurred roughly between 1:40 PM PDT and 1:55 PM PDT. The tornado occurred roughly 8 miles east of Weston and had an estimated travel length of roughly 3 miles with a small break in the path of less than a mile. The tornado was rated an EF1 based on estimated wind speeds and corresponding damage. Multiple trees were uprooted and there was extensive snapping of large branches. In addition, a manufactured home was left with structural damage while a separate residence saw extensive roof damage. The roof damage included uplift of the roof deck with a loss of roof material. A farm outbuilding was also heavily damaged in which the roof and walls collapsed.

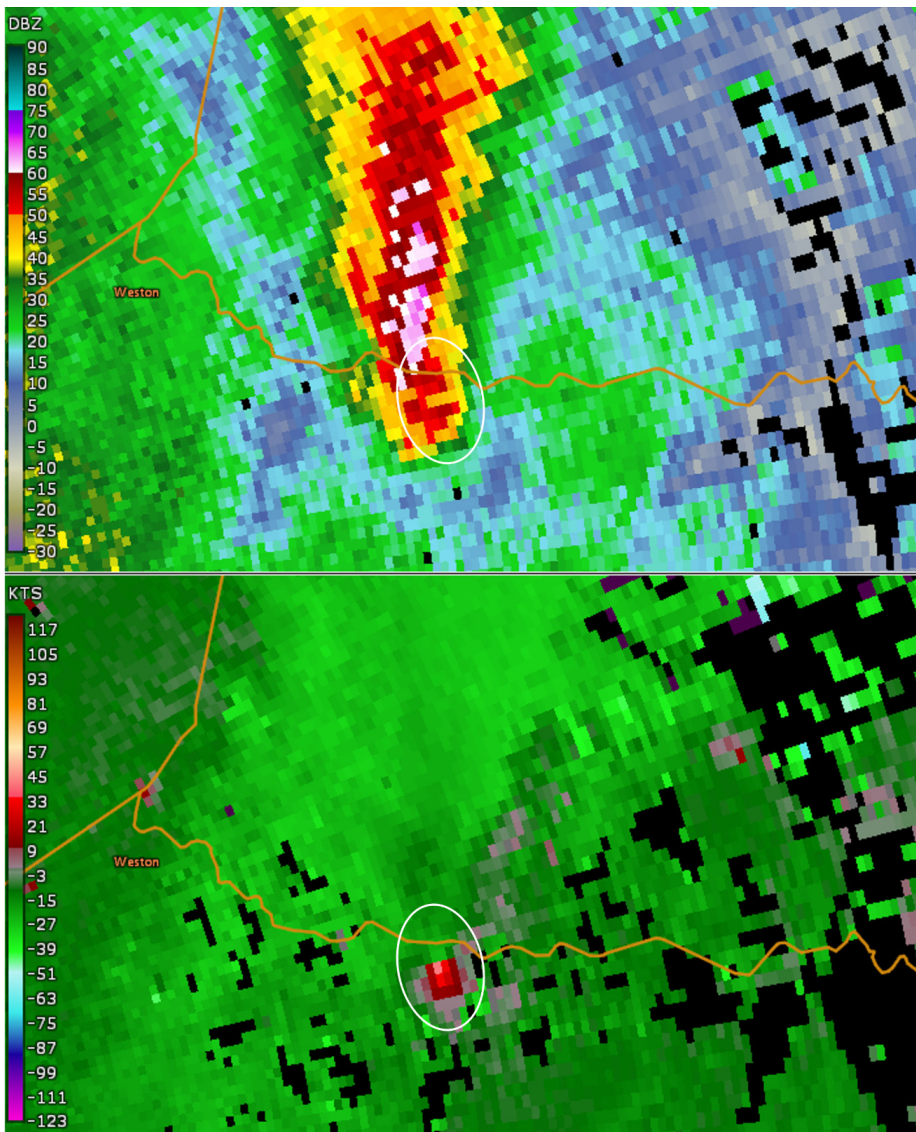
The storm that produced the tornado rapidly intensified and diminished in a span of around 30 minutes in the time frame between 1:30 PM PDT to 1:58 PM PDT. On May 6th a surface trough extended south across south central WA to the central OR mountains with a disturbance aloft moving eastward over

the region with a cold front approaching from the west. The overall environment had a combination of favorable and less favorable traits when it came to the possibility of strong-severe thunderstorms. Less favorable was the modest instability and large-scale forcing. Separately, the cloud heights, lower-level moisture, and the quantity of wind shear or the change in the wind's direction and speed with height proved sufficient.

There were numerous showers that day with a few isolated thunderstorms with this being the strongest and most severe storm that occurred. The NWS actively conducts research on tornadic environments and why some storms produce tornadoes, and why some do not, to improve warning decision making and warning accuracy. Local NWS research efforts will continue to investigate this event, and will hopefully promote increased lead time for future events. ❖

More information on this event can be found by visiting <https://www.weather.gov/pdt/DamageSurvey050622>

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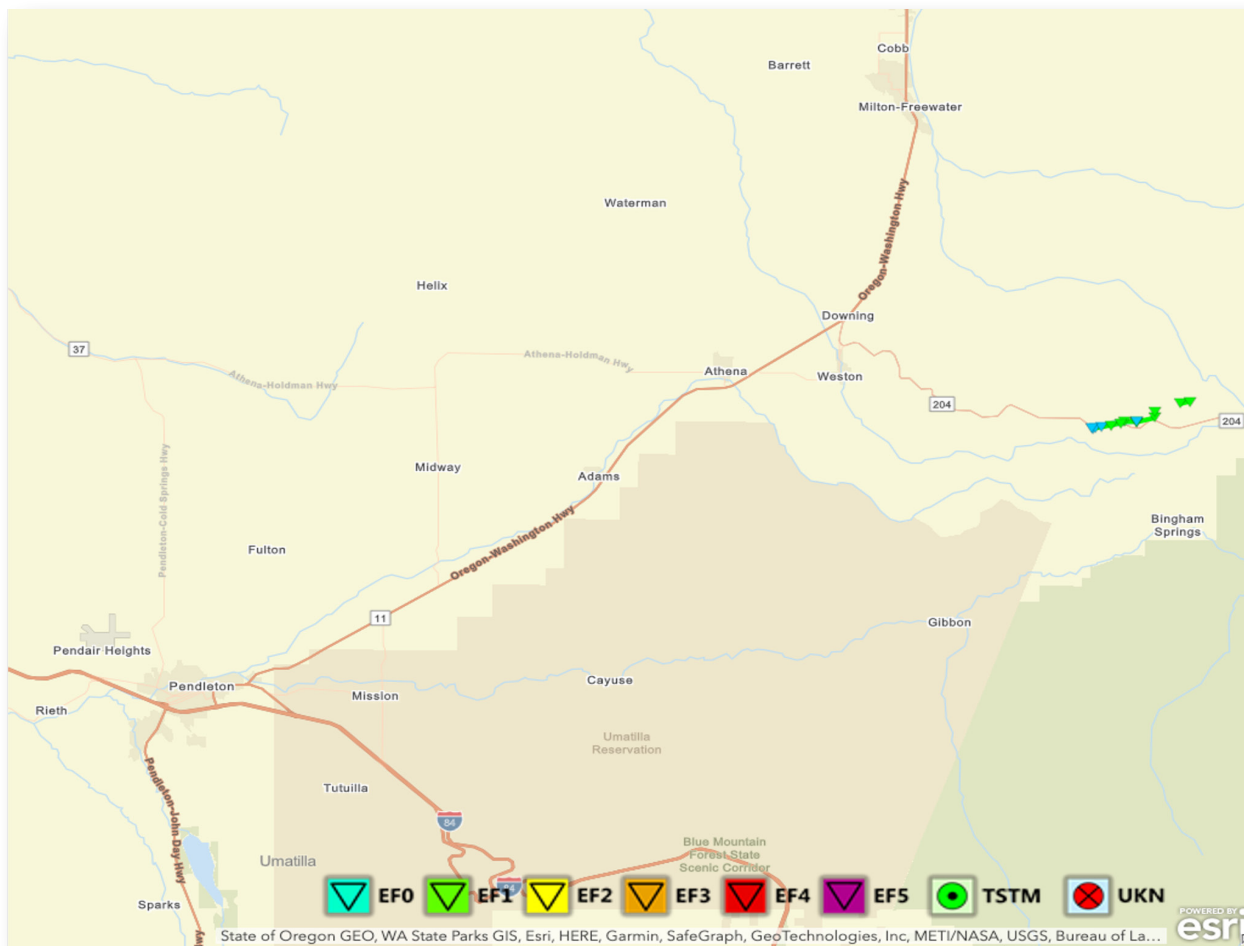


Figures 2 & 3

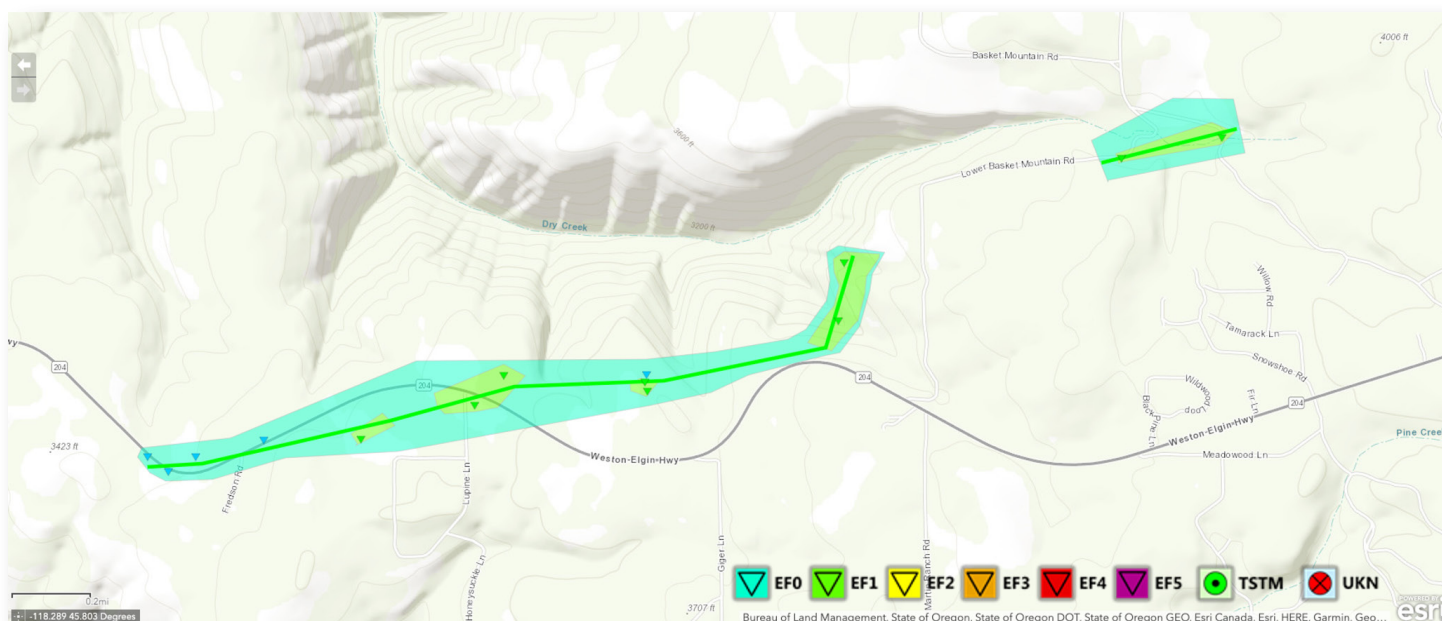
1:41 PM PDT  
Base Reflectivity.

1:41 PM PDT  
Storm Relative Velocity

Radar pattern depicts a small cyclonic velocity signature, circled in white. The red colors denote an outbound velocity (motion moving away from radar) and the green colors denote an inbound velocity (motion toward the radar)



**Figures 4 (above) and 5 (below)** Zoomed-out (Fig. 4) and Zoomed-in (Fig. 5) track map showing damage indicators (triangles) and the approximate damage path (polygon) from the NWS Damage Survey for the May 6, 2022 tornado event. Damage denoted by color with cyan corresponding to EF0 and green corresponding to EF1.



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**Figure 6** Softwood tree uprooted indicative of EF1 damage. Photo taken by NWS Employee.

**Figure 7** Uplift of roof deck with loss of roof material indicative of EF1 damage. Photo taken by NWS Employee.



**Figure 8** Collapse of farm outbuilding walls. Shown are NWS Employee Brandon Lawhorn (left) and East Umatilla Fire & Rescue Chief Dave Baty (right). Photo taken by NWS Employee.

# Summer 2022 Seasonal Climate Outlook

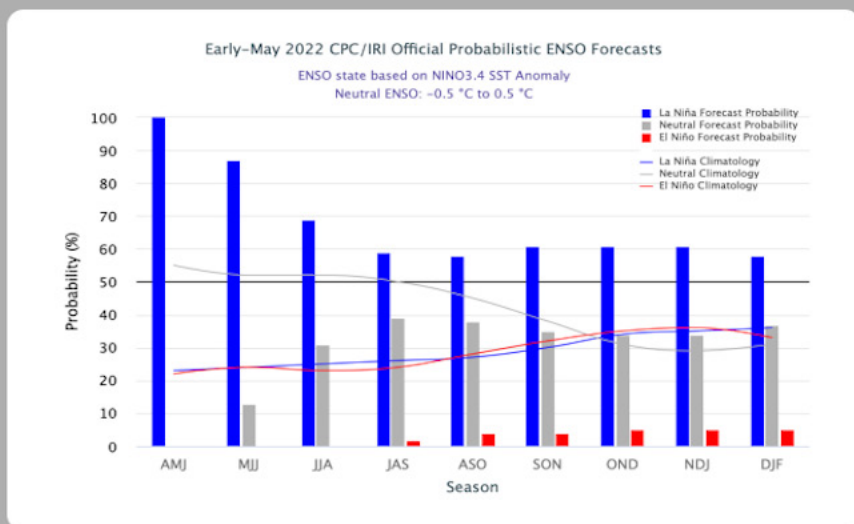
By Roger Cloutier, Senior Meteorologist

During the past two winters and this past spring, the Pacific Northwest has been under the influence of a La Niña event. The only break was during the late spring and summer of 2021, when the region experienced much below normal precipitation and much above normal temperatures. A La Niña Advisory remains in effect for the rest of the spring into the summer of 2022, with some slight variations in intensity. ENSO neutral, or ENSO El Niño conditions are not expected to return, for the rest of the spring into the warm season (June – September), which is expected to remain under La Niña

increase during the fall and early winter 2022, with a 61% chance in the northern hemisphere.

In the graph (Figure 9), the probabilistic ENSO forecast shows the Blue Bars (which are all greater than the black 50% horizontal line), which favors that there is a greater than a 50% chance of the La Niña conditions to continue through each of the three-month periods through the summer and fall into the winter of 2022-2023. This increases confidence of the likelihood of a continuation (greater than a 50% chance) of continued cooler

Though La Niña is favored to continue, the odds for La Niña decrease into the late Northern Hemisphere summer (58% chance in August-October 2022) before slightly increasing through the Northern Hemisphere fall and early winter 2022 (61% chance).



**Figure 9.** Probabilistic ENSO Forecast, provided by the National Centers for Environmental Prediction (NCEP), Climate Prediction Center (CPC)

conditions. This is evident, especially during this past spring, which so far has been quite cool and wet since late winter. April and May have been especially cooler than normal with unusual cold or cool spells, and even record snowfall events in April in some of the lower elevations around the forecast area. This is typical with La Niña events. The current ENSO outlook is for La Niña conditions to be favored to continue, and that the odds for a for La Niña decrease into the late Northern Hemisphere summer is a only a 58% chance from August into October 2022. Then it is expected to slightly

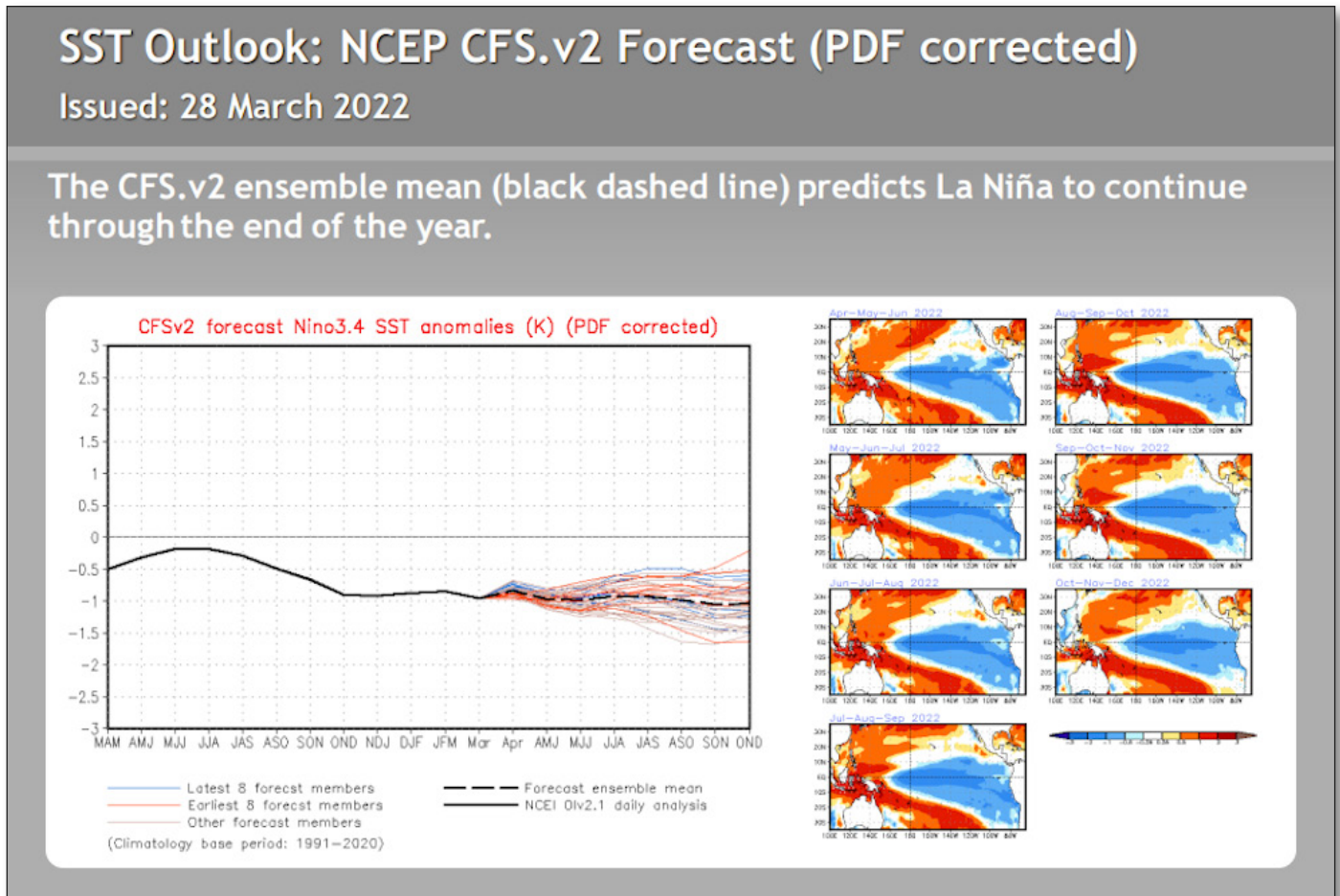
and wetter conditions than normal through the summer, fall and into next winter. However, during

the rest of the spring and summer and through the fall, the red bars (ENSO El Niño condition probabilities) do increase slightly through the rest of the spring, and then remains nearly steady through the summer and fall at only about a 5% favorability to develop. The grey bars also remain below the 50% probability line of ENSO neutral conditions to return but show a much greater probability of ENSO Neutral conditions, but still below a 50% probability.

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Figure 10 (below) shows that the Sea Surface Temperature (SST) Outlook: NCEP CFS.v2 ensemble mean (and ALL of the ensemble members) remain below the zero ENSO neutral line, which indicates that the probability of La Niña conditions are expected to continue, based on SSTs. On the right-hand side are ensemble probabilistic forecasts of SSTs, of various SST ensemble forecasts, are to remain below normal at the central equatorial tropical Pacific, indicating that La Niña conditions

3 months (June, July and August) over the Pacific Northwest. While this is not in complete agreement with the expected continuation of a La Niña as we see often in winter, the odds have a slight tilt toward above normal temperatures. While this outlook does not reflect the potential for any summer heat waves, there are sure to be periods of hotter weather as almost always occurs every summer.



**Figure 10.** An ensemble mean (thick black dashed line), which predicts ENSO conditions for Niño region 3.4 using Sea Surface Temperature anomalies. Niño region 3.4 is the central equatorial Pacific Ocean. The horizontal zero line on the vertical axis of the graph indicates ENSO neutral conditions. Below that zero line indicate La Niña conditions, and above the zero line indicate El Niño conditions. At the zero line is ENSO neutral conditions.  
 \*\* To view the latest, higher resolution version of these graphics, visit: <https://go.usa.gov/xJ784>

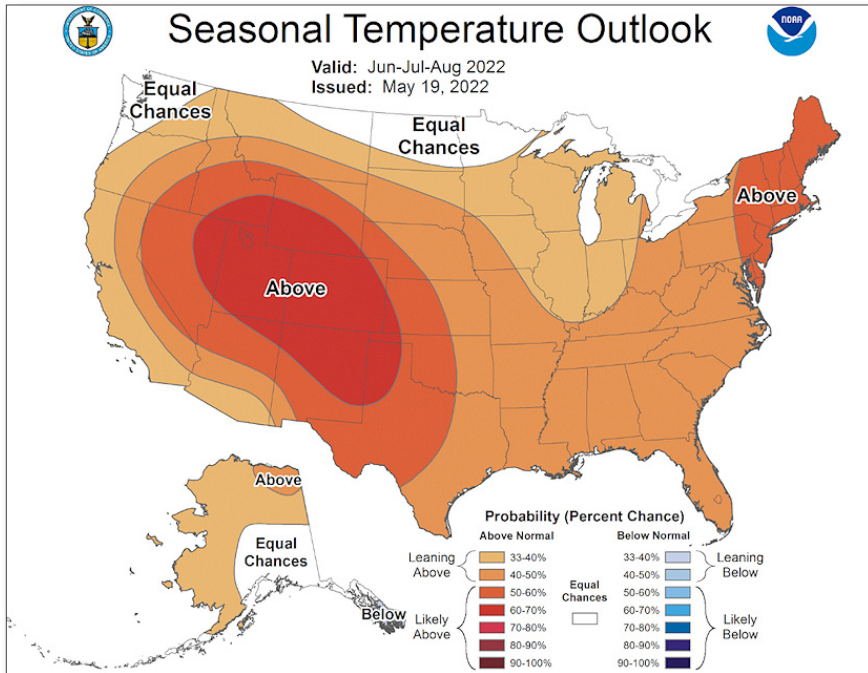
are favored to continue through at least October – December (which is also shown on the left hand side of the image, that shows the ensemble mean and ensemble member spread, which are all in the negative for Niño Region 3.4, which has the greatest impact on the northern hemisphere). In Figure 11 (page 7), the Climate Prediction Center (CPC) is showing equal chances to “leaning above” normal temperatures for the next

In Figure 12 (page 7), the Climate Prediction Center (CPC) is showing a greater chance of below normal precipitation for the next 3 months (June, July and August) over the Pacific Northwest.

The forecast shows odds leaning toward the below normal precipitation direction during the summer. It's important to

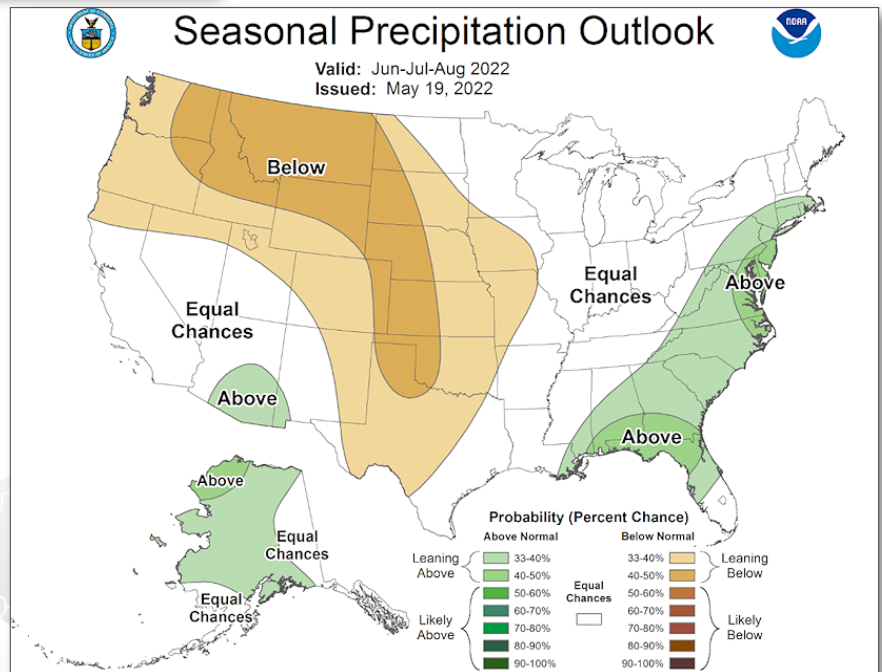
remember while La Niña and El Niño play a role, its signal is weaker during summer compared to winter in part due to other factors and climate patterns that contribute to the season's variability. However, as is always the case, there are certain to be periods of below normal precipitation during the summer of 2022, as is nearly always the case every summer, though likely not as dry as the summer of 2021. These temperature and precipitation seasonal forecast outlooks are favorable in tandem

with our summer climatology for critical fire weather conditions at times this summer. Specifically, weather conditions that could result in potential wildland fires or foster an environment that contributes to fire spread. This seasonal forecast outlook also favors more relief from the ongoing drought, especially east of the Oregon Cascades, and in central Oregon. ❖



**Figure 11.** A 3-month seasonal forecast of temperature anomalies for the USA during the period June - August 2022.

**Figure 12.** A 3-month seasonal forecast of precipitation anomalies for the USA during the period June - August 2022.



For more information on El Niño - Southern Oscillation, visit <http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml>

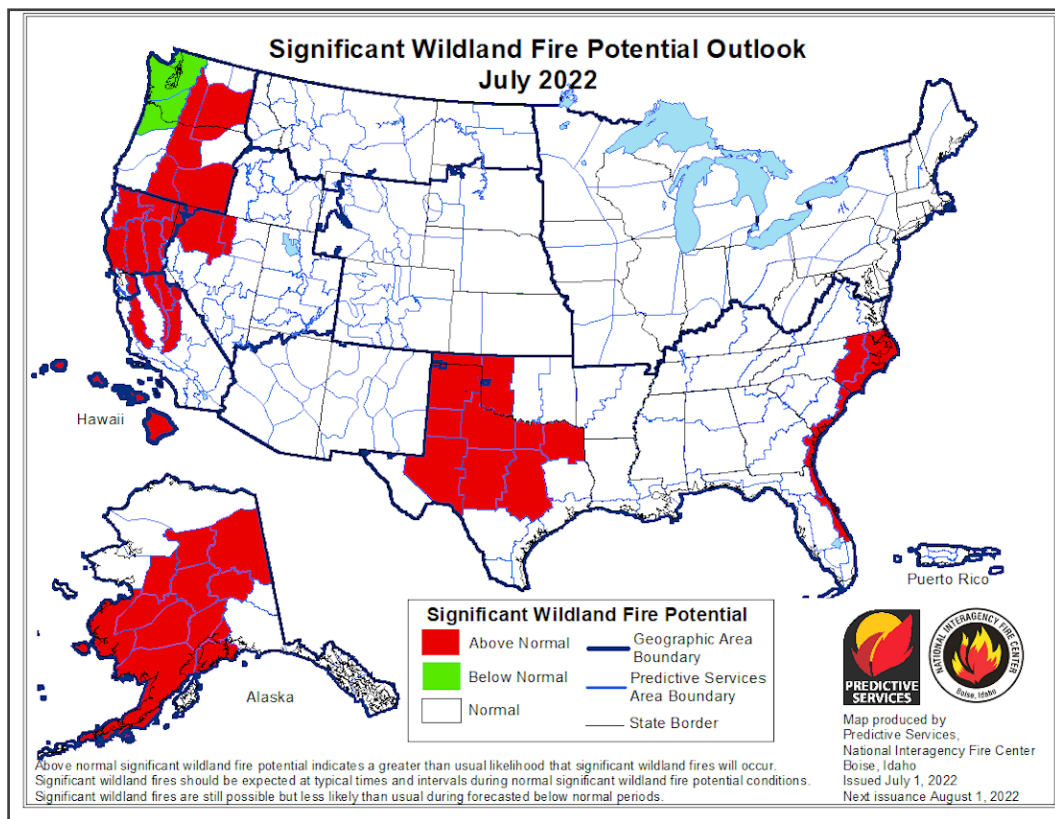
# Fire Season Outlook 2022

By Mary Wister, Incident Meteorologist / Fire Weather Program Leader

What a difference a year makes! In June 2021, the Pacific Northwest suffered over a week of brutally hot temperatures and extremely dry conditions. In June 2022, the Pacific Northwest has been cool and wet for most of the month. Obviously, precipitation and temperature extremes during the spring play a role in the summer fire season. Last year in early June, Oregon had its first large wildfire of the season (Joseph Canyon Fire) in Wallowa County that required an Incident Management Team. It's not uncommon to have grass fires over eastern Washington and eastern Oregon in June, but a large wildfire in the higher terrain where fuels are often green is rare. So far this year, Washington and Oregon have experienced a quiet fire season with continued snowpack along the mountain peaks.

What about the remainder of the summer? The weather has transitioned to warmer and drier conditions, and the Climate Prediction Center is expecting an overall dry pattern for the next several months. Fine fuels such as grass and shrubs respond quickly to changes in the humidity and precipitation. If you look around, you will likely observe cheat grass and foxtails that are thick and tall. After a couple of weeks of dry and warm conditions, you will observe the grass changing to a more purplish hue followed by a brown color—an indicator that the grass is curing. Grass fires will be the primary concern for July. If we experience a prolonged period of hot and dry conditions, the larger fuels in the higher terrain will show signs of curing and will be monitored for large wildfire potential.

The Northwest Coordination Center Predictive Service in Portland works closely with other Geographical Area Coordination Centers (GACCs) across the nation to compile a fire season outlook. The outlook is provided around the first day of each month. From July through August, the Cascade Range and the southern half of Oregon have a



greater than average potential for large wildfires. Despite some improvement in the overall drought conditions the past couple of months, most of this area remains under a moderate to extreme drought. September, the focus for large wildfires will be from the Cascades westward due to the likelihood of easterly downslope winds, and this area will remain under above average potential for large fires.

No matter what the season has in store, it's better to be safe than sorry. Maintain your lawn and cut down tall weeds and grass. Don't allow vehicles to idle along

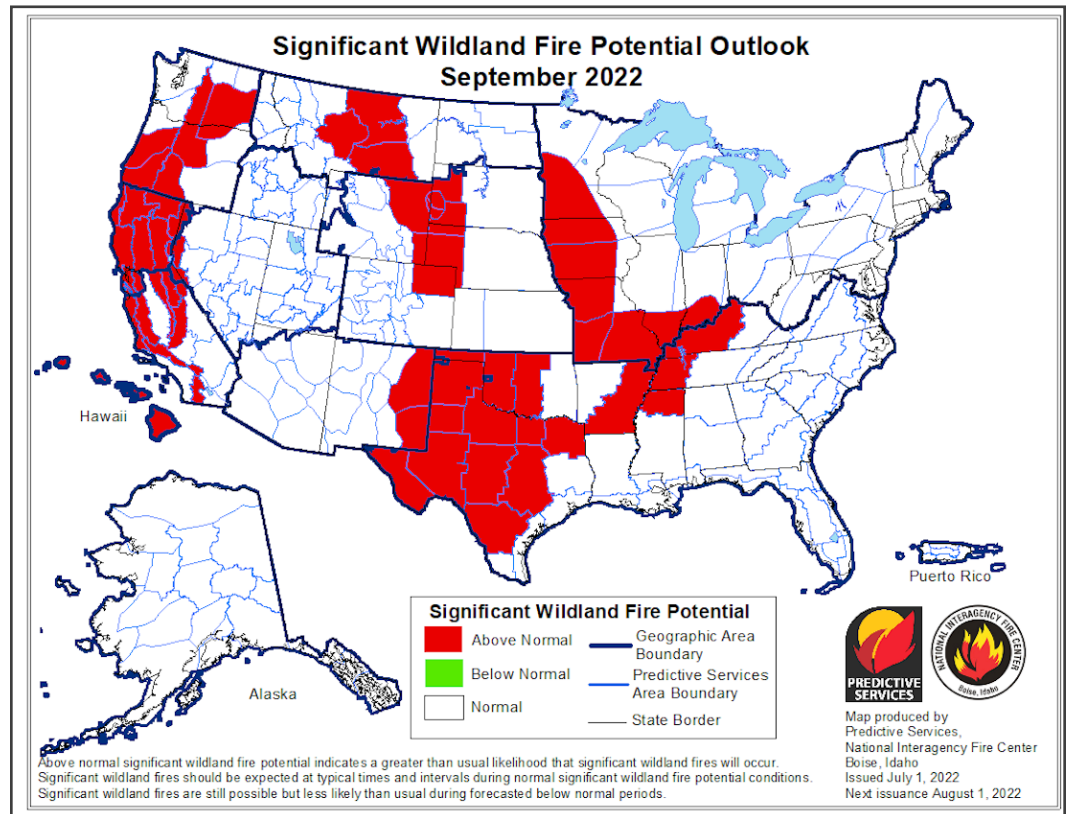
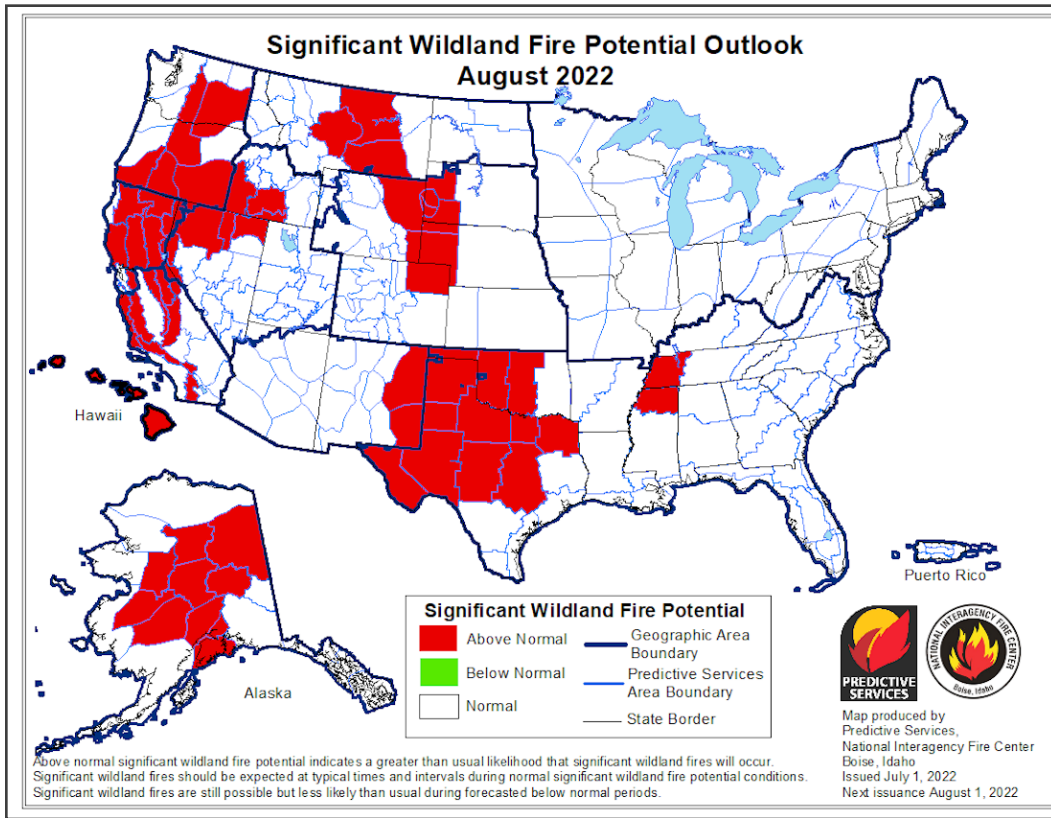
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grassy areas. Campfires should never be left unattended and should be completely extinguished when no longer in use. Follow local regulations for burning and do not burn outdoors if winds are gusty. The fire season has been

relatively quiet so far; let's do our part to keep it that way. ❖

For more information visit: [www.ready.gov/wildfires](http://www.ready.gov/wildfires)



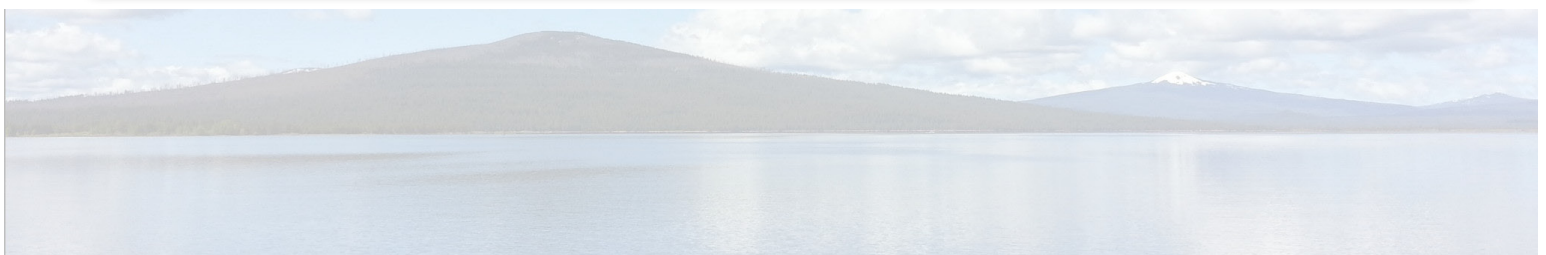
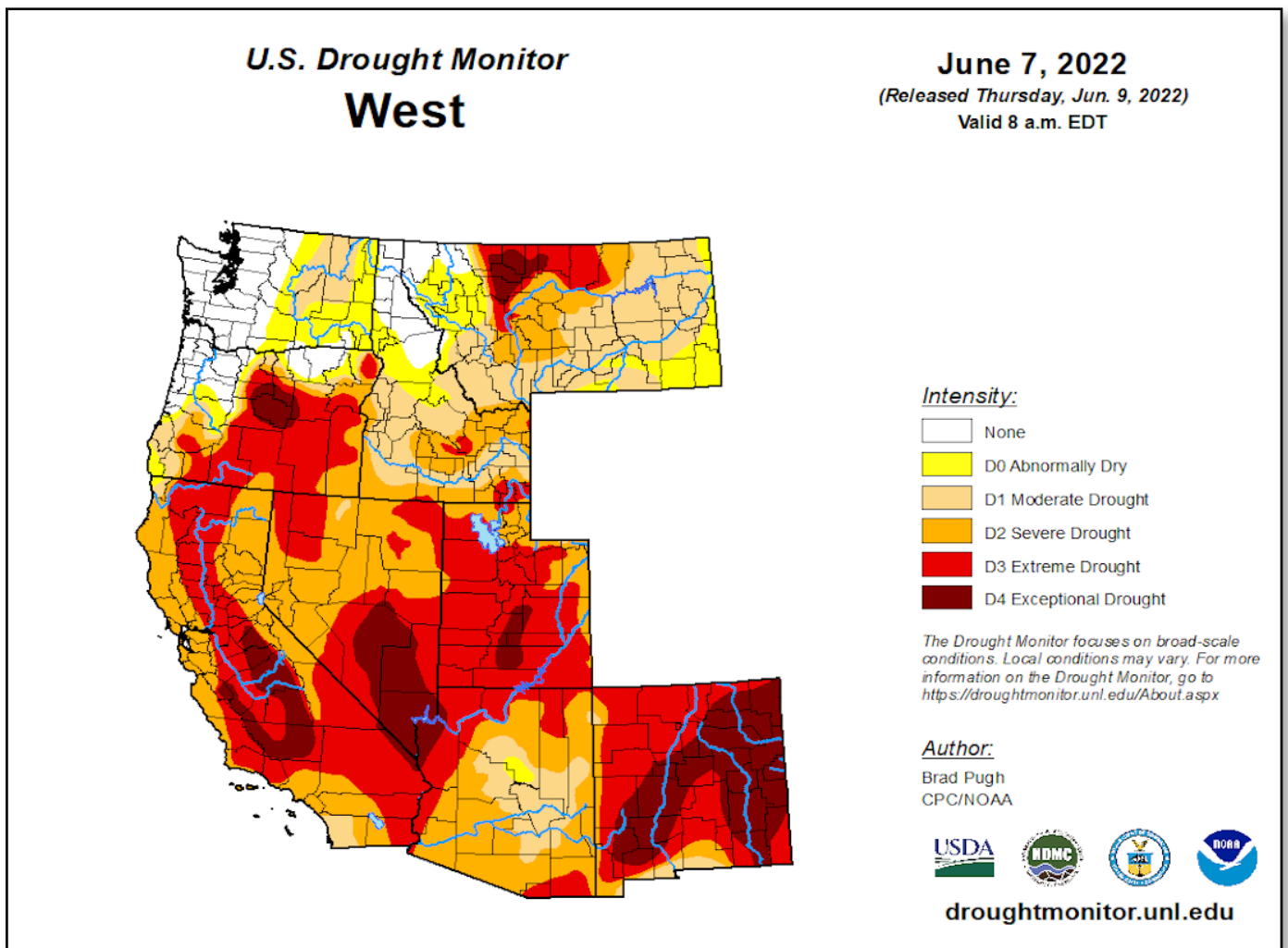
# 2022 Drought Summary

By Marilyn Lohmann, Service Hydrologist

The very dry and warm period from late January to late February stalled improvement of drought conditions over much of eastern Oregon and Washington. Since March 1st, there has been a pattern change with more frequent weather systems. Improvements have been seen and with the wetter April and early May additional improvements are likely. Even with the improvements, total removal of drought conditions is not likely.

For June through August, above normal temperatures and below normal precipitation is expected.

Please report any drought conditions and or impacts in your area, via email to [pdt.operations@noaa.gov](mailto:pdt.operations@noaa.gov), or through the National Drought Mitigation Center at <https://droughtimpacts.unl.edu/> ❖



# A Fond Farewell

By Marcus Austin, Warning Coordination Meteorologist

Having grown up in Florida, the land of heat, humidity, alligators, and bugs, I was always intrigued by the idea of living in a more comfortable part of the country. At the same time, I've always been more of a mountain person than one who likes to soak up the sun on the white sands of the beach. Not that there's anything wrong with that, it has its place. I was thrilled when, through my career, I was able to take up a position within the National Weather Service (NWS) here in Pendleton, Oregon; A chance to get the true northwestern U.S. experience!

That was in late 2018 and I can safely say it's been everything I expected and more! The natural beauty of the Pacific coast, mountains, and rolling hills and lowlands is unmatched, and the climate is ideal for an outdoor life. As someone who enjoys hiking and fishing, this has been a perfect spot for me. Pendleton has also been an outstanding place to raise a family and build friendships and memories to last a lifetime. The sense of community you get in Pendleton is something you don't get everywhere, and I've lived in a variety of places.

The job has had its perks too! There's been plenty of travel for meetings, presentations, and fun times as the manager charged with building partner relationships and educating the public about hazardous weather. And speaking of weather, I was told when I took the position here that weather in the Pacific Northwest would be boring and I wouldn't know what to do without all of the hurricanes and severe storms experienced with greater frequency back east. To my surprise, and to those who told me otherwise, there have been some pretty historic events in my nearly four years here. From record snows in February 2019 and 2021, to the May 30 severe weather outbreak, to historic flooding along the Umatilla and Walla Walla rivers, and tragic wildfire and smoke seasons, it's been a busy time here! A busy, but exceptionally rewarding time alongside a team of meteorologists and technicians who are passionate about the job they do and the people they serve.

Early last month, I was notified that I was selected to take the helm as Meteorologist-in-Charge (office supervisor) at



the NWS office in Las Vegas, Nevada. I'm absolutely humbled by such an opportunity, and know that the experiences I've had and memories I've made here will set me up for success as I move on to this challenging new phase in my career.

Throughout my career I've always had a passion for service and for people. I believe if we invest in those around us and help them see the best version of themselves they can be, we're on the path to success. This is the mindset I've brought along with me as I've visited the many partners and communities dotted across the Inland Northwest. I've learned so much from my teammates here at NWS Pendleton, but also from you, our devoted storm spotters, weather observers, and partners in hazardous weather communication and response. This successful promotion is as much yours as it is mine, and I thank you for allowing me to serve you over the last few years. It's bittersweet to say goodbye, so instead I'll just say farewell, for now. ❖

# Staff Spotlight

## Camden Plunkett, Meteorologist

Camden Plunkett was born in Salem, Oregon and spent the first 20 years of his life on top of a hill just outside of town. Here, he developed an interest in the weather as conditions in the Willamette Valley where Salem is located were often substantially different than on the hill.

After graduating high school, Camden studied meteorology at Embry-Riddle Aeronautical University (ERAU) in Prescott, Arizona. Here, he got the chance to interact with the National Weather Service (NWS) in person and decided he wanted to pursue a career as an operational meteorologist. He obtained a B.S. in Applied Meteorology from ERAU in three years, graduating Summa Cum Laude, and was named the Outstanding Graduate from the program. Camden continues to pursue

an M.S. in Atmospheric Science from the University of Colorado Boulder where he has worked on fire weather and wind energy projects.

Having grown up in Oregon, Camden always knew he wanted to return some day. The opportunity arose in May 2021 when he joined the Pendleton Weather Forecast Office. When he is not on shift, Camden enjoys hiking and spending time outdoors in nature with his wife Rachael, taking photographs of the stunning landscapes as he explores Oregon's rugged side. He also has an affinity for music and science fiction, whether it be books, movies, or television shows. ❖



# Photo Album



*Sunrise in Pendleton, OR reveals smoke and Crepuscular Rays.  
Photo by A. Adams*

*A spring storm rolls into the Pendleton area producing heavy rain and gusty winds.  
Photo by A. Adams*



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