

The Weather Watcher of the Inland Northwest

www.weather.gov/Spokane



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On the Front Lines of a Wildfire

When you think of the National Weather Service (NWS) and its role in hazardous weather, you may think of the severe weather, like thunderstorms, heavy rain and hail. What you may not realize is that the NWS has eyes on the sky before, during and after some of the country's most dangerous weather in the West—wildfires.

On average each year, wildfires kill around 30 people, destroy 2,800 homes and burn more than seven million acres in the U.S. The annual average cost for damages and suppression of wildland fire is more than \$2 billion. As we have seen recently, smoke from wildfires can lead to many health issues. Breathing in smoke produced by wildfire can be hazardous, particularly for children and older adults.

NWS meteorologists work on the front lines to support agencies who suppress and fight wildfires, collaborating closely with state and local fire control agencies, as well as the Forest Service and other federal agencies. Wildfires are not weather. However, weather conditions influence how easily a fire may start, how quickly it spreads and where the fire and smoke will move. Lightning strikes with little rainfall in dry areas are a common cause of these fires.

Incident Meteorologists (IMETs) help keep the fire crews safe by enabling responders to plan operations taking into account one of the most variable aspects of the incident — the weather. These are NWS Forecasters who have been specially trained and certified to provide weather support at a wildfire location. IMETs keep firefighters safe by interpreting weather information, assessing its effect on the fire and communicating it to fire crews. Once on-site, IMETs provide continuous meteorological support for the duration of the incident.

There are numerous NWS IMETs across the country. At NWS Spokane, we are lucky to have four fully trained IMETs on staff.



IMETs Todd Carter & Jon Fox at the Crescent Mountain fire camp in August 2018

These IMETs include Bob Tobin, Todd Carter, Jon Fox and Steve Bodnar. Each has been very busy this summer, traveling to wildfires in the region including the Crescent Mountain fire, the Cougar Creek fire, and other fires from Oregon to Montana.



IMETs Steve Bodnar & Bob Tobin at the Cougar Creek fire camp in August 2018

Once deployed to a wildfire, IMETs arrive within 24-48 hours. They bring their own weather and computer equipment. They can be stationed at the fire command center for up to two weeks at a time, and many times, live out of their own tent. Hours are long and there is very little down time when working a wildfire.

As the threat of wildfires expands in the West, the importance of the NWS IMET program will continue to grow and remain a vital component in keeping the fire crews safe during fire season. ☀

Editor's Notes

As the calendar changed from August to September, so did the summer heat and smoke transition to more fall-like weather. The long stint of hot temperatures came to a halt, while more rainfall would be appreciated.

September is recognized as National Preparedness Month. It's a good time to start planning and prepping for winter weather and hazards. Get your vehicle winterized. Restock your winter weather kit. Update your emergency plan and practice it with your family.

The Autumn Equinox will be Saturday, September 22, 2018 at 6:54 PM PDT. After this date, the length of the darkness will increase into December.

We're always looking for new ideas and stories for our publication. Please send to nws.spokane@noaa.gov.

Newsletters are available on the NWS Spokane web page.

The main purpose of this publication is to keep our readers informed about NWS services and programs, and recognize those who help us with our mission, including weather spotters, observers, media, emergency managers, and government agencies.

All articles are written by the NWS staff. A big thanks goes to Jeremy Wolf, Jon Fox, Todd Carter, Bob Tobin, & Steve Bodnar for their help

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Smoky Skies

Waking up to hazy skies, low visibilities and the thick air that makes you cough was something most were not ready to endure. Sure we experienced this before, but this year the smoke arrived early, filtering in by mid July and blanketed the region well into August. It cut our summer short and made many seek indoors activities instead of enjoying the great outdoors of the Inland NW.

Many factors contributed to the smoky skies. Yes, weather was a big one—another cool, wet spring followed by a dry and hot summer. This allowed the grasses and shrubs to grow tall and thick in the spring then dry out quickly in the summer. Although precipitation was minimal, there were several days of lightning that caused wildfire starts in the mountains. Hot, dry and windy weather helped fan the flames and lead to abundant smoke.

Not all the smoke came from our local fires. An active fire season in California and Oregon produced plumes of smoke that drifted northward with southerly winds and clouded our skies. Likewise, the hundreds of wildfires in

B.C. lead to another major smoke source that drifted south of the border under northerly winds, and this was the pattern brought us the thickest smoke and poorest air quality. Spokane Clean Air Agency reported the highest ever average daily air quality level of 257 $PM_{2.5}$ on August 19th with some sensors peaking at near 300 that day. These air quality records start in 1999 for Spokane County.

The recent cooldown and light rain in late August into early September helped settle the fires and limit the smoke. More rain and mountain snow is needed to fully extinguish them. Yet the smoke season looks to be coming to a close. There are many resources you can use to monitor smoke and air quality. Good sources for both Washington and Idaho are the online smoke blogs. In cooperation with federal, state, county and tribal agencies, each page gives the specifics on weather, fires, air quality, and more. The Washington state site can be found at <http://wasmoke.blogspot.com/> and the Idaho site is located at <http://idsmoke.blogspot.com/> ☀

Funnel Cloud near Post Falls on June 9, 2018



Watch : Conditions are favorable for severe or hazardous weather around the watch area.
CAUTION—Watch the Sky!

Upper Beacon Fire in Spokane on July 17, 2018



Warning : Severe or hazardous weather is likely or is occurring in the warned area.
DANGER—ACT NOW!

Staff News

We had several exciting changes to the NWS Spokane staff. First, a new Meteorologist In Charge has been named and it's **Ron Miller**. Ron has been the Science and Operations Officer at NWS Spokane for over two decades, arriving in the mid 90s. He has a wealth of knowledge and experience of the Spokane area. Second, **Mike Henry** received a promotion to the Electronic Systems Analyst. He has been at NWS Spokane since 2008 as an Electronic Technician, and he looks forward to his new position. Newly selected is **Tom Dang** as a Lead Forecaster. Tom will be moving from Sacramento and should arrive by mid October. In addition, a new Science and Operations Officer has been selected and it's **Travis Wilson**. Travis will be arriving from Phoenix later this fall. Lastly, after three years in Spokane, **Bryce Williams** received a promotion to a Forecaster in Boston, MA. He left in late August on his cross country trip to the East Coast. We wish the best of luck to Ron, Mike, Tom, Travis and Bryce in their new NWS roles. ☀

El Niño Watch

Now that summer has wrapped up, it's time to look to the future at the long range outlook. Overall, the summer has been warm and dry for most of the region. ENSO-neutral conditions have been present through the summer with warming sea surface temperatures in the eastern Pacific. This trend looks to continue. The NWS Climate Prediction Center has issued an El Niño Watch for this fall and winter. The majority of the seasonal models indicate near a 70% chance of El Niño for the Northern Hemisphere by winter 2018-19. So what does that mean for the winter outlook? Based on past trends, there's a tendency for milder and somewhat drier conditions across the Inland NW during an El Niño fall and winter. ☀



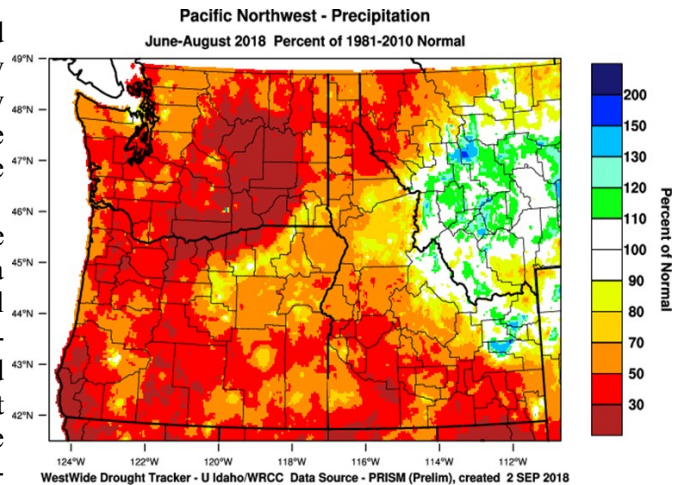
Summer 2018 in Review

It was another warm and dry summer for the Inland NW and another busy fire season as extensive smoke impacted many areas in August. As the map to the right shows it was quite dry around the Columbia Basin and near the Cascades. Wenatchee Airport reported their 4th driest summer with 0.12". Omak came in 5th driest with 0.24", and Ephrata 8th driest with 0.19".

June brought fairly normal conditions although ended on the dry side for most locations. The big event of the month was a severe thunderstorm wind event on the 25th over North Central Washington that struck at an usual time – during the early morning hours as a strong cold front passed through. Significant wind damage was reported from Twisp to Okanogan and Bridgeport areas as well as Republic. At Alta Lake State Park, there were numerous downed trees injuring four people, damaging two vehicles, as well as a RV. In the Okanogan Highlands trees were flattened or snapped off in large swaths with 100 trees reported down in Republic with trees on houses. Numerous trees also fell at Beaver Lake Campground and Bonaparte Lake Resort. Wind sensors in this area reported wind gusts ranging from 40-70 MPH. Further east while the storms didn't produce as much wind, abundant lightning was observed around Lake Roosevelt, Kettle Falls, and Northport. Besides this big event, a few other weather events of note. The 8th through the 10th was abnormally cool and wet. On the 9th Pullman only reached 56°F for a high temperature with just over a half inch of rain, while a funnel cloud was spotted near Post Falls on the same day. On the 21st and 22nd strong thunderstorms formed and produced heavy rain and hail. Penny to quarter sized hail was reported near Colville and at Fairchild AFB.

The weather was not too eventful in **July**. It was still a very dry and warm month with only 0.06" of rain in Spokane, and just a trace in Wenatchee and Lewiston. A prolonged warm spell occurred from the 23rd through the 31st with Omak peaking between 96° to 104° each day. The main event was scattered thunderstorms on the 27th and 28th that ignited several wildfires in North Idaho, Northeast Washington, and the Cascades of Washington.

Another round of extensive smoke and haze arrived in **August** with visibility restrictions observed from the 5th through the 26th for many areas and continuing through the end of the month in the Methow Valley. Numerous wildfires in British Columbia, Washington, Oregon, Idaho, Montana and California lofted extensive smoke into the atmosphere. The worst of the conditions regionwide arrived on the 19th and 20th as extensive smoke moved south into the region from Canada. The visibility in Spokane, Pullman, and Wenatchee dropped to a 1/2 mile with hazardous air quality. Besides the smoke, temperatures were quite noteworthy on the 9th and 10th as the hottest weather of the summer arrived. Kellogg reached an impressive 110°F, just one degree shy of its all time high of 111°F. Meanwhile Lewiston did reach 111°F while Kamiah topped out at 110°F. Several other stations across the region reached values near 105°F. This short heat wave broke with a couple bands of dry lightning over northeast Washington late on the 10th and 11th including Colville and Spokane. ☀ *Jeremy Wolf*



Summer Weather Statistics				
Wenatchee Water Plant	Jun	Jul	Aug	Total
Avg High Temp	78.8	91.2	88.2	86.1
Departure from Norm	-1.0	+3.0	+0.6	+0.9
Avg Low Temp	55.2	62.9	61.5	59.9
Departure from Norm	-0.4	+1.4	+1.0	+0.7
Total Precip	0.31	0.00	0.02	0.33
Departure from Norm	-0.35	-0.34	-0.17	-0.86
Total Snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0
Lewiston Airport	Jun	Jul	Aug	Total
Avg High Temp	79.2	93.6	90.0	87.6
Departure from Norm	+0.7	+4.3	+1.2	+2.1
Avg Low Temp	54.8	60.8	60.6	58.7
Departure from Norm	+1.4	+1.2	+1.4	+1.3
Total Precip	1.15	T	0.46	1.61
Departure from Norm	-0.09	-0.66	-0.23	-0.98
Total Snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0
Spokane Airport	Jun	Jul	Aug	Total
Avg High Temp	73.9	87.2	83.6	81.6
Departure from Norm	+0.1	+3.9	+0.7	+1.6
Avg Low Temp	50.8	59.3	57.7	55.9
Departure from Norm	+0.4	+3.0	+1.9	+1.8
Total Precip	0.55	0.06	0.17	0.78
Departure from Norm	-0.70	-0.58	-0.42	-1.70
Total snowfall	0.0	0.0	0.0	0.0
Departure from Norm	0.0	0.0	0.0	0.0

Remember your Autumn Spotter Checklist

First Snow of the Season!!!

Reduced Visibility:
under a mile due to smoke, fog...

Strong Winds:
30mph+ or damage

Hail: pea size or larger

Tornado or Funnel Cloud

Heavy Rain:
Showery: 1/2" + in 1hr
Steady: 1"+ in 12hr/1.5"+ in 24hr

Snow:
2"+ valleys & 4"+ mountains

Any Mixed Precipitation

Any Flooding

Travel Problems or Damage:
due to severe/hazardous weather



Henry Reges, National CoCoRaHS Coordinator, visited the NWS Spokane office on September 11th. L-R: Joey Clevenger, Jeremy Wolf, Jenn Simmons, Robin Fox, Matt Fugazzi, Laurie Nisbet, Andy Brown, Steven VanHorn & Henry Reges.

Fall Reminders.....

Observers: When sub-freezing temperatures are expected, please winterize your rain gauge. Remove the funnel & inner tube and bring indoors. Review the rules on observing and measuring snow through the training shows @ www.cocorahs.org

Spotters: Please report your 1st snowfall of the season and then after that – let us know when any significant snow occurs.

Observers & Spotters

It's time to dust off that rain gauge and pull out the spotter checklist. Fall weather should bring more active and wet weather. Spotter and observer training dates will be posted soon on the NWS Spokane web page.

Did you know through CoCoRaHS....

1. Daily precipitation reports are useful, not only to the NWS but for water managers, agriculture, recreation and researchers. Even zeros are important and helps with seasonal drought monitoring.
2. There are ways to report how wet or dry the soil and surrounding conditions are. You can send a Condition Monitoring Report or be a Soil Moisture observer. Learn more & get training under Resources @ www.cocorahs.org.
3. The new water year starts on October 1st. Under your account page, you can view your Water Year summary. The new 2018 reports will be ready by November.
4. It's the 10th year of CoCoRaHS in the Inland NW. There are 29 observers that have reported over 3000 times! WOW!

The Weather Watcher

Of the Inland Northwest



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Trivia: What is a water year?