

The Weather Watcher

of the Inland Northwest

www.weather.gov/Spokane



INSIDE THIS ISSUE:

COOP Award	2
Mobile Weather	2
Spotter Corner	2
Staff News	2
Fall in Review	3
Radar Update	4
Fire Season Review	4

La Nina Winter Outlooks

With the prospect of a La Niña winter on the way, everyone is buzzing about the potential for above average snowfall, whether with glee or with gloom. Much of the flooding in the Inland Northwest is caused by, or at least exacerbated by, snowmelt. As you might guess then, our chances to see flooding in a La Niña winter/spring are also higher than in a Neutral or El Niño winter. Of course, it all depends on what snowpack we do end up getting and the specific weather pattern that eventually brings it off, which is impossible to predict at this time. That said, here are some statistics for area rivers on how many times during each type of ENSO winter they have experienced flooding. For example, the Okanogan River at Tonasket has flooded in 50% of La Niña winters, 30% of Neutral winters, and 15% of El Niño winters. It's safe to say the likelihood of seeing a flood on the Okanogan River, and most all of the rivers and lakes in our area, is much greater in or after a La Niña winter! ☀️ *Katherine Rowden*

Snowy winter weather has been slow to develop as a ridge of high pressure settled over the western U.S. for the first half of December and led to widespread fog and low clouds. This weather pattern has been attributed to additional ocean/atmospheric oscillations interfering with the onset of the La Niña specifically the Madden Julian Oscillation, that takes place in the tropical Pacific. There are indications that this dry ridge pattern would break before the holidays, but the month would still be trending below normal for precipitation. The Climate Prediction Center still holds to their long range La Niña forecast which indicates a better chance of wetter and cooler conditions developing and lasting into early 2018 over the Inland Northwest. Keep in mind, weather is not the same as climate. Weather is the day to day changes in atmosphere, while climate is the average of weather over a month, season or year. There's more winter to come. ☀️ *R Fox*

Editor's Notes

December started off with the Skywarn Recognition Day where a dozen local amateur radio operators & weather spotters came to the NWS, set up their stations and communicated with other radio operators across the country. This annual event celebrates the contributions that the volunteer Skywarn radio operators make to the NWS. They staffed the NWS Spokane station for about 24 hours and contacted stations, not only in the local area, but as far away as Minnesota, Arizona and Florida.

The winter solstice will take place on December 21st at 8:28 am PST, marking the shortest day of the year.

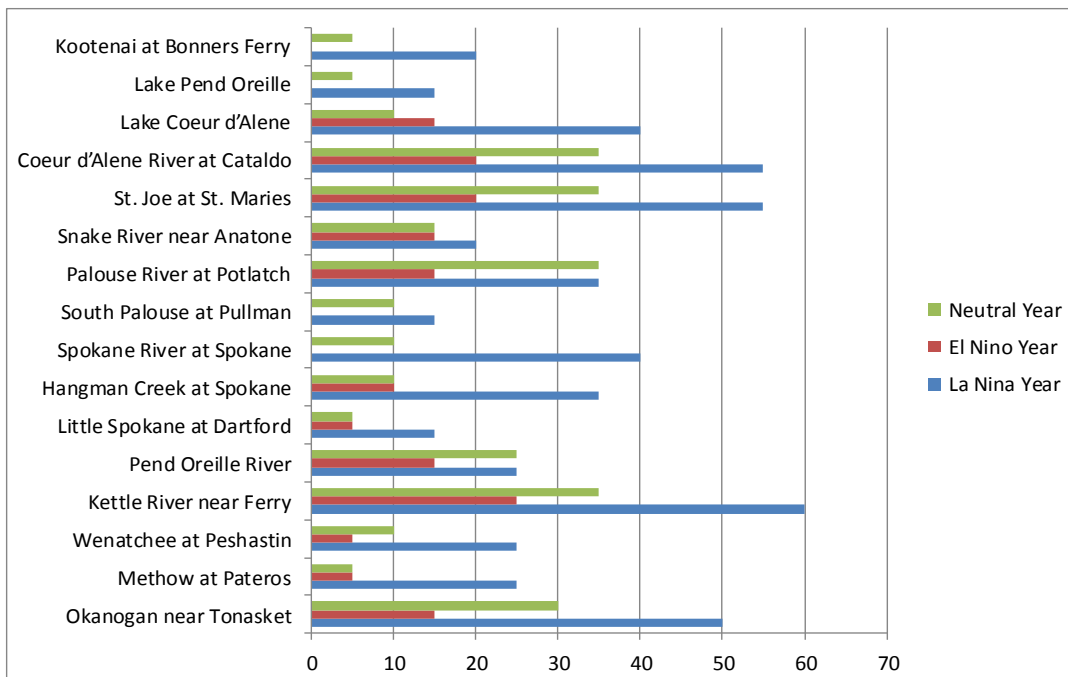
We're always looking for new ideas and stories for our publication. Please send to nws.spokane@noaa.gov.

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 special thanks goes to Katherine Rowden, Andy Brown, Mark Turner & Jeremy Wolf for their contributions.

Approximate % of ENSO years that saw flooding on area Rivers



Want to report precipitation? Check out CoCoRaHS at www.cocorahs.org

COOP Observer Award

Tom Petty, COOP Observer from Asotin 14SW (45-0294) received a 40 year length of service award on December 7th, 2017. Tom and his wife Vicky began reporting weather from their family farm at the foot of Mt. Misery in the Wallowa-Whitman National Forest in 1976. He was initially enlisted to report significant event precipitation by the Washington State Soil Conservation Service. He was invited to become a Cooperative Weather Observer by the Hydrologist-in-Charge of the Northwest River Forecast Center to provide critical precipitation information for the Asotin Creek drainage. Tom was the 2011 recipient of the agency's John Campanius Holm Award for outstanding service in the Cooperative Weather Observer Program. Congratulations to Tom & his family for their dedication and years of service! ☀ *Mark Turner*

Tom Petty—COOP Observer from the Asotin, WA



Travel Resources

Planning any trips in the winter months? Make sure you check the weather before you go.

- Visit the NWS Spokane web page & see the latest **Weather Stories**.
- Check out the NWS **Forecasts & Travel Forecast** under the Forecast tab on the NWS Spokane web page for weather/road impacts.
- Check the state DOT web pages for current mountain pass & road conditions or **Dial 511**.
- Follow NWS Spokane on **Facebook** and **Twitter** for updates.

Mobile weather and apps

Did you know you can set up a *NWS* weather app to your phone or device? It's easy. Simply go to mobile.weather.gov. Enter your city, state or zip code. A forecast for your location will pop up. Then click the Send button at the bottom of the screen and choose "Add to Home Screen" and "Add".

Do you like to report your precipitation on your phone? **CoCo-RaHS** has a phone app, both on iPhone and Android. A recent update now allows the observer to report a multi-day report on the app. What a terrific addition! See <https://www.cocorahs.org/> for details.

Still interested in weather apps? Try the **mPING** app. This crowd sourcing application allows anyone to report the precipitation type at their location. No name or ID needed. It can be important to share during the winter months with mixed precipitation, like: rain, sleet, freezing rain and snow. Other report types on this app include: hail, wind damage, tornado, flooding, mudslides and reduced visibility. No need for amounts. It's just precipitation or weather type. Very handy! See <https://mping.nssl.noaa.gov/> for details. ☀ *Robin Fox*

Spotter Corner

Winter spotter training was in full swing this fall with over 100 new and current weather spotters receiving training. Do you still need to brush up on your training? The NWS Spokane web page has many options on the Spotter Resources section. Look under the Local Programs tab for the NWS Weather Spotter Program at https://www.weather.gov/otx/Spotter_Resource_Page. You will find a recording of the Virtual Spotter Training that will take you to the NWS Spokane YouTube channel. There are also links to three Spotter training modules from the COMET MetEd training site. Links to the Weather Spotter Field Guide and Sky Watcher Chart are available too. Once you complete any of the online training, just email us at nws.spokane@noaa.gov and we will mark you down as a trained weather spotter. Happy Spotting! ☀ *Robin Fox*



Spotter reports of hail on 10/13/17 from Whitman #43. Thanks for sharing!

Staff News

A new change happened at the NWS Spokane office. Dwight Williams, the Electronic Systems Analyst, transferred to the NWS Seattle in early December 2017. We wish Dwight and his family the best of luck on the West Side! ☀

Fall 2017 in Review

September started where August left off with very warm and dry conditions and high temperatures in the 90s on the 2nd and 3rd. This resulted in a continuation of numerous active wildfires across Washington, Oregon, Montana, and southern British Columbia. The Montana fires were especially active and thus when winds shifted out of the northeast on the 4th extensive smoke was brought into the region. Widespread visibility of one to three miles was observed from the 4th through the 7th. Additional wind shifts resulted in varying amounts of smoke through the 15th. The pattern changed on the 17th, finally bringing an end of the smoke. Rain showers moved in late in the evening, ending Spokane Airport dry streak at 80 days which was a record. The 18th through the 21st was much cooler and wet with some places not even making it out of the upper 40s for highs. Isolated thunderstorms occurred to finish out the month. Outflow winds hit the Spokane Airport in the evening on the 30th with a peak wind gust of 47 mph.

October started off on a quiet note except around the Wenatchee area on the 6th where windy conditions were observed. A wind gust of 87 MPH was recorded at the top of Mission Ridge and 44 MPH in Wenatchee. The pattern turned active in the middle of the month. An usually cool, wet and unstable period occurred on the 12th and 13th with snow falling in the mountains. Lookout Pass reported a foot of snow. Hail reported on the Palouse. On the 17th a strong cold front brought windy conditions with several downed trees and power lines between Colville and Spokane which closed several roads. Wind gusts included: 54 MPH Thornton, 53 MPH Spokane, 52 MPH Pomeroy, 48 MPH Pullman, 46 MPH Sandpoint, and 44 MPH Coeur d'Alene. A mild and wet subtropical moisture fetch hit the region on the 21st and 22nd with Prichard coming in with 2.34" of rain with 2.12" in Leavenworth. All this rain fell as snow in the mountains around the Methow Valley with 23" at Washington Pass, and 15" at 3300 feet north of Winthrop. It was windy as well with a 53 MPH gust at Alpowa Summit and 52 MPH gust in Spangle. On the last day of the month, a push of north winds down the Okanogan Valley brought a peak wind of 41 MPH in Omak.

November turned out to be mild and wet after starting off on a cold note. An early season modified arctic boundary shifting south towards the Washington and Oregon border on the 4th and 5th with several around of light snow. Higher snow totals hit the mountains north and east of Spokane. Two-day totals include 12" Spirit Lake, with 9" in Wallace, Coeur d'Alene, Athol, and Prichard. All this snow combined with clearing skies led to a cold morning on the 7th with Republic and Deer Park the cold spots at 13°F. Late on the 15th and early on the 16th a cold front stalled over the NE WA Mountains. Heavy mountain snow hit 49 Degrees North Ski Resort with 14". A very mild system arrives from the 20th through the 22nd as a tropical moisture fetch became aimed at the region. The first initial surge of moisture brought mountain snow with a burst of heavy wet snow closing Interstate 90 over Lookout Pass. The Cascades also saw significant snow near the Cascade crest with 7" in Mazama. The Cascades continued to get pounded with significant precipitation the following days. On the 21st a wintry mix hit the Cascades with freezing rain over Loup Loup Pass with a mix of snow, sleet, freezing rain, and rain in the Methow Valley. Yet more precipitation on the 22nd and 23rd was enough to push the Stehekin River above flood stage. Holden Village, located in the mountains above Lucerne near Lake Chelan over a 5 day period recorded 6.14 inches of precipitation. This combined with snow melt contributed to a mud flow above the village, which then flowed downed main street and left 4 to 6 inches of mud covering the road. ☀️ JWOLF

Fall Weather Statistics

Wenatchee Water Plant	Sep	Oct	Nov	Total
Avg High Temp	78.2	62.0	46.1	62.1
Departure from Norm	-0.1	-1.5	-0.4	-0.7
Avg Low Temp	53.5	39.2	33.4	42.0
Departure from Norm	+1.8	-2.0	+1.2	+0.3
Total Precip	0.01	1.32	1.56	2.89
Departure from Norm	-0.29	+0.80	+0.18	+0.69
Total Snowfall	0.0	0.0	2.4	2.4
Departure from Norm	0.0	0.0	+0.5	+0.5
Lewiston Airport	Sep	Oct	Nov	Total
Avg High Temp	78.7	61.7	50.4	63.6
Departure from Norm	+0.5	-0.9	+2.2	+0.6
Avg Low Temp	53.8	41.0	35.4	43.4
Departure from Norm	+2.8	-0.1	+1.3	+1.3
Total Precip	0.56	1.17	1.76	3.49
Departure from Norm	-0.11	+0.21	+0.58	+0.68
Total Snowfall	0.0	0.0	T	T
Departure from Norm	0.0	0.0	-1.8	-1.8
Spokane Airport	Sep	Oct	Nov	Total
Avg High Temp	73.2	56.2	43.5	57.6
Departure from Norm	+0.3	-1.8	+1.9	+0.1
Avg Low Temp	51.1	37.0	31.9	40.0
Departure from Norm	+3.7	-0.2	+2.1	+1.9
Total Precip	1.21	1.40	2.88	5.49
Departure from Norm	+0.54	+0.22	+0.58	+1.34
Total snowfall	0.00	T	7.2	7.2
Departure from Norm	0.0	-0.1	-0.2	-0.3

Remember your Winter Spotter Checklist

Snow: 2"+ valleys & 4"+ mountains
Strong Winds: 30mph+ or damage
Reduced Visibility: under a mile due to fog, snow...
Hail: pea size or larger
Heavy Rain: Showery: 1/2" + in 1hr Steady: 1"+ in 12hr/1.5"+ in 24hr
Any Mixed Precipitation
Any Flooding
Travel Problems or Damage: due to severe/hazardous weather

Doppler Radar Update

The Spokane Doppler weather radar has been operational for over 20 years. It's one of the 160 NWS weather radars in the country. It scans the skies, detecting precipitation and winds. It samples the atmosphere, employing scanning strategies with 360 degree sweeps, repeating every 5 to 10 minutes.

Back in 2012, the radar received a dual polarization upgrade that allowed for both vertical and horizontal radar waves. This helped the radar to accurately distinguish between rain, hail and snow.

This fall, the Spokane radar had another upgrade, the first step in the service life extension program. This is a series of four independent projects to improve and extend the life of the radar system into the 2030s. The Spokane radar is one the last few radars to receive this first upgrade which will replace obsolete technology and improve processing speed and data quality. The radar is jointly owned and funded by three agencies: NOAA, FAA and US Air Force. ☀ *Andy Brown*

Fire Season Review

The stats for the 2017 wildfire season have been counted. It's not surprising that it was another active year across the Inland Northwest. Despite the wet winter/spring, the summer of 2017 was very dry and warm which helped promote fires, especially in grasslands. There were 33 different fires across the region, starting in late May, peaking by August, before tapering off by October. The total acres burned was over 318,000 acres. The largest fire was the Diamond Creek fire in the far northern Cascades that spanned over 128,000 acres including parts of Canada; this was about a third of the yearly total. The next two big fires were also in the northern Cascades and included Norse Peak at over 52,000 acres and Jolly Mountain at over 36,000 acres.

☀ *Jeremy Wolf*



The Weather Watcher

Of the Inland Northwest



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

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

Trivia: How much of the Earth's fresh water is frozen?