YOUR NATIONAL WEATHER SERVICE SPOKANE QUARTERLY REPORT

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The Weather Watcher

of the Inland Northwest

www.weather.gov/Spokane

Spring Flood Outlook

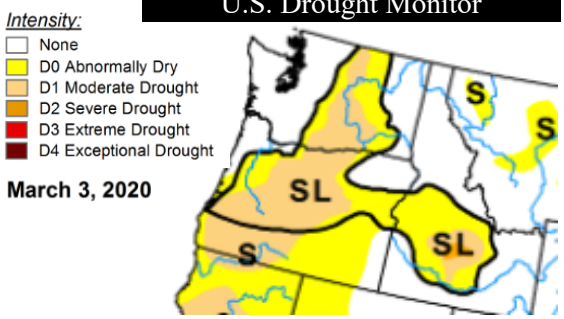
What a difference a year makes. Last March the snowpack was widespread in the valleys and mountains. This March, lowland snowpack is essentially gone except from the sheltered northern valleys. Current mountain snow water equivalent (SWE) has been running near 100% of seasonal normal for the last several weeks, although there are some spots in north-central Washington that have been running a deficit.

Current stream flows are low. Runoff peaks in mid April into early June. The chance of widespread main-stem river flooding is low, although there are some areas to keep an eye on. A hefty mountain snowpack in south central BC may lead to higher rises on the Kettle River in north Central Washington. Higher rises are possible on the upper Cascade rivers and streams, like Stehekin and the drainages from the Blue mountains in southeast Washington. These rises will depend on how quickly the mountain snow pack melts. Under any rapid warmups or heavy rains, there's the potential for rapid rises on the smaller streams and rivers. Remember for the latest river levels and forecasts, please visit https://water.weather.gov/ahps2/index.php?wfo=otx ☼ *Robin Fox*

Drought

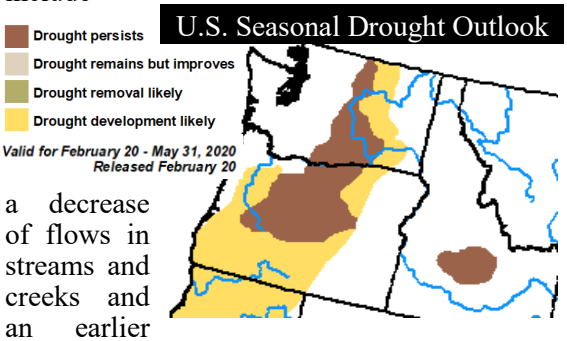
Despite the seasonal winter precipitation, drought conditions persists across much of the region especially in the lee of the Cascades in central Washington and the Columbia Basin.

U.S. Drought Monitor

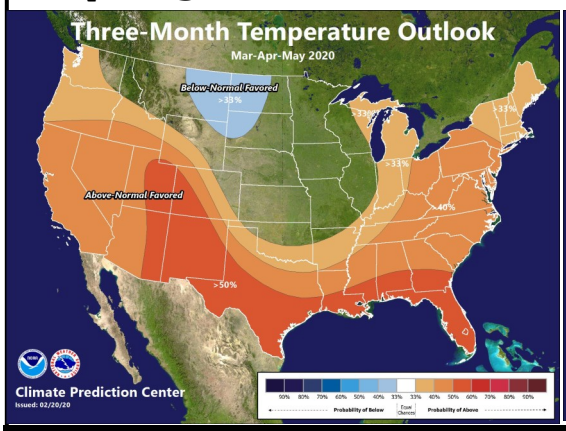


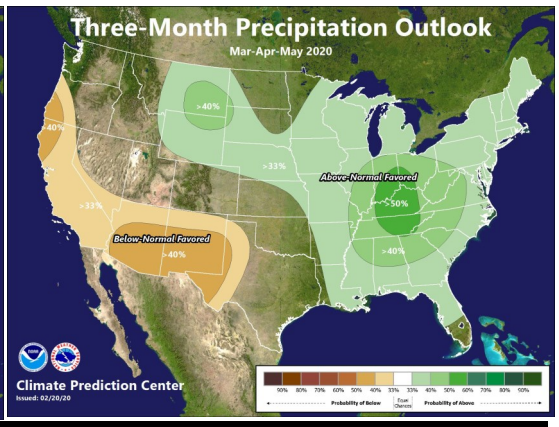
The U.S. Seasonal Drought Outlook shows that drought conditions are likely to persist through the spring. Impacts of these dry conditions can include a decrease of flows in streams and creeks and an earlier start time for irrigation. This needs to be monitored for the summer season. For more updates, see https://droughtmonitor.unl.edu/ ☼ *Robin Fox*

U.S. Seasonal Drought Outlook



Spring Seasonal Outlook—March through May





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

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Editor's Notes

If feels like Spring got a jump start this year after the mild weather in February. Warmer temperatures remind on the spring weather hazards. Mountain snow will eventually melt away. Any sudden warmups may speed up this process and lead to local flooding concerns on streams and creeks. Another top hazard are thunderstorms, packed with lightning, hail and gusty winds. It's important to keep an eye to the sky and check the latest weather forecast while making outdoor plans.

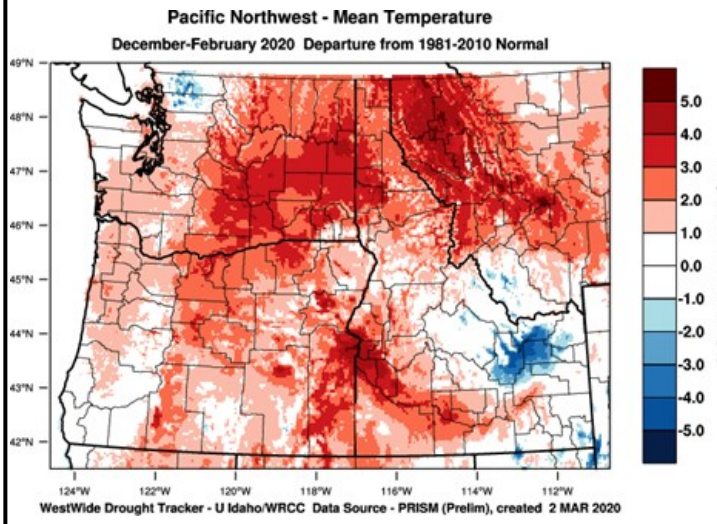
The Summer Equinox will be arriving on March 19th, 2020 at 8:49 pm PDT. This marks the equal time between day and night. After this date, expect longer daytime hours.

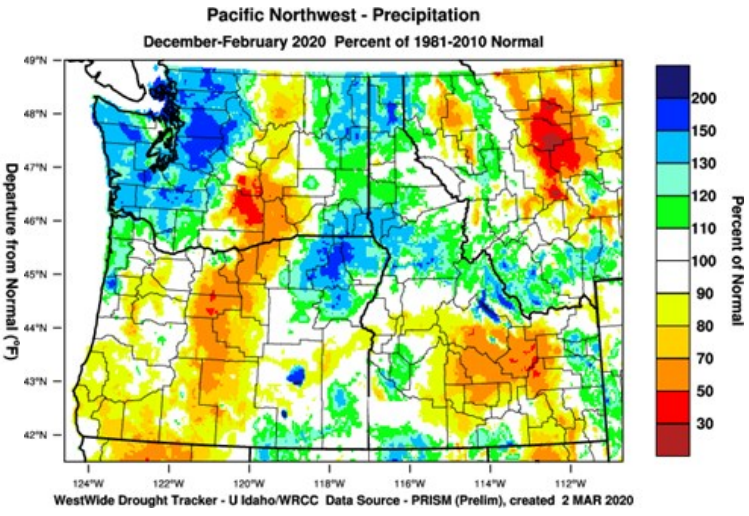
We're always looking for new ideas and stories for our publication. Please send to nws.spokane@ noaa.gov. Newsletters are available on the NWS Spokane web page.

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 Jeremy Wolf, and Steven VanHorn for their contributions.

Winter 2019-2020 in Review





The winter finished milder and wetter than normal, except across Central Washington where prevailing westerly flow resulted in below normal precipitation.

December brought below normal snowfall for most valleys due to the mild weather but there was still some winter to deal with. On the 12th widespread light snow blanked NE Washington into the Idaho Panhandle with 1-3". The snow fell during commute time which contributed to several accidents across Eastern Washington. The most impressive event of the month resulted from an atmospheric river which brought a swath of very mild and wet weather from the 19th through the 21st. Heavy snow fell along the East Slopes of the Cascades with the upper end of Lake Chelan hardest hit where Stehekin came in with 44", making it the 2nd highest 48 hour snow total on record. Other amounts include Mazama 21", Leavenworth 15-18", and Wenatchee 3-5". Over NE Washington and the Idaho 3-6" of snow fell in the northern valleys before changing to rain. The warm temperatures were noteworthy for the first day of winter when Spokane reached 54°F and Lewiston 60°F. Another storm arrived on New Years Eve brought more rain and snow. Priest River, Sandpoint, and Elk received 7" from this storm.

The mild weather continued into early **January**. For the first seven days high temperatures warmed into the 40s to mid 50s. Omak tied or broke a record high temperature each day through the 4th. A mild and wet system on the 6th and 7th brought more heavy snow to the Cascades with 30" at Stevens Pass. The pattern then made an abrupt shift on the 10th towards cold and snowy weather. A burst of snow hit the region during the afternoon making for a very difficult evening commute. Moscow came in with 9" and Spokane 7". The moisture plume continued into the 12th. While many areas changed to rain or rain/snow mix, heavy wet snow continued north of Spokane and Coeur d'Alene with several power outages. Athol received 21" with 19" in Rathdrum. The Cascades continued to get nailed with heavy snow with another 33" at Stevens Pass into the 12th which ultimately closed the pass for a while after several accidents. Bitterly cold arctic air dropped into southern British Columbia on the 12th. Thankfully the coldest of this air remained north of the border put the cold air did pour down the Okanogan Valley. Winds behind the arctic front gusted to 53 MPH in Omak with wind chills as low as -17° F. Clear skies and light winds combined with the cold air allowed temperatures to plummet early on the 15th in Davenport and Wilbur with -11°F and -6°F respectively. More snow hit the Cascades on the 15th and 16th with 8-12" in Plain, Manson, and Winthrop. Wenatchee came in with 5" with another 3-5" on the 18th. A milder and occasionally wet pattern set up for the remainder of the month.

February started off on an active note. Damaging wind gusts of 65 MPH hit the Post Falls area on the morning of the 1st with several downed trees which damaged homes and let to power outages as well. Downed trees were also reported in Laclede, Sandpoint, Hayden Lake, Chattaroy, and Ruby. On the 4th light snow in the afternoon initially melted on many roads but quickly refroze leading to very icy conditions across Eastern Washington including a fatality collision near Ritzville. Interstate 90 was closed for two hours near Post Falls. On the 5th heavy snow fell in Wilbur, Odessa, and Ritzville with 5". On the 6th, Lewiston recorded 1.24" of rain, making it the wettest February day on record. Over the 3 day period form the 5th-7th Lewiston received 1.99". Snow melt on the Palouse and Camas Prairie combined with the rain led to minor small stream flooding. The last impactful storm arrived on the 23rd. A strong cold front brought a wide variety of weather including rain, snow, graupel, a handful of thunderstorms, windy conditions, and even an area of blowing dust between Moses Lake and Ritzville. Thundersnow was even observed on the south hill of Spokane. The strongest wind gusts with the front occurred around the Lewiston area and Camas Prairie where 45-55 MPH gusts were recorded. A few sites were even stronger including 59 MPH at Shirrod Hill. ☼ *Jeremy Wolf*

ANSWER: 16 tornadoes. The recent tornado years include: 2016, 2011, 2010, 2009, 2008, 2004 and 2003.

High flows on Lapwai Creek near Reubens, ID—February 2020

Winter Weather Statistics

Wenatchee Water Plant	Dec	Jan	Feb	Total
Avg High Temp	36.8	38.9	49.3	41.7
Departure from Norm	+2.0	+3.0	+5.9	+3.6
Avg Low Temp	29.7	28.0	28.6	28.8
Departure from Norm	+4.5	+2.6	+0.9	+2.7
Total Precip	0.85	1.38	0.17	2.40
Departure from Norm	-0.68	+0.05	-0.83	-1.46
Total Snowfall	4.6	7.3	T	11.9
Departure from Norm	-2.1	+3.3	-2.3	-1.1
Lewiston Airport	**Dec**	**Jan**	**Feb**	**Total**
Avg High Temp	43.9	45.9	49.4	46.4
Departure from Norm	+4.4	+4.3	+2.9	+3.9
Avg Low Temp	33.4	33.4	32.1	33.0
Departure from Norm	+5.4	+3.8	+1.2	+3.5
Total Precip	1.36	1.61	2.24	5.21
Departure from Norm	+0.39	+0.53	+1.46	+2.38
Total Snowfall	0.9	9.3	0.5	10.7
Departure from Norm	-2.6	+6.9	-1.6	+2.7
Spokane Airport	**Dec**	**Jan**	**Feb**	**Total**
Avg High Temp	37.7	39.1	42.8	39.9
Departure from Norm	+5.5	+4.7	+3.2	+4.5
Avg Low Temp	29.1	29.2	27.4	28.6
Departure from Norm	+6.6	+4.5	+1.0	+4.0
Total Precip	2.14	3.17	0.89	6.20
Departure from Norm	-0.16	+1.38	-0.44	+0.78
Total snowfall	10.5	19.1	3.8	33.4
Departure from Norm	-4.1	+6.7	-3.0	-0.4

Spotter Training

Expect spring spotter training dates in the coming months. The training focus will cover convection, flooding and thunderstorms. We'll also include the basics on CoCoRaHs and precipitation measurements. This training is open to current weather spotters who would like a refresher course and any new recruits who are weather enthusiasts eager to learn more. Stay tuned to the NWS Spokane web page for the latest schedule. Current spotters and observers will receive emails on training when it has been scheduled for your county. If you want to learn more about weather spotter, see *https://www.weather.gov/otx/*

CoCoRaHS Notes

March kicks off the annual CoCoRaHS March Madness recruiting contest. If you are interested in measuring daily precipitation or you know someone does, please considering joining this volunteer program. Find out more and sign up at *https://www.cocorahs.org/*

Downed trees in Post Falls—February 2020

Staff News

Incident Meteorologist and Information Technology Officer Todd Carter has been abroad the last several weeks, deployed to Australia to assist their country's meteorologists during the record breaking wildfire season. He will resume his regular duties in Spokane this spring.

Meteorologist Amanda Young has received a new position as a Meteorologist in NWS Elko, NV. She will be transferring in April to be closer to her family.

Lead Forecaster Matt Fugazzi plans to retire from federal service in late May.

Best of luck to Todd, Amanda and Matt on your adventures. ☼

NWS Spokane

Meteorologist In Charge
Ron Miller

Warning Coordination Meteorologist
Andy Brown

Science Operations Officer
Travis Wilson

Administrative Assistant
Jodi Fitts

Information Technology Officer
Todd Carter

Observation Program Leader
Mark Turner

Lead Forecasters
Jon Fox
Matt Fugazzi
Greg Koch
Tom Dang

Meteorologists
Robin Fox
Rocco Pelatti
Laurie Nisbet
Jeremy Wolf
Jeffrey Coté
Steve Bodnar
Steven Van Horn
Joey Clevenger
Jenn Simmons
Amanda Young

Electronic Systems Analyst
Mike Henry

Electronic Technicians
Paul Kozsan
Eric Dizon

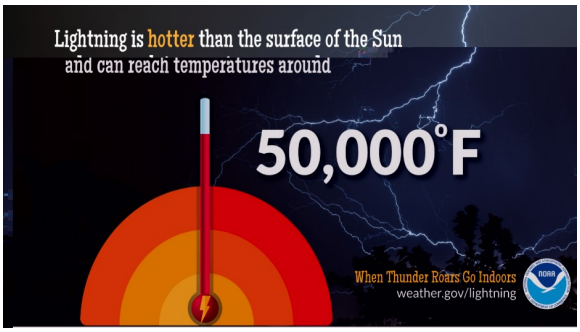
Facilities Technician
Mike Belarde

Remember your Spring Spotter Checklist

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

Severe Weather Climatology

Severe weather season begins in March and spans through the summer. All thunderstorms produce lightning which is a top hazard. Severe weather includes multiple thunderstorm hazards including: thunderstorm wind gusts of 58 mph or greater, hail one inch in diameter or greater, and tornadoes. The larger the thunderstorms, the greater the risk of severe weather. Based on the climatology of thunderstorms in the Inland Northwest, the peak month for tornado development in the region is May while the peak month for large hail and/or damaging winds is in July. The main time of the day for severe weather and thunderstorms is mid to late afternoon.



The top ingredients for thunderstorms include moisture, an unstable atmosphere and a lifting mechanism like a cold front. When the days get warm and muggy, watch the sky for building clouds and any thunderstorm development. Take cover as soon as you experience lightning or thunder.

To monitor for severe weather risks across the county, check out the Storm Prediction Center at https://www.spc.noaa.gov/ ☼ *Steven Van Horn & Robin Fox*

The Weather Watcher

Of the Inland Northwest

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«county» County #«SPT#»
«FIRST NAME» «LAST NAME»
«ADDRESS»
«CITY», «STATE» «ZIP»

Question: How many tornadoes have been reported across the Inland NW since 2000?