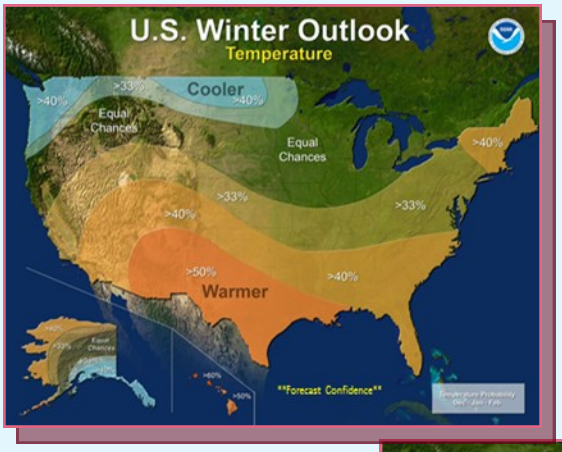
Northern Rockies Weather Watch

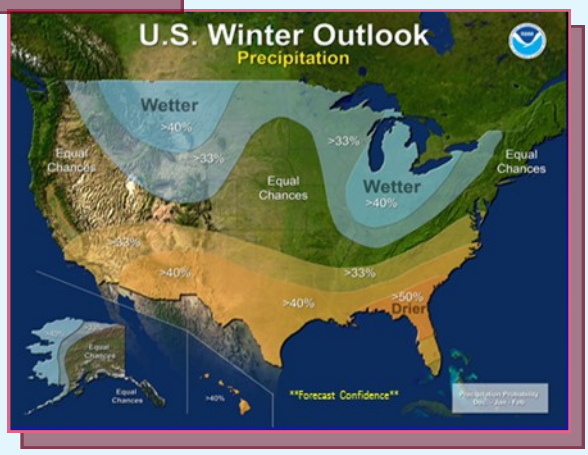
NWS Missoula, Montana

DECEMBER 2017

Northern Rockies Winter Outlook 2017-2018

On November 9th the Climate Prediction Center (CPC) issued a La Nina Advisory. A weak La Nina has developed and is likely to persist through the winter months. This is a very similar situation to what occurred the winter months of 2016-17. La Nina conditions typically produce wetter and cooler than normal conditions across the Northern Rockies. The graphs below shows CPC's outlook for the U.S. It's important to note this is a SEASONAL FORECAST.





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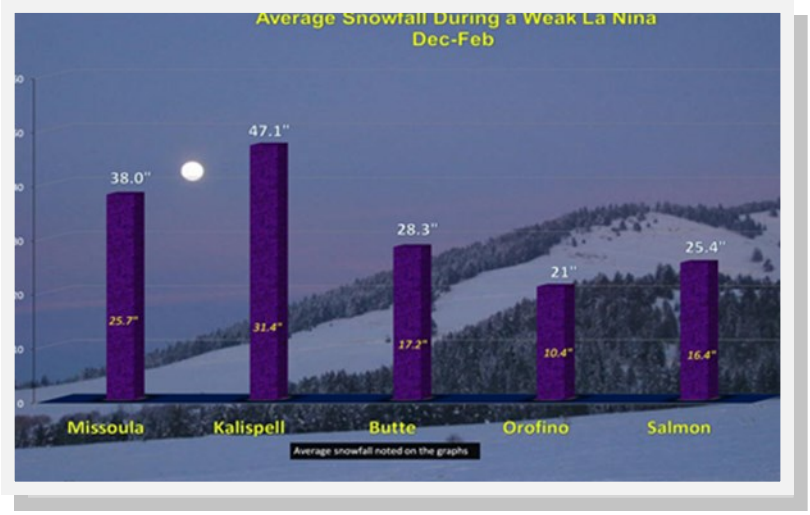
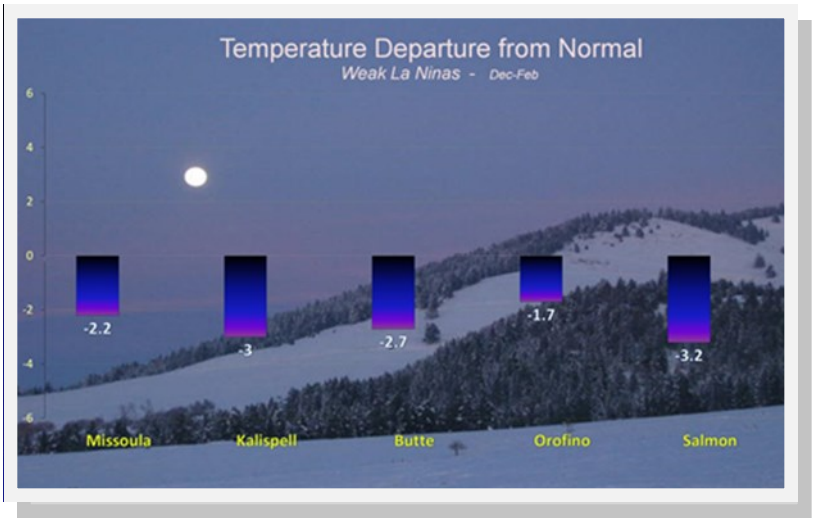
Northern Rockies Winter Outlook continued

Previous Weak La Nina events have on average brought **above normal snowfall** to the valleys of western Montana and central Idaho. The weather patterns under weak La Ninas trend toward a moist northwesterly flow which favors more frequent snow events in the valleys. Snowfall amounts range from 10-15 inches above normal for the course of the winter season (November-March).

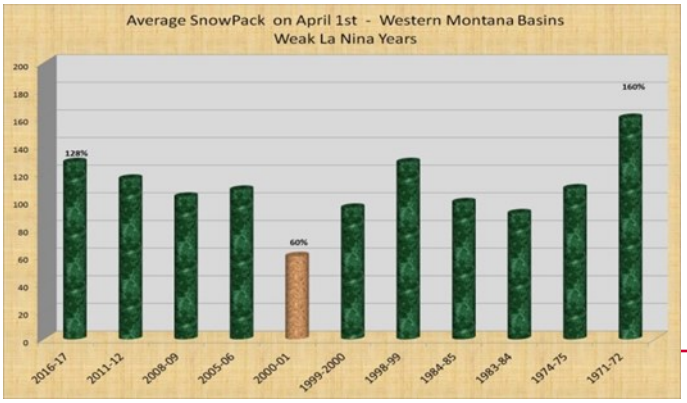


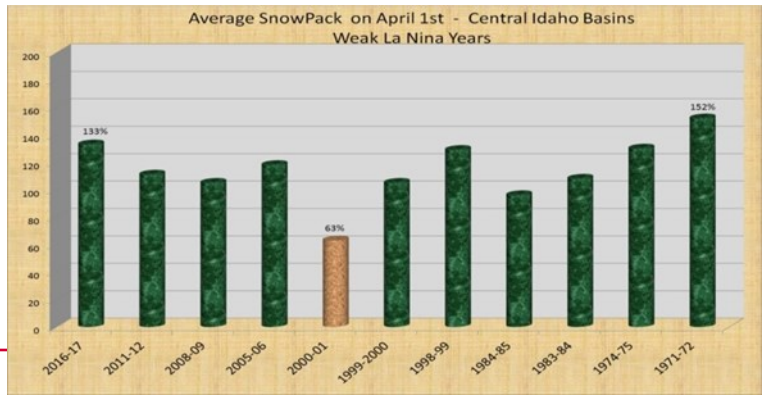
Valley temperatures are on average below normal during Weak La Ninas with some years significantly colder. In part this can be attributed to the increased number of arctic events. The degree of colder than normal temperatures depends on other factors such as the Arctic Oscillation.



Snowpack in the mountains by April 1st are on average above normal across the western Montana and central Idaho basins.

Stay tuned to the National Weather Service forecasts and social media posts for any upcoming winter storms this season!

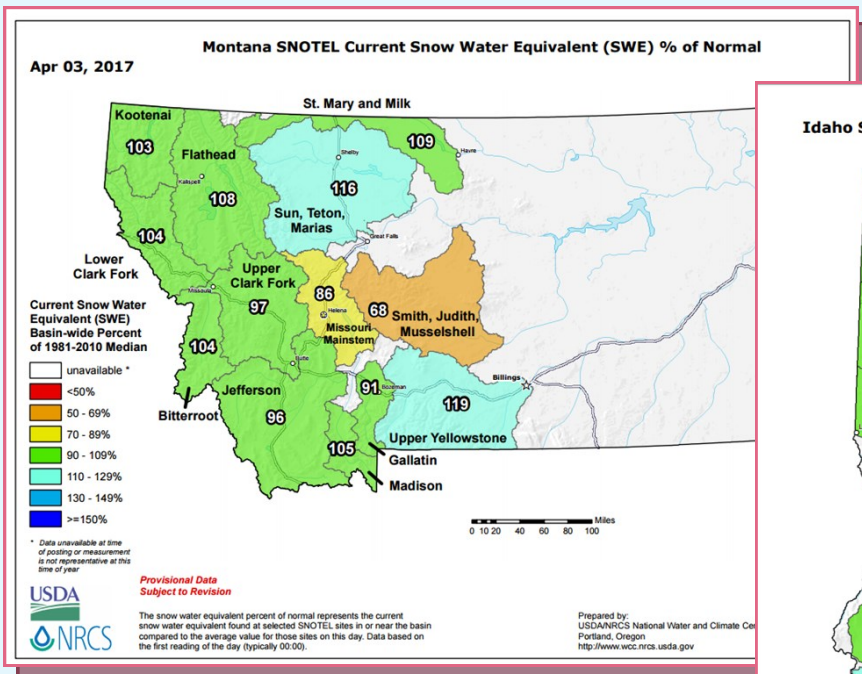


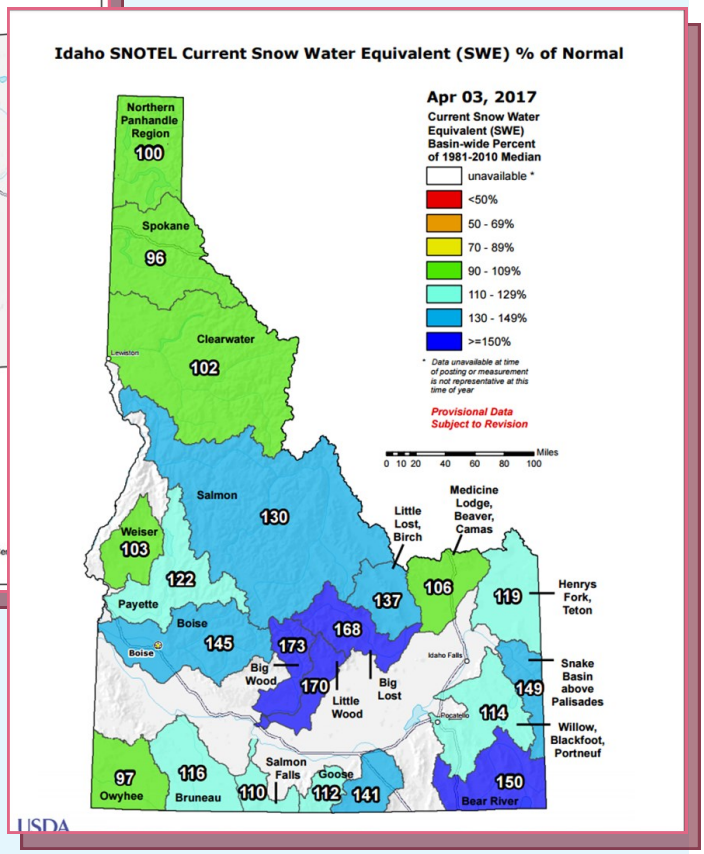


Fire Season 2017: One to Remember

The fire season of 2017 proved to be one of the most destructive in recent memory, rivaling big years such as 2000 and 2012. The state and federal government spent roughly $393 million in Montana alone, making it the most costly season since at least 1999, when adjusted for inflation. Weather is a huge contributor to fire season severity, so what exactly happened?

The winter of 2016-2017 was dominated by a La Nina event, which led to a cold and wet (snowy!) winter. This allowed the year to start off promising regarding snow pack, with many locations entering the spring months with near to slightly above normal snow water equivalent values.





A switch in the weather pattern began in April, when drier conditions set up across the region. Most locations received below normal precipitation for the April/May/June time frame. May and June, in particular, tend to be the wettest months for western Montana and central Idaho. A lack of moisture in this time frame can be really critical in drying out fuels (grass, tree litter, etc), making them more susceptible to fire come summer.

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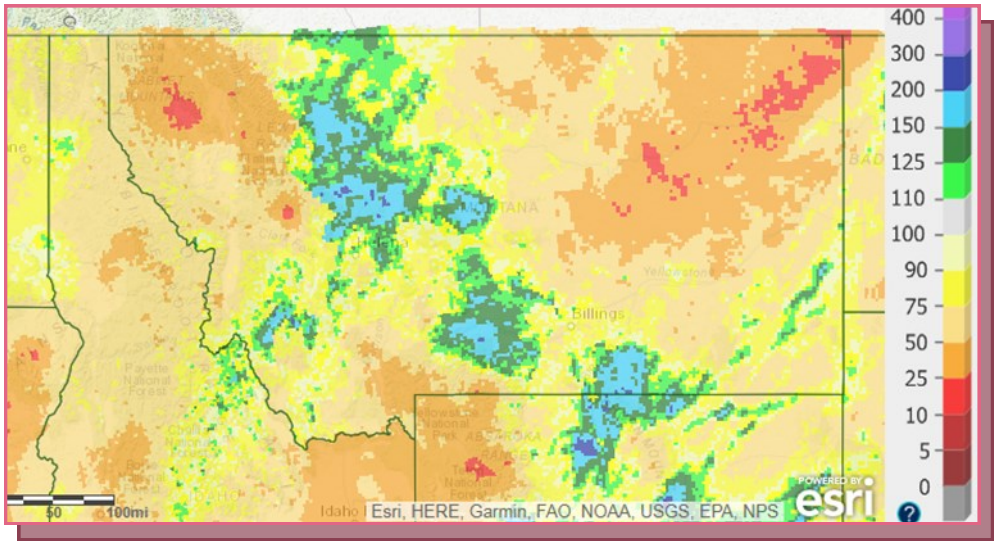
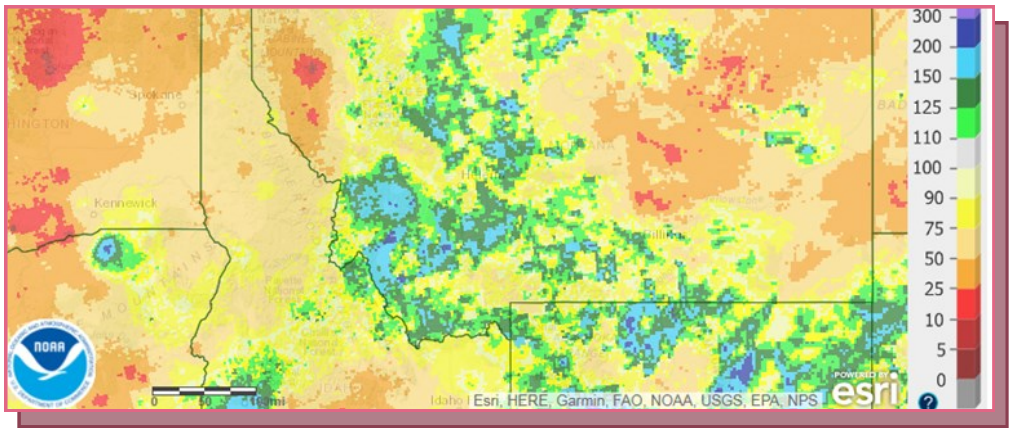
Fire Season 2017: One to Remember continued



Percent of normal precipitation in May, 2017



Percent of normal precipitation in June, 2017

A significant precipitation event occurred June 12-13 across southwest Montana. Precipitation amounts ranging from 1" up to almost 4" fell in this time frame, with flooding reported in many locations. Because of the relatively short duration of this event, the heavy precipitation amounts likely had little effect in mitigating the overall dry spring. In fact, this may have contributed to a larger than normal grass crop in these areas to start the summer season.

A strong ridge of high pressure set up across the Northern Rockies Region beginning in late June, and lasting for much of the summer. An extremely hot and dry period ensued, with Missoula having its driest July on record, only receiving a trace of precipitation through the entire month. July also proved to be one of the hottest on record, only being eclipsed by 1985 and 2007. This hot and dry period, following an overall dry spring, really accelerated the drying of fuels, quickly bringing the landscape to critically dry levels as early as mid to late July.

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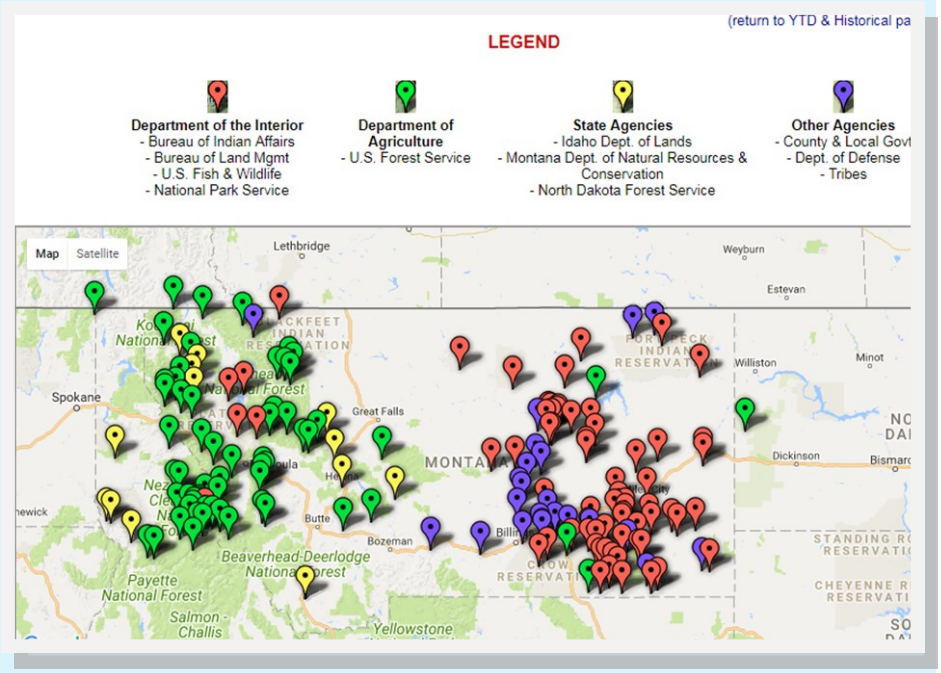
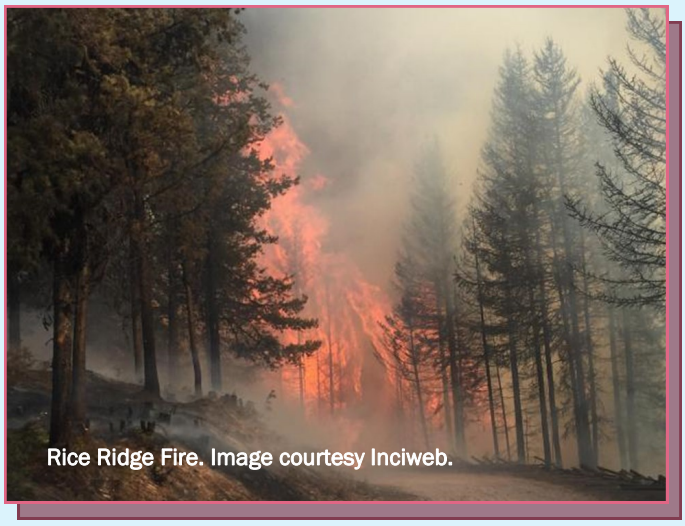
Fire Season 2017: One to Remember continued

Due to the readiness of fuels and a poorly timed nocturnal (night time) thunderstorm event, fires across southwest and west central Montana started quite early compared to typical years, with several large fires already present by mid to late July!



August continued to be hot and dry, with a few periods of thunderstorms, further adding fire to the landscape. Several dry cold fronts pushed through the area in late August and early September, which led to periods of extreme fire growth. One such event in early September caused the Rice Ridge Fire, near Seeley Lake, Montana, to grow 48,000 acres, nearly doubling in size!


Rice Ridge Fire. Image courtesy Inciweb.

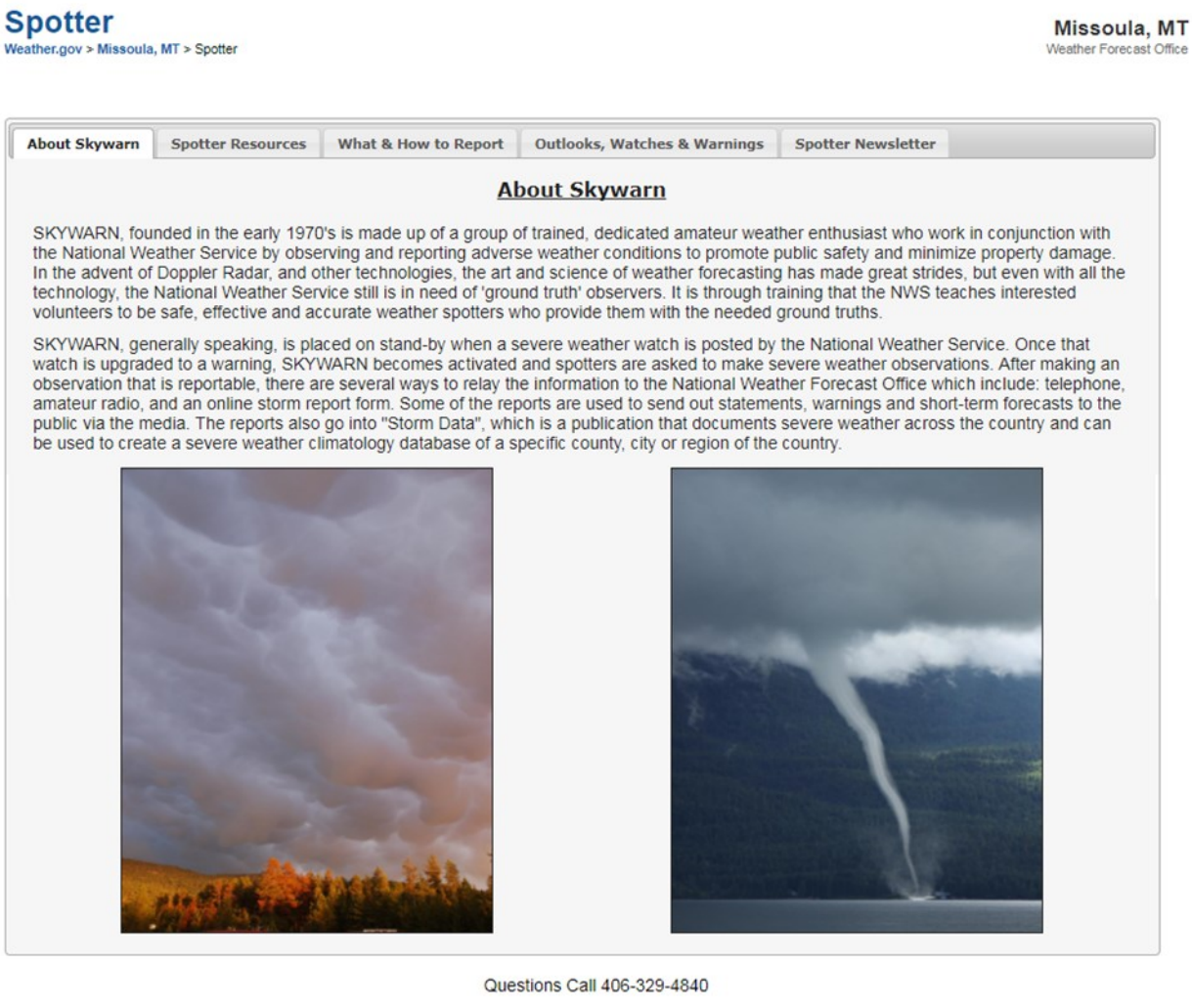
When all said and done, the amount of acreage burned across Montana due to wildfire was nearly 4 times what would burn in a typical year. The Rice Ridge Fire turned out to be the third largest wildfire in the Northern Rockies Region (which includes part of Idaho, Montana, North Dakota and South Dakota) dating between 2007 and the present. This past year is definitely one for the record books!

	2017 Wildfire Acres	10 year Average Wildfire Acres
Idaho	164,744	110,327
Montana	1,255,432	311,915

New Spotter Webpage!

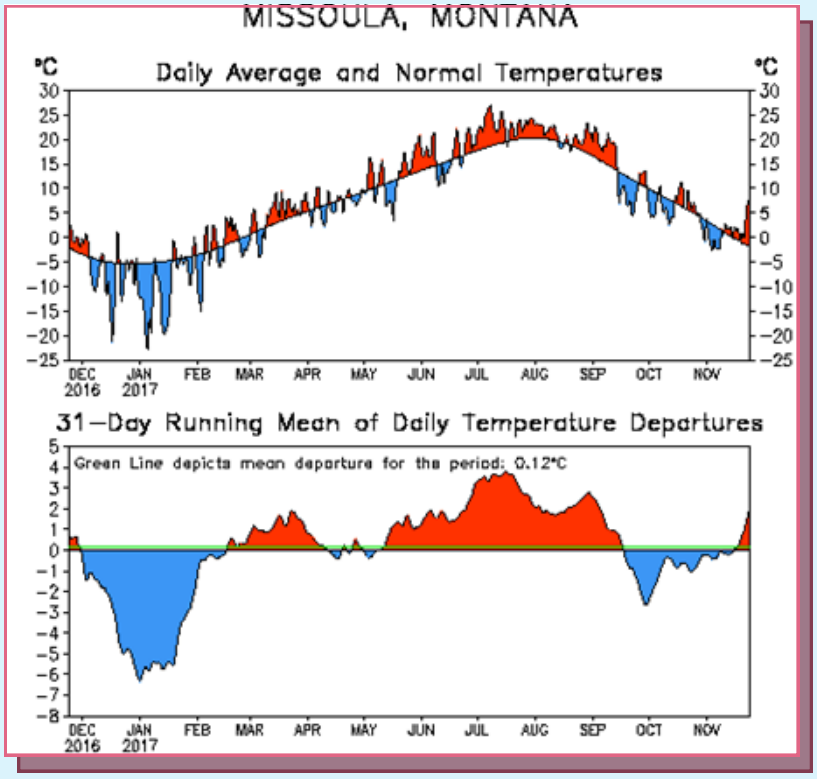
For the past year the National Weather Service in Missoula has been developing a new webpage for weather spotters. This webpage brings together an all-inclusive format on why we need spotters, how to contact the NWS office and what training is available. The new webpage incorporates Youtube videos that the office has prepared for weather spotters plus an easier format on reading the spotter newsletter. We are excited to share this new webpage with you and hope it is a useful tool.

www.weather.gov/mso/spotter



Wild Weather Facts

What a wild crazy year the Northern Rockies has experienced these past 365 days! Last winter the Northern Rockies was in a La Nina pattern which cause temperatures to be well below seasonal readings. Average temperatures for the winter months of December through February were the coldest readings since the winter of 1992-1993. In actuality January has not been that cold since 1979. The Northern Rockies also received a steady stream of precipitation throughout the winter and spring allowing snow pack readings to remain well above average. The area had the second wettest January/February/March on record, according to readings at Missoula, MT. The region even received a significant rain event in mid-June that cause historic flooding in the Sapphire Mountains down along Rock Creek. Then all of a sudden the faucet was turned off and the heater was cranked to full blast. July turned out to be the 4th warmest on record and the heat continued on into August. The heat did not help when Missoula had its driest July ever, only recording a trace of precipitation. The region did not break out of this hot and dry pattern until mid-September. The wet spring allowed fine fuels, such as grasses and shrubs, to grow rapidly. Then the furnace of July and August caused one of the biggest fire seasons in the Northern Rockies. The following images are the daily averages of temperature and precipitation for Missoula and Kalispell compared to normal.



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Wild Weather Facts continued