

## 2015 Annual Summary

2015 will be remembered by the winter and spring snow pack drought and record hot June which contributed to a very active wildfire season. Around 913,000 acres were reported burned across Central and Eastern Washington and north Idaho. For Spokane and Lewiston it was the second warmest year on record. For Ephrata and Kellogg the numbers came in with the warmest on record. Then a windstorm for the record books in November followed by a snowy December. Now let's look at the individual months in more detail.

A cold snap ended 2014 with the cold air lingering into the first few days of **January**. This would be the coldest period of the winter, with low temperatures in the single digits. A strong weather system on the 4<sup>th</sup> scoured out this cold air, but with it came 4 to 6 inches of snow for many locations. The Sandpoint area received a foot of snow. The worst weather was in the Wenatchee Valley. Leavenworth picked up 4 to 6 inches of snow, followed by an inch of freezing rain which brought down trees and power lines. The next ten days were quiet with cool temperatures. A couple of stronger storms moved through the region in the middle of the month, bringing 2-5" of snow to the northern valleys and Cascades. Leavenworth and Plain picked up 7 to 10" of snow. The month then closed out on a quiet note.

**February** saw the end of what little winter we had. A strong pineapple express pattern set up and brought rain to the valleys and mountains on the 4<sup>th</sup> through 7<sup>th</sup>. A few rivers actually exceeded flood stage with a few mudslides. This rain and warmth removed the low elevation snow from most locations as temperatures soared into the mid-50s and lower 60s. Numerous records were set on the 6<sup>th</sup>, including 64°F at Lacrosse and 66°F at Lewiston. The mild temperatures lasted until the middle of the month before cooling a bit. A cooler air mass moved in on the 20<sup>th</sup>, allowing nighttime temperatures to finally drop below freezing again. Still, daytime temperatures generally warmed into the 40s and 50s for the remainder of the month.

Winter snow numbers were very low, and here is a look at the numbers:

	2014/15	Record Year
Wenatchee	5.4" (4 <sup>th</sup> least snow)	3.6" (1962)
Lewiston	1.5" (6 <sup>th</sup> least snow)	Trace (1944, 57 and 91)
Spokane	15.7" (18 <sup>th</sup> least snow)	4.4" (1933)

After a very mild winter, folks were wondering if they would have to "pay for it" in spring. As it turned out, that wouldn't be the case. The mild winter weather carried over throughout spring. Most plants budded and bloomed earlier than normal. The meager snow pack in the mountains melted early as well.

**March** started out very quiet. As is usual, the first few days of the month saw some light lowland snow. Temperatures gradually warmed to readings in the 60s and even lower 70s by the 10<sup>th</sup>. A very wet storm system moved through the area on the 15<sup>th</sup>. Bonners Ferry received 2.23" of rain while Fairchild AFB recorded 1.64" of rain. This led to some minor rock slides onto roads in Kootenai and Stevens counties. The second half of the month was more showery, with light rain on more days than not. A strong Pacific front brought widespread rain and wind to the region on the 28<sup>th</sup>. St. Maries and Kellogg both picked up 0.85" of rain while Elk and Chattaroy received a half inch. Spokane Airport and Lewiston both gusted to 45 mph.

**April** was extra-quiet and dry. Temperatures were close to normal, but precipitation was lacking. Less than half the normal amount fell during the month. One cold front on the 6<sup>th</sup> brought lowland snow to the area, including 2.1" south of Coeur d'Alene. A somewhat stronger front on the 13<sup>th</sup> provided up to 6" of snow to the mountains. The cold air behind this storm dropped morning low temperatures on the 15<sup>th</sup> into the 20s in many locations. The latter half of the month was remarkably quiet.

This stretch of quiet weather continued well into **May**, ending on the 12<sup>th</sup> and 13<sup>th</sup> as a low from the south finally brought some rain to the area. Moscow received 1.35" inches of rain while Clarkston picked up 0.94". Many locations in the Wenatchee area received 1" to nearly 2" of rain. This event started a warmer and wetter pattern for the remainder of the month. A moist and unstable atmosphere brought several days of heavy showers and thunderstorms. One of these caused a Flash Flood between Oaxdale and Tekoa on the 16<sup>th</sup>. The last week of May saw repeated heavy rain showers each day.

OK, there's no other way to say it: 2015 was the hottest summer (defined as June, July, and August) ever in the Inland Northwest. In some locations, it was also the driest.

<i>Location</i>	<i>Hottest Summer Rank</i>	<i>Driest Summer Rank</i>
Lewiston	1 <sup>st</sup>	20 <sup>th</sup>
Spokane	1 <sup>st</sup>	1 <sup>st</sup>
Ephrata	1 <sup>st</sup>	4 <sup>th</sup>
Moscow	5 <sup>th</sup>	3 <sup>rd</sup>
Colville	1 <sup>st</sup>	10 <sup>th</sup>
Wenatchee	1 <sup>st</sup>	5 <sup>th</sup>
Winthrop	3 <sup>rd</sup>	7 <sup>th</sup>

The month of **June** started off innocently enough. A cold front on the 1<sup>st</sup> brought heavy rain to the region with thunderstorms producing flash flooding. Hayden, ID measured 3.25-4.75" of rainfall, while Colbert, WA picked up 2.28". Lewiston had 0.70" of rain in 30 minutes which led

to significant flooding. After a few cool days behind this front, an unusually strong area of high pressure developed, bringing record hot temperatures to the area. By the 8<sup>th</sup>, everyone was in the 90s with a few lower 100s. The heat didn't last, and temperatures dropped back to normal mid-June readings. But there wasn't any rain either. Warm weather returned as the high pressure continued over the western US. The desert Southwest saw extremely hot temperatures, and this heat built northward into our area by the end of the month. Triple-digits were common place on the 27<sup>th</sup> and 28<sup>th</sup>. Many locations set their all-time hottest June day. Spokane hit 105F. To put this in context, not only was this the hottest June day ever in Spokane, it was the 5<sup>th</sup> hottest day ever in Spokane history. A wild fire in the Wenatchee area burned 28 homes on the 29<sup>th</sup>. The heat abated a bit on the last few days of June as some thunderstorms tracked from Colville to Bonners Ferry, resulting in significant wind damage with numerous downed trees and power outages. When it was all over, the month of June 2015 was by far the hottest June ever, more than 10 degrees warmer than average. In fact, the readings for June this year were hotter than what we usually see in July or August. Of course, the question became "would this heat last all summer?"

**July** quickly answered that question as above-normal temperatures persisted for the first 10 days. Showers and thunderstorms brought a short end to the heat on the 11<sup>th</sup>, bringing much needed rain to the area. An observer north of Davenport reported 1.34". Flash flooding closed Highway 195 north of Clarkston. Another round of thunderstorms brought lightning to the Canadian border region on the 20<sup>th</sup>, which started a few wild fires. Temperatures for the rest of the month were actually quite normal for this time of year. A cool and showery weather pattern came in for the 25<sup>th</sup> through the 27<sup>th</sup>. But the heat returned on the 30<sup>th</sup> with more triple-digit temperatures.

The hot weather continued into **August**. There were a few thunderstorms on the 3<sup>rd</sup> and again on the 10<sup>th</sup>, but they weren't widespread and didn't bring much if any rain with them. But the lightning started a number of fires south of Lewiston. A strong low pressure system moved through the region on the 13<sup>th</sup> and 14<sup>th</sup>. Initially this low sparked a number of thunderstorms which started numerous wild fires. As the low exited, strong winds developed on the 14<sup>th</sup> which fanned the wild fire flames. Tens of thousands of acres were burned. The wind also created a significant dust storm. Following this event, temperatures were pretty close to normal for mid-August. But the smoke from all of the wild fires was the big story, reducing visibility and causing health concerns. A strong cold front from the north on the 20<sup>th</sup> and 21<sup>st</sup> brought more wind to the Okanogan Valley. A third strong storm moved through the region on the 29<sup>th</sup>, bringing the strongest winds of all. Lewiston gusted to 73 mph, which knocked down trees and power lines, while the Spokane Airport measured a gust of 49 mph. Blowing dust was again a problem. Thankfully, this storm was more moist, bringing some rain to the Cascades and northern mountains. This helped keep the fire activity in check, despite the strong winds. A secondary front the next day brought more widespread rains to the area, and significantly cooler temperatures. Many locations didn't even warm into the 70s.

**September** continued to give welcome relief to the unrelenting heat from earlier in the summer. Temperatures were generally cooler than normal across the entire region, although most

location continued to see relatively dry weather. Temperatures at the beginning of the month were slightly cooler than normal, however by the 5<sup>th</sup> and 6<sup>th</sup> a fairly strong cold front delivered widespread light to moderate rains and more importantly much cooler temperatures. The front also produced some gusty winds near Wenatchee with a gust to 42 mph reported on the 5<sup>th</sup>. A significant warm-up developed by the 10<sup>th</sup> and persisted for a few days with highs in the 80s to lower 90s. Another strong cold front tracked through the region on the 13<sup>th</sup> which plummeted high temperatures nearly 30 degrees from their peak. The front was not a big rain producer. A slow warming ensued between the 15<sup>th</sup> and 20<sup>th</sup> after which another cold front moved through producing a few reports of 40 mph winds. The remainder of the month saw roller coaster temperatures however little if any rain fell. Generally speaking the cooler temperatures and shorter days were sufficient to put a slow end to the area wildfires despite the lack of appreciable rain.

While September was generally characterized by cool conditions, the tables completely flipped in **October**. Every day of the month featured warmer than normal temperatures. The sum of all these warm days resulted in the warmest October on record in Wenatchee and the second warmest in Spokane! Not only was it warm, it was also dry. The first 17 days of the month featured dry and warm weather, with the only noteworthy feature consisting of a cold front on the 10<sup>th</sup>. This front produced wind gusts around 45 mph in both Spokane and Wenatchee. It also produced some light rain near the Cascades and the northern mountains. The last seven days of the month finally delivered some much needed precipitation to the region. Near the Cascades rainfall amounts ranged from 3 to 7 inches with 1 to 2 inches falling over much of the Idaho Panhandle. The strongest event of the month was a cold front that moved through between the 30<sup>th</sup> and 31<sup>st</sup>. Wind gusts of 40-55 mph were reported with some blowing dust over the Columbia Basin.

**November** saw warmer than normal conditions as the first three weeks of the month saw relatively persistent and mild westerly flow. This pattern supported 3 windy days due to the passage of strong cold fronts. The initial front moved through on the 1<sup>st</sup> with gusts to 45 mph with similar speeds encountered from the 2<sup>nd</sup> front on the 13<sup>th</sup>. The final front of the month was the most memorable. This front roared through the area on the 17<sup>th</sup> and produced some of the strongest wind reports the Inland Northwest has ever seen from a non-thunderstorm event. Wind gusts in excess of 60 mph were reported at Moses Lake and Pullman with a 71 mph gust in Spokane. This resulted in widespread blowing dust and numerous downed trees and power lines over northeast Washington and north Idaho. From a precipitation standpoint, the westerly flow kept light rainfall over much of eastern Washington and north Idaho. Meanwhile heavy precipitation was kept near the Cascades and over the northern mountains. The last week of the month saw cold and dry conditions in the wake of a dry polar front cold front.

**December** brought a much needed change bringing rain and snow to the region resulting in improvement to the drought. For Spokane it was the fourth wettest December on record. The first half of the month was mild with mostly rain the valleys and a mix of rain and snow in the mountains. An exceptionally wet system occurred from the 6<sup>th</sup> through the 9<sup>th</sup> as an atmospheric river of subtropical moisture became aimed at the region. The hardest hit areas was the Cascades with 4 to 7 inches of mostly rain near the Cascade crest with 3 to 5 inches in the Idaho Panhandle. A large mudslide resulted along Highway 2 near Leavenworth. Minor flooding resulted as well on some small streams such as Lightning Creek, and other small streams near Sandpoint. The second half of the month continued with storms moving in, but from a cooler northwest direction. This brought several rounds of snow especially in the

Cascades. Up in the mountains near the upper end of Lake Chelan Holden Village reported 117" of snow for the month, which is 39" above normal. The strongest storm resulted as a deep low pressure system tracked from Yakima to Coeur D'Alene on the 21<sup>st</sup>. Heavy snow fell on the north side of the low with 5 to 9 inches falling in Leavenworth, Wenatchee, Quincy, and on the Waterville Plateau. South of the low track a mix of rain and snow fell along with very windy conditions near the foothills of the Blue Mountains with a wind gust of 69 mph at Alpowa Summit.

### Site: Wenatchee, WA (Water Plant)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>Average High Temp</b>	36.5	50.1	60.6	64.0	76.6	88.8	91.8	89.3	75.6	68.2	48.2	36.2	65.6
<b>Dep from Normal</b>	+0.6	+6.7	+4.8	+0.6	+3.6	+9.0	+3.2	+1.7	-2.7	+4.7	+1.7	+1.4	+3.1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>Average Low Temp</b>	28.6	32.9	37.8	40.1	52.5	63.1	65.5	62.8	50.8	45.5	31.4	27.4	45.0
<b>Dep from Normal</b>	+3.2	+5.2	+4.2	+3.2	+3.7	+7.5	+4.0	+2.3	-0.9	+4.3	-0.8	+2.2	+2.9

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
<b>Precipitation</b>	1.03	.87	.76	.21	1.45	.03	.08	.01	.51	.48	1.33	3.59	10.35
<b>Dep from Normal</b>	-.30	-.13	+1.15	-.32	+1.76	-.63	-.26	-.18	+1.21	-.04	-.05	+2.06	+1.13

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
<b>Snowfall</b>	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	16.7	22.3
<b>Dep from Normal</b>	+0.6	-2.7	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.9	+10.0	+6.6

## Site: Lewiston, ID

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average High Temp	43.9	52.2	59.8	64.2	76.7	89.8	93.2	90.9	77.2	70.4	46.8	42.8	67.5
Dep from Normal	+2.3	+5.7	+4.9	+1.9	+5.8	+11.3	+2.9	+2.1	-1.0	+7.8	-1.4	+3.3	+4.0

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average Low Temp	32.5	35.4	38.2	38.1	50.3	60.5	64.2	62.0	50.6	48.3	33.1	31.6	45.5
Dep from Normal	+2.9	+4.5	+2.6	-2.2	+3.3	+7.1	+4.6	+2.8	-0.4	+7.2	-1.0	+3.6	+3.0

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Precipitation	.83	1.36	1.18	.29	1.11	1.22	.02	.01	.65	.75	.95	1.59	10.06
Dep from Normal	-.25	+6.8	+0.03	-1.03	-.50	-.02	-.64	-.68	-.02	-.21	-.23	+6.2	-2.25

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Snowfall	1.5	Tr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Tr	5.7	7.2
Dep from Normal	-0.9	-2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.8	+2.2	-3.3

## Site: Spokane, WA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average High Temp	35.2	47.1	55.5	58.7	72.5	84.8	87.1	85.6	70.7	64.5	42.1	35.5	61.7
Dep from Normal	+0.8	+7.5	+6.6	+1.5	+5.9	+11.0	+3.8	+2.7	-2.2	+6.5	+0.5	+3.2	+4.3

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
Average Low Temp	26.7	31.4	35.5	36.3	48.9	58.0	61.3	59.3	47.1	44.2	27.7	25.9	41.9
Dep from Normal	+2.0	+5.0	+3.9	-0.5	+5.1	+7.6	+5.0	+3.5	-0.3	+7.0	-2.1	+3.4	+3.9

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Precipitation	1.91	1.04	2.43	.53	.85	.07	.19	.18	.52	1.14	.77	4.45	14.08
Dep from Normal	+1.12	-2.29	+8.82	-7.75	-7.77	-1.18	-4.45	-4.41	-1.15	-0.04	-1.53	+2.15	-2.17

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Snowfall	10.4	1.1	0.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	24.1	39.0
Dep from Normal	-1.0	-5.7	-2.6	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-5.9	+9.5	-5.9