

The Month In Review

February 2018

National Weather Service
Pendleton, Oregon

February, 2018 Climate Summary

The climate over the forecast area during February, 2018 can be described as mild through about the 18th. Then big changes took place during the last week of the month with much colder weather with several cold weather systems which brought moderate to heavy snow to the area mountains. The snow was not that heavy in Pendleton, OR, but there was heavy snow in the mountains during the end of the month with a considerable amounts of winter weather warnings or advisories issued. Overall, the temperatures during the month of February were only slightly below for the normal. In Pendleton, OR the average for the month was only -0.5 degrees F. below normal, with similar temperature departures elsewhere. Below are some photos taken during the month to illustrate the winter weather at the end of the month, and also the snow that fell on Valentines day.



Valentines Day Snowstorm



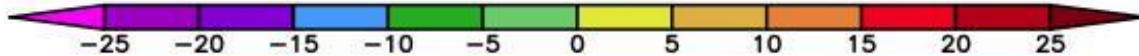
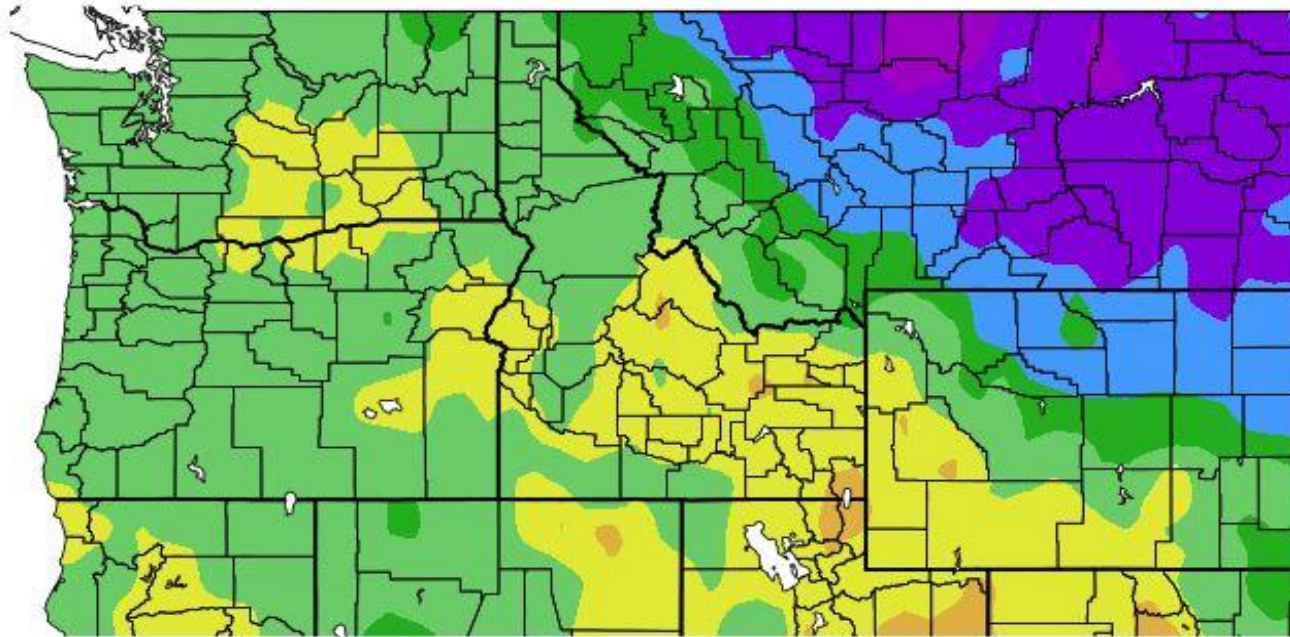
Snow at the end of February



Snow at the end of February

Departure from Normal Temperatures

Departure from Normal Temperature (F)
2/1/2018 – 2/28/2018



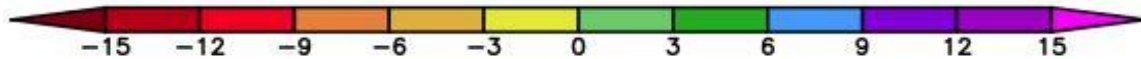
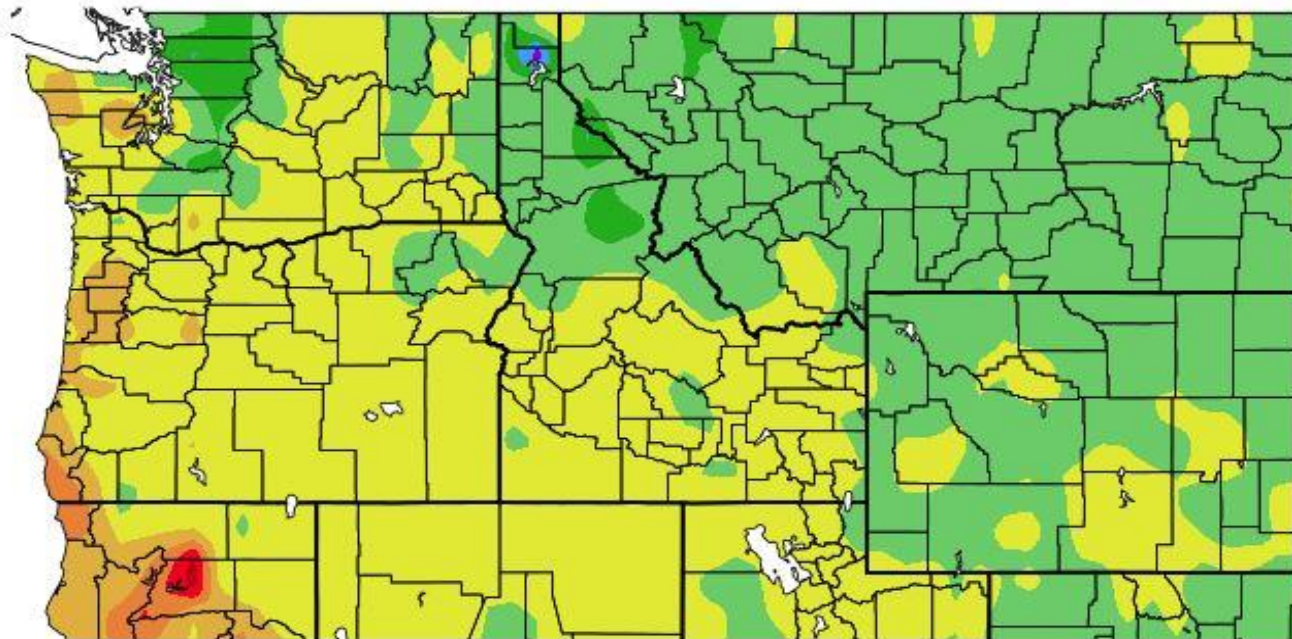
Generated 3/6/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

As the map shows, most of the Pacific Northwest had near normal temperatures, except for the Lower Columbia Basin and adjacent Valleys which was just slightly above normal.

Departure from Normal Temperatures

Departure from Normal Precipitation (in)
2/1/2018 – 2/28/2018



Generated 3/6/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

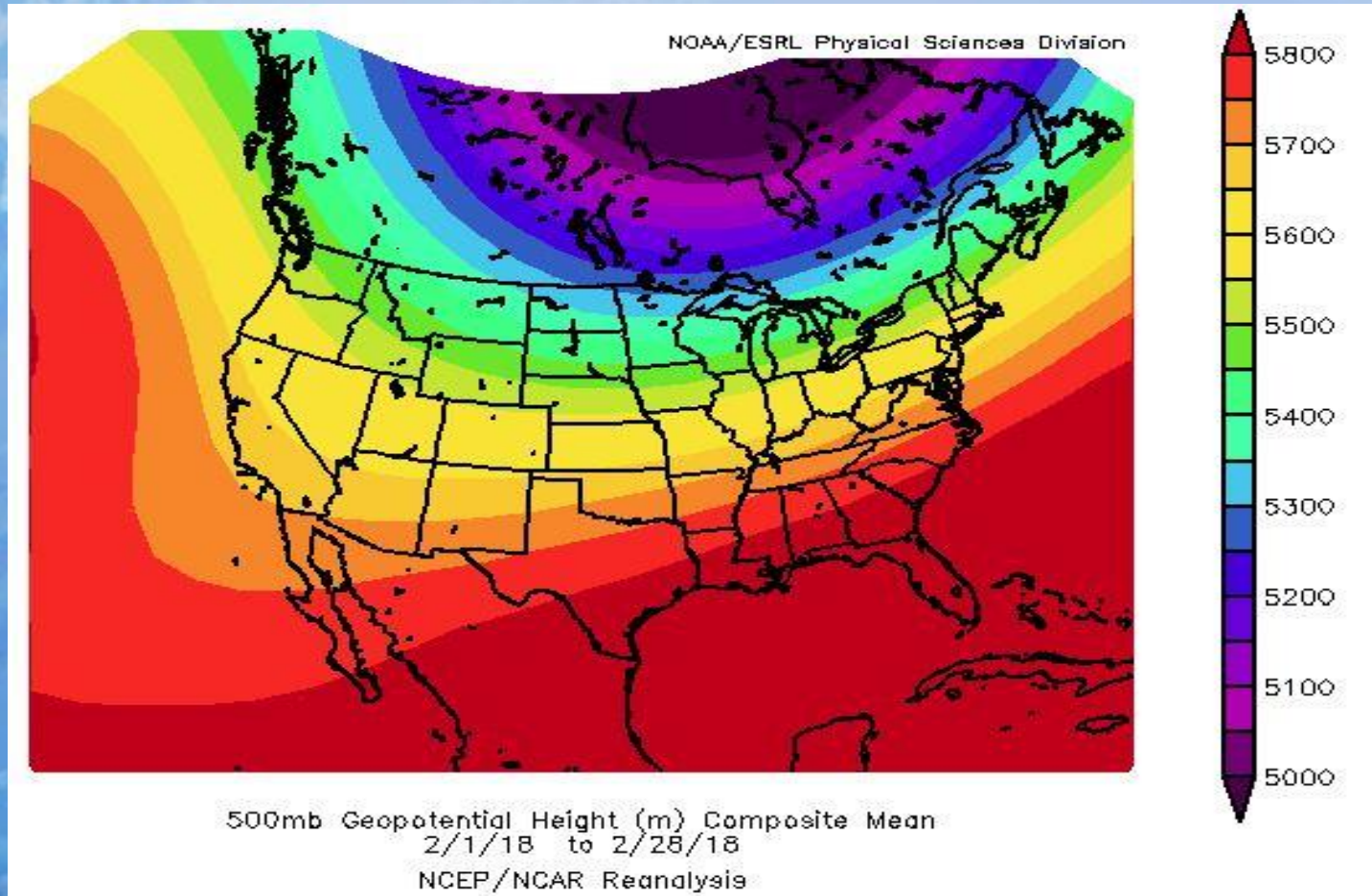
As the map shows, most of the Pacific Northwest had slightly below normal precipitation, except the Northern Blue Mountains which was slightly above normal.

Select February, 2018 Averages and Departures

	Max T	Max T D	Min T	Min T D	Ave T	Ave T D	PCPN	PCPN D	Snowfall	Snow D
Yakima	51.5	5.2	25.8	-0.1	39.0	2.9	0.19	-0.59	0.5	-2.5
Kennewick	50.3	2.3	31.9	1.2	41.1	1.8	0.46	-0.32	0.0	-3.0
Walla Walla	46.6	0.6	33.9	1.7	40.2	1.1	1.61	-0.15	0.6	-2.4
The Dalles	50.6	2.0	33.9	2.1	42.3	2.4	0.71	-1.06	M	M
Redmond	47.6	0.8	21.3	-2.4	34.5	-0.7	0.31	-0.34	3.4	0.4
Pendleton Airport	46.5	-0.3	29.5	-0.8	38.0	-0.5	0.74	-0.37	4.4	1.4
La Grande	43.0	0.1	24.4	-1.5	33.7	-0.7	1.47	0.33	3.0	0.0
John Day	41.5	-5.9	20.9	-3.9	31.5	-4.6	0.44	-0.30	4.7	1.7

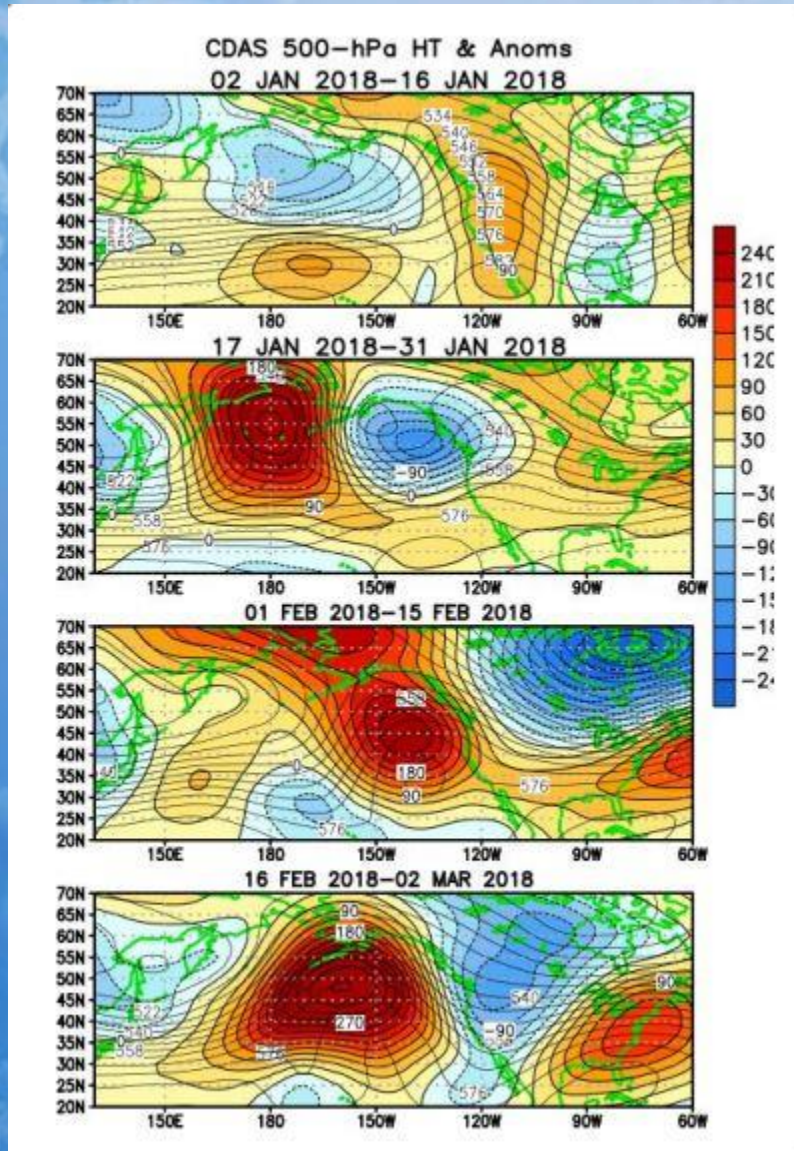
Average max temperatures were mostly above normal, except Pendleton and John Day which were below average. Average min temperatures were near normal +/- 0 - 4 degrees F. Average mean temperatures were again near normal +/- 0 - 5 degrees F. Precipitation amounts were all below normal, except La Grande which was above normal. And lastly, Snowfall amounts were near normal +/- 0 - 3 degrees of normal.

February 2018 Average 500 MB Weather Pattern



This image shows a 500 MB upper trough anomaly over the north central part of the USA with the trough extending over the western USA, and a nearly zonal westerly flow over the northeast. The average upper 500 MB trough pattern over the Pacific Northwest was mainly a result of a strong upper 500 MB trough during the last week of the month, with much below heights and temperatures.

Detailed 500 MB Analysis for Jan - Feb, 2018



This graphic shows a comparison of detailed 15 day sets of 500 MB analysis and anomalies for January vs February. Green lines show land masses over the northern hemisphere.

The first two images from the top you can see that the Pacific Northwest was dominated by an upper ridge over the region. This resulted in mostly mild temperatures in the higher terrain and periods of fog/low clouds over the basins. The upper ridge pattern continued during the first half of February (third image). Then during the latter half of February a strong upper trough with very cold conditions prevailed Over the Pacific Northwest.

Significant Weather Events

During the month of February, 2018, there were several wind events and several moderate to heavy snow events. These are summarized in the tables below of/from Local Storm Reports (LSRs) of the most significant events.

February 17th, 2018 High Wind Event

..TIME...	..EVENT...	..CITY LOCATION...	..LAT..LON...
..DATE...	..MAG....	..COUNTY LOCATION..ST..	..SOURCE....
..REMARKS..			
1258 PM	NON-TSTM WND GST 11 S	CELILO	45.48N 120.95W
02/17/2018	M62.00 MPH	WASCO	OR MESONET
0127 PM	NON-TSTM WND GST 13 WSW	MIKKALO	45.38N 120.46W
02/17/2018	E90.00 MPH	GILLIAM	OR MESONET
0131 PM	NON-TSTM WND GST 1 SE	MARYHILL	45.68N 120.80W
02/17/2018	M68.00 MPH	SHERMAN	OR MESONET
0140 PM	NON-TSTM WND GST 4 NW	WEST RICHLAND	46.36N 119.46W
02/17/2018	M68.00 MPH	BENTON	WA MESONET
0154 PM	NON-TSTM WND GST W	IONE	45.50N 119.83W
02/17/2018	M60.00 MPH	MORROW	OR MESONET
ZCZC PDXLSRPDT			
0157 PM	NON-TSTM WND DMG 1 NNE	SISTERS	44.30N 121.54W
02/17/2018		DESCHUTES	OR TRAINED SPOTTER
TRAINED SPOTTER REPORTED A 2 FEET IN DIAMETER TREE BLOWN OVER WITH WINDS ESTIMATED AT ABOVE 50 MPH AND GUSTS NEAR 70. A SECOND TREE, SPLIT AT THE TOP WHERE THE DIAMETER MEASURED AROUND 1 1/2 FEET IN DIAMETER.			

February 17th, 2018 High Wind Event - Continued

0200 PM	NON-TSTM WND GST 5 WSW SHANIKO	44.99N 120.85W
02/17/2018	M60.00 MPH WASCO	OR MESONET
0215 PM	NON-TSTM WND GST 6 SW BASIN CITY	46.54N 119.24W
02/17/2018	M60.00 MPH FRANKLIN	WA MESONET
0215 PM	NON-TSTM WND GST 1 NW HEPPNER	45.36N 119.56W
02/17/2018	M63.00 MPH MORROW	OR MESONET
0215 PM	NON-TSTM WND GST 1 NNE SISTERS	44.30N 121.54W
02/17/2018	M66.00 MPH DESCHUTES	OR MESONET
0223 PM	NON-TSTM WND GST 4 WSW ALDERDALE	45.82N 120.00W
02/17/2018	M65.00 MPH KCLICKITAT	WA MESONET
0225 PM	NON-TSTM WND GST 2 S ROOSEVELT	45.72N 120.21W
02/17/2018	M58.00 MPH GILLIAM	OR MESONET
0227 PM	NON-TSTM WND GST 1 E HERMISTON	45.83N 119.26W
02/17/2018	M64.00 MPH UMATILLA	OR ASOS
0233 PM	NON-TSTM WND GST 4 NE LYLE	45.73N 121.22W
02/17/2018	M60.00 MPH KCLICKITAT	WA MESONET
0237 PM	NON-TSTM WND GST E GOODNOE HILLS	45.75N 120.47W
02/17/2018	M62.00 MPH KCLICKITAT	WA MESONET
0308 PM	NON-TSTM WND GST 1 N CITY OF THE DALLES	45.62N 121.17W
02/17/2018	E63.00 MPH KCLICKITAT	WA ASOS

February 17th, 2018 High Wind Event - Continued

0316 PM	HIGH SUST WINDS 2 NNW	PENDLETON	45.70N 118.83W
02/17/2018	M48.00 MPH	UMATILLA	OR ASOS
0317 PM	NON-TSTM WND DMG 1 NW	UMATILLA	45.92N 119.34W
02/17/2018	UMATILLA	OR TRAINED SPOTTER	
NUMEROUS POWER OUTAGES DUE TO STRONG WINDS			
0318 PM	NON-TSTM WND GST 4 SSW	FOSSIL	44.94N 120.23W
02/17/2018	M61.00 MPH	WHEELER	OR MESONET
0354 PM	NON-TSTM WND GST 3 WSW	KOOSKOOSKIE	45.99N 118.18W
02/17/2018	M72.00 MPH	UMATILLA	OR MESONET

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This event was mainly a wind event which occurred over much of central and north central Oregon and south central Washington. It resulted in many occurrences of high winds with downed trees and power outages. There was some light precipitation with this event's cold front, but the main impacts were due to high winds with a strong, but relatively dry cold front. This was followed a day later with a modified arctic push on the 18th that produced mainly just light snow across the forecast area. The areas that did receive snowfall only measured mostly less than an inch except for a few isolated areas of several inches, which did not meet advisory or warning criteria.

February 24-25 Heavy Snow Event over the area mountains From central Oregon to the Northeast Blue Mountains:

PRELIMINARY LOCAL STORM REPORT...SUMMARY

NATIONAL WEATHER SERVICE PENDLETON OR

636 AM PST SUN FEB 25 2018

..TIME... ..EVENT... ..CITY LOCATION... ..LAT.LON...
..DATE... ..MAG.... ..COUNTY LOCATION..ST.. ..SOURCE....
..REMARKS..

0600 AM SNOW 4 NW MEACHAM 45.55N 118.47W
02/24/2018 M3.0 INCH UMATILLA OR TRAINED SPOTTER

ACCUMULATION OVERNIGHT

0600 AM SNOW 2 WNW SISTERS 44.30N 121.59W
02/24/2018 M2.3 INCH DESCHUTES OR COCORAHS

0651 AM SNOW 1 WSW CITY OF THE DALLE 45.59N 121.20W
02/24/2018 M2.5 INCH WASCO OR TRAINED SPOTTER

ACCUMULATION OVERNIGHT

0700 AM SNOW 1 S BEND 44.05N 121.31W
02/24/2018 M3.6 INCH DESCHUTES OR COCORAHS

0710 AM SNOW 2 SW GOLDENDALE 45.80N 120.84W
02/24/2018 M3.0 INCH KLICKITAT WA CO-OP OBSERVER

0730 AM SNOW SSW TROUT LAKE 46.00N 121.53W
02/24/2018 M2.9 INCH KLICKITAT WA COCORAHS

0800 AM SNOW 1 SSW SNOWDEN 45.82N 121.36W
02/24/2018 M5.0 INCH KLICKITAT WA CO-OP OBSERVER

0815 AM SNOW 9 N ELGIN 45.69N 117.92W
02/24/2018 M5.8 INCH UNION OR COCORAHS

February 24-25 Heavy Snow Event over the area mountains From central Oregon to the Northeast Blue Mountains - Continued

0900 AM HEAVY SNOW 1 WSW SKI BLUEWOOD 46.08N 117.85W

02/24/2018 M10.0 INCH COLUMBIA WA TRAINED SPOTTER

ACCUMULATION SINCE LAST NIGHT

0924 AM HEAVY SNOW 5 NNE LA GRANDE 45.39N 118.07W

02/24/2018 M5.3 INCH UNION OR TRAINED SPOTTER

3.5 INCHES OVERNIGHT THROUGH 7 AM, 5.3 INCHES TOTAL

0930 AM SNOW 1 NW EASTON 47.24N 121.19W

02/24/2018 M8.0 INCH KITTTITAS WA CO-OP OBSERVER

24 HOUR ACCUMULATION

1200 PM HEAVY SNOW 5 SW SPOUT SPRINGS 45.70N 118.11W

02/24/2018 M12.0 INCH UMATILLA OR MESONET

THE HIGH RIDGE SNOTEL REPORTED 12 INCHES OF SNOW

ACCUMULATION SINCE MIDNIGHT. ELEVATION 4920 FEET.

1200 PM HEAVY SNOW 3 NNW SKI BLUEWOOD 46.12N 117.85W

02/24/2018 M10.0 INCH COLUMBIA WA MESONET

THE TOUCHET SNOTEL REPORTED 10 INCHES OF SNOW

ACCUMULATION SINCE MIDNIGHT. ELEVATION 5530 FEET.

1200 PM HEAVY SNOW 9 SW SKI BLUEWOOD 45.98N 117.95W

02/24/2018 M9.0 INCH WALLOWA OR MESONET

THE MILK SHAKES SNOTEL REPORTED 9 INCHES OF SNOW

ACCUMULATION SINCE MIDNIGHT. ELEVATION 5580 FEET.

February 24-25 Heavy Snow Event over the area mountains From central Oregon to the Northeast Blue Mountains - Continued

1210 PM	HEAVY SNOW	2 SSW CAMP SHERMAN	44.44N 121.66W
02/24/2018	M7.0 INCH	JEFFERSON	OR TRAINED SPOTTER

12 HOUR ACCUMULATION

0138 PM	SNOW	TOLLGATE	45.78N 118.11W
02/24/2018	M7.0 INCH	UMATILLA	OR PUBLIC

SNOW ACCUMULATION SINCE LAST NIGHT. STILL SNOWING.
 ELEVATION 5077 FEET.

0138 PM	HEAVY SNOW	1 WSW SKI BLUEWOOD	46.08N 117.85W
02/24/2018	M15.0 INCH	COLUMBIA	WA TRAINED SPOTTER

2 INCHES OVERNIGHT, 13 INCHES SINCE 445 AM.

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This event was mainly a sharp modified arctic cold front which brought light to moderate snow to the forecast area, but the main impacts were the influx of significant arctic cold air. Over the next couple of days of these last days of February, temperatures dropped to near or below record low temperatures which will be listed in a few slides. For the remainder of the month daytime highs were a bit below normal, with near record cold night time lows and mainly light snow events.

Some Record Cold Temperatures for February In the Forecast Area

Some record high temperatures occurred at the beginning of the month, but most of the record were record lows during the latter half of February

February 1st record highs

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
REDMOND, OR	65 / 1976	65 (TIED)	1941
THE DALLES, OR	59 / 2015	62	1929
YAKIMA, WA	58 / 1982	63	1909

February 3rd record highs

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
THE DALLES, OR	60 / 1967	63	1929
YAKIMA, WA	61 / 1962	66	1909

February 5th record highs

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
THE DALLES, OR	57 / 1958	60	1929
YAKIMA, WA	58 / 1991	61	1909

February 8th record highs

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
*LA GRANDE(CITY), OR	63 / 2015	63 (TIED)	1887
*PRINEVILLE, OR	64 / 1996	66	1897
*SISTERS, OR	59 / 2006	66	1958
*GOLDENDALE, WA	55 / 2015	62	1905
*SATUS PASS, WA	53 / 1974	53 (TIED)	1967
YAKIMA,WA	58 / 1995	64	1909



Some Record Temperatures for February In the Forecast Area

Some record low temperatures for the latter half of February

February 21st record lows

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
*LA GRANDE(CITY), OR	12 / 2006	10	1887
*LONG CREEK, OR	9 / 1975	7	1908
*MORO, OR	7 / 1918	3	1897
THE DALLES, OR	16 / 1993	16 (TIED)	1929
*BICKLETON, WA	6 / 1957	5	1927
*WHITMAN MISSION, WA	18 / 2010	17	1962

February 23rd record lows

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
*HEPPNER, OR	12 / 1910	9	1889
*JOHN DAY(CITY), OR	12 / 2015	5	1891
*LA GRANDE(CITY), OR	18 / 2015	13	1887
*LONG CREEK, OR	9 / 1960	1	1908
MEACHAM, OR	3 / 2003	-2	1929
*PELTON DAM, OR	12 / 1960	6	1958
PENDLETON(ARPT), OR	19 / 2015	12	1934
*PENDLETON(ES), OR	15 / 2015	6	1932
REDMOND, OR	10 / 2015	-5	1941
THE DALLES, OR	20 / 2015	13	1929
*GOLDENDALE, WA	14 / 1910	1	1905
WALLA WALLA, WA	20 / 1957	19	1930
YAKIMA,WA	16 / 1993	11	1909

February 27th record lows

STATION	PREVIOUS RECORD/YEAR	NEW RECORD	RECORDS BEGAN
*LA GRANDE(CITY), OR	7 / 1996	6	1887
MEACHAM, OR	-4 / 1962	-10	1929



Observed Monthly Max & Min Temperatures

Location	Highest Maximum Temperature	Lowest Minimum Temperature
Pendleton, OR	64	10
Redmond, OR	69	-5
Pasco, WA	66	11
Yakima, WA	69	11
Walla Walla, WA	62	19
Bend, OR	59	-5
Ellensburg, WA	61	11
Hermiston, OR	65	10
John Day, OR	61	4
La Grande, OR	63	6
Prineville, OR	67	9
The Dalles, OR	66	13

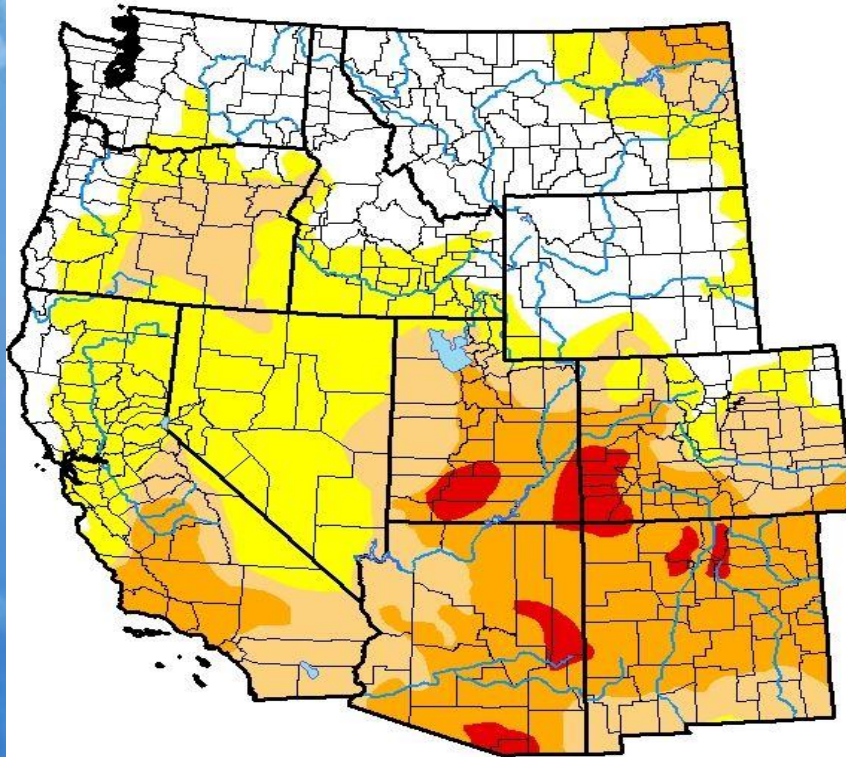
Highest max temperatures were not that unusual, but the lowest minimum temps were more extreme due to the arctic cold snap during the last 2 weeks of February

Monthly Total Precipitation and Snowfall

Location	Total Monthly Precip	Total Snowfall
Easton	1.84 ”	19.0 ”
Ellensburg	0.63 ”	M “
Yakima	0.19 ”	0.4 ”
Pasco	0.40 ”	T ”
The Dalles	0.71 ”	M “
Walla Walla	1.61 ”	0.6 “
Hermiston	0.53 ”	T ”
Pendleton	0.74 ”	4.4 ”
Redmond	0.31 ”	3.4 ”
Meacham	5.71 ”	40.6 ”
John Day	0.44 ”	4.7 ”
Mt Adams RS	3.16 ”	12.0 ”

February 2018 Drought Monitor

U.S. Drought Monitor West



February 27, 2018
(Released Thursday, Mar. 1, 2018)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.13	71.87	45.57	25.09	3.01	0.00
Last Week 02-20-2018	27.26	72.74	46.71	25.04	2.41	0.00
3 Months Ago 11-28-2017	60.34	39.66	21.48	3.94	1.52	0.00
Start of Calendar Year 01-02-2018	48.76	51.24	29.03	8.60	1.52	0.00
Start of Water Year 09-26-2017	55.72	44.28	21.01	8.72	5.30	2.17
One Year Ago 02-28-2017	79.07	20.93	6.98	0.75	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

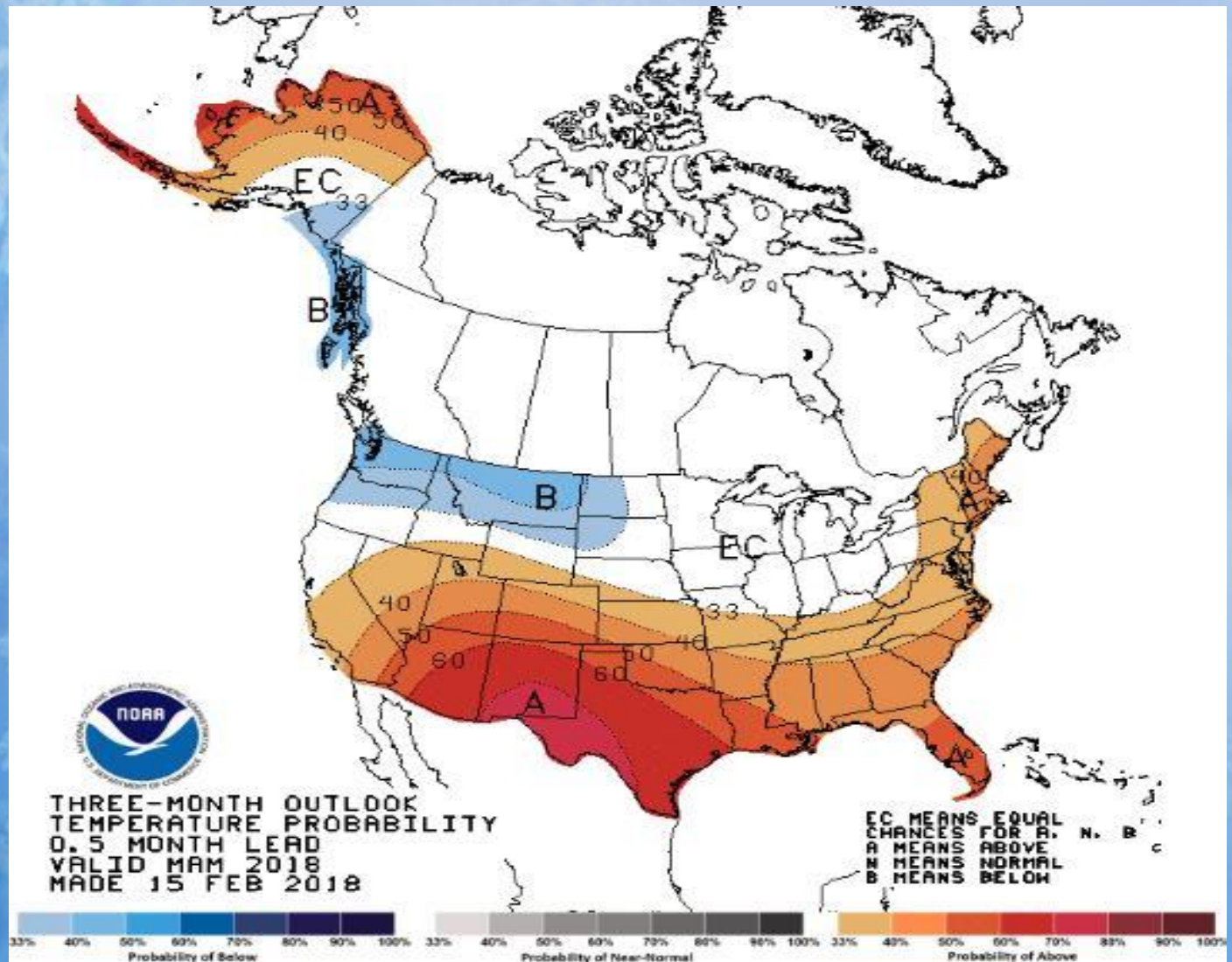
Deborah Bathke
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

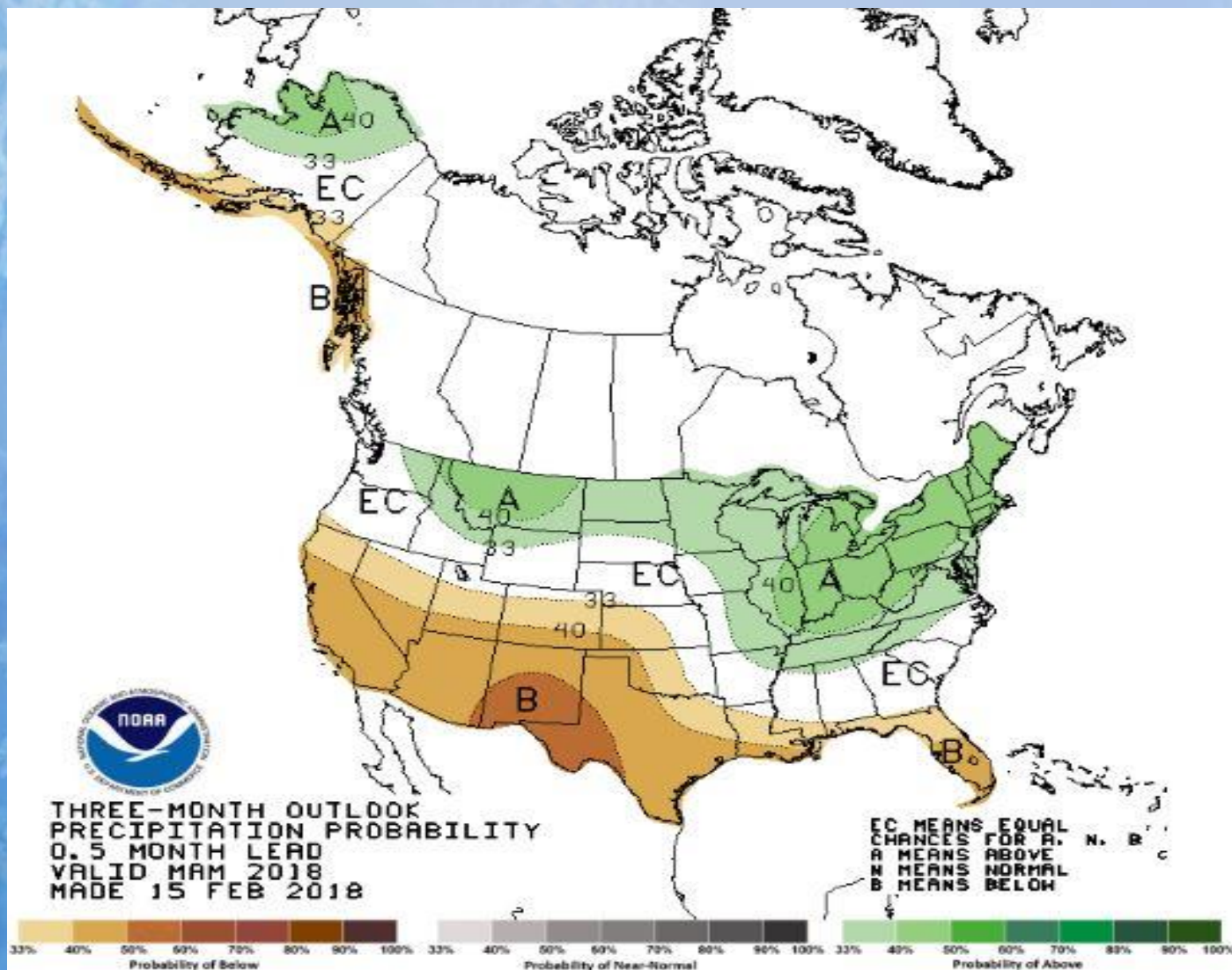
At the end of the month the map shows that the Pacific Northwest was abnormally dry to a moderate drought.

USA Three Month Temperature Outlook (March, April, May)



The temperature outlook for the next three months (March, April & May) shows mostly below normal temperatures for the Pacific Northwest.

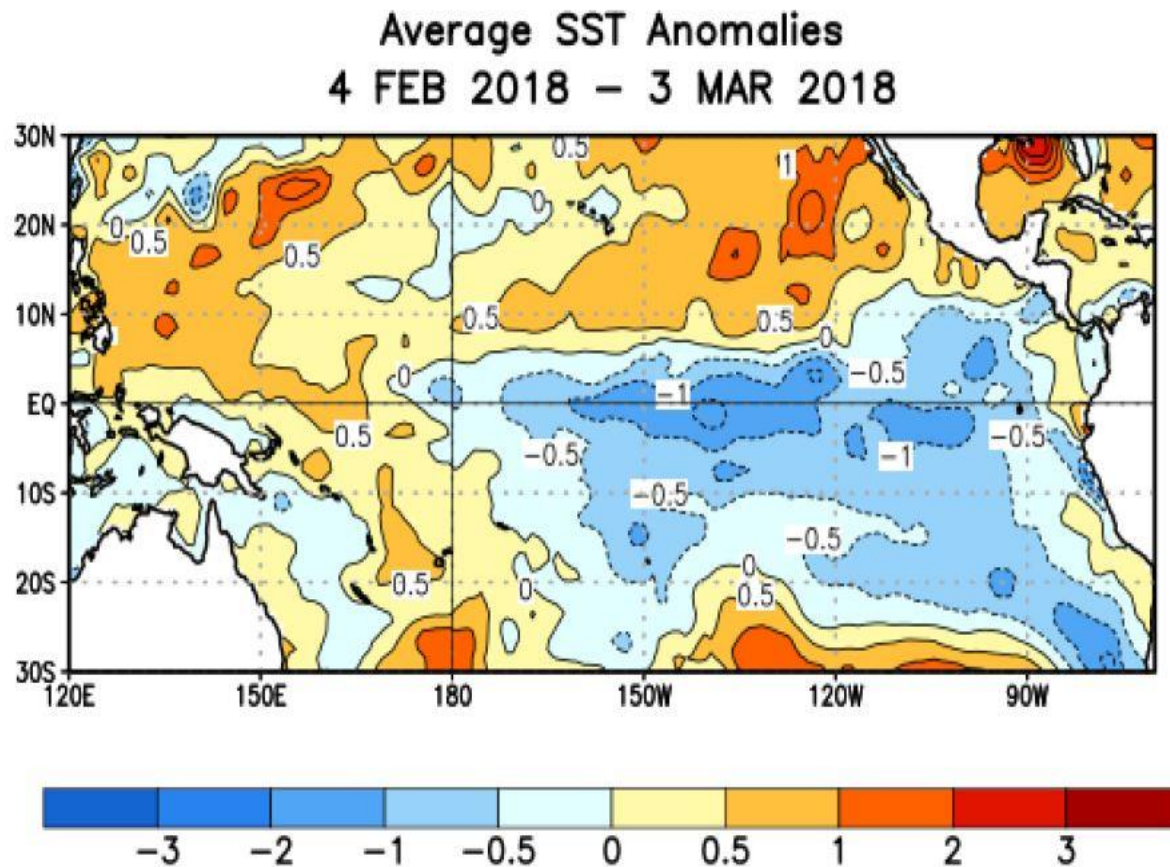
USA Three Month Precipitation Outlook (March, April, May)



The precipitation outlook for the next three months (March, April & May) shows mostly equal chances of above or below normal precipitation.

El Nino/La Nina Index 4 February 2018 – 3 March 2018

During the last four weeks, equatorial SSTs were below average across most of the central and eastern Pacific Ocean, and above average in parts of the western Pacific.





Thank You!