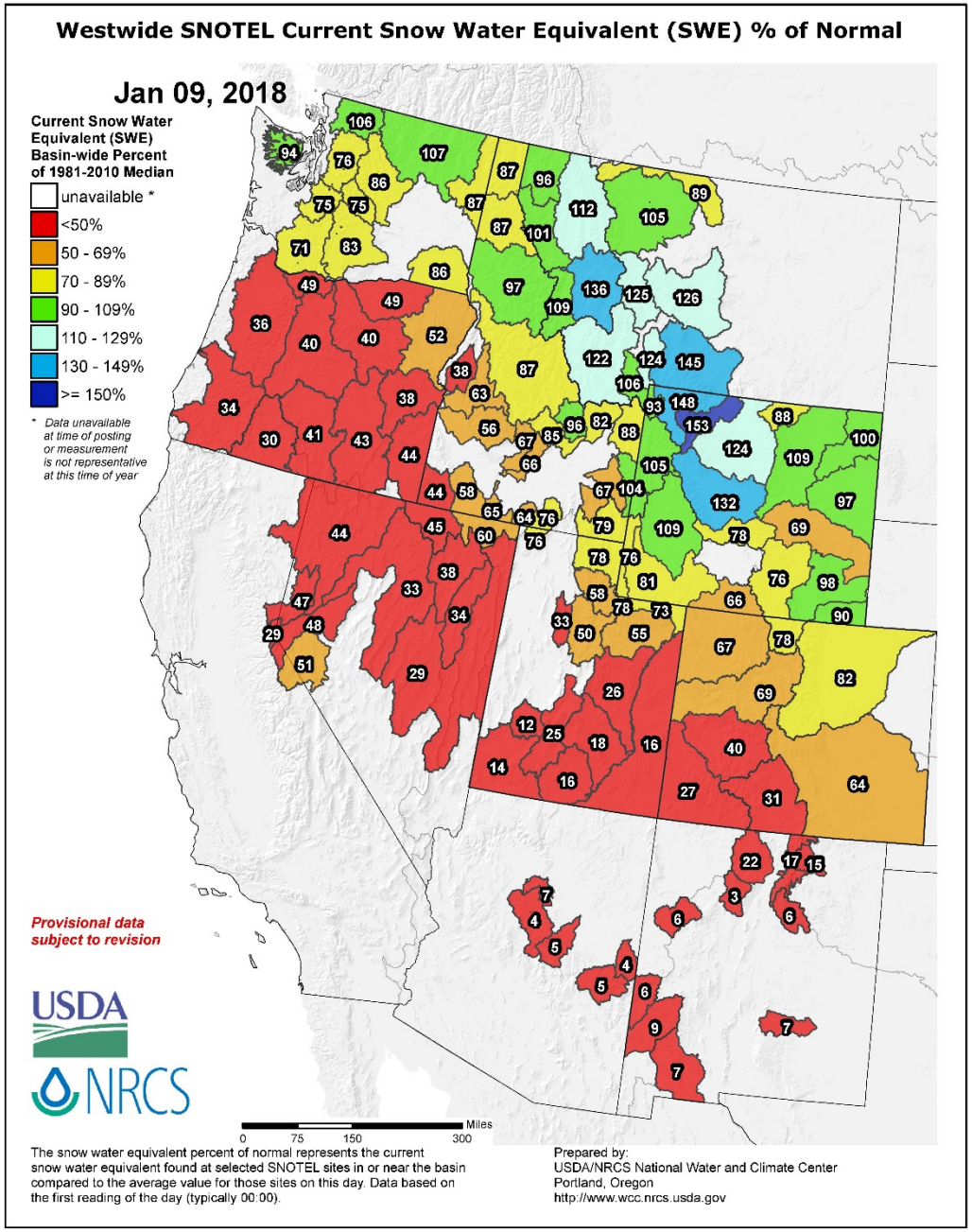
Oregon Water Supply Availability Committee
January 9, 2018

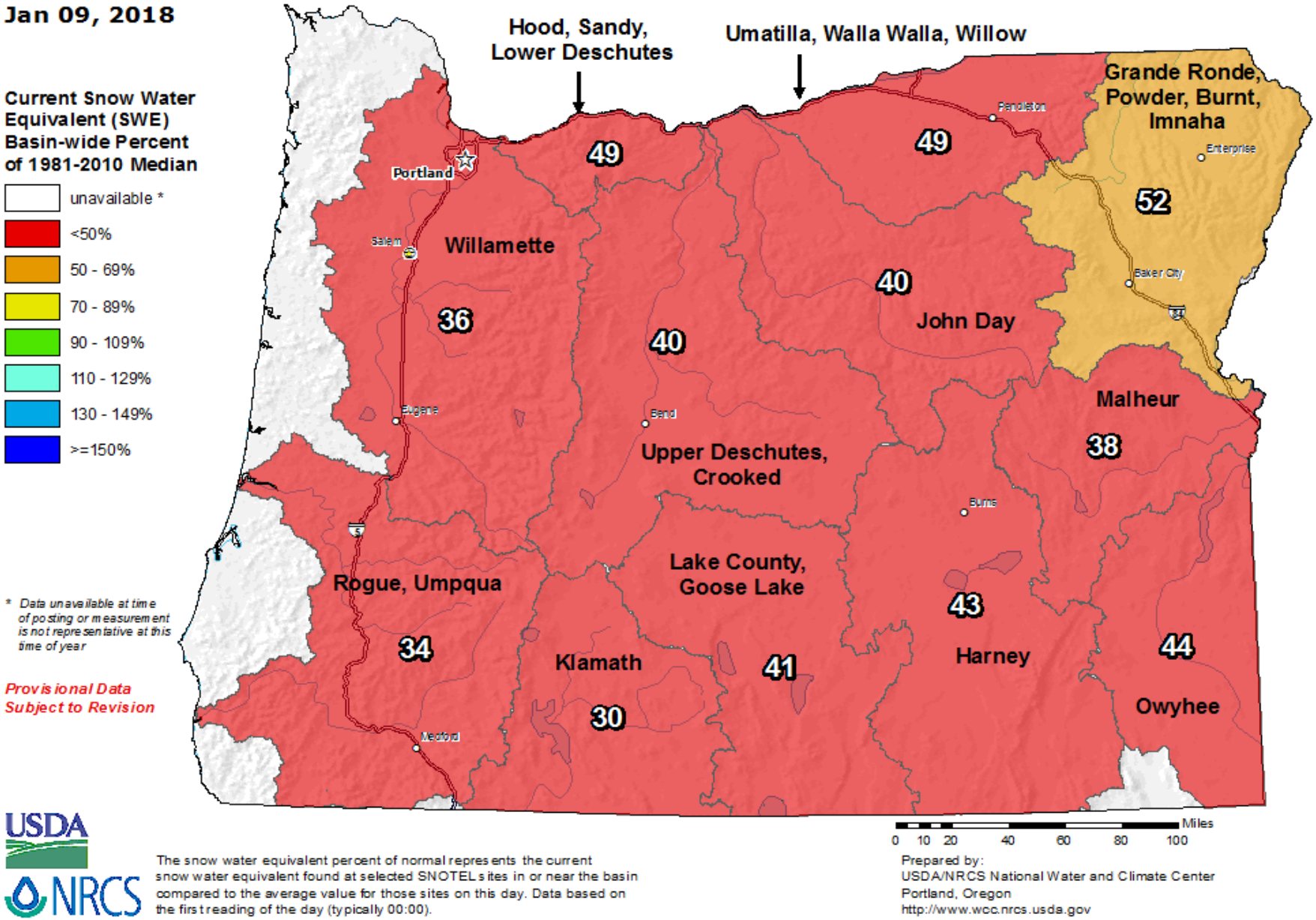
Not much snow to measure on January 1
Photo courtesy of Bill Goodman (Snow Surveyor, USFS Lakeview)

H. Scott Oviatt
Snow Survey Supervisory Hydrologist
Acting State Soil Scientist
USDA NRCS
Scott.Oviatt@or.usda.gov
503-414-3271
http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/

West-Wide Snowpack – January 9, 2018

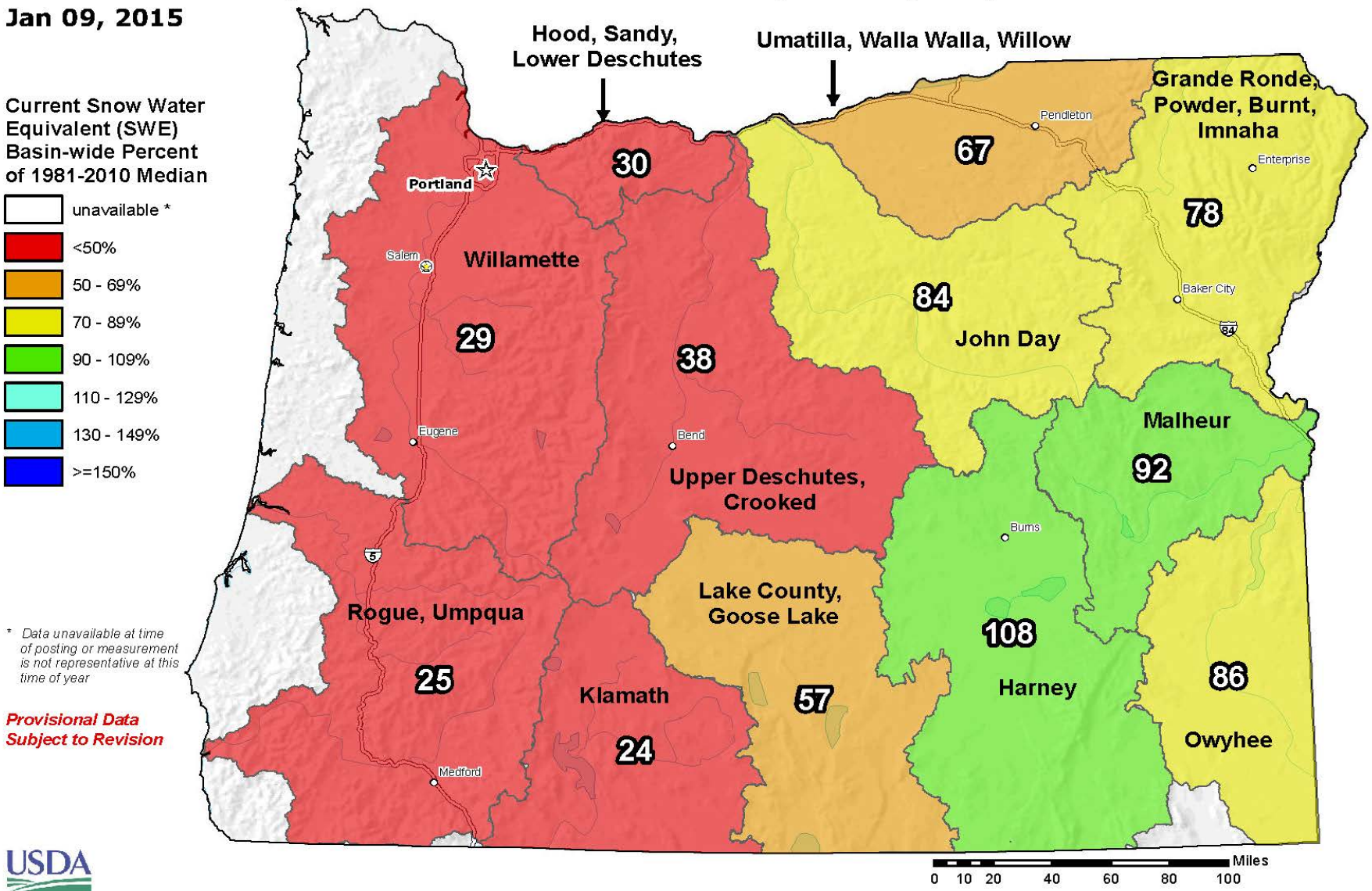


Statewide SNOTEL Snowpack is 39% of normal



Statewide SNOTEL Snowpack was 45% of normal

Jan 09, 2015



* *Data unavailable at time of posting or measurement is not representative at this time of year*

Provisional Data Subject to Revision

USDA NRCS

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

United States Department of Agriculture
NRCS Natural Resources Conservation Service
National Water and Climate Center

Statewide SNOTEL SWE – January 9, 2018

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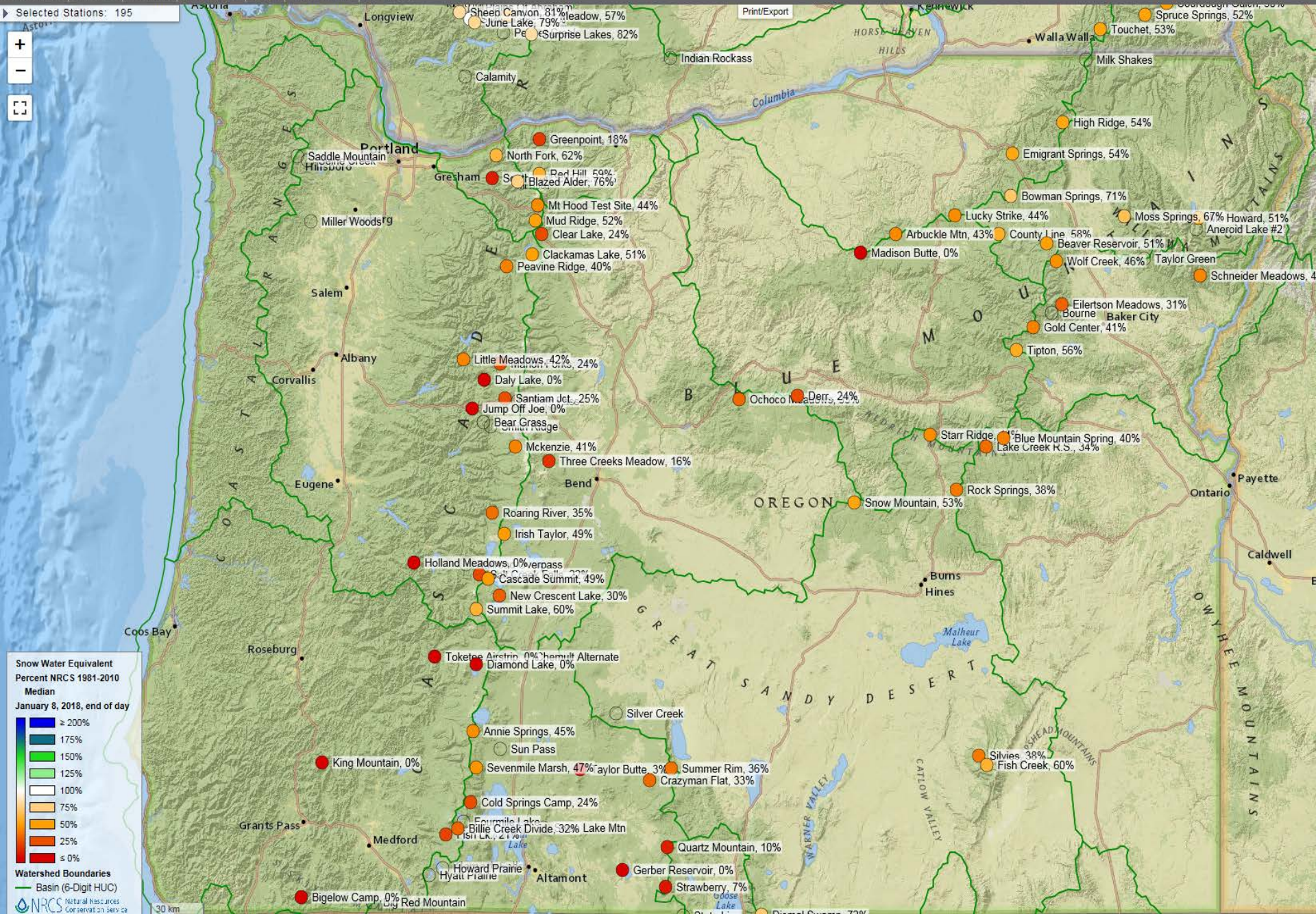
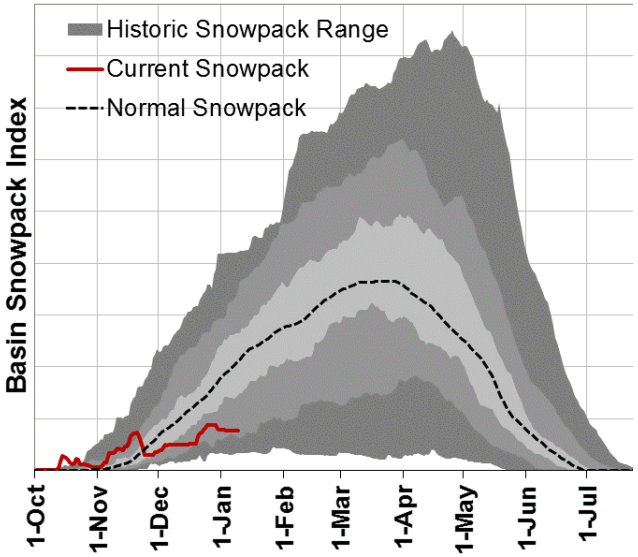
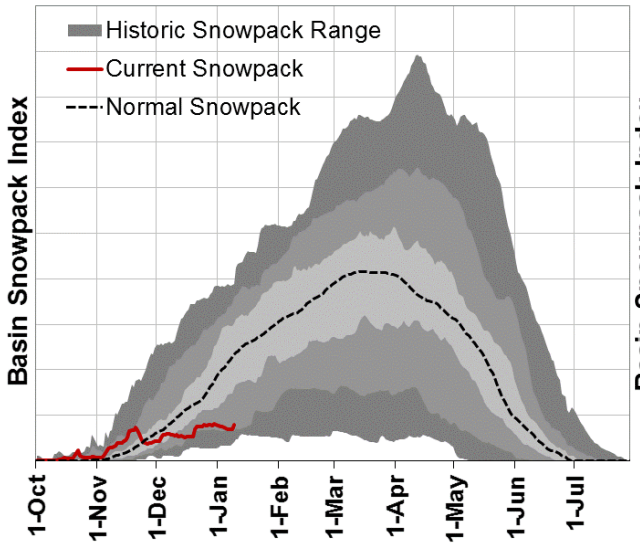


SNOWPACK GRAPHS – January 9, 2018

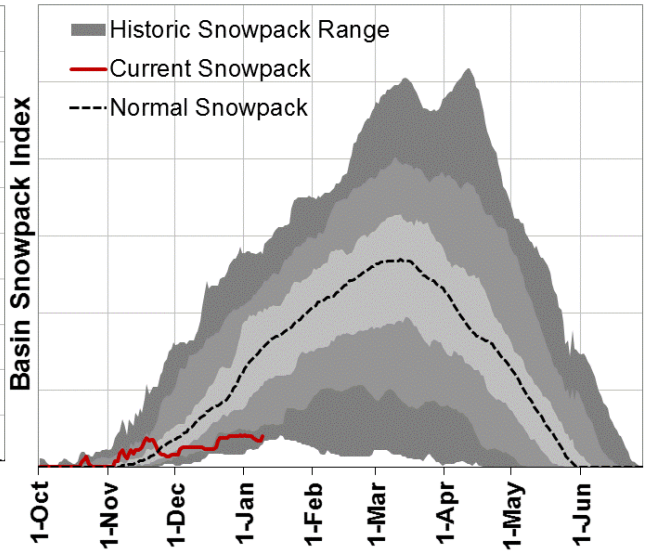
Willamette



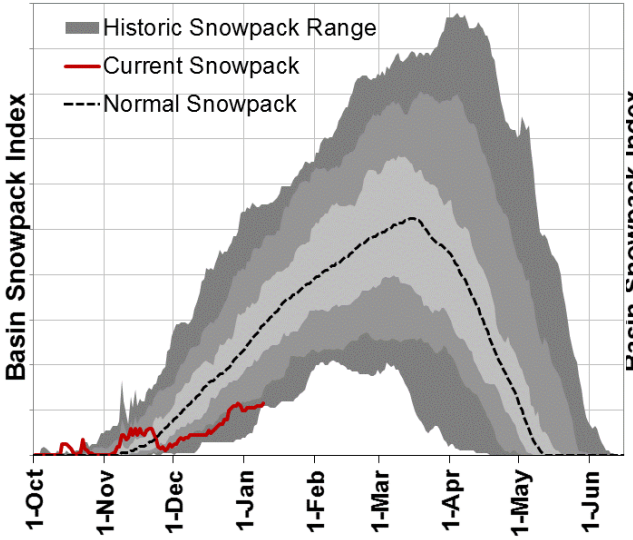
Rogue/Umpqua



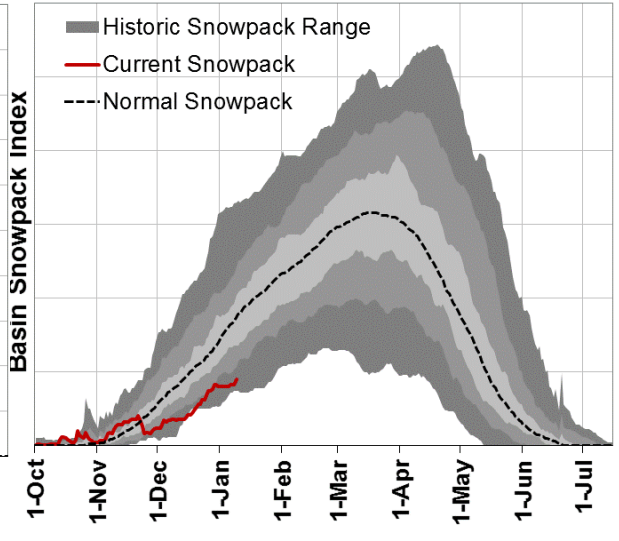
Klamath



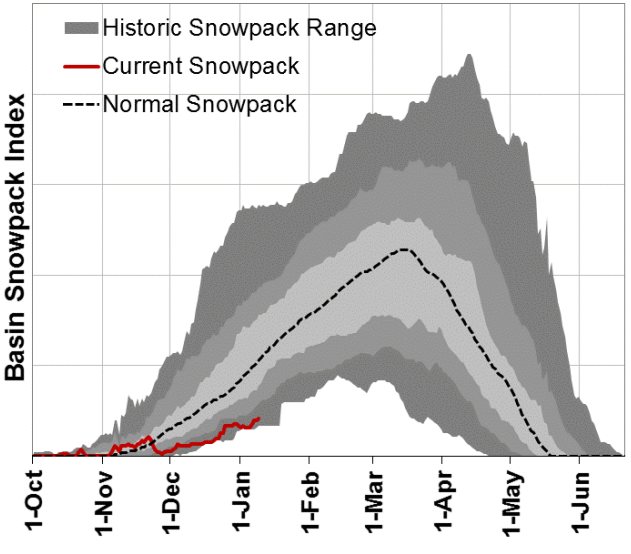
John Day



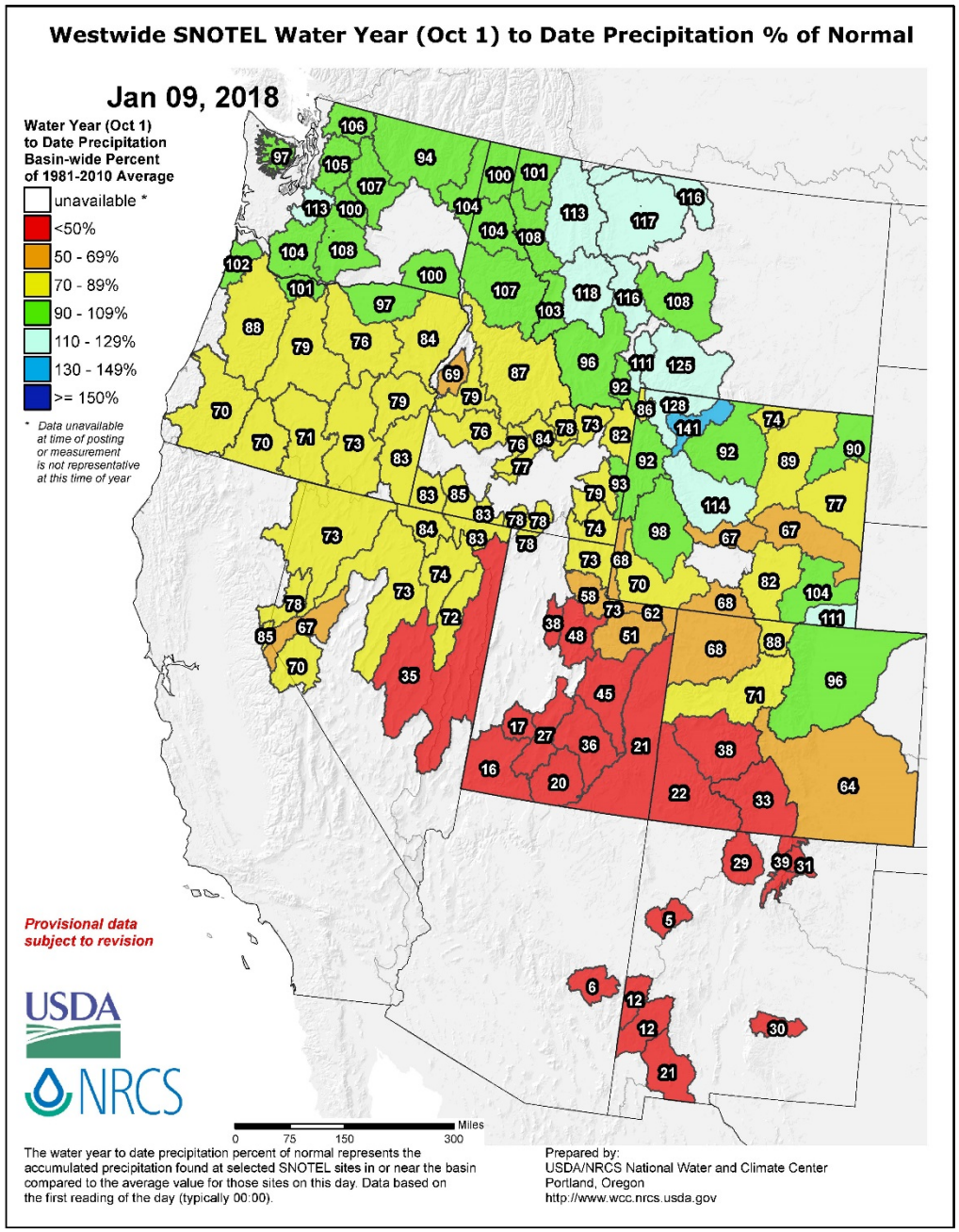
Grande Ronde/Powder/Burnt



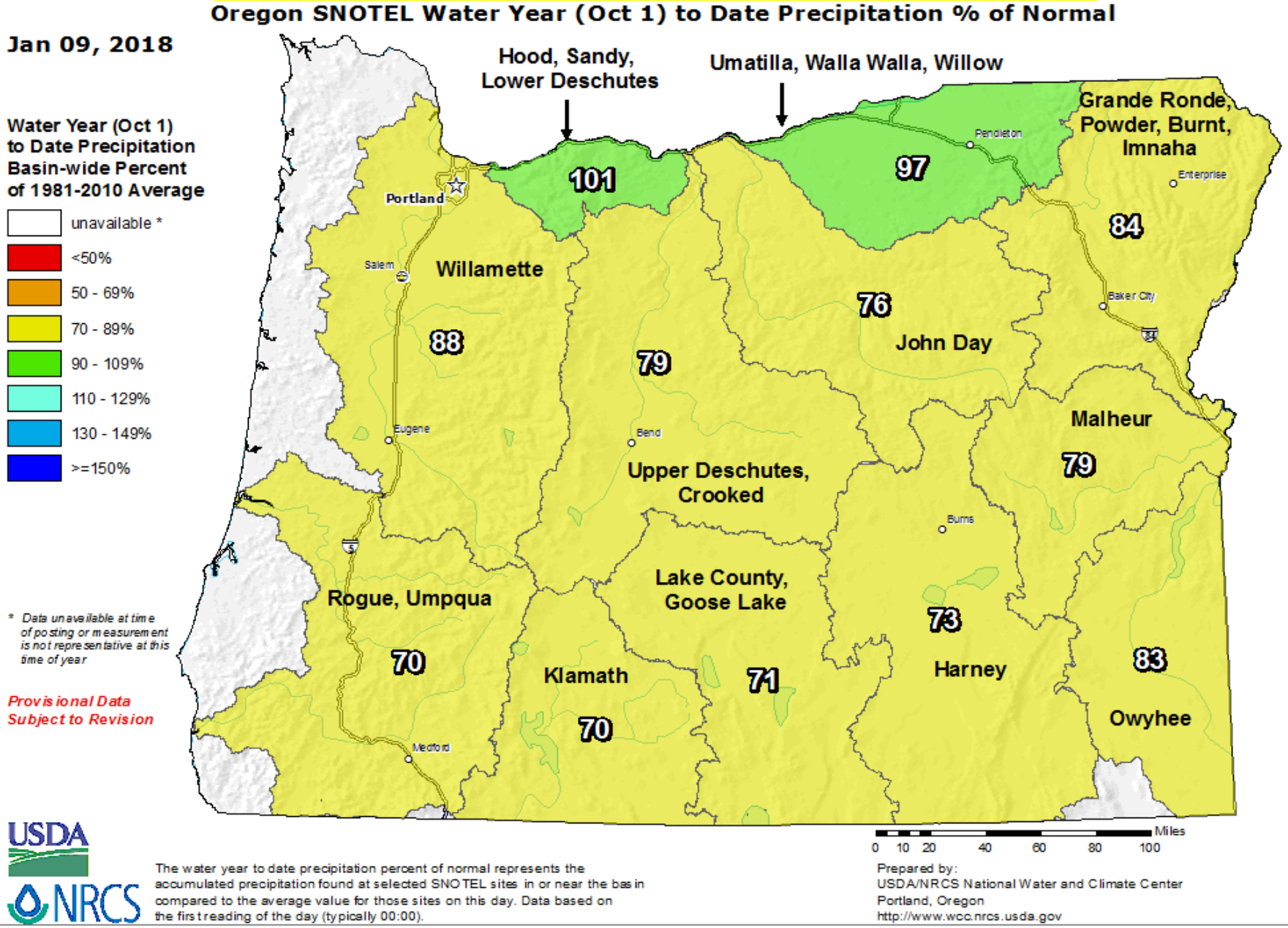
Owyhee/Malheur



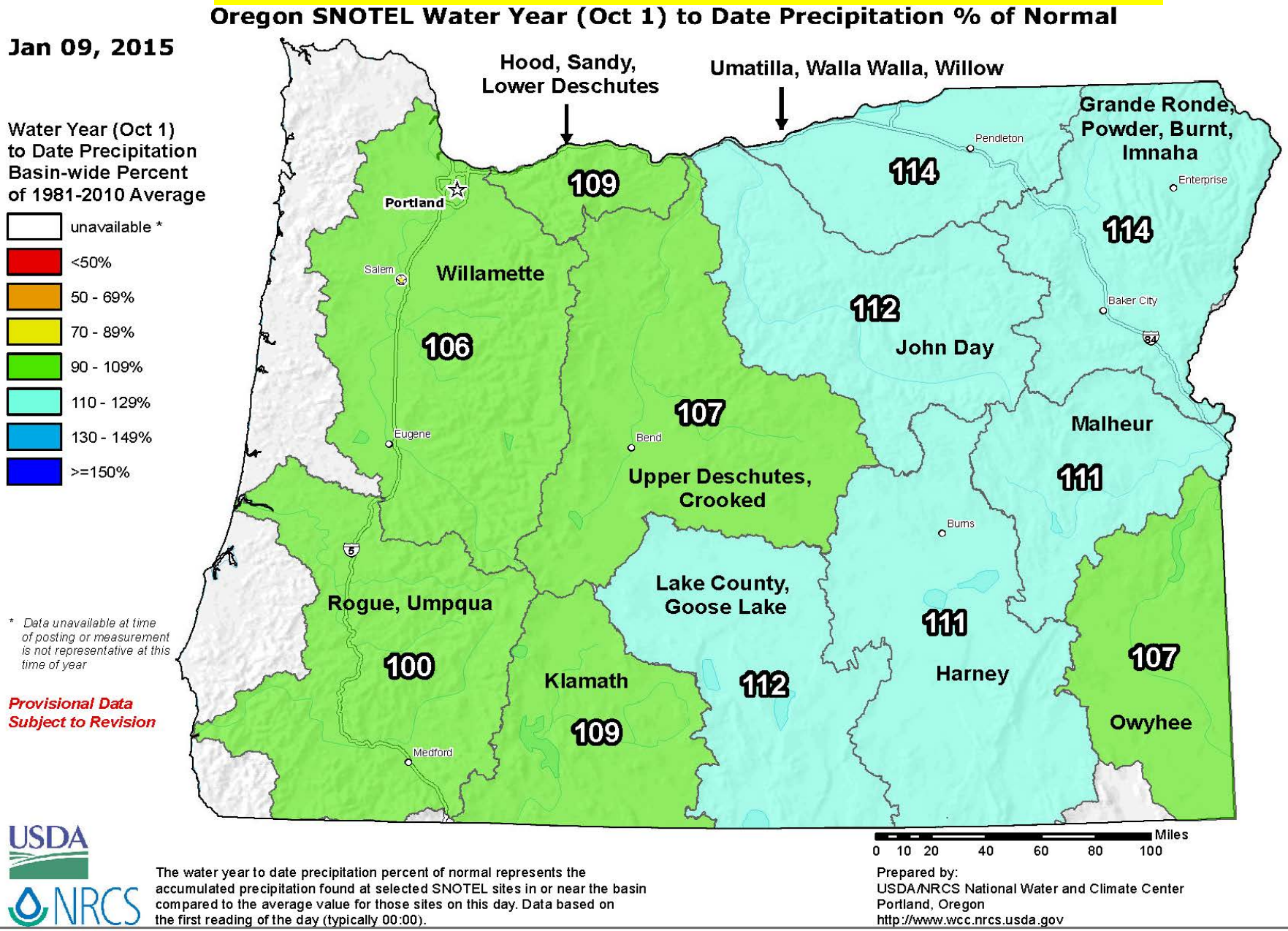
West-Wide Water Year Precipitation – January 9, 2018



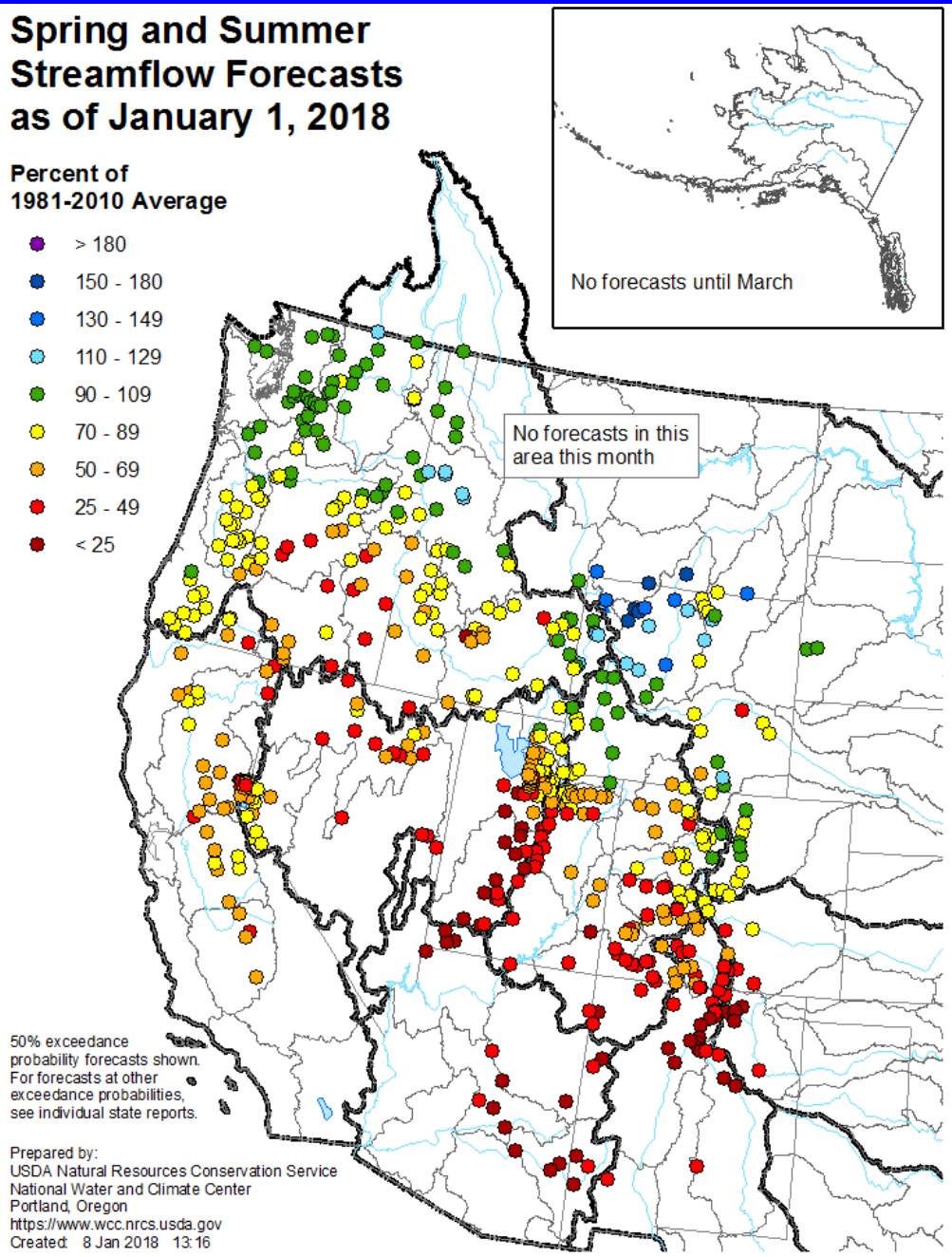
Statewide SNOTEL Precipitation is 85% of normal



Statewide SNOTEL Precipitation was 108% of normal

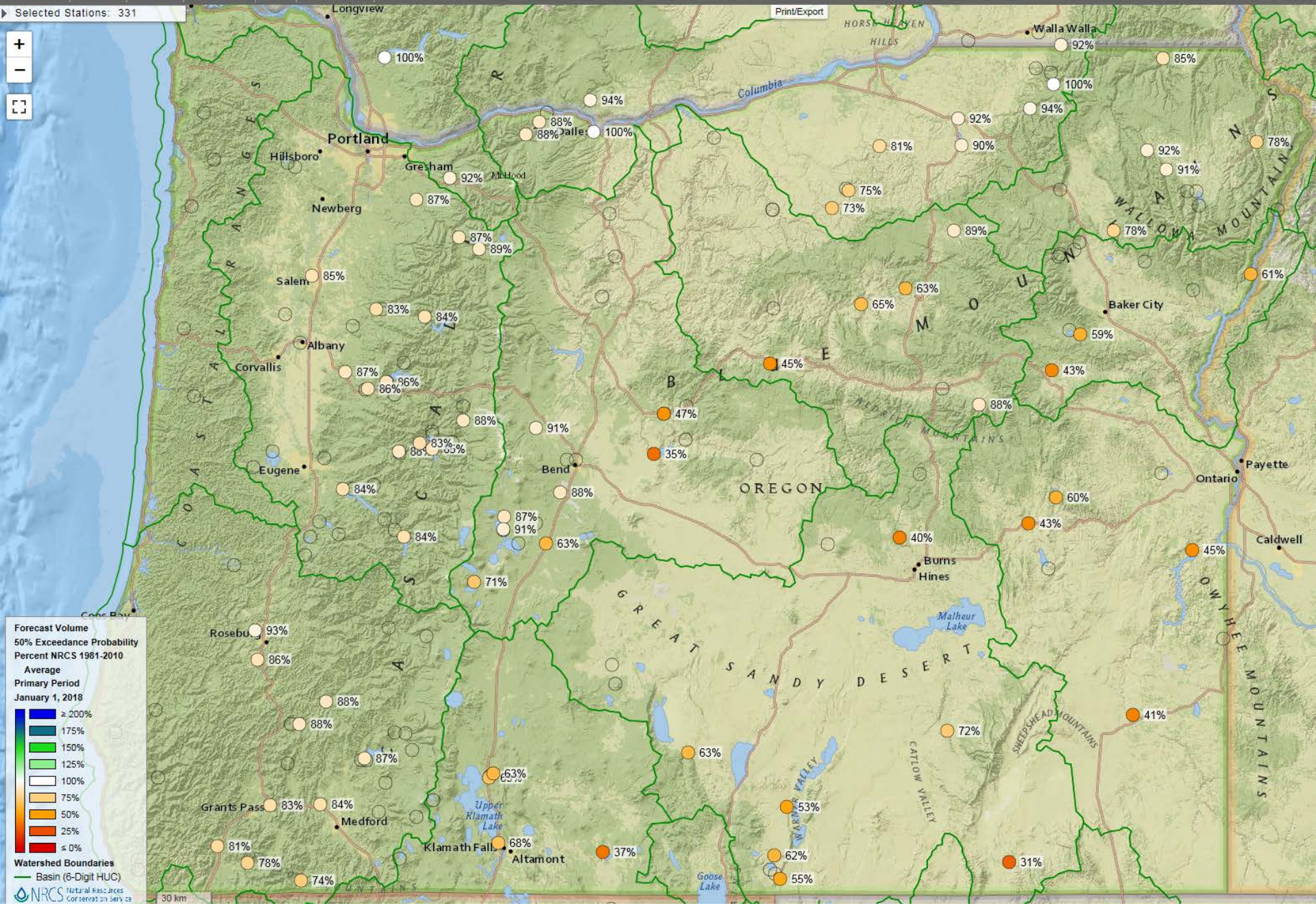


West-Wide Streamflow Volume Forecasts 50% Exceedance Probability – January 2018



United States Department of Agriculture
NRCS Natural Resources Conservation Service
National Water and Climate Center

January 1 Streamflow Volume Forecast % of Average
50% Exceedance Probability

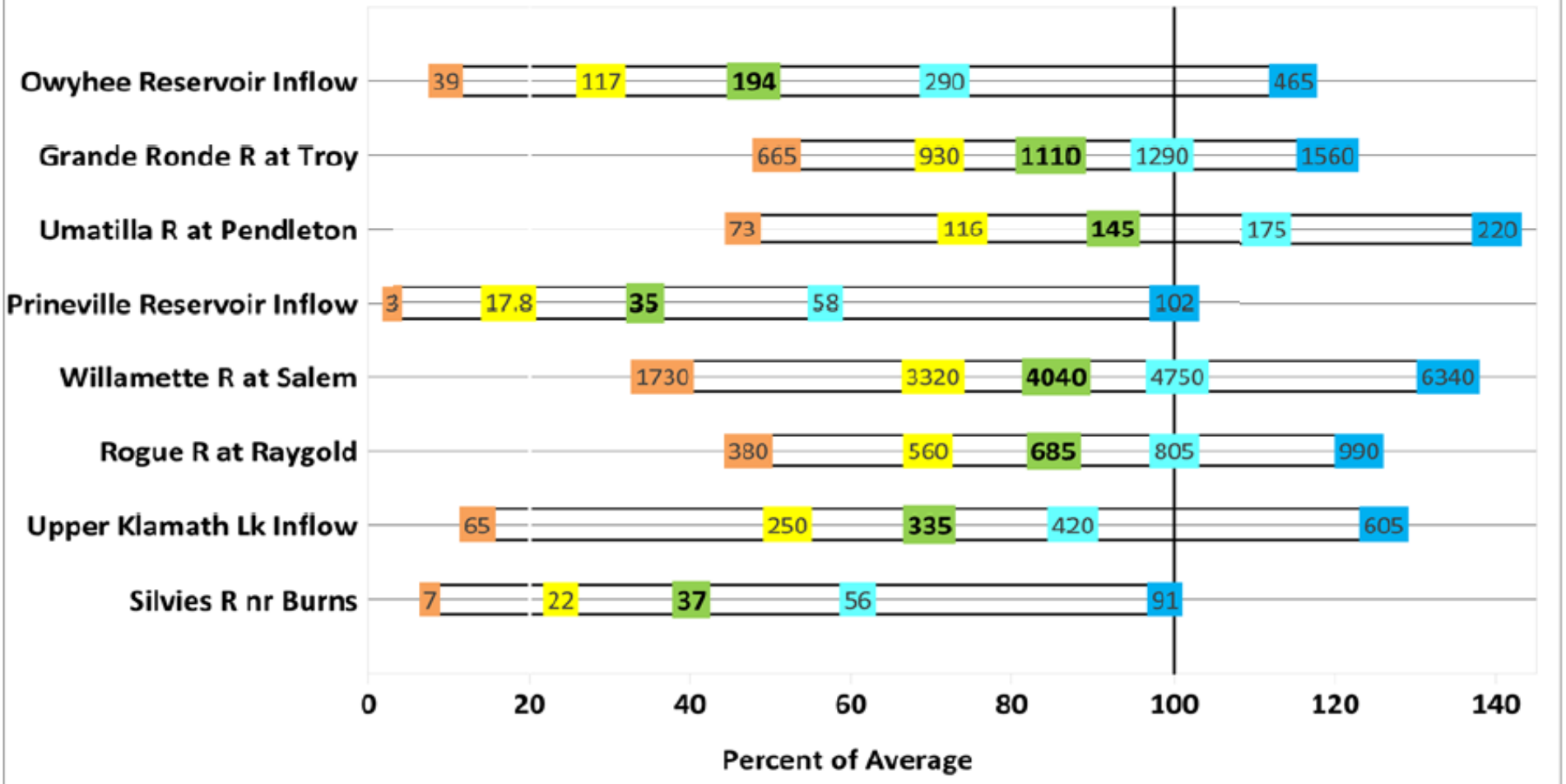


January 1, 2018

Summary of Streamflow Forecasts across Oregon

April through September Forecast Volumes at a Selection of Streamflow Points

(Volumes listed in KAF)



Legend: ←----------Drier----------**Future Conditions**----------Wetter----------→

90% Exceedance Forecast (KAF)	70% Exceedance Forecast (KAF)	50% Exceedance Forecast (KAF)	30% Exceedance Forecast (KAF)	10% Exceedance Forecast (KAF)
There is a 90% chance that flows will exceed this volume.	There is a 70% chance that flows will exceed this volume.	There is a 50% chance that flows will exceed this volume.	There is a 30% chance that flows will exceed this volume.	There is a 10% chance that flows will exceed this volume.

Oregon Water Supply Availability Committee

January 09, 2018

Not much snow to measure on January 1
Photo courtesy of Bill Goodman (Snow Surveyor, USFS Lakeview)

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Thank you!

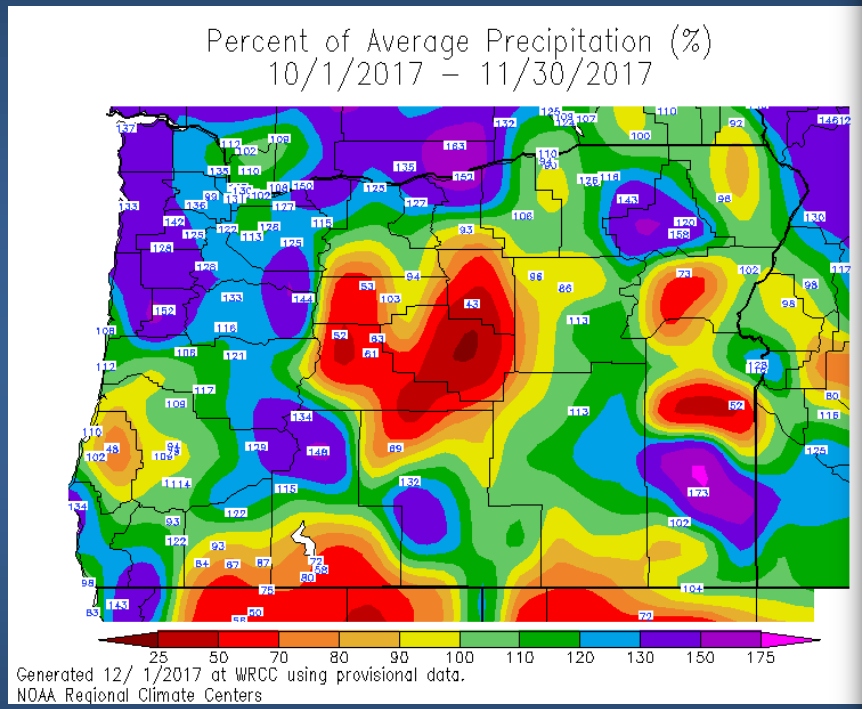
Oregon Water Supply Availability

January 9, 2018 NWS Update

Andy Bryant, NWS Portland

WY2018 Precipitation thus far

Thru Nov 30 2017



Thru Jan 7 2017

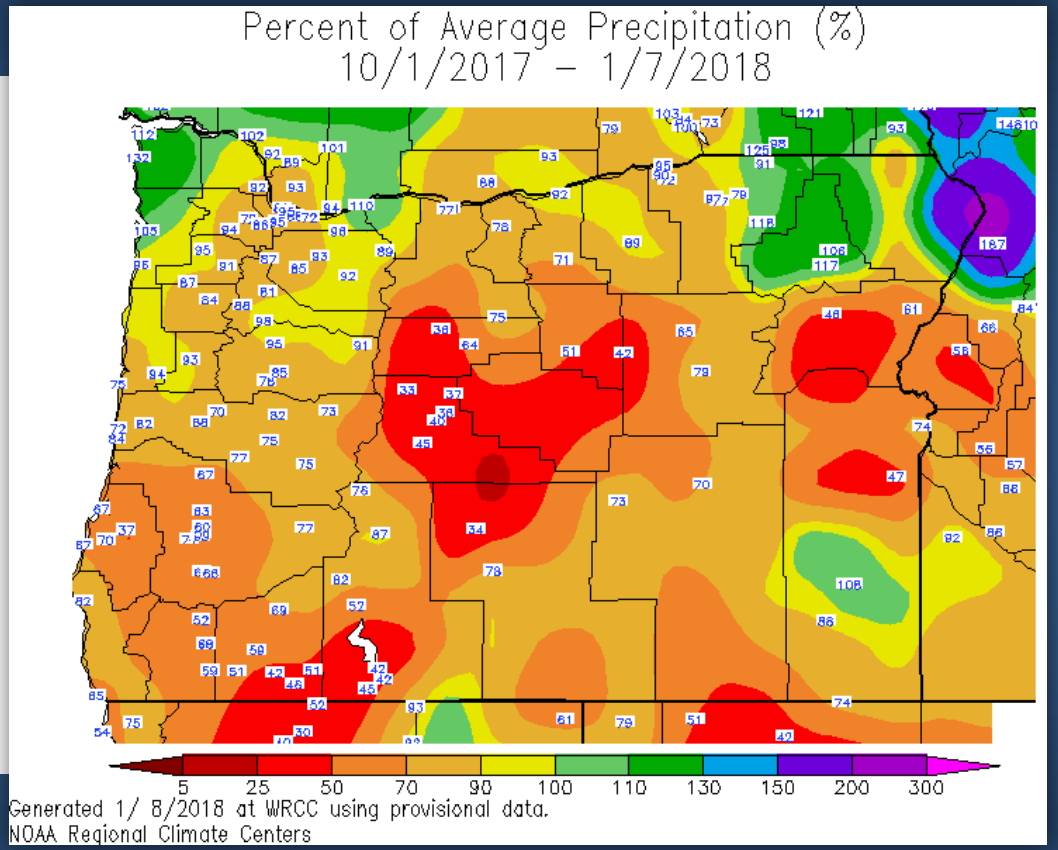
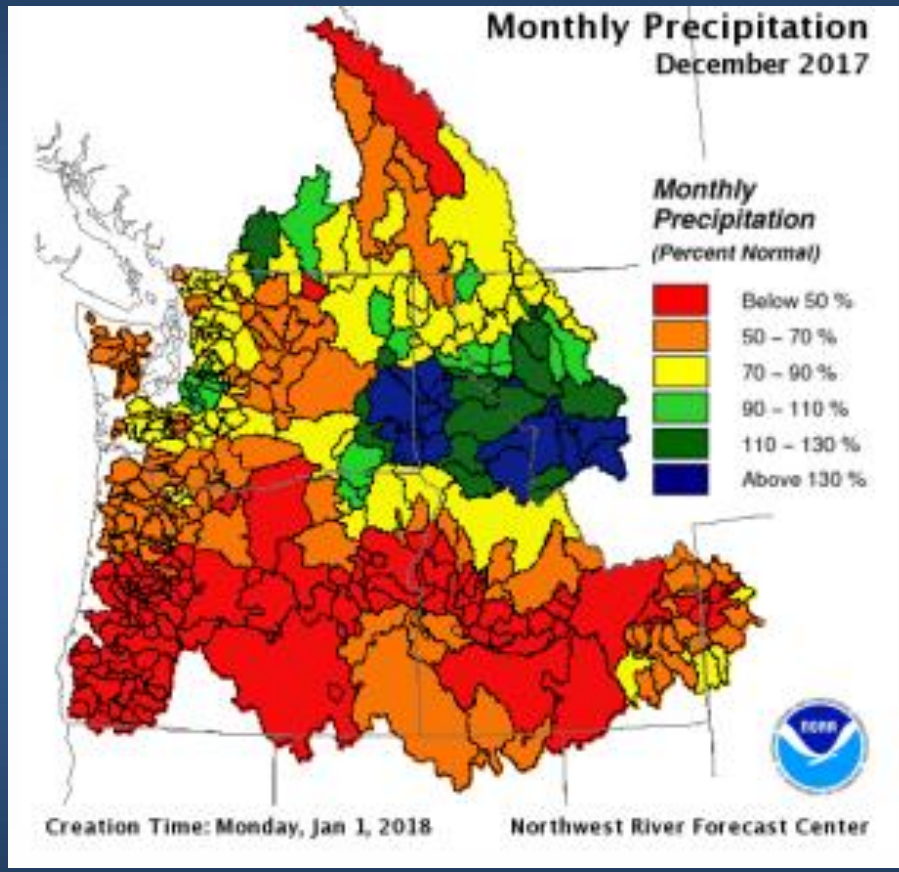


Image sources: wrcc.dri.edu

December Precipitation & Temperatures



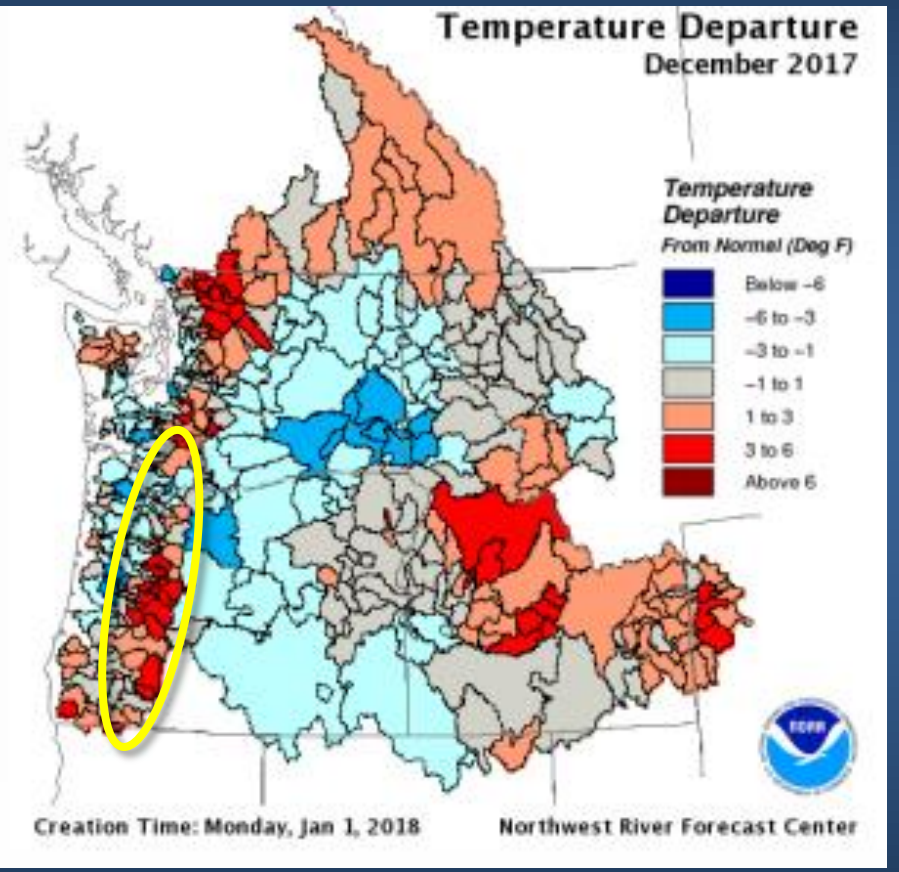
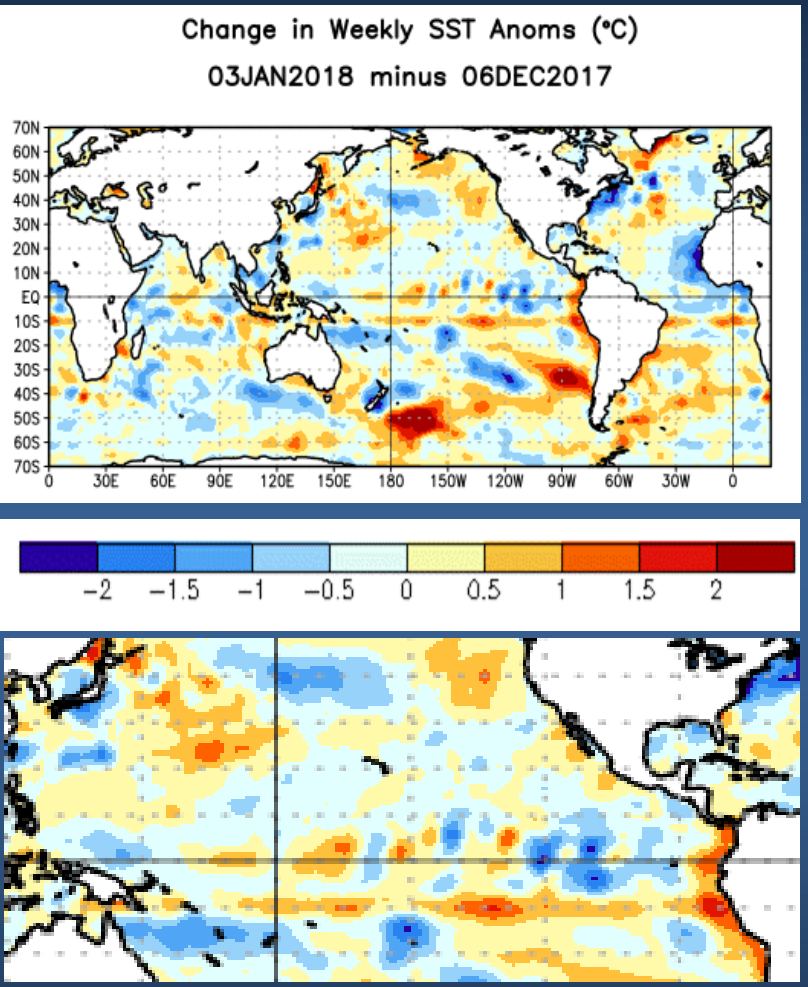


Image sources: water.weather.gov/precip/index.php

La Niña Conditions



La Niña is persisting and predicted to slowly trend to ENSO-neutral during the spring of 2018.

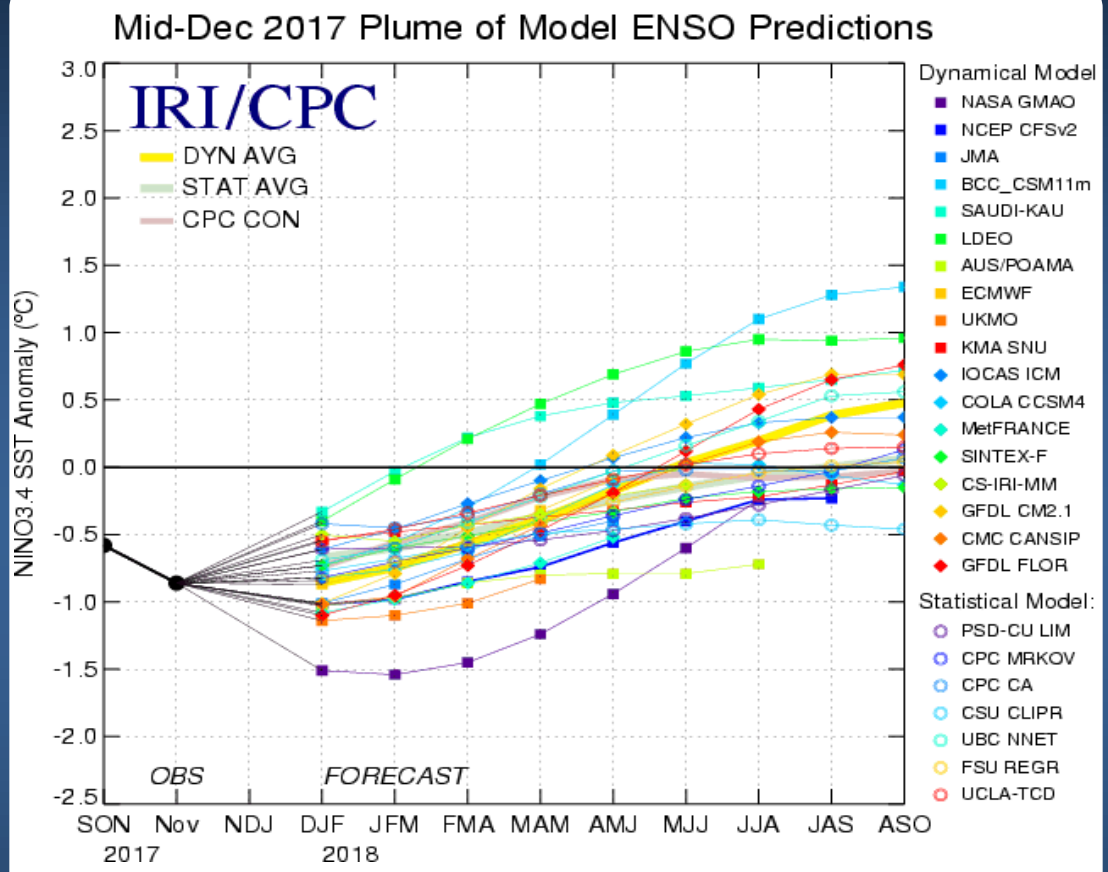
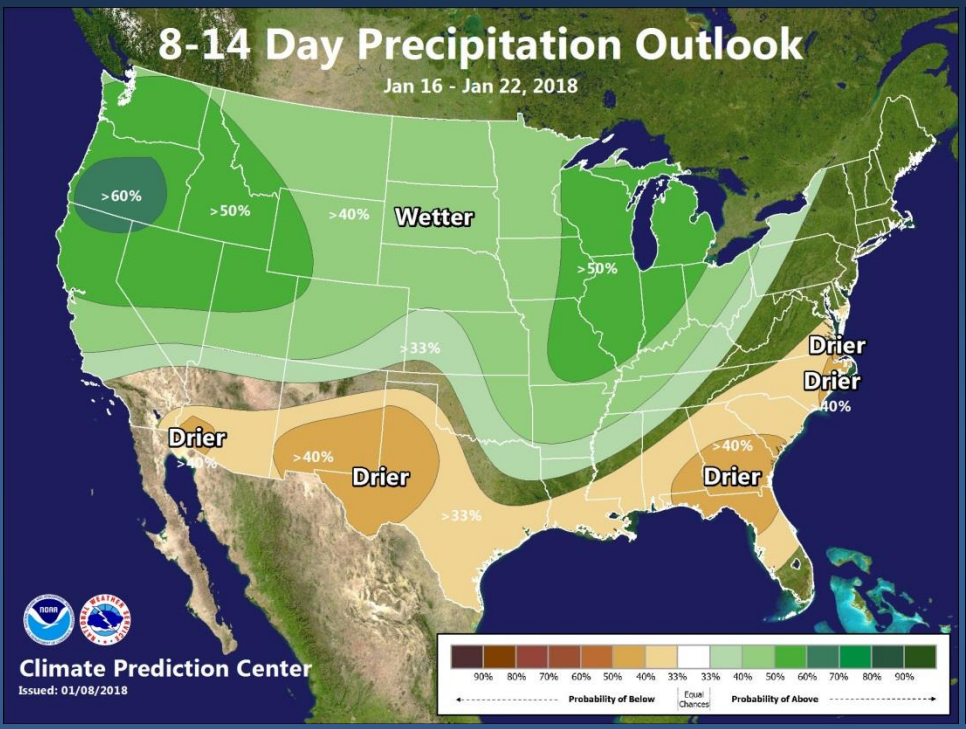
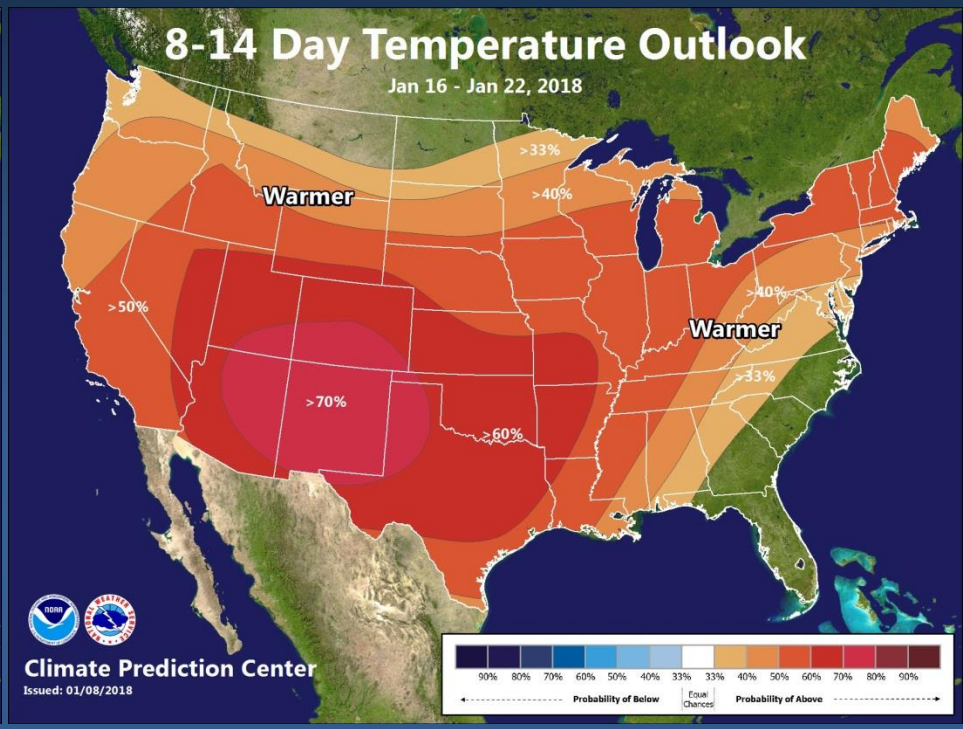


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 18 December 2017).

Image sources: www.cpc.ncep.noaa.gov

Mid-January Outlook

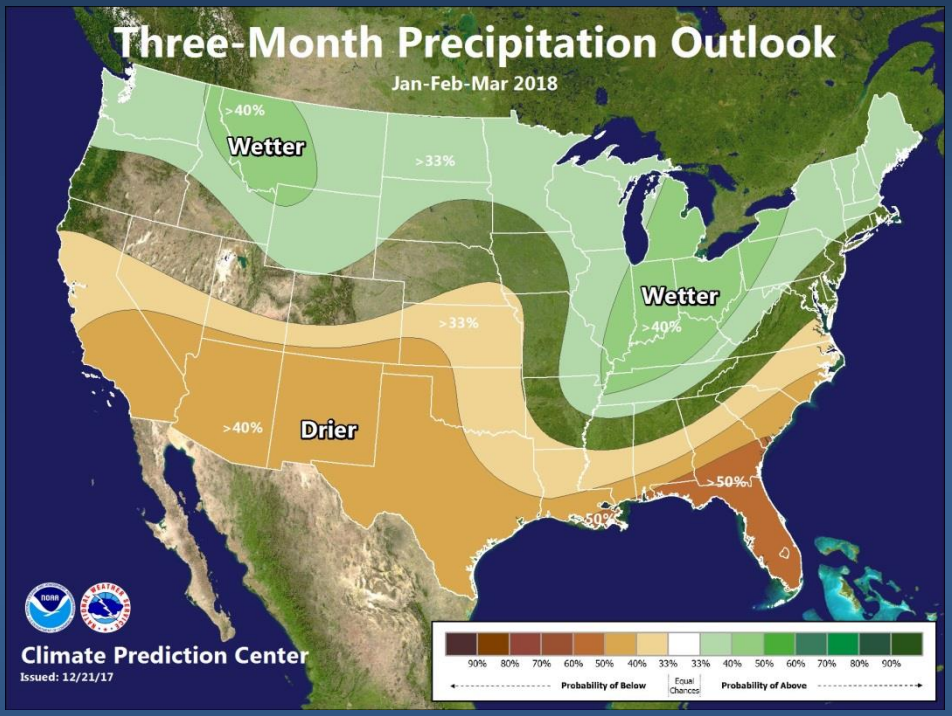




There are model-guidance indications of a pattern change to wetter on-shore flow conditions in mid-January for the Pacific Northwest.

Image source: www.cpc.ncep.noaa.gov

Outlook for January-February-March



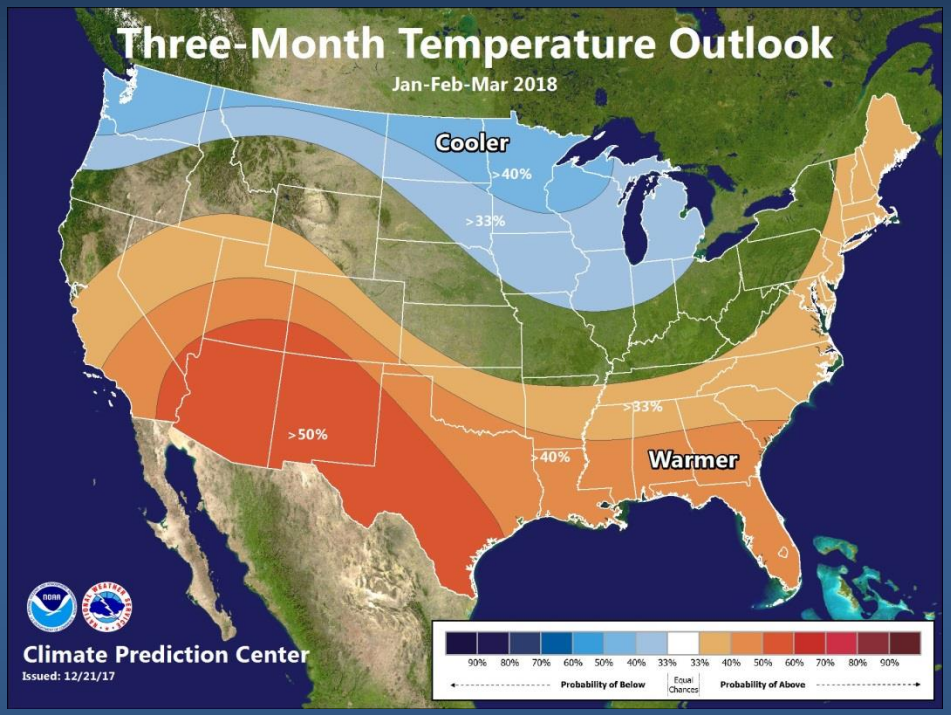


Image source: www.cpc.ncep.noaa.gov

USGS
science for a changing world

Water Supply Availability Committee

January 2018

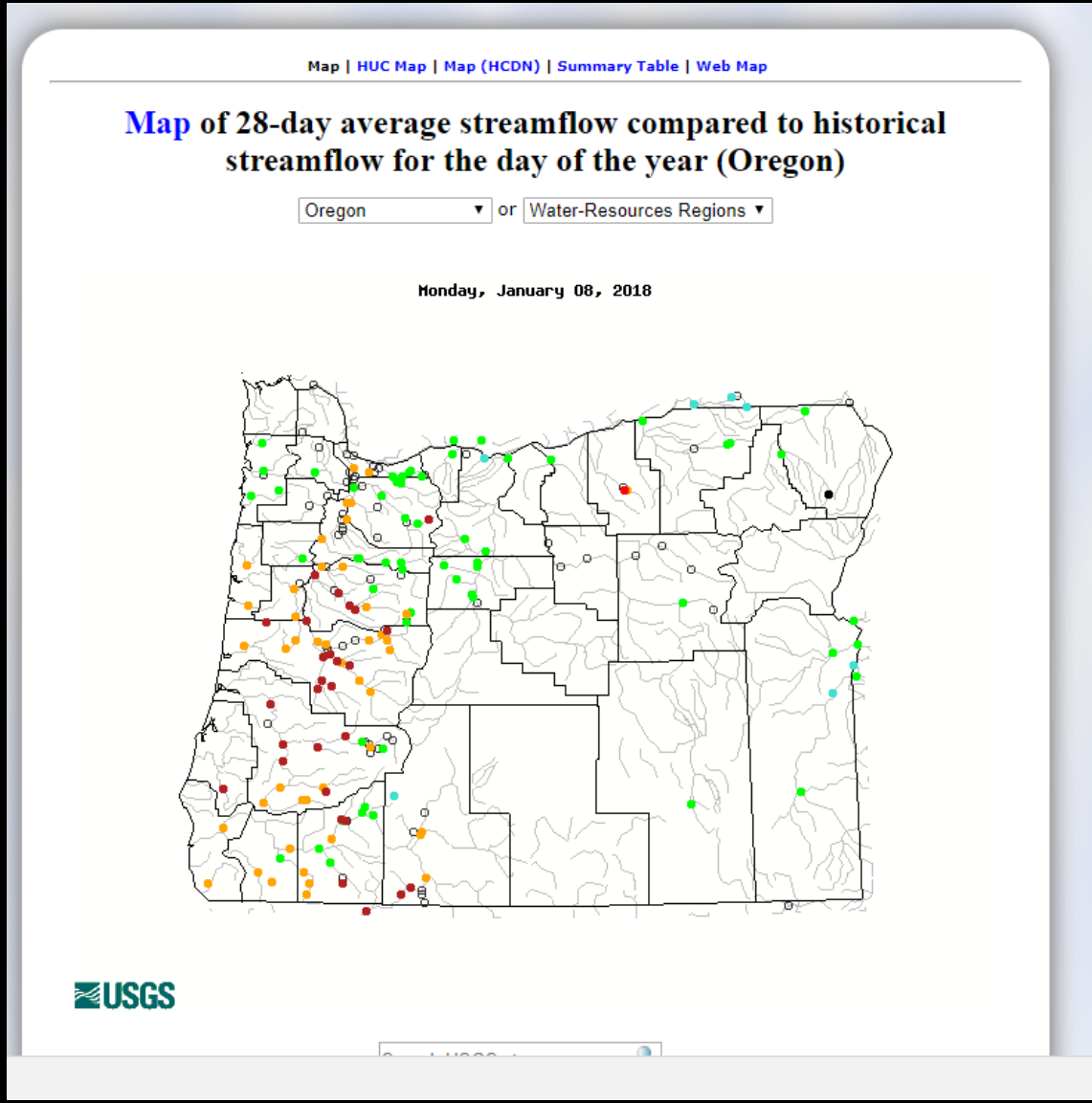
USGS Update on Surface Water Conditions

Marc Stewart USGS ORWSC

Provisional Data Statement
Data are provisional and subject to revision until they have been thoroughly reviewed and received final approval.

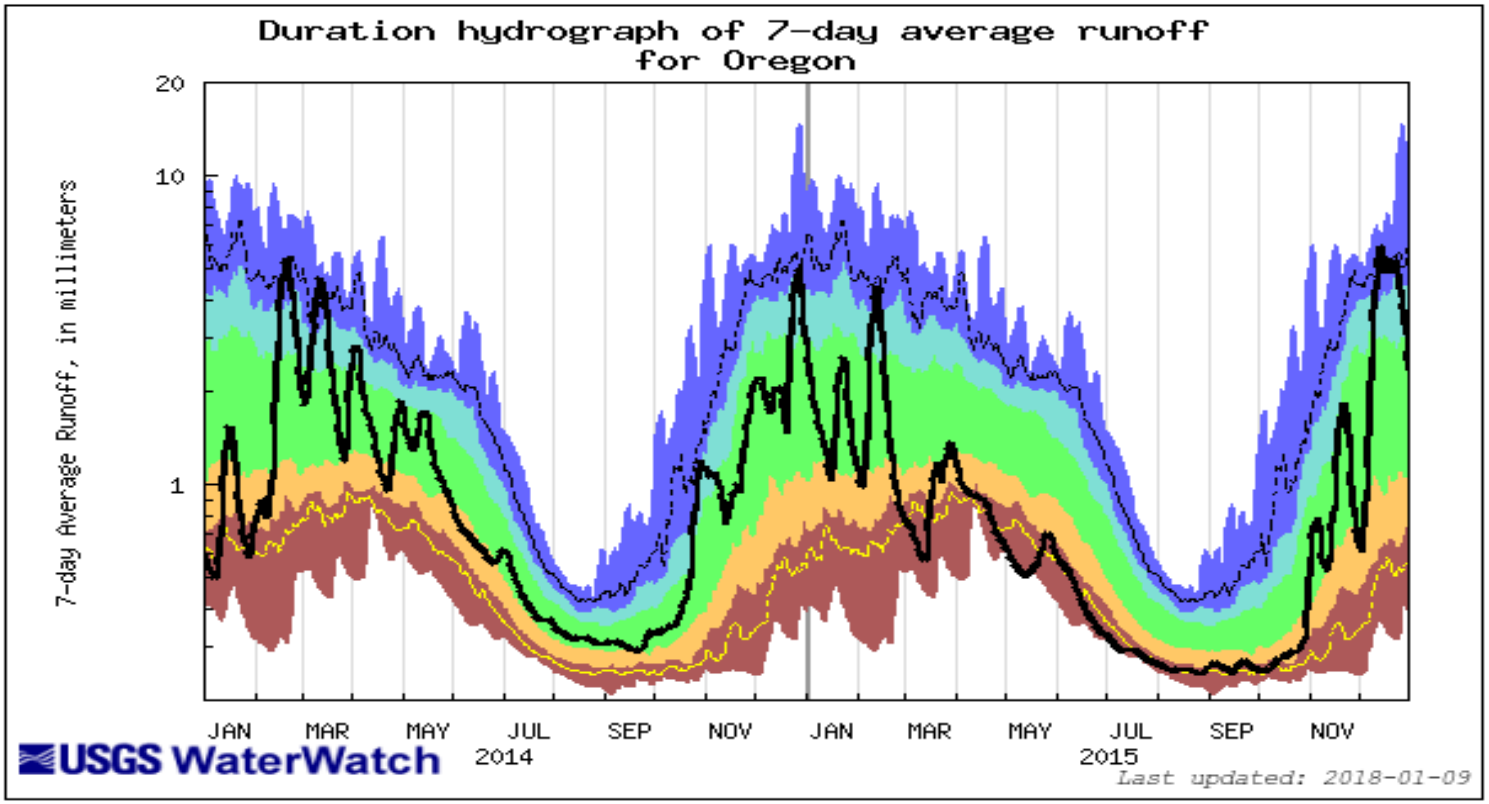
U.S. Department of the Interior
U.S. Geological Survey

Oregon Map of 28-day average streamflow compared to historical streamflow for the day of the year

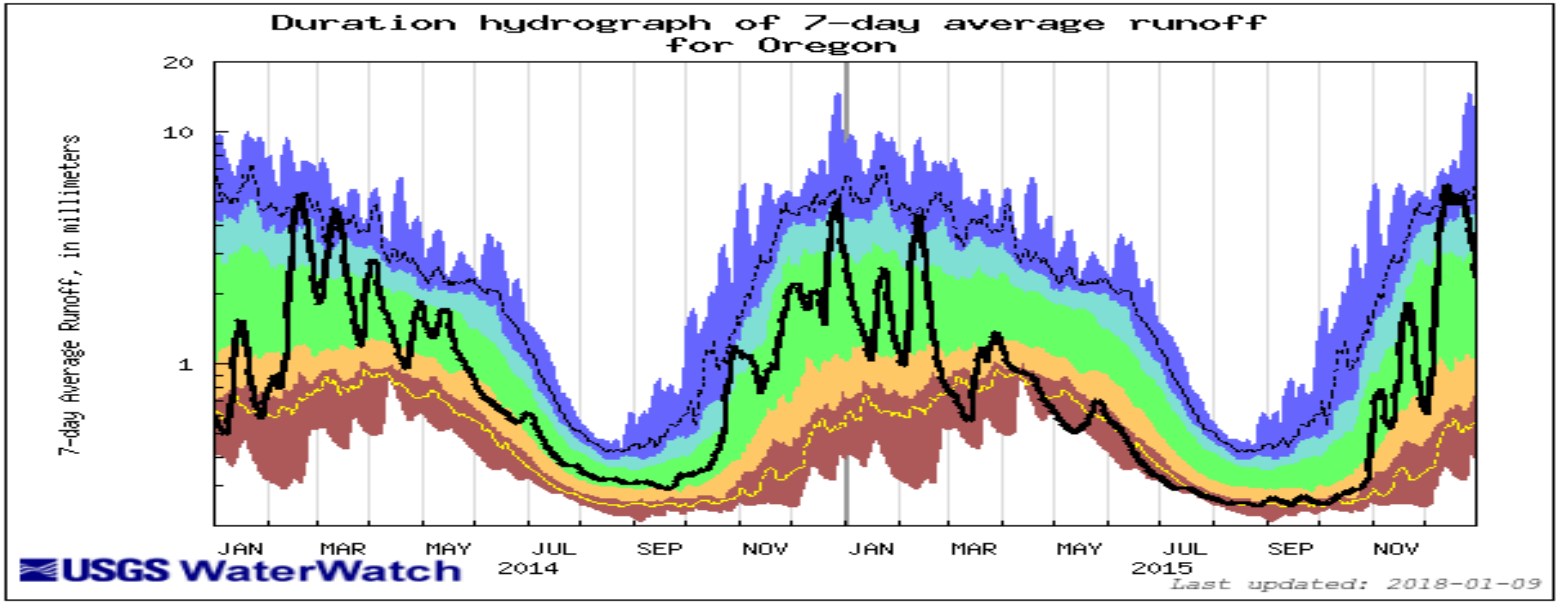


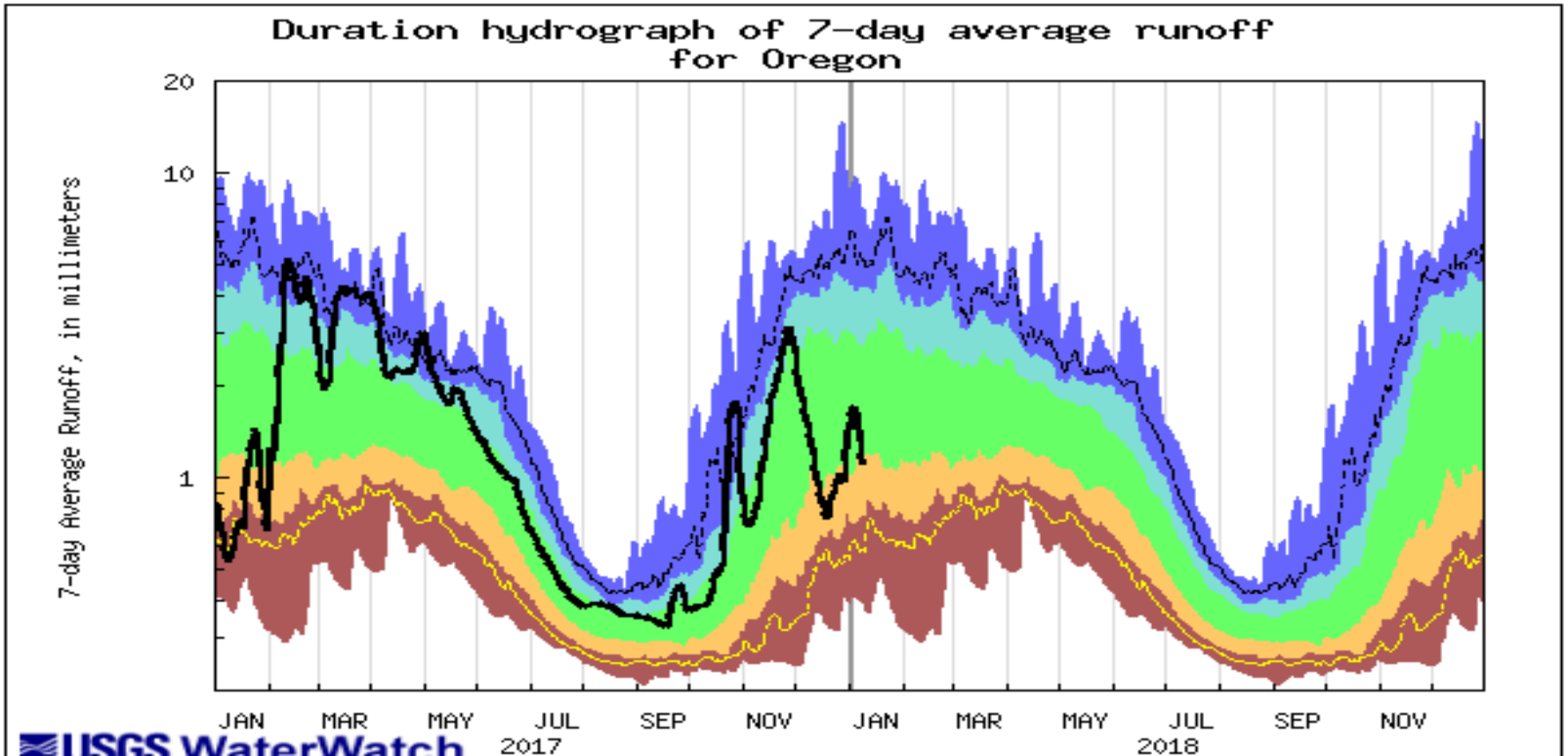
USGS

Oregon Map of 7-day average streamflow compared to historical streamflow for the day of the year for 2015.

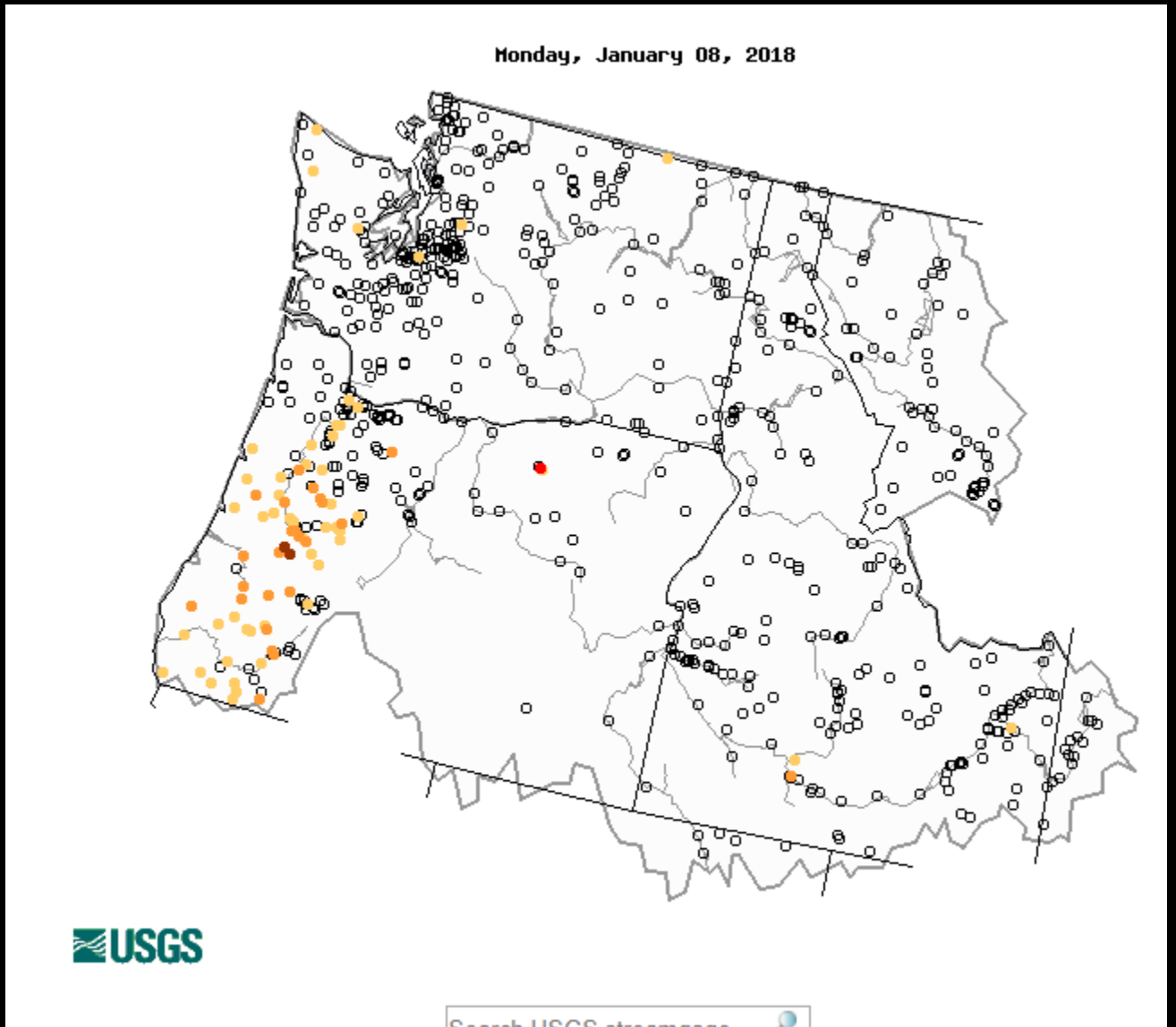


Explanation - Percentile classes							
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	Runoff
Much below Normal		Below normal	Normal	Above normal	Much above normal		

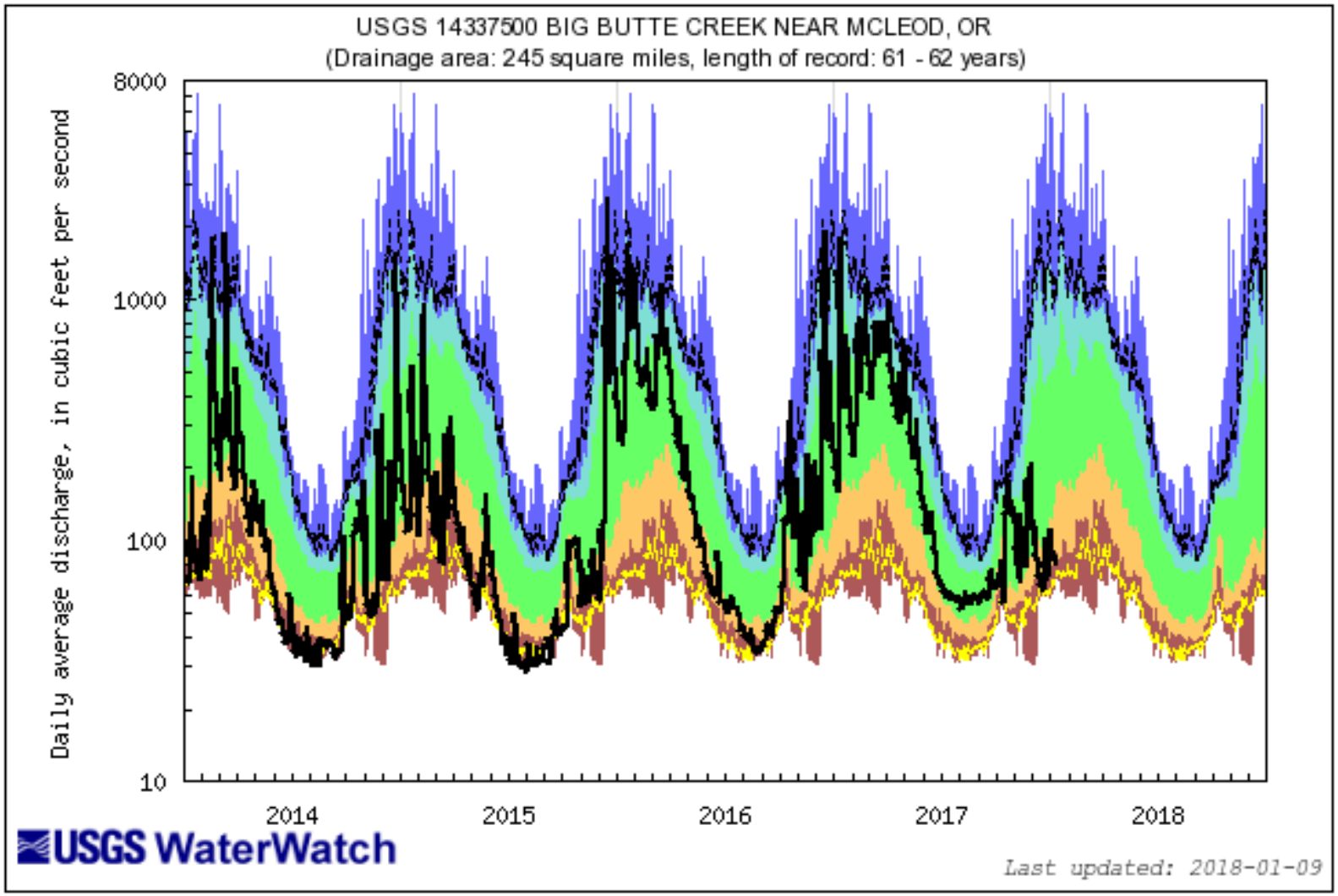

Duration hydrograph of 7-day average runoff
for Oregon
7-day Average Runoff, in millimeters
20
10
1
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2014
2015
USGS WaterWatch
Last updated: 2018-01-09


Duration hydrograph of 7-day average runoff
for Oregon
7-day Average Runoff, in millimeters
20
10
1
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2017
2018
USGS WaterWatch

Map of below normal 28-day average streamflow compared to historical streamflow for the day of year (Pacific Northwest)

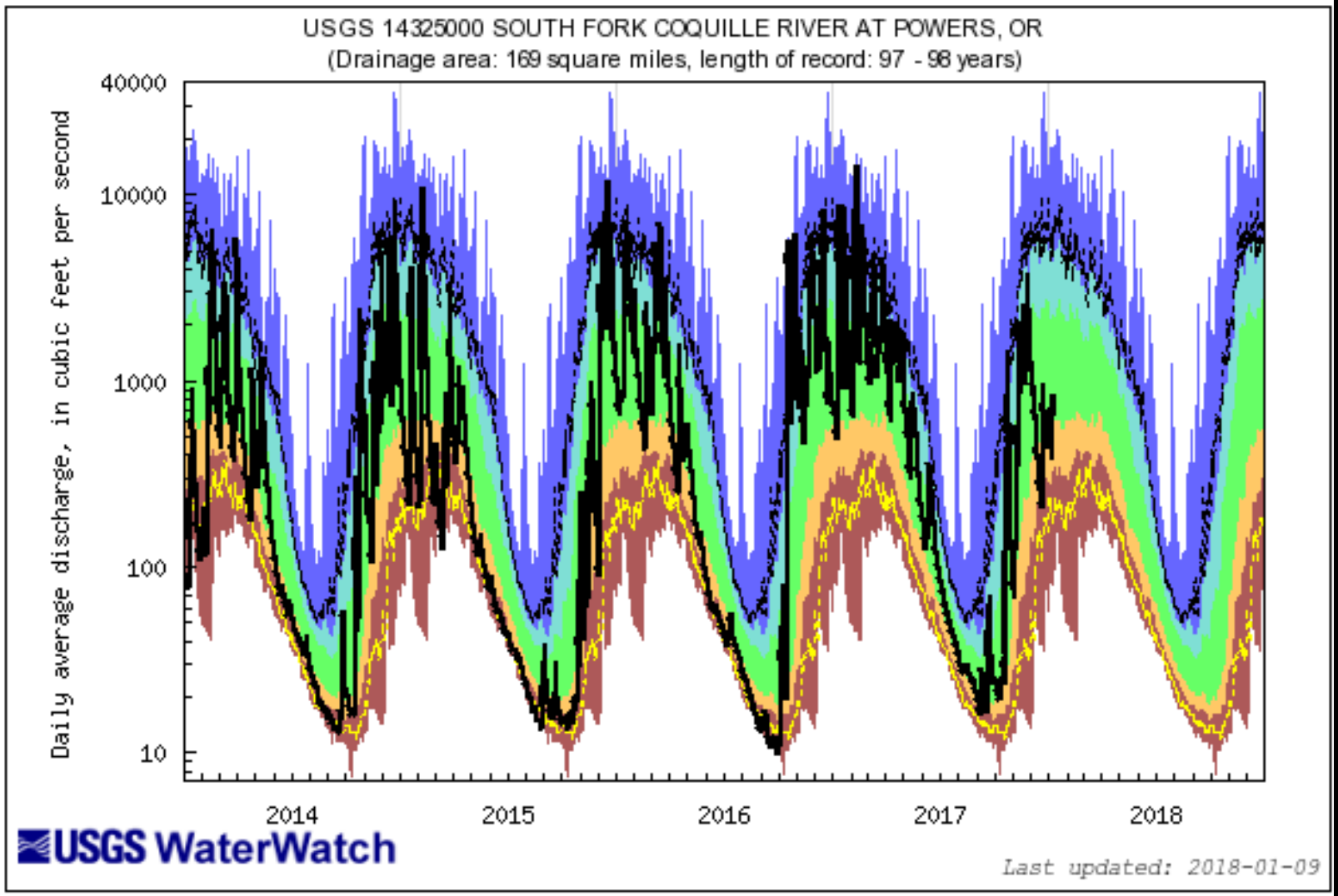


USGS



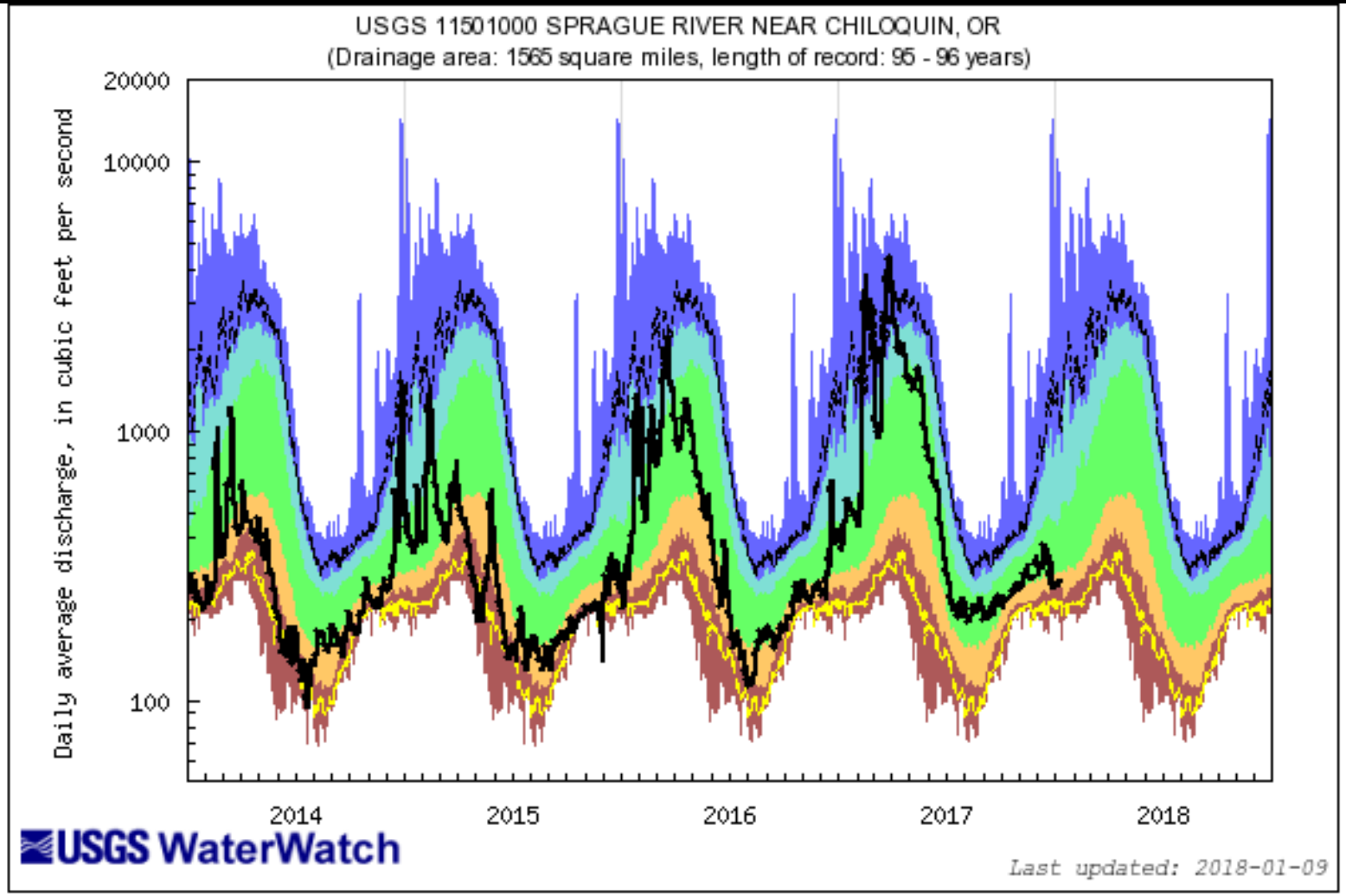
USGS

https://waterwatch.usgs.gov



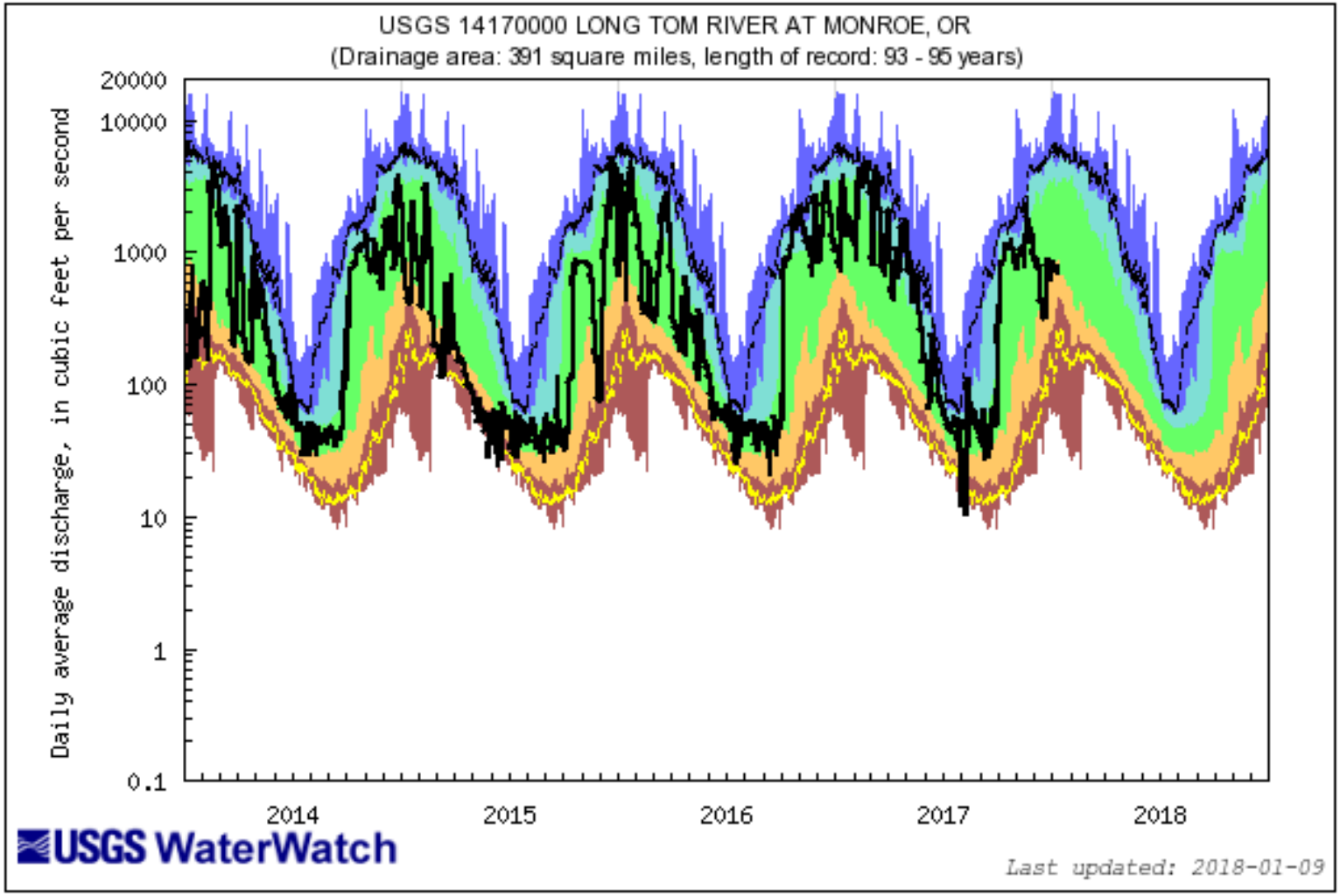
USGS

https://waterwatch.usgs.gov

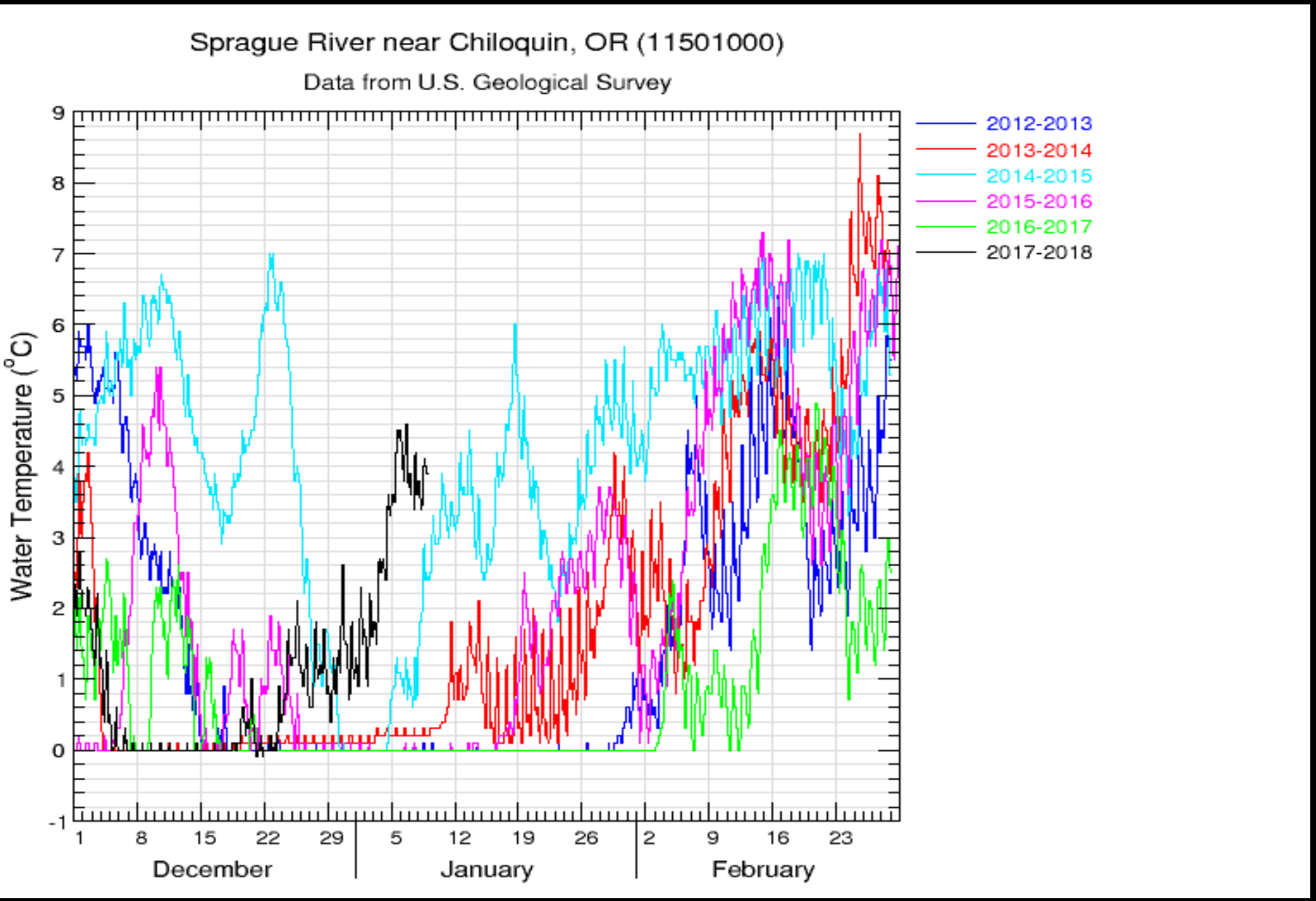


USGS

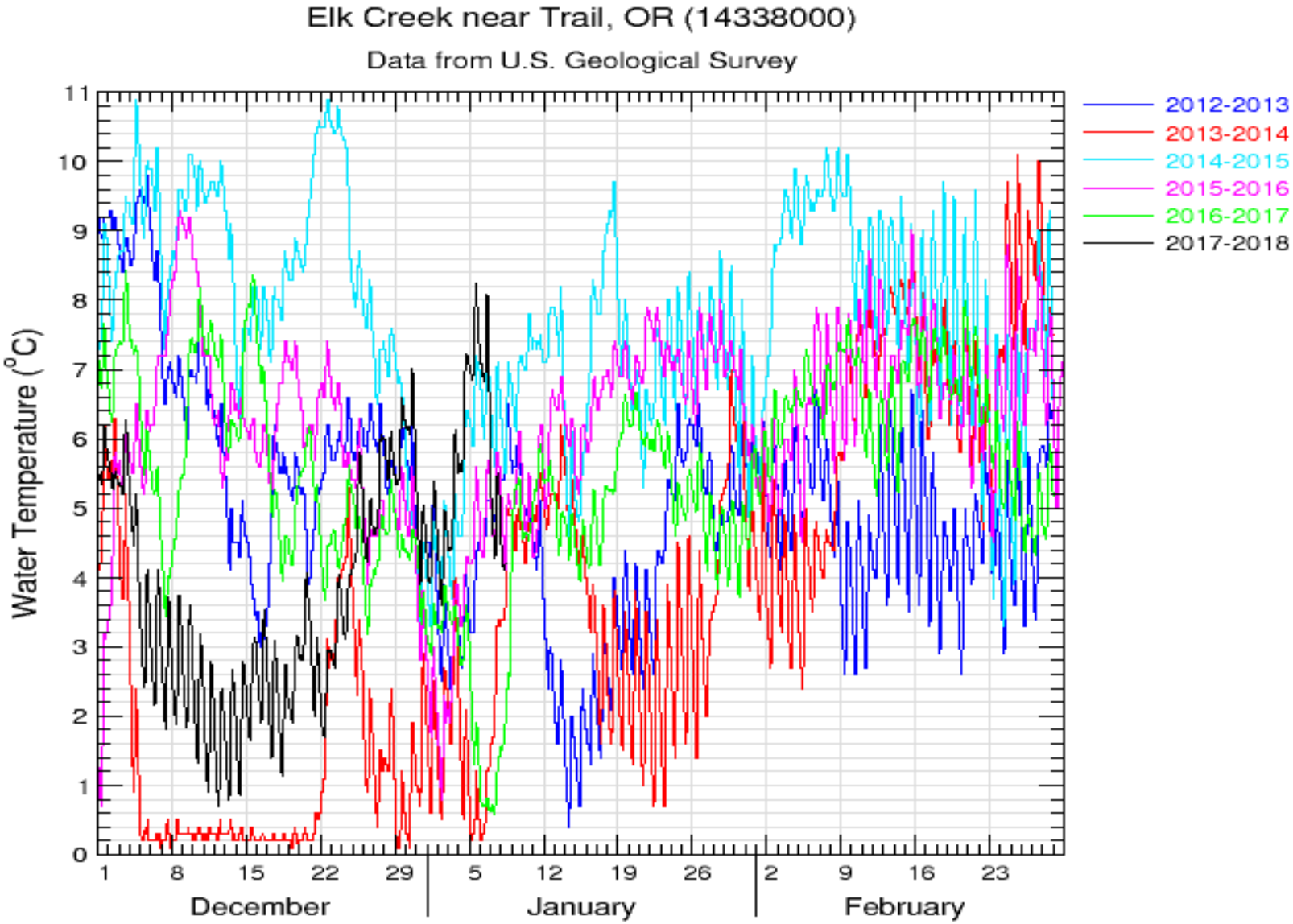
https://waterwatch.usgs.gov


USGS 14170000 LONG TOM RIVER AT MONROE, OR
(Drainage area: 391 square miles, length of record: 93 - 95 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
10
1
0.1
2014
2015
2016
2017
2018
USGS WaterWatch
Last updated: 2018-01-09

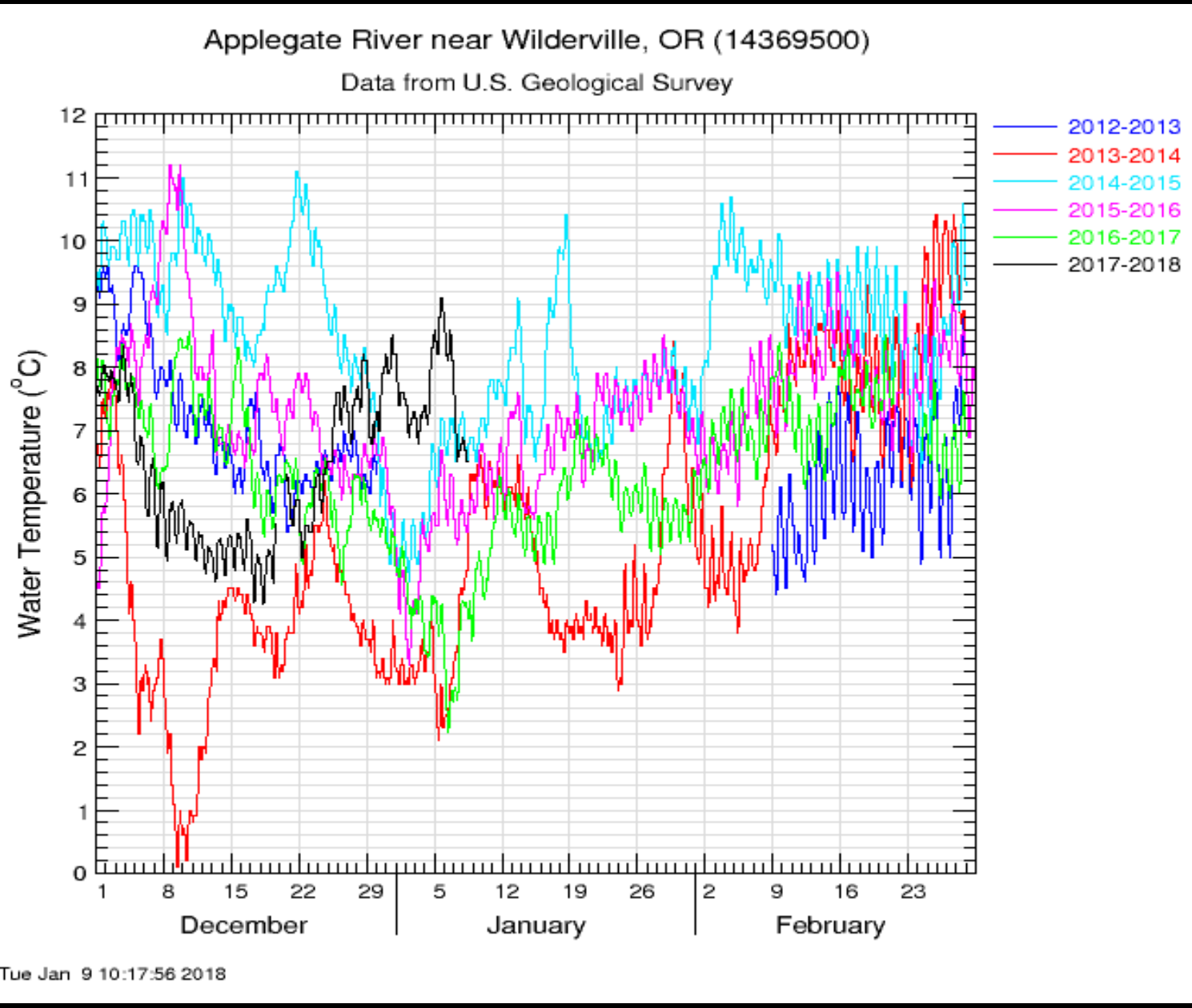
USGS


Sprague River near Chiloquin, OR (11501000)
Data from U.S. Geological Survey
Water Temperature (°C)
9
8
7
6
5
4
3
2
1
0
-1
1
8
15
22
29
5
12
19
26
2
9
16
23
December
January
February
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018

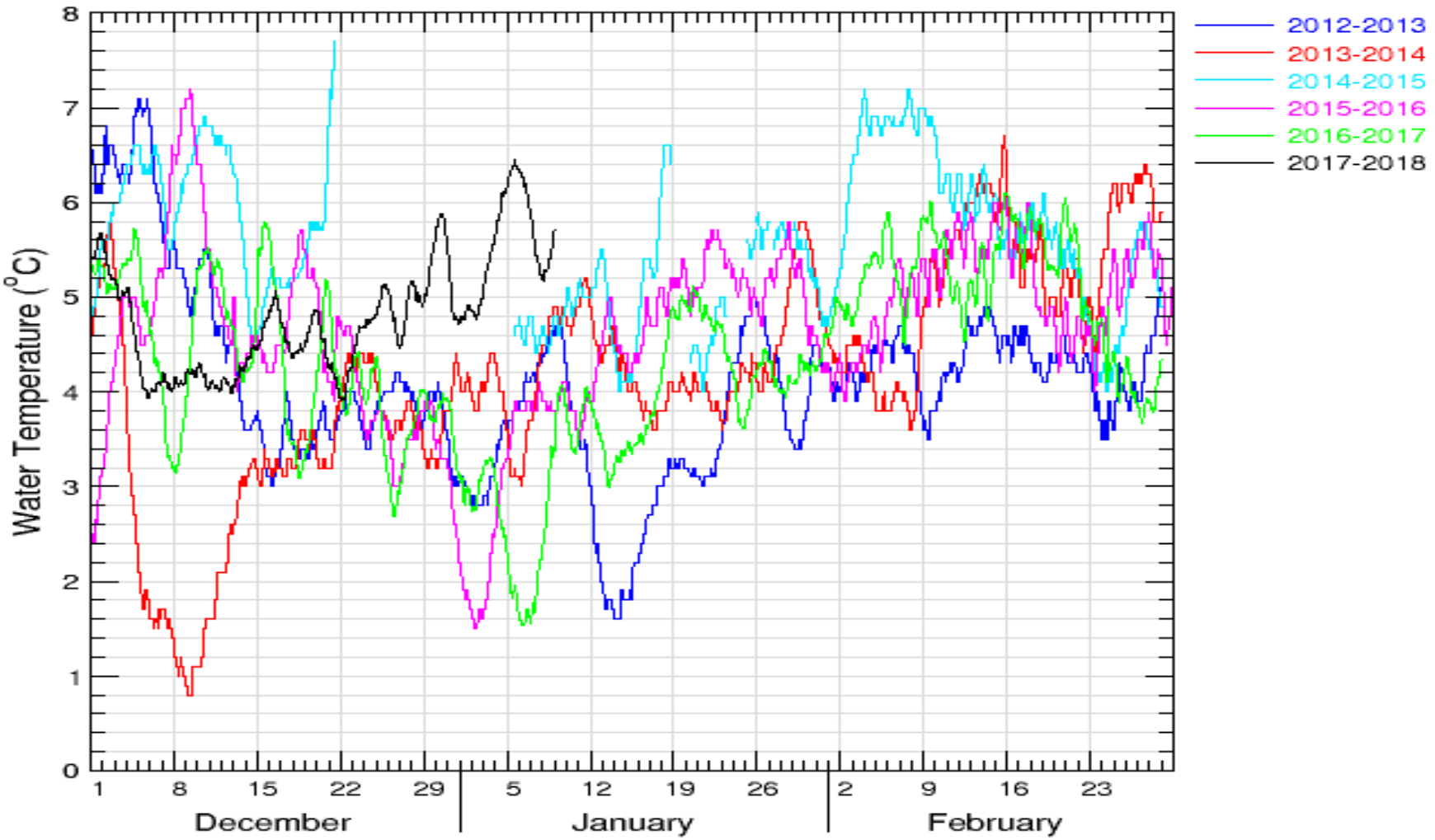
USGS


Elk Creek near Trail, OR (14338000)
Data from U.S. Geological Survey
Water Temperature (°C)
0
1
2
3
4
5
6
7
8
9
10
11
1
8
15
22
29
5
12
19
26
2
9
16
23
December
January
February
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018

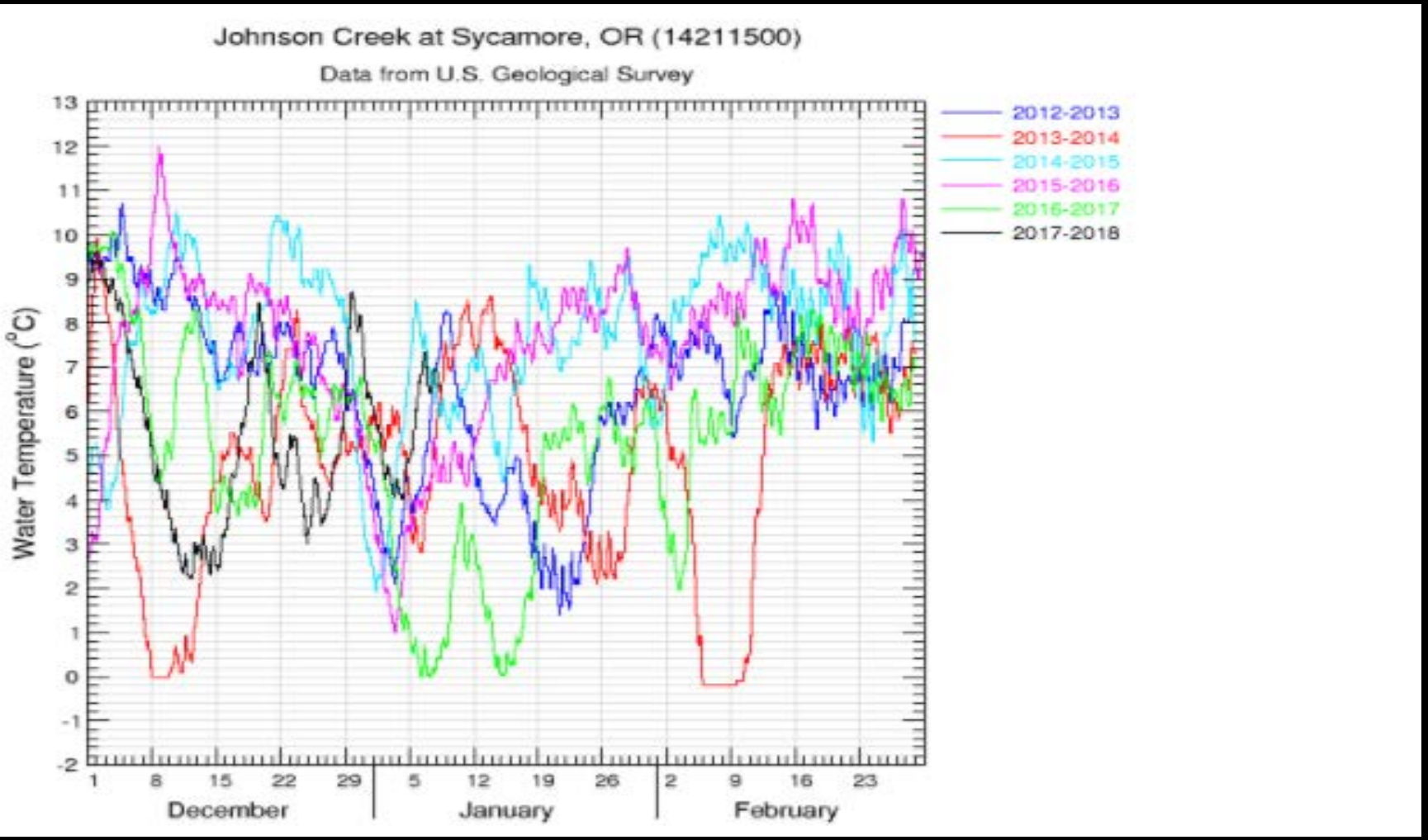
USGS


Applegate River near Wilderville, OR (14369500)
Data from U.S. Geological Survey
Water Temperature (°C)
0
1
2
3
4
5
6
7
8
9
10
11
12
1
8
15
22
29
December
5
12
19
26
January
2
9
16
23
February
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
Tue Jan 9 10:17:56 2018

USGS


N. Umpqua River ab Copeland Ck nr Toketee Falls, OR (14316500)
Data from U.S. Geological Survey
Water Temperature (°C)
0
1
2
3
4
5
6
7
8
1
8
15
22
29
5
12
19
26
2
9
16
23
December
January
February
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018

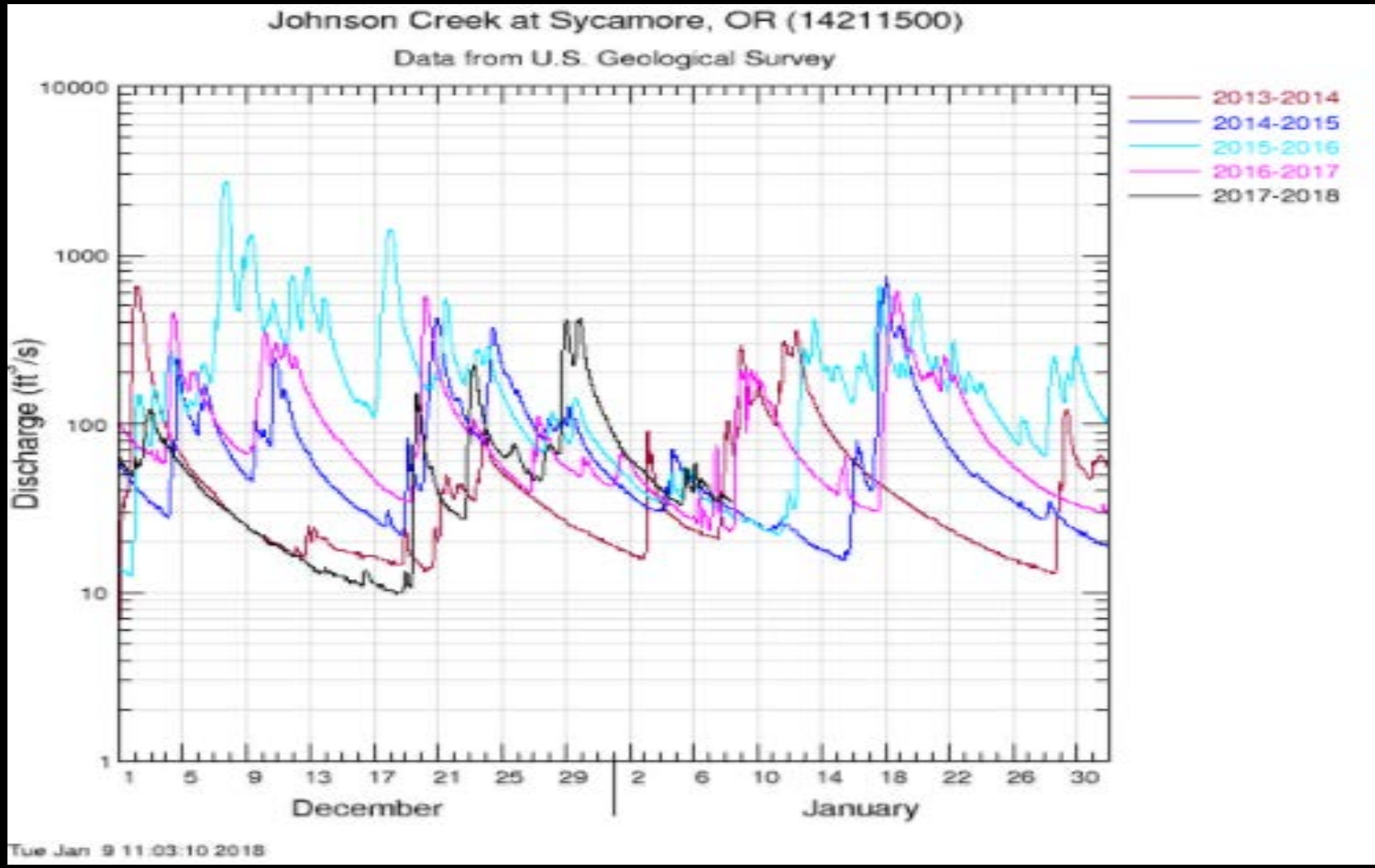
USGS



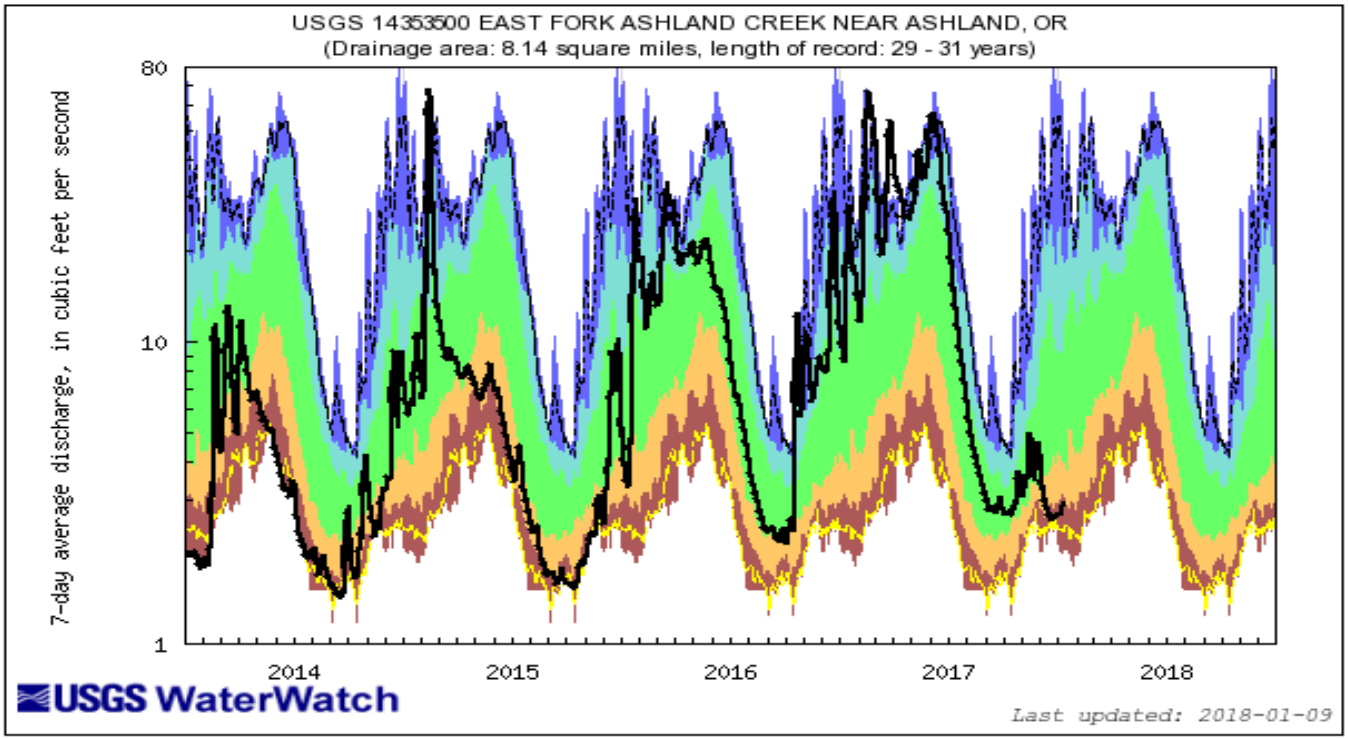
USGS Data Grapher & Data Tabler

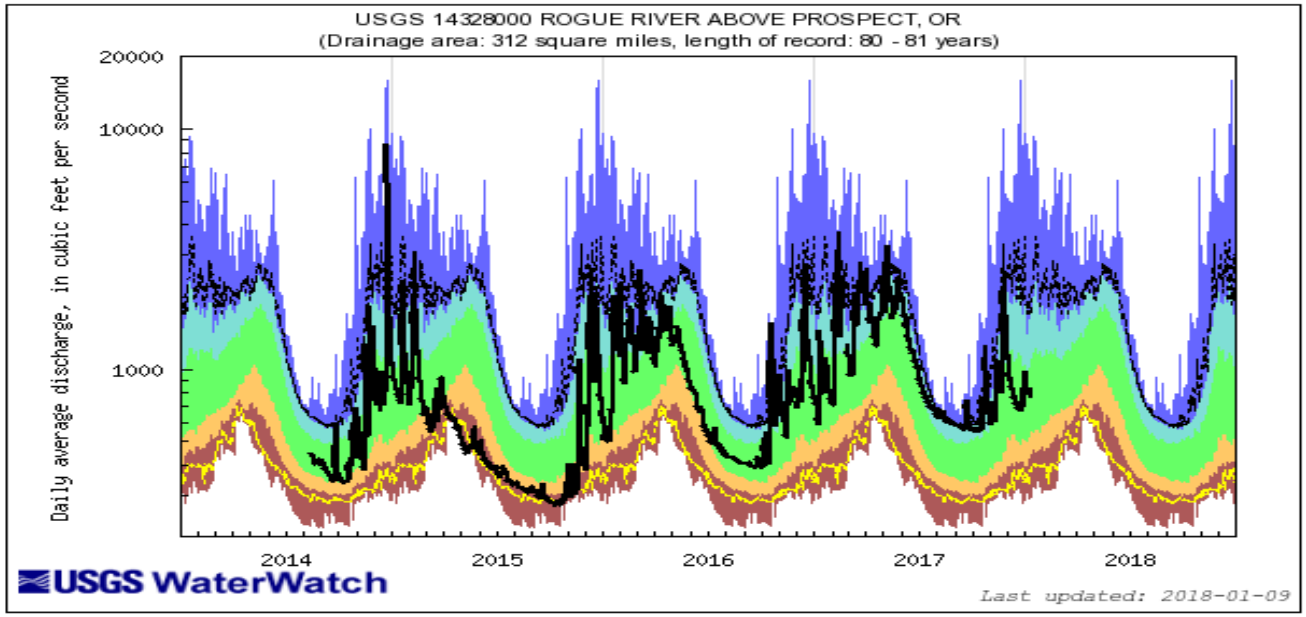
https://or.water.usgs.gov/grapher/

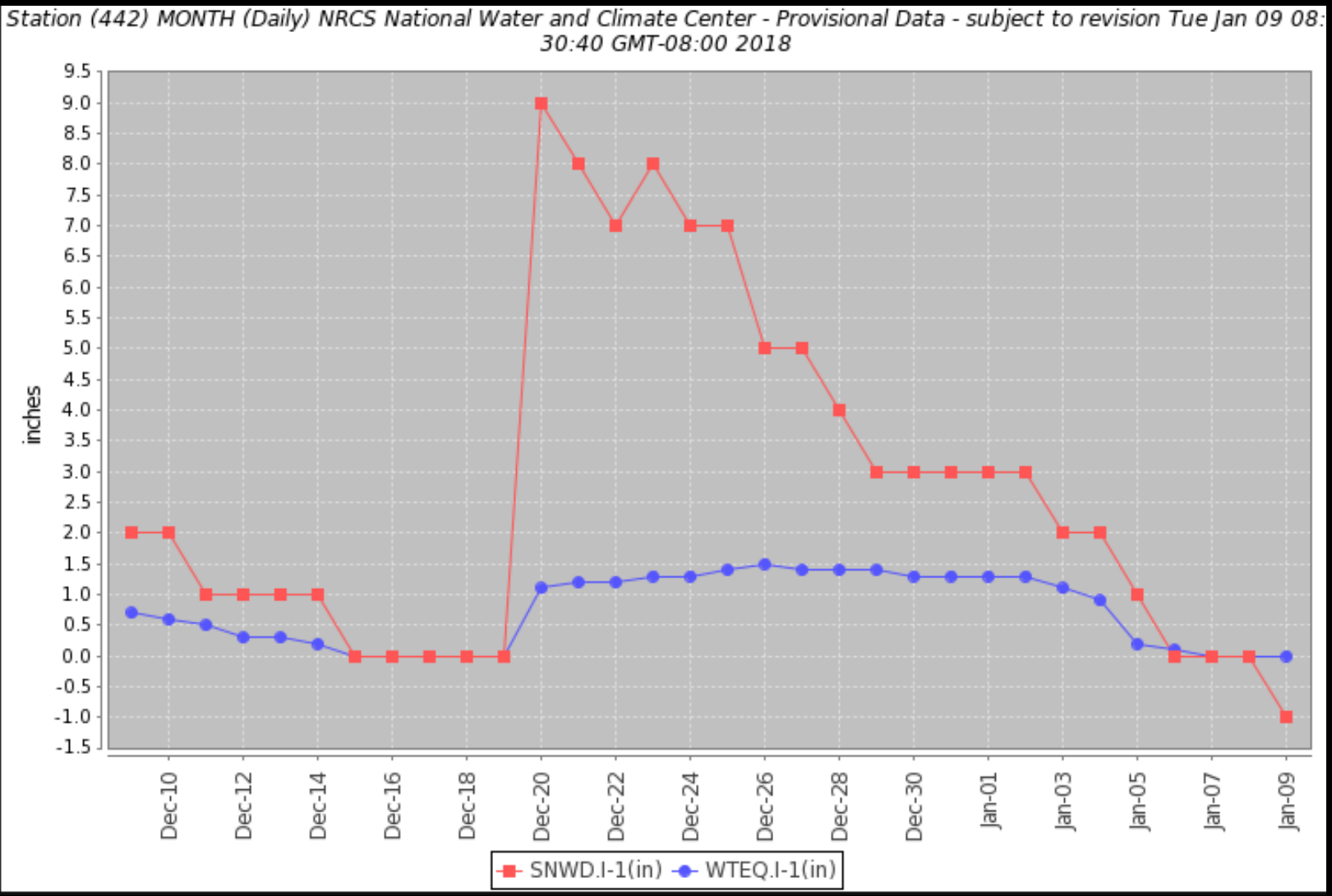
USGS


Johnson Creek at Sycamore, OR (14211500)
Data from U.S. Geological Survey
Discharge (ft³/s)
10000
1000
100
10
1
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
1 5 9 13 17 21 25 29
December
2 6 10 14 18 22 26 30
January
Tue Jan 9 11:03:10 2018

USGS


USGS 14353500 EAST FORK ASHLAND CREEK NEAR ASHLAND, OR
(Drainage area: 8.14 square miles, length of record: 29 - 31 years)
7-day average discharge, in cubic feet per second
80
10
1
2014
2015
2016
2017
2018
USGS WaterWatch
Last updated: 2018-01-09


USGS 14328000 ROGUE RIVER ABOVE PROSPECT, OR
(Drainage area: 312 square miles, length of record: 80 - 81 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
2014
2015
2016
2017
2018
USGS WaterWatch
Last updated: 2018-01-09



USGS

DIAMOND LAKE SNOTEL
Site Elevation: 5280 ft

US GEOLOGICAL SURVEY, OREGON WATER SCIENCE CENTER
WATER AVAILABILITY REPORT FOR DECEMBER 2017

Station	NRCS SWSI Basin	Monthly mean discharge: Cubic feet per second	Monthly mean discharge: Percent of average	Change in discharge from previous month (percent)	Accumulated Runoff For the Period Oct. to Dec.: Percent of average
Donner Und Blitzen nr Frenchglen	Harney	43	72	-7	85
(*)Deep Creek above Adel	Lake County	34	44	-40	82
(*)Chewaucan River near Paisley	Lake County	51	67	-22	106
Williamson River near Chiloquin	Klamath	636	73	-4	88
Owyhee River near Rome	Owyhee	228	64	-6	89
(*)NF Malheur River near Beulah	Malheur	58	92	-16	107
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	1,535	97	-9	118
Umatilla River nr Gibbon	Umatilla Lower John Day	226	113	18	129
John Day River at Service Crk	Upper John Day	473	42	-17	68
(*)Little Deschutes River nr LaPine	Upper Deschutes	131	92	-18	123
Hood River nr Hood River	Lower Deschutes Mt.Hood	1,157	93	-29	142
Willamette River at Salem	Willamette	25,554	58	-36	99
Wilson River near Tillamook	North Coast	1,919	77	-39	131
Umpqua River near Elkton	Rogue/Umpqua	4,552	32	-38	66
Rogue River near Agness	Rogue/Umpqua	3,318	35	-42	71
SF Coquille River at Powers	South Coast	543	29	-61	68
Chetco River near Brookings	South Coast	1,415	26	-73	78

All data should be considered provisional and subject to revision.
Percent of average computed using 30-year base period, water years 1981-2010.
(*) provided by Oregon Water Resources Department

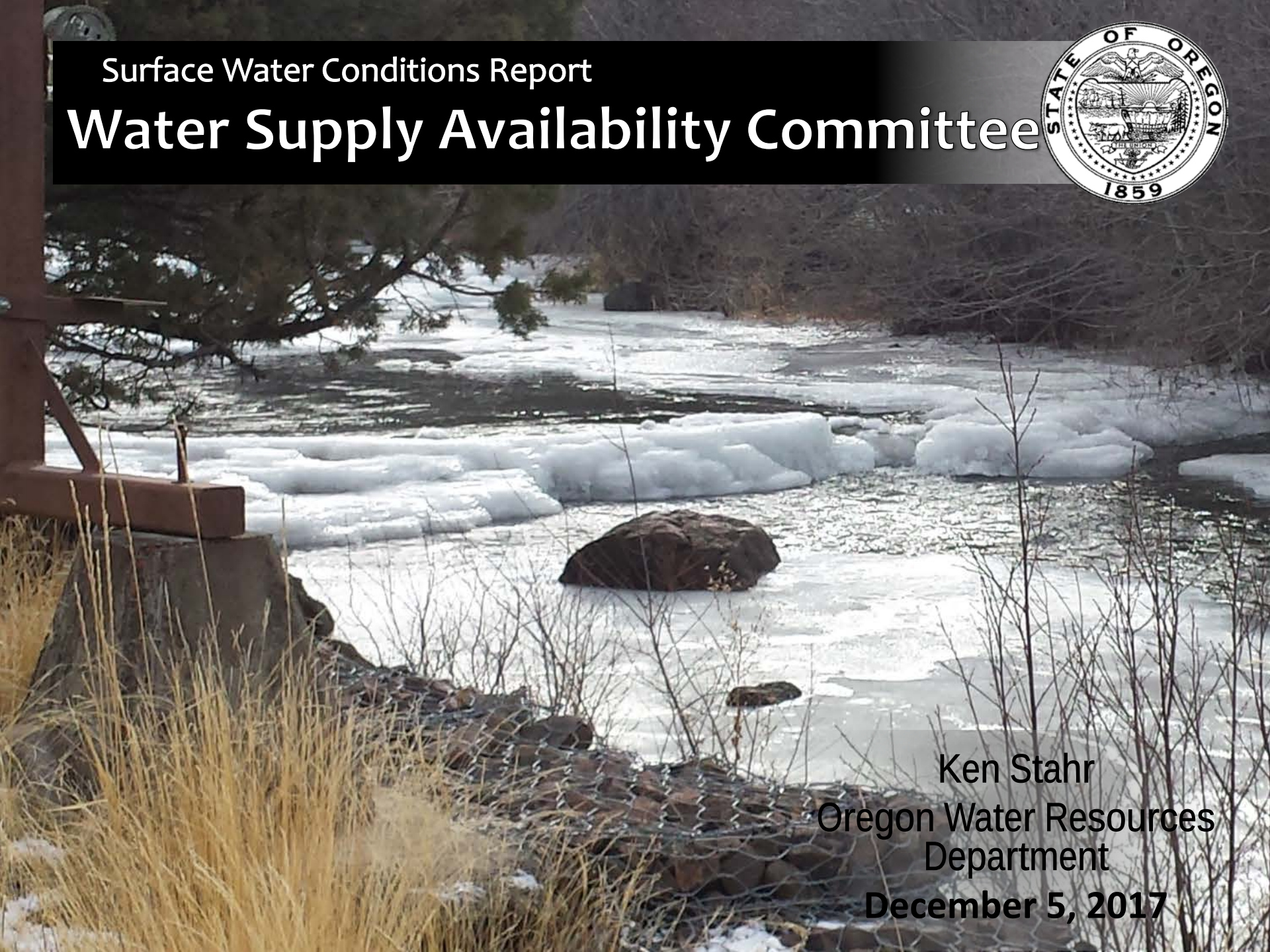
1/4/2017

https://or.water.usgs.gov/data_dir/war_dir/war1709.html

USGS

Surface Water Conditions Report

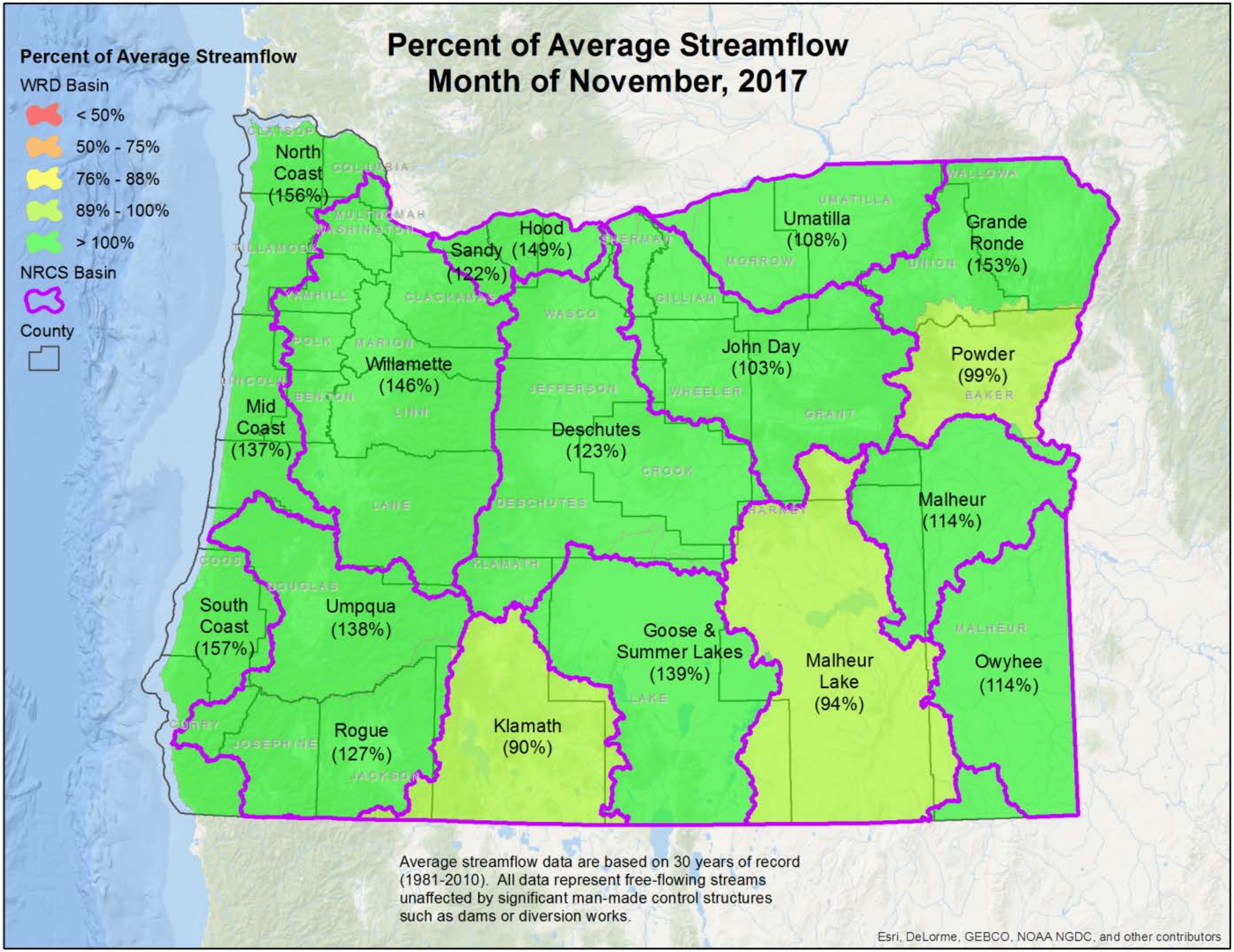
Water Supply Availability Committee



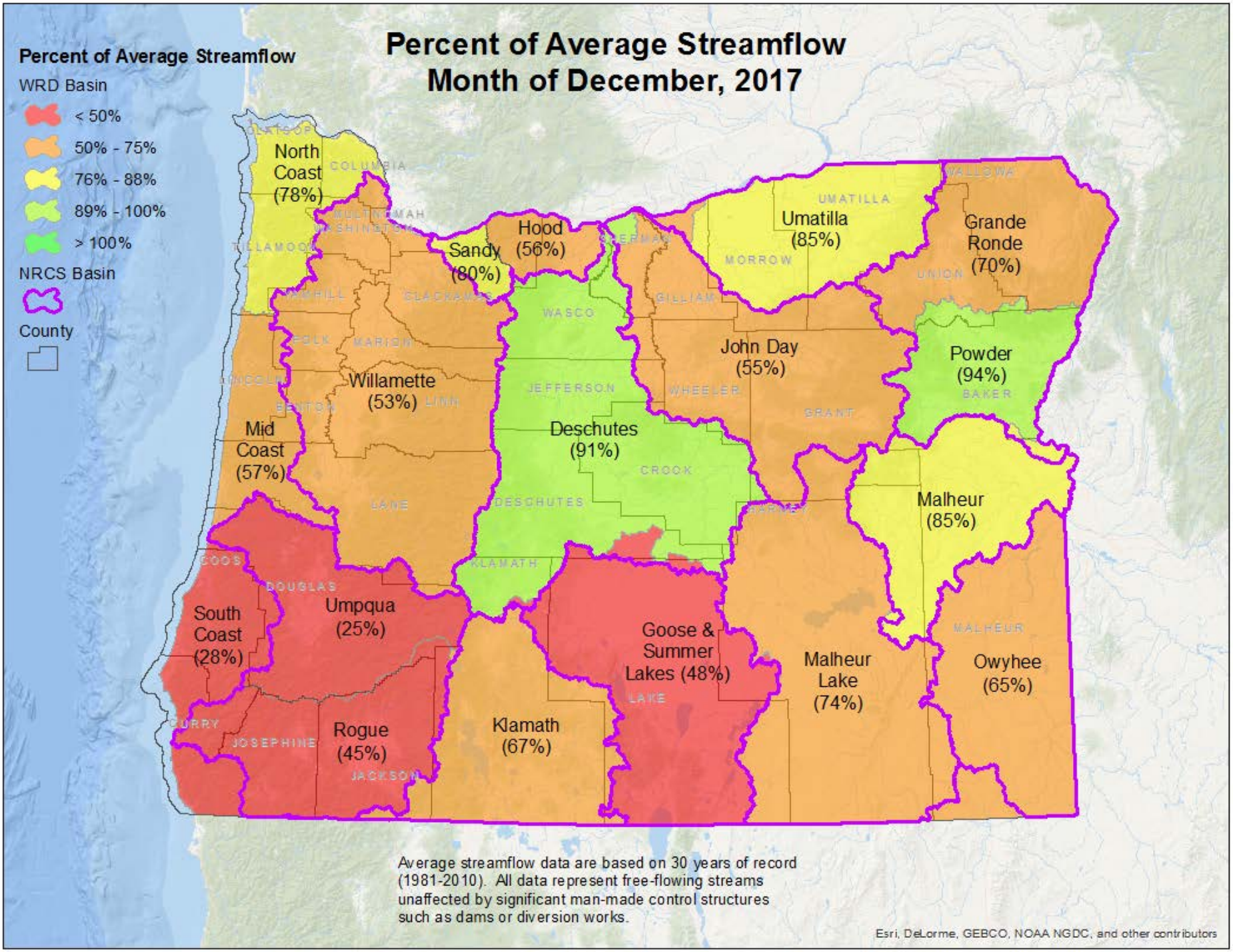
Ken Stahr
Oregon Water Resources Department

December 5, 2017

Percent of Average Streamflow
Month of November, 2017

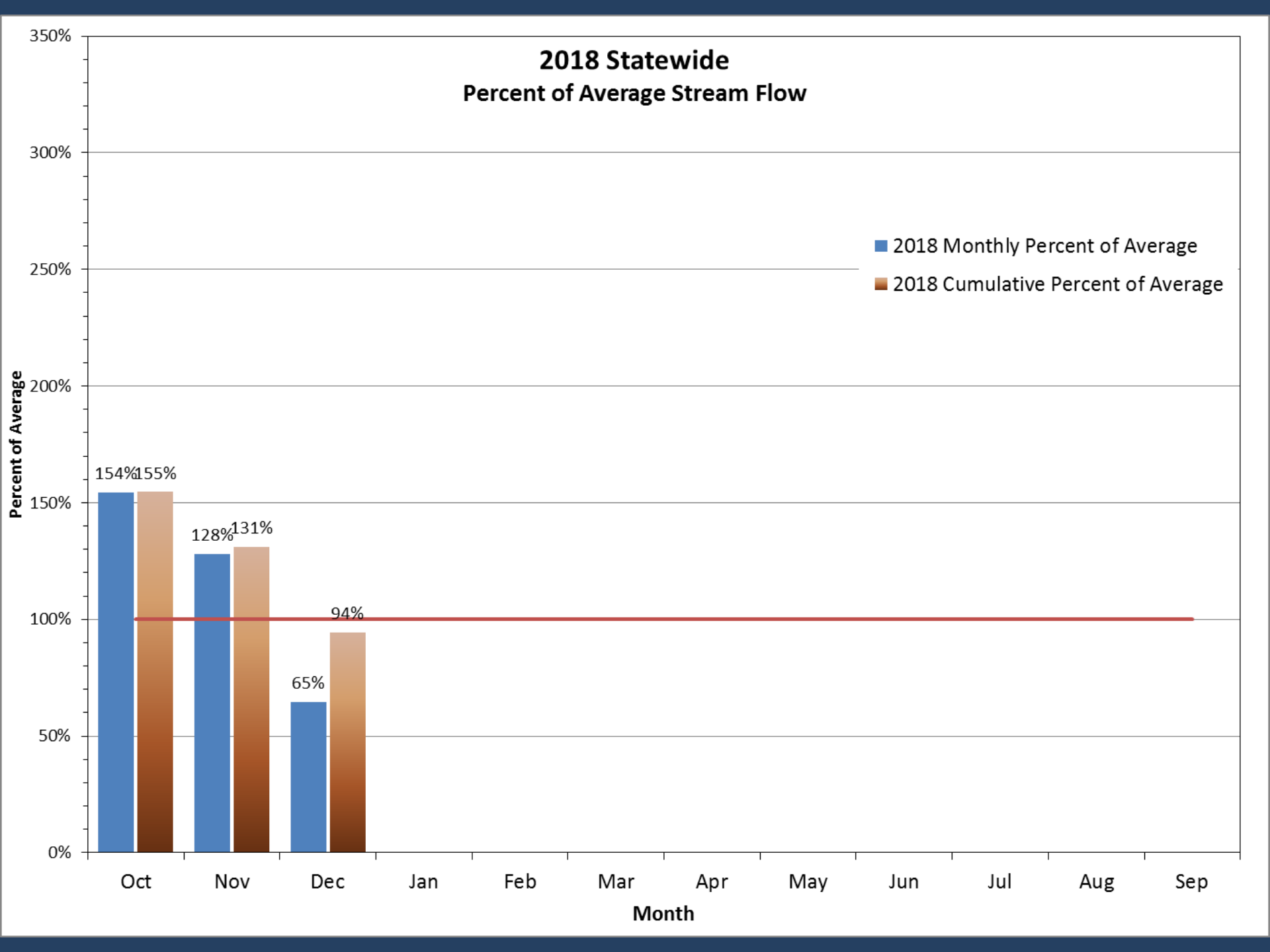


Percent of Average Streamflow
Month of December, 2017



Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.

Basin	Water Year % of average through December, 2017	% of average for December	% of average for 01/05/2018
North Coast	123%	78%	61%
Willamette	99%	53%	48%
Sandy	119%	80%	63%
Hood	108%	64%	67%
Deschutes	107%	88%	82%
John Day	81%	56%	46%
Umatilla	94%	85%	74%
Grande Ronde	114%	86%	102%
Powder	104%	94%	66%
Malheur	102%	84%	85%
Owyhee	90%	65%	35%
Malheur Lake	86%	74%	61%
Goose & Summer Lakes	83%	44%	70%
Klamath	81%	67%	47%
Rogue	80%	45%	46%
Umpqua	68%	25%	27%
South Coast	74%	28%	39%
Mid Coast	91%	57%	31%
West Side	**93%**	**52%**	**45%**
East Side	**96%**	**73%**	**67%**
State	**95%**	**65%**	**58%**


2018 Statewide
Percent of Average Stream Flow
2018 Monthly Percent of Average
2018 Cumulative Percent of Average
Percent of Average
350%
300%
250%
200%
150%
100%
50%
0%
154%
155%
128%
131%
65%
94%
Oct
Nov
Dec
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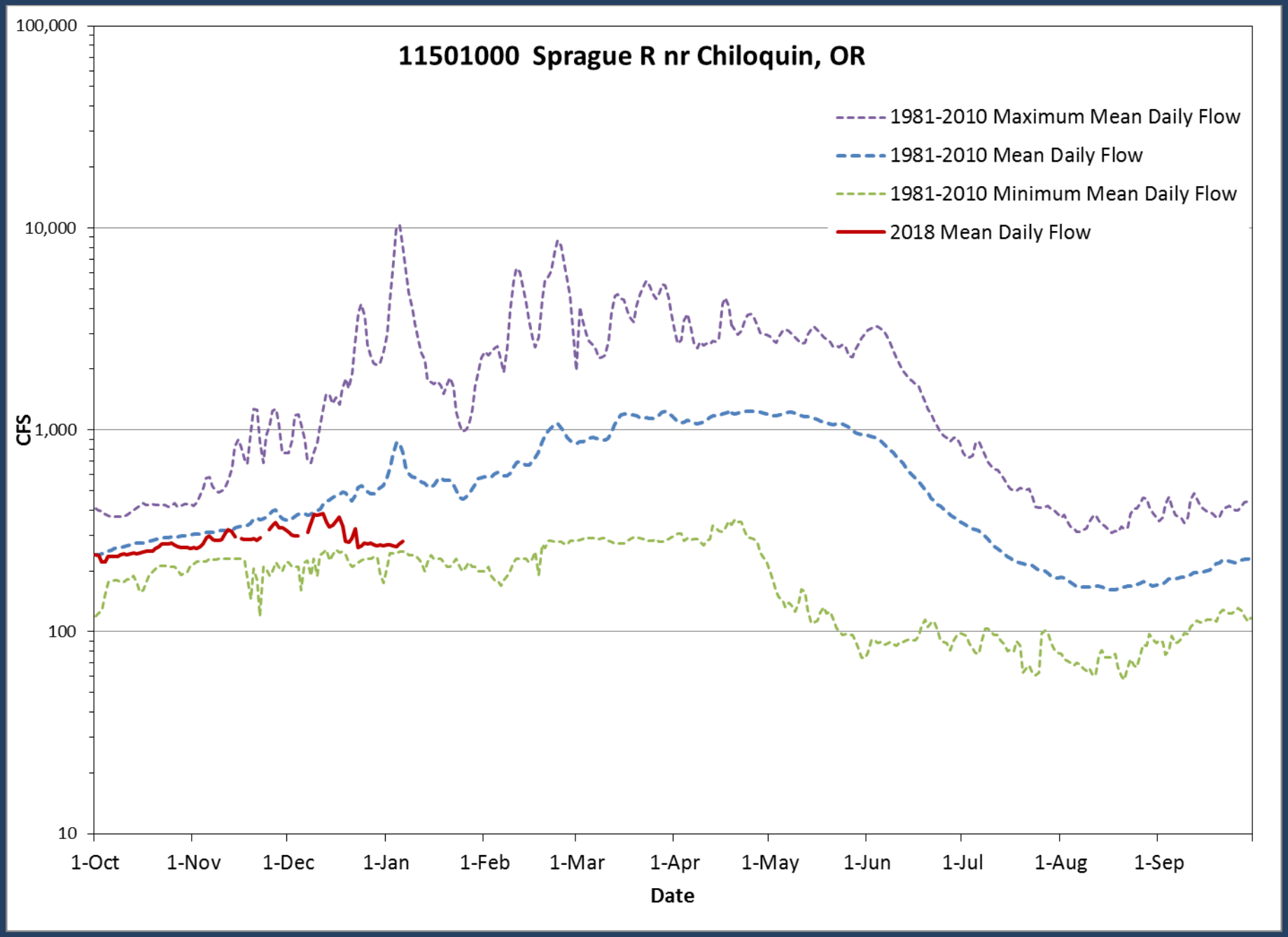
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month


11501000 Sprague R nr Chiloquin, OR
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2018 Mean Daily Flow
100,000
10,000
1,000
100
10
CFS
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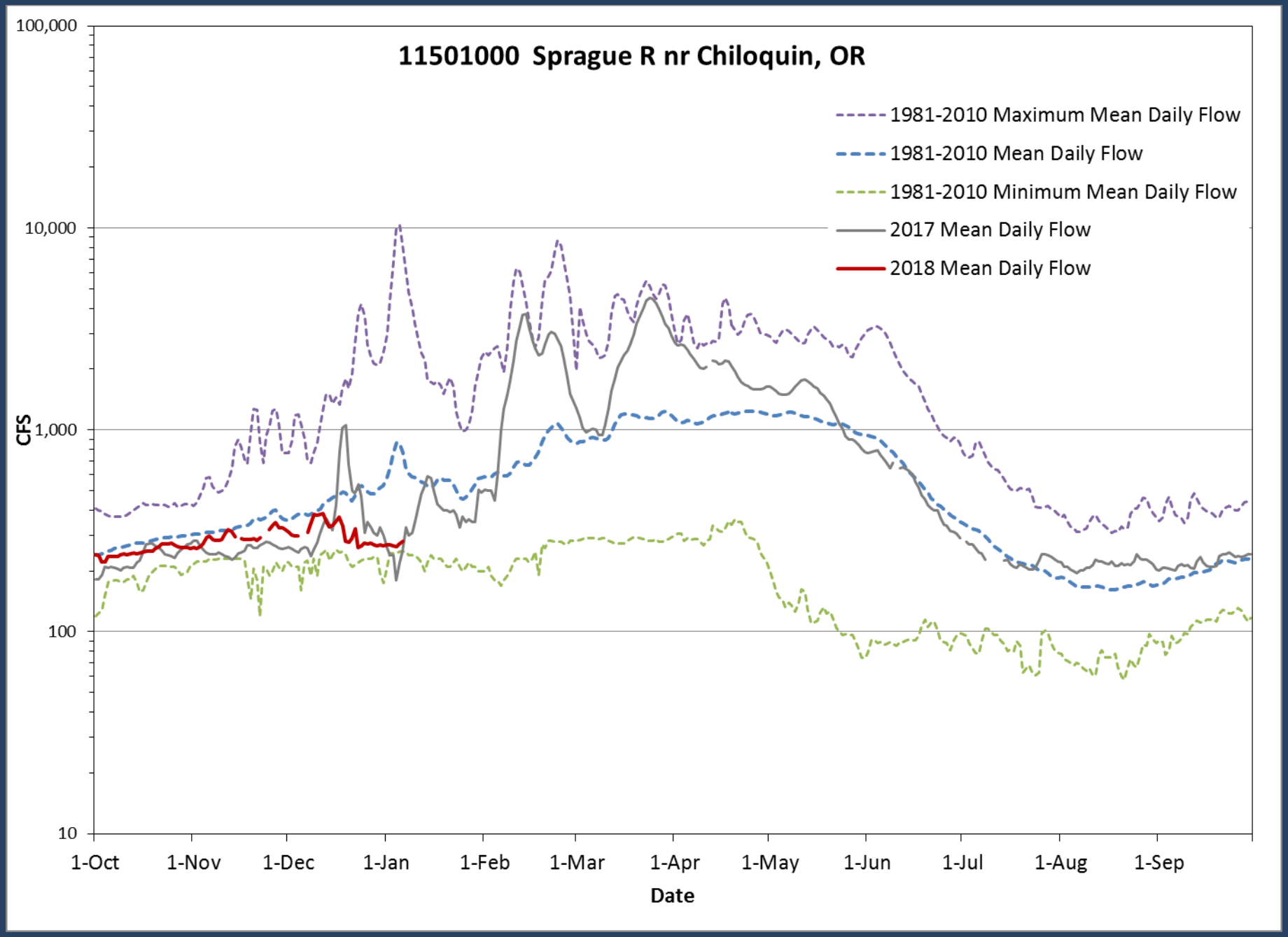
1-Sep
Date


11501000 Sprague R nr Chiloquin, OR
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2017 Mean Daily Flow
2018 Mean Daily Flow
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10,000
1,000
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CFS
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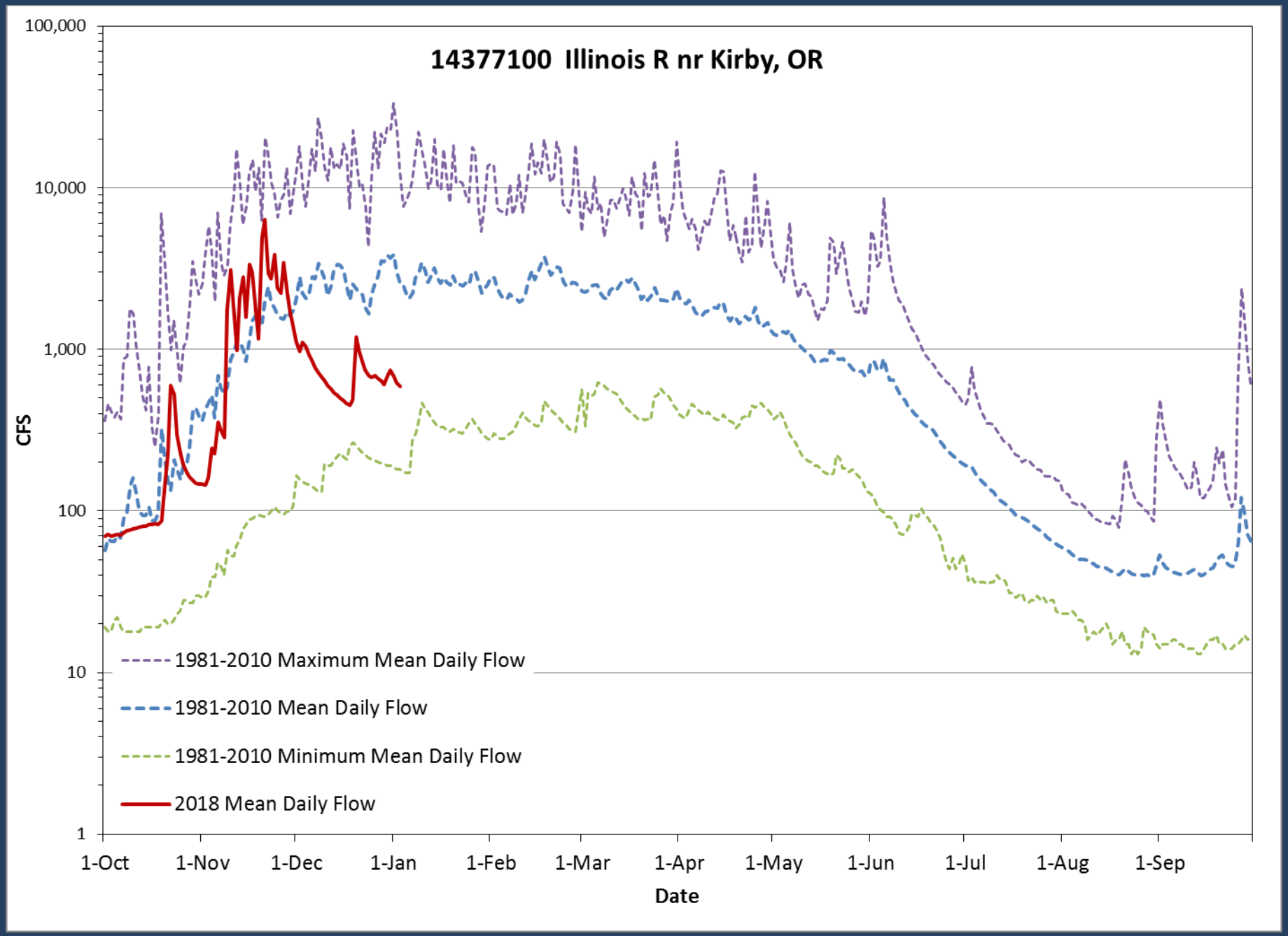
Date


14377100 Illinois R nr Kirby, OR
100,000
10,000
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CFS
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2018 Mean Daily Flow
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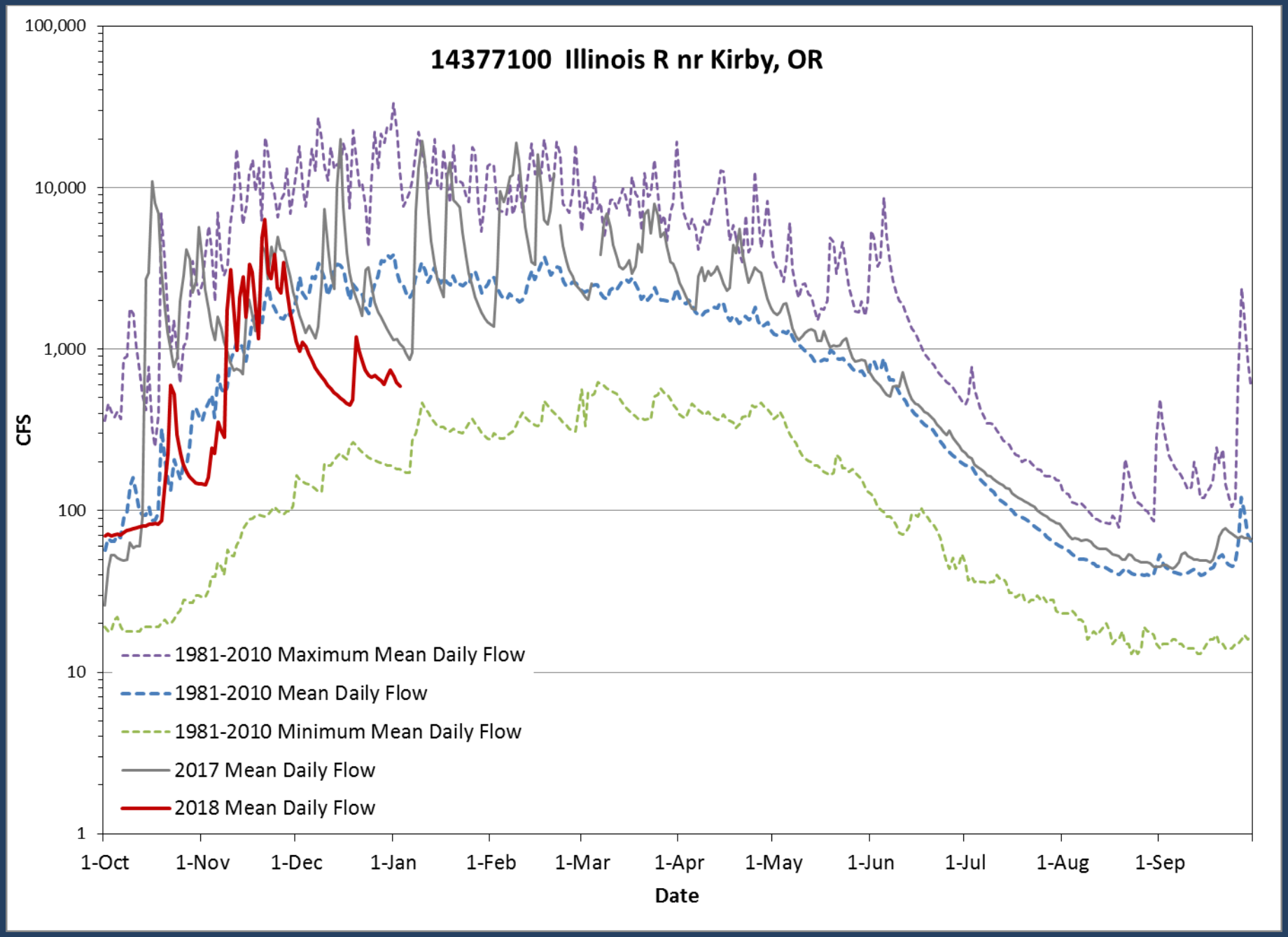
Date


14377100 Illinois R nr Kirby, OR
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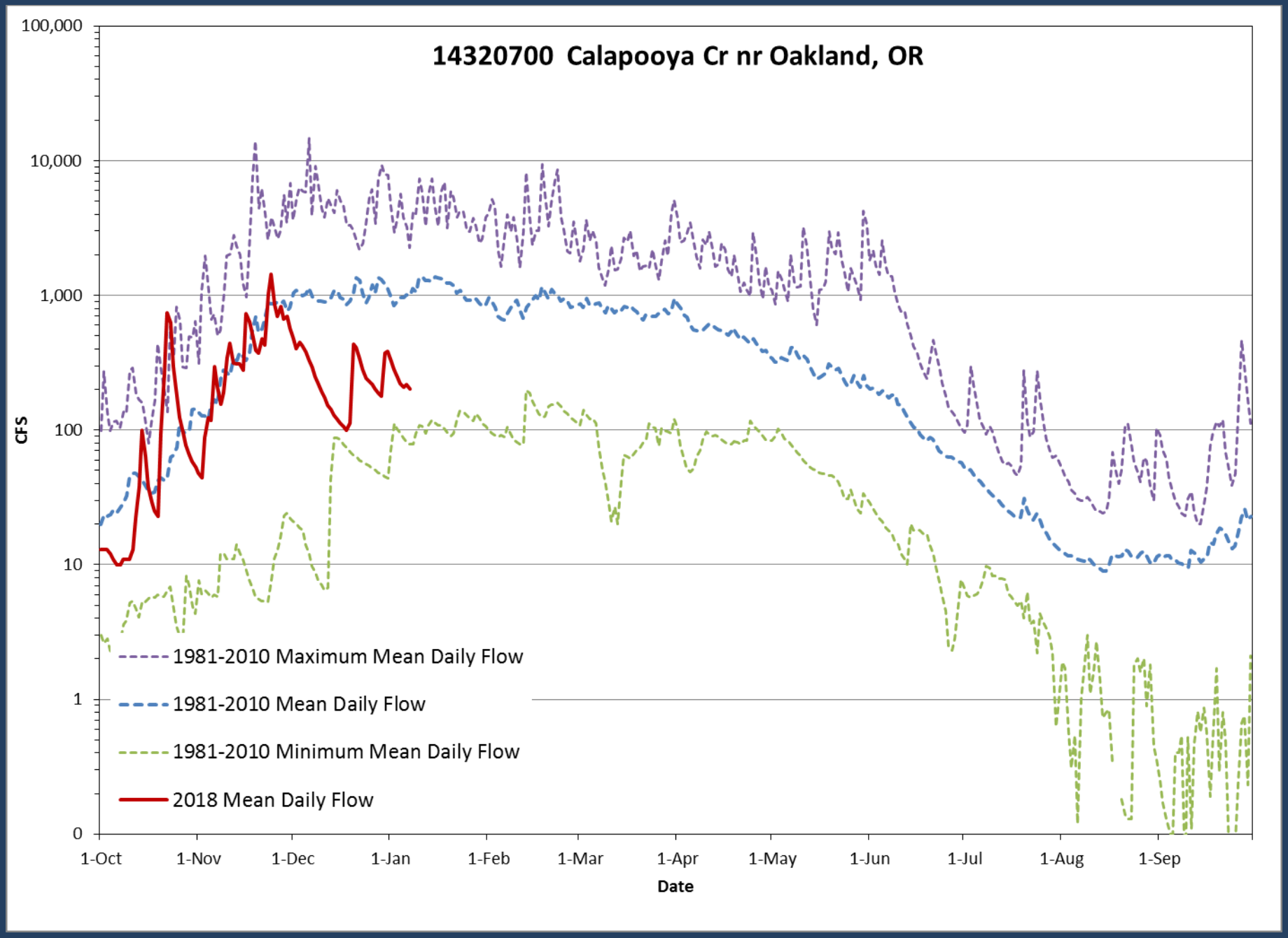
Date
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2017 Mean Daily Flow
2018 Mean Daily Flow


14320700 Calapooya Cr nr Oakland, OR
100,000
10,000
1,000
100
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CFS
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2018 Mean Daily Flow
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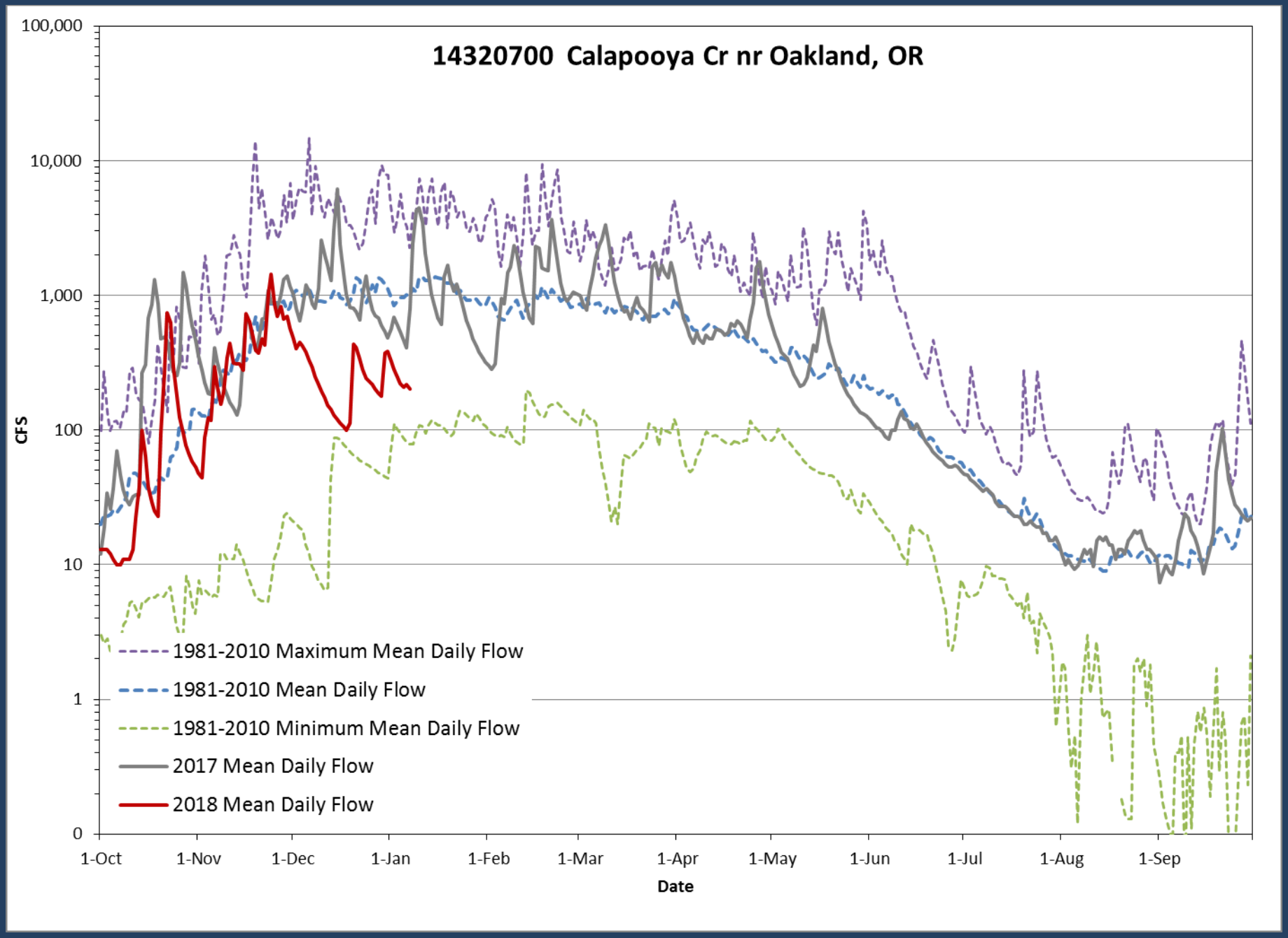
1-Aug
1-Sep
Date


14320700 Calapooya Cr nr Oakland, OR
100,000
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CFS
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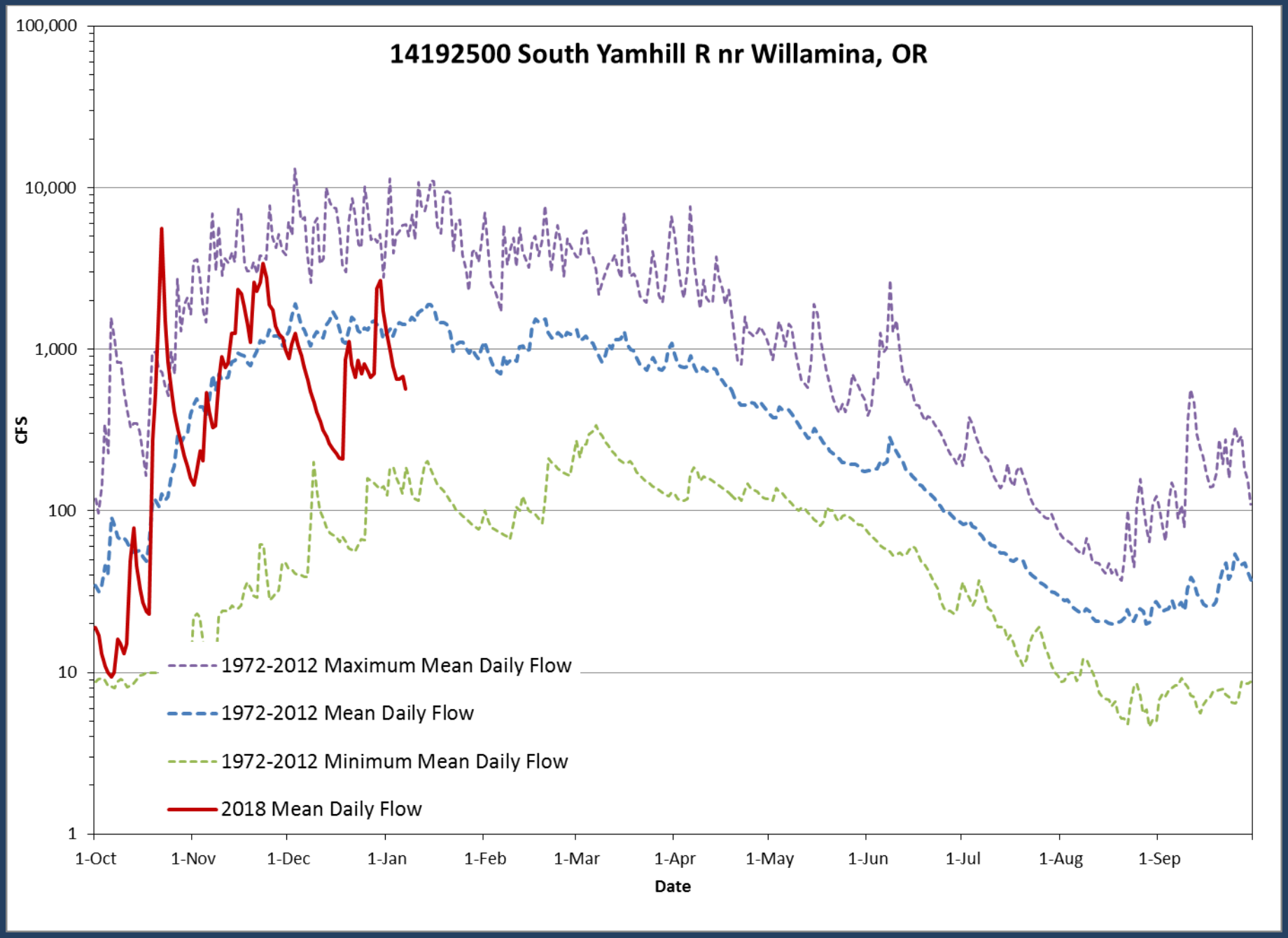
Date
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2017 Mean Daily Flow
2018 Mean Daily Flow


14192500 South Yamhill R nr Willamina, OR
100,000
10,000
1,000
100
10
1
CFS
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
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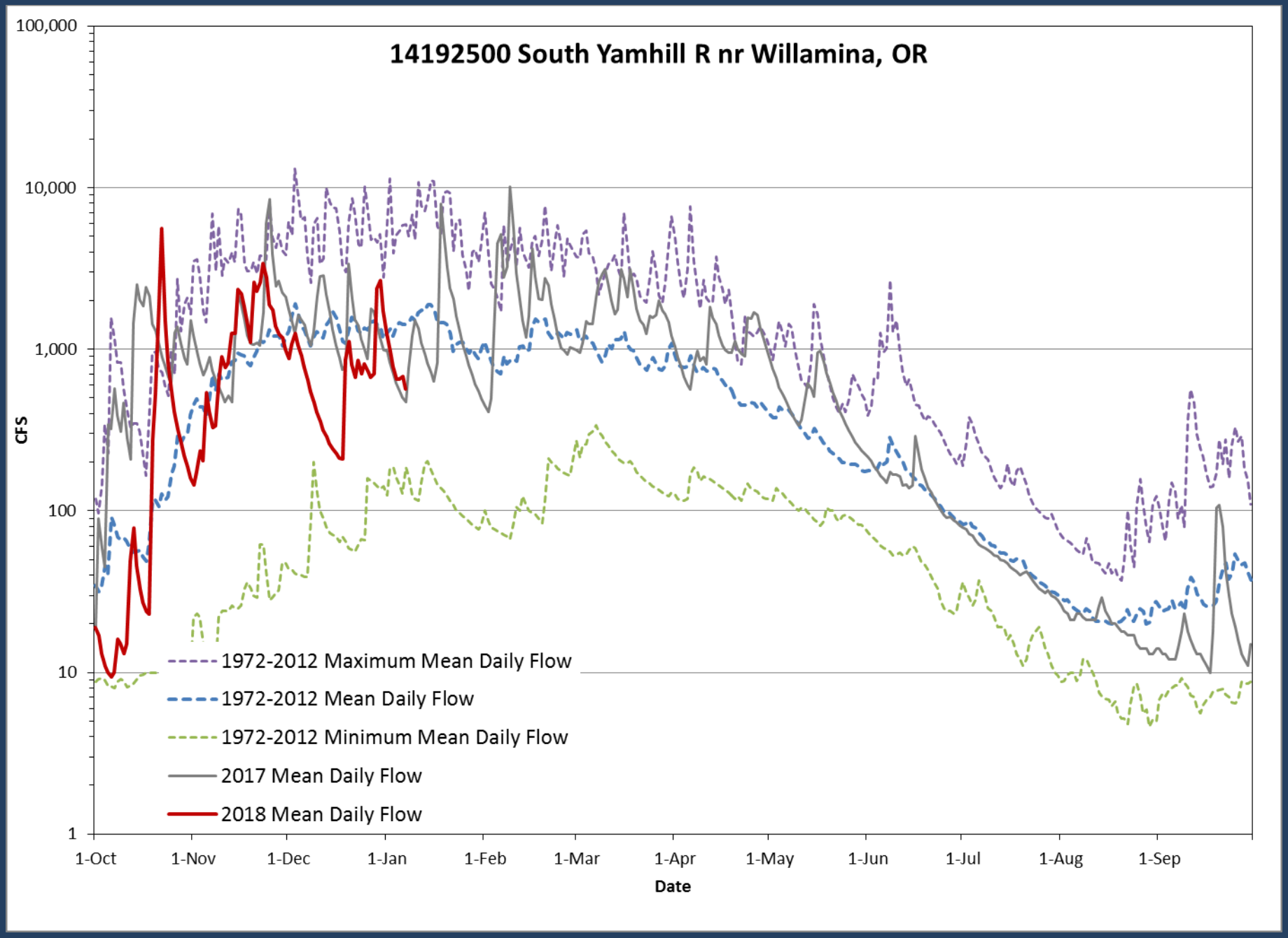
1-Sep
Date
1972-2012 Maximum Mean Daily Flow
1972-2012 Mean Daily Flow
1972-2012 Minimum Mean Daily Flow
2018 Mean Daily Flow


14192500 South Yamhill R nr Willamina, OR
100,000
10,000
1,000
100
10
1
CFS
1-Oct
1-Nov
1-Dec
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1-Feb
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1-Jul
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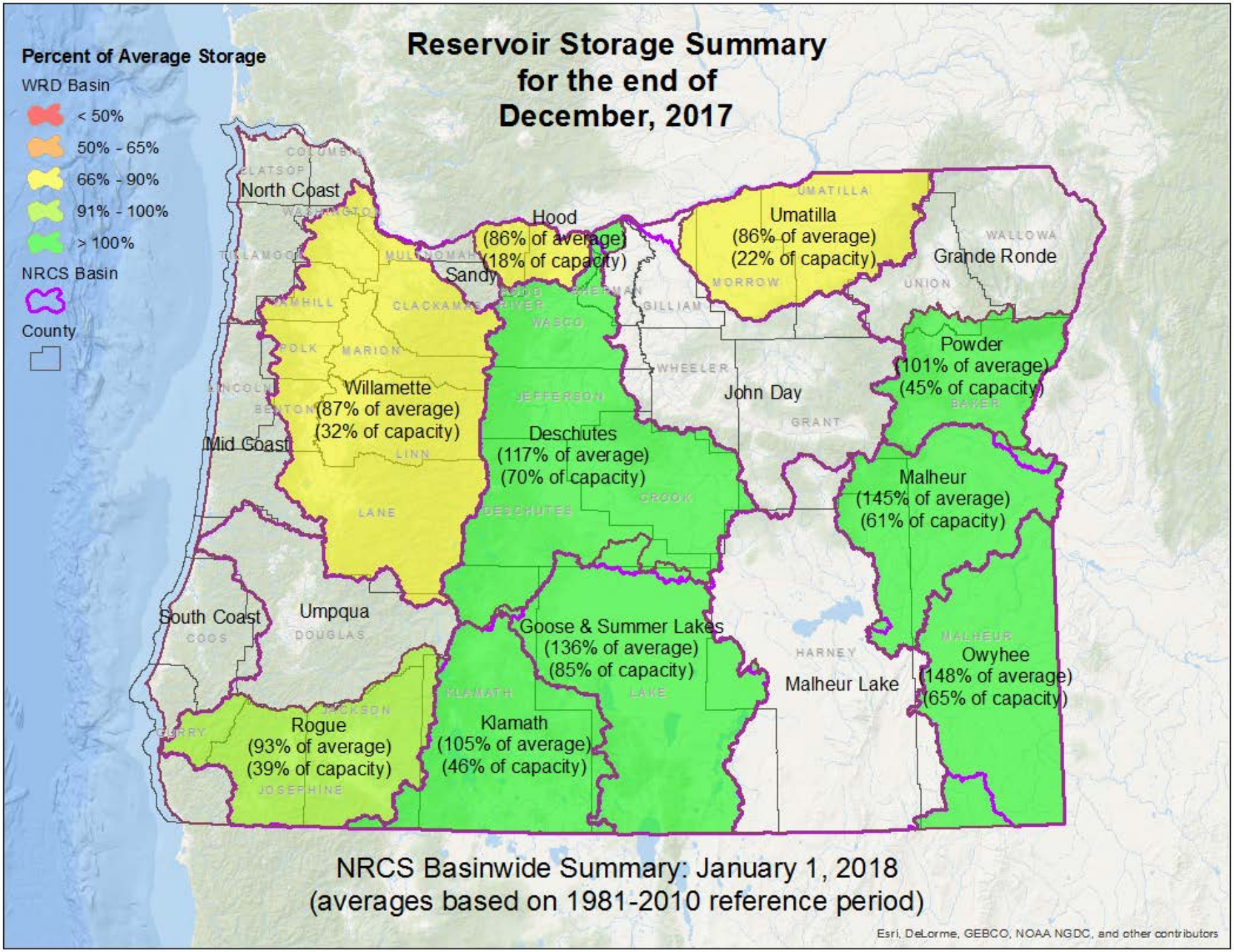
Date
1972-2012 Maximum Mean Daily Flow
1972-2012 Mean Daily Flow
1972-2012 Minimum Mean Daily Flow
2017 Mean Daily Flow
2018 Mean Daily Flow

Storage

Reservoir Storage Summary for the end of December, 2017



NRCS Basinwide Summary: January 1, 2018
(averages based on 1981-2010 reference period)

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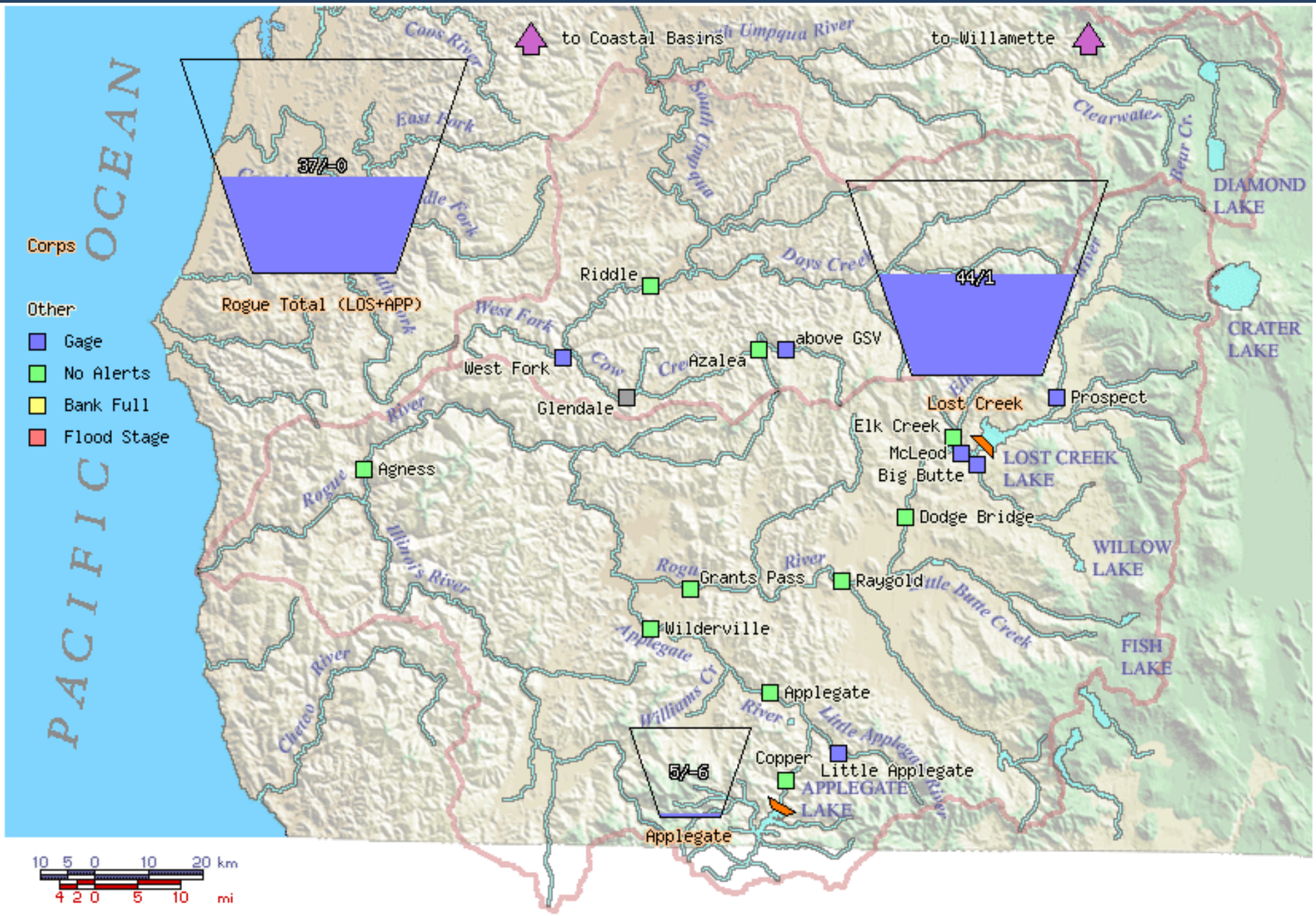

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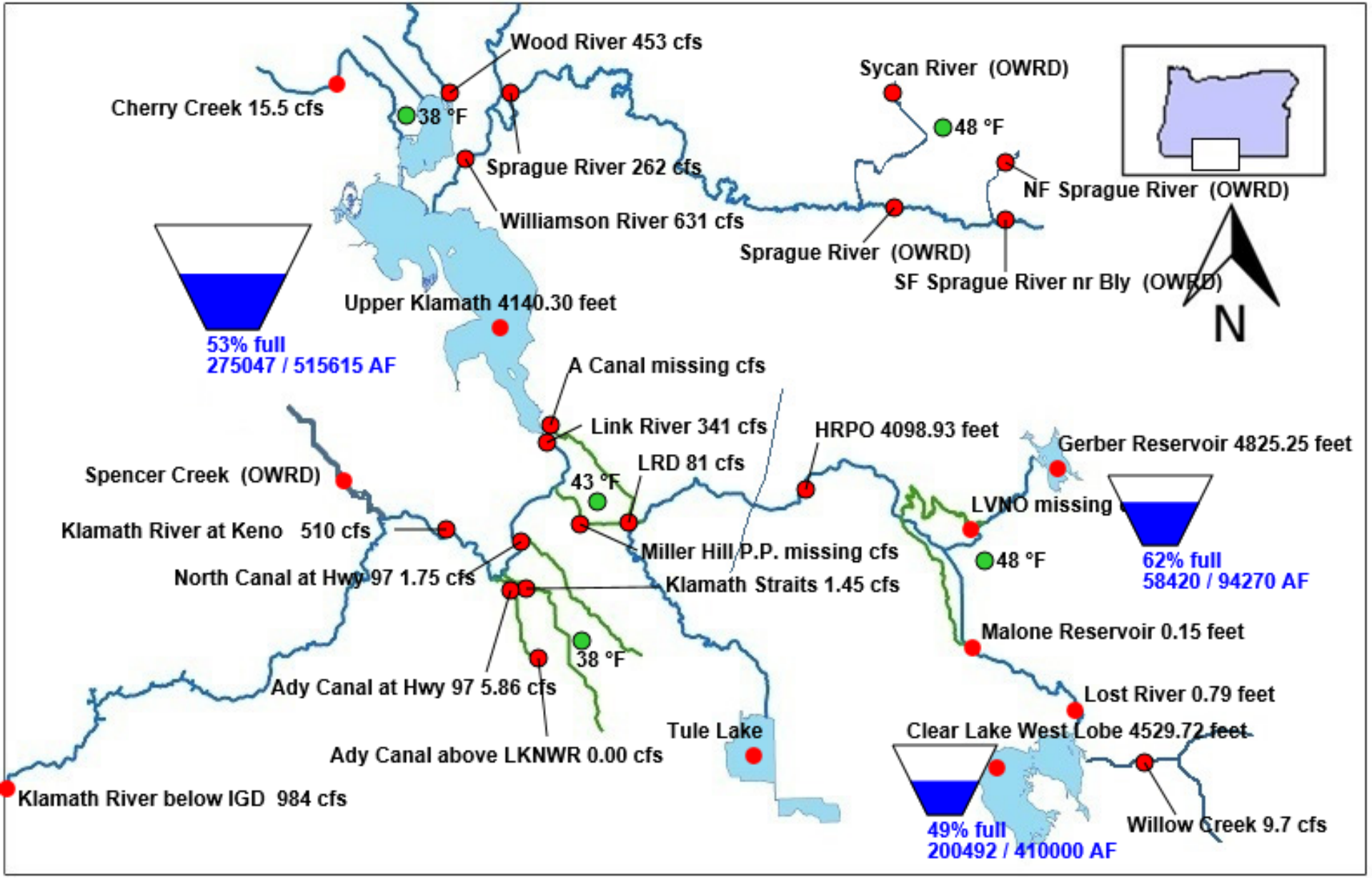


Thu Jan 04 2018 10:48:19 GMT-0800 (Pacific Standard Time)

Thank You

RECLAMATION

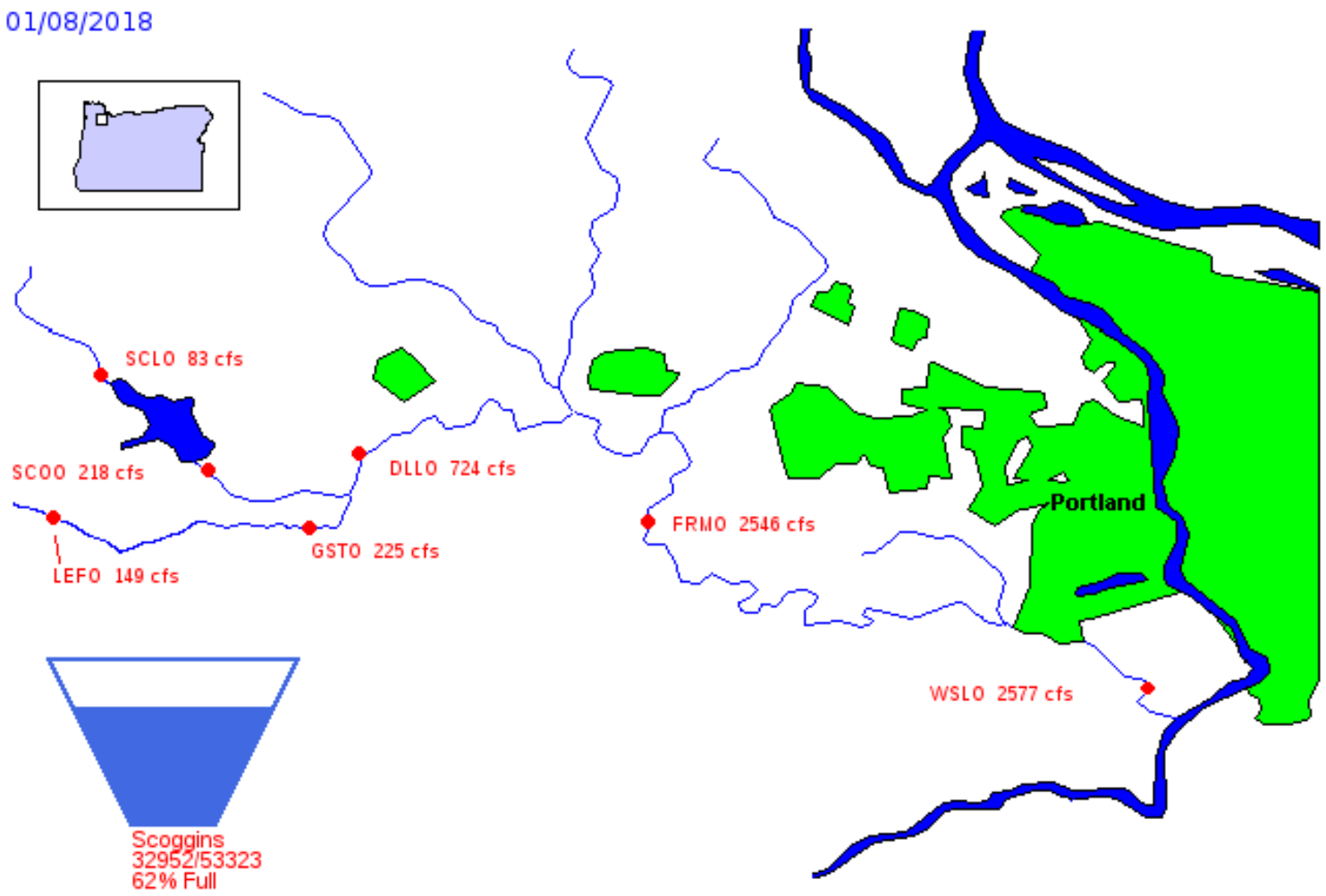
Managing Water in the West

Oregon Water Supply Availability Committee Meeting
January 9, 2018

Peter Cooper

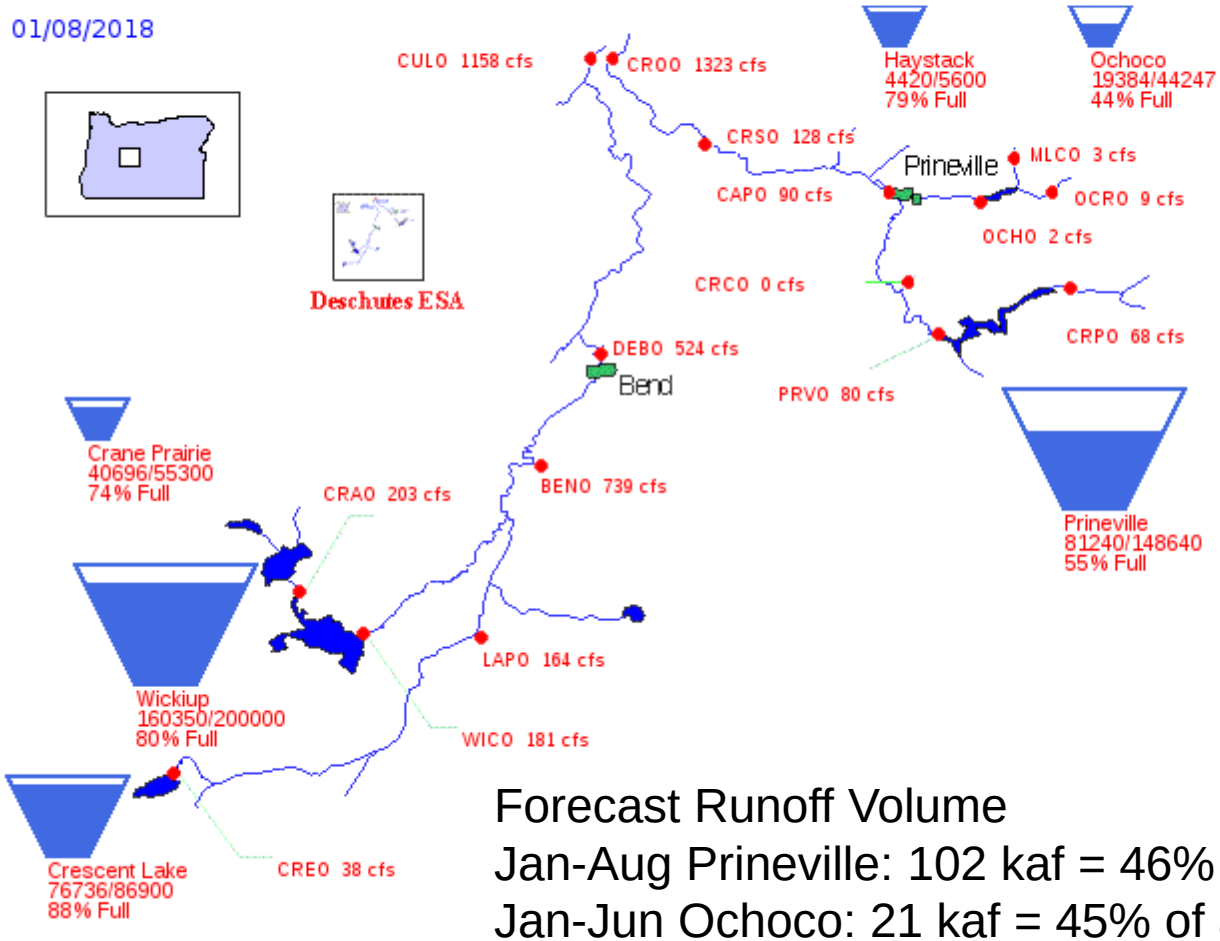
U.S. Department of the Interior
Bureau of Reclamation

Bureau of Reclamation, Pacific Northwest Region
Tualatin River Basin Storage and Flow Diagram



RECLAMATION

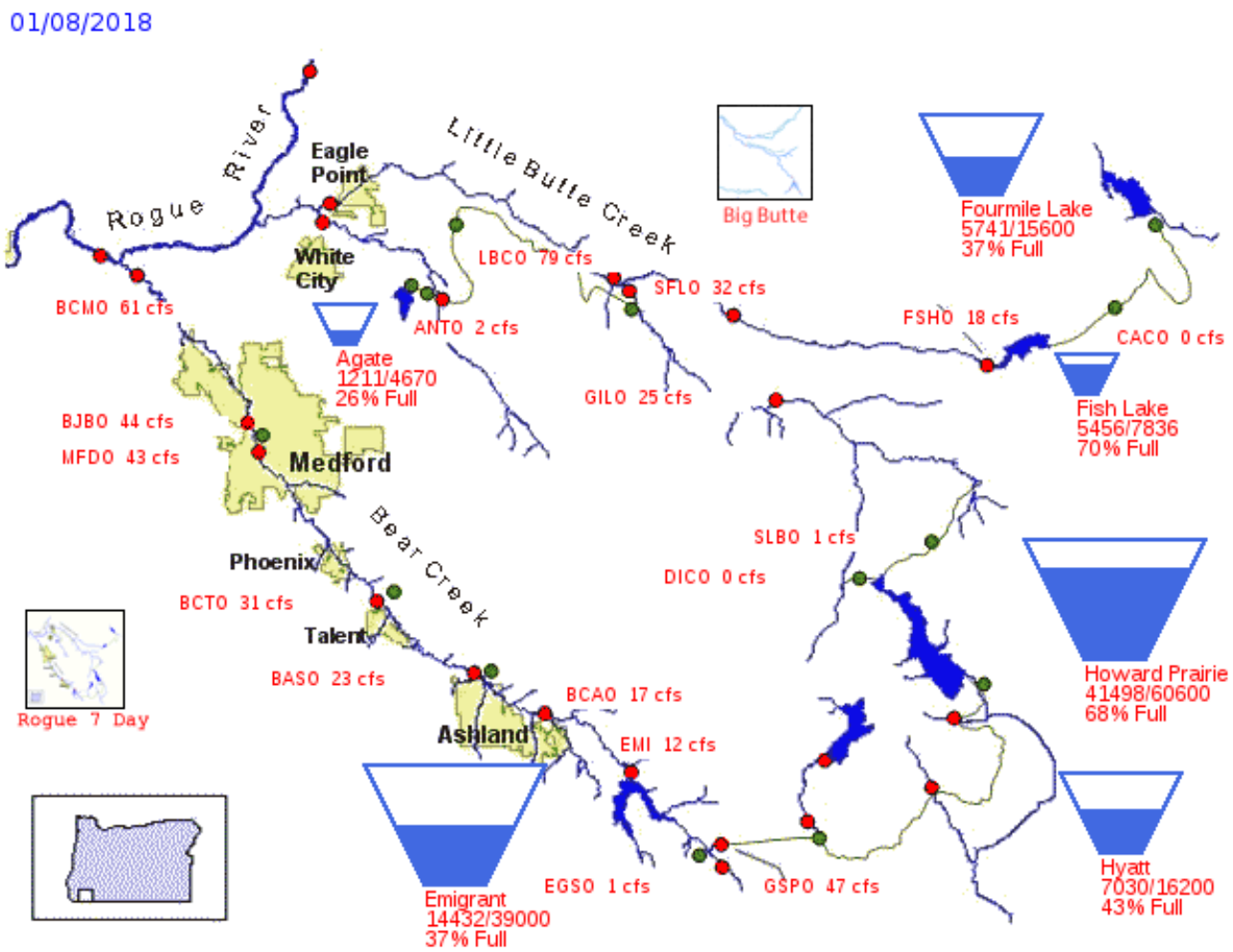
US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Deschutes River Basin



Forecast Runoff Volume
Jan-Aug Prineville: 102 kaf = 46% of ave
Jan-Jun Ochoco: 21 kaf = 45% of ave

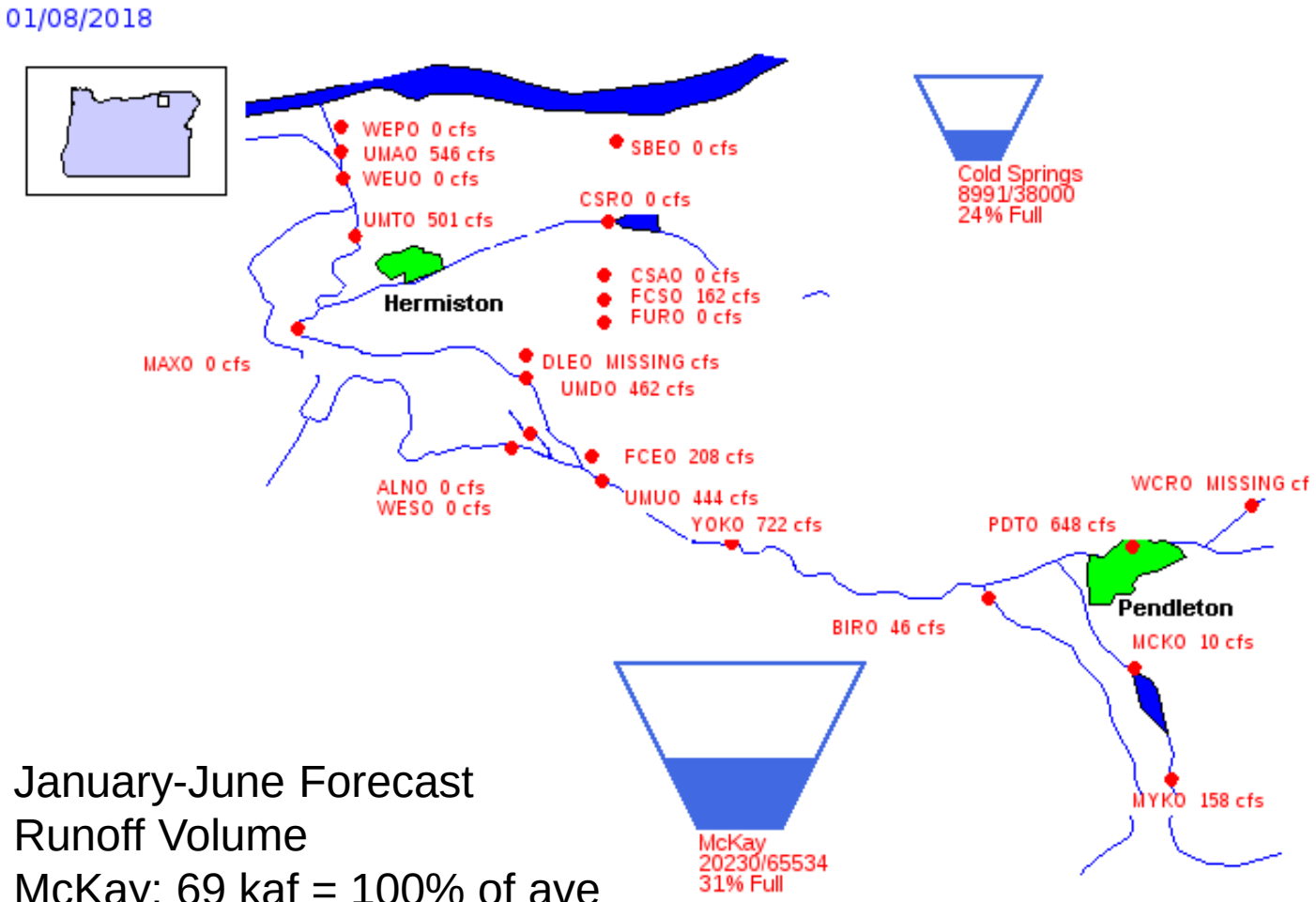
RECLAMATION

US Bureau of Reclamation, Pacific Northwest Region
Bear Creek and Little Butte Creek Basins



RECLAMATION

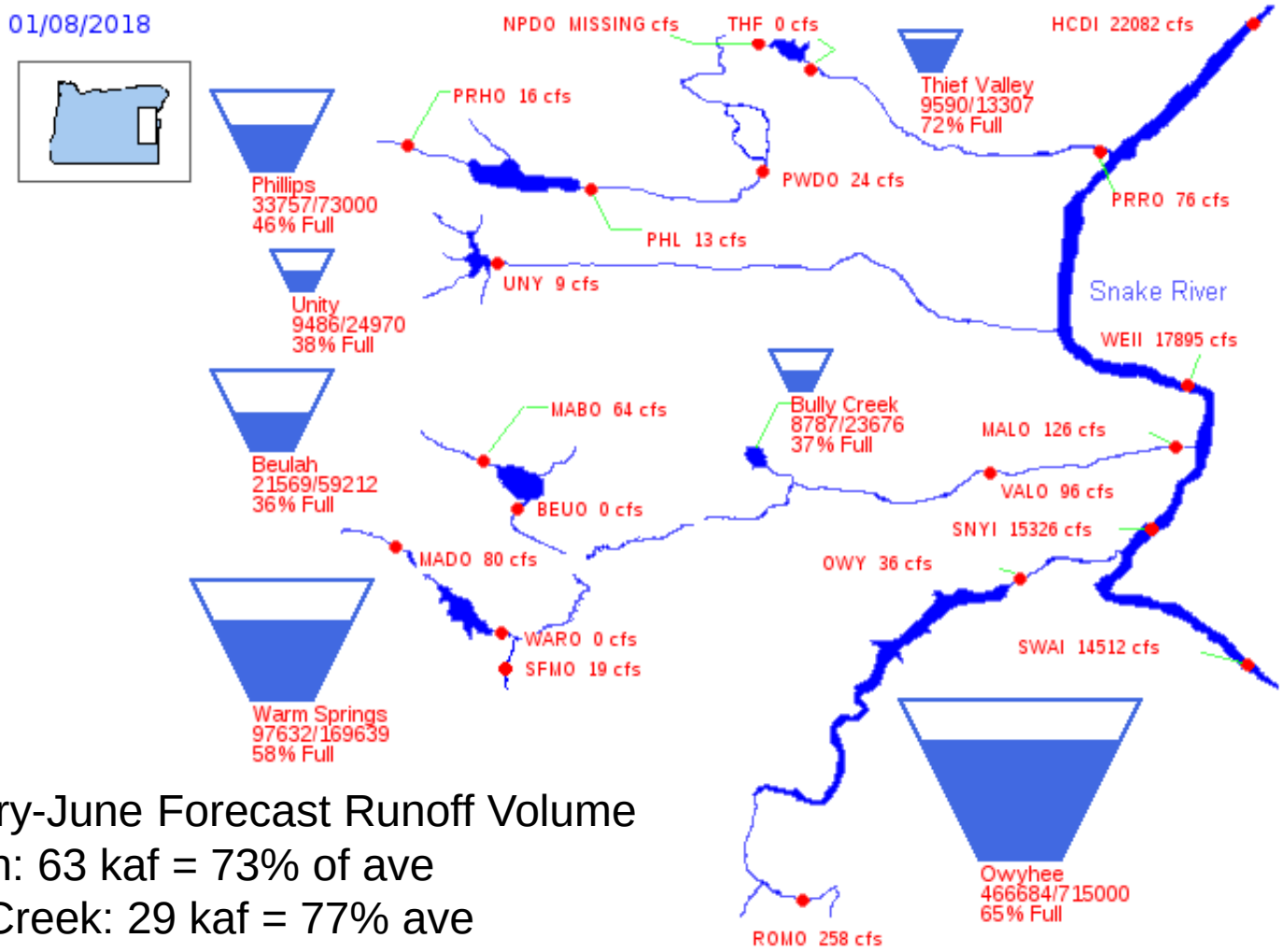
Bureau of Reclamation, Pacific Northwest Region
Umatilla River Basin Storage and Flow Diagram



January-June Forecast
Runoff Volume
McKay: 69 kaf = 100% of ave

RECLAMATION

US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in Southeastern Oregon



January-June Forecast Runoff Volume
Beulah: 63 kaf = 73% of ave
Bully Creek: 29 kaf = 77% ave
Owyhee: 541 kaf = 83%
Warm Springs: 113 kaf = 82%

RECLAMATION

Questions?