

2018 Water Conditions Report

Water Resources Commission



Water Supply Availability Committee
Ken Stahr, Chair, OWRD
Scott Oviatt, NRCS Snow Survey
Andy Bryant, NWS
Kathie Dello, OCCRI
Oregon Water Resources Dept.
March 15, 2018



Overview

- **2018 Water Conditions**
- **State Drought Declaration**
 - **Process**
 - **Toolbox**
- **Contacts and Resources**

Oregon Water Resources Commission Meeting

March 15, 2018



Hungry Flat Snow Course – 03/01/18
Upper Deschutes Elevation 4400'
10" Depth, 1.5" SWE - 71% Normal
Last year 5.9" SWE - 281% Normal

H. Scott Oviatt
Snow Survey Supervisory Hydrologist
USDA Natural Resources Conservation Service
Scott.Oviatt@or.usda.gov
503-414-3271
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

INTRODUCTION

- Approximately 50-80% of western water supply comes from snowmelt run-off
- Measurement of snow water content for determination of water supply has been on-going for over 100 years
- Due to the significance of snowmelt run-off as a major contributor to streamflow, the federal government funded a program to measure western snowpack and ultimately forecast future streamflows volumes
- Snow measurements are conducted using several methods, both manual and automated
- Forecasts and numerous other products generated from snow data are used for water supply, drought identification, recreation, flood forecasting, and many other applications

COMMON TERMINOLGY

SWE = Snow Water Equivalent, the depth of water in inches if snow was melted to liquid

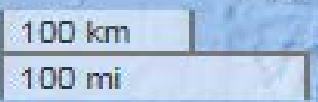
Water Year Precipitation = The amount of precipitation (liquid and frozen) Accumulated from October 1 through date of reference. Water year 2018 is the period – October 1, 2017 through September 30, 2018

Streamflow Forecast = A water supply forecast issued on the first of each month From January through June. Refers to the volume of water (Thousands of Acre Feet) forecast to pass by a real-time gaging station operated by OWRD or USGS.

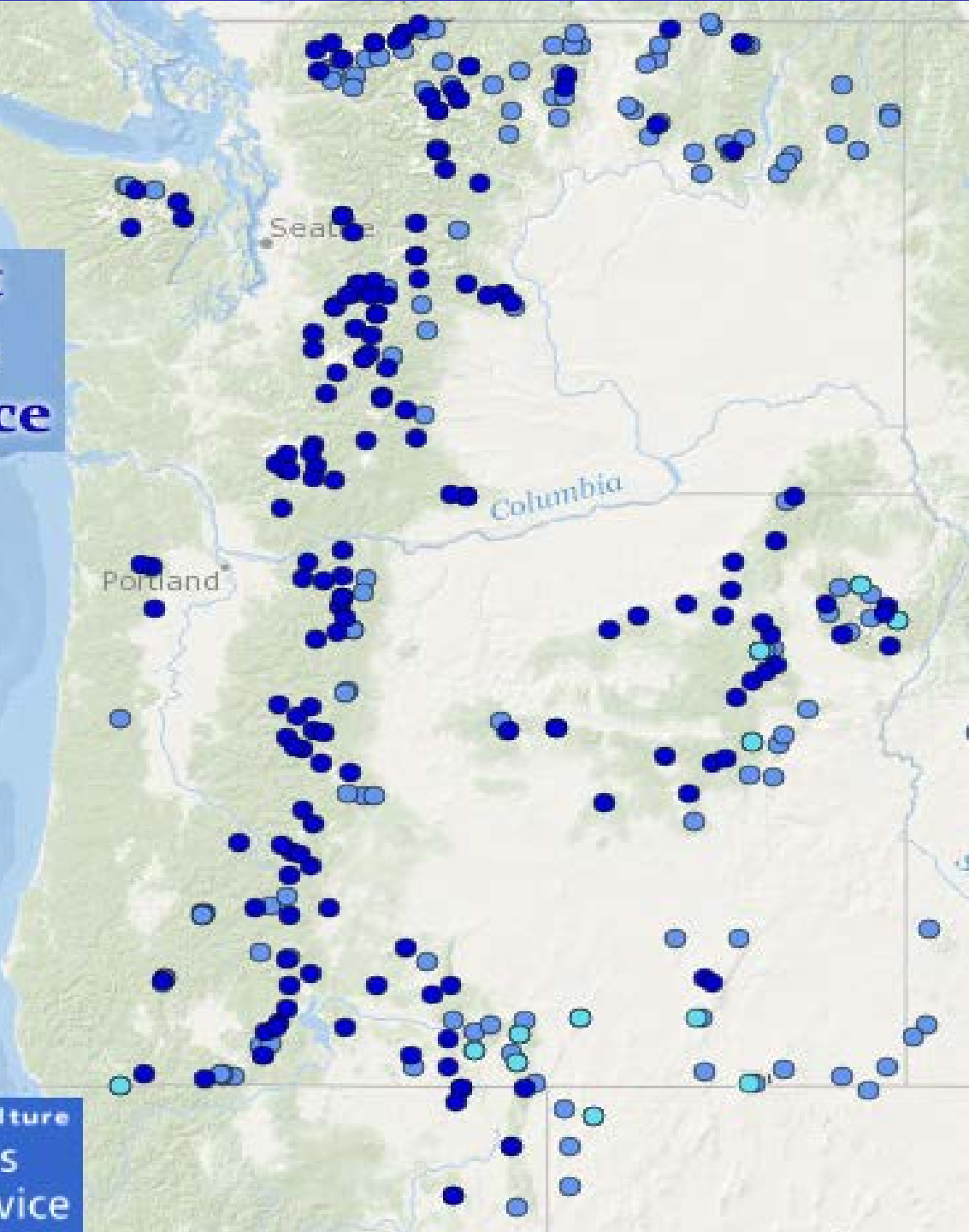
Snow Measurement Sites in the Oregon Data Collection Office

Stations by Network

- SNOTEL
- SNOLITE
- Snow Course/Aerial Marker



1347



Data Collection Efforts

- **Snow Courses:**
Site maintenance, data collection, quality control and archival
- **SNOTEL Sites:**
Site maintenance/repair, data collection, quality control and archival
- **Snow and water supply data analysis, interpretation, and dissemination:**
 - Develop and release state water supply outlook reports
 - Handle media contacts and issue news releases
 - Work with state and federal entities in assessing/mitigating flood and drought conditions

SNOW COURSES

155 Snow Courses & Aerial Markers

Manual Monthly Measurements:
Snow Water Equivalent (SWE)
Snow Depth

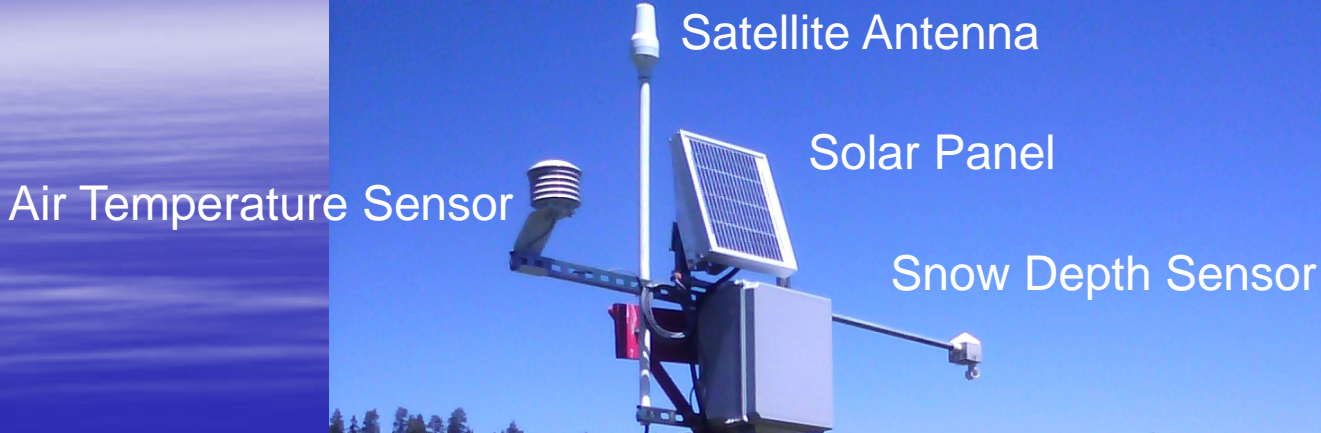


Aerial Markers



**Manually
Measured
Monthly
Data**

SNOLITE SITES



12 SNOLITE (Automated Aerial Marker) Sites
Automated Telemetered Measurements:
Snow Water Equivalent (SWE)
Air Temperature
(Max, Min, Current, Average)
Snow Depth

SNOTEL

Air Temperature
Sensor

Snow Depth
Sensor

Antenna and
Solar Panel

Automated
Daily &
Hourly Data

156 Automated SNOWpack TELelemetry (SNOTEL) Sites

Automated Telemetered Measurements:

Snow Water Equivalent (SWE)

Precipitation (Rain and Frozen)

Air Temperature (Max, Min, Current, Average)

Snow Depth

Wind Speed and Direction*

Relative Humidity*

Solar Radiation*

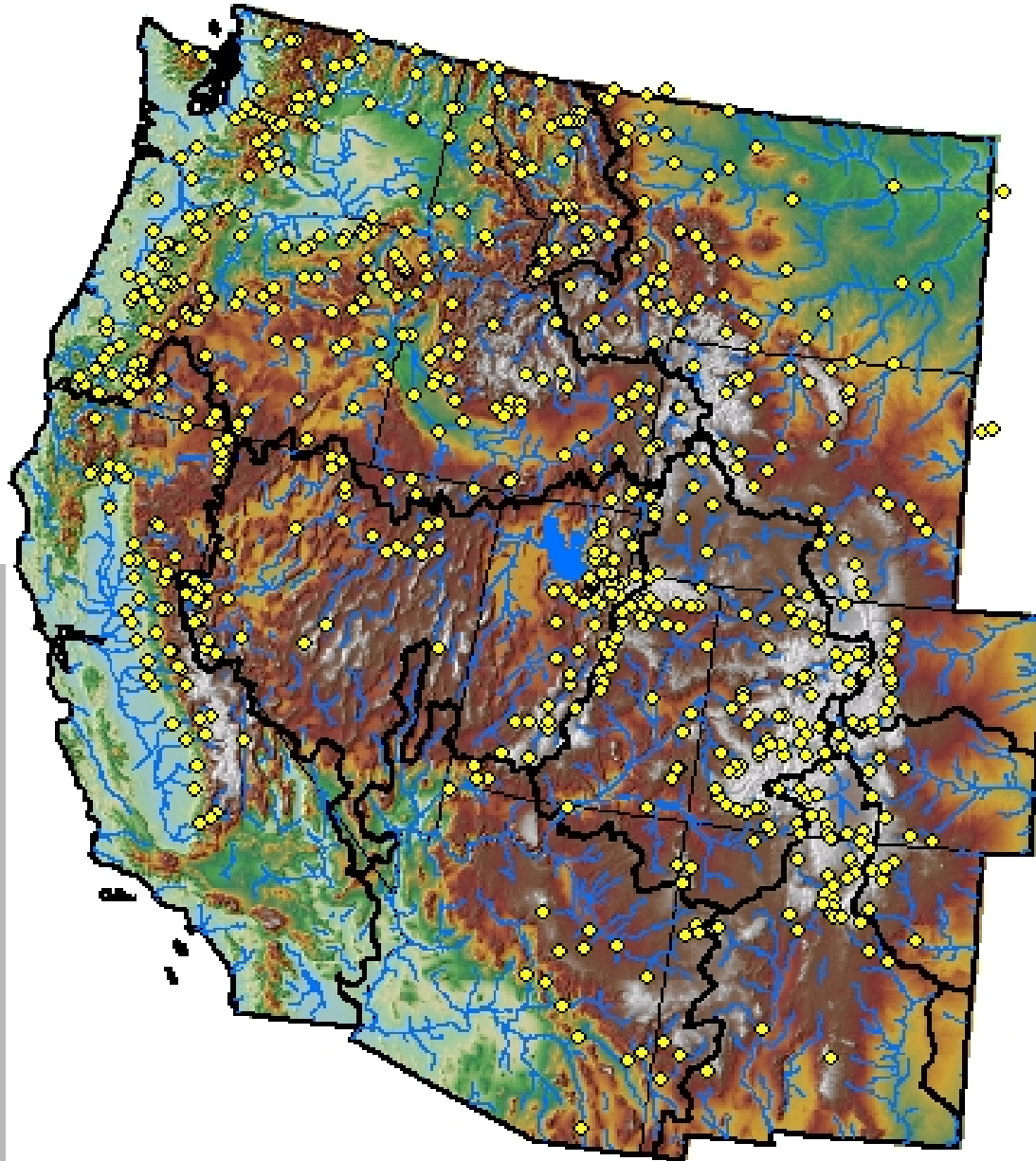
Soil Moisture and Soil Temperature*

*Parameters measured at select sites

Snow Pillow

Precipitation
Storage Gage

NRCS Forecast Points



**OVER 10,000
NRCS
Forecasts
Issued
Westwide**

**NRCS uses
statistical
forecasting
models to
relate SWE and
Water Year
Precipitation at
SNOTEL sites
to USGS or
OWRD real-
time stream
gaging Stations**

USERS and USES of NRCS Data, Forecasts, Products, and Reports

Federal Agencies

- USGS
- USFS
- Other USDA
- USACE
- USBR
- National Weather Service
- NWS - River Forecast Centers
- NOAA
- NASA
- NPS

Irrigation is critical to agriculture in the US. Nearly 50% of the value of commodities sold comes from the 16% of irrigated cropland.

State and Local Groups

- OWRD
- ODF
- ODFW
- ODA
- Local Water Managers
- Irrigation Districts and Companies
- Municipalities
- State Water Supply Availability Committee
- State Drought Readiness Council
- Power Companies
- University Researchers
- Avalanche Centers
- Producers and Ranchers
- Recreationists and Tourism Groups

2018 Current Conditions

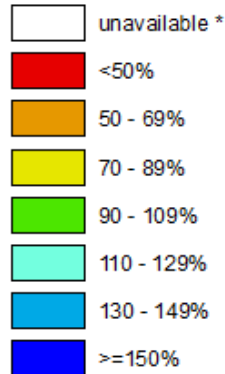
Statewide SNOTEL Snowpack is 64% of normal

Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Mar 15, 2018

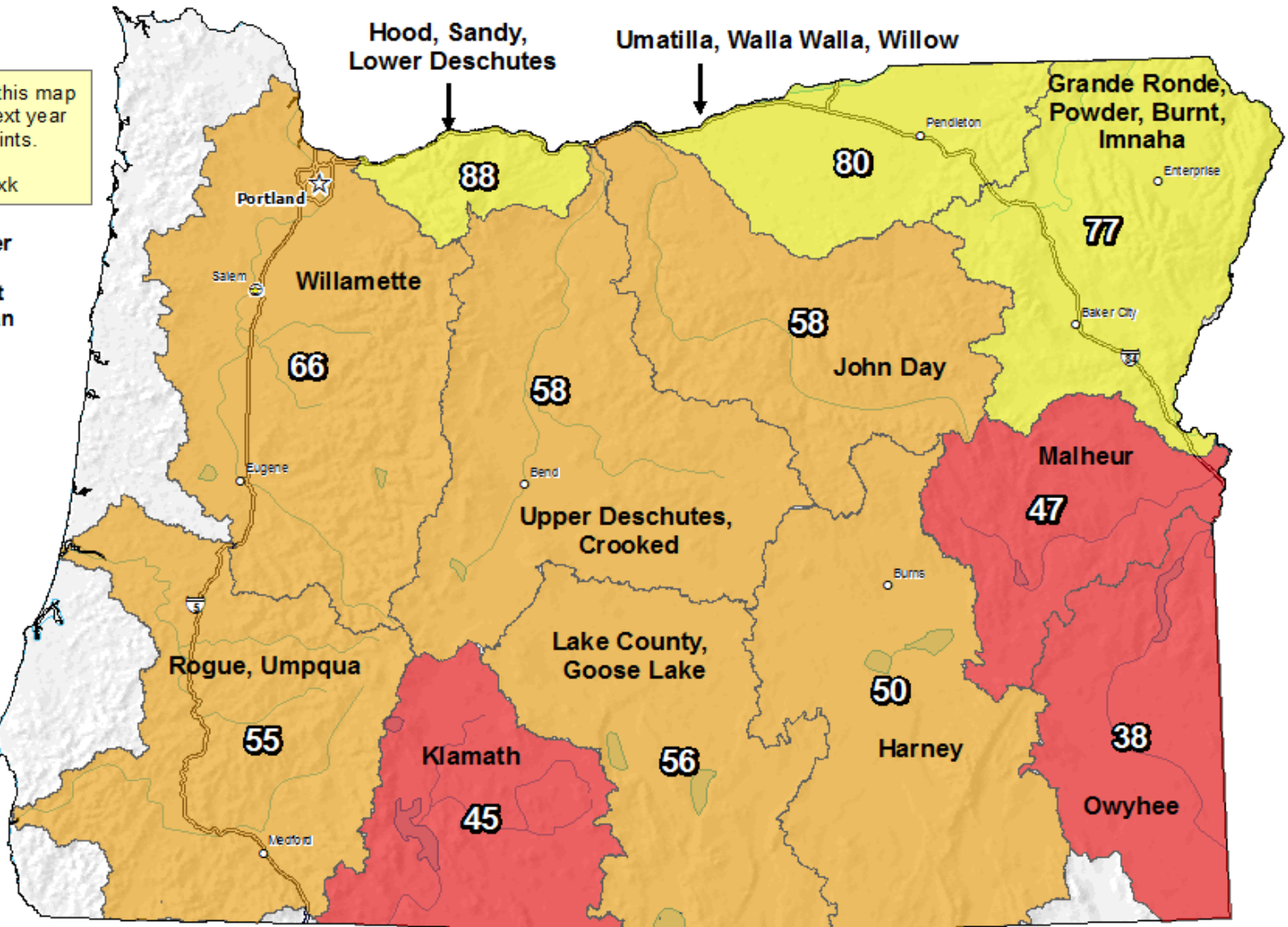
Notice: We anticipate this map will not be available next year due to staffing constraints. Alternate maps: <https://go.usa.gov/xnzxk>

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



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

Provisional Data
Subject to Revision



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).



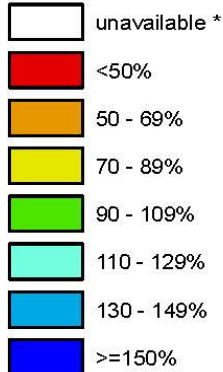
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Statewide SNOTEL Snowpack was 236% of normal

Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal

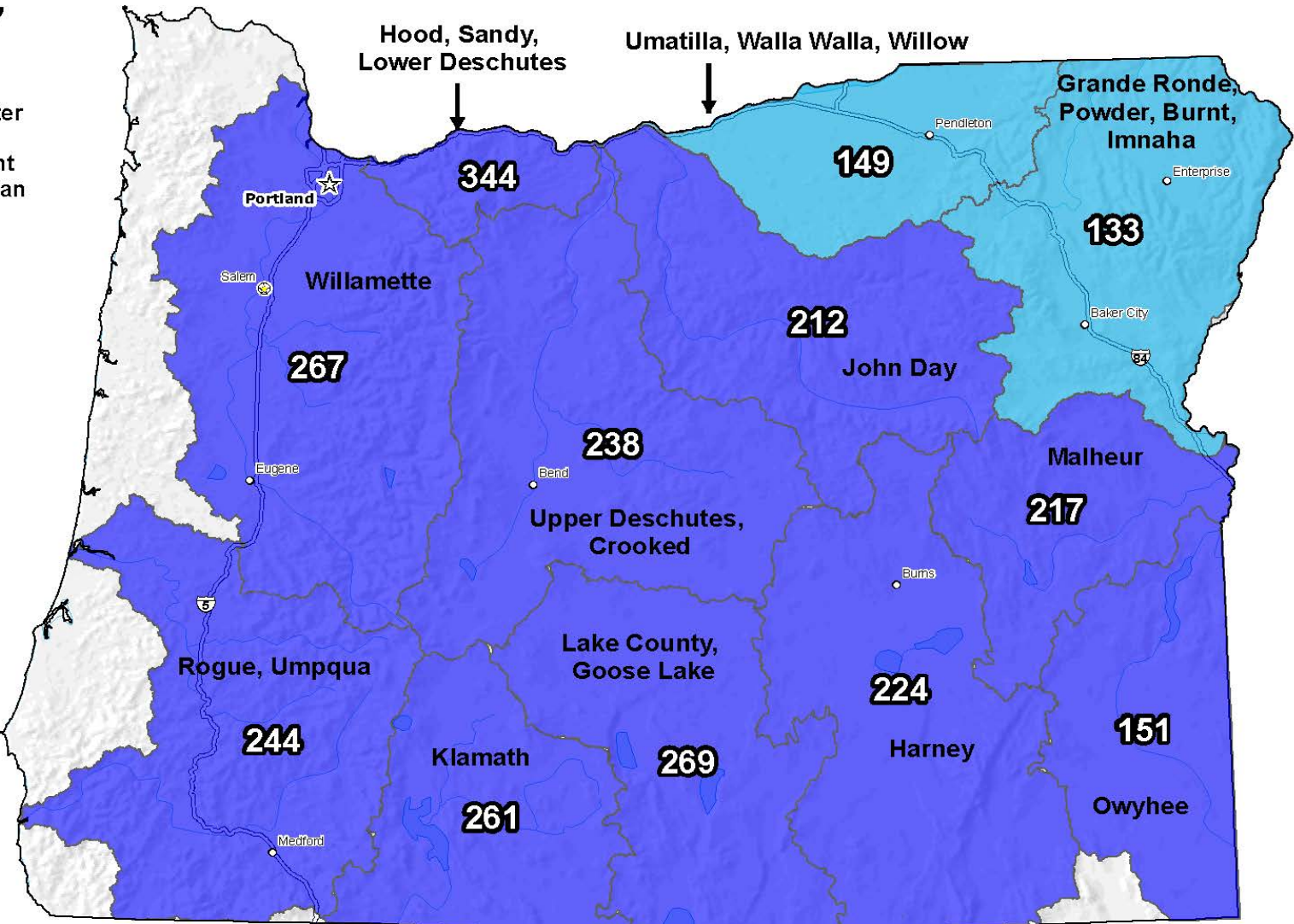
Nov 20, 2017

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median

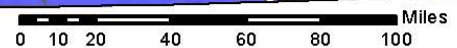


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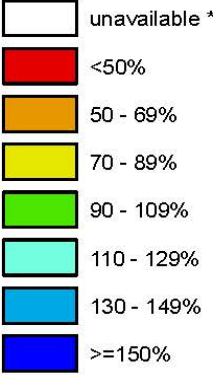
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Statewide SNOTEL Snowpack was 17% of normal

Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal

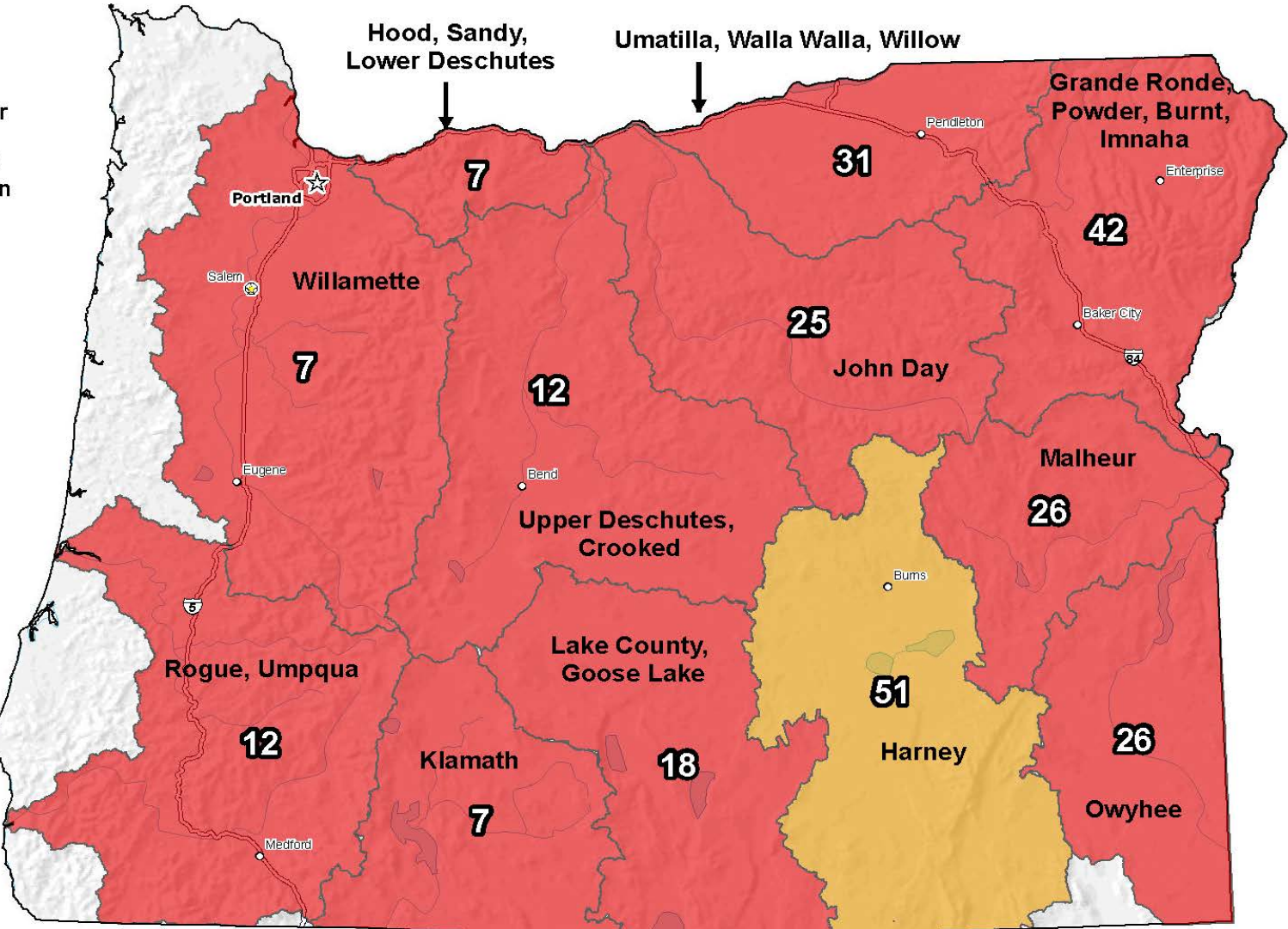
Mar 15, 2015

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median

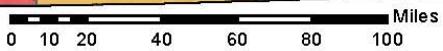


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Provisional Data
Subject to Revision



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USDA/NRCS National Water and Climate Center
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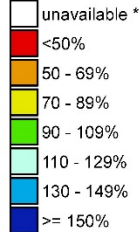
West-Wide Snowpack – March 15, 2018

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Mar 15, 2018

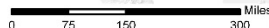
Notice: We anticipate this map will not be available next year due to staffing constraints.
Alternate maps:
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Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



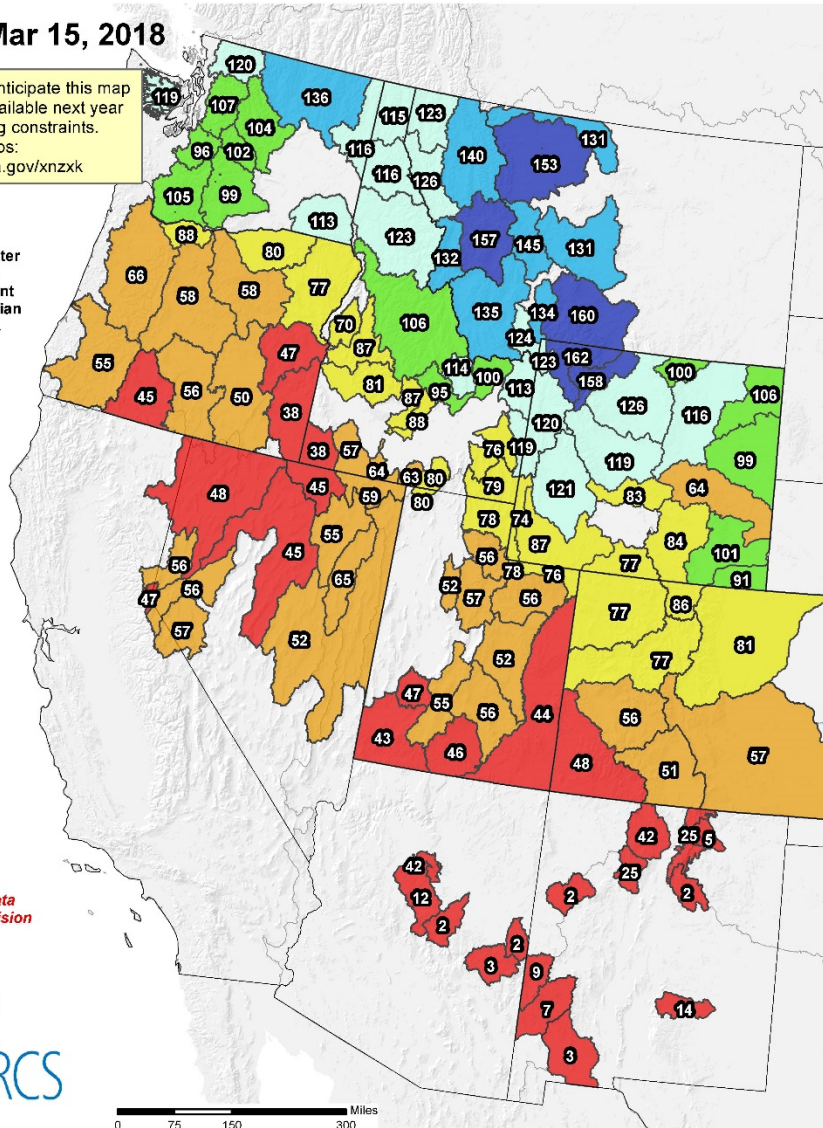
* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



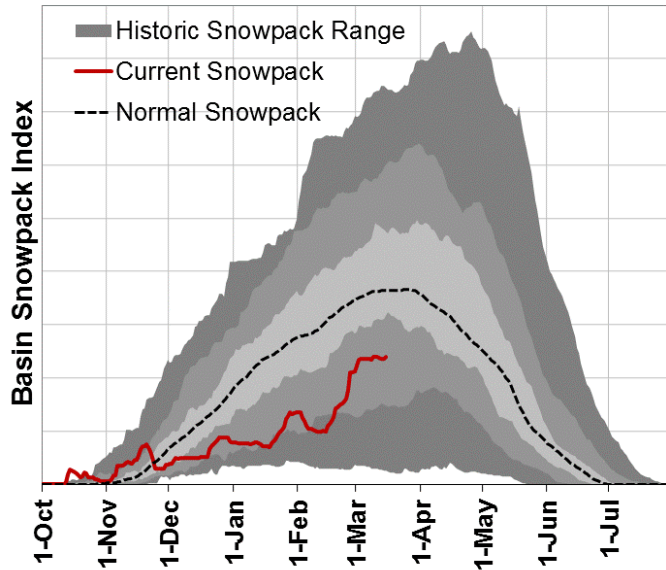
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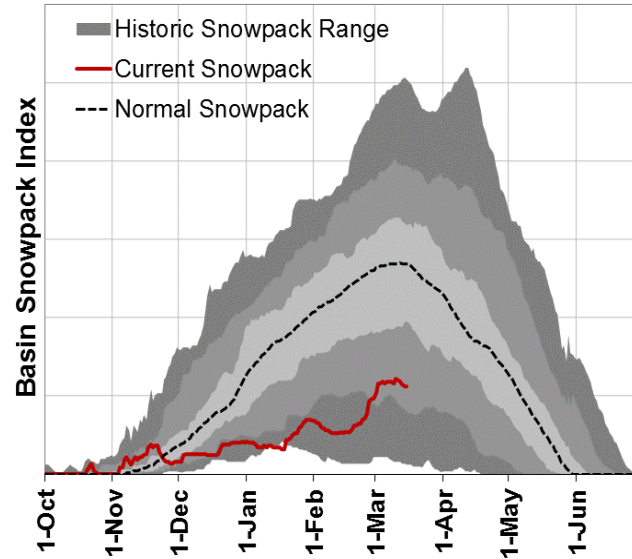


Water Year 2018

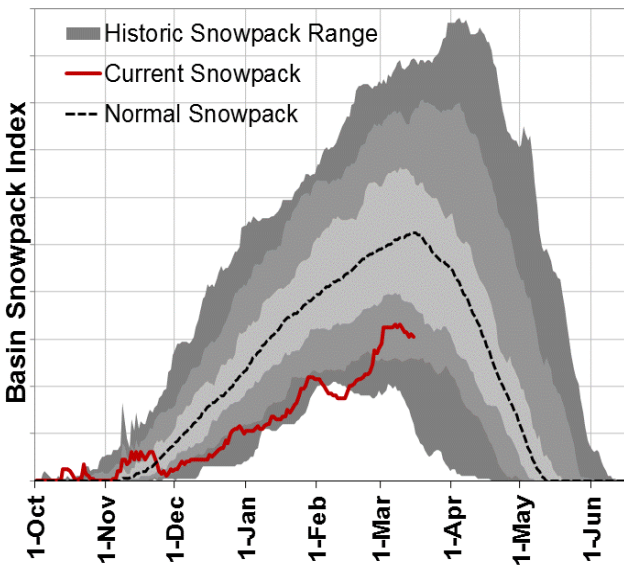
Willamette



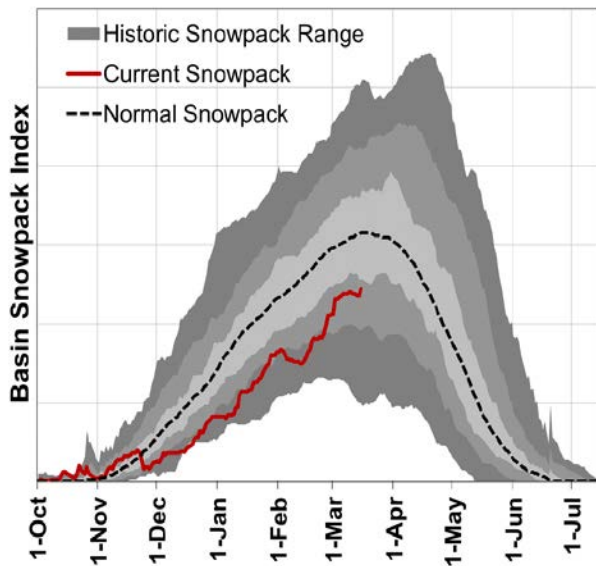
Rogue/Umpqua



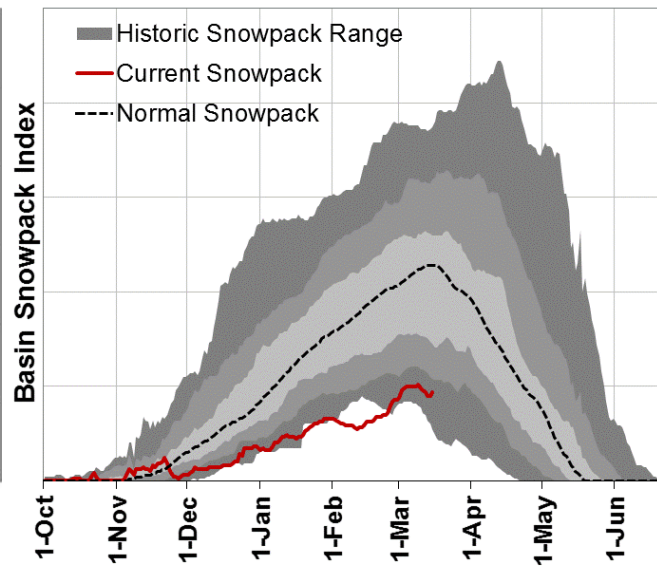
John Day



Grande Ronde/Powder/Burnt

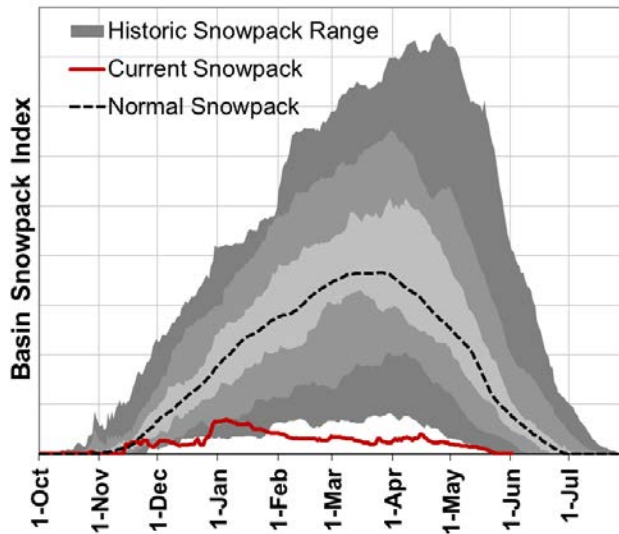


Owyhee/Malheur

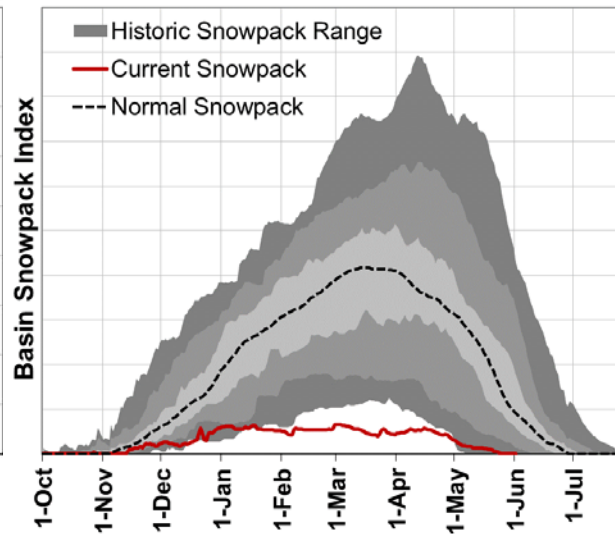


Water Year 2015

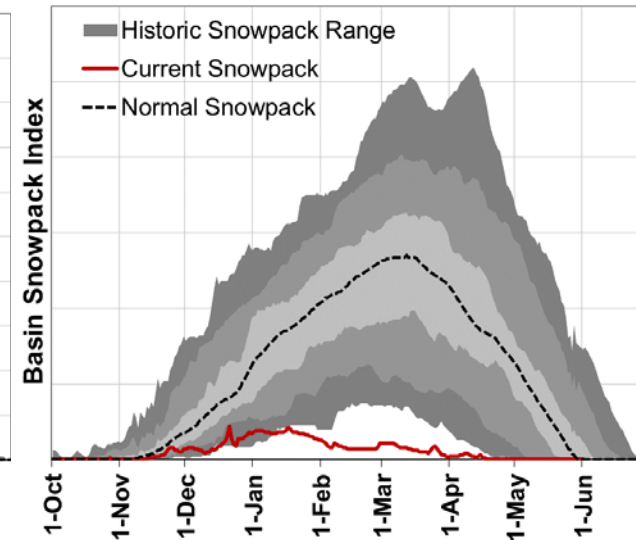
Willamette



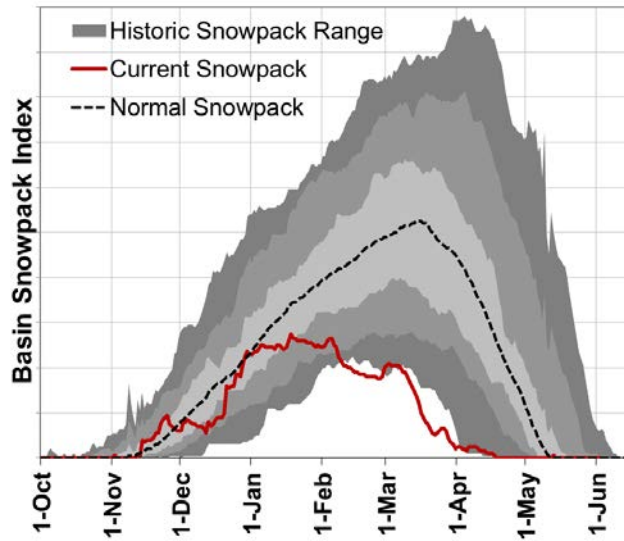
Rogue/Umpqua



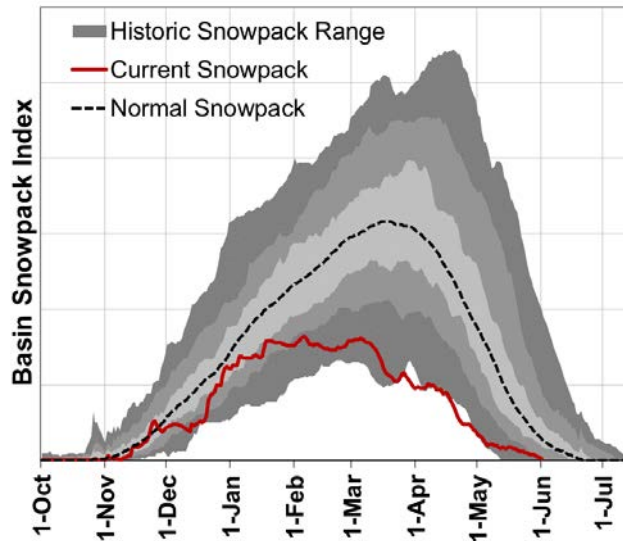
Klamath



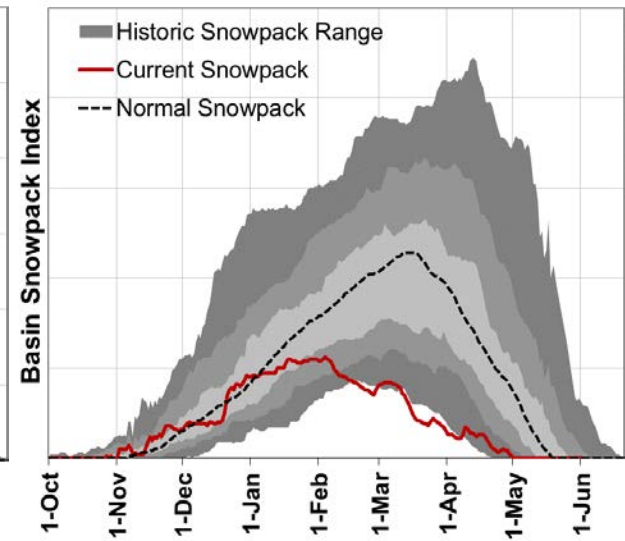
John Day



Grande Ronde/Powder/Burnt

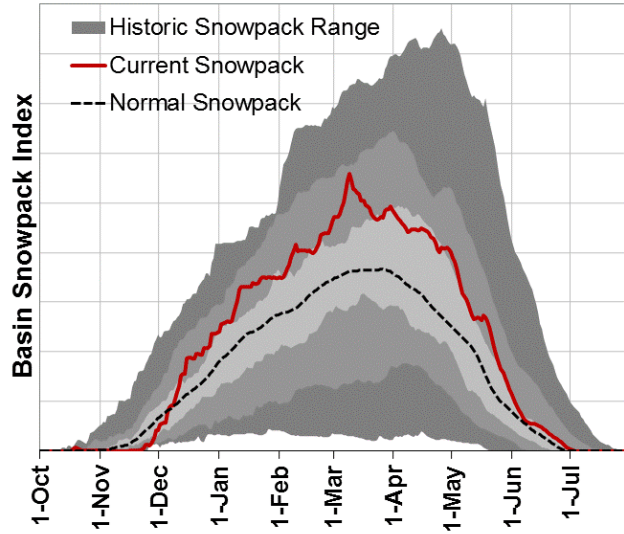


Owyhee/Malheur



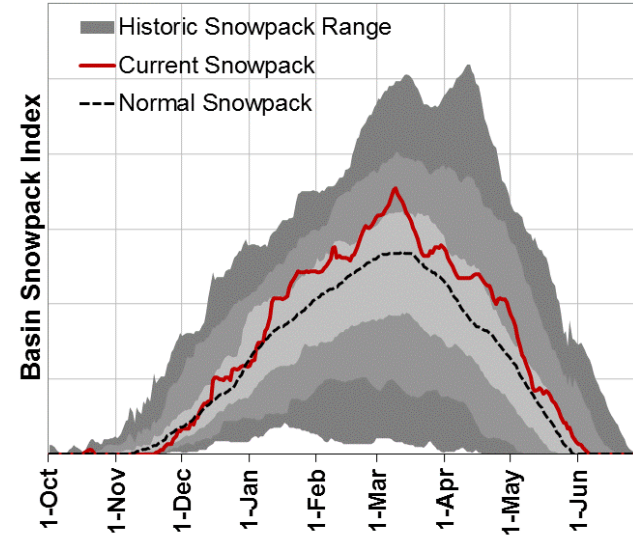
Water Year 2017

Willamette

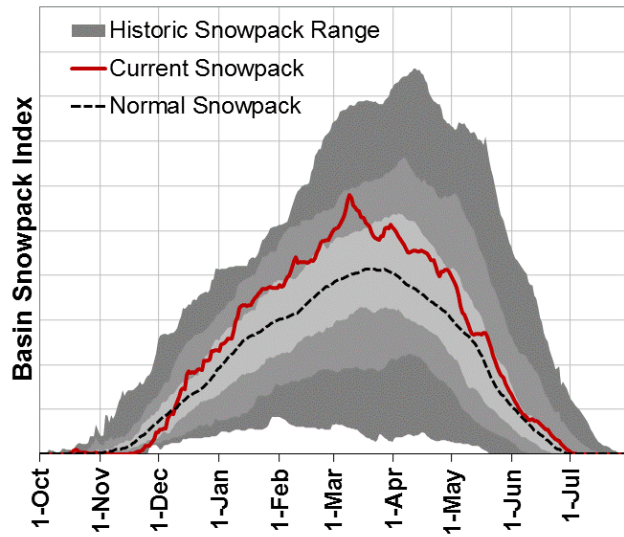


Rogue/Umpqua

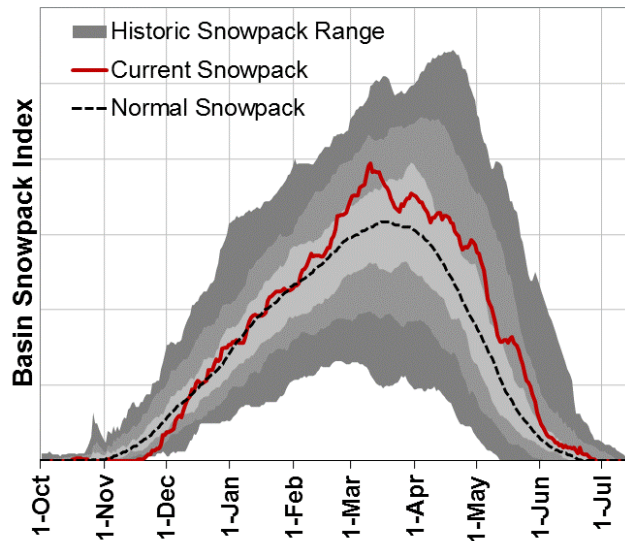
Klamath



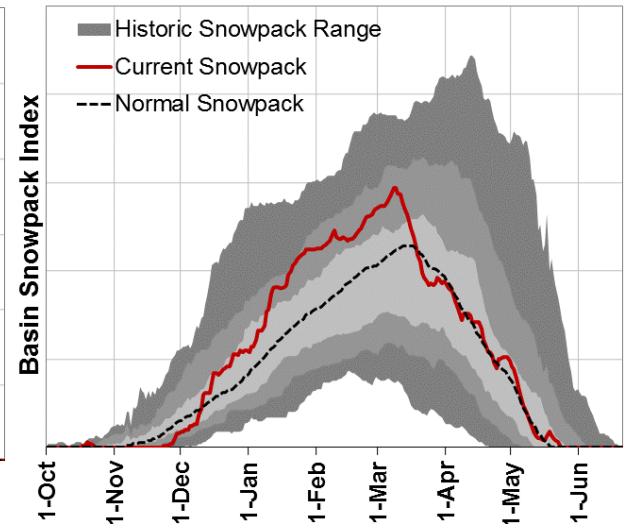
Deschutes



Grande Ronde/Powder/Burnt



Owyhee/Malheur



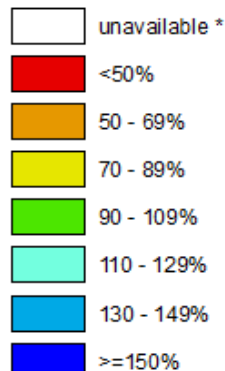
Statewide SNOTEL Water Year Precipitation is 90% of average

Oregon SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

Mar 15, 2018

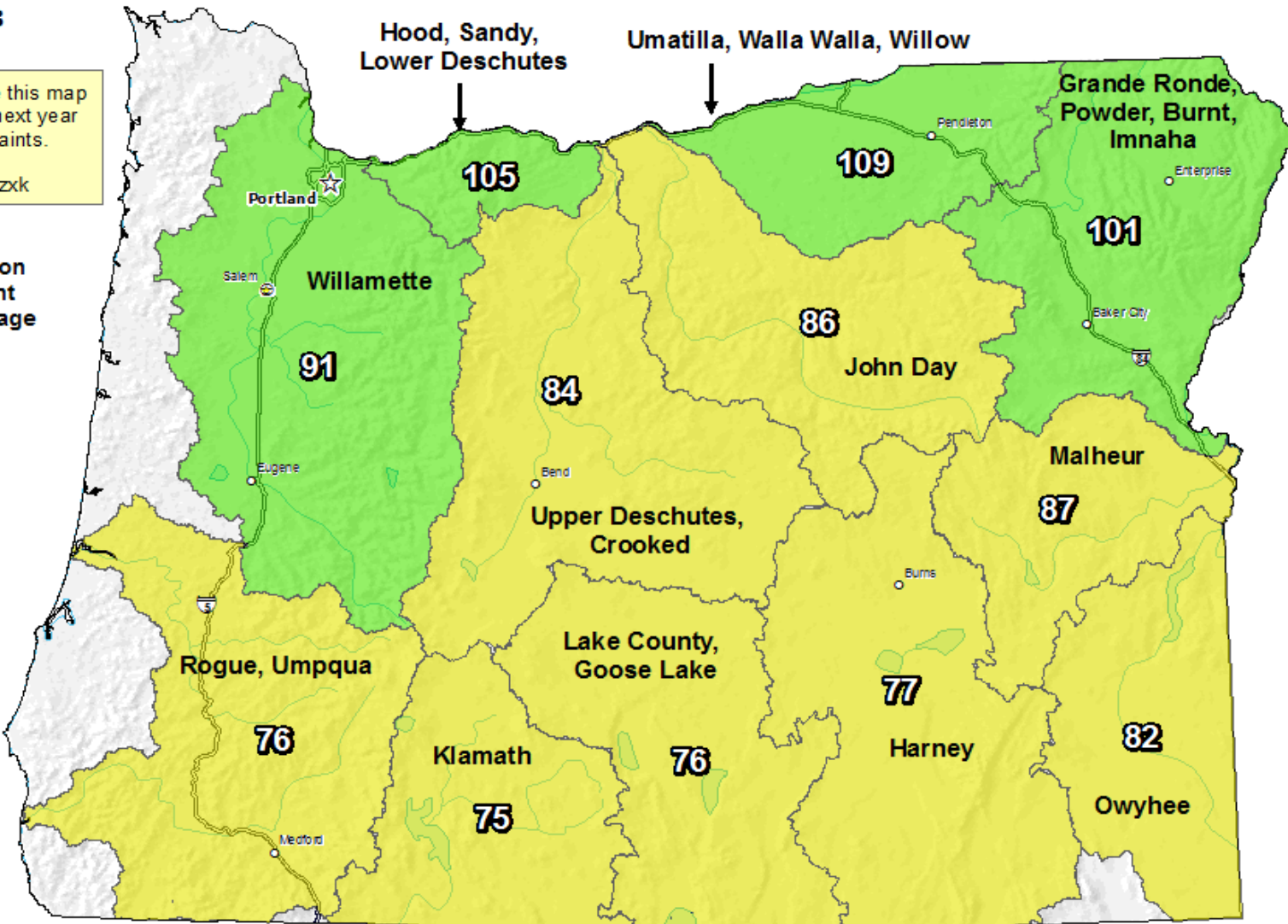
Notice: We anticipate this map will not be available next year due to staffing constraints. Alternate maps: <https://go.usa.gov/xnzxk>

Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average

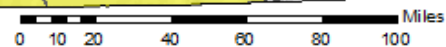


* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional Data
Subject to Revision



The water year to date precipitation percent of normal represents the accumulated precipitation 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).



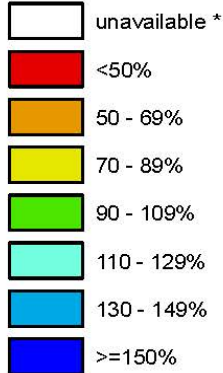
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Statewide SNOTEL Water Year Precipitation was 92% of average

Oregon SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

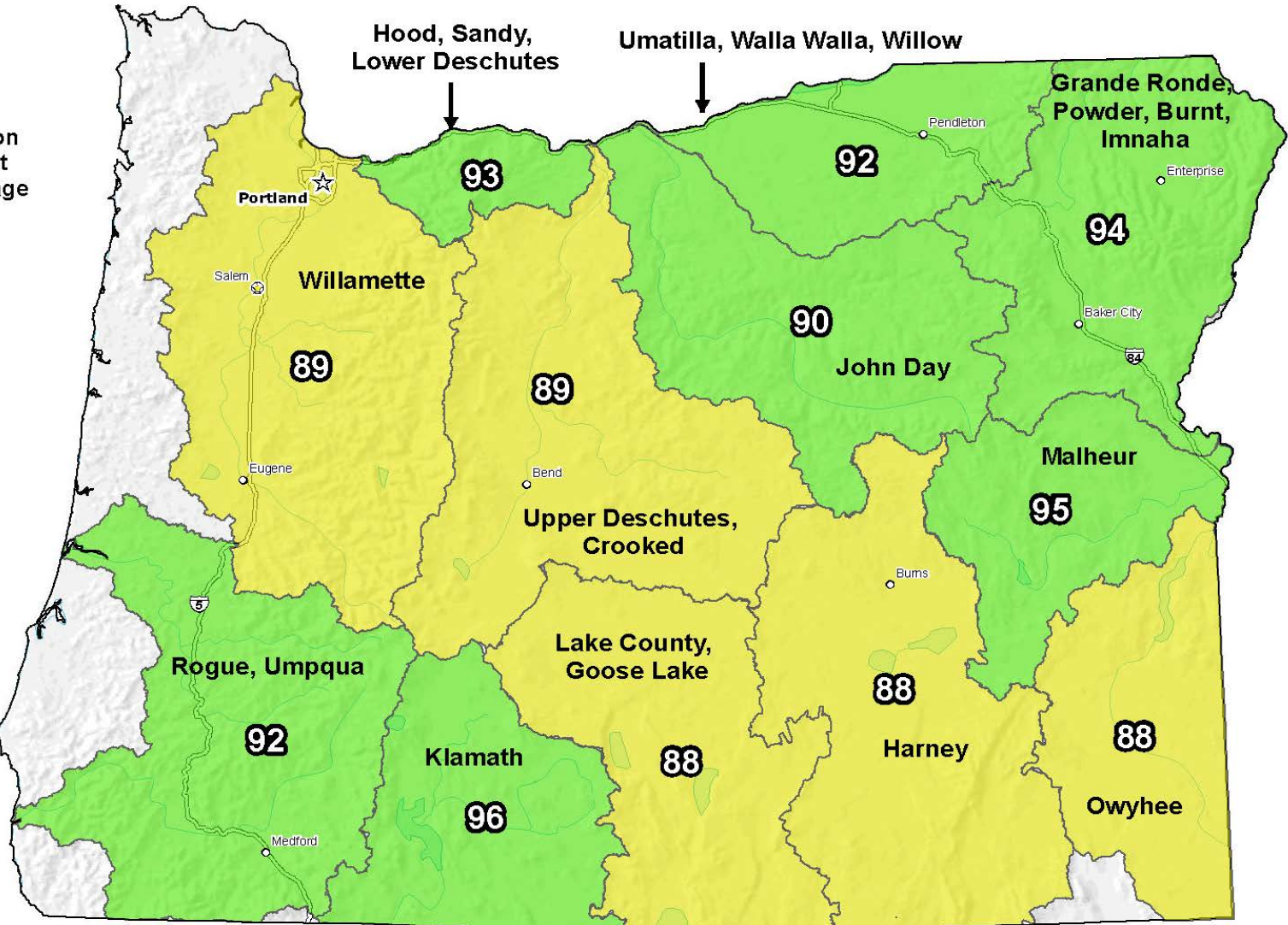
Mar 15, 2015

Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average

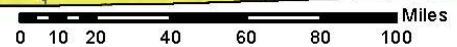


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Subject to Revision**



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Prepared by:
USDA/NRCS National Water and Climate Center
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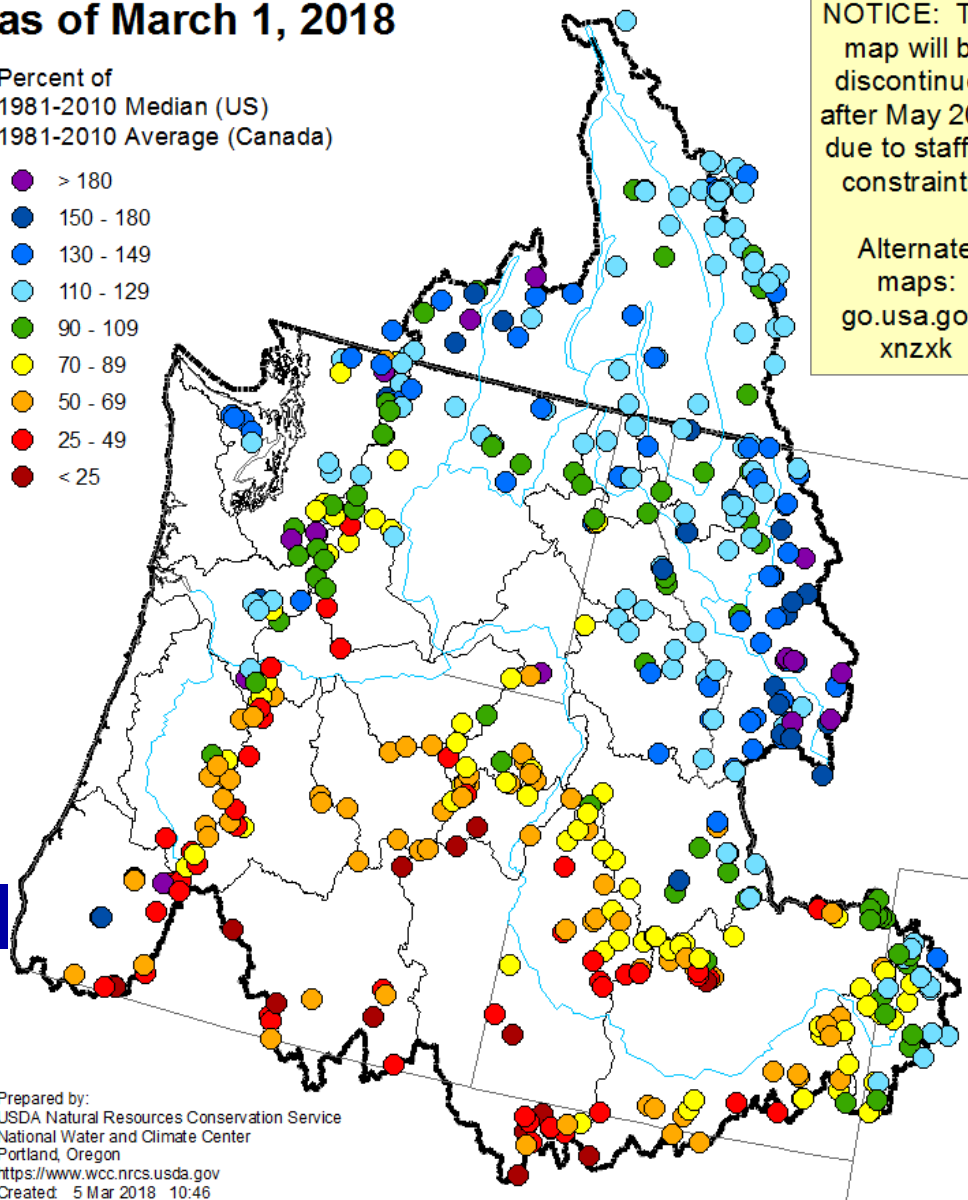
Columbia River and Pacific Coastal Basins Mountain Snowpack as of March 1, 2018

Percent of
1981-2010 Median (US)
1981-2010 Average (Canada)

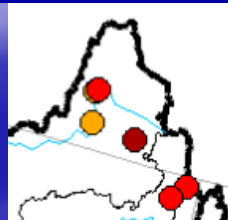
- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

NOTICE: This map will be discontinued after May 2018 due to staffing constraints.

Alternate maps:
go.usa.gov/xnzxk



Klamath Basin

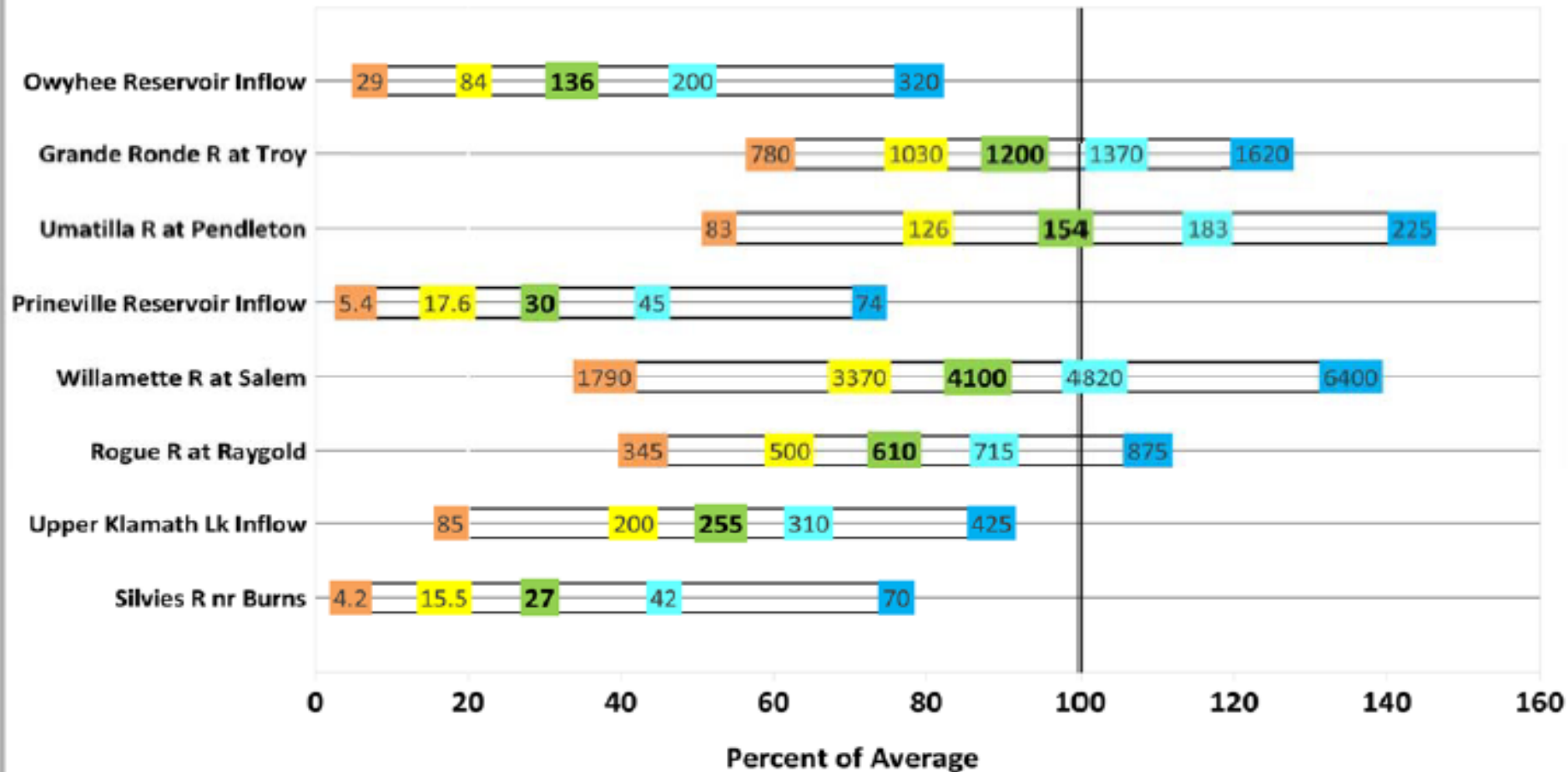


Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<https://www.wcc.nrcs.usda.gov>
Created: 5 Mar 2018 10:46






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

The background of the slide is a photograph of a river flowing through a lush, green landscape. In the foreground on the left, a concrete dam structure is visible, with water flowing over it. The river reflects the surrounding trees and sky. The text is overlaid on the right side of the image.

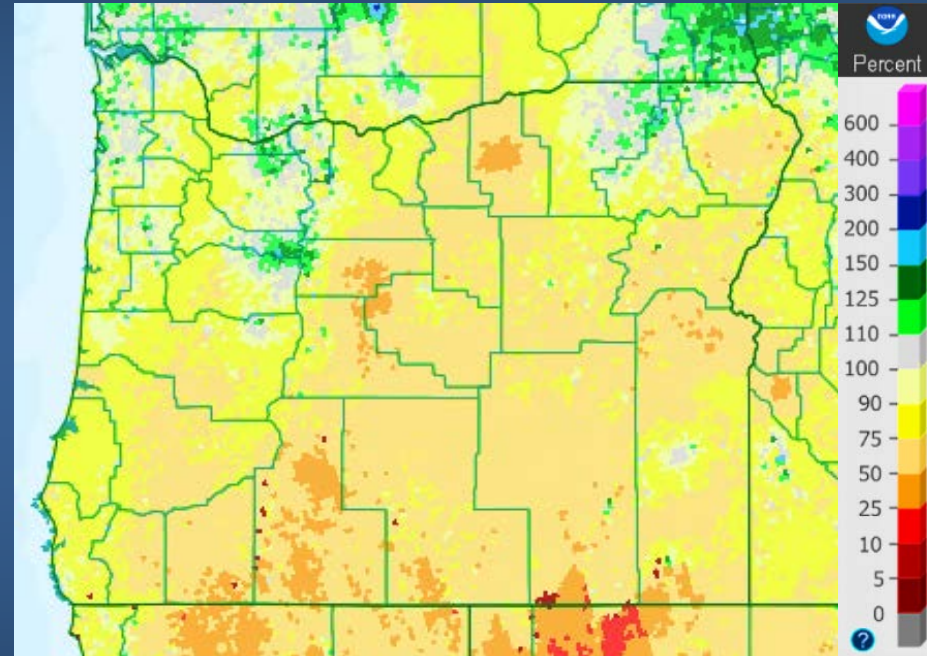
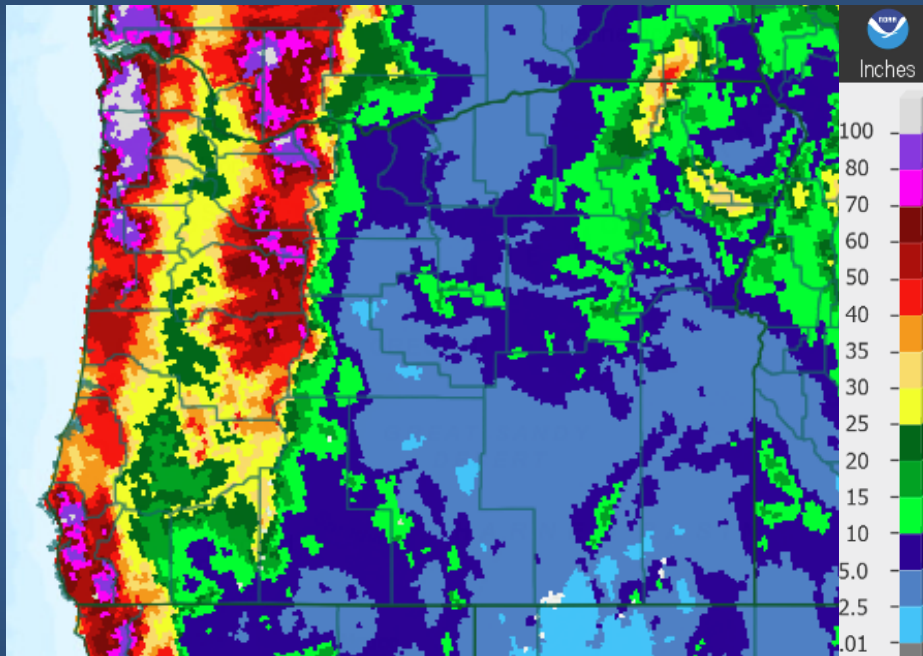
Andy Bryant, NWS Portland
March 15, 2018 NWS Update



WY2018 Precipitation thus far

Observed Precipitation
October 1, 2017 – March 13, 2018

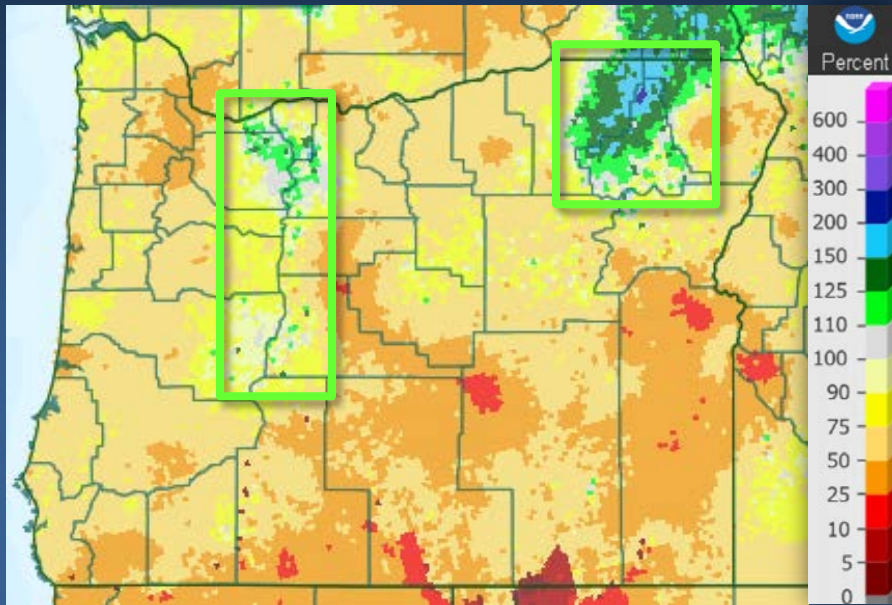
Percent of Average
October 1, 2017 – March 13, 2018



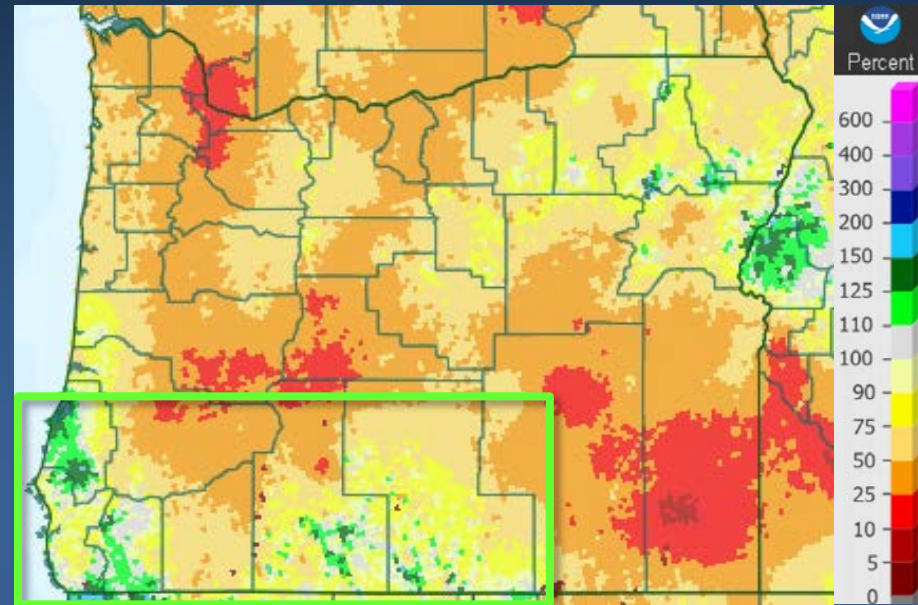


February & March (so far) 2018

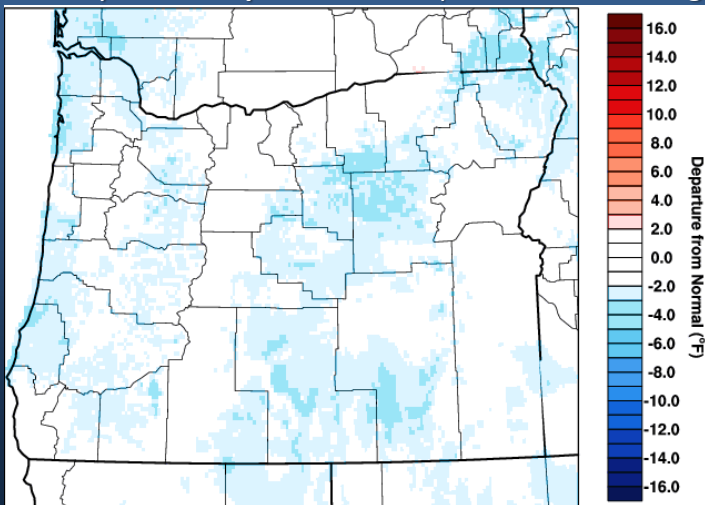
February 2018 Precipitation - Percent of Average



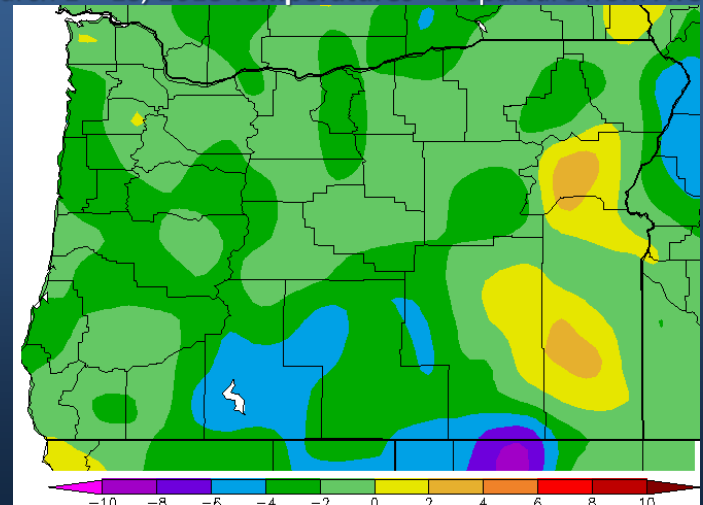
March 1 – 13, 2018 Precipitation - Percent of Average



February 2018 Temperatures – Departure from Average



March 1 – 13, 2018 Temperatures – Departure from Average

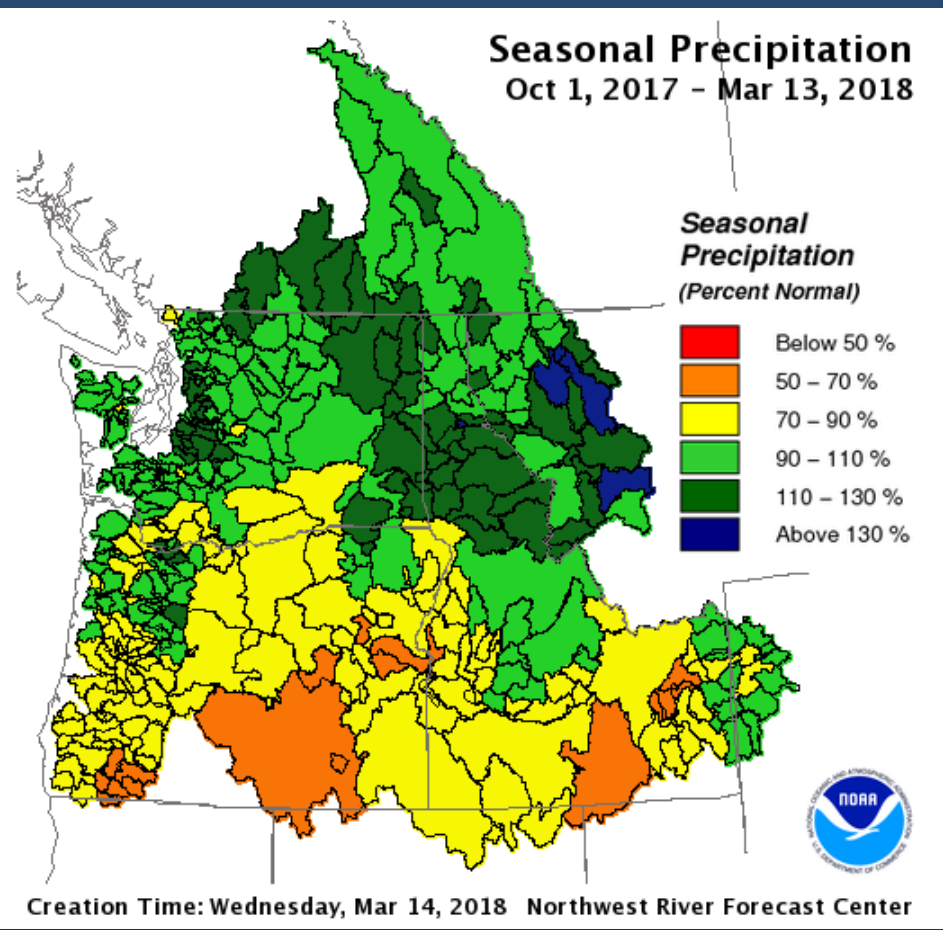




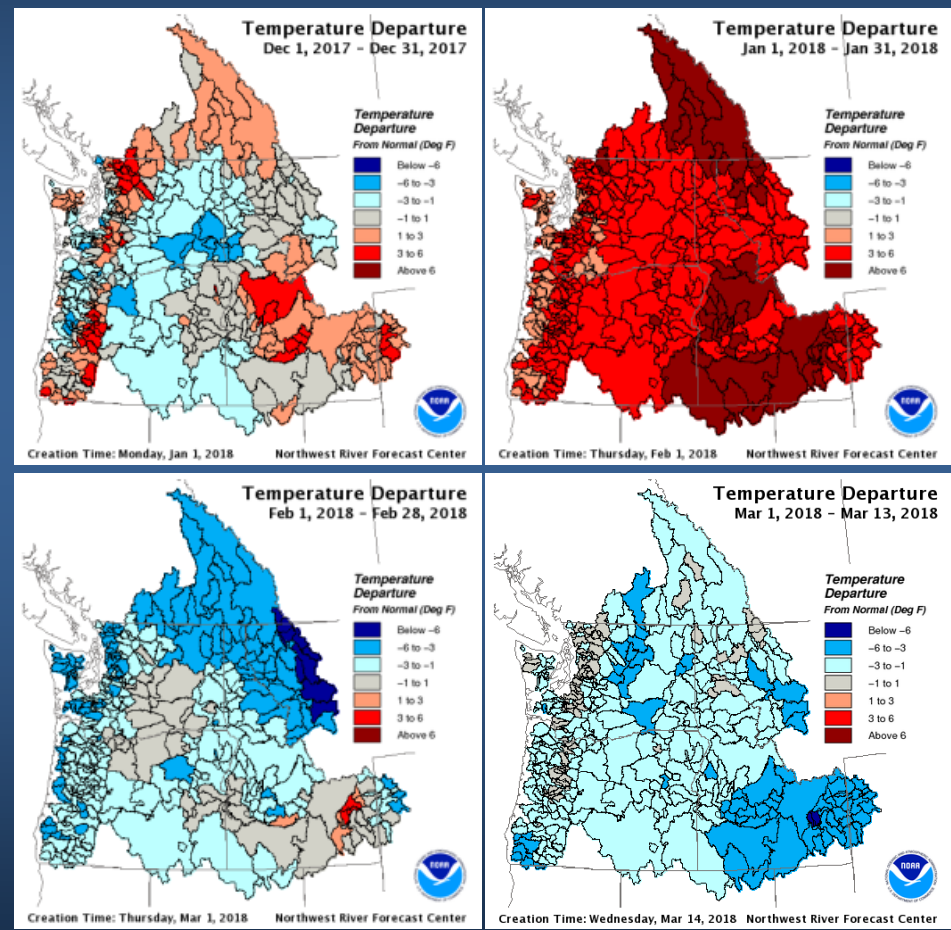
Columbia Basin Conditions

Water Year 2018 thus far

Precipitation



Temperatures





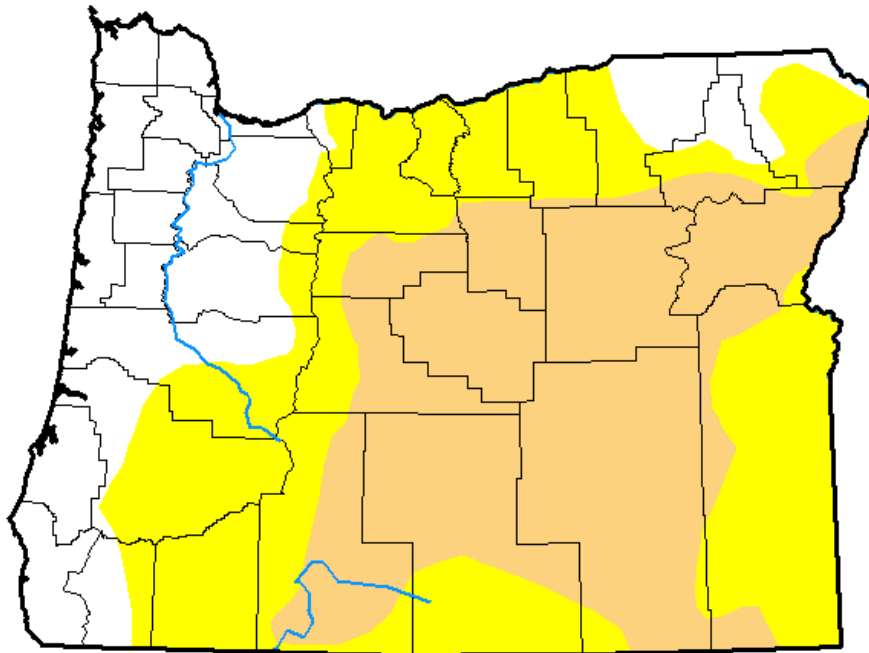
Drought Monitor

U.S. Drought Monitor Oregon

March 13, 2018
(Released Thursday, Mar. 15, 2018)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|--|--------|-------|-------|-------|-------|------|
| Current | 23.86 | 76.14 | 38.32 | 0.00 | 0.00 | 0.00 |
| Last Week <i>03-06-2018</i> | 23.86 | 76.14 | 38.32 | 0.00 | 0.00 | 0.00 |
| 3 Months Ago <i>12-12-2017</i> | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start of Calendar Year <i>01-02-2018</i> | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start of Water Year <i>09-26-2017</i> | 39.23 | 60.77 | 28.57 | 0.00 | 0.00 | 0.00 |
| One Year Ago <i>03-14-2017</i> | 100.00 | 0.00 | 0.00 | 0.00 | 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:

Richard Tinker
CPC/NOAA/NWS/NCEP

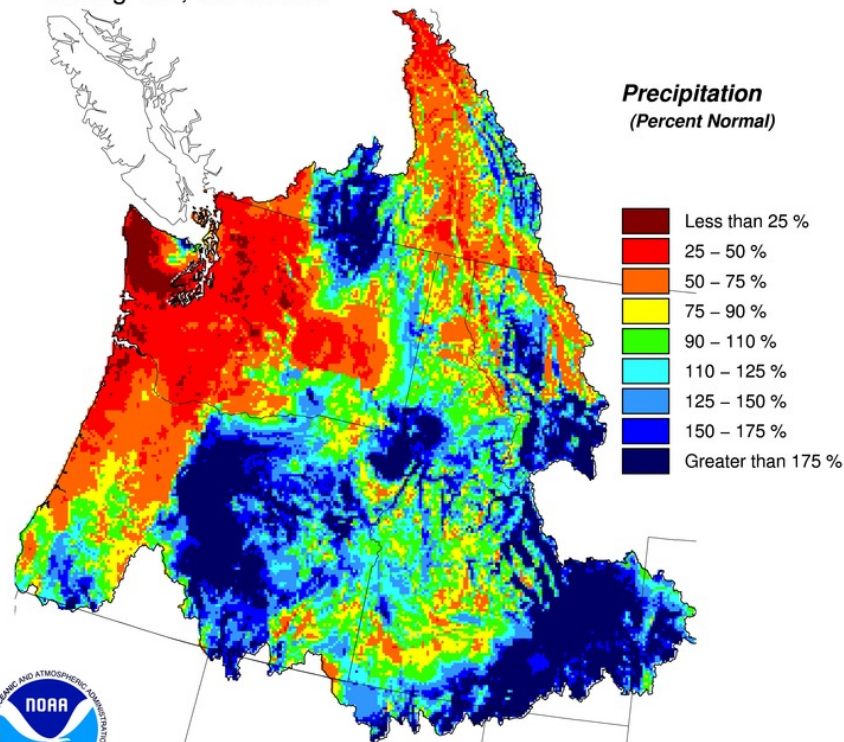




March Outlook

March 14 - 23, 2018
Forecast Precipitation

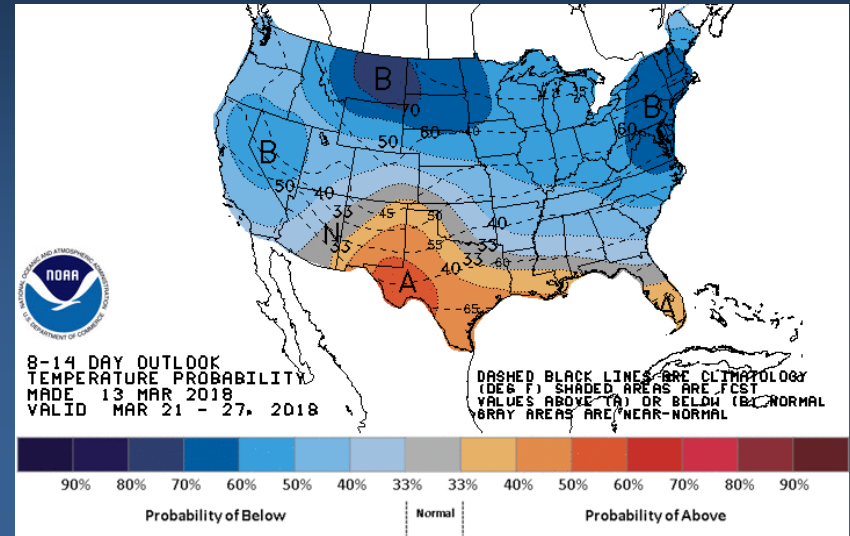
10 Day QPF (Percent of Climatology)
Ending 12Z, 03/24/2018



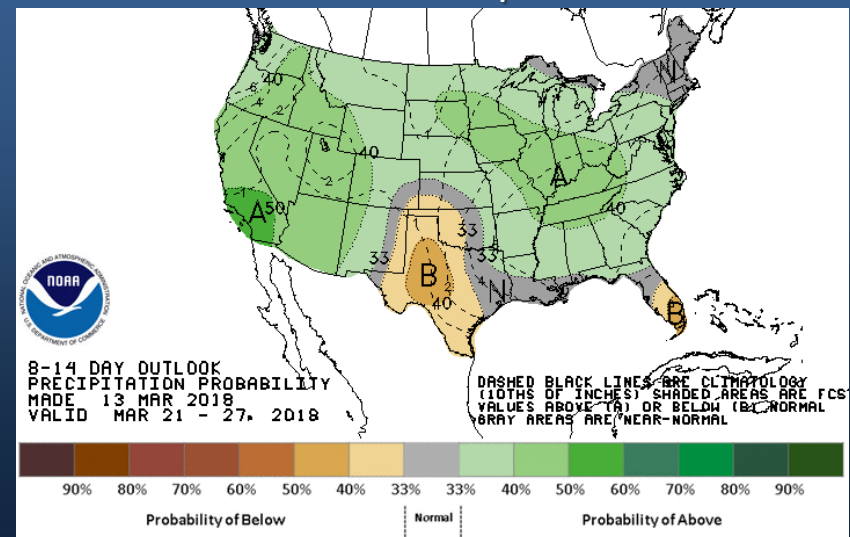
Creation Time: Wed Mar 14 15:43:24 UTC 2018



Late-March 2018: Temperature Outlook

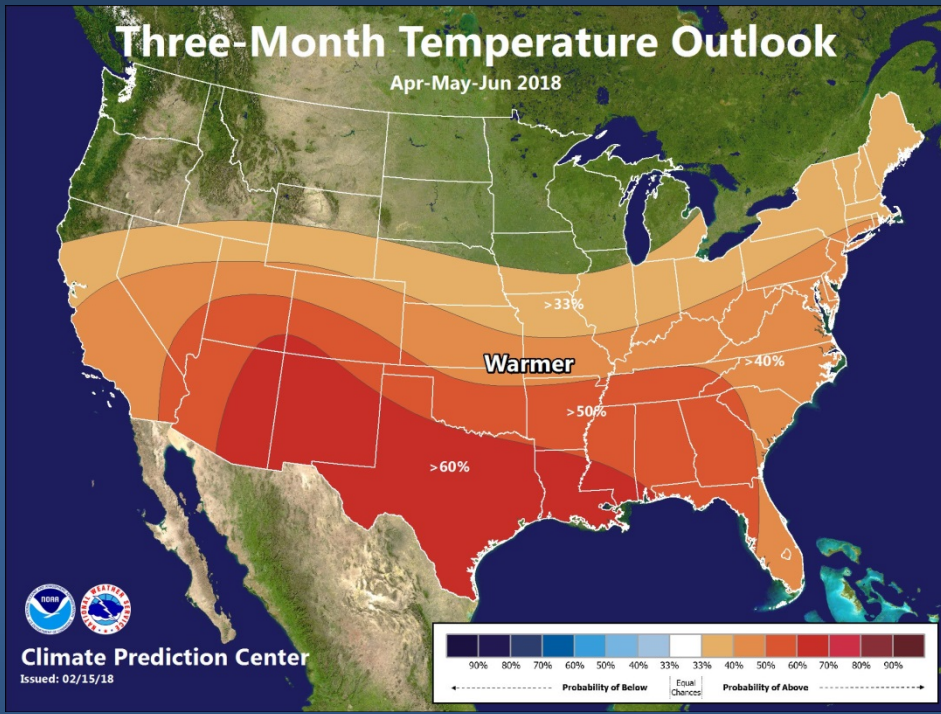
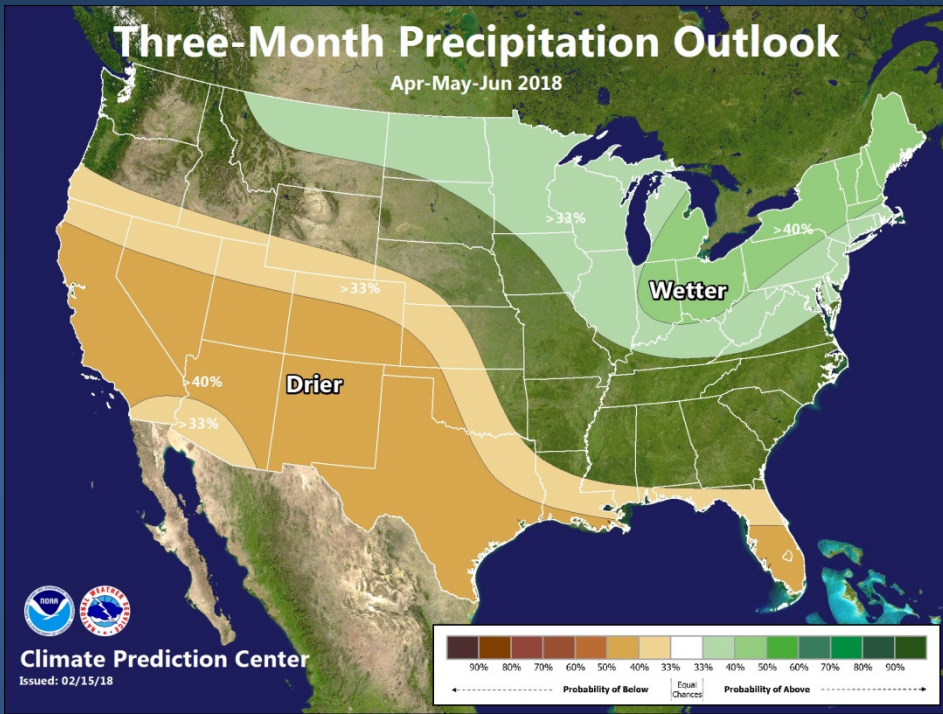


Late-March 2018: Precipitation Outlook



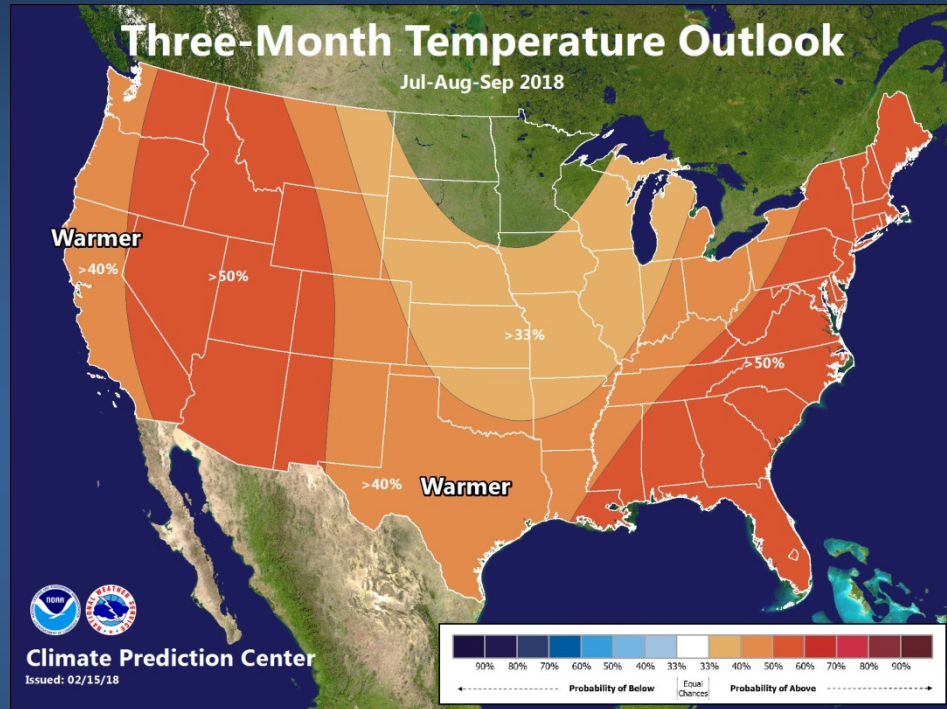
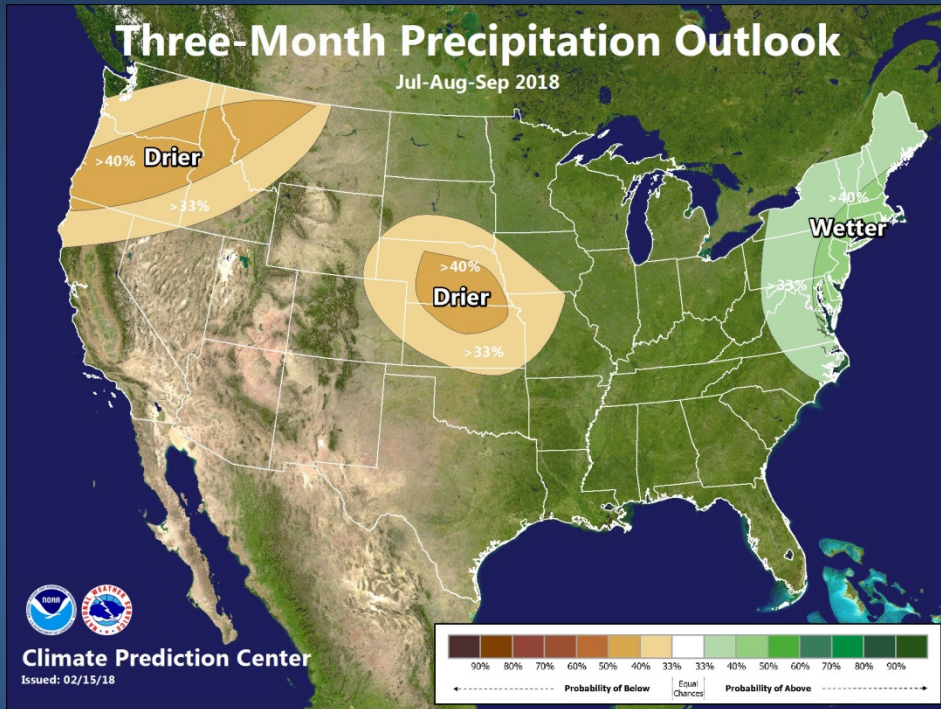


Outlook for April-May-June 2018





Outlook for July-August-September 2018





Water Supply Forecasts



Northwest River Forecast Center ESP Natural Forecast



River and Hydrology Water Supply Observations Weather Forecasts Climate NWRFC

Home Zoom Out --- Quick Zooms --- ESP Issued: 2018-03-13 Ensemble Date: 2018-03-13 Permalink

Search

Enter NWS ID:

GO

Map Overlays

- NWRFC Boundary
- NWRFC Basins
- NWS HSAs
- Counties

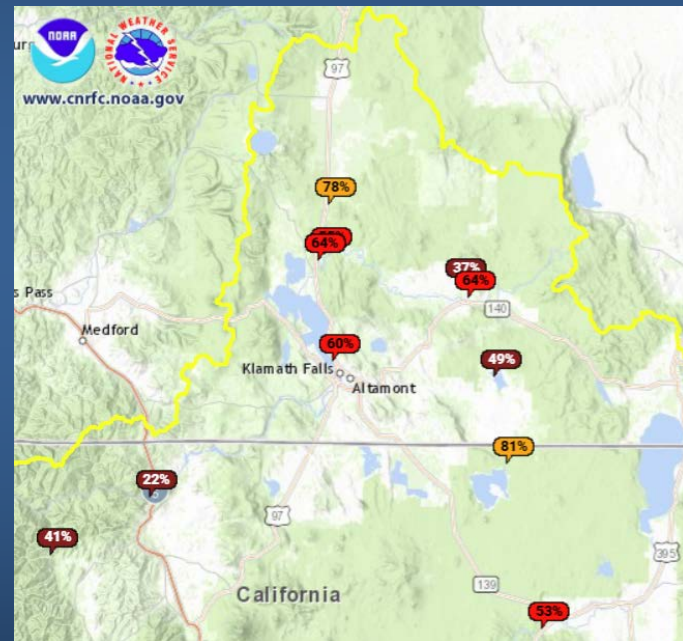
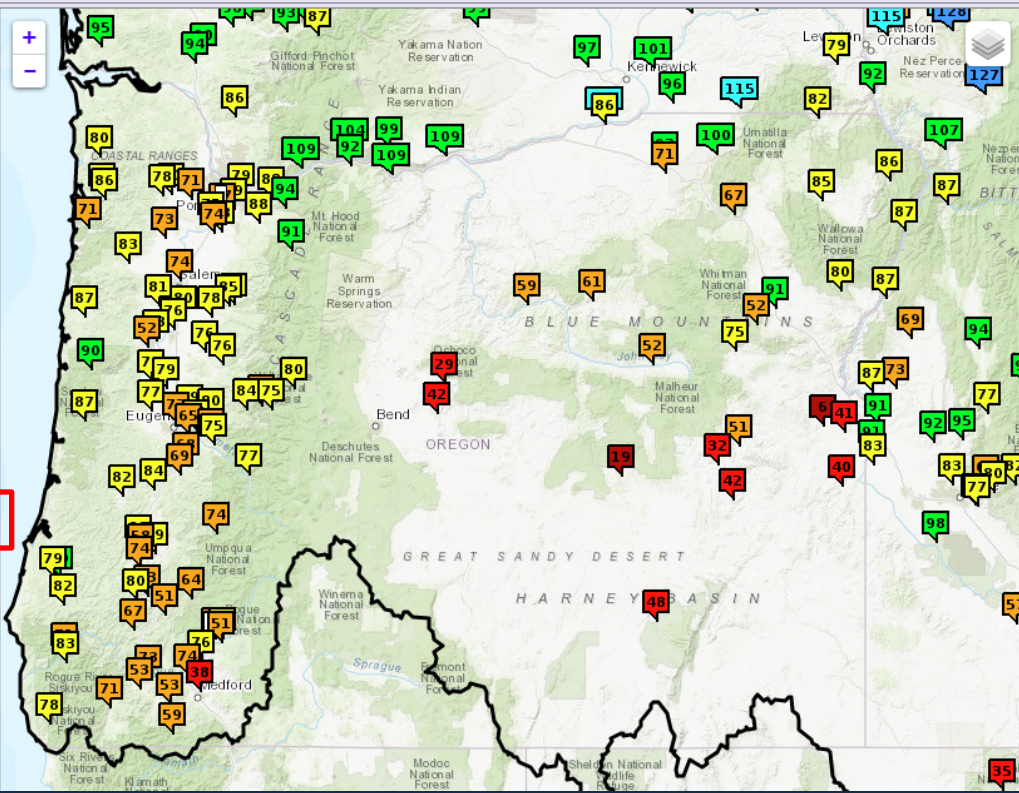
ESP Natural Forecast

- Status
- Percent of Normal
- Rank (ASC)
- Rank (DESC)
- Exceedance (%)
- Percentile (%)

ESP Natural Forecast

Period: APR-SEP
Forecast (% Normal)

- No Normal, No Data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175



Source: www.nwrfc.noaa.gov & www.cnrfc.noaa.gov



Water Supply Forecasts

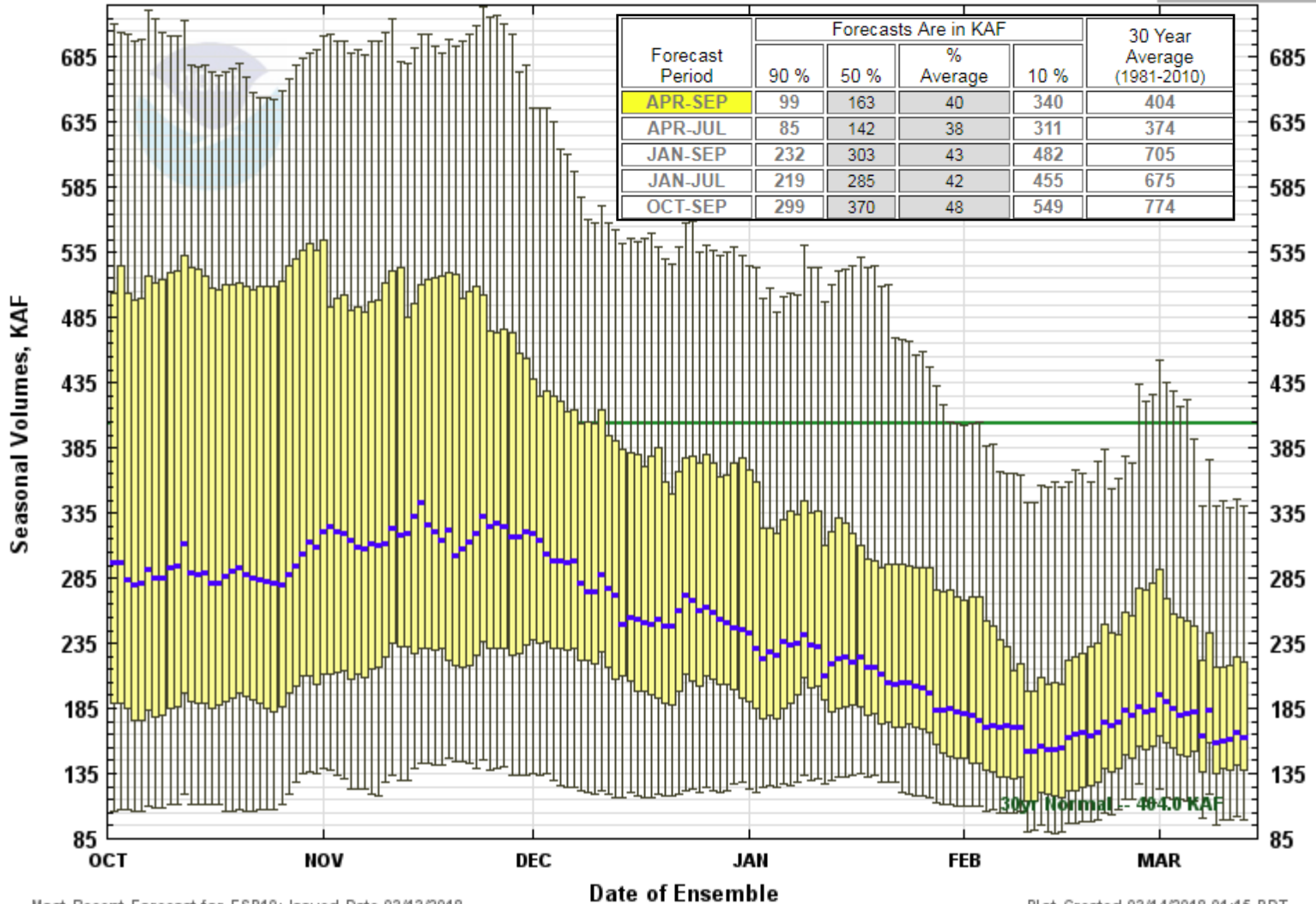
Owyhee R below Owyhee Dam

Natural Volume Forecasts

OWYHEE - OWYHEE DAM

Period APR to SEP -- Water Year 2018

— 30yr Normal
 ■ ESP10





Water Supply Forecasts

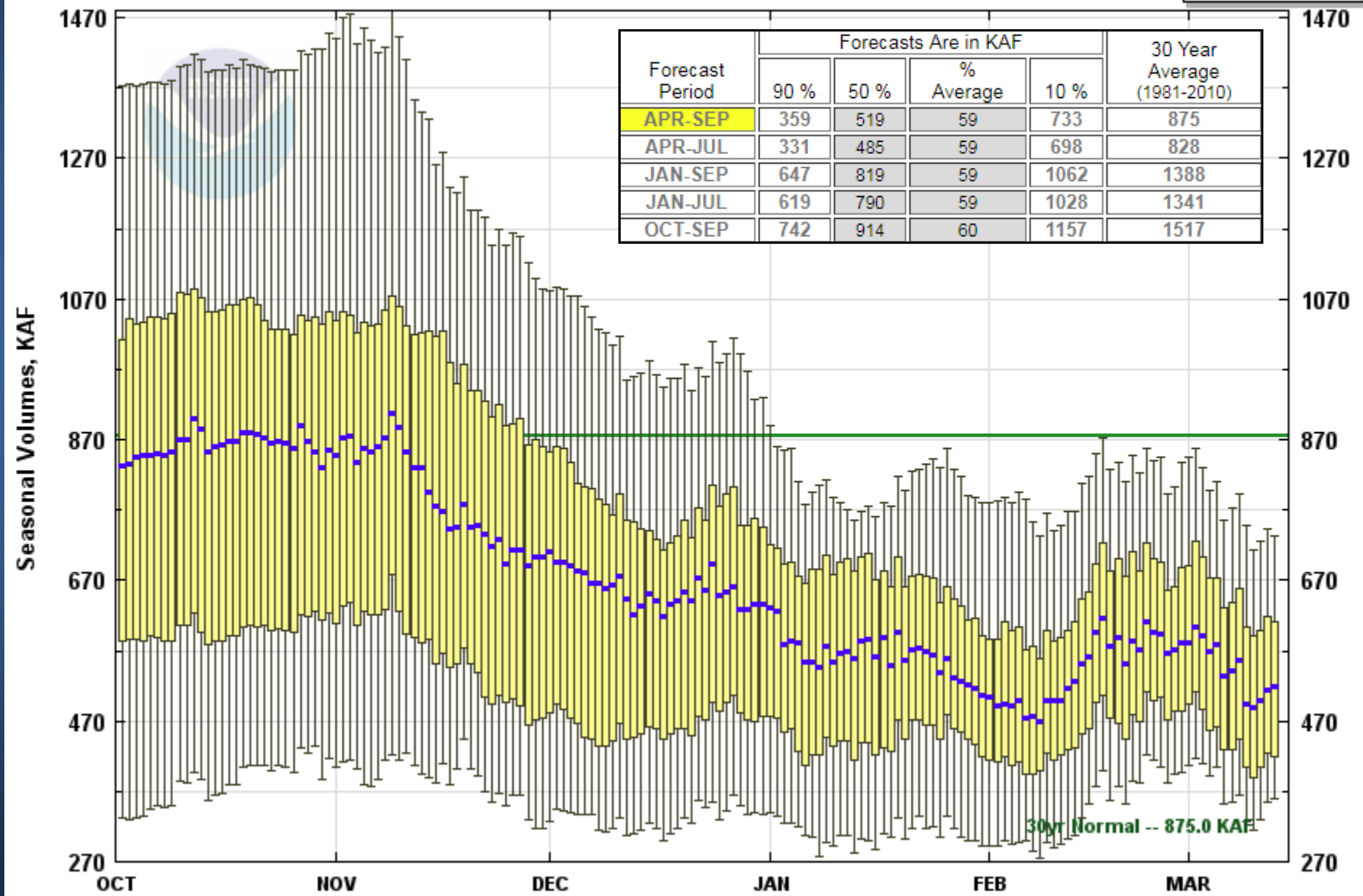
John Day R at Service Creek

Natural Volume Forecasts

JOHN DAY - AT SERVICE CK

Period APR to SEP -- Water Year 2018

— 30yr Normal
 ■ ESP10



| Forecast Period | Forecasts Are in KAF | | | | 30 Year Average (1981-2010) |
|-----------------|----------------------|------|-----------|------|-----------------------------|
| | 90 % | 50 % | % Average | 10 % | |
| APR-SEP | 359 | 519 | 59 | 733 | 875 |
| APR-JUL | 331 | 485 | 59 | 698 | 828 |
| JAN-SEP | 647 | 819 | 59 | 1062 | 1388 |
| JAN-JUL | 619 | 790 | 59 | 1028 | 1341 |
| OCT-SEP | 742 | 914 | 60 | 1157 | 1517 |



Water Supply Forecasts

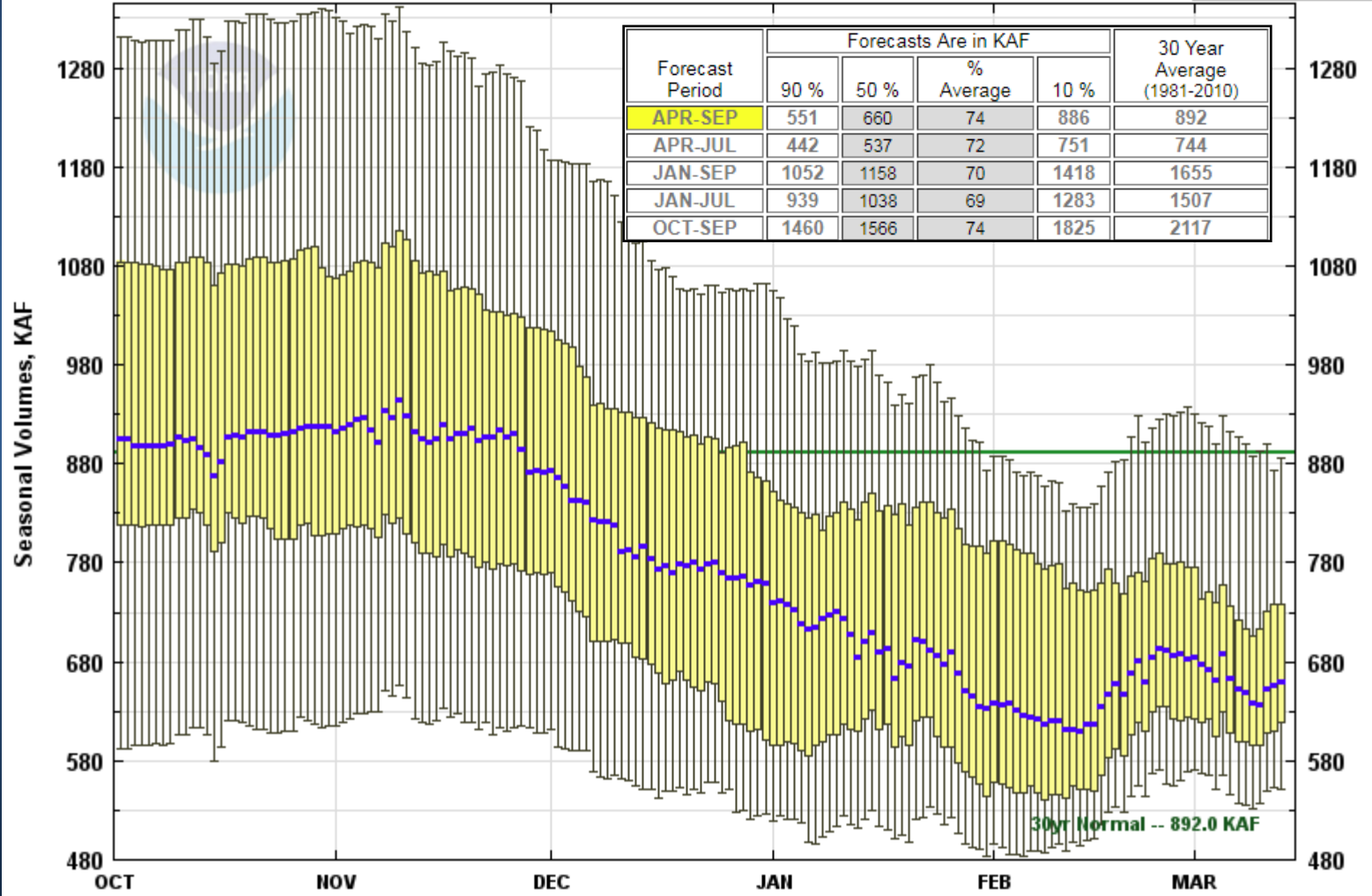
Rogue R at Raygold

Natural Volume Forecasts

ROGUE - AT RAYGOLD

Period APR to SEP -- Water Year 2018

— 30yr Normal
 ESP10



OREGON



WATER RESOURCES
DEPARTMENT

Streamflow and Storage Update

Percent of Average Streamflow Month of January, 2018

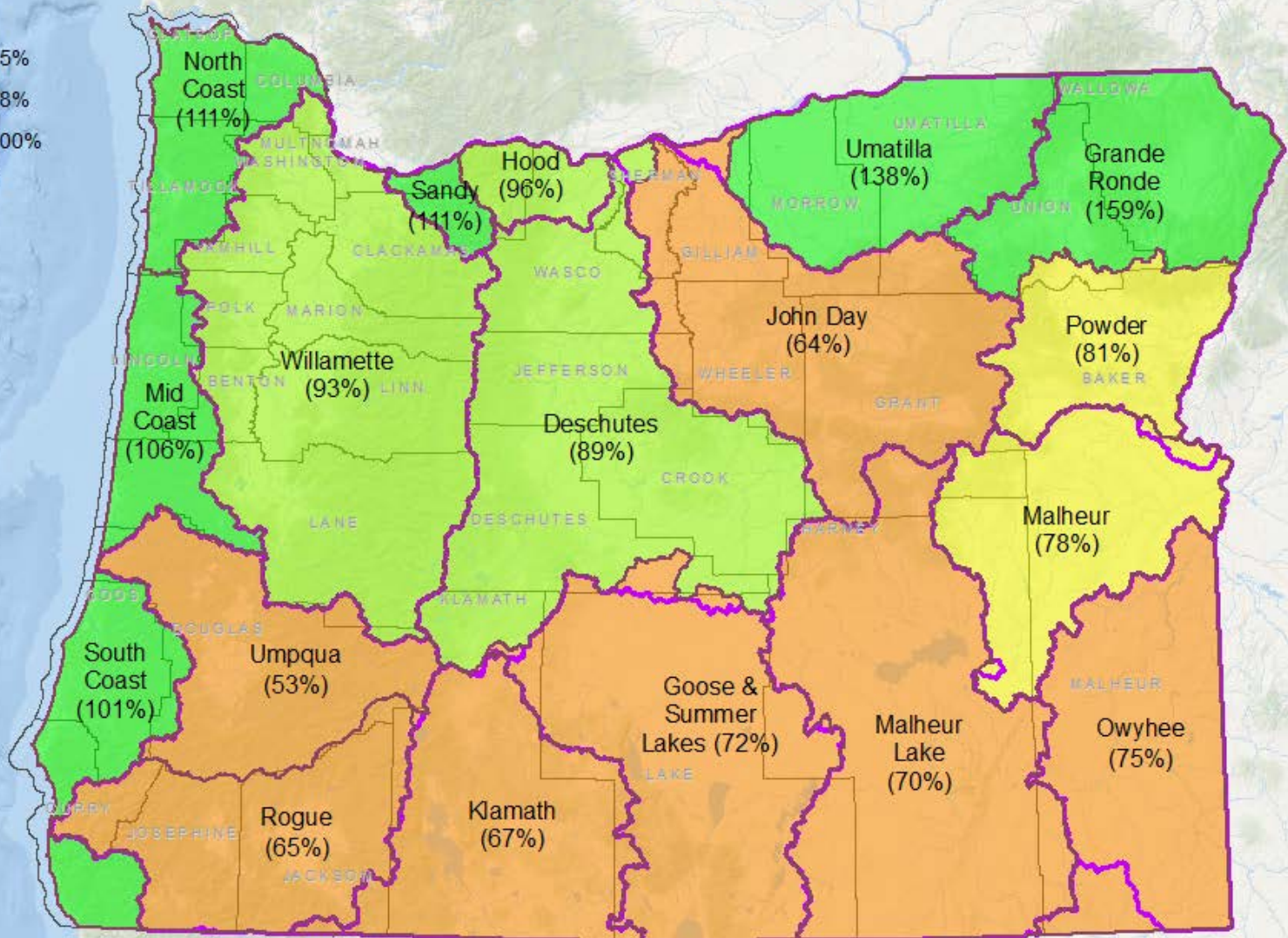
Percent of Average Streamflow

WRD Basin

- < 50%
- 50% - 75%
- 76% - 88%
- 89% - 100%
- > 100%

NRCS Basin

-
- County



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.

Percent of Average Streamflow Month of February, 2018

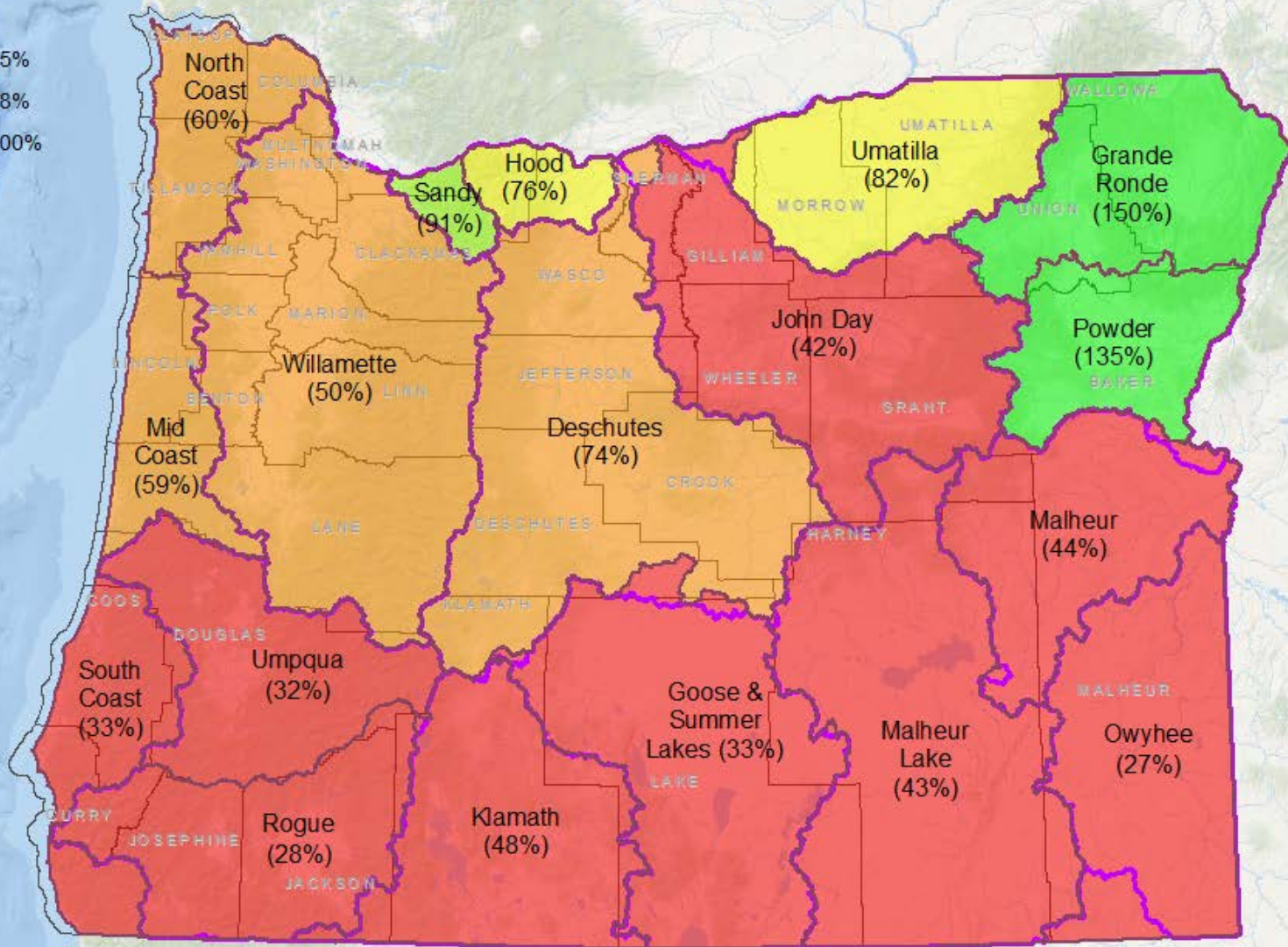
Percent of Average Streamflow

WRD Basin

- < 50%
- 50% - 75%
- 76% - 88%
- 89% - 100%
- > 100%

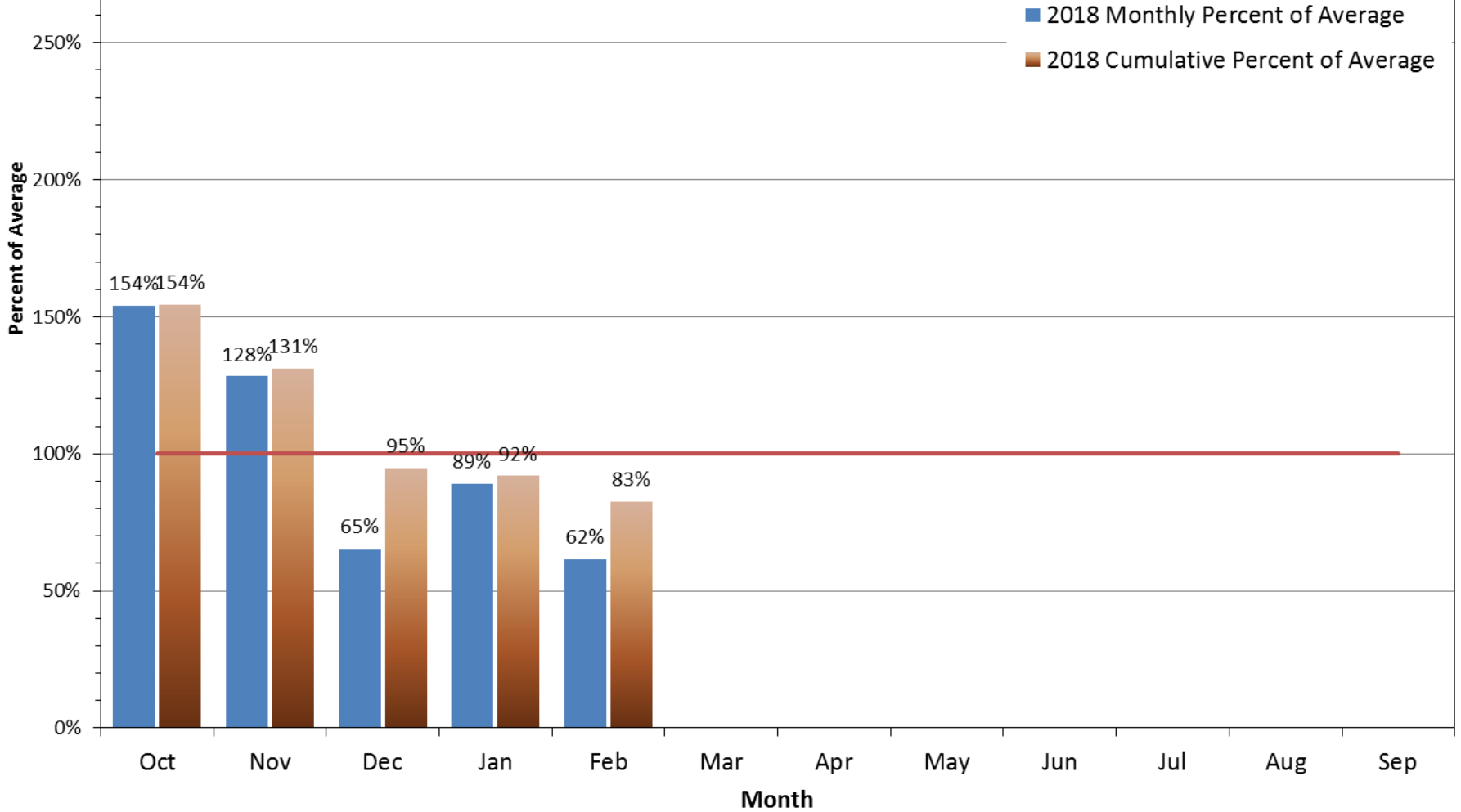
NRCS Basin

-
- County

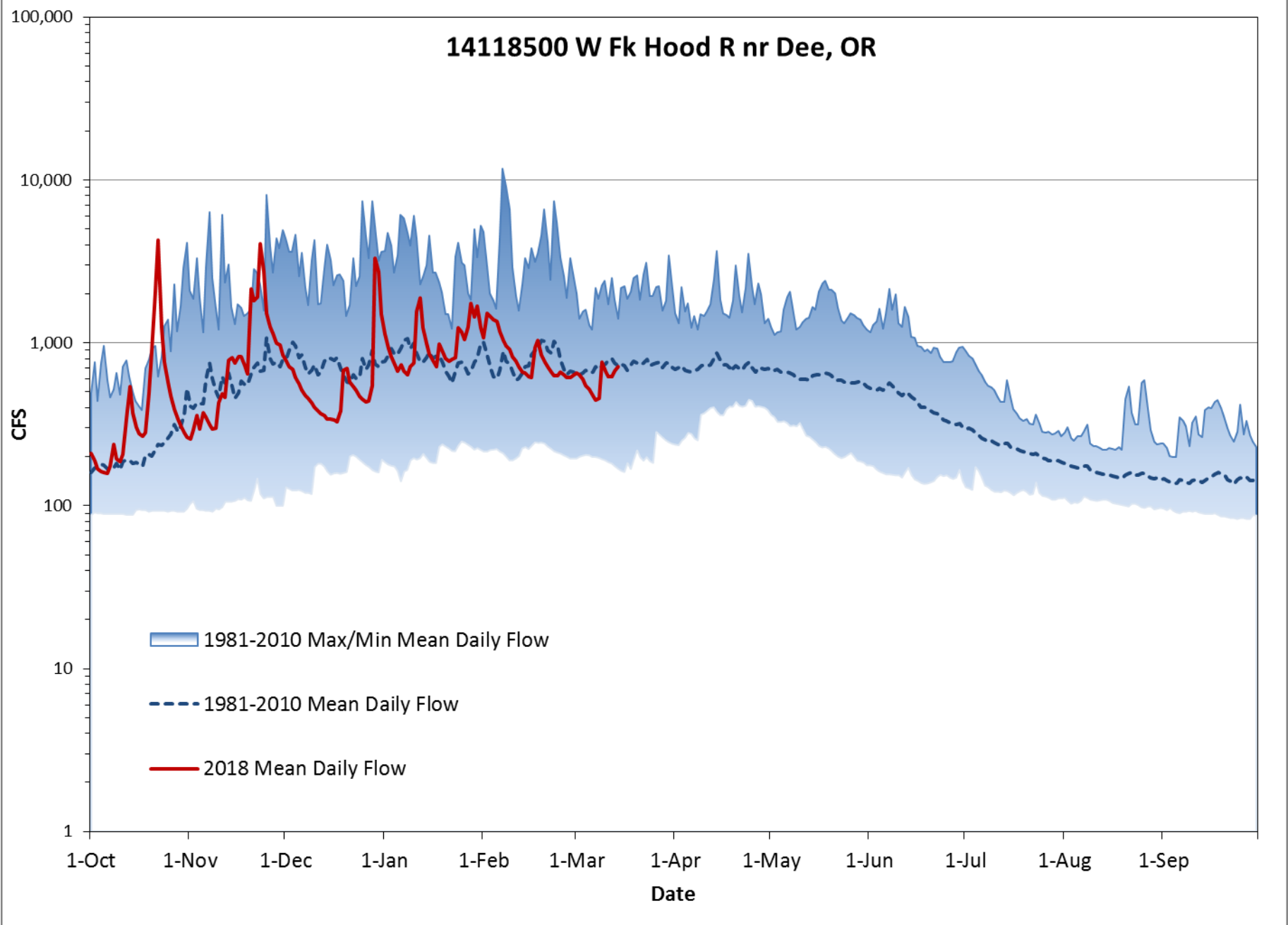


Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.

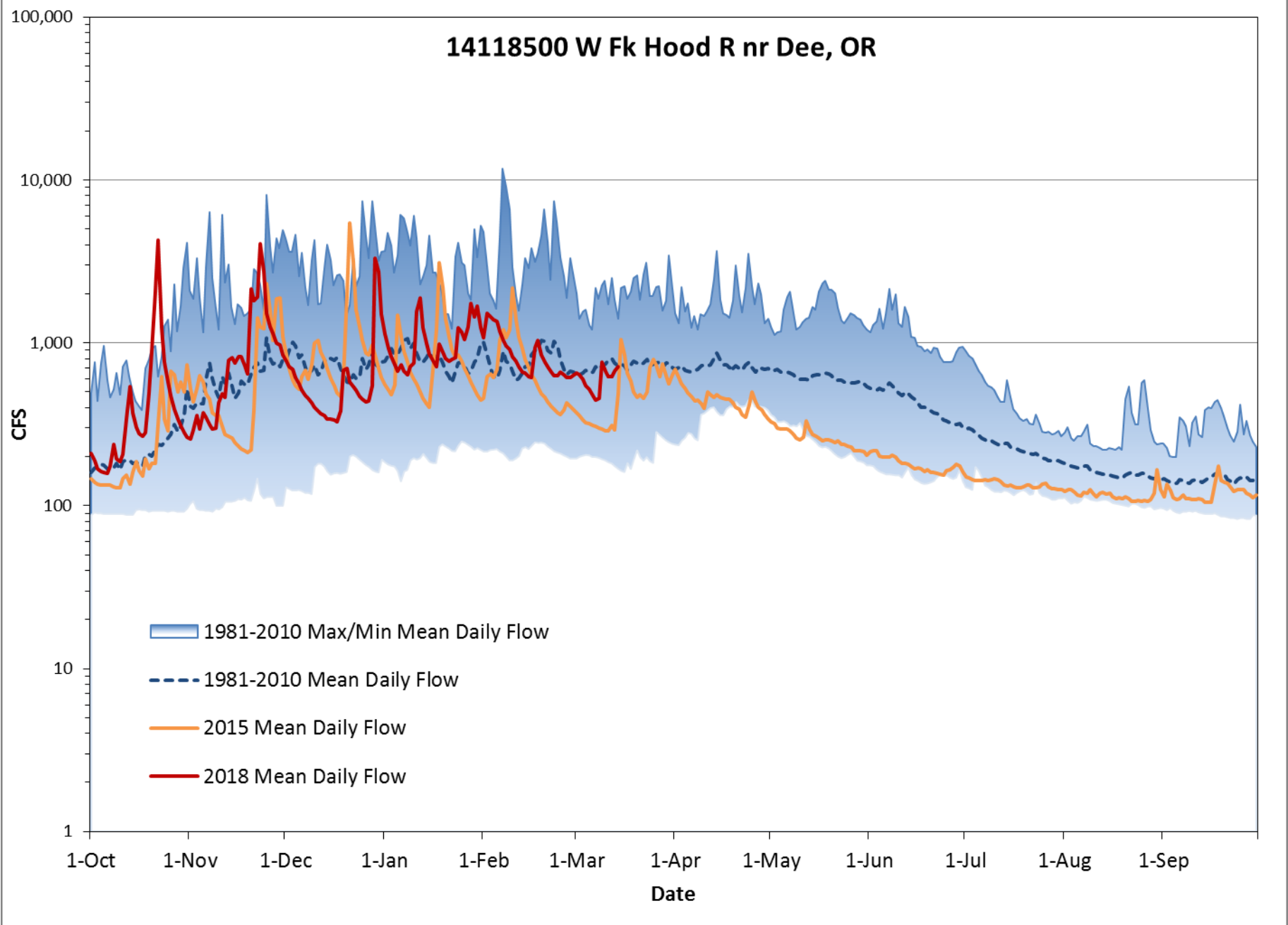
2018 Statewide Percent of Average Stream Flow



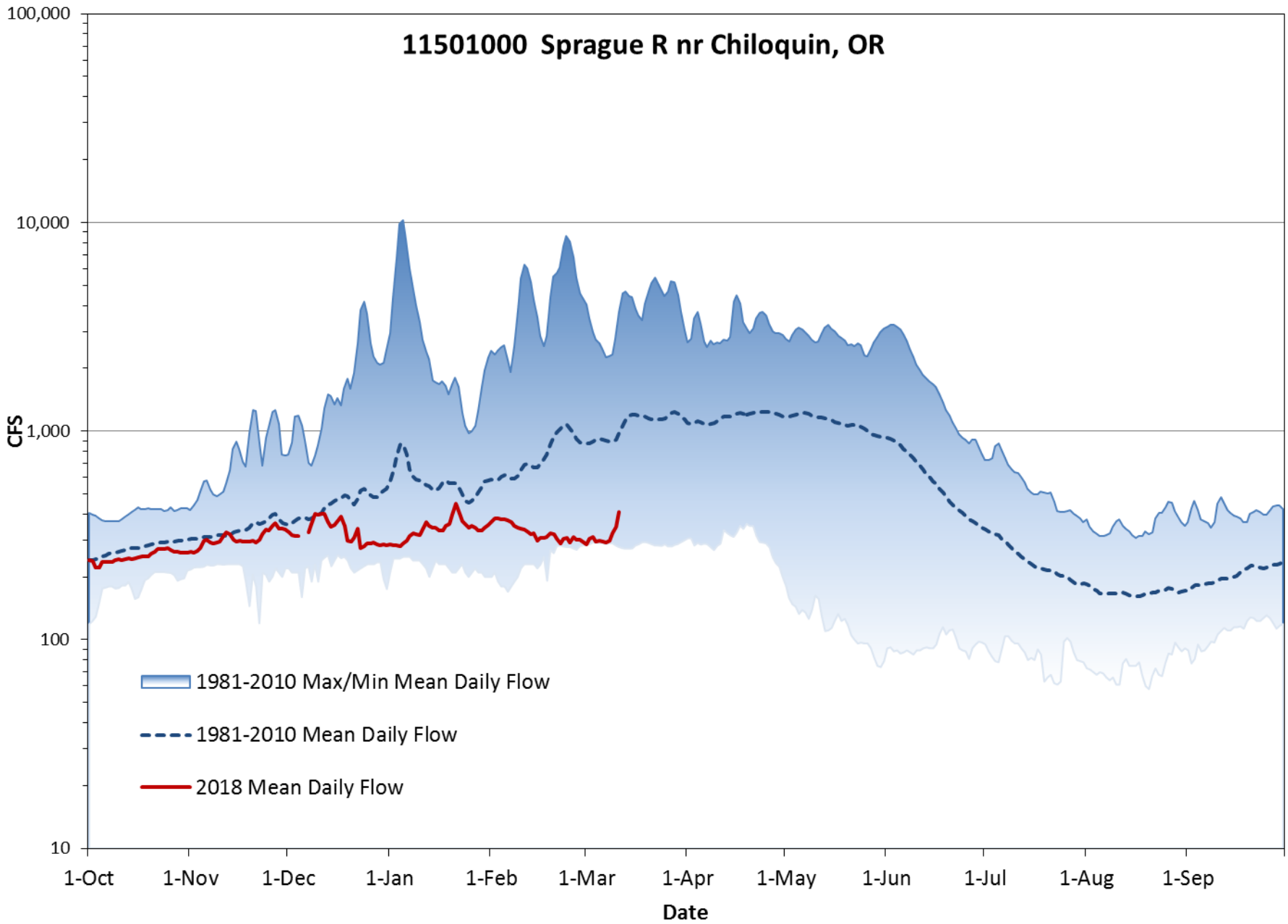
14118500 W Fk Hood R nr Dee, OR



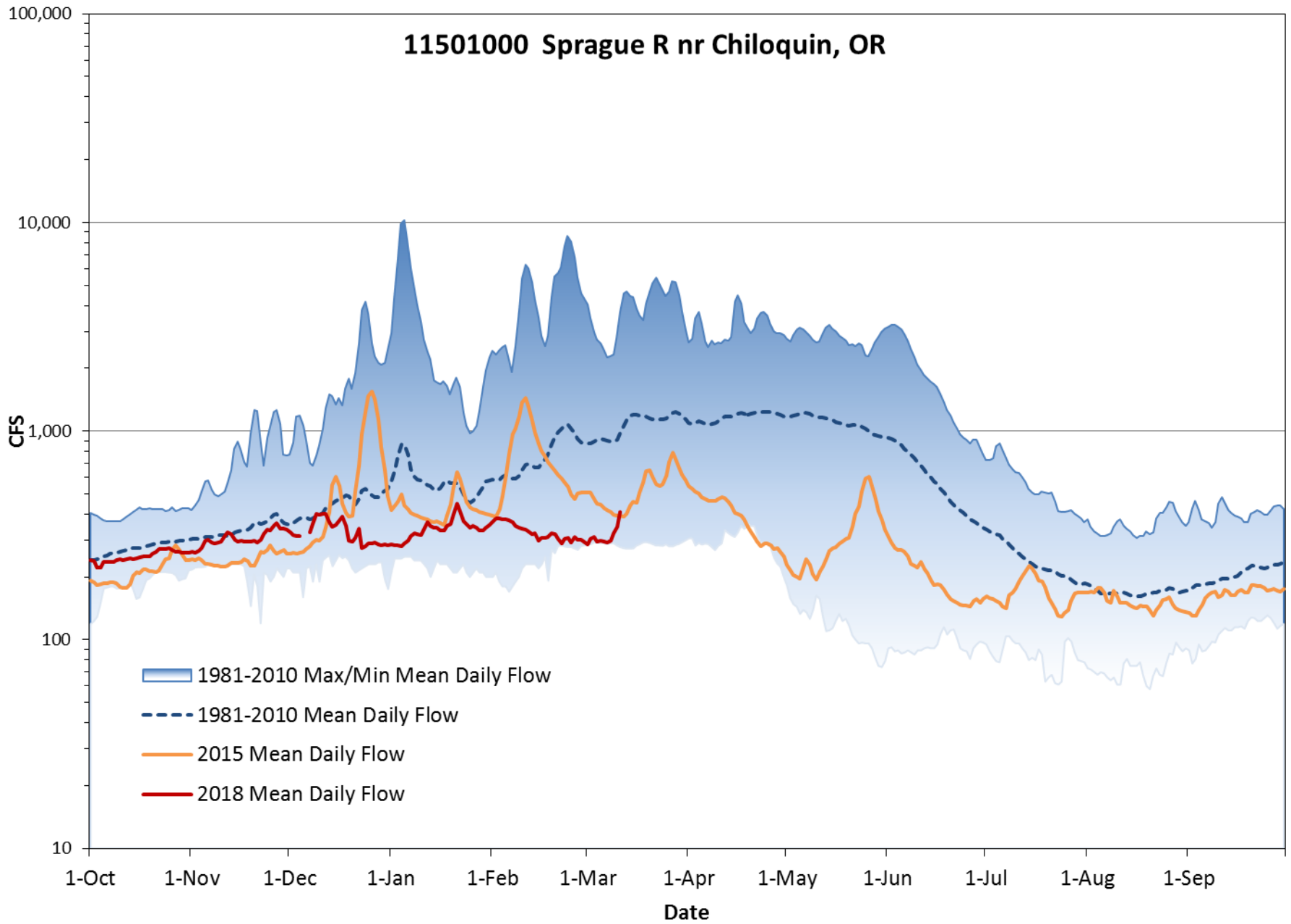
14118500 W Fk Hood R nr Dee, OR



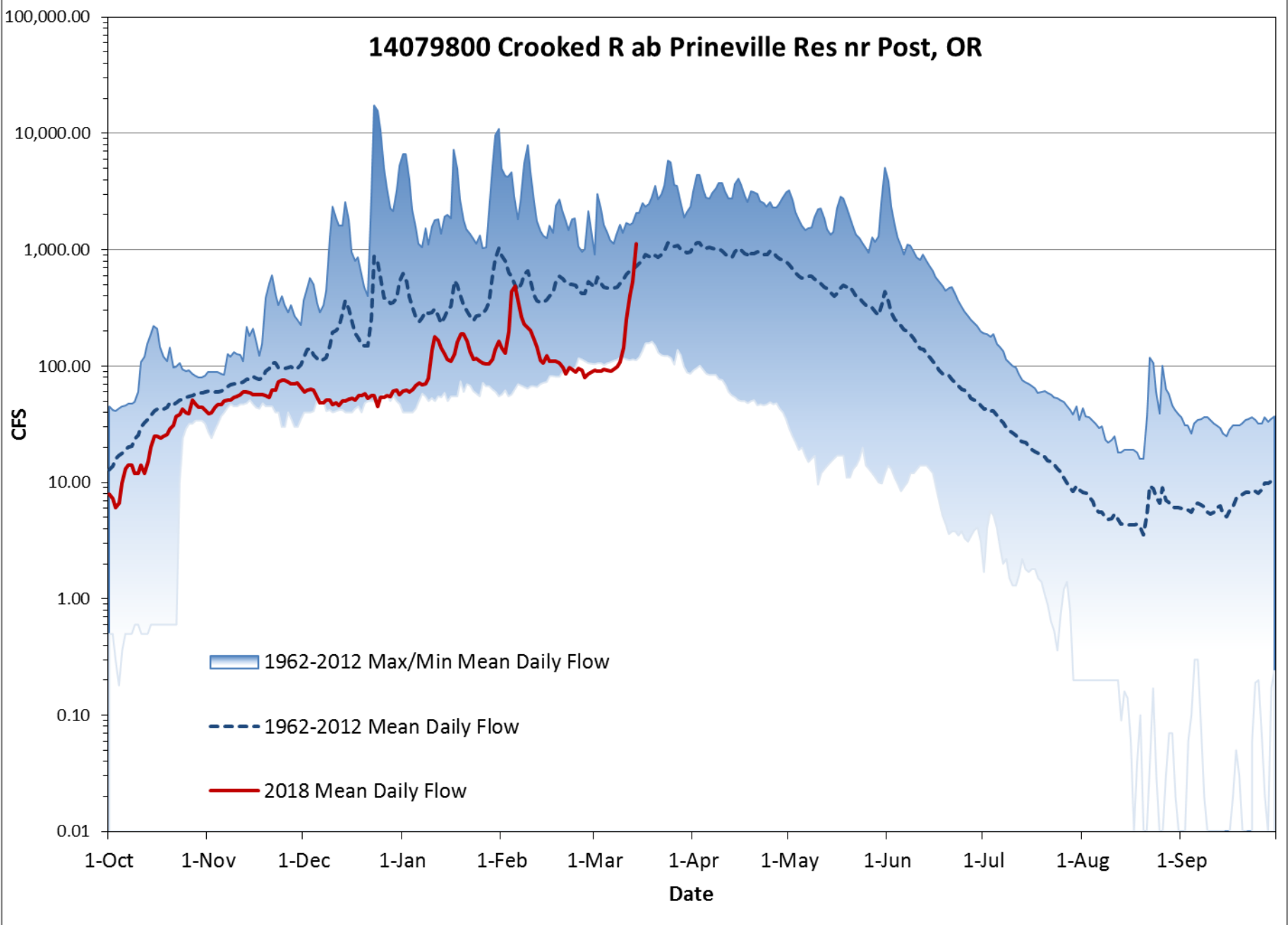
11501000 Sprague R nr Chiloquin, OR



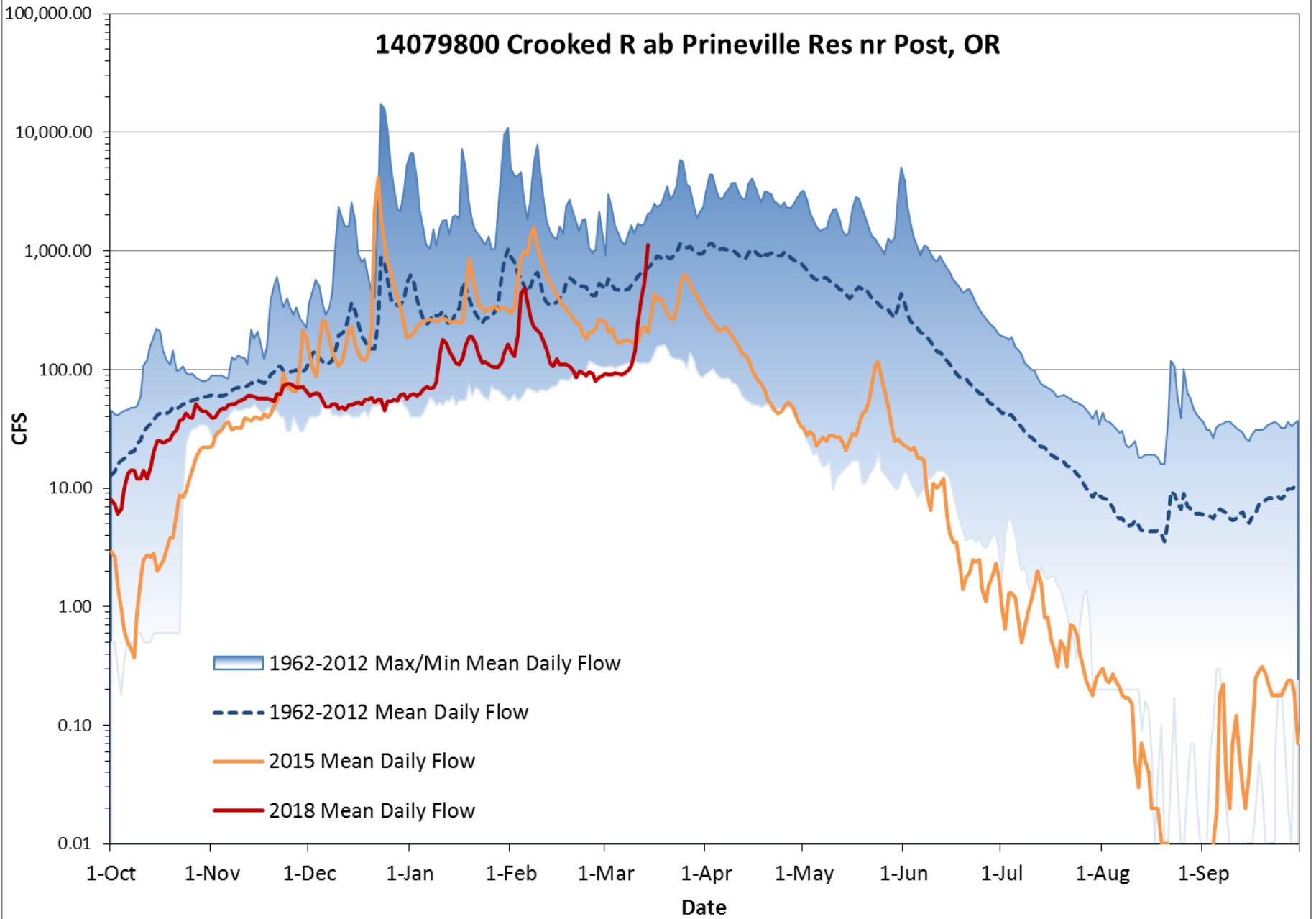
11501000 Sprague R nr Chiloquin, OR



14079800 Crooked R ab Prineville Res nr Post, OR



14079800 Crooked R ab Prineville Res nr Post, OR



Reservoir Storage Summary for the end of February, 2018

Percent of Average Storage

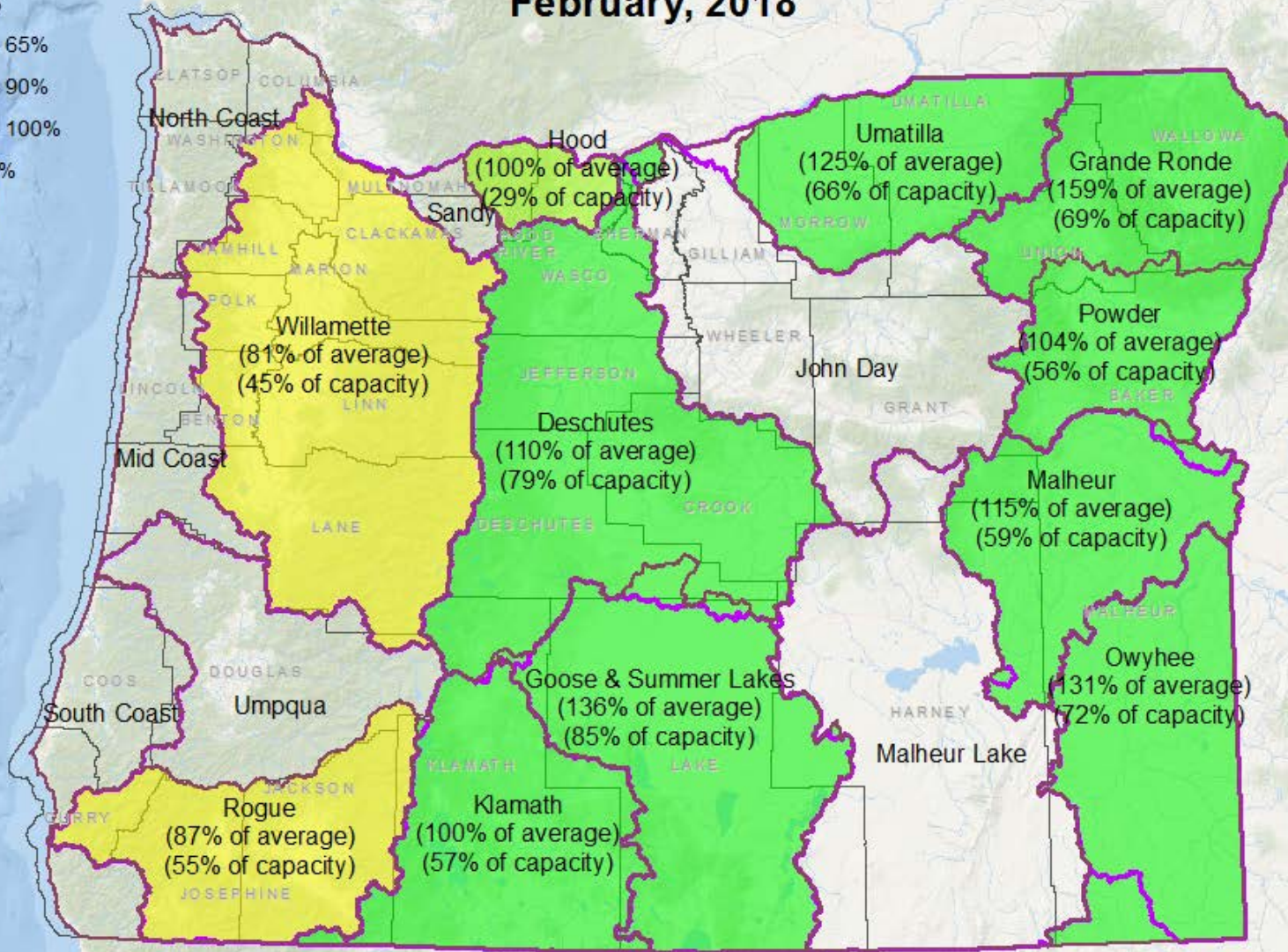
Current_Average / none

- < 50%
- 50% - 65%
- 66% - 90%
- 91% - 100%
- > 100%

NRCS Basin

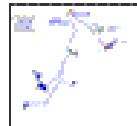
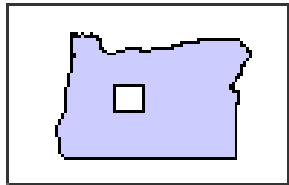


County



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

03/14/2018



Deschutes ESA

CULO 1222 cfs

CR00 1279 cfs

Haystack
4406/5600
79% Full

Ochoco
22744/44247
51% Full

CRS0 108 cfs

Prineville

MLC0 37 cfs

CAP0 54 cfs

OCRO 76 cfs

OCHO 3 cfs

CRCO 0 cfs

DEBO 675 cfs

Bend

PRVO 52 cfs

CRPO 1098 cfs

Crane Prairie
46222/55300
84% Full

CRA0 143 cfs

BENO 754 cfs

Prineville
93900/148640
63% Full

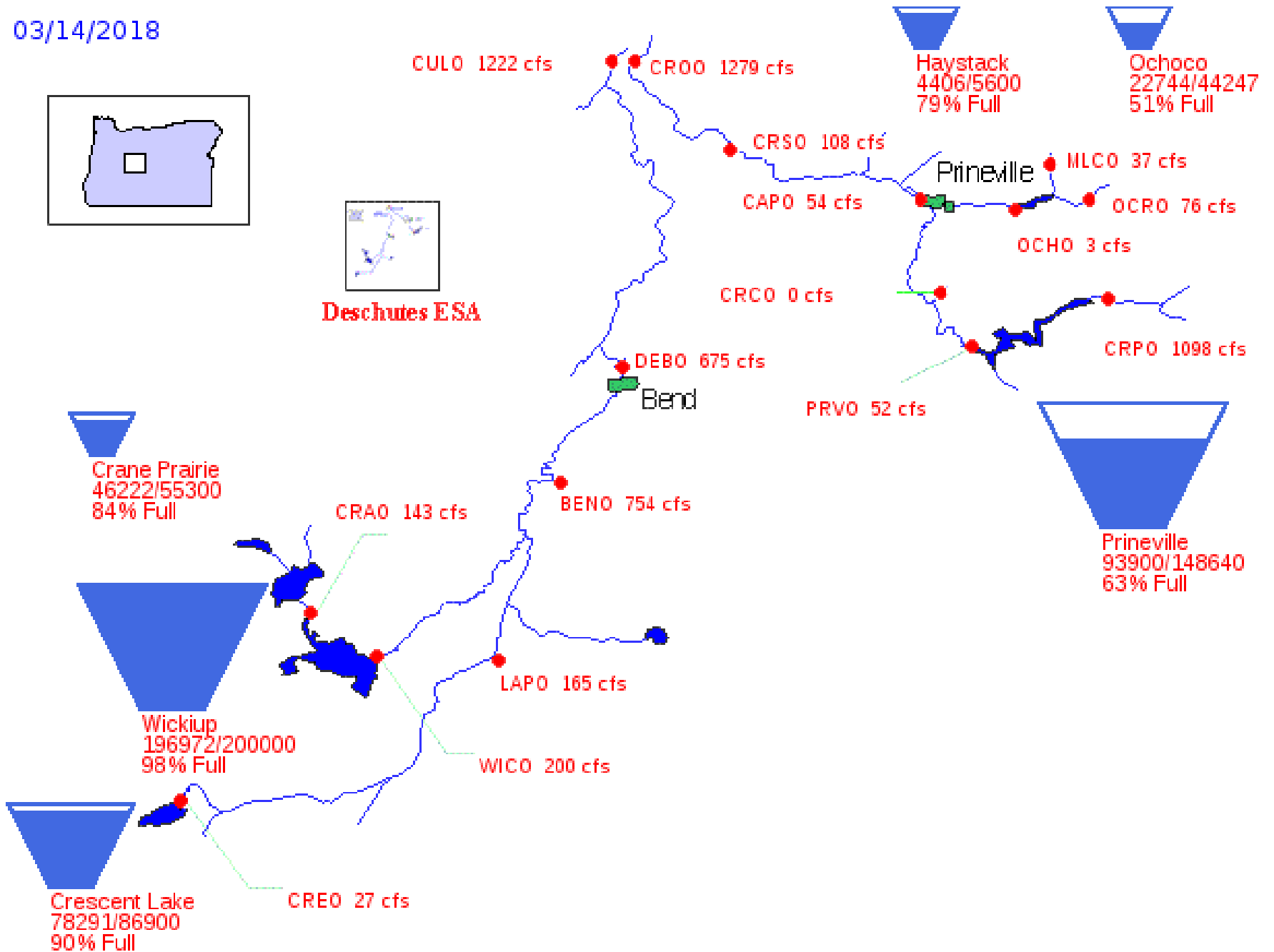
LAP0 165 cfs

Wickiup
196972/200000
98% Full

WICO 200 cfs

Crescent Lake
78291/86900
90% Full

CRE0 27 cfs



drought, water, and climate update

Kathie Dello

Associate Director, Oregon Climate Change Research Institute
Oregon State University

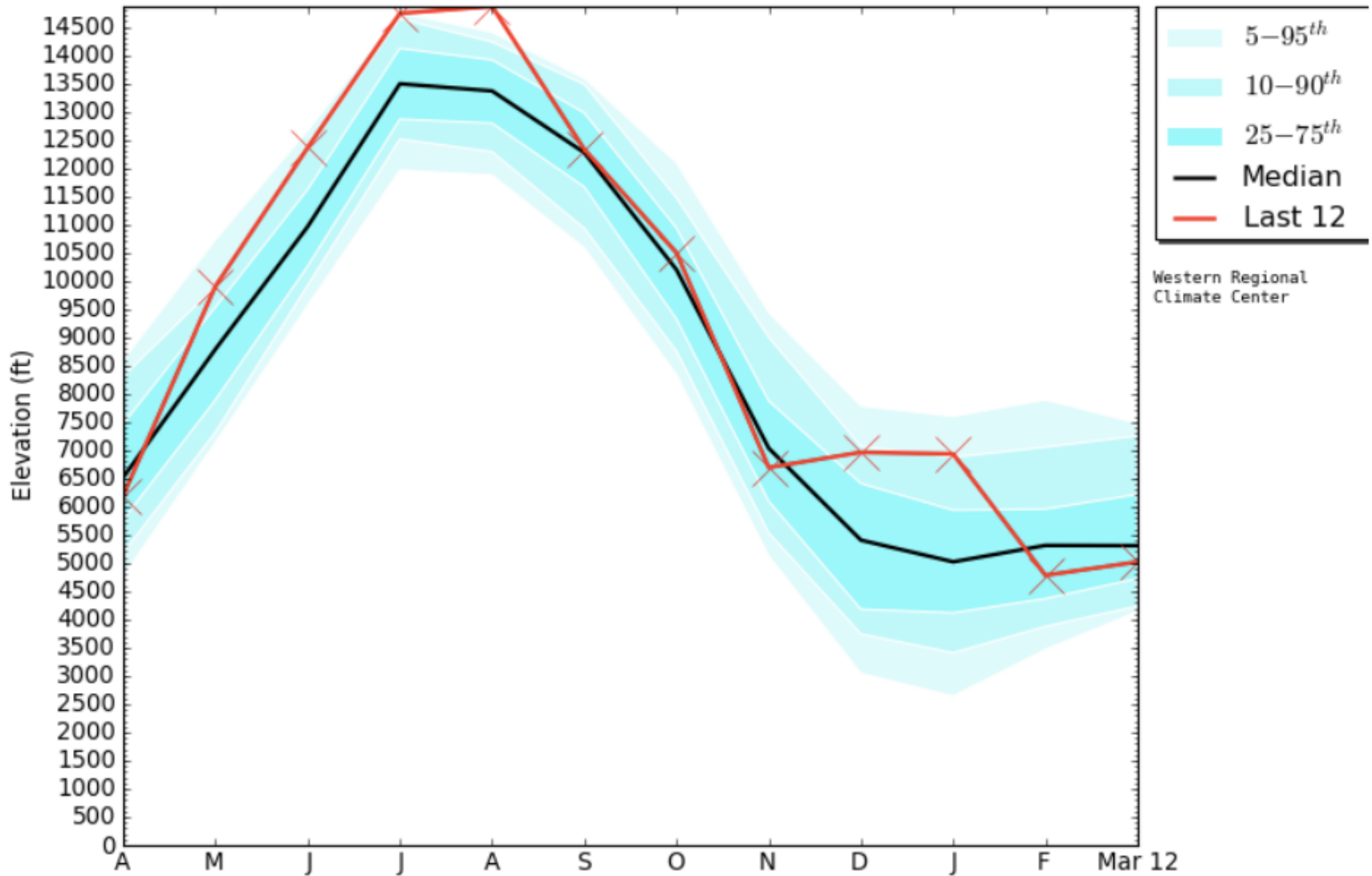
March 15, 2018





photo: Philip Mote

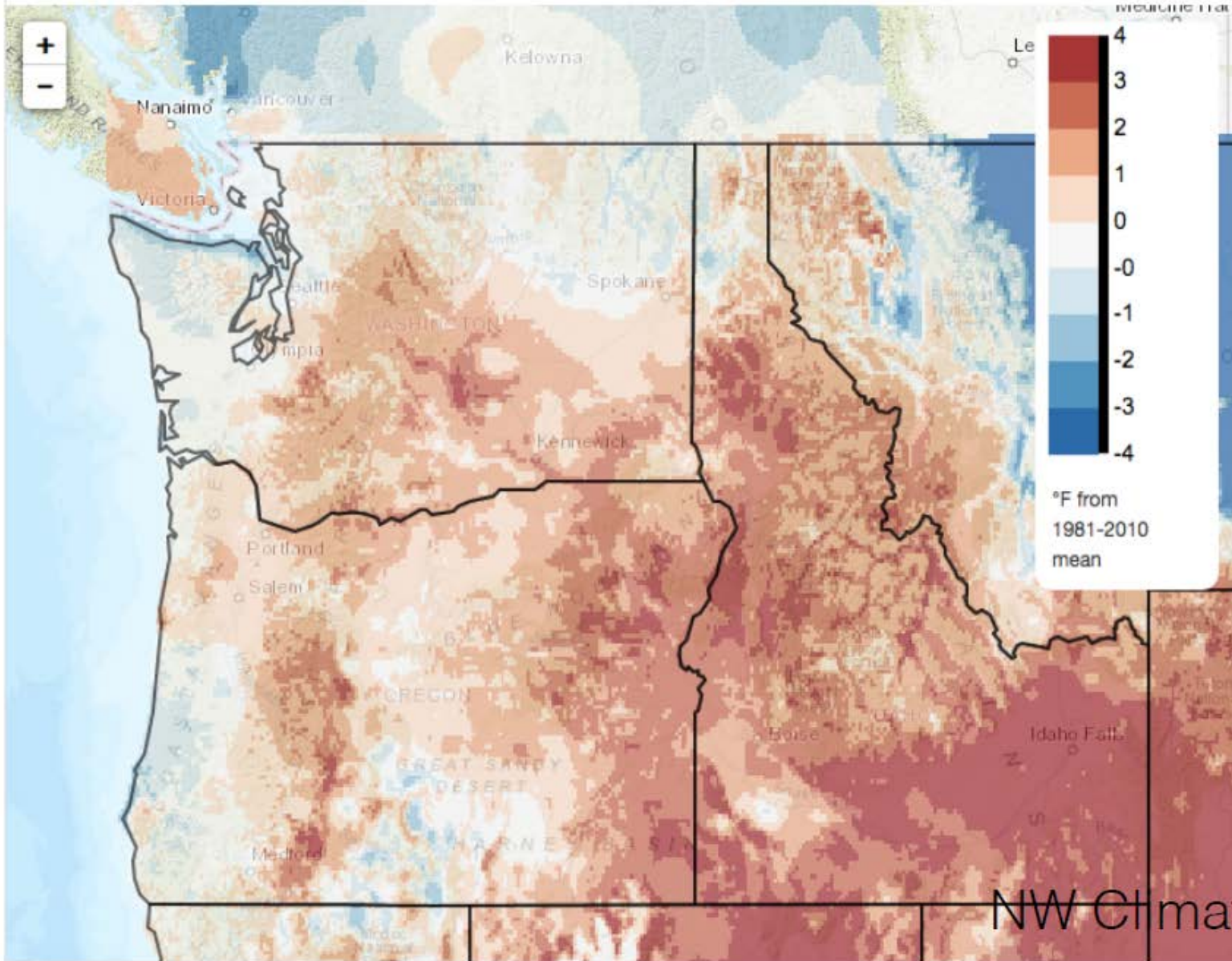
Freezing level height at Santiam Pass



Western Regional
Climate Center

Minimum Daily Temperature Anomaly, Since Jan 1st

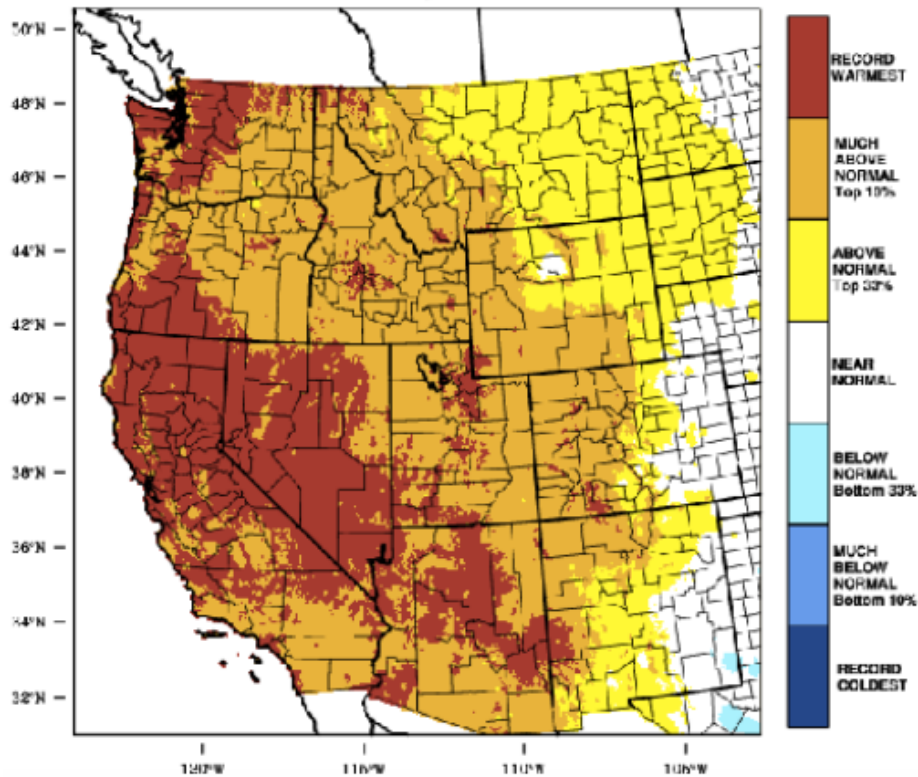
2018/01/01 - 2018/03/10



NW Climate Toolbox

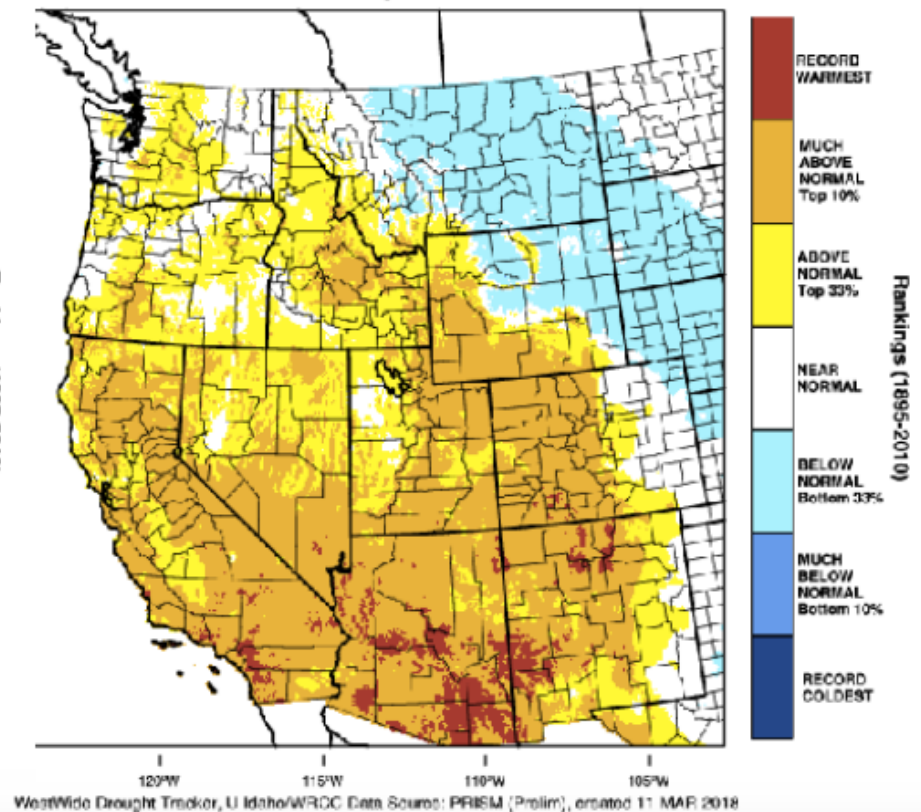
Winter 2015

Western United States - Mean Temperature
December-February 2015 Percentile



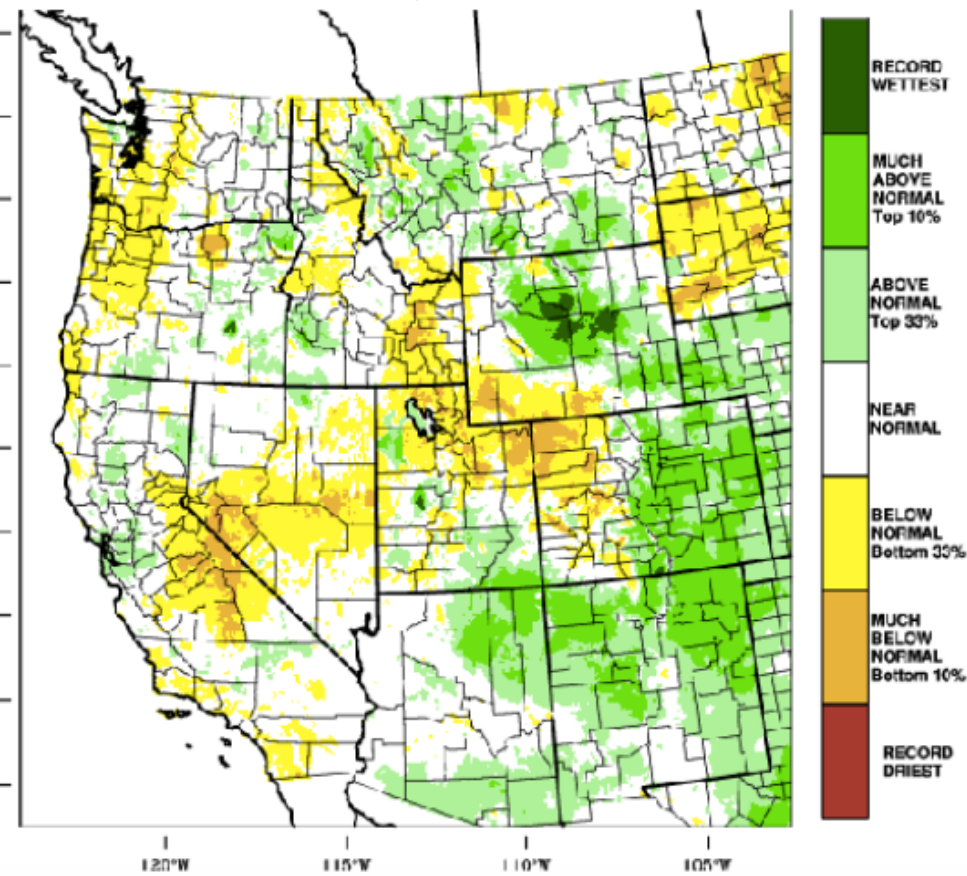
Winter 2018

Western United States - Mean Temperature
December-February 2018 Percentile



Winter 2015

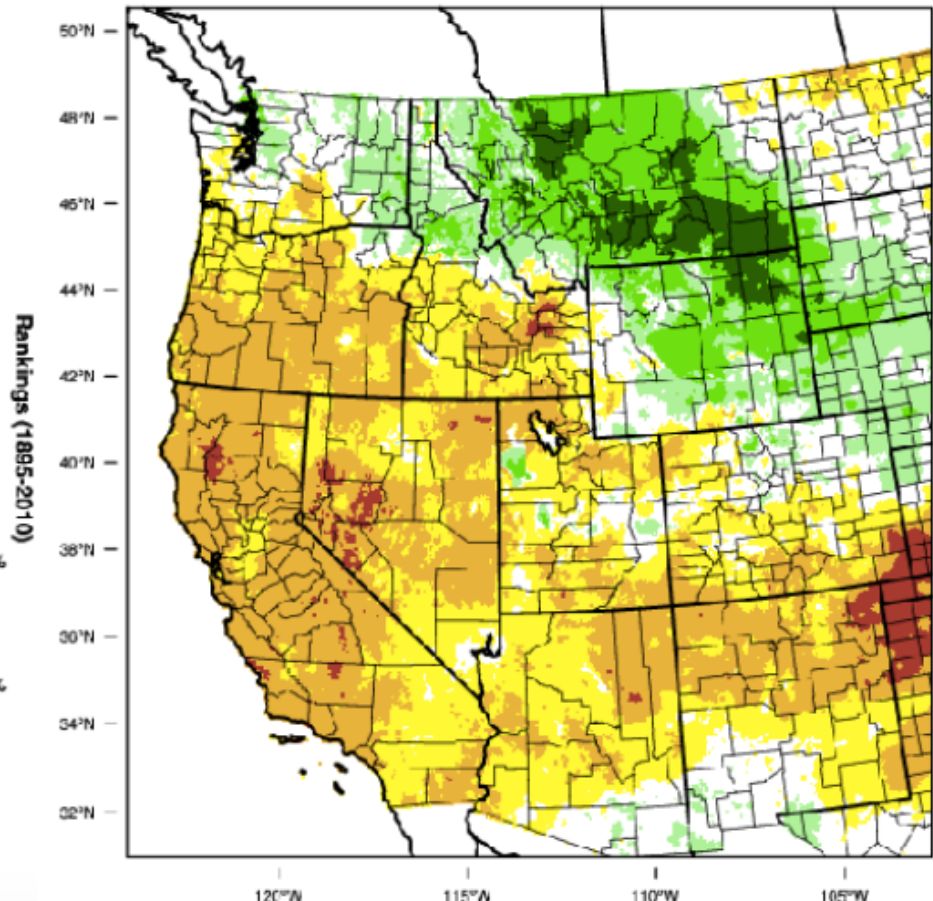
Western United States - Precipitation
December-February 2015 Percentile



WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Final), created 16 SEP 2015

Winter 2018

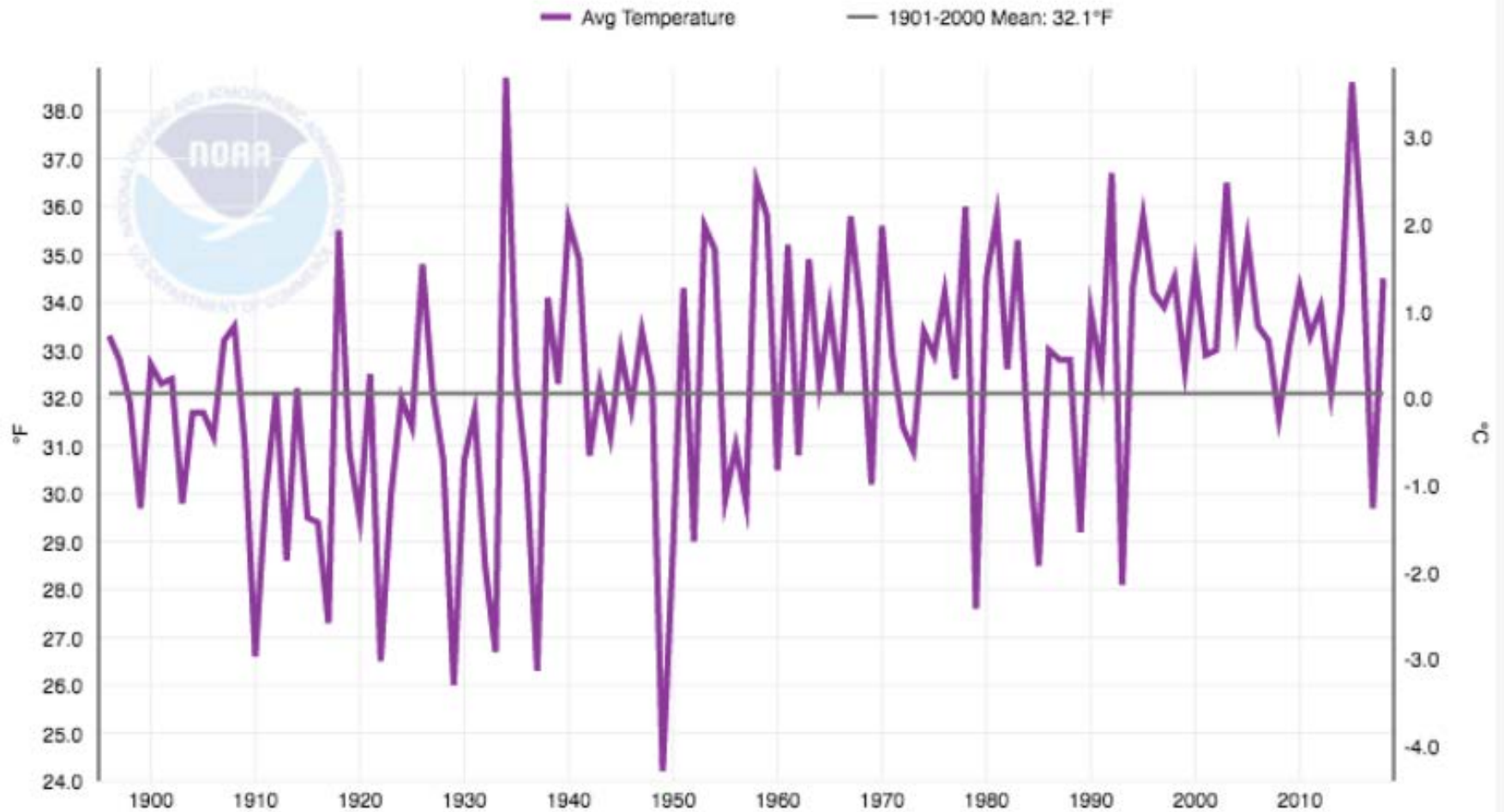
Western United States - Precipitation
December-February 2018 Percentile



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 MAR 2018

Our winters are warming

Oregon, Average Temperature, December-February

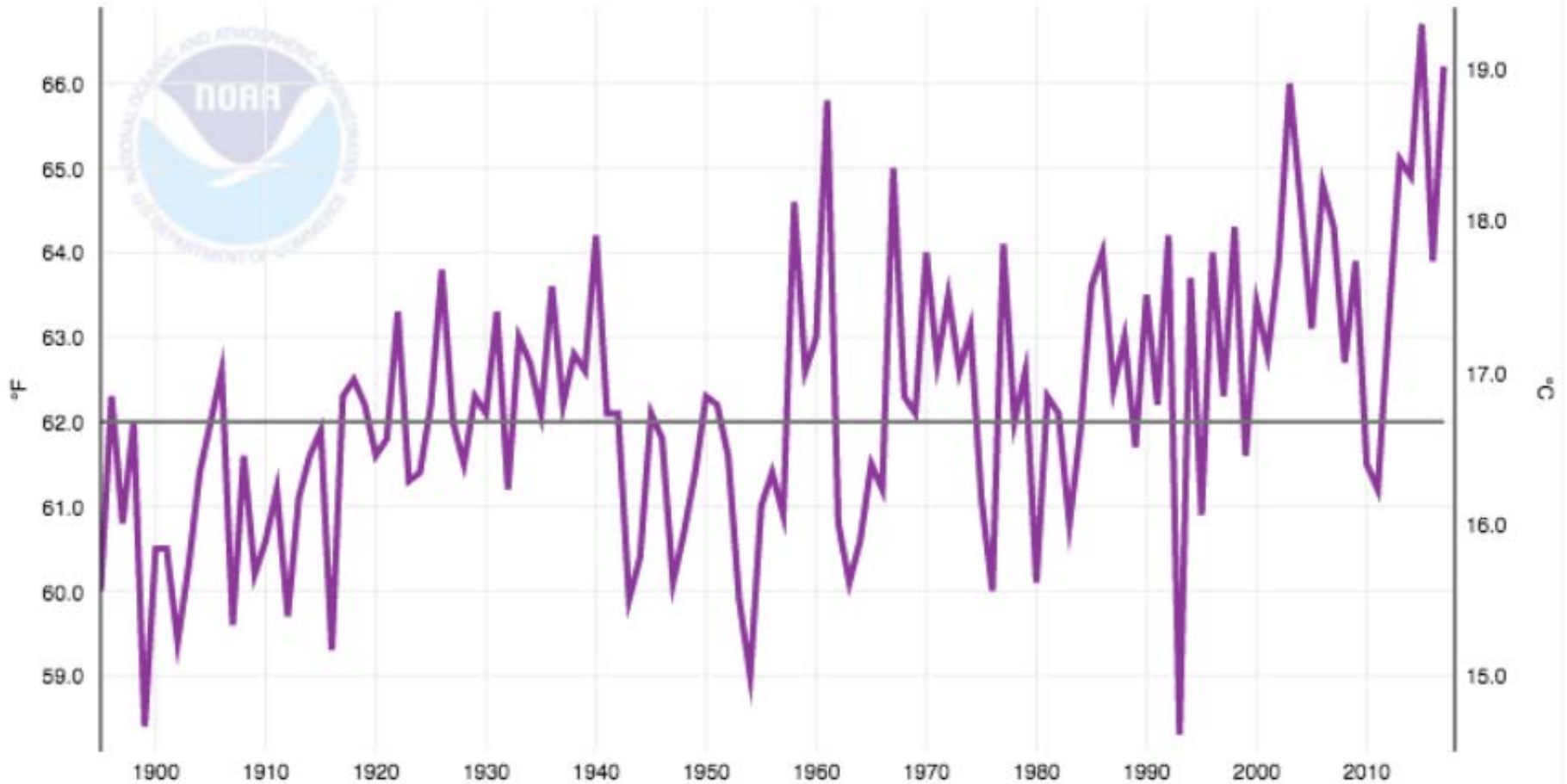


Our summers are warming

Oregon, Average Temperature, June-August

Avg Temperature

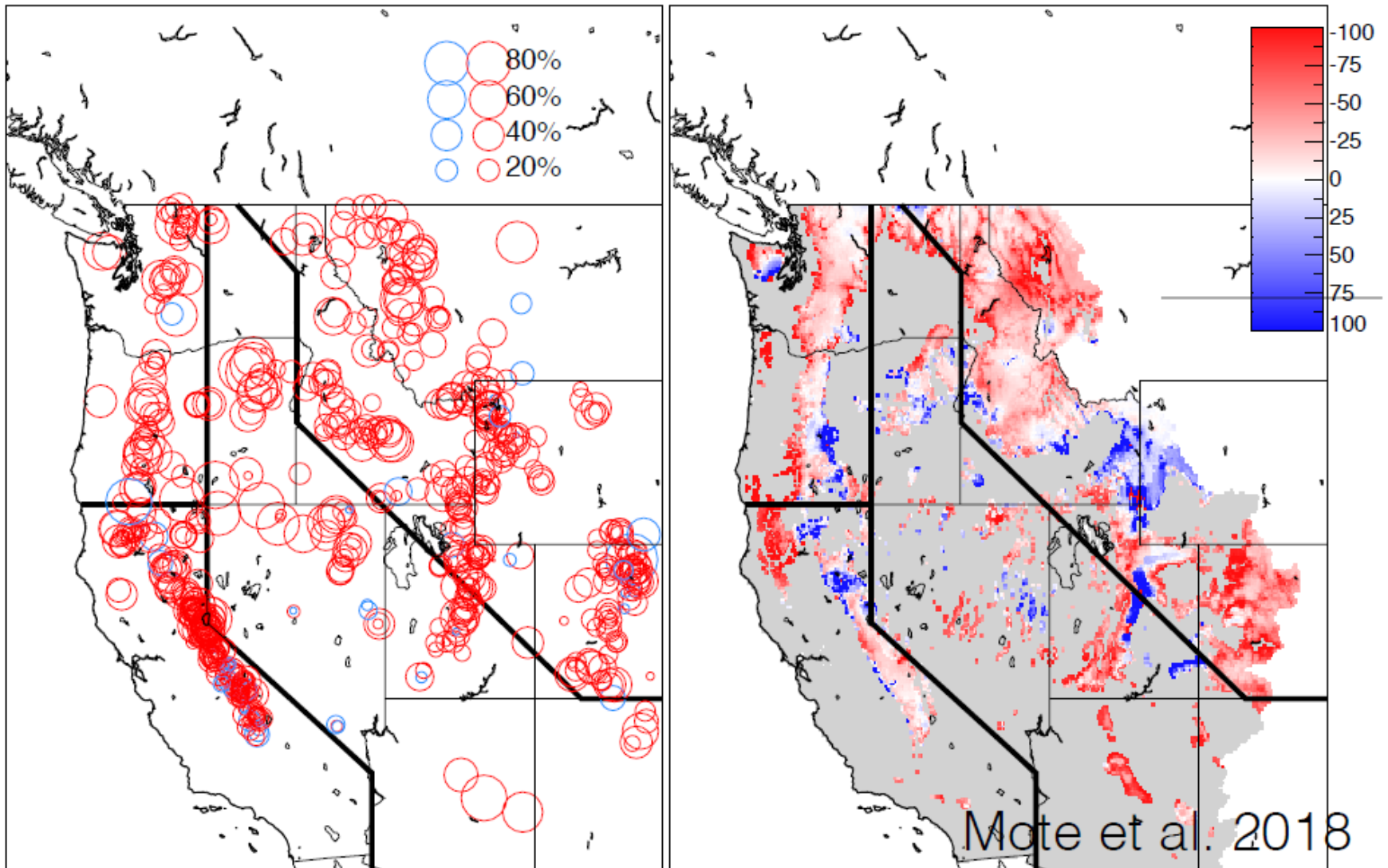
1901-2000 Mean: 62.0°F



Obs & model: 90% decline

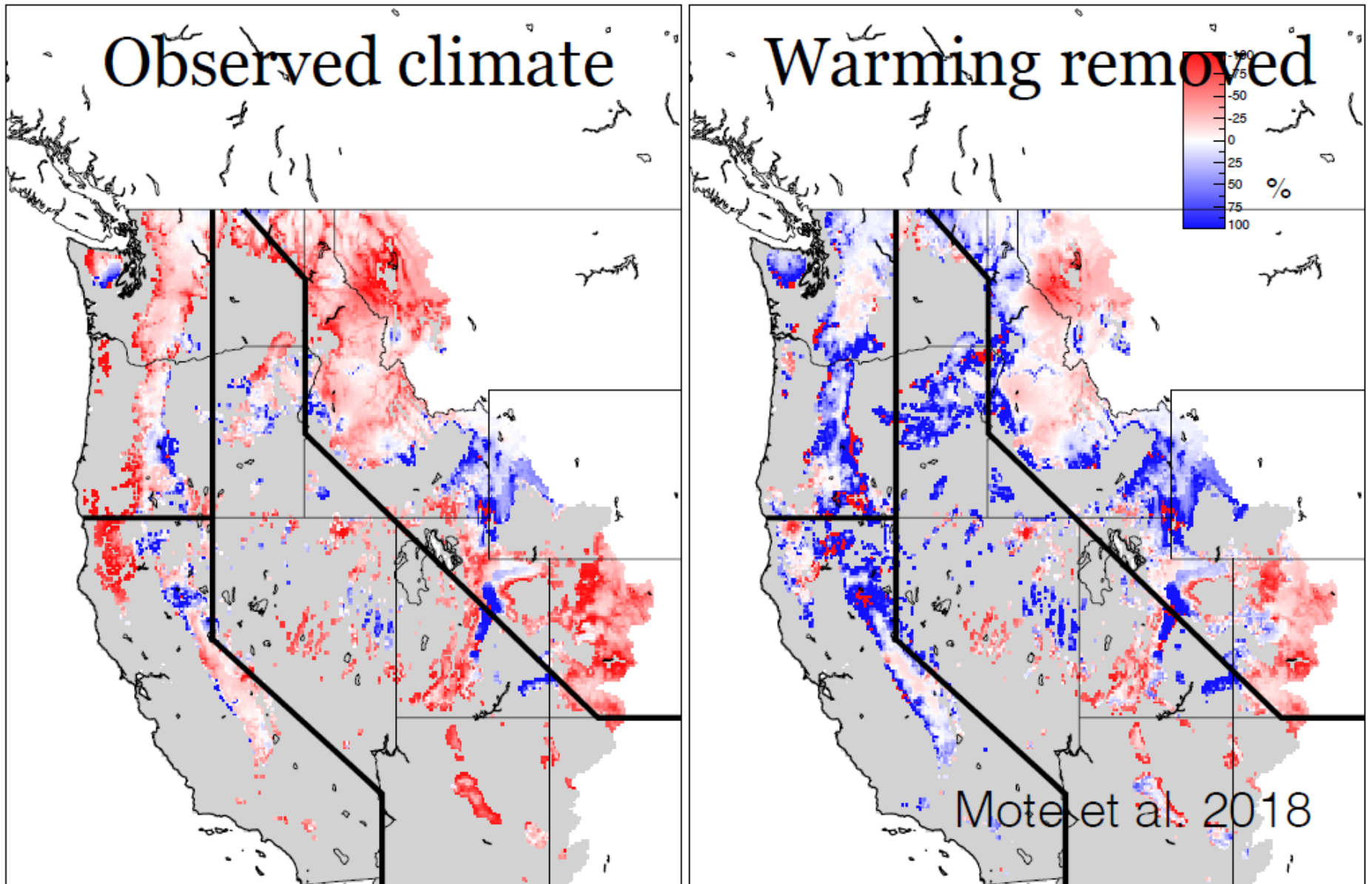
a) April 1 Observed SWE Trends 1955-2016

b) April 1 VIC SWE Trend 1955 to 2014

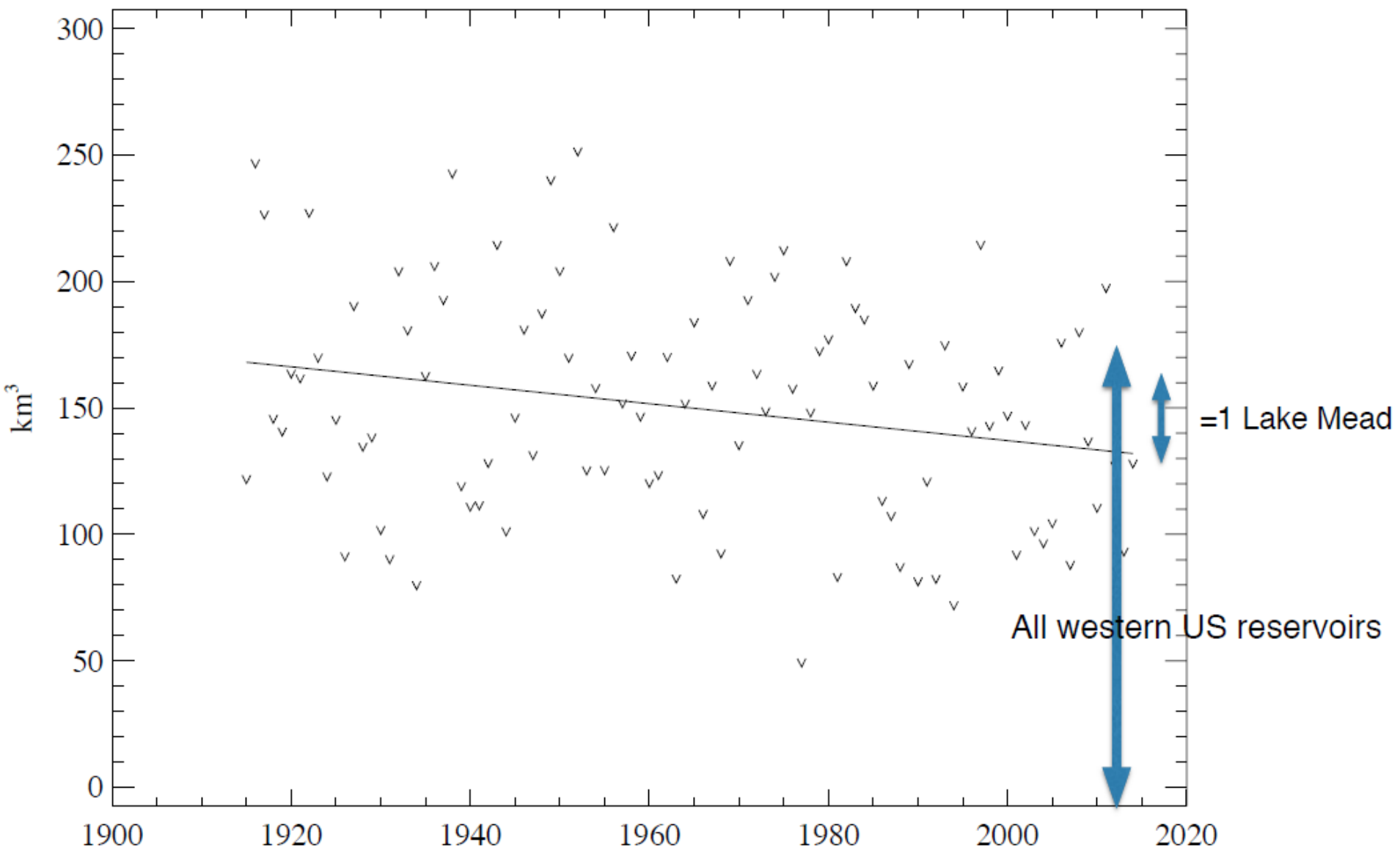


Role of warming

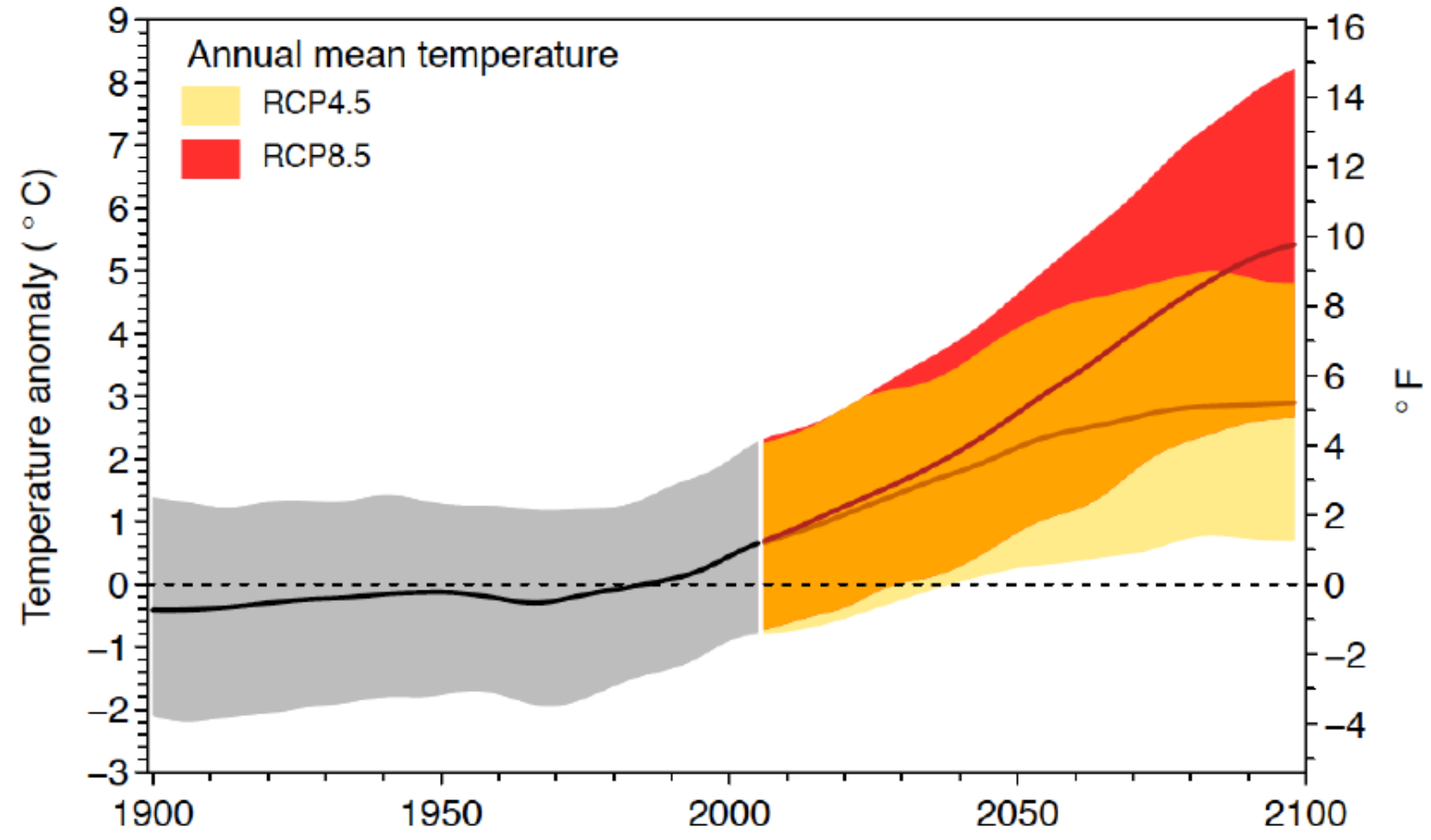
b) April 1 VIC SWE Trend 1955 to 2014 c) April 1 VIC SWE Trend(Detrended) 1955 to 2014



Modeled total snow storage in the western US on April 1



Temperature Projections for the Columbia Basin**



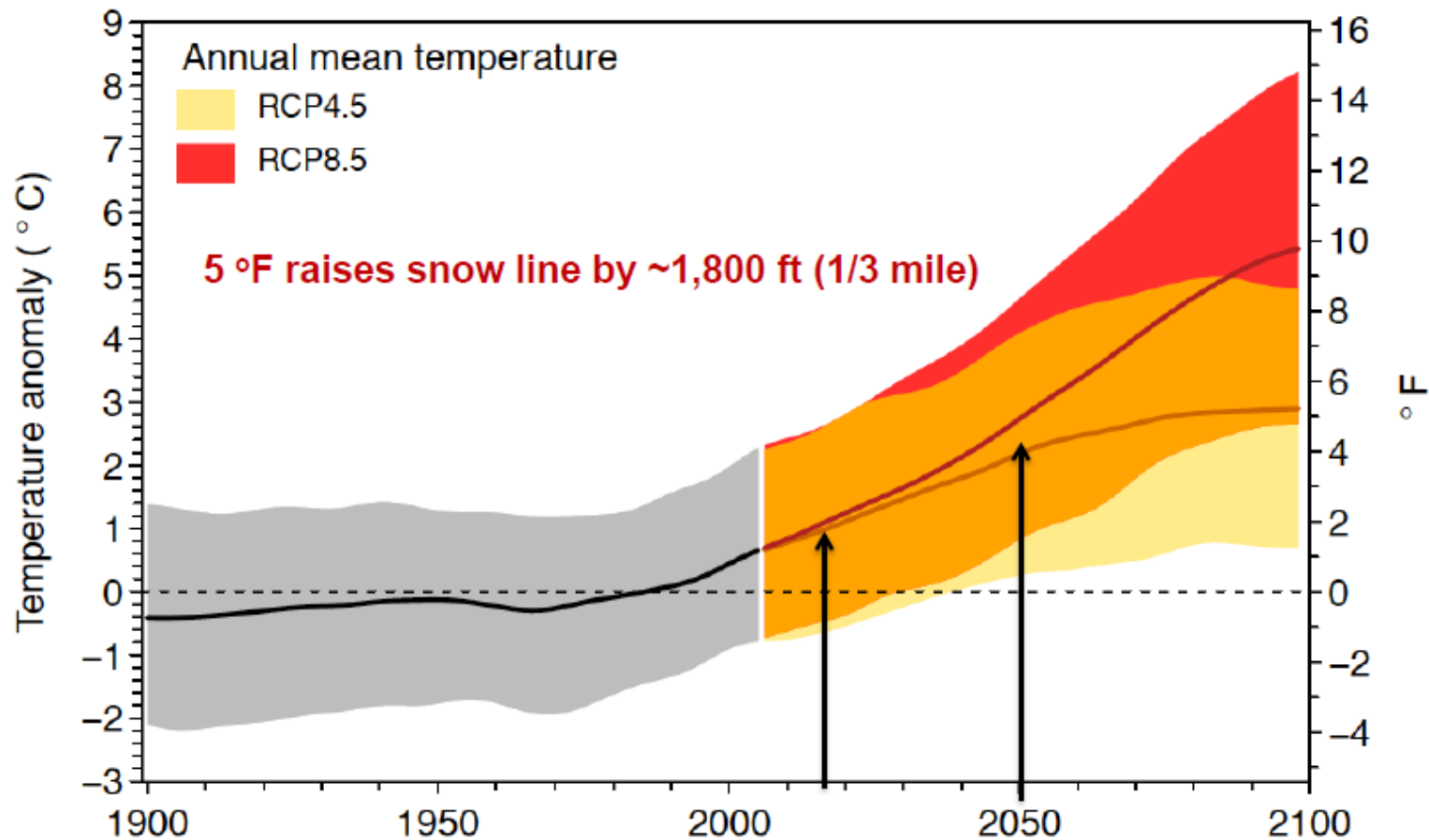
*Departure from 1979-1999 average

**Above Bonneville Dam

Source: Rupp, Abatzoglou, & Mote, *Climate Dynamics*, 2016

Red: High Emissions
Yellow: Low Emissions

Temperature Projections for the Columbia Basin**



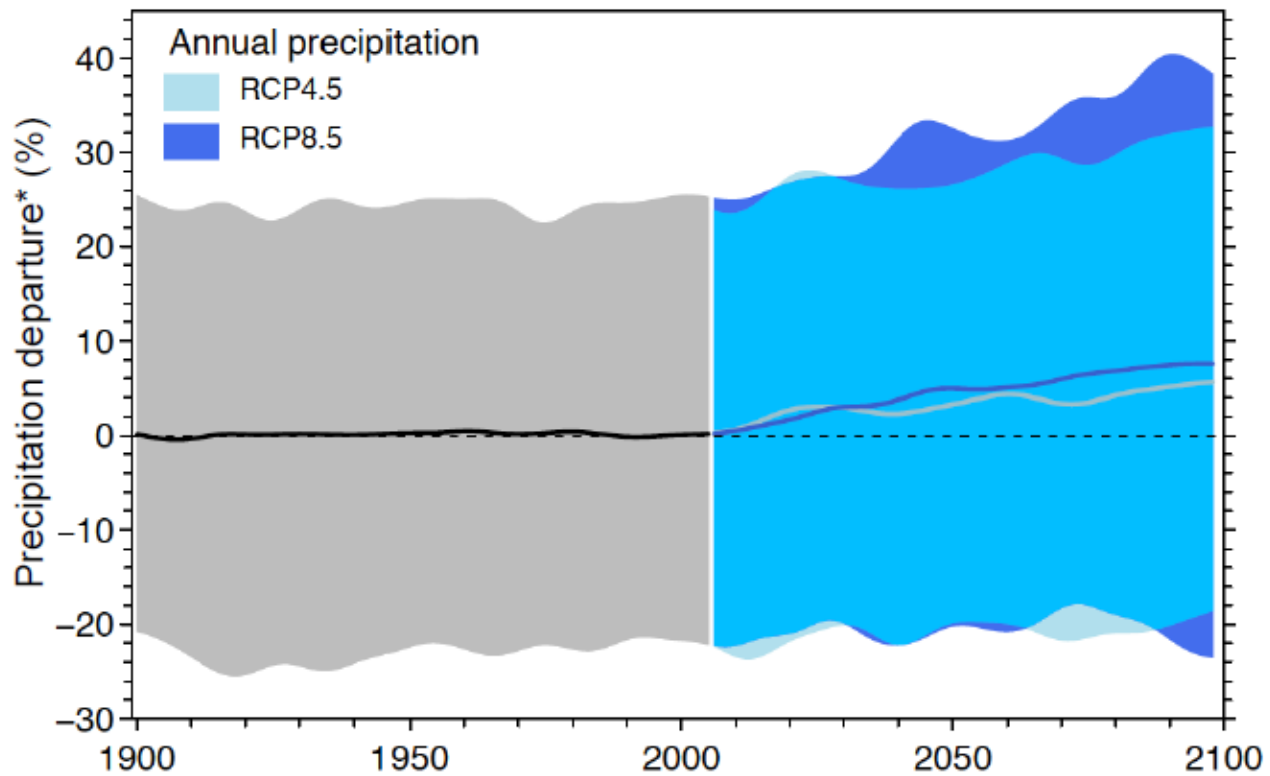
*Departure from 1979-1999 average

**Above Bonneville Dam

Source: Rupp, Abatzoglou, & Mote, *Climate Dynamics*, 2016

Red: High Emissions
Yellow: Low Emissions

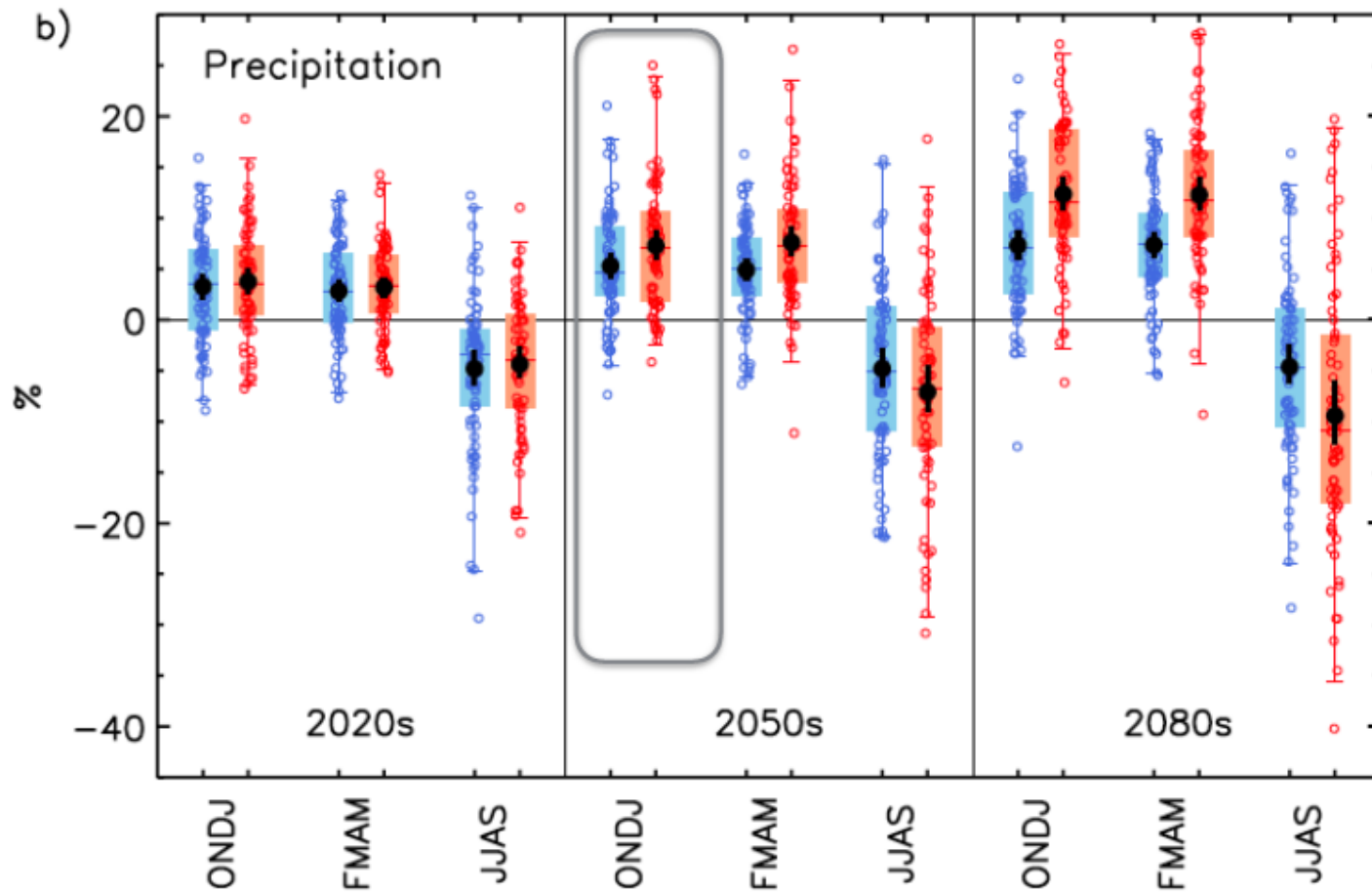
Precipitation Projections for the Columbia Basin



*Relative departure from 1979-1999 average

Source: Rupp, Abatzoglou, & Mote, *Climate Dynamics*, 2016

Precipitation changes by season: Columbia Basin



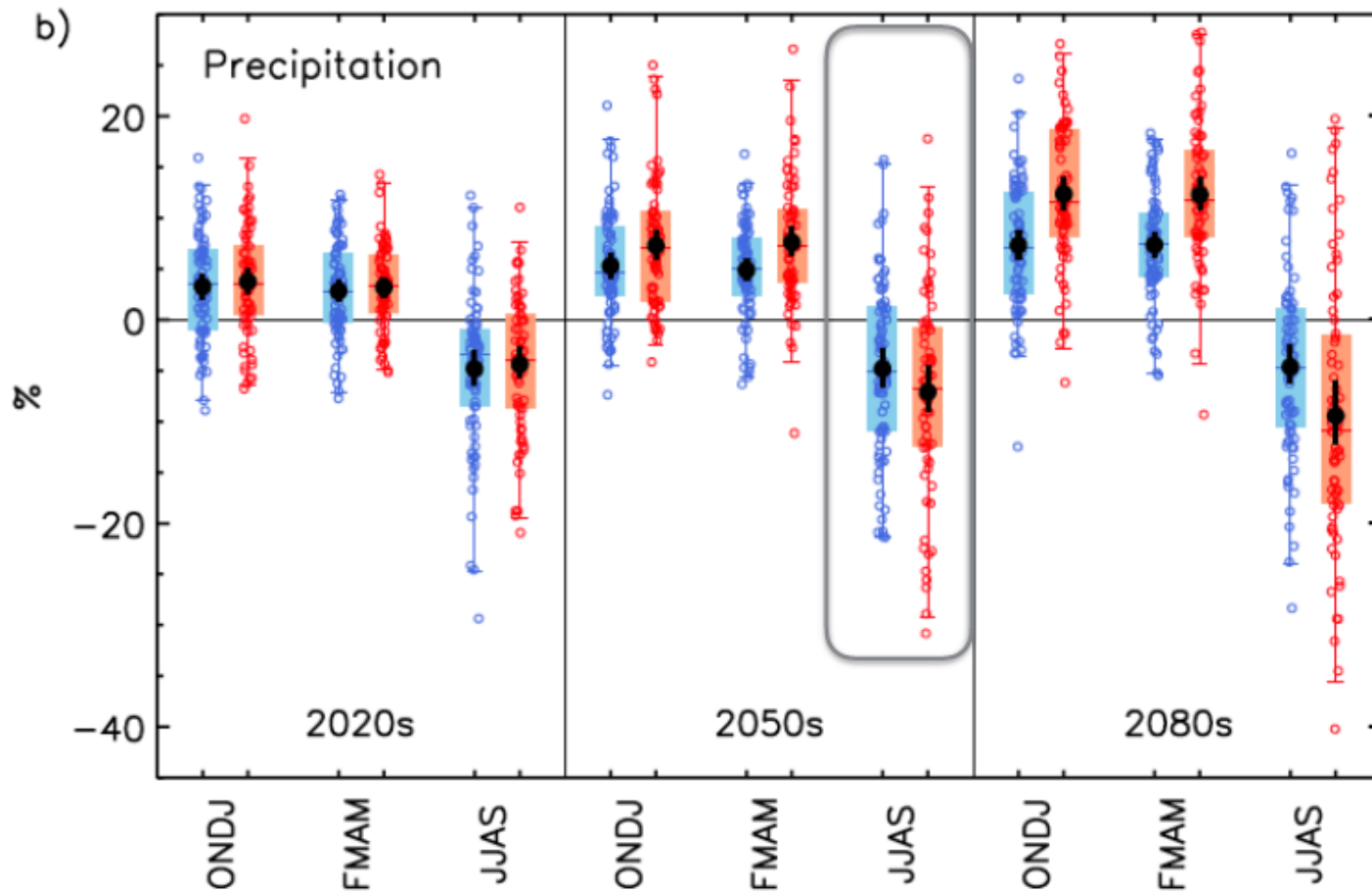
*Departure from 1979-1999 average

Source: Rupp, Abatzoglou. & Mote, *Climate Dynamics*, 2016

- RCP45
- RCP85

Red: High Emissions
Blue: Low Emissions

Precipitation changes by season: Columbia Basin



*Departure from 1979-1999 average

Source: Rupp, Abatzoglou, & Mote, *Climate Dynamics*, 2016

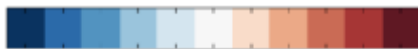
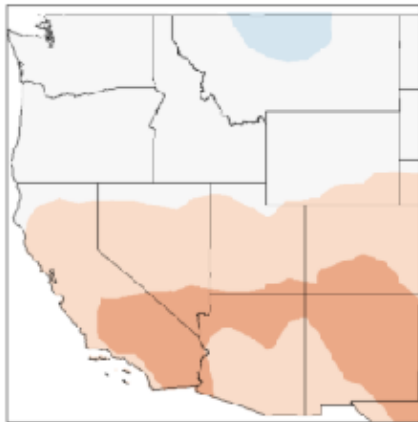
- RCP45
- RCP85

Red: High Emissions
Blue: Low Emissions

Seasonal Forecasts (Feb 9, 2018)

multi-model average temperature

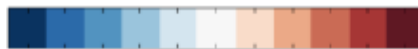
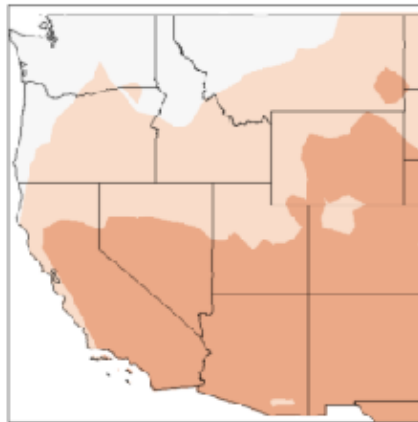
Mar 2018-May 2018



Temp. Anomaly (F) from 1982-2010 normal

Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA, NW Climate Toolbox

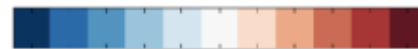
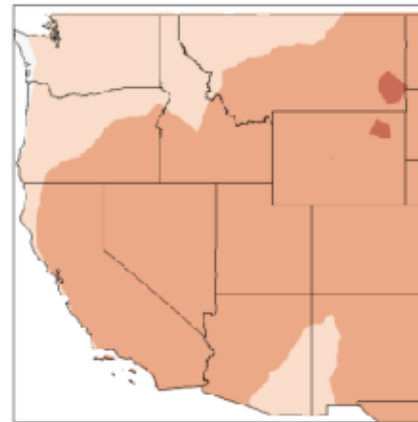
Apr 2018-Jun 2018



Temp. Anomaly (F) from 1982-2010 normal

Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA, NW Climate Toolbox

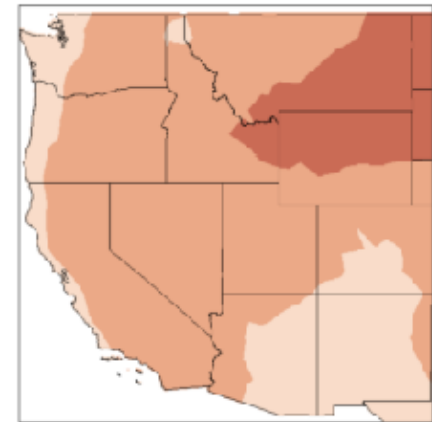
May 2018-Jul 2018



Temp. Anomaly (F) from 1982-2010 normal

Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA, NW Climate Toolbox

Jun 2018-Aug 2018



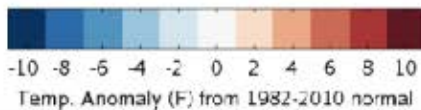
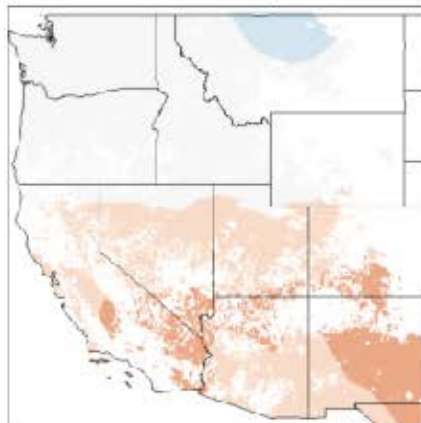
Temp. Anomaly (F) from 1982-2010 normal

Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA, NW Climate Toolbox

Seasonal Forecasts (Feb 9, 2018)

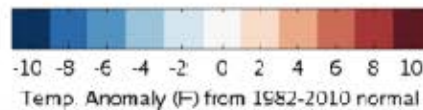
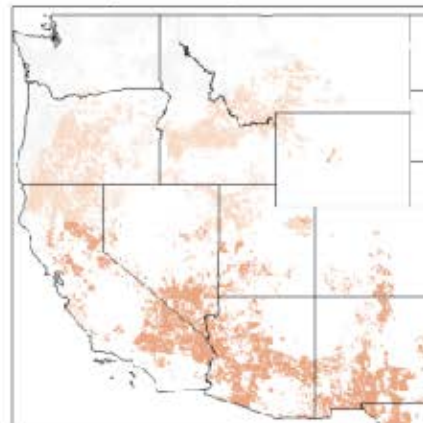
multi-model average temperature

Mar 2018-May 2018



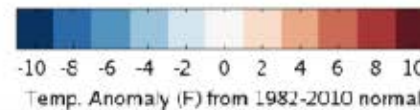
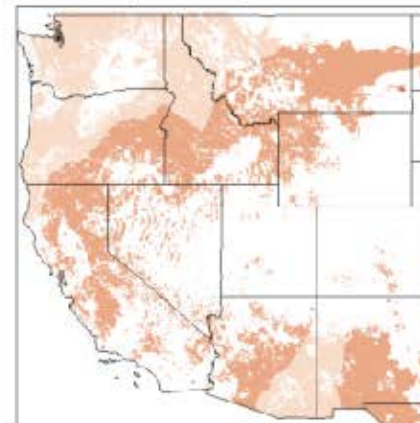
Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA; HSS>17; NW Climate Toolbox

Apr 2018-Jun 2018



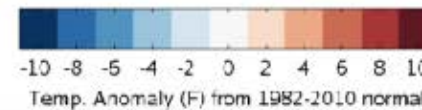
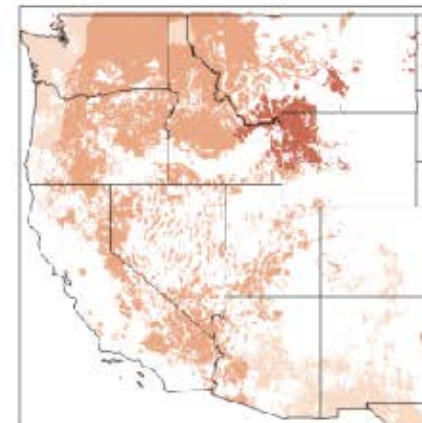
Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA; HSS>17; NW Climate Toolbox

May 2018-Jul 2018



Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA; HSS>17; NW Climate Toolbox

Jun 2018-Aug 2018



Data Source: NMME acquired 2/9/2018
Processing: BCSO-METDATA; HSS>17; NW Climate Toolbox

NW Climate Toolbox

Seasonal Forecasts (Feb 9, 2018)

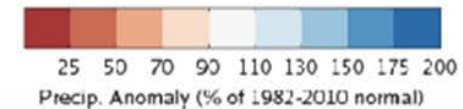
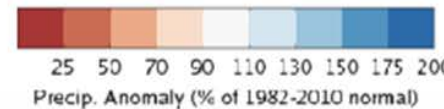
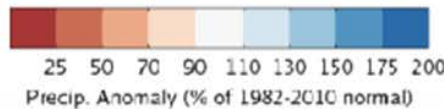
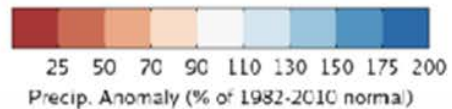
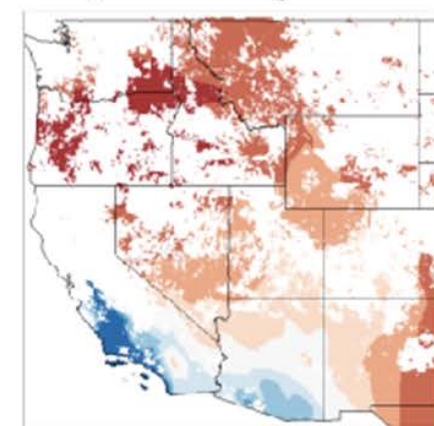
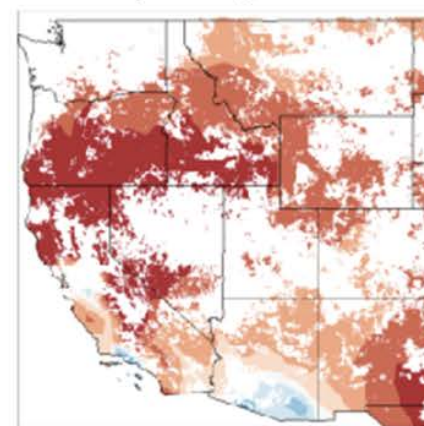
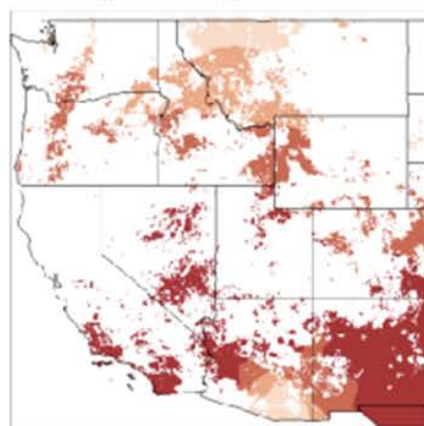
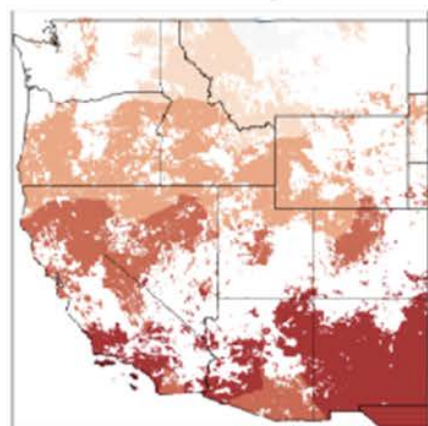
multi-model average temperature

Mar 2018-May 2018

Apr 2018-Jun 2018

May 2018-Jul 2018

Jun 2018-Aug 2018



Data Source: NMME acquired 2/9/2018
Processor: BCSD, <http://climate.skn.ualoha.edu>

Data Source: NMME acquired 2/9/2018
Processor: BCSD, <http://climate.skn.ualoha.edu>

Data Source: NMME acquired 2/9/2018
Processor: BCSD, <http://climate.skn.ualoha.edu>

Data Source: NMME acquired 2/9/2018
Processor: BCSD, <http://climate.skn.ualoha.edu>

NW Climate Toolbox

Thank you!

dellok@oregonstate.edu

occri.net

State Drought Declarations: Process and Toolbox



Declaring a Drought: Process

- **Declaration by County Commission**
 - ~ with descriptions and observations
- **Water Supply Availability Committee**
 - ~ add details re water conditions
- **Drought Readiness Council**
 - ~ makes recommendation to Governor

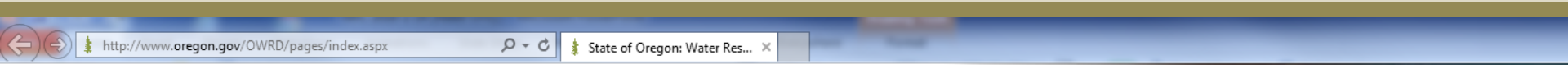
Note 1: Governor can declare independently from this process as well

Note 2: State process ≠ Federal process

Declaring a Drought: Toolbox

- **Temporary Emergency Water Use Permit** – expedites processing of a groundwater permit as an alternative to an already-existing surface water right. Only granted if water is available.
- **Temporary Transfer** – expedites processing of a request to change type of water use, place of use, or location of diversion.
- **Human or Stock Water Use Preference** – grants preference over other uses regardless of priority date.

Contacts and Resources



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Oregon's 2017 Integrated Water Resources Strategy - Now Available Online



This past December, the Water Resources Commission adopted Oregon's 2017 Integrated Water Resources Strategy, a framework for better understanding and meeting our instream and out-of-stream water needs, including water quantity, water quality, and ecosystem needs. Using a process that involved extensive public outreach, the 2017 Strategy identifies the most critical water-related challenges facing communities throughout Oregon. It offers recommendations in 13 issues areas to address these challenges.

To download the 2017 Integrated Water Resources Strategy, please [visit this website](#).



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Agency Resources

Resources For:

- [Wells and Well Construction](#)
- [Exempt Use Water Well Recording](#)
- [Realtors®](#)
- [Certified Water Right Examiners](#)
- [Water Conservation](#)
- [Drought Information](#)
- [Conservation and Supply Resources and Programs](#)
- [Deschutes Basin Mitigation Program](#)
- [Environmental Justice](#)
- [Gold Mining: FAQ](#)
- [Assignments and Ownership Updates](#)



Lookup Information:

- [Lookup Water Rights](#)
- [Find out if a Property has a Water Right](#)
- [Find a Well Log](#)
- [Well ID Application Form](#)
- [Find a Document \(Vault\)](#)
- [Near Real Time Streamflow Data](#)

Agency Spotlight

Klamath Water Distribution Update

Please [click here](#) for more information.

Willamette Basin Review Feasibility Study Available for Public Comment

The U.S. Army Corps of Engineers has released a draft report for public comment regarding the reallocation of storage from the Willamette Valley project reservoirs. Comments are due January 5, 2018. For more information, visit the following website: <http://www.nwp.usace.army.mil/willamette/basin-review>.

An informational Open House was held on Monday, December 11, from 3:00 - 7:00 pm at the Department of Fish and Wildlife's office in Salem (4034 Fairview Industrial Drive).

For more information, refer to the [press release](#).

Funding Opportunities

The Department offers grants and loans to assist with evaluating and developing water resources projects that help address instream and out-of-stream water needs. [Click here](#) to learn more about our grant and loan opportunities.

Department Rulemaking

[Click here](#) to view information on current rulemaking activities, including public comment periods and public hearings.

Water Use and Marijuana





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Thank you.