

Oregon Water Supply Availability Committee

February 14, 2017

NRCS hydrologists sample low elevation snow in the Owyhee Basin where mountain snowpack has already surpassed its normal annual peak.

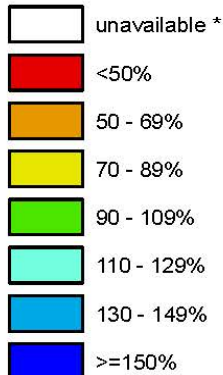


H. Scott Oviatt
Snow Survey Supervisory Hydrologist
USDA NRCS Snow Survey and Water
Supply Forecasting Program
Scott.Oviatt@or.usda.gov
503-414-3271
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

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

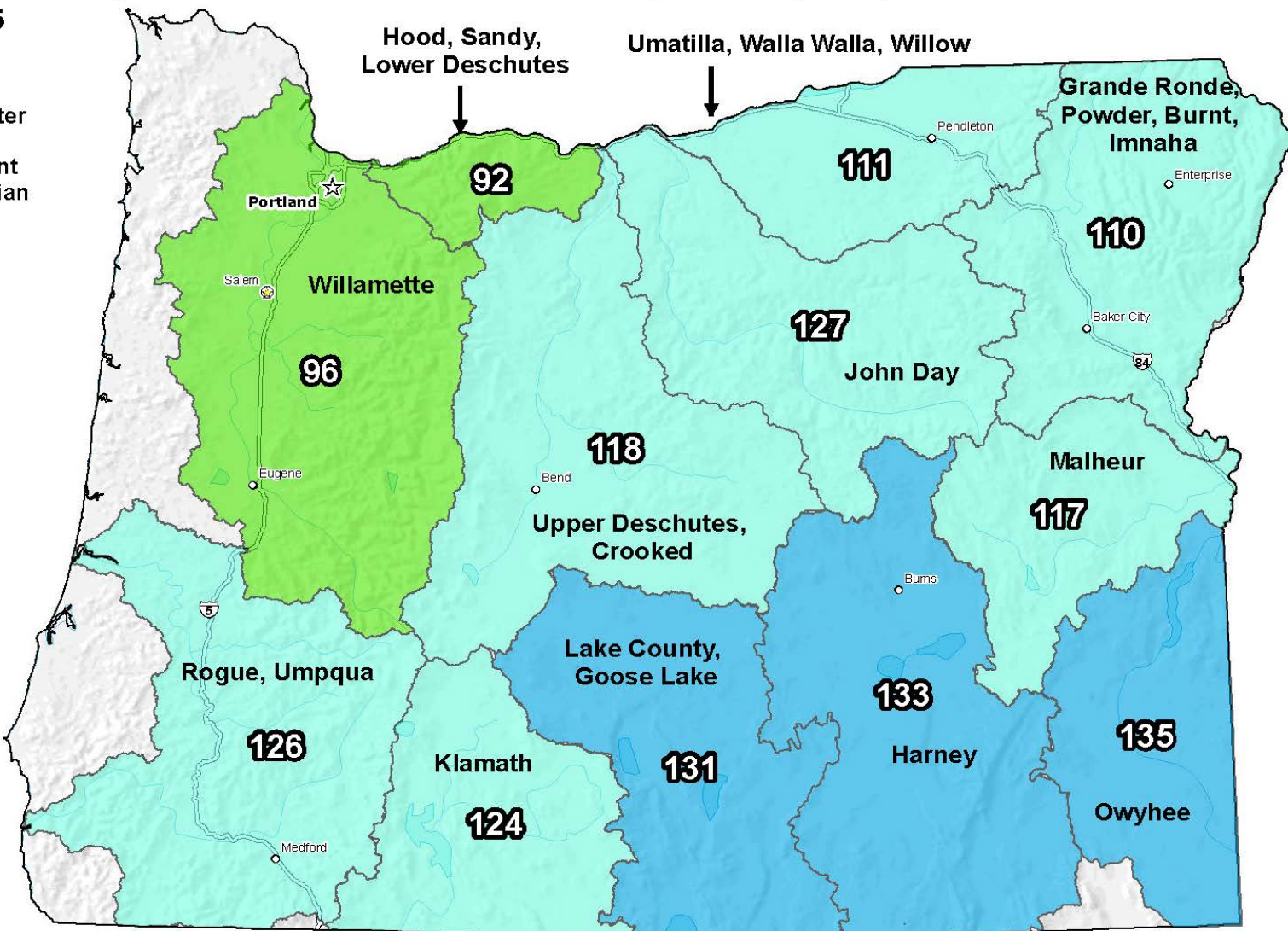
Feb 13, 2016

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

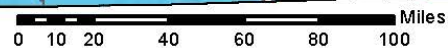


* Data unavailable at time of posting or measurement is not representative at this time of year

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).



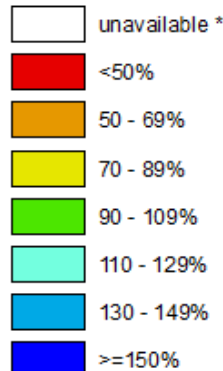
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Statewide SNOTEL Snowpack is 127% of normal

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

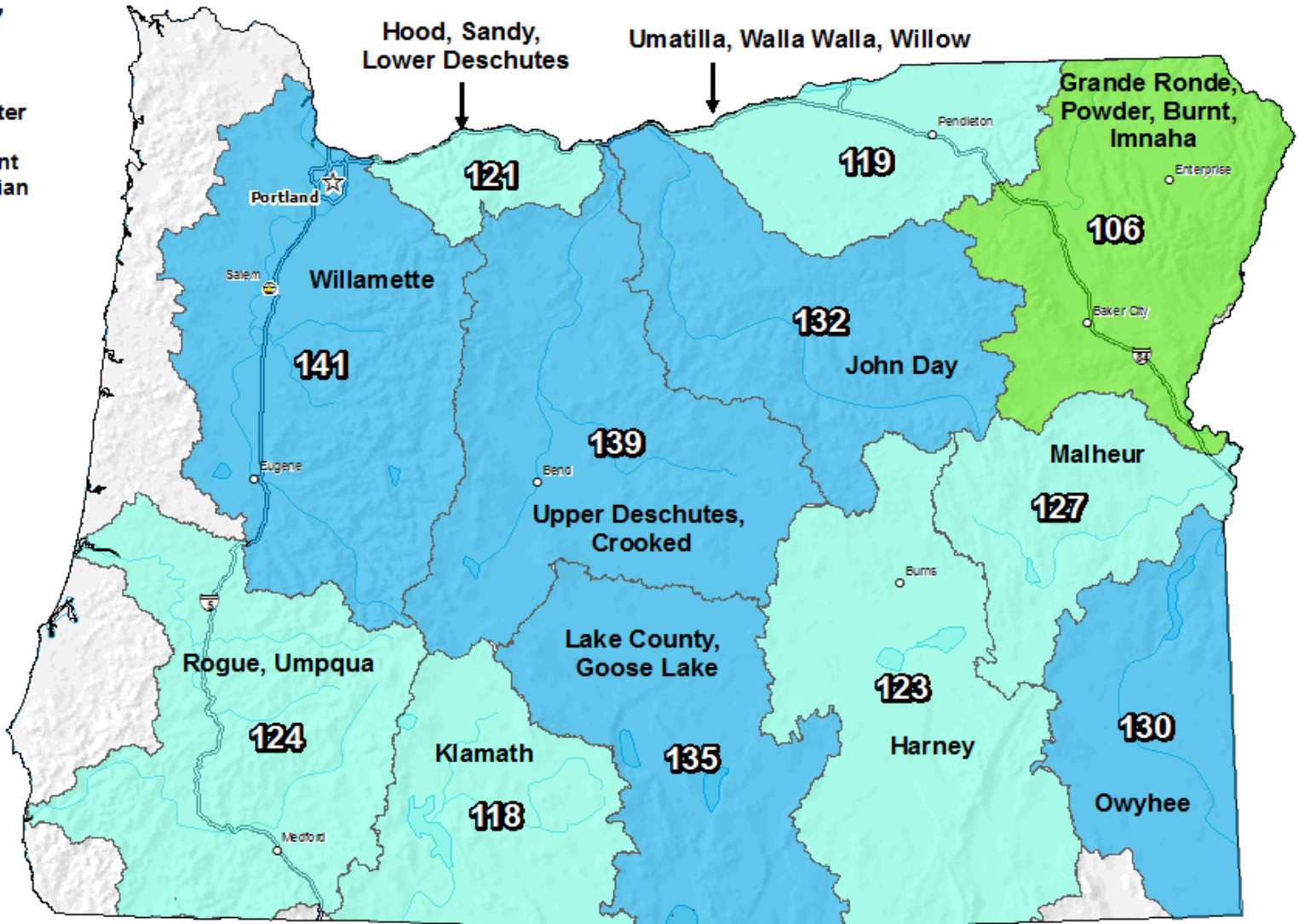
Feb 13, 2017

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



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Provisional Data
Subject to Revision

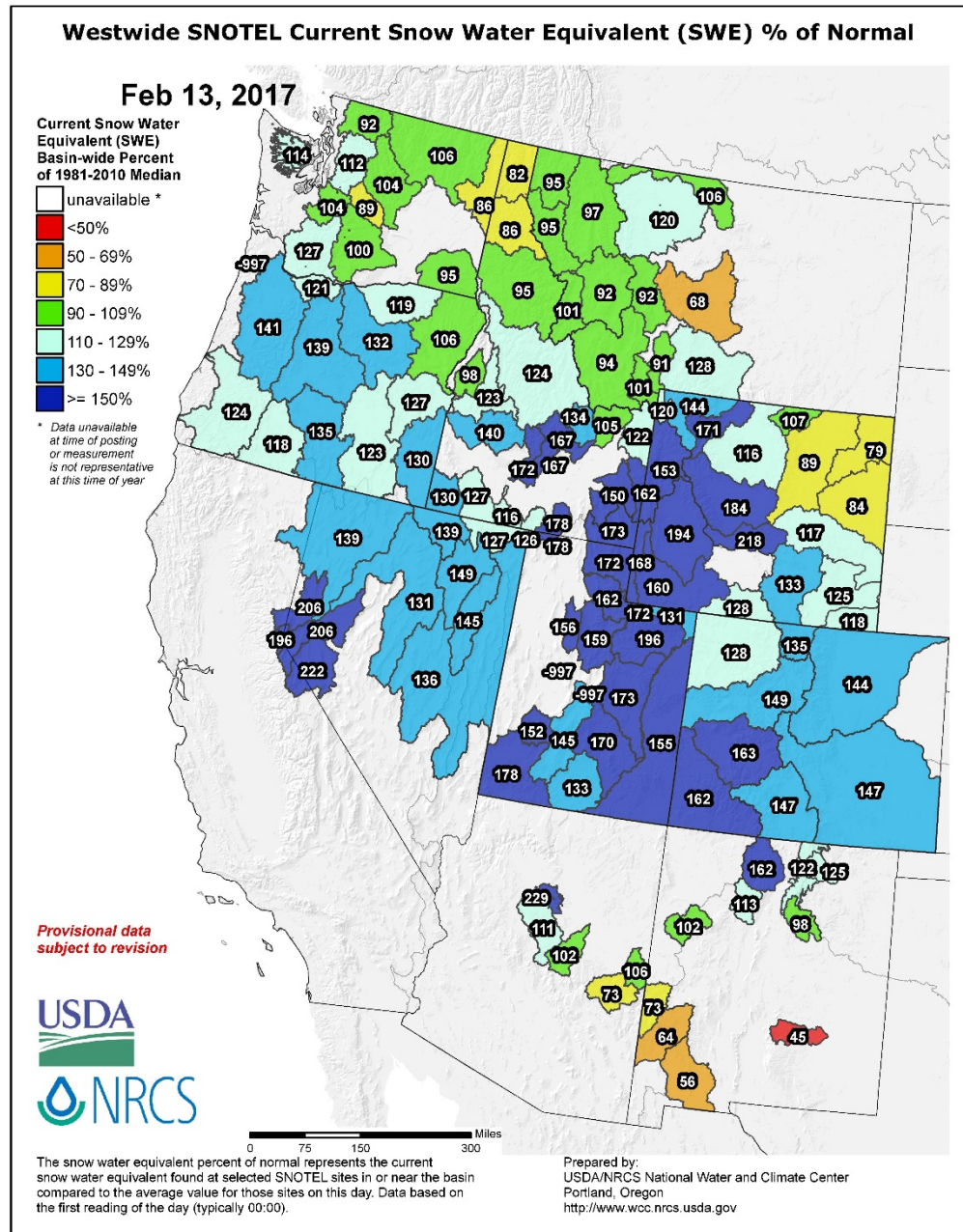


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

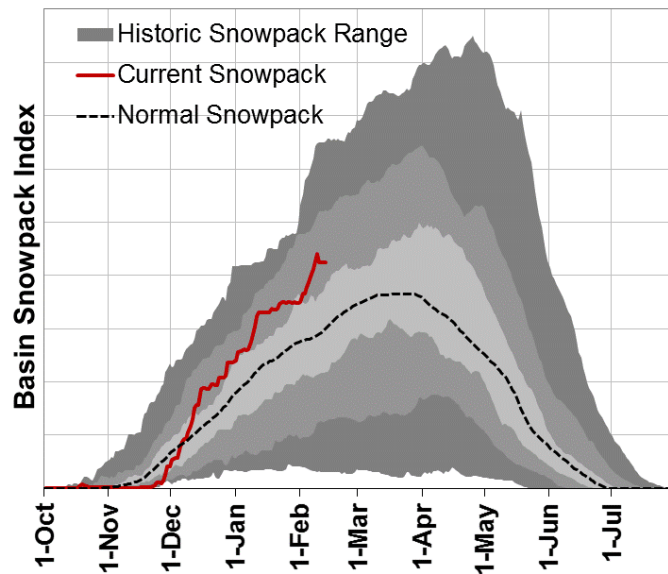
0 10 20 40 60 80 100 Miles

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

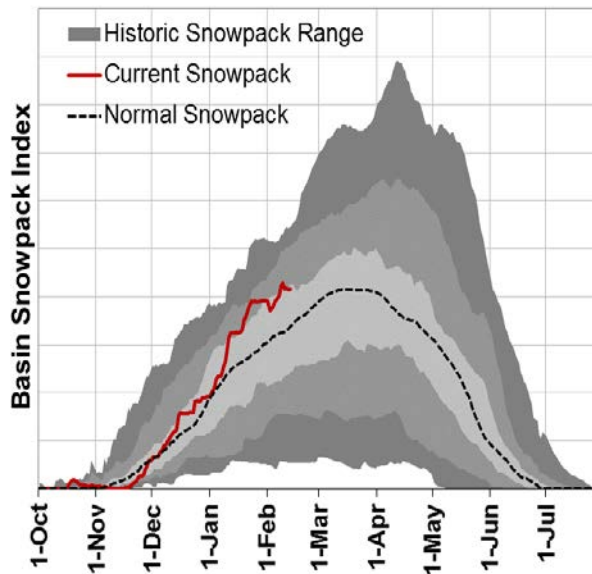
West-Wide Snowpack – February 13, 2017



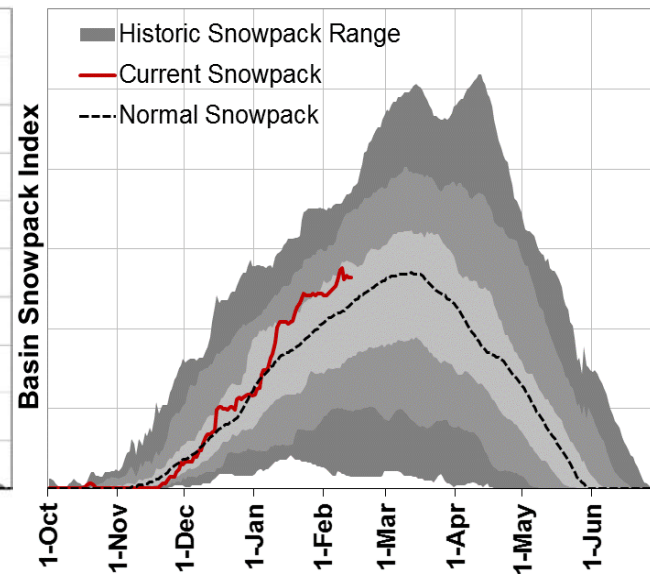
Willamette



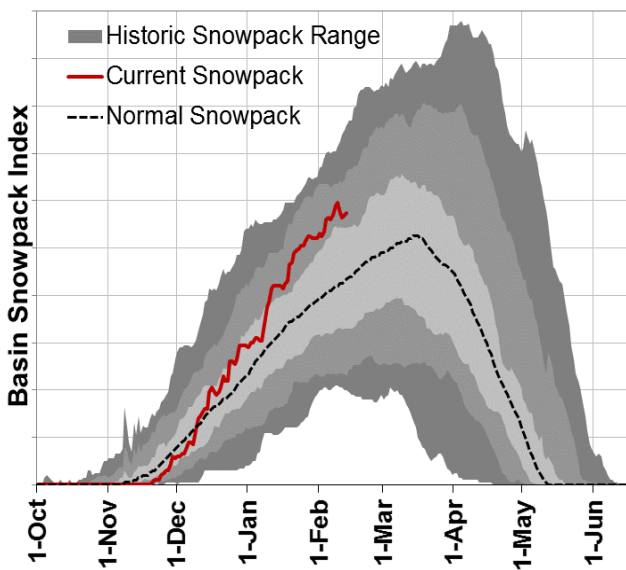
Rogue/Umpqua



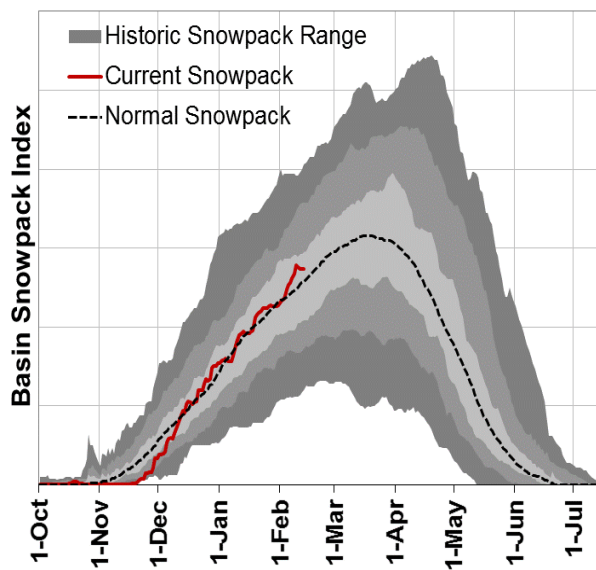
Klamath



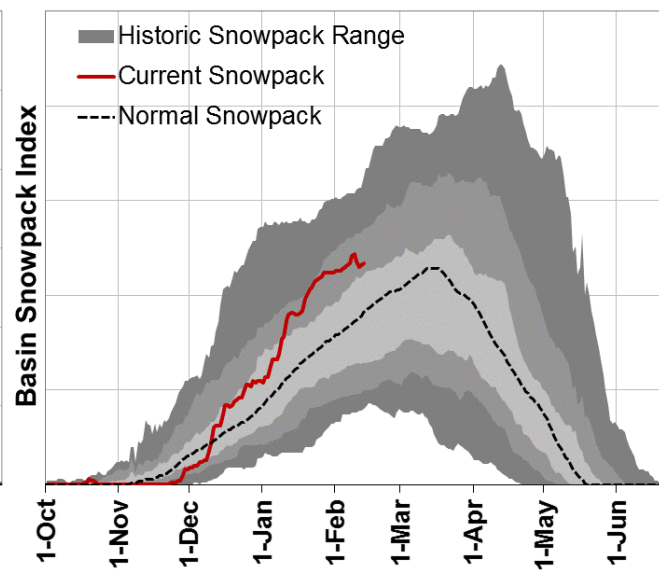
John Day



Grande Ronde/Powder/Burnt



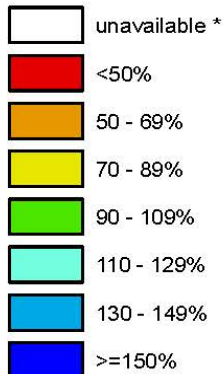
Owyhee/Malheur



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

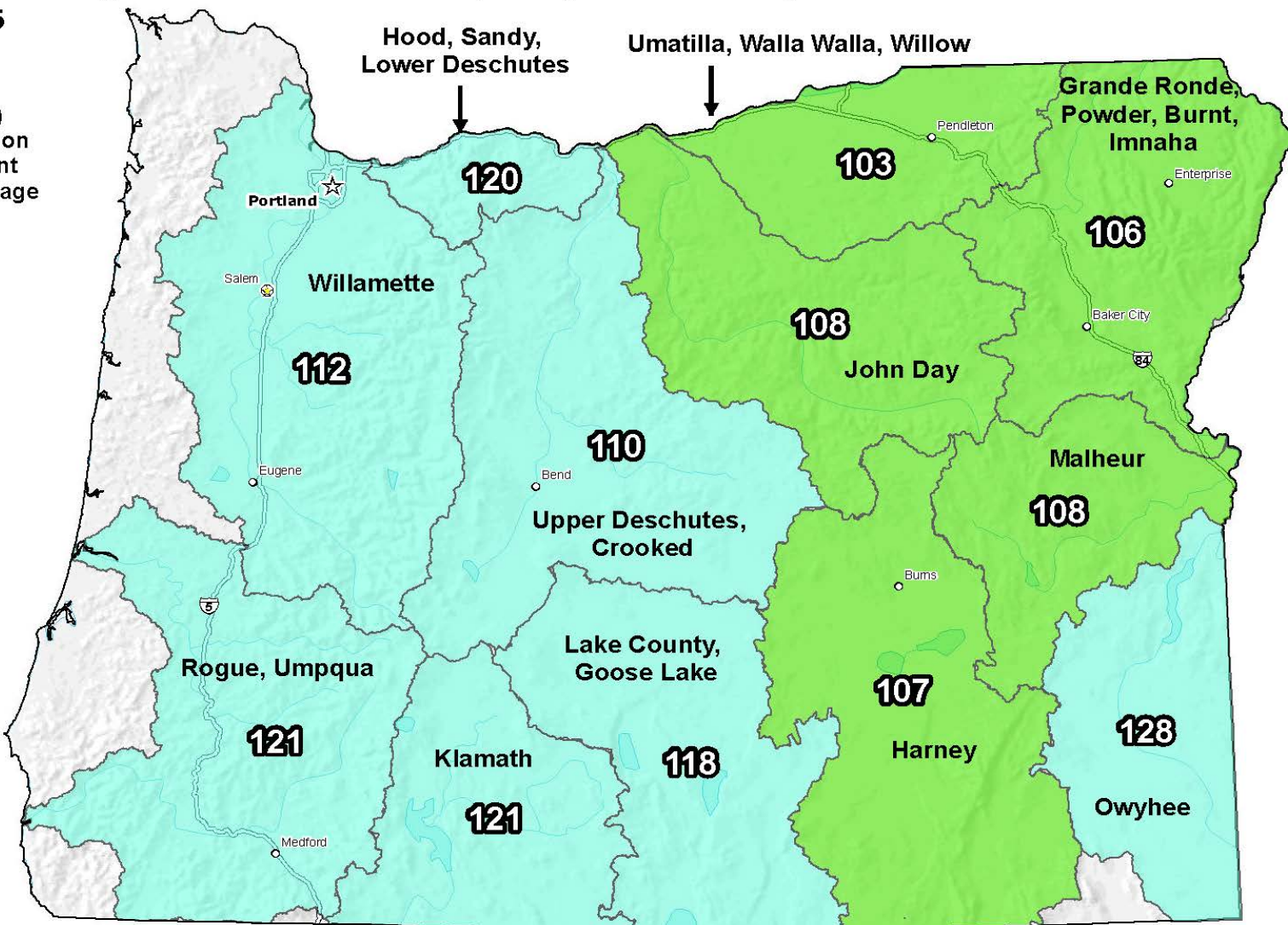
Feb 13, 2016

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



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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).



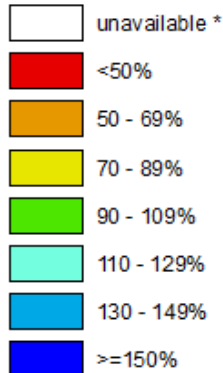
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Statewide SNOTEL Precipitation is 124% of normal

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

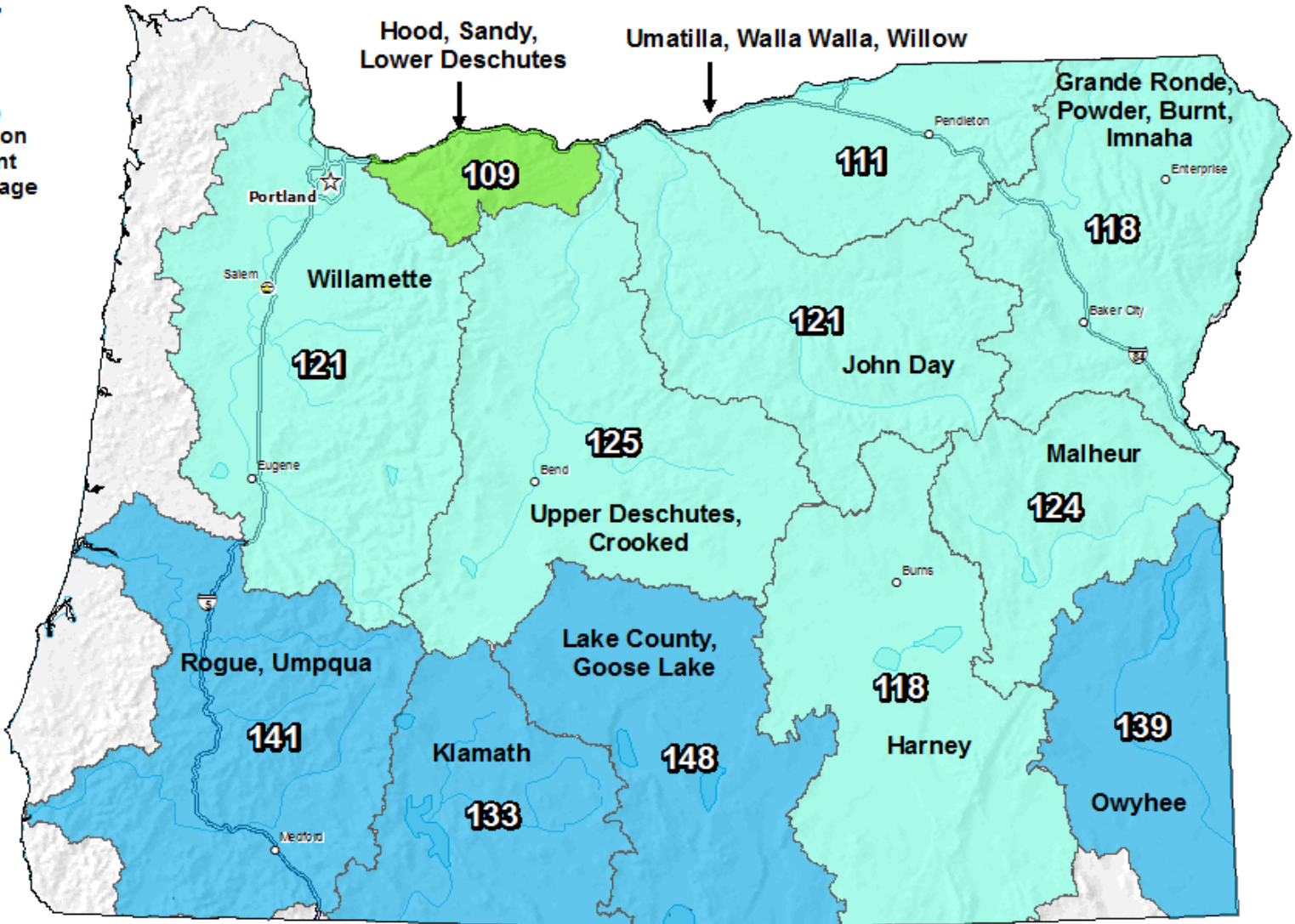
Feb 13, 2017

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

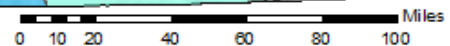


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Provisional Data
Subject to Revision



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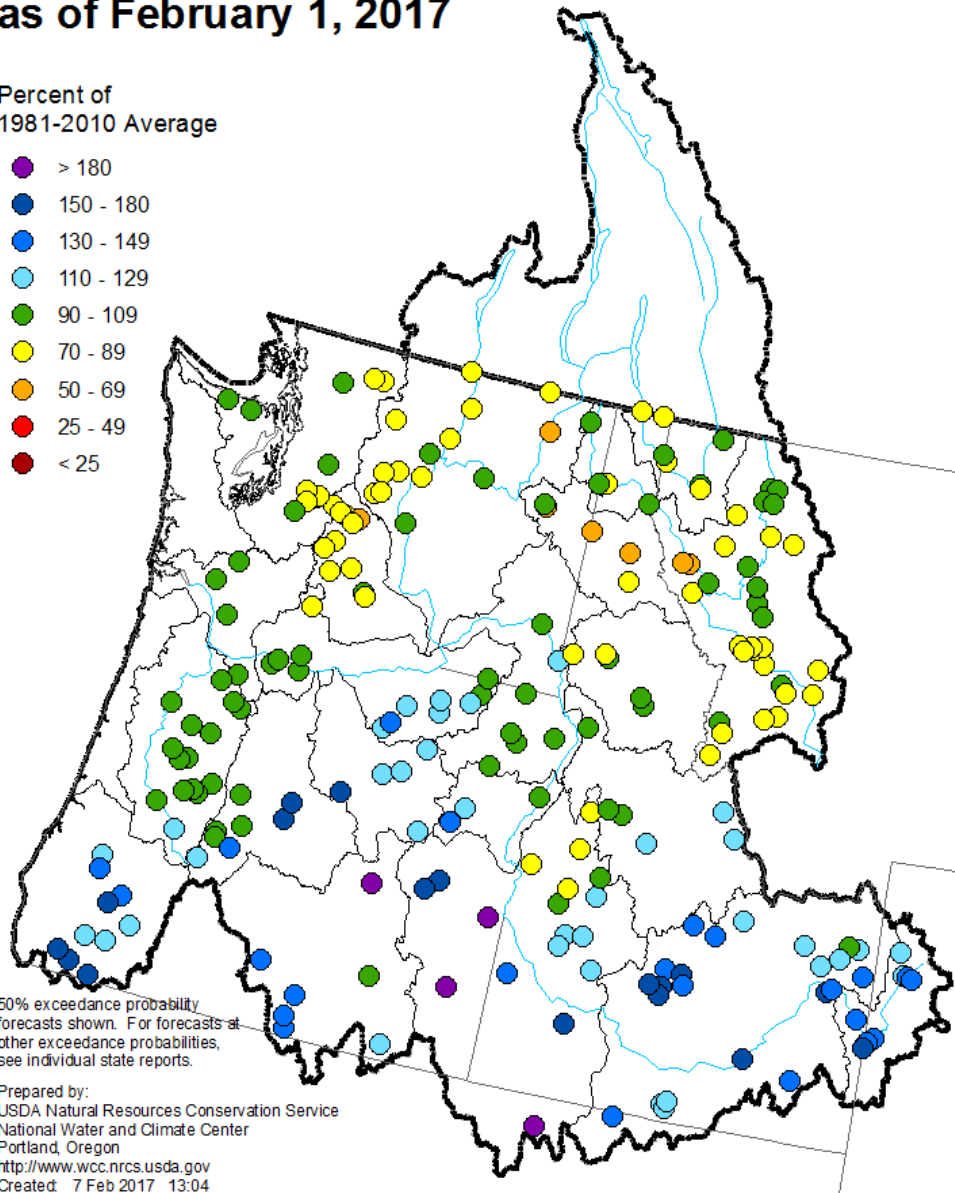


Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Columbia River and Pacific Coastal Basins Spring and Summer Streamflow Forecasts as of February 1, 2017

Percent of
1981-2010 Average

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



50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>
Created: 7 Feb 2017 13:04

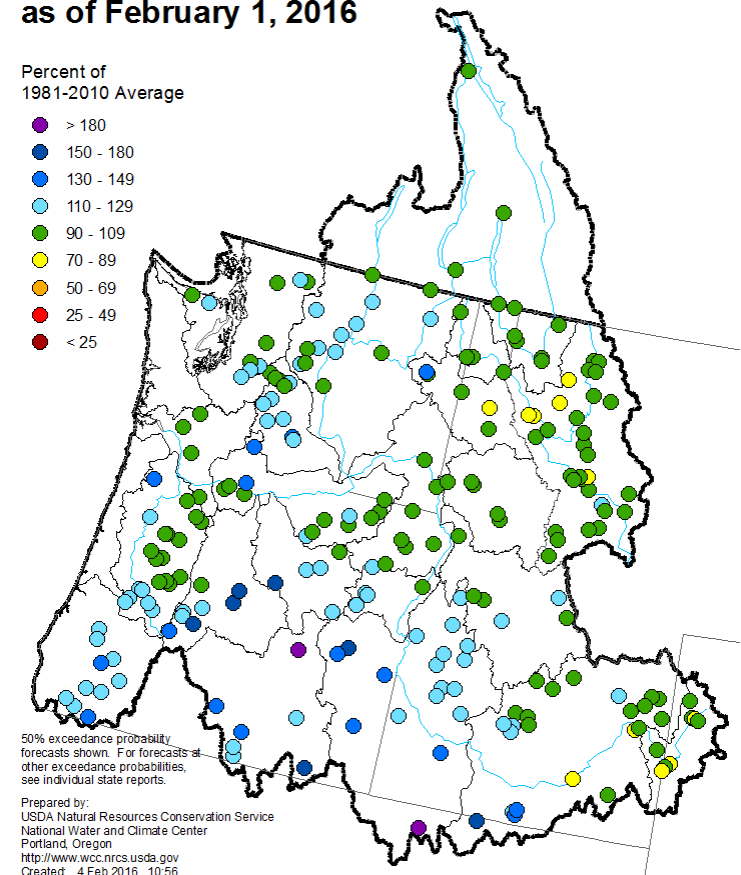
April thru September Streamflow Forecasts:

- Generally near normal to well above normal statewide
- Very similar to February 1, 2016

Columbia River and Pacific Coastal Basins Spring and Summer Streamflow Forecasts as of February 1, 2016

Percent of
1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
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50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

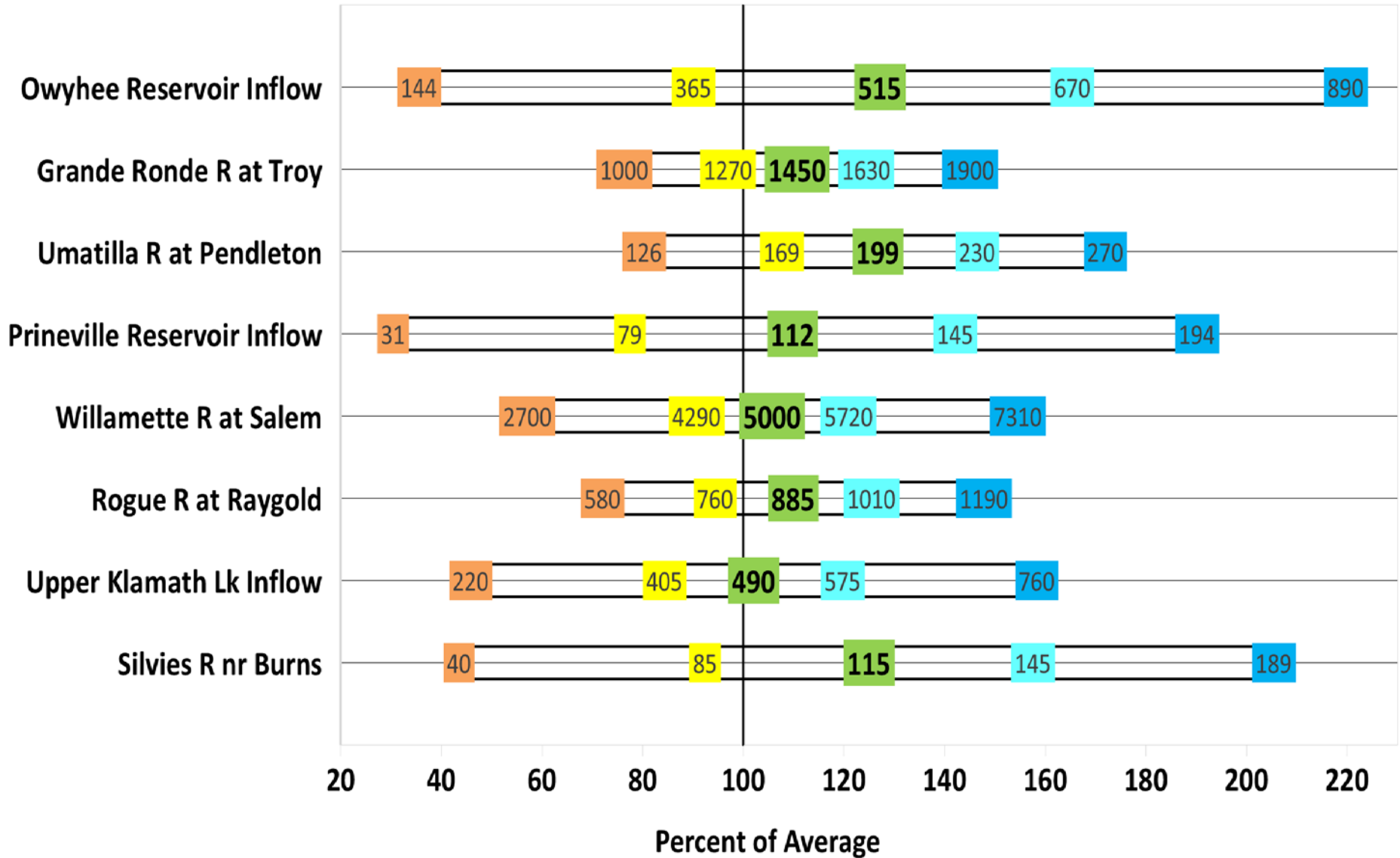
Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>
Created: 4 Feb 2016 10:56

January 1, 2017

Summary of Streamflow Forecasts across Oregon

April through September Forecast Volumes at a Selection of Streamflow Points

(Volumes listed in KAF)

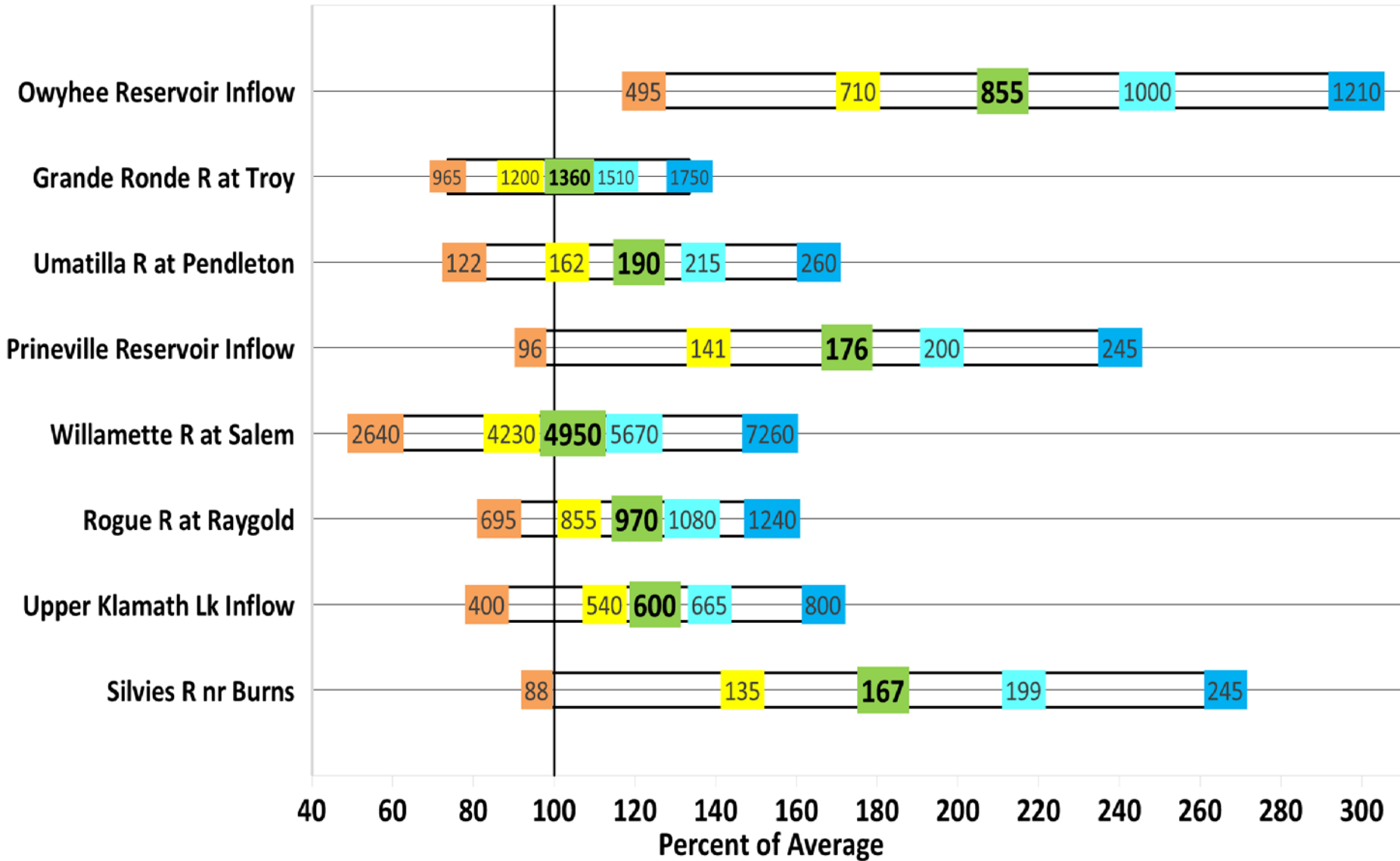


February 1, 2017

Summary of Streamflow Forecasts across Oregon

April through September Forecast Volumes at a Selection of Streamflow Points

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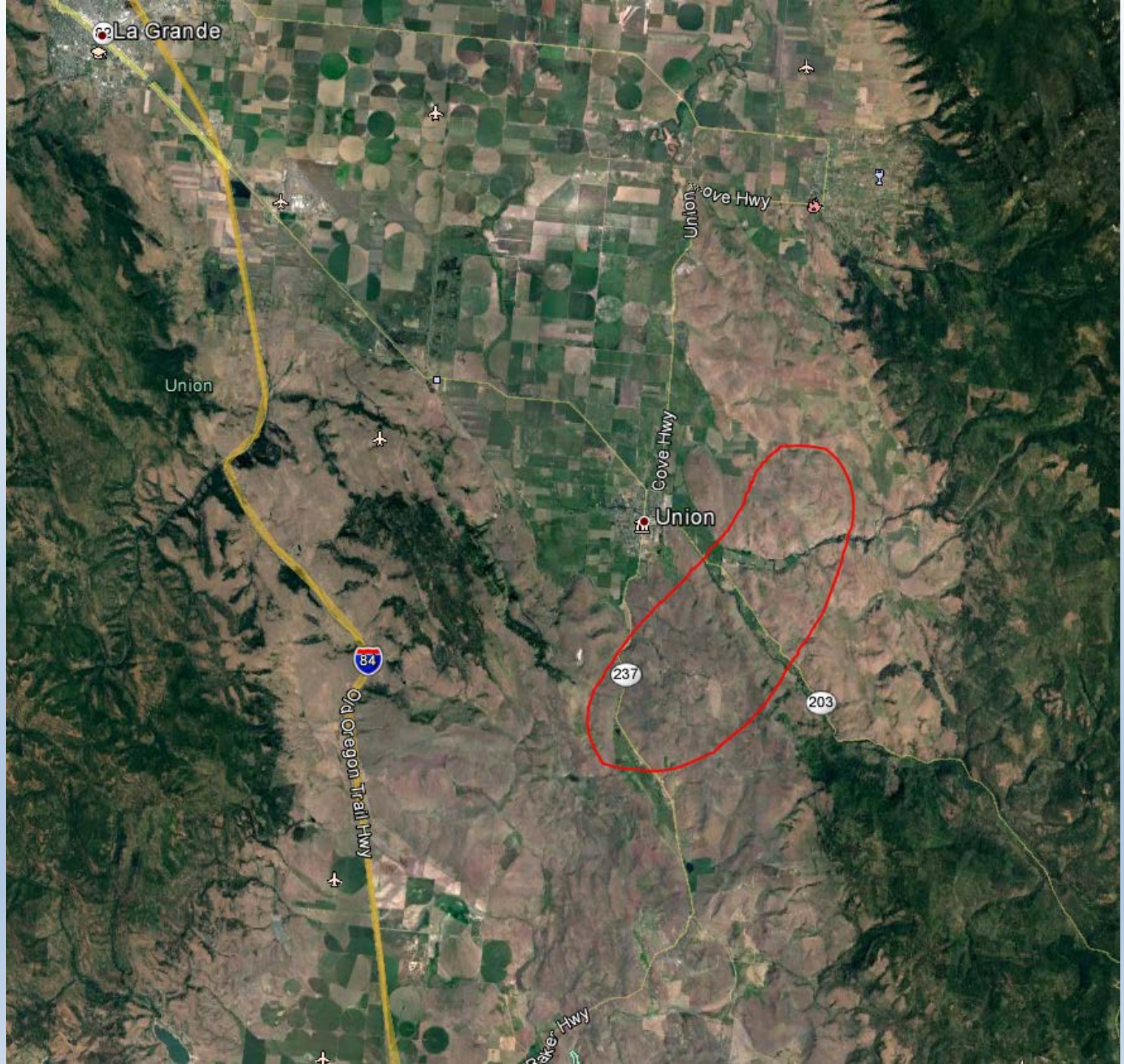


NRCS staff from Union, Baker, and Malheur Counties met to discuss implications of the low elevation snowpack that has accumulated and remained in place this winter. Concerns of what could transpire if a rapid warming or rain-on-snow event occurred. Field crews mobilized 02/07 – 02/09 to measure snow at certain locations mainly to determine water content and depth.

NWS Offices in Pendleton and Boise were contacted and asked:

- 1) Are there certain areas (cross sections of tributaries, areas where NWS has recorded historic flooding, etc.) where we should sample to identify impacts that would assist NWS flood forecasting or predictability?**
- 2) Is there anything else we could identify/measure (photos or other data collection) that would assist your efforts?**

Effort is a one-time, quick snapshot of conditions, and is not meant to be a replication of our snow course or SNOTEL monitoring in terms of long-term data records and sampling at pre-specified locations. NWS was pleased and responded immediately with request for specified target areas, including photo documentation of sampled areas.



La Grande

Union

Union Cove Hwy

Union

Cove Hwy

84

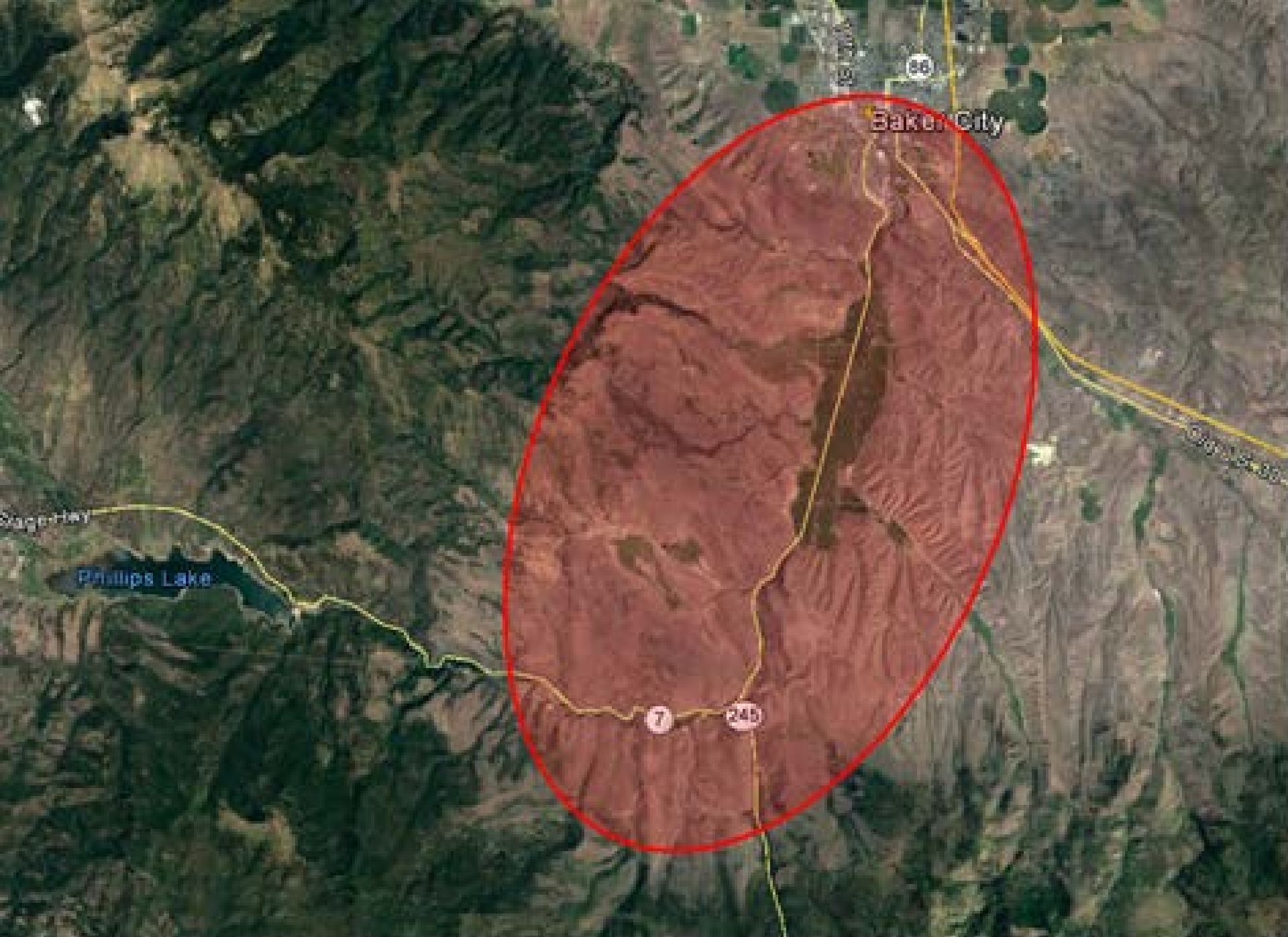
Oa Oregon Trail Hwy

237

203

Gate Hwy





Baker City

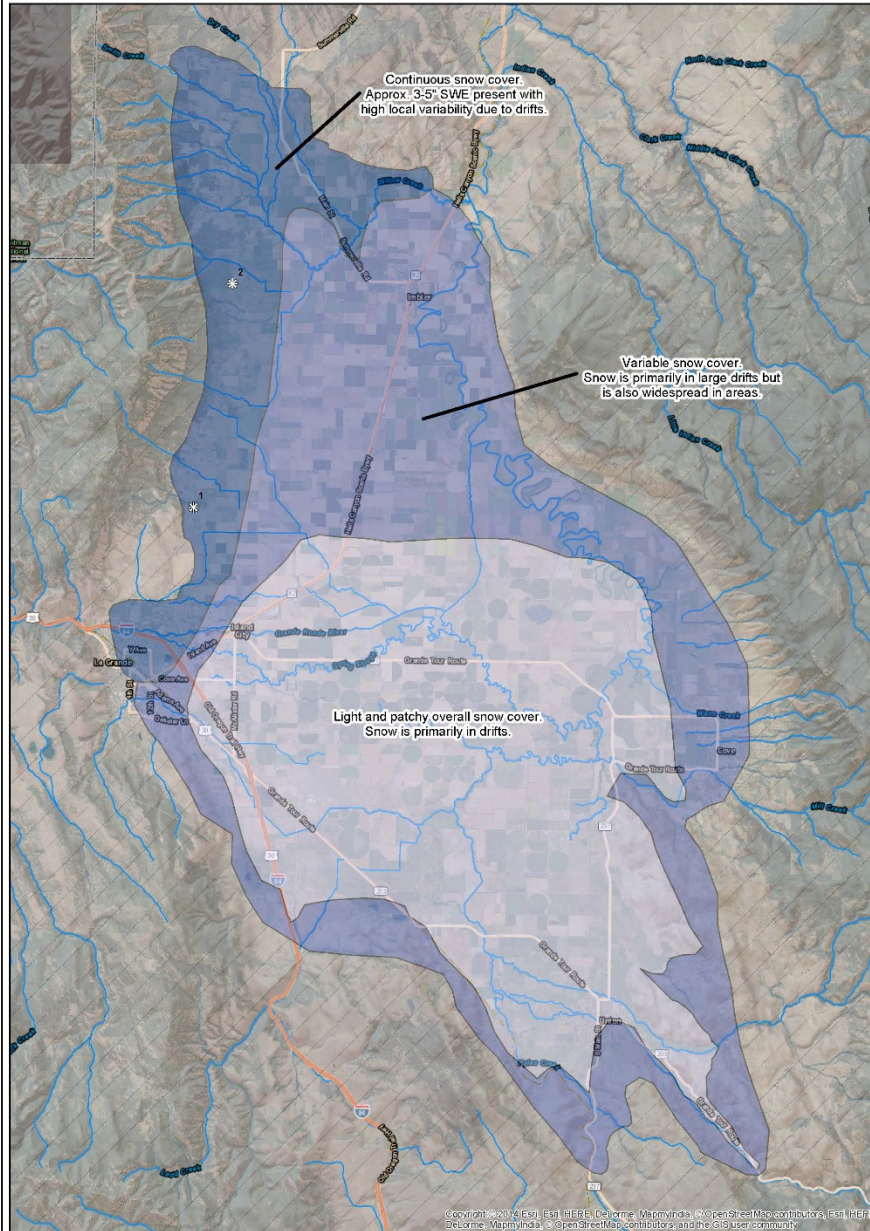
Phillips Lake

30

7

245

Grande Ronde Valley Low Elevation Snowpack: February 7, 2017



2-7-17 Snow Cover

Light	SWE Sample Sites
Variable	Counties
Continuous	Streams
Not Assessed	

1:128,000
0 1 2 3 4 5 6 Miles

Map by N. Vora, USDA-NRCS, Union County, OR 2/7/2017.
Map for reference purposes only, accuracy of information is not guaranteed.
Data collected 2/6 and 2/7 2017 by USDA-NRCS staff.



Legend

Bonita RD-ELEV 3970 21" snow, SWE 5.9"

Cottonwood MTN-ELEV 2773 24" snow, SWE 7.0"

Main Boyd Canal-ELEV 2550 24" snow, SWE 7.0"

Snow Survey Map Completed 2/8/17

Bully Creek Dam-ELEV 2551 Snow 20", SWE 5.0"

Vale Cemetery-ELEV 2306, 14.9" snow, 5.0" SWE

NRCS Office-ELEV 2175 16.7" snow, 5.3" SWE

Bench Rd-ELEV 2264 17.2" snow, 4.3" SWE

Vale

New Plymouth

Harper Pass-ELEV 2924 19.7" snow, SWE 5.0"

Nyssa

HWY 20-ELEV 2605 15.2" snow, SWE 4.0"

HWY 20-ELEV 2807 snow 9.5", SWE 3.0"

Parma

Google earth

© 2016 Google



20 mi

Snow Survey 2/9/17

NRCS Baker City- ELEV3415, 12.5" snow, SWE 3.7"

Baker City

Sumpter

410

McEwen

Hudspeth LN- ELEV-4075, 17.5" snow, SWE 6.3"

Union Creek- ELEV 4191, 11.5" snow, SWE 4.3"

Bowen Valley-ELEV 3638, 7.0" Snow, SWE 3.5"

HWY245- ELEV 3771, 5.0" snow, SWE 2.0"



North Fork John Day River near Monument – 02/05/2017



Outside Vale – 02/08/2017



Geiser Grand Hotel – Baker City – 02/06/2017



Geiser Grand Hotel – Baker City – 02/06/2017



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NRCS hydrologists sample low elevation snow in the Owyhee Basin where mountain snowpack has already surpassed its normal annual peak.



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USDA NRCS Snow Survey and Water
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<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

Thank you!

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Winter 2016-17

One we will not soon forget...

**January 2017 coldest month at PDX
since December 1985**

**“...More onion facilities down as snow
continues in Idaho, Oregon...”**



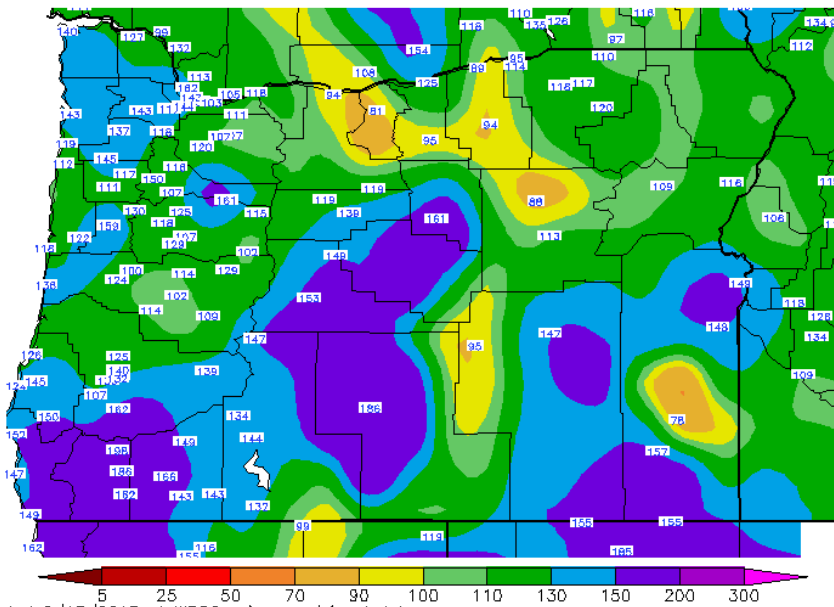


Seasonal Precipitation

Water Year - Percent of Average
Columbia Basin

Water Year - Percent of Average

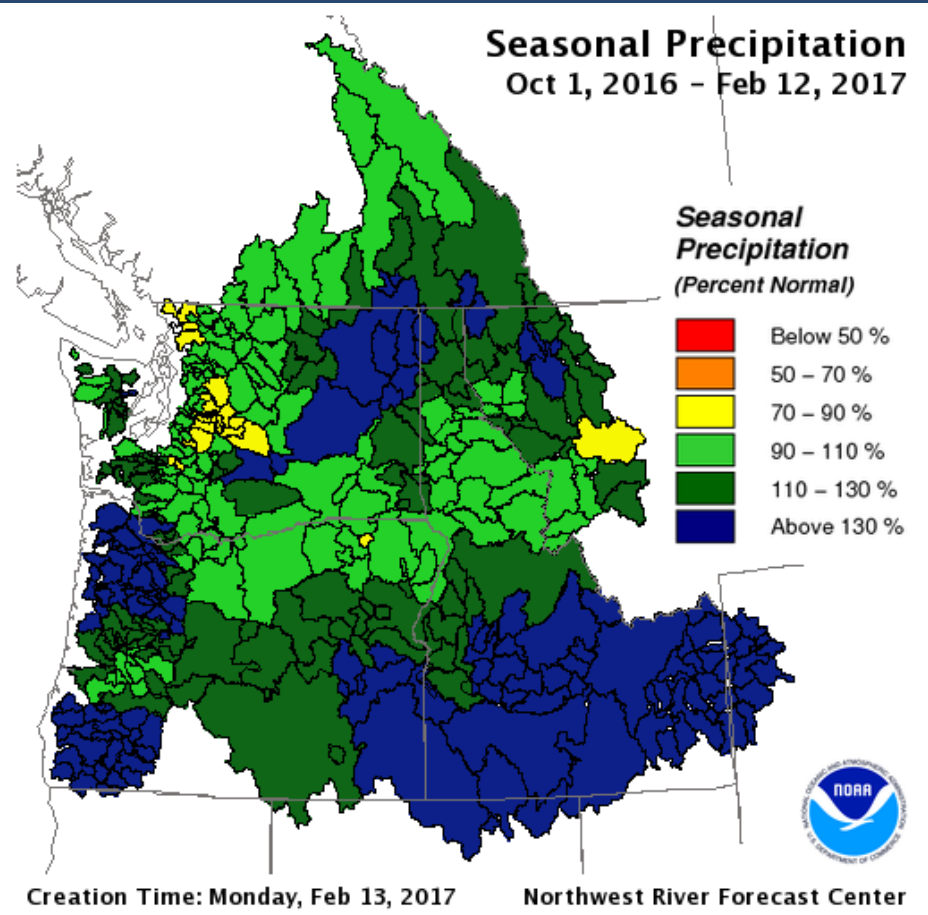
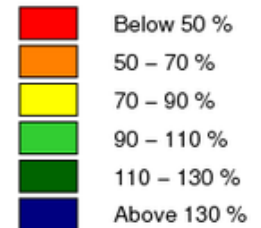
Percent of Average Precipitation (%)
10/1/2016 - 2/12/2017



Generated 2/13/2017 at WRCC using provisional data.
NOAA Regional Climate Centers

Seasonal Precipitation
Oct 1, 2016 - Feb 12, 2017

Seasonal
Precipitation
(Percent Normal)

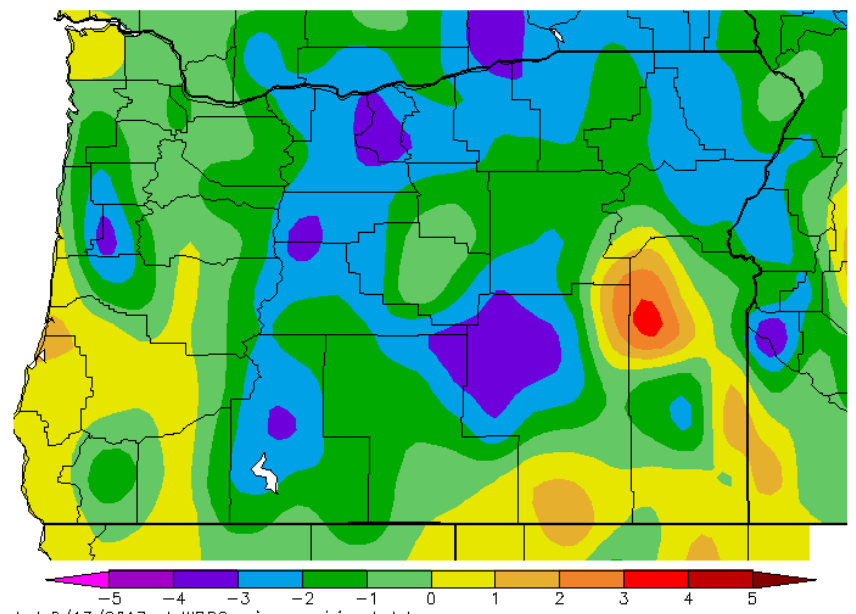




Seasonal Temperatures

Water Year - Departure from Average

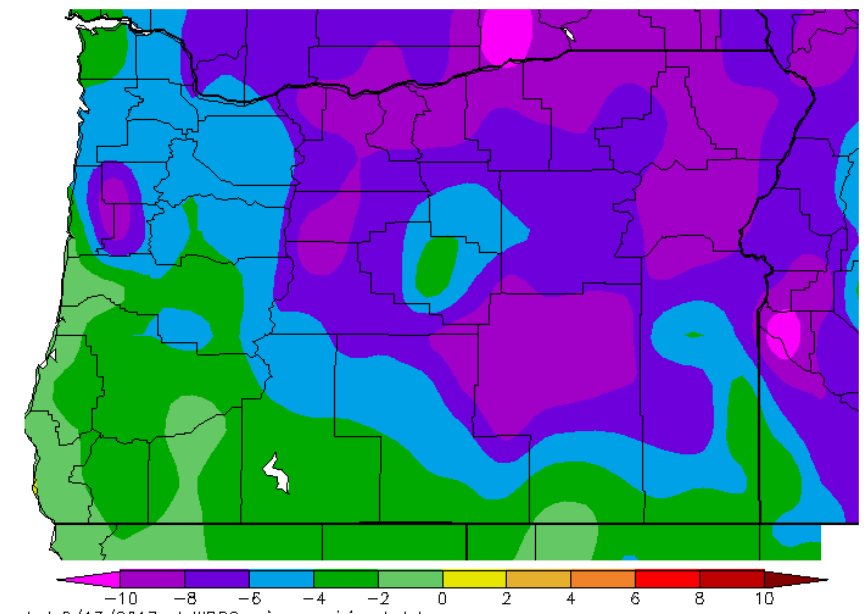
Ave. Temperature dep from Ave (deg F)
10/1/2016 - 2/12/2017



Generated 2/13/2017 at WRCC using provisional data.
NOAA Regional Climate Centers

Past 60 Days - Departure from Average

Ave. Temperature dep from Ave (deg F)
12/15/2016 - 2/12/2017



Generated 2/13/2017 at WRCC using provisional data.
NOAA Regional Climate Centers

Image source: www.wrcc.dri.edu



Seasonal Temperatures

DIVISION NAME	Oct	Nov	Dec	Jan	Feb 1 - 12
Malheur-Owyhee-Boise River Basins	0.5	5.0	-6.4	-7.1	2.5
Grande Ronde River Basin	0.3	6.0	-6.1	-7.1	-0.5
Middle Columbia Lower Tribs	-0.1	5.3	-6.8	-8.7	-2.7
Coastal River Basins	1.5	5.2	-3.9	-4.1	-1.3
Clackamas River Basin	0.0	4.8	-5.3	-6.7	-2.5
Willamette River Basin abv Harrisburg	-0.1	4.8	-5.0	-5.9	-1.9
Santiam River Basin	0.1	4.7	-4.7	-5.7	-2.0
Coquille River Basin	0.4	4.5	-4.2	-5.3	-0.6
Umpqua River Basin	0.1	5.0	-5.0	-5.6	-1.0
Rogue-Illinois River Basins	-0.4	4.7	-4.9	-5.7	-0.8

Data source: www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php



Outlook for 2nd Half of February

Forecast Precipitation - Next 7 Days

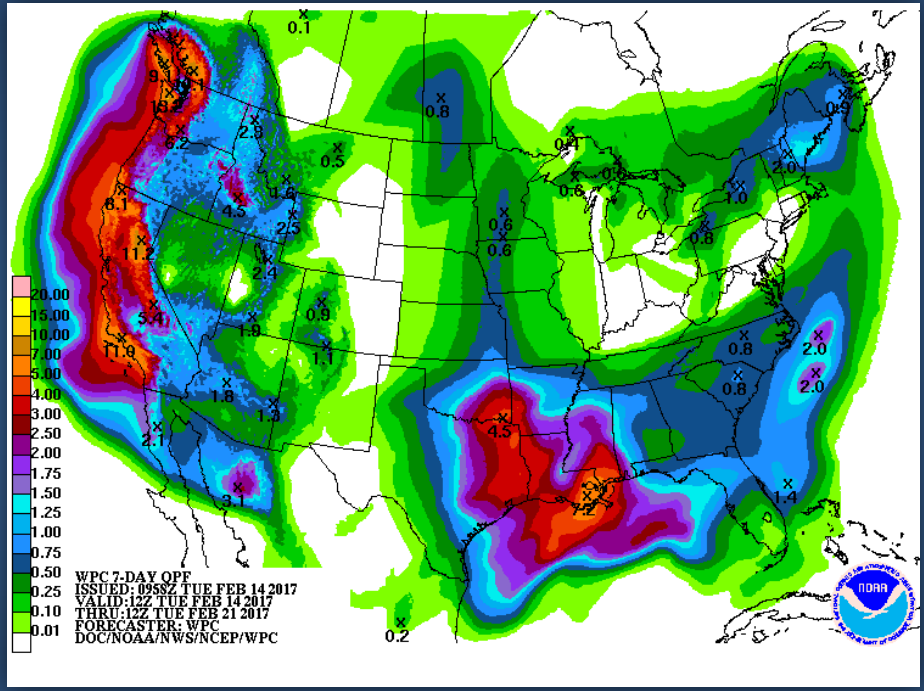
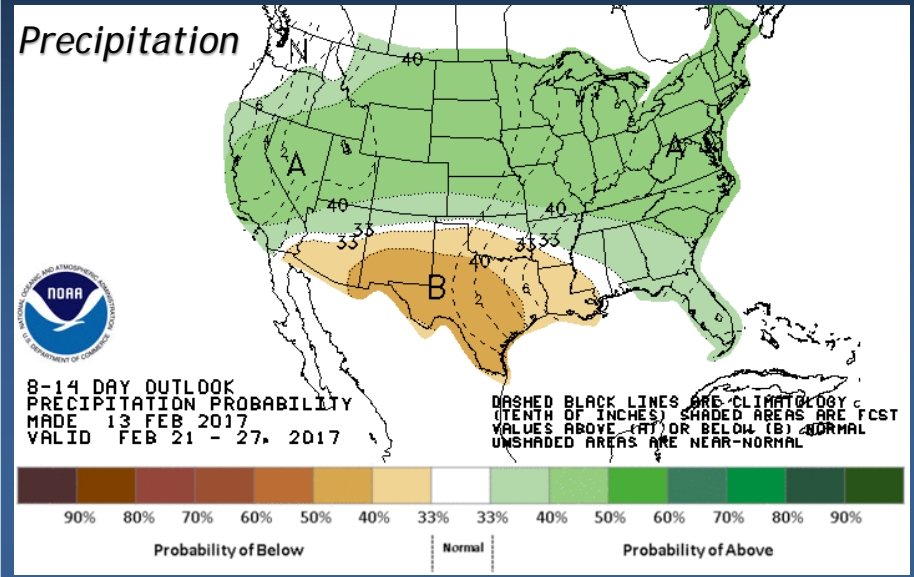


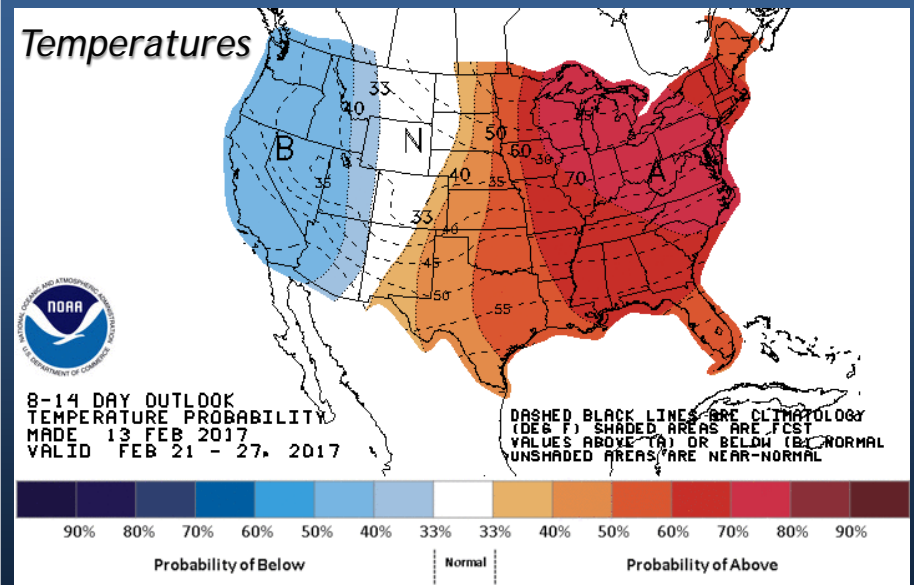
Image sources: www.wpc.ncep.noaa.gov & www.cpc.ncep.noaa.gov

8 - 14 Day Outlooks

Precipitation

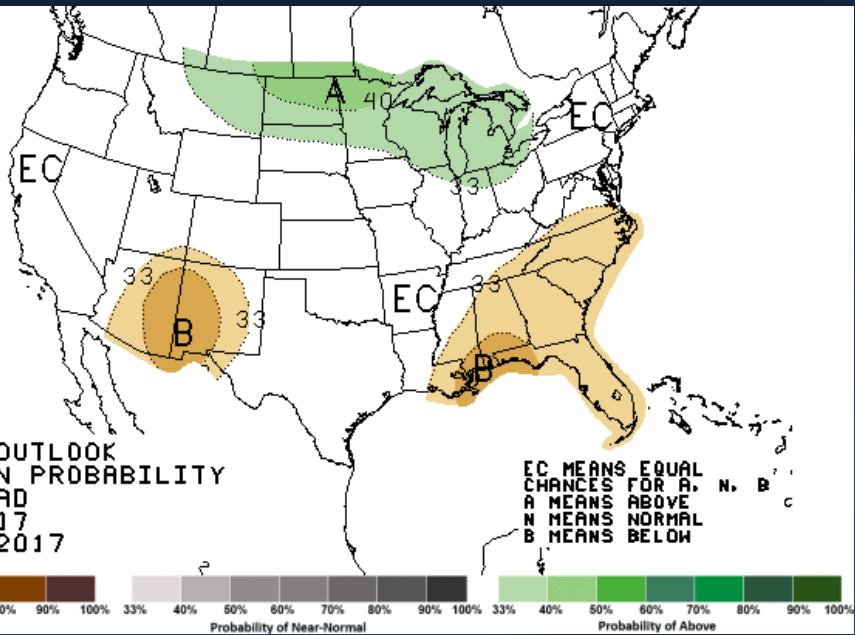


Temperatures





Outlook for March-April-May



Precipitation

Temperatures

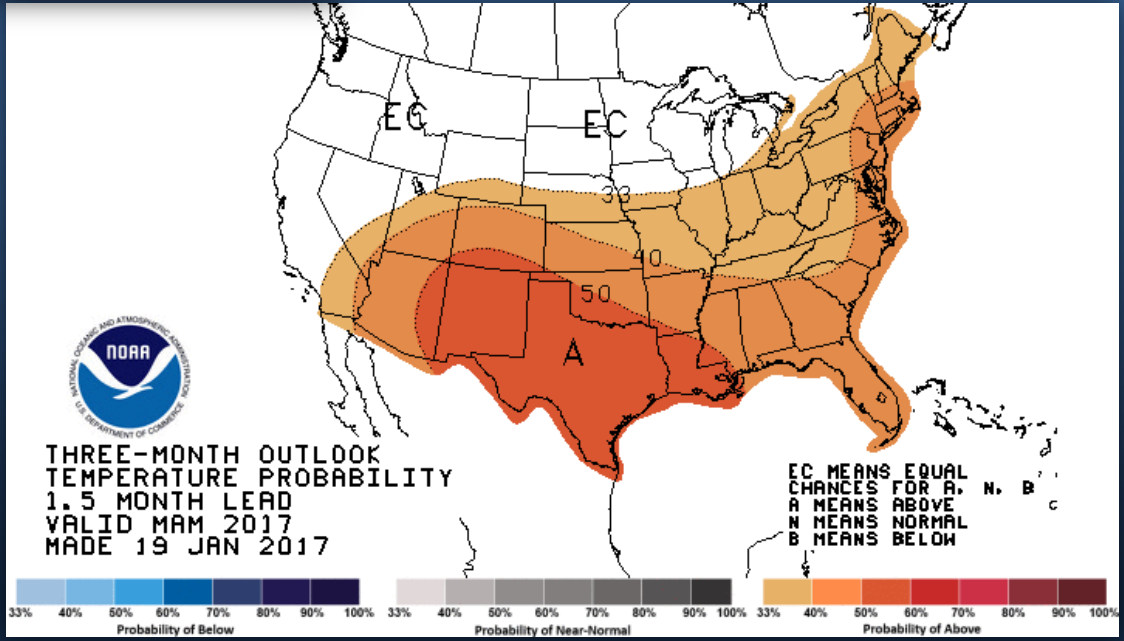
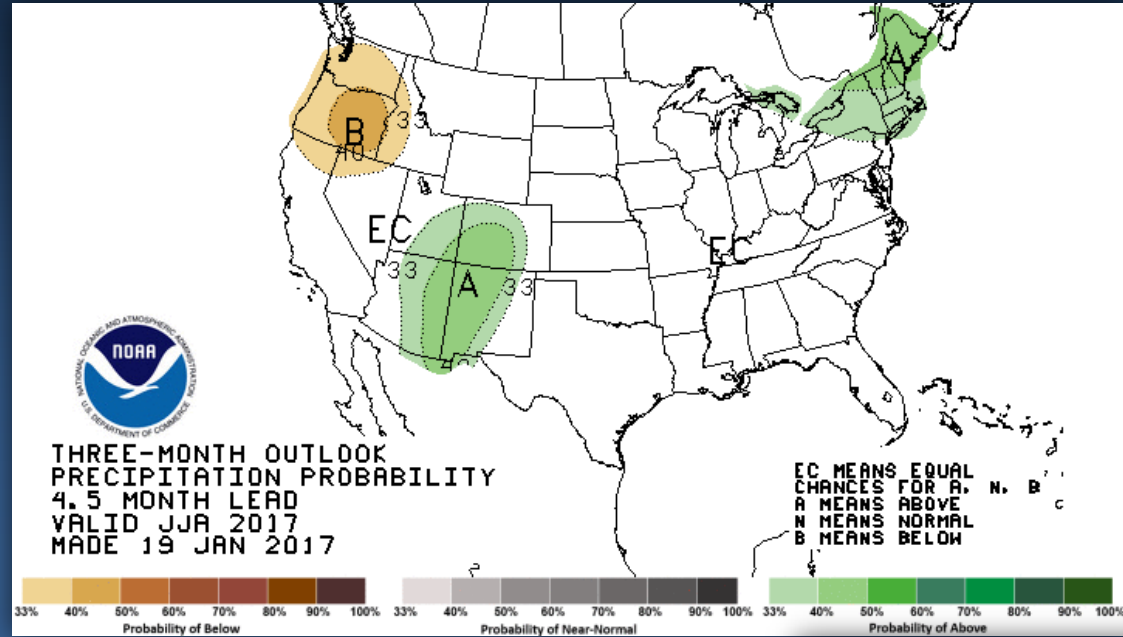


Image source: www.cpc.ncep.noaa.gov



Outlook for June-July-August



Temperatures

Precipitation

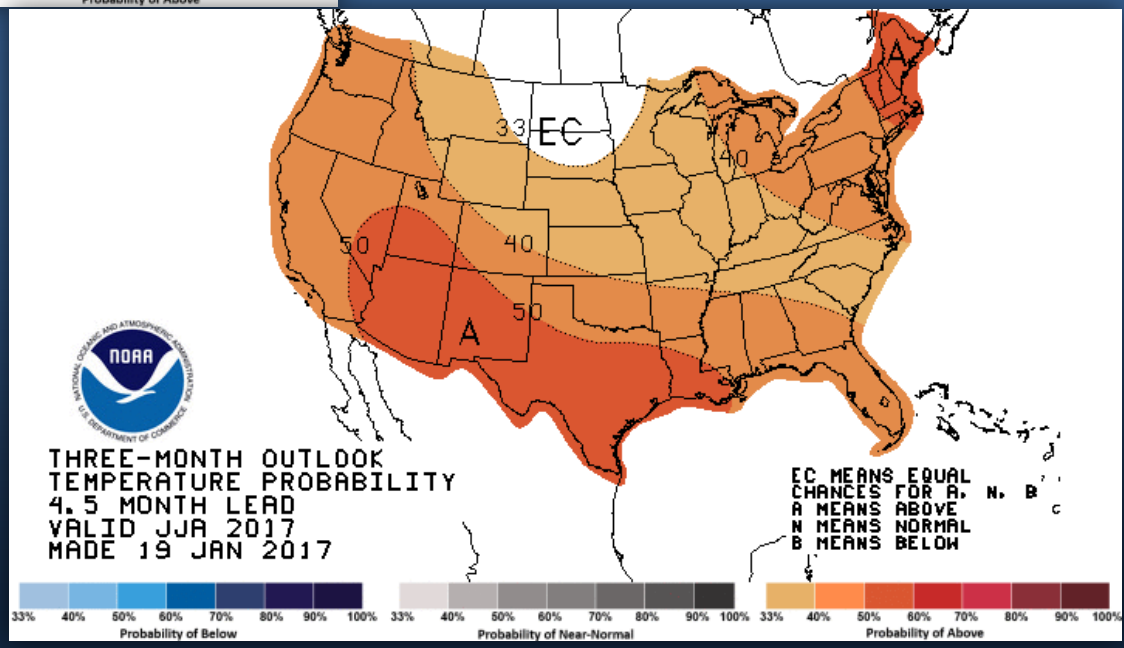


Image source: www.cpc.ncep.noaa.gov



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: 2017-02-13 Ensemble Date: 2017-02-13 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)

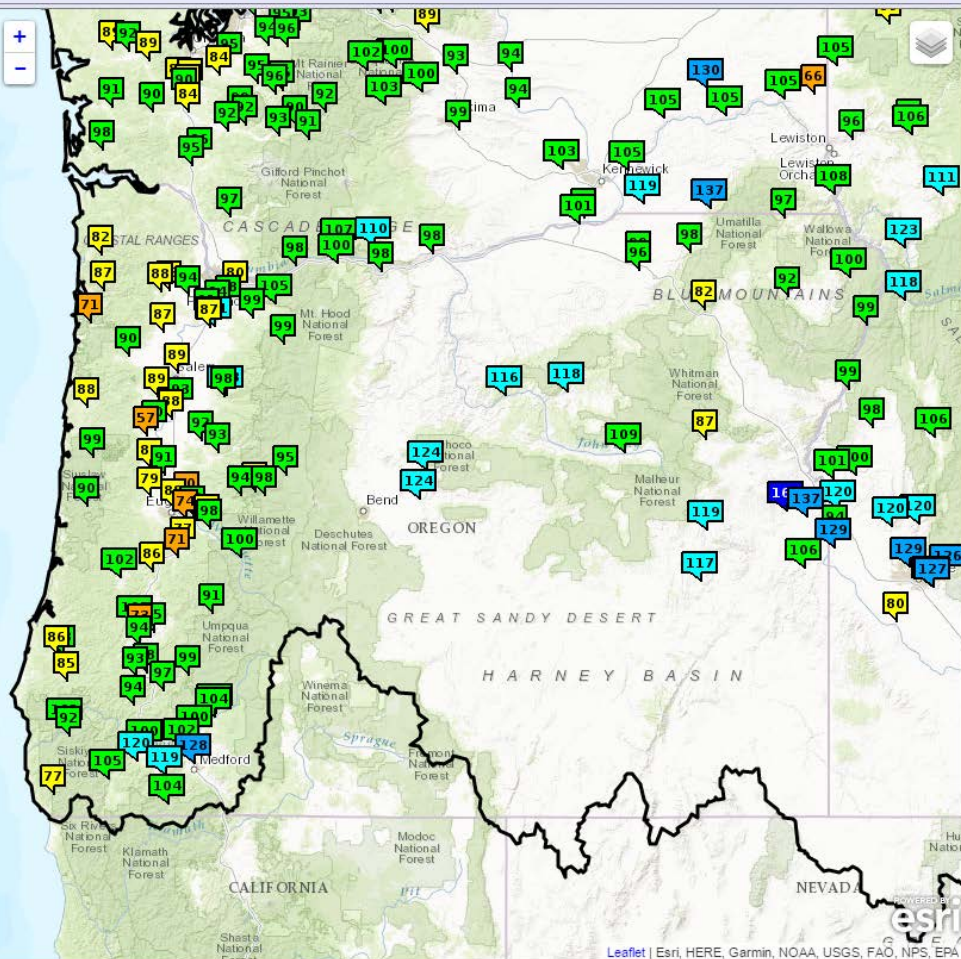
- No Normal, No Data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175



Stations Displayed:
183

Natural Links

- Forecast Listing
- Forecast Report
- Forecast Report CSV



Klamath Basin (from California-Nevada RFC)

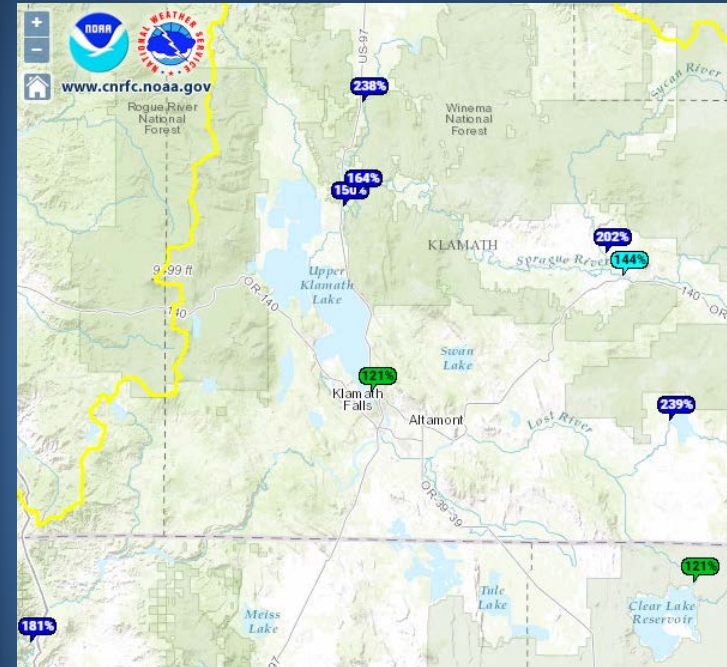


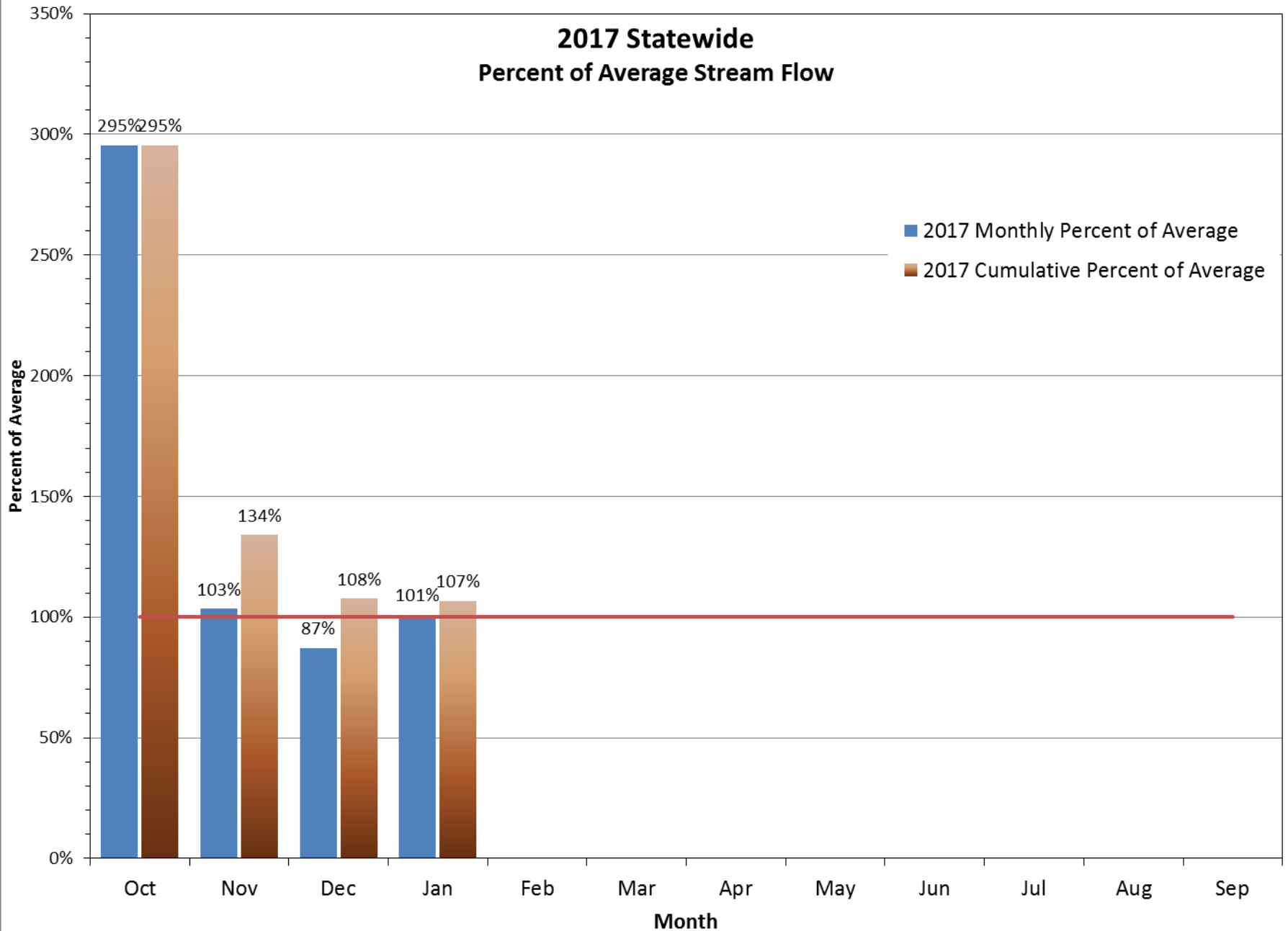
Image sources: www.nwrfc.noaa.gov & www.cnrfc.noaa.gov

Surface Water Conditions Report
Water Supply Availability Committee

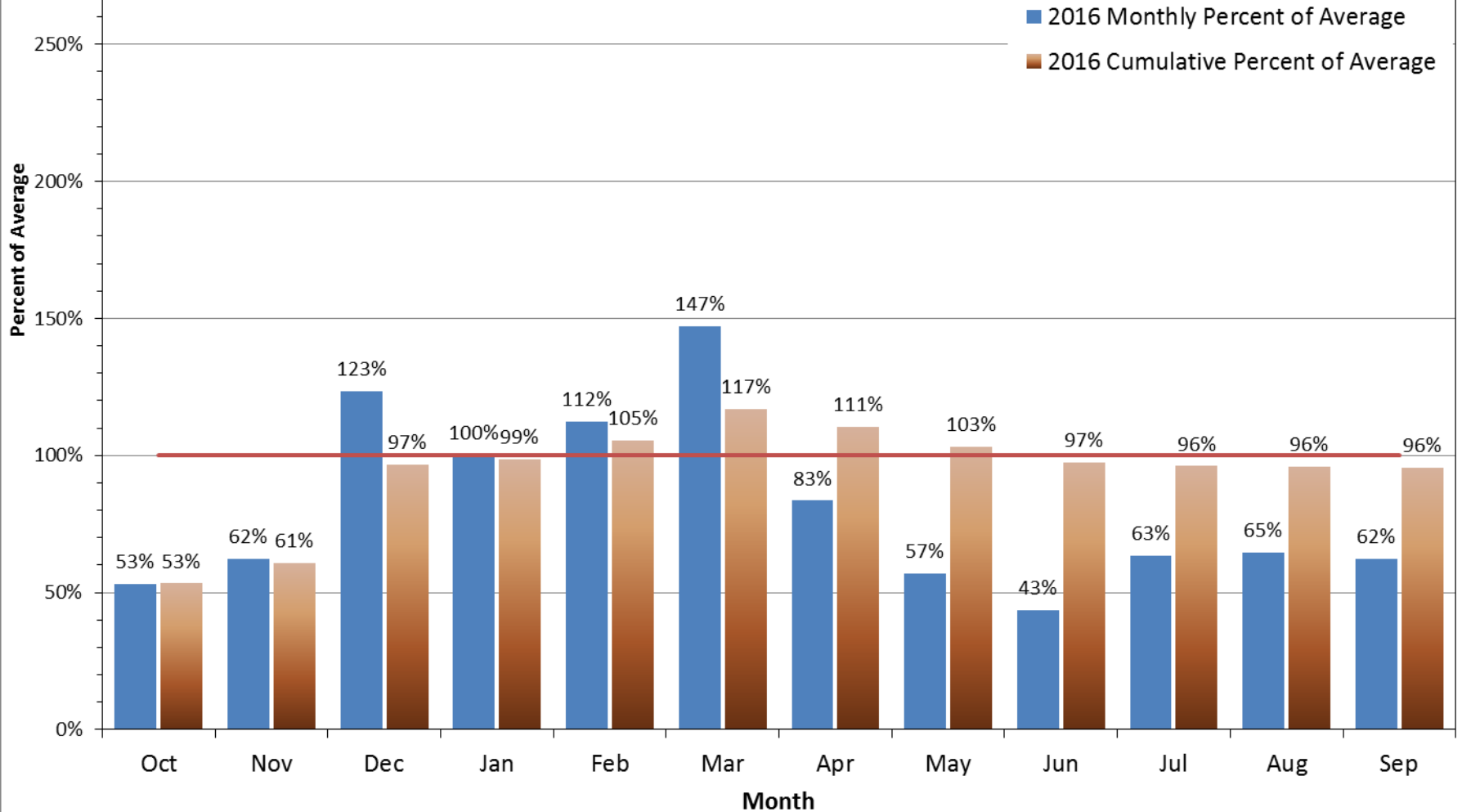


Ken Stahr
Oregon Water Resources
Department
January 10, 2017

2017 Statewide Percent of Average Stream Flow



2016 Statewide Percent of Average Stream Flow



Percent of Average Streamflow Month of January, 2017

Percent of Average Streamflow

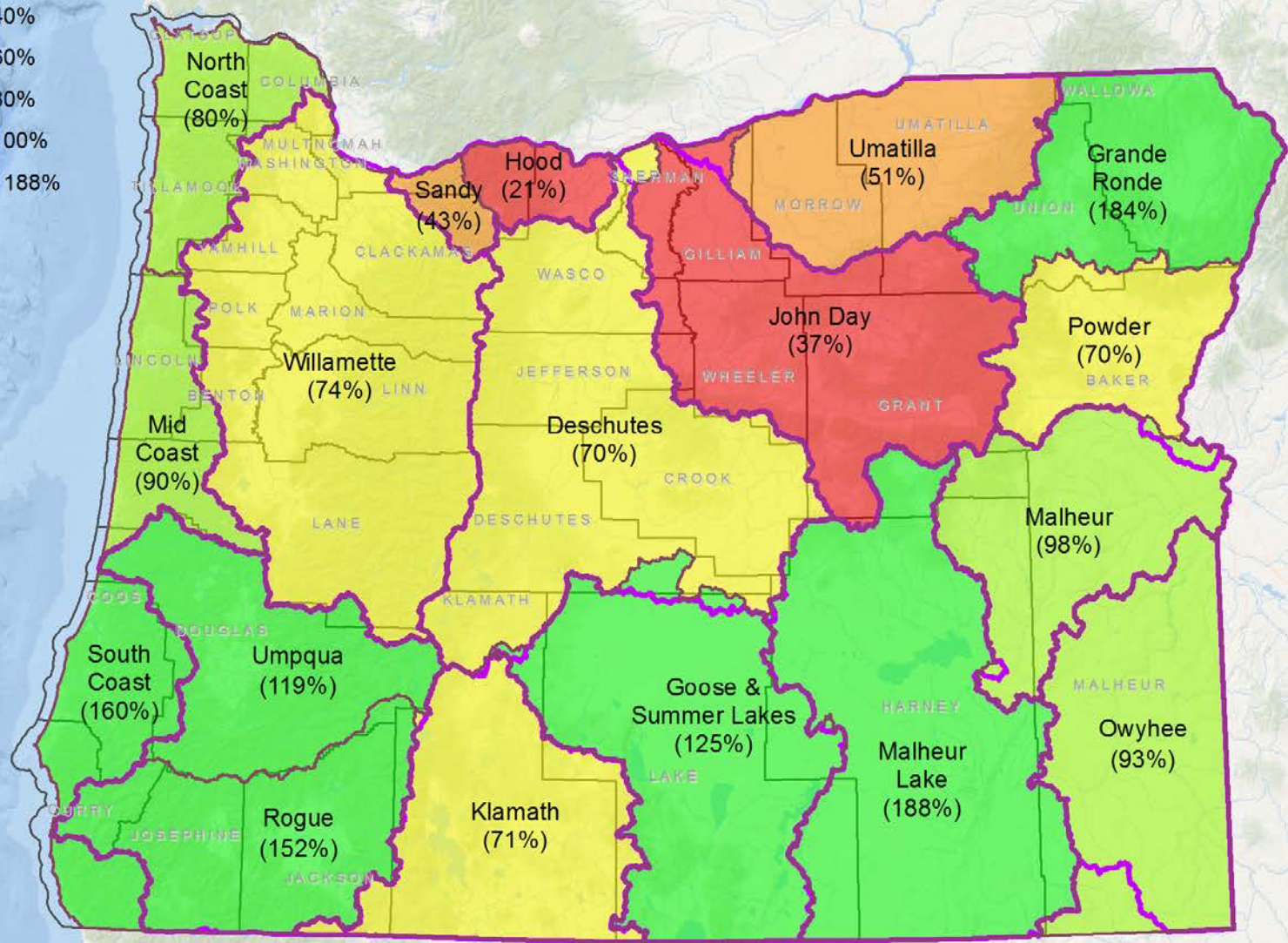
WRD Basin

- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- 101% - 188%

NRCS Basin



County

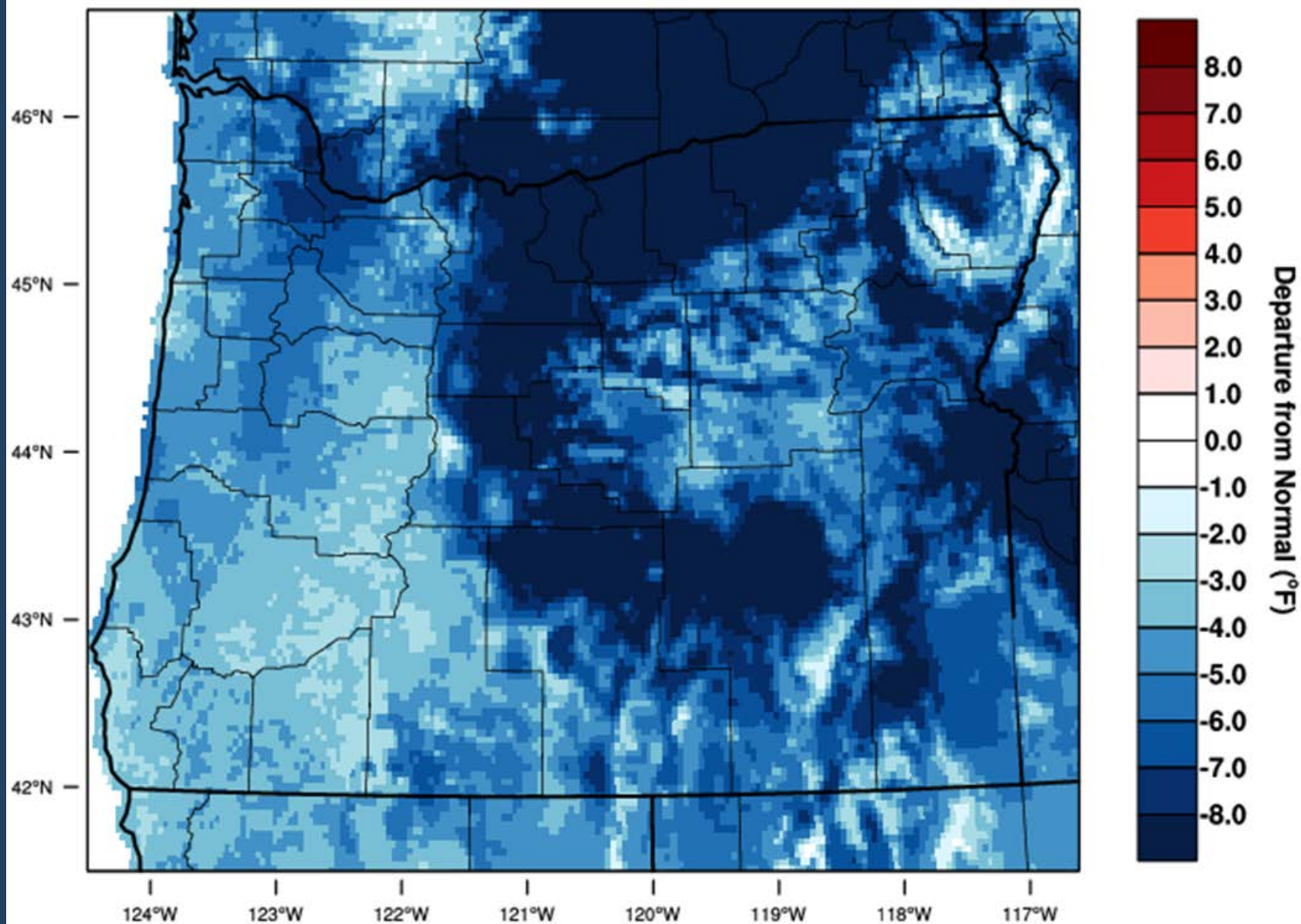


Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.

PRISM > Temperature Anomaly 1 Month > Oregon

Oregon - Mean Temperature

January 2017 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 FEB 2017

Deschutes

Crooked River at Smith Rocks



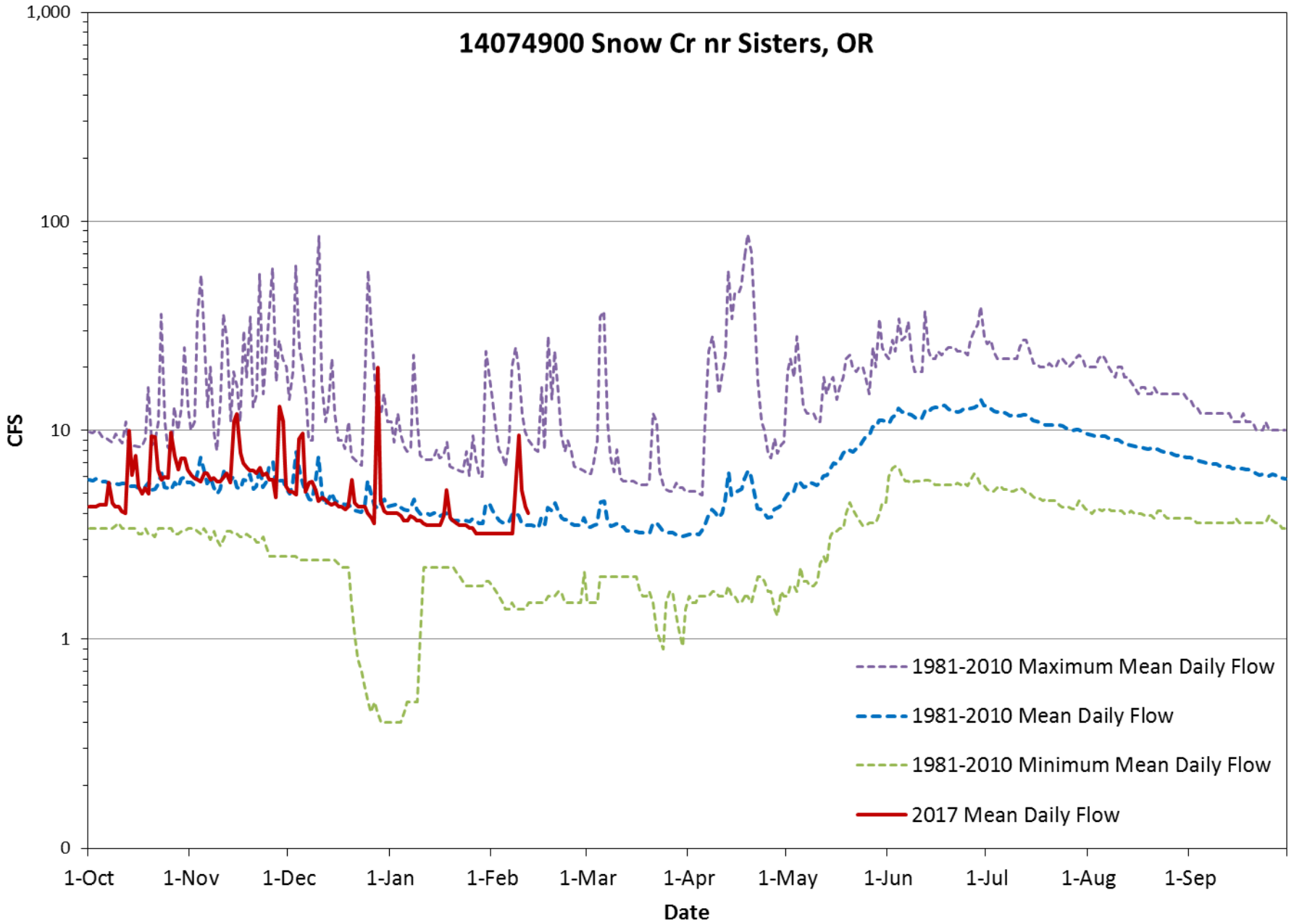
**Little
Deschutes
River near
La Pine**



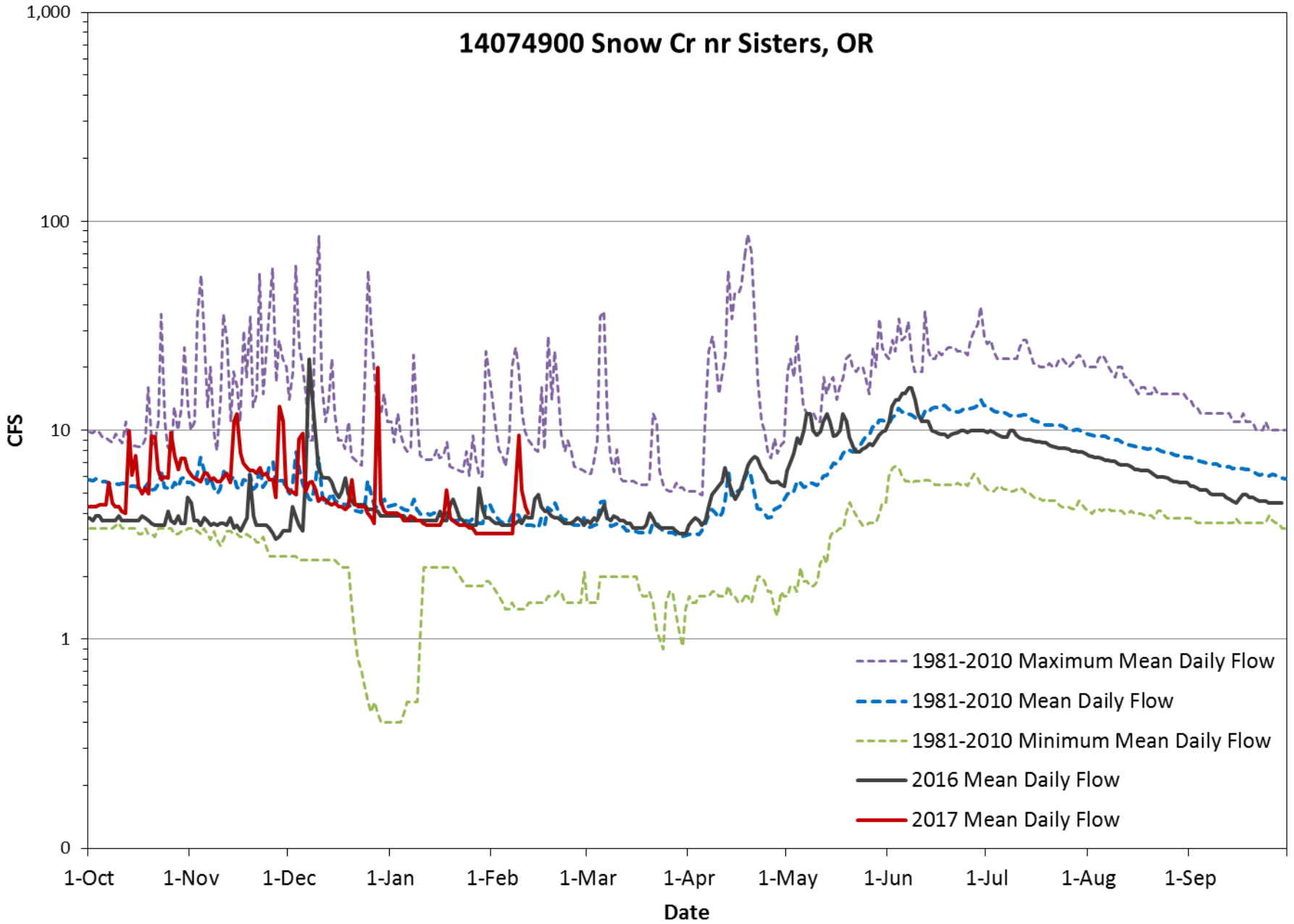
**Little
Deschutes
River near
La Pine**



14074900 Snow Cr nr Sisters, OR

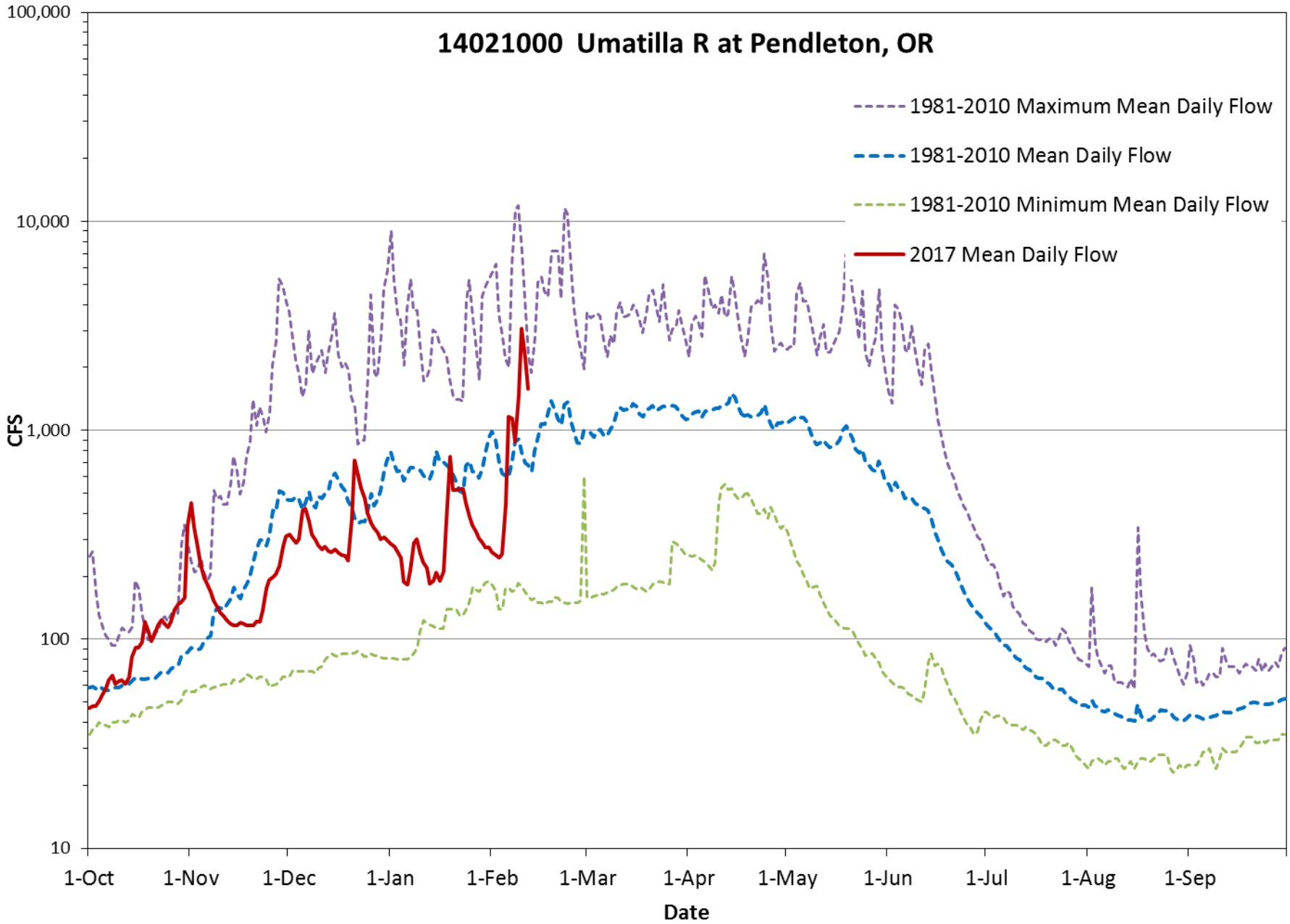


14074900 Snow Cr nr Sisters, OR

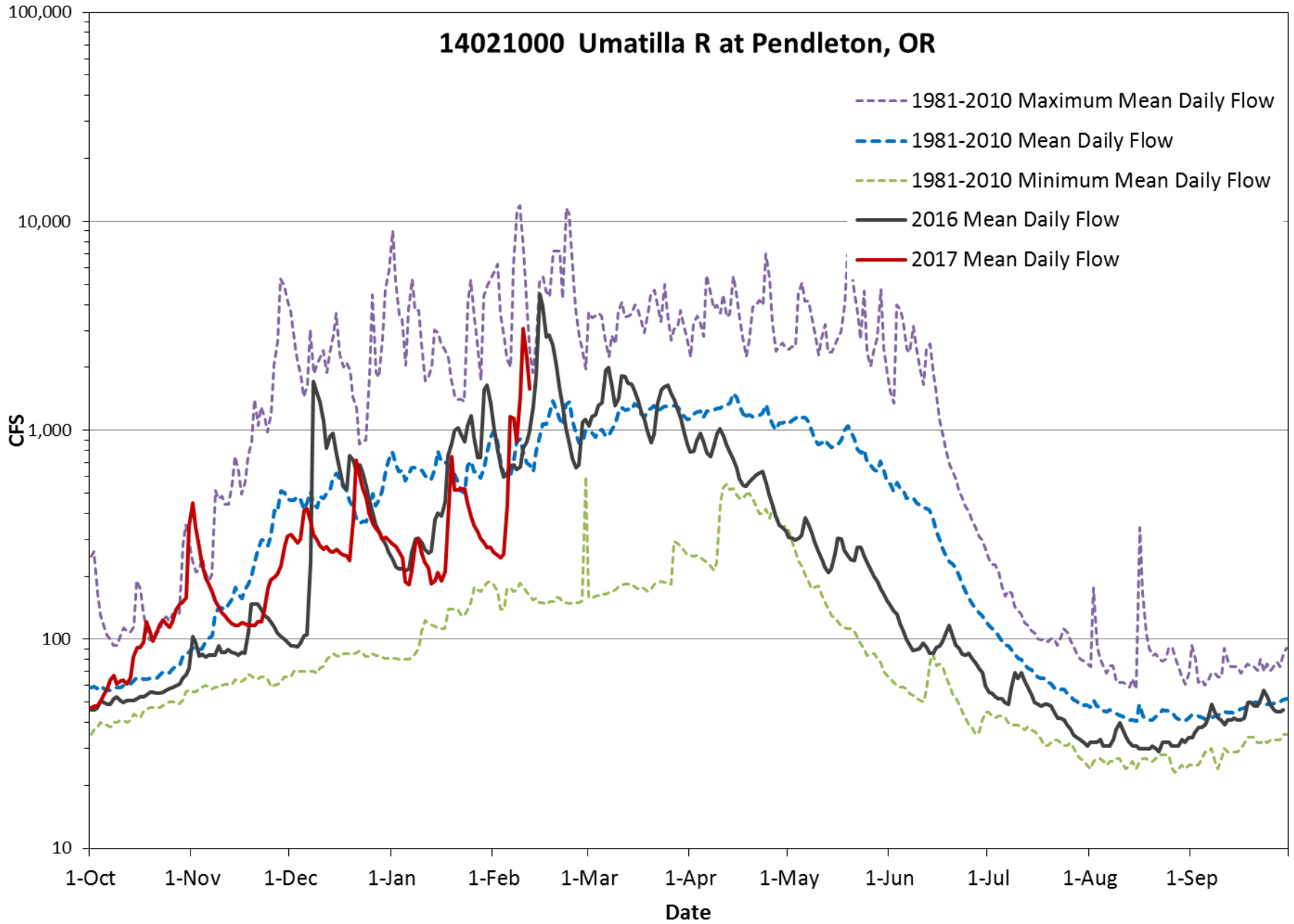


Umatilla

14021000 Umatilla R at Pendleton, OR

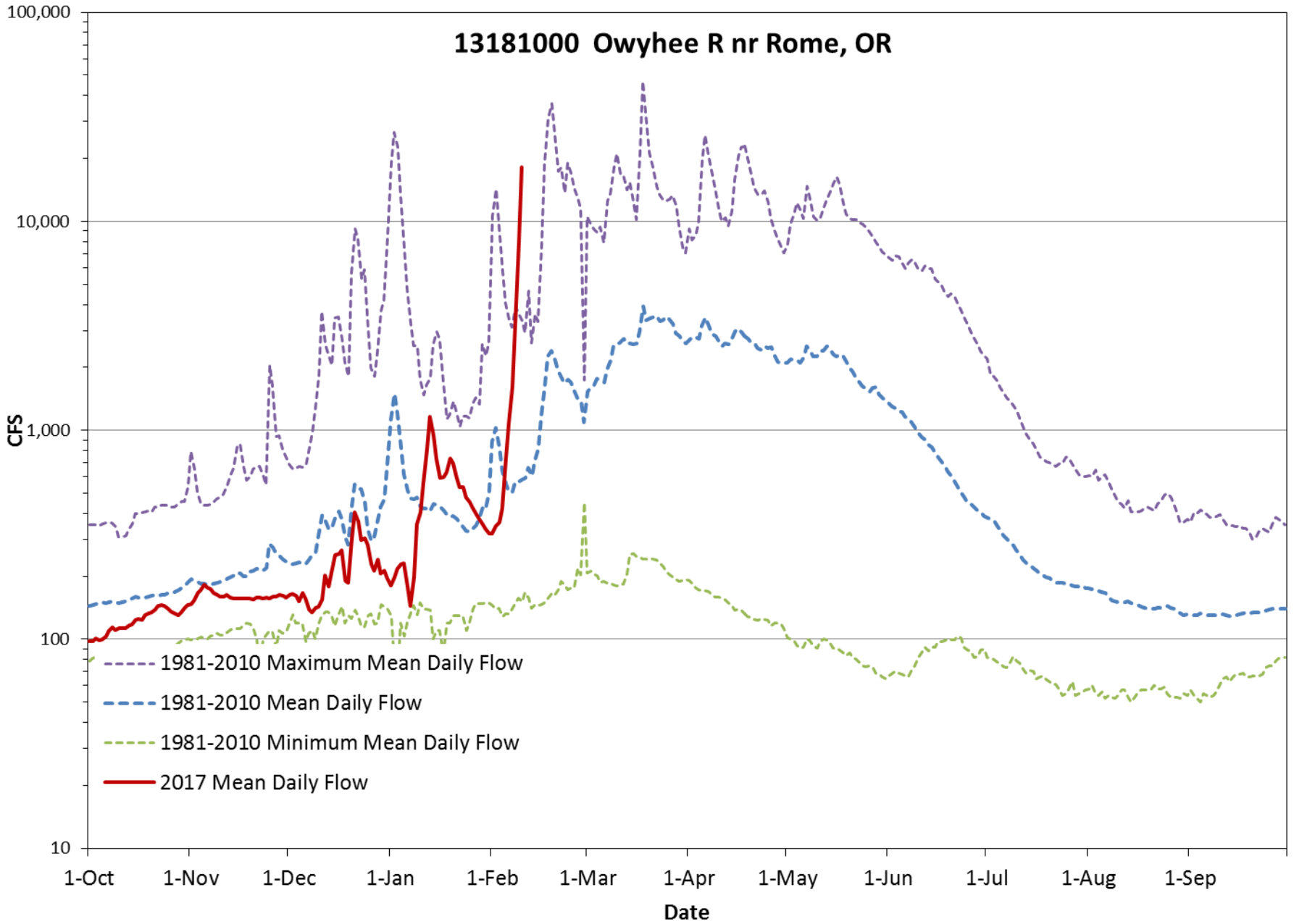


14021000 Umatilla R at Pendleton, OR

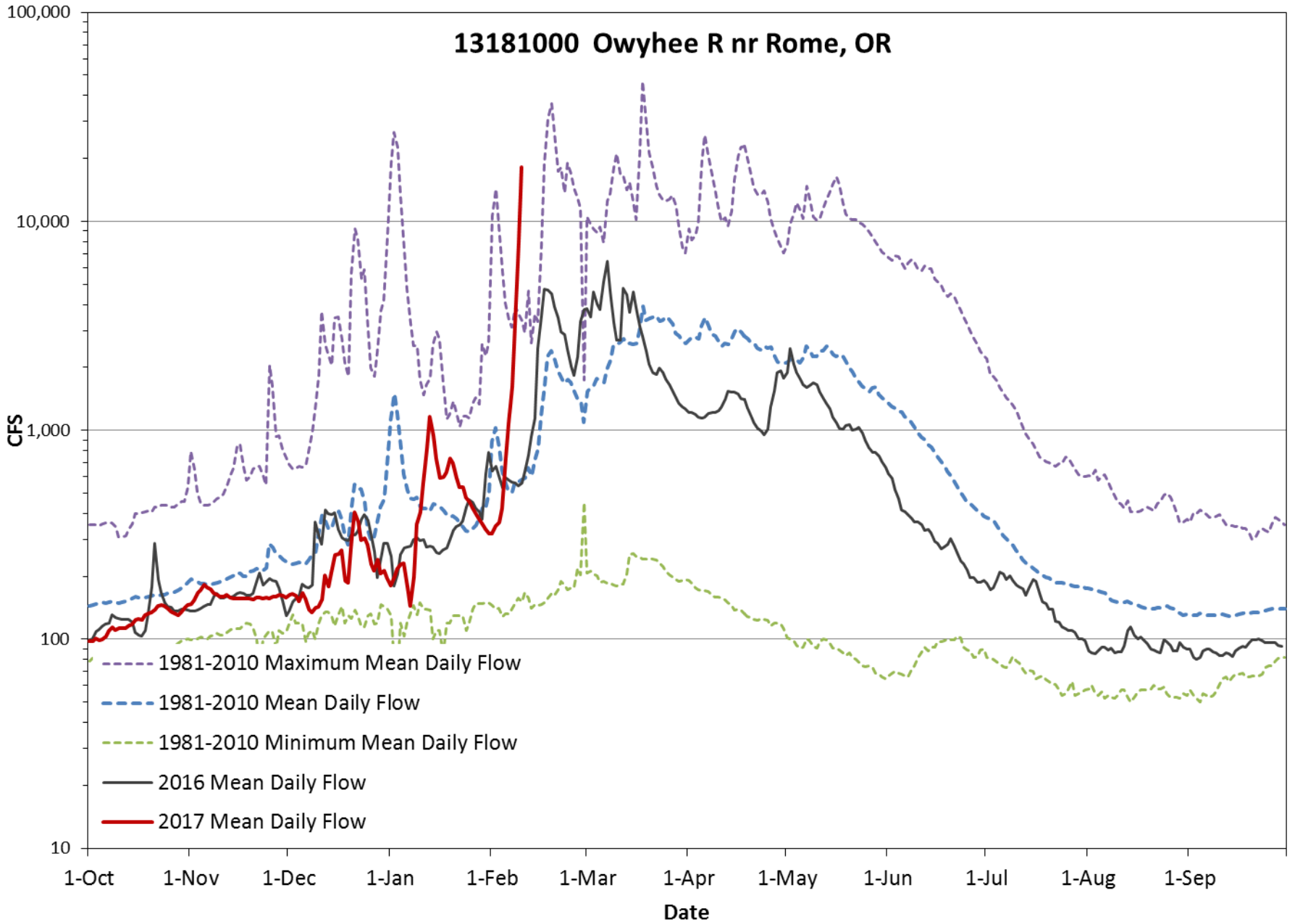


Owyhee

13181000 Owyhee R nr Rome, OR

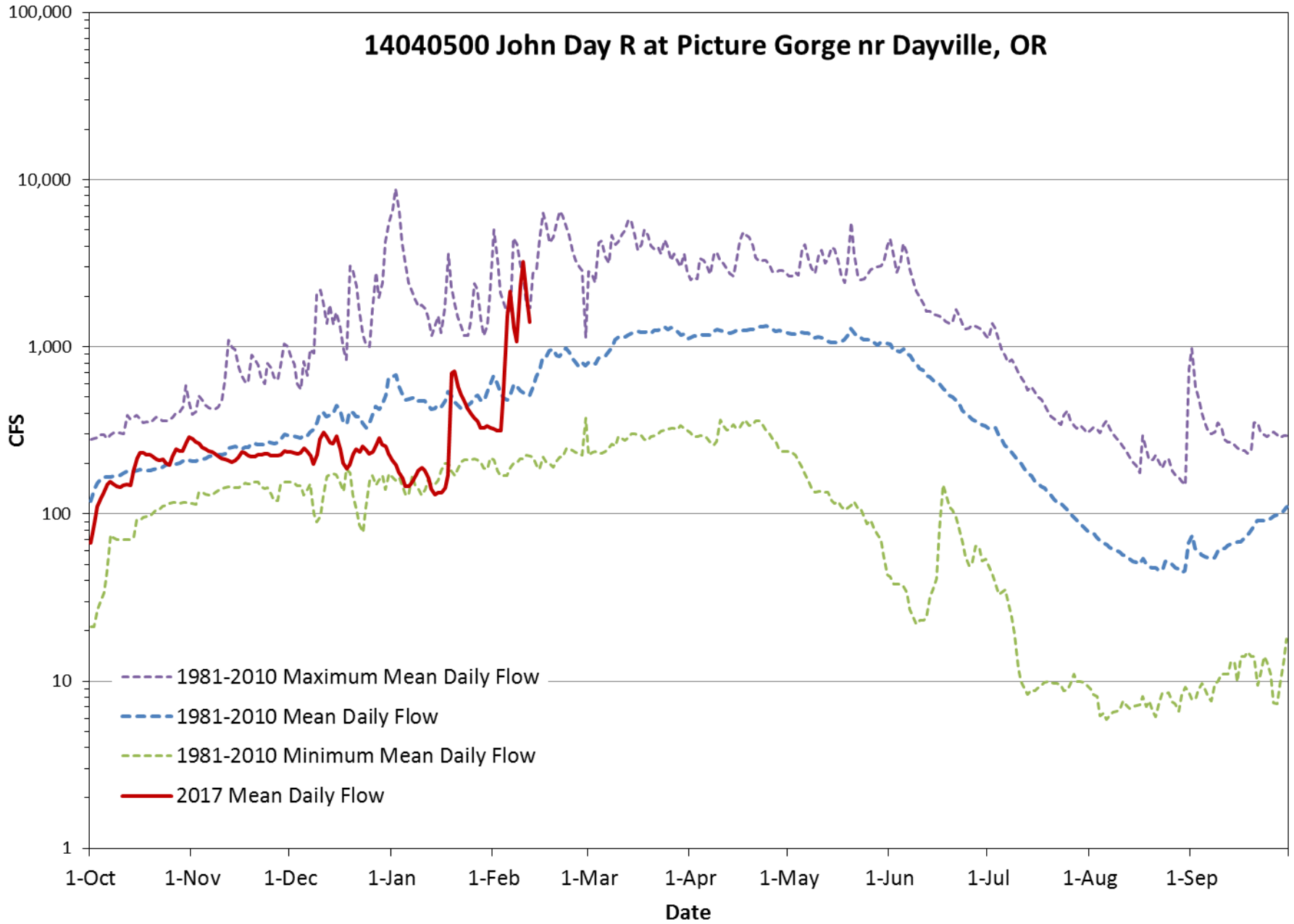


13181000 Owyhee R nr Rome, OR

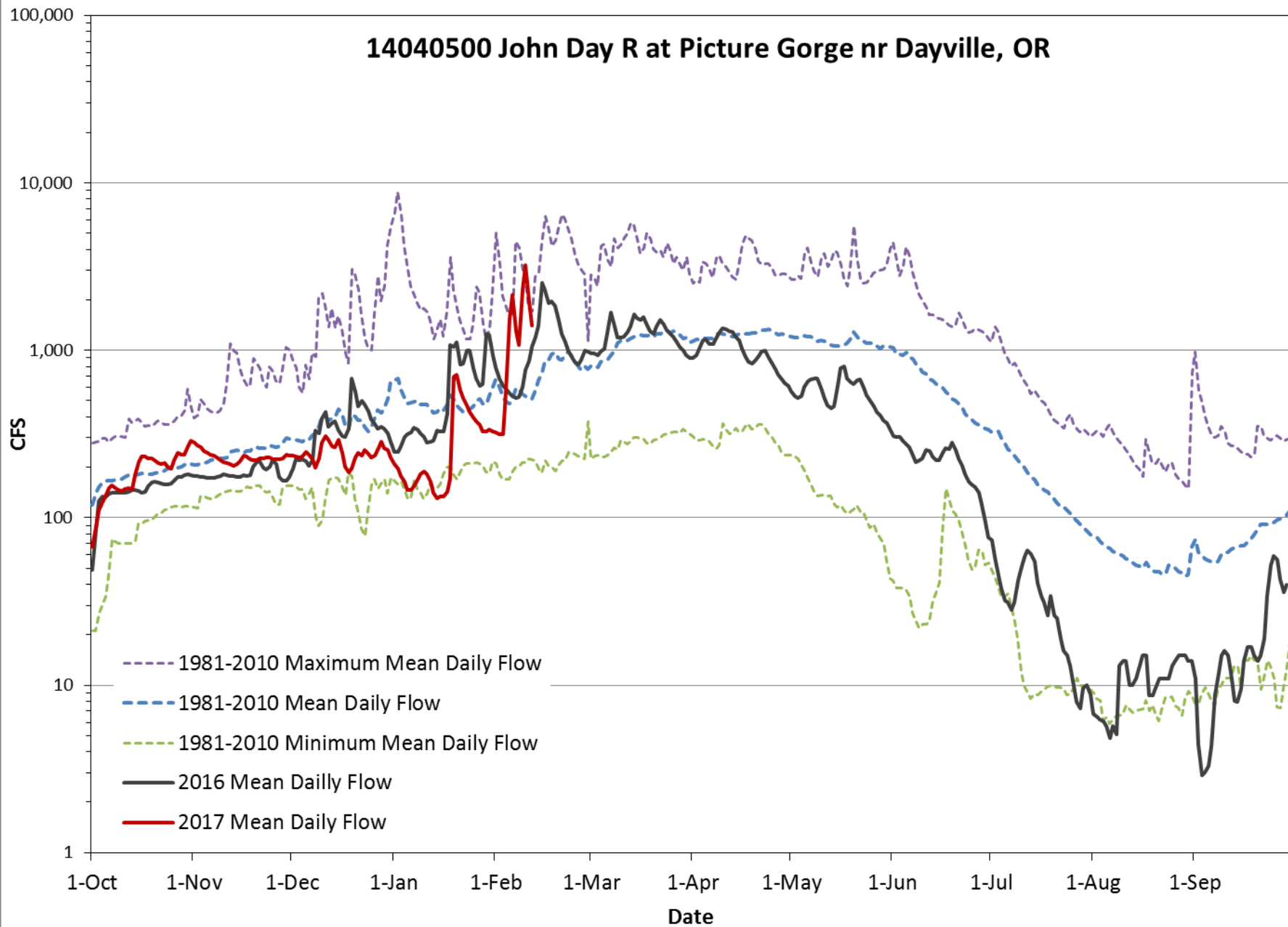


John Day

14040500 John Day R at Picture Gorge nr Dayville, OR

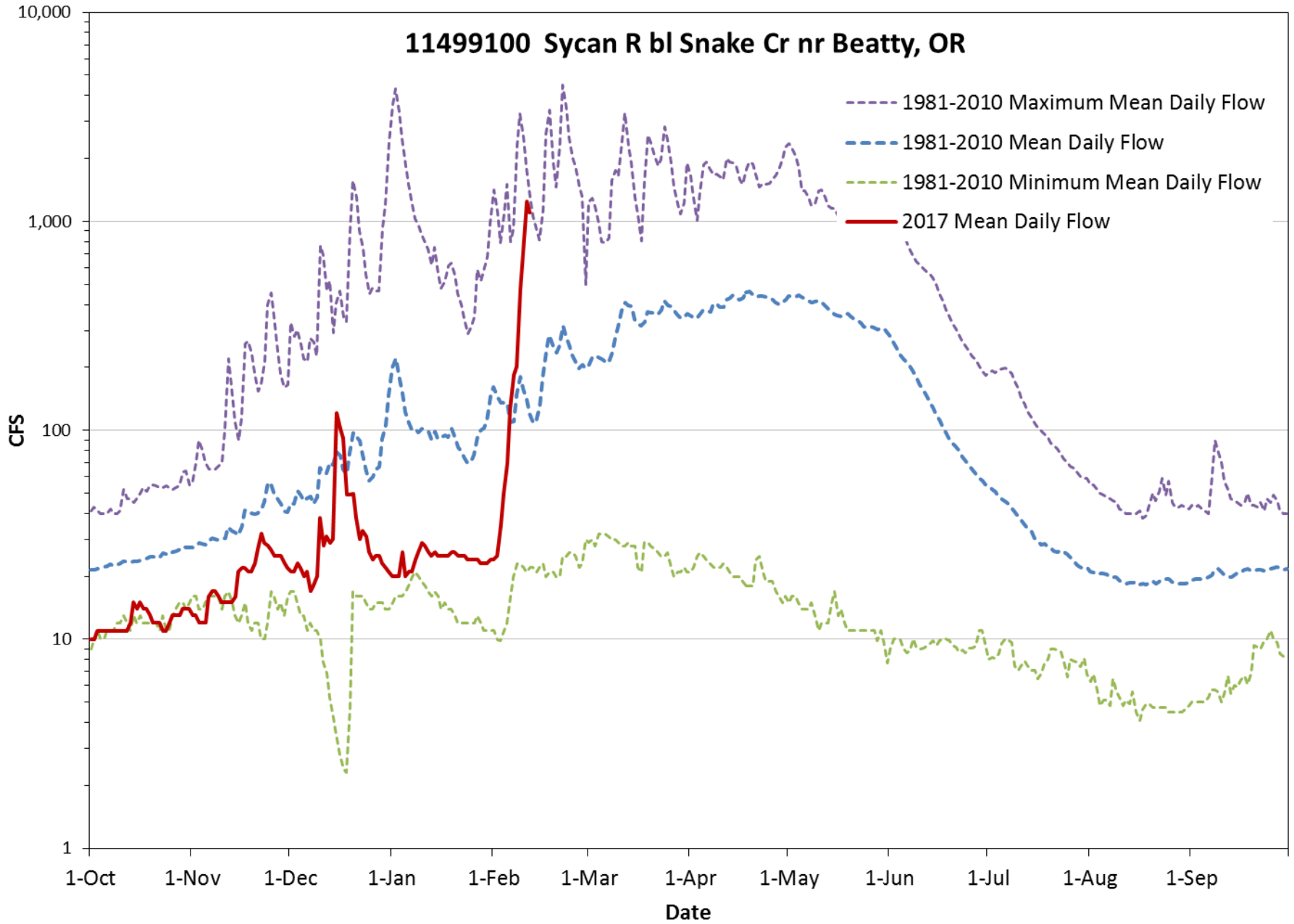


14040500 John Day R at Picture Gorge nr Dayville, OR

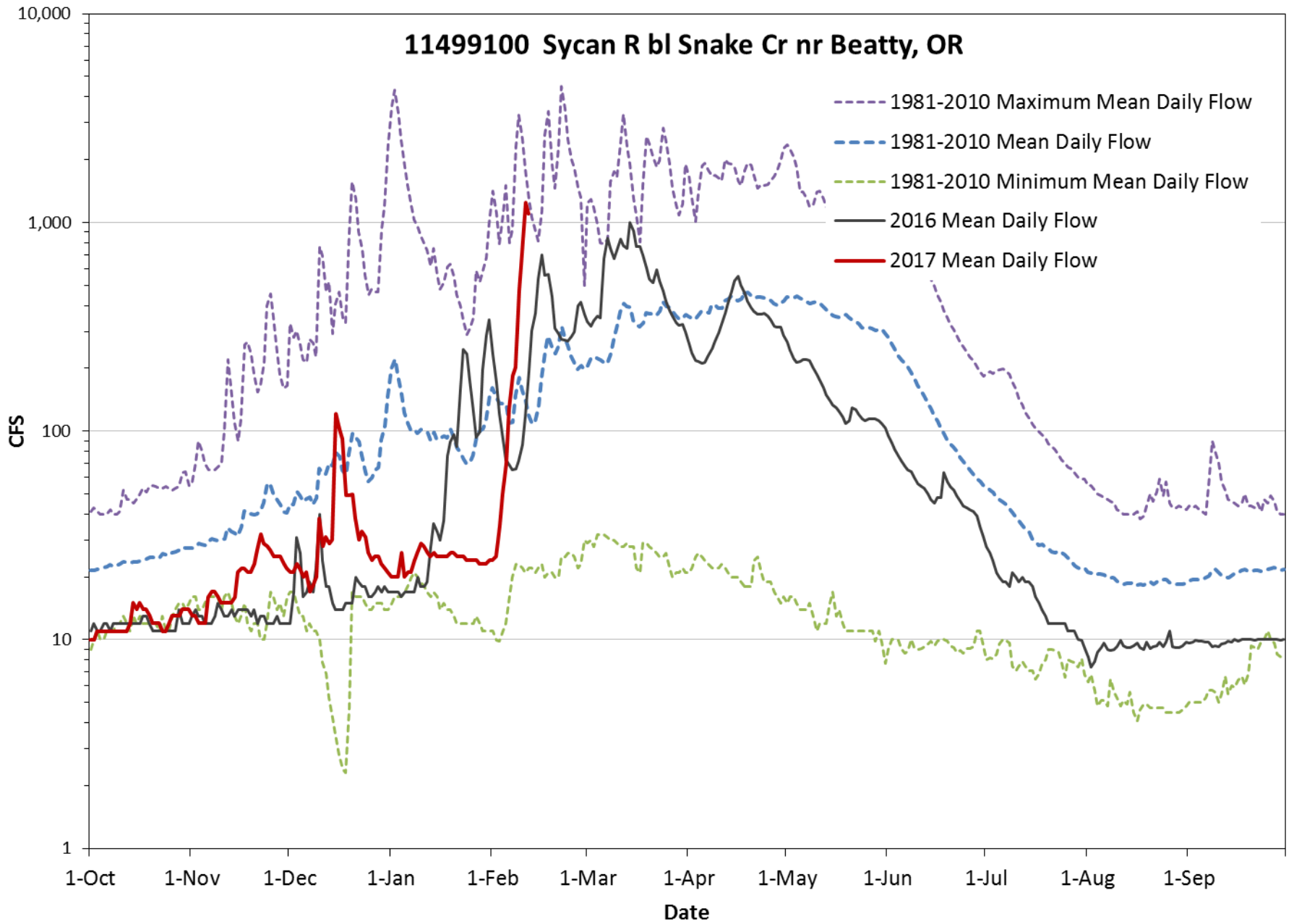


Klamath

11499100 Sycan R bl Snake Cr nr Beatty, OR

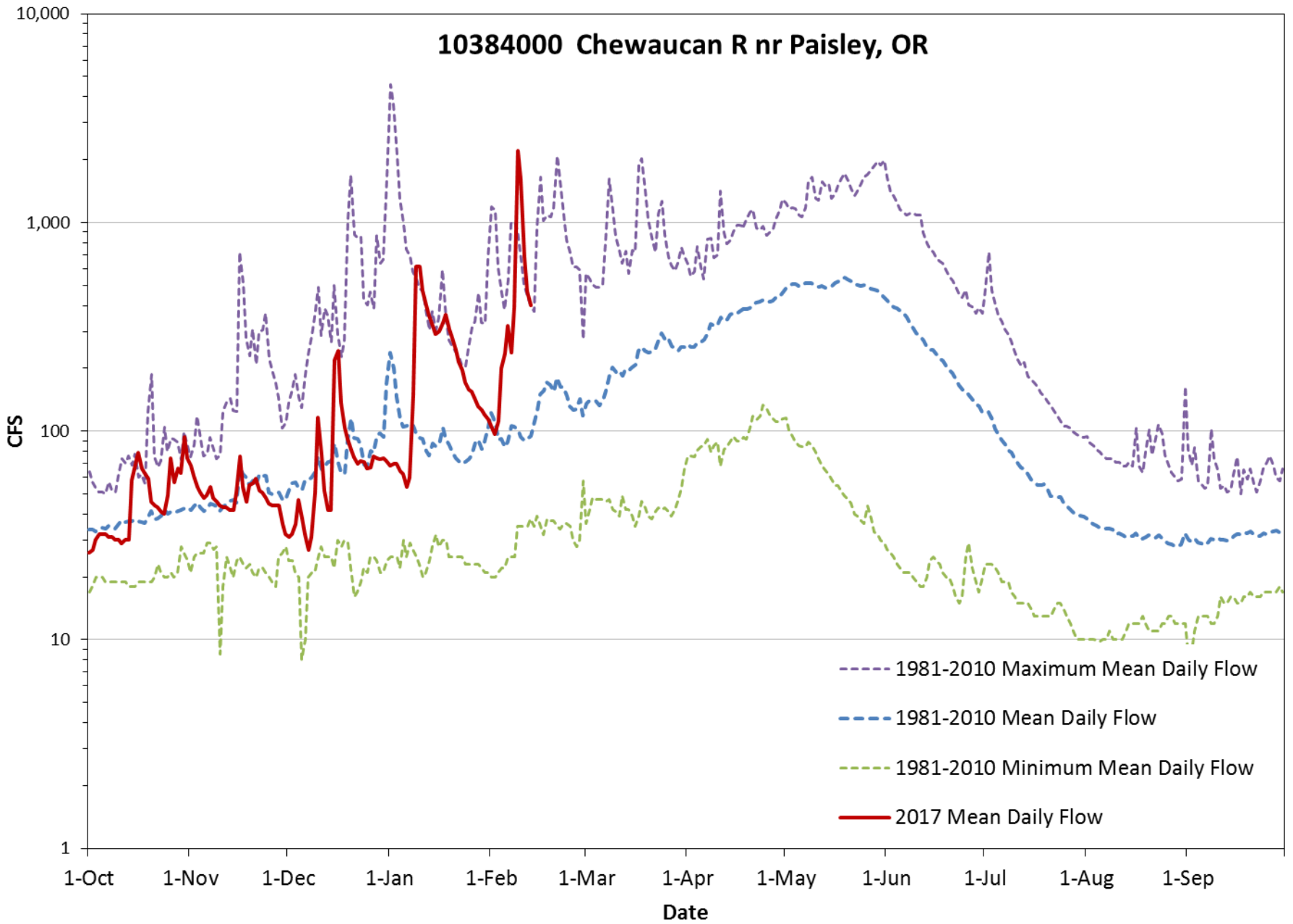


11499100 Sycan R bl Snake Cr nr Beatty, OR

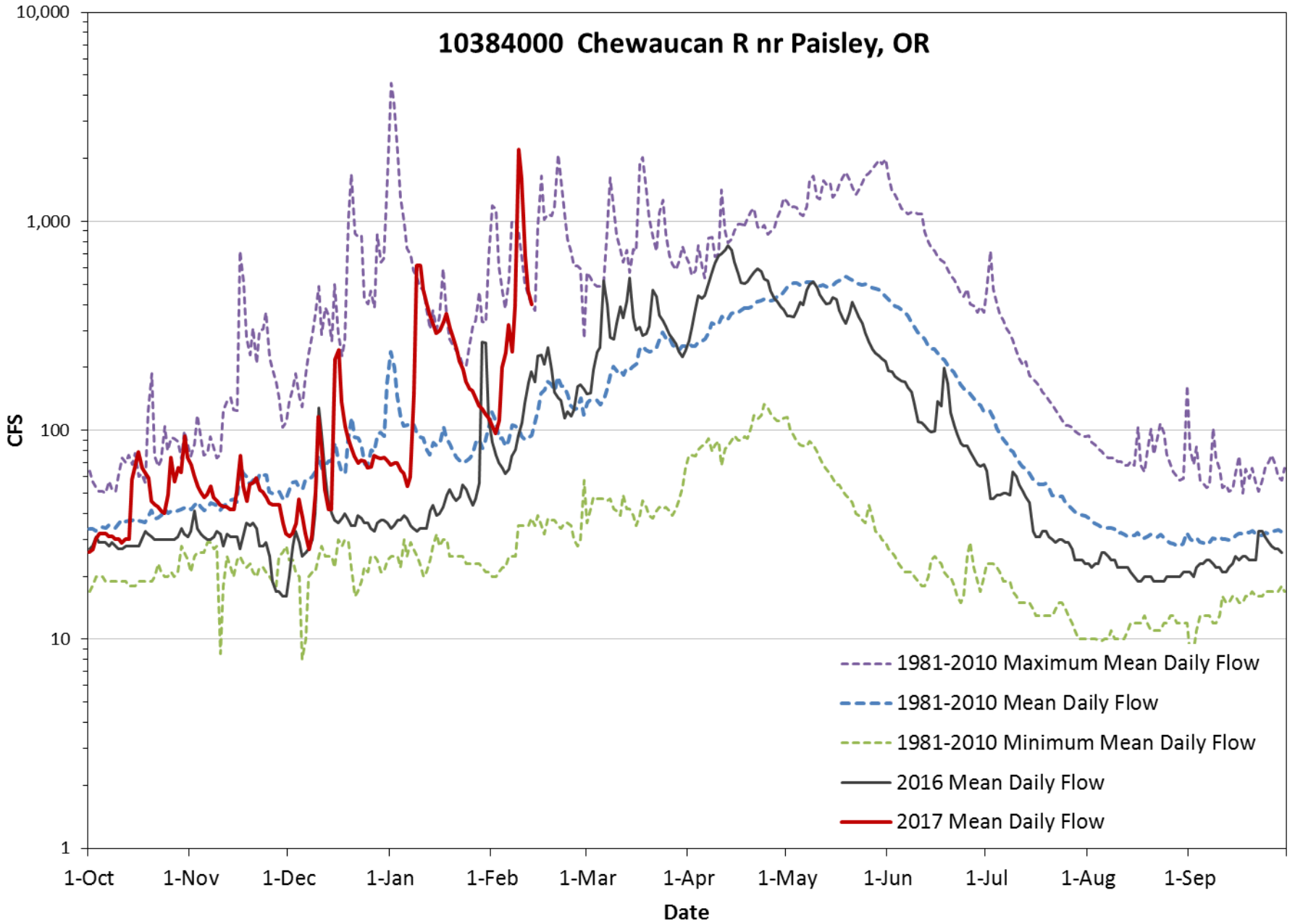


Goose & Summer Lake

1038400 Chewaucan R nr Paisley, OR



1038400 Chewaucan R nr Paisley, OR



Storage

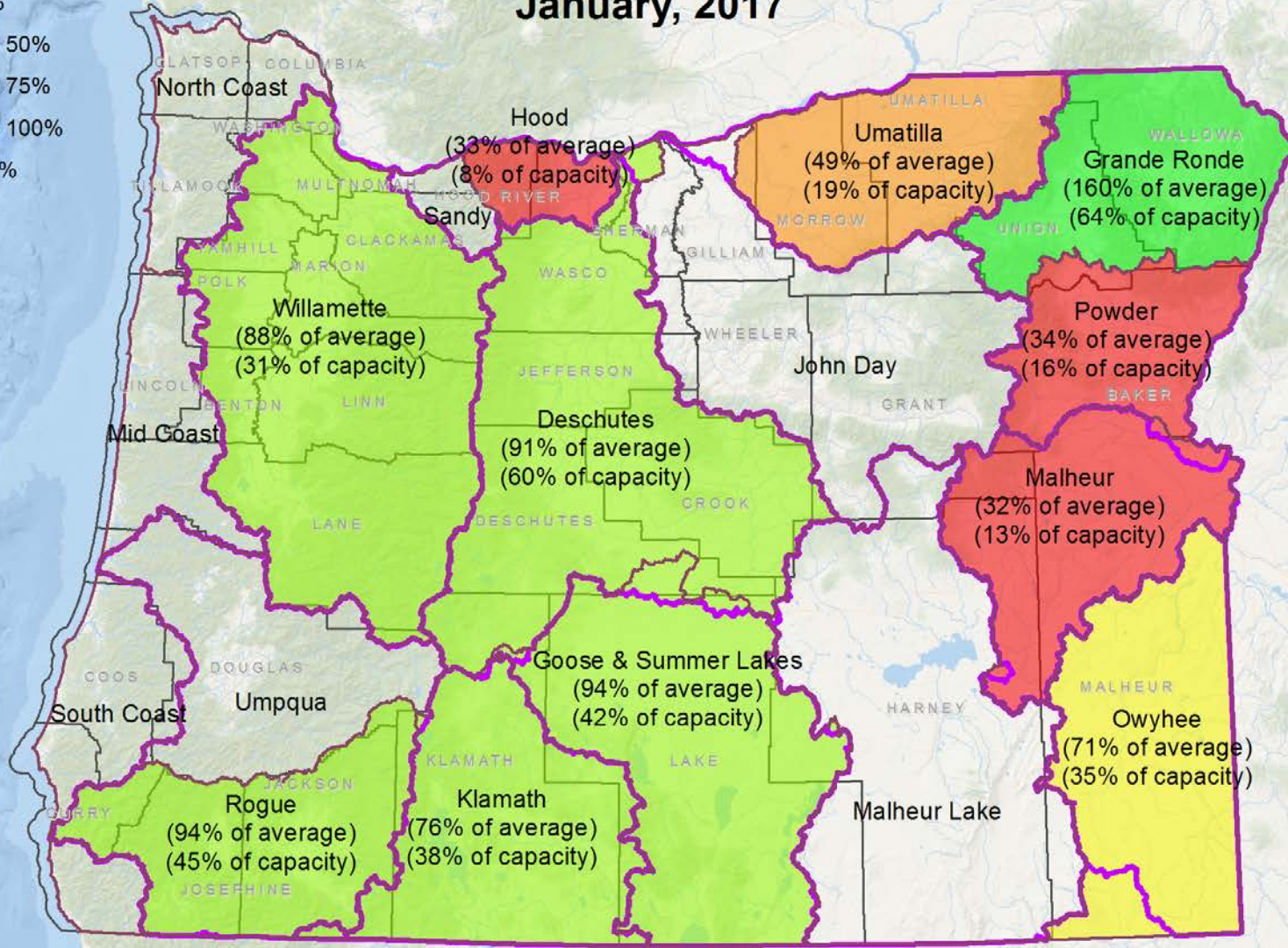
Reservoir Storage Summary for the end of January, 2017

Percent of Average Storage

WRD Basin

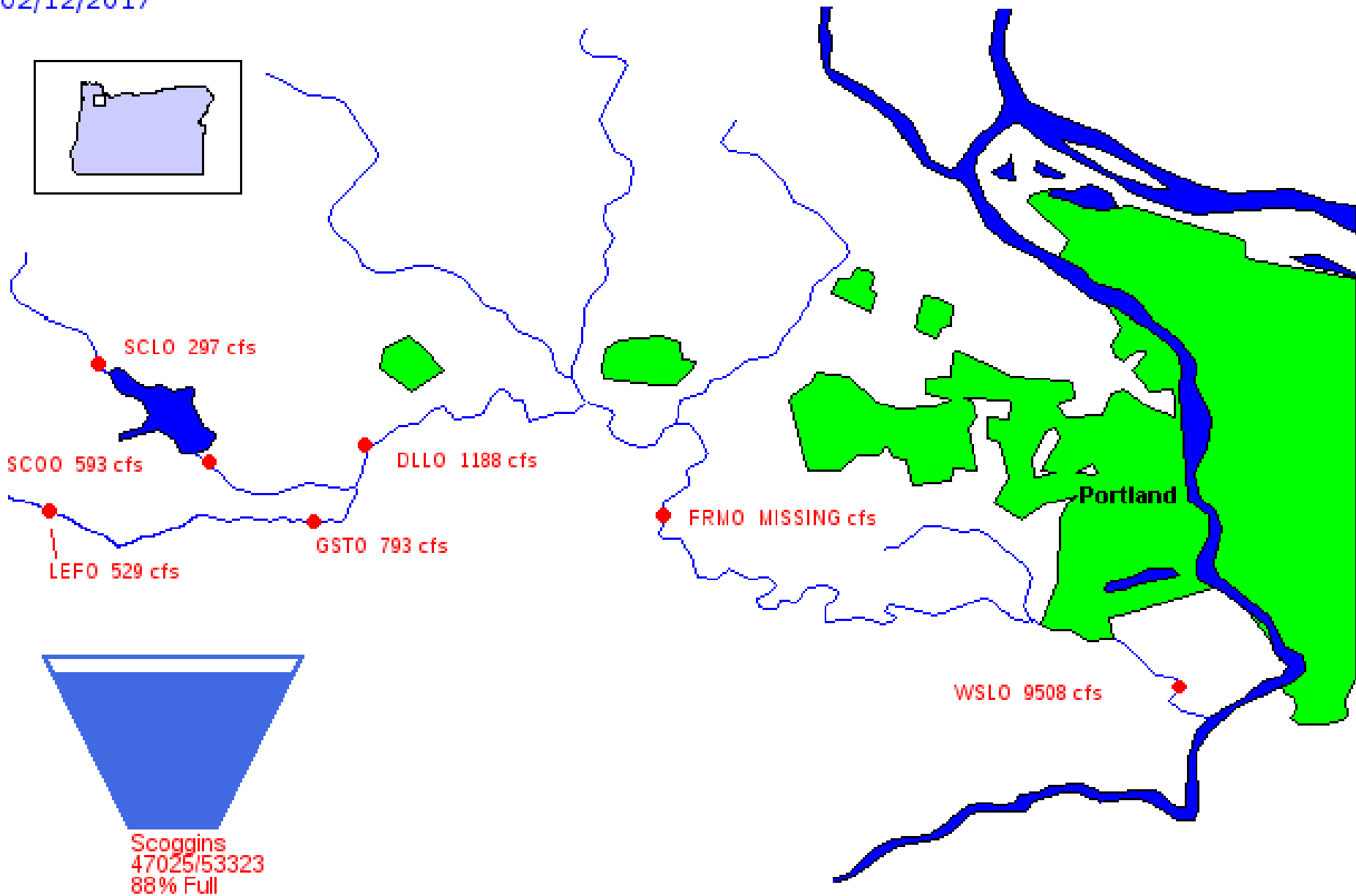
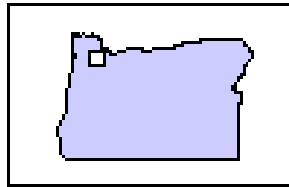
- < 35%
- 35% - 50%
- 51% - 75%
- 76% - 100%
- > 100%

NRCS Basin



NRCS Basinwide Summary: February 1, 2017
(averages based on 1981-2010 reference period)

02/12/2017

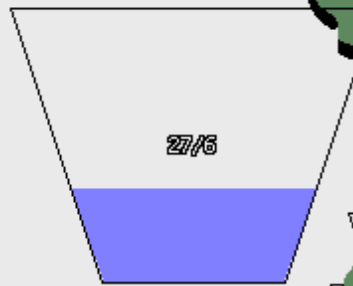


The Willamette Basin

LEGEND

- Storage Project
- Run of River
- Gage
- No Alerts
- Bank Full
- Flood Stage

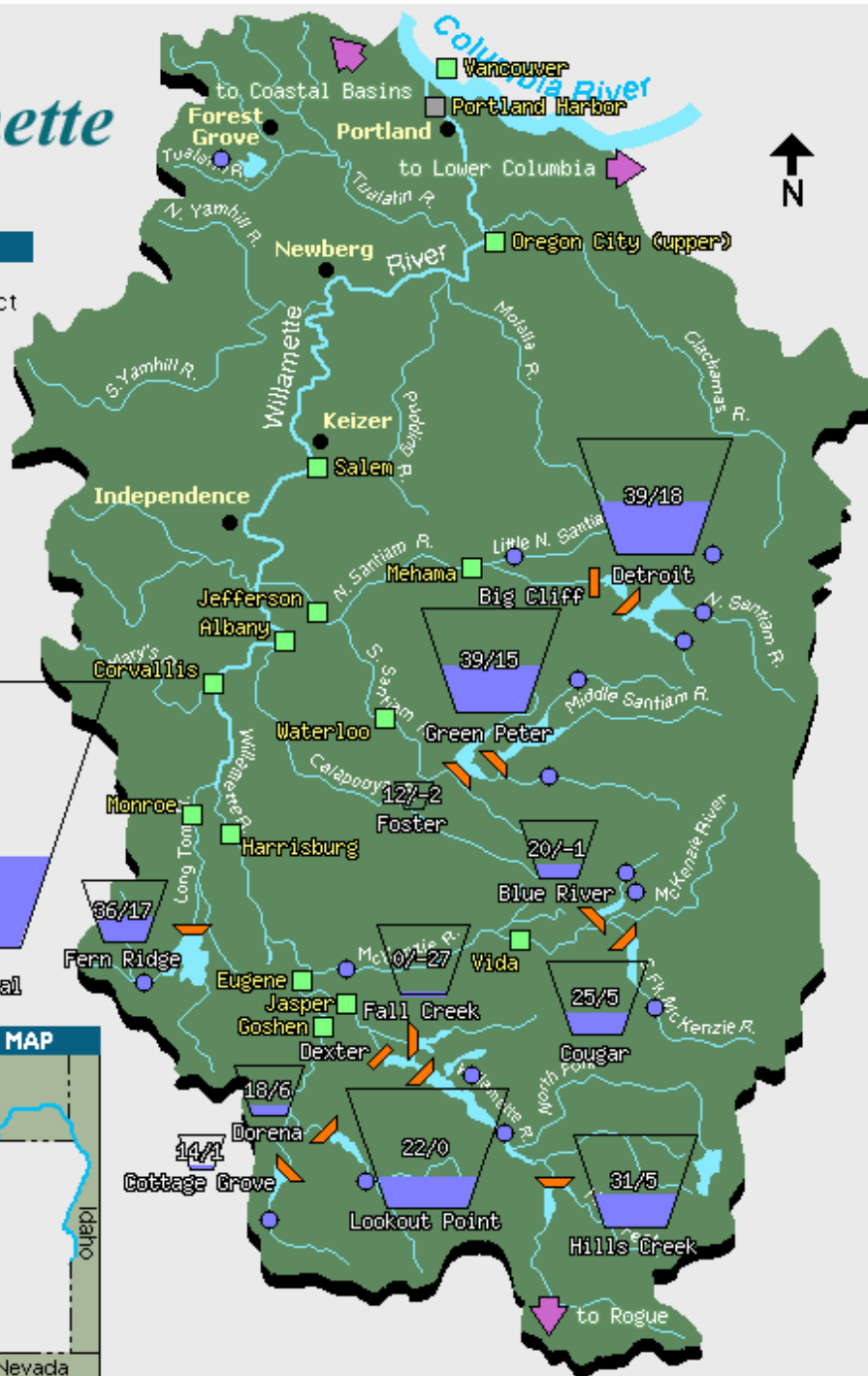
Overview



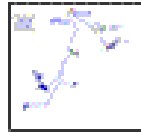
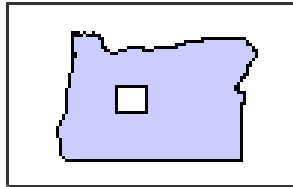
Willamette Total



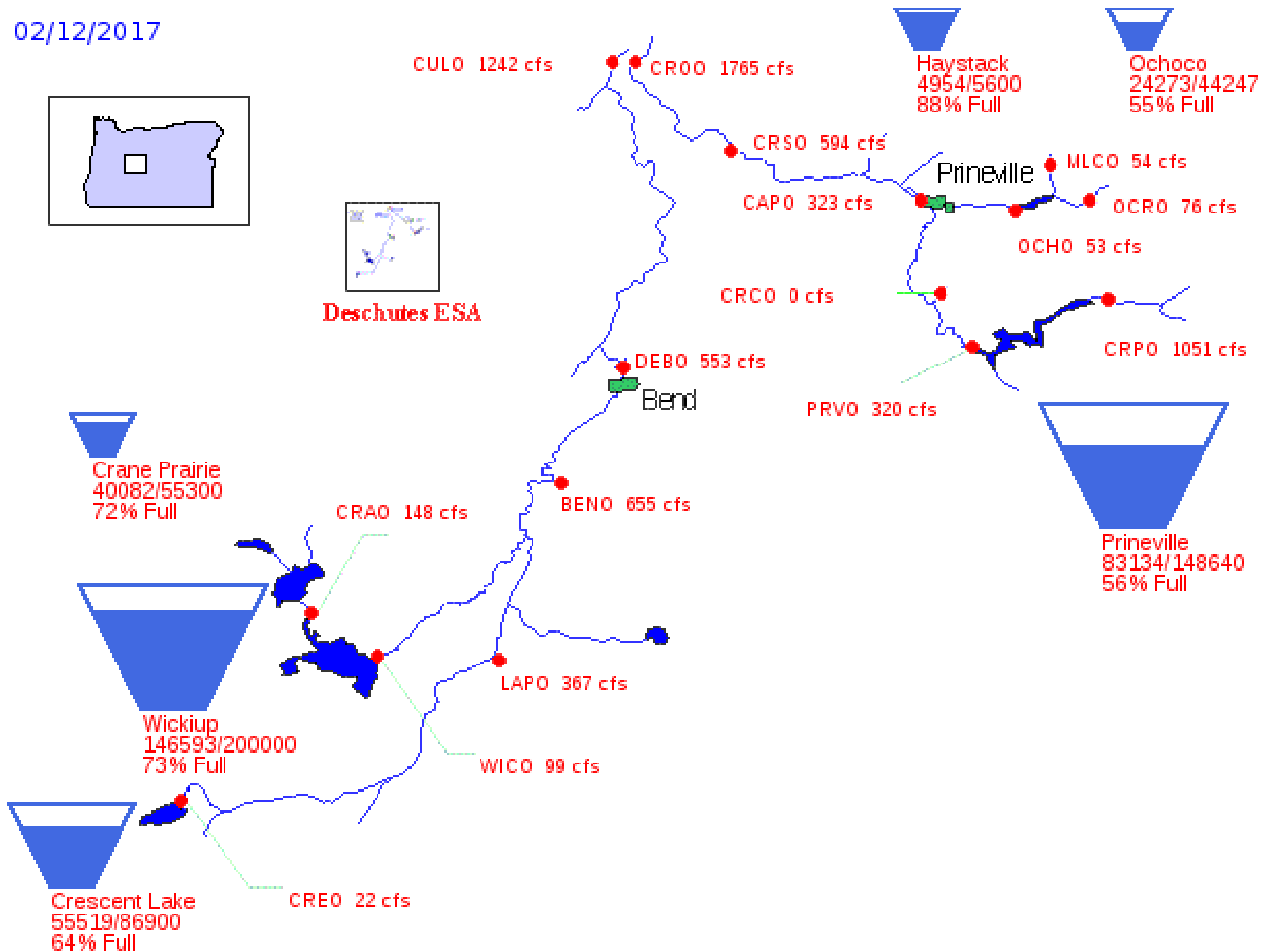
BASIN LOCATION MAP



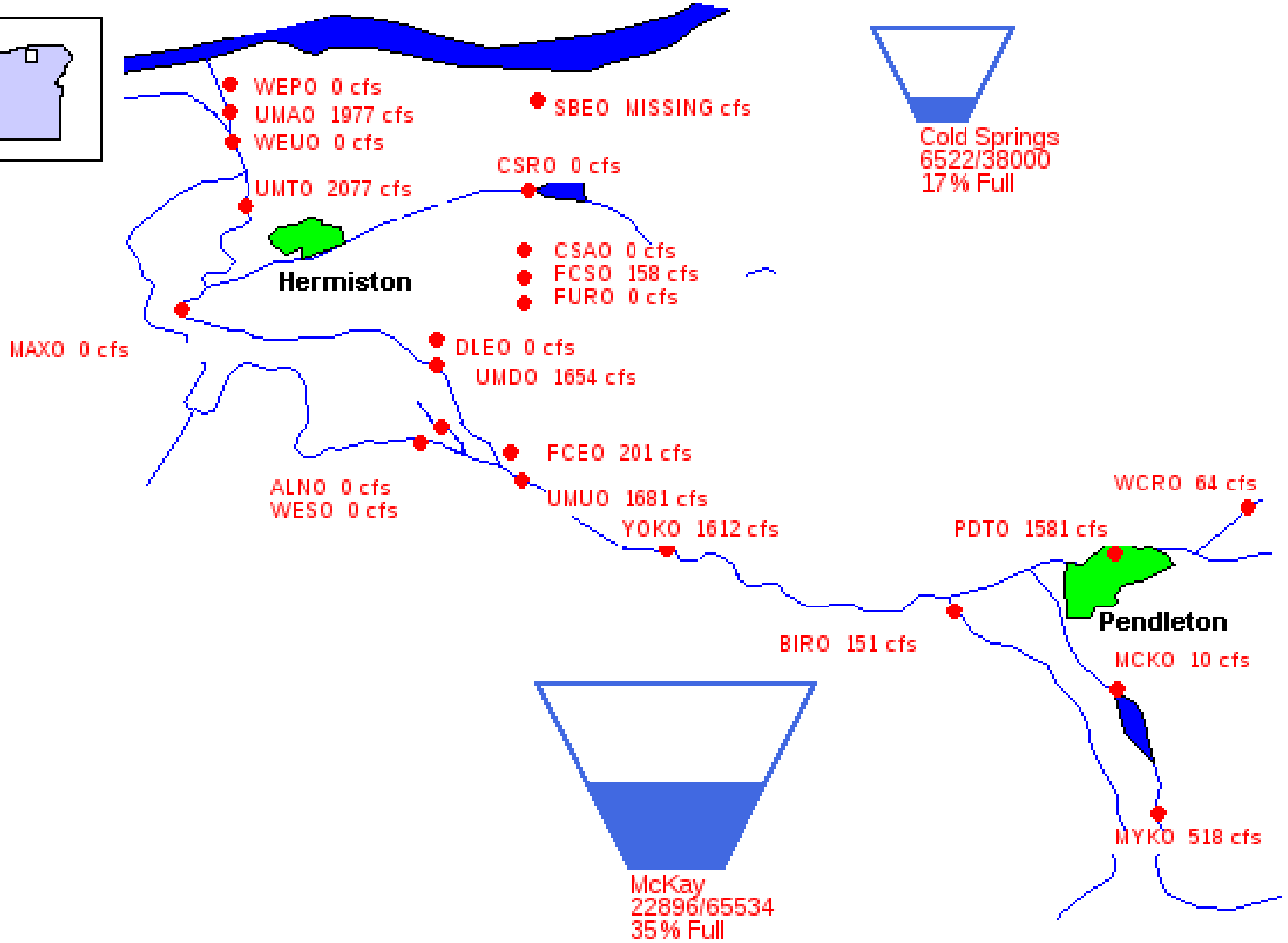
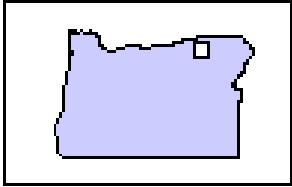
02/12/2017

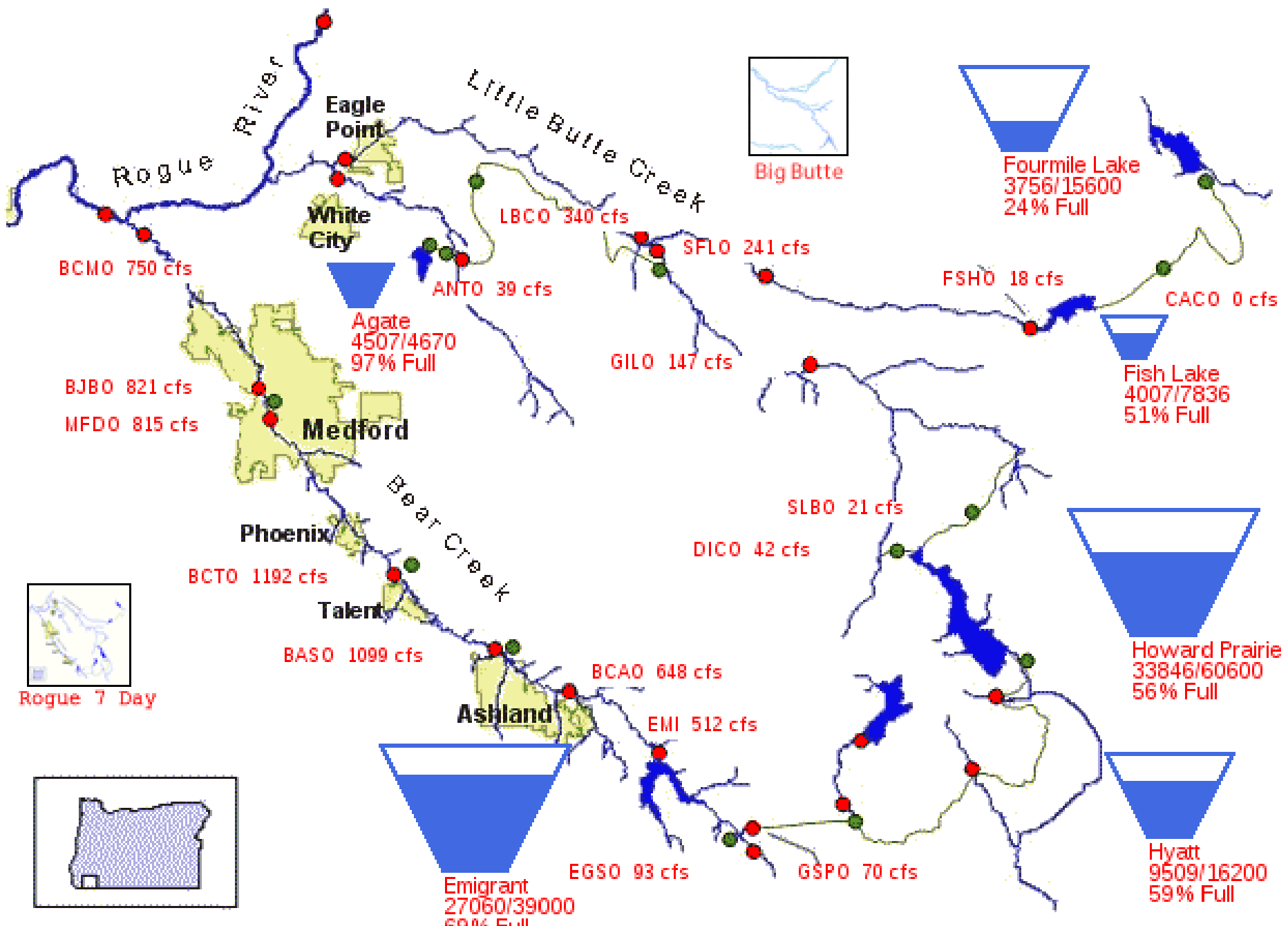


Deschutes ESA

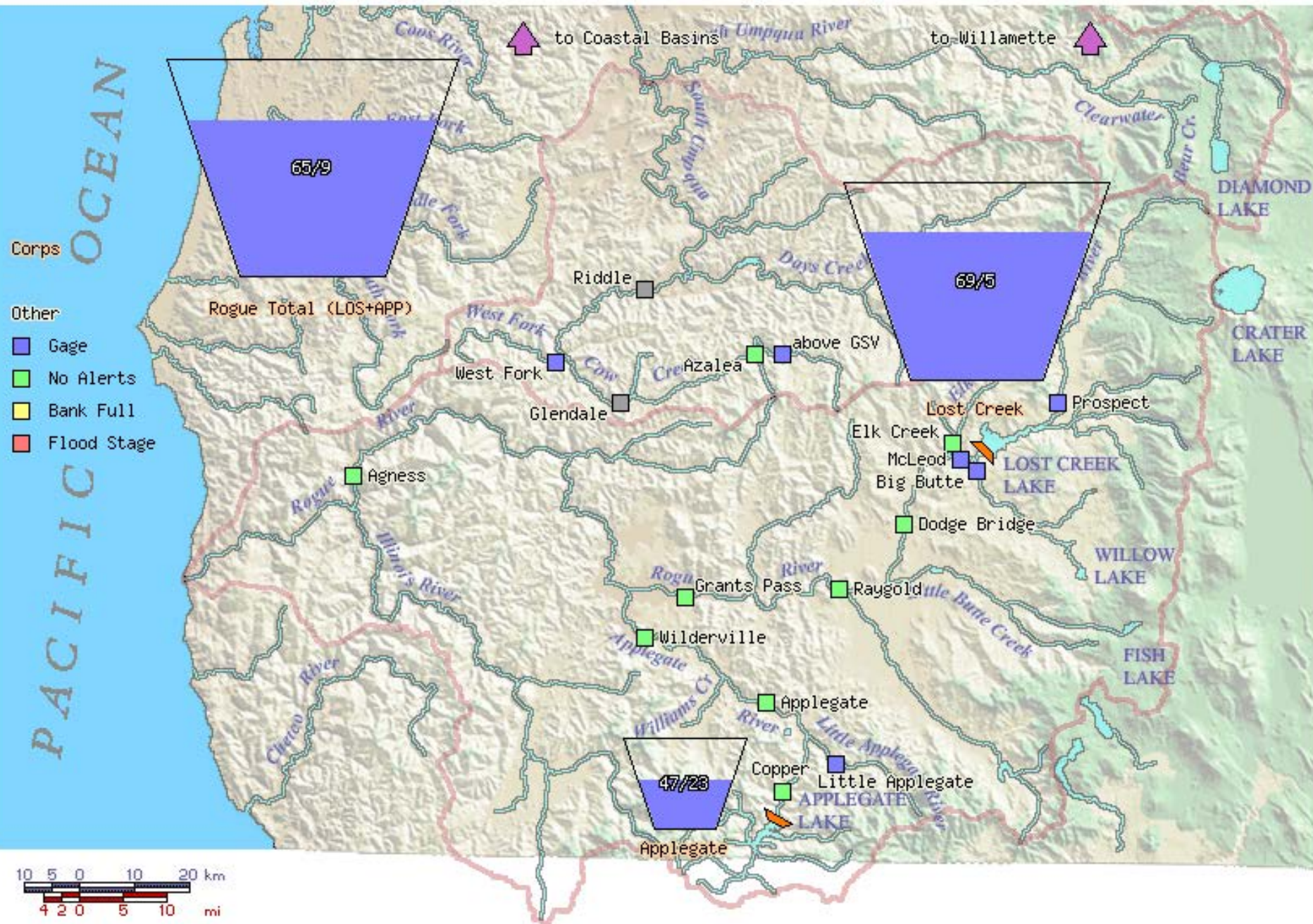


02/12/2017

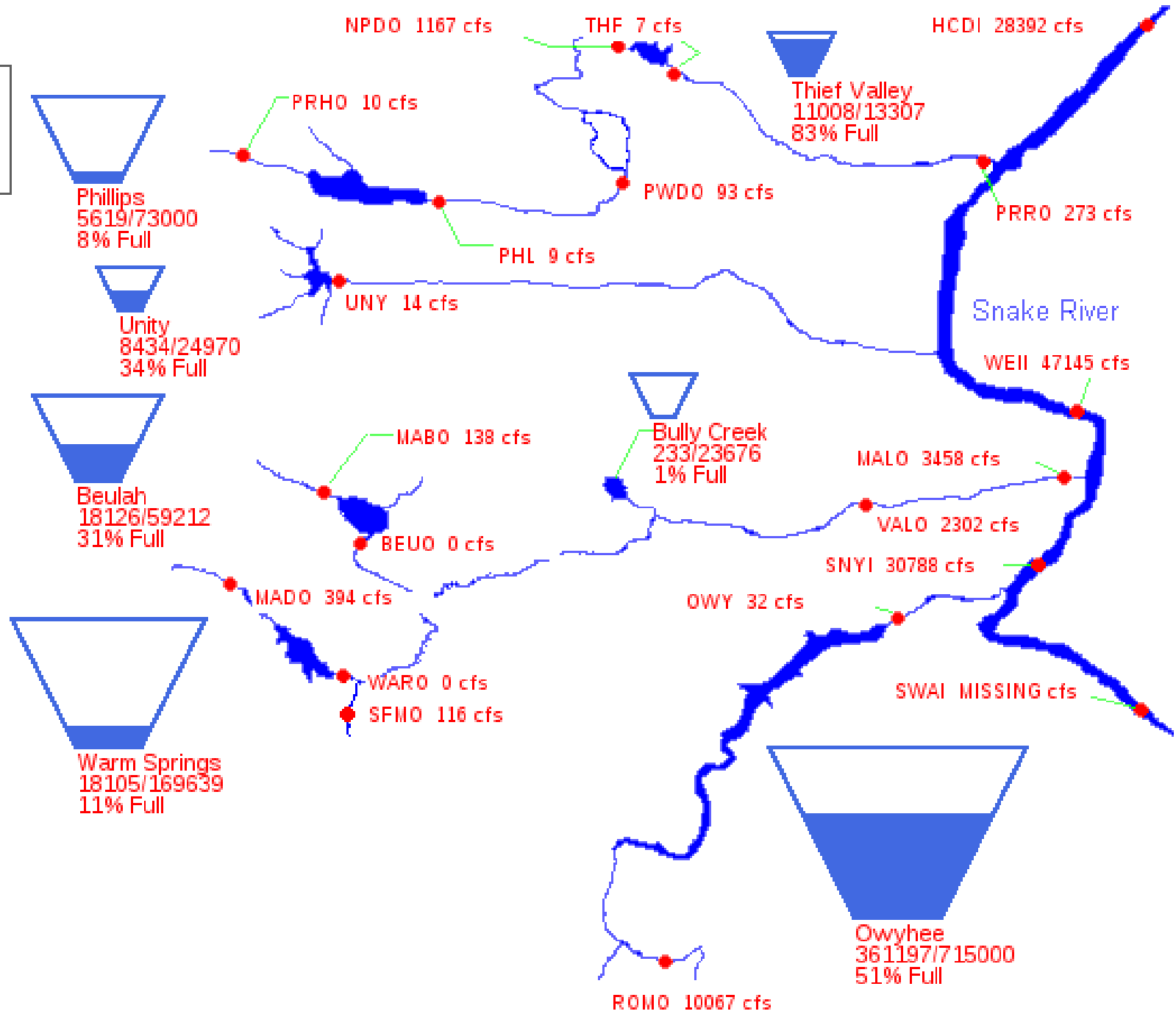
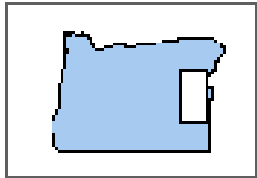




Rogue Basin Teacup Diagram

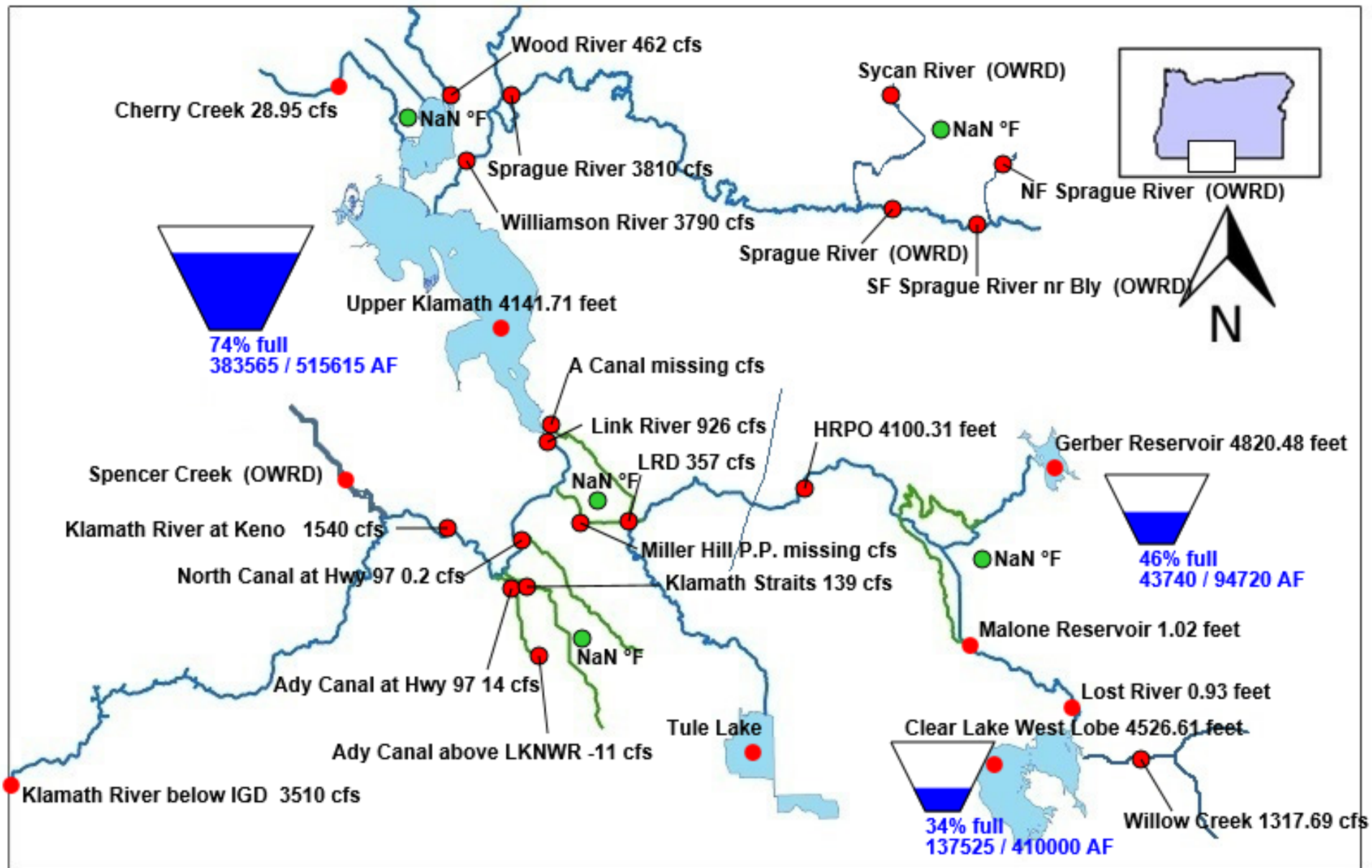


02/12/2017



Major Storage Reservoirs in the Klamath River Basin

Tue Feb 14 2017 08:07:51 GMT-0800 (Pacific Standard Time)



Thank You

