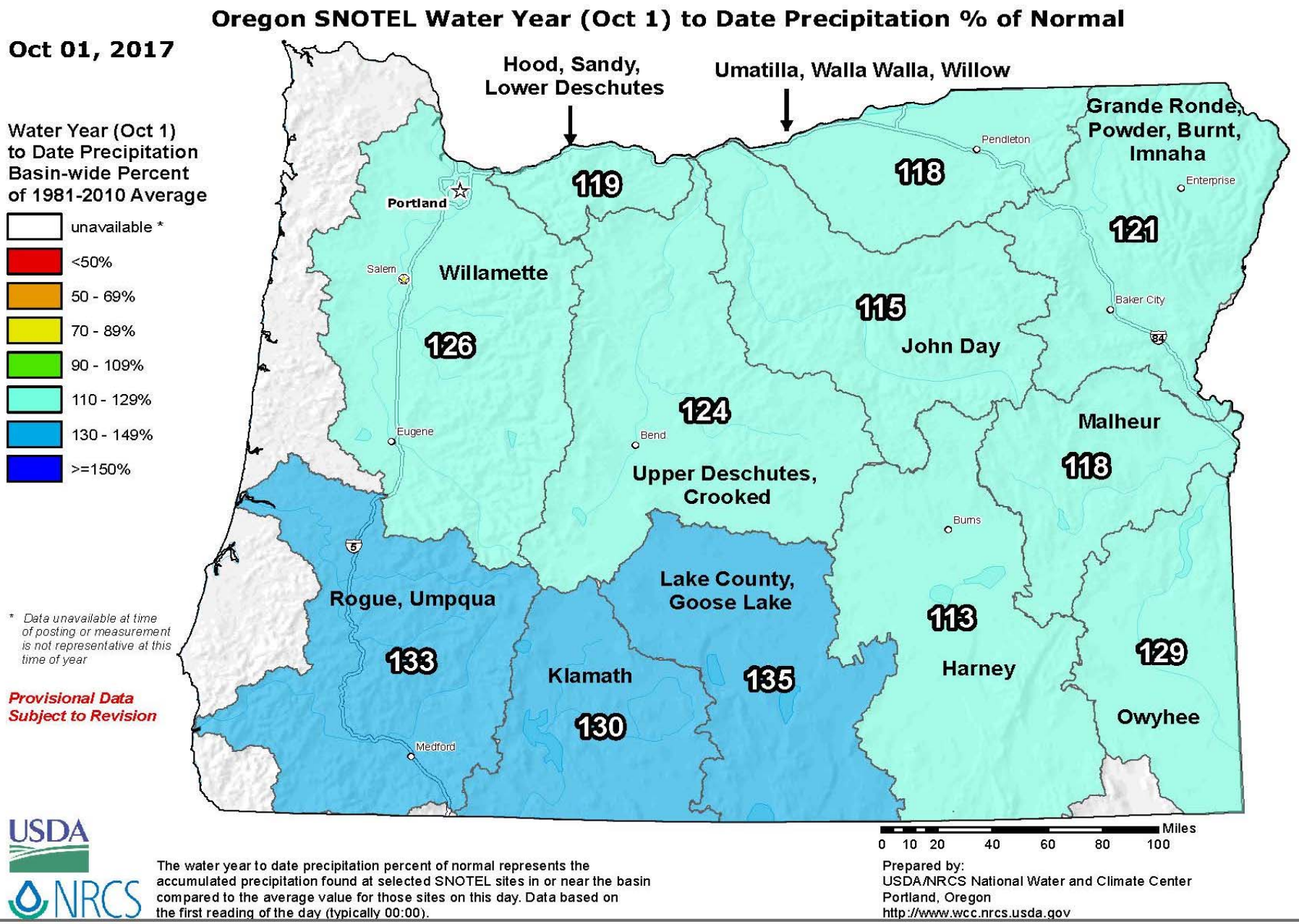
# Oregon Water Supply Availability Committee

## October 10, 2017

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/

# WY2017 Statewide SNOTEL Precipitation - 124% of normal




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

# WATER YEAR 2017 SUMMARY

1. Record setting October precipitation set the tone for wet weather that continued through early June

2. Snowy & cold December - January brought unusual low elevation snow and above normal snow amounts to the mountains

3. Mid-winter (Feb and March) heavy rain events brought rounds of flooding throughout the state and significant snowmelt. Due to the snowpack surplus, the snowpack was sustained at normal levels even after these losses

4. December through April brought 5 consecutive months of above average precipitation

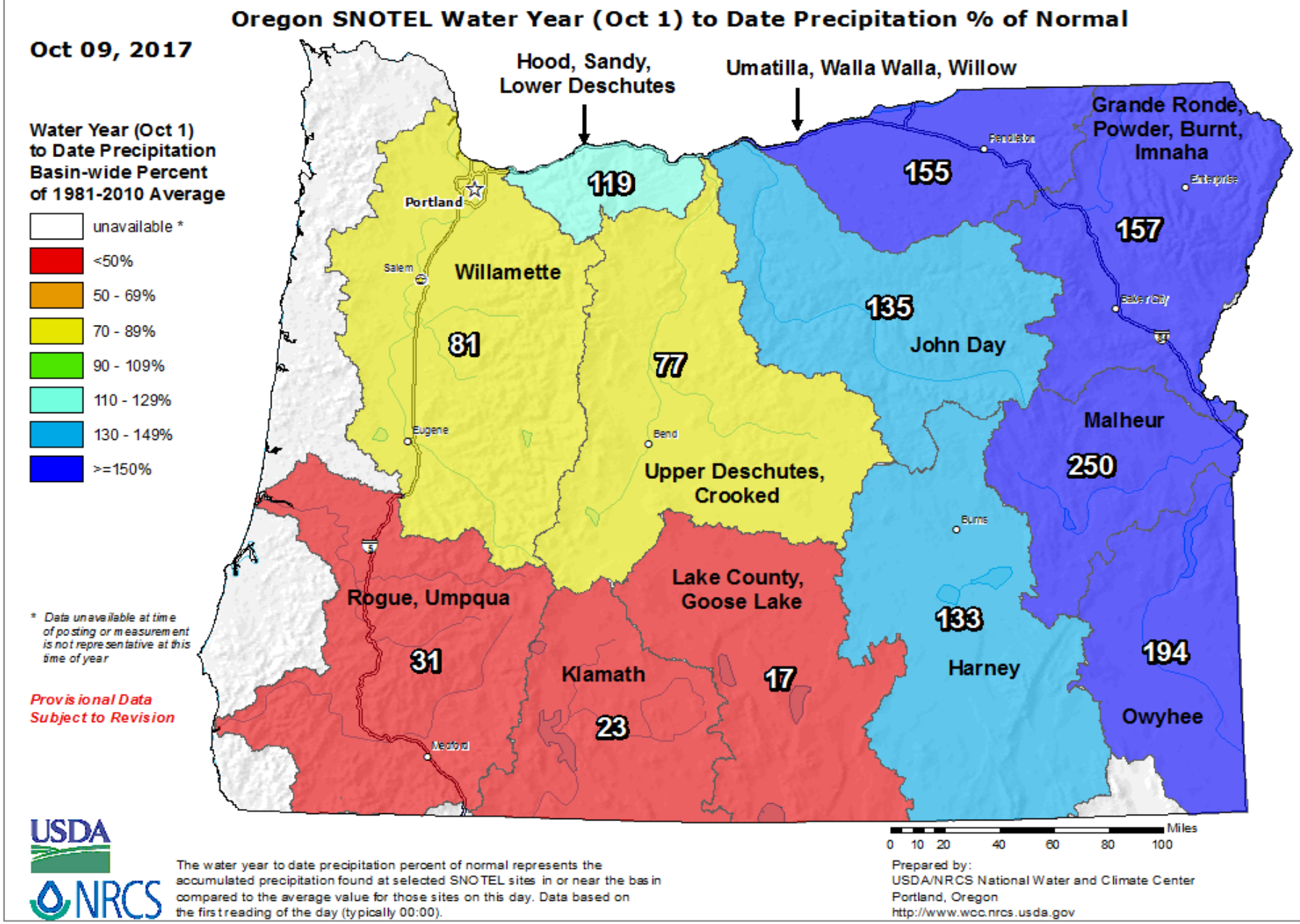
5. Normal to above normal snowpack was maintained through the peak of the season (mid March to early April)

6. Most major irrigation reservoirs began the water supply season with average and above amounts of water

7. As forecast, most rivers experienced above average streamflow volumes from April – July (largely due to the above normal streamflow contribution during April and May

8. July and August were hot and dry, placing high demands for water usage with decreased streamflows statewide

## Statewide SNOTEL Precipitation is 92% of normal

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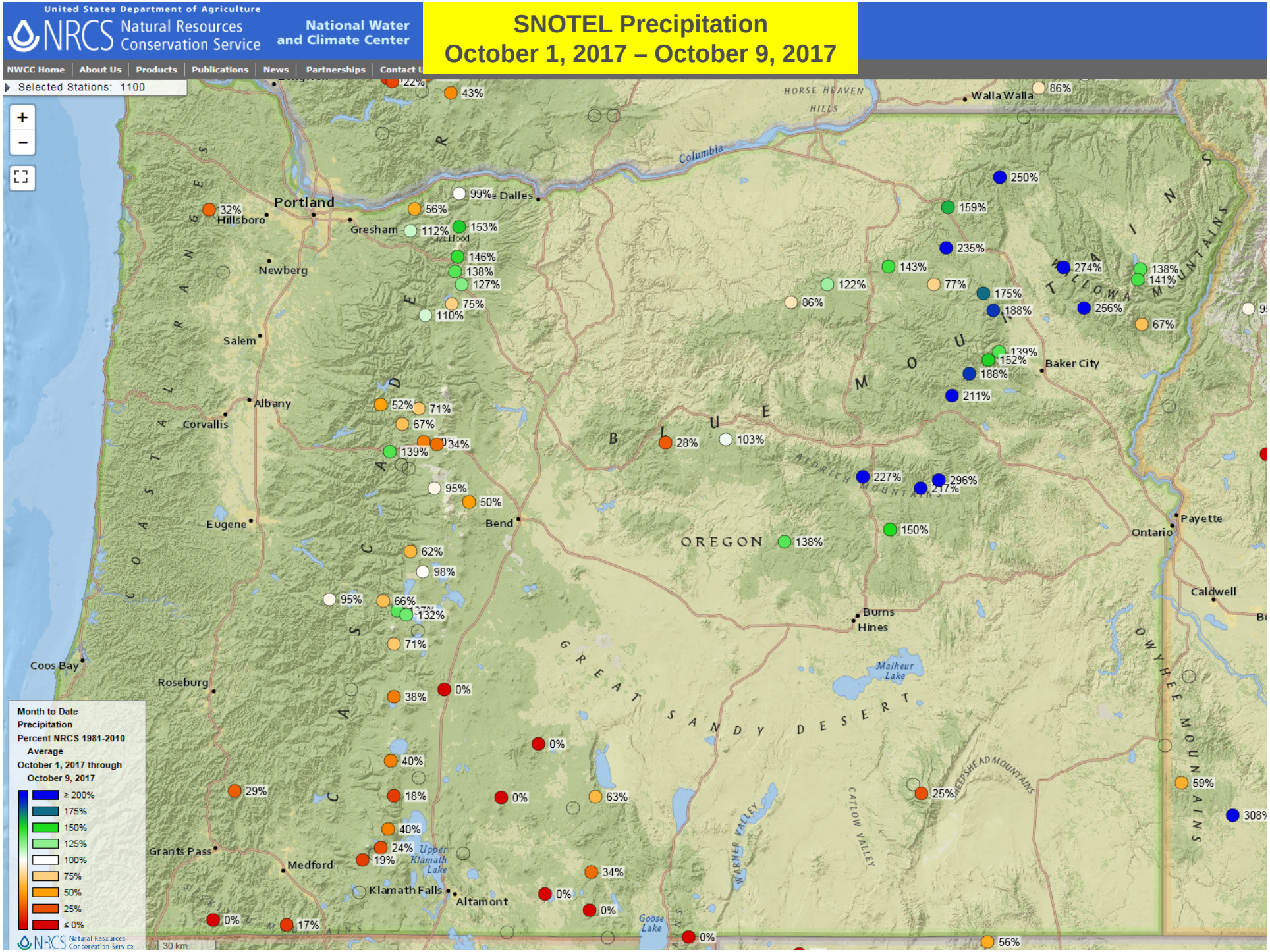
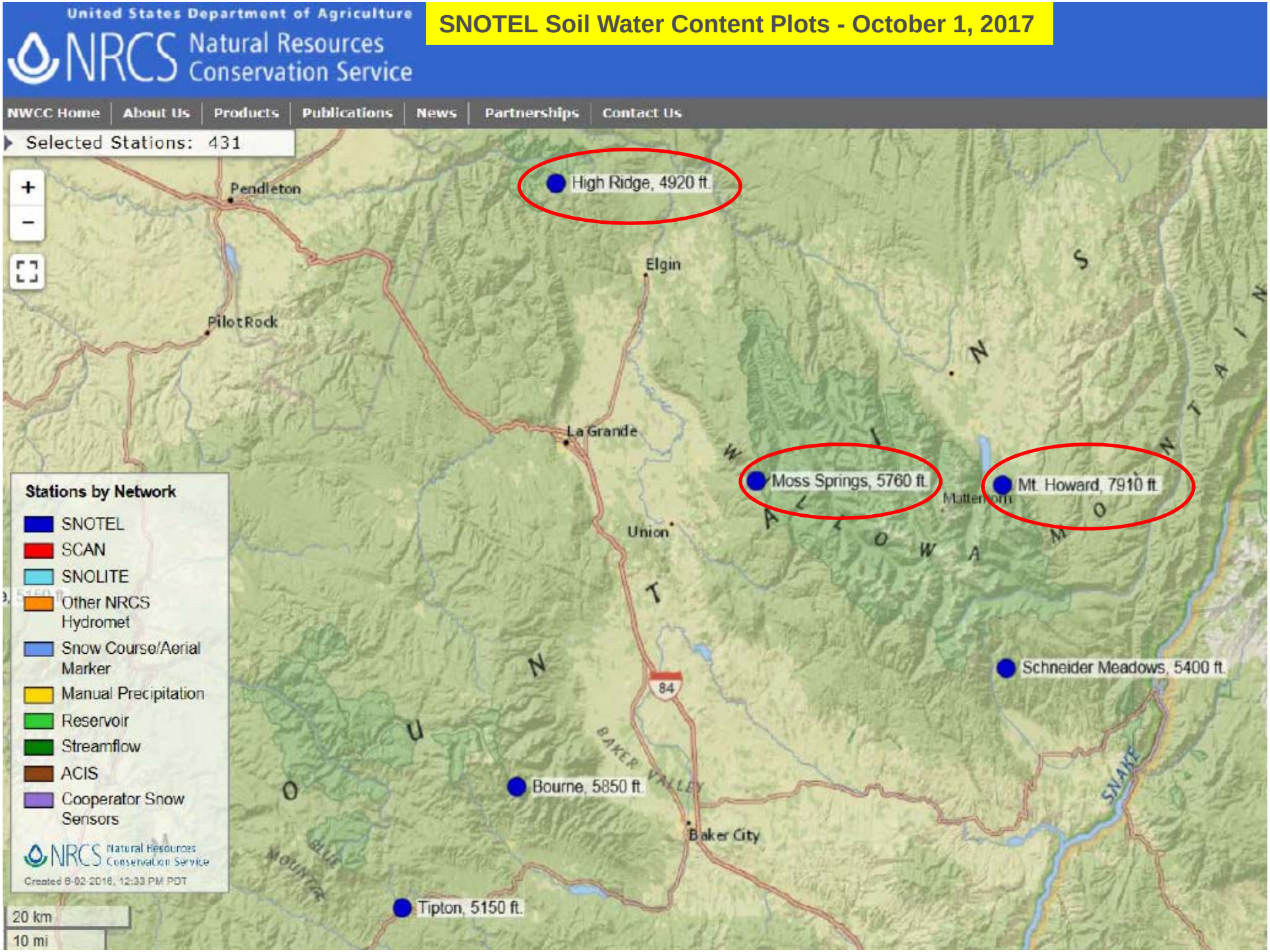
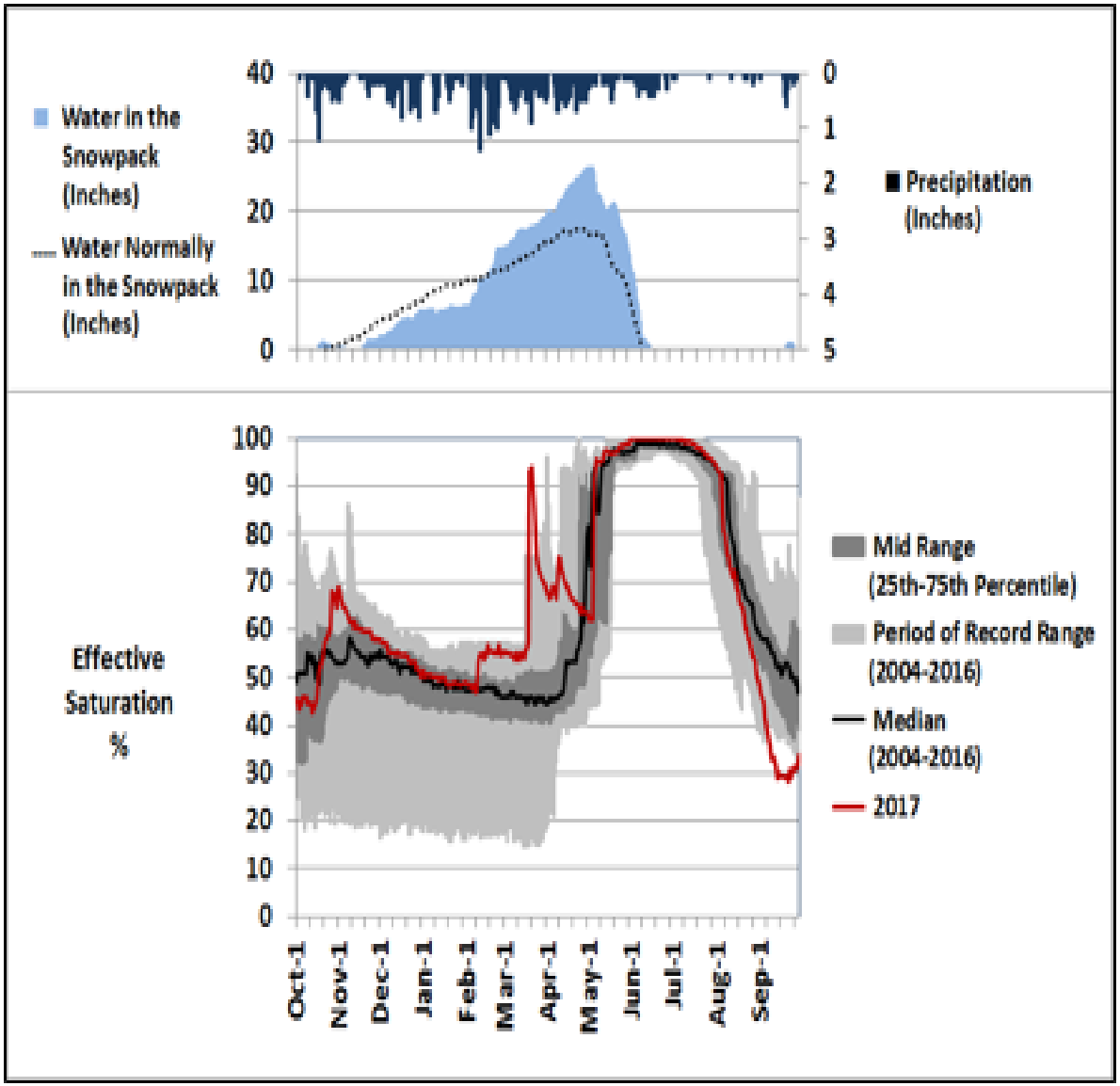

United States Department of Agriculture
NRCS Natural Resources Conservation Service
National Water and Climate Center
SNOTEL Precipitation
October 1, 2017 – October 9, 2017
NWCC Home | About Us | Products | Publications | News | Partnerships | Contact U
Selected Stations: 1100
Month to Date Precipitation
Percent NRCS 1981-2010 Average
October 1, 2017 through October 9, 2017
≥ 200%
175%
150%
125%
100%
75%
50%
25%
≤ 0%
30 km
Portland
Hillsboro
Gresham
Mt Hood
The Dalles
Columbia
Walla Walla
HORSE HEAVEN HILLS
Newberg
Salem
Albany
Corvallis
Eugene
Bend
OREGON
Baker City
Payette
Ontario
Caldwell
Burns
Hines
Roseburg
Coos Bay
Grants Pass
Medford
Klamath Falls
Altamont
Upper Klamath Lake
Malheur Lake
Goose Lake
GREAT SANDY DESERT
WARNER VALLEY
CATLOW VALLEY
STEENS MOUNTAINS
OWYHEE MOUNTAINS
BLUE MOUNTAINS
WALLOWA MOUNTAINS
COAST RANGES
CASCADES
32%
43%
99%
56%
112%
153%
146%
138%
127%
75%
110%
52%
71%
67%
34%
139%
95%
50%
62%
98%
95%
66%
132%
71%
38%
0%
40%
29%
18%
0%
63%
40%
24%
19%
34%
0%
0%
0%
17%
0%
56%
86%
250%
159%
235%
143%
122%
77%
86%
175%
188%
274%
138%
141%
256%
67%
139%
152%
188%
211%
28%
103%
227%
296%
217%
150%
138%
25%
59%
308%


United States Department of Agriculture
NRCS Natural Resources Conservation Service
SNOTEL Soil Water Content Plots - October 1, 2017
NWCC Home | About Us | Products | Publications | News | Partnerships | Contact Us
Selected Stations: 431
High Ridge, 4920 ft.
Moss Springs, 5760 ft.
Mt. Howard, 7910 ft.
Schneider Meadows, 5400 ft.
Bourne, 5850 ft.
Tipton, 5150 ft.
Pendleton
Elgin
Pilot Rock
La Grande
Union
Baker City
Matterhorn
Stations by Network
SNOTEL
SCAN
SNOLITE
Other NRCS Hydromet
Snow Course/Aerial Marker
Manual Precipitation
Reservoir
Streamflow
ACIS
Cooperator Snow Sensors
Created 8-02-2016, 12:33 PM PDT
20 km
10 mi

## **Mt Howard**, 7910' elevation

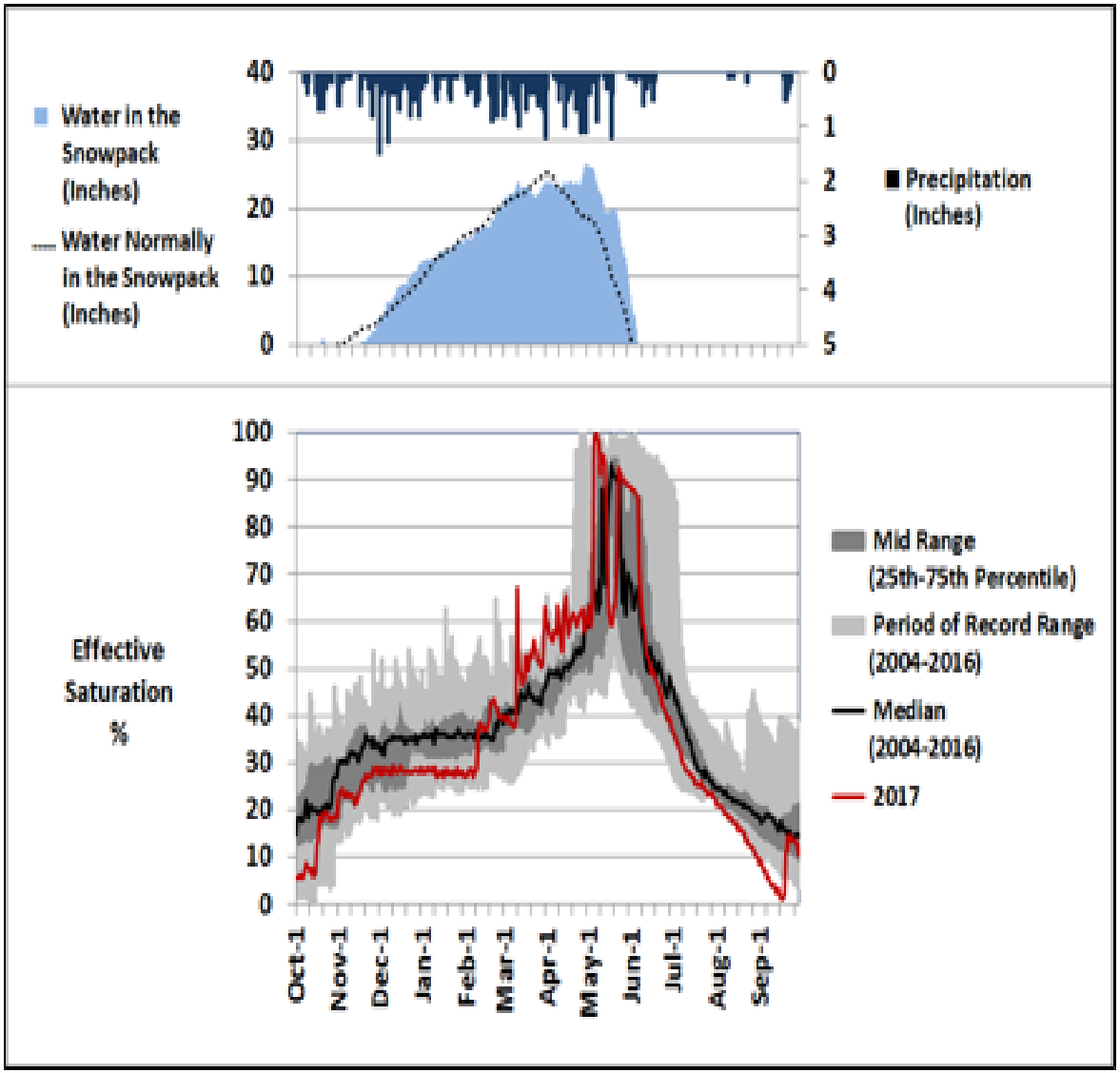
- As of Oct 1st, the soil moisture is 34% effectively saturated, when normally it is 47%.




**Site Characteristics:** Mt. Howard SNOTEL site sits on soils formed in volcanic ash over colluvium from argillite. The soil series is Angelpeak which consists of deep and very deep, well drained soils on mountains. The site has a slope of 10 percent. Mean annual precipitation is approximately 44 inches, with roughly 45% falling as snow. Vegetation is subalpine fir, lodgepole pine and western larch with an understory of elk sedge and grouse blueberry. Soil moisture probes have been installed here since 2004, at depths of 2, 4, 8 and 40 inches. The silt equation is currently being applied to all probes.

## **Moss Springs**, 5760' elevation

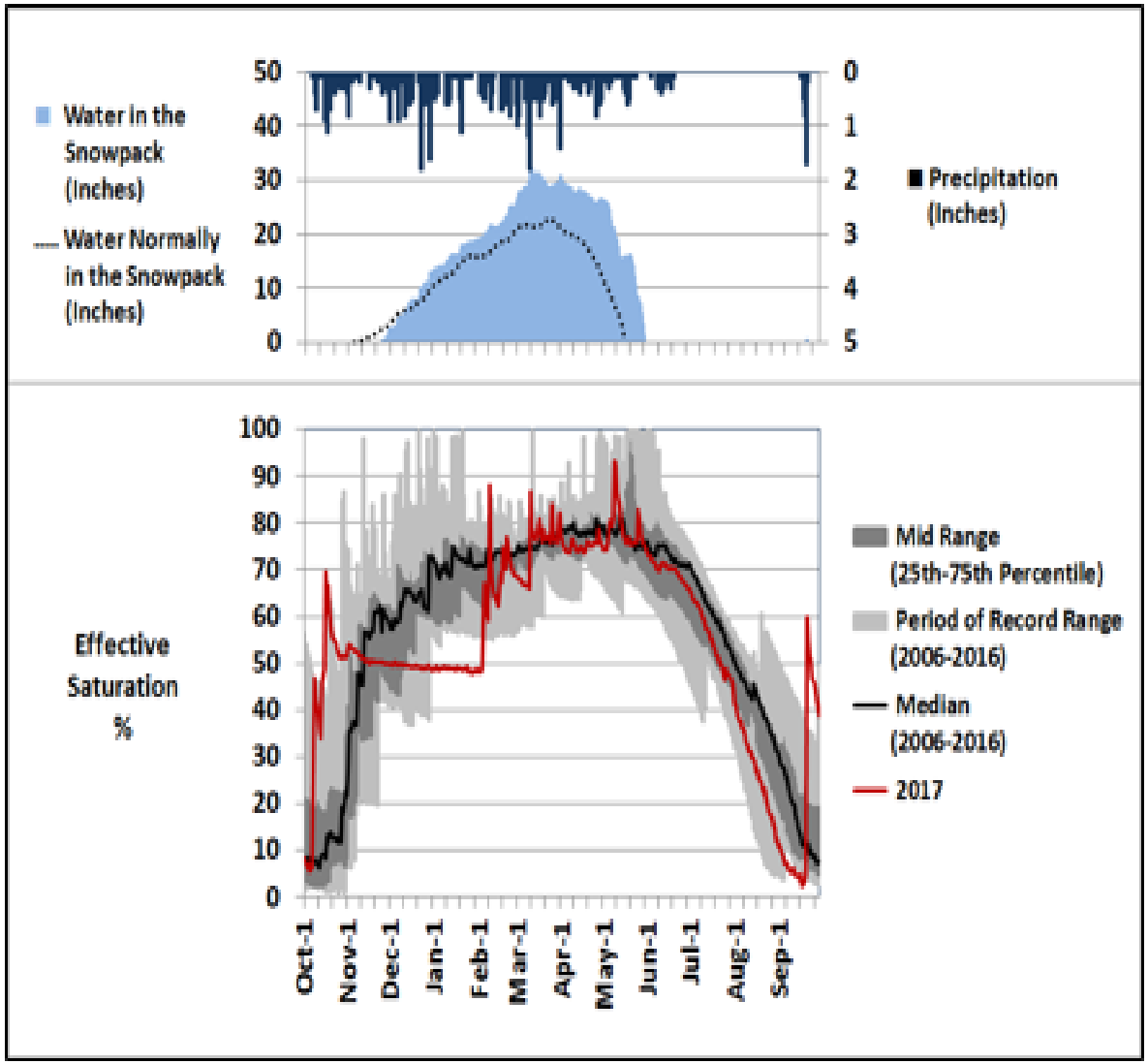
- As of Oct 1st, the soil moisture is 10% effectively saturated, when normally it is 14%.




**Site Characteristics**: Moss Springs SNOTEL site sits on volcanic soils formed from ash over igneous-basalt. The soil series is Mountemily, which consists of very deep, well drained soils on ridgetops, side slopes and shoulders of mountains. The site has a slope of 10 percent. Mean annual precipitation is approximately 51 inches, with roughly 50% falling as snow. Vegetation is lodgepole pine, subalpine fir, western larch, Engleman spruce, huckleberry, twinflower, Oregon boxwood, prince's pine, sidebells pyrola, herbaceous plants, grasses and sedges. Soil moisture probes have been installed here since 2004, at depths of 2, 4, 20 and 40 inches. The silt equation is currently being applied to all probes.

## **High Ridge,** 4920' elevation

- As of Oct 1st, the soil moisture is 39% effectively saturated when normally it is 7.6%.




**Site Characteristics**: High Ridge SNOTEL site sits on volcanic soils formed from colluvium derived from ash over colluvium derived from rock. The soil series is Tamara, consisting of very deep, well drained soils formed in a mantle of ash overlying material derived from a mixture of loess and colluvium and residuum from basalt. The site has a slope of 10 percent. Mean annual precipitation is approximately 50 inches, with roughly 47% falling as snow. Vegetation is grand fir, spruce, Douglas fir, western larch, ponderosa pine, lodgepole pine, twinflower, big huckleberry, herbaceous plants, grasses and sedges. Soil moisture probes have been installed here since 2006, at depths of 4, 8 and 20 inches. The silt equation is currently being applied to all probes.

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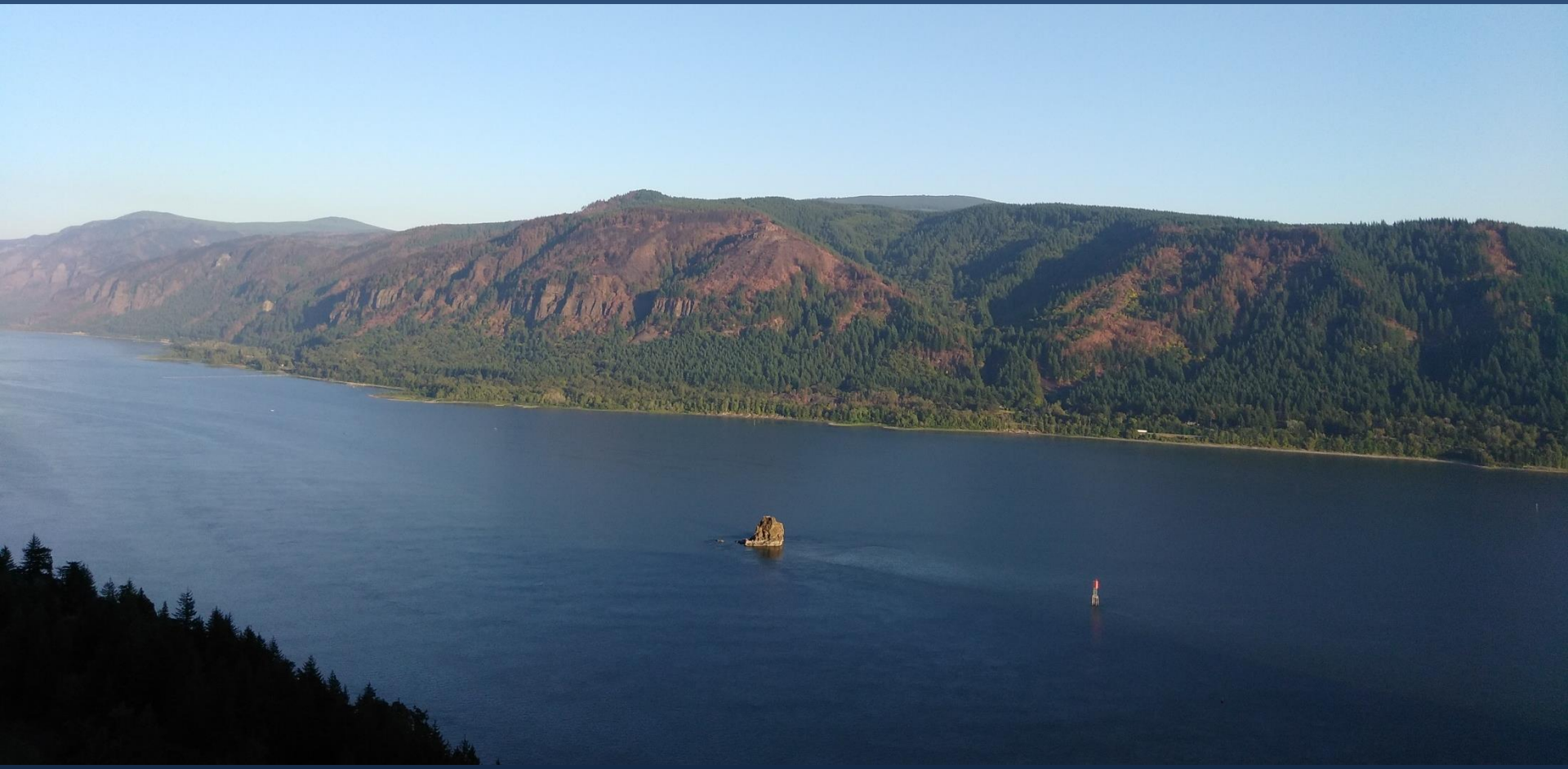
# Thank you!

# Oregon Water Supply Availability

## *September 11, 2017 NWS Update*

Columbia Gorge – view from Cape Horn, Washington

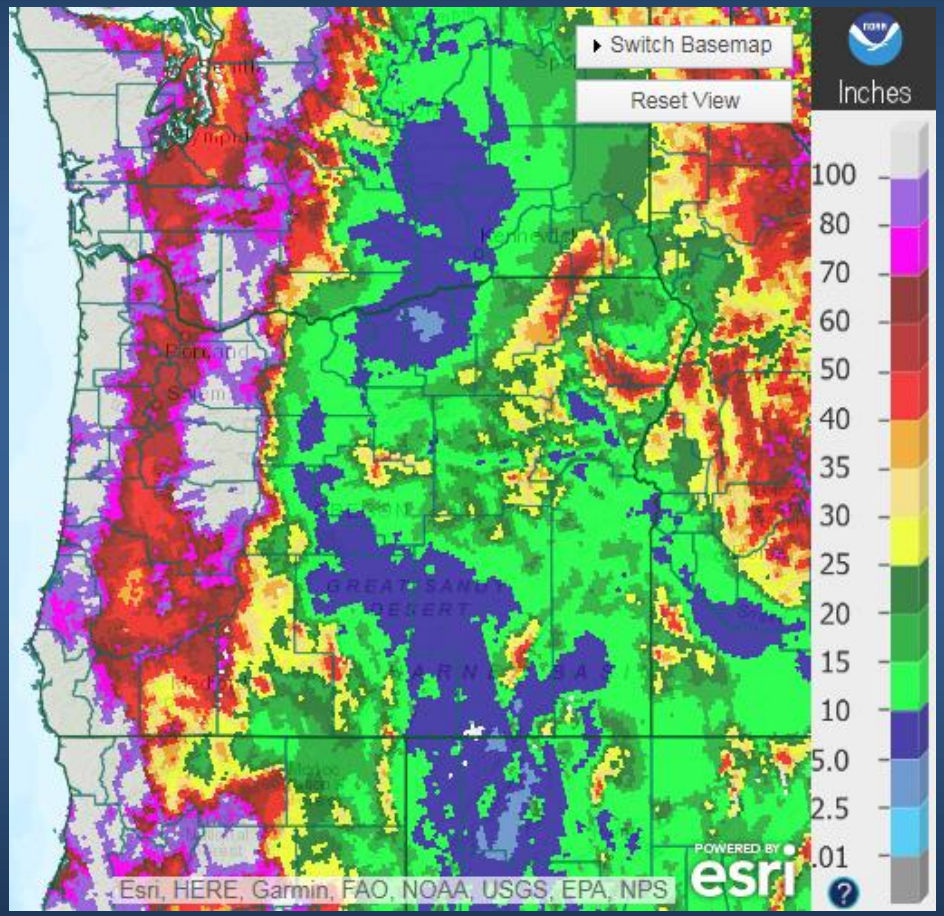
Early October 2017



Andy Bryant, NWS Portland

# Water Year 2017 Precipitation

*Observed amounts (inches)*




*% of Average*

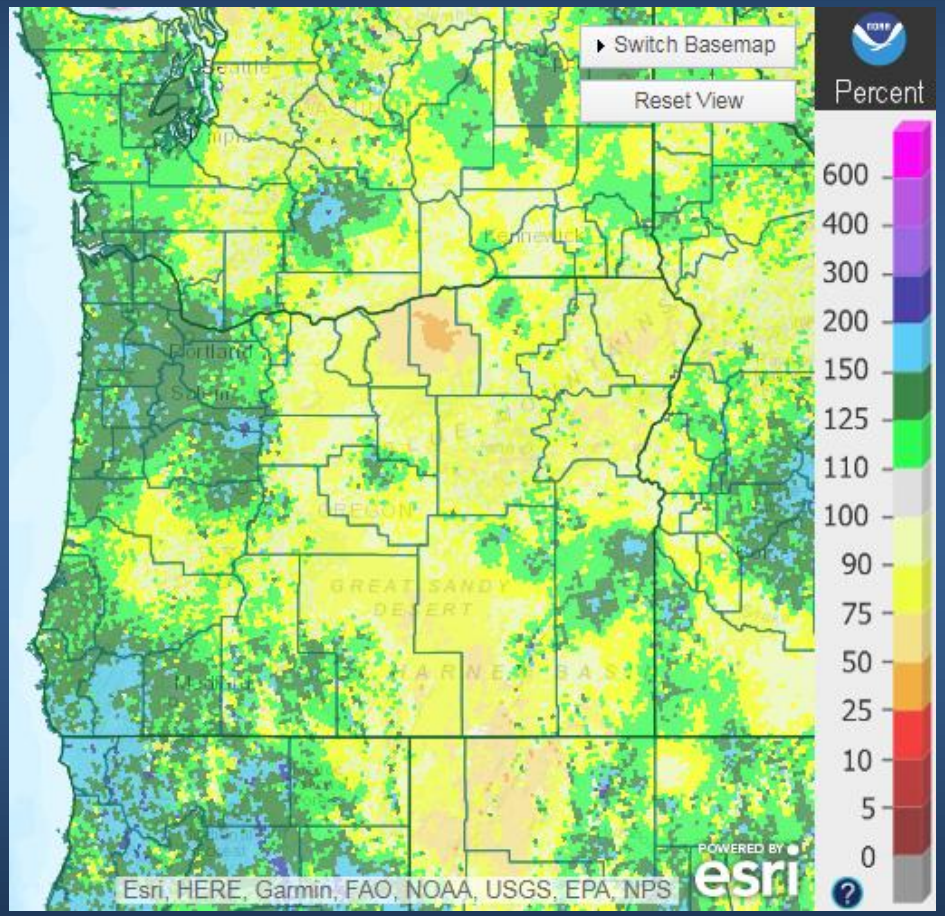
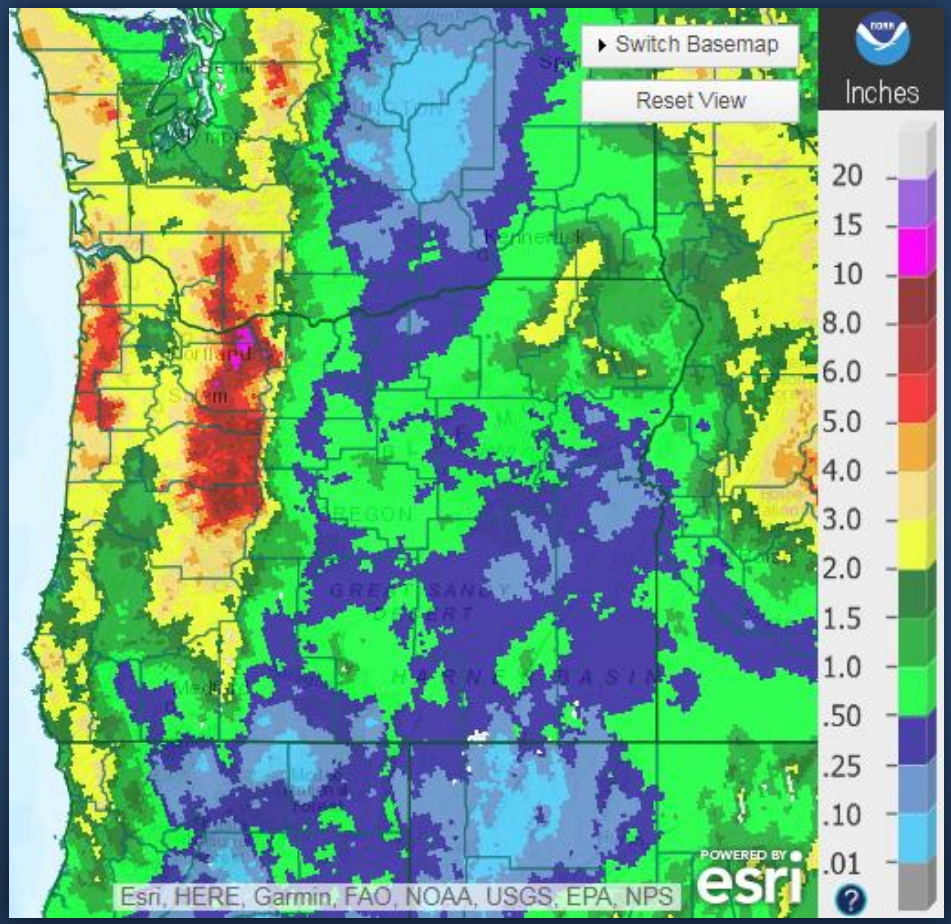



Image sources: water.weather.gov/precip/index.php

# September Precipitation

*Observed Amounts (inches)*




*% of Average*

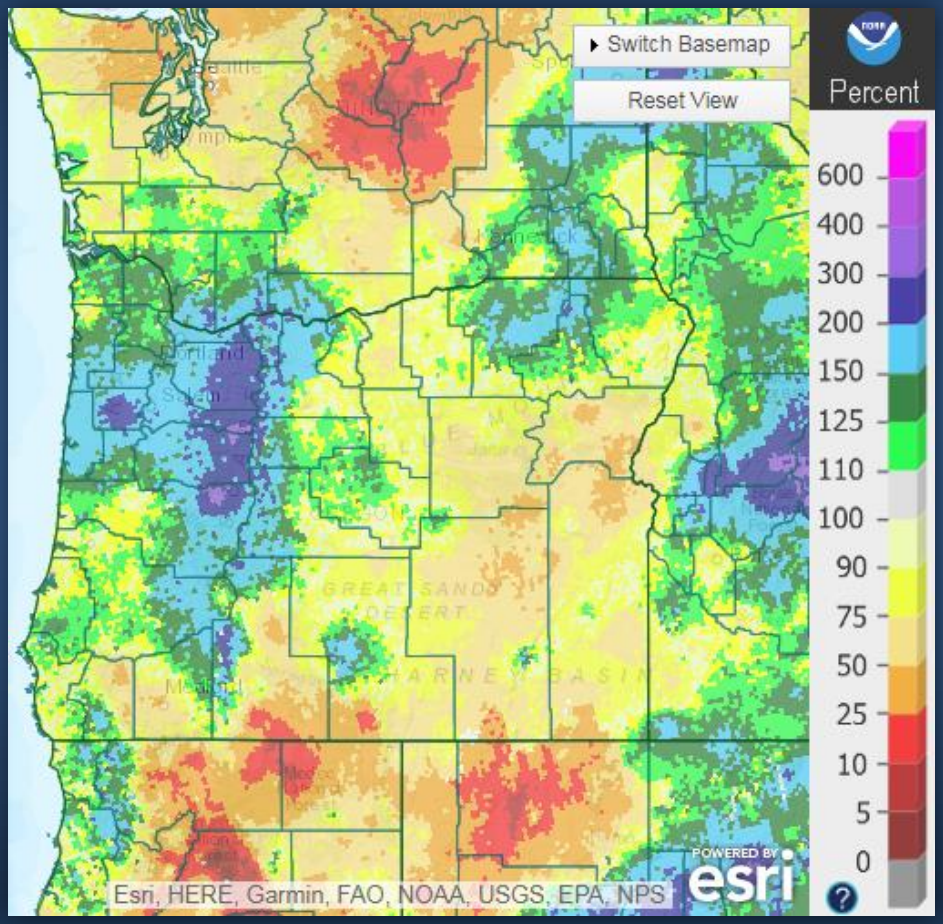
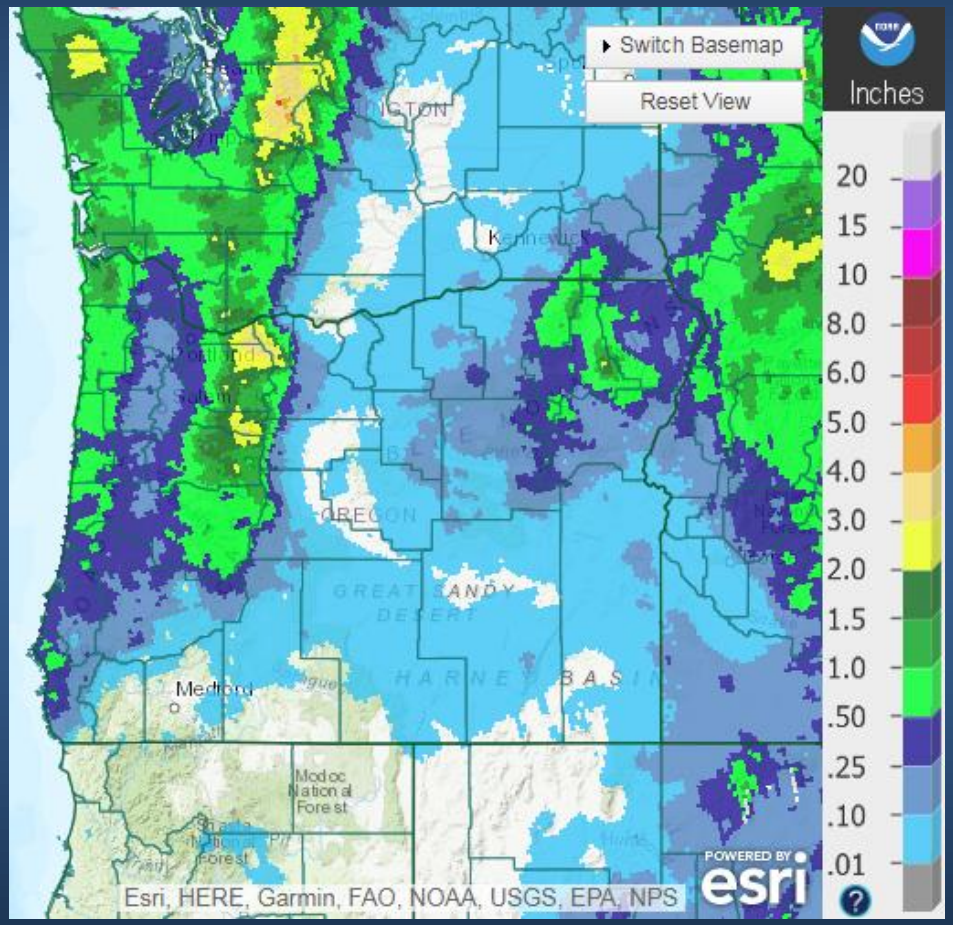



Image sources: water.weather.gov/precip/index.php

# Precipitation for Past 14 days

*Observed Amounts (inches)*




*% of Average*

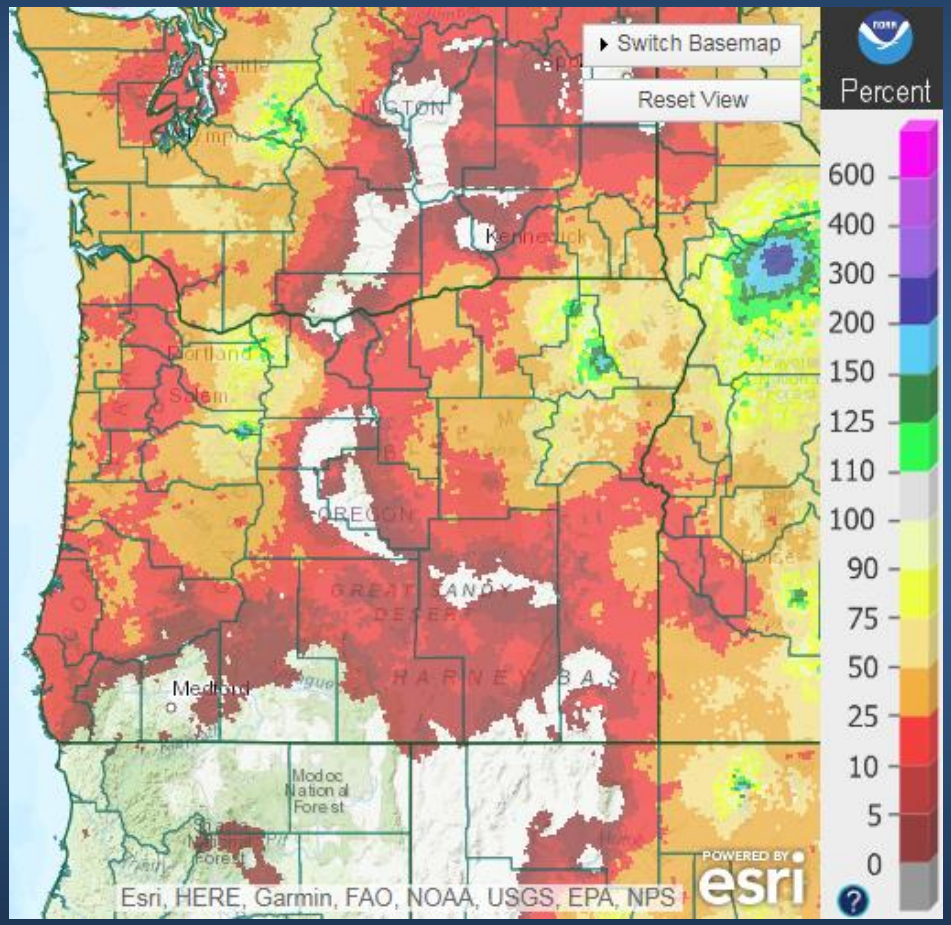



Image sources: water.weather.gov/precip/index.php

# Temperatures Past 90 Days

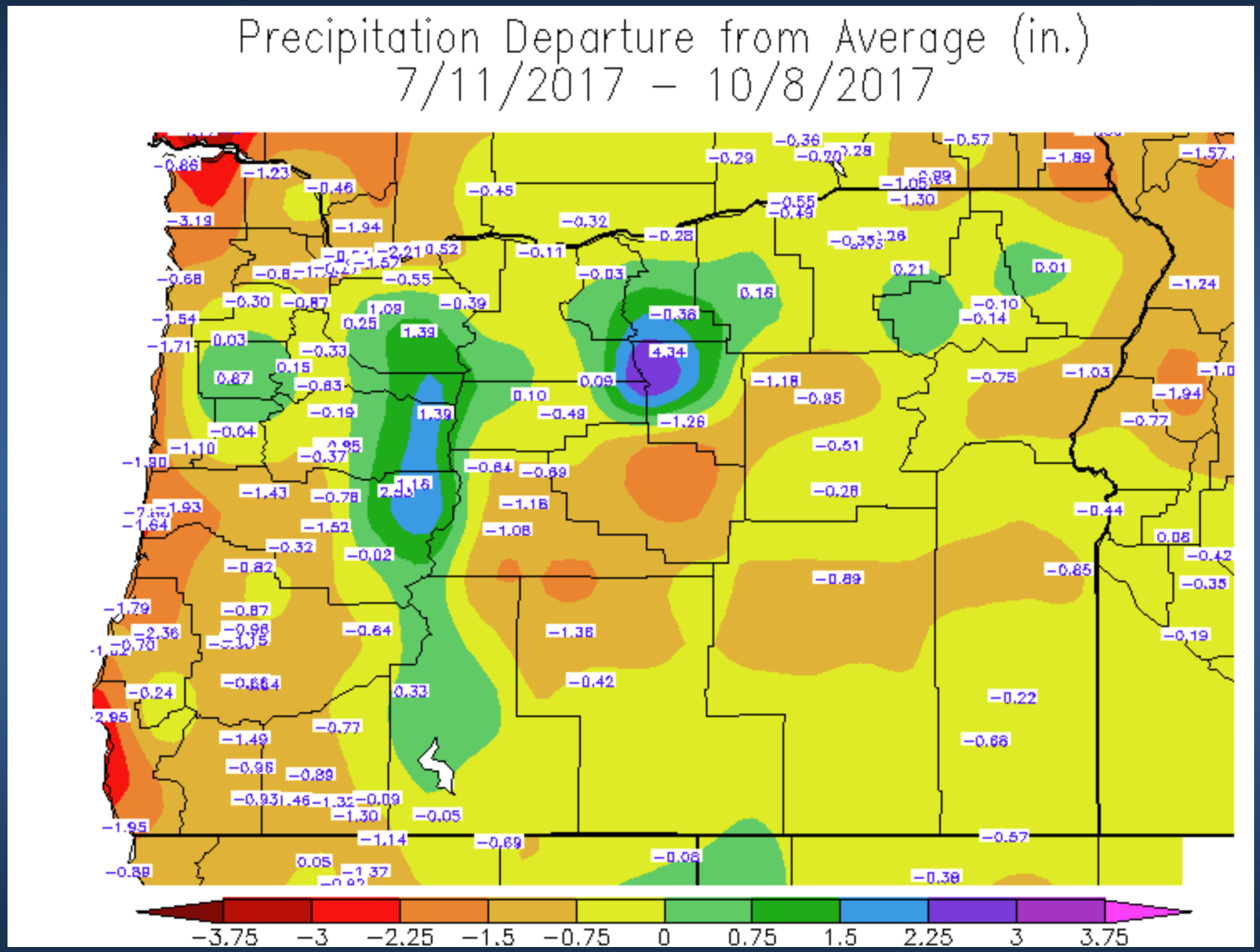



Image source: wrcc.dri.edu/cgi-bin/anomimage.pl

# Water Year 2017 Temperatures



| DIVISION NAME | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Malheur-Owyhee-Boise River Basins | 0.5 | 5.0 | -6.4 | -7.1 | 1.2 | 3.0 | -2.6 | 0.9 | 0.9 | 4.5 | 5.0 | 1.2 | 0.3 |
| Grande Ronde River Basin | 0.3 | 6.0 | -6.1 | -7.1 | 0.3 | 1.7 | -2.1 | 0.7 | 1.2 | 4.1 | 4.0 | 0.8 | 0.3 |
| Middle Columbia Lower Tributaries | -0.1 | 5.3 | -6.8 | -8.7 | -1.4 | 1.1 | -1.8 | 1.3 | 1.5 | 3.7 | 5.6 | 1.6 | 0.1 |
| Coastal River Basins | 1.4 | 5.2 | -3.9 | -4.1 | -1.1 | 0.0 | -0.8 | 1.7 | 1.7 | 1.1 | 1.3 | 0.2 | 0.3 |
| Clackamas River Basin | 0.0 | 4.9 | -5.3 | -6.7 | -1.5 | 0.2 | -1.9 | 0.9 | 1.1 | 2.1 | 4.9 | 1.4 | 0.0 |
| Willamette Headwater River Basins | 0.4 | 4.6 | -5.0 | -5.8 | -1.4 | -0.2 | -1.5 | 1.6 | 1.6 | 1.1 | 3.3 | 1.3 | 0.0 |
| Willamette River Basin abv Harrisburg | -0.1 | 4.8 | -5.0 | -5.9 | -1.4 | -0.1 | -2.1 | 2.9 | 0.8 | 1.1 | 5.5 | 2.1 | 0.1 |
| Santiam River Basin | 0.1 | 4.7 | -4.7 | -5.7 | -1.3 | -0.3 | -2.1 | 1.1 | 1.0 | 1.1 | 5.5 | 2.4 | 0.2 |
| Willamette River Basin above Portland | 0.3 | 4.8 | -4.9 | -5.9 | -1.3 | -0.1 | -1.8 | 3.7 | 1.2 | 1.1 | 4.5 | 1.8 | 0.1 |
| Coquille River Basin | 0.4 | 4.5 | -4.2 | -5.3 | -0.8 | 0.6 | -1.4 | 1.1 | 1.5 | 2.6 | 1.8 | 0.3 | 0.1 |
| Umpqua River Basin | 0.1 | 5.0 | -5.0 | -5.6 | -0.8 | 0.7 | -1.7 | 2.8 | 1.4 | 2.7 | 4.1 | 0.5 | 0.3 |
| Rogue-Illinois River Basins | -0.4 | 4.7 | -4.9 | -5.7 | -0.9 | 0.7 | -1.8 | 1.0 | 1.2 | 2.6 | 4.9 | 0.5 | 0.2 |

Image source: www.nwrfc.noaa.gov

# Drought Monitor



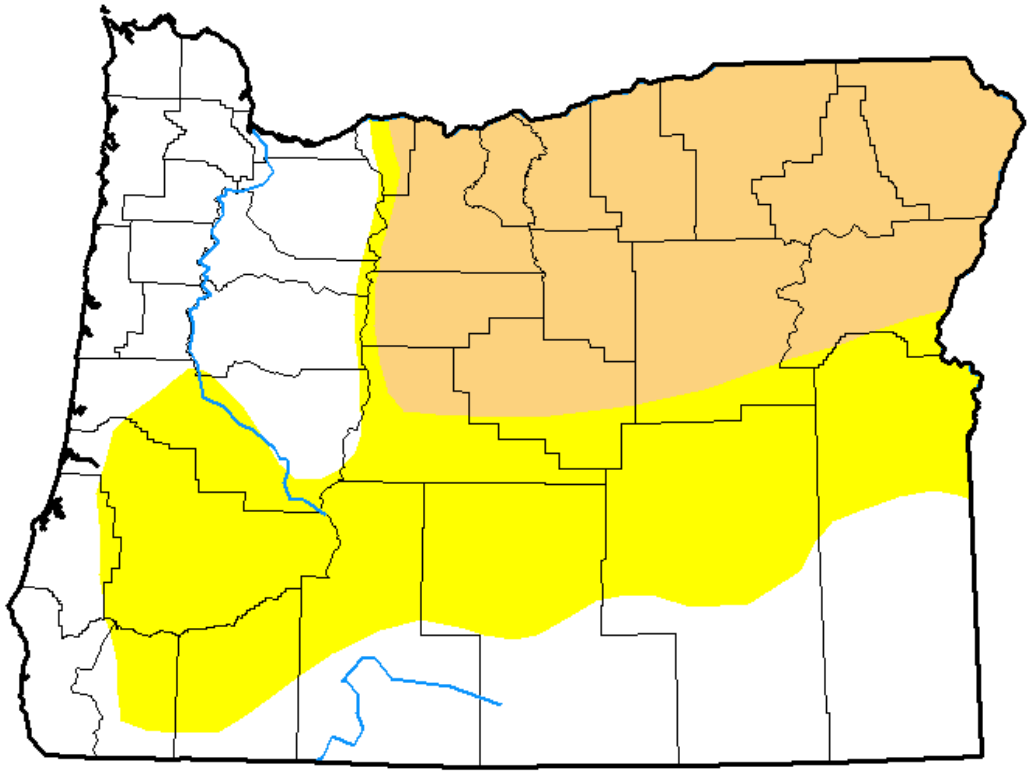
***U.S. Drought Monitor***

**Oregon**

**October 3, 2017**

***(Released Thursday, Oct. 5, 2017)***

**Valid 8 a.m. EDT**



*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:*

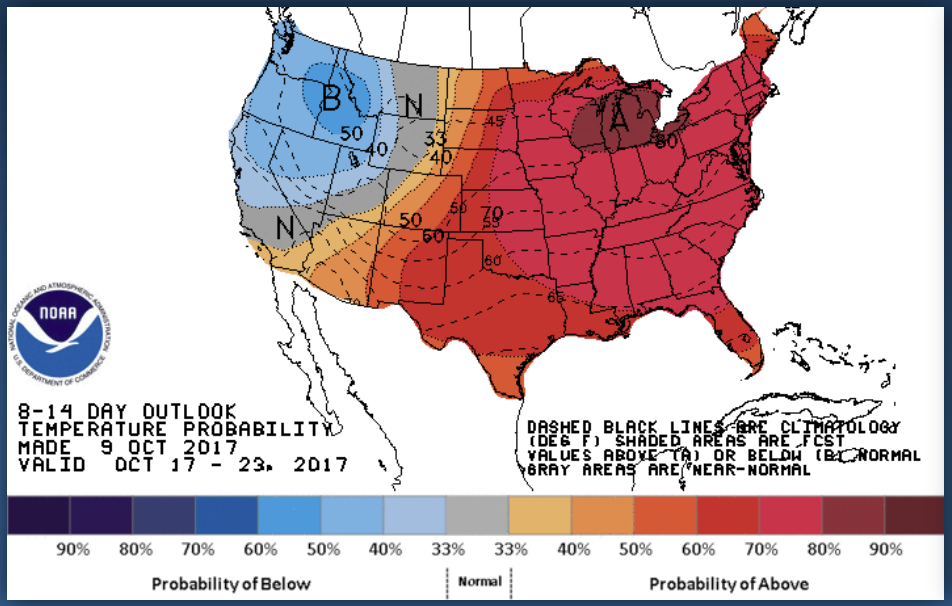
Anthony Artusa
NOAA/NWS/NCEP/CPC

**http://droughtmonitor.unl.edu/**

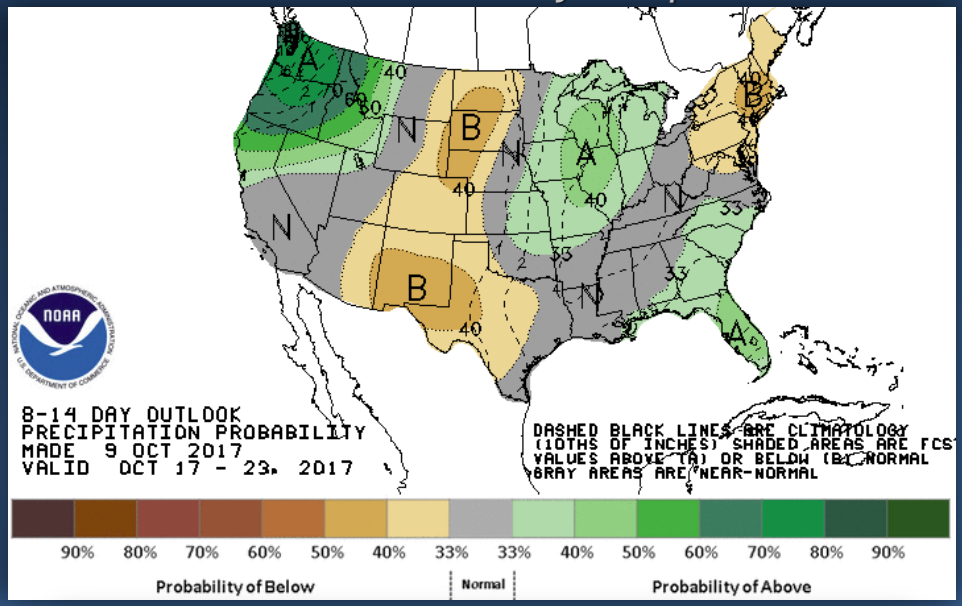
# October Outlook



*8 - 14 Day Temperature Outlook*




*8 - 14 Day Precipitation Outlook*




Potential for above-average precipitation mid and late October, with indication of atmospheric river event; details tbd

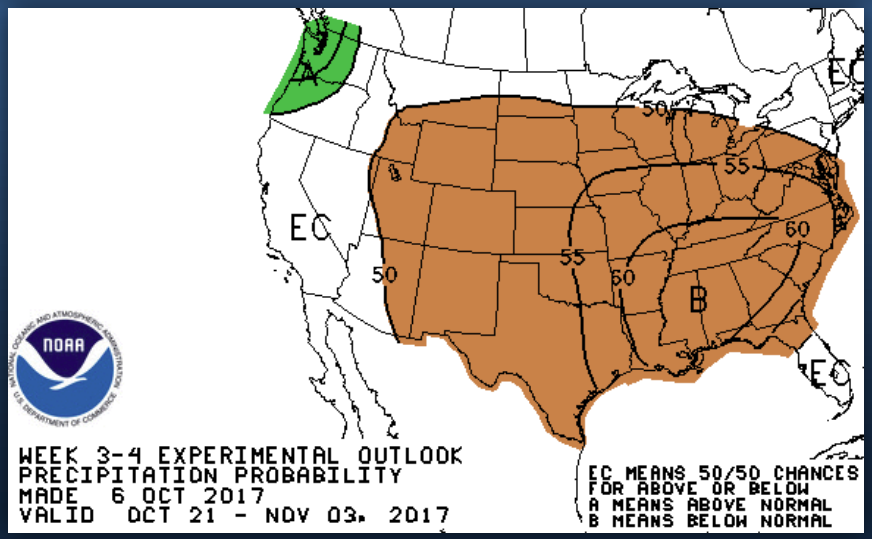
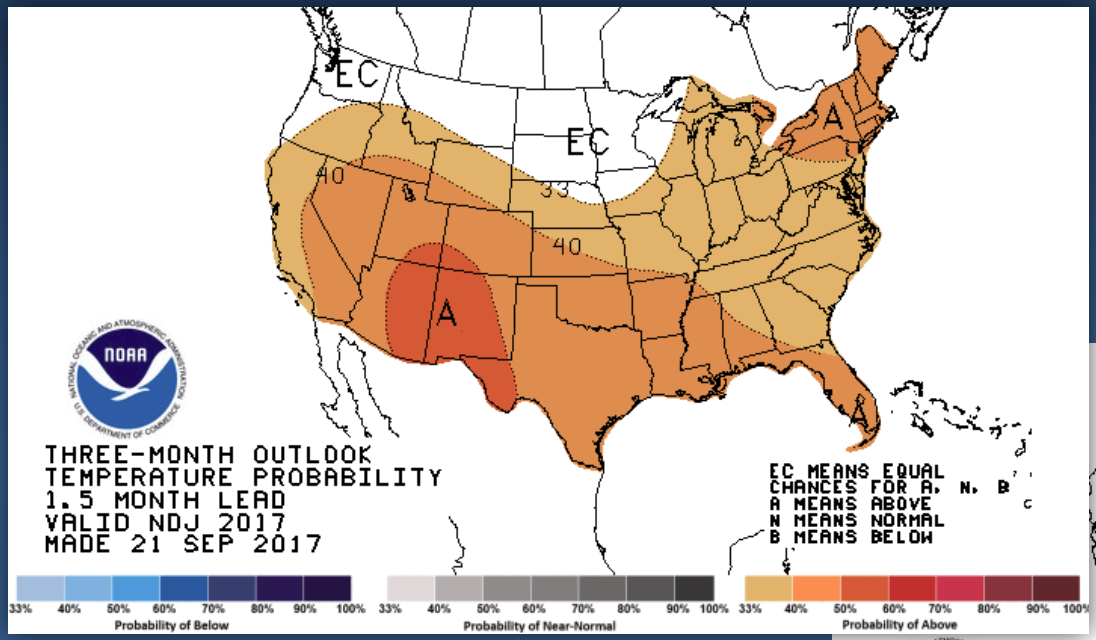



Image source: www.cpc.ncep.noaa.gov

# Outlook for November-December-January

*Temperatures*




*Precipitation*

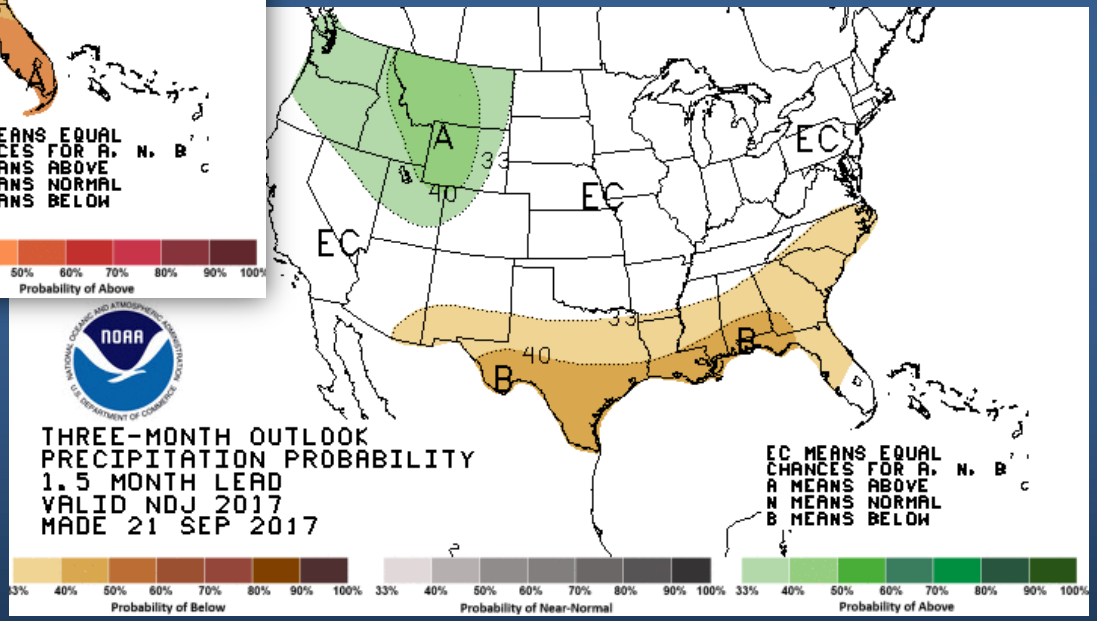
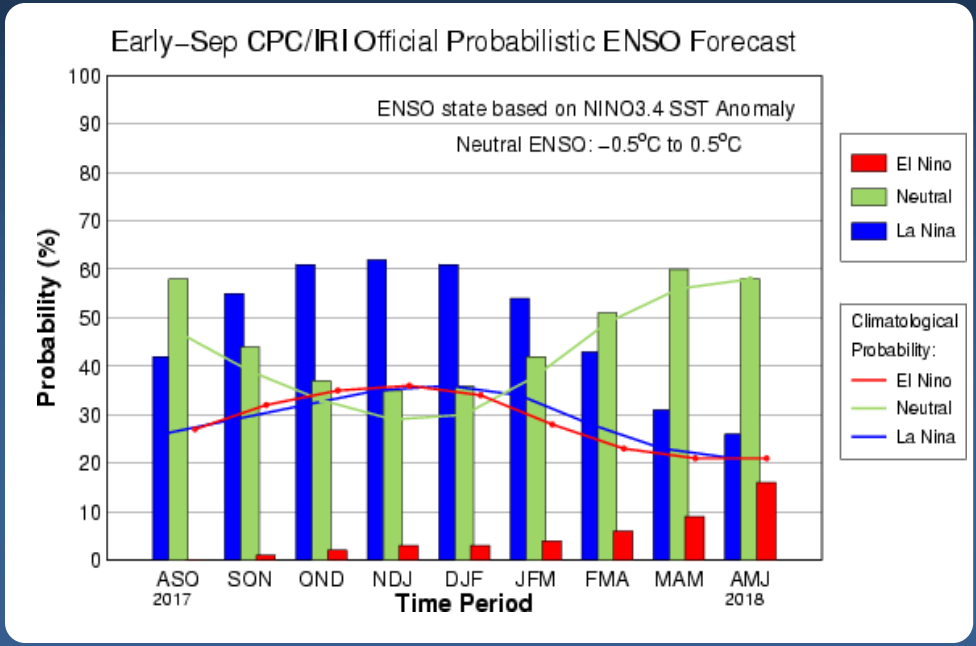



Image source: www.cpc.ncep.noaa.gov

# ENSO Outlook




**La Niña is now favored (~55%-60%) during the Northern Hemisphere fall and winter 2017-18.**

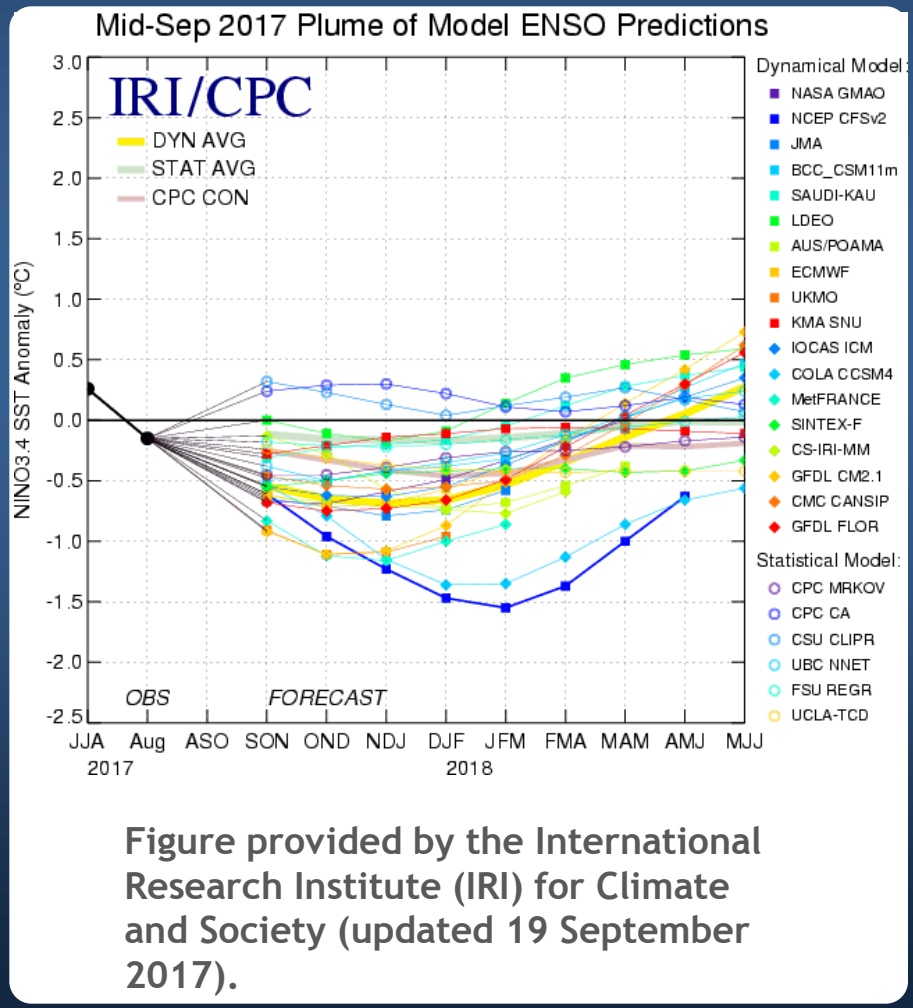



Figure provided by the International Research Institute (IRI) for Climate and Society (updated 19 September 2017).

USGS
science for a changing world

# Water Supply Availability Committee

## October 2017

## USGS Update on Surface Water Conditions

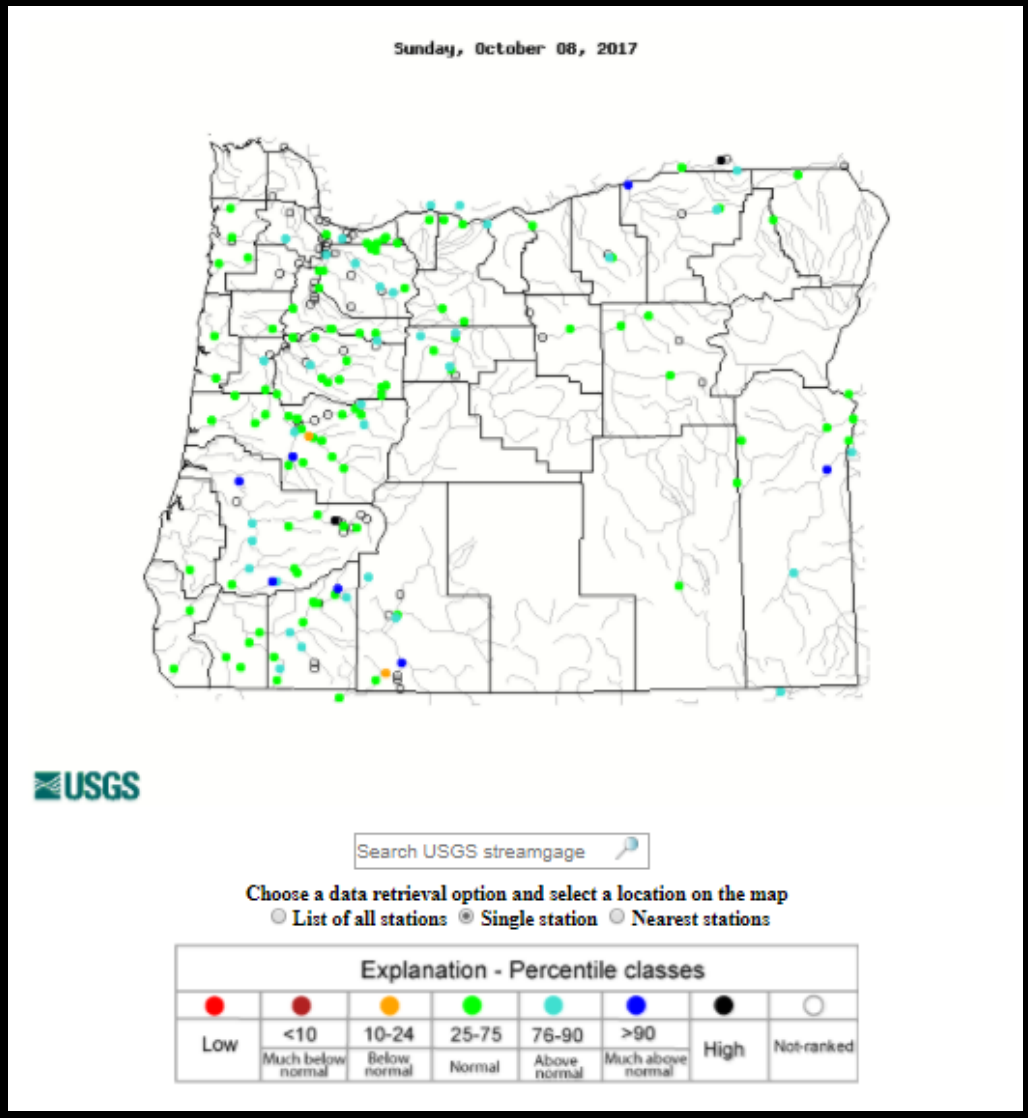
**Marc Stewart USGS ORWSC**

**Oct 10, 2017**

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

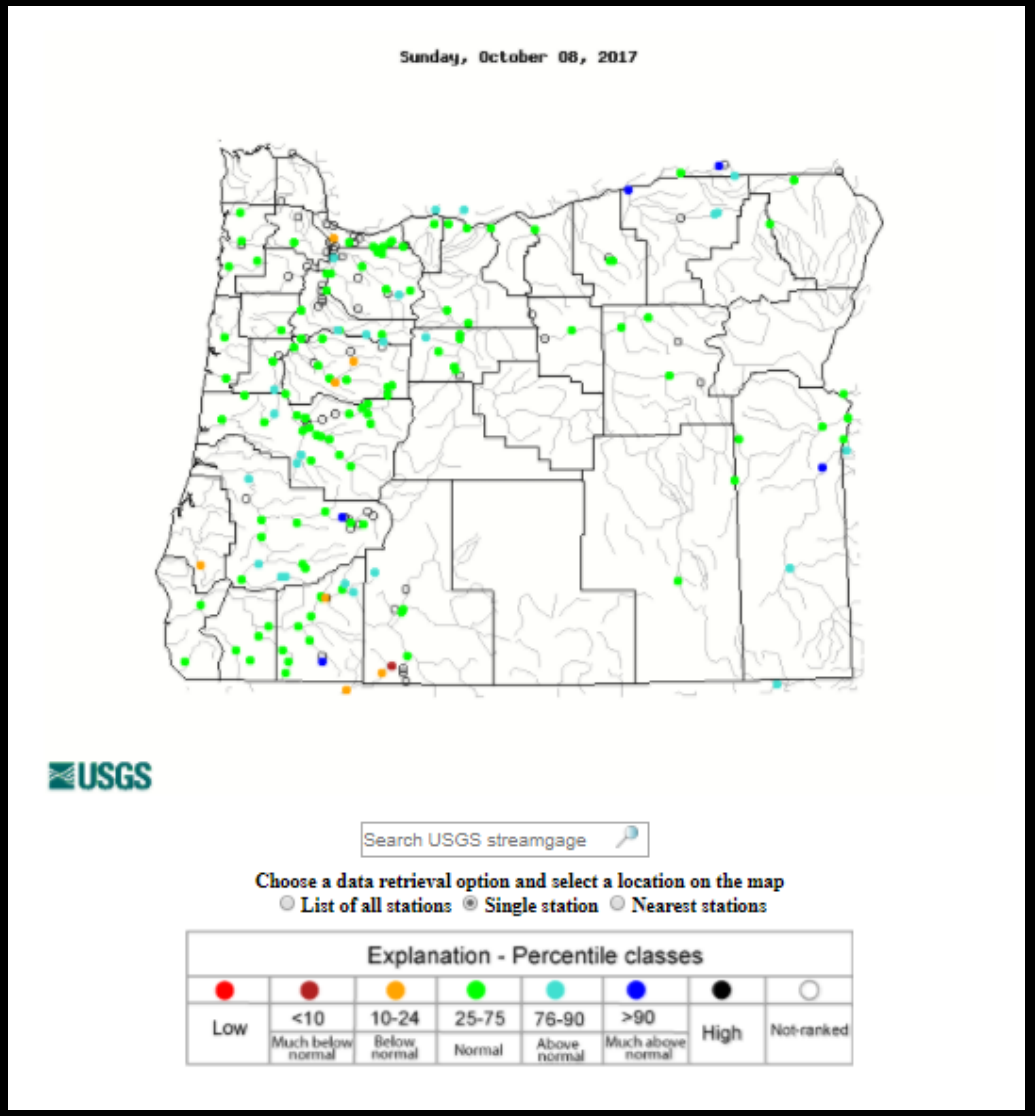
**U.S. Department of the Interior**
**U.S. Geological Survey**

# 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




USGS

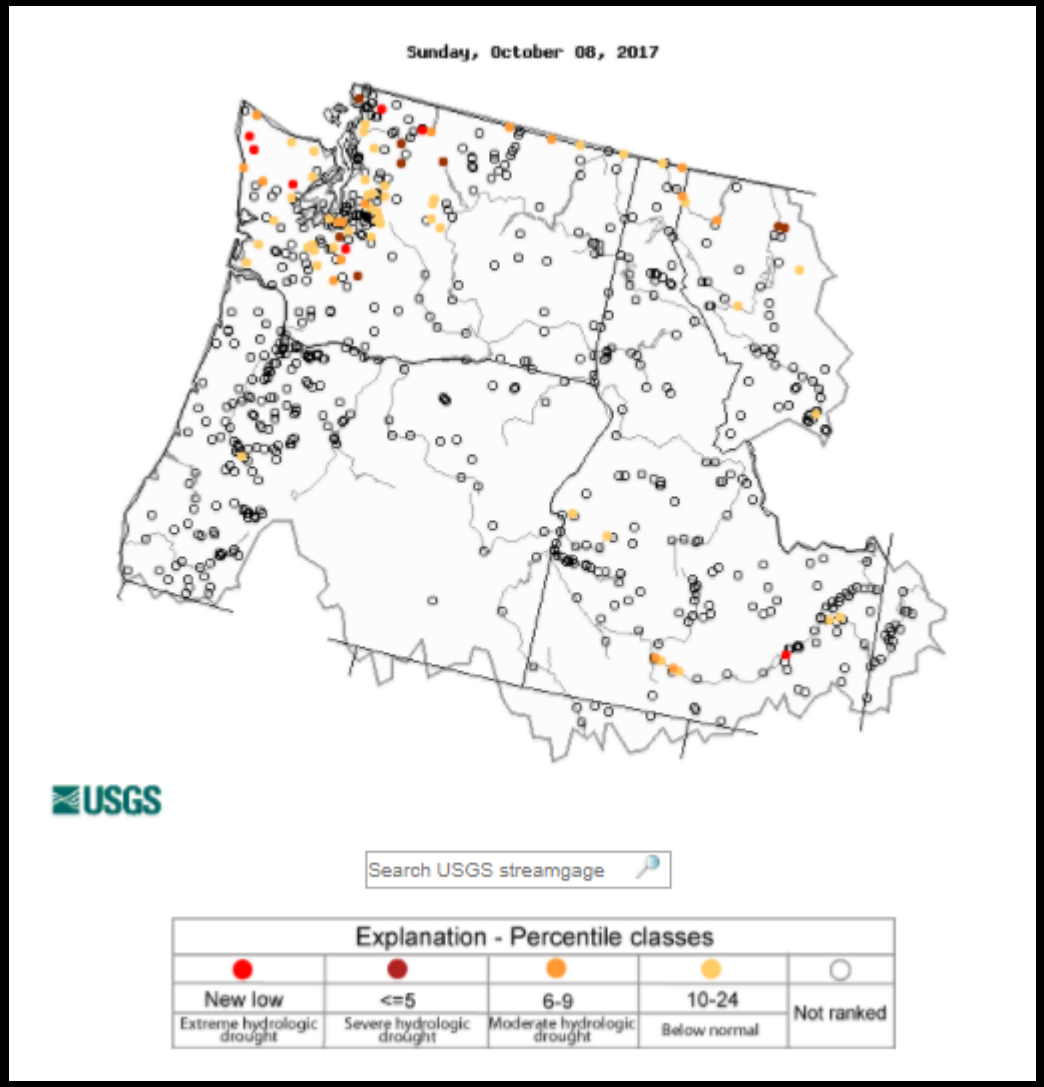
# Table of 7-day average streamflow compared to historical streamflow for the day of the year (Oregon)

| | Total | Percentile summary | | | | | | Number of Stations | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | < 10th pecentile | | 25- 75 th percentile | | | | | | |
| *Date* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *stations* | *25th* | *50th* |
| 10/8/2015 | 8 | 38 | 22 | 27 | 4 | 0 | 0 | 134 | 4.92 | 12.98 |
| 10/8/2014 | 0 | 12 | 17 | 63 | 5 | 2 | 0 | 126 | 20.51 | 36.01 |
| 10/8/2012 | 2 | 15 | 23 | 43 | 15 | 2 | 1 | 121 | 14.72 | 41.09 |
| 10/8/2006 | 1 | 13 | 17 | 59 | 8 | 2 | 0 | 105 | 17.04 | 44.53 |
| 10/8/2009 | 0 | 5 | 16 | 69 | 7 | 2 | 1 | 114 | 26.96 | 48.46 |
| 10/8/2010 | 0 | 2 | 12 | 69 | 11 | 5 | 1 | 114 | 32.73 | 52.02 |
| 10/8/2017 | 0 | 1 | 4 | 78 | 14 | 3 | 0 | 139 | 40.77 | 56 |
| 10/8/2005 | 0 | 3 | 7 | 65 | 21 | 5 | 0 | 107 | 42.11 | 62.04 |
| 10/8/2016 | 0 | 3 | 15 | 44 | 24 | 14 | 0 | 133 | 33.83 | 64.82 |
| 10/8/2007 | 1 | 1 | 10 | 51 | 33 | 4 | 0 | 111 | 43.89 | 66.67 |
| 10/8/2011 | 0 | 1 | 3 | 52 | 29 | 14 | 1 | 119 | 57.99 | 72.35 |
| 10/8/2008 | 0 | 1 | 5 | 37 | 43 | 13 | 0 | 113 | 66.75 | 76.48 |
| 10/8/2013 | 0 | 2 | 5 | 17 | 11 | 41 | 23 | 132 | 75.56 | 95.5 |

USGS

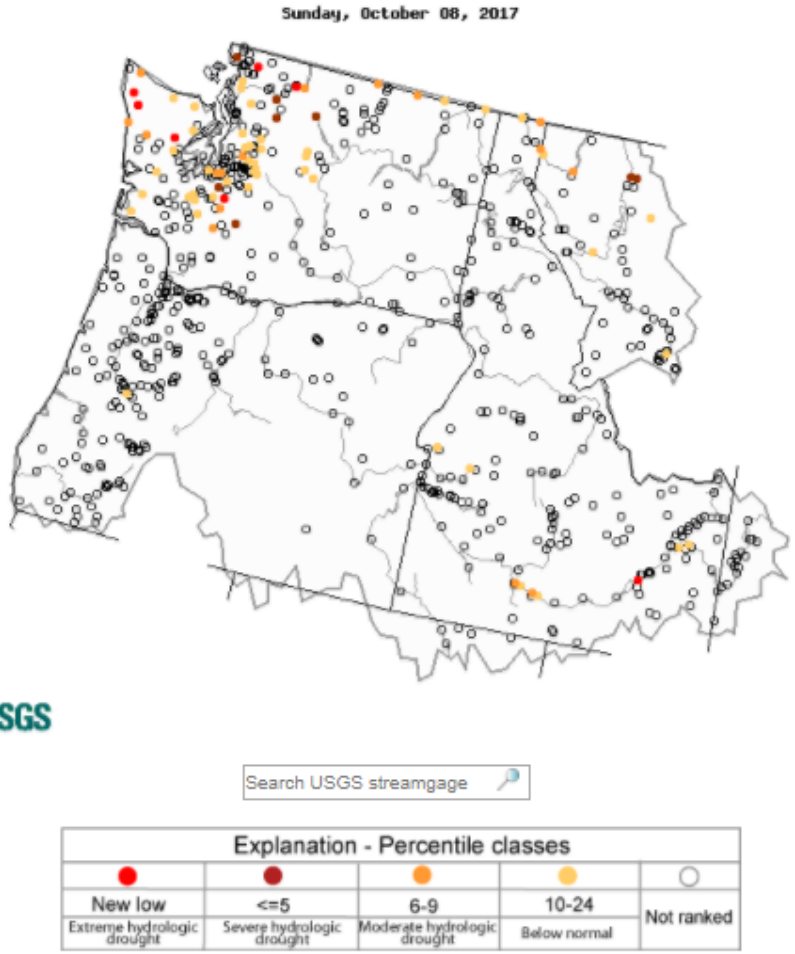
Unpublished data, subject to revision

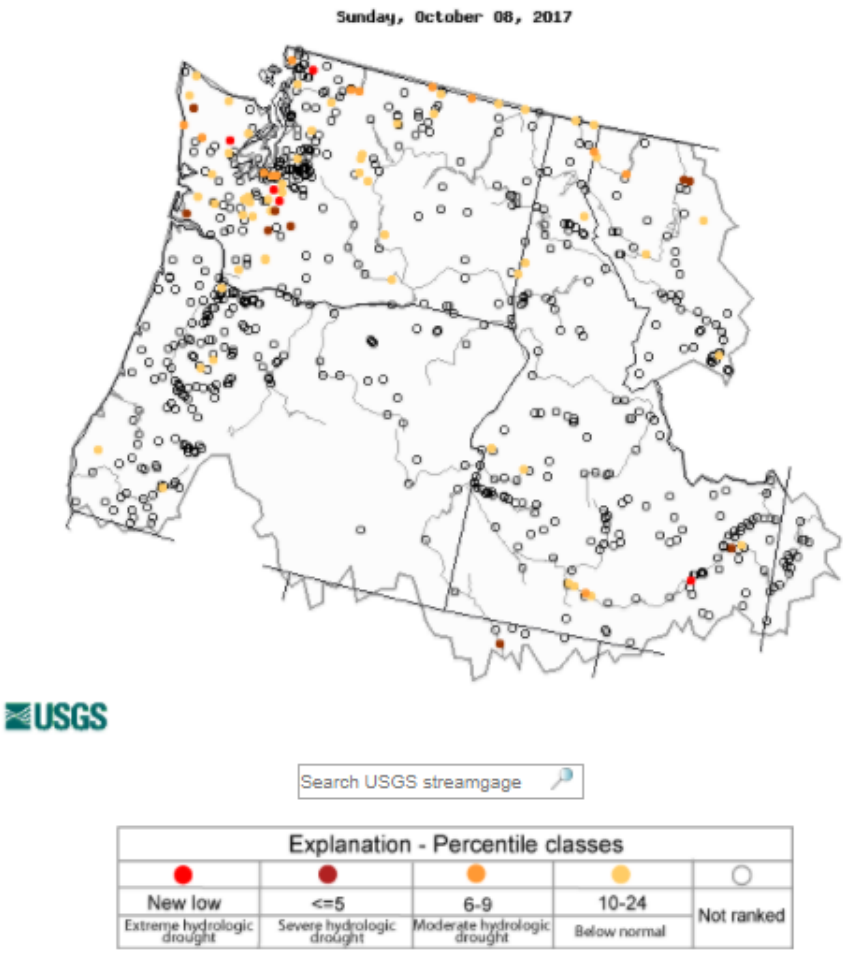
# Map of below normal 28-day average streamflow compared to historical streamflow for the day of year (Pacific Northwest)




USGS

# Map of below normal 28-day average (left) and 7-day average streamflows (right) compared to historical streamflow for the day of year (Pacific Northwest)

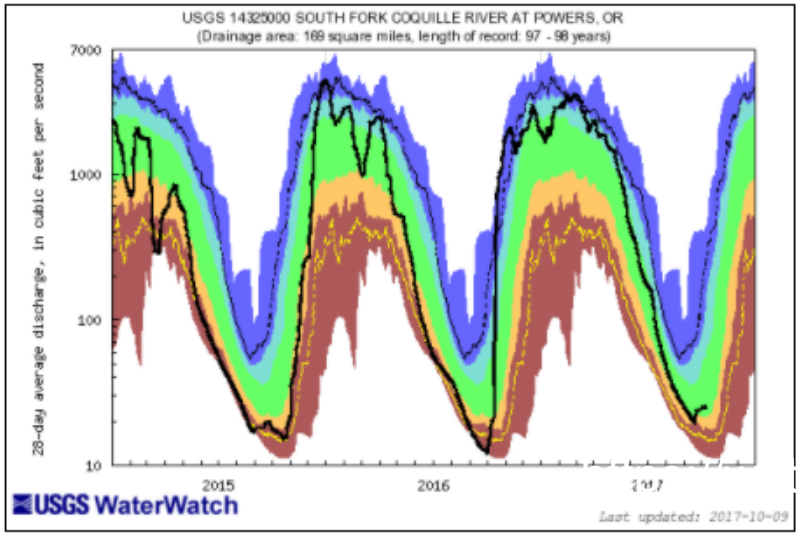


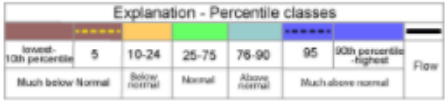



## USGS Streamflow Duration Hydrograph Builder

Site Number: 14325000 | Year: 2017 | No. of years: 3 | Flow: 28-day | cfs | GO
Draw 5th and 95th percentiles as: Line | Year Type: Calendar Year | Output: Hydrograph

**For some streams, flow statistics may have been computed from mixed regulated and unregulated flows; this can affect depictions of flow conditions.**



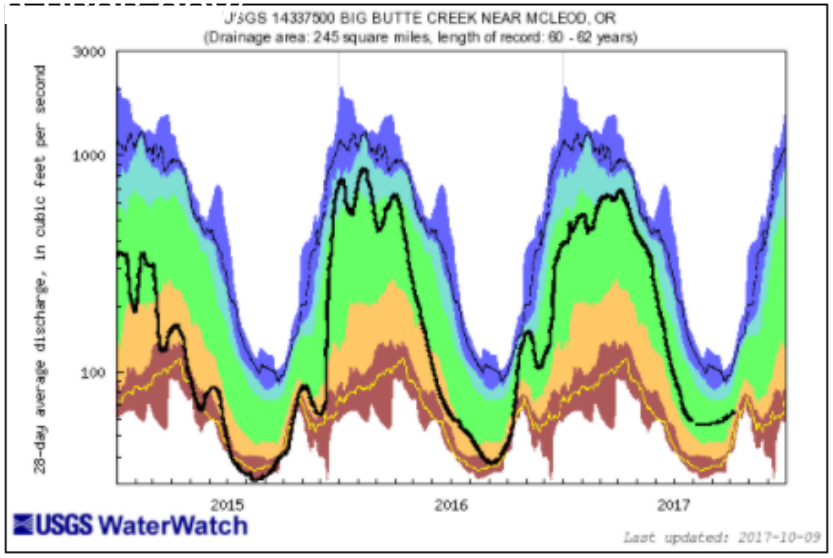

https://waterwatch.usgs.gov

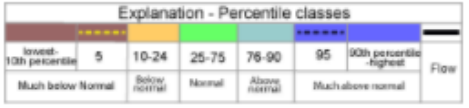
USGS

## USGS Streamflow Duration Hydrograph Builder

Site Number: 14337500 | Year: 2017 | No. of years: 3 | Flow: 28-day | cfs | GO
Draw 5th and 95th percentiles as: Line | Year Type: Calendar Year | Output: Hydrograph

**For some streams, flow statistics may have been computed from mixed regulated and unregulated flows; this can affect depictions of flow conditions.**



# Monthly Water Availability Report

US GEOLOGICAL SURVEY, OREGON WATER SCIENCE CENTER
WATER AVAILABILITY REPORT FOR SEPTEMBER 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 Sep.: Percent of average |
|---|---|---|---|---|---|
| Donner Und Blitzen nr Frenchglen | Harney | 39 | 89 | -3 | 91 |
| (*)Deep Creek above Adel | Lake County | 20 | 111 | 11 | 203 |
| (*)Chewaucan River near Paisley | Lake County | 36 | 116 | 6 | 193 |
| Williamson River near Chiloquin | Klamath | 598 | 117 | 1 | 126 |
| Owyhee River near Rome | Owyhee | 173 | 129 | 8 | 154 |
| (*)NF Malheur River near Beulah | Malheur | 50 | 104 | 6 | 154 |
| Grande Ronde R at Troy | Grande Ronde Powder/Burnt | 569 | 83 | -1 | 143 |
| Umatilla River nr Gibbon | Umatilla Lower John Day | 44 | 100 | 7 | 132 |
| John Day River at Service Crk | Upper John Day | 133 | 64 | 10 | 141 |
| (*)Little Deschutes River nr LaPine | Upper Deschutes | 114 | 90 | -9 | 123 |
| Hood River nr Hood River | Lower Deschutes Mt.Hood | 388 | 125 | 7 | 121 |
| Willamette River at Salem | Willamette | 9,249 | 102 | 4 | 134 |
| Wilson River near Tillamook | North Coast | 97 | 81 | 15 | 145 |
| Umpqua River near Elkton | Rogue/Umpqua | 1,504 | 124 | 13 | 152 |
| Rogue River near Agness | Rogue/Umpqua | 2,126 | 101 | -26 | 188 |
| SF Coquille River at Powers | South Coast | 24 | 60 | -8 | 170 |
| Chetco River near Brookings | South Coast | 124 | 99 | -2 | 158 |

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

10/3/2017

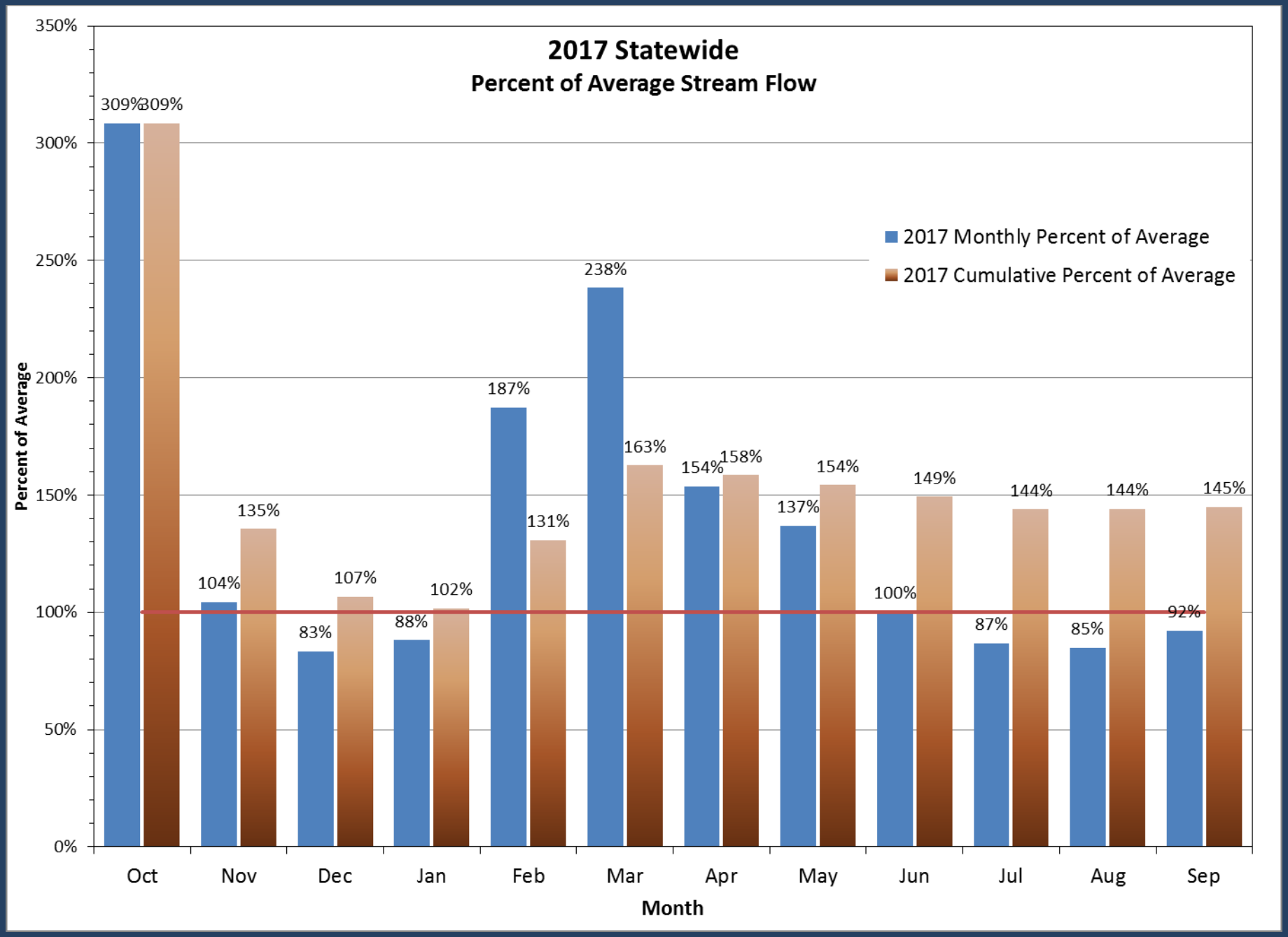
https://or.water.usgs.gov/data_dir/war_dir/war1709.html

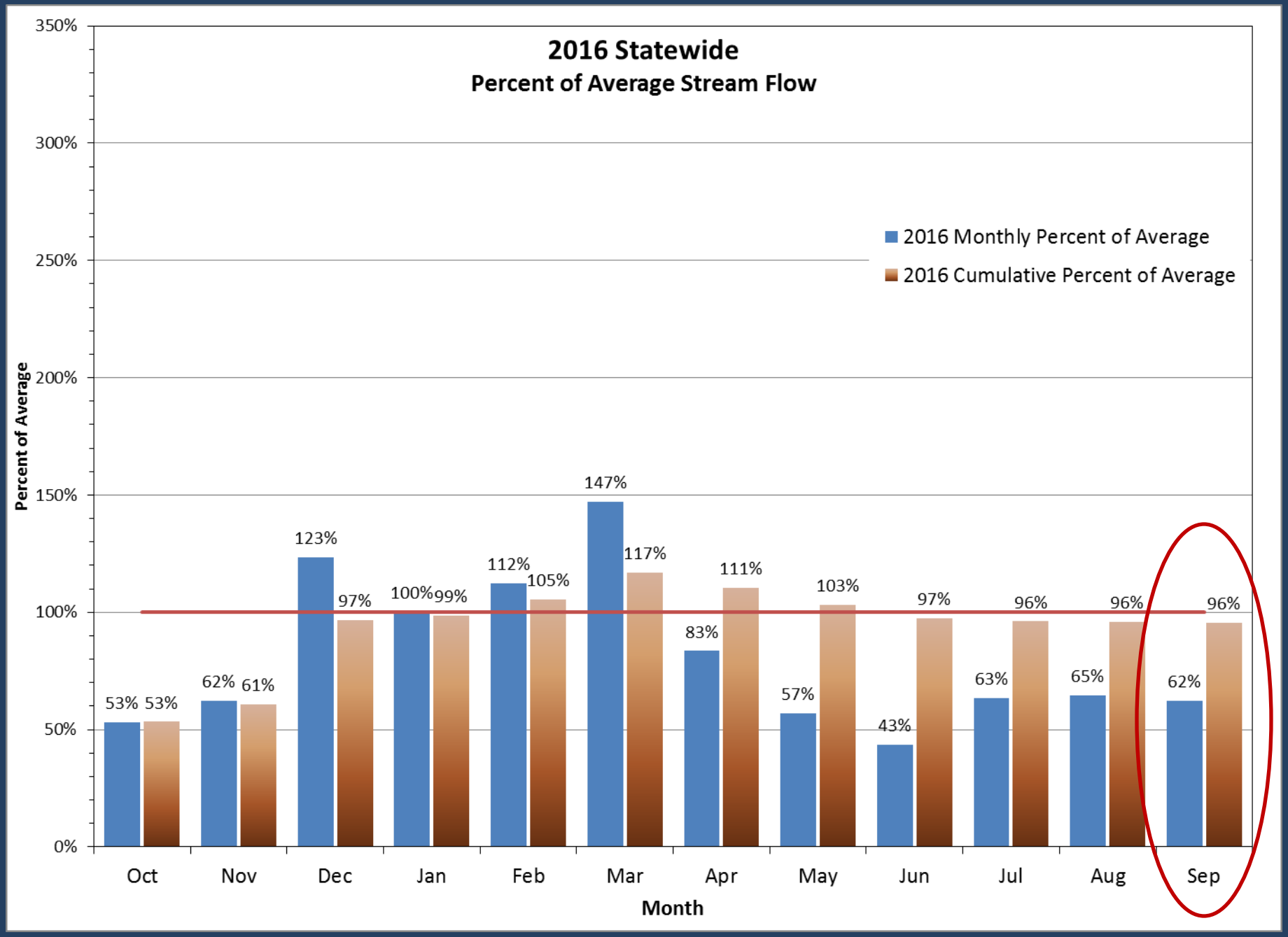
Surface Water Conditions Report

# Water Supply Availability Committee

Ken Stahr
Oregon Water Resources Department

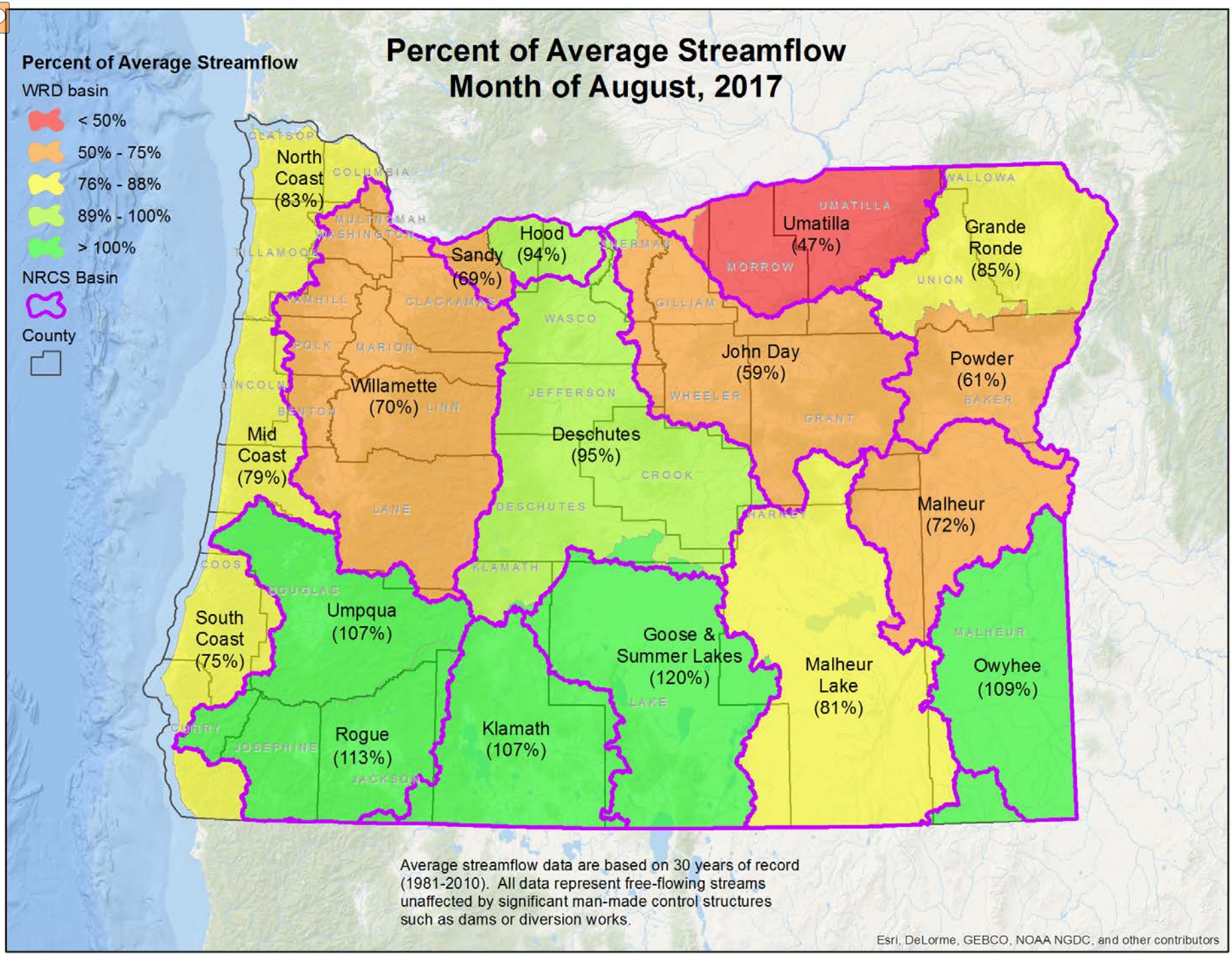
**October 10, 2017**

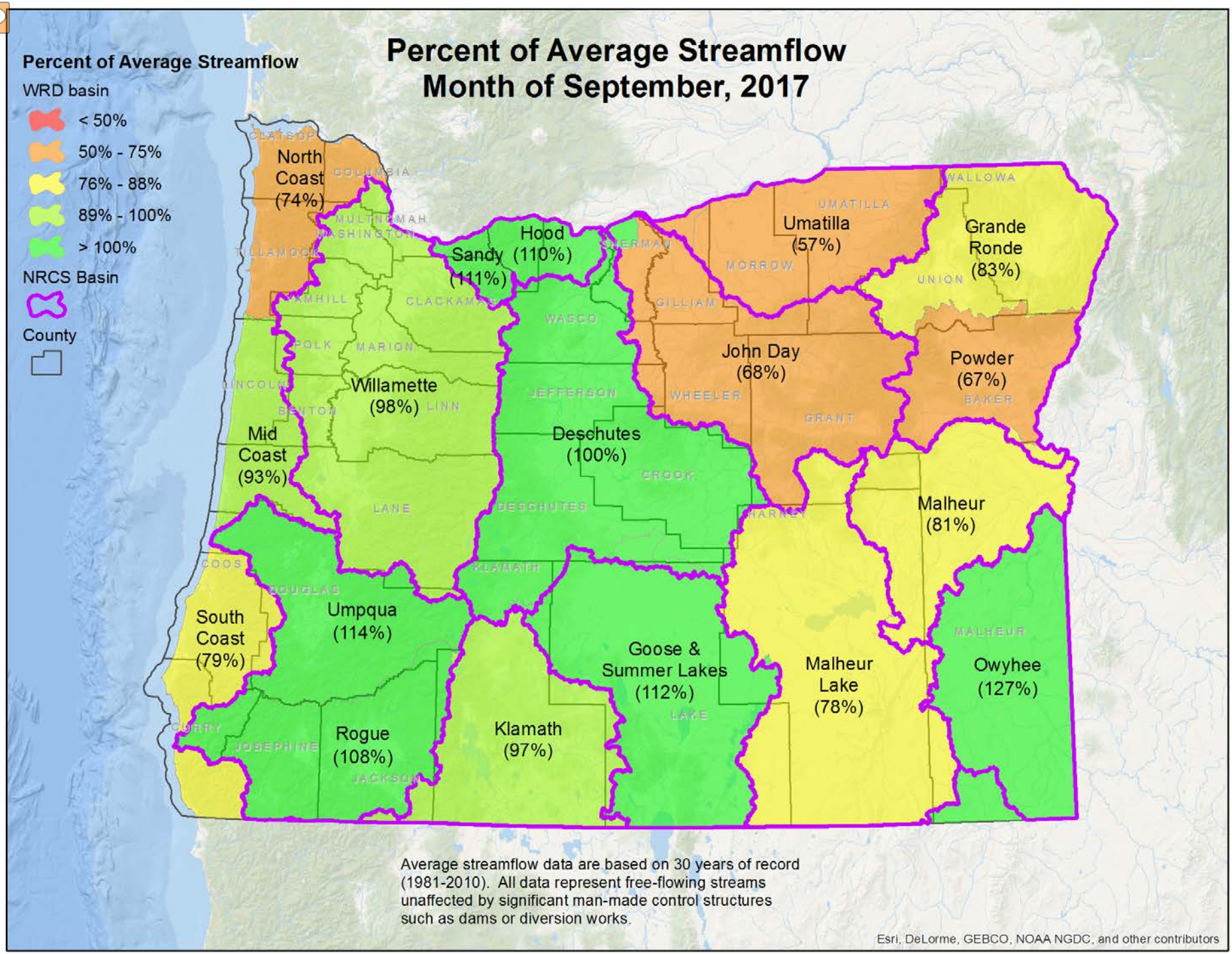

2017 Statewide
Percent of Average Stream Flow
2017 Monthly Percent of Average
2017 Cumulative Percent of Average
Percent of Average
Month
350%
300%
250%
200%
150%
100%
50%
0%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
309%
309%
104%
135%
83%
107%
88%
102%
187%
131%
238%
163%
154%
158%
137%
154%
100%
149%
87%
144%
85%
144%
92%
145%

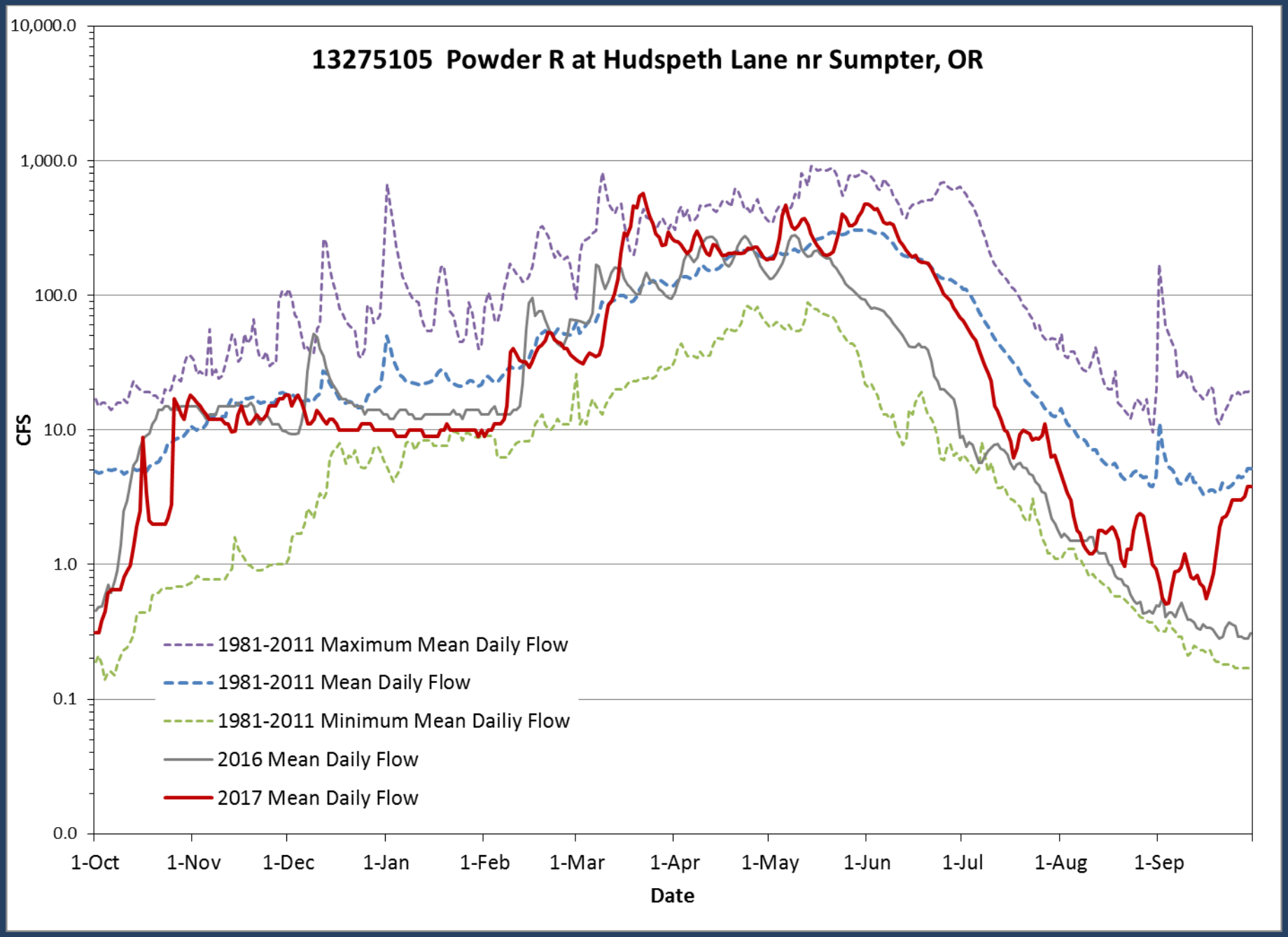

2016 Statewide
Percent of Average Stream Flow
2016 Monthly Percent of Average
2016 Cumulative Percent of Average
Percent of Average
Month
350%
300%
250%
200%
150%
100%
50%
0%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
53% 53%
62% 61%
123% 97%
100% 99%
112% 105%
147% 117%
83% 111%
57% 103%
43% 97%
63% 96%
65% 96%
62% 96%

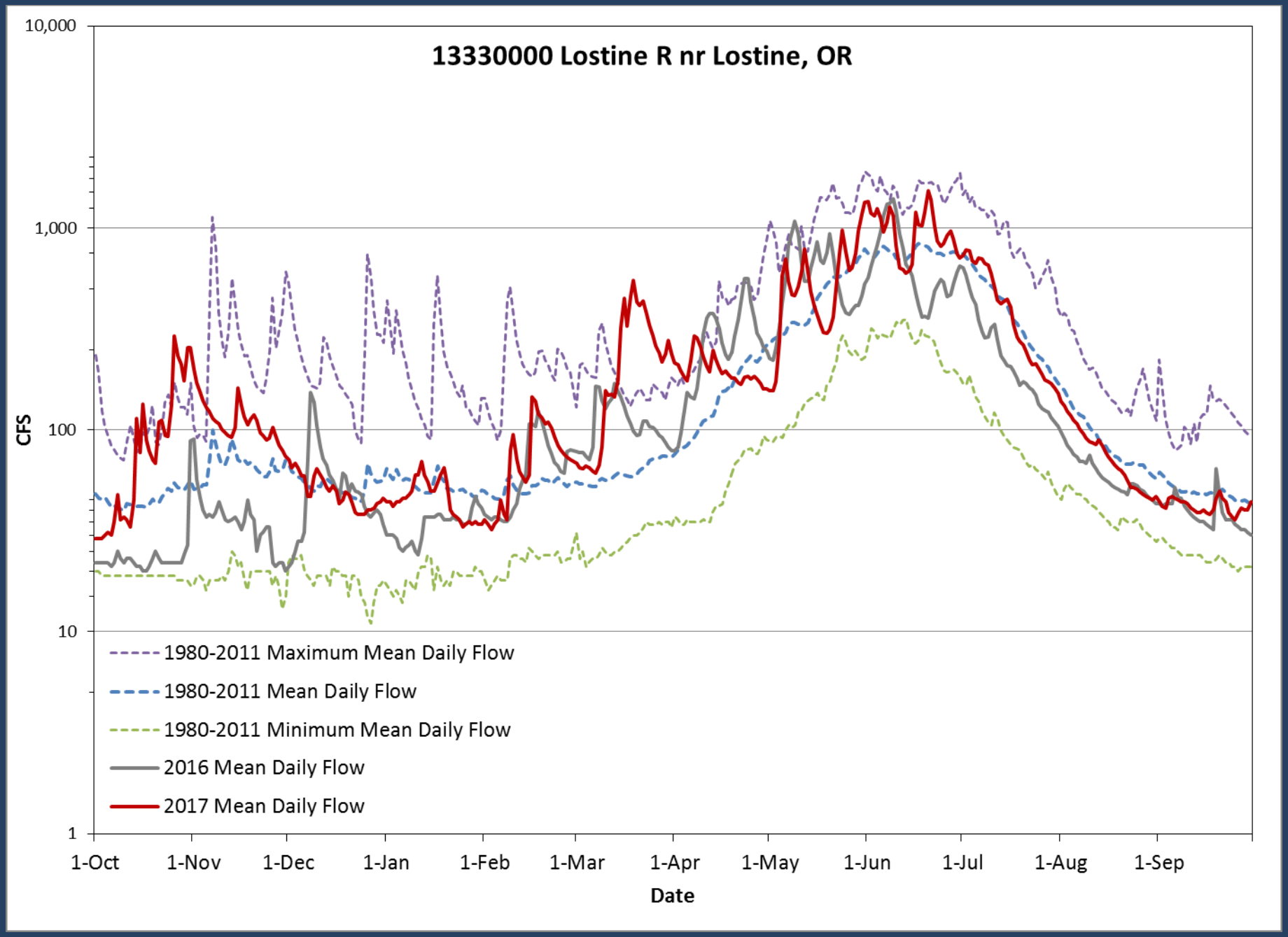
| Basin | 2017 Water Year percent of average | Percent of average for September 2017 | % of average for 09/30/2017 |
|---|---|---|---|
| North Coast | 153% | 74% | 67% |
| Willamette | 140% | 98% | 70% |
| Sandy | 108% | 113% | 69% |
| Hood | 117% | 110% | 108% |
| Deschutes | 128% | 100% | 105% |
| John Day | 144% | 68% | 78% |
| Umatilla | 133% | 57% | 88% |
| Grande Ronde | 133% | 83% | 100% |
| Powder | 142% | 67% | 93% |
| Malheur | 173% | 81% | 90% |
| Owyhee | 153% | 127% | 134% |
| Malheur Lake | 122% | 78% | 87% |
| Goose & Summer Lakes | 197% | 112% | 109% |
| Klamath | 151% | 97% | 96% |
| Rogue | 158% | 108% | 95% |
| Umpqua | 149% | 114% | 75% |
| South Coast | 165% | 79% | 73% |
| Mid Coast | 146% | 93% | 79% |
| **West Side** | **145%** | **97%** | **76%** |
| **East Side** | **145%** | **89%** | **99%** |
| **State** | **145%** | **92%** | **90%** |

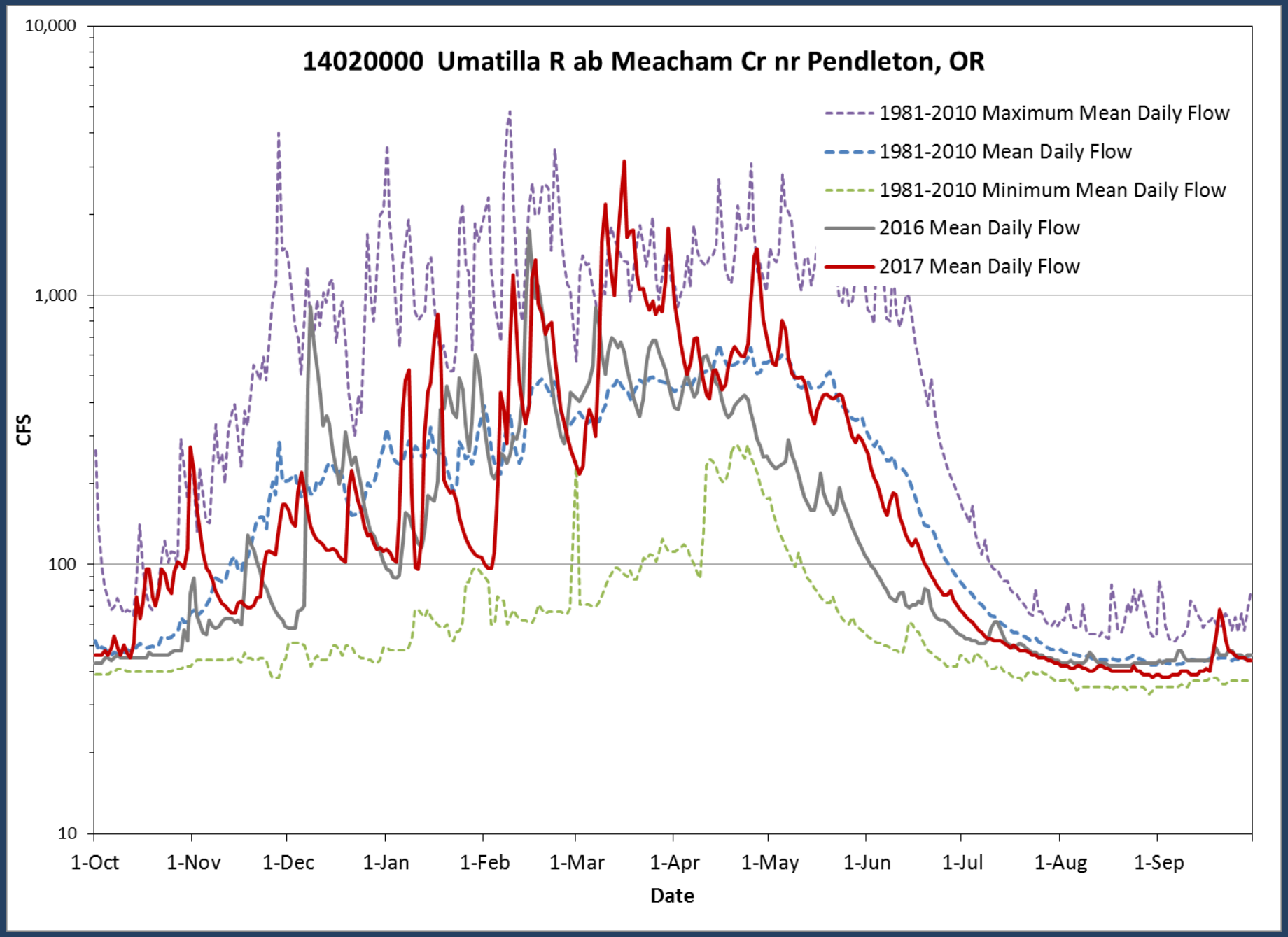
# Percent of Average Streamflow
# Month of August, 2017

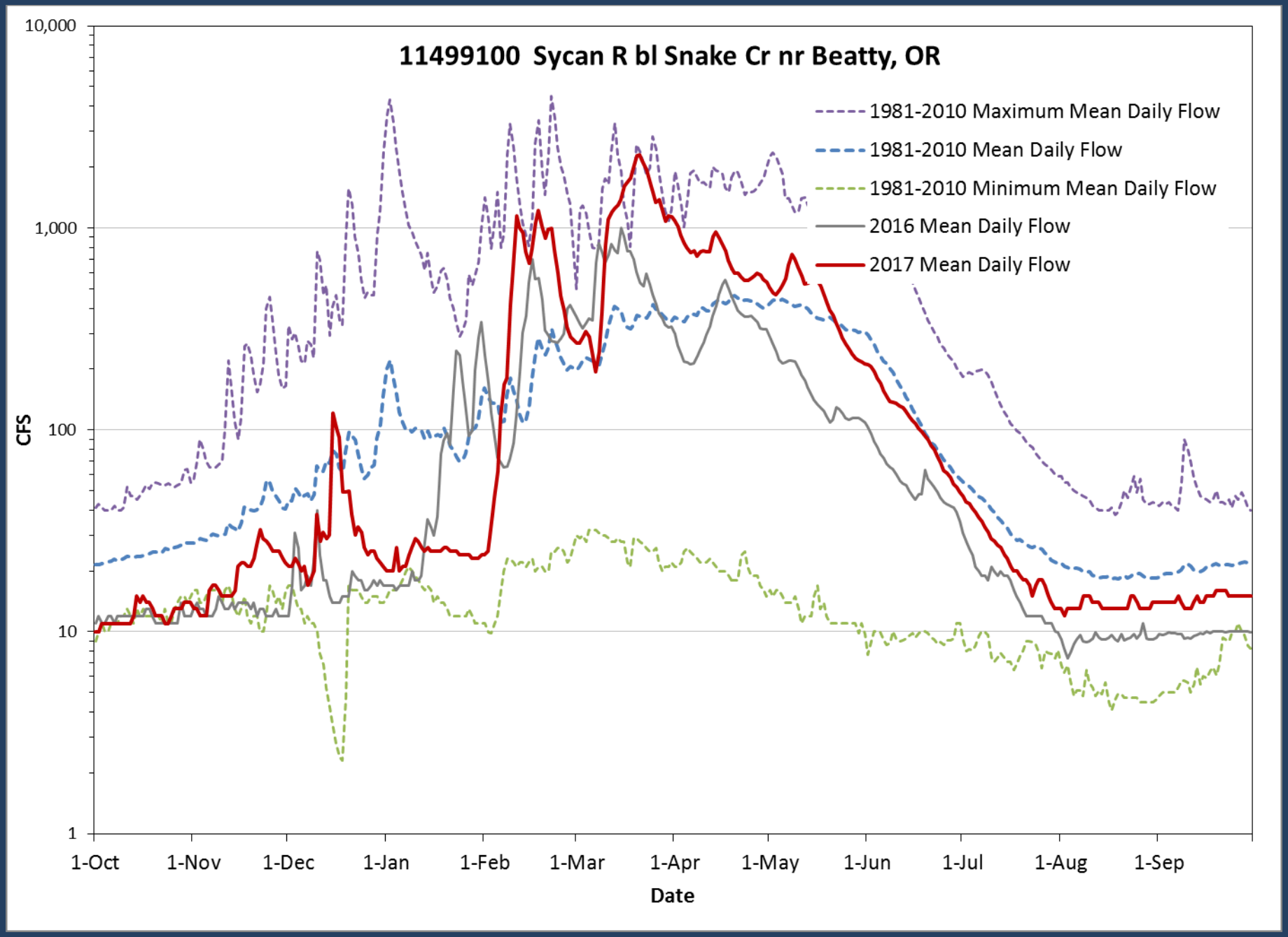


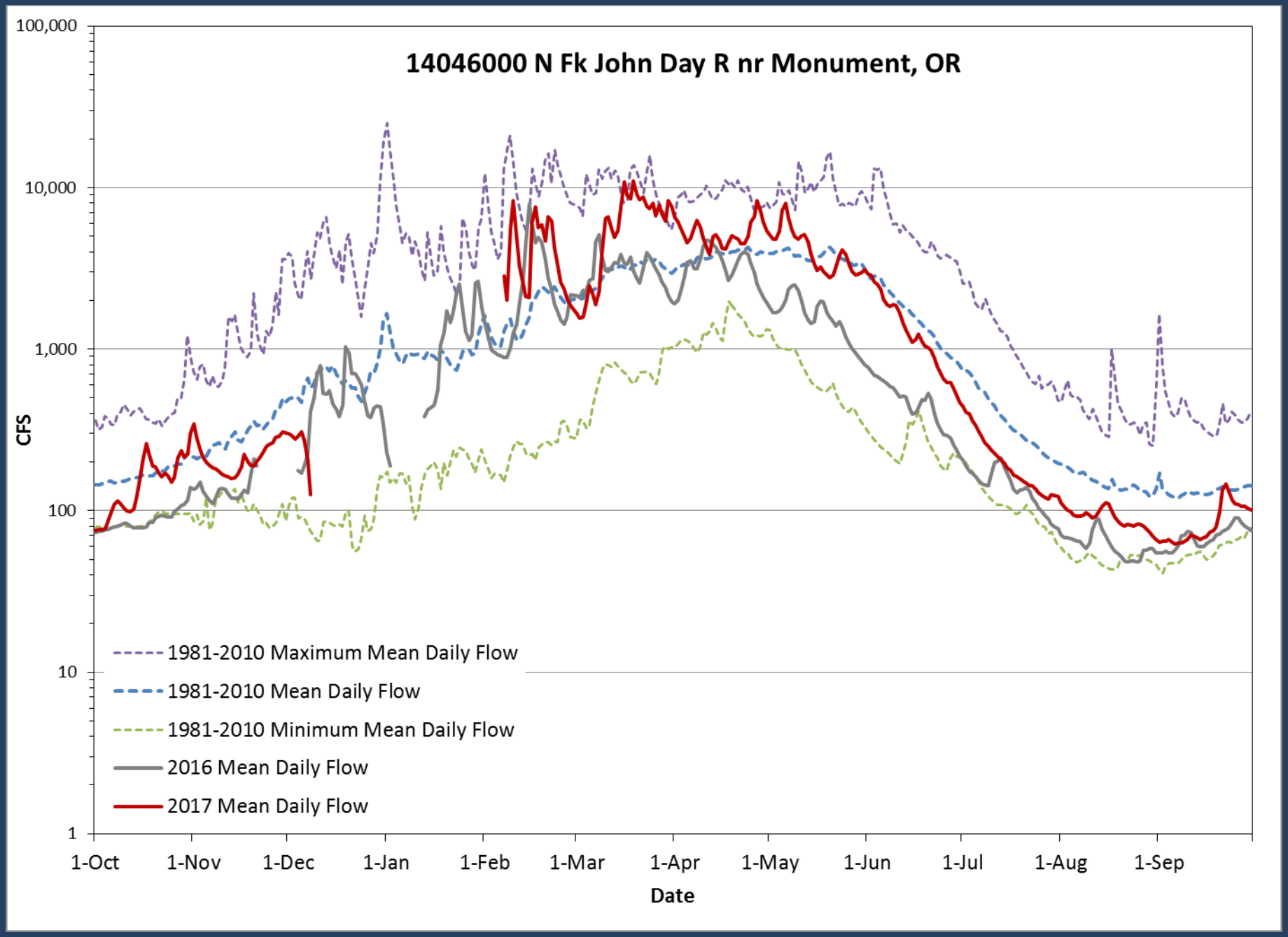

Percent of Average Streamflow
Month of September, 2017
Percent of Average Streamflow
WRD basin
< 50%
50% - 75%
76% - 88%
89% - 100%
> 100%
NRCS Basin
County
North Coast (74%)
Hood Sandy (110%) (111%)
Umatilla (57%)
Grande Ronde (83%)
John Day (68%)
Powder (67%)
Willamette (98%)
Mid Coast (93%)
Deschutes (100%)
Malheur (81%)
South Coast (79%)
Umpqua (114%)
Goose & Summer Lakes (112%)
Malheur Lake (78%)
Owyhee (127%)
Rogue (108%)
Klamath (97%)
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.
Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

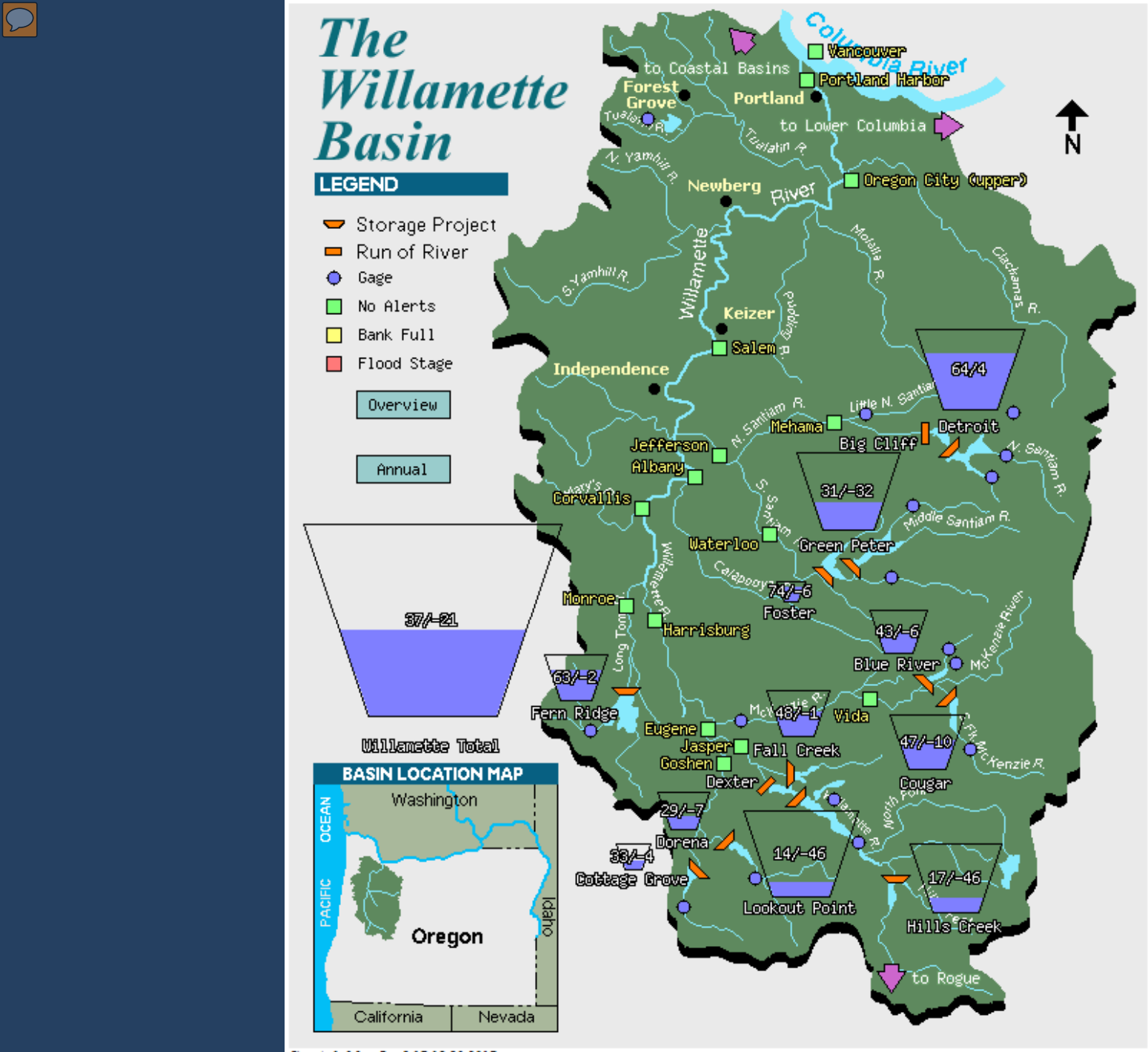

13275105 Powder R at Hudspeth Lane nr Sumpter, OR
10,000.0
1,000.0
100.0
10.0
1.0
0.1
0.0
CFS
1981-2011 Maximum Mean Daily Flow
1981-2011 Mean Daily Flow
1981-2011 Minimum Mean Dailiy Flow
2016 Mean Daily Flow
2017 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


13330000 Lostine R nr Lostine, OR
10,000
1,000
100
10
1
CFS
1980-2011 Maximum Mean Daily Flow
1980-2011 Mean Daily Flow
1980-2011 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


14020000 Umatilla R ab Meacham Cr nr Pendleton, OR
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow
10,000
1,000
100
10
CFS
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


11499100 Sycan R bl Snake Cr nr Beatty, OR
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow
CFS
10,000
1,000
100
10
1
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


14046000 N Fk John Day R nr Monument, 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
1-Jul
1-Aug
1-Sep
Date
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow

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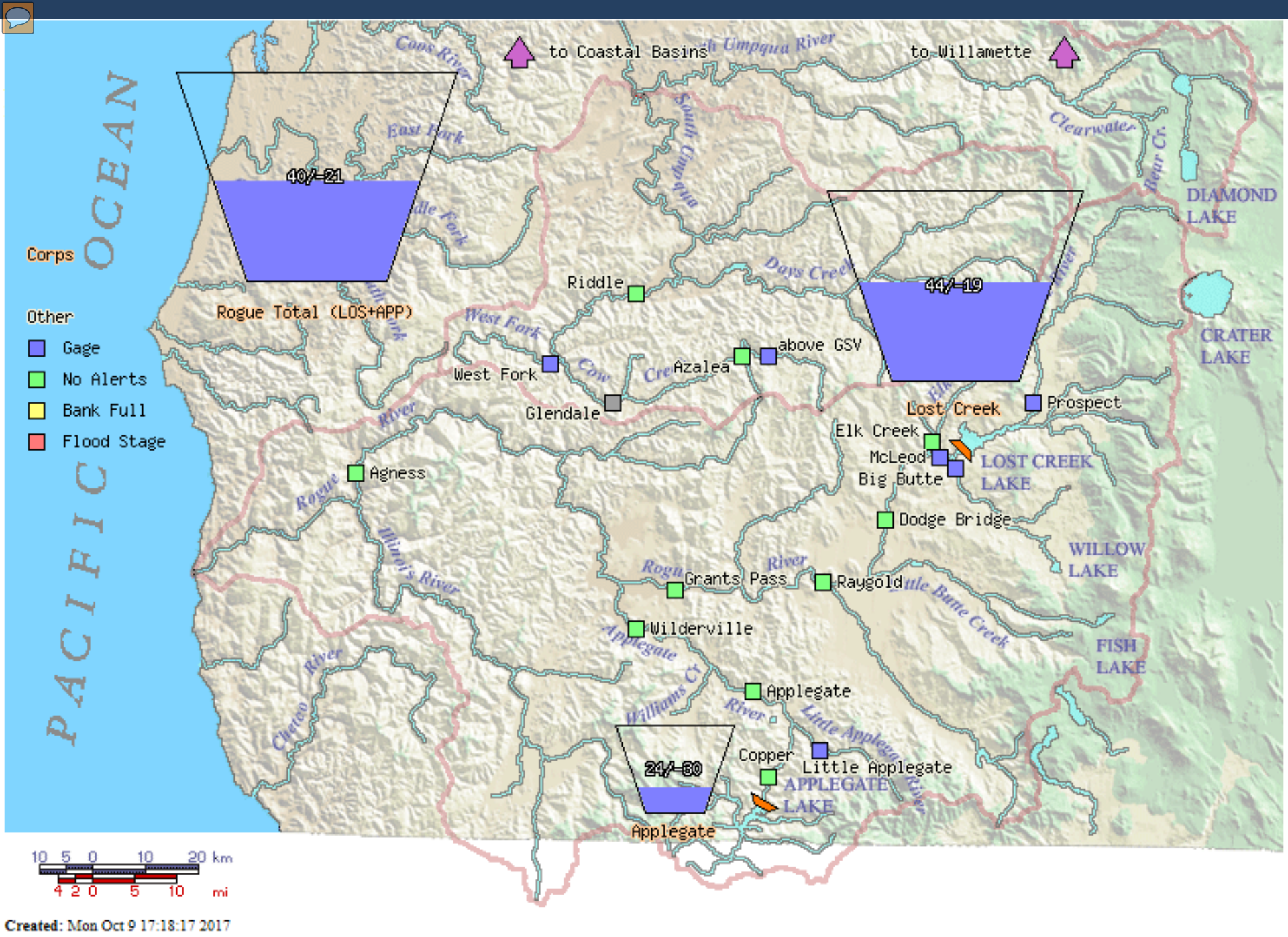


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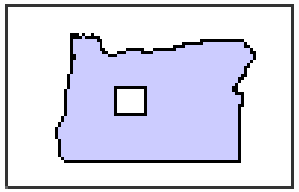
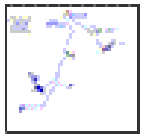
10/08/2017





Deschutes ESA

CULO 535 cfs

CROO 1396 cfs

Haystack
4012/5600
72% Full

Ochoco
19426/44247
44% Full

CRSO 188 cfs

Prineville

MLCO 1 cfs

CAPO 93 cfs

OCRO 0 cfs

OCHO 6 cfs

CRCO 0 cfs

CRPO 11 cfs

PRVO 117 cfs

DEBO 68 cfs

Bend

Crane Prairie
35128/55300
64% Full

BENO 1343 cfs

CRAO 222 cfs

Prineville
87245/148640
59% Full

LAPO 74 cfs

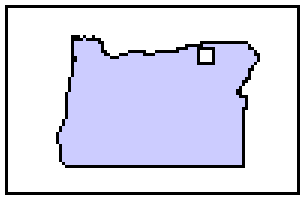
Wickiup
73858/200000
37% Full

WICO 716 cfs

Crescent Lake
70803/86900
81% Full

CREO 29 cfs

10/08/2017

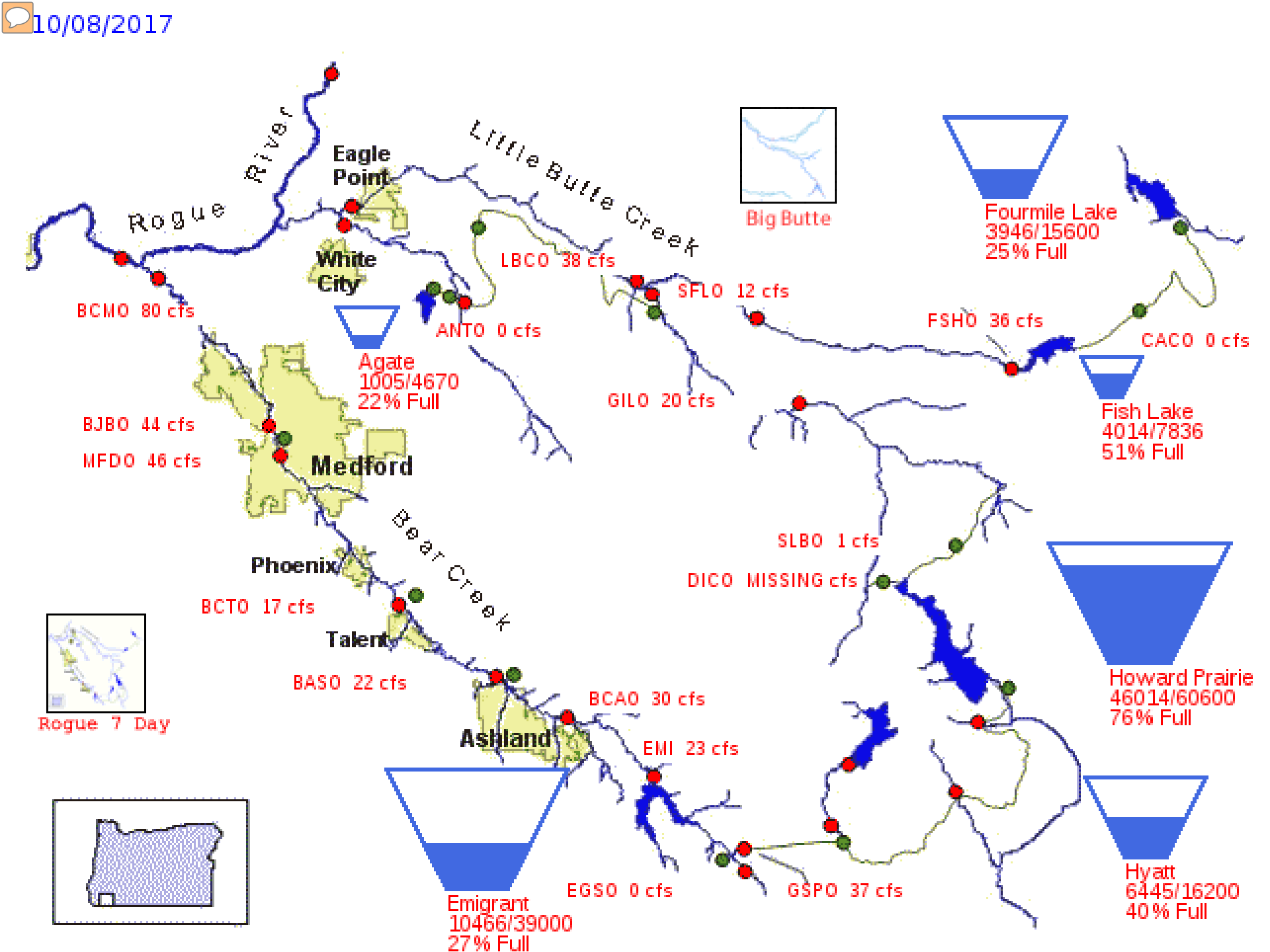


WEPO 46 cfs
UMAO 282 cfs
WEUO 6 cfs
SBEO 50 cfs
UMTO 236 cfs
CSRO 18 cfs
Hermiston
CSAO 73 cfs
FCSO 0 cfs
FURO 0 cfs
MAXO 12 cfs
DLEO MISSING cfs
UMDO 131 cfs
FCEO 0 cfs
ALNO 0 cfs
WESO 74 cfs
UMUO 223 cfs
YOKO 220 cfs
WCRO 5 cfs
PDTO 62 cfs
Pendleton
BIRO 0 cfs
MCKO 163 cfs
MYKO 4 cfs

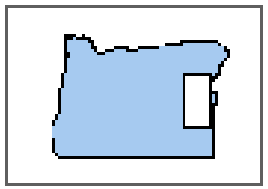
Cold Springs
4689/38000
12% Full

McKay
18838/65534
29% Full

10/08/2017


Rogue River
Eagle Point
Little Butte Creek
Big Butte
Fourmile Lake
3946/15600
25% Full
White City
LBCO 38 cfs
SFLO 12 cfs
BCMO 80 cfs
ANTO 0 cfs
FSHO 36 cfs
CACO 0 cfs
Agate
1005/4670
22% Full
GILO 20 cfs
Fish Lake
4014/7836
51% Full
BJBO 44 cfs
MFDO 46 cfs
Medford
SLBO 1 cfs
DICO MISSING cfs
Bear Creek
Phoenix
BCTO 17 cfs
Howard Prairie
46014/60600
76% Full
Talent
BASO 22 cfs
BCAO 30 cfs
Ashland
EMI 23 cfs
Rogue 7 Day
Hyatt
6445/16200
40% Full
EGSO 0 cfs
GSPO 37 cfs
Emigrant
10466/39000
27% Full

10/08/2017



NPDO 40 cfs

THF 31 cfs

HCDI 13146 cfs

Thief Valley
77/13307
1% Full

PRHO 6 cfs

PWDO 13 cfs

PRRO MISSING cf

Phillips
31949/73000
44% Full

PHL 13 cfs

UNY 25 cfs

Unity
4189/24970
17% Full

Snake River

WEII 12546 cfs

Bully Creek
7661/23676
32% Full

MABO 53 cfs

MALO 310 cfs

Beulah
10133/59212
17% Full

VALO 139 cfs

BEUO 1 cfs

SNYI 10452 cfs

MADO 47 cfs

OWY 240 cfs

WARO 0 cfs

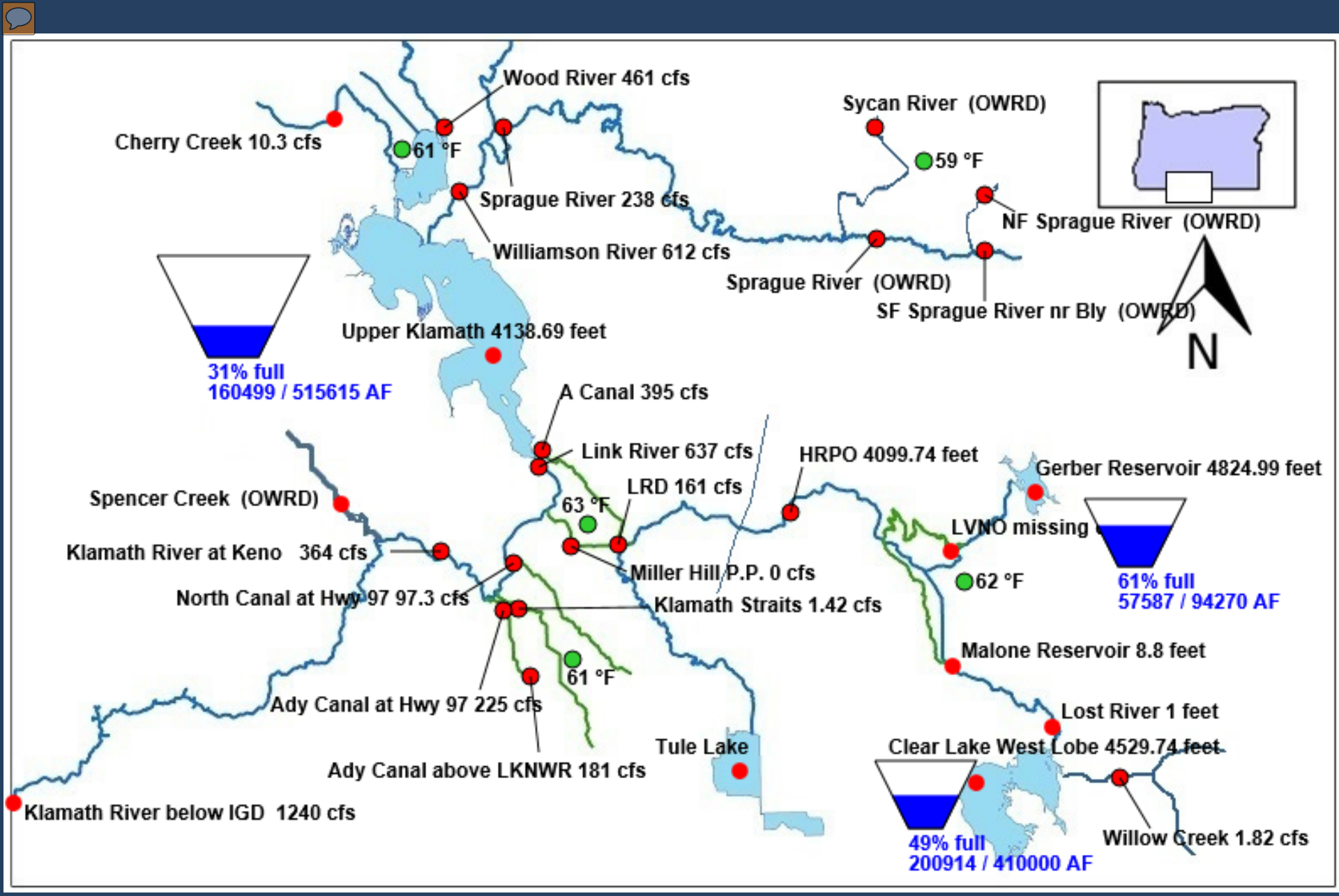
SFMO 15 cfs

SWAI 8750 cfs

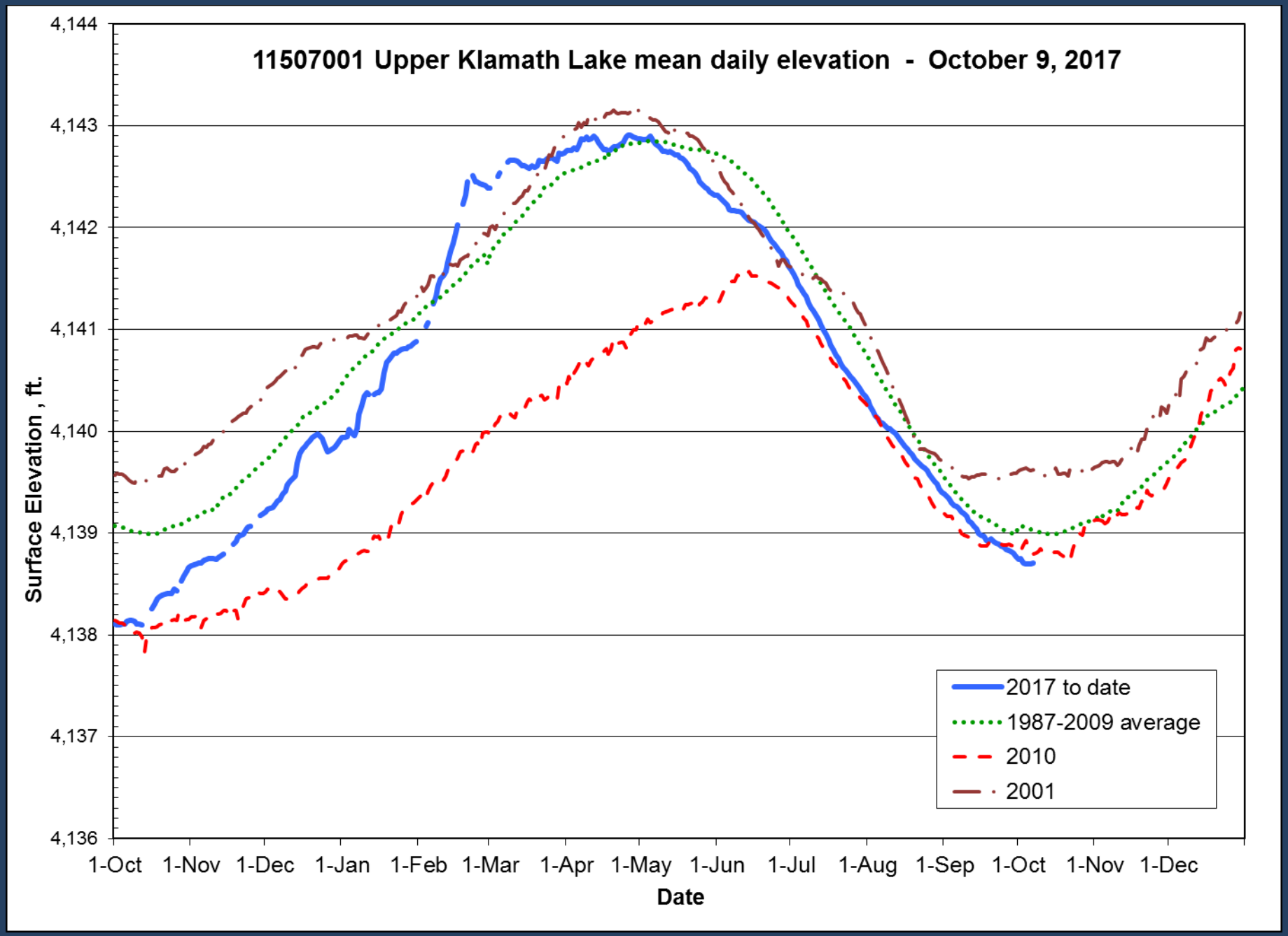
Warm Springs
85019/169639
50% Full

Owyhee
420808/715000
59% Full

ROMO 175 cfs




Mon Oct 09 2017 17:37:36 GMT-0700 (Pacific Daylight Time)


11507001 Upper Klamath Lake mean daily elevation - October 9, 2017
Surface Elevation , ft.
4,144
4,143
4,142
4,141
4,140
4,139
4,138
4,137
4,136
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Date
2017 to date
1987-2009 average
2010
2001

# Thank You