Oregon Water Supply Availability Committee

September 12, 2017

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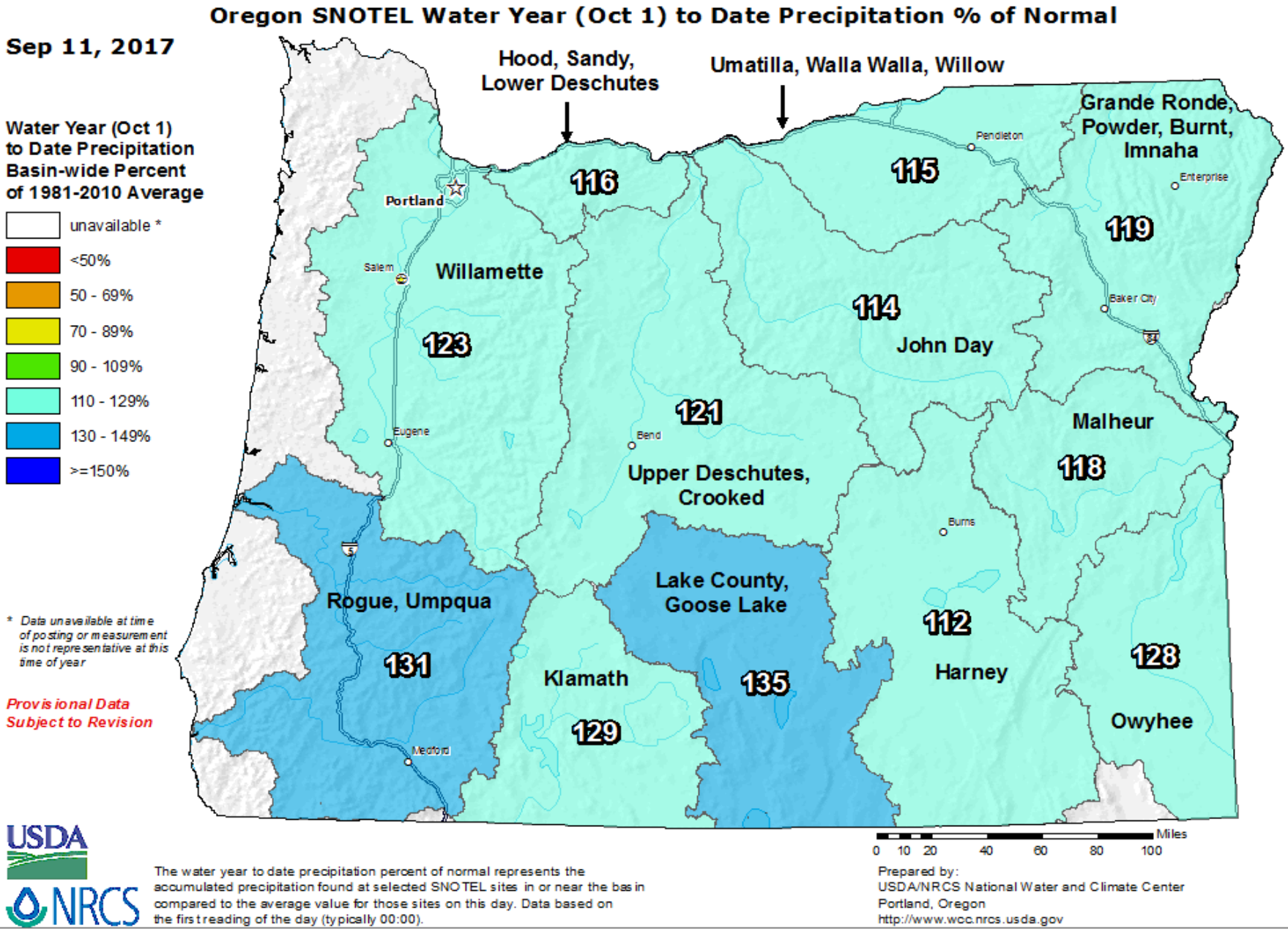
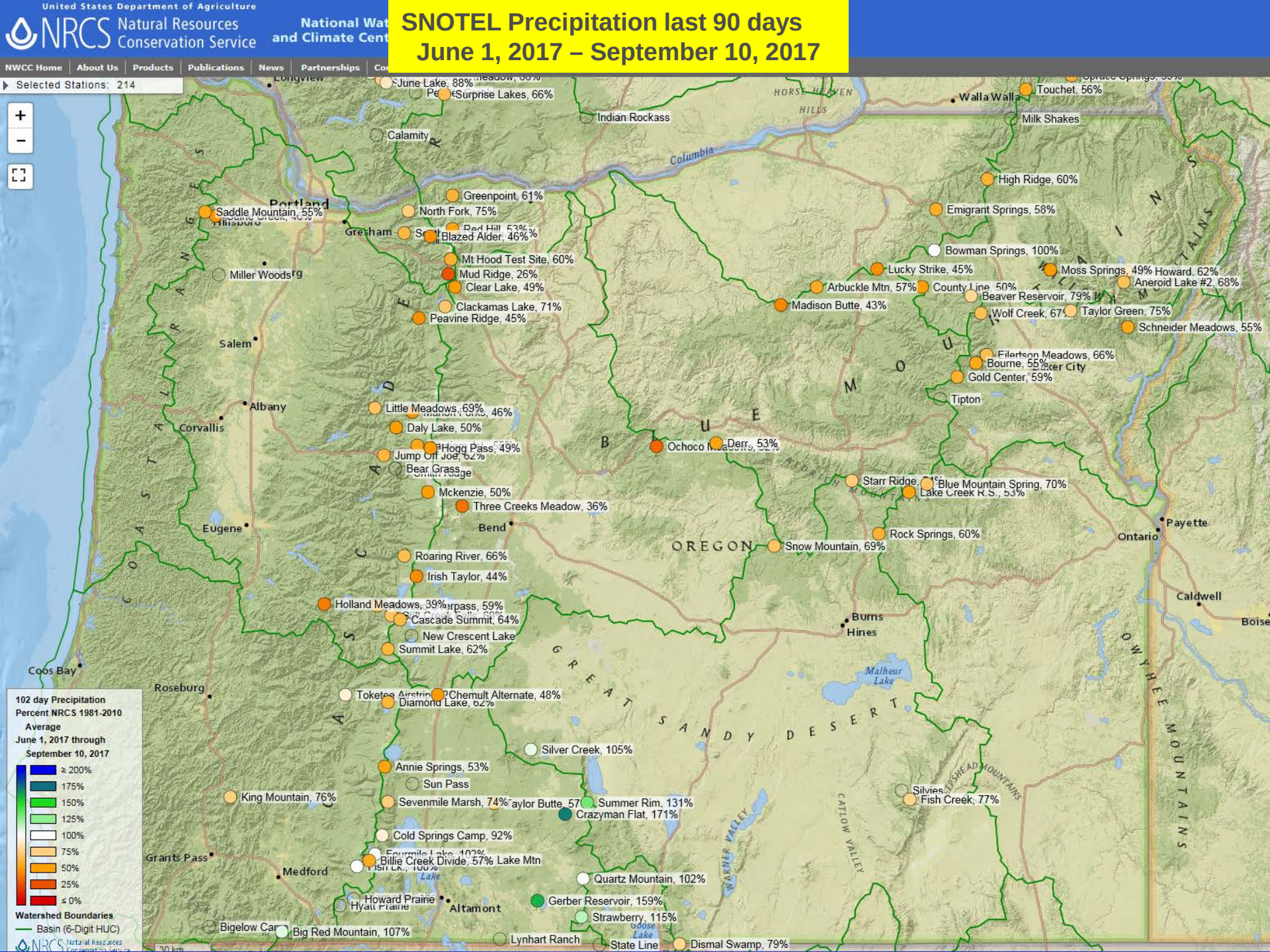
503-414-3271
http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/

Statewide SNOTEL Precipitation is 122% of normal




United States Department of Agriculture
NRCS Natural Resources Conservation Service
National Wat
and Climate Cent
SNOTEL Precipitation last 90 days
June 1, 2017 – September 10, 2017
NWCC Home | About Us | Products | Publications | News | Partnerships
Selected Stations: 214
June Lake, 88%
Surprise Lakes, 66%
Indian Rockass
Calamity
Touchet, 56%
Walla Walla
Milk Shakes
High Ridge, 60%
Emigrant Springs, 58%
Greenpoint, 61%
North Fork, 75%
Saddle Mountain, 55%
Portland
Gresham
Blazed Alder, 46%
Mt Hood Test Site, 60%
Mud Ridge, 26%
Clear Lake, 49%
Clackamas Lake, 71%
Peavine Ridge, 45%
Miller Woods
Bowman Springs, 100%
Lucky Strike, 45%
Moss Springs, 49%
Howard, 62%
Aneroid Lake #2, 68%
Arbuckle Mtn, 57%
County Line, 50%
Beaver Reservoir, 79%
Madison Butte, 43%
Wolf Creek, 67%
Taylor Green, 75%
Schneider Meadows, 55%
Filertson Meadows, 66%
Bourne, 55%
Gold Center, 59%
Tipton
Salem
Albany
Corvallis
Little Meadows, 69%
Daly Lake, 50%
Hogg Pass, 49%
Jump Off Joe, 62%
Bear Grass
Ochoco Meadows, 52%
Derr, 53%
Starr Ridge, 71%
Blue Mountain Spring, 70%
Lake Creek R.S., 53%
Mckenzie, 50%
Three Creeks Meadow, 36%
Eugene
Bend
Rock Springs, 60%
Payette
Ontario
OREGON
Snow Mountain, 69%
Roaring River, 66%
Irish Taylor, 44%
Holland Meadows, 39%
Cascade Summit, 64%
New Crescent Lake
Summit Lake, 62%
Burns
Hines
Caldwell
Boise
Coos Bay
Roseburg
Toketee Airstrip
Chemult Alternate, 48%
Diamond Lake, 62%
Malheur Lake
GREAT SANDY DESERT
Silver Creek, 105%
Annie Springs, 53%
Sun Pass
King Mountain, 76%
Sevenmile Marsh, 74%
Taylor Butte, 57%
Summer Rim, 131%
Crazyman Flat, 171%
Silvies
Fish Creek, 77%
Cold Springs Camp, 92%
Grants Pass
Billie Creek Divide, 57%
Lake Mtn
Medford
Quartz Mountain, 102%
Howard Prairie
Hyatt Prairie
Altamont
Gerber Reservoir, 159%
Strawberry, 115%
Bigelow Cam
Big Red Mountain, 107%
Lynhart Ranch
State Line
Dismal Swamp, 79%
102 day Precipitation
Percent NRCS 1981-2010
Average
June 1, 2017 through
September 10, 2017
≥ 200%
175%
150%
125%
100%
75%
50%
25%
≤ 0%
Watershed Boundaries
Basin (6-Digit HUC)

United States Department of Agriculture
NRCS Natural Resources Conservation Service

SNOTEL Precipitation % Normal – June 1, 2017 through September 10, 2017

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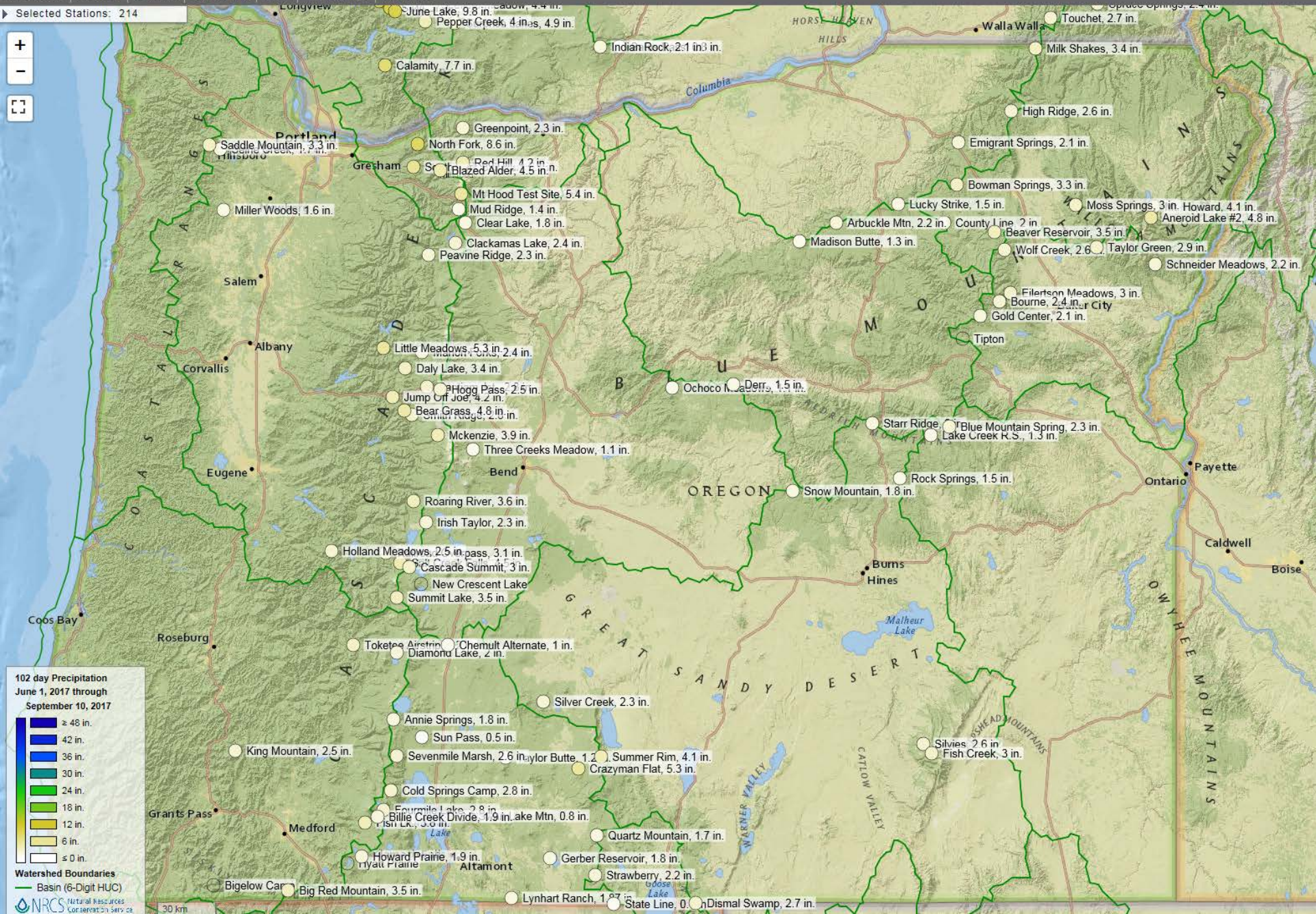

United States Department of Agriculture

NRCS Natural Resources Conservation Service

SNOTEL Soil Water Content Plots - September 1, 2017

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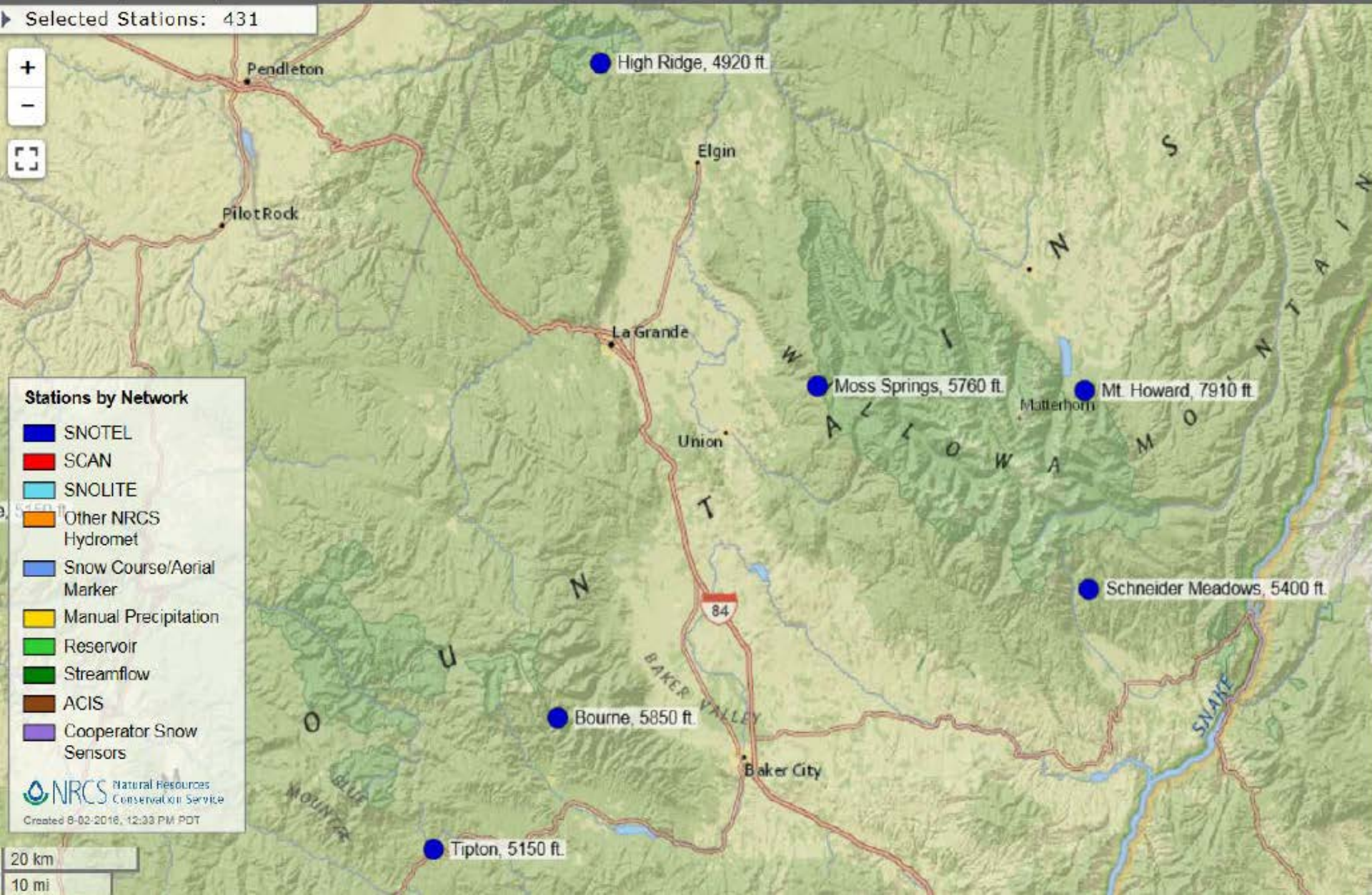
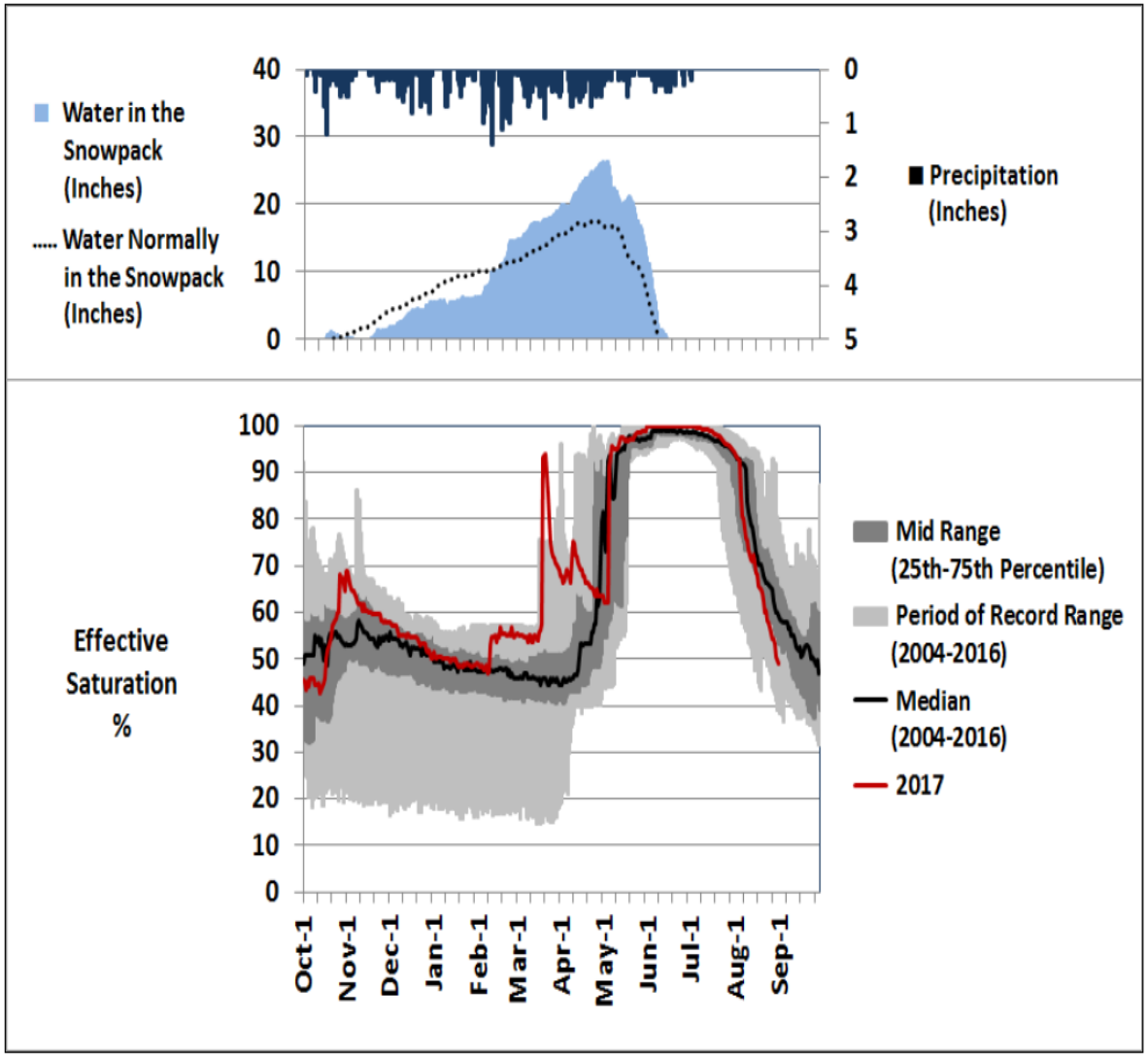


Mt Howard, 7910' elevation

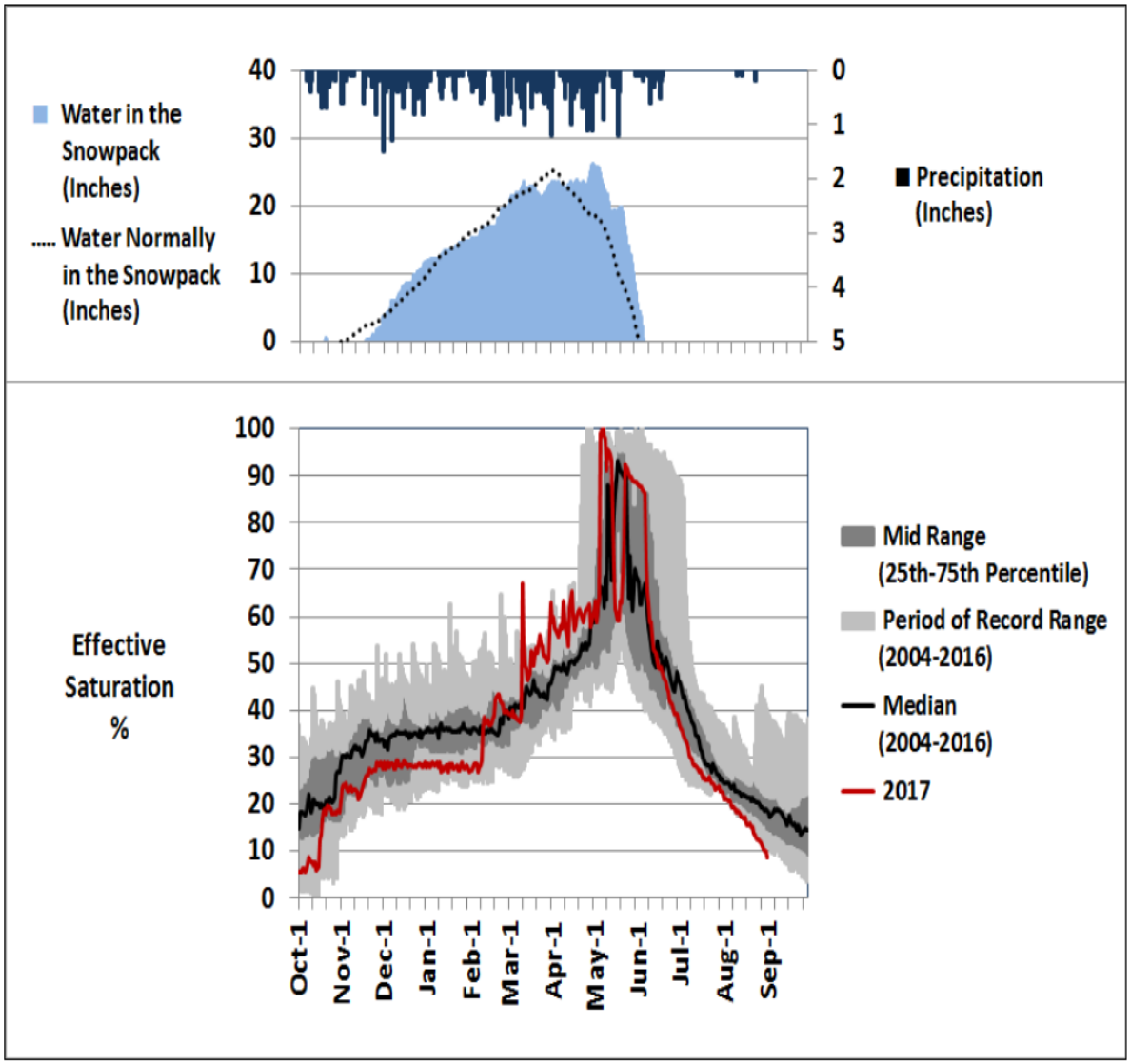
- As of September 1st, the soil moisture is 49% effectively saturated, when normally it is 59%.
- Snowpack melted out on June 15th this year, about a week later than normal.



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

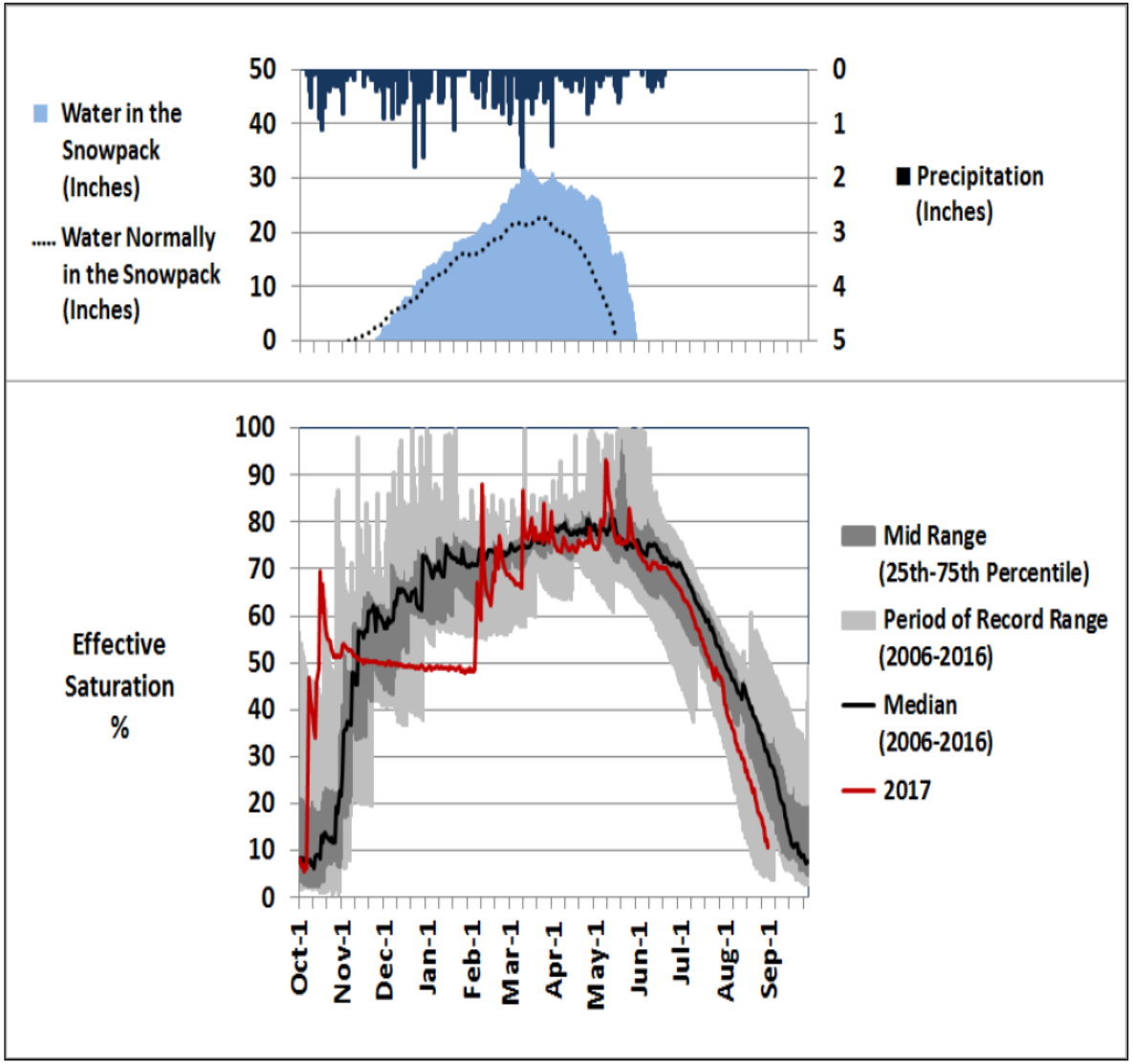
- As of September 1st, the soil moisture is 8.8% effectively saturated, when normally it is 18%.
- Snowpack melted out on June 5th this year, which is about normal for this site.



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 September 1st, the soil moisture is 11% effectively saturated when normally it is 31%.
- Snowpack melted out on May 30th, which is about two weeks later than normal.



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.

Oregon Water Supply Availability Committee

September 12, 2017

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Thank you!

Oregon Water Supply Availability

September 11, 2017 NWS Update

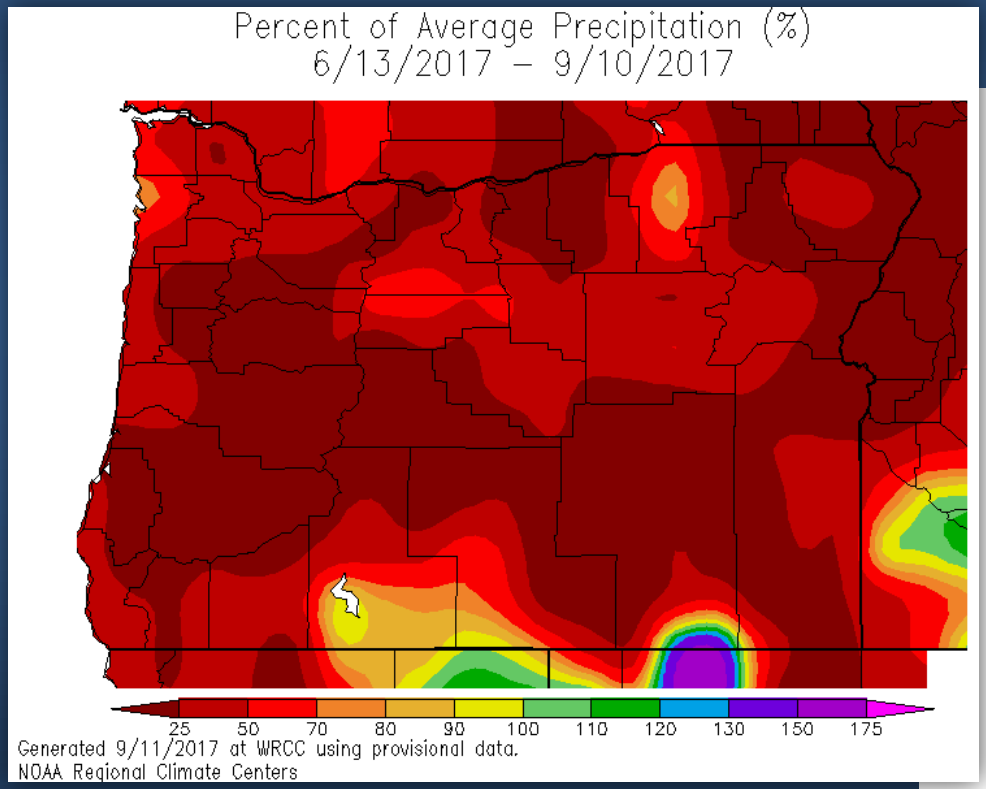
Eagle Creek Fire and the Columbia River

Photo courtesy of InciWeb

Andy Bryant, NWS Portland

Seasonal Precipitation

Past 90 Days



Water Year

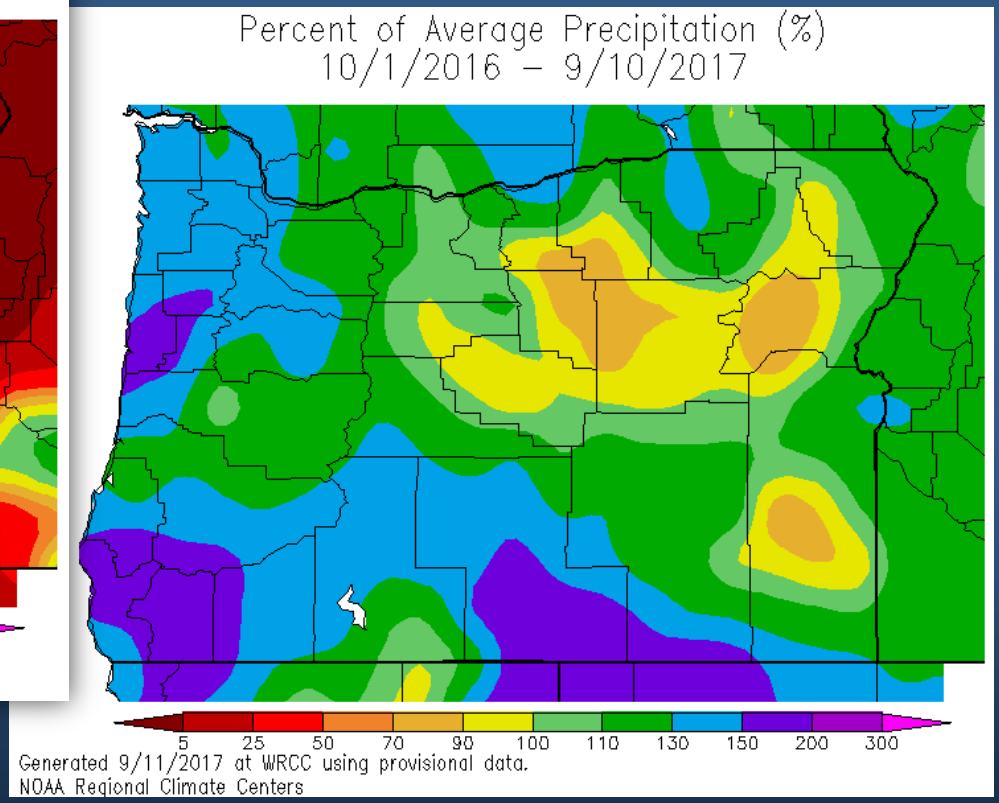
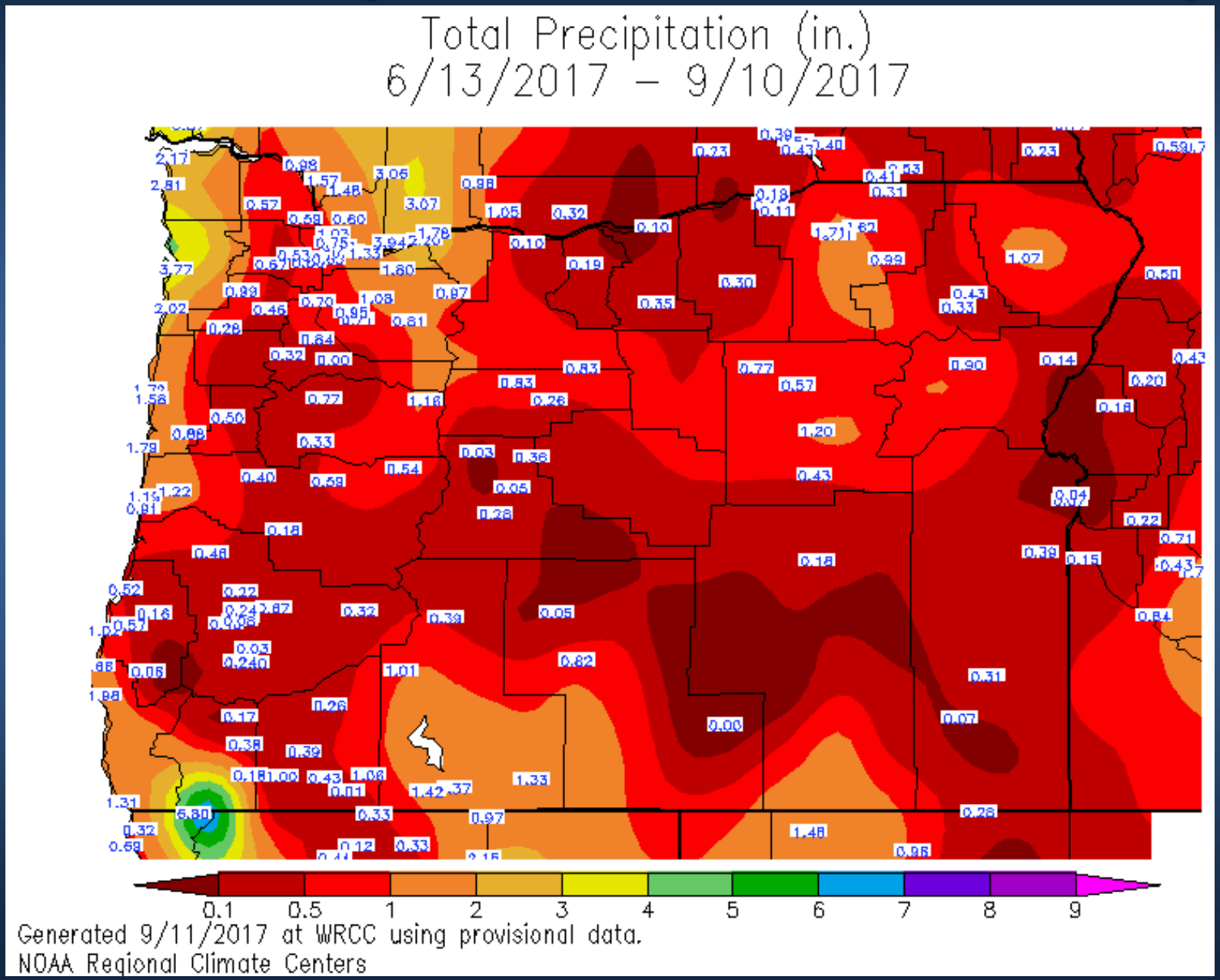
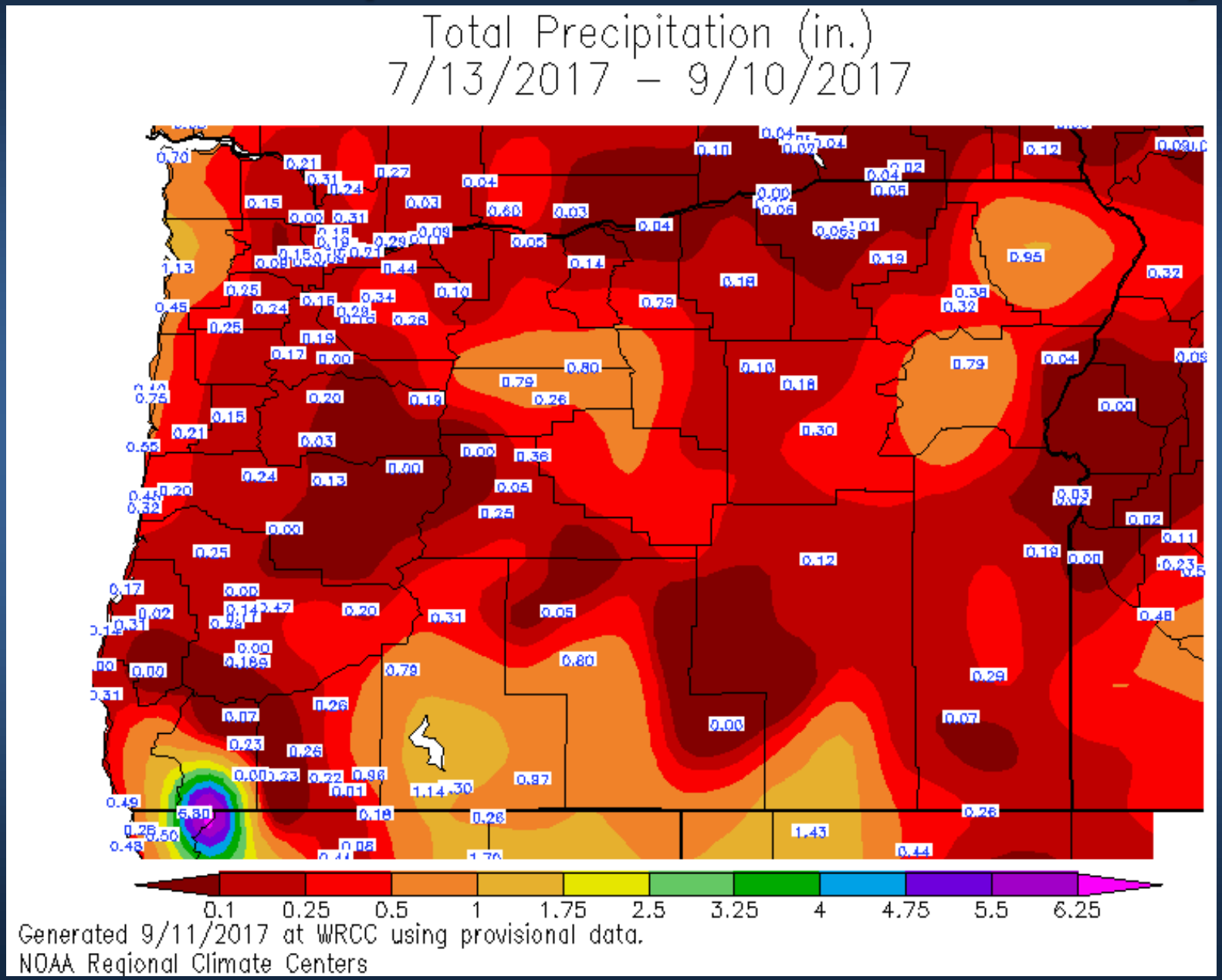


Image sources: www.wrcc.dri.edu

Total Precipitation for Past 90 days

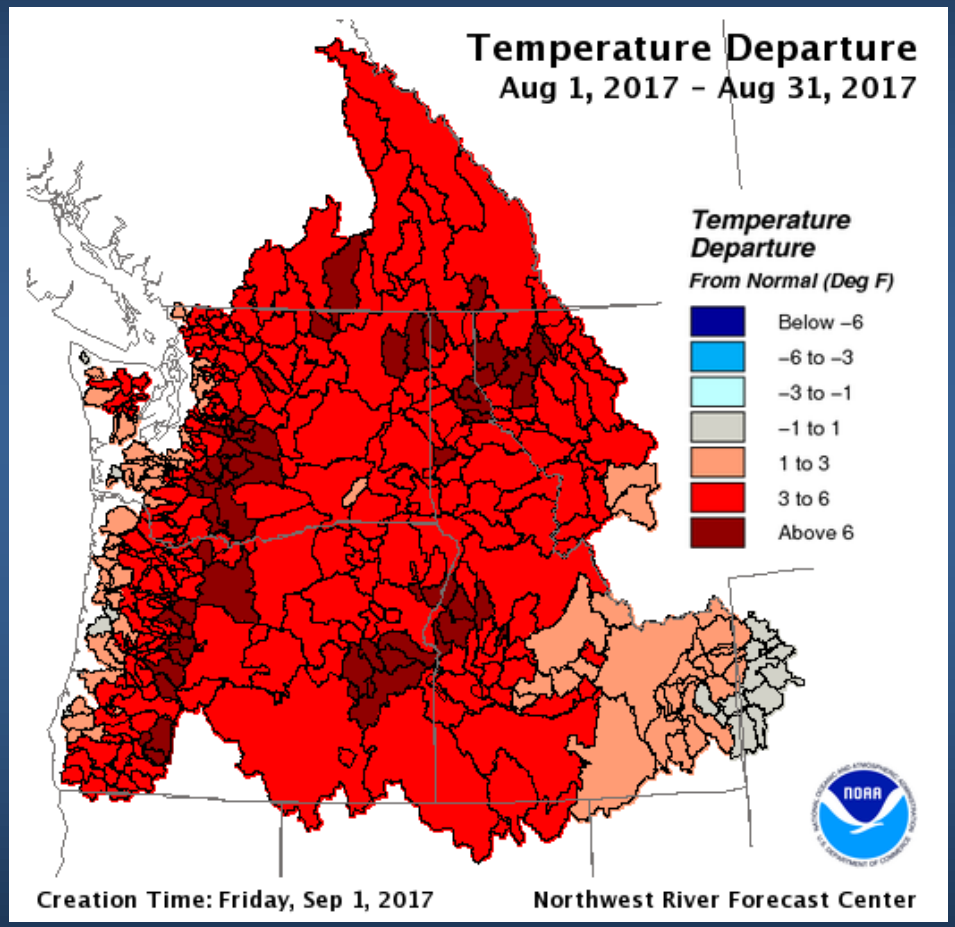


Total Precipitation for Past 60 days



Seasonal Temperatures

August Temperatures in Columbia Basin



September 1-10, 2017

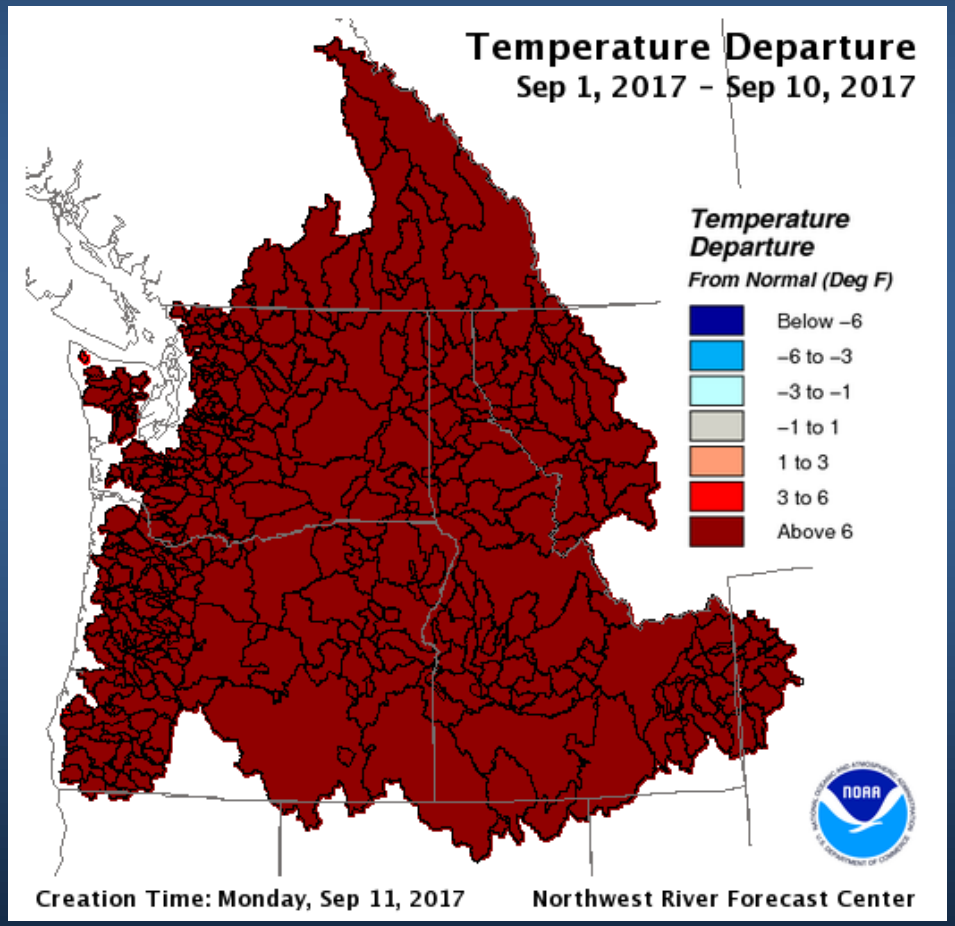


Image source: www.nwrfc.noaa.gov

Seasonal Temperatures

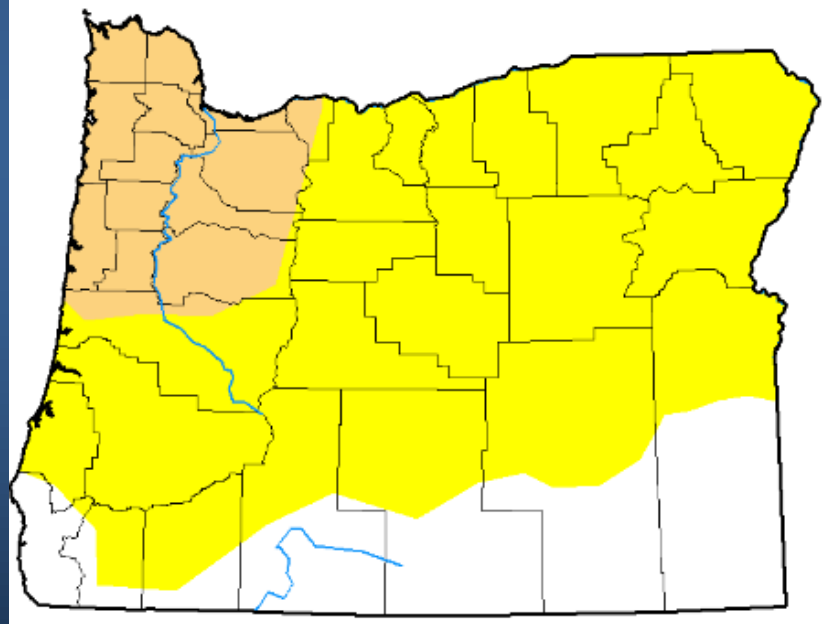
DIVISION NAME	Current Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Seasonal
Malheur-Owyhee-Boise River Basins	5.0	0.5	5.0	-6.4	-7.1	1.2	3.0	-2.6	0.9	0.9	4.5	5.0	0.1
Grande Ronde River Basin	4.0	0.3	6.0	-6.1	-7.1	0.3	1.7	-2.1	0.7	1.2	4.1	4.0	0.2
Middle Columbia Lower Tributaries	5.6	-0.1	5.3	-6.8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

Image source: www.nwrfc.noaa.gov

Drought Monitor

U.S. Drought Monitor

Oregon



September 5, 2017

(Released Thursday September 7, 2017)

Valid 8 a.m. EDT

Statistics type: Traditional Percent Area

Export table: PNG CSV XLS

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current 2017-09-05	22.33	77.67	13.50	0.00	0.00	0.00
Last Week 2017-08-29	22.33	77.67	0.00	0.00	0.00	0.00
3 Months Ago 2017-06-06	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 2016-12-27	65.31	34.69	5.29	0.00	0.00	0.00
Start of Water Year 2016-09-27	0.00	100.00	50.59	12.30	0.00	0.00
One Year Ago 2016-09-06	0.00	100.00	50.21	12.03	0.00	0.00

Estimated Population in Drought Areas: **2,534,518**

View More Statistics

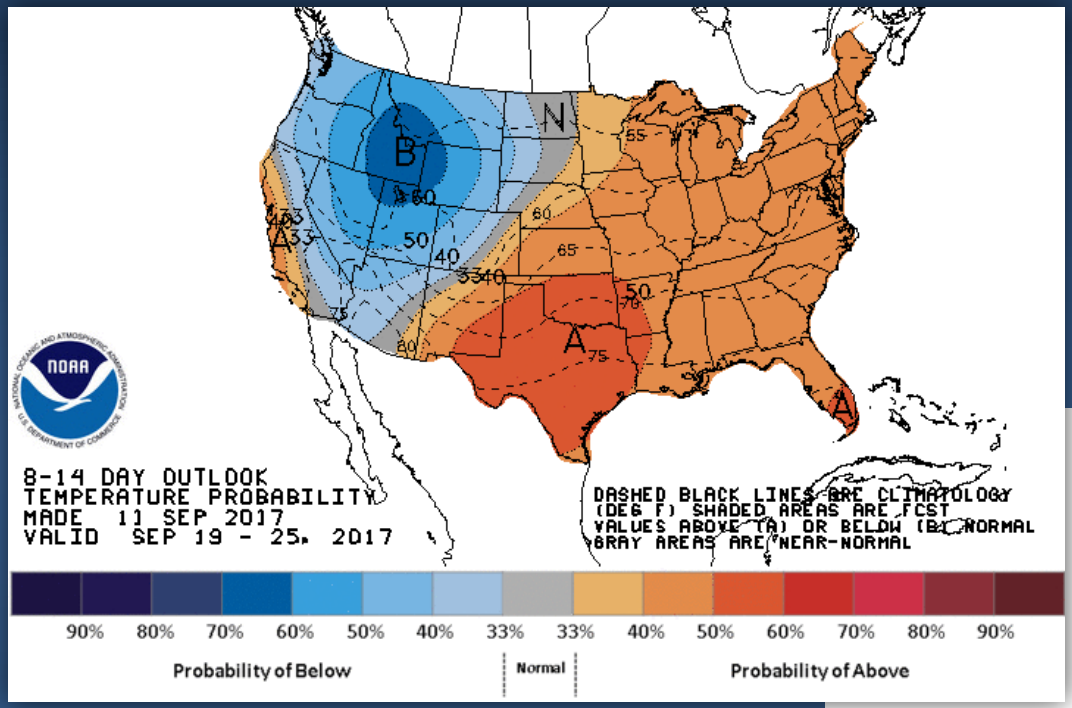
Intensity:

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

Image source: droughtmonitor.unl.edu

September Outlook

8 - 14 Day Temperature Outlook



Generally wetter and cooler pattern starting September 17th and continuing into late September

8 - 14 Day Precipitation Outlook

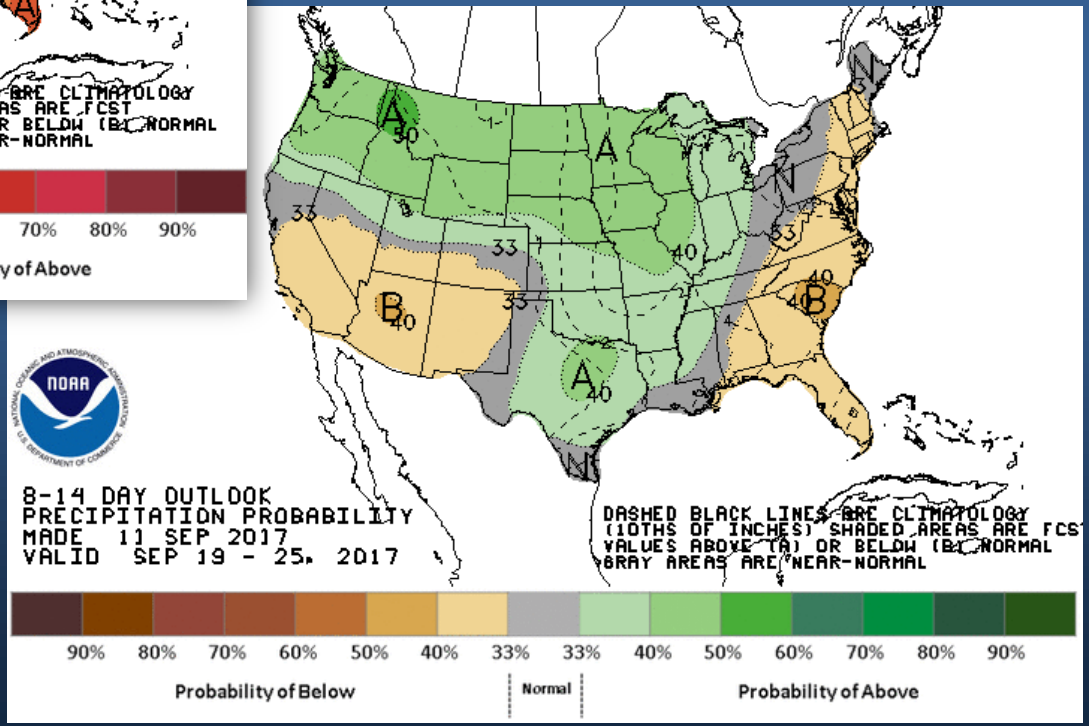
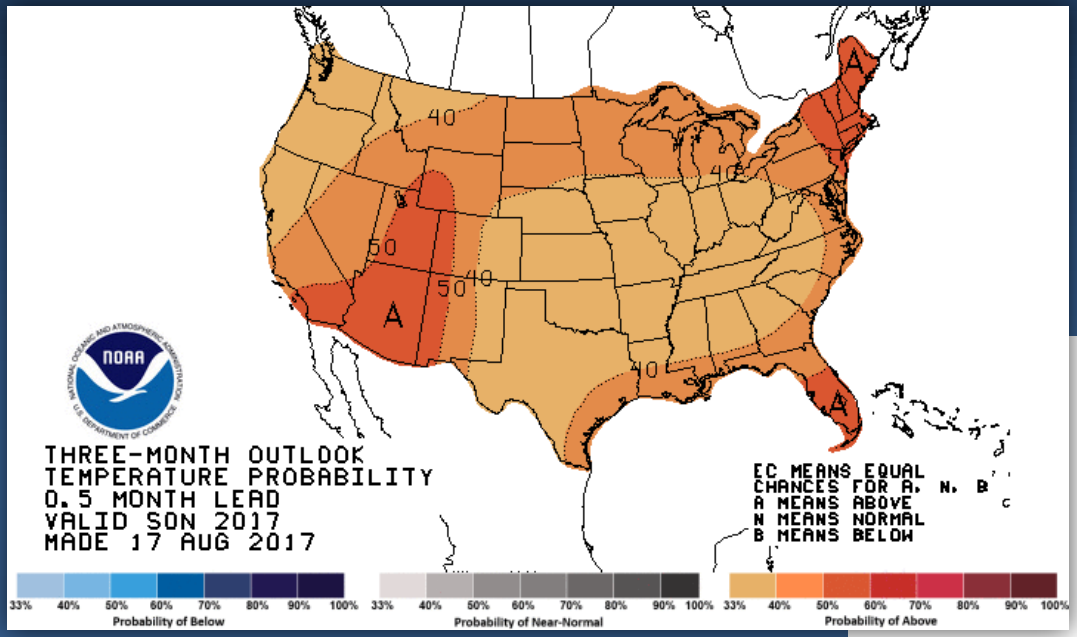


Image source: www.cpc.ncep.noaa.gov

Outlook for September-October-November

Temperatures



Precipitation

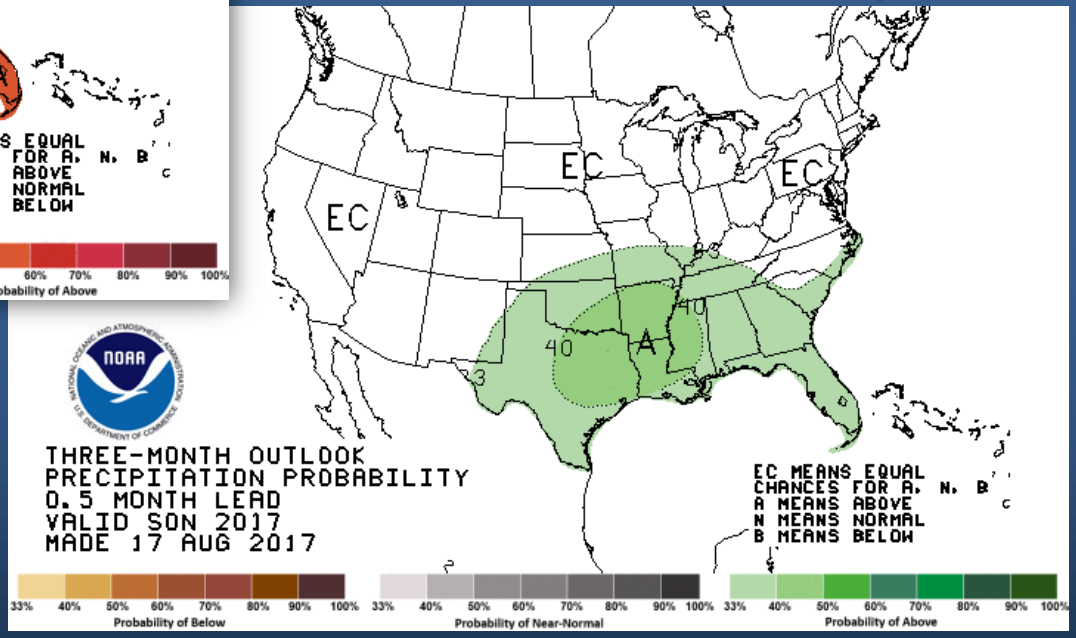
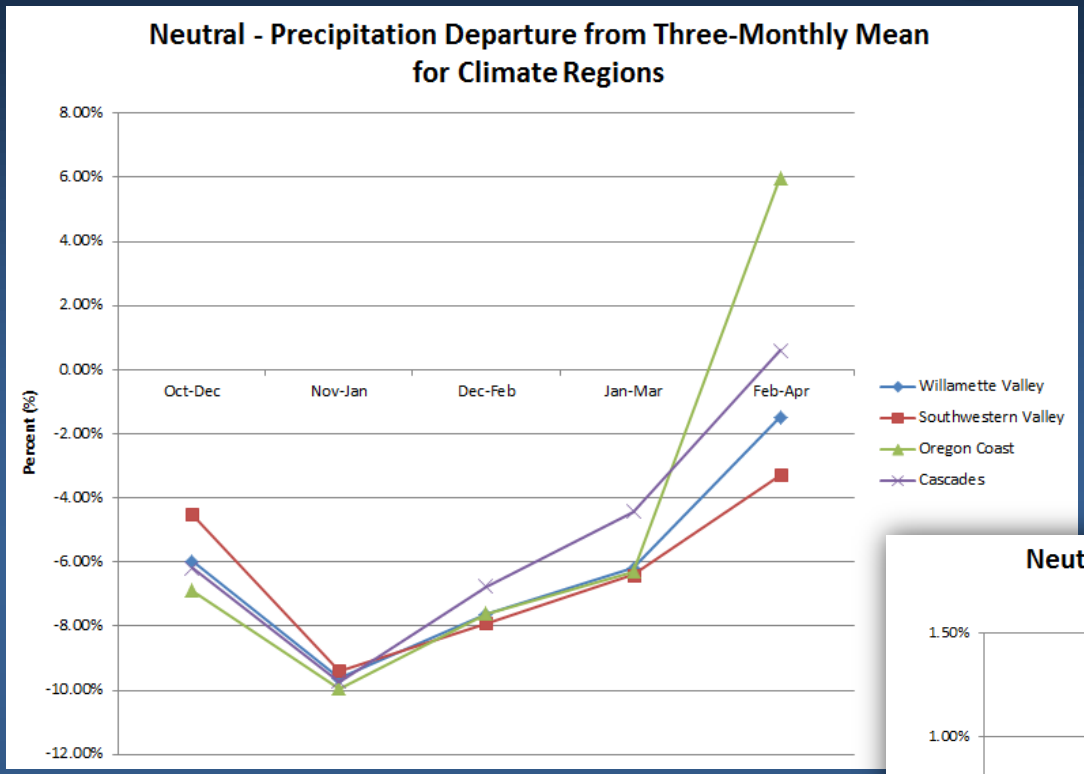
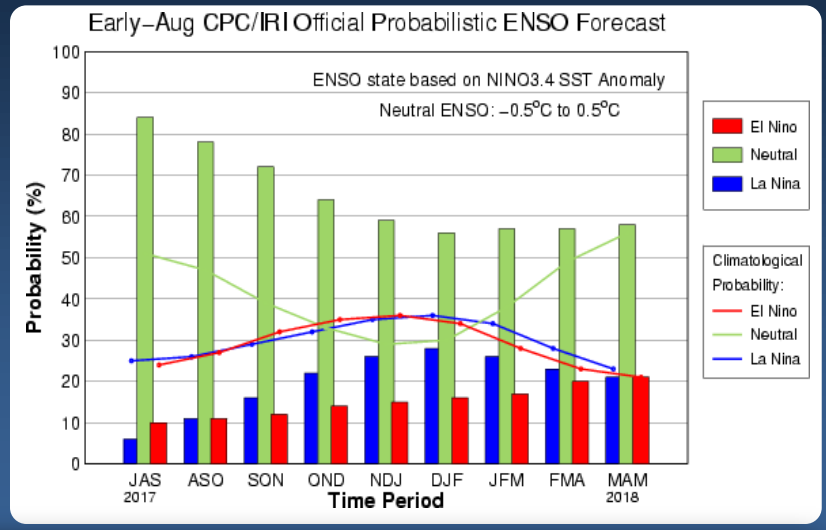
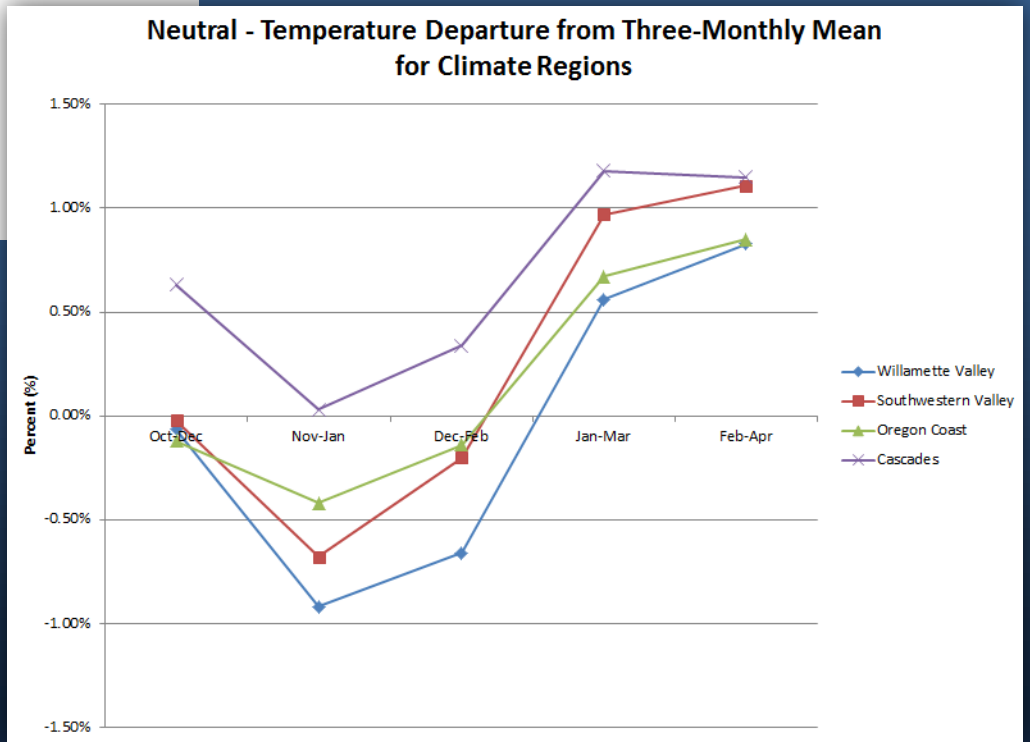


Image source: www.cpc.ncep.noaa.gov

ENSO & Oregon Climate





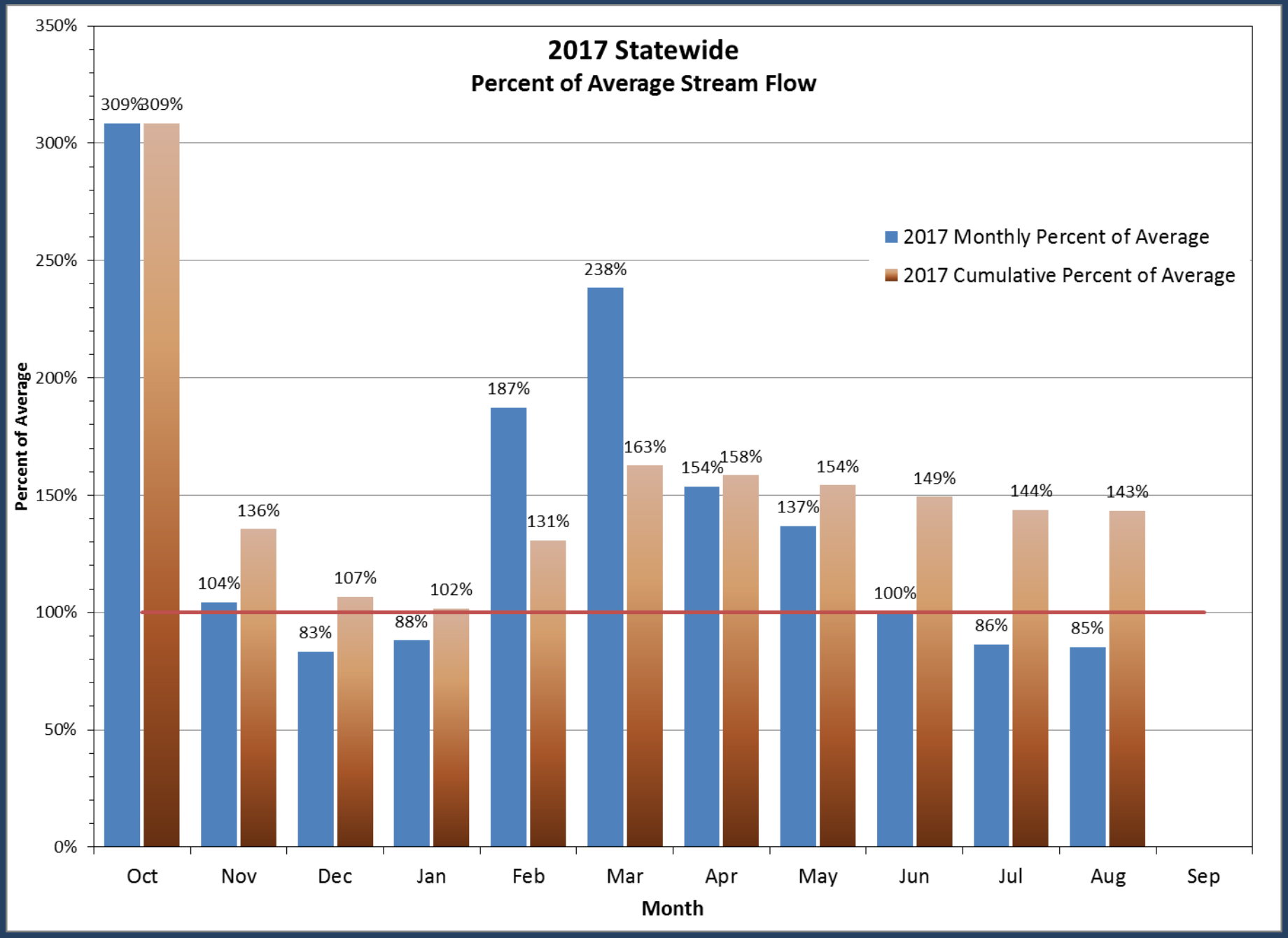


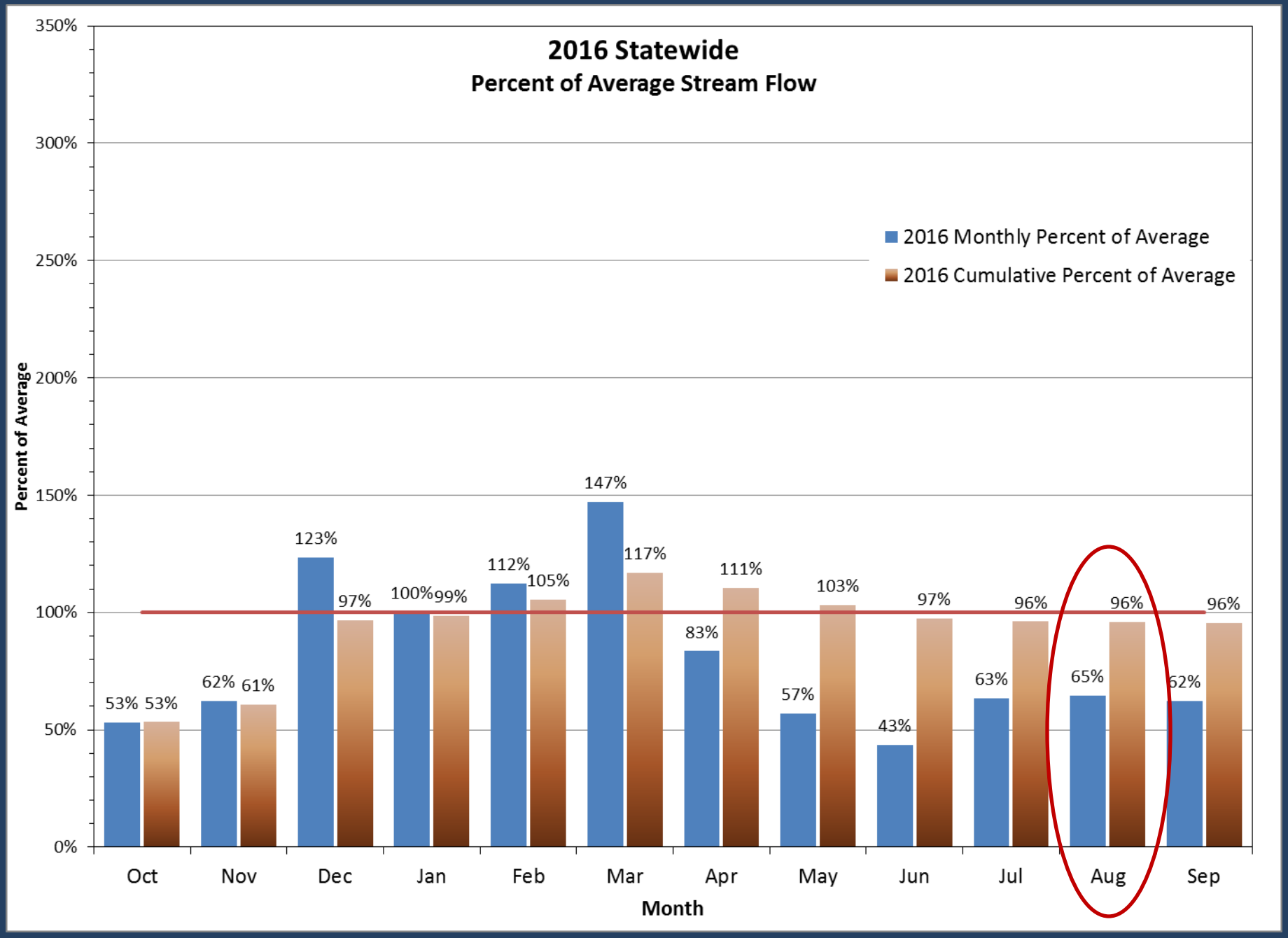
ENSO Neutral conditions historically result in below-average precipitation and near-average temperatures in Western Oregon & the Cascades.

Surface Water Conditions Report

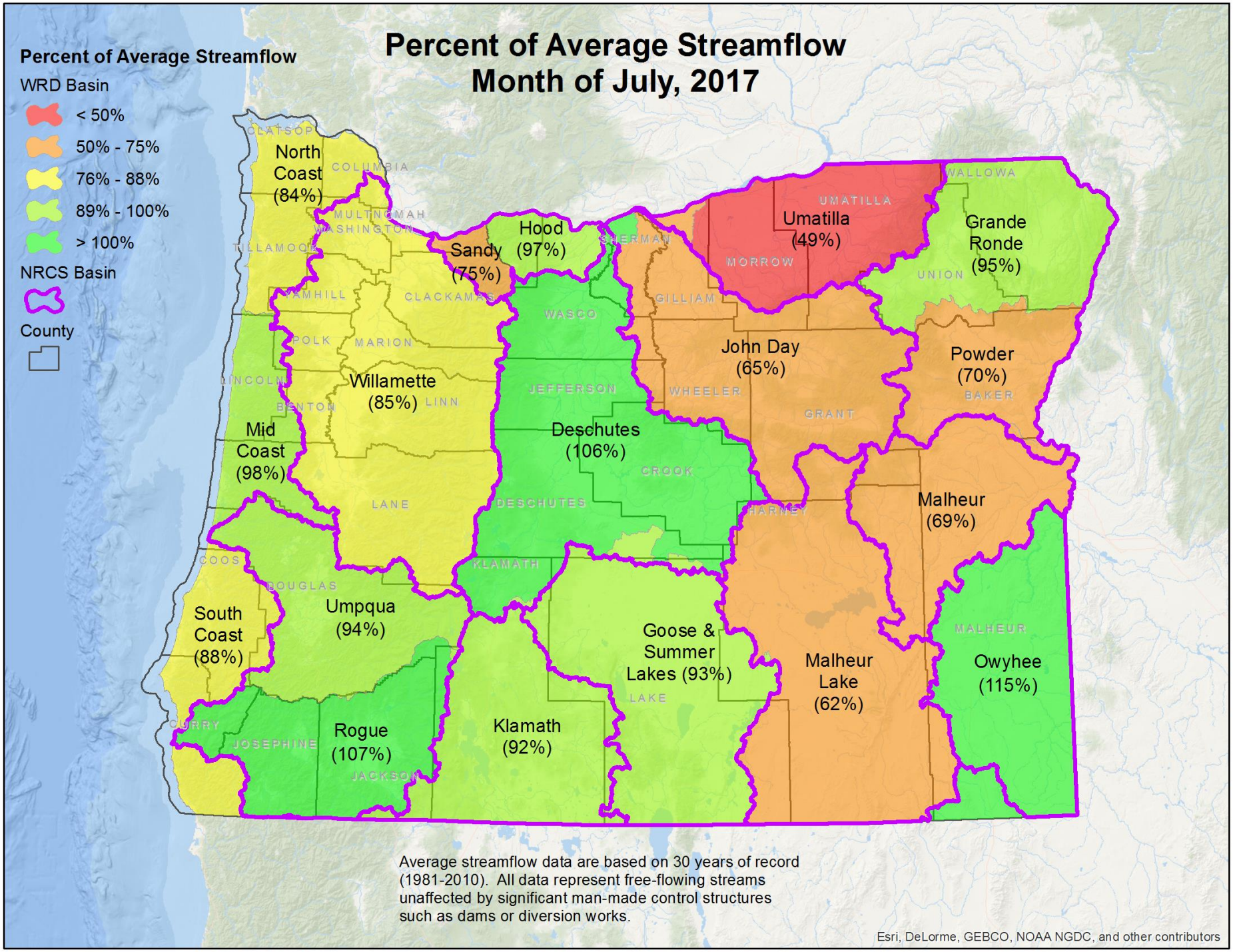
Water Supply Availability Committee

Ken Stahr
Oregon Water Resources Department
September 12, 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%
136%
83%
107%
88%
102%
187%
131%
238%
163%
154%
158%
137%
154%
100%
149%
86%
144%
85%
143%

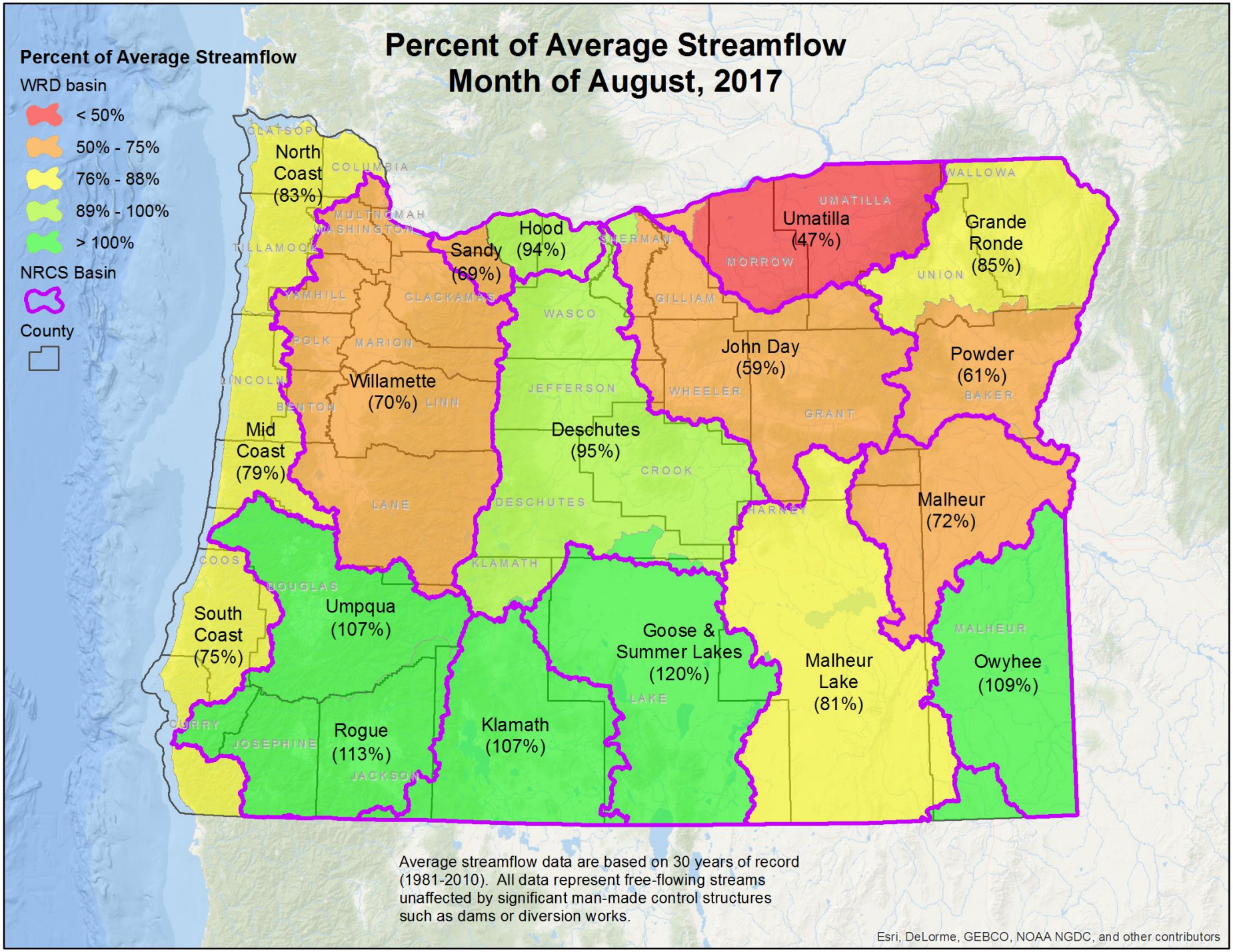

2016 Statewide
Percent of Average Stream Flow
2016 Monthly Percent of Average
2016 Cumulative Percent of Average
Percent of Average
Month
350%
300%
250%
200%
150%
100%
50%
0%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
53% 53%
62% 61%
123% 97%
100% 99%
112% 105%
147% 117%
83% 111%
57% 103%
43% 97%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

Percent of Average Streamflow
Month of July, 2017

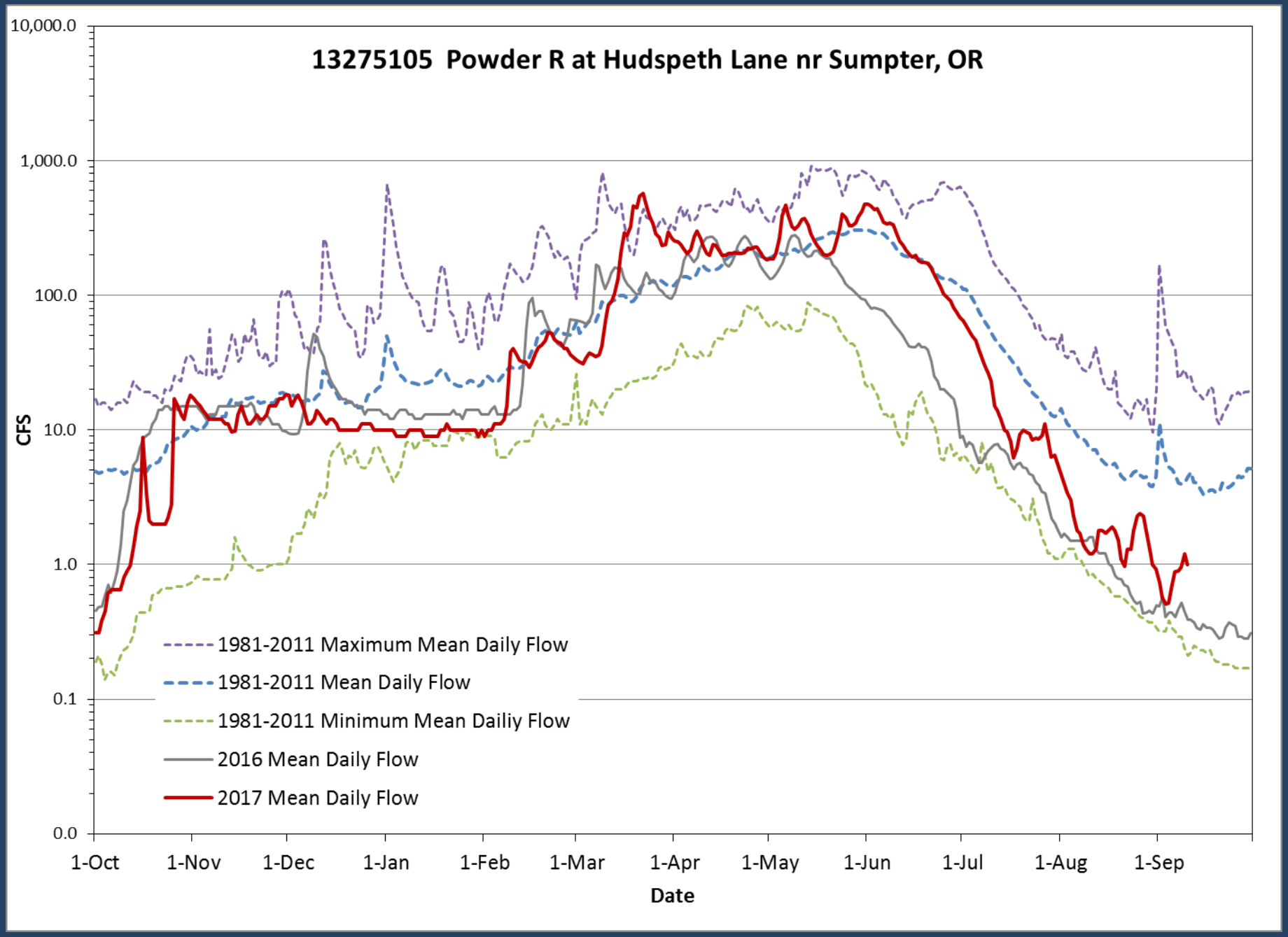


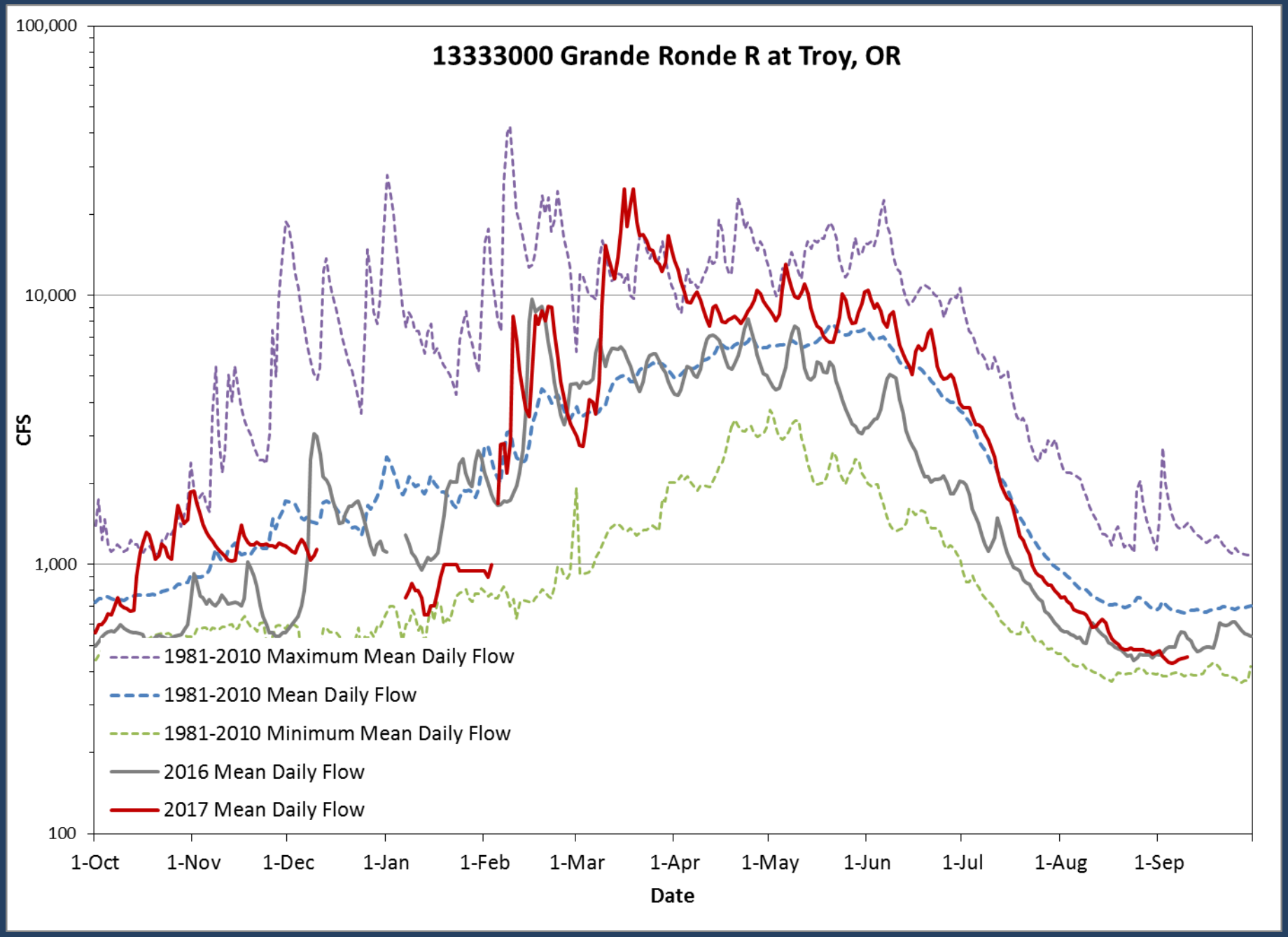
Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.

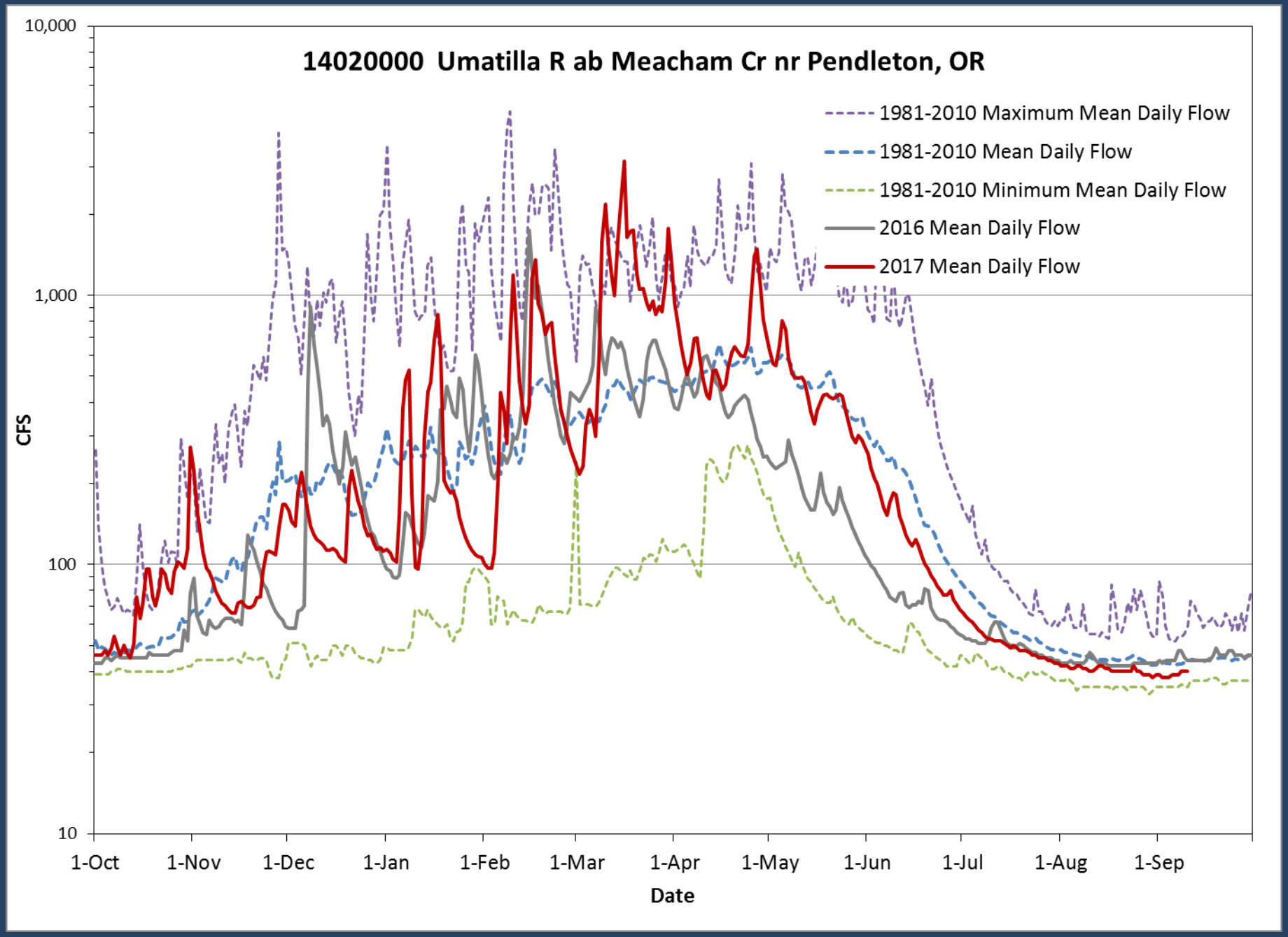
Percent of Average Streamflow
Month of August, 2017

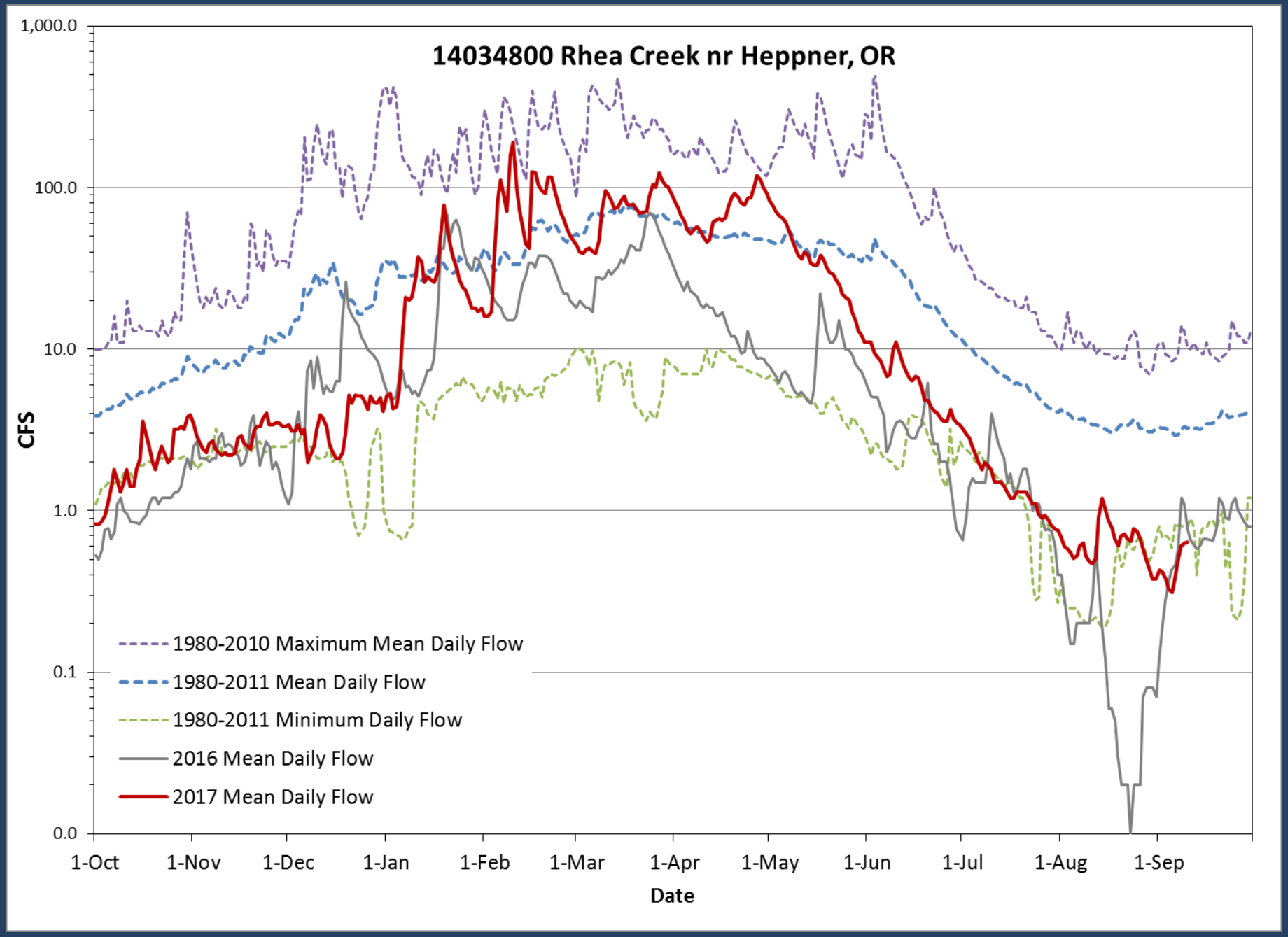


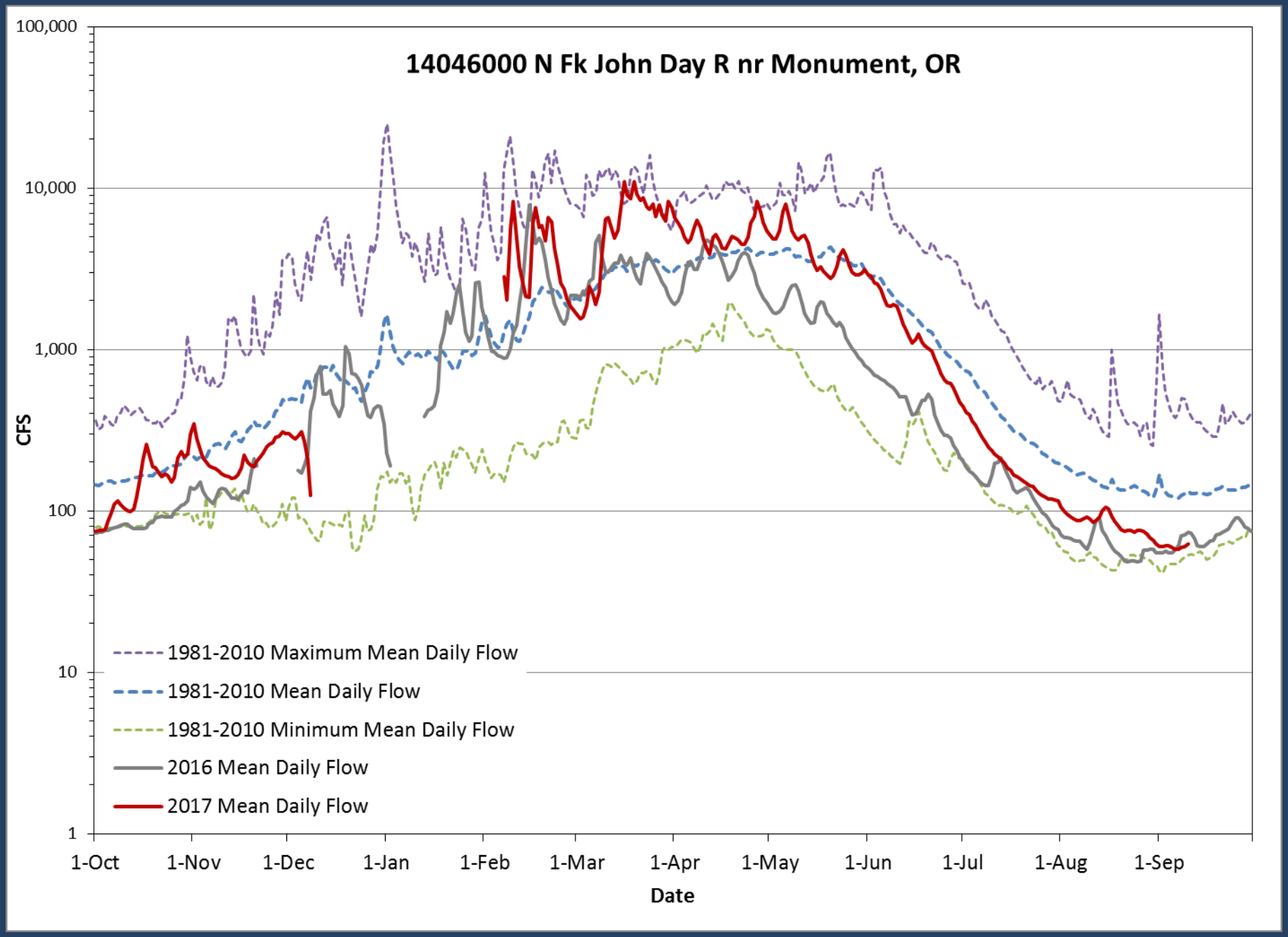
Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.


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

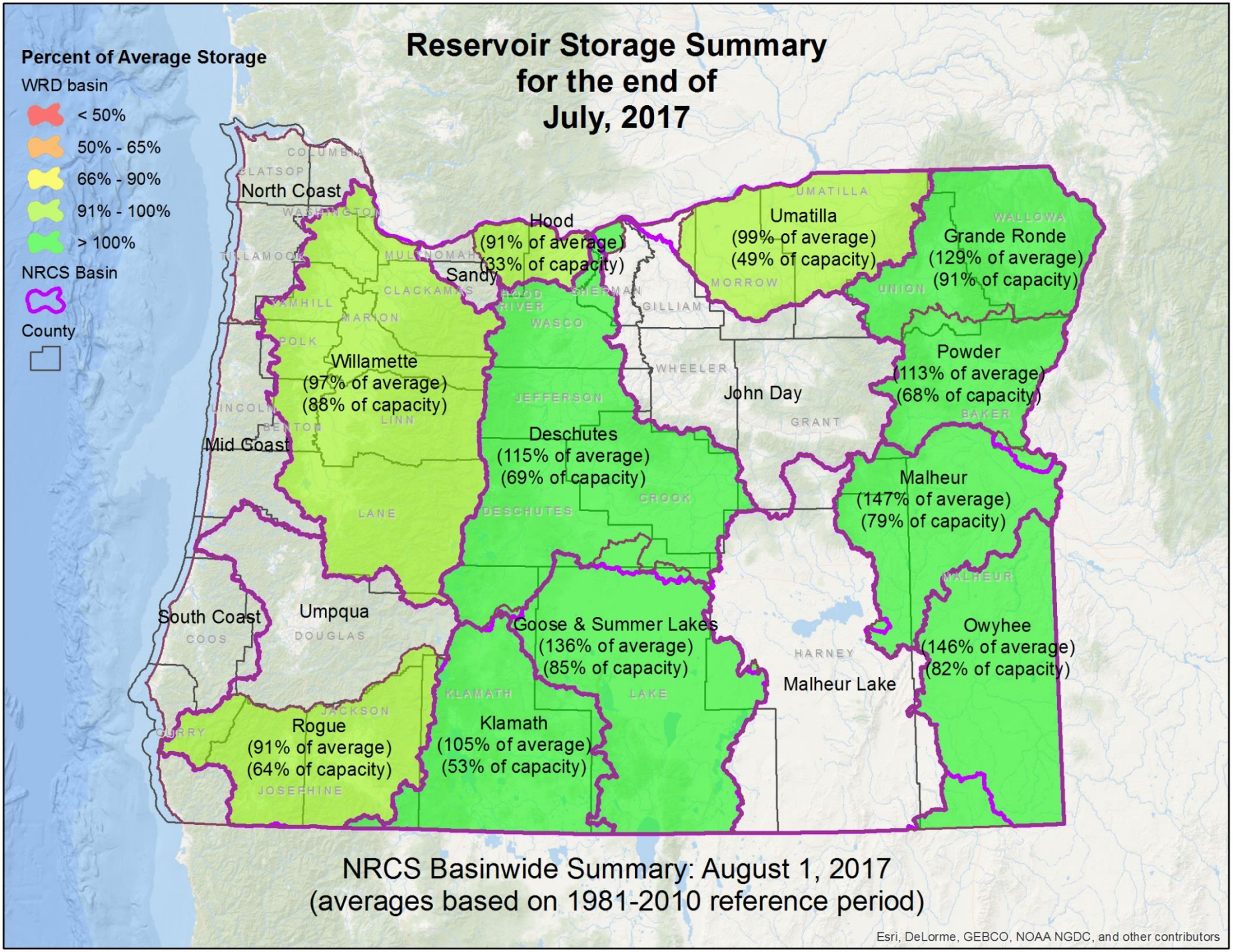

13333000 Grande Ronde R at Troy, OR
100,000
10,000
1,000
100
CFS
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


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


14034800 Rhea Creek nr Heppner, OR
1,000.0
100.0
10.0
1.0
0.1
0.0
CFS
1980-2010 Maximum Mean Daily Flow
1980-2011 Mean Daily Flow
1980-2011 Minimum 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

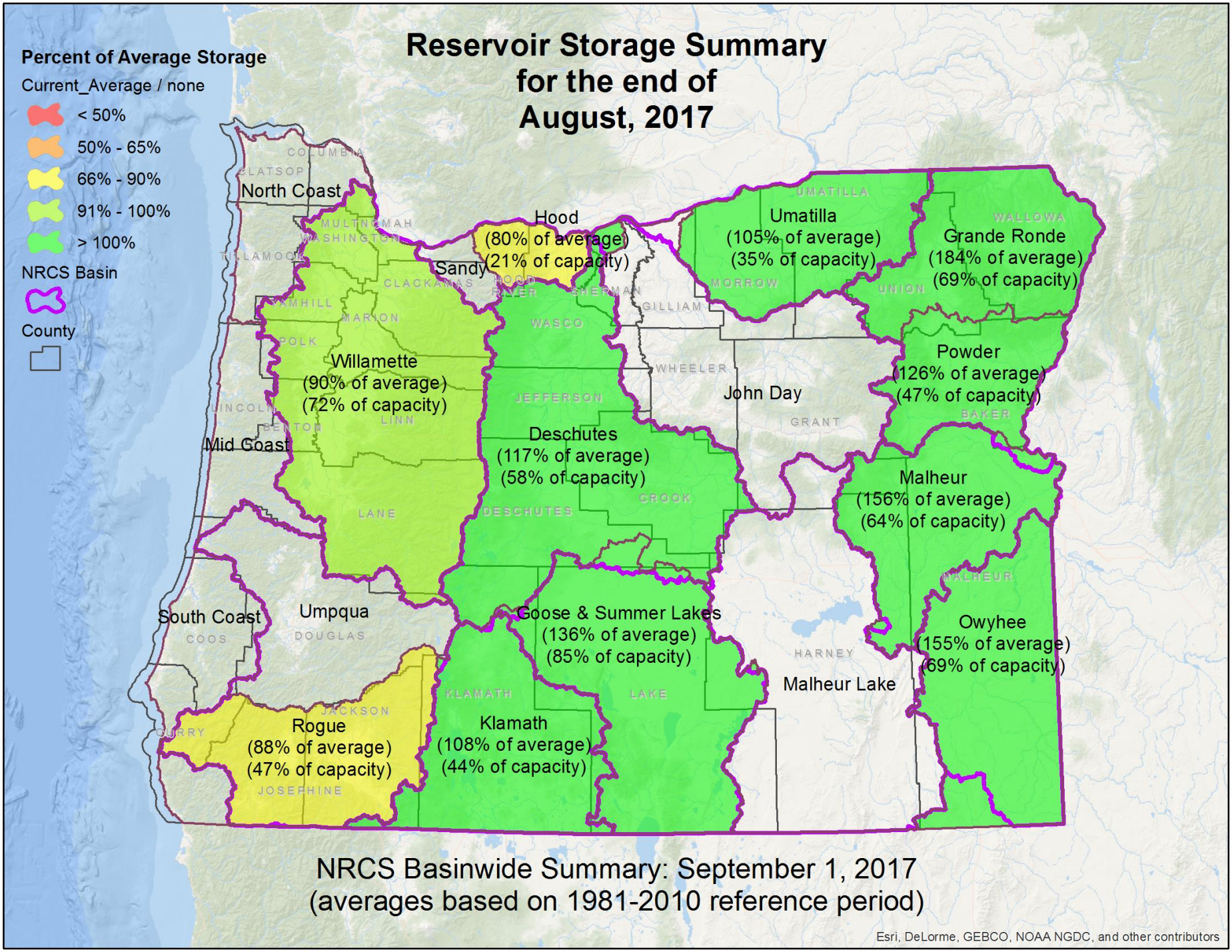

14046000 N Fk John Day R nr Monument, OR
100,000
10,000
1,000
100
10
1
CFS
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date
1981-2010 Maximum Mean Daily Flow
1981-2010 Mean Daily Flow
1981-2010 Minimum Mean Daily Flow
2016 Mean Daily Flow
2017 Mean Daily Flow

Reservoir Storage Summary for the end of July, 2017

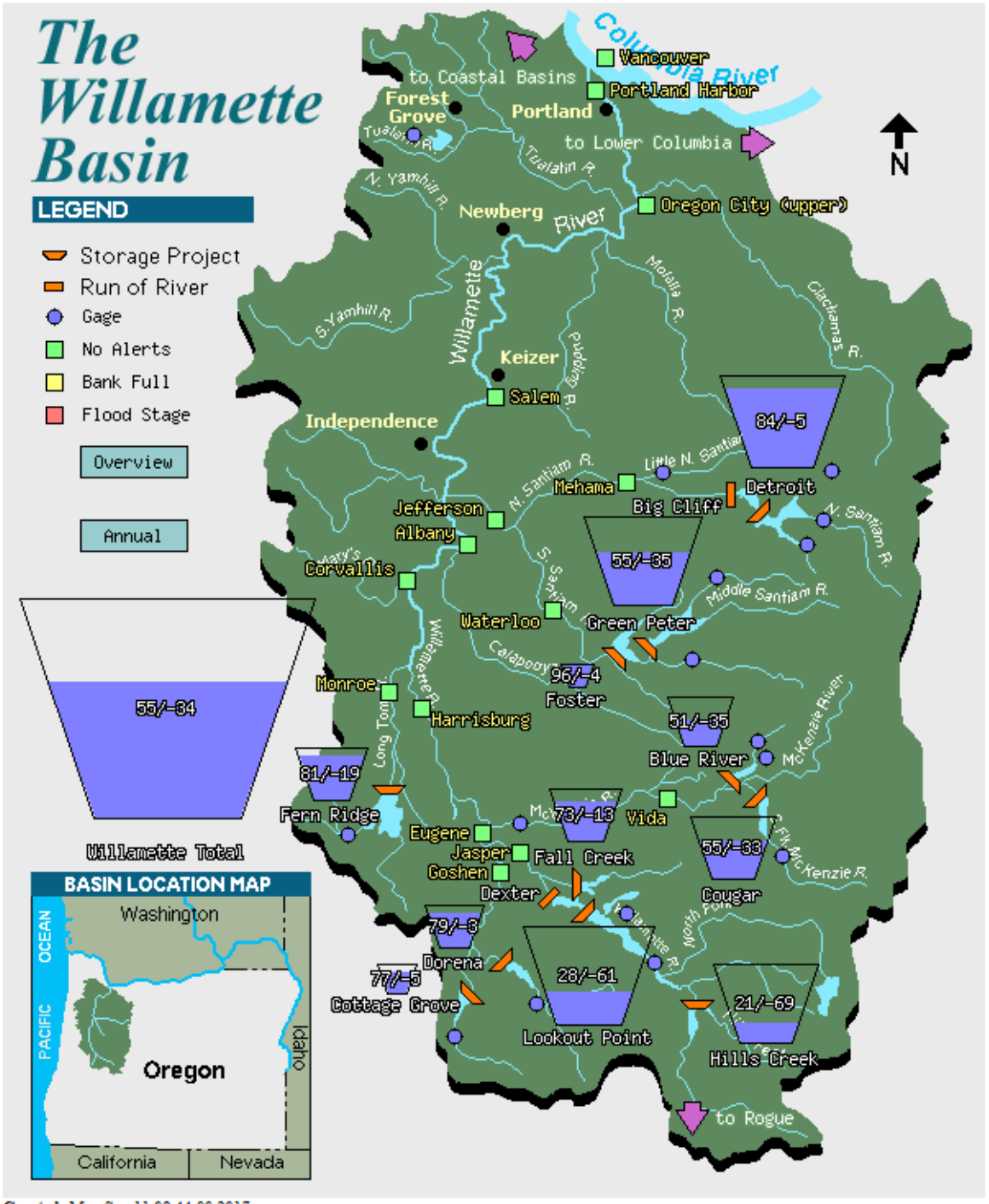


NRCS Basinwide Summary: August 1, 2017
(averages based on 1981-2010 reference period)

Reservoir Storage Summary for the end of August, 2017

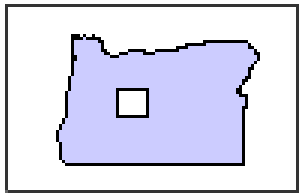


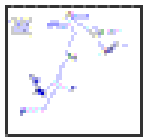
NRCS Basinwide Summary: September 1, 2017
(averages based on 1981-2010 reference period)



Created: Mon Sep 11 09:44:00 2017

09/10/2017





Deschutes ESA

CULO 642 cfs

CROO 1444 cfs

Haystack
5765/5600
100% Full

Ochoco
21617/44247
49% Full

CRSO 245 cfs

Prineville

MLCO 0 cfs

CAPO 79 cfs

OCRO 0 cfs

OCHO 17 cfs

CRCO 161 cfs

CRPO 0 cfs

PRVO 267 cfs

DEBO 186 cfs

Bend

Crane Prairie
39089/55300
71% Full

BENO 1845 cfs

CRAO 394 cfs

Prineville
97090/148640
65% Full

LAPO 120 cfs

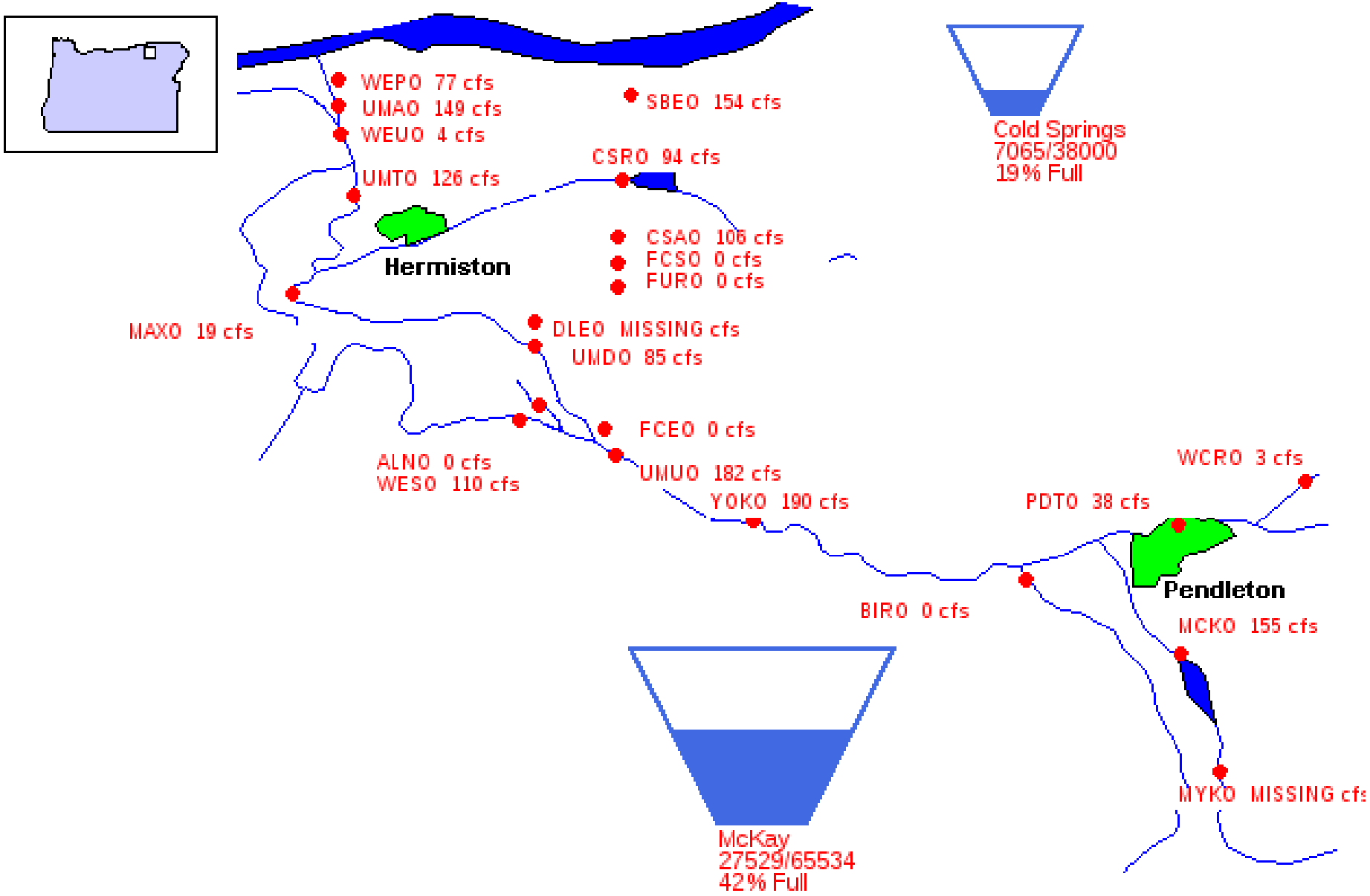
Wickiup
66699/200000
33% Full

WICO 1328 cfs

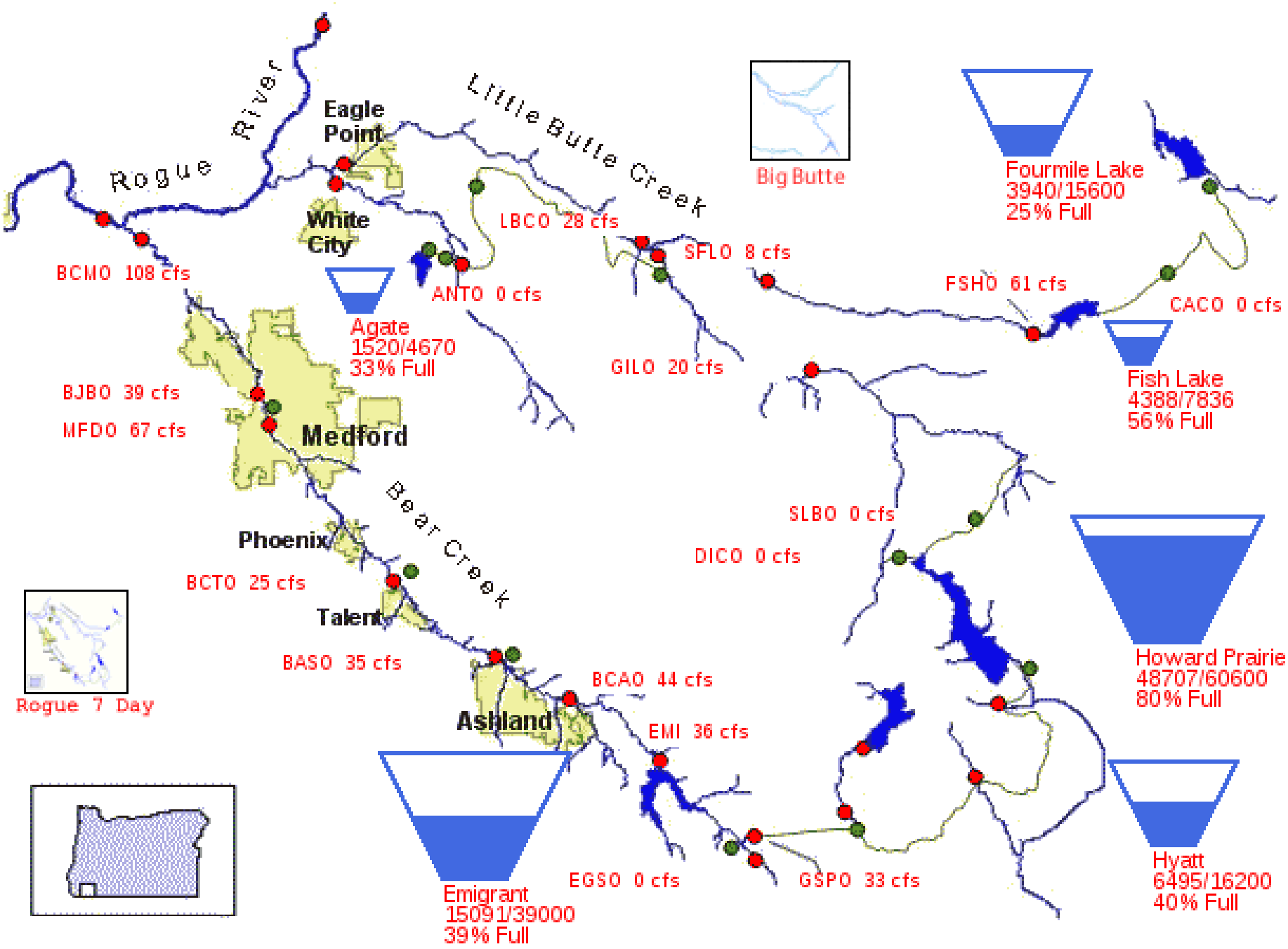
Crescent Lake
71238/86900
82% Full

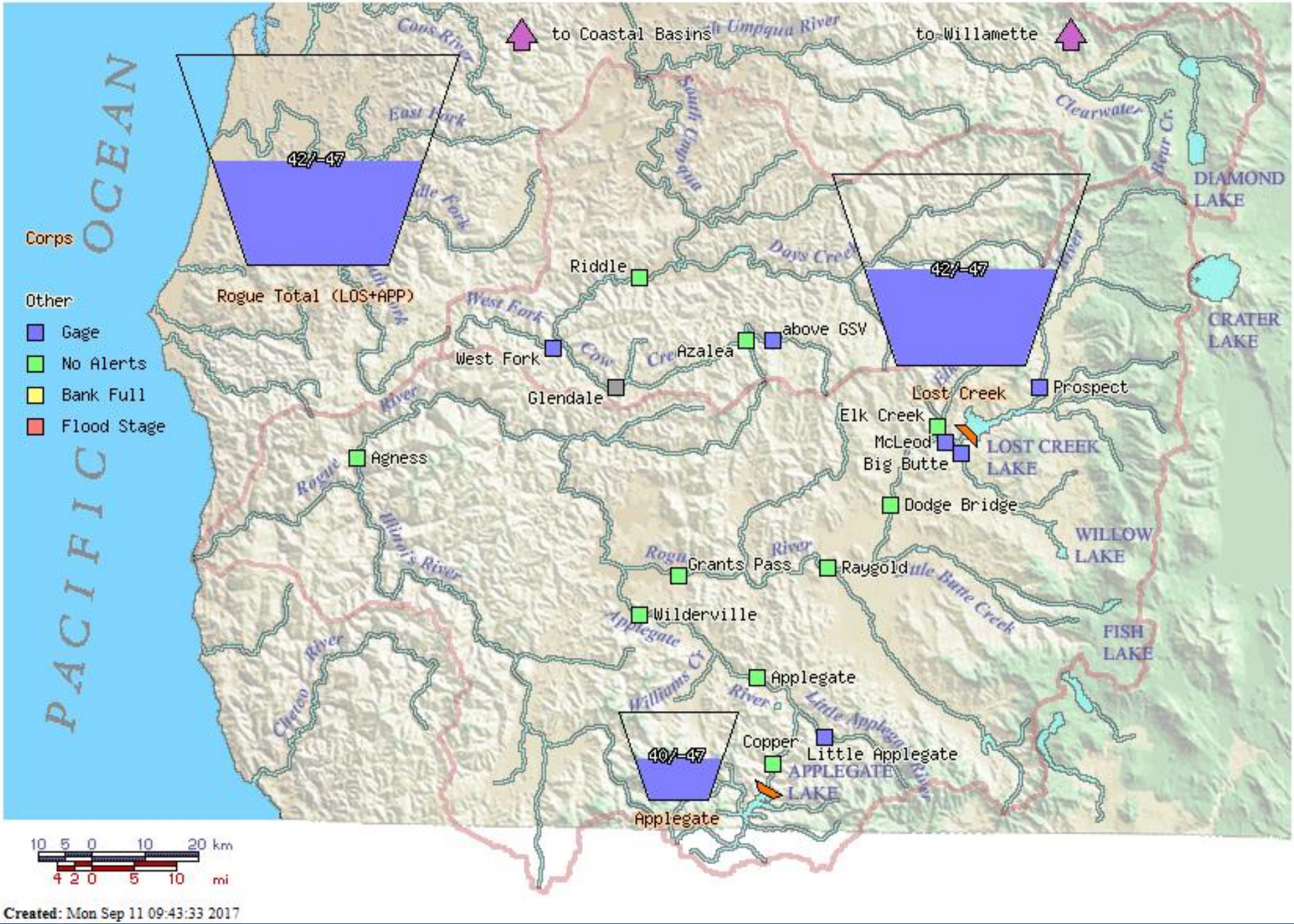
CREO 87 cfs

09/10/2017


WEPO 77 cfs
UMAO 149 cfs
WEUO 4 cfs
SBEO 154 cfs
Cold Springs
7065/38000
19% Full
CSRO 94 cfs
UMTO 126 cfs
Hermiston
CSAO 106 cfs
FCSO 0 cfs
FURO 0 cfs
MAXO 19 cfs
DLEO MISSING cfs
UMDO 85 cfs
FCEO 0 cfs
ALNO 0 cfs
WESO 110 cfs
UMUO 182 cfs
YOKO 190 cfs
WCRO 3 cfs
PDTO 38 cfs
Pendleton
BIRO 0 cfs
MCKO 155 cfs
MYKO MISSING cfs
McKay
27529/65534
42% Full

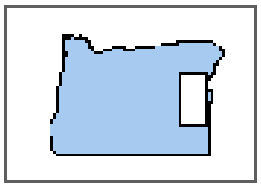
09/10/2017


Rogue River
Eagle Point
Little Butte Creek
Big Butte
Fourmile Lake
3940/15600
25% Full
White City
LBCO 28 cfs
SFLO 8 cfs
BCMO 108 cfs
ANTO 0 cfs
FSHO 61 cfs
CACO 0 cfs
Agate
1520/4670
33% Full
GILO 20 cfs
Fish Lake
4388/7836
56% Full
BJBO 39 cfs
MFDO 67 cfs
Medford
SLBO 0 cfs
Bear Creek
Phoenix
DICO 0 cfs
BCTO 25 cfs
Talent
Howard Prairie
48707/60600
80% Full
BASO 35 cfs
BCAO 44 cfs
Ashland
EMI 36 cfs
Rogue 7 Day
Hyatt
6495/16200
40% Full
Emigrant
15091/39000
39% Full
EGSO 0 cfs
GSPO 33 cfs



Created: Mon Sep 11 09:43:33 2017

09/10/2017



NPDO 27 cfs

THF 25 cfs

HCDI 12945 cfs

Thief Valley
51/13307
0% Full

PRHO 1 cfs

PWDO 45 cfs

PRRO MISSING cf

Phillips
35317/73000
48% Full

PHL 102 cfs

UNY 103 cfs

Unity
6206/24970
25% Full

Snake River

WEII 10042 cfs

Bully Creek
9340/23676
39% Full

MABO 50 cfs

MALO 371 cfs

Beulah
14174/59212
24% Full

VALO 141 cfs

BEUO 265 cfs

SNYI 8479 cfs

MADO 7 cfs

OWY 257 cfs

WARO 232 cfs

SFMO 6 cfs

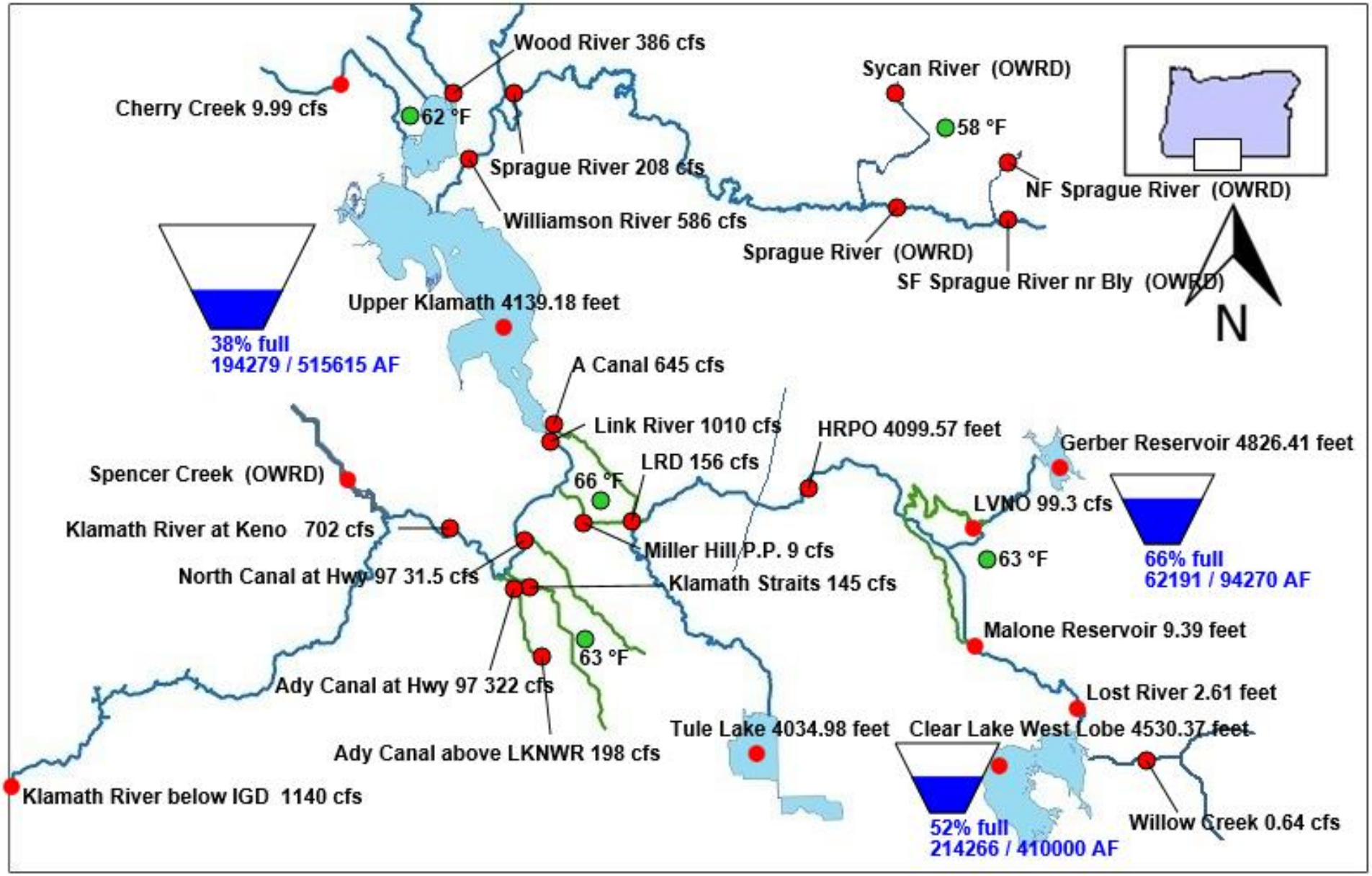
SWAI 6551 cfs

Warm Springs
90584/169639
53% Full

Owyhee
468892/715000
66% Full

ROMO 155 cfs

Mon Sep 11 2017 09:44:16 GMT-0700 (Pacific Daylight Time)

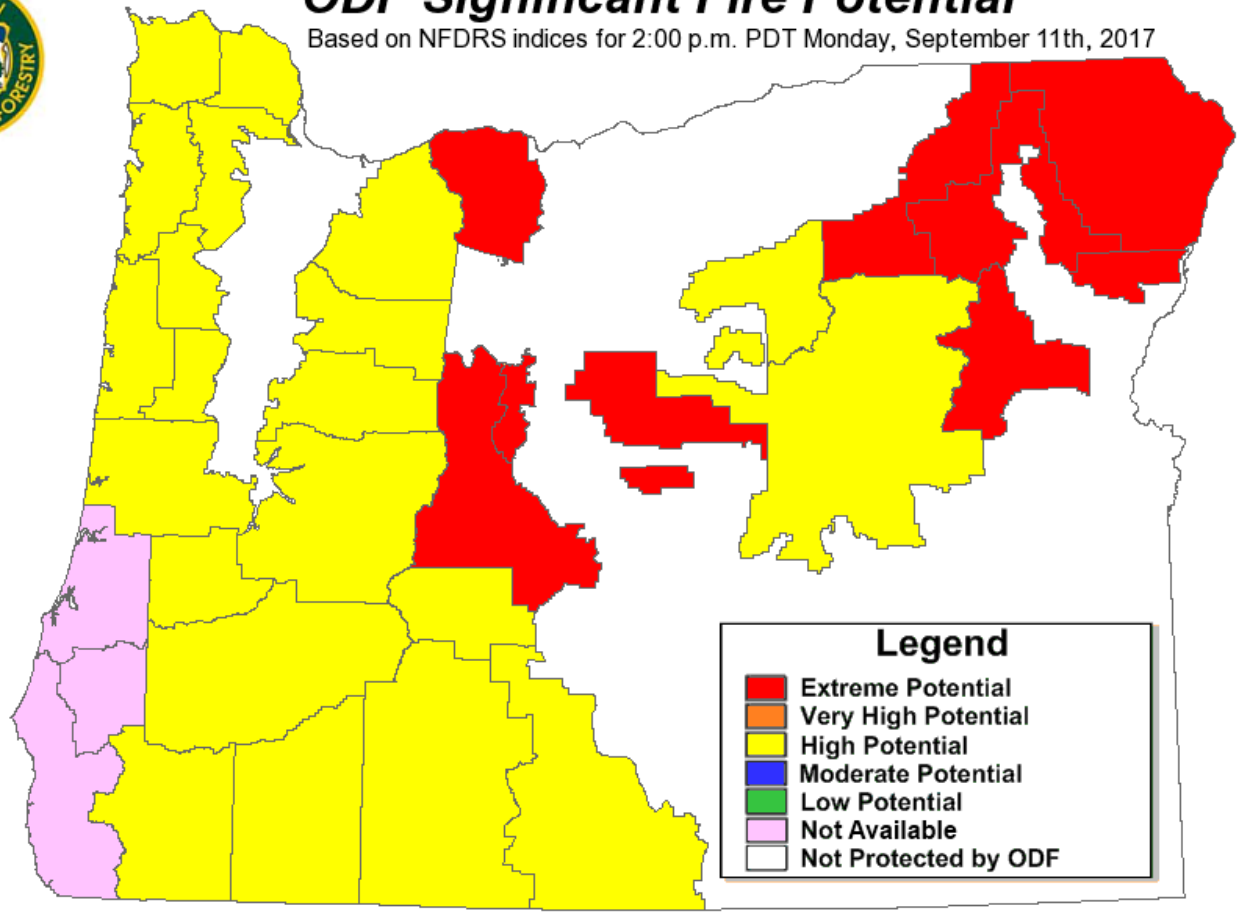


Thank You

WSAC Sig Fire Potential

ODF Significant Fire Potential

Based on NFDRS indices for 2:00 p.m. PDT Monday, September 11th, 2017



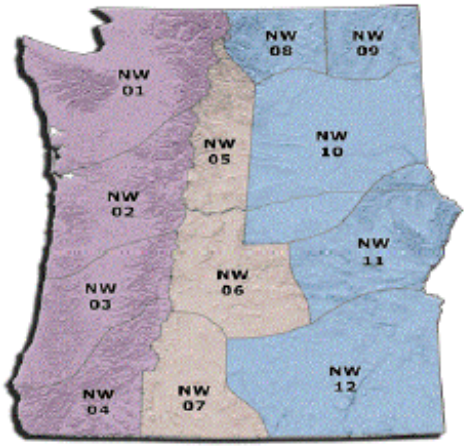
Updated: 8:33 a.m. PDT Tuesday, September 12th, 2017 (map does not display or represent Fire Danger or Regulated Use Restrictions).

Significant Fire Potential Map

Map Explanation

Map Calculation File

WSAC Forecast Fire Potential



Legend

Fire Environment (FEN) 4 levels	
Minimal	- The Overall Fire Environment suggests a very low risk for Large fires (**less than 1% chance**)
Normal	- The Overall Fire Environment suggests a normal risk for large fires (**1 - 4% chance**)
Elevated	- The Overall Fire Environment suggests a moderately high risk for large fires (**5 - 19% chance**)
High Risk	**The risk for large fire(s) is very high (≥ 20%)** **Triggers: 1. ⚡ (Significant Lightning)** **2. BEN (Critical Burn Environment)**

The assessment of the overall fire environment considers multiple factors including weather, lightning amount and fuel dryness. Large Fire probabilities are derived objectively via statistical methods. **High Risk** levels (≥ 20% probability of a large fire) are almost always due to significant lightning as burning conditions alone rarely result in a large fire probability much above about 10%.

Pacific Northwest 7 Day Significant Fire Potential

Tuesday, September 12, 2017

Predictive Service Areas	ytd	tdy	Wed	Thu	Fri	Sat	Sun	Mon
NW01								
NW02								
NW03								
NW04								
NW06								
NW08								
NW07								
NW08								
NW09								
NW10								
NW11								
NW12								

Fire Potential: Warm and dry conditions will prevail over Eastern Washington today. Elsewhere, a cold front will bring increasing humidity, clouds and chances for showers through the day.

There is a threat for scattered lightning, mainly over southern and eastern Oregon today into tonight. The lightning will bring a potential for new ignitions and moderate initial attack with a low-end elevated risk for large new fires.

The frontal passage will bring a transition to a gusty northwest winds today and tonight. Although the arriving air mass will be much cooler, humidity values will remain on the low side for areas east of the Cascades. This combination of dry, gusty will promote an increase in fire activity, mainly for eastern Washington winds tonight through Thursday.

Pay close attention to NWS fire weather planning forecasts, spot forecasts, and IMET forecasts for the weather details in your area.

Please call NWCC Predictive Services (503) 808-2737 with any questions.

Preparedness Level:

Northwest:5
National: 5

- Amanda Graning