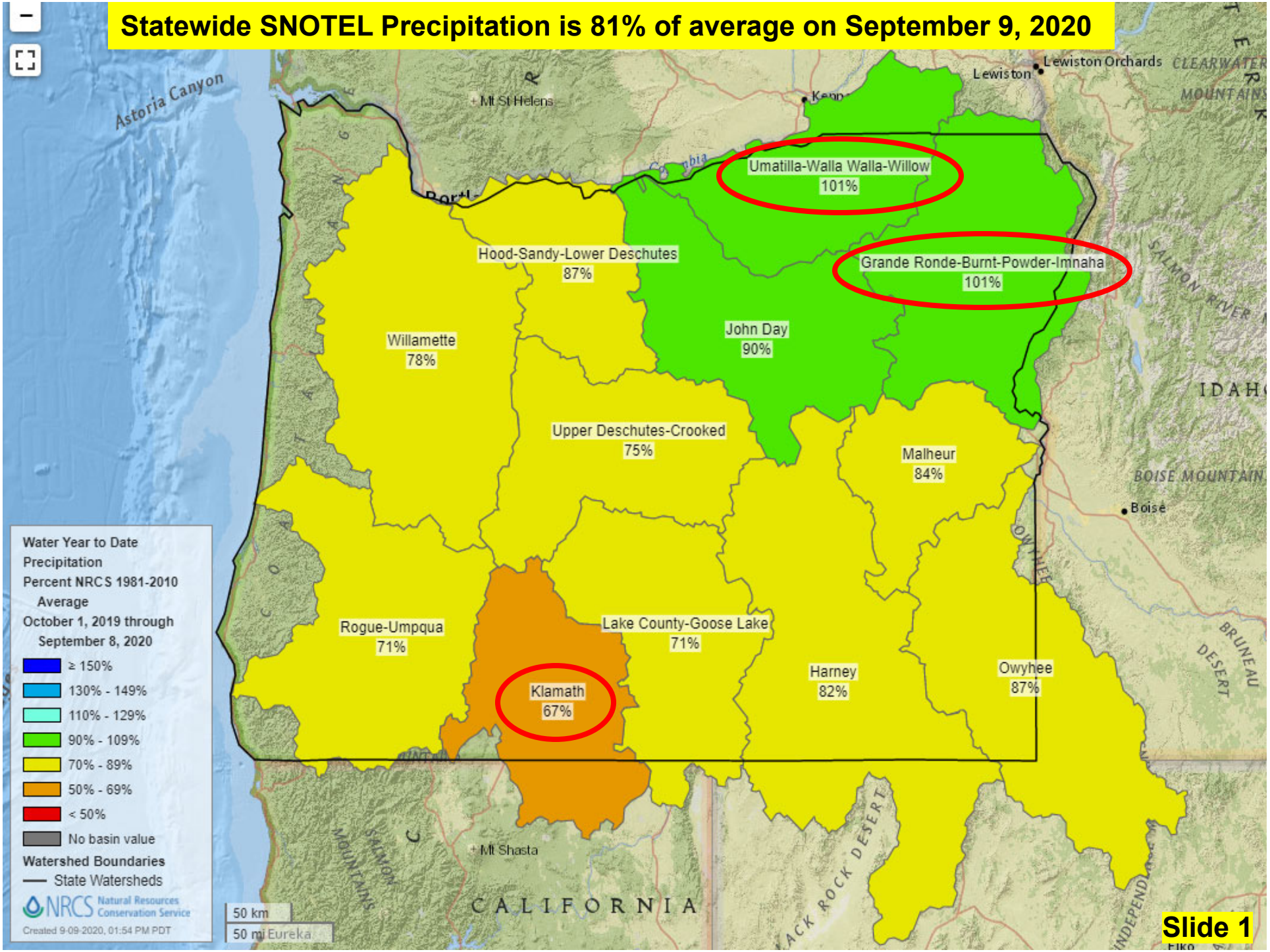
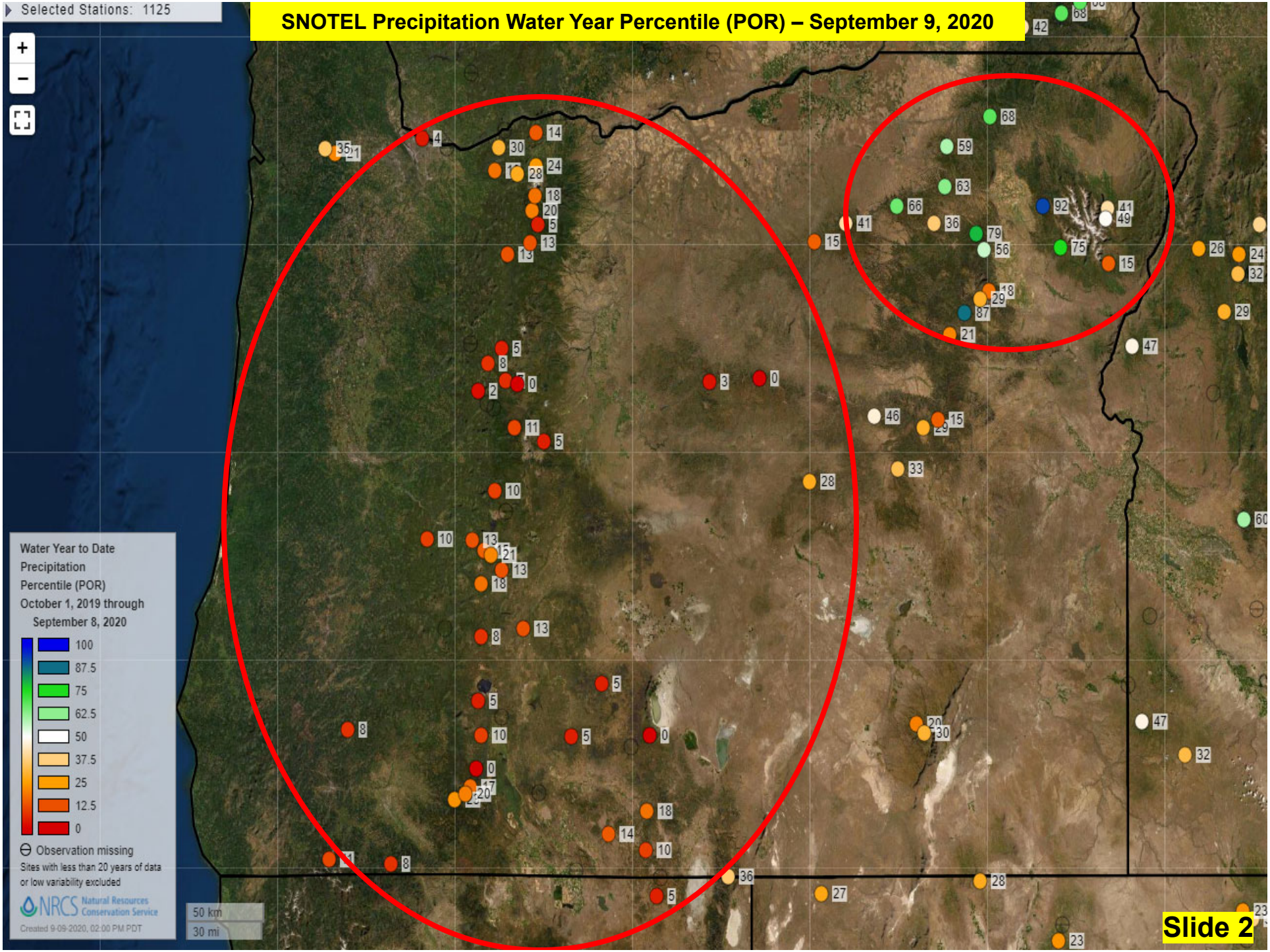
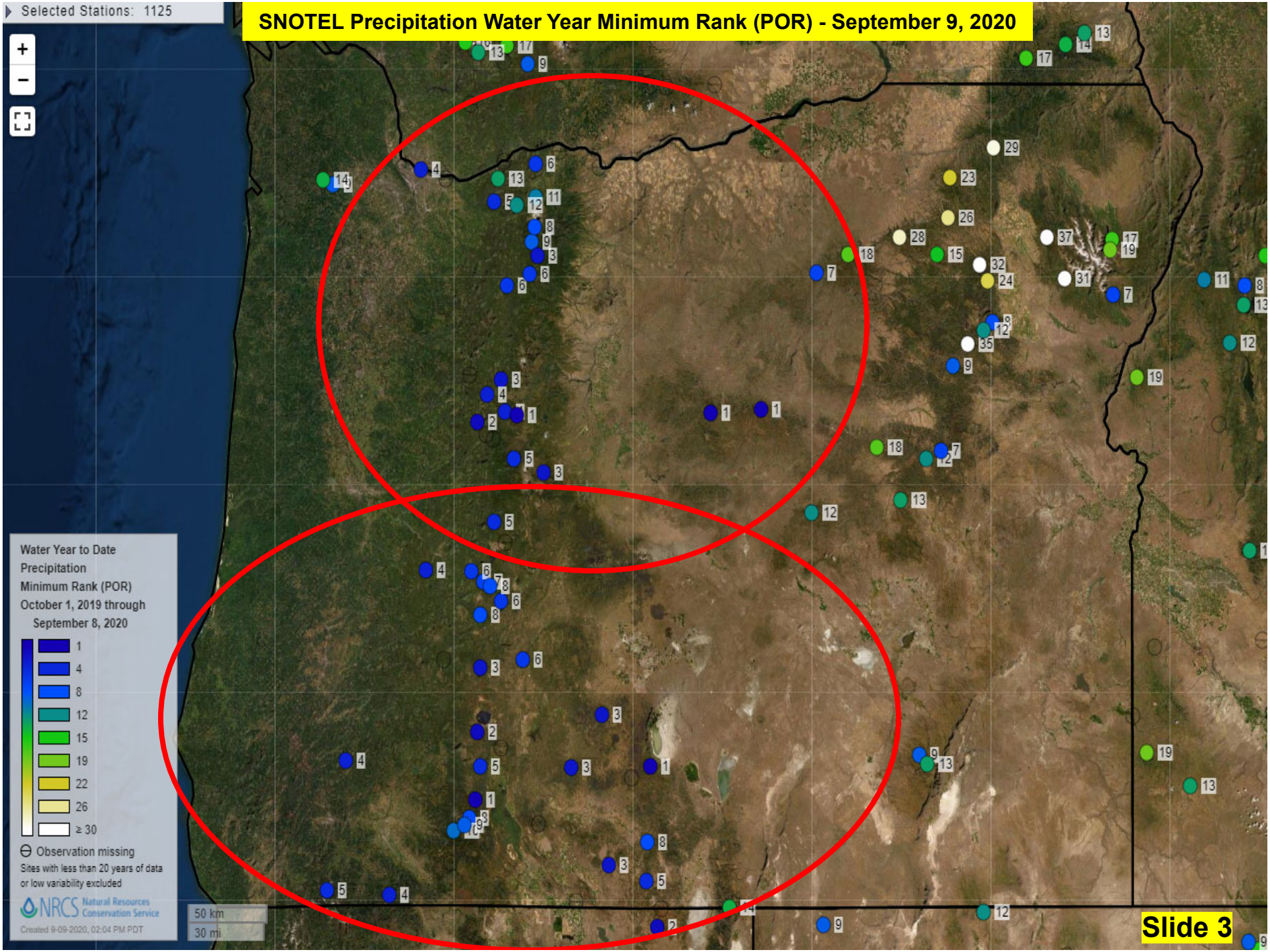
Oregon Water Supply Availability Committee – September 10, 2020

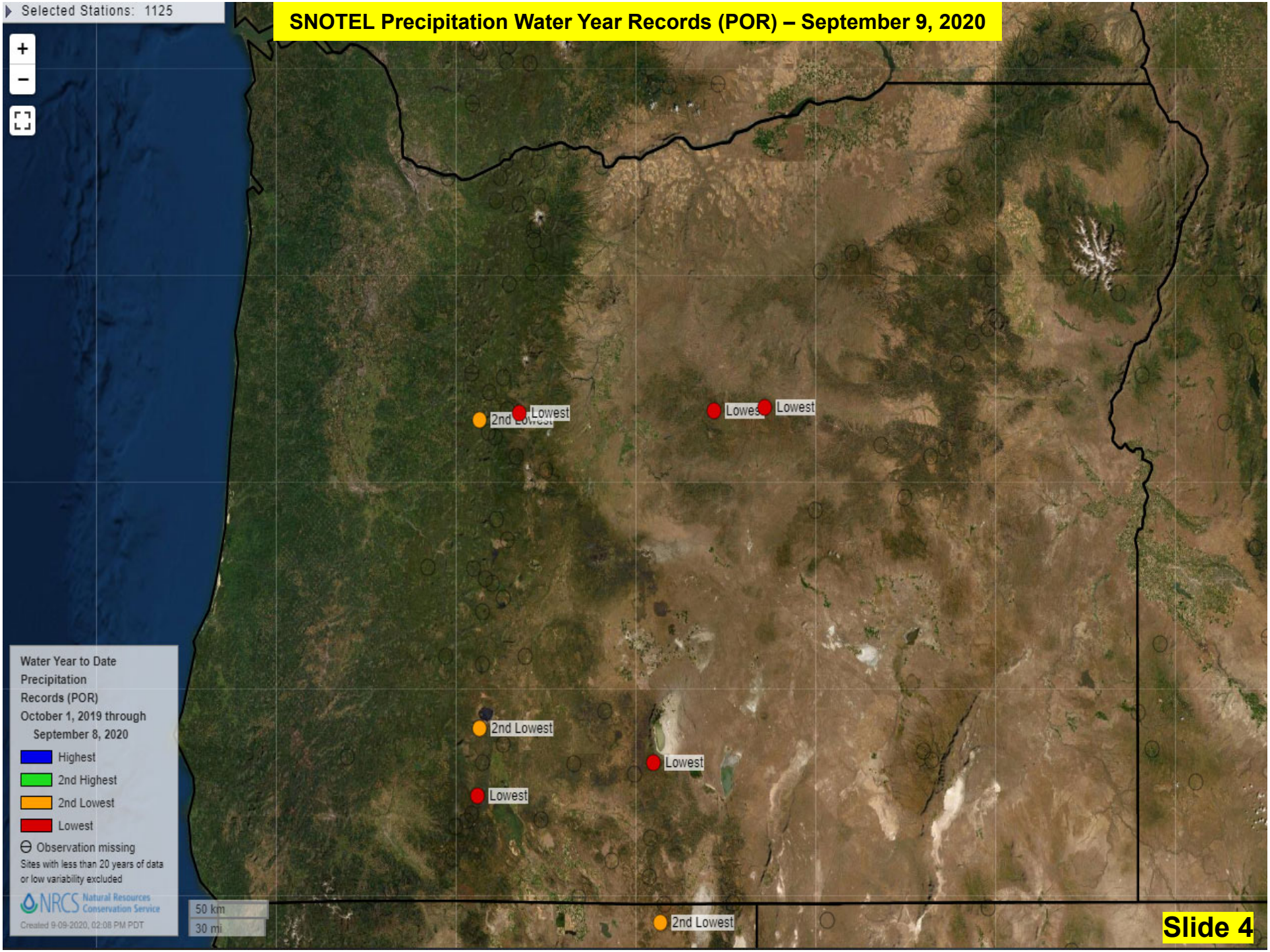
H. Scott Oviatt
USDA – Natural Resources Conservation Service
scott.oviatt@usda.gov
503-414-3271

Statewide SNOTEL Precipitation is 81% of average on September 9, 2020




Selected Stations: 1125
SNOTEL Precipitation Water Year Percentile (POR) – September 9, 2020
Water Year to Date
Precipitation
Percentile (POR)
October 1, 2019 through
September 8, 2020
100
87.5
75
62.5
50
37.5
25
12.5
0
Observation missing
Sites with less than 20 years of data
or low variability excluded
NRCS Natural Resources Conservation Service
Created 9-09-2020, 02:00 PM PDT
50 km
30 mi
Slide 2


Selected Stations: 1125
SNOTEL Precipitation Water Year Minimum Rank (POR) - September 9, 2020
Water Year to Date
Precipitation
Minimum Rank (POR)
October 1, 2019 through
September 8, 2020
1
4
8
12
15
19
22
26
≥ 30
Observation missing
Sites with less than 20 years of data
or low variability excluded
NRCS Natural Resources Conservation Service
Created 9-09-2020, 02:04 PM PDT
50 km
30 mi
Slide 3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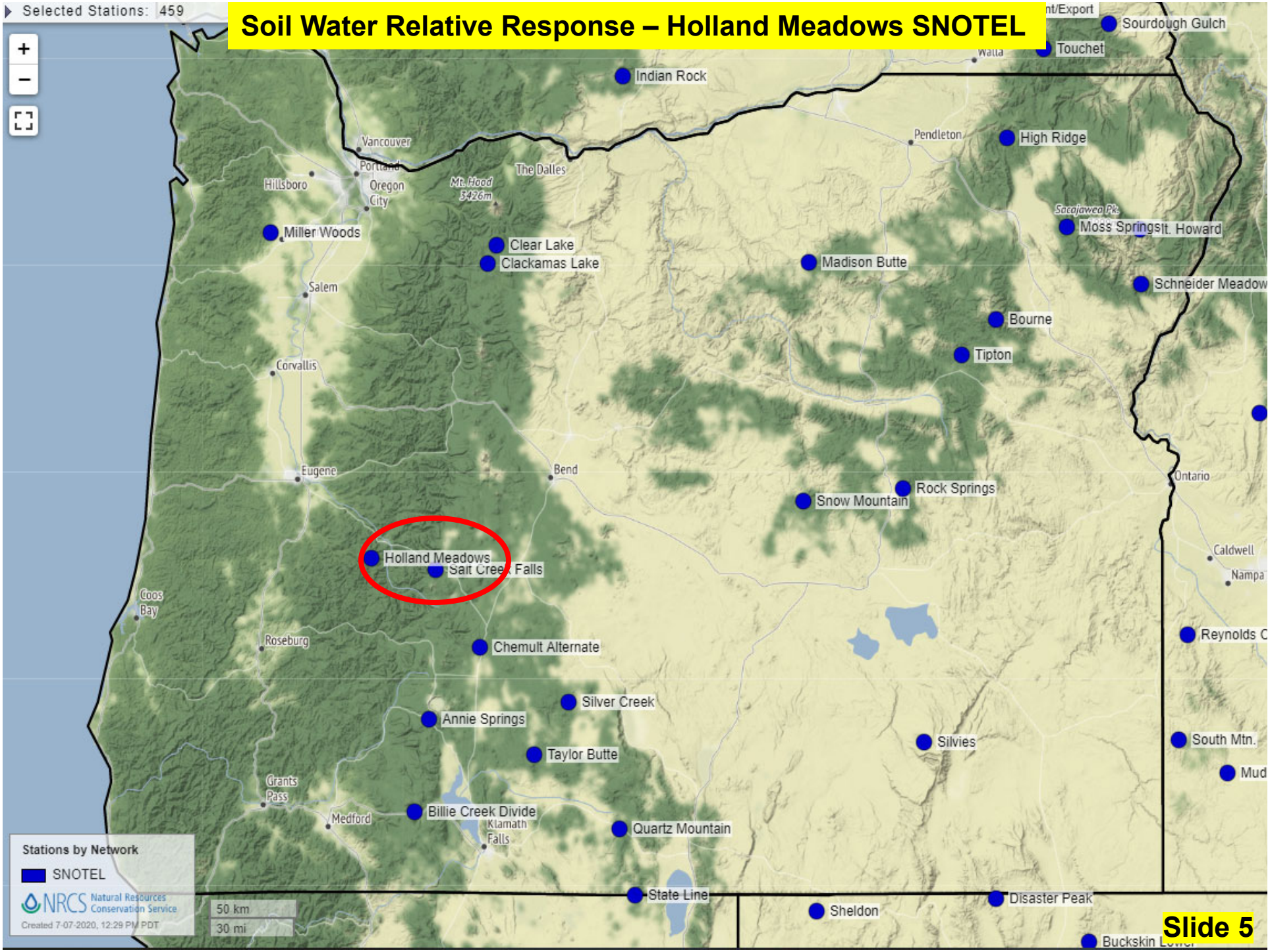
SNOTEL Precipitation Water Year Records (POR) – September 9, 2020
Lowest
Lowest
Lowest
2nd Lowest
Lowest
2nd Lowest
Water Year to Date Precipitation Records (POR)
October 1, 2019 through September 8, 2020
Highest
2nd Highest
2nd Lowest
Lowest
Observation missing
Sites with less than 20 years of data or low variability excluded
NRCS Natural Resources Conservation Service
Created 9-09-2020, 02:08 PM PDT
50 km
30 mi
Slide 4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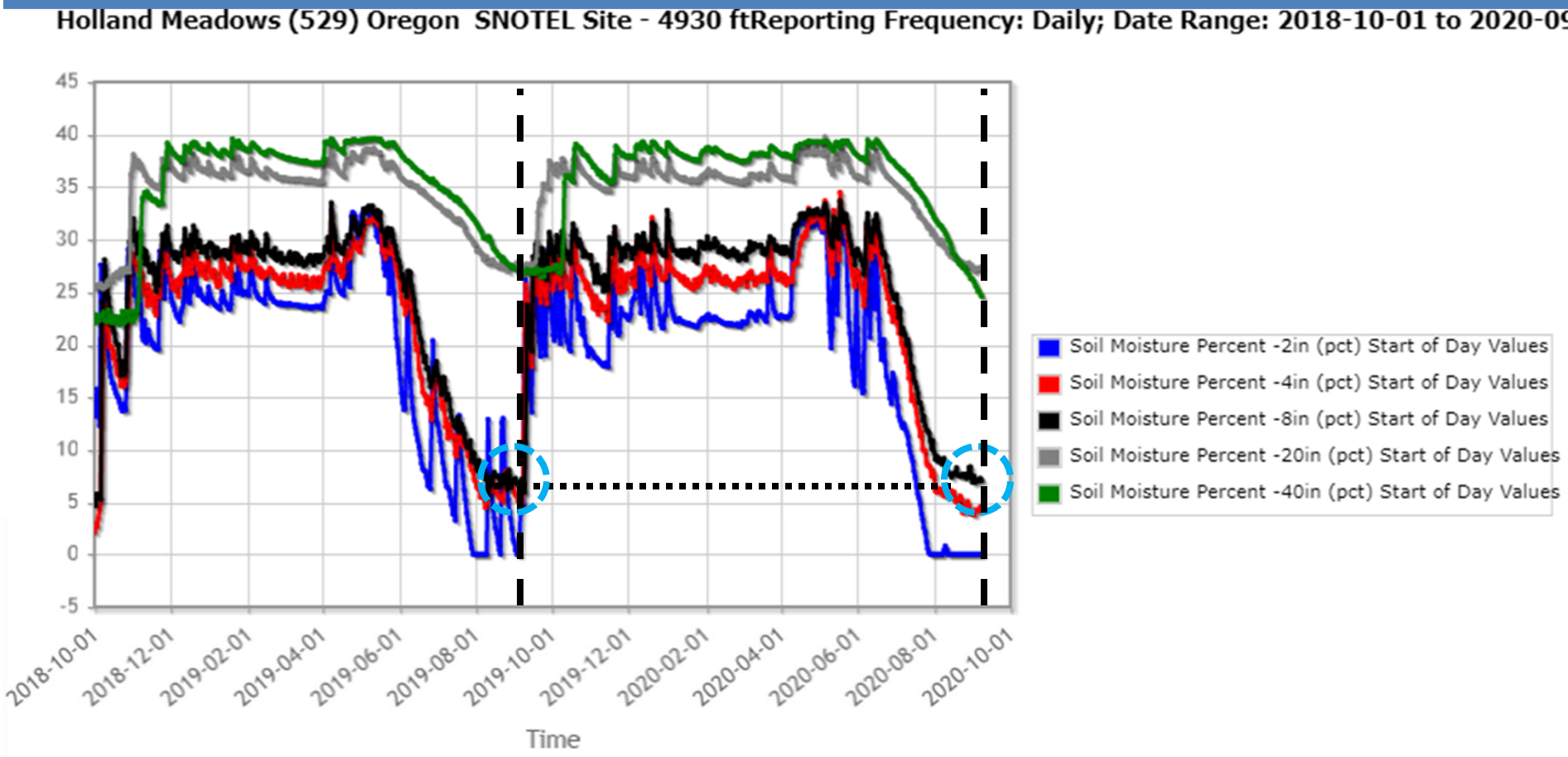
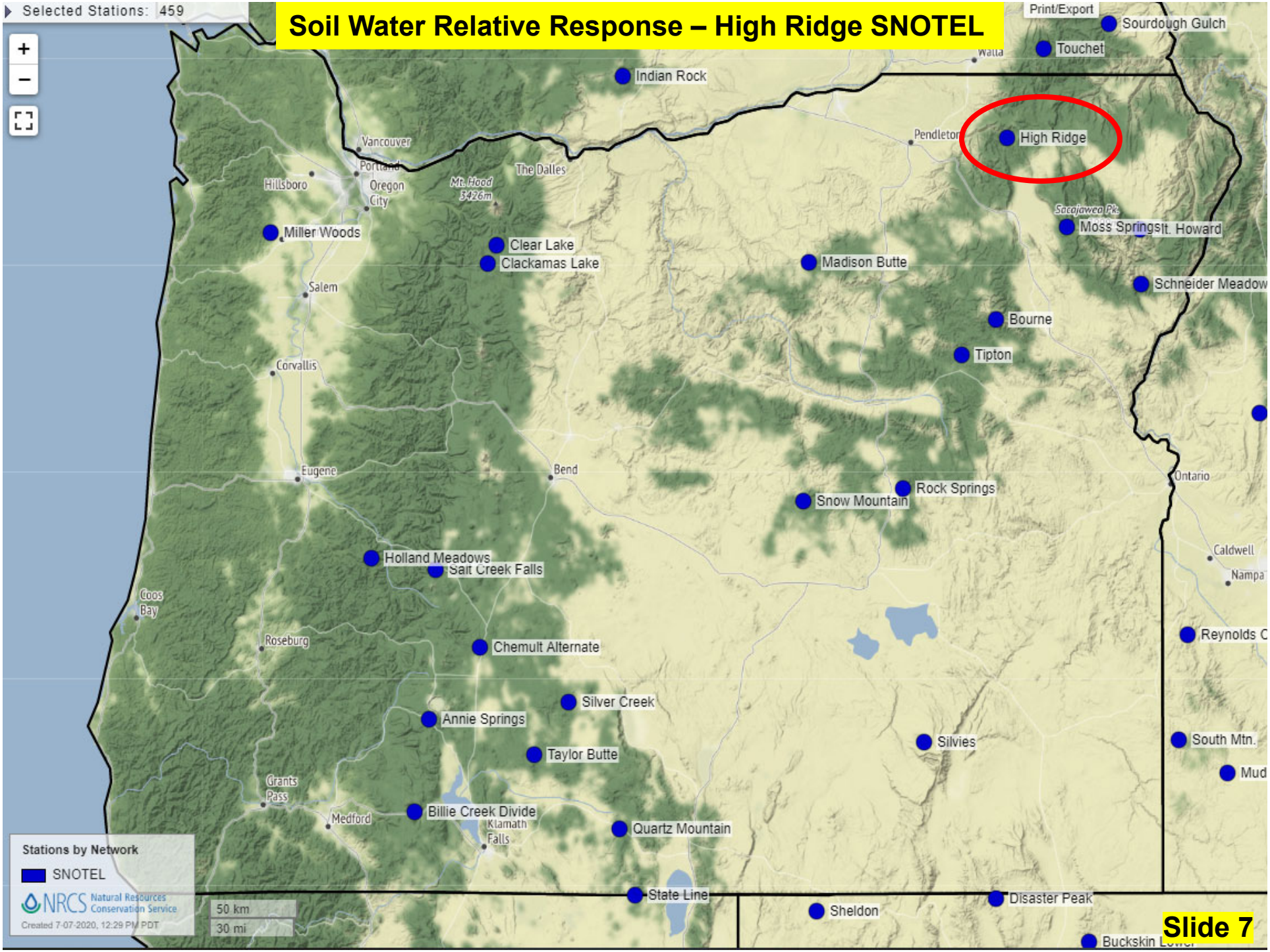
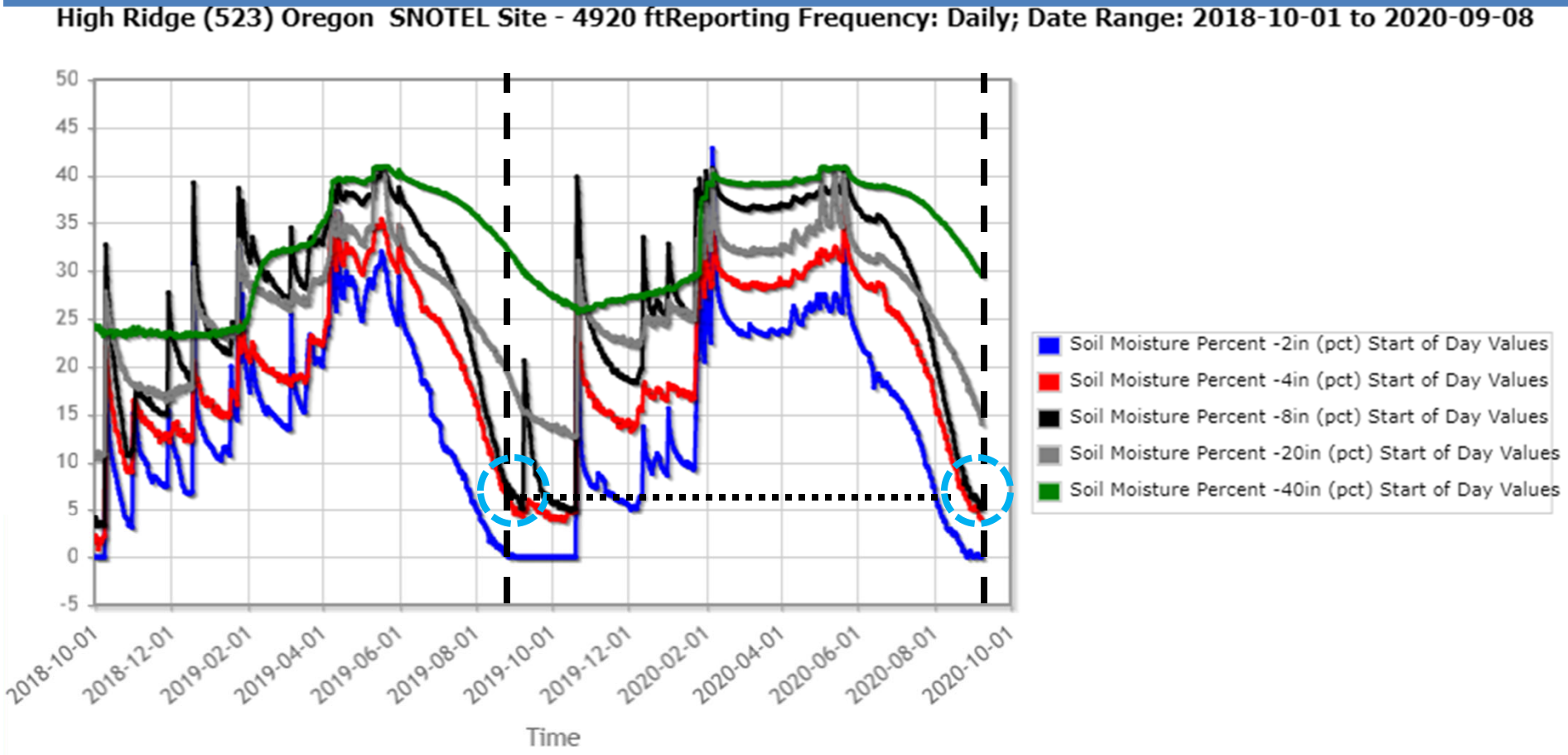
Soil Water Relative Response – Holland Meadows SNOTEL
Sourdough Gulch
Touchet
Indian Rock
Pendleton
High Ridge
Vancouver
Portland
Hillsboro
Oregon City
The Dalles
Mt. Hood 5426m
Miller Woods
Clear Lake
Clackamas Lake
Madison Butte
Moss Springs
Schneider Meadow
Salem
Bourne
Tipton
Corvallis
Eugene
Bend
Rock Springs
Snow Mountain
Ontario
Holland Meadows
Falls
Caldwell
Nampa
Coos Bay
Roseburg
Chemult Alternate
Reynolds C
Silver Creek
Annie Springs
Silvies
South Mtn.
Taylor Butte
Grants Pass
Medford
Billie Creek Divide
Klamath Falls
Quartz Mountain
State Line
Sheldon
Disaster Peak
Stations by Network
SNOTEL
NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT
50 km
30 mi
Slide 5

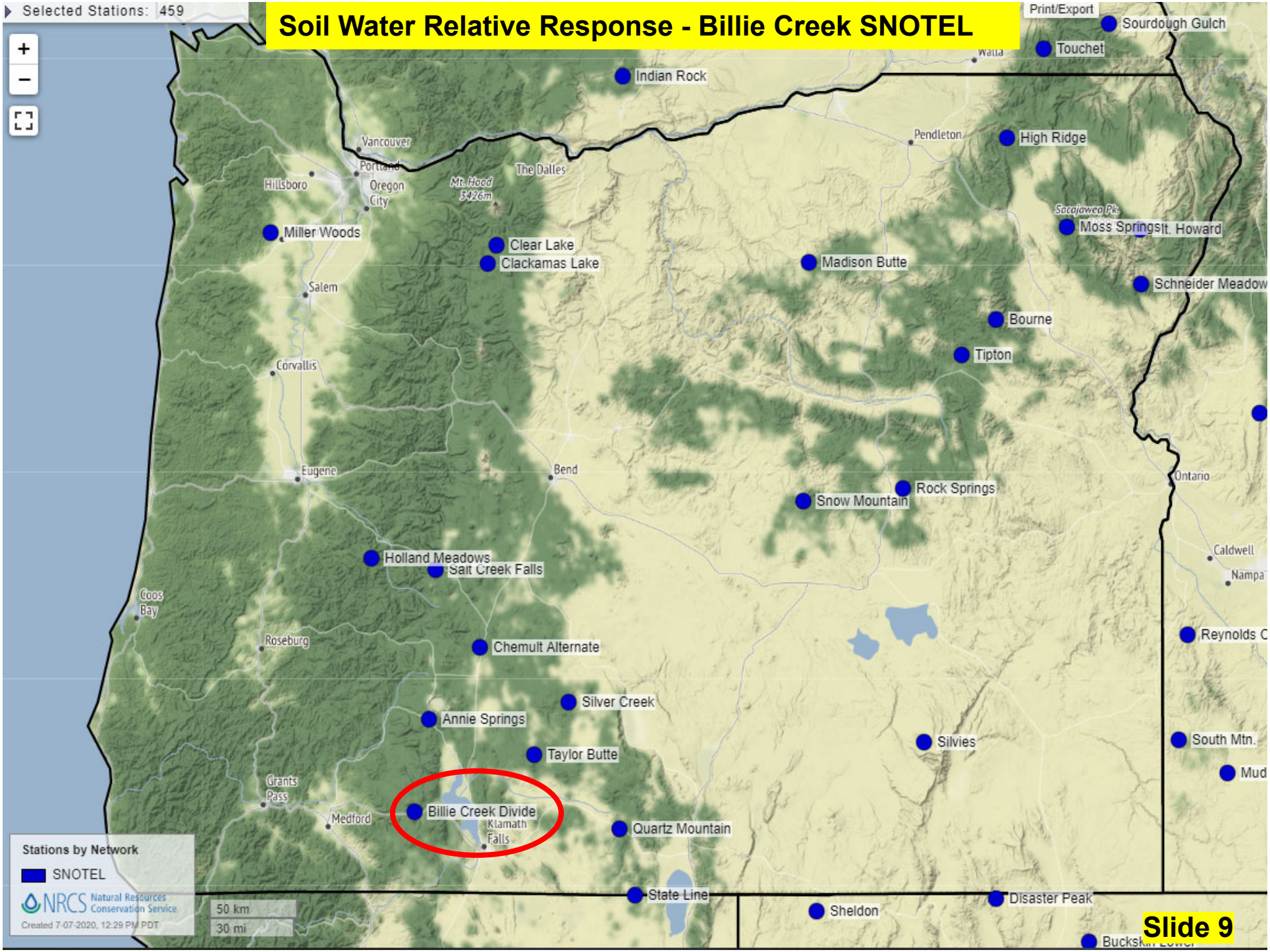
Soil Water Relative Response – Holland Meadows SNOTEL




Selected Stations: 459
Soil Water Relative Response – High Ridge SNOTEL
Print/Export
Sourdough Gulch
Touchet
Indian Rock
High Ridge
Pendleton
Vancouver
Portland
Hillsboro
Oregon City
Mt. Hood 5426m
The Dalles
Miller Woods
Clear Lake
Clackamas Lake
Madison Butte
Sacajawea Pk
Moss Springs
Mt. Howard
Schneider Meadow
Salem
Bourne
Tipton
Corvallis
Eugene
Bend
Rock Springs
Snow Mountain
Ontario
Holland Meadows
Salt Creek Falls
Caldwell
Nampa
Coos Bay
Roseburg
Chemult Alternate
Reynolds C
Silver Creek
Annie Springs
Silvies
South Mtn.
Taylor Butte
Mud
Grants Pass
Medford
Billie Creek Divide
Klamath Falls
Quartz Mountain
State Line
Sheldon
Disaster Peak
Buckskin
Stations by Network
SNOTEL
NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT
50 km
30 mi
Slide 7

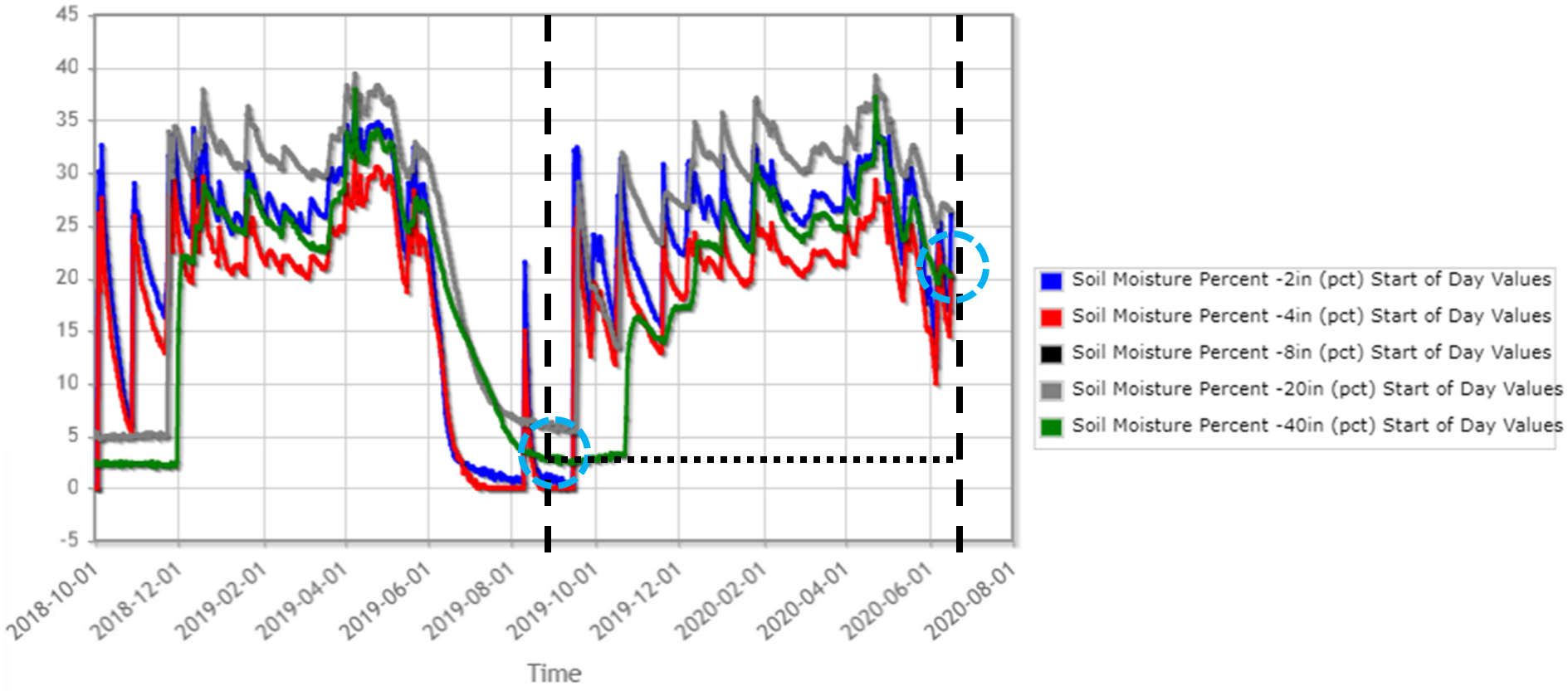
Soil Water Relative Response – High Ridge SNOTEL

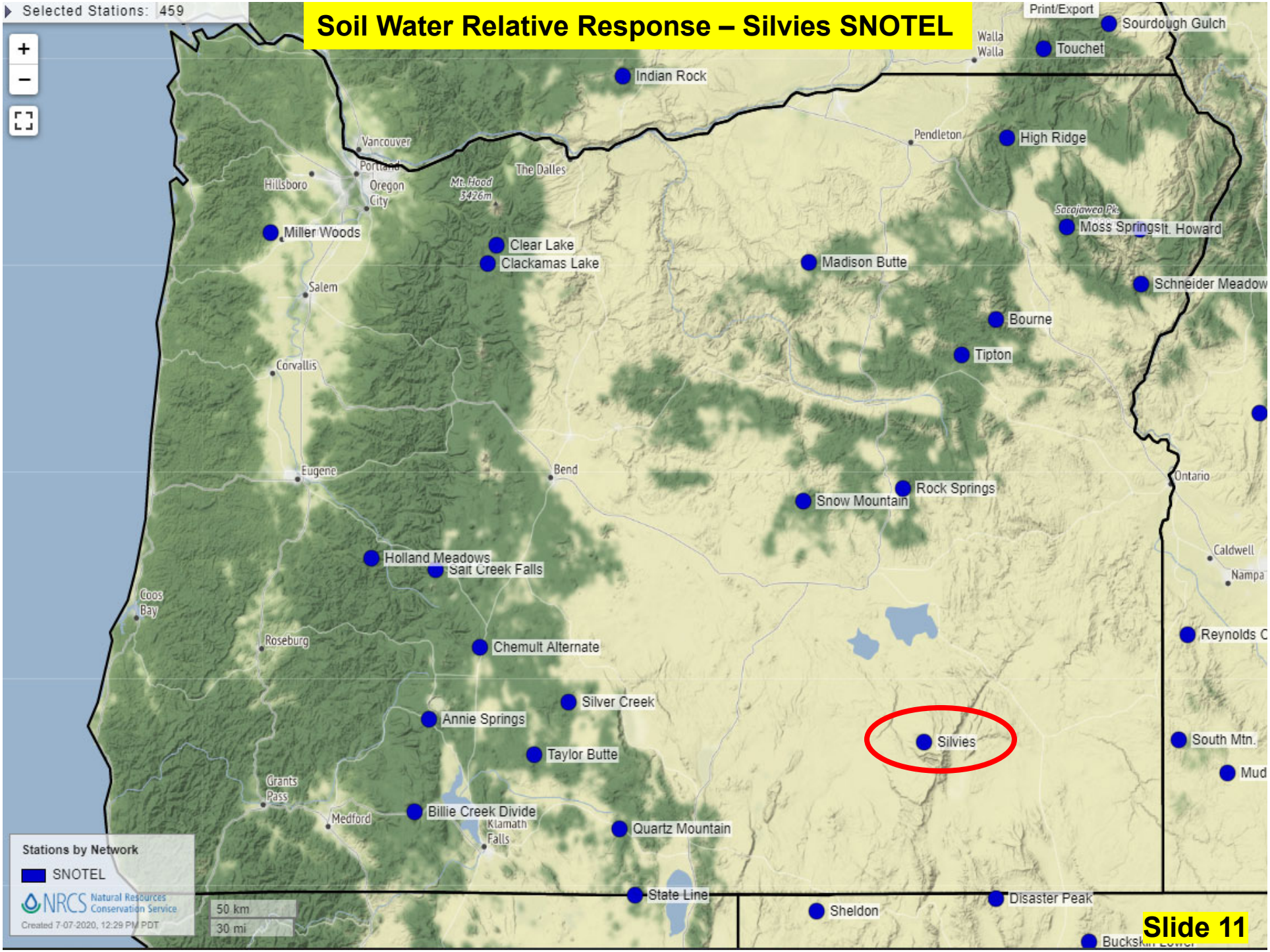



Selected Stations: 459
Soil Water Relative Response - Billie Creek SNOTEL
Print/Export
Sourdough Gulch
Touchet
Indian Rock
Pendleton
High Ridge
Vancouver
Portland
Hillsboro
Oregon City
The Dalles
Mt. Hood 5426m
Sacajawea Pk
Moss Springs
Mt. Howard
Miller Woods
Clear Lake
Clackamas Lake
Madison Butte
Schneider Meadow
Salem
Bourne
Tipton
Corvallis
Eugene
Bend
Ontario
Rock Springs
Snow Mountain
Caldwell
Nampa
Holland Meadows
Salt Creek Falls
Coos Bay
Roseburg
Chemult Alternate
Reynolds C
Silver Creek
Annie Springs
Silvies
South Mtn.
Taylor Butte
Mud
Grants Pass
Medford
Billie Creek Divide
Klamath Falls
Quartz Mountain
State Line
Sheldon
Disaster Peak
Stations by Network
SNOTEL
NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT
50 km
30 mi
Slide 9

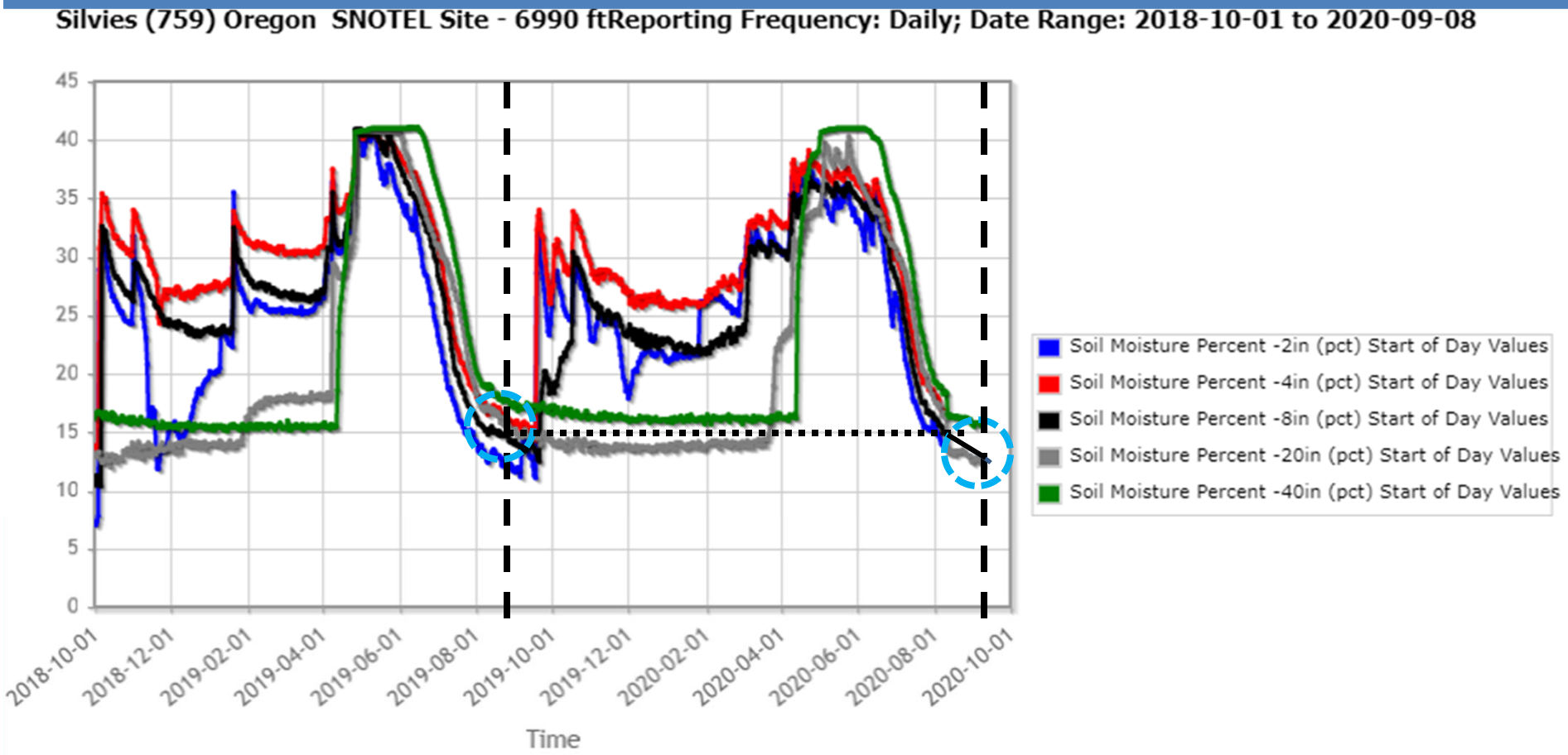
Soil Water Relative Response - Billie Creek SNOTEL

Billie Creek Divide (344) Oregon SNOTEL Site - 5280 ftReporting Frequency: Daily; Date Range: 2018-10-01 to 2020-09-

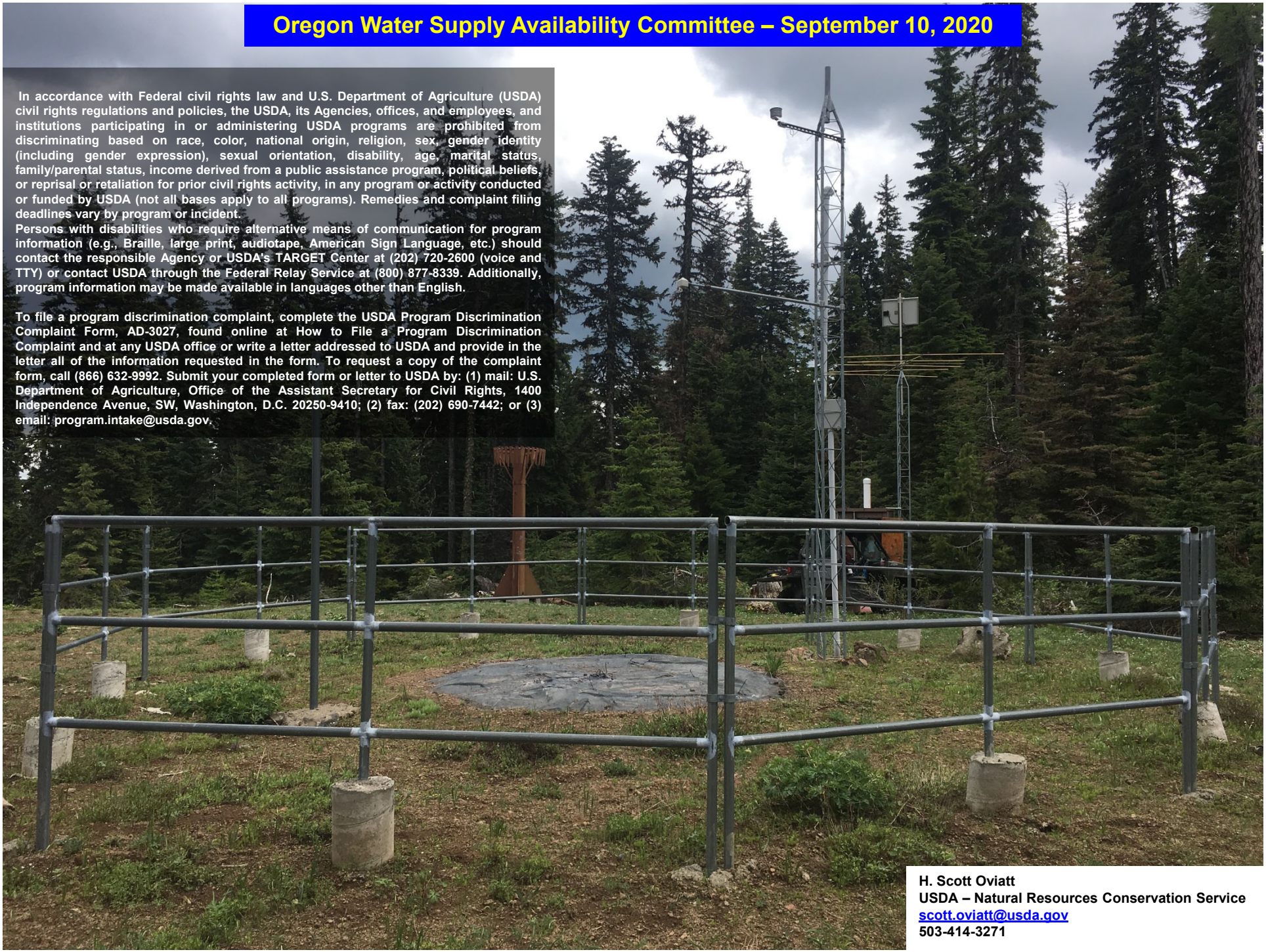



Selected Stations: 459
Soil Water Relative Response – Silvies SNOTEL
Print/Export
Sourdough Gulch
Touchet
Walla Walla
Indian Rock
Pendleton
High Ridge
Vancouver
Portland
Hillsboro
Oregon City
Mt. Hood 5426m
The Dalles
Sacajawea Pk
Moss Springs
Mt. Howard
Miller Woods
Clear Lake
Clackamas Lake
Madison Butte
Schneider Meadow
Salem
Bourne
Tipton
Corvallis
Eugene
Bend
Ontario
Rock Springs
Snow Mountain
Caldwell
Nampa
Holland Meadows
Salt Creek Falls
Coos Bay
Roseburg
Chemult Alternate
Reynolds C
Silver Creek
Annie Springs
Silvies
South Mtn.
Taylor Butte
Mud
Grants Pass
Medford
Billie Creek Divide
Klamath Falls
Quartz Mountain
State Line
Disaster Peak
Sheldon
Stations by Network
SNOTEL
NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT
50 km
30 mi
Slide 11

Soil Water Relative Response – Silvies SNOTEL



Oregon Water Supply Availability Committee – September 10, 2020



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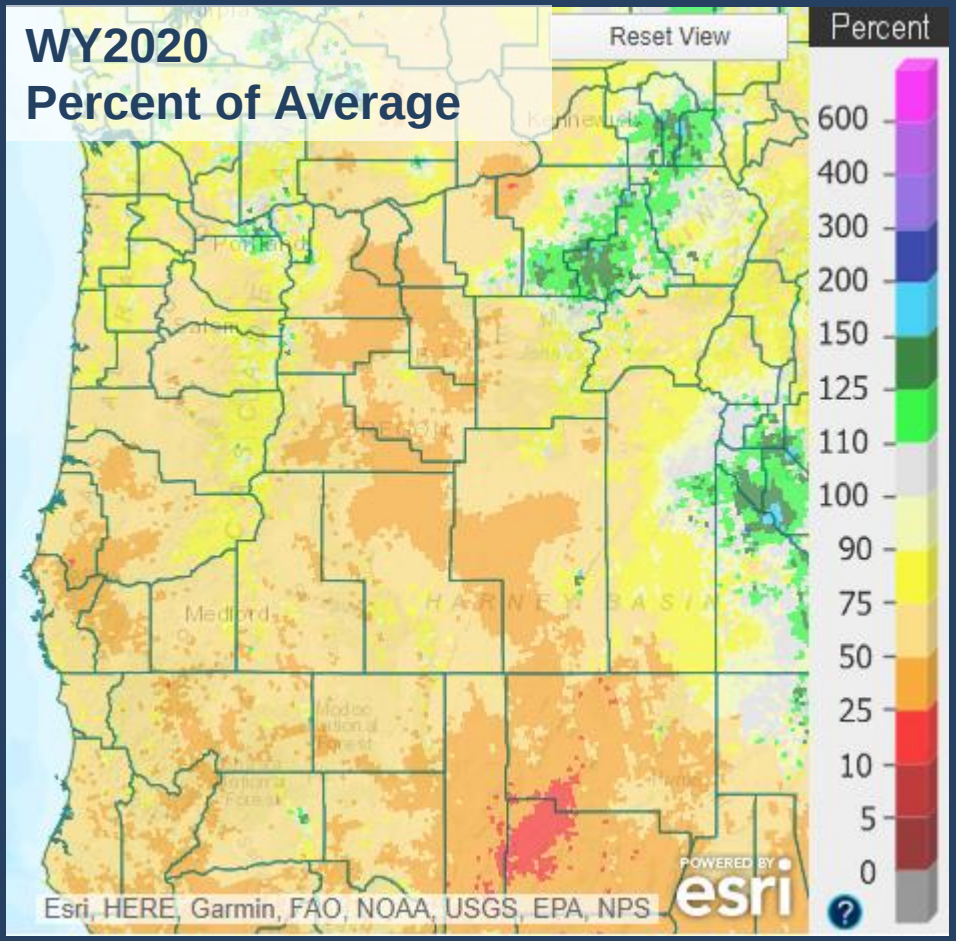
Oregon WSAC

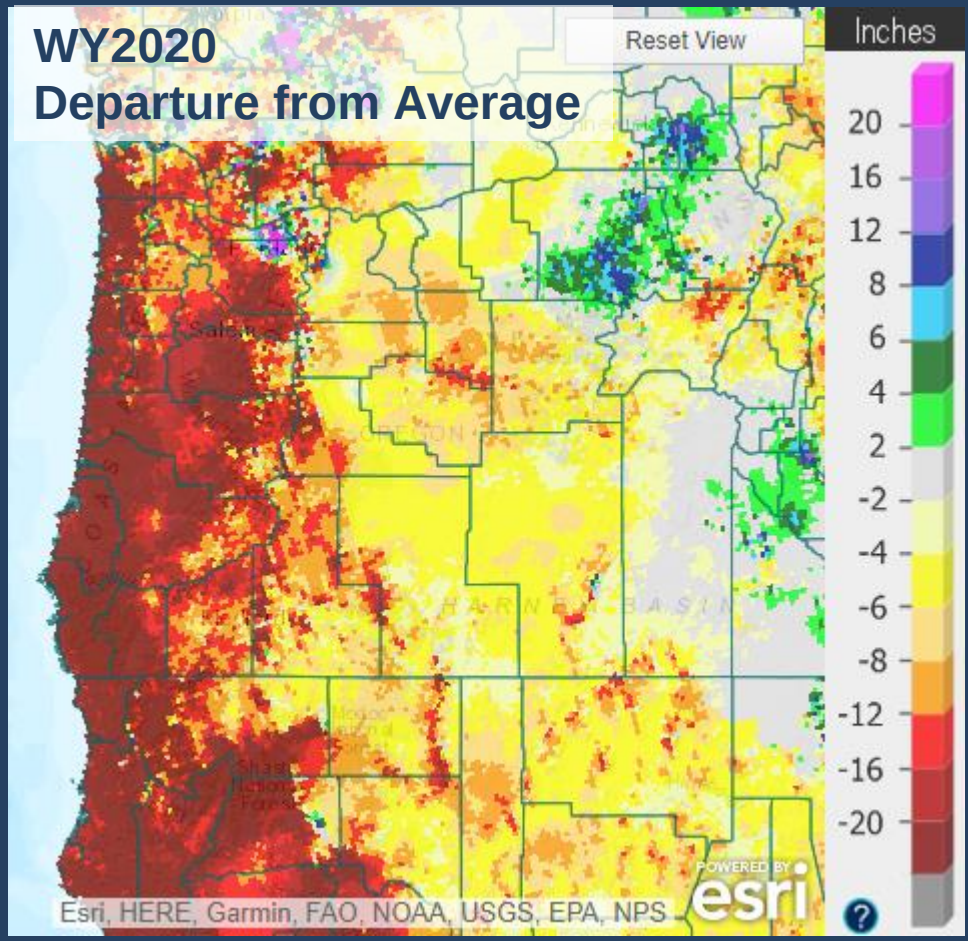
National Weather Service

Precipitation & Temperatures Update

Sept 10, 2020

Water Year Precipitation

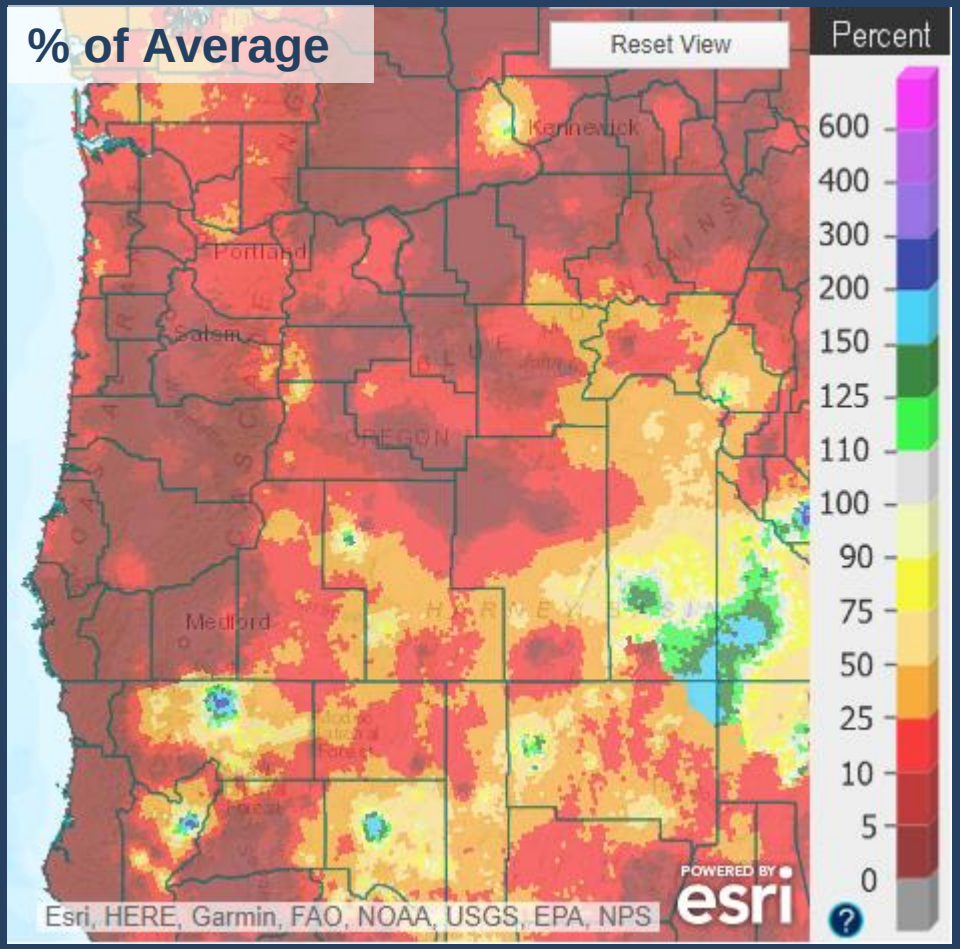


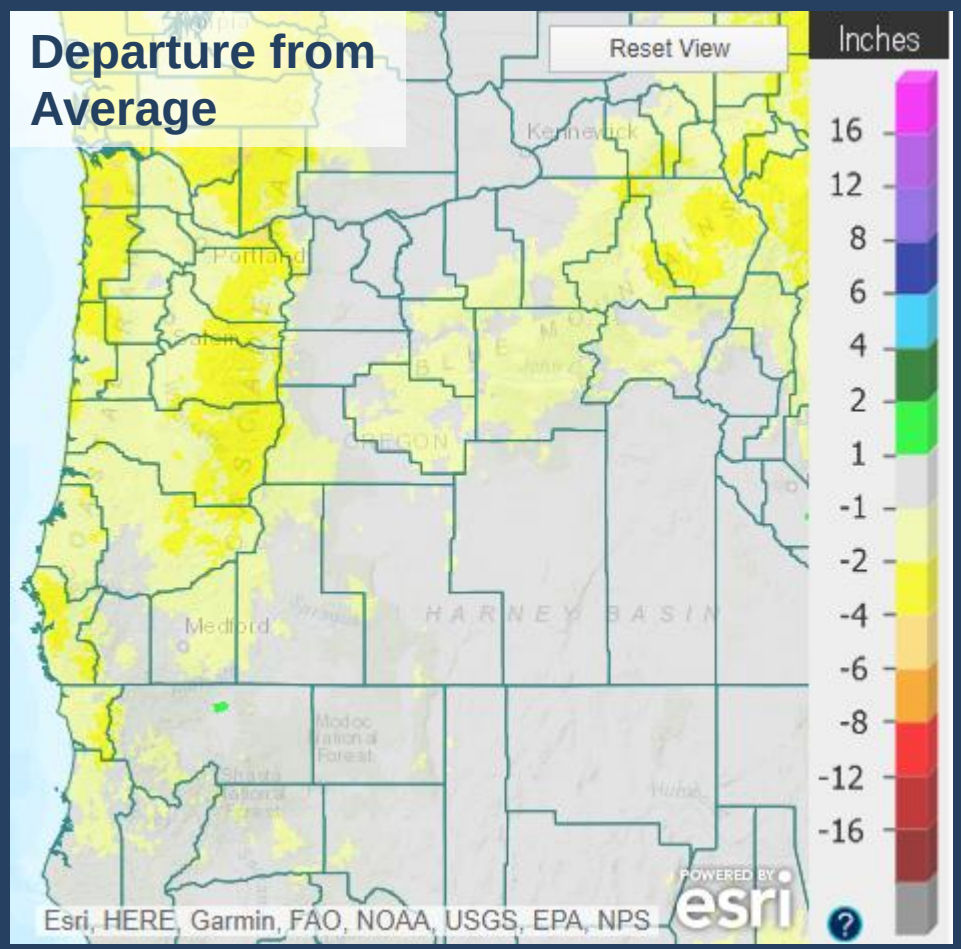


Precipitation Data as of Sept 10, 2020

Source: water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr

Precipitation – Past 60 Days



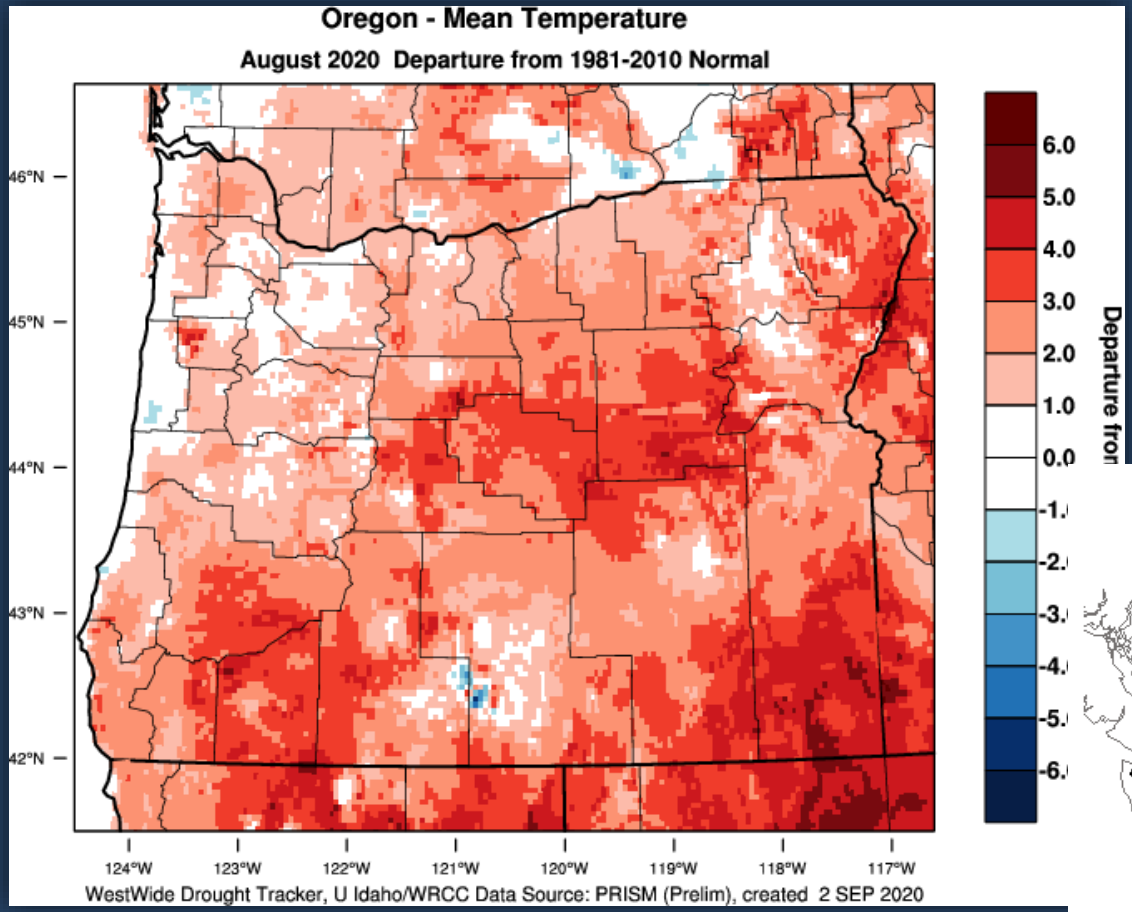


Precipitation Data as of Sept 10, 2020

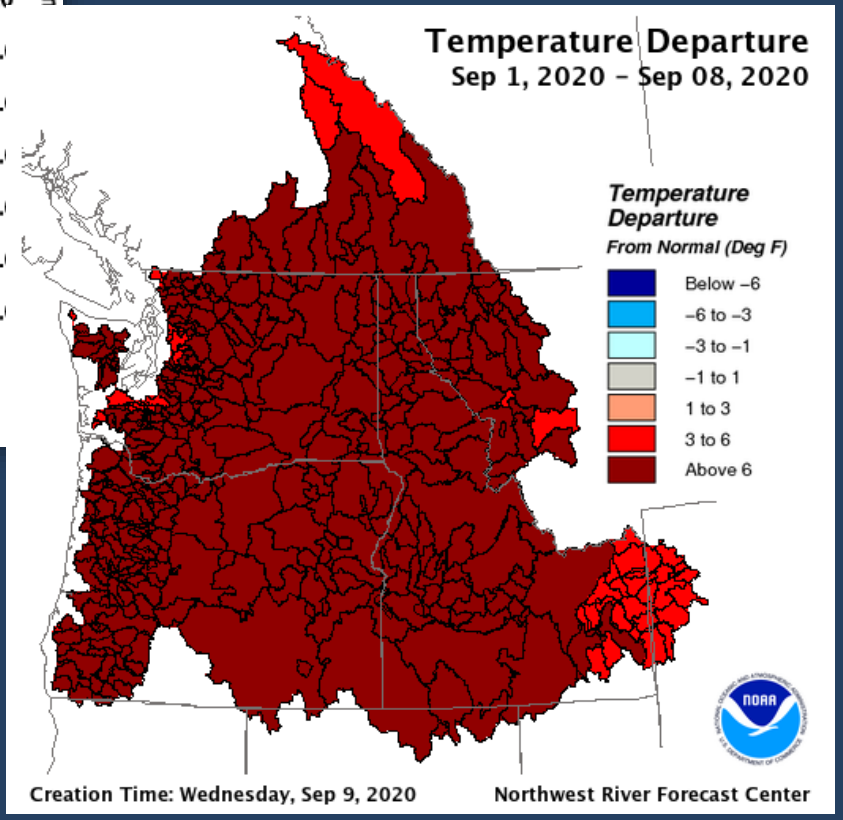
Source: water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr

Recent Temperatures

August 2020



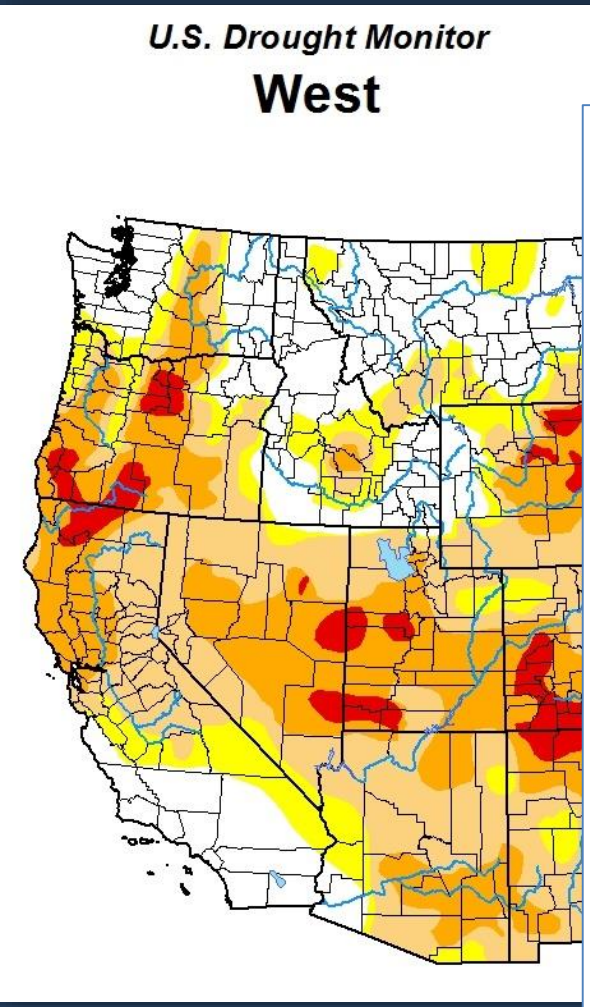
September 1 - 08, 2020

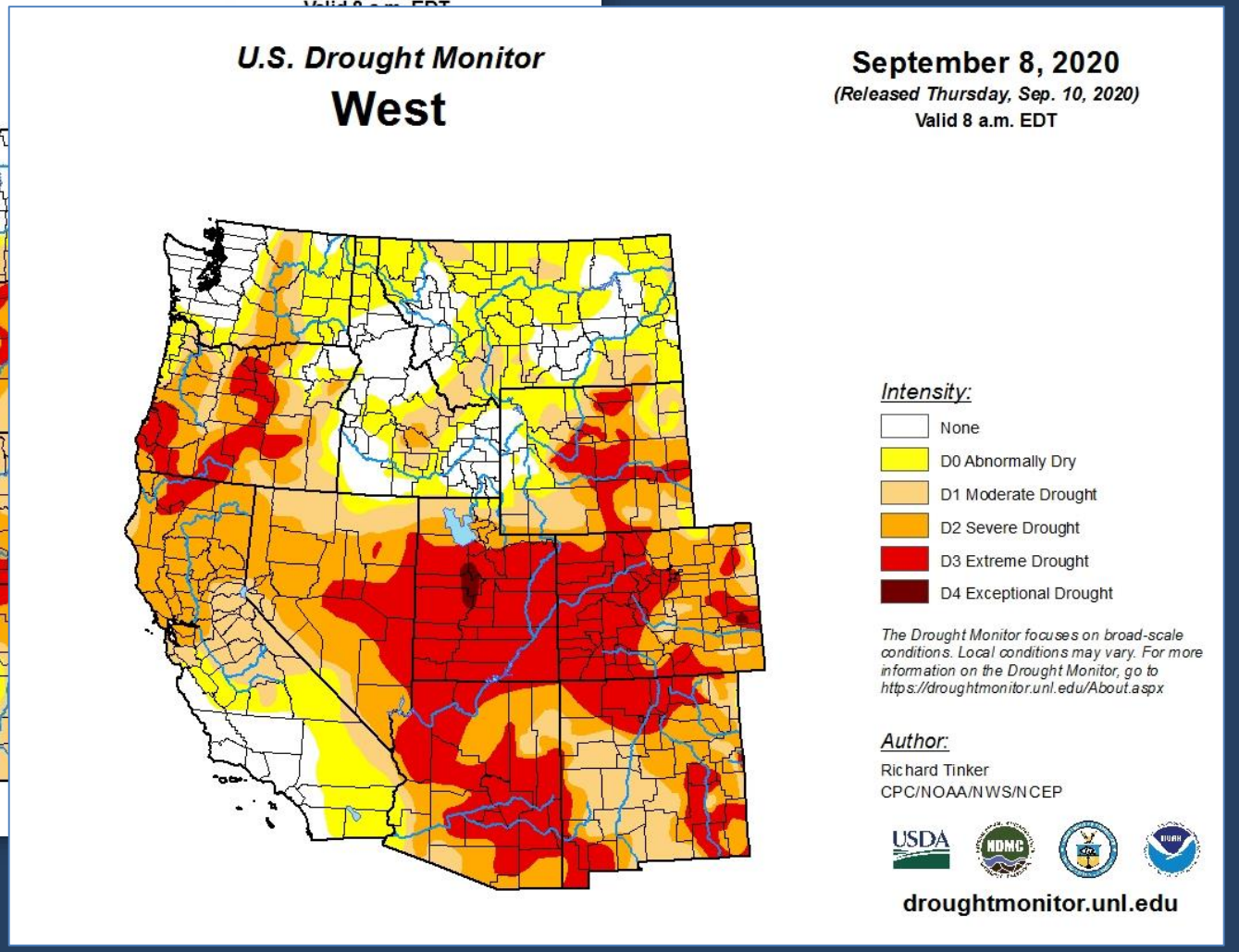


wrcc.dri.edu/wwdt/current.php?folder=mdn1

www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=2

Drought Monitor

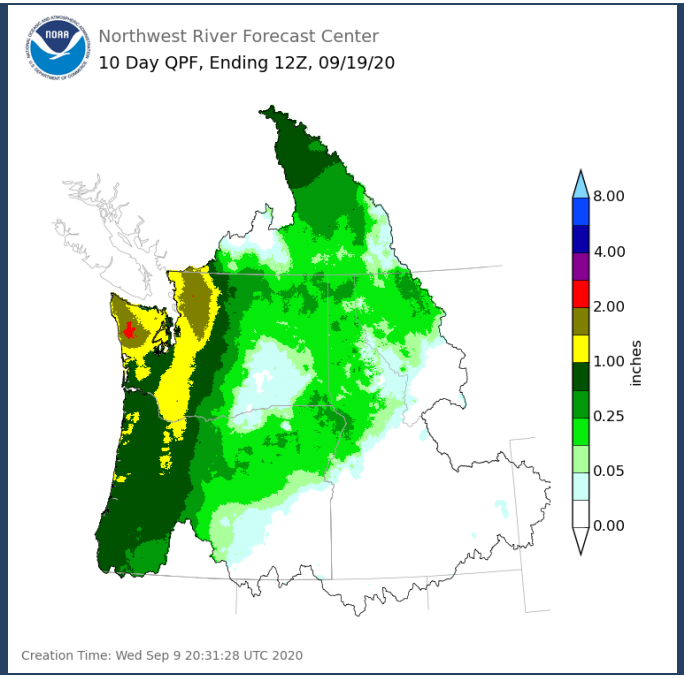


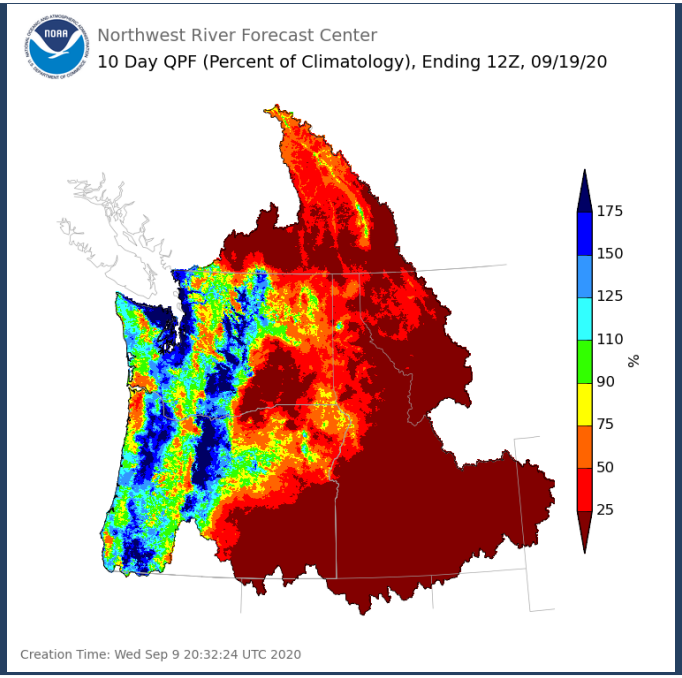


https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West

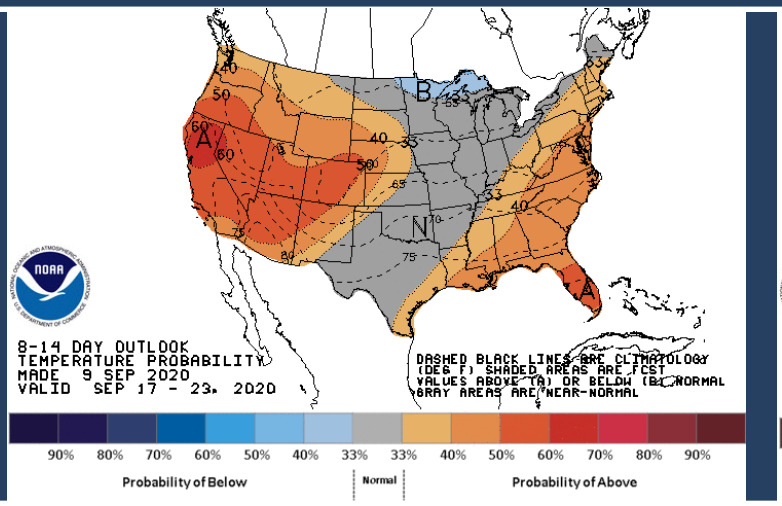
Mid/Late August Outlook

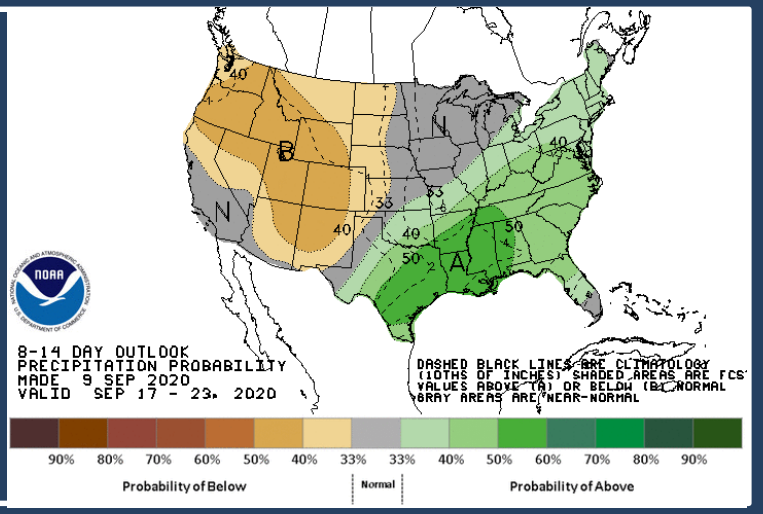
NWRFC
10-DAY
PRECIPITATION





CPC
8 – 14 DAY
OUTLOOK





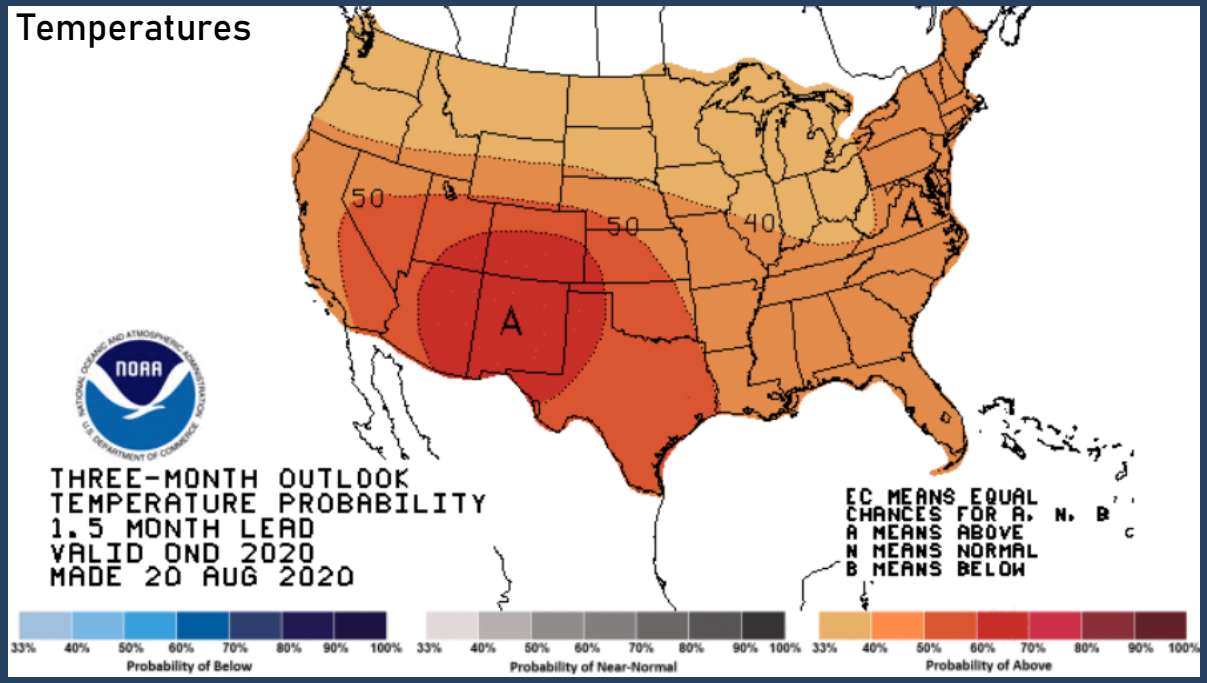
https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=3

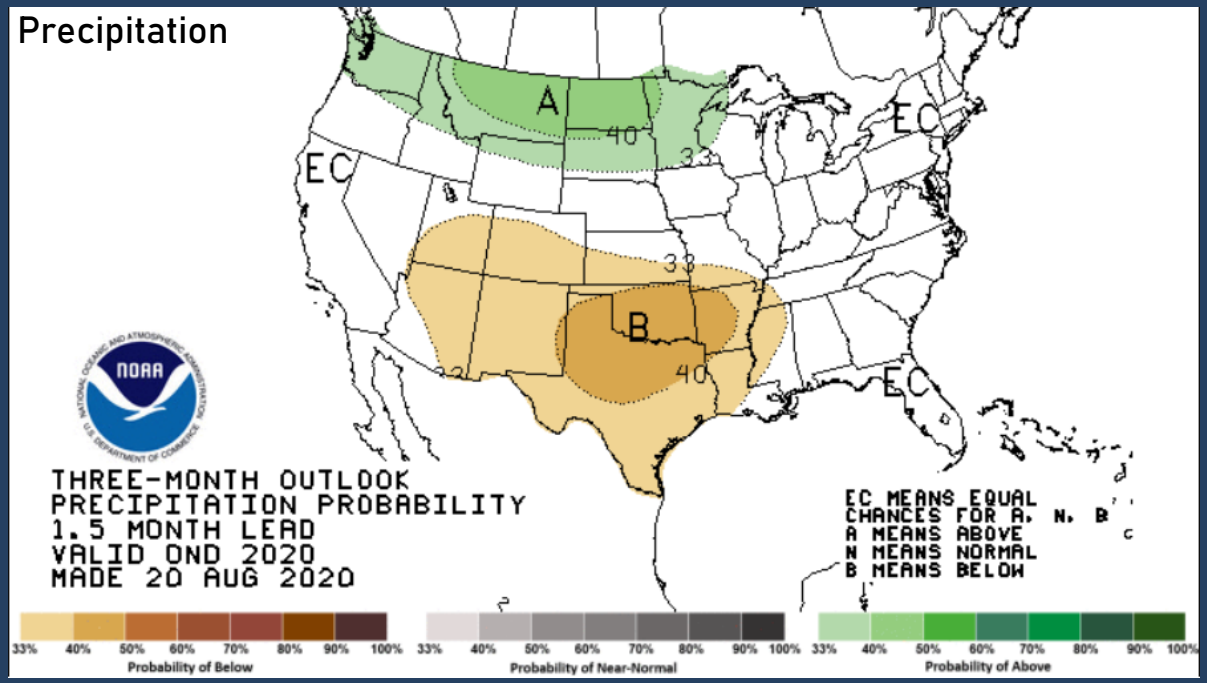
https://www.cpc.ncep.noaa.gov/products/predictions/814day/

Climate Prediction Center Outlook

Oct – Nov – Dec 2020

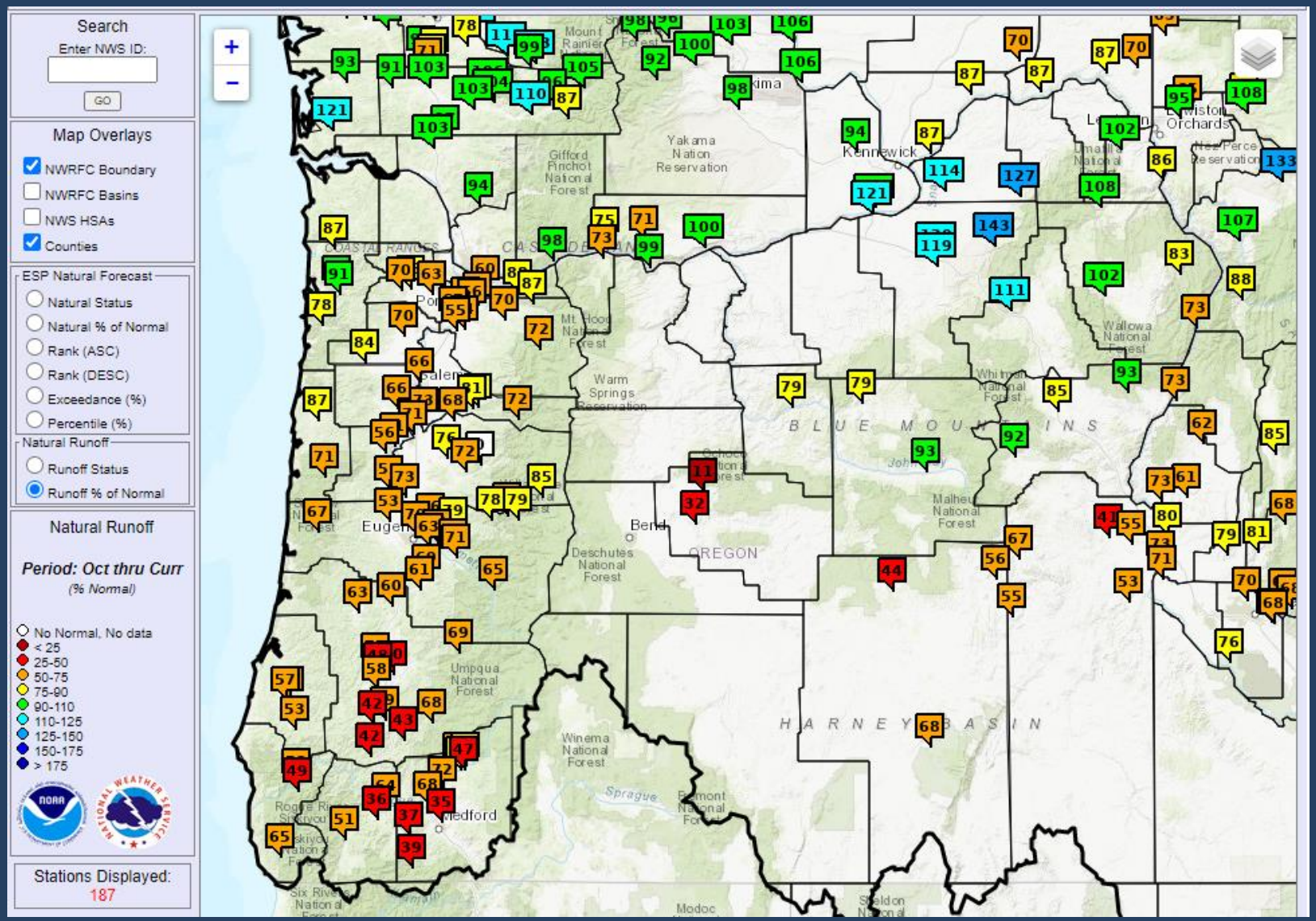
La Niña Watch in effect for this fall and winter





https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

Naturalized Runoff % Normal



US Drought Monitor Update

Larry O'Neill

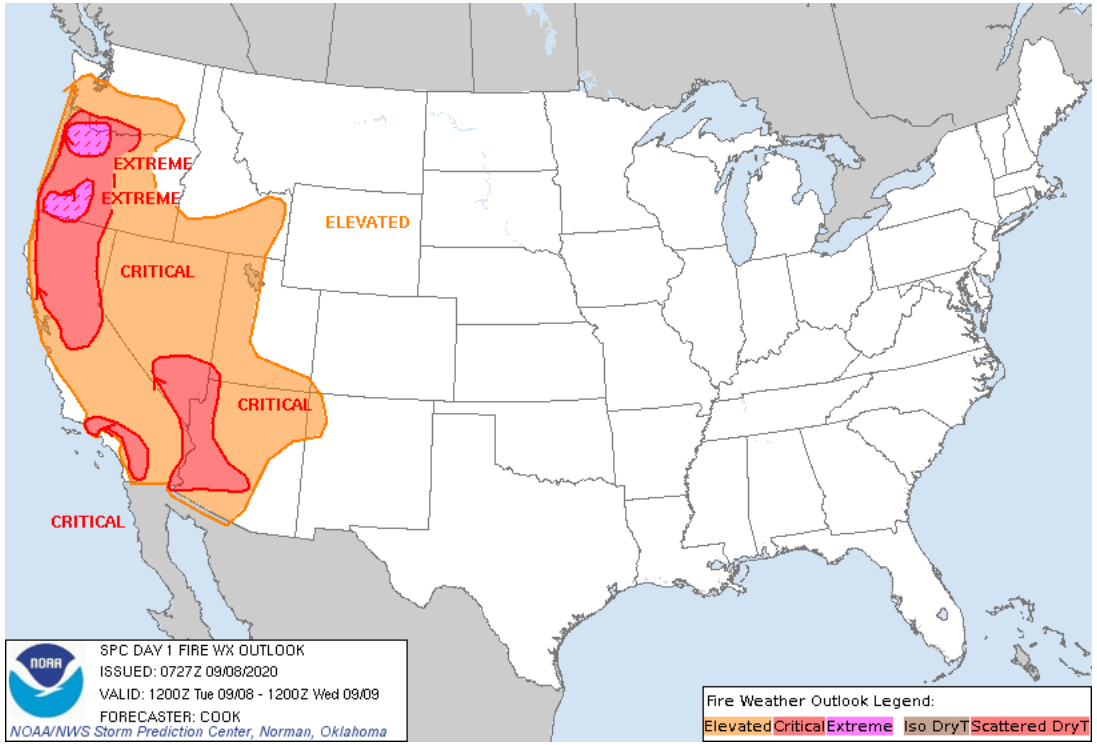
Oregon State University

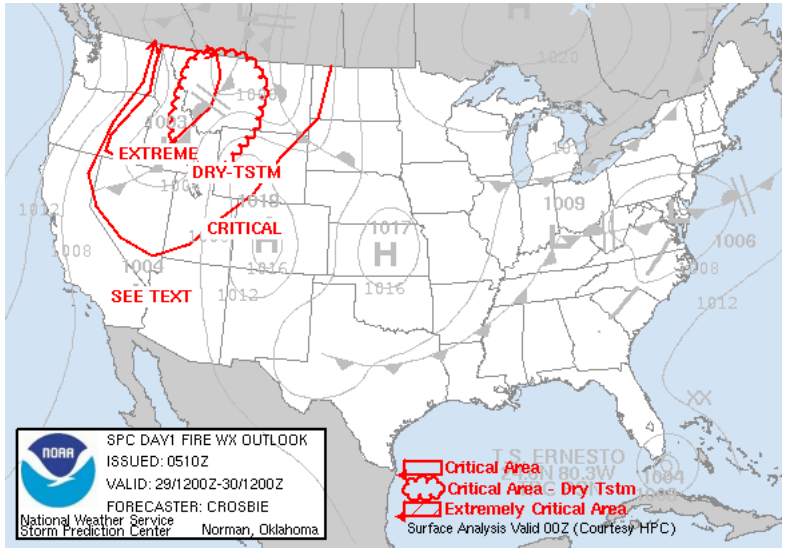
Oregon Drought Monitor Advisory Committee

Fire Weather Warnings

First time western Oregon with extremely critical fire weather warning on Sunday and Monday

Only other time this warning issued anywhere in the state of Oregon was August 30, 2006 in eastern Oregon



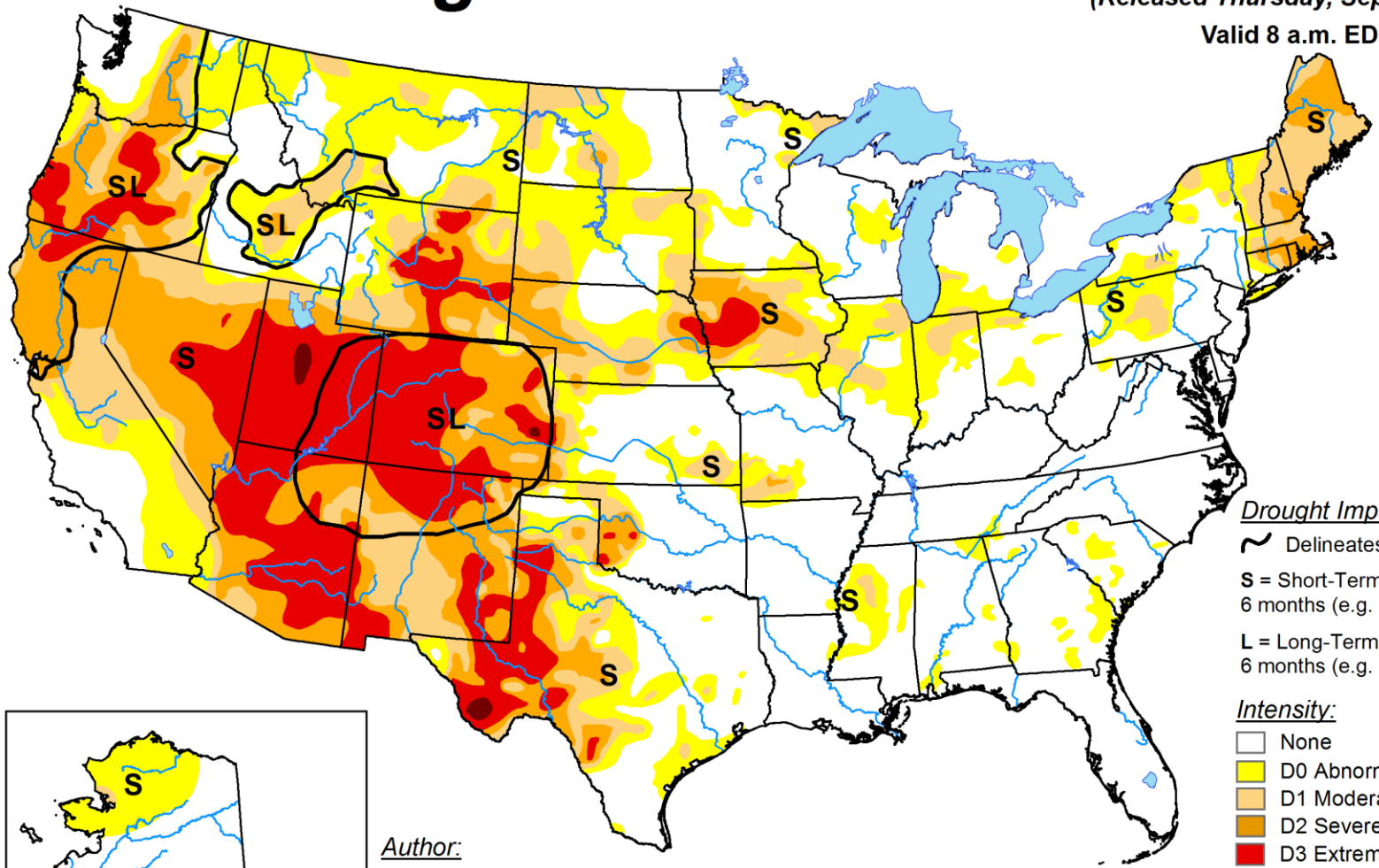


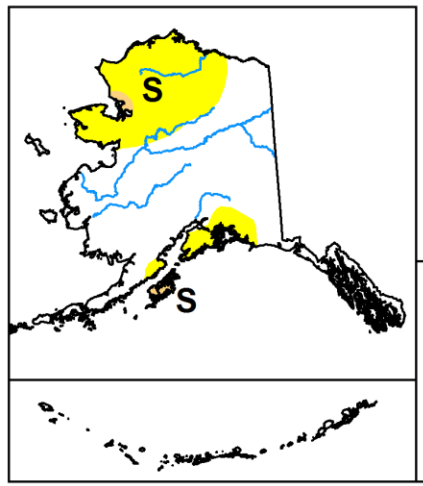
U.S. Drought Monitor

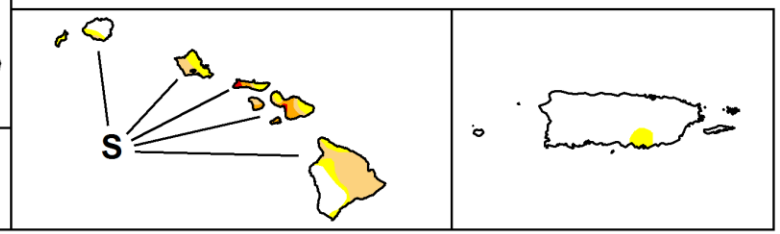
September 8, 2020

(Released Thursday, Sep. 10, 2020)

Valid 8 a.m. EDT







Author:

Richard Tinker

CPC/NOAA/NWS/NCEP

Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

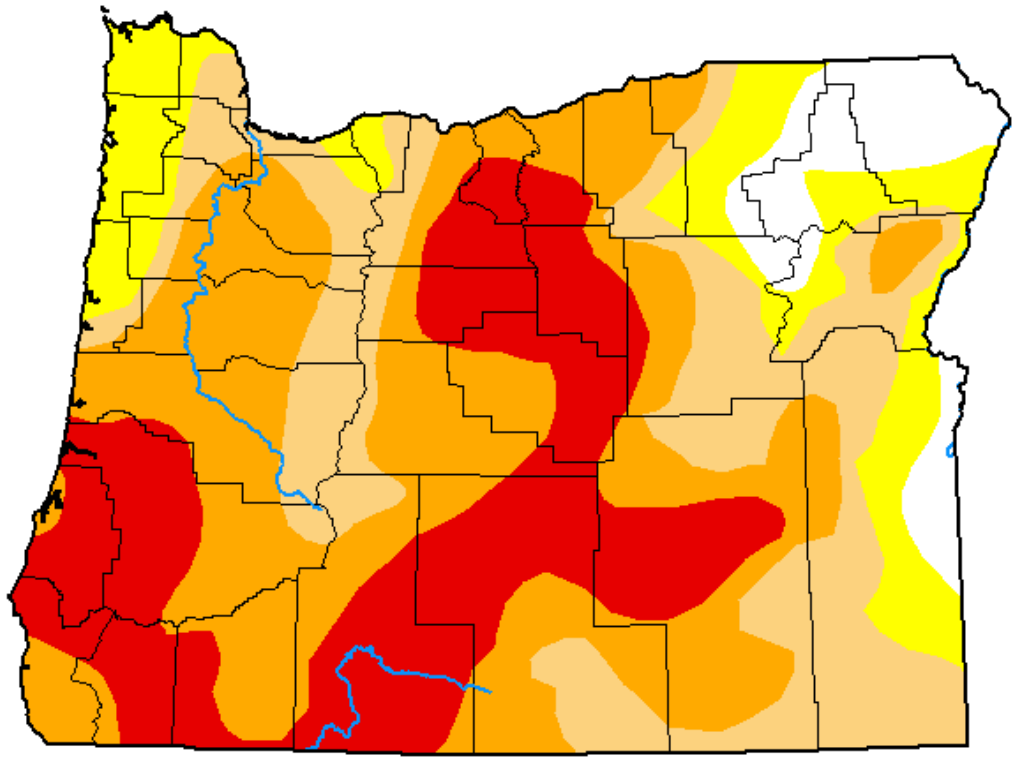
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

USDA NDMC NOAA

droughtmonitor.unl.edu

U.S. Drought Monitor

Oregon



September 8, 2020

(Released Thursday, Sep. 10, 2020)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	6.38	93.62	81.80	59.05	24.90	0.00
Last Week *09-01-2020*	6.36	93.64	80.22	56.99	17.61	0.00
3 Months Ago *06-09-2020*	4.88	95.12	81.33	38.77	4.79	0.00
Start of Calendar Year *12-31-2019*	2.40	97.60	24.46	0.00	0.00	0.00
Start of Water Year *10-01-2019*	88.54	11.46	0.00	0.00	0.00	0.00
One Year Ago *09-10-2019*	70.90	29.10	6.53	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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Author:

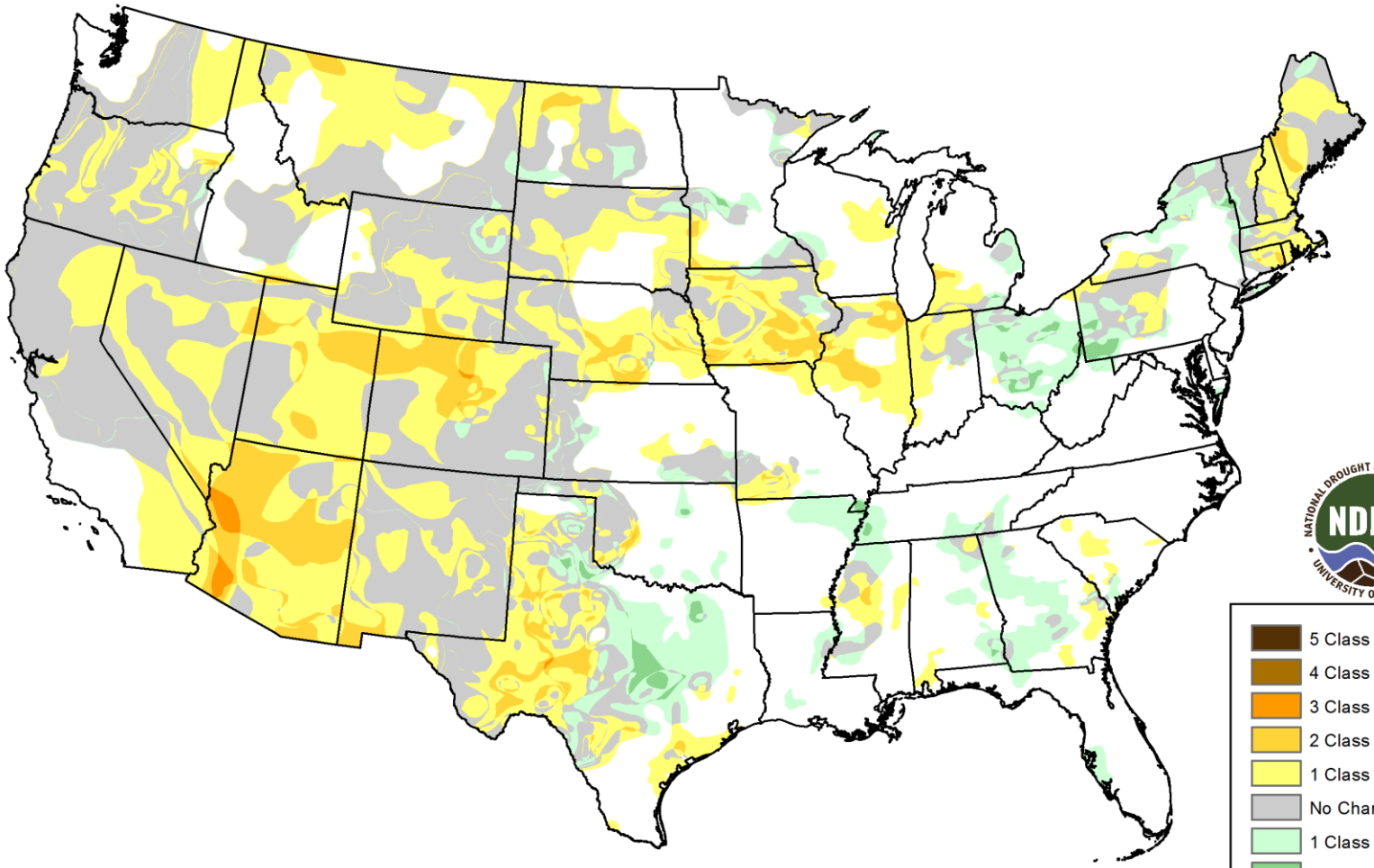
Richard Tinker

CPC/NOAA/NWS/NCEP

droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - CONUS

1 Month

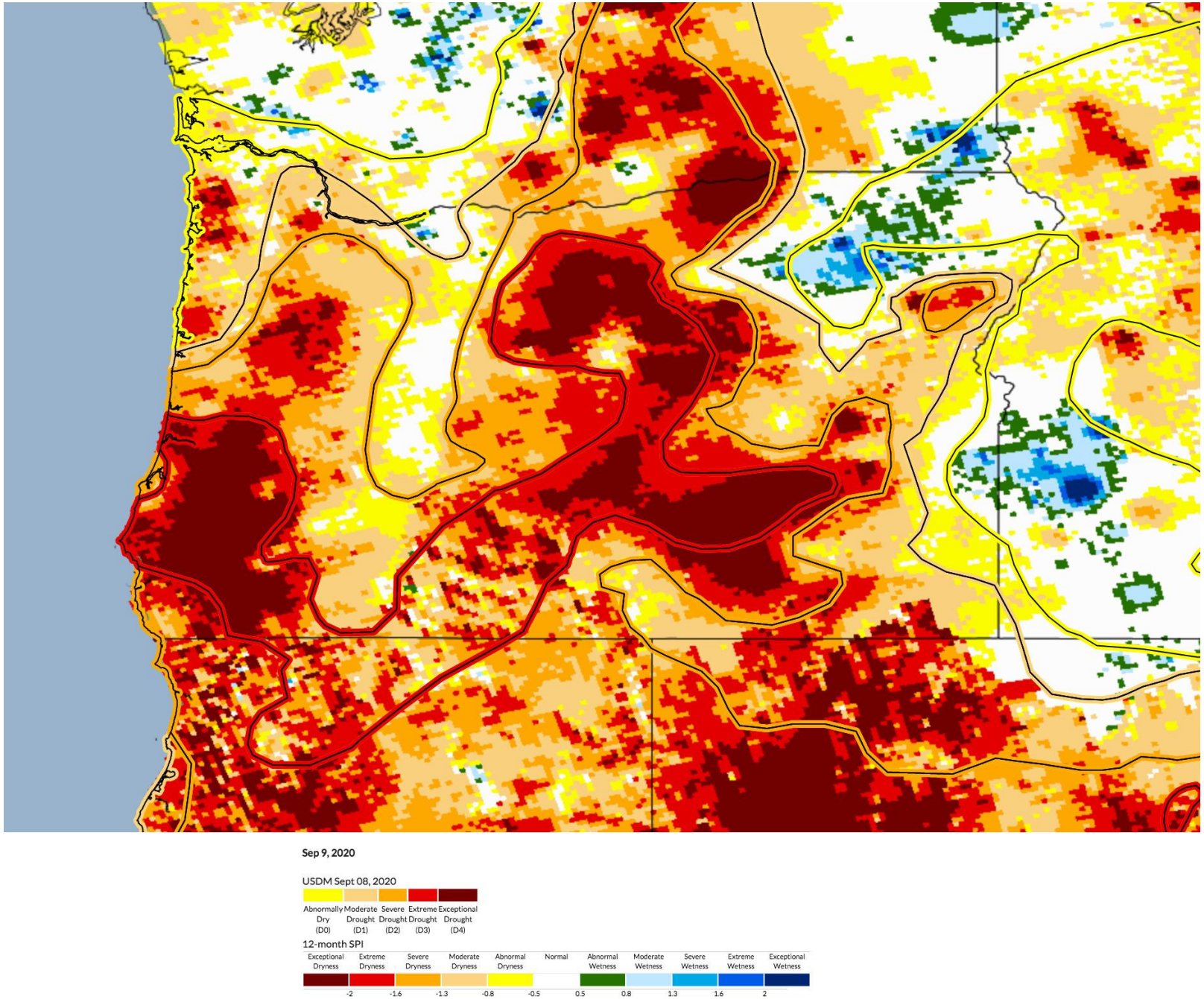


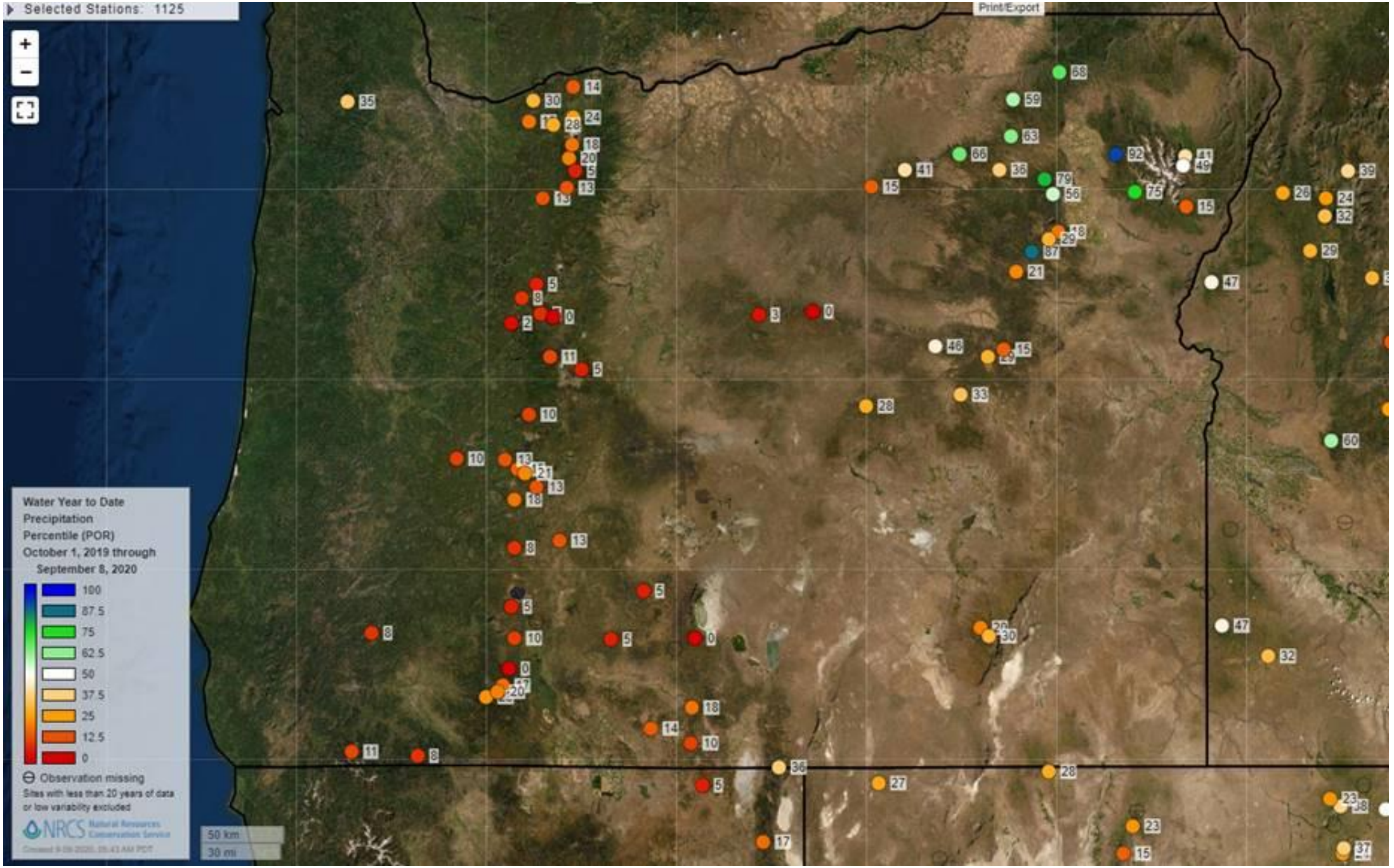
- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

September 8, 2020
compared to
August 11, 2020

droughtmonitor.unl.edu

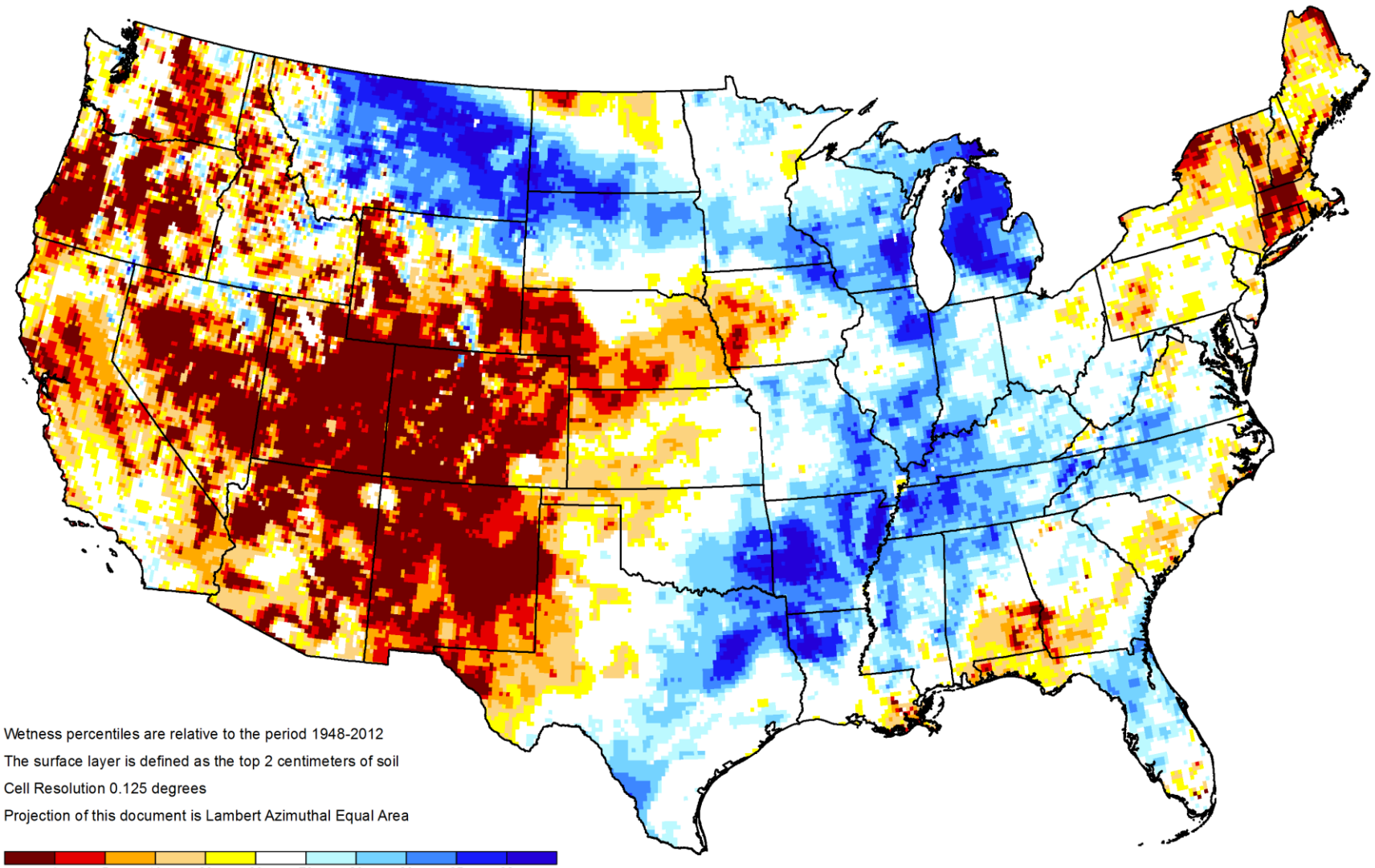
AHPS 12-month SPI




Selected Stations: 1125
Print/Export
Water Year to Date
Precipitation
Percentile (POR)
October 1, 2019 through
September 8, 2020
100
87.5
75
62.5
50
37.5
25
12.5
0
Observation missing
Sites with less than 20 years of data
or low variability excluded
NRCS Natural Resources Conservation Service
50 km
30 mi

GRACE-Based Surface Soil Moisture Drought Indicator

September 07, 2020



Wetness percentiles are relative to the period 1948-2012

The surface layer is defined as the top 2 centimeters of soil

Cell Resolution 0.125 degrees

Projection of this document is Lambert Azimuthal Equal Area

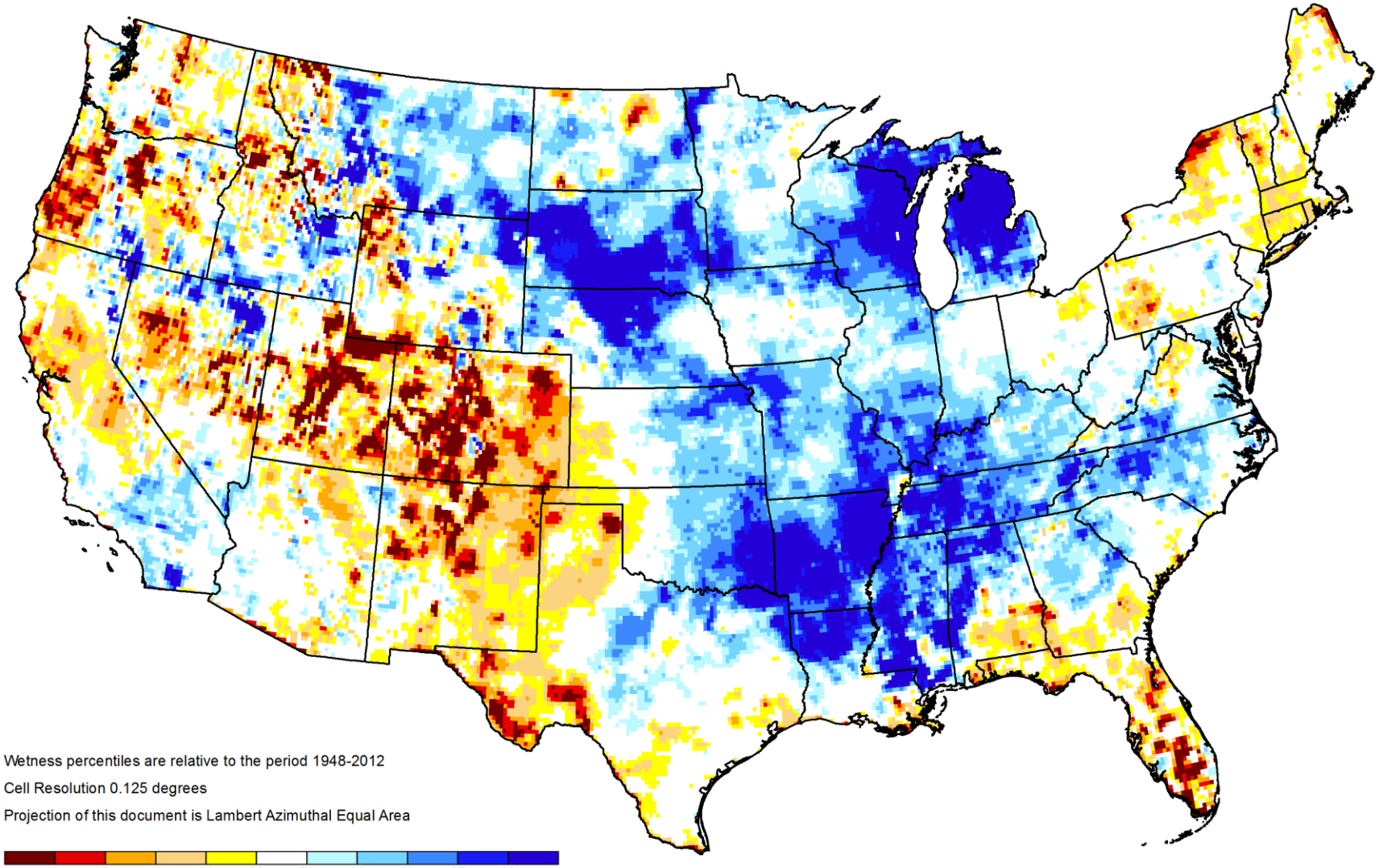
2 5 10 20 30 70 80 90 95 98

Wetness Percentile

https://nasagrace.unl.edu

GRACE-Based Shallow Groundwater Drought Indicator

September 07, 2020



Wetness percentiles are relative to the period 1948-2012

Cell Resolution 0.125 degrees

Projection of this document is Lambert Azimuthal Equal Area

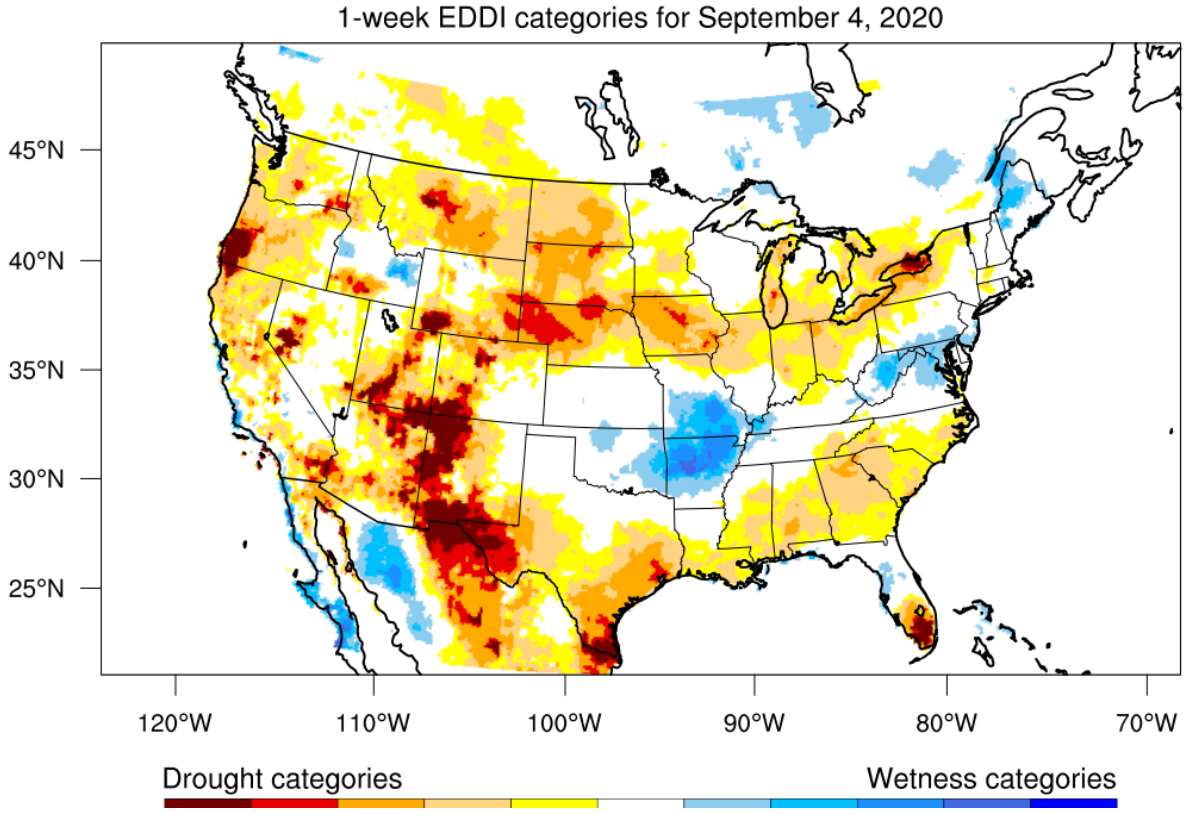
2 5 10 20 30 70 80 90 95 98

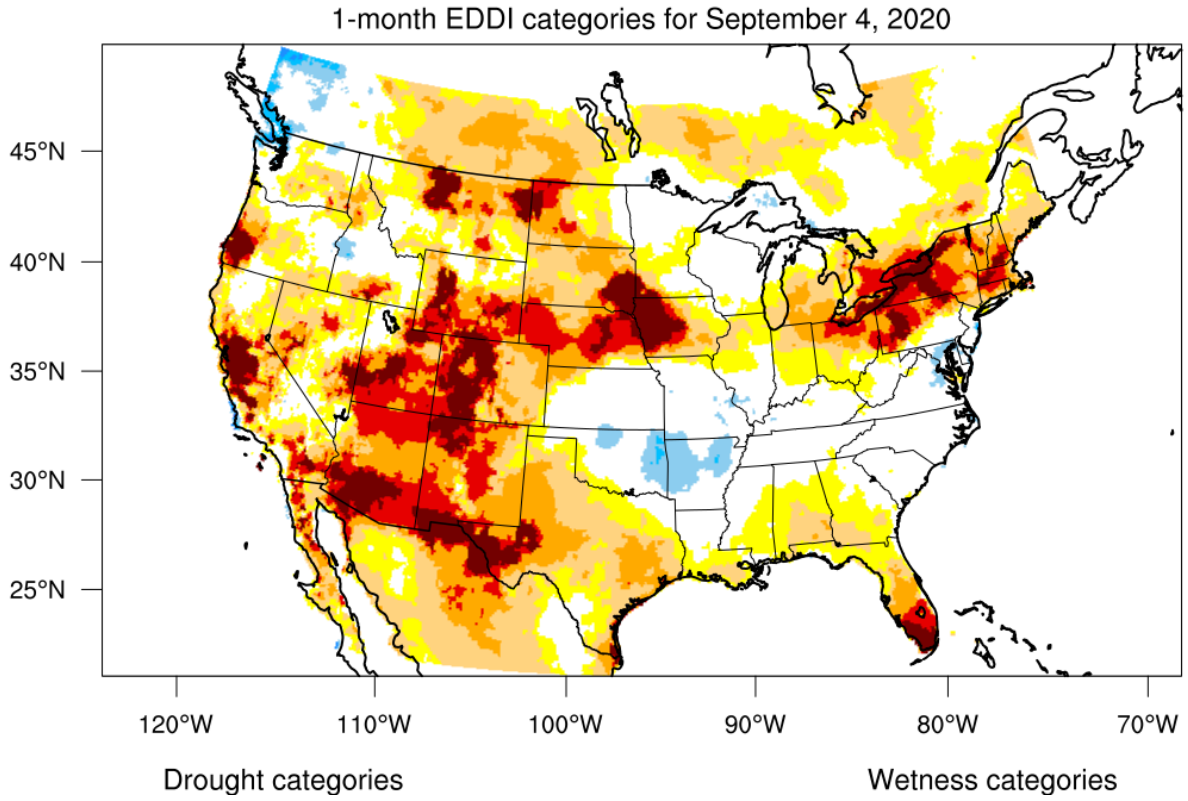
Wetness Percentile

https://nasagrace.unl.edu

Evaporative Demand Drought Index (EDDI)

Abnormally warm and dry conditions have increased evaporative demand

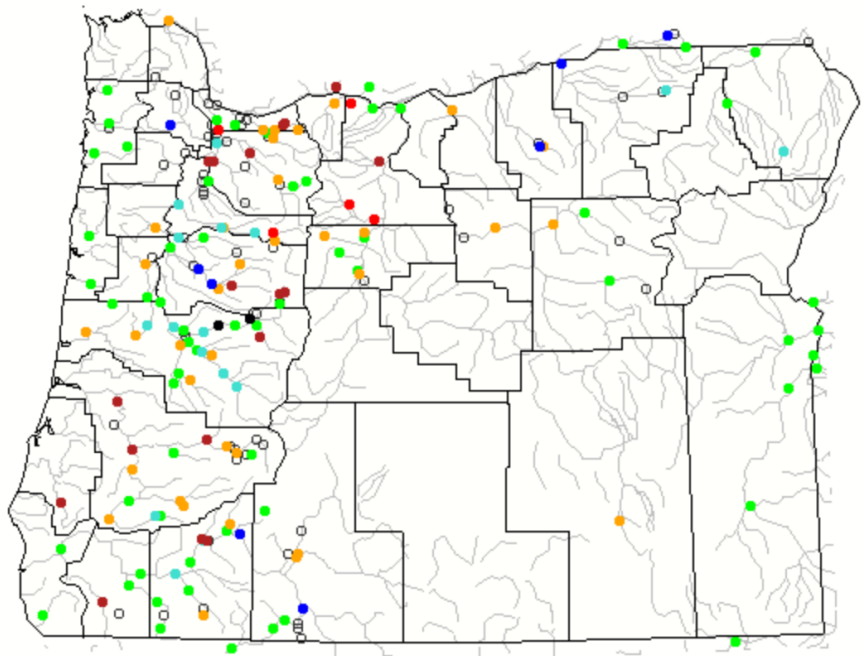




Map of 7-day average streamflow compared to historical streamflow for the day of the year (Oregon)

Oregon or Water-Resources Regions All Days

Wednesday, September 09, 2020



USGS

Search USGS streamgage

Choose a data retrieval option and select a location on the map

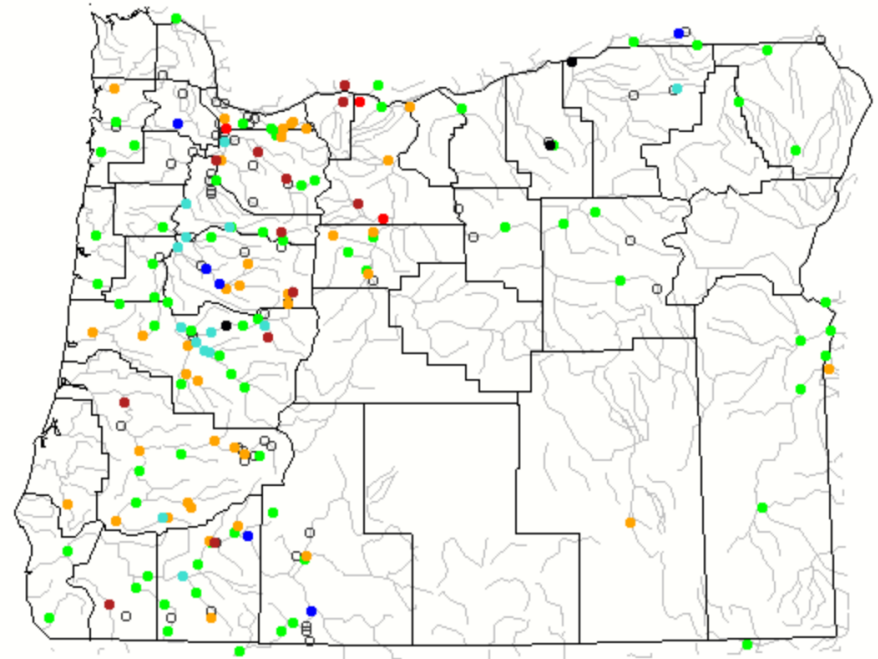
○ List of all stations ◉ Single station ○ Nearest stations

Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

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

Oregon or Water-Resources Regions

Wednesday, September 09, 2020



USGS

Search USGS streamgage

Choose a data retrieval option and select a location on the map

○ List of all stations ◉ Single station ○ Nearest stations

Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

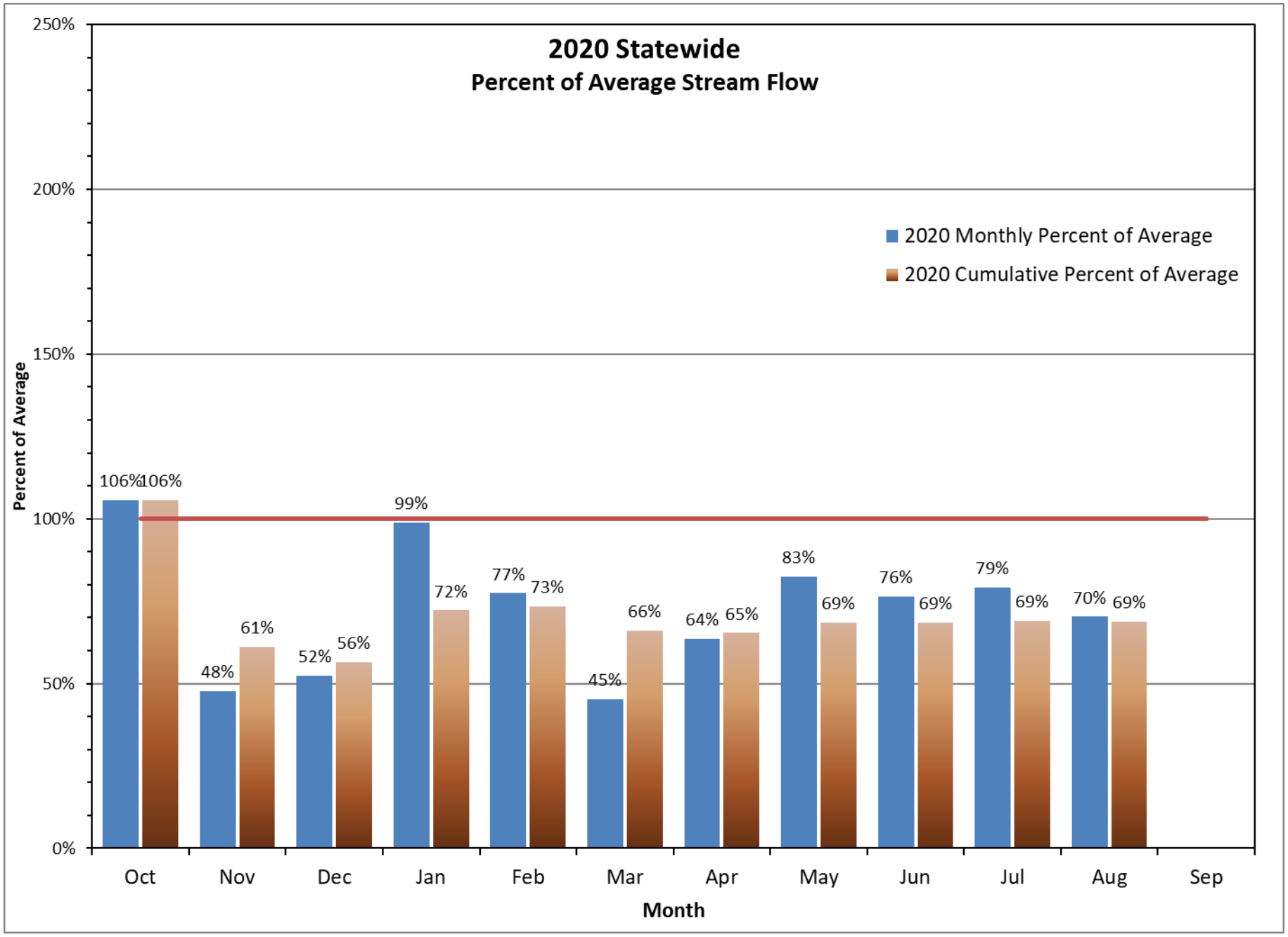
Water Supply Conditions Report

Water Supply Availability Committee

OREGON
WATER RESOURCES DEPARTMENT

Ken Stahr
Oregon Water Resources Department

September 10, 2020


2020 Statewide
Percent of Average Stream Flow
2020 Monthly Percent of Average
2020 Cumulative Percent of Average
Percent of Average
250%
200%
150%
100%
50%
0%
106%
106%
48%
61%
52%
56%
99%
72%
77%
73%
45%
66%
64%
65%
83%
69%
76%
69%
79%
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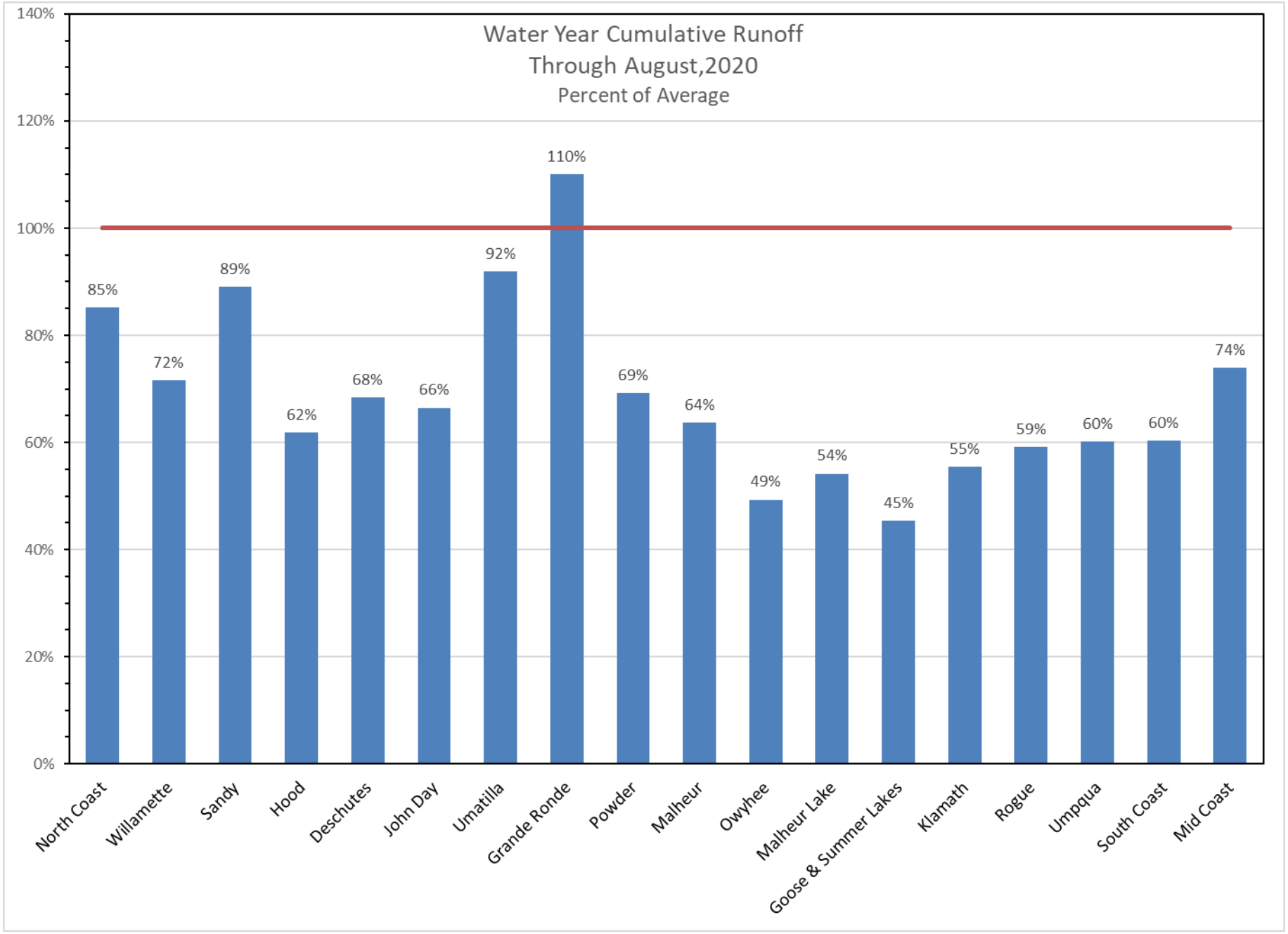
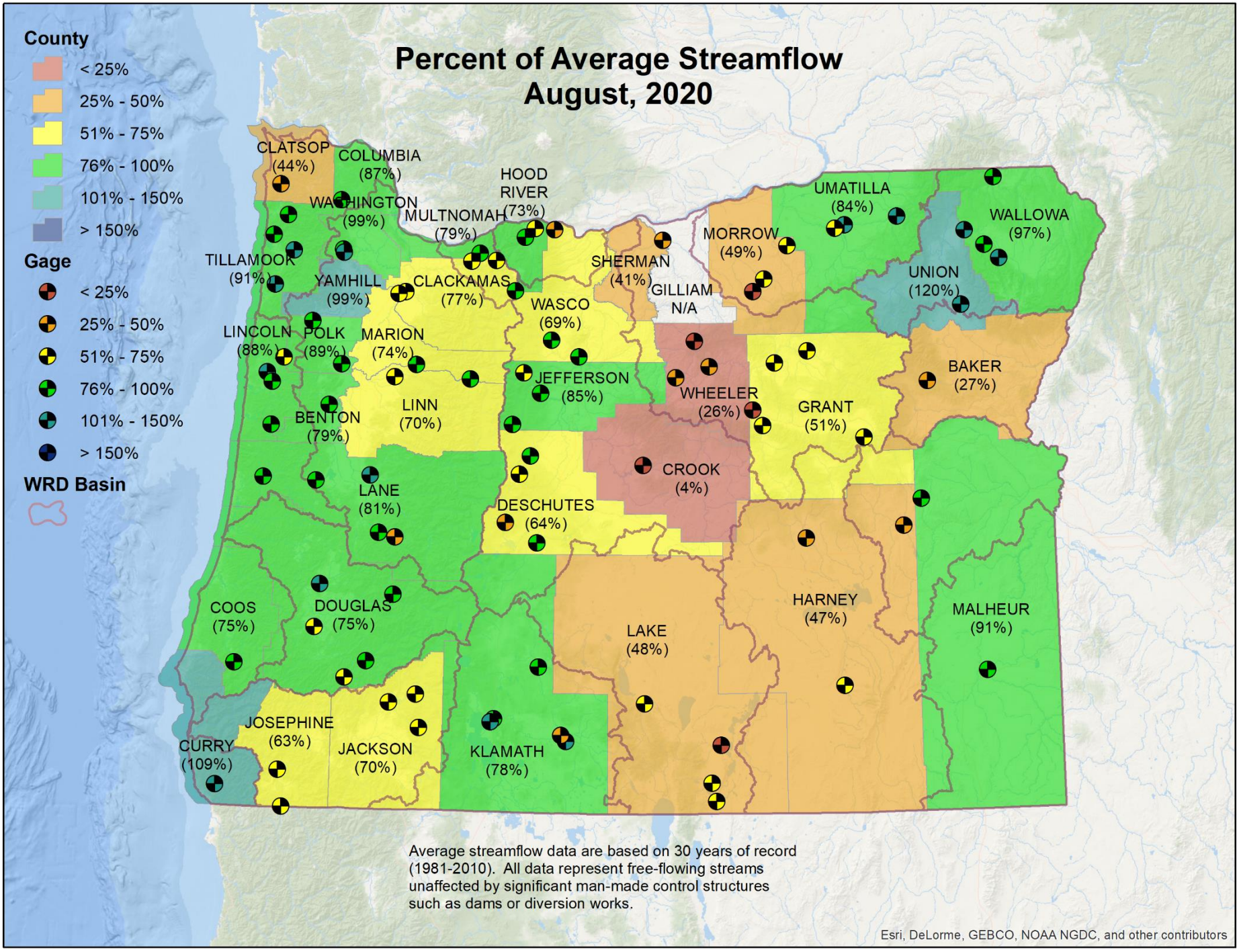
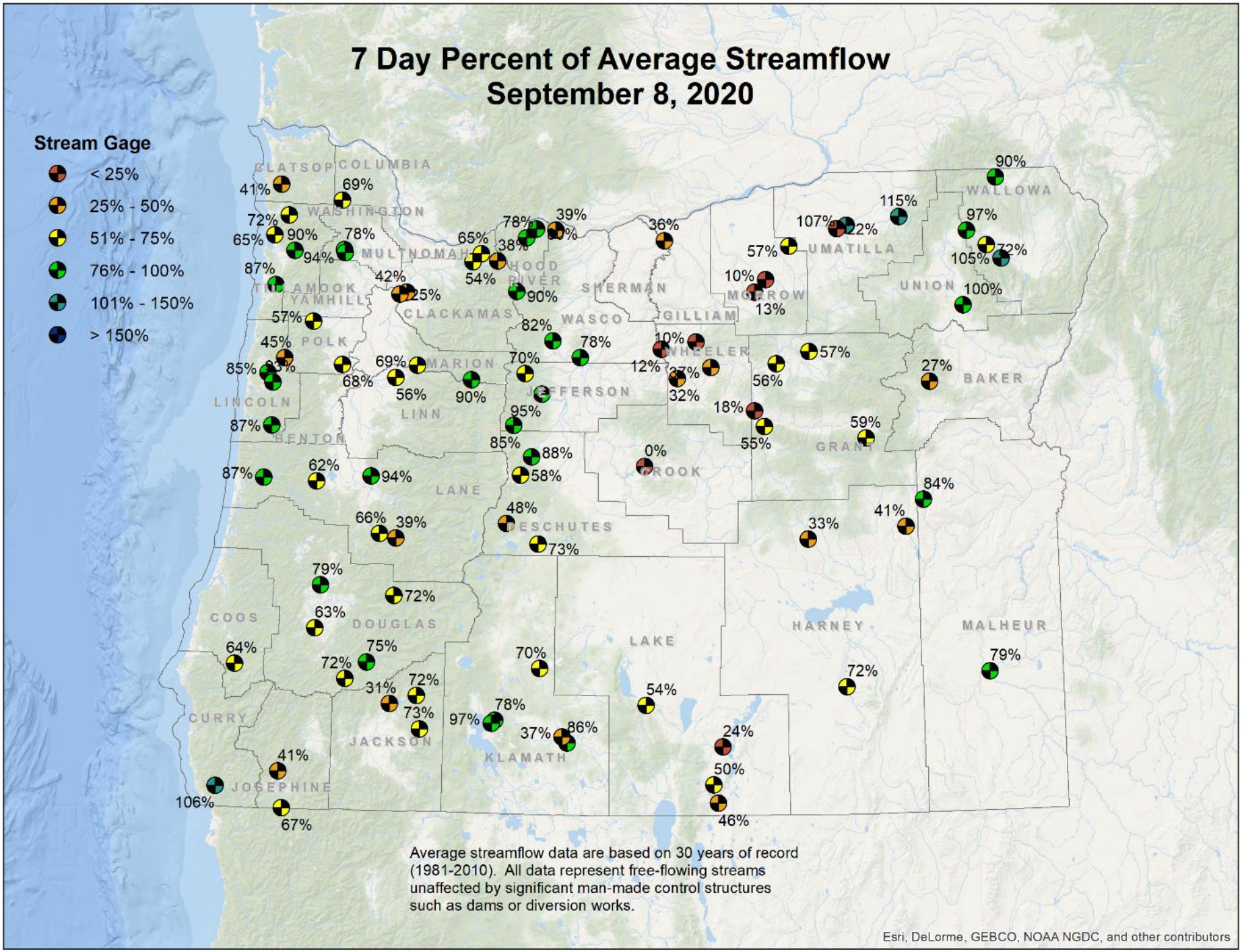
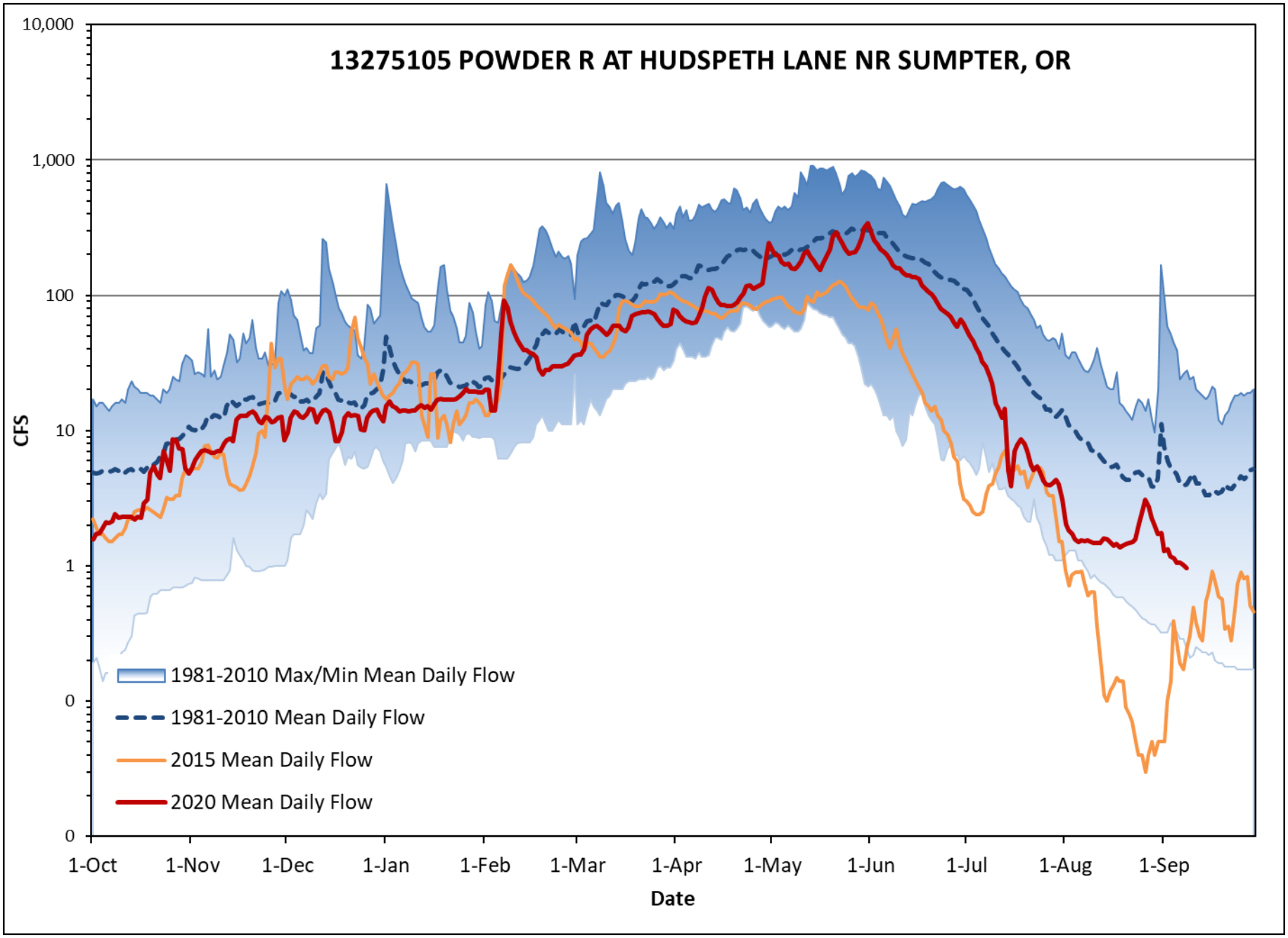
70%
69%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month

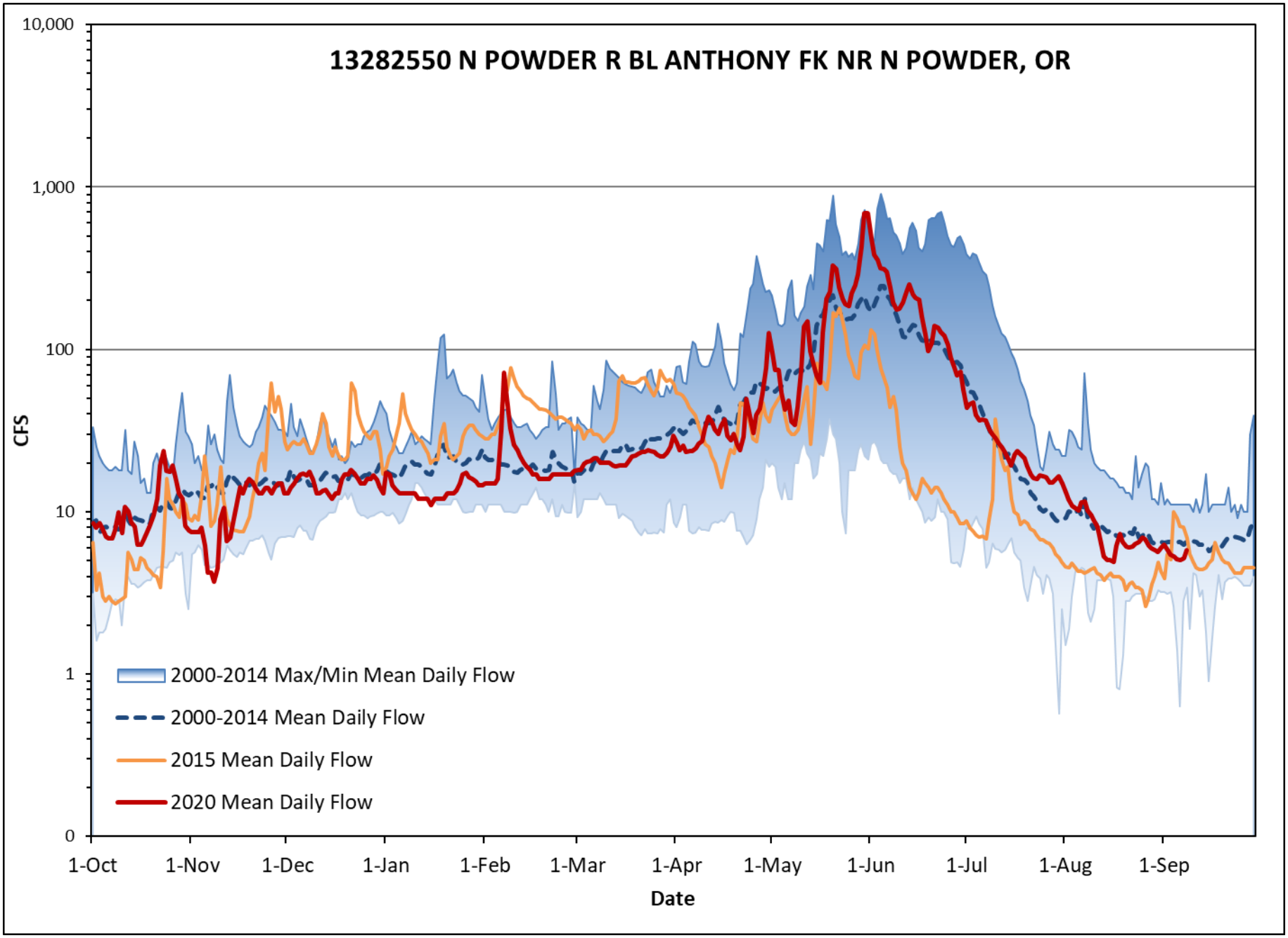

Water Year Cumulative Runoff
Through August,2020
Percent of Average
140%
120%
100%
80%
60%
40%
20%
0%
85%
72%
89%
62%
68%
66%
92%
110%
69%
64%
49%
54%
45%
55%
59%
60%
60%
74%
North Coast
Willamette
Sandy
Hood
Deschutes
John Day
Umatilla
Grande Ronde
Powder
Malheur
Owyhee
Malheur Lake
Goose & Summer Lakes
Klamath
Rogue
Umpqua
South Coast
Mid Coast

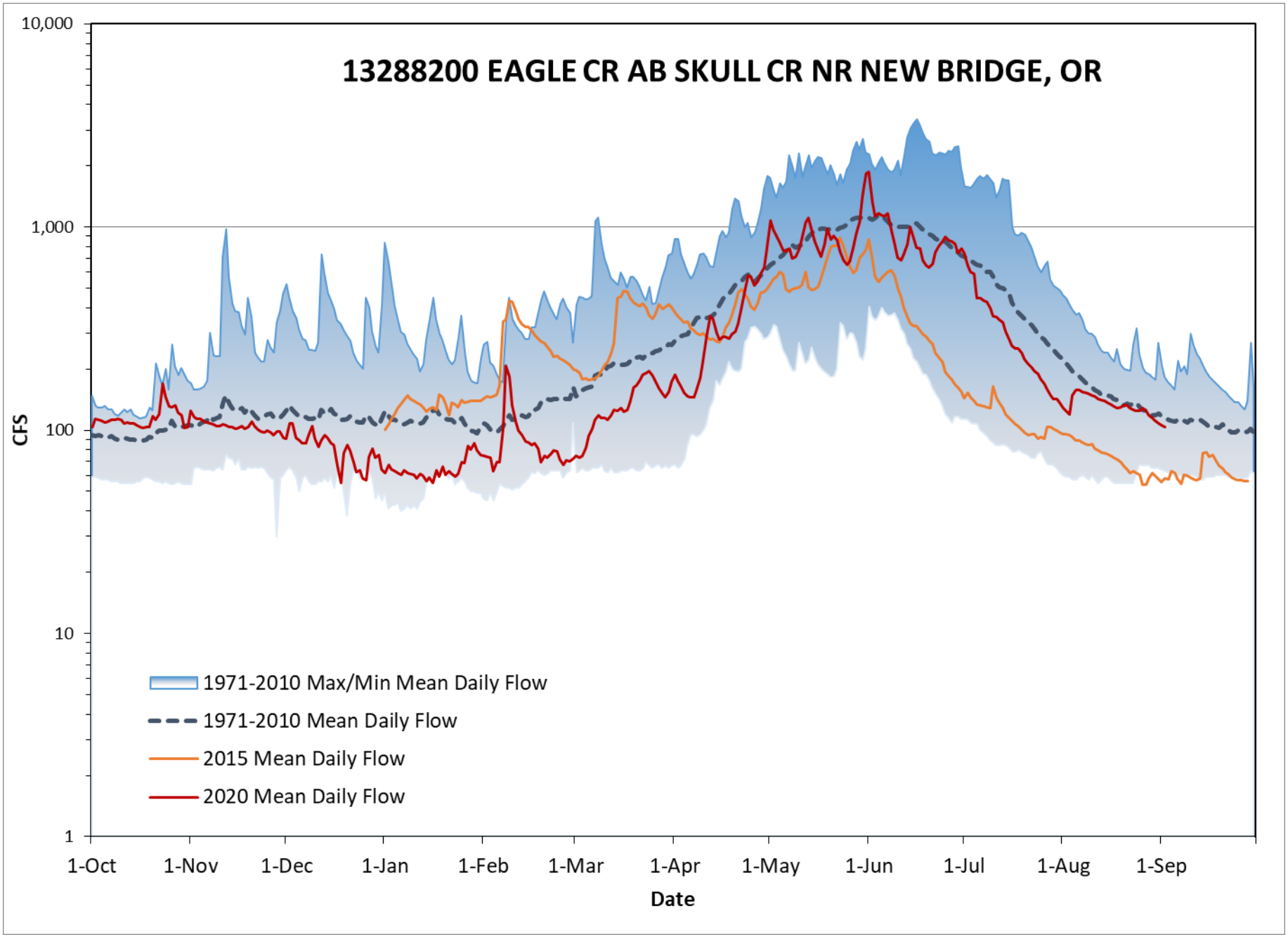
Percent of Average Streamflow
August, 2020

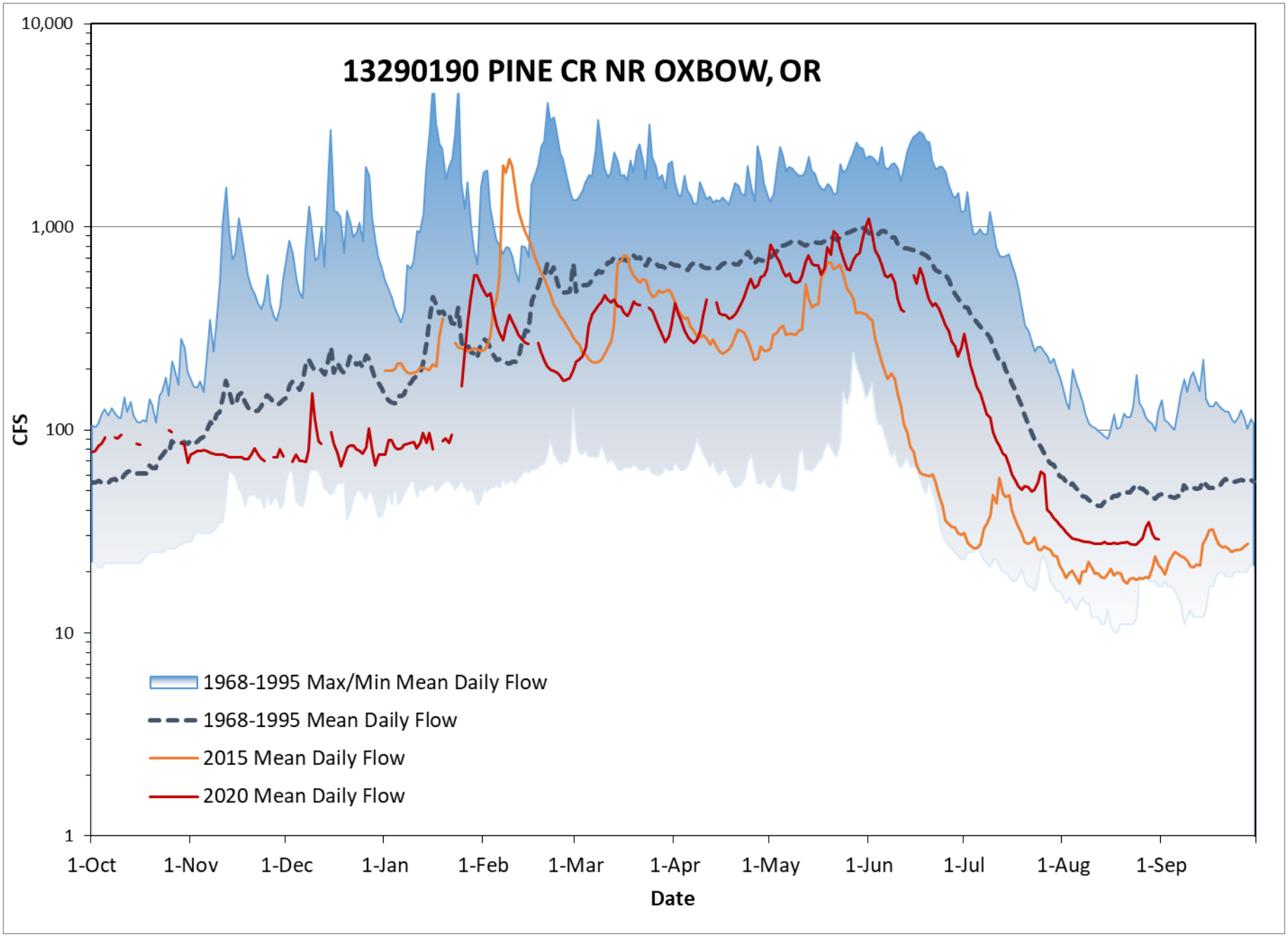


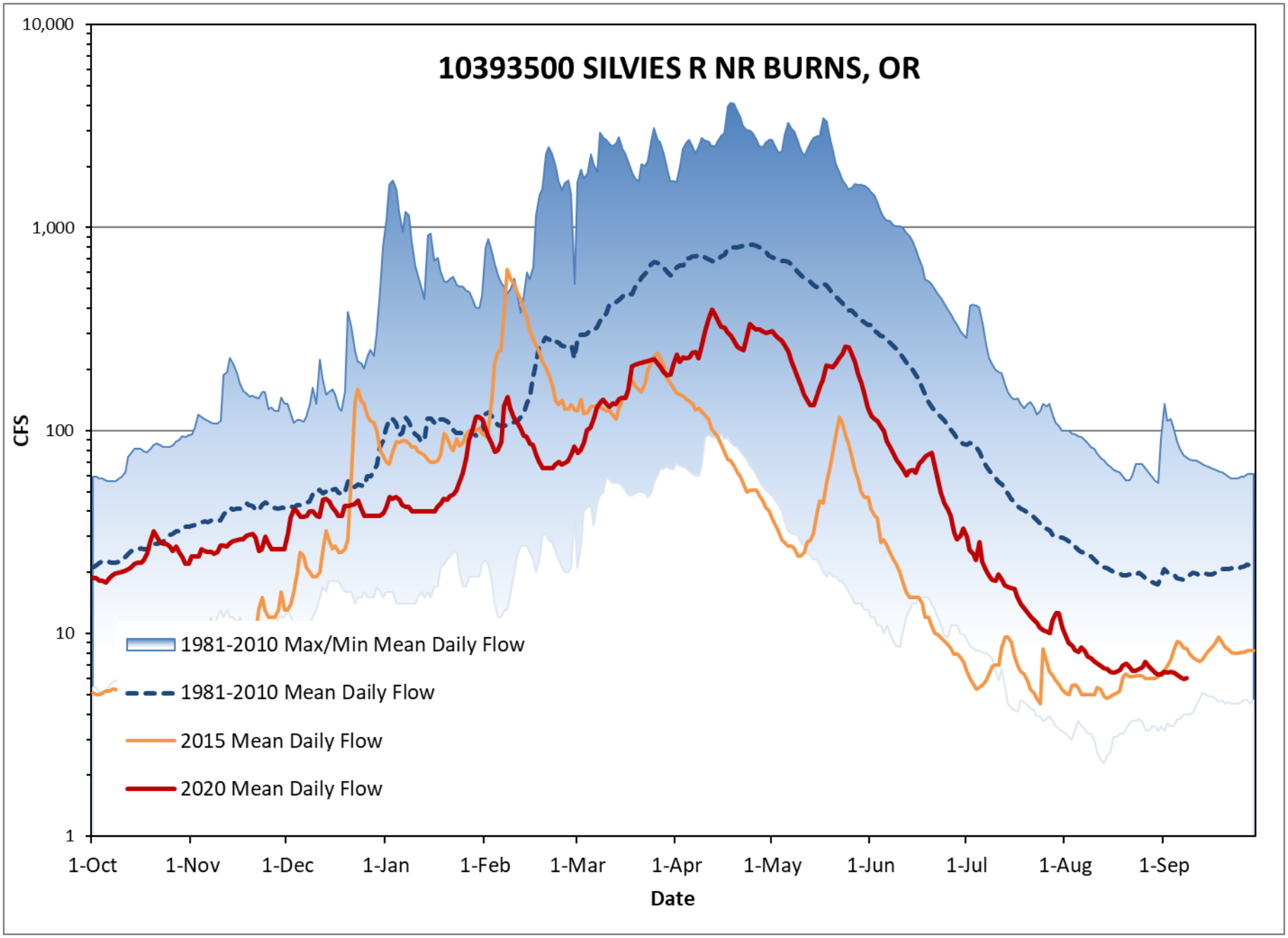

7 Day Percent of Average Streamflow
September 8, 2020
Stream Gage
< 25%
25% - 50%
51% - 75%
76% - 100%
101% - 150%
> 150%
CLATSOP
COLUMBIA
WASHINGTON
MULTNOMAH
HOOD RIVER
SHERMAN
WALLOWA
UMATILLA
UNION
TILLAMOOK
YAMHILL
CLACKAMAS
WASCO
GILLIAM
MORROW
POLK
MARION
WHEELER
BAKER
LINCOLN
JEFFERSON
LINN
GRANT
BENTON
CROOK
LANE
DESCHUTES
COOS
DOUGLAS
LAKE
HARNEY
MALHEUR
CURRY
JACKSON
KLAMATH
JOSEPHINE
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

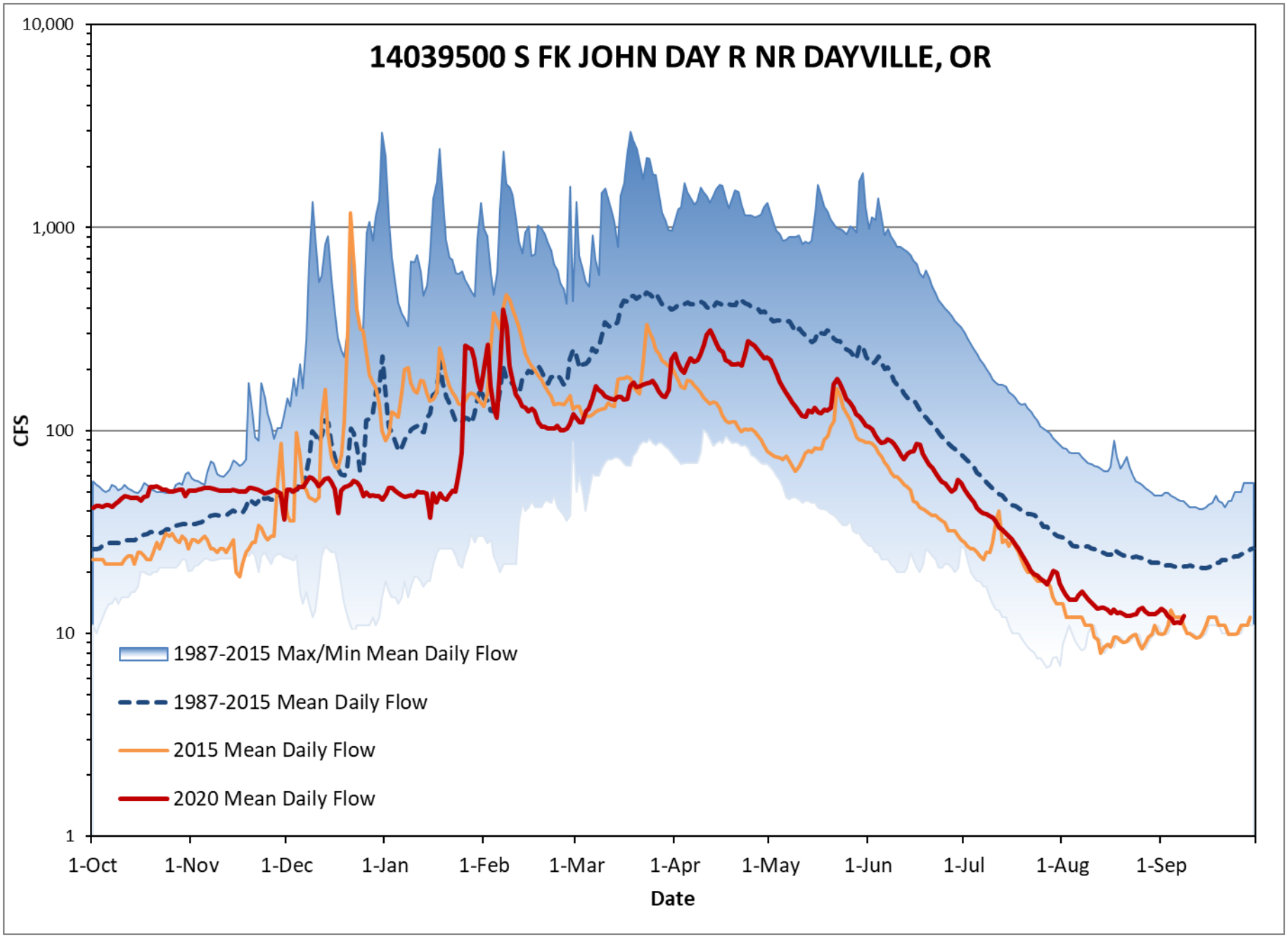

13275105 POWDER R AT HUDSPETH LANE NR SUMPTER, OR
10,000
1,000
100
10
1
0
0
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


13282550 N POWDER R BL ANTHONY FK NR N POWDER, OR
10,000
1,000
100
10
1
0
CFS
2000-2014 Max/Min Mean Daily Flow
2000-2014 Mean Daily Flow
2015 Mean Daily Flow
2020 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


13288200 EAGLE CR AB SKULL CR NR NEW BRIDGE, OR
10,000
1,000
100
10
1
CFS
1971-2010 Max/Min Mean Daily Flow
1971-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 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

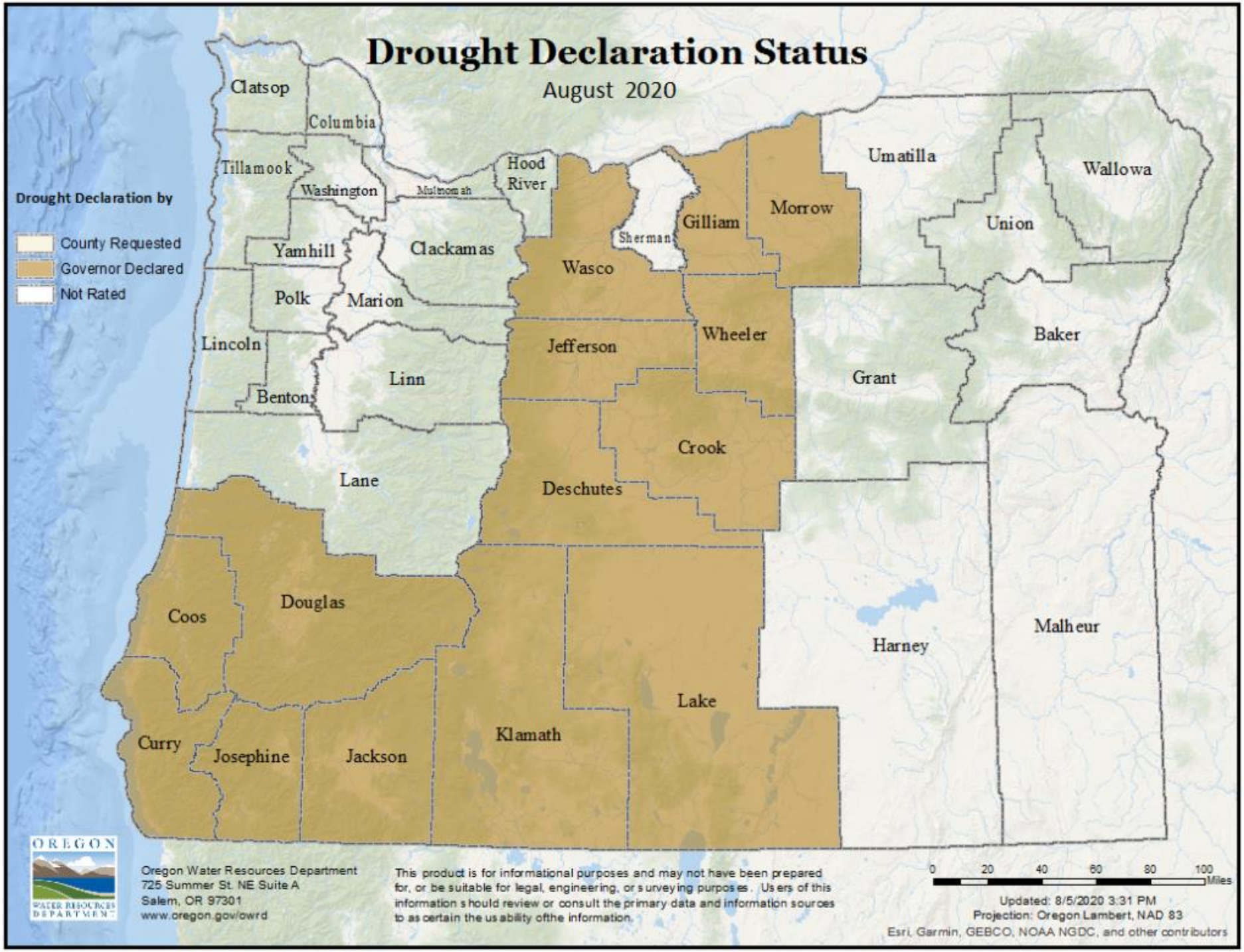

13290190 PINE CR NR OXBOW, OR
10,000
1,000
100
10
1
CFS
1968-1995 Max/Min Mean Daily Flow
1968-1995 Mean Daily Flow
2015 Mean Daily Flow
2020 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


10393500 SILVIES R NR BURNS, OR
10,000
1,000
100
10
1
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 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


14039500 S FK JOHN DAY R NR DAYVILLE, OR
10,000
1,000
100
10
1
CFS
1987-2015 Max/Min Mean Daily Flow
1987-2015 Mean Daily Flow
2015 Mean Daily Flow
2020 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

Drought Declaration Status

August 2020



Oregon Water Resources Department
725 Summer St. NE Suite A
Salem, OR 97301
www.oregon.gov/owrd

Updated: 8/5/2020 3:31 PM
Projection: Oregon Lambert, NAD 83
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Thank you

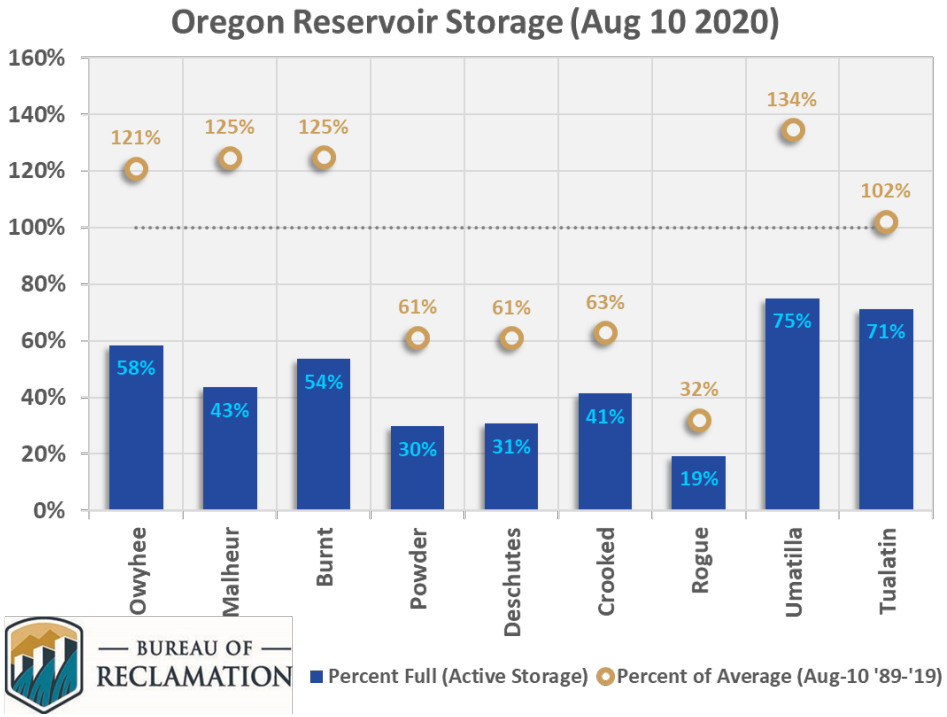
BUREAU OF RECLAMATION

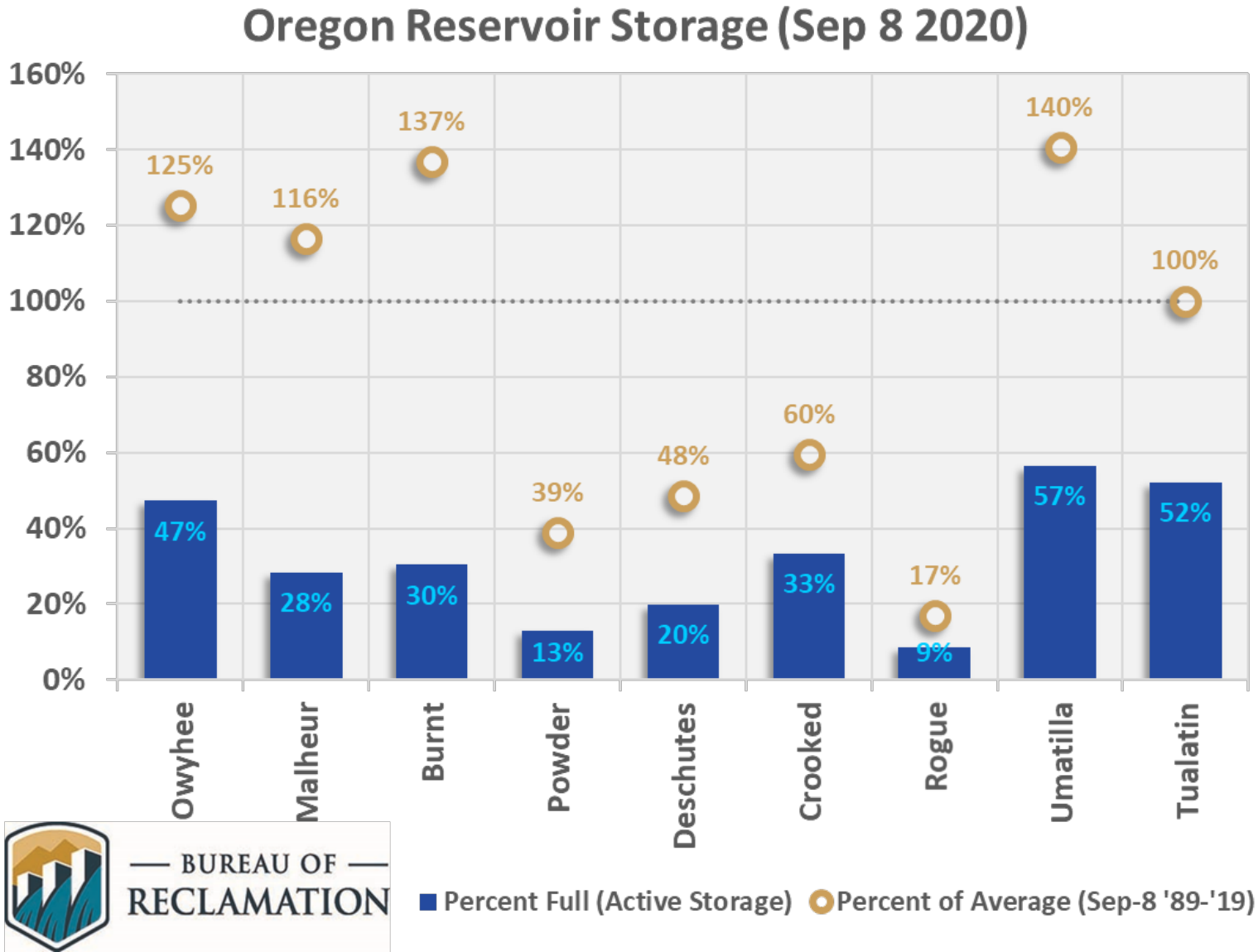
Reclamation Storage Update

Oregon Water Supply Availability Committee Meeting

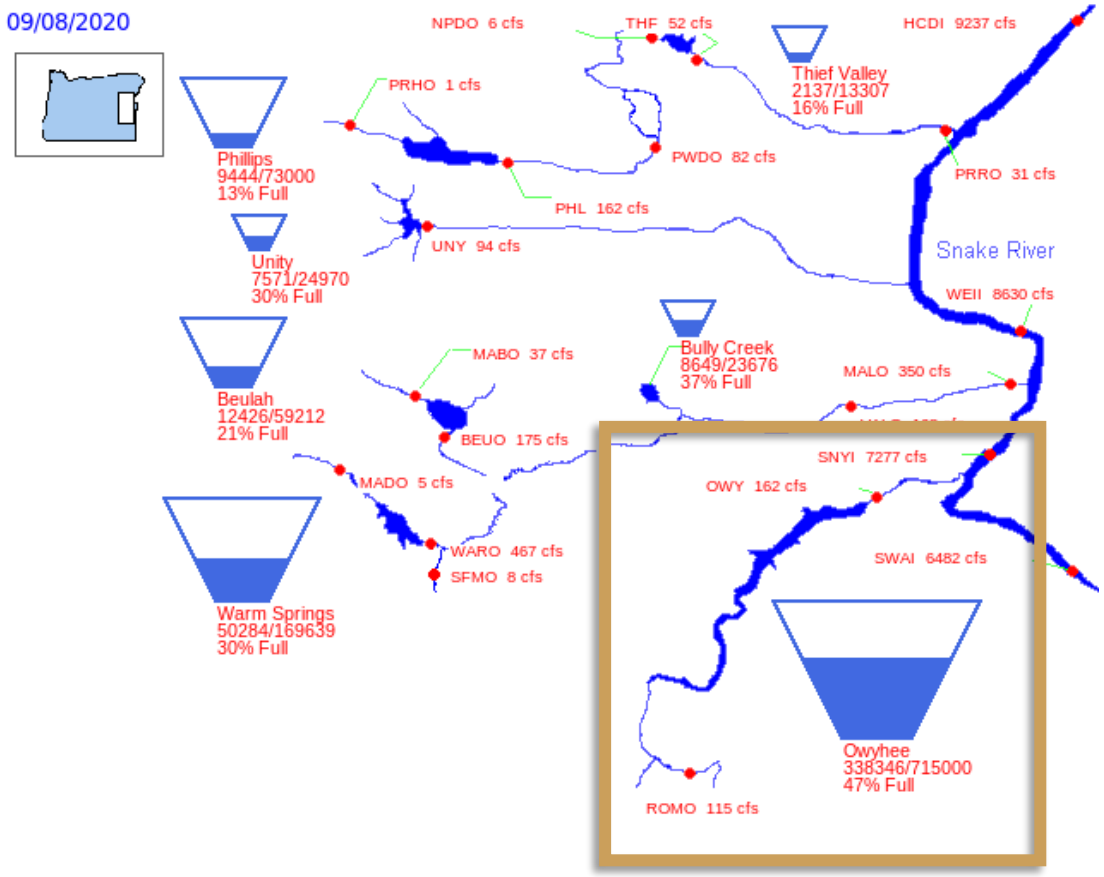
September 10, 2020

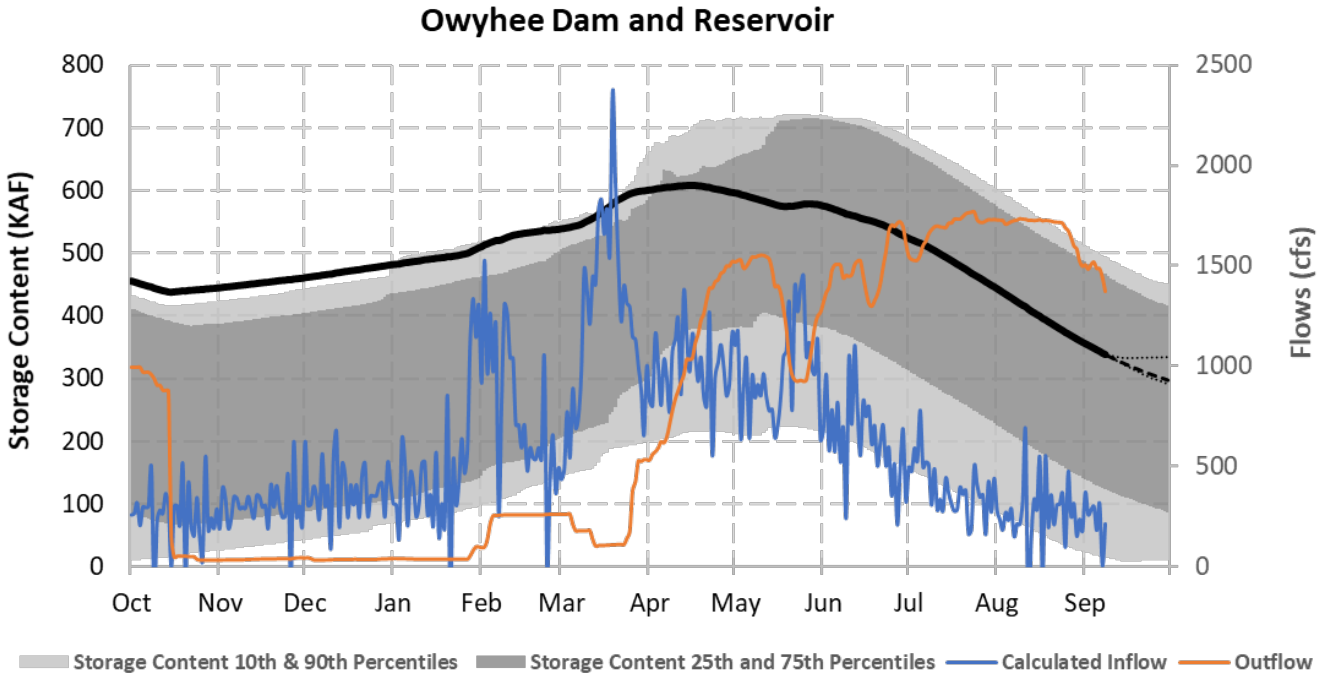
Reservoir Storage Conditions





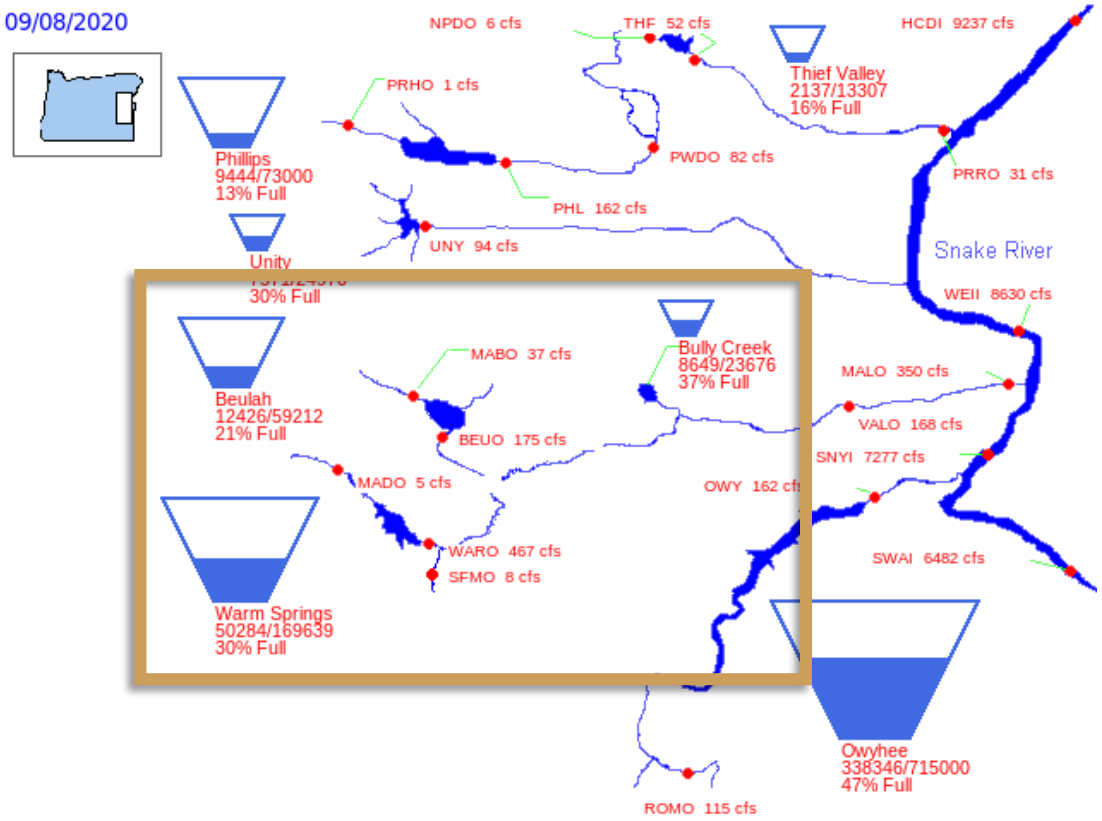
Owyhee River Basin

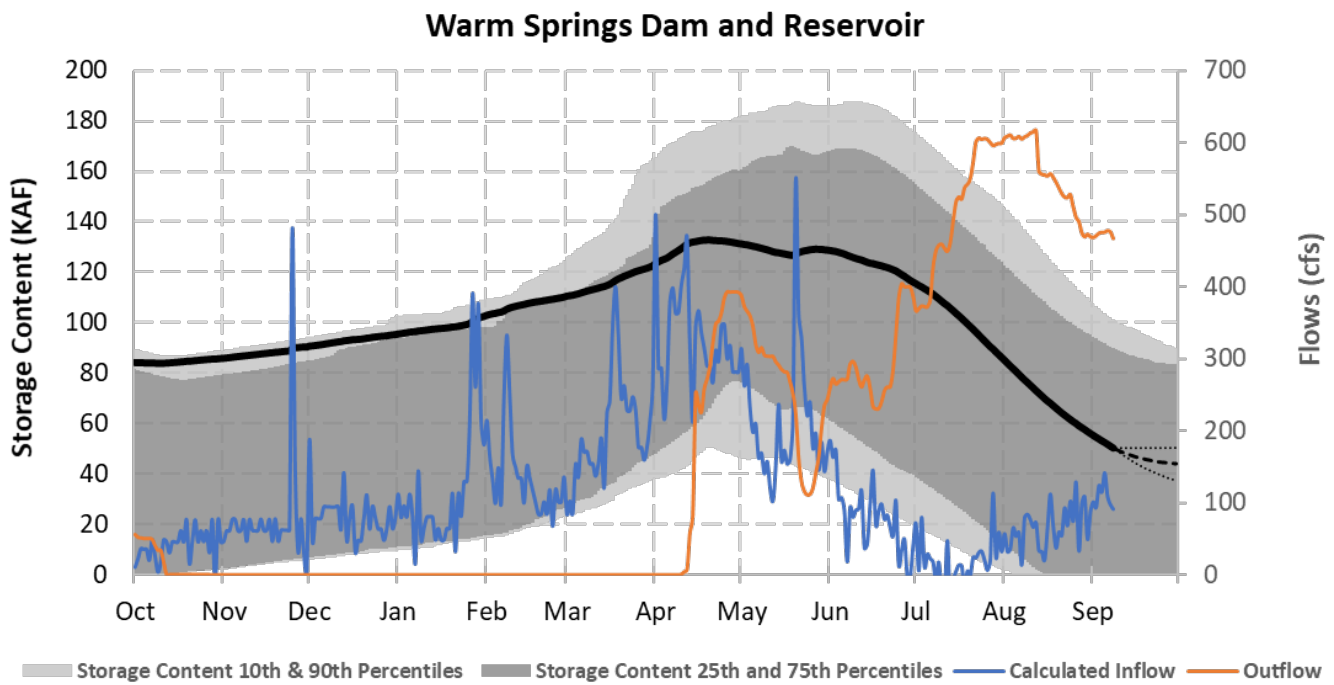


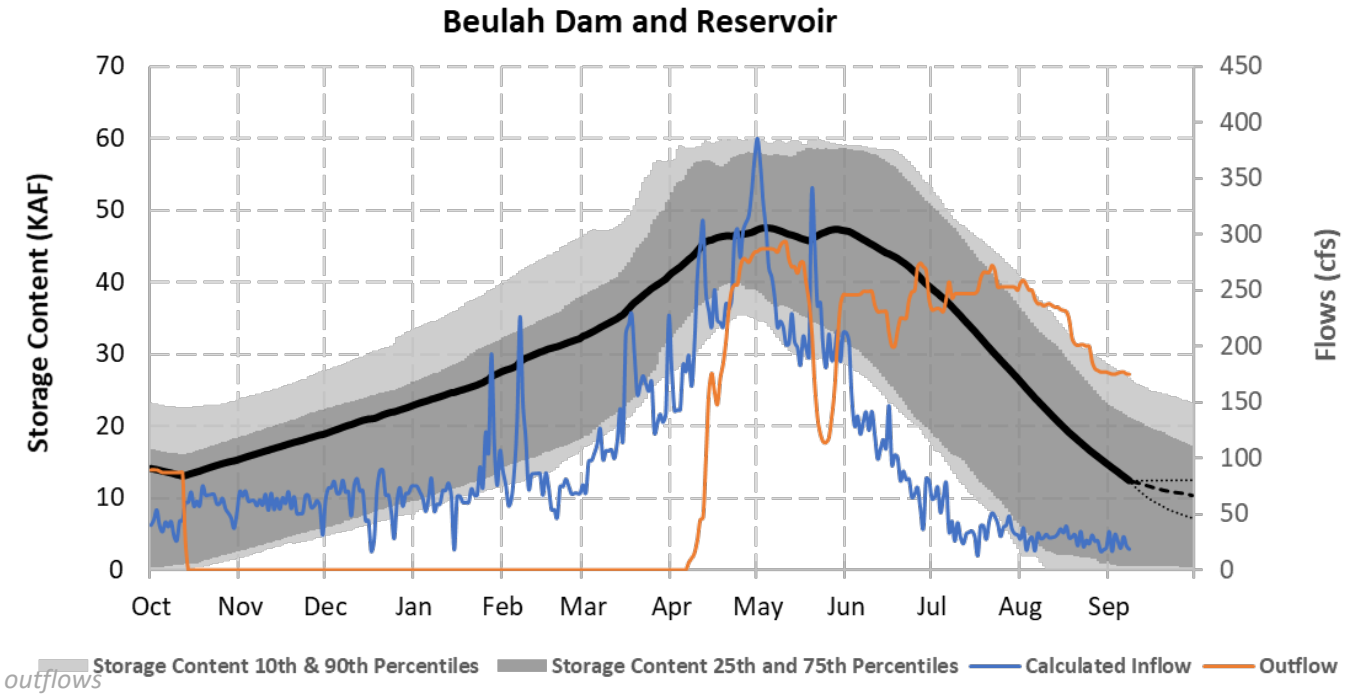


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Malheur River Basin

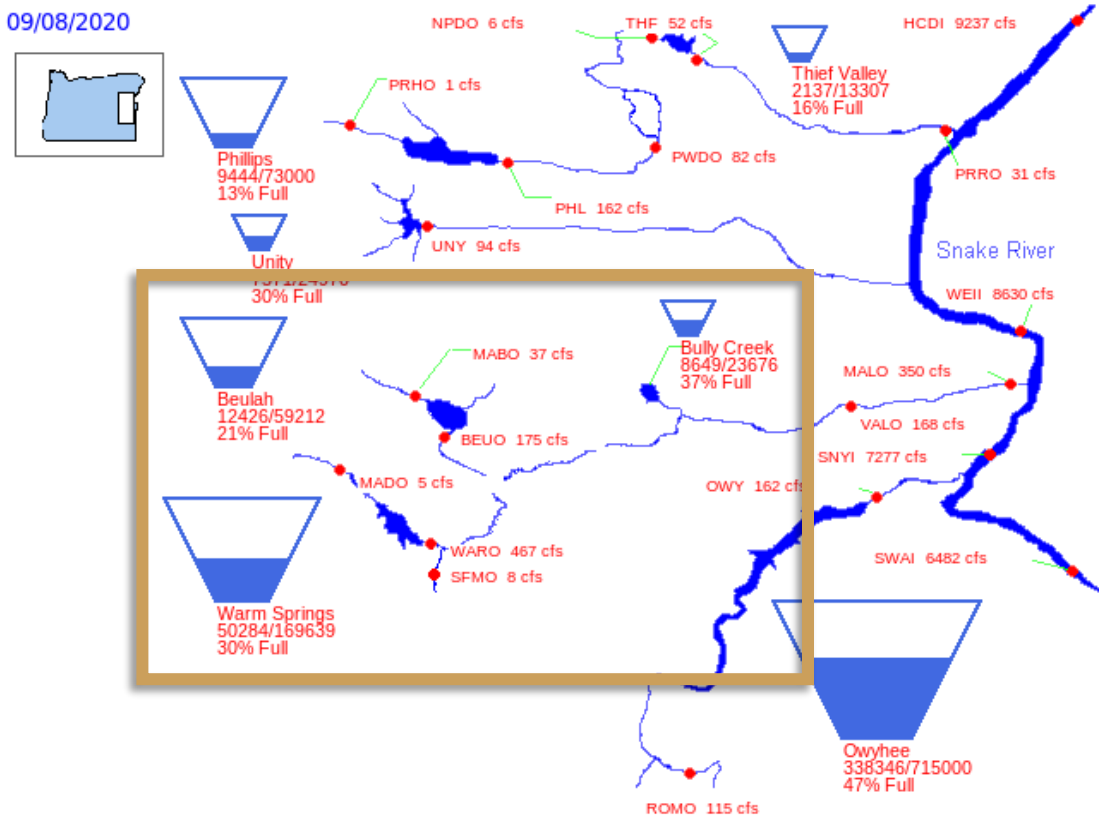


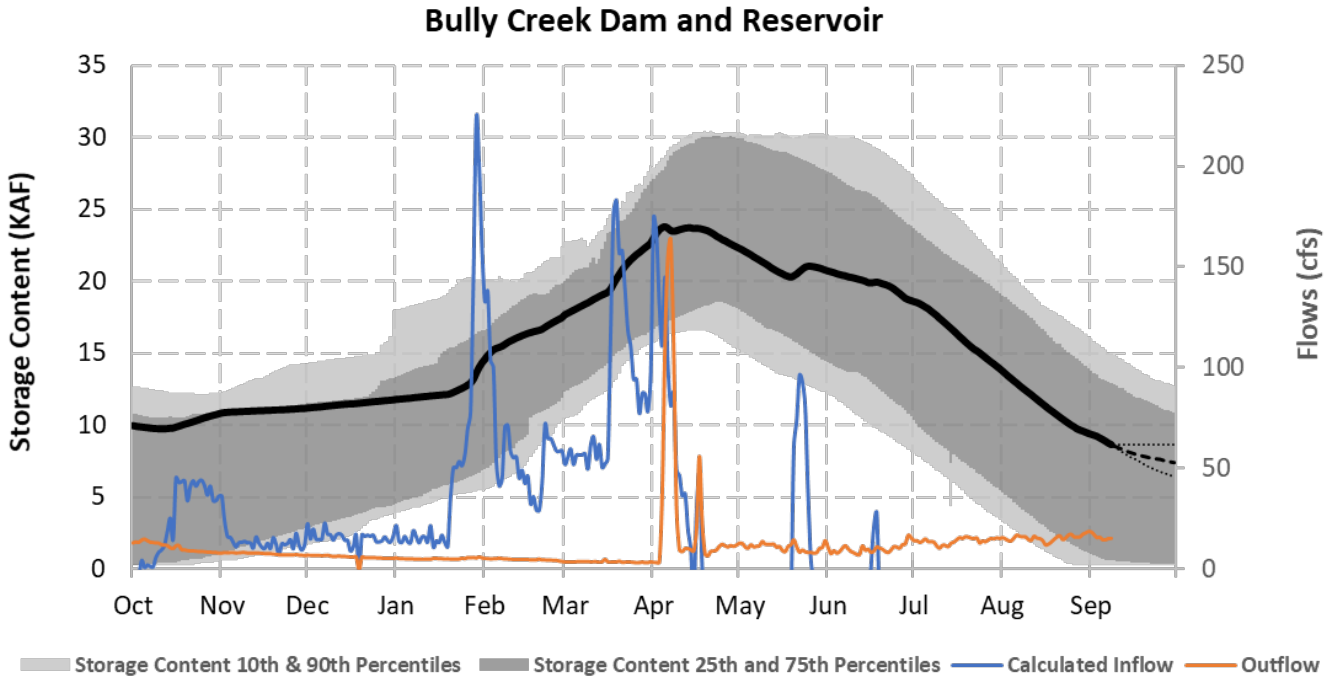




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

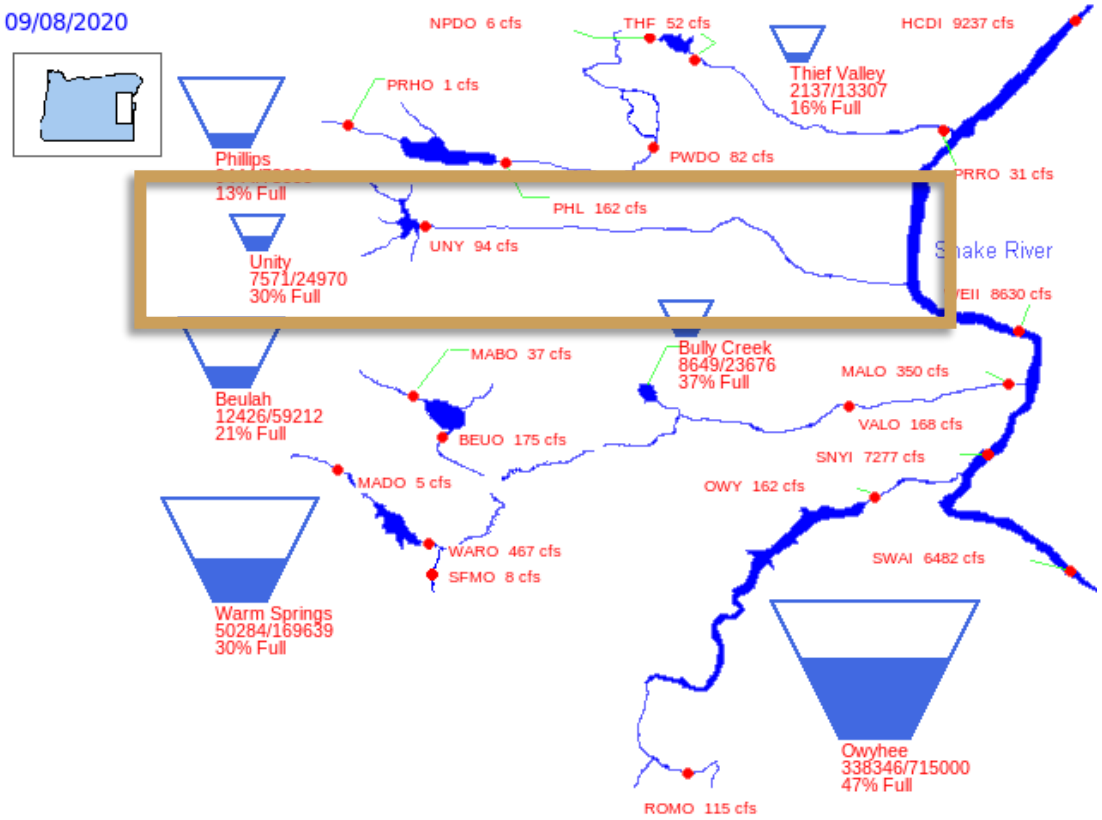
Malheur River Basin

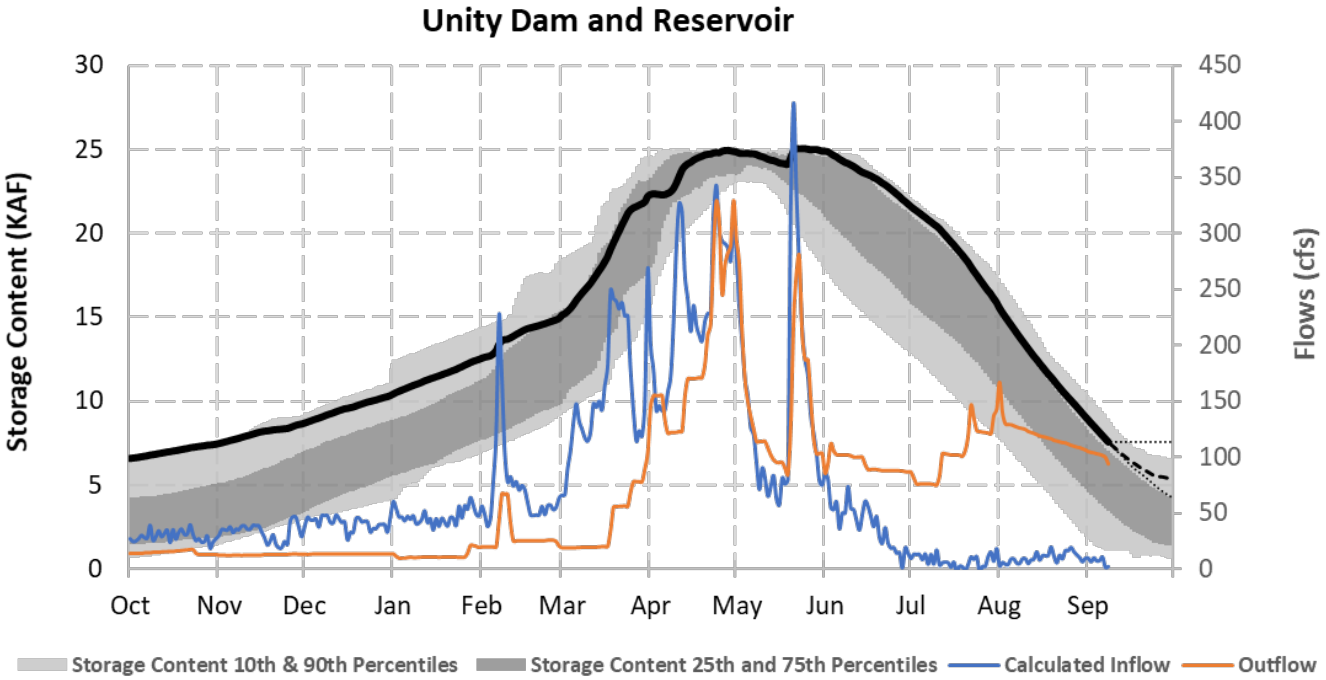




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

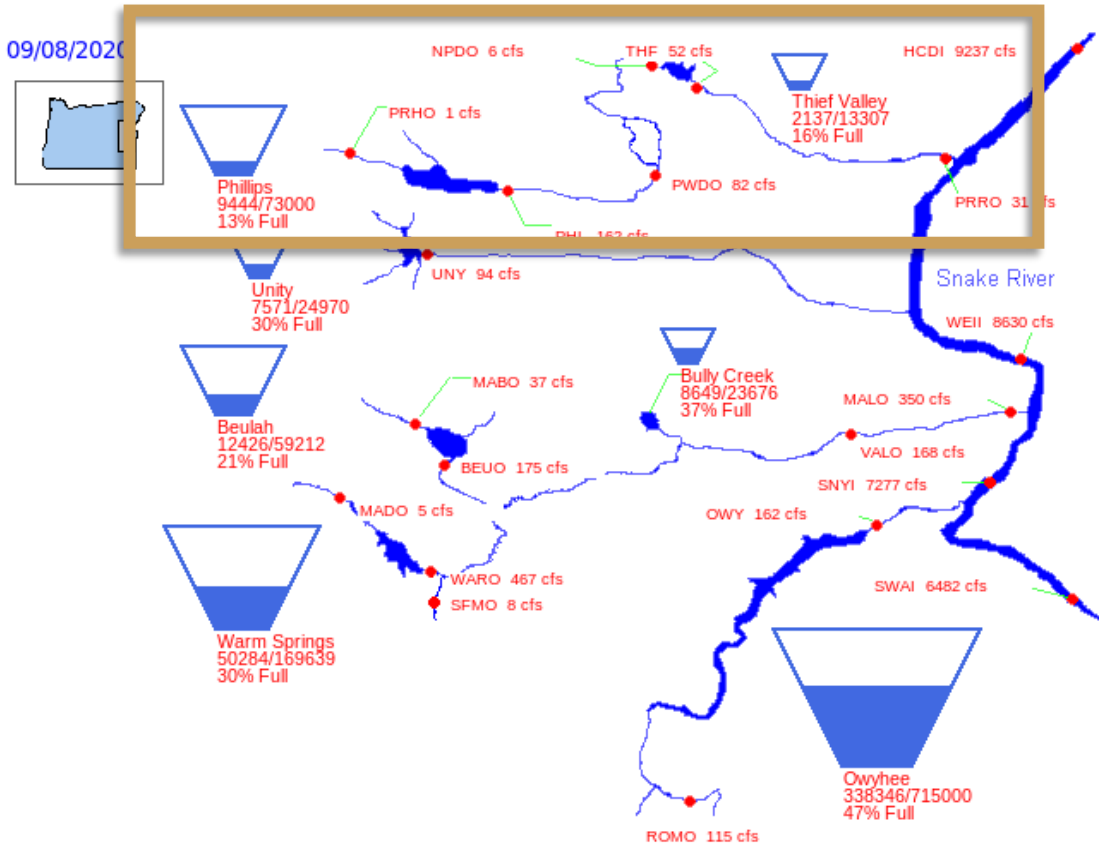
Burnt River Basin

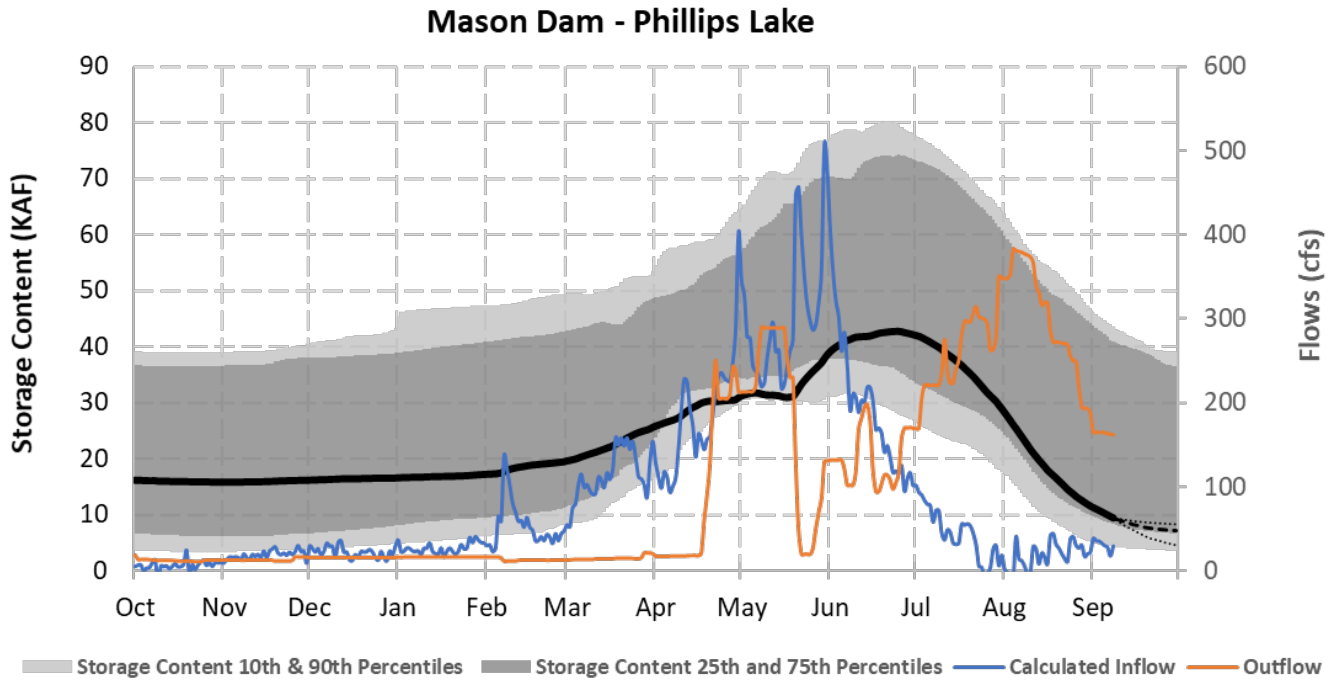




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

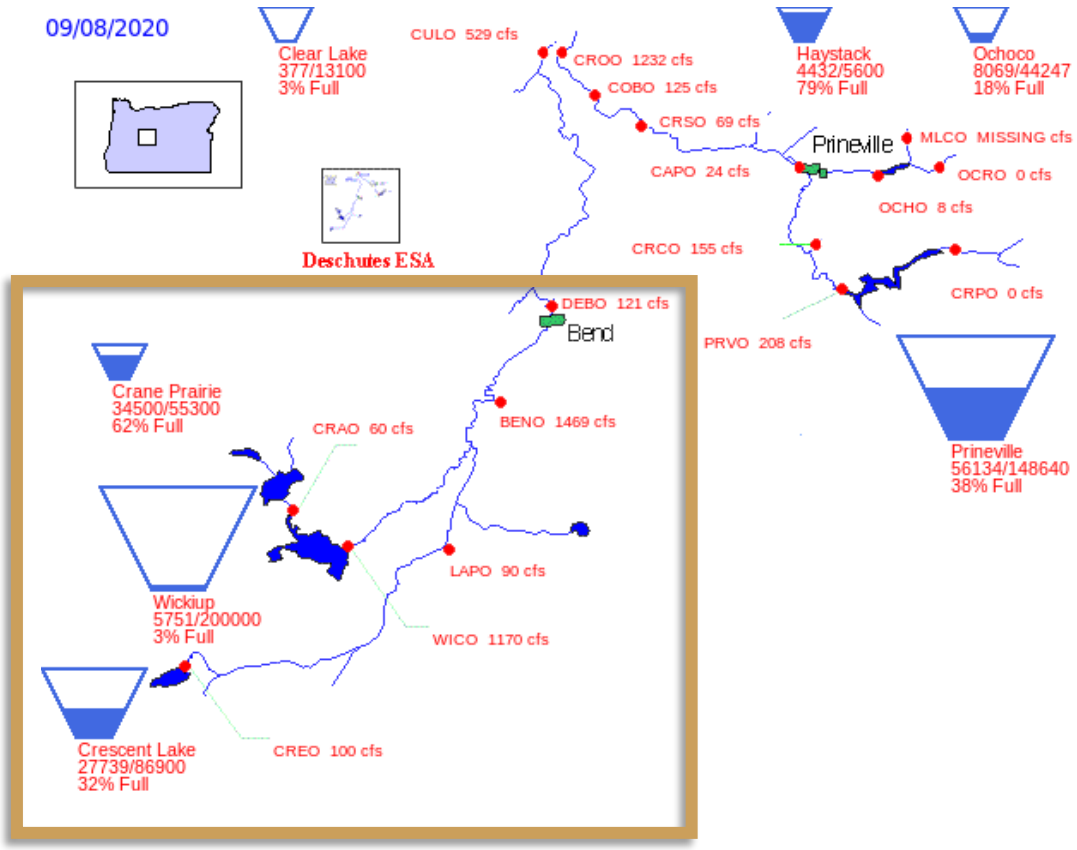
Powder River Basin

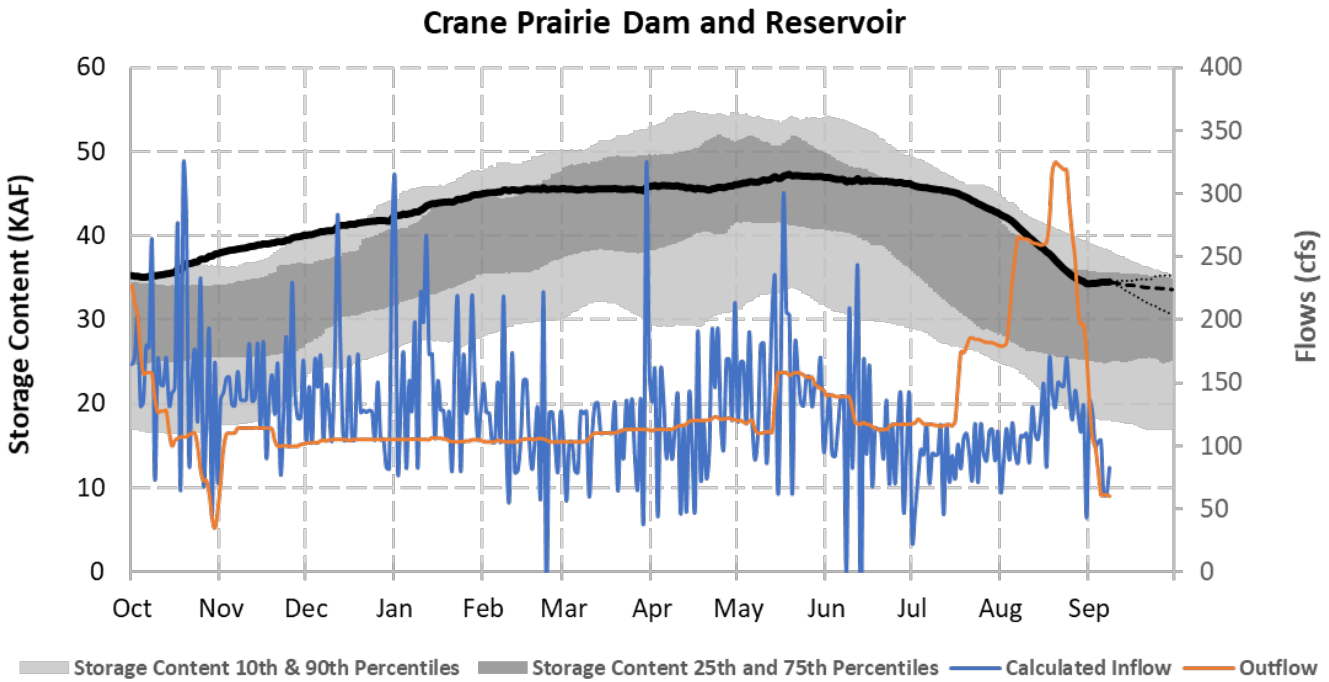


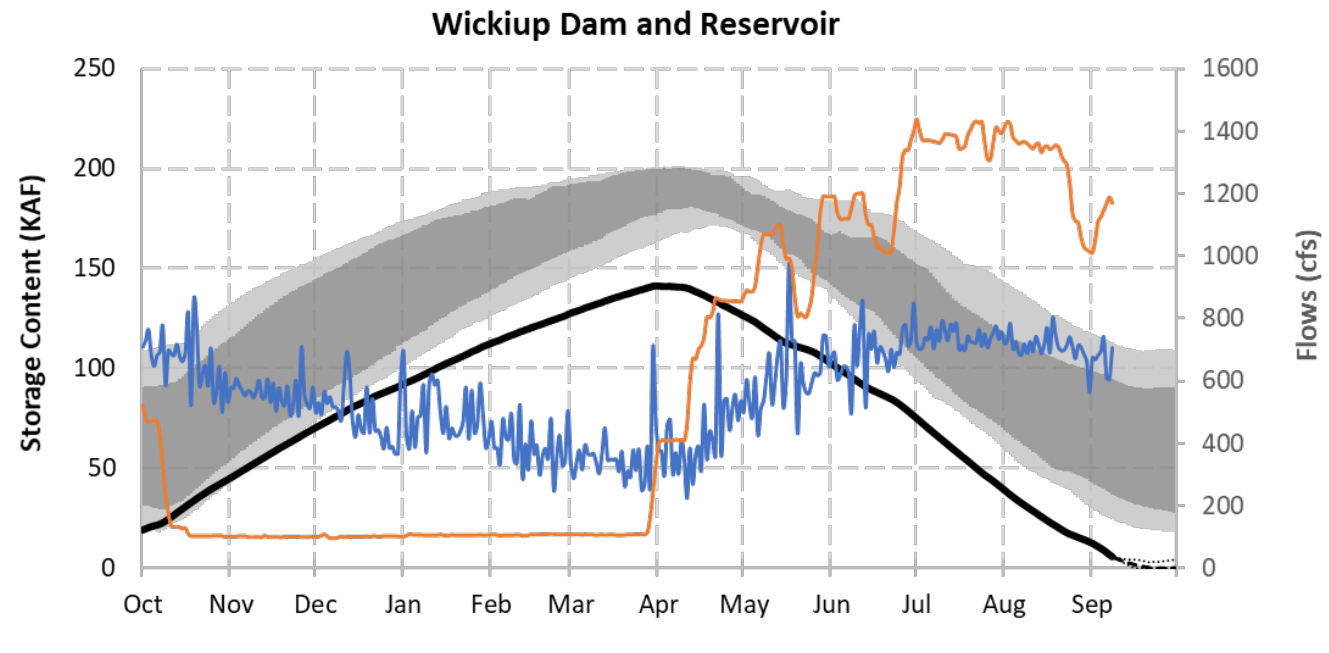


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Deschutes River Basin

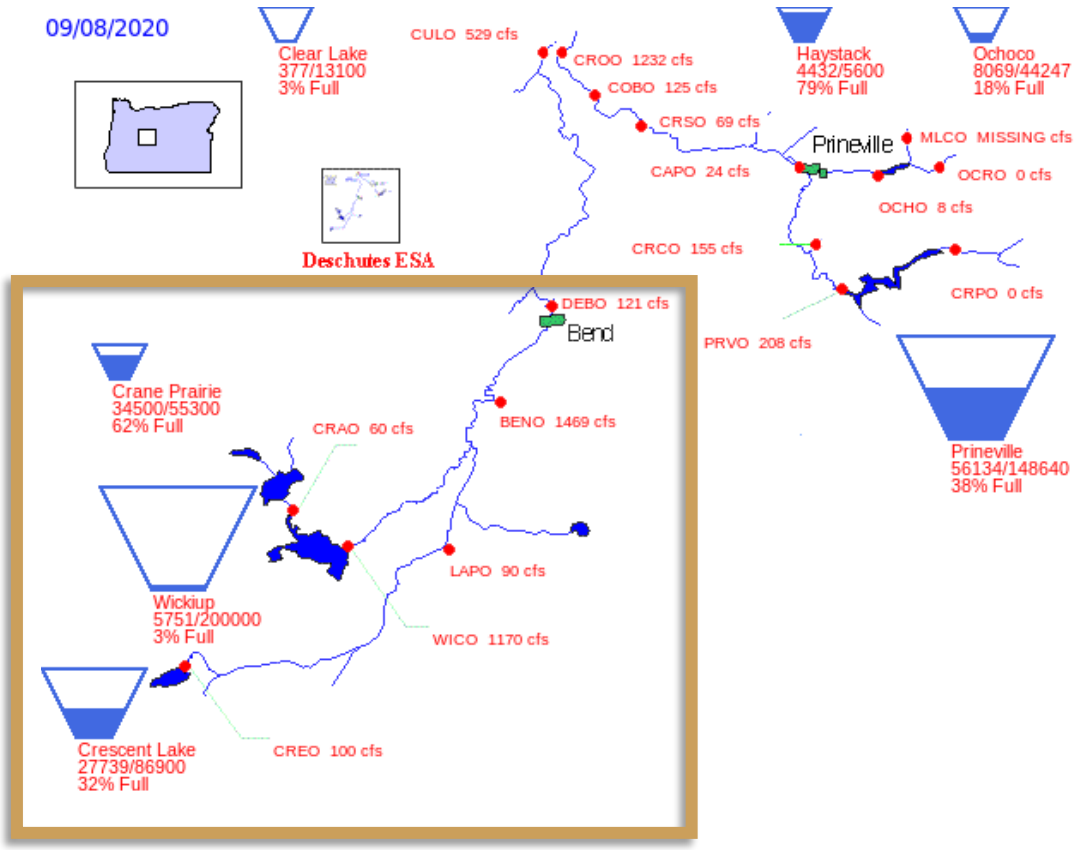


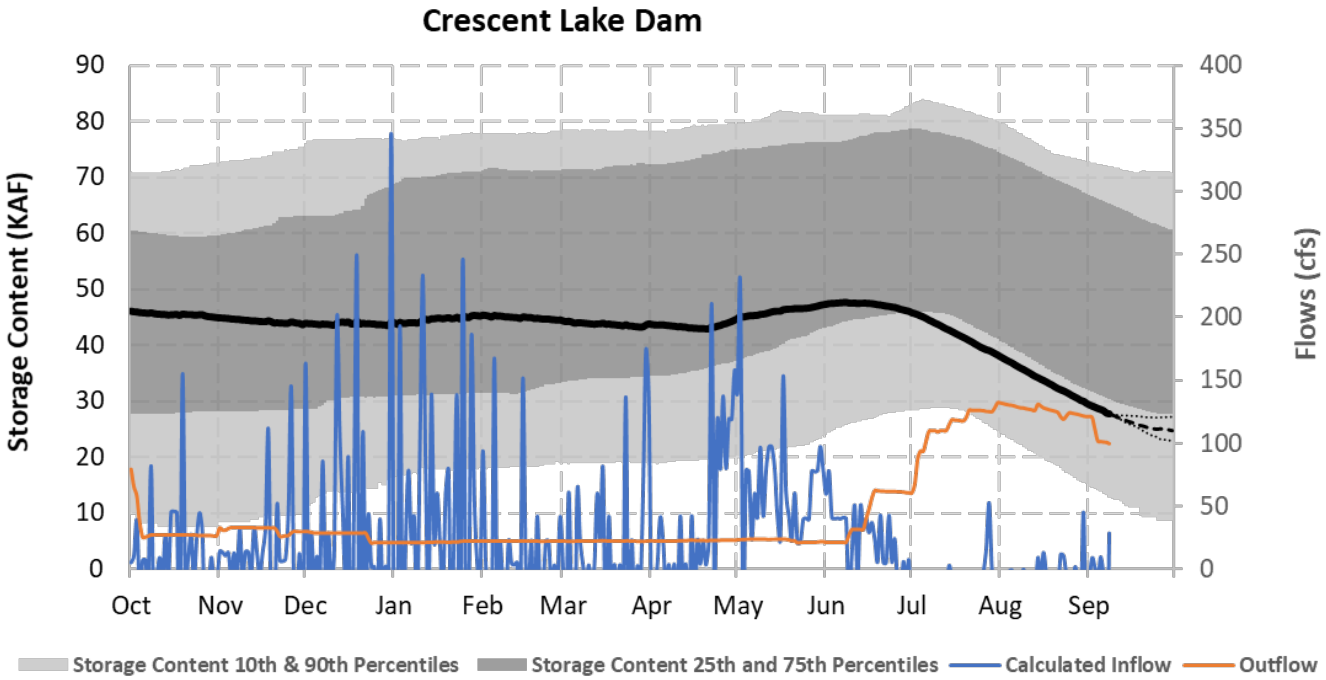




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

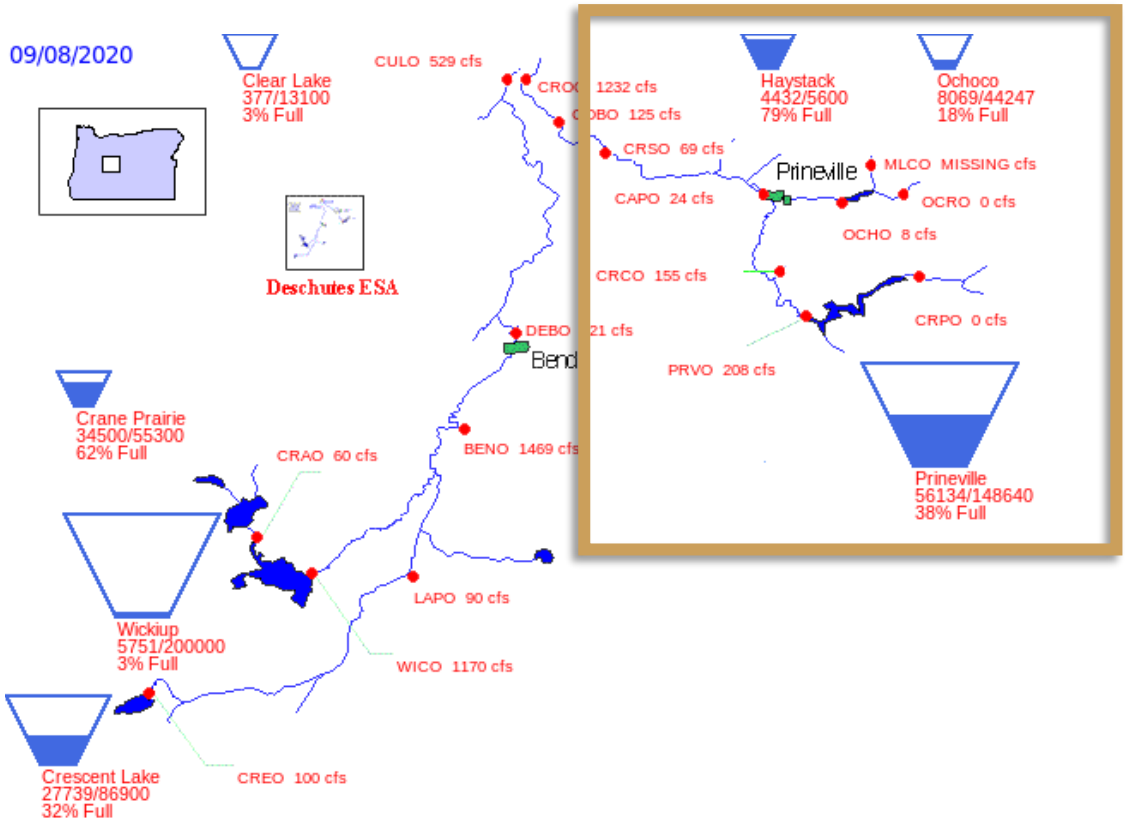
Deschutes River Basin

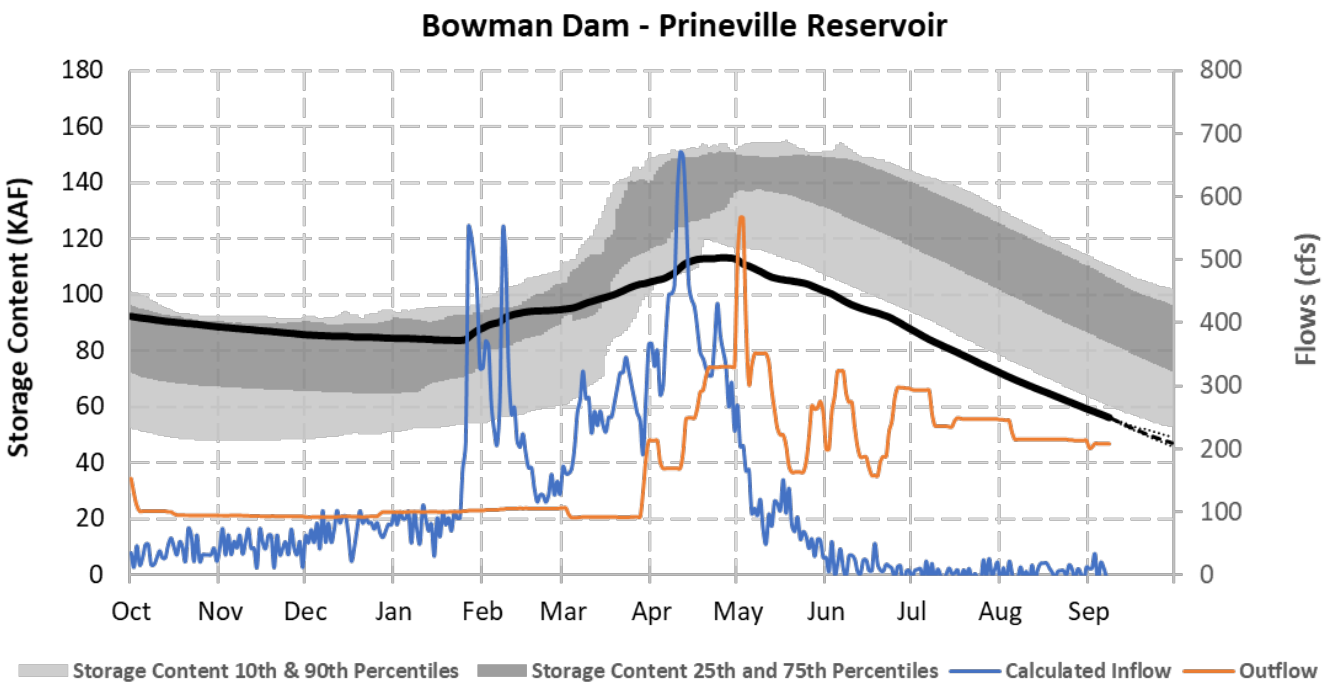


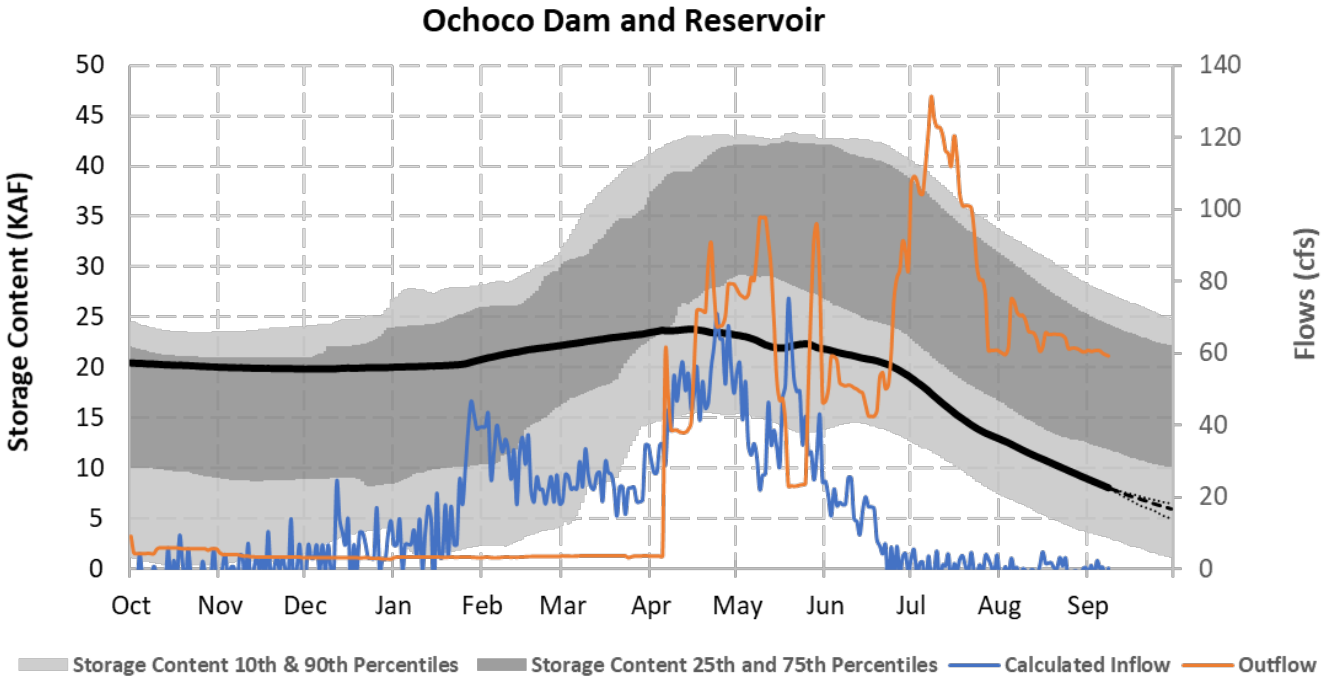


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Crooked River Basin



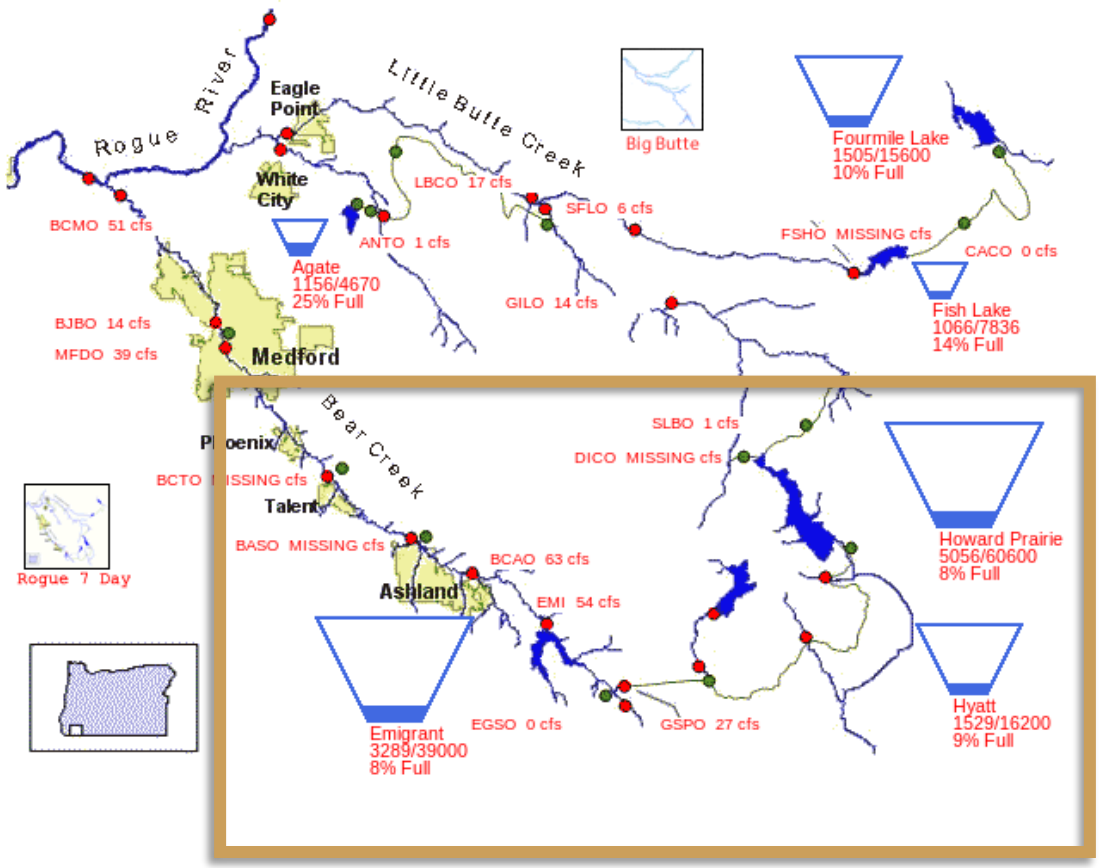


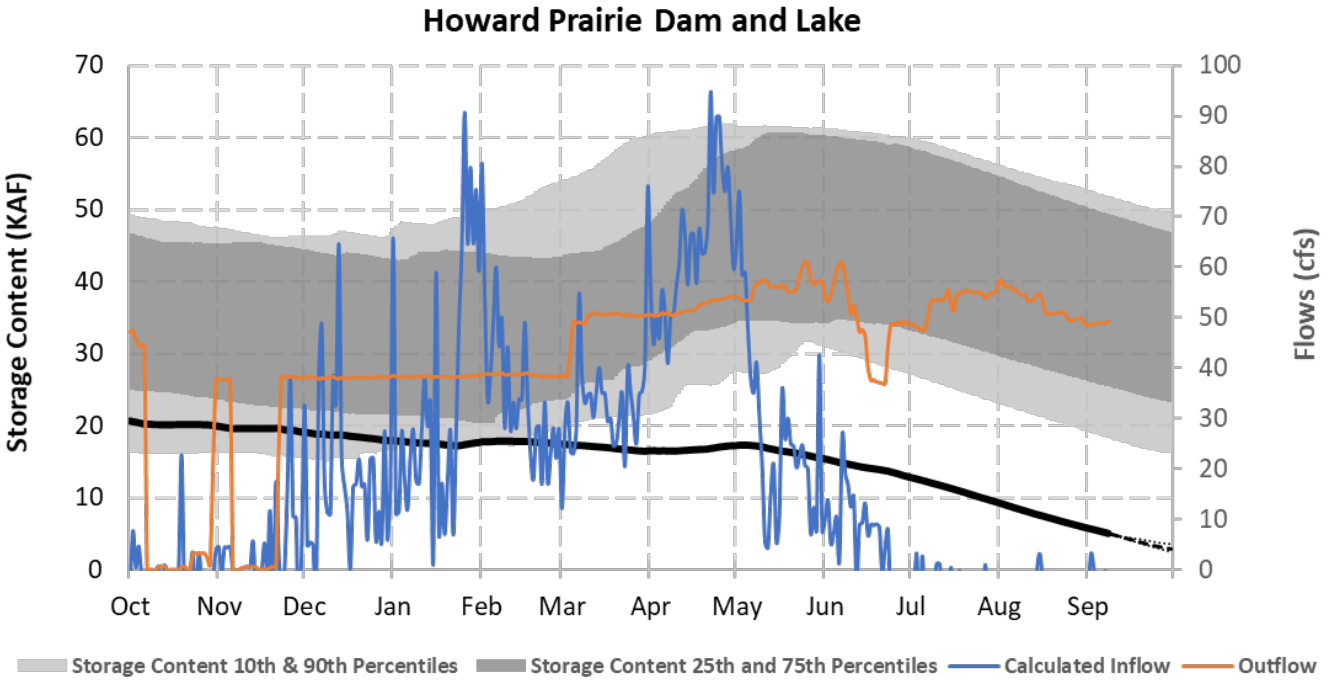


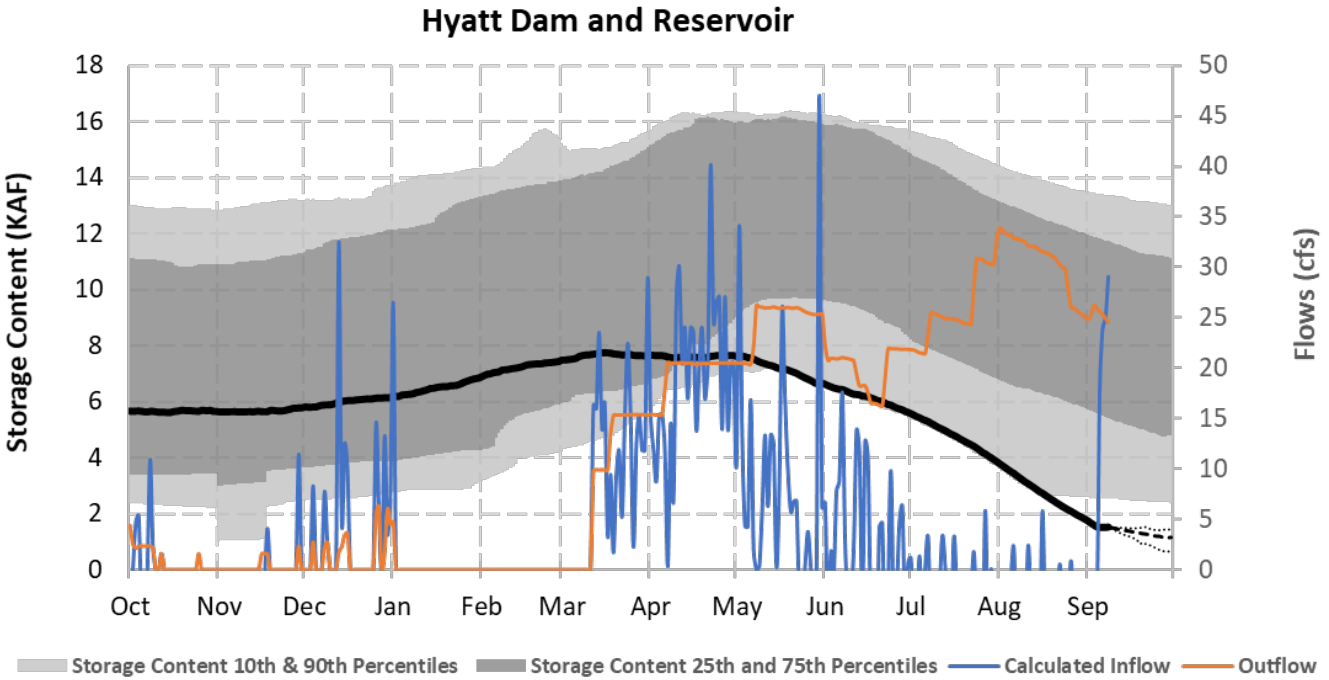
**Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows*

Rogue River Basin

09/08/2020



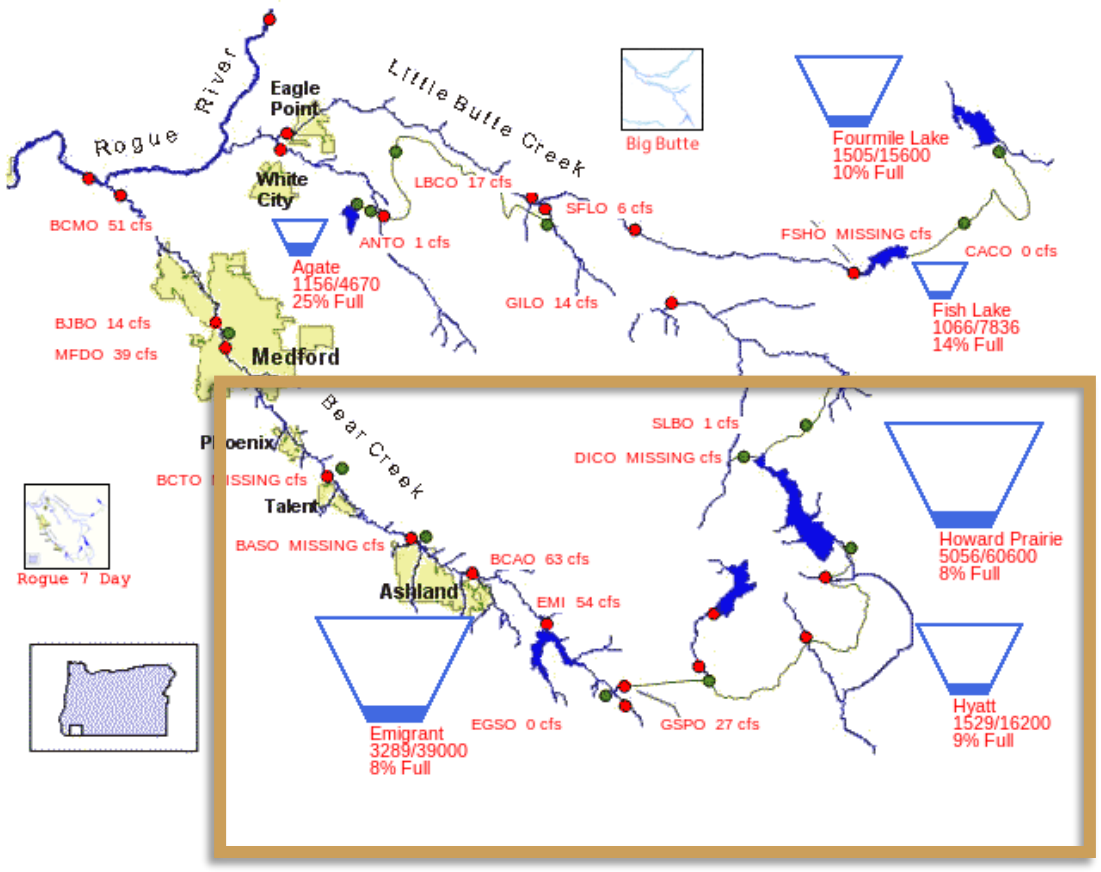


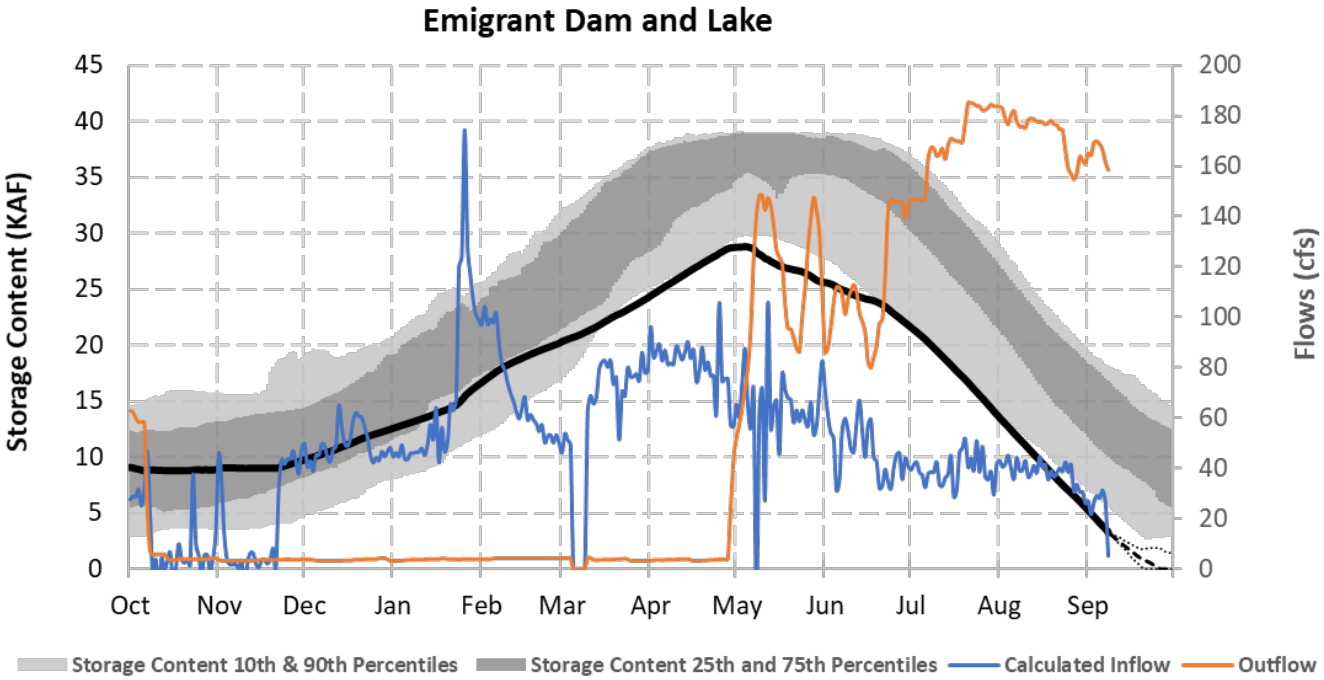


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Rogue River Basin

09/08/2020

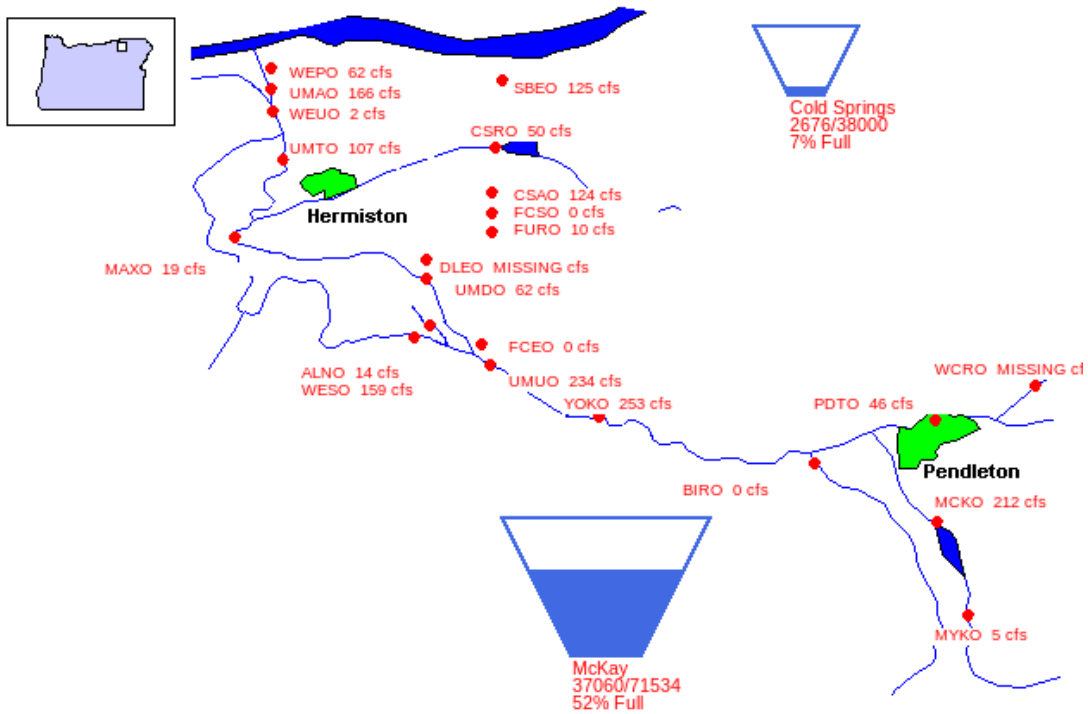


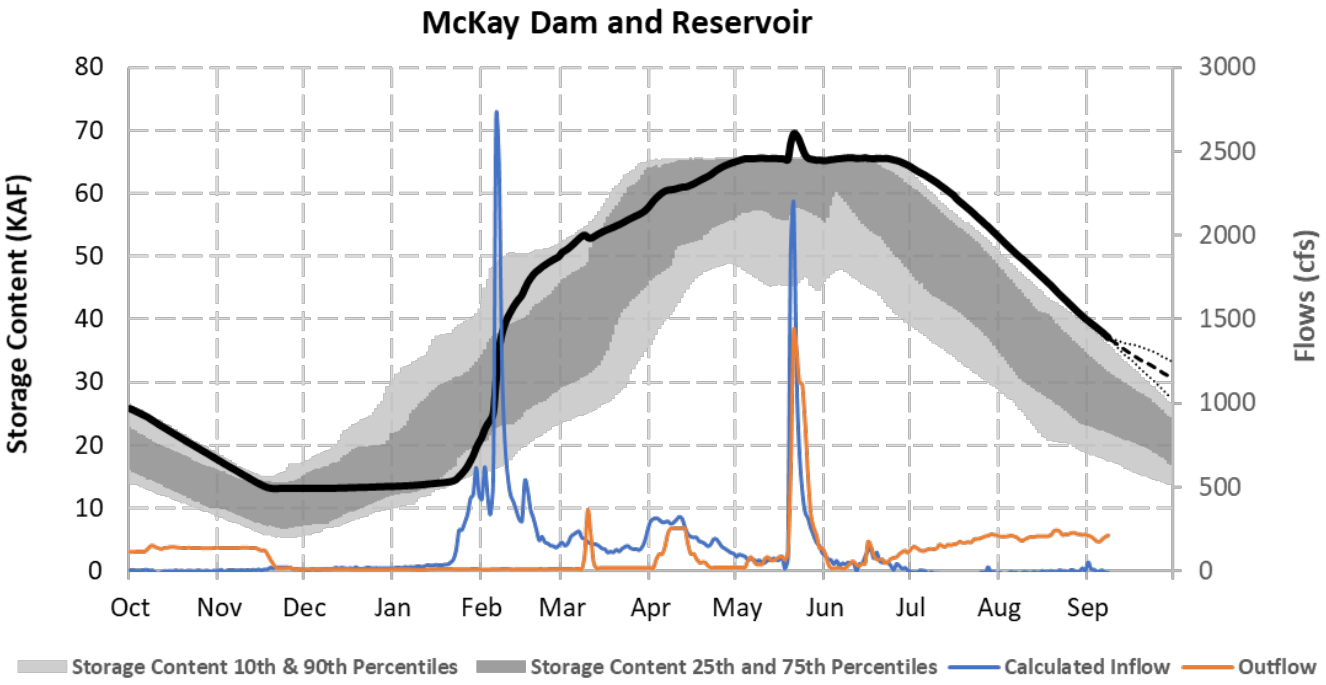


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Umatilla River Basin

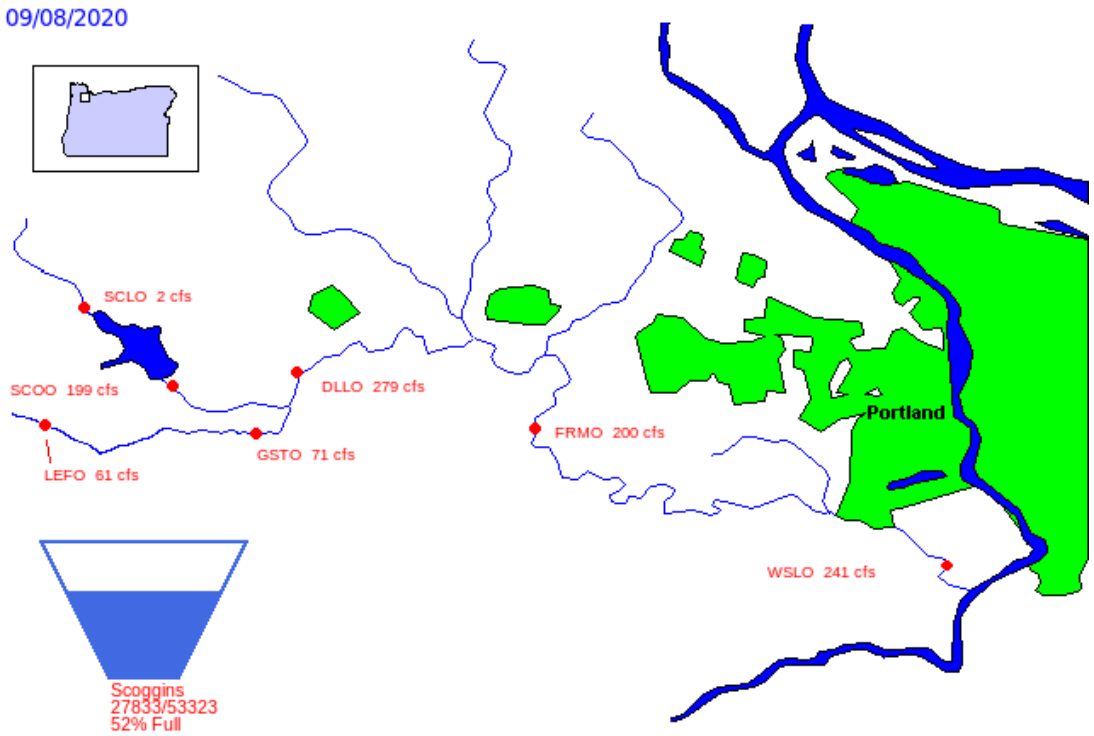
09/08/2020

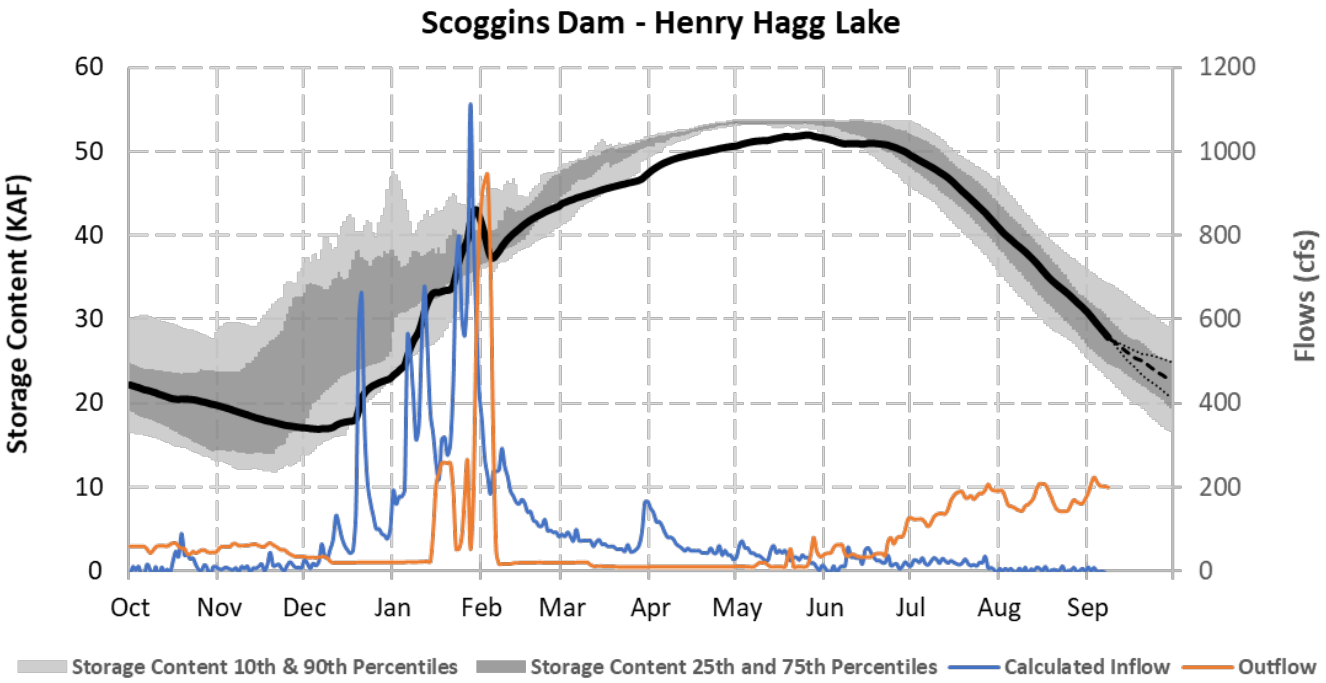




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Tualatin River Basin





*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

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BUREAU OF RECLAMATION