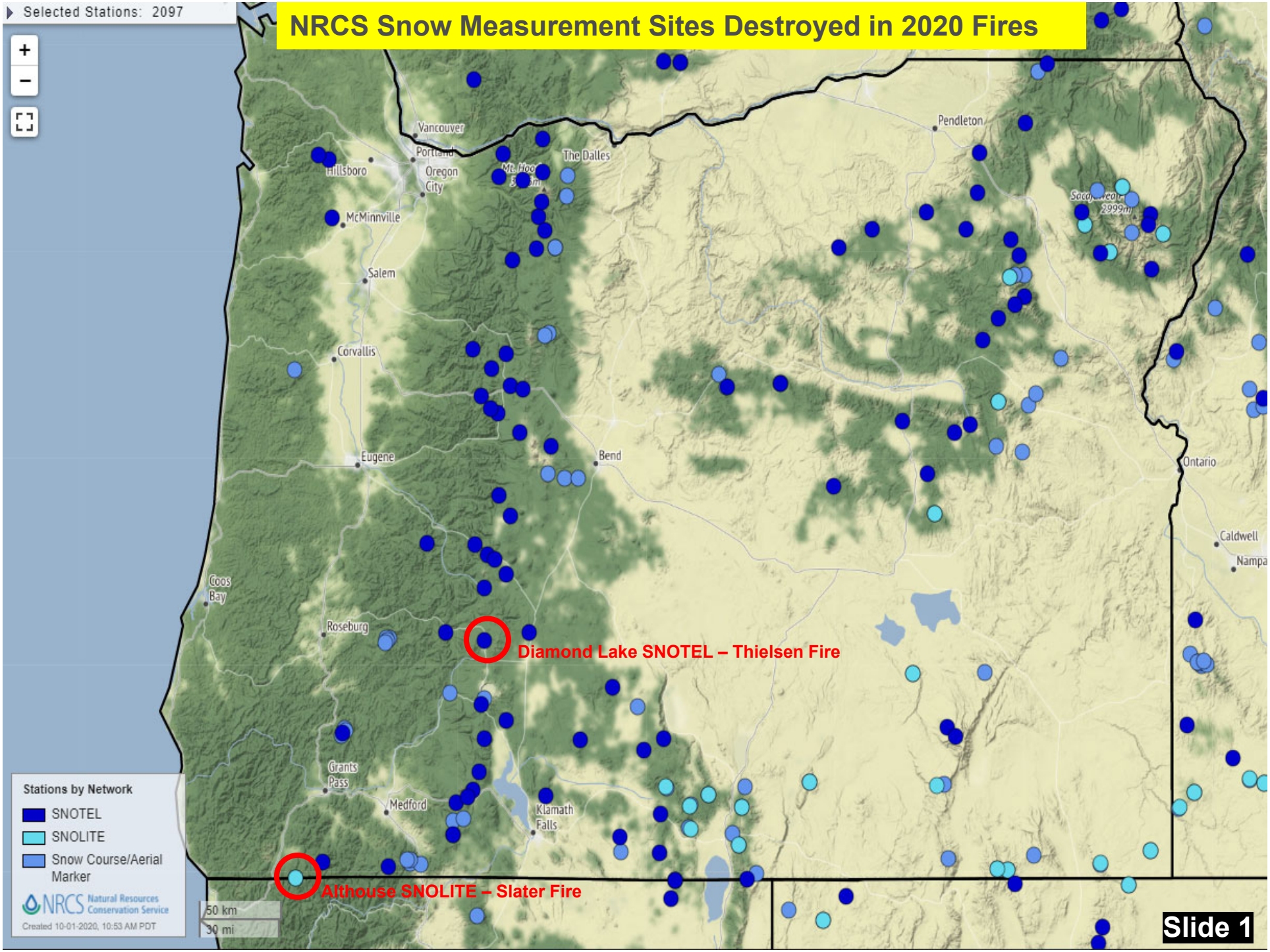
Oregon Water Supply Availability Committee - October 8, 2020

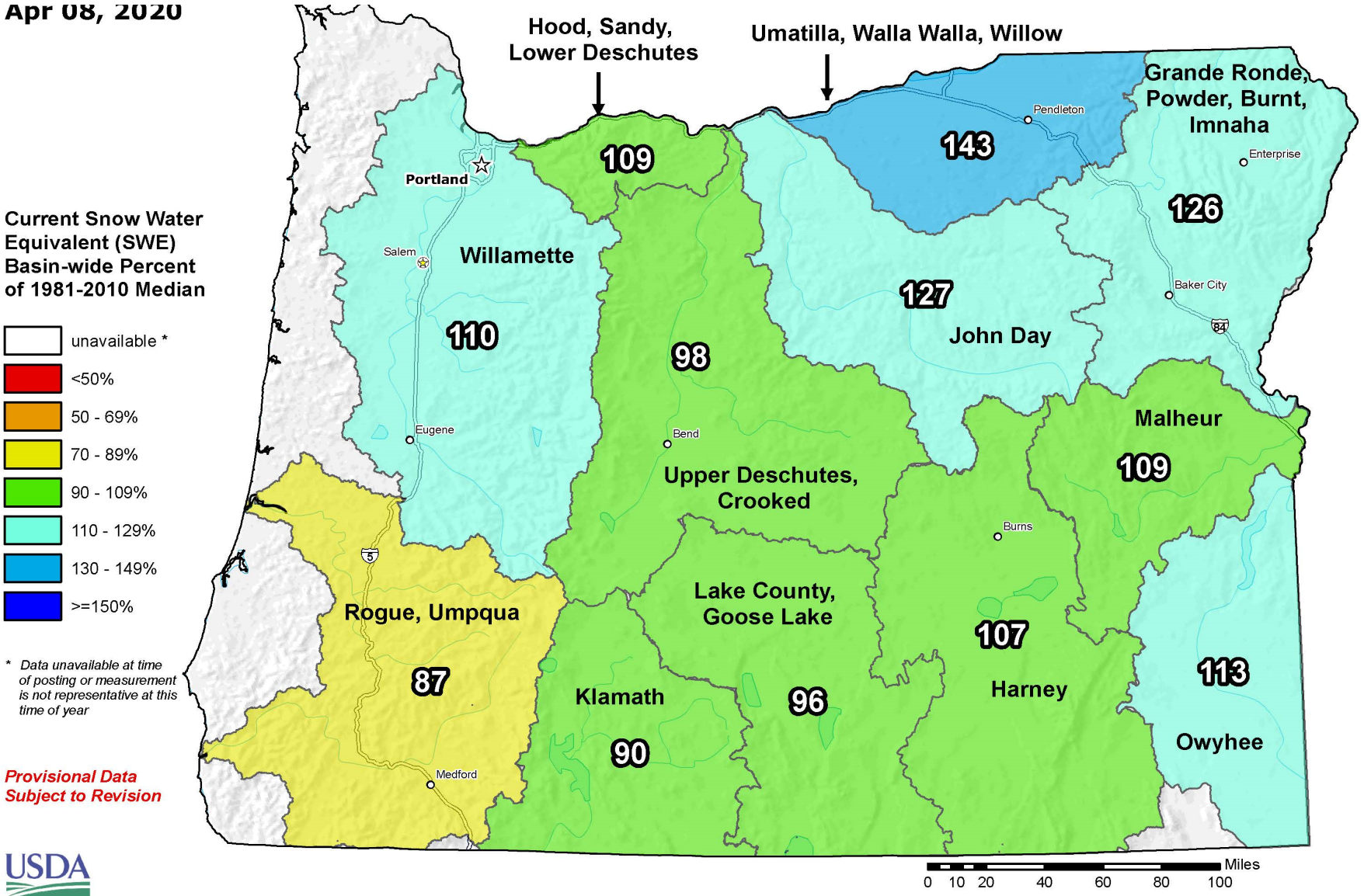
Diamond Lake SNOTEL
Burned in Thielsen Fire – 09/09/2020
Klamath Basin

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


Selected Stations: 2097
NRCS Snow Measurement Sites Destroyed in 2020 Fires
Vancouver
Portland
Hillsboro
Oregon City
The Dalles
Pendleton
McMinnville
Salem
Corvallis
Eugene
Bend
Ontario
Caldwell
Nampa
Coos Bay
Roseburg
Grants Pass
Medford
Klamath Falls
Diamond Lake SNOTEL – Thielsen Fire
Althouse SNOLITE – Slater Fire
Stations by Network
SNOTEL
SNOLITE
Snow Course/Aerial Marker
NRCS Natural Resources Conservation Service
Created 10-01-2020, 10:53 AM PDT
50 km
30 mi
Slide 1

Statewide SNOTEL Snowpack peaked at 109% - April 8, 2020

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



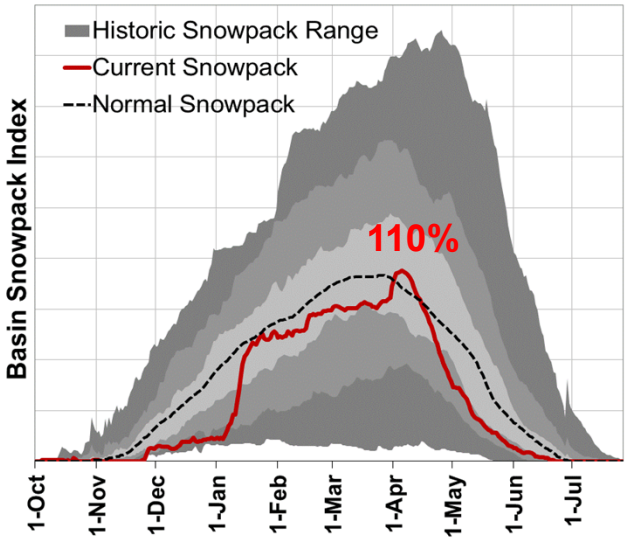
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

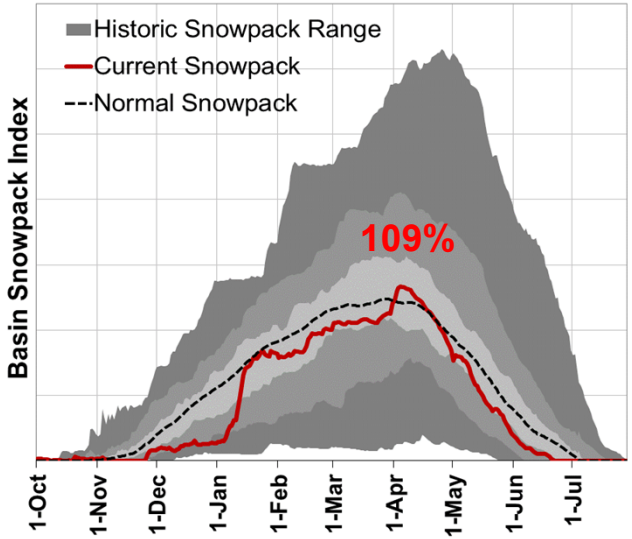
Slide 2

Water Year 2020

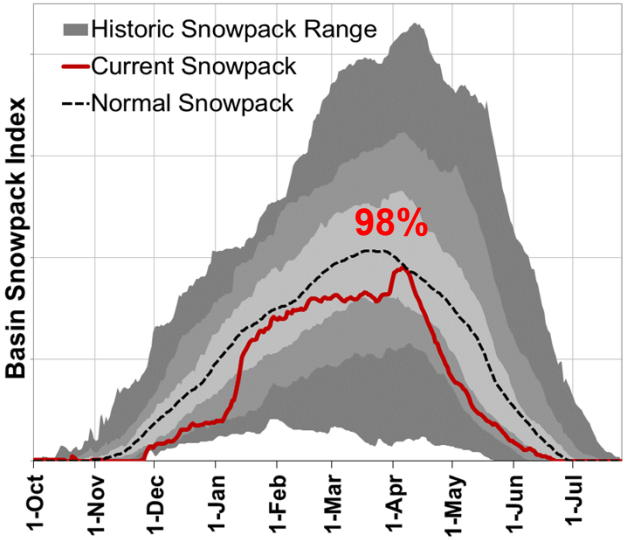
Willamette



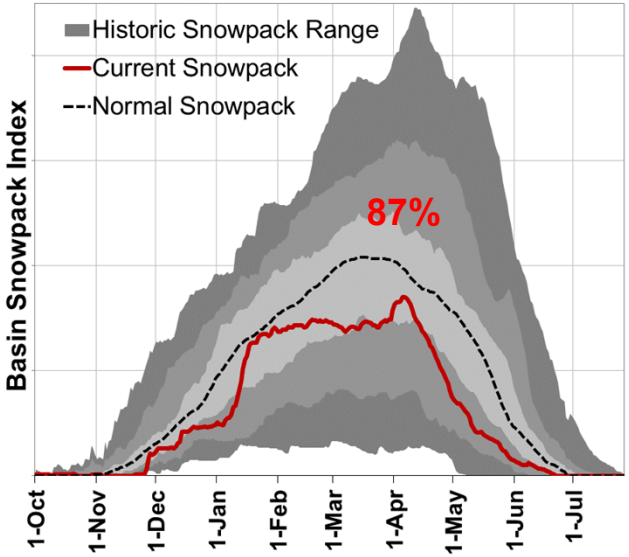
Hood/Sandy/L. Deschutes



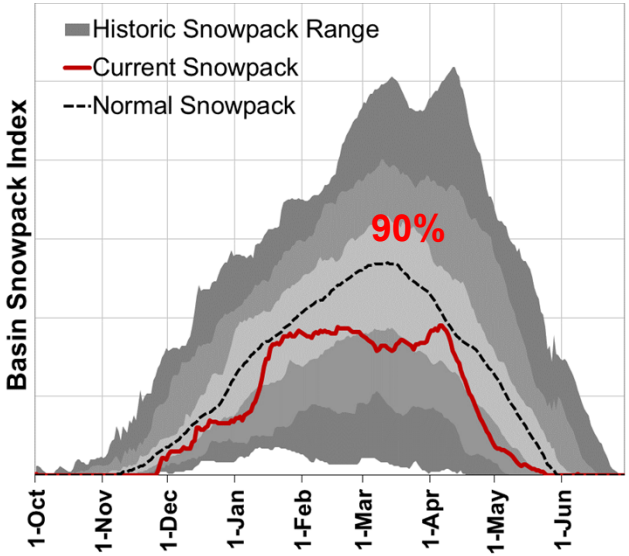
Deschutes



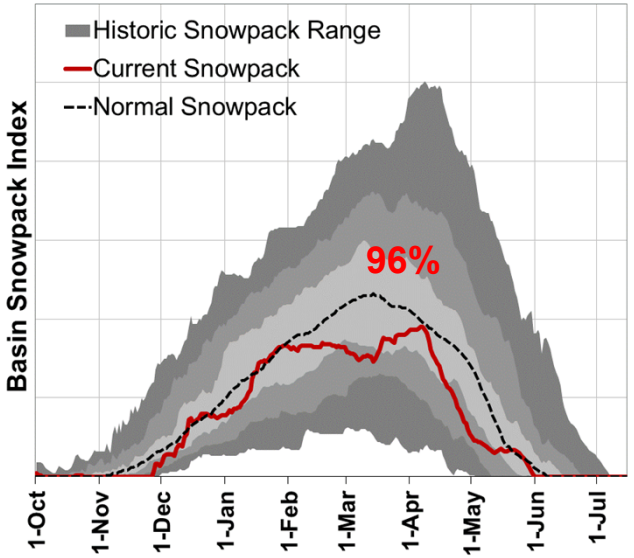
Rogue/Umpqua



Klamath

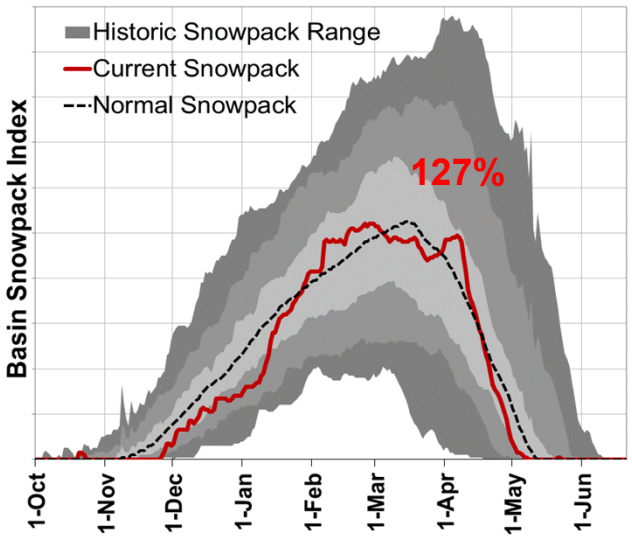


Lake County/Goose Lake

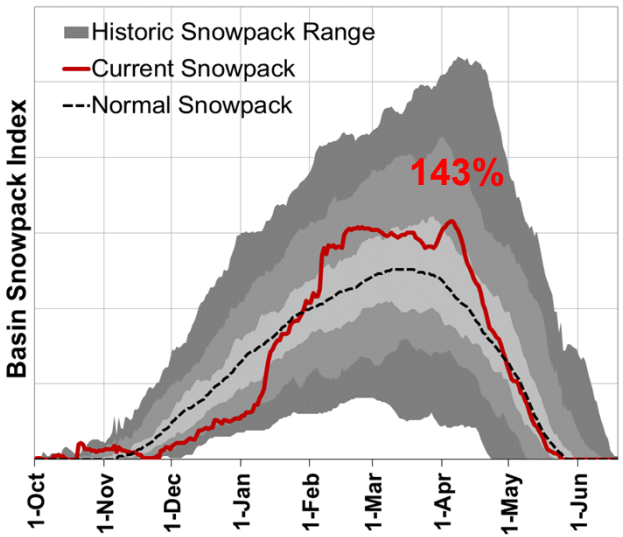


Water Year 2020

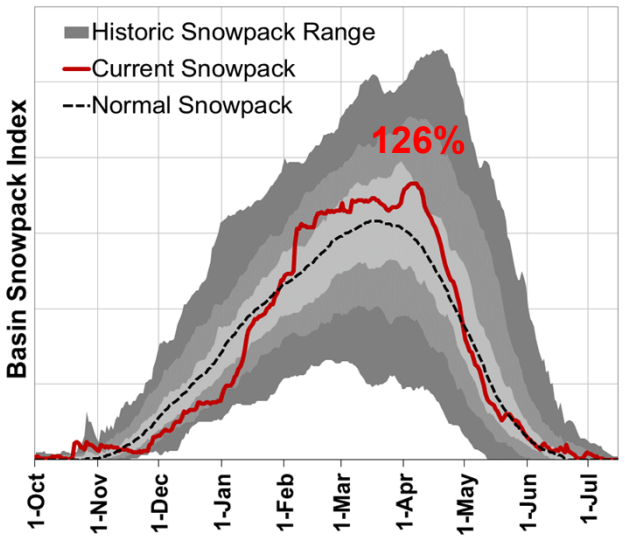
John Day



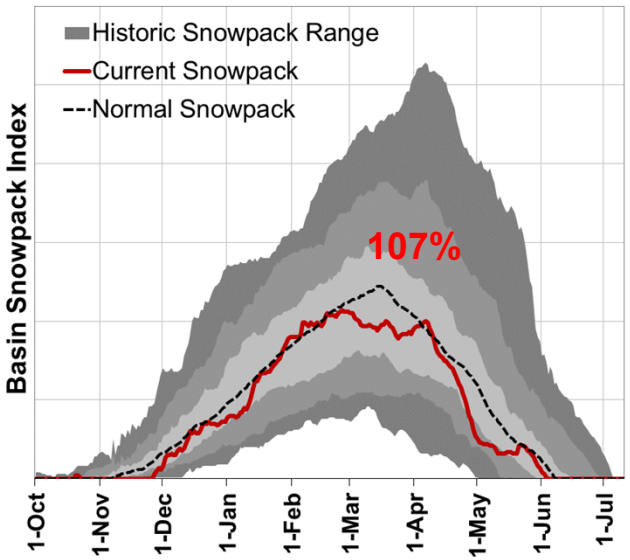
Umatilla



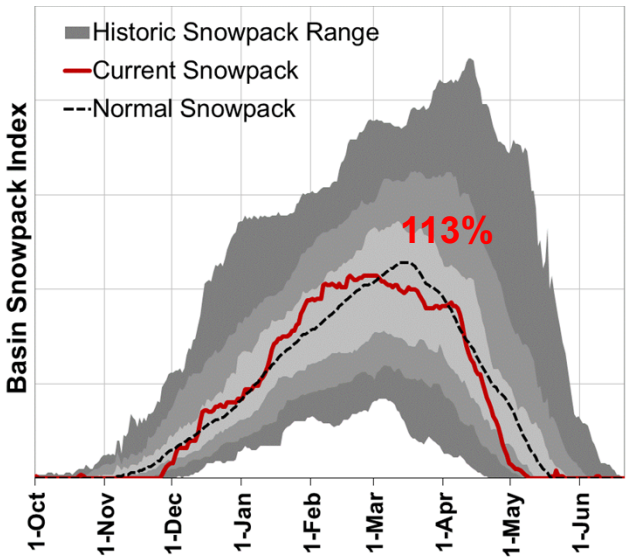
Grand Ronde/Powder/Burnt



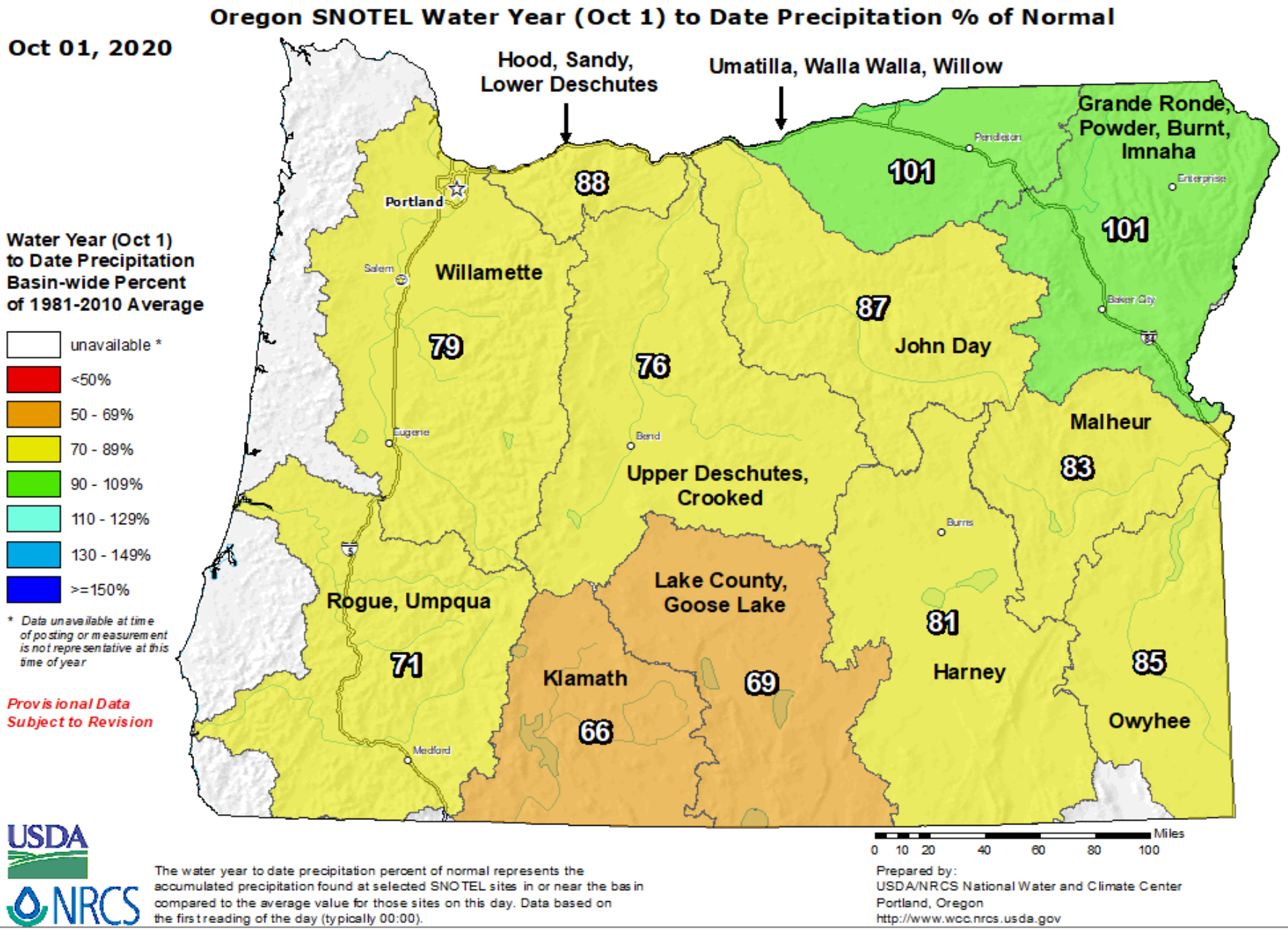
Harney

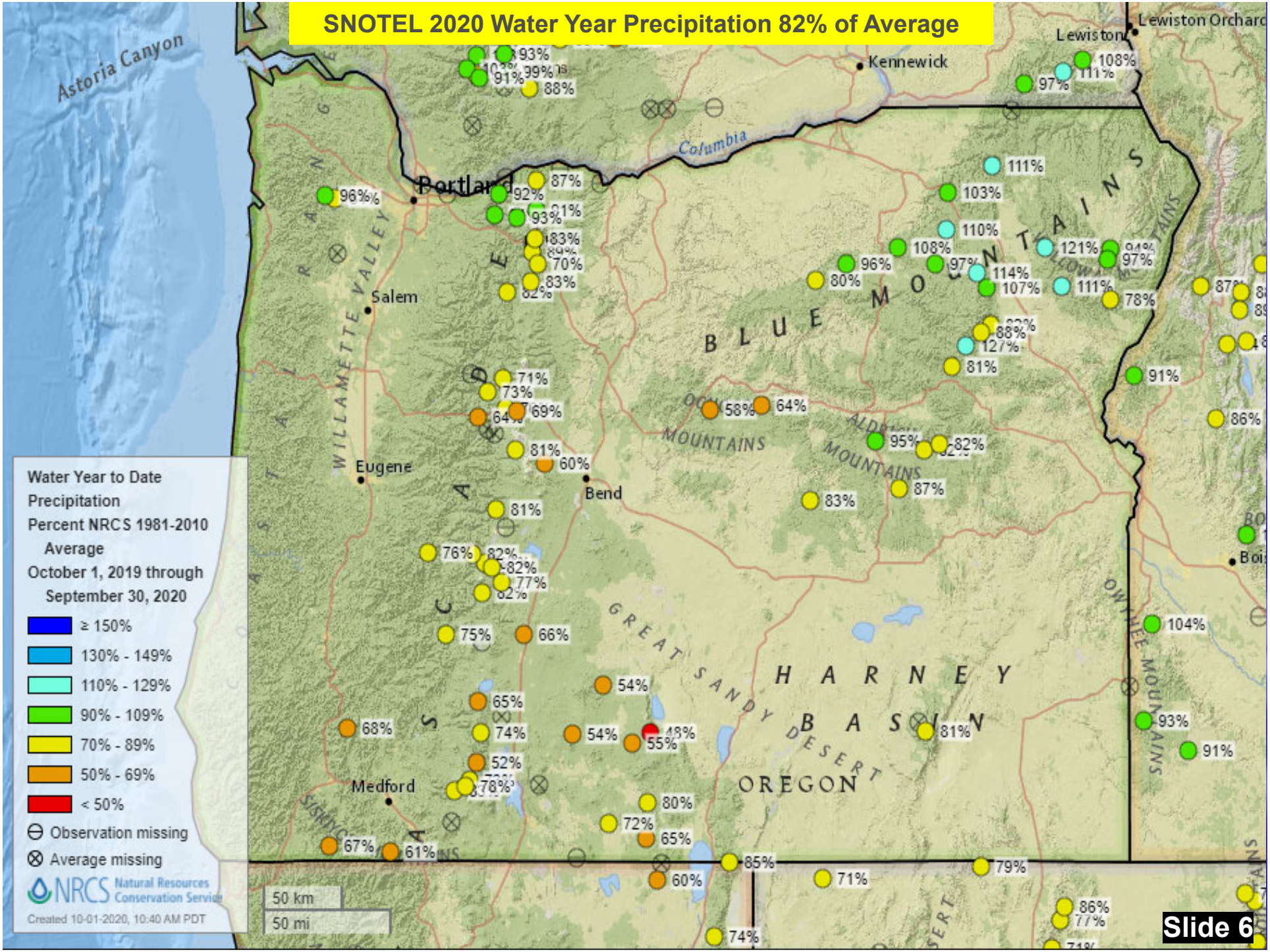


Owyhee



Statewide SNOTEL Water Year Precipitation was 82% of normal




SNOTEL 2020 Water Year Precipitation 82% of Average
Water Year to Date Precipitation
Percent NRCS 1981-2010 Average
October 1, 2019 through September 30, 2020
≥ 150%
130% - 149%
110% - 129%
90% - 109%
70% - 89%
50% - 69%
< 50%
Observation missing
Average missing
NRCS Natural Resources Conservation Service
Created 10-01-2020, 10:40 AM PDT
50 km
50 mi
Astoria Canyon
Columbia
Portland
Salem
Eugene
Bend
Medford
Kennewick
Lewiston
Lewiston Orchard
WILLAMETTE VALLEY
CASCADES
BLUE MOUNTAINS
OCHOCO MOUNTAINS
ALDRICH MOUNTAINS
GREAT SANDY DESERT
HARNEY BASIN
OREGON
OWYHEE MOUNTAINS
SISKIYOU MOUNTAINS
Slide 6


Slide 7


Slide 8


Slide 9

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Thank you

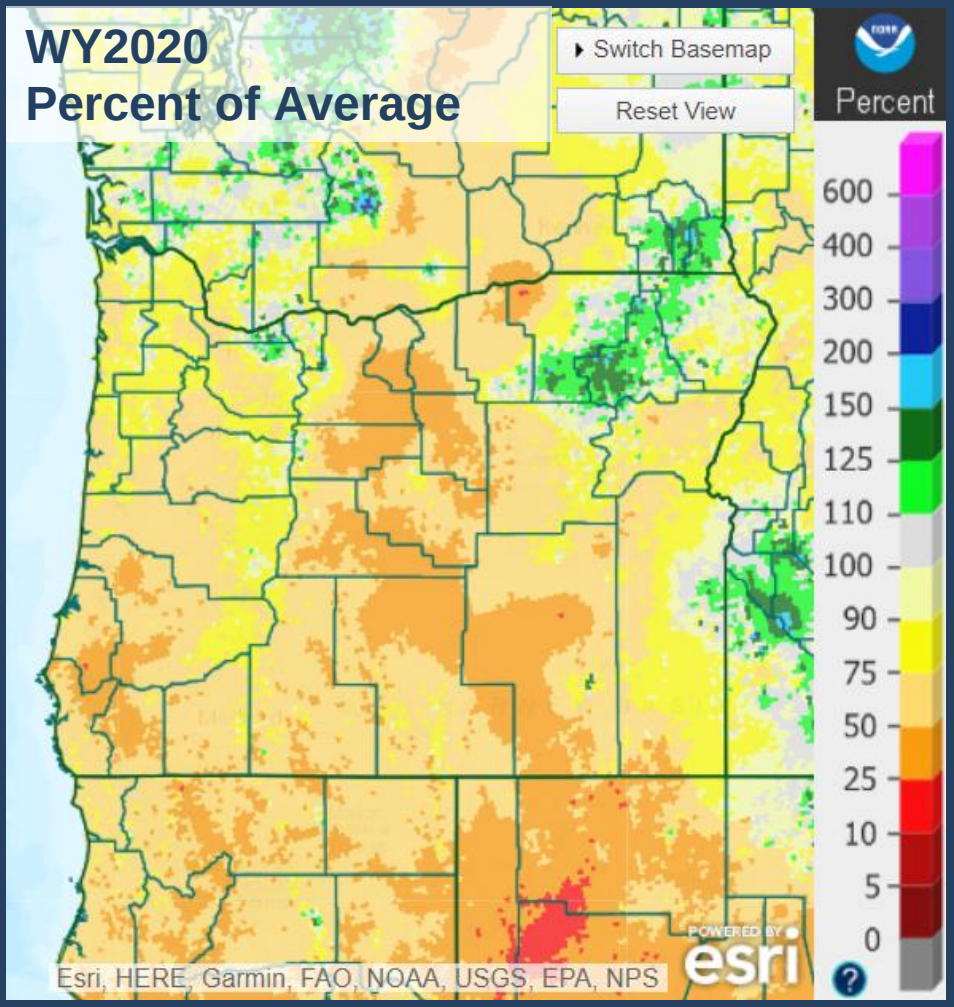
Oregon WSAC

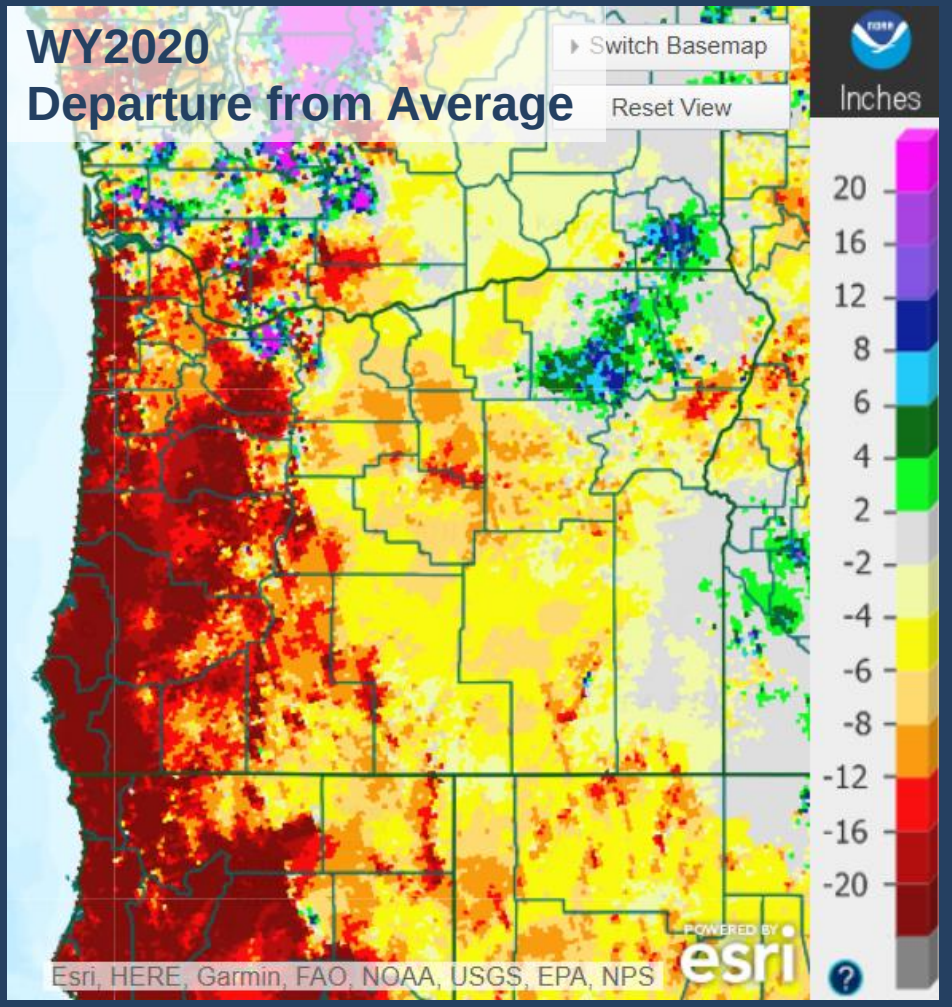
National Weather Service Precipitation & Temperatures Update

October 8, 2020

Andy Bryant
NOAA/NWS Portland
Weather Forecast Office

Water Year Precipitation

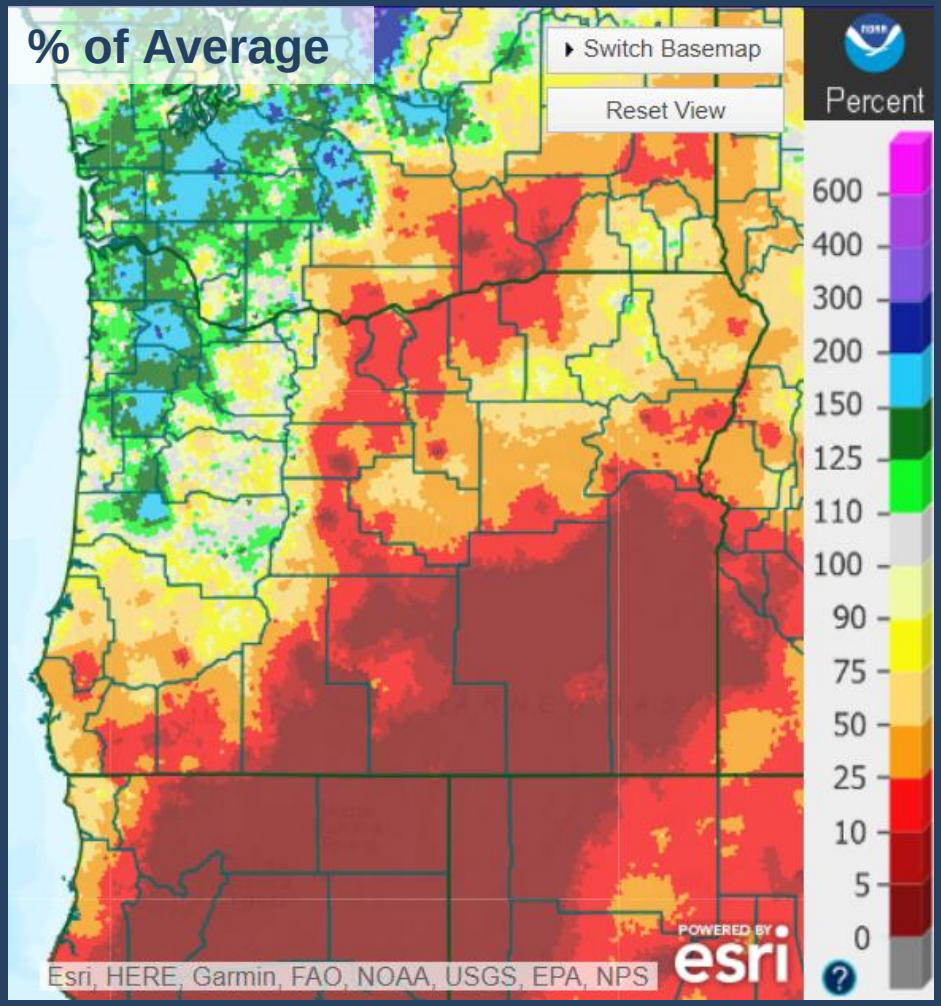


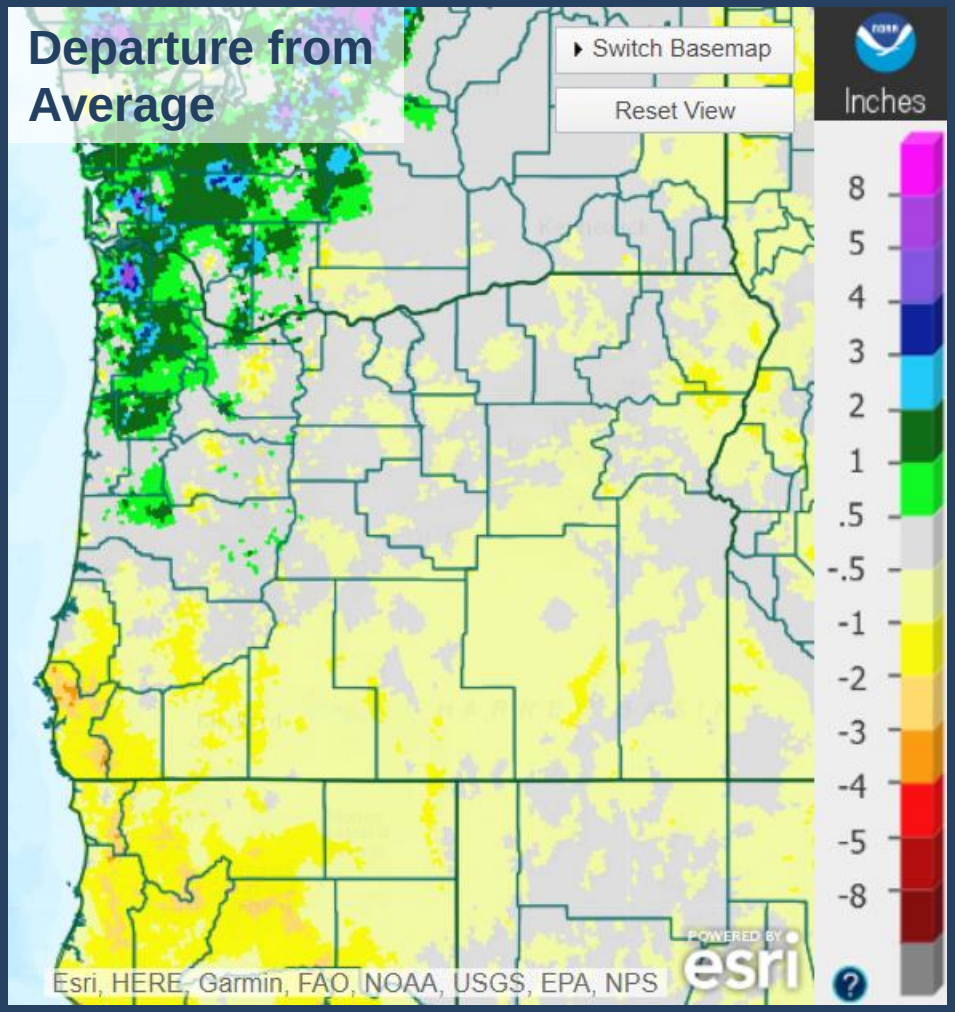


Precipitation Data as of October 7, 2020

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

Precipitation – Past 30 Days



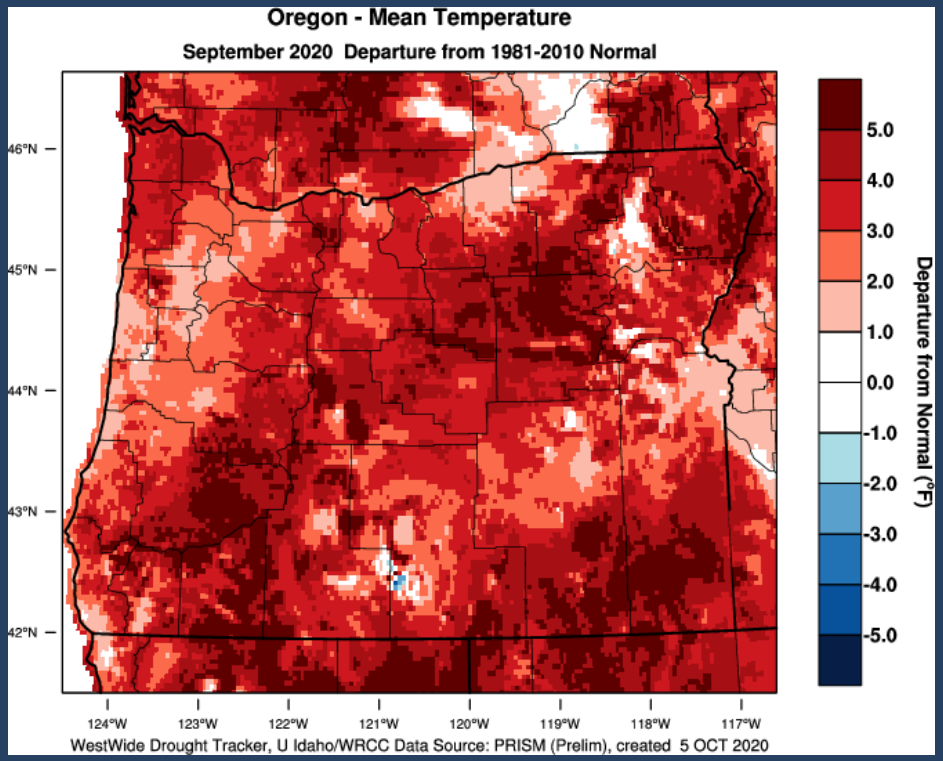


Precipitation Data as of October 7, 2020

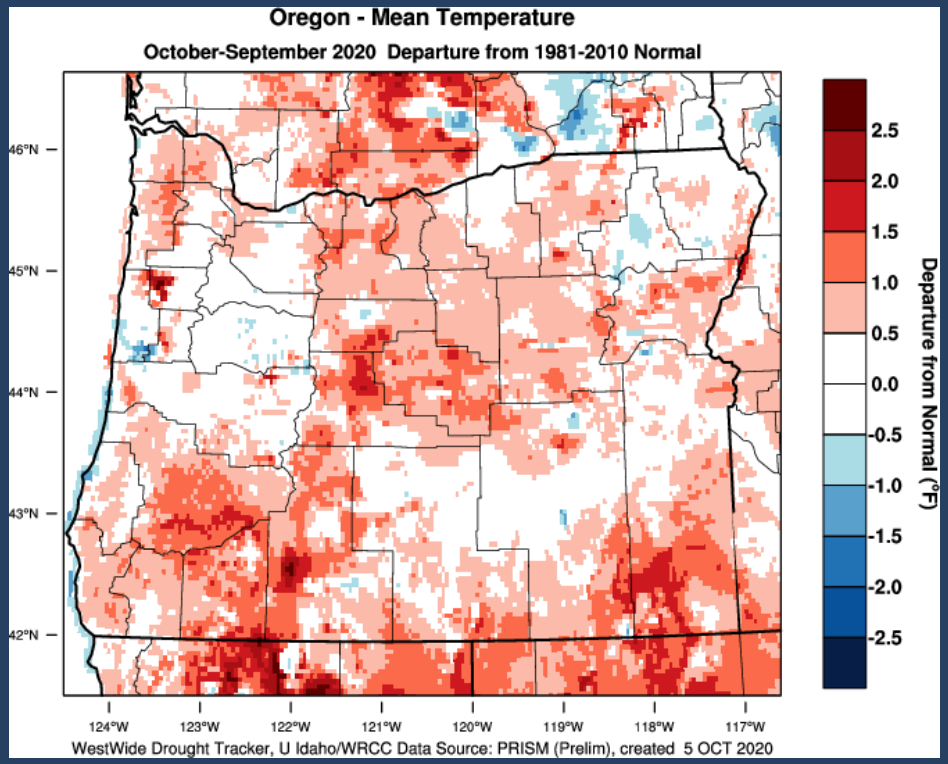
Source: water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr

Recent Temperatures

September 2020



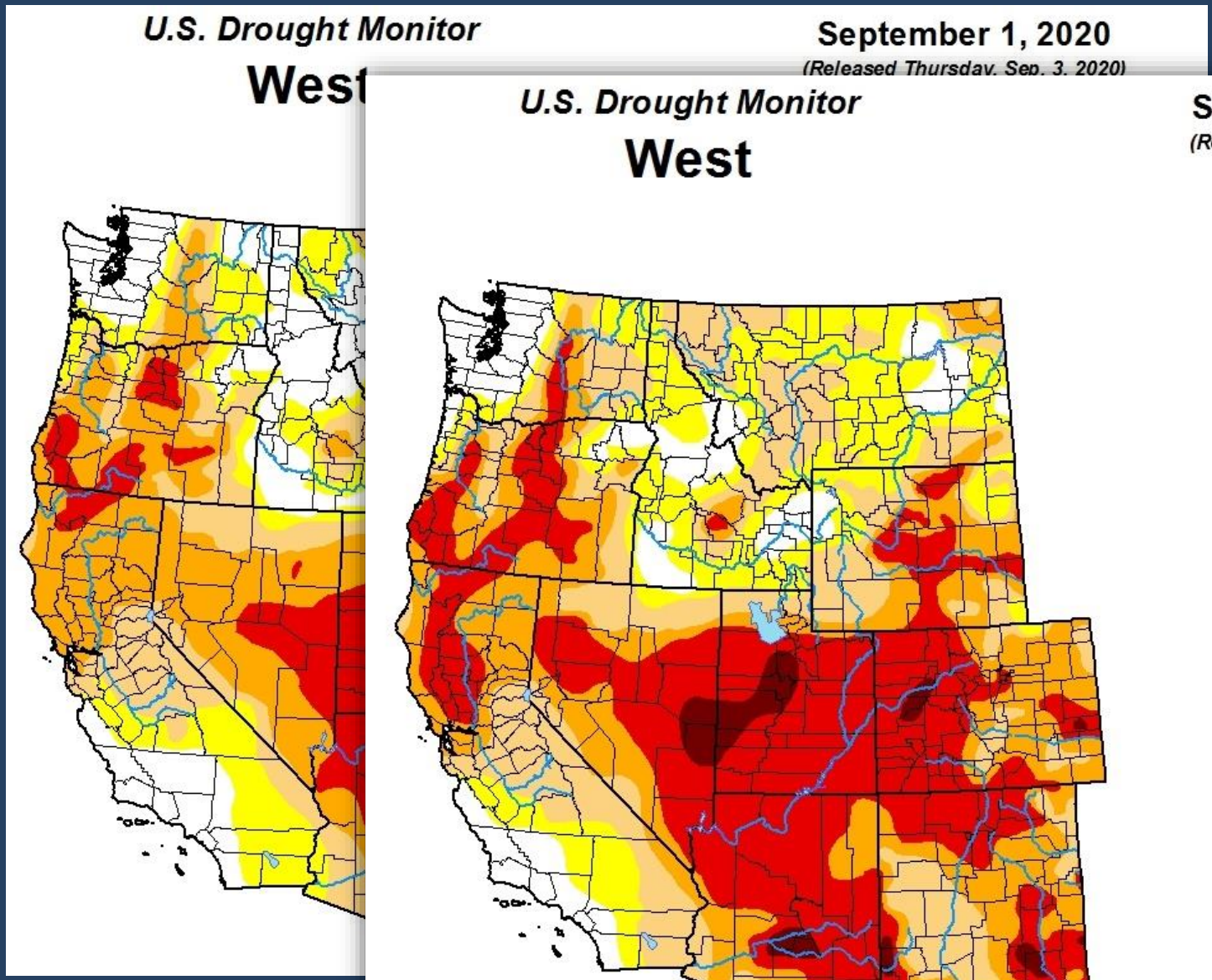
Water Year 2020



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

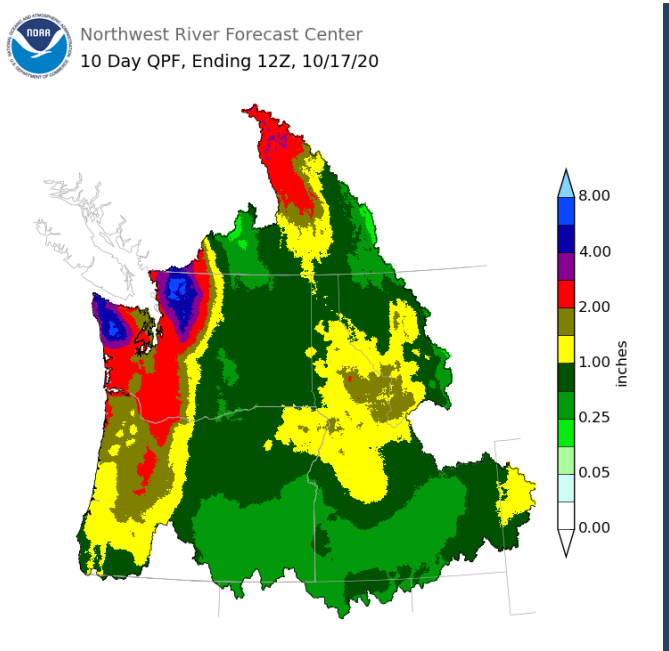
www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=2

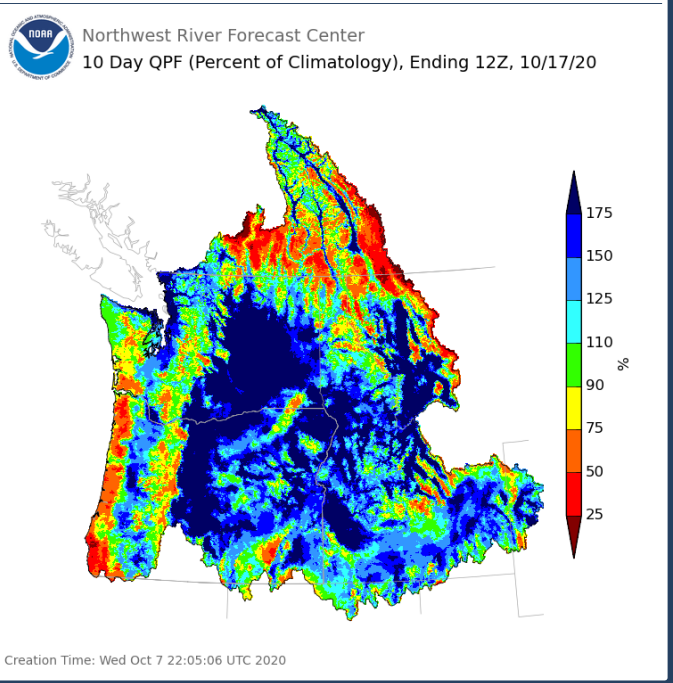
Drought Monitor



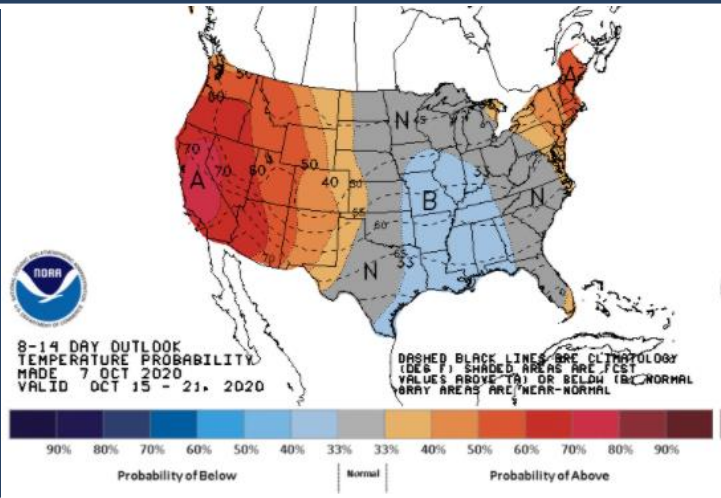
Mid October Outlook

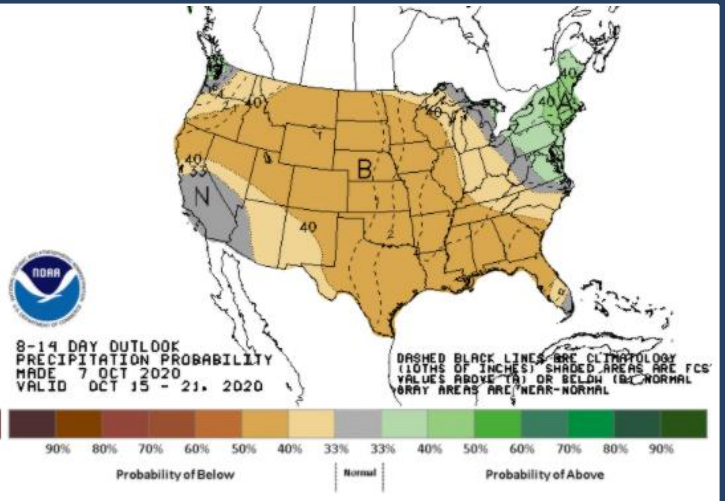
NWRFC
10-DAY
PRECIPITATION





CPC
8 – 14 DAY
OUTLOOK





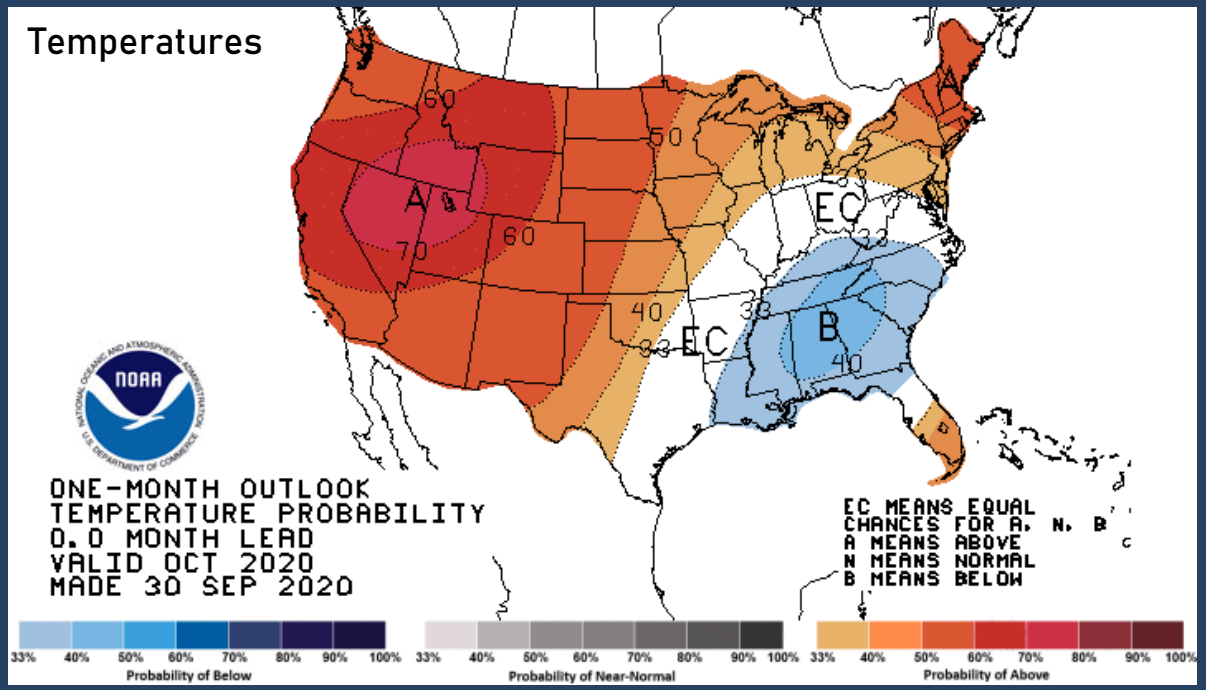
https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?t

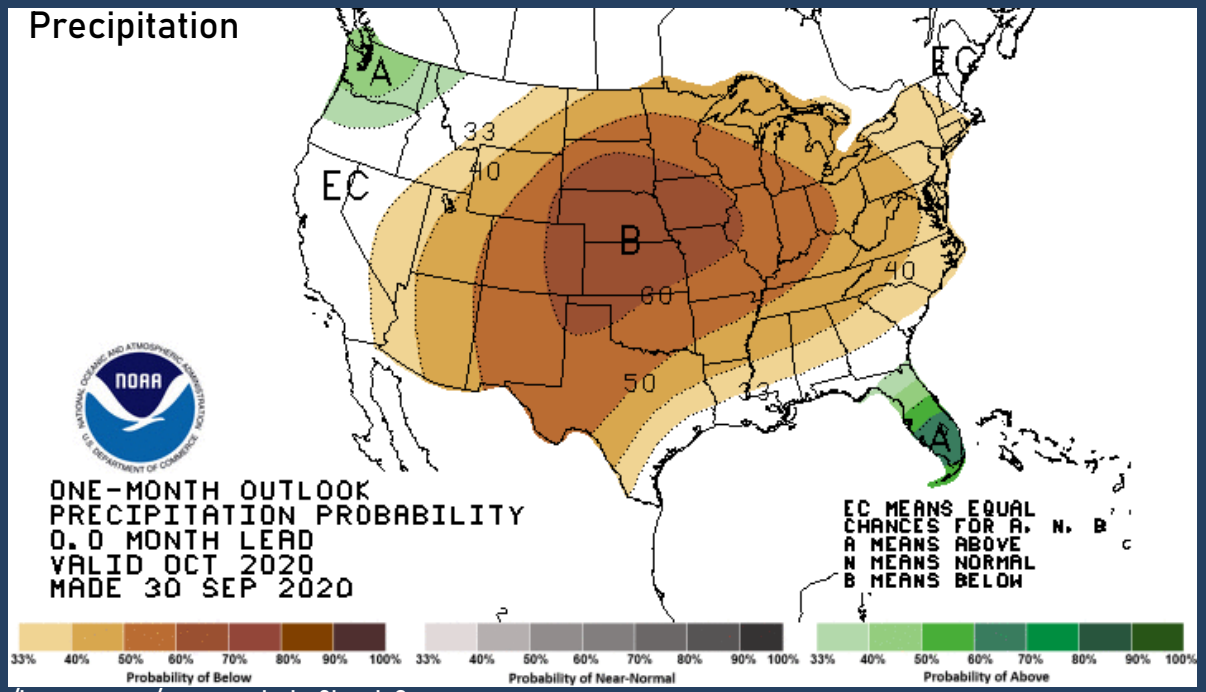
https://www.cpc.ncep.noaa.gov/products/predictions/814day/

Climate Prediction Center Outlook

October 2020

La Niña Advisory in effect for this fall and winter



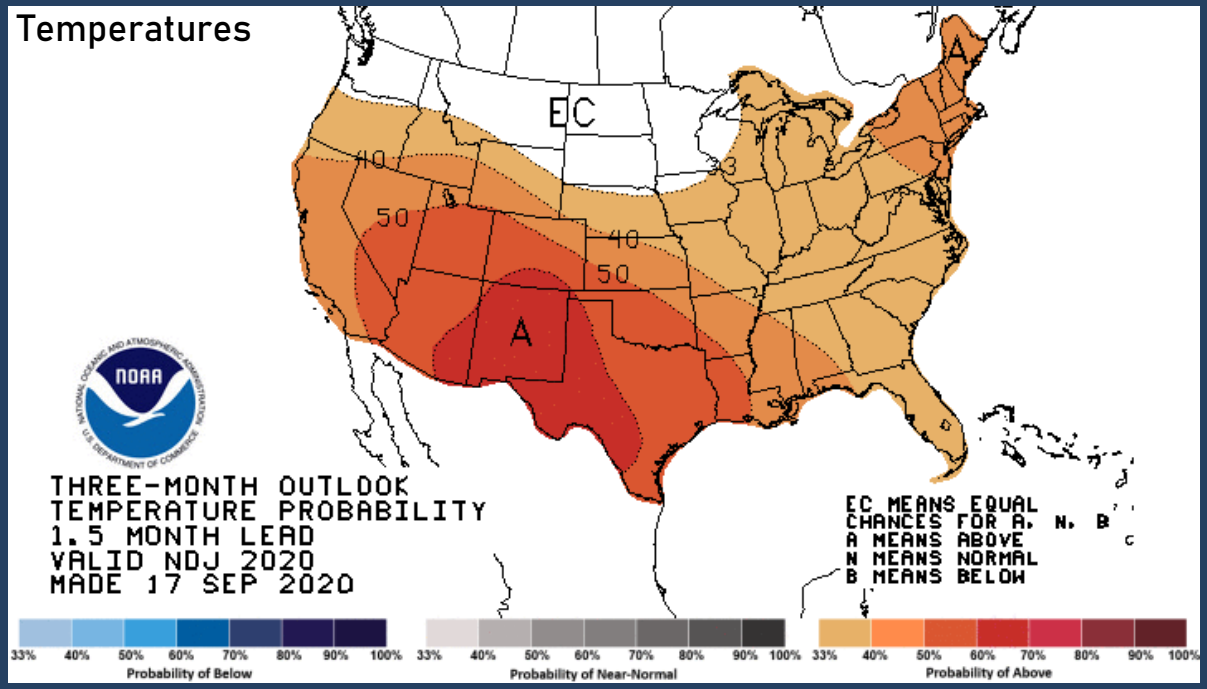


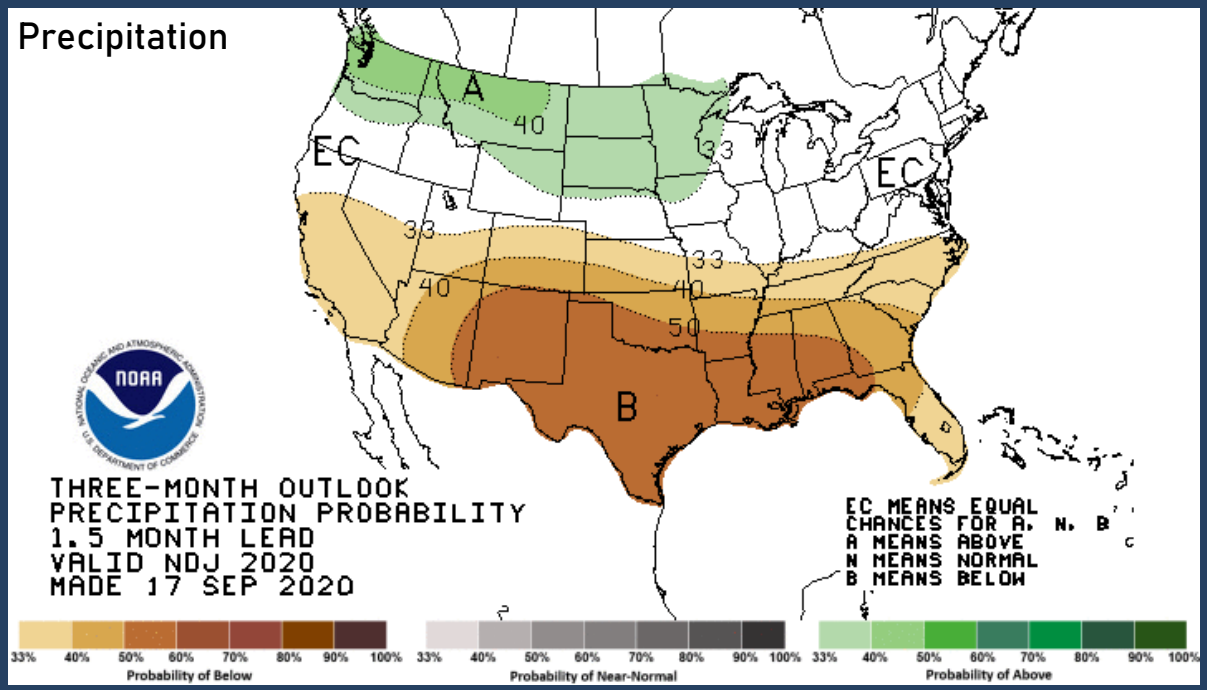
https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

Climate Prediction Center Outlook

Oct – Nov – Dec 2020

La Niña Watch in effect for this fall and winter





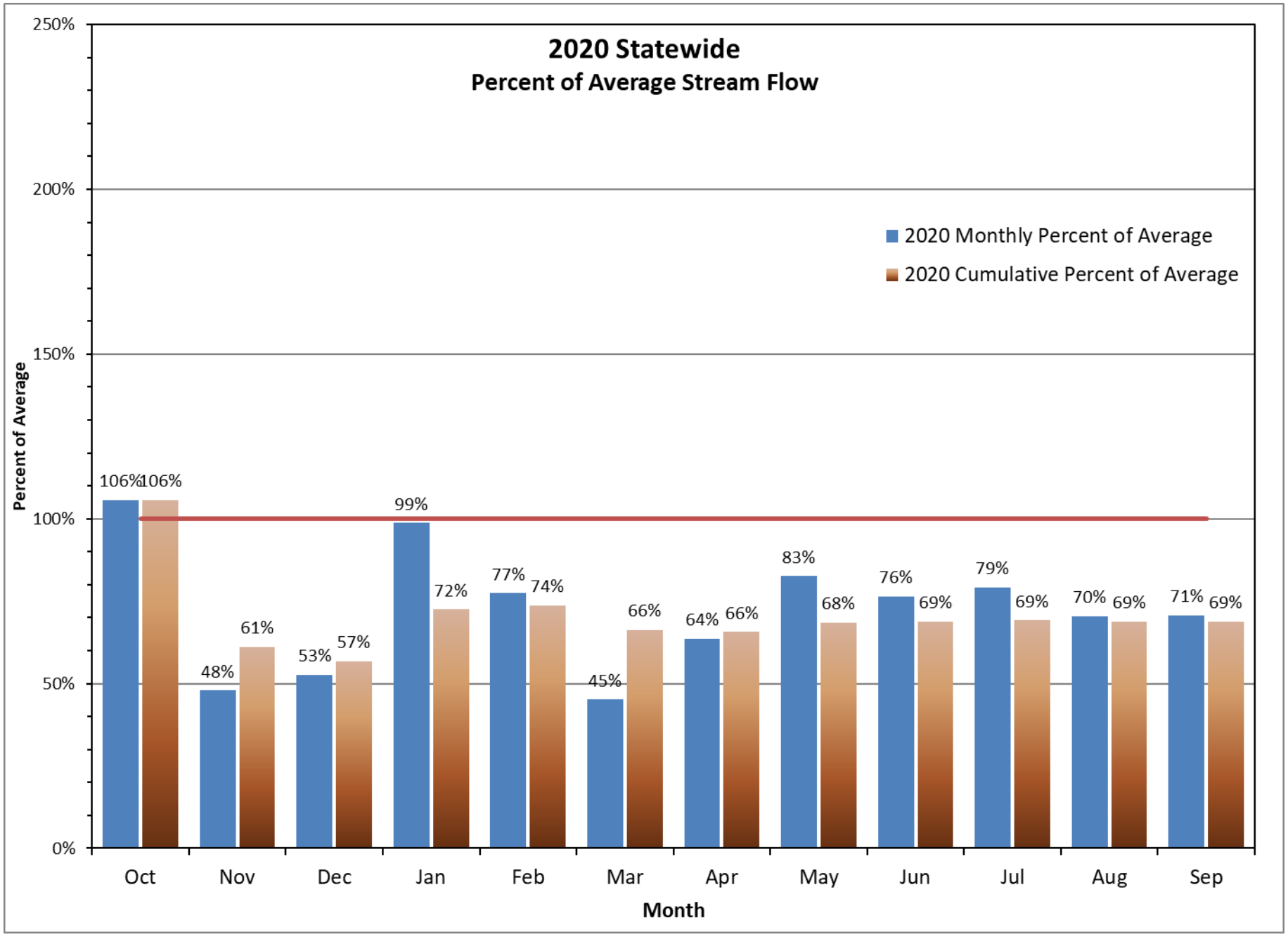
https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

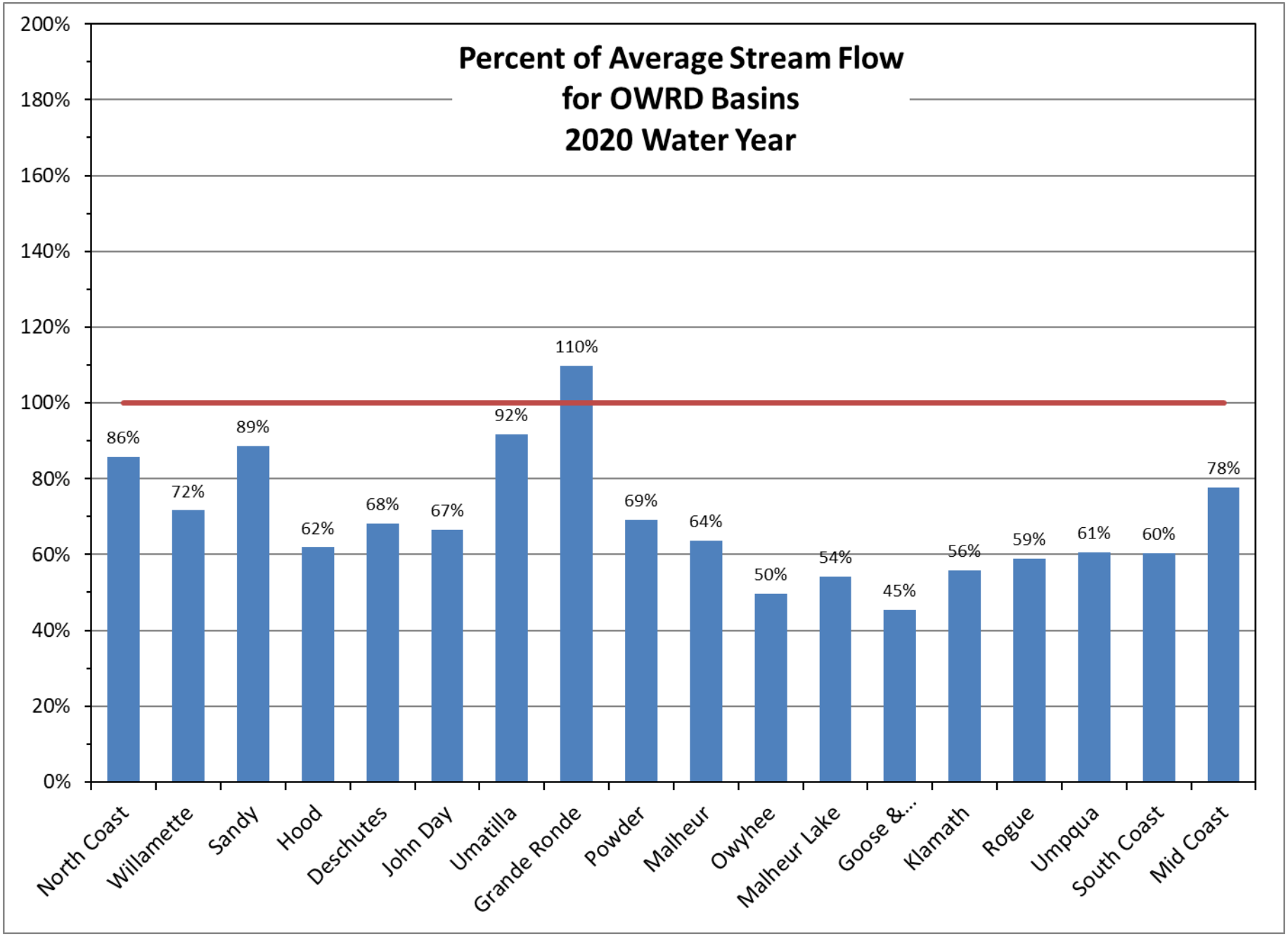
Water Supply Conditions Report

Water Supply Availability Committee

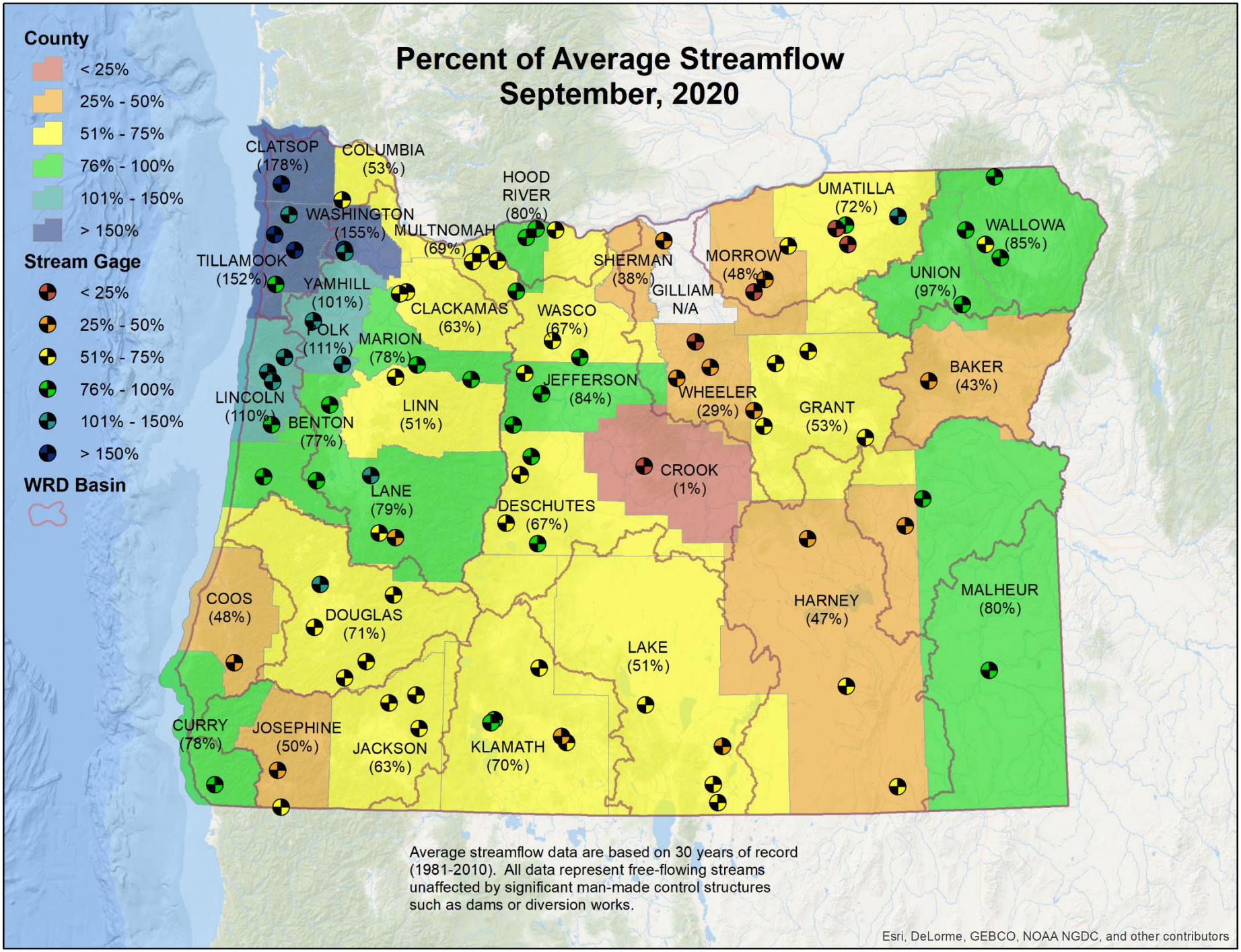
OREGON
WATER RESOURCES DEPARTMENT

Ken Stahr
Oregon Water Resources Department
October 8, 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%
53%
57%
99%
72%
77%
74%
45%
66%
64%
66%
83%
68%
76%
69%
79%
69%
70%
69%
71%
69%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month


Percent of Average Stream Flow
for OWRD Basins
2020 Water Year
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
86%
72%
89%
62%
68%
67%
92%
110%
69%
64%
50%
54%
45%
56%
59%
61%
60%
78%
North Coast
Willamette
Sandy
Hood
Deschutes
John Day
Umatilla
Grande Ronde
Powder
Malheur
Owyhee
Malheur Lake
Goose &...
Klamath
Rogue
Umpqua
South Coast
Mid Coast

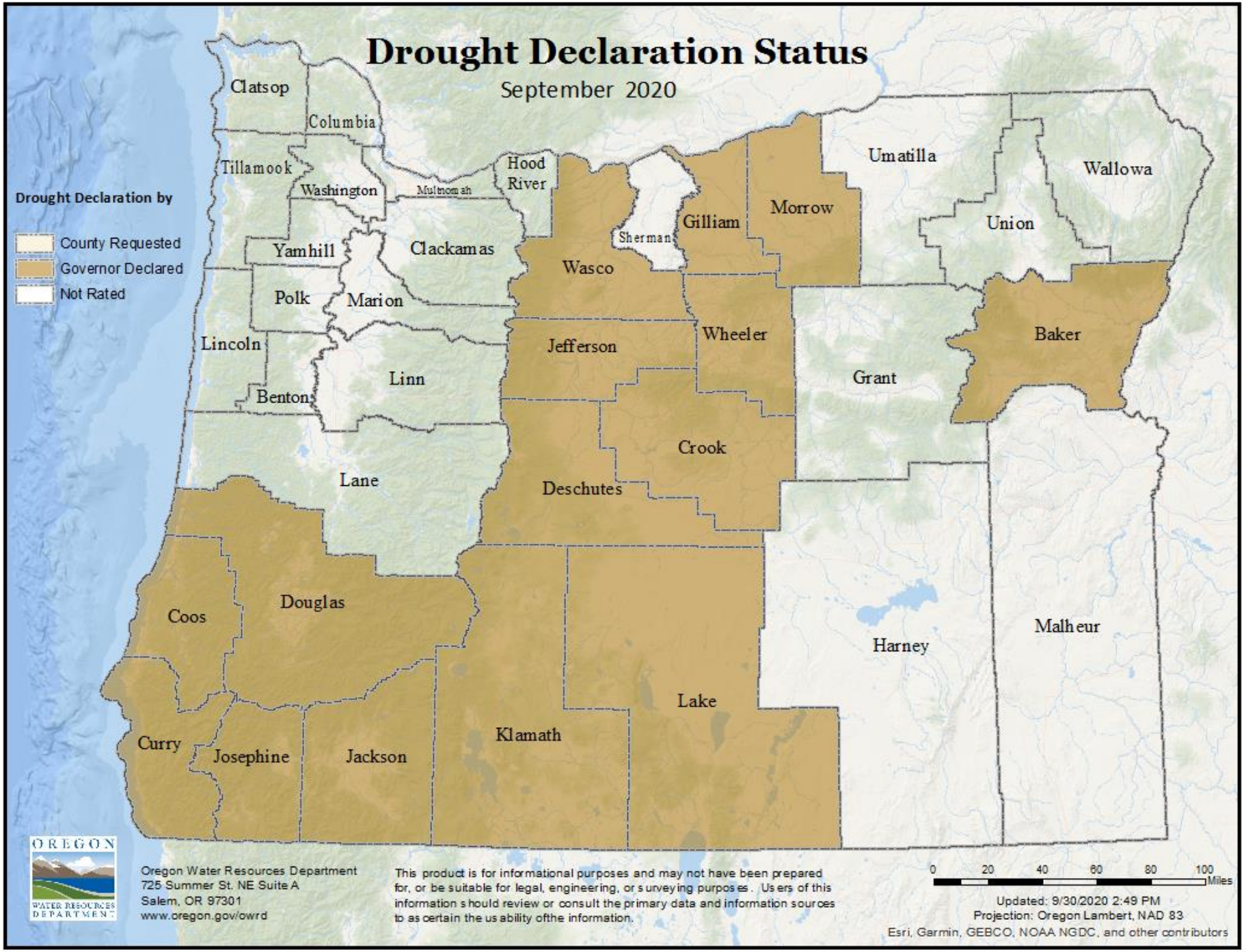
Percent of Average Streamflow
September, 2020



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.

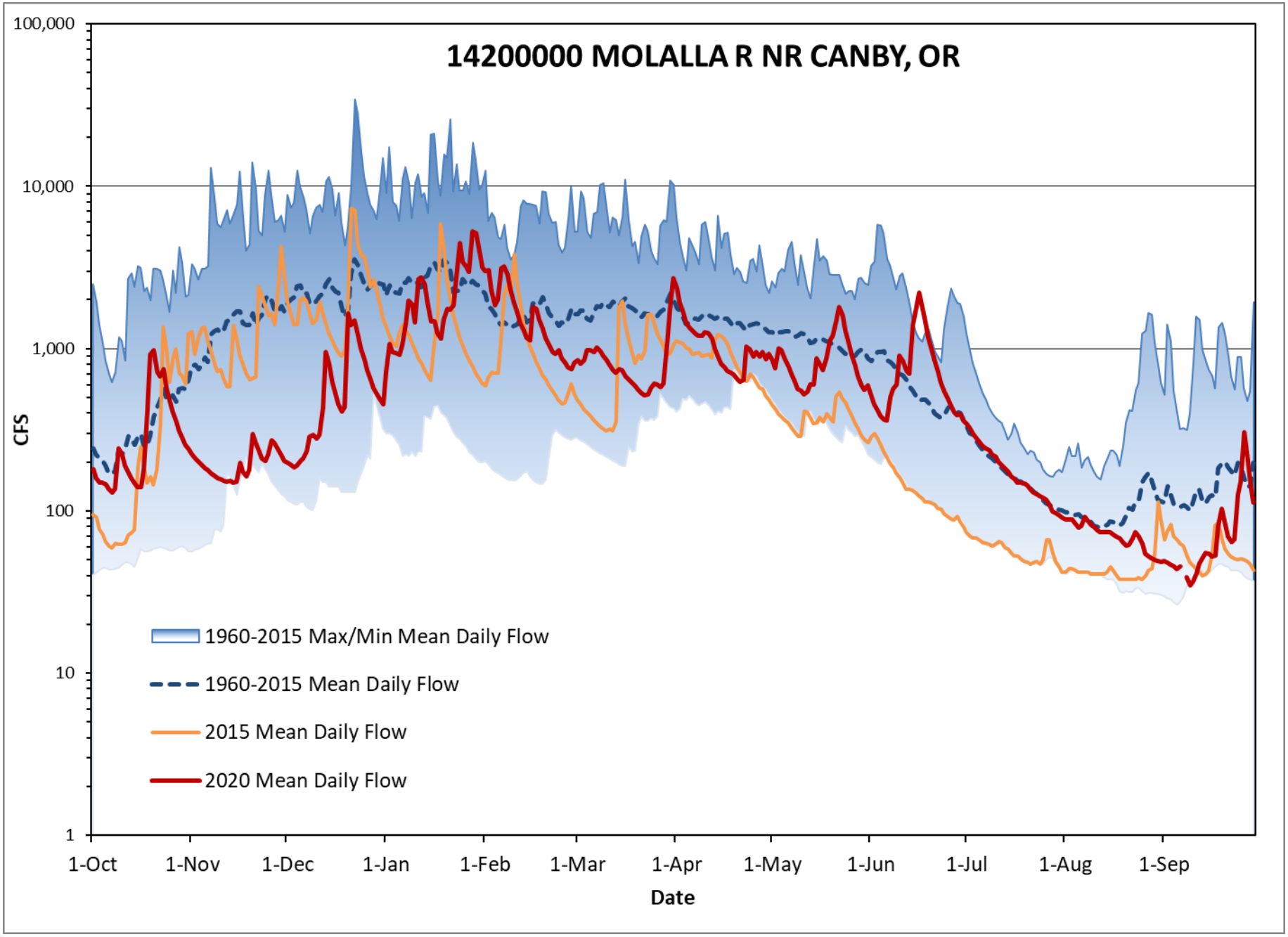
Drought Declaration Status

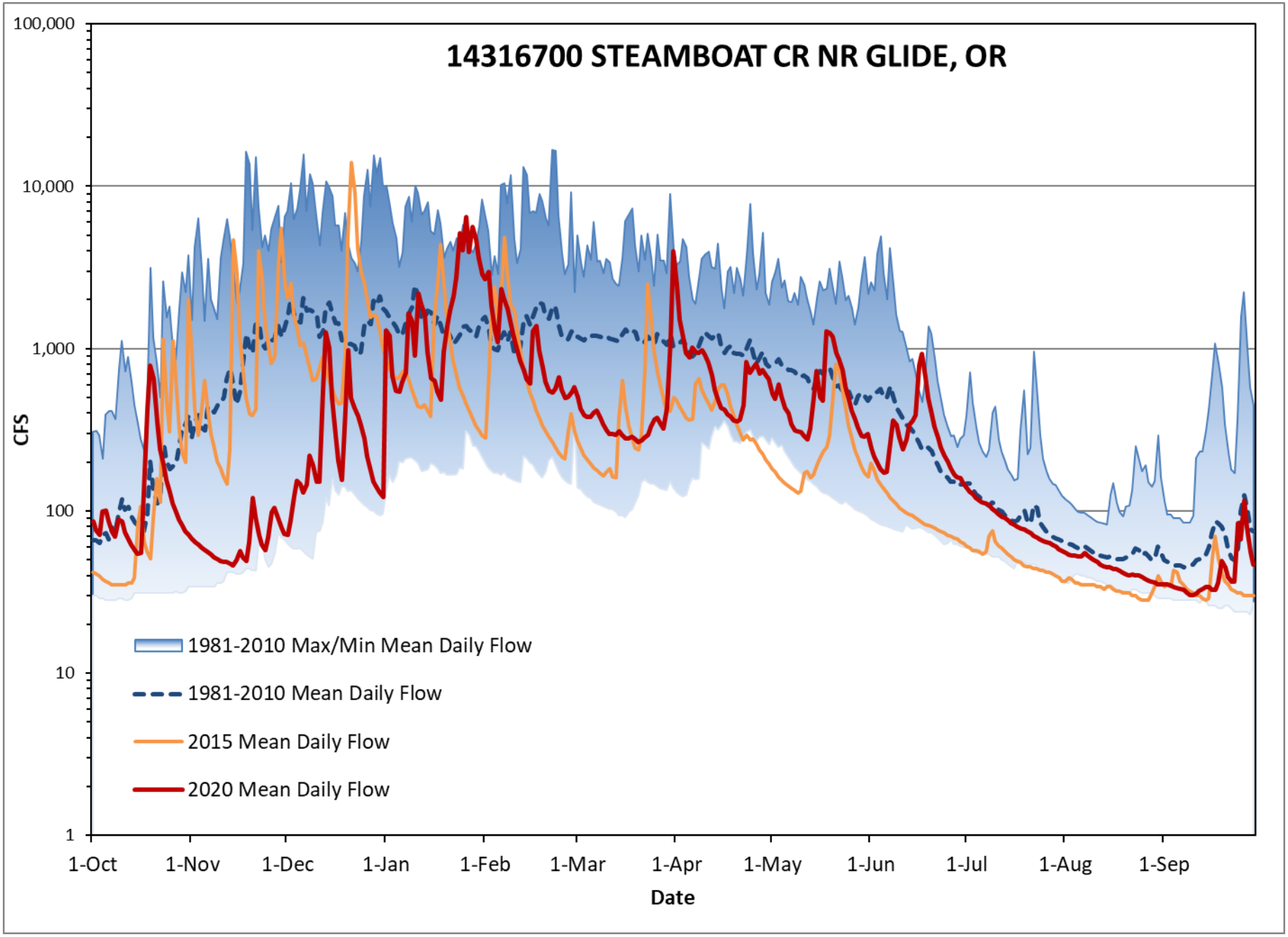
September 2020

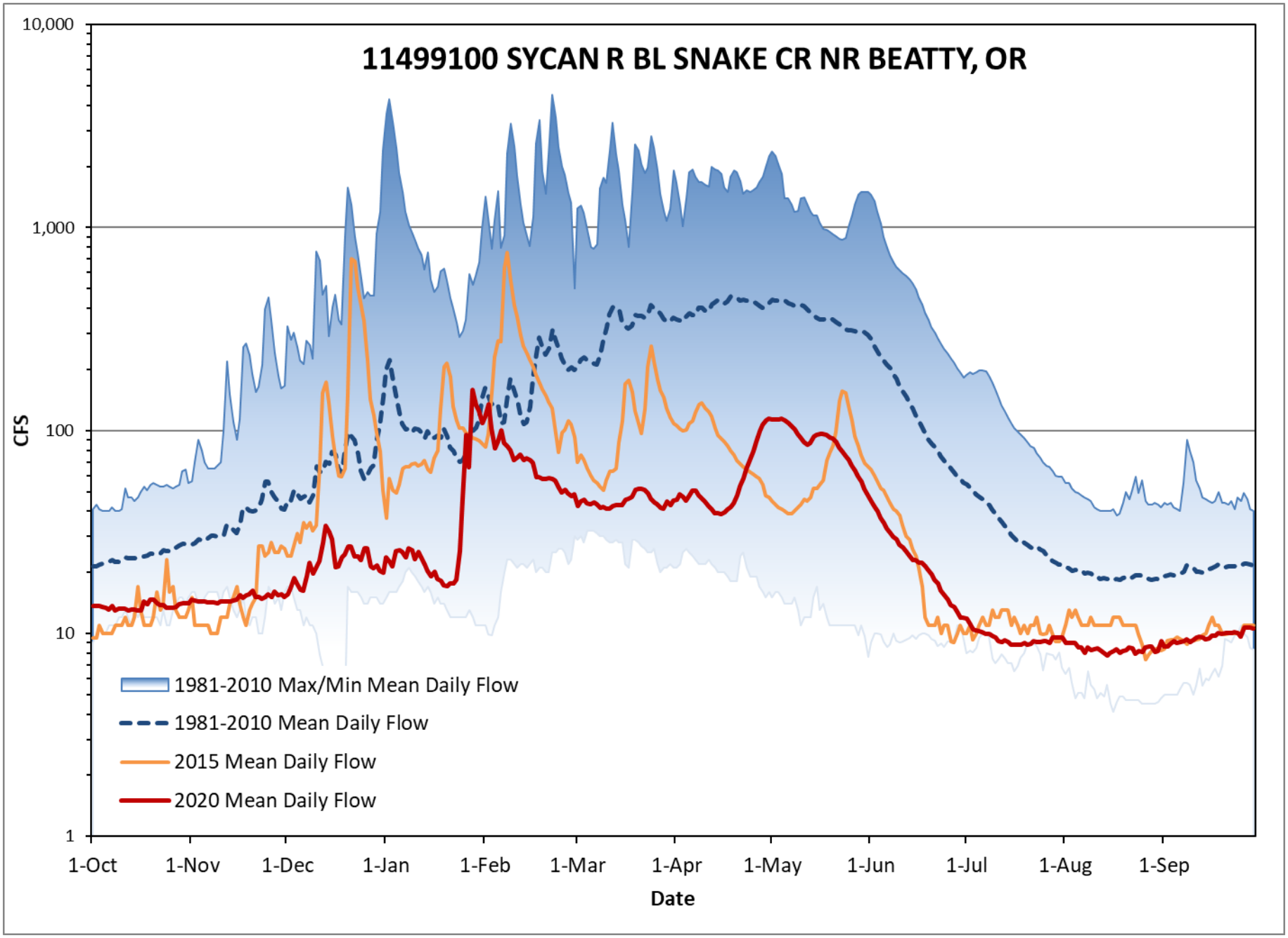


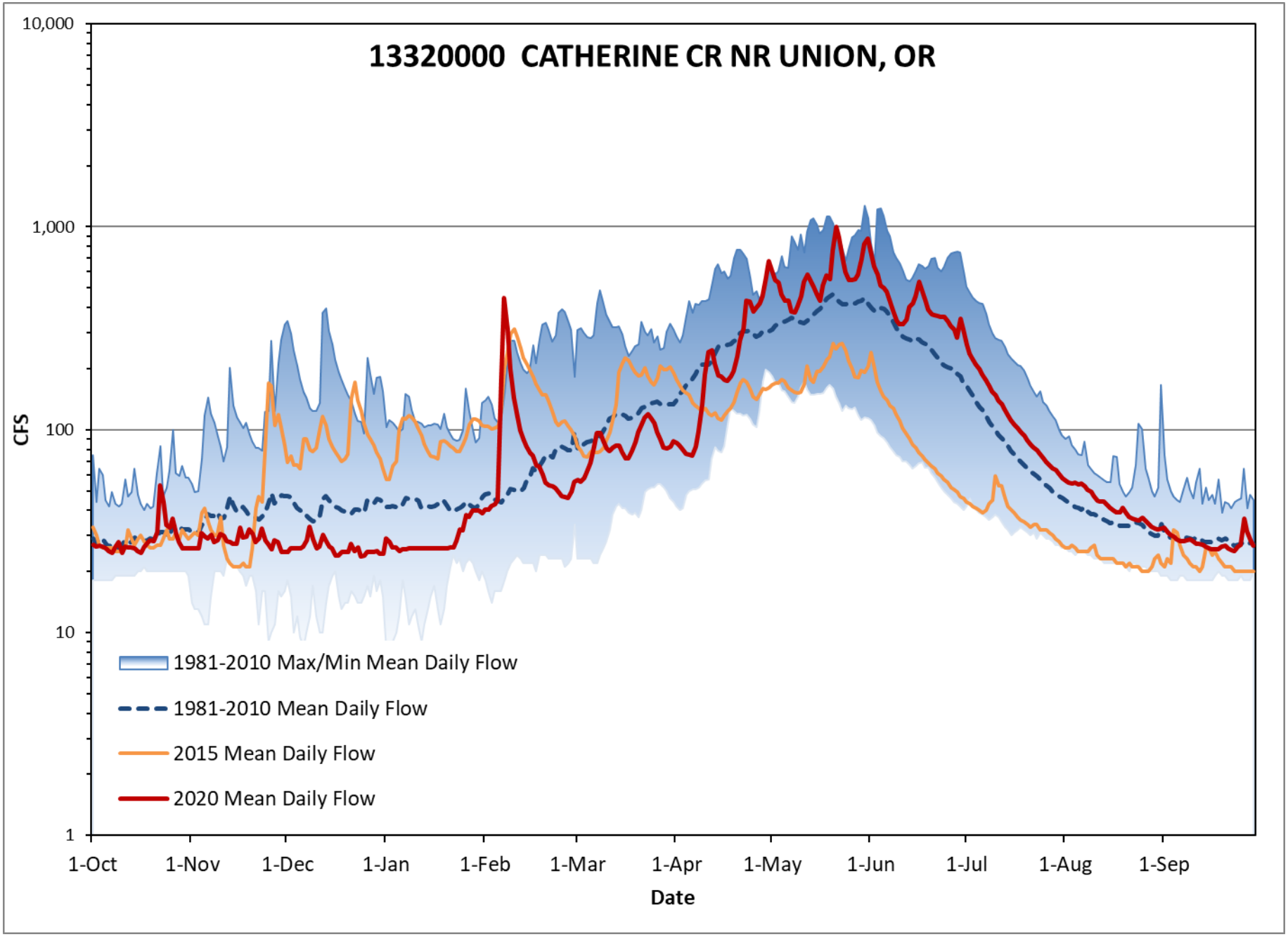
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem, OR 97301
www.oregon.gov/owrd

Updated: 9/30/2020 2:49 PM
Projection: Oregon Lambert, NAD 83
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors


14200000 MOLALLA R NR CANBY, OR
100,000
10,000
1,000
100
10
1
CFS
1960-2015 Max/Min Mean Daily Flow
1960-2015 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

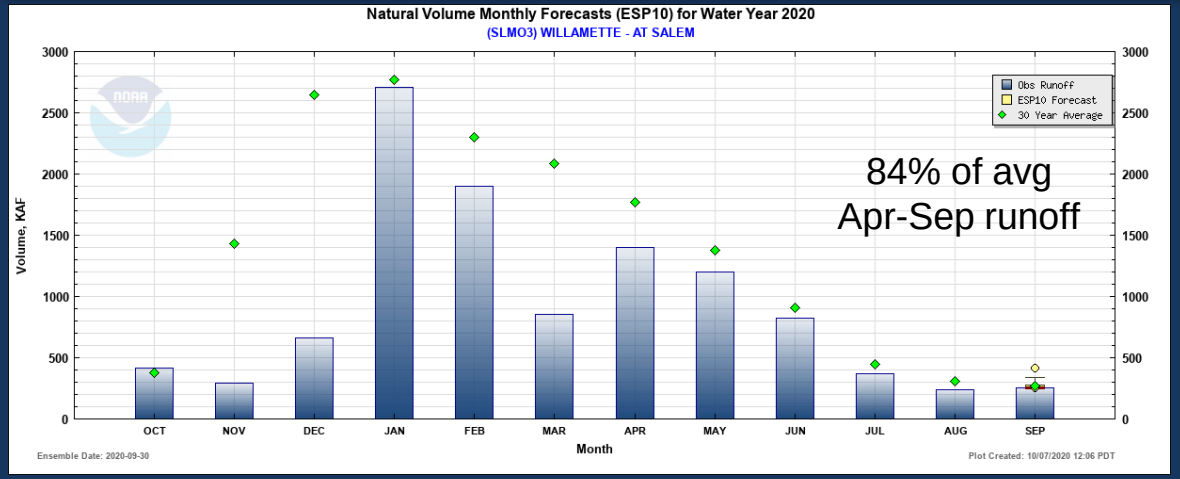

14316700 STEAMBOAT CR NR GLIDE, OR
100,000
10,000
1,000
100
10
1
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date

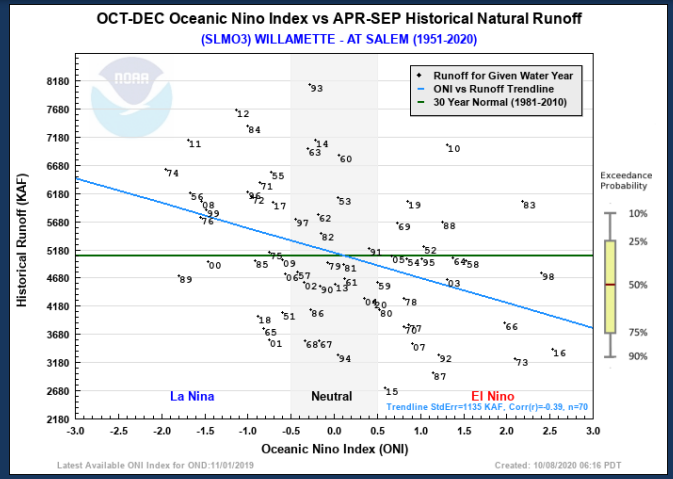

11499100 SYCAN R BL SNAKE CR NR BEATTY, OR
10,000
1,000
100
10
1
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date

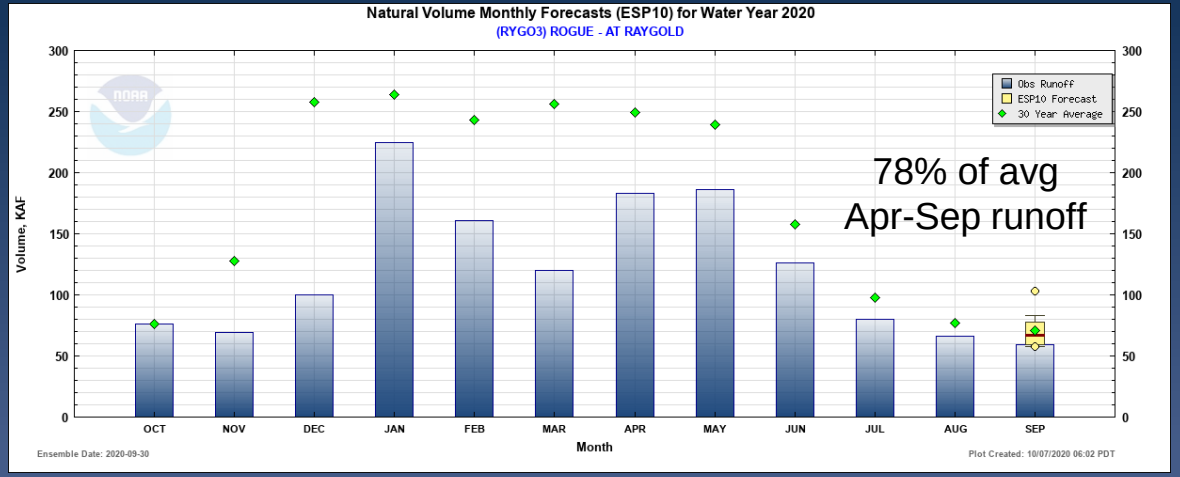

13320000 CATHERINE CR NR UNION, OR
10,000
1,000
100
10
1
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2020 Mean Daily Flow
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date

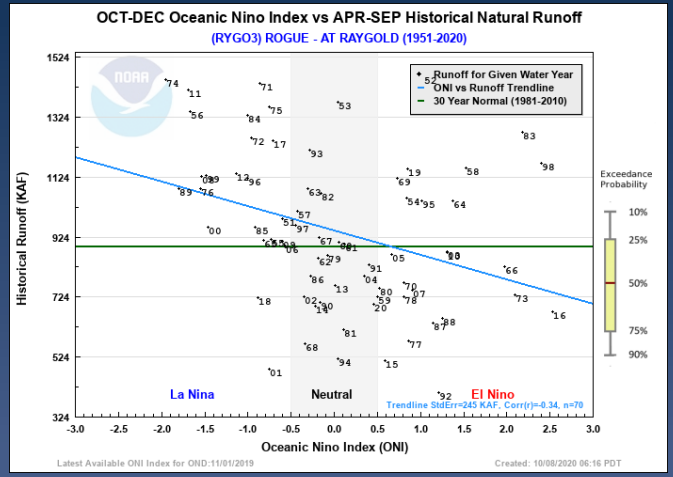
Thank you

WY 2020 runoff

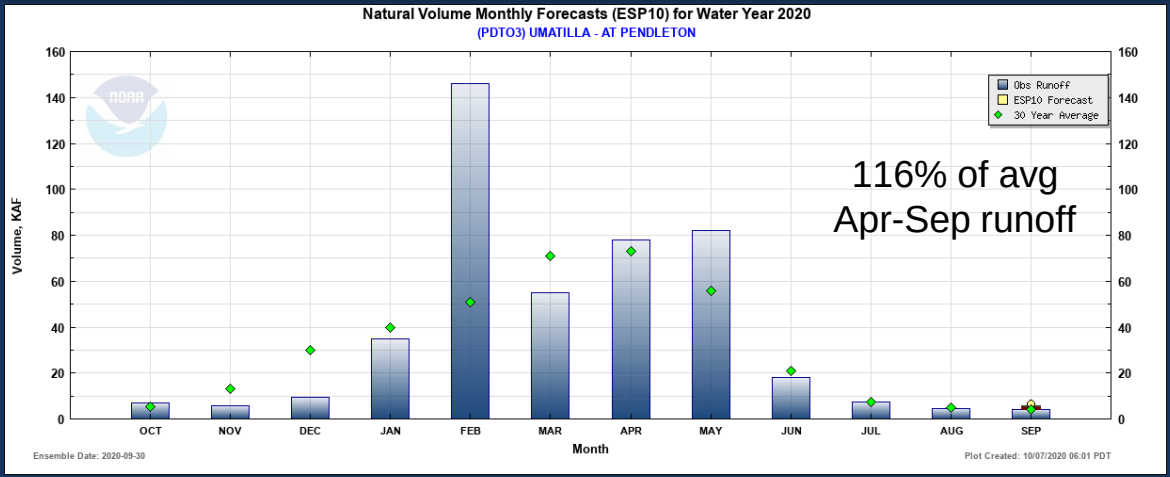


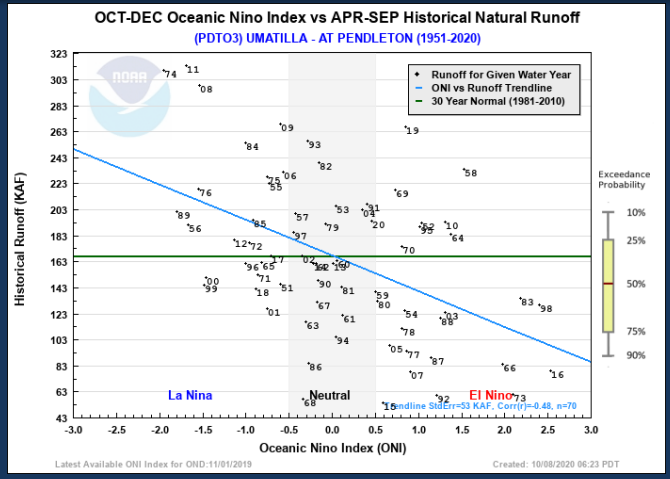


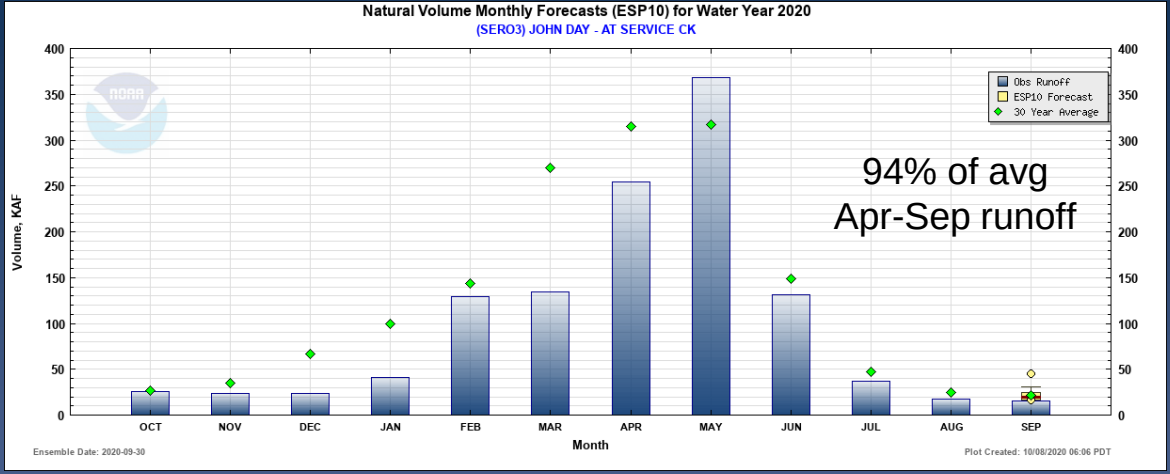


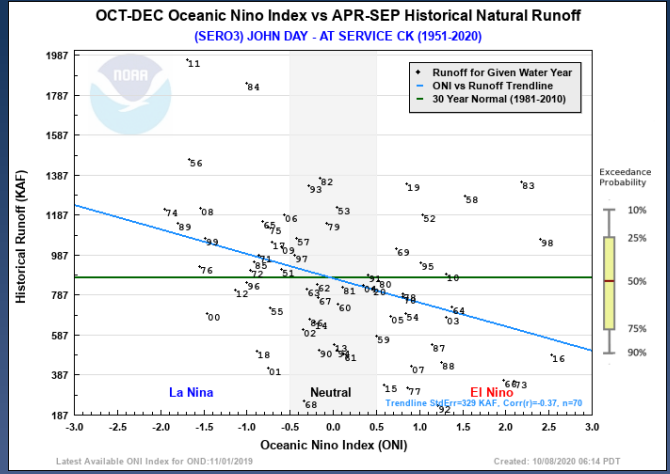


WY 2020 runoff

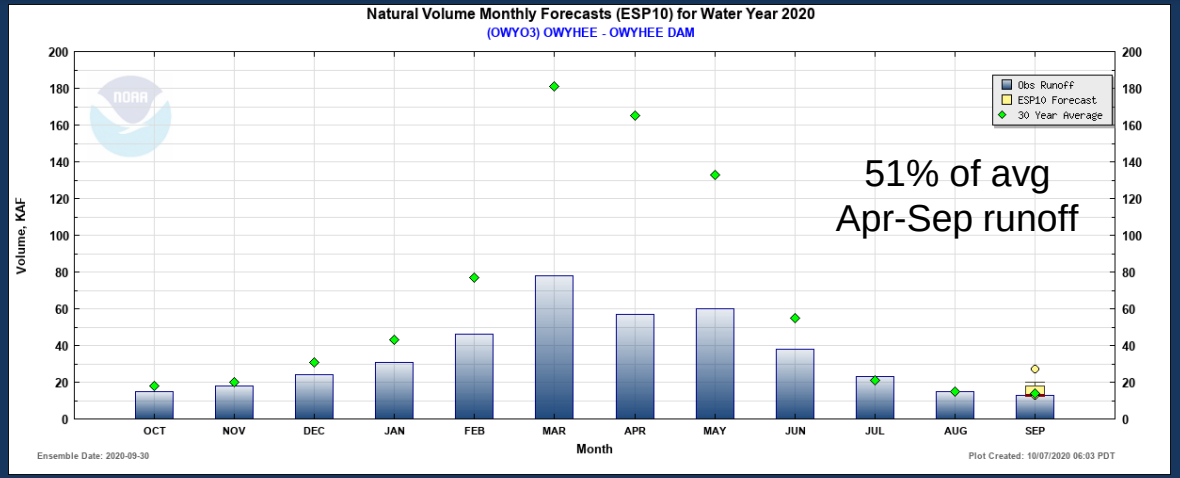


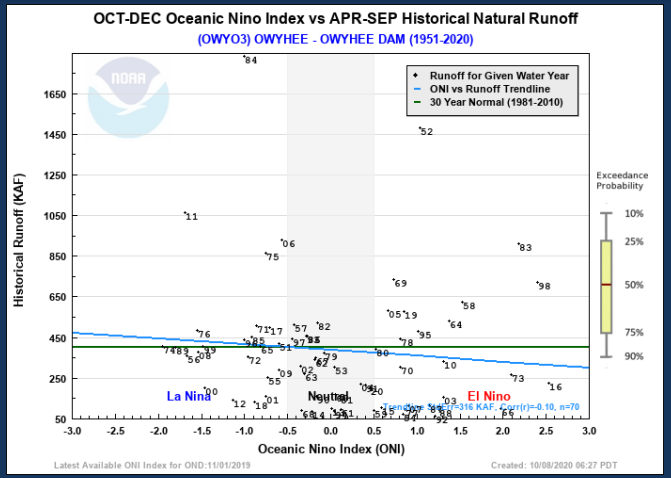


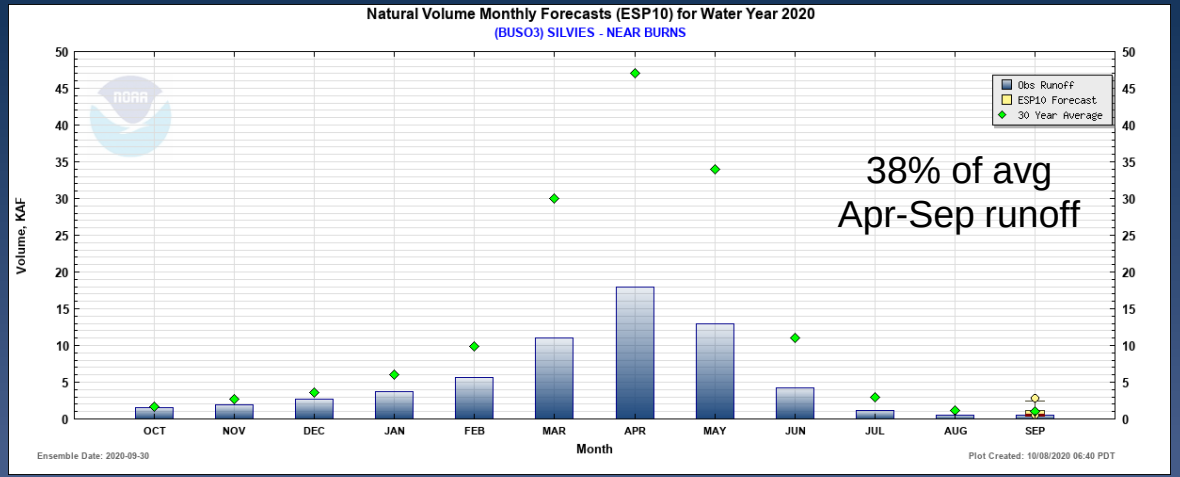


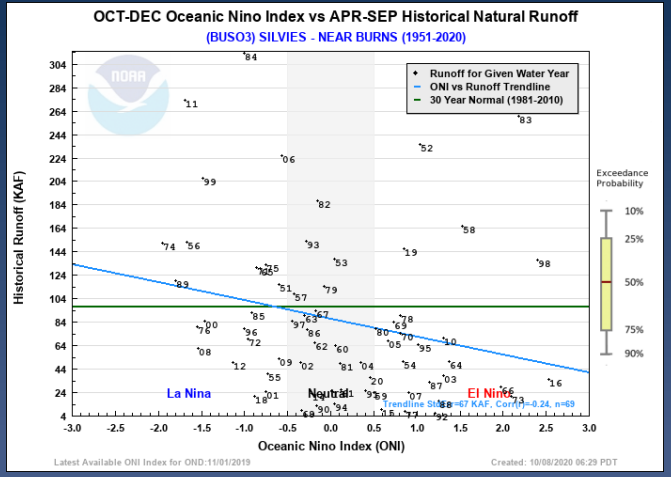


WY 2020 runoff

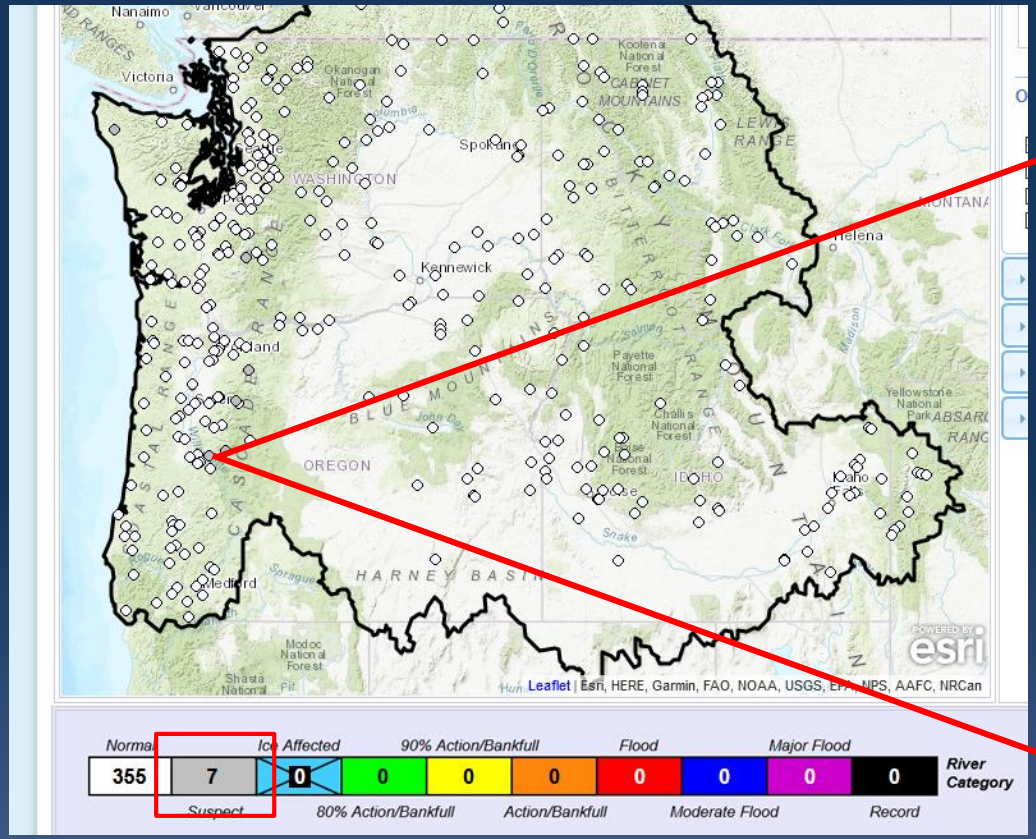


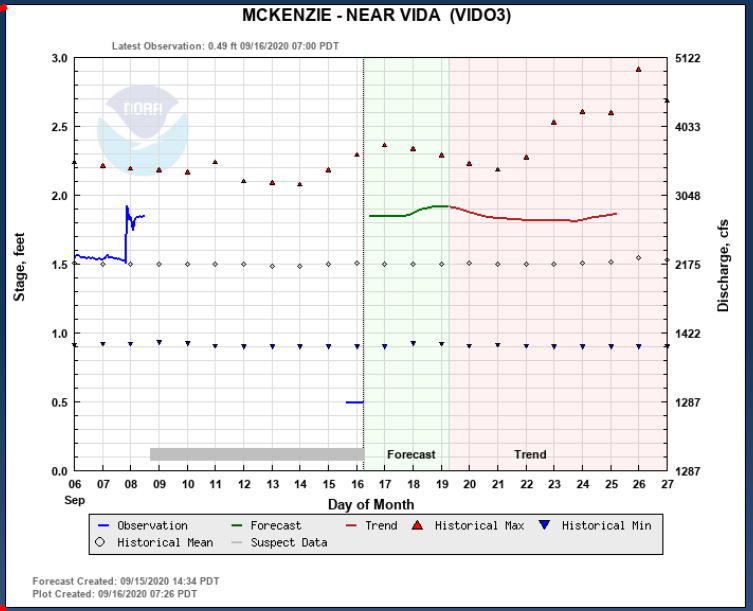




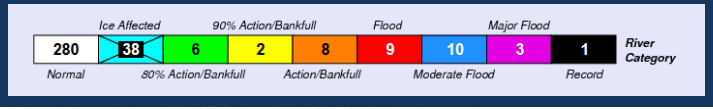


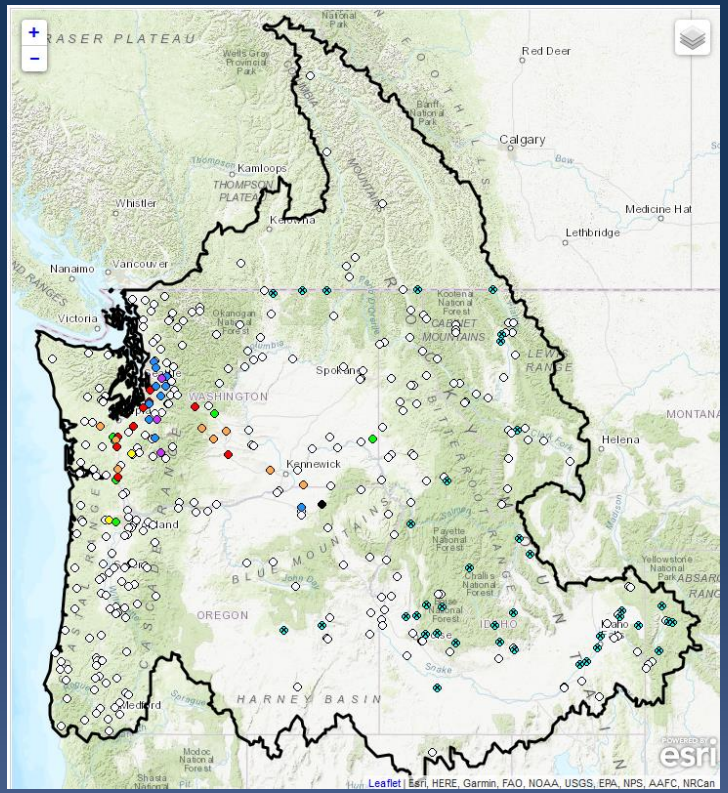
Questionable Data Flag

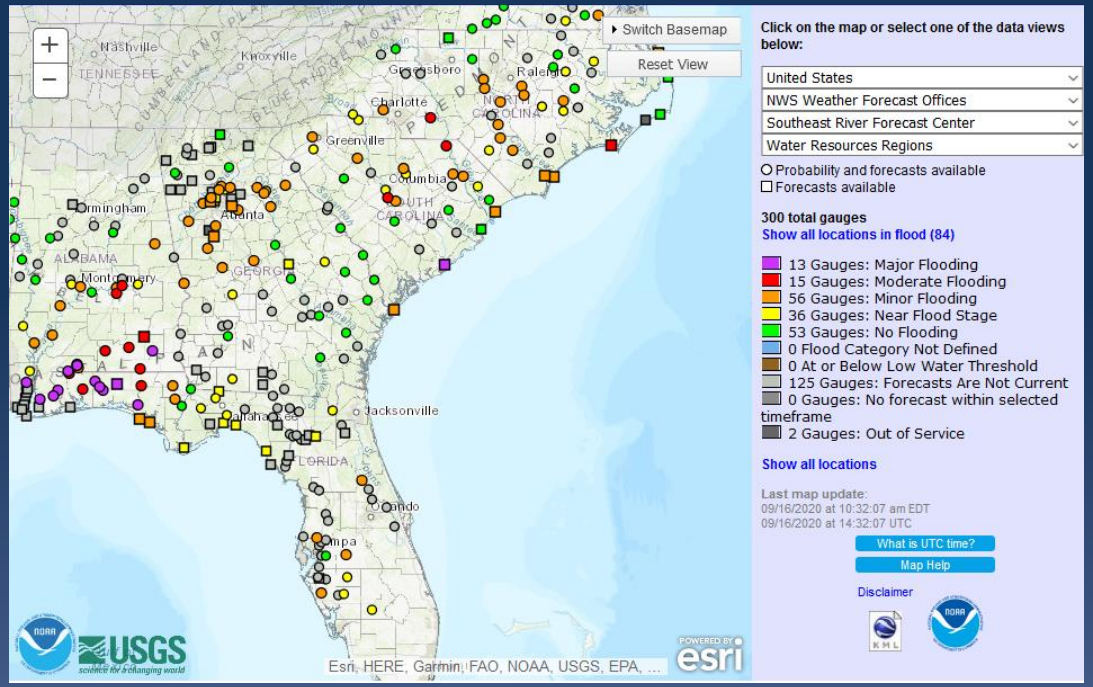




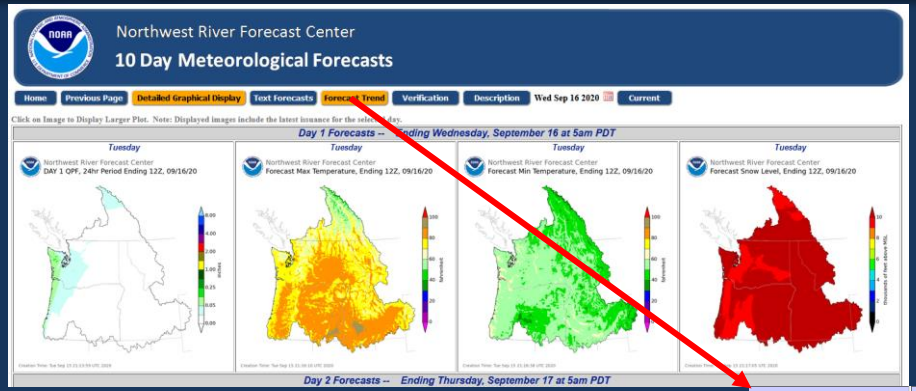
Switch Threshold Colors



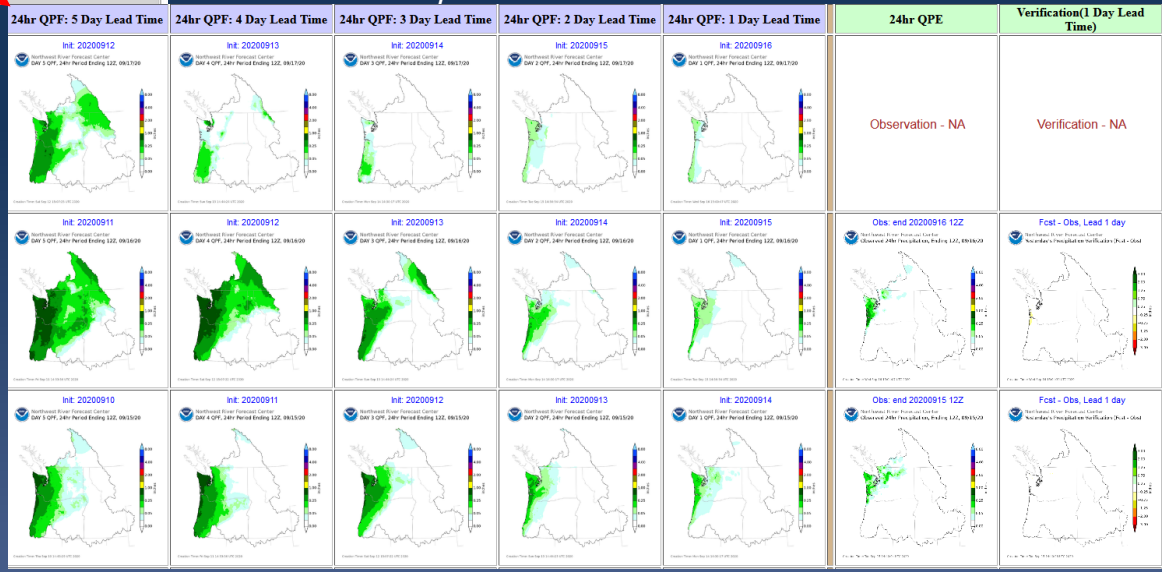




Forecast Trend Tool



https://www.nwrfc.noaa.gov/weather/trend/



Up to 10 day lead time

Go dive back into the archive

HEFS Forcings

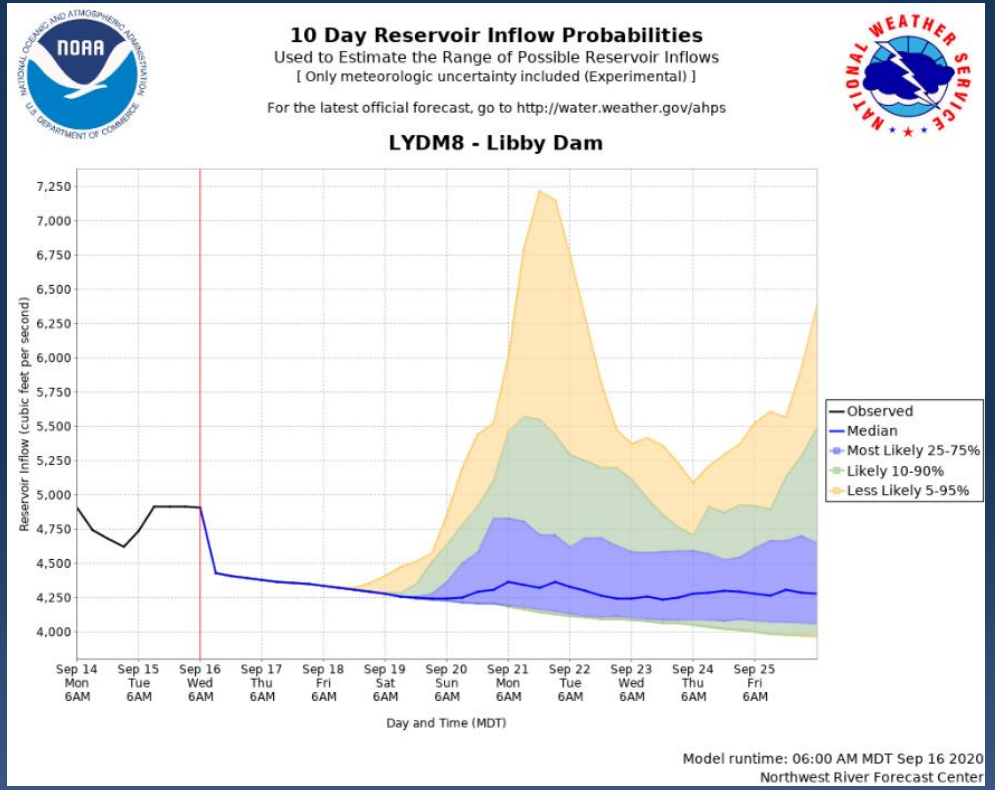
Upgrading from GEFS v10 to v12

Increase in model skill not as much as we had hoped

Will allow us to update HEFS forcings 4 time a day

Likely will produce short term forecast twice a day.

Run old and new in parallel Oct.-De. 2020. New forcings operational Jan. 2021.



https://water.weather.gov/ahps2/probability_information.php?wfo=MSO&gage=LYDM8&graph_id=3

Calibration Efforts

West side calibrations should be completed this year

- Historical mean areal forcing data
- Percent Precip as Snow
- Dynamic ET
- Updated zone delineations
- Auto Calibration and Hydrologic Landscape Regions (HLR) to constrain the parameters
- Partnering with BPA to collaborate with east side calibrations

USGS
science for a changing world

Oregon Water Supply Availability Meeting

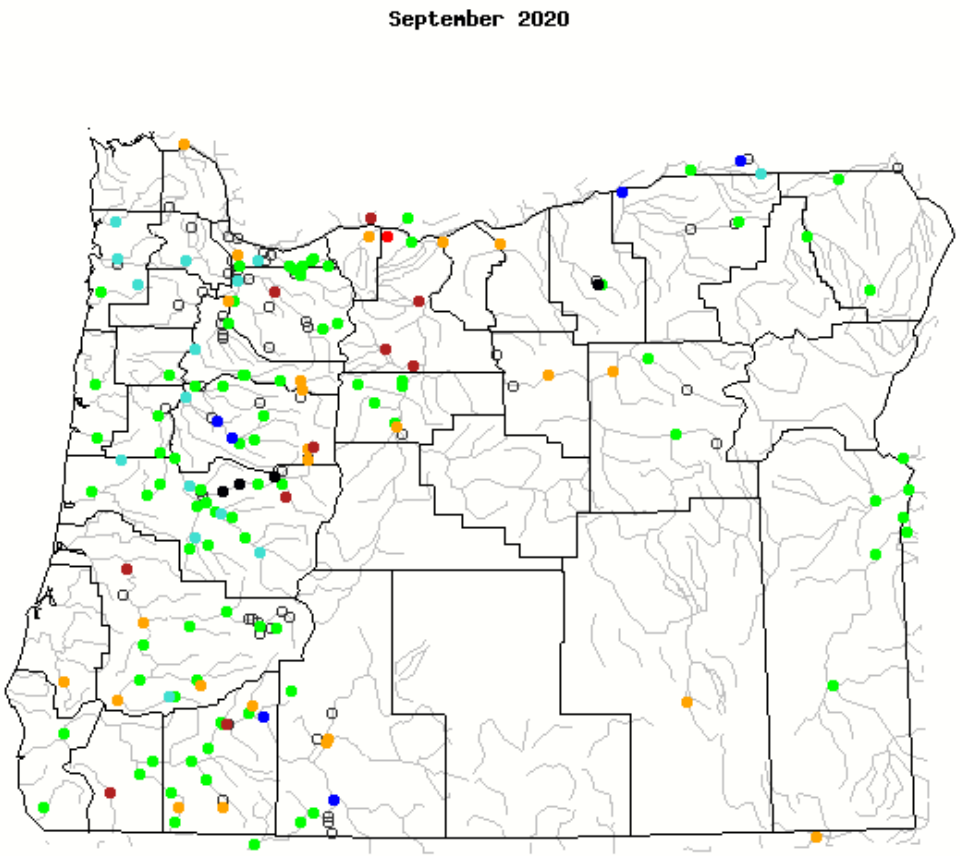
October 2020

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

USGS Update on Surface Water Conditions
Carrie Boudreau & Marc Stewart
Oregon Water Science Center
Photo: 14162200 , Blue River at Blue River, OR

Monthly Average Streamflow

(as compared to Historical Record)



USGS

Search USGS streamgage

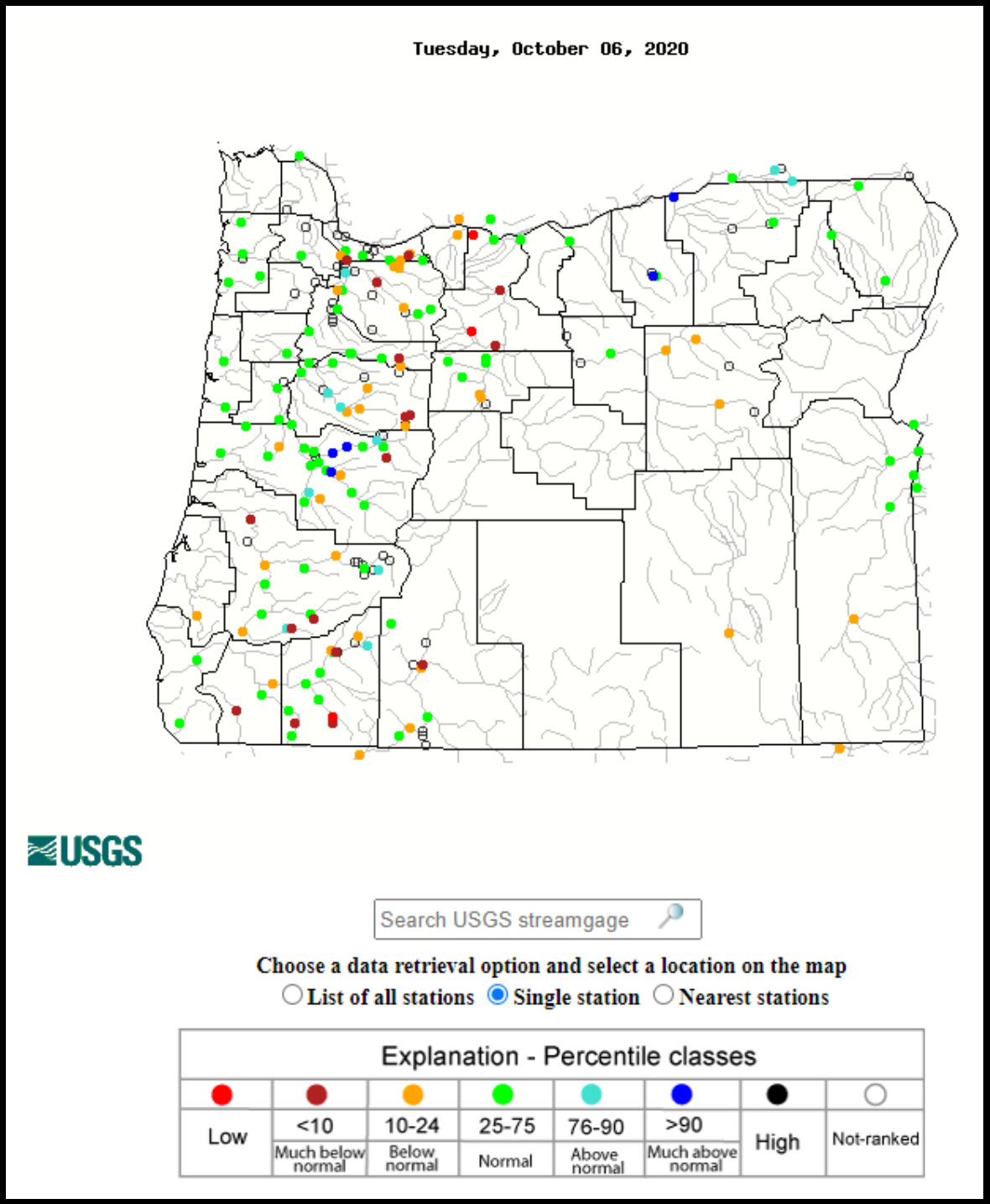
Choose a data retrieval option and select a location on the map

○ List of all stations ◉ Single station ○ Nearest stations ○ Peak flow

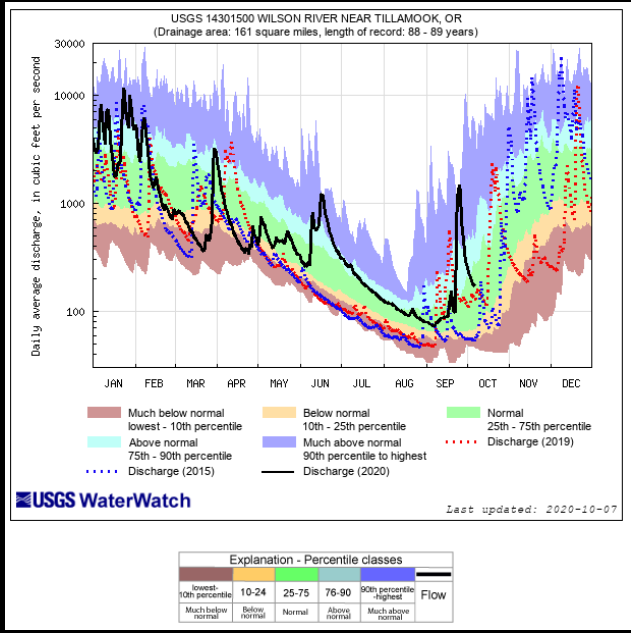
Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

7-day Average Streamflow

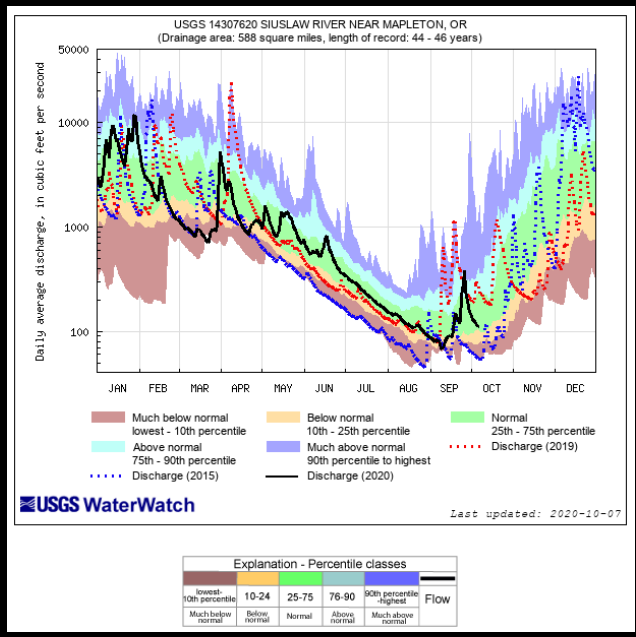
(as compared to Historical Record)



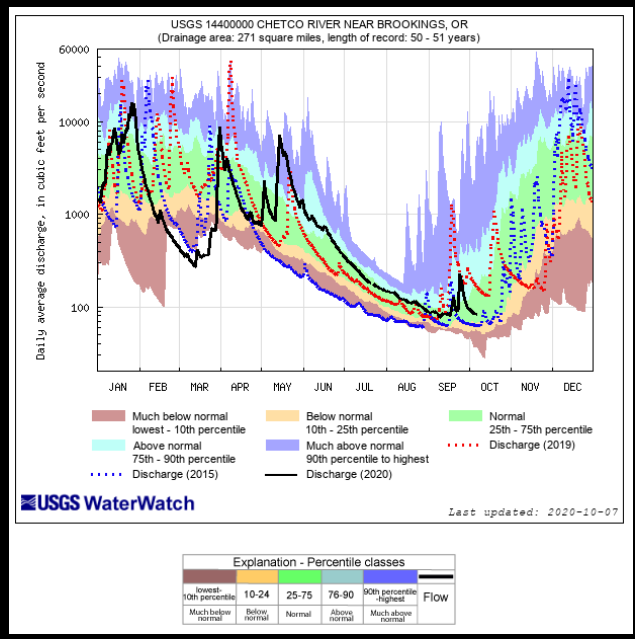
Coastal Oregon



14301500 Wilson R nr Tillamook, OR



14307620 Siuslaw R nr Mapleton, OR



USGS

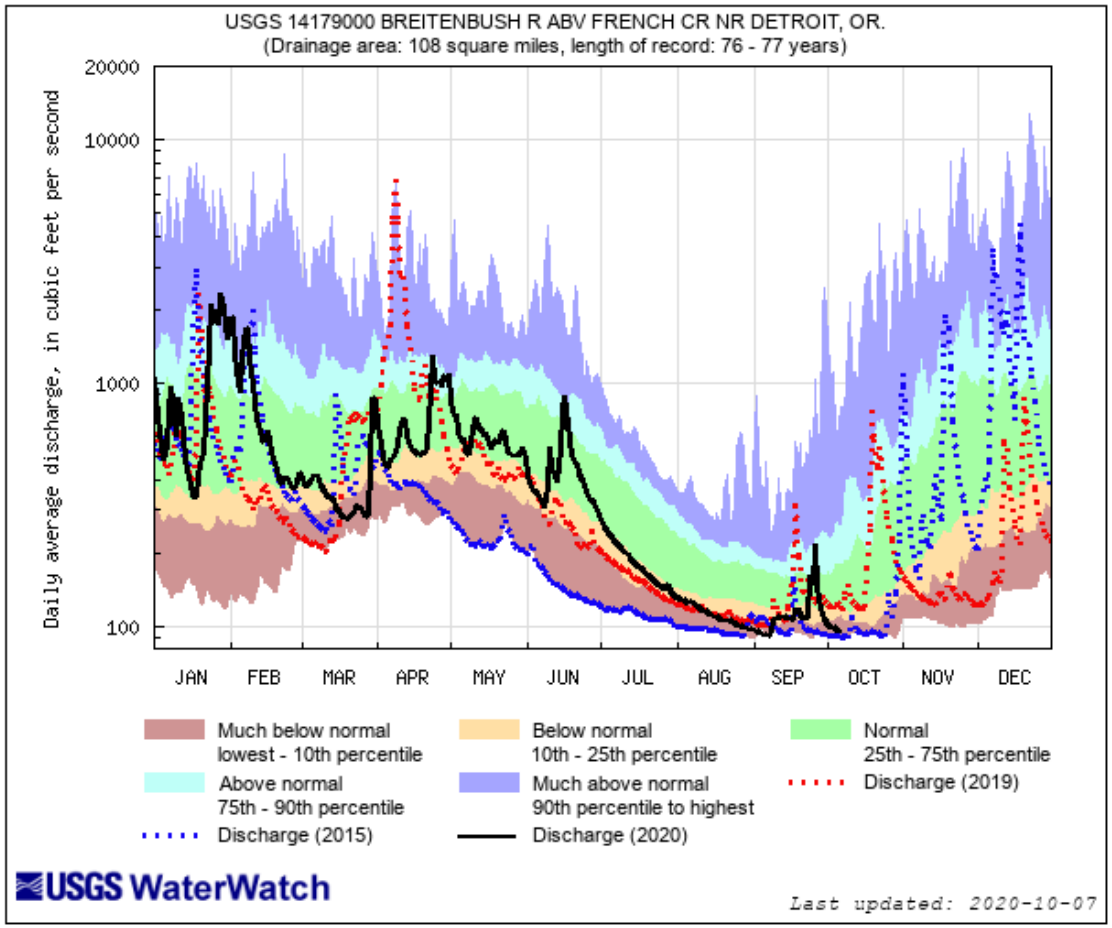
14400000 Chetco R nr Brookings, OR

USGS gages affected by recent wildfires

- 17 gages were deemed “damaged” – this ranged from power loss to damaged equipment
  - All but three have been brought back online
- 3 gages were completely destroyed – 14162200, 14209500, and 14354200
  - 14162200 and 14209500 have temporary gages
  - 14354200 has a new permanent gage installed

USGS

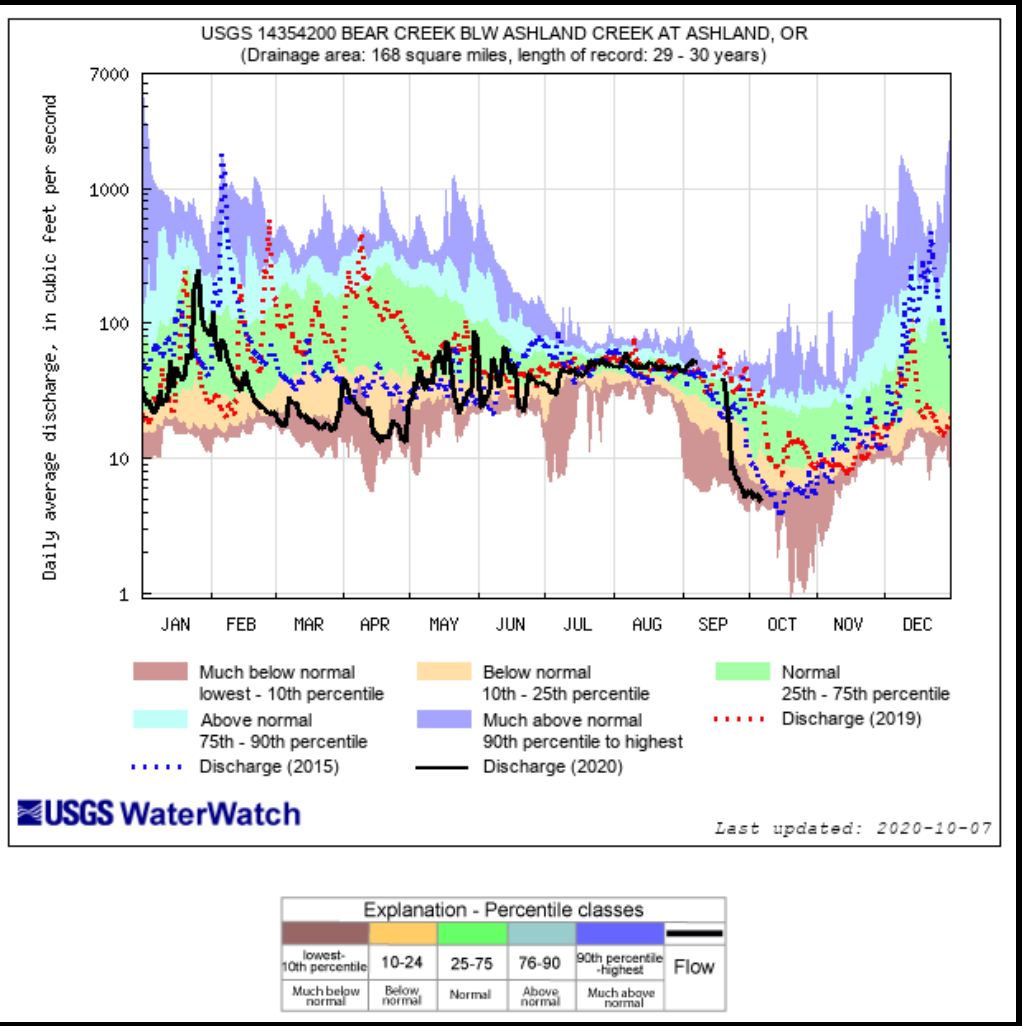
14179000 Breitenbush R abv French Cr



Explanation - Percentile classes					
lowest-10th percentile	10-24	25-75	76-90	90th percentile -highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

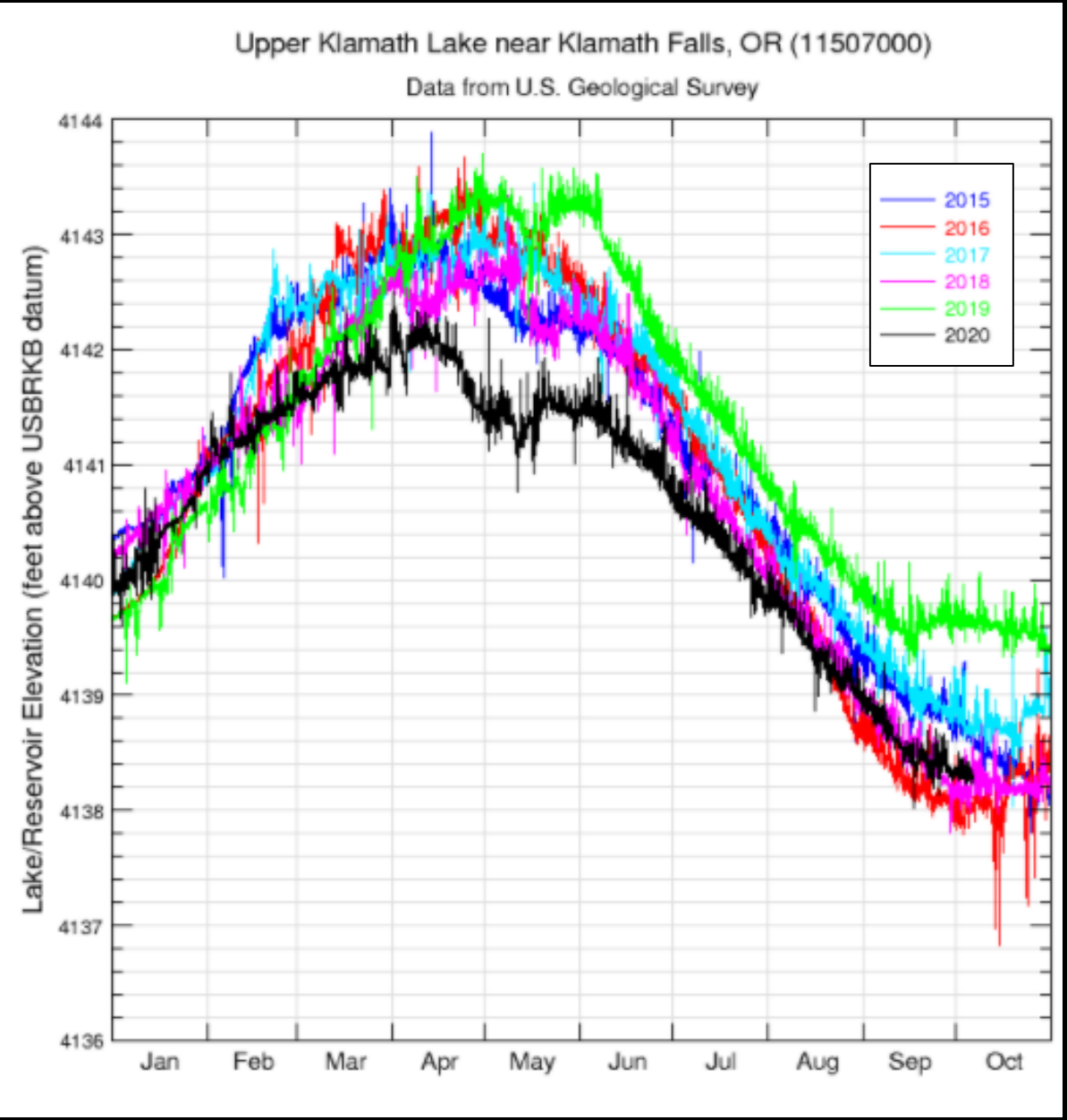
USGS

14354200 Bear Creek blw Ashland Creek



USGS

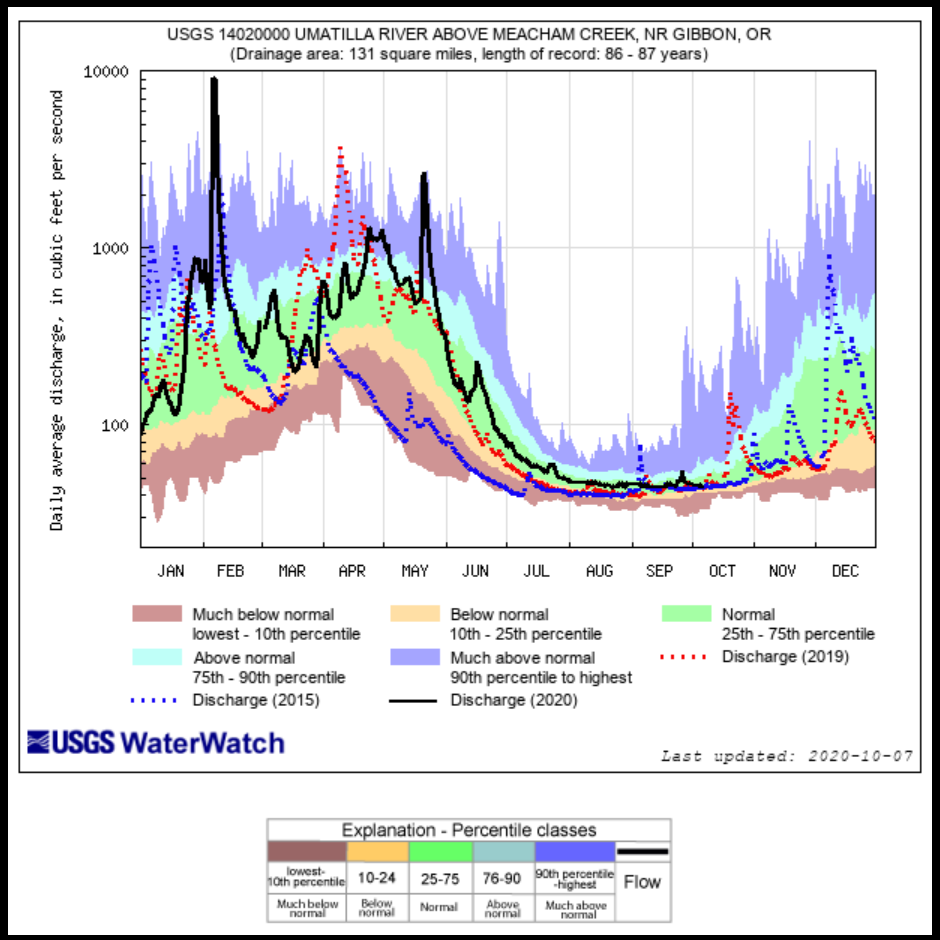
11507000 Upper Klamath Lake



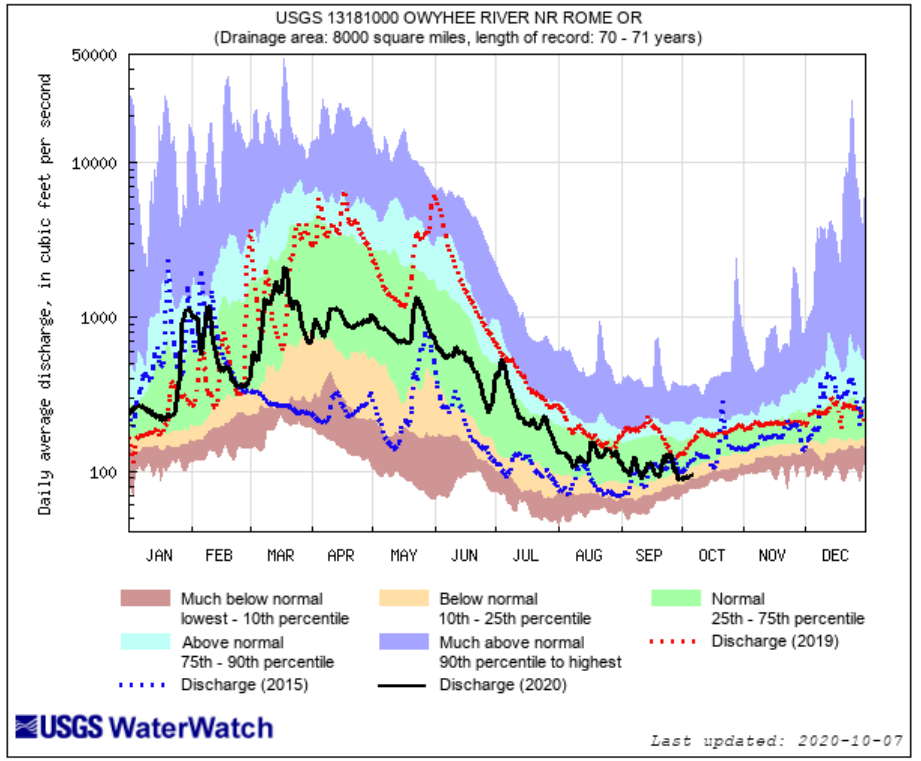
USGS

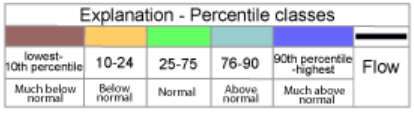
Eastern Oregon

14020000 Umatilla R abv
Meacham Cr, nr Gibbon, OR



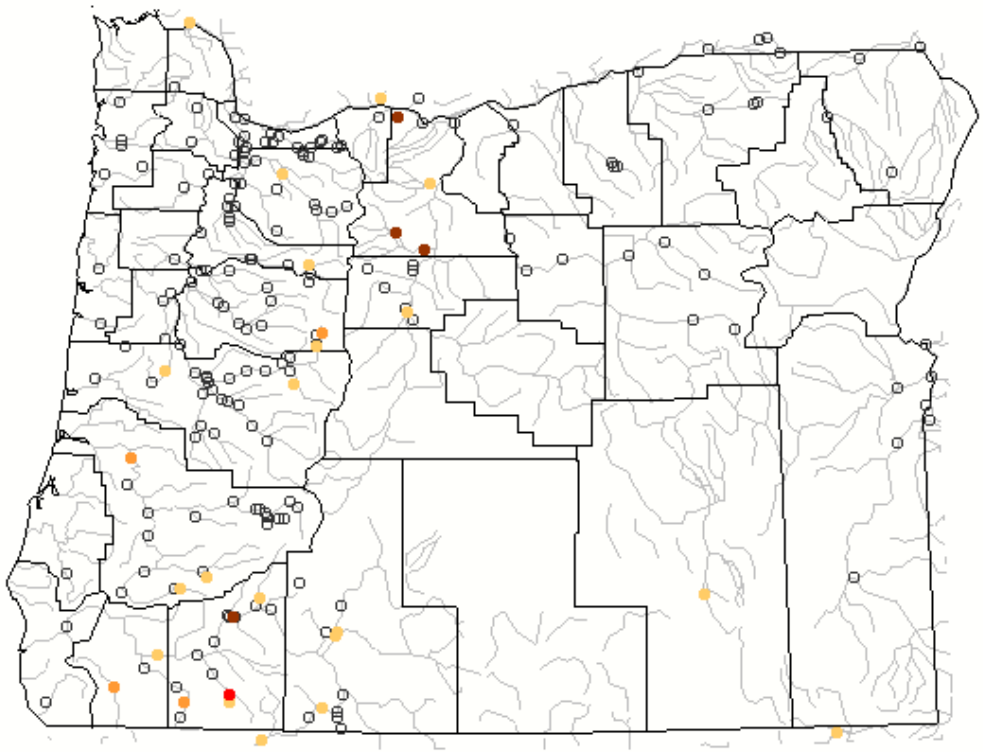
13181000 Owyhee R
nr Rome, OR





USGS

Tuesday, October 06, 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				
●	●	●	●	○
New low	<=5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

14-day *below normal* Average Streamflow

(as compared to Historical Record)

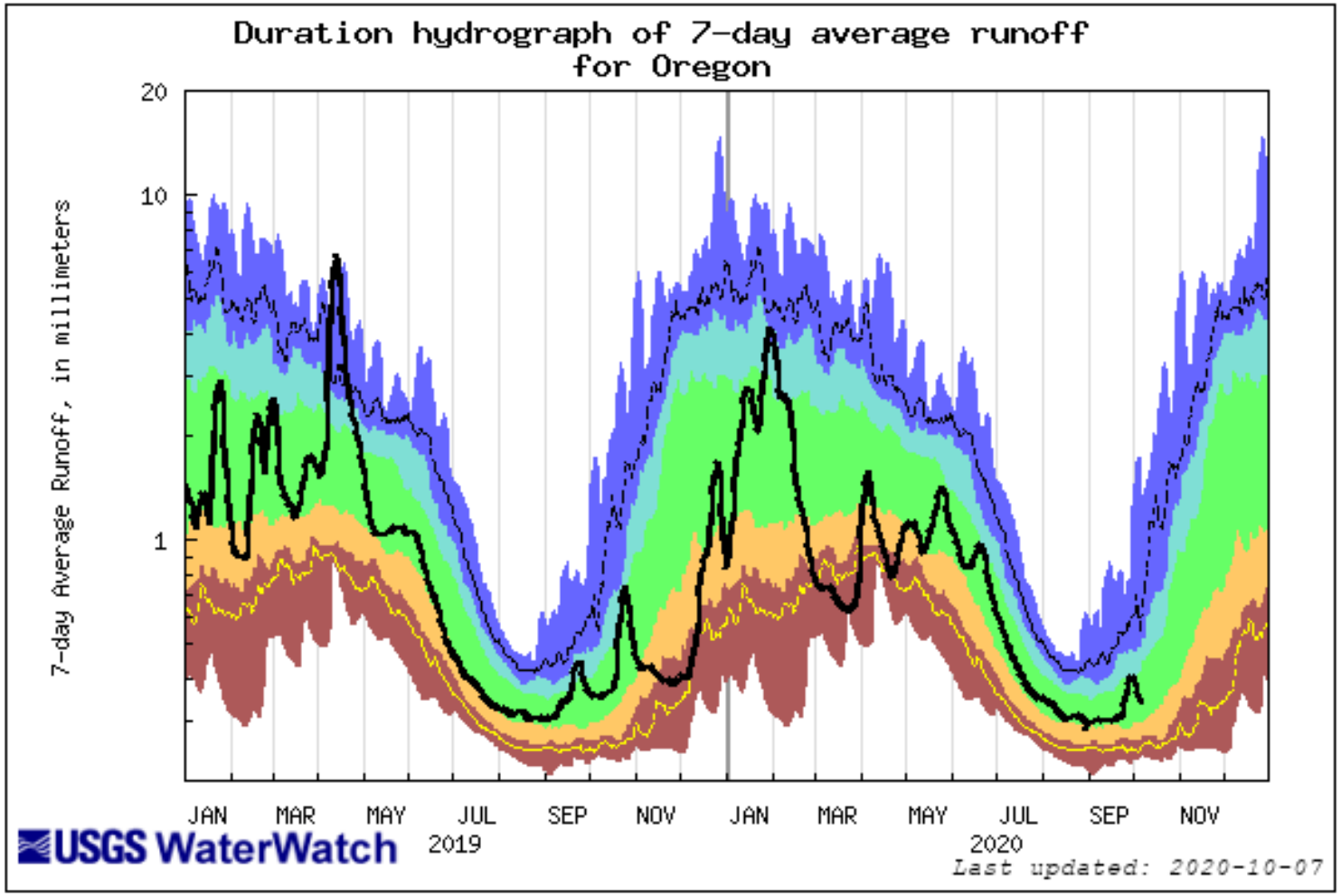
US GEOLOGICAL SURVEY, OREGON WATER SCIENCE CENTER
WATER AVAILABILITY REPORT FOR SEPTEMBER 2020

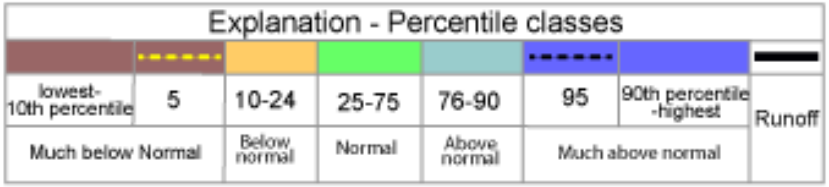
Station	NRCS SWSI Basin	Monthly mean discharge: Cubic feet per second	Monthly mean discharge: Percent of average	Change in discharge from previous month (percent)	Accumulated Runoff For the Period Oct. to Sep.: Percent of average
Donner Und Blitzen nr Frenchglen	Harney	31	70	-11	68
(*)Deep Creek above Adel	Lake County	9	50	13	61
(*)Chewaucan River near Paisley	Lake County	21	68	17	53
Williamson River near Chiloquin	Klamath	485	95	2	60
Owyhee River near Rome	Owyhee	289	216	131	51
(*)NF Malheur River near Beulah	Malheur	41	85	-5	71
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	659	96	-10	108
Umatilla River nr Gibbon	Umatilla Lower John Day	46	105	-6	140
John Day River at Service Crk	Upper John Day	84	41	8	79
(*)Little Deschutes River nr LaPine	Upper Deschutes	98	77	-17	63
Hood River nr Hood River	Lower Deschutes Mt.Hood	254	82	5	73
Willamette River at Salem	Willamette	9,450	104	24	70
Wilson River near Tillamook	North Coast	276	230	173	94
Umpqua River near Elkton	Rogue/Umpqua	829	68	-8	63
Rogue River near Agness	Rogue/Umpqua	1,800	85	-12	57
SF Coquille River at Powers	South Coast	20	50	-23	55
Chetco River near Brookings	South Coast	102	82	-14	66

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

10/1/2020

USGS


Duration hydrograph of 7-day average runoff
for Oregon
7-day Average Runoff, in millimeters
20
10
1
JAN
MAR
MAY
JUL
SEP
NOV
JAN
MAR
MAY
JUL
SEP
NOV
2019
2020
USGS WaterWatch
Last updated: 2020-10-07


Explanation - Percentile classes
lowest-10th percentile
5
10-24
25-75
76-90
95
90th percentile -highest
Runoff
Much below Normal
Below normal
Normal
Above normal
Much above normal

USGS