

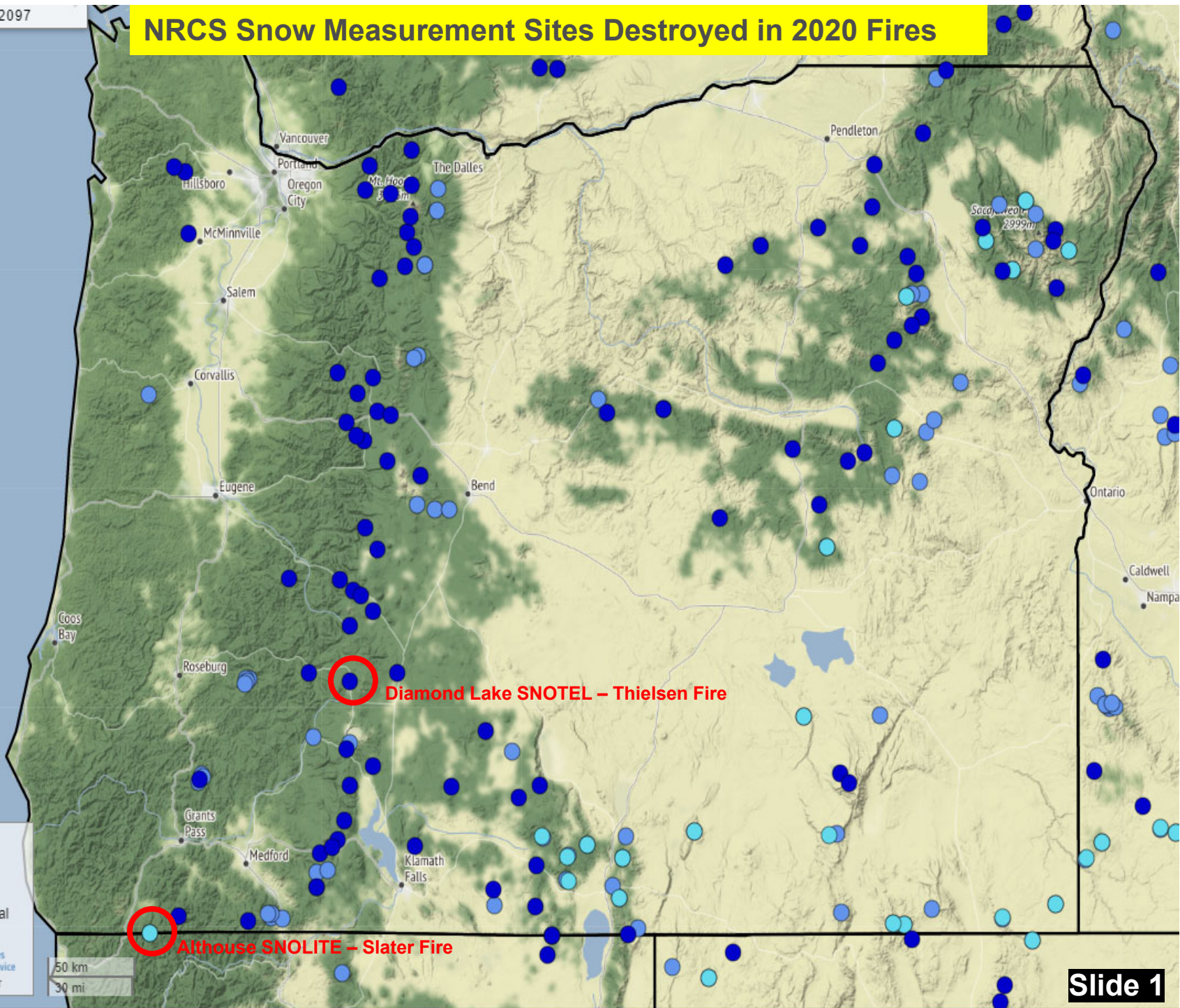
Oregon Water Supply Availability Committee - October 8, 2020



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](mailto:Scott.Oviatt@or.usda.gov)  
503-414-3271  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

# NRCS Snow Measurement Sites Destroyed in 2020 Fires



- Stations by Network
- SNOTEL
  - SNOLITE
  - Snow Course/Aerial Marker

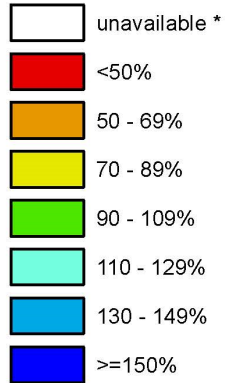


# Statewide SNOTEL Snowpack peaked at 109% - April 8, 2020

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

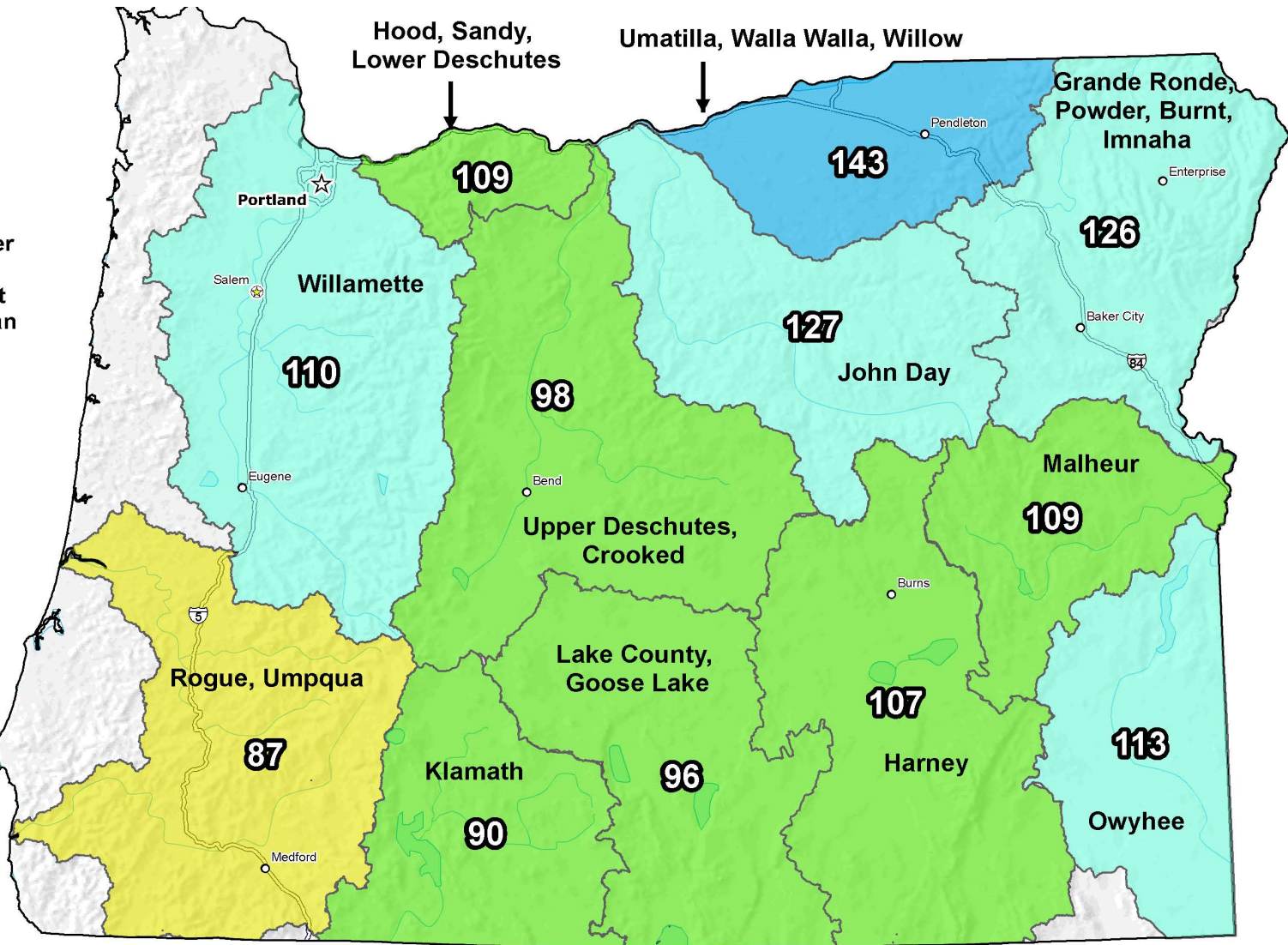
Apr 08, 2020

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

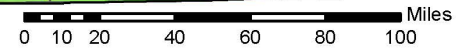


\* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional Data  
Subject to Revision

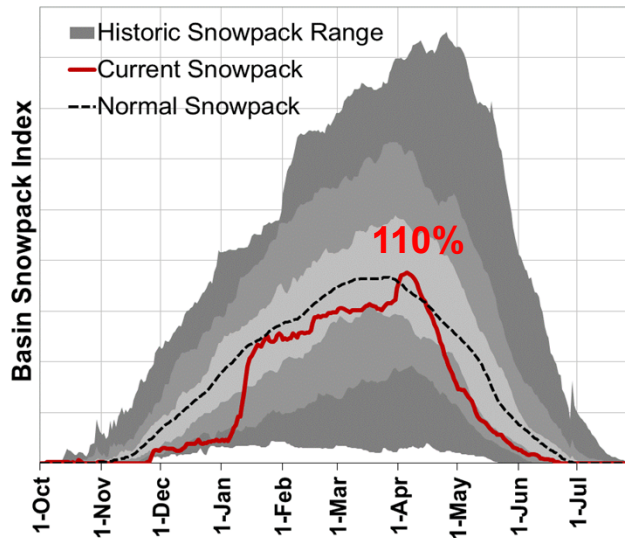


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

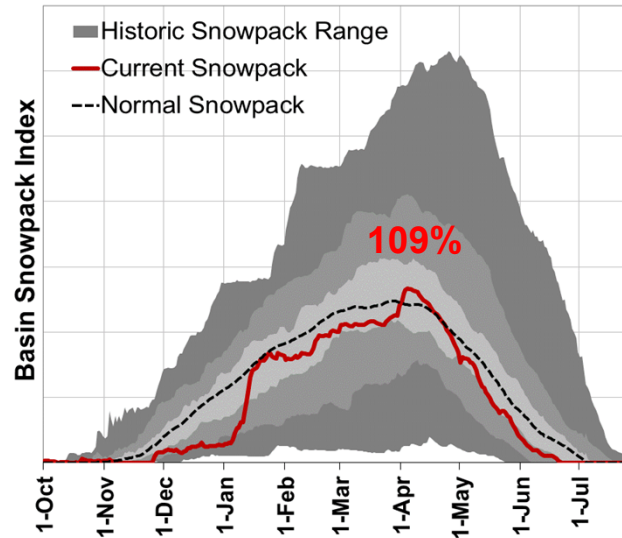


Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

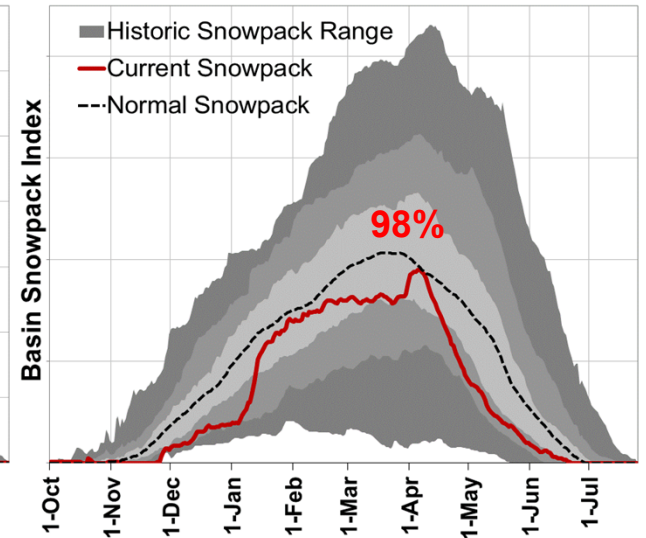
## Willamette



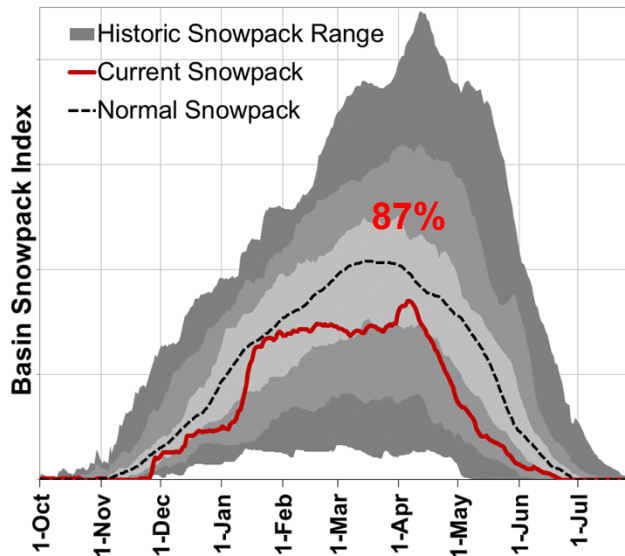
## Hood/Sandy/L. Deschutes



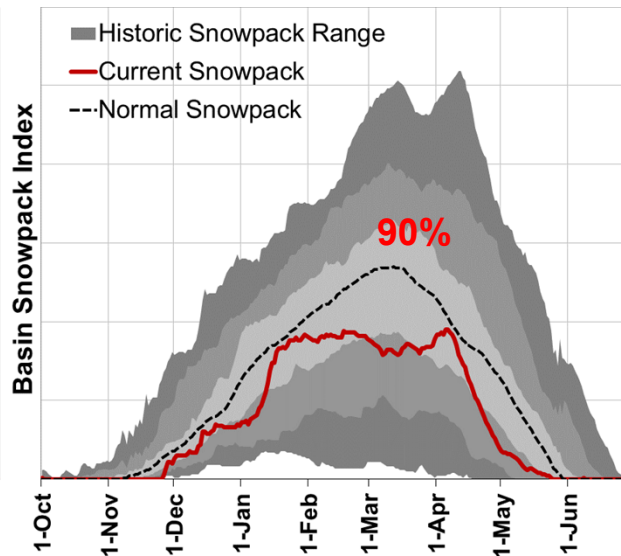
## Deschutes



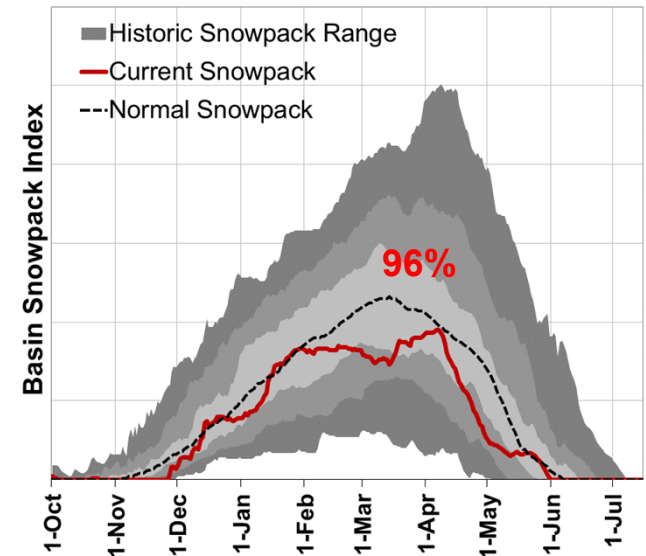
## Rogue/Umpqua



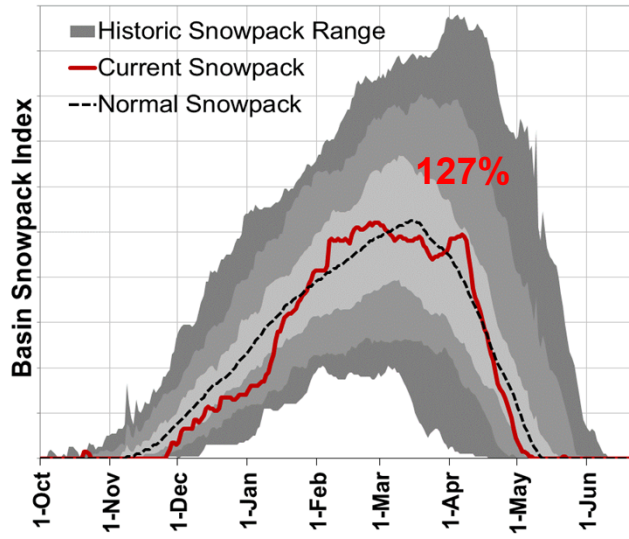
## Klamath



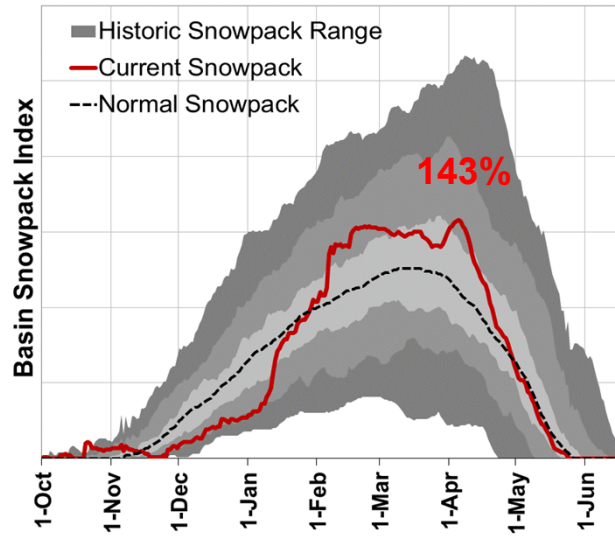
## Lake County/Goose Lake



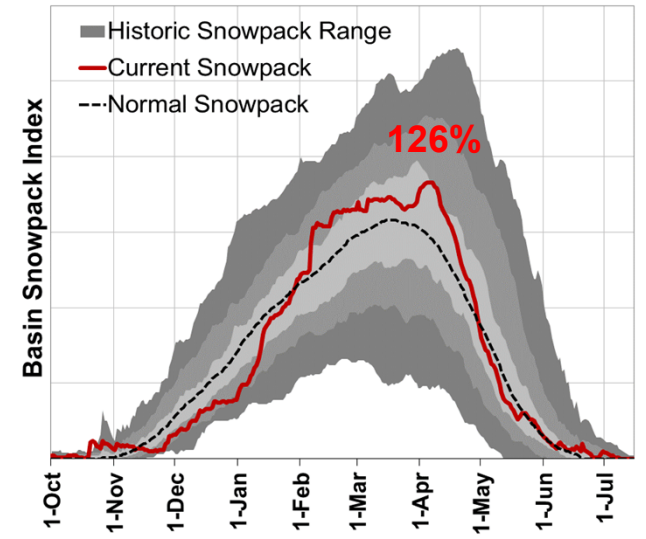
## John Day



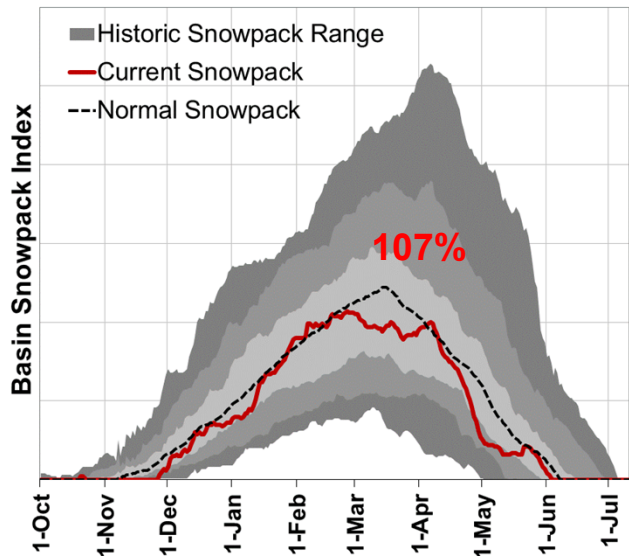
## Umatilla



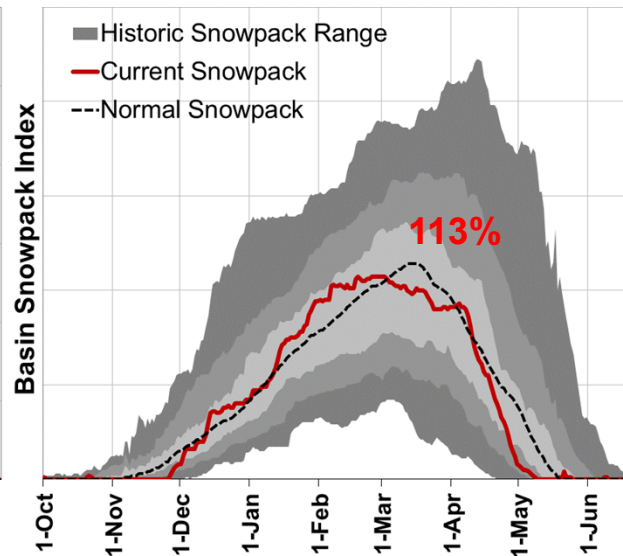
## Grand Ronde/Powder/Burnt



## Harney



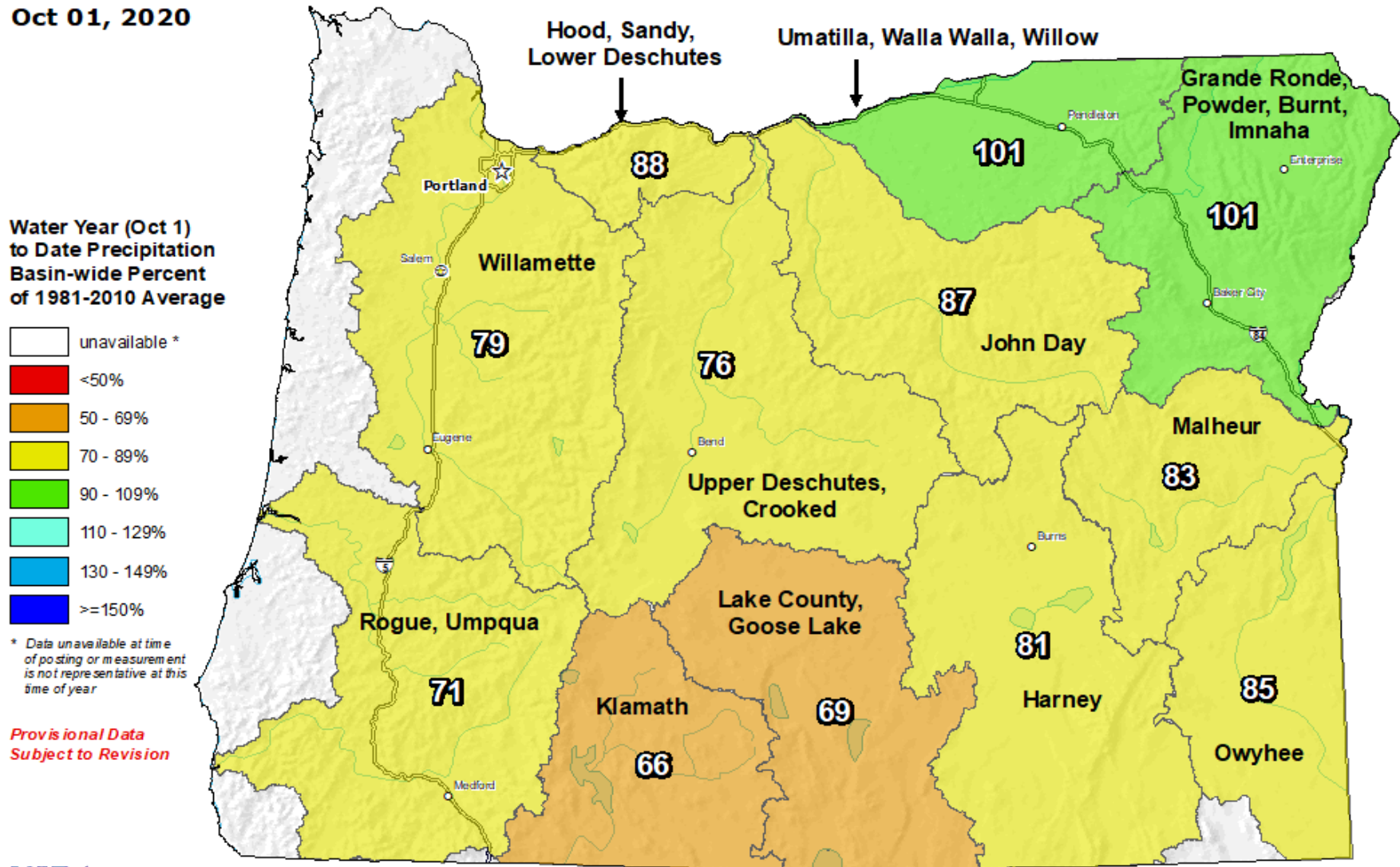
## Owyhee



# Statewide SNOTEL Water Year Precipitation was 82% of normal

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

Oct 01, 2020



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

- unavailable \*
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >=150%

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

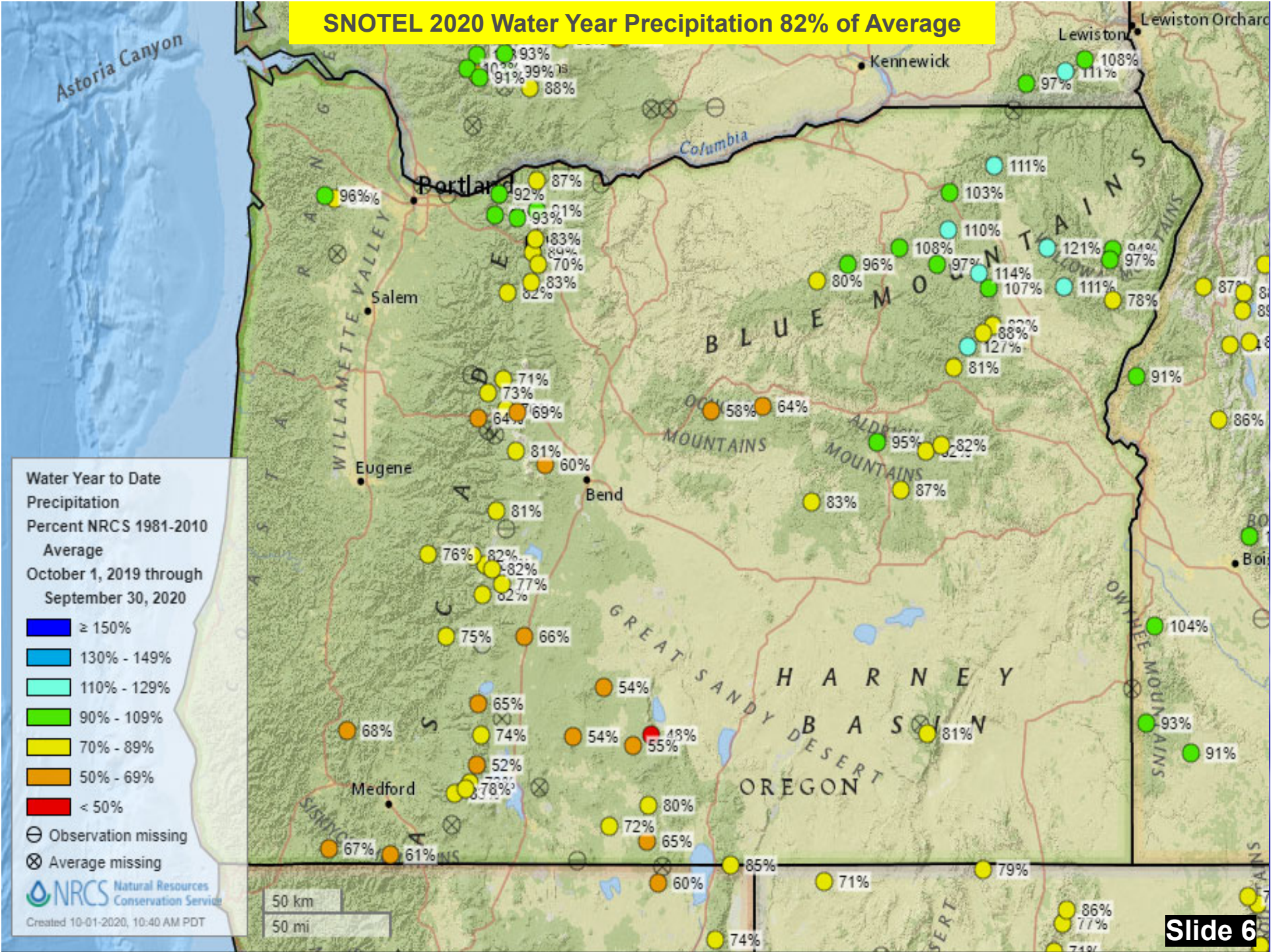
Provisional Data Subject to Revision



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

0 10 20 40 60 80 100 Miles  
 Prepared by:  
 USDA/NRCS National Water and Climate Center  
 Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

# SNOTEL 2020 Water Year Precipitation 82% of Average











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](mailto:Scott.Oviatt@or.usda.gov)  
503-414-3271  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/>

# Thank you

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

The background of the slide is a photograph of trees with vibrant yellow and orange autumn leaves. The branches are dark and silhouetted against the bright foliage.

# Oregon WSAC

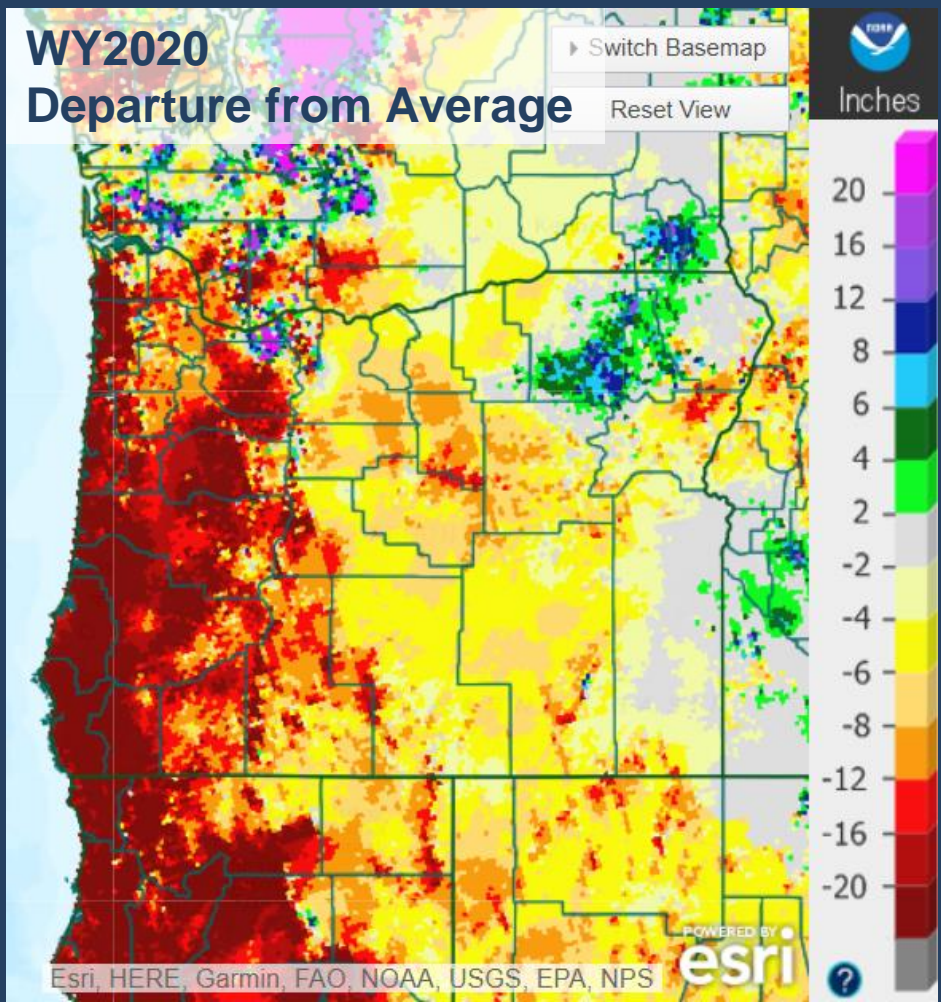
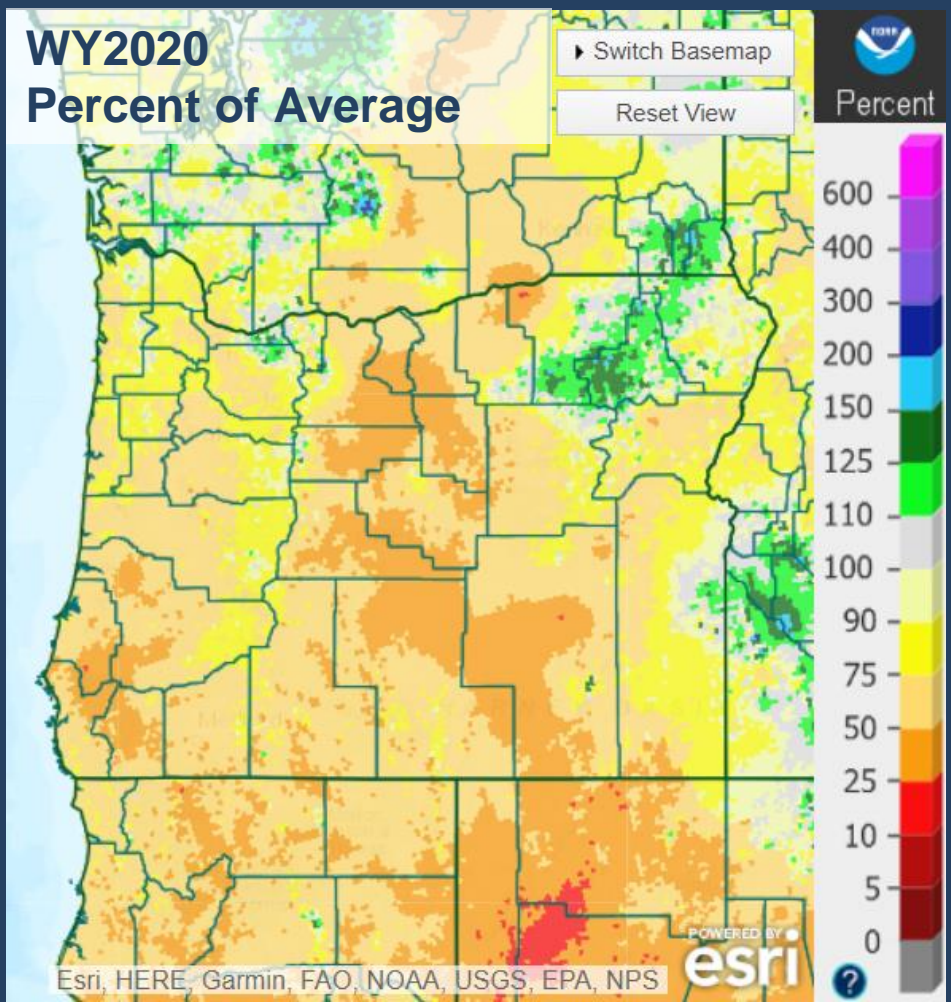
National Weather Service  
Precipitation & Temperatures Update

October 8, 2020

Andy Bryant  
NOAA/NWS Portland  
Weather Forecast Office



# Water Year Precipitation

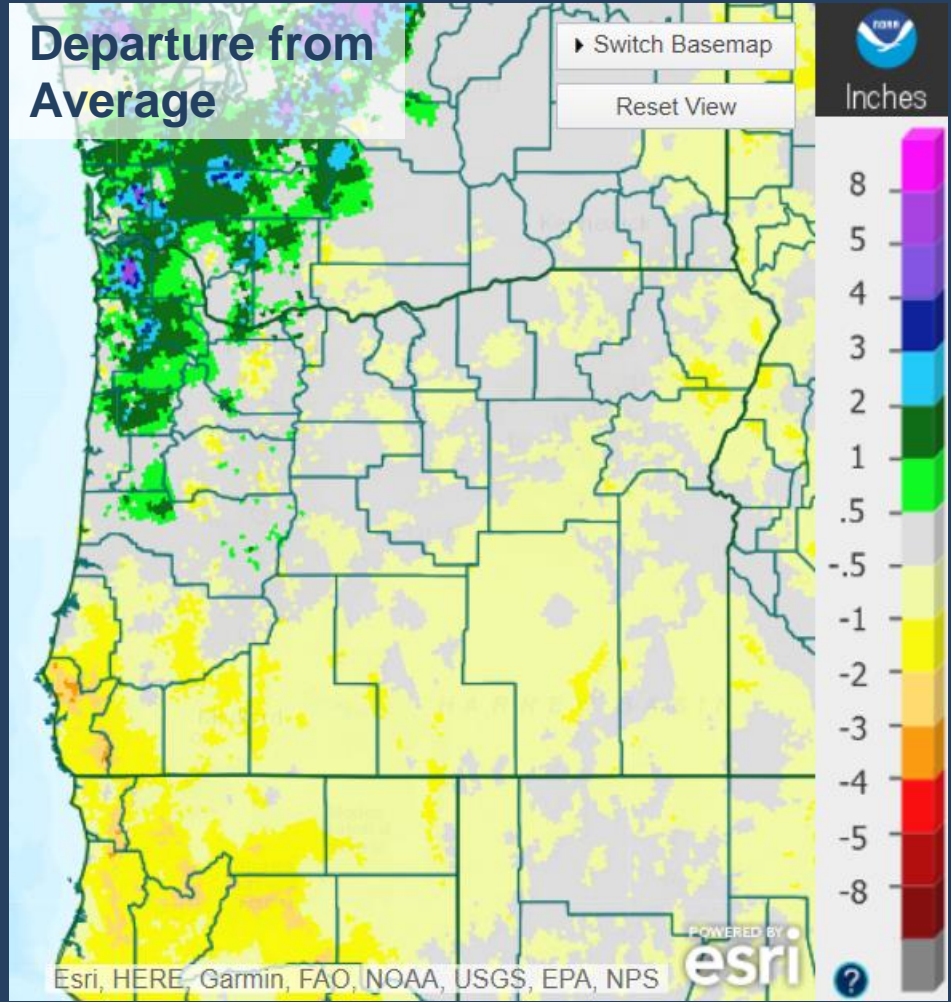
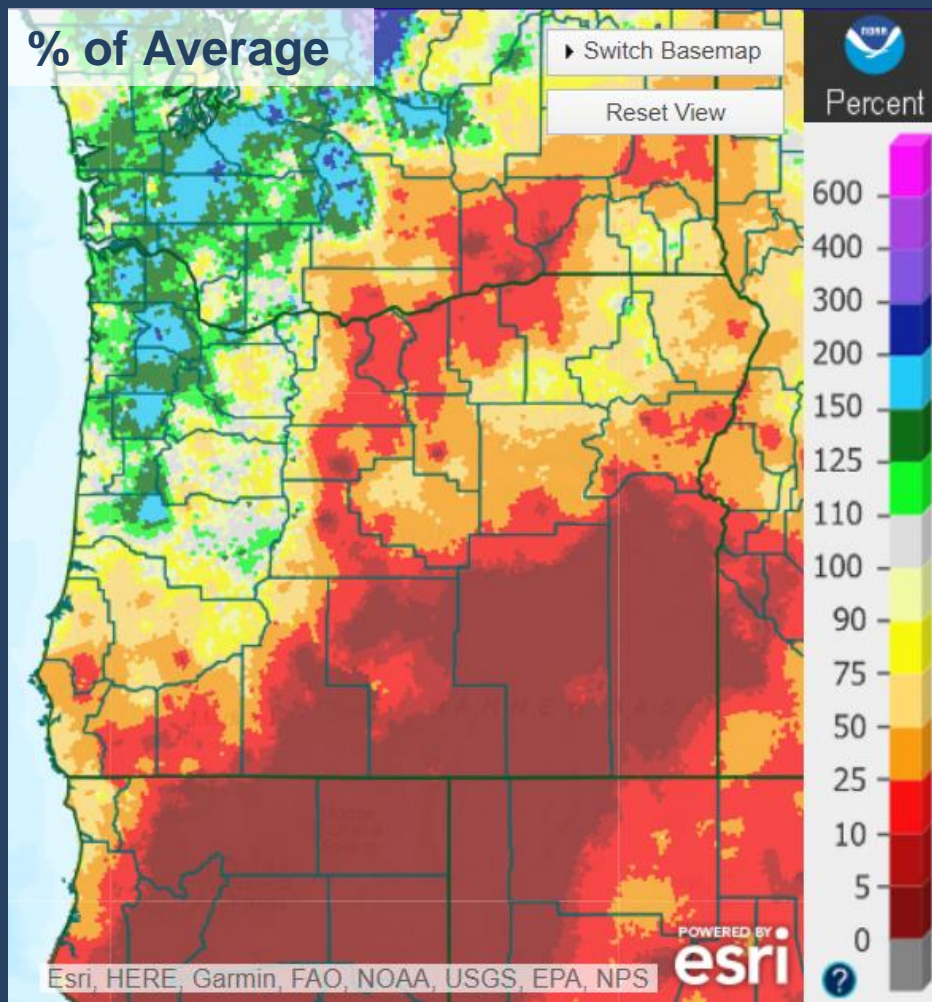


Precipitation Data as of October 7, 2020

Source: [water.weather.gov/precip/index.php?location\\_type=wfo&location\\_name=pqr](http://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](http://water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr)



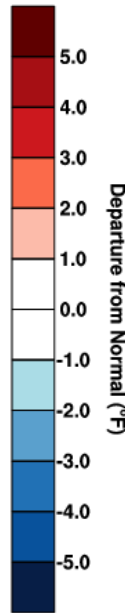
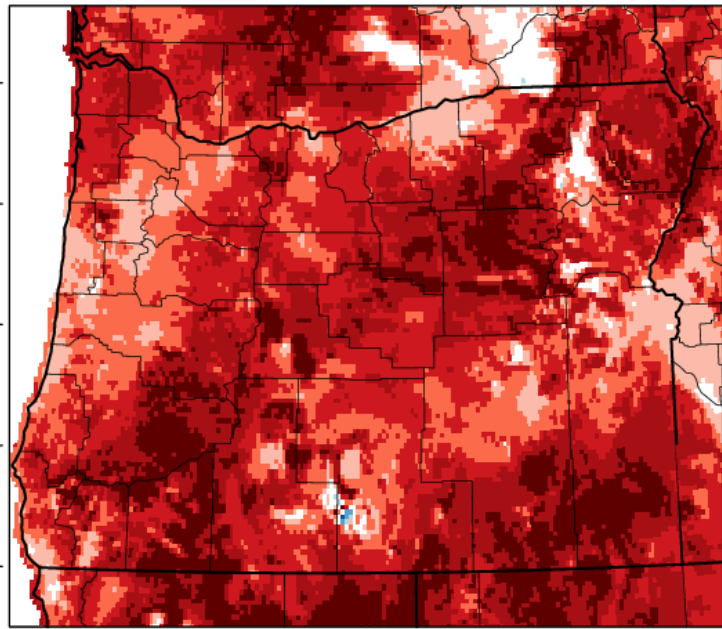
# Recent Temperatures

September 2020

Water Year 2020

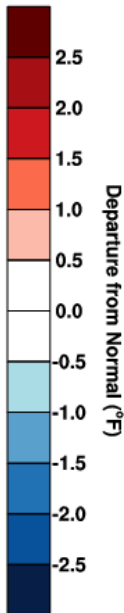
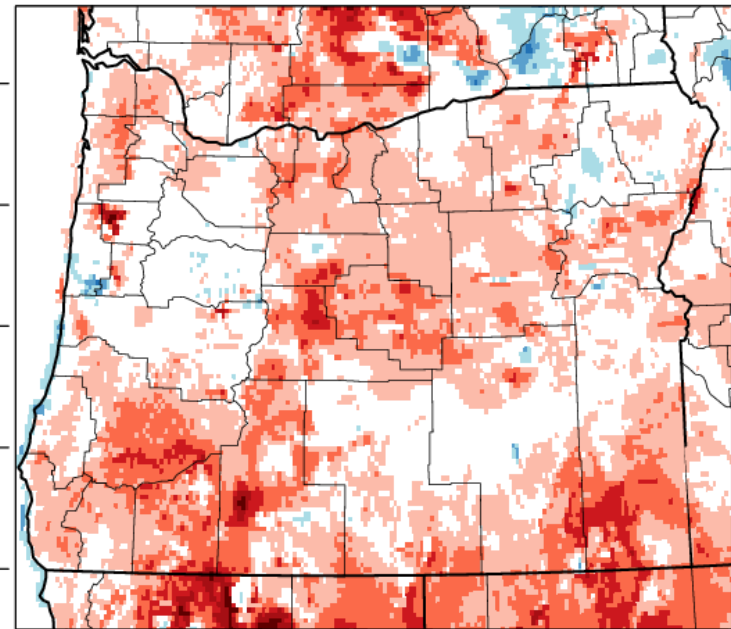
Oregon - Mean Temperature

September 2020 Departure from 1981-2010 Normal



Oregon - Mean Temperature

October-September 2020 Departure from 1981-2010 Normal



WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 OCT 2020

WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 OCT 2020





# Drought Monitor

U.S. Drought Monitor

September 1, 2020

(Released Thursday, Sep. 3, 2020)

West

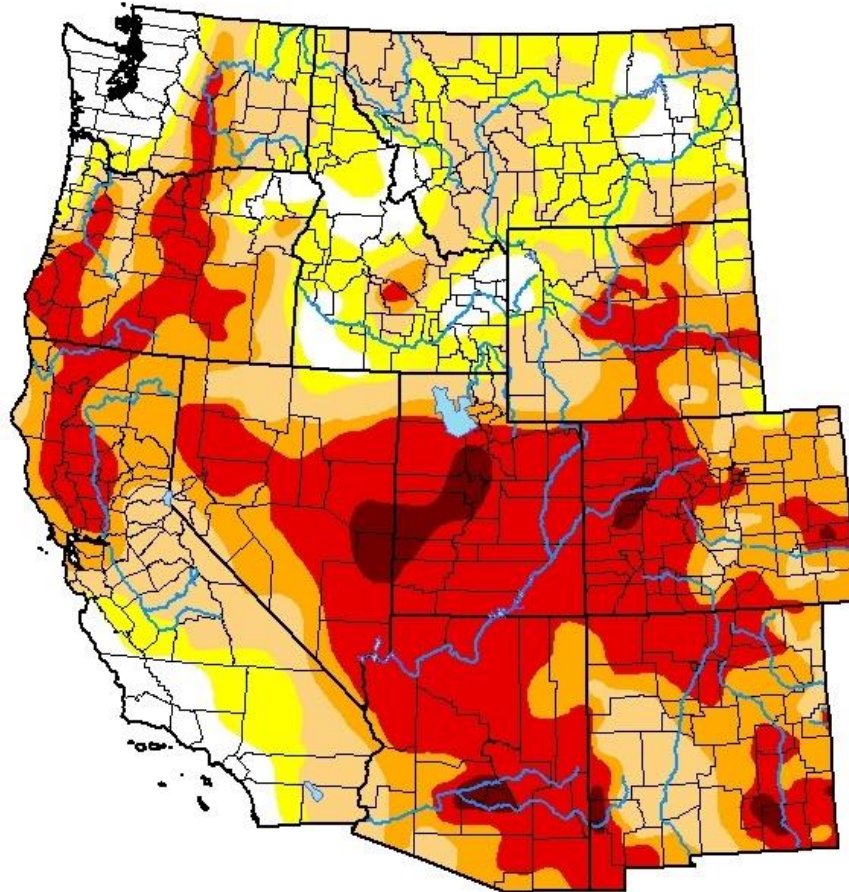
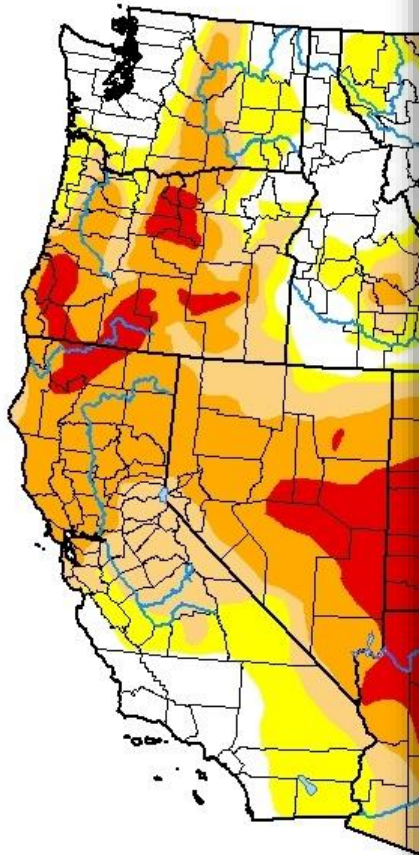
U.S. Drought Monitor

September 29, 2020







(Released Thursday, Oct. 1, 2020)

West

Valid 8 a.m. EDT



**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>

**Author:**

Brad Rippey  
U.S. Department of Agriculture

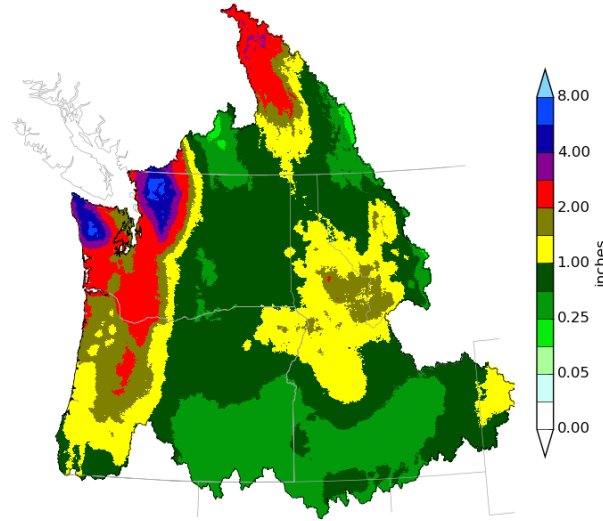




# Mid October Outlook

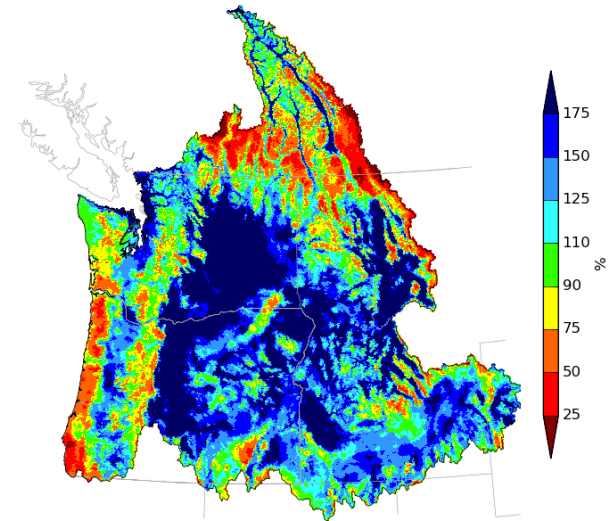
## NWRFC 10-DAY PRECIPITATION

Northwest River Forecast Center  
10 Day QPF, Ending 12Z, 10/17/20



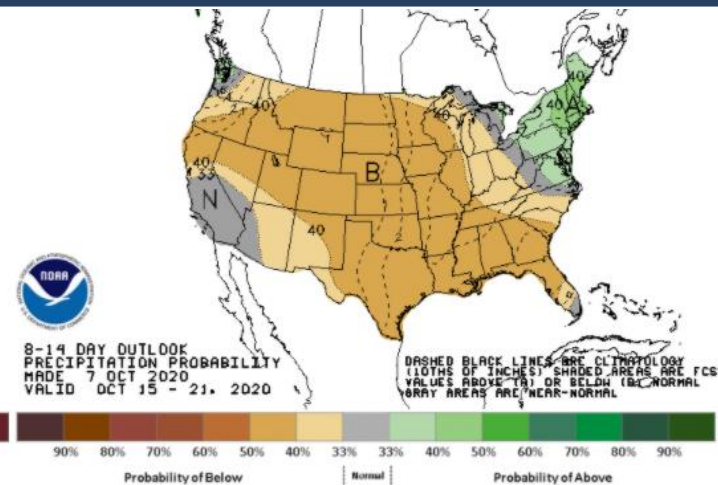
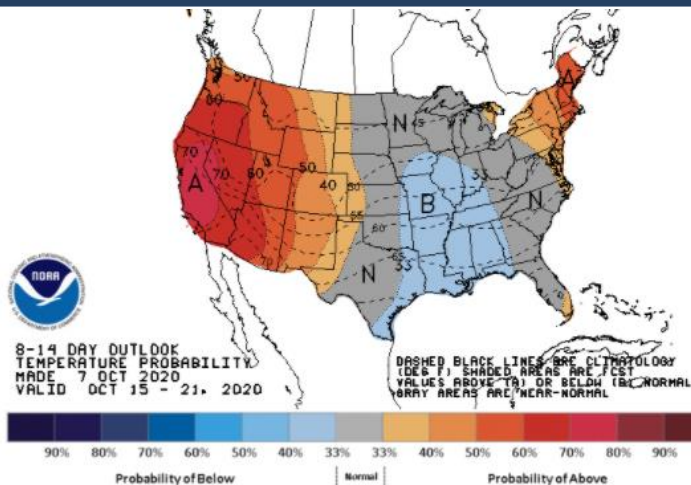
Creation Time: Wed Oct 7 22:04:18 UTC 2020

Northwest River Forecast Center  
10 Day QPF (Percent of Climatology), Ending 12Z, 10/17/20



Creation Time: Wed Oct 7 22:05:06 UTC 2020

## CPC 8 - 14 DAY OUTLOOK

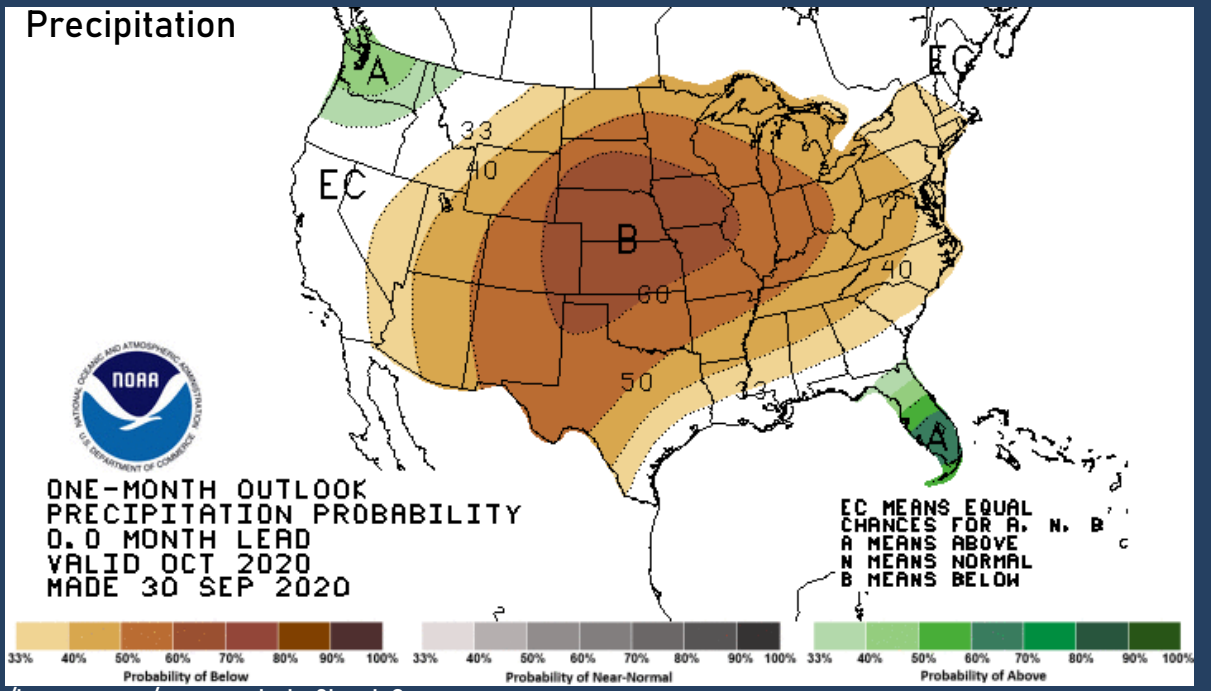
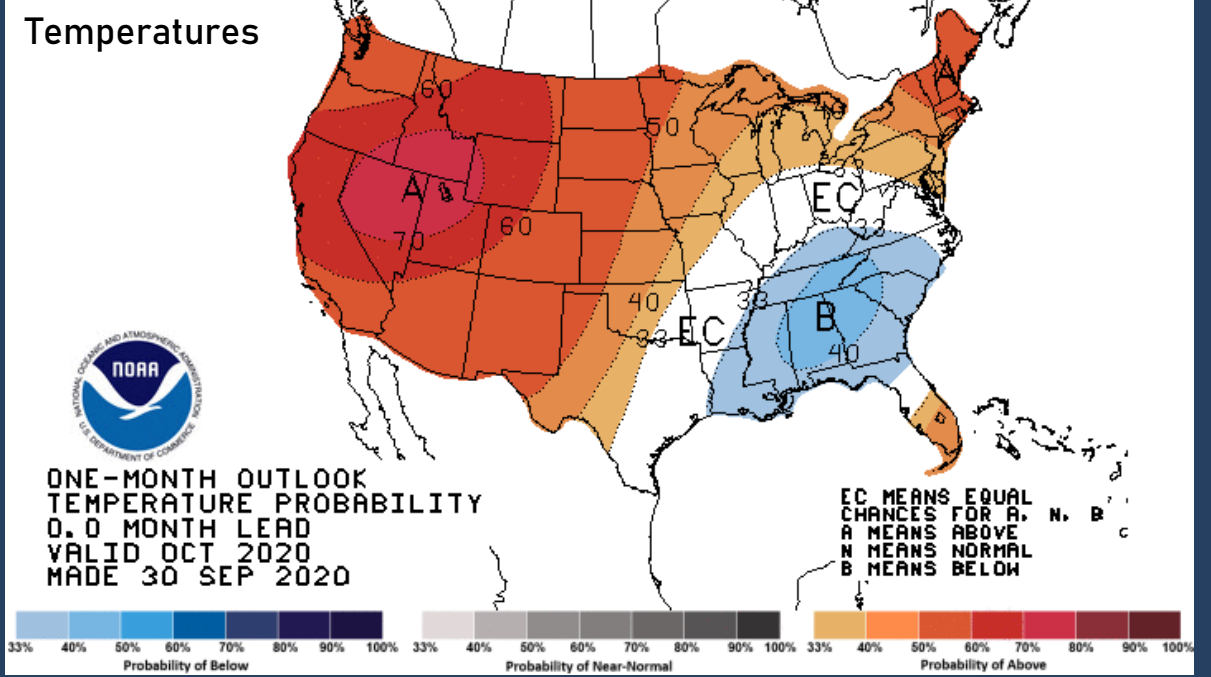




# Climate Prediction Center Outlook

October 2020

La Niña Advisory in effect for this fall and winter



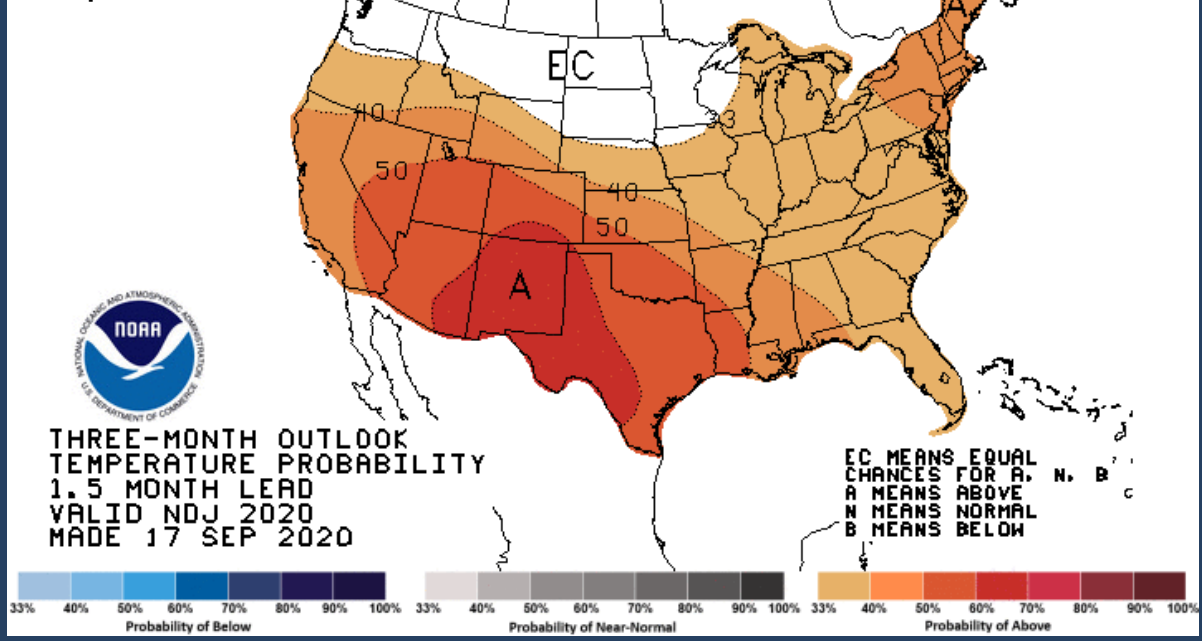


# Climate Prediction Center Outlook

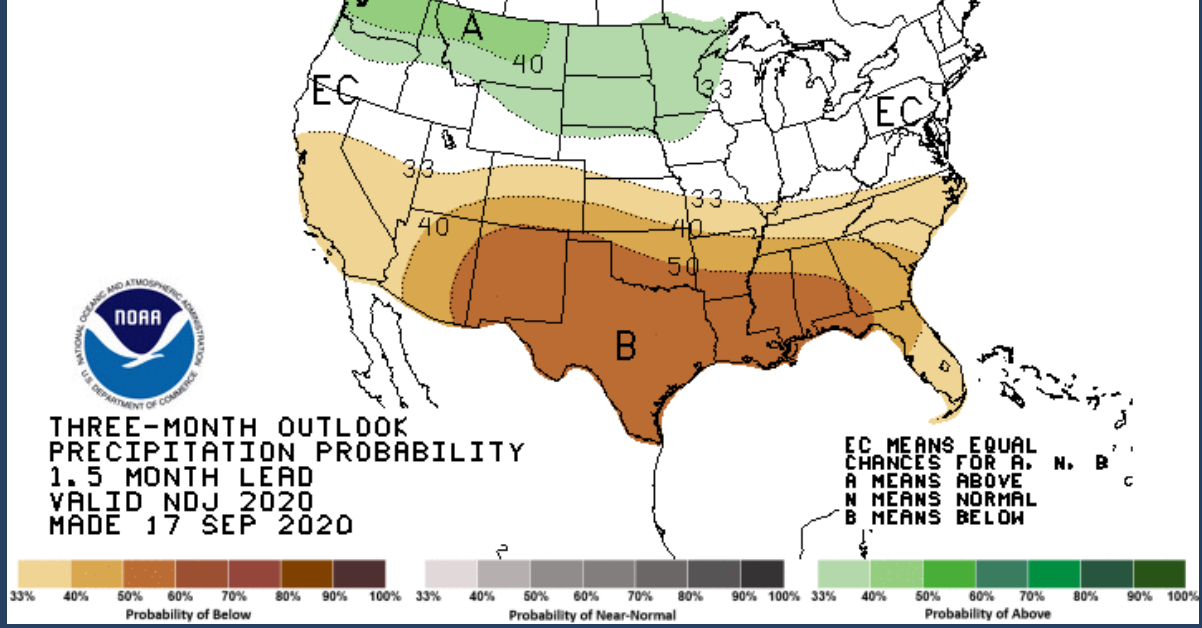
Oct - Nov - Dec 2020

## La Niña Watch in effect for this fall and winter

### Temperatures



### Precipitation



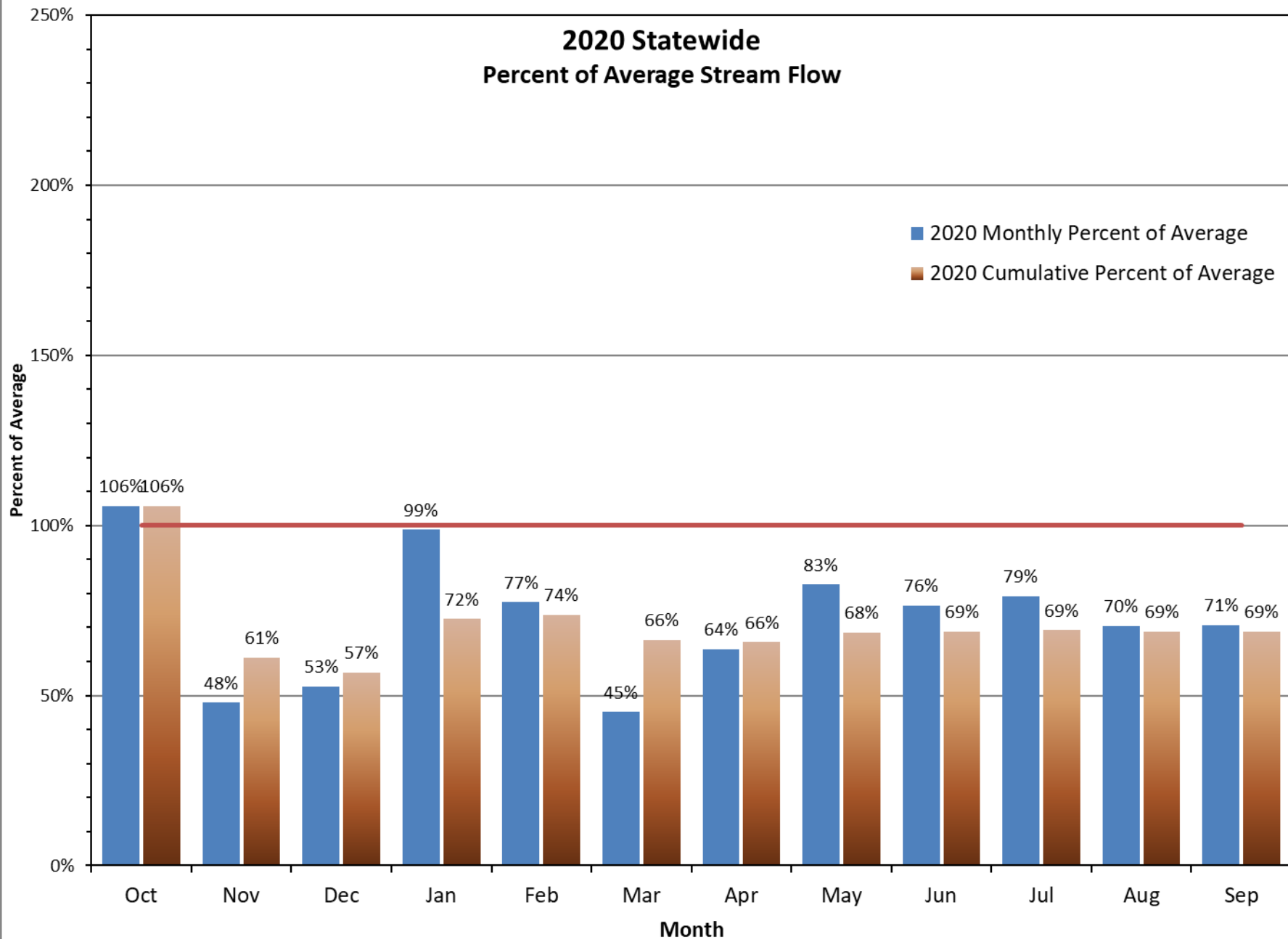
# Water Supply Conditions Report

# Water Supply Availability Committee

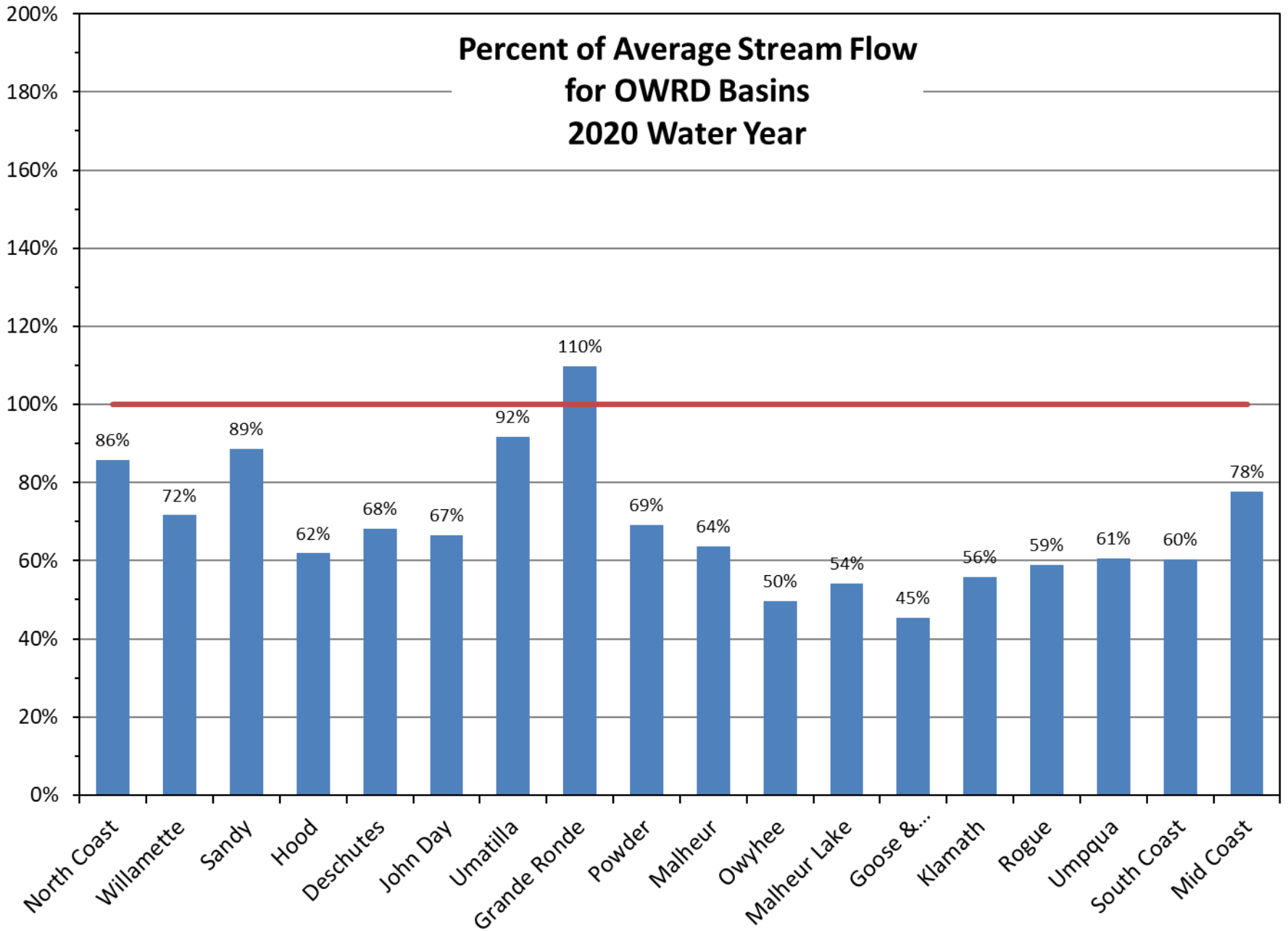


**Ken Stahr**  
**Oregon Water Resources**  
**Department**  
**October 8, 2020**

## 2020 Statewide Percent of Average Stream Flow

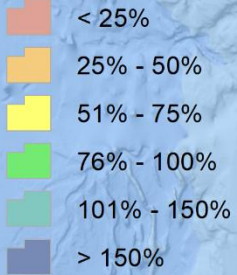


### Percent of Average Stream Flow for OWRD Basins 2020 Water Year

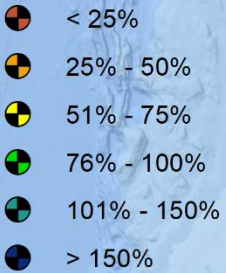


# Percent of Average Streamflow September, 2020

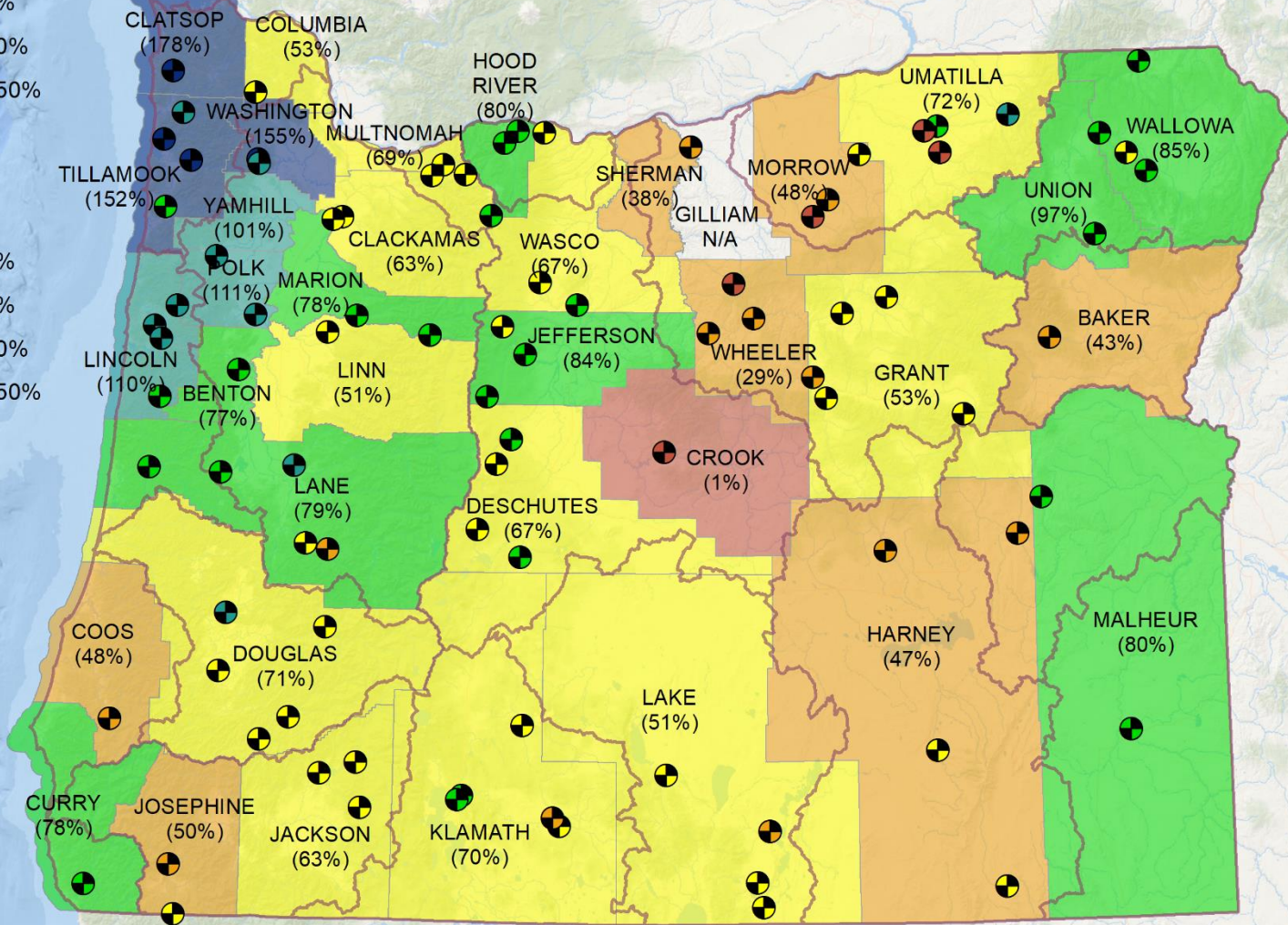
## County



## Stream Gage



## WRD Basin



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

Drought Declaration by

- County Requested
- Governor Declared
- Not Rated



Oregon Water Resources Department  
725 Summer St. NE Suite A  
Salem, OR 97301  
[www.oregon.gov/owrd](http://www.oregon.gov/owrd)

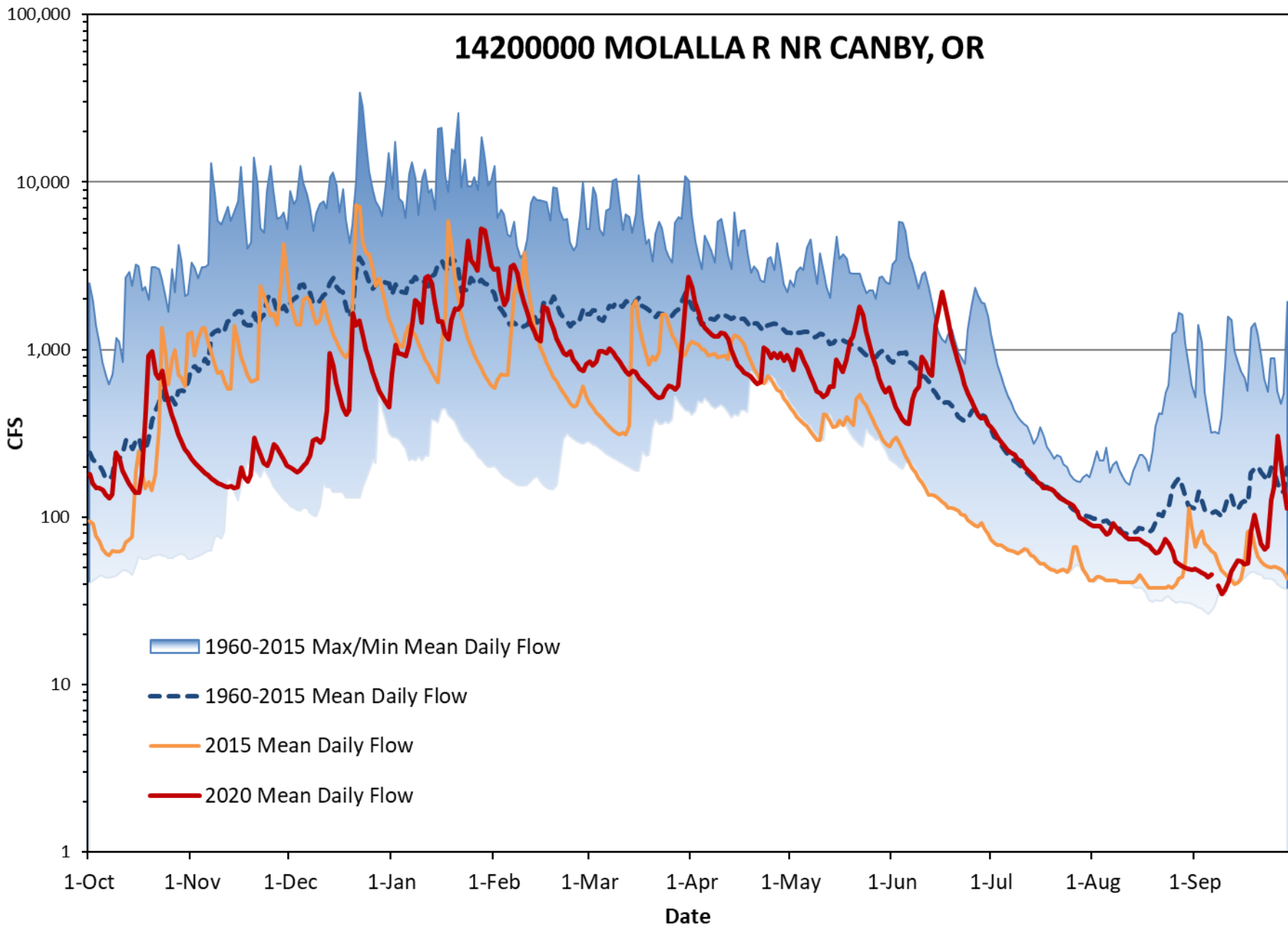
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

0 20 40 60 80 100 Miles

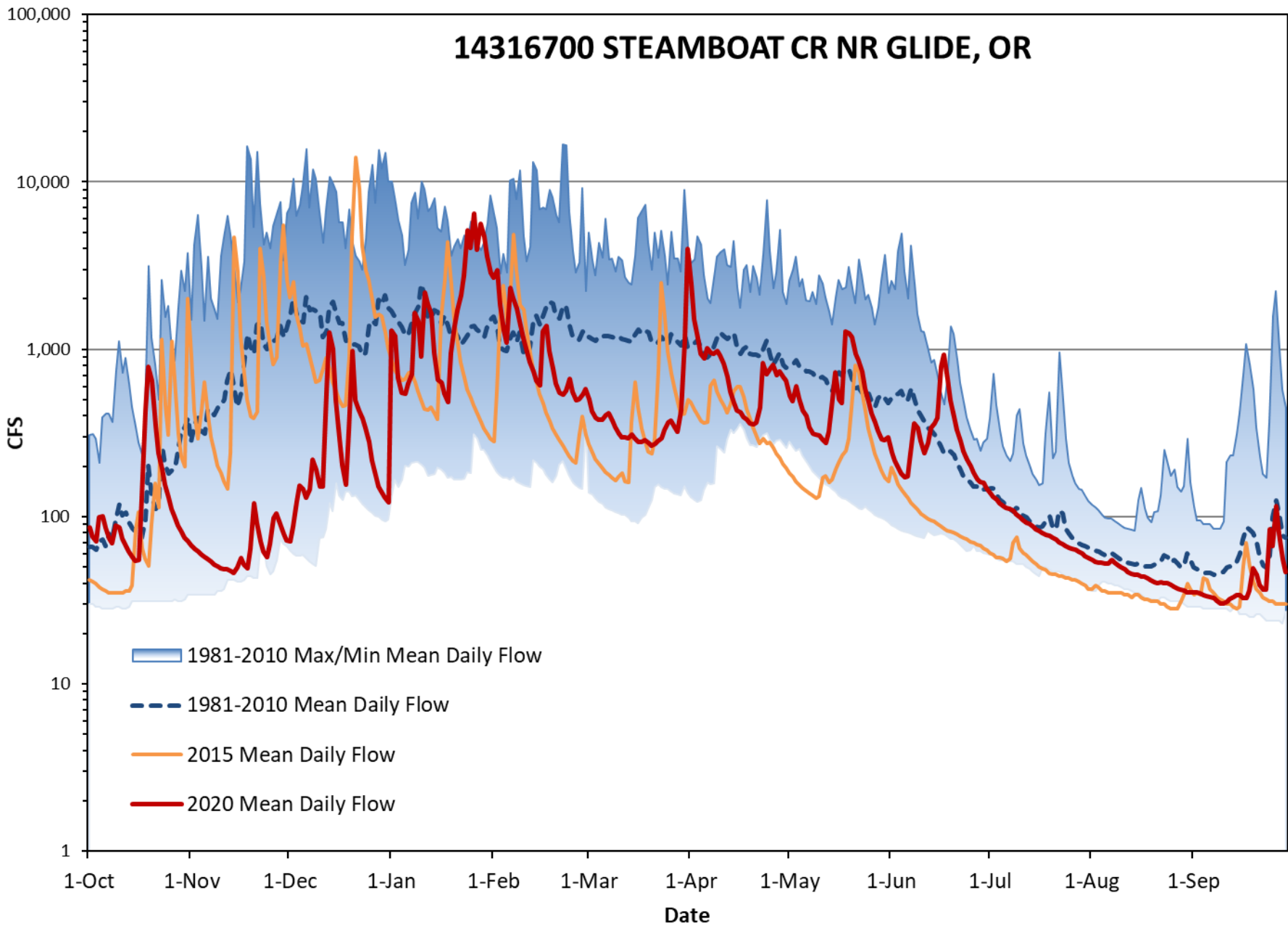
Updated: 9/30/2020 2:49 PM  
Projection: Oregon Lambert, NAD 83

Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

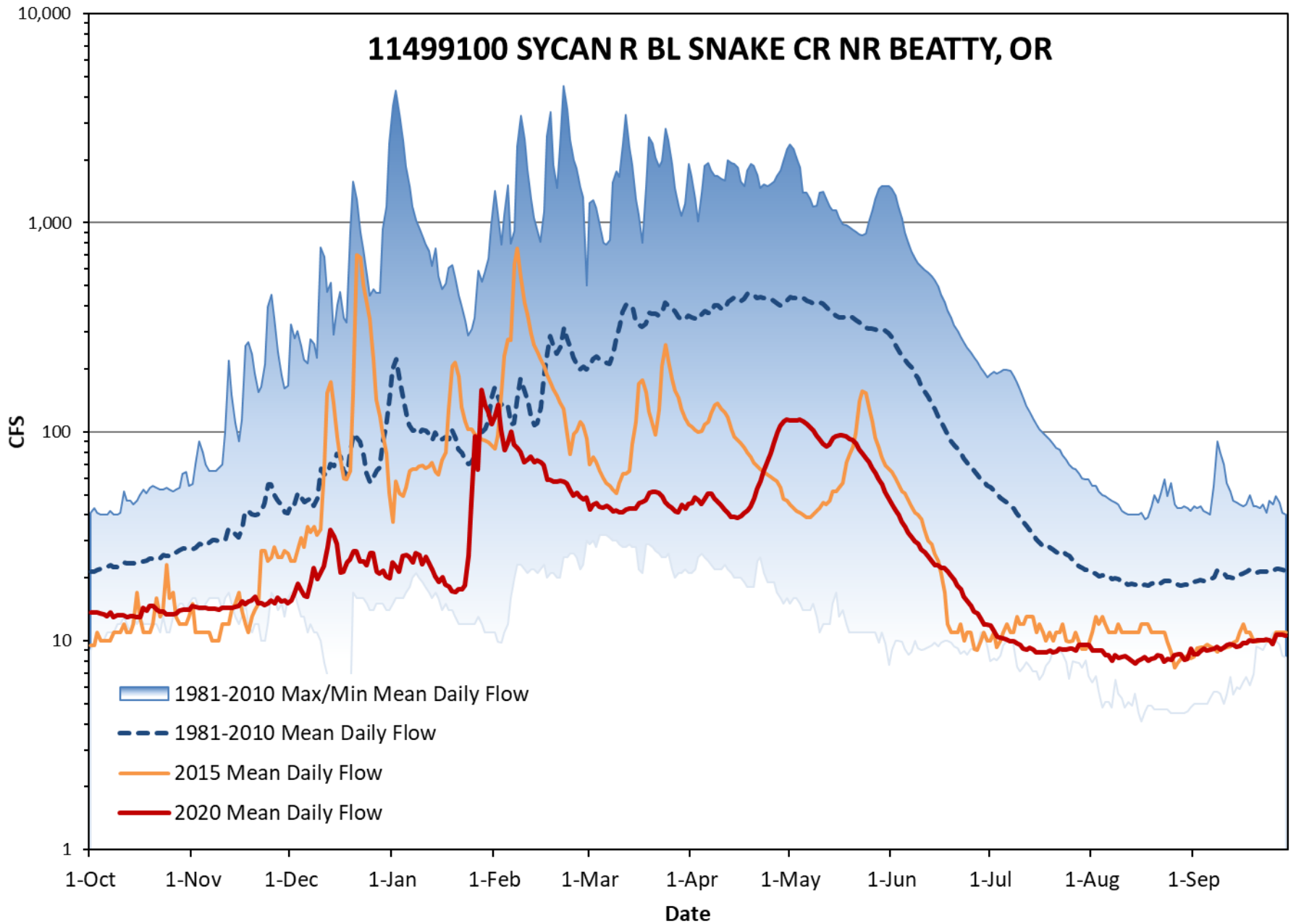
# 1420000 MOLALLA R NR CANBY, OR



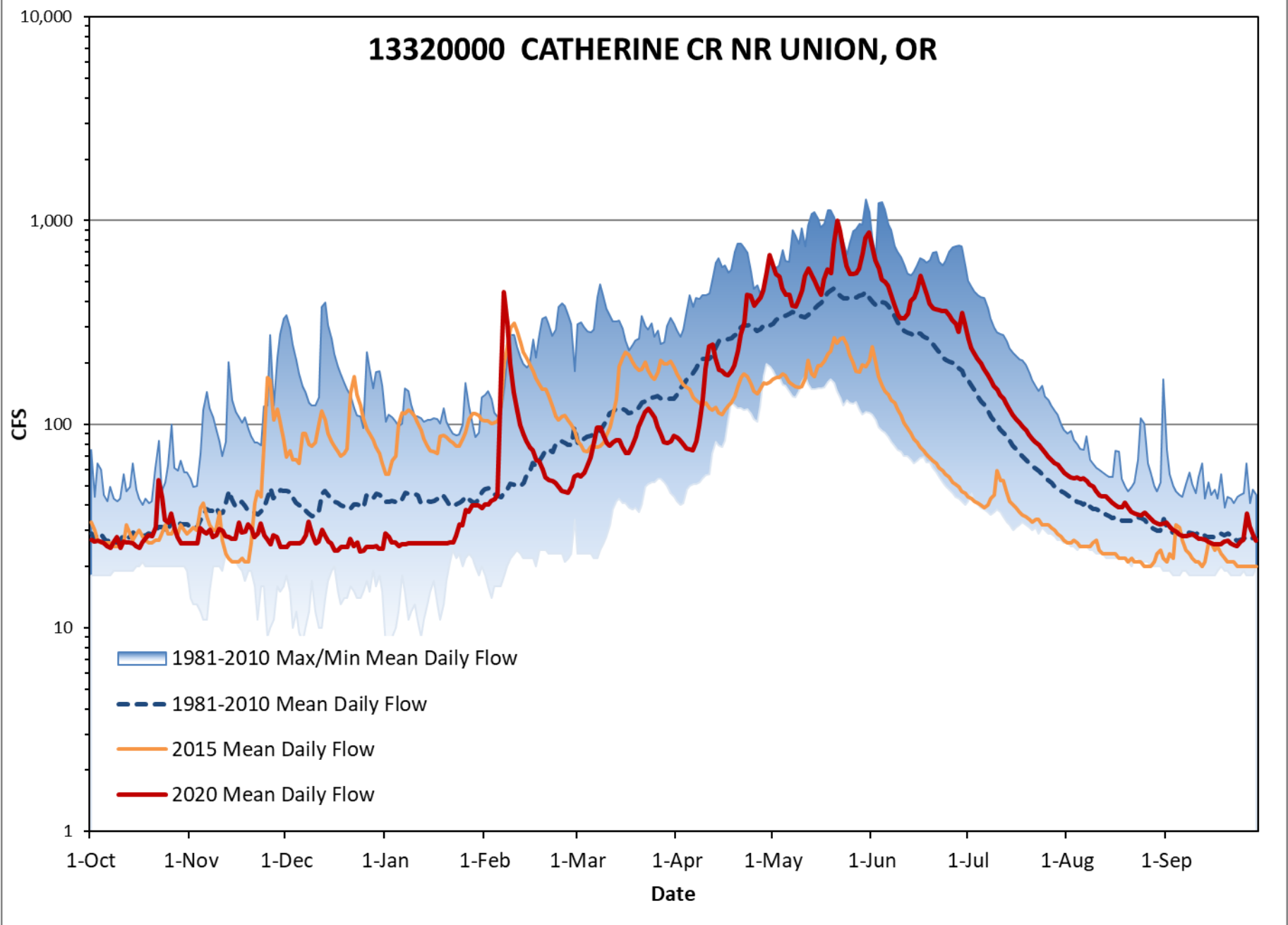
# 14316700 STEAMBOAT CR NR GLIDE, OR



# 11499100 SYCAN R BL SNAKE CR NR BEATTY, OR



# 1332000 CATHERINE CR NR UNION, OR



OREGON



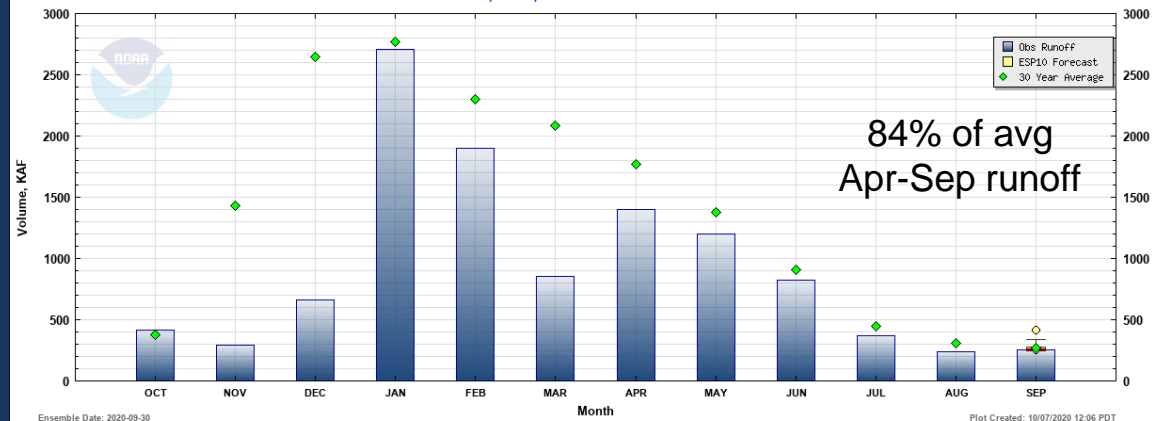
WATER RESOURCES  
DEPARTMENT

Thank you

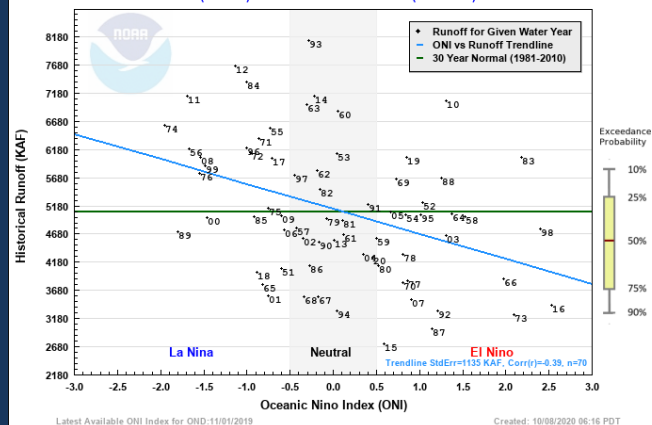


# WY 2020 runoff

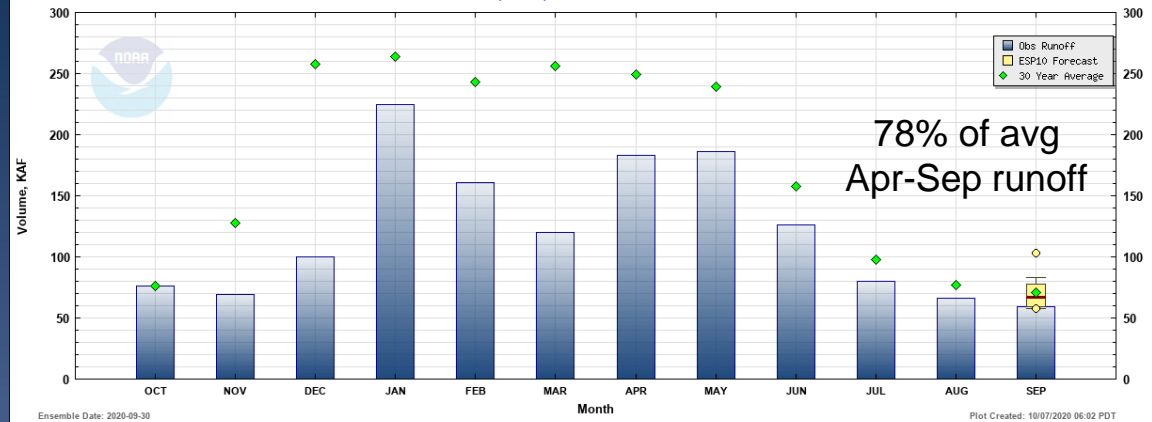
Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(SLMO3) WILLAMETTE - AT SALEM



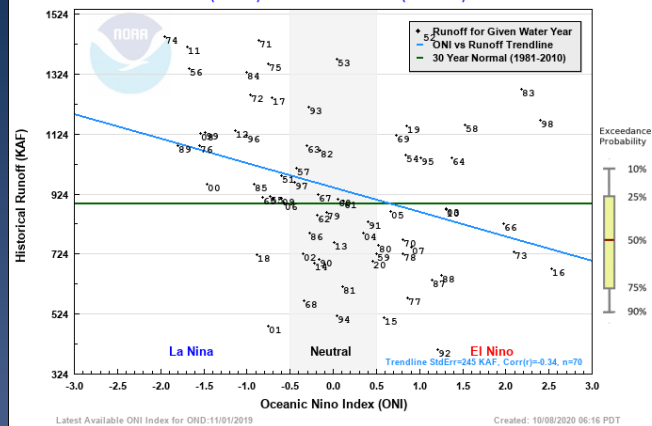
OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(SLMO3) WILLAMETTE - AT SALEM (1951-2020)



Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(RYGO3) ROGUE - AT RAYGOLD



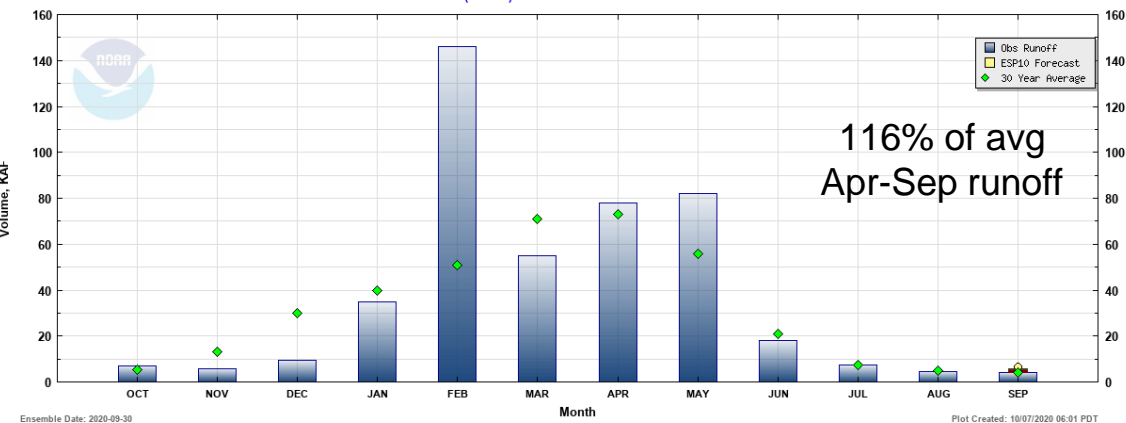
OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(RYGO3) ROGUE - AT RAYGOLD (1951-2020)



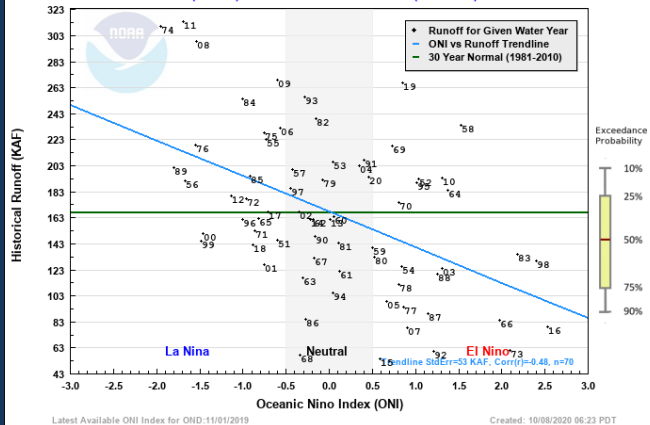


# WY 2020 runoff

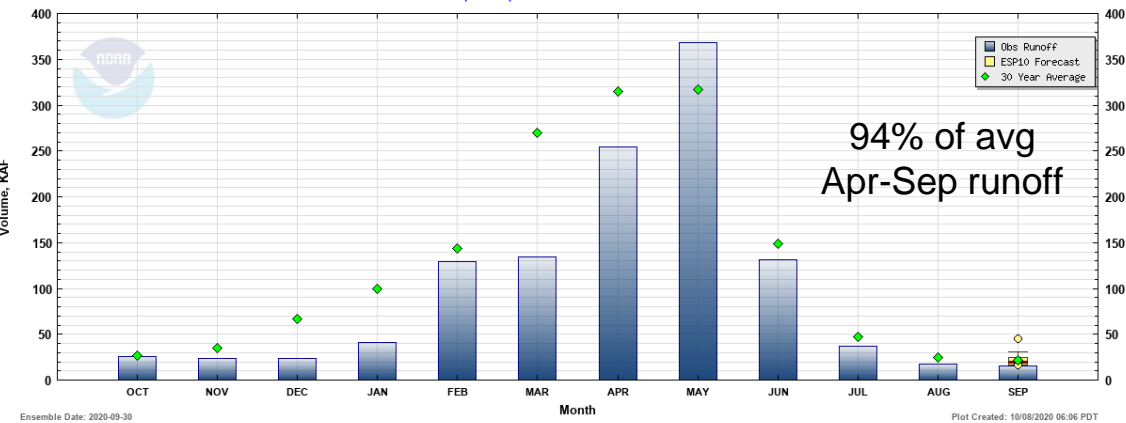
Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(PDT03) UMATILLA - AT PENDLETON



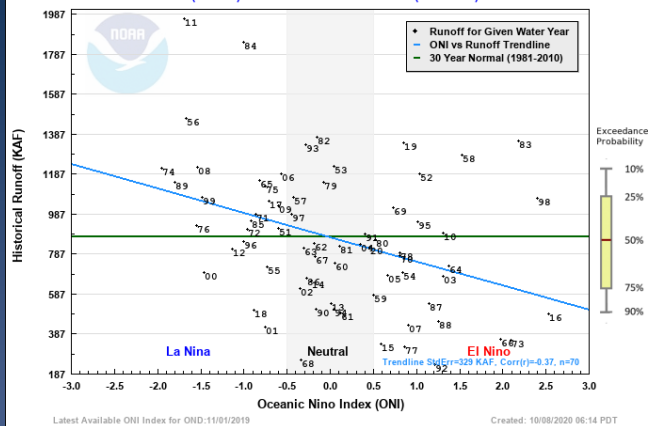
OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(PDT03) UMATILLA - AT PENDLETON (1951-2020)



Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(SERO3) JOHN DAY - AT SERVICE CK



OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(SERO3) JOHN DAY - AT SERVICE CK (1951-2020)

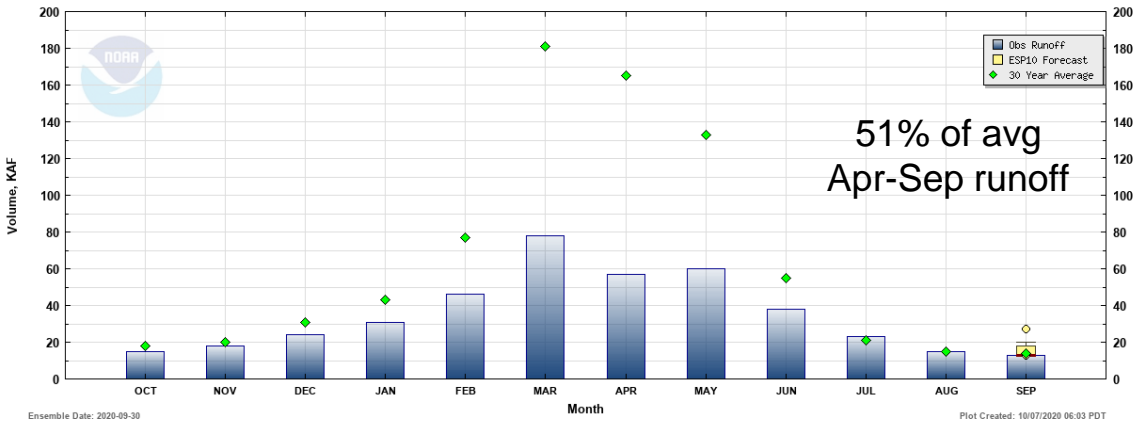




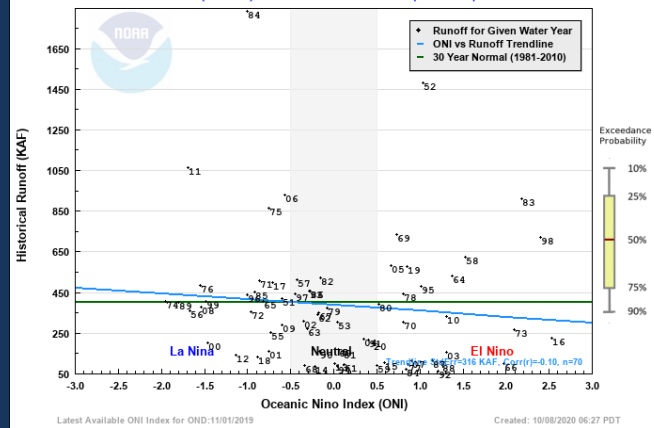


# WY 2020 runoff

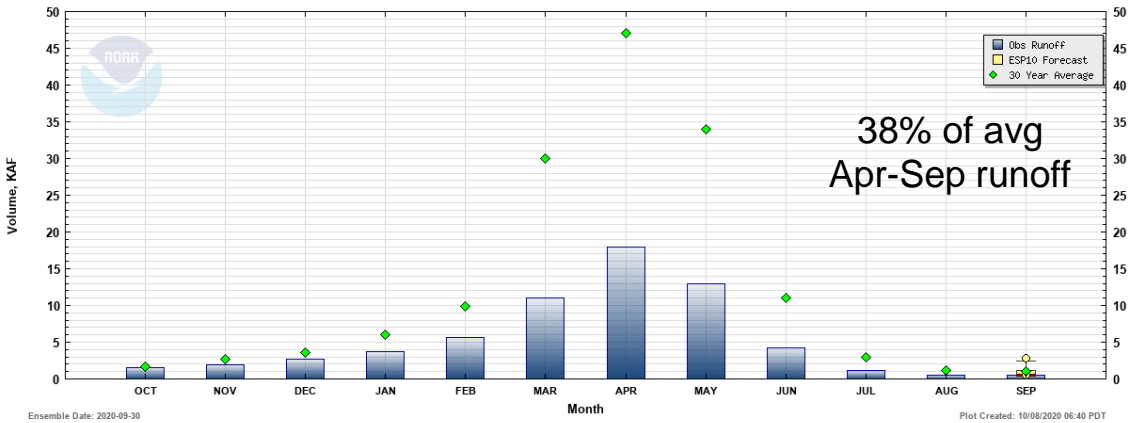
Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(OWY03) OWYHEE - OWYHEE DAM



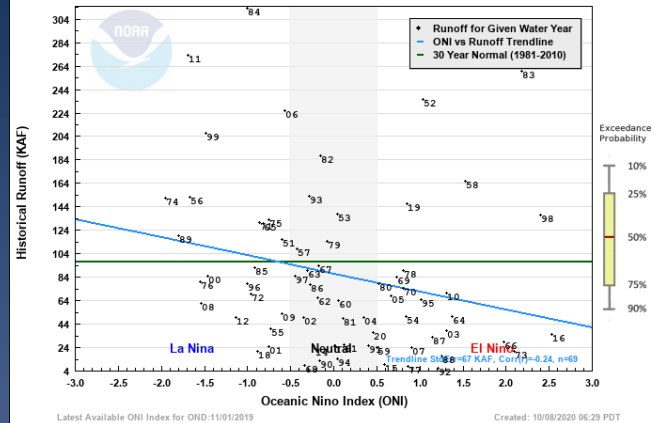
OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(OWY03) OWYHEE - OWYHEE DAM (1951-2020)



Natural Volume Monthly Forecasts (ESP10) for Water Year 2020  
(BUSO3) SILVIES - NEAR BURNS

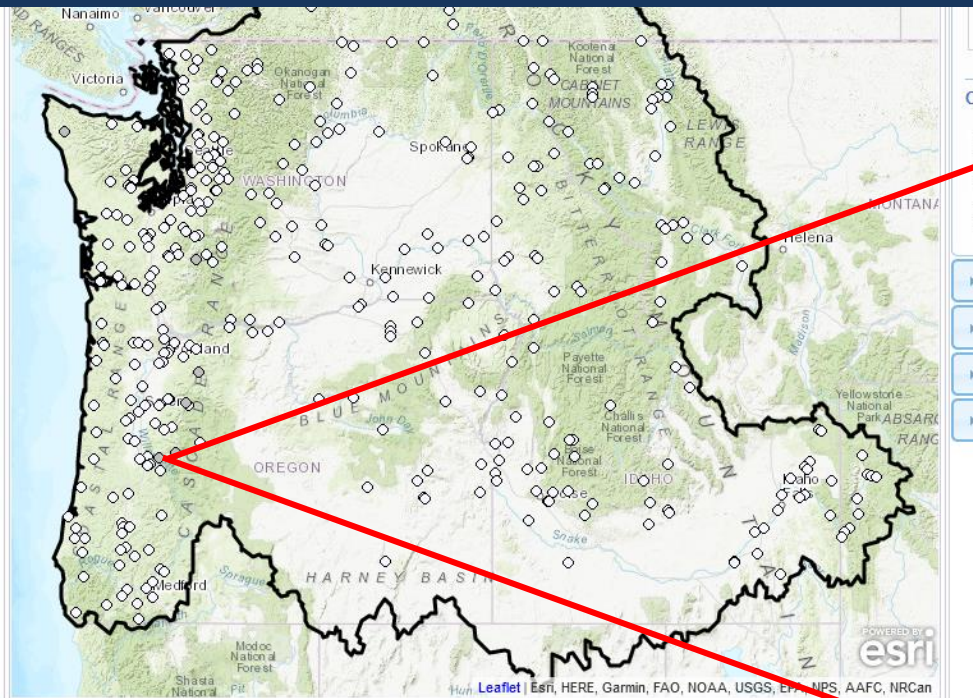


OCT-DEC Oceanic Nino Index vs APR-SEP Historical Natural Runoff  
(BUSO3) SILVIES - NEAR BURNS (1951-2020)

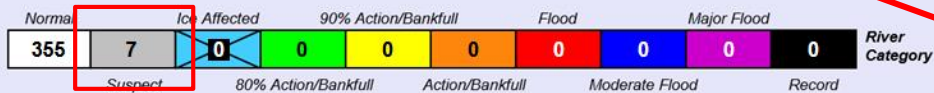
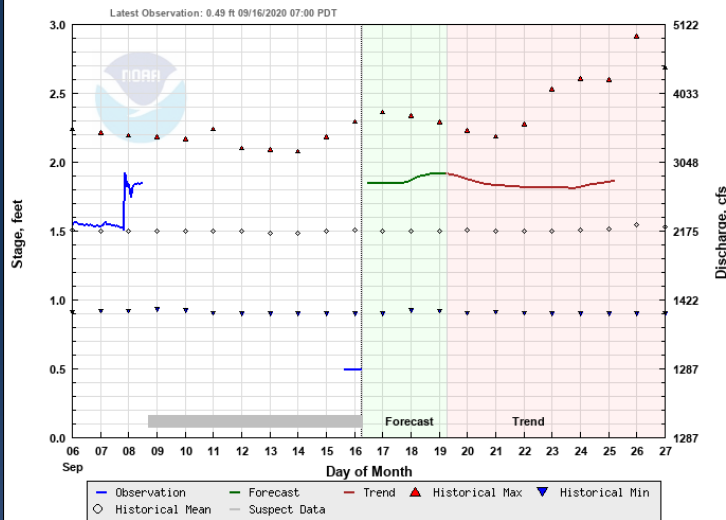




# Questionable Data Flag

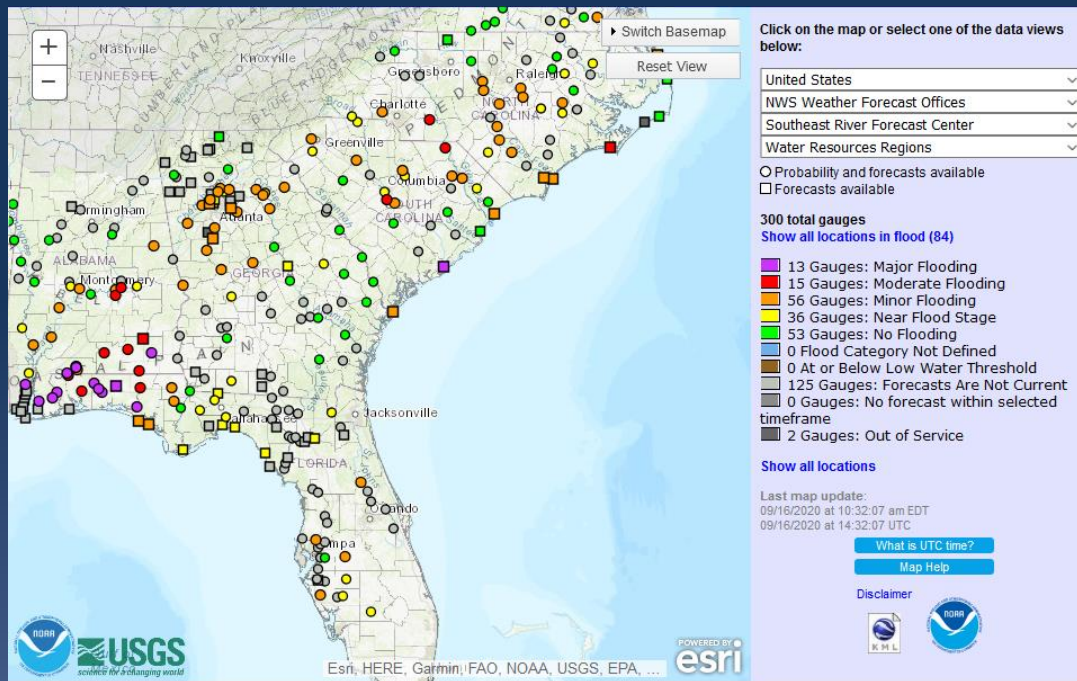
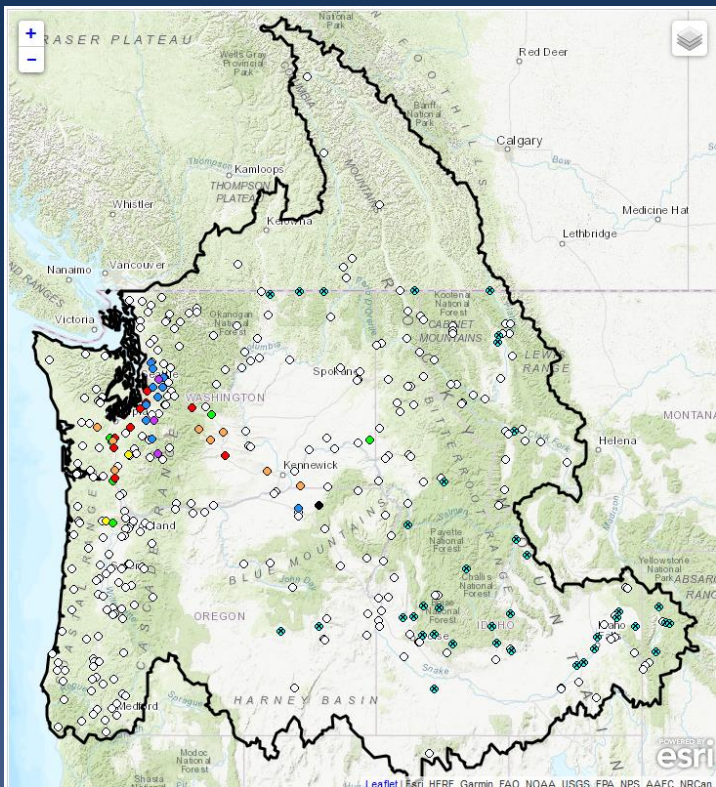
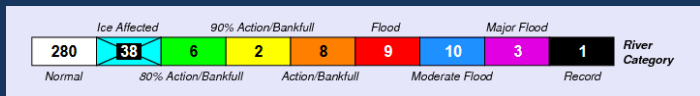


MCKENZIE - NEAR VIDA (VIDO3)





# Switch Threshold Colors



Click on the map or select one of the data views below:

- United States
- NWS Weather Forecast Offices
- Southeast River Forecast Center
- Water Resources Regions

- Probability and forecasts available
- Forecasts available

300 total gauges  
[Show all locations in flood \(84\)](#)

- 13 Gauges: Major Flooding
- 15 Gauges: Moderate Flooding
- 56 Gauges: Minor Flooding
- 36 Gauges: Near Flood Stage
- 53 Gauges: No Flooding
- 0 Flood Category Not Defined
- 0 At or Below Low Water Threshold
- 125 Gauges: Forecasts Are Not Current
- 0 Gauges: No forecast within selected timeframe
- 2 Gauges: Out of Service

[Show all locations](#)

Last map update:  
 09/16/2020 at 10:32:07 am EDT  
 09/16/2020 at 14:32:07 UTC

[What is UTC time?](#)

[Map Help](#)

Disclaimer



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, ...





# Forecast Trend Tool

Northwest River Forecast Center  
10 Day Meteorological Forecasts

Home Previous Page Detailed Graphical Display First Forecasts Forecast Trend Verification Description Wed Sep 16 2020 Current

Click on Image to Display Larger Plot. Note: Displayed images include the latest issuance for the selected date.

Day 1 Forecasts -- Ending Wednesday, September 16 at 5am PDT

Day 2 Forecasts -- Ending Thursday, September 17 at 5am PDT

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

Up to 10 day lead time

Go dive back into the archive

24hr QPF: 5 Day Lead Time	24hr QPF: 4 Day Lead Time	24hr QPF: 3 Day Lead Time	24hr QPF: 2 Day Lead Time	24hr QPF: 1 Day Lead Time	24hr QPE	Verification(1 Day Lead Time)
 Inlt: 20200912 Northwest River Forecast Center Day 5 QPF, 24hr Period Ending 12Z, 09/12/20	 Inlt: 20200913 Northwest River Forecast Center Day 4 QPF, 24hr Period Ending 12Z, 09/13/20	 Inlt: 20200914 Northwest River Forecast Center Day 3 QPF, 24hr Period Ending 12Z, 09/13/20	 Inlt: 20200915 Northwest River Forecast Center Day 2 QPF, 24hr Period Ending 12Z, 09/15/20	 Inlt: 20200916 Northwest River Forecast Center Day 1 QPF, 24hr Period Ending 12Z, 09/15/20	Observation - NA	Verification - NA
 Inlt: 20200911 Northwest River Forecast Center Day 5 QPF, 24hr Period Ending 12Z, 09/11/20	 Inlt: 20200912 Northwest River Forecast Center Day 4 QPF, 24hr Period Ending 12Z, 09/11/20	 Inlt: 20200913 Northwest River Forecast Center Day 3 QPF, 24hr Period Ending 12Z, 09/11/20	 Inlt: 20200914 Northwest River Forecast Center Day 2 QPF, 24hr Period Ending 12Z, 09/11/20	 Inlt: 20200915 Northwest River Forecast Center Day 1 QPF, 24hr Period Ending 12Z, 09/11/20	Obs_end 20200916 12Z	Fcst - Obs, Lead 1 day
 Inlt: 20200910 Northwest River Forecast Center Day 5 QPF, 24hr Period Ending 12Z, 09/10/20	 Inlt: 20200911 Northwest River Forecast Center Day 4 QPF, 24hr Period Ending 12Z, 09/10/20	 Inlt: 20200912 Northwest River Forecast Center Day 3 QPF, 24hr Period Ending 12Z, 09/10/20	 Inlt: 20200913 Northwest River Forecast Center Day 2 QPF, 24hr Period Ending 12Z, 09/10/20	 Inlt: 20200914 Northwest River Forecast Center Day 1 QPF, 24hr Period Ending 12Z, 09/10/20	Obs_end 20200916 12Z	Fcst - Obs, Lead 1 day



# HEFS Forcings

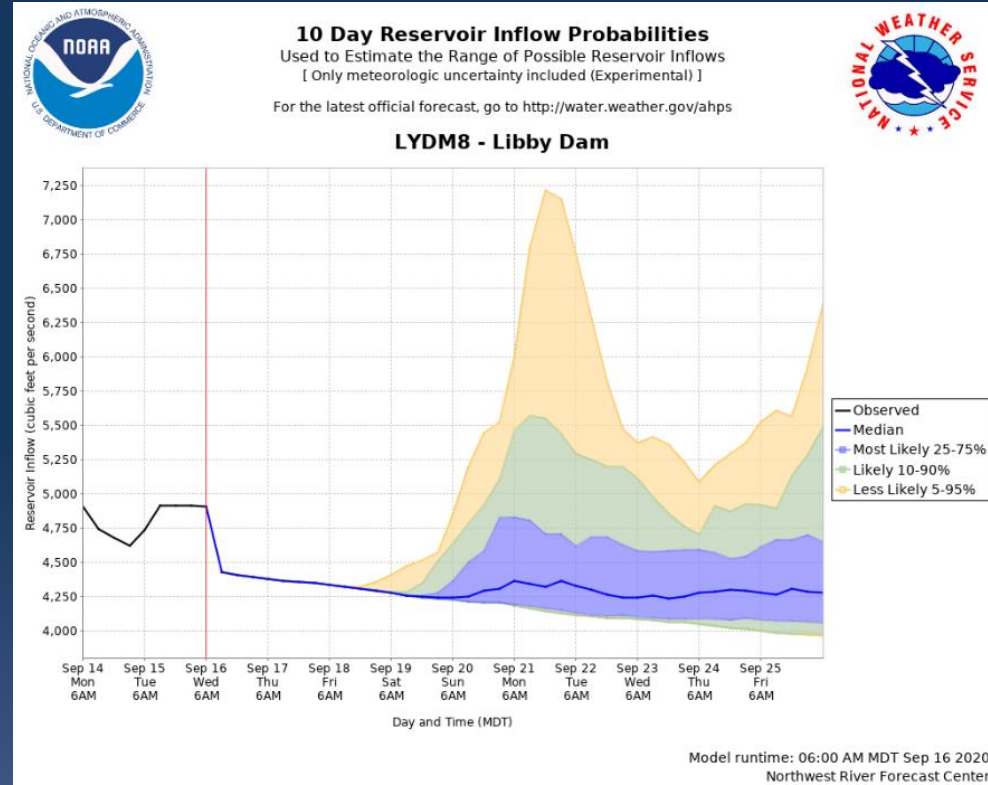
Upgrading from GEFS v10 to v12

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](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

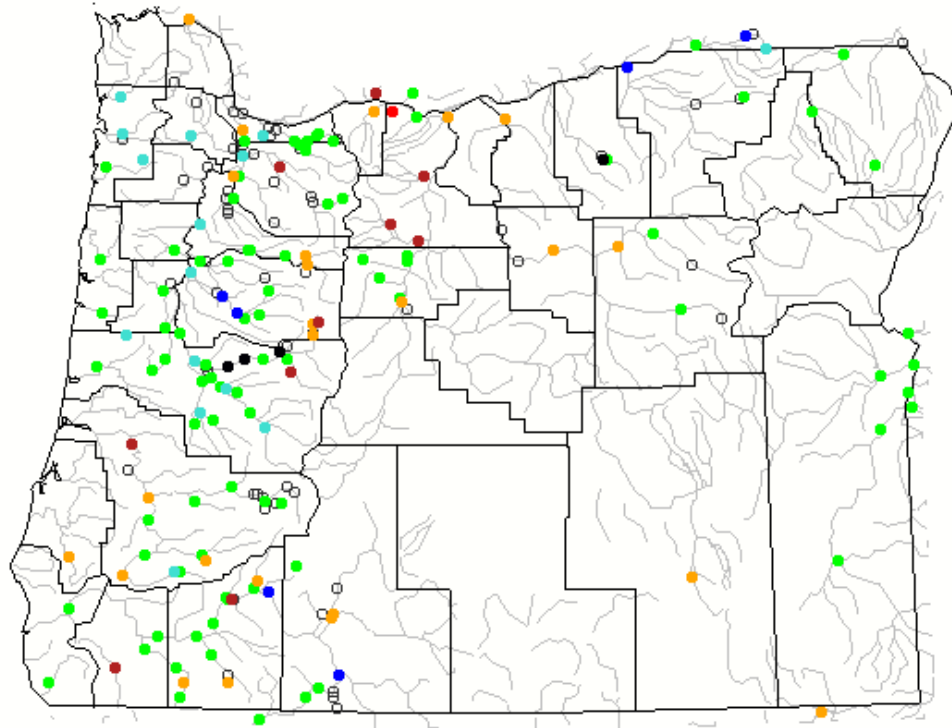
- Historical mean areal forcing data
- Percent Precip as Snow
- Dynamic ET
- Updated zone delineations
- Auto Calibration and Hydrologic Landscape Regions (HLR) to constrain the parameters
- Partnering with BPA to collaborate with east side calibrations



# Oregon Water Supply Availability Meeting

October 2020

September 2020



# Monthly Average Streamflow (as compared to Historical Record)



Search USGS streamgage

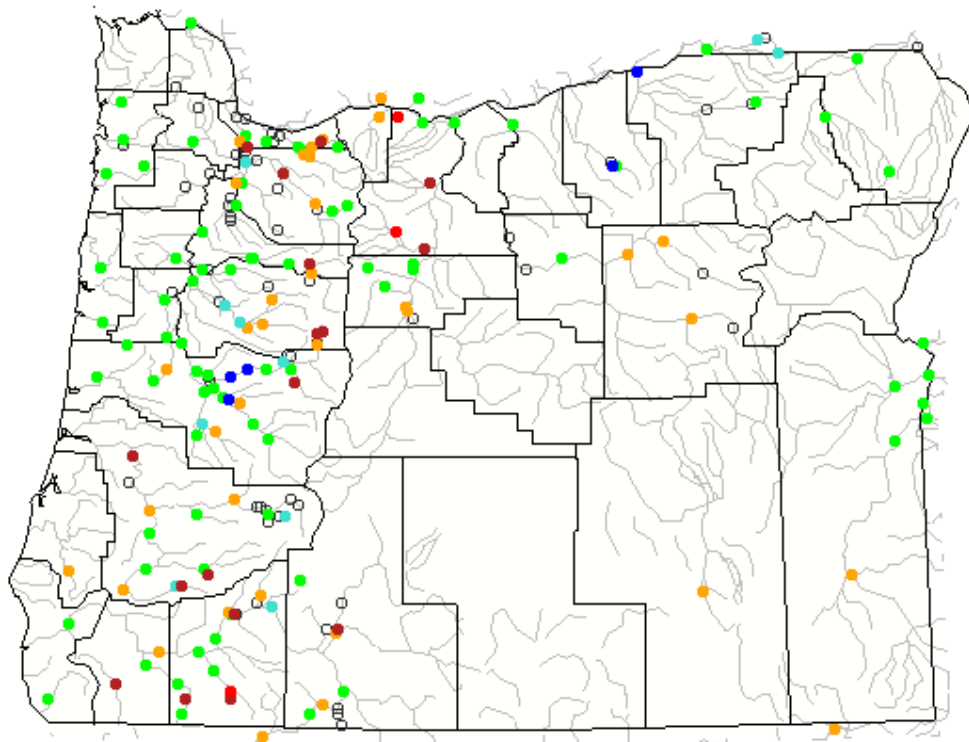
Choose a data retrieval option and select a location on the map

- 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)



Search USGS streamgage

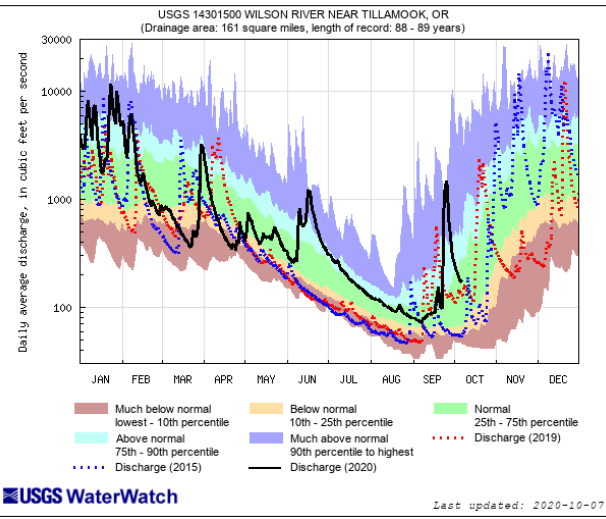
Choose a data retrieval option and select a location on the map

- List of all stations 
  Single station 
  Nearest stations

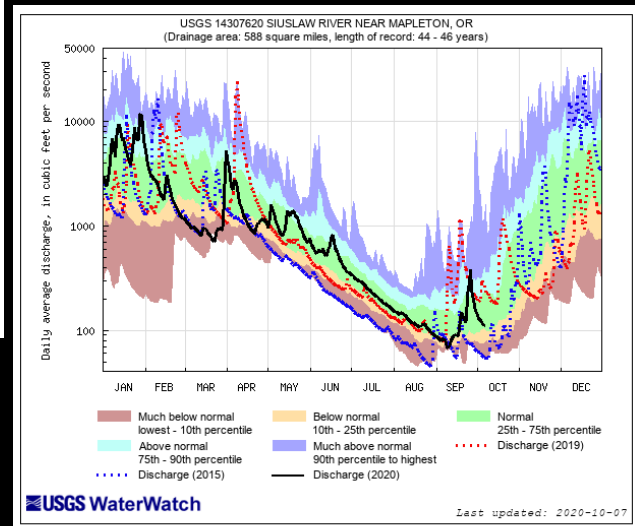
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

# Coastal Oregon

## 14301500 Wilson R nr Tillamook, OR

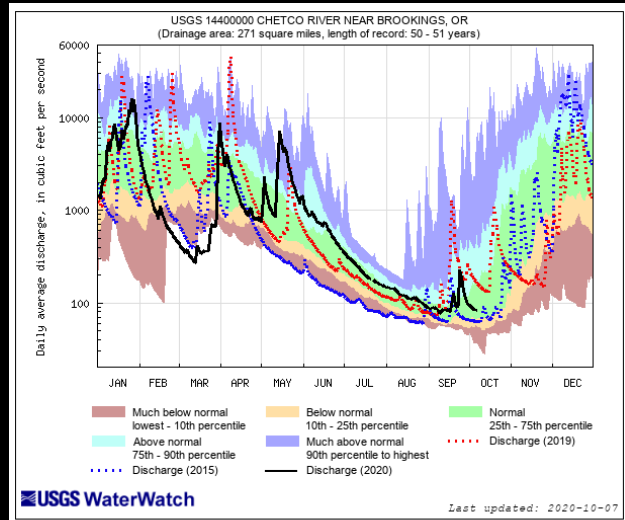


Explanation - Percentile classes					Flow
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	
Much below normal	Below normal	Normal	Above normal	Much above normal	



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

## 14307620 Siuslaw R nr Mapleton, OR



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

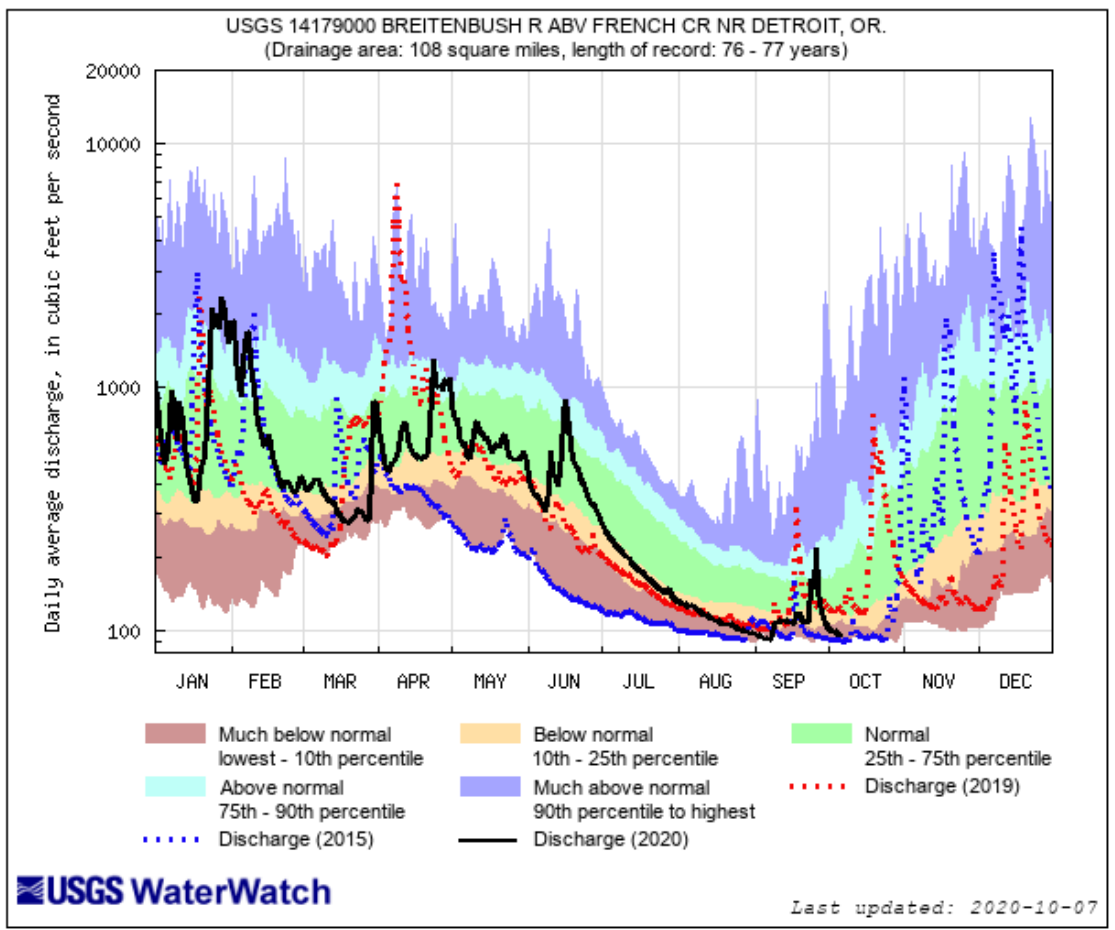


## 14400000 Chetco R nr Brookings, OR

# 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**

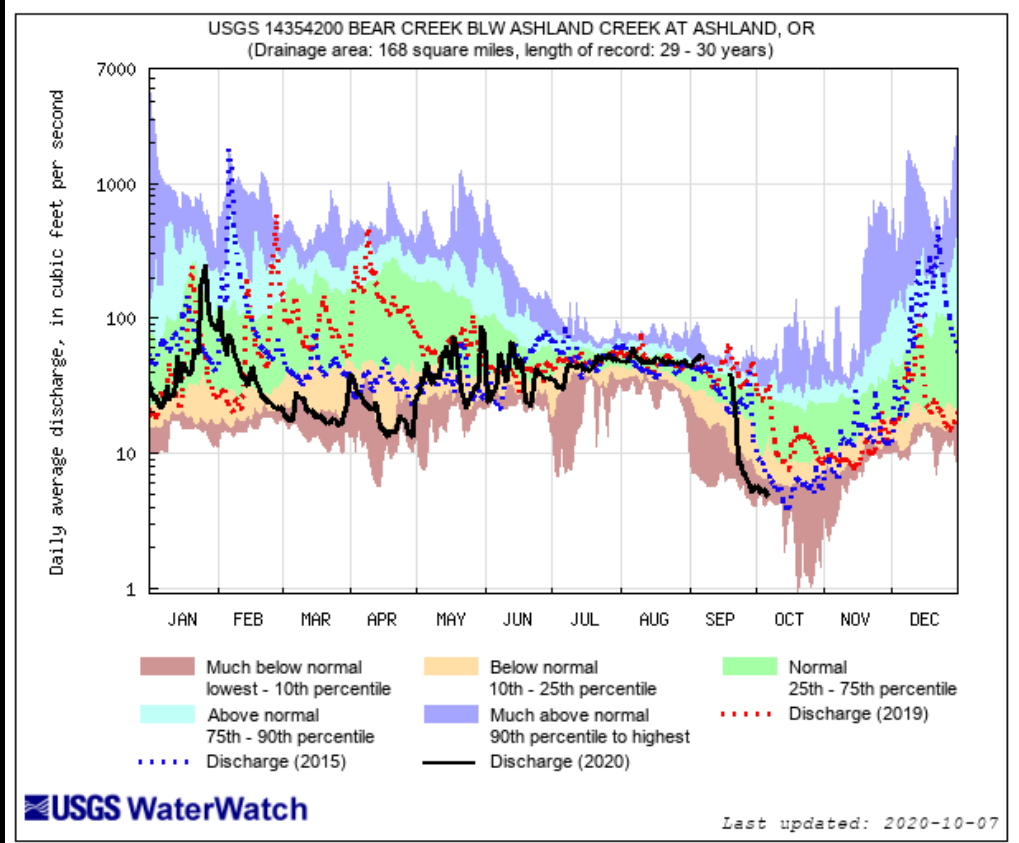
# 14179000 Breitenbush R abv French Cr



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	



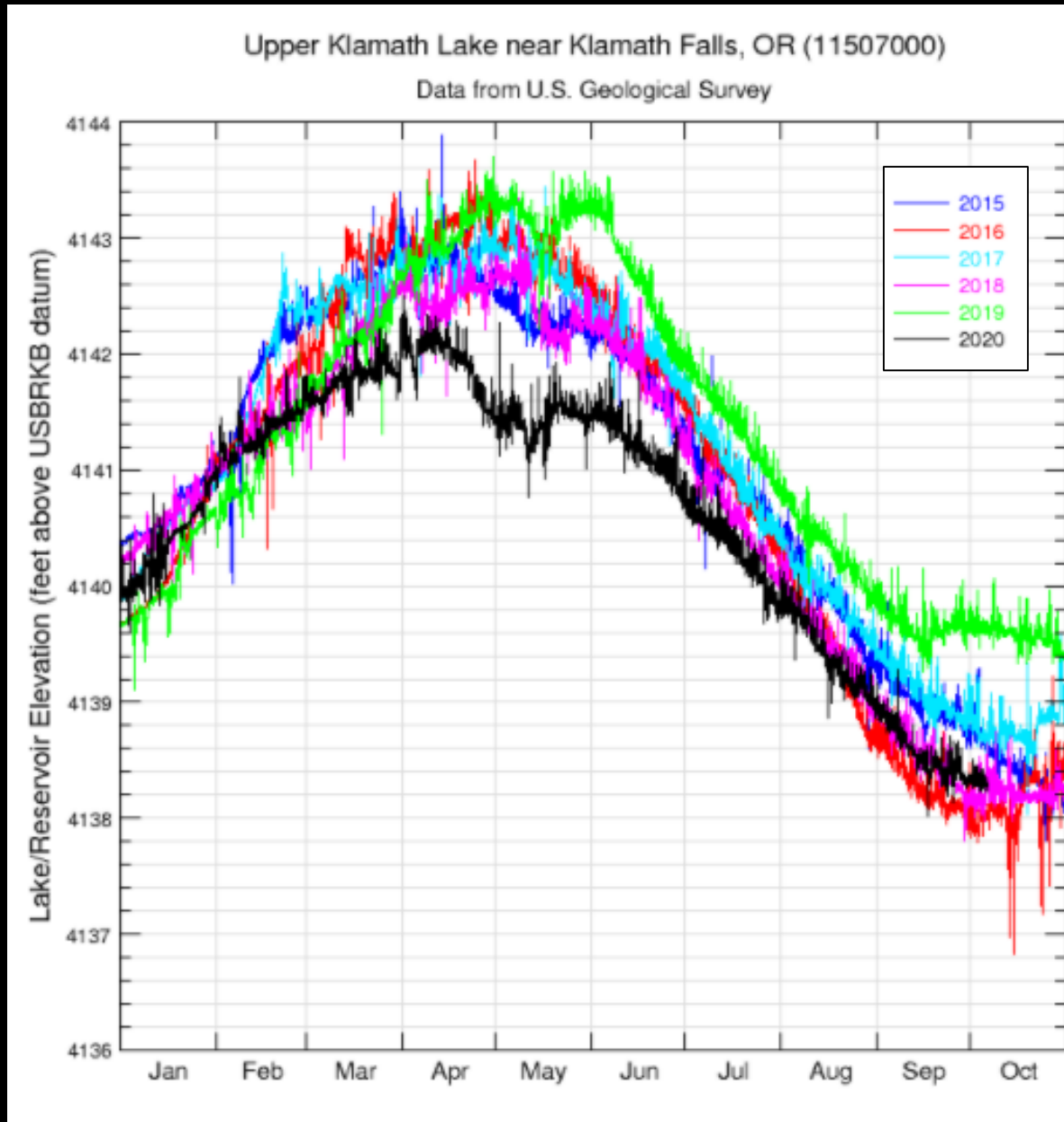
# 14354200 Bear Creek blw Ashland Creek



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	



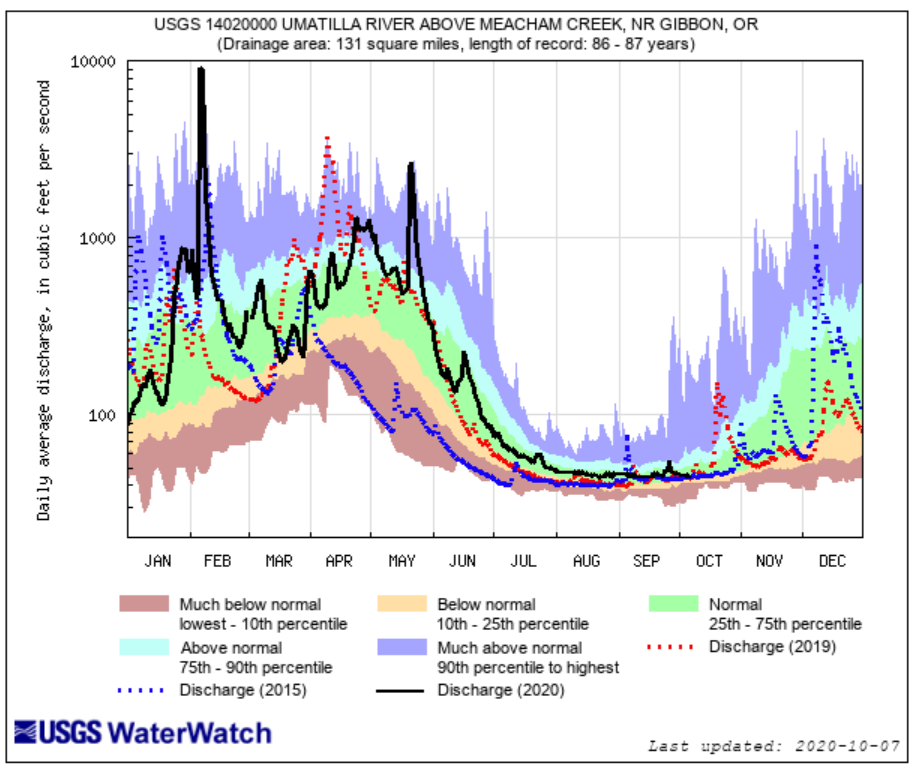
# 11507000 Upper Klamath Lake



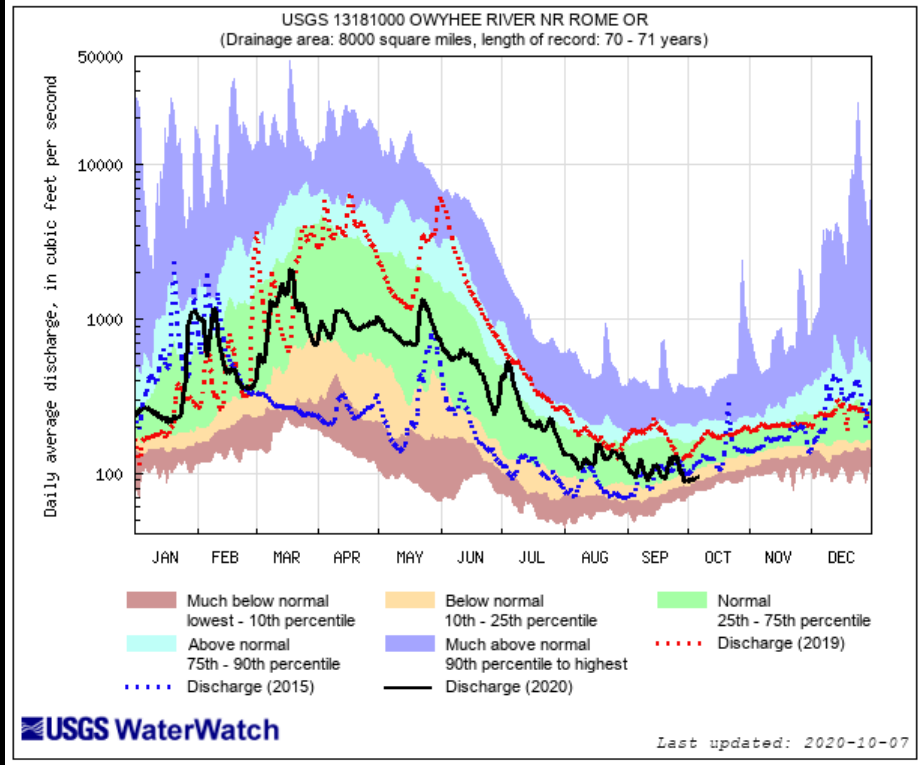
# Eastern Oregon

14020000 Umatilla R abv  
Meacham Cr, nr Gibbon, OR

13181000 Owyhee R  
nr Rome, OR



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

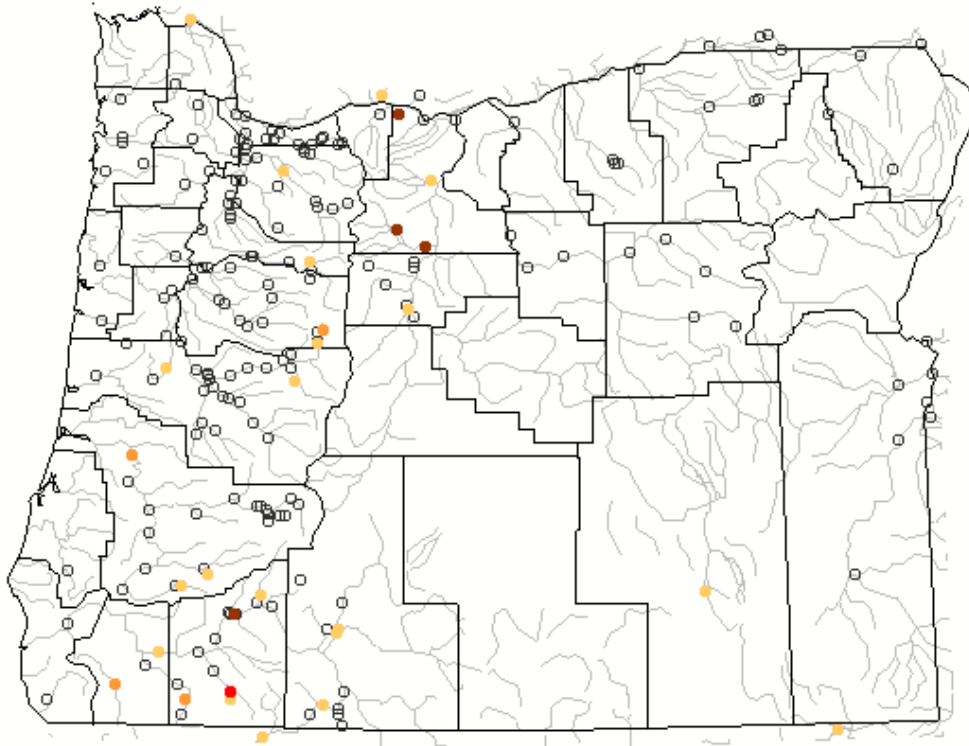


Explanation - Percentile classes					Flow
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	
Much below normal	Below normal	Normal	Above normal	Much above normal	



Tuesday, October 06, 2020

# 14-day *below normal* Average Streamflow (as compared to Historical Record)



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	



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

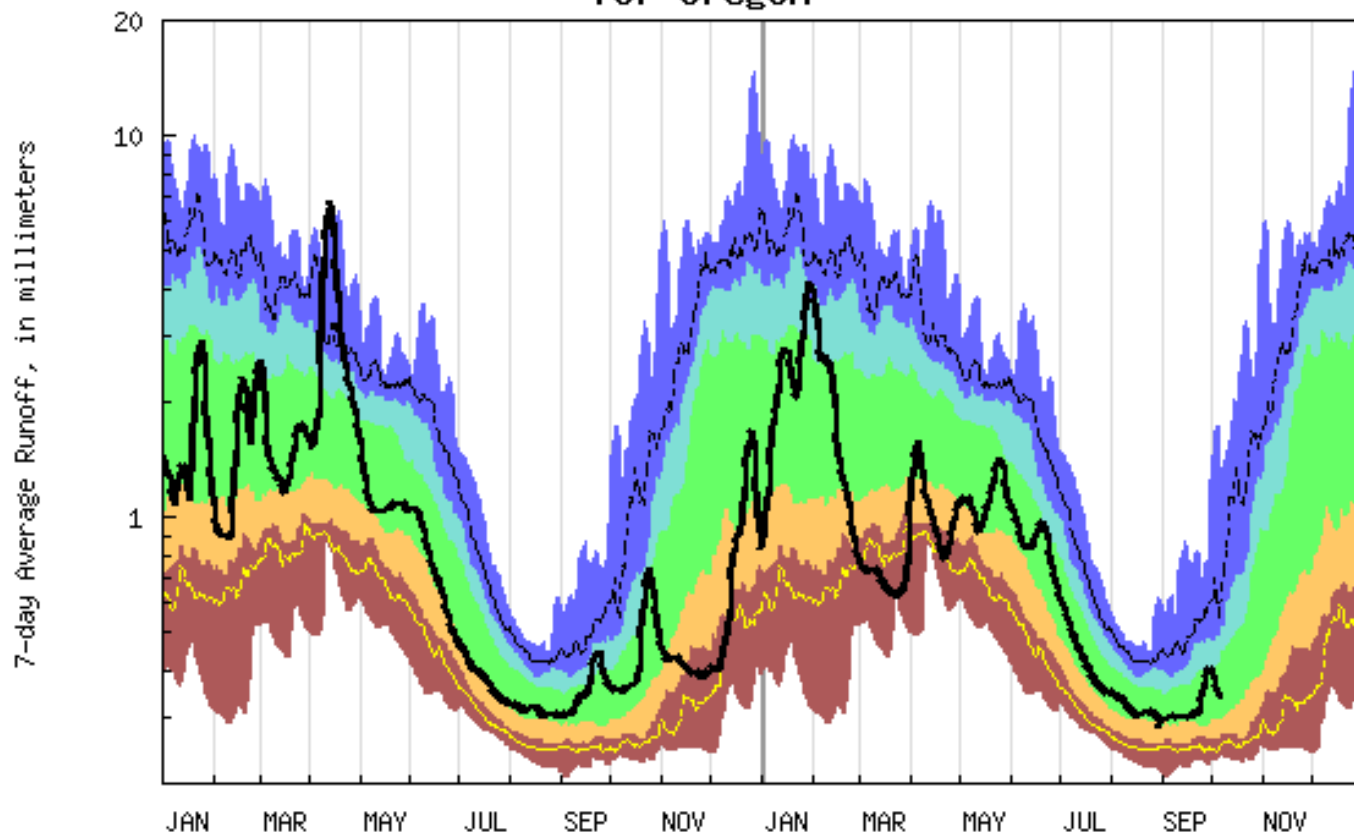
Station	NRCS SWSI Basin	Monthly mean discharge		Change in dis- charge from previous month (percent)	Accumulated Runoff For the Period Oct. to Sep.
		Cubic feet per second	Percent of average	Percent of average	
Donner Und Blitzen nr Frenchglen	Harney	31	70	-11	68
(*)Deep Creek above Adel	Lake County	9	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



### Duration hydrograph of 7-day average runoff for Oregon



USGS WaterWatch

2019

2020

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			