Oregon Water Supply Availability Committee
March 12, 2019

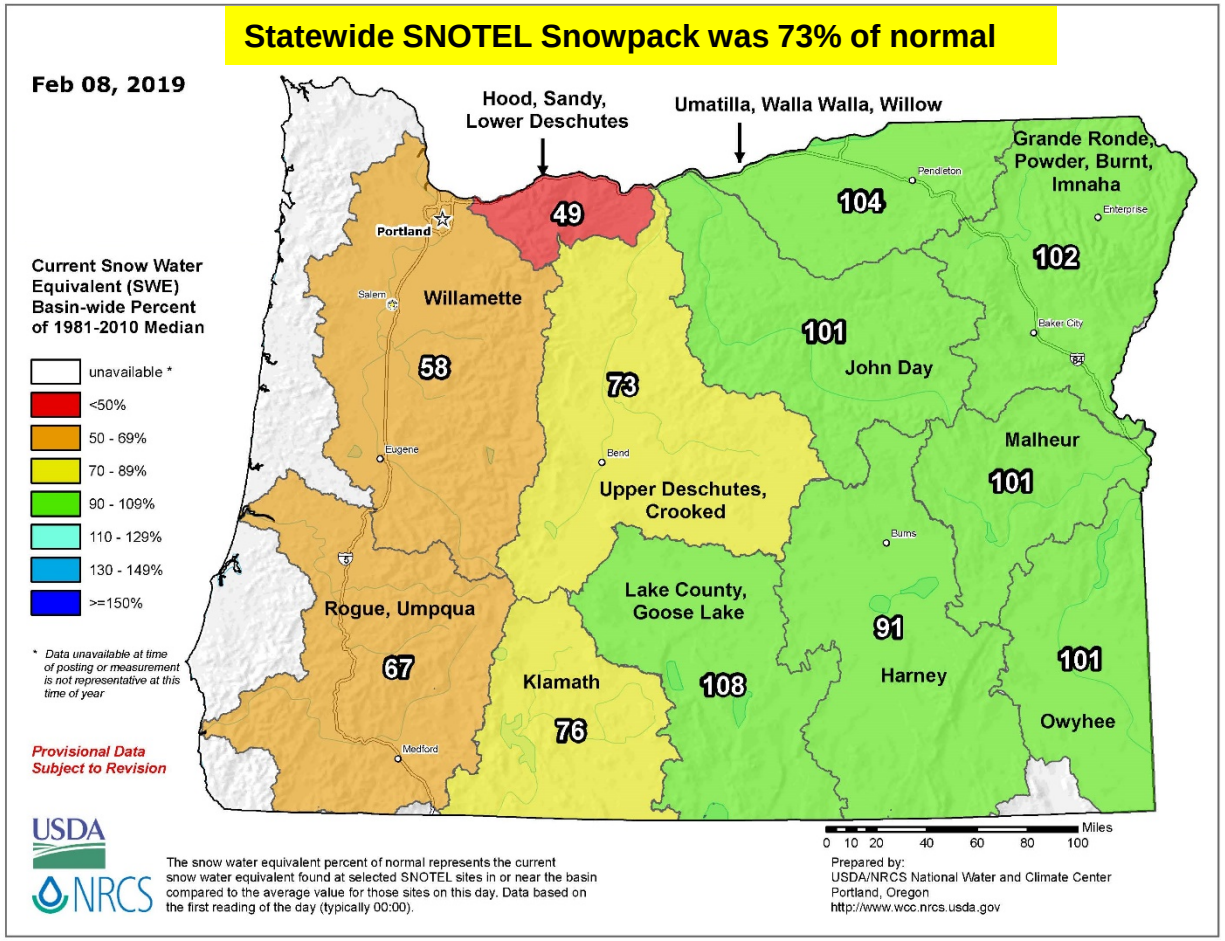
Van Patten Trailhead Sign – Little Alps Snow Course
Baker County, OR - Powder River Basin
February 27, 2019
Elevation 6360’
53” Depth, 12.8” SWE - 123% Normal
Last year 6.4” SWE - 62% Normal

Photo Courtesy Jason Yencopal
Director, Baker County Emergency Management

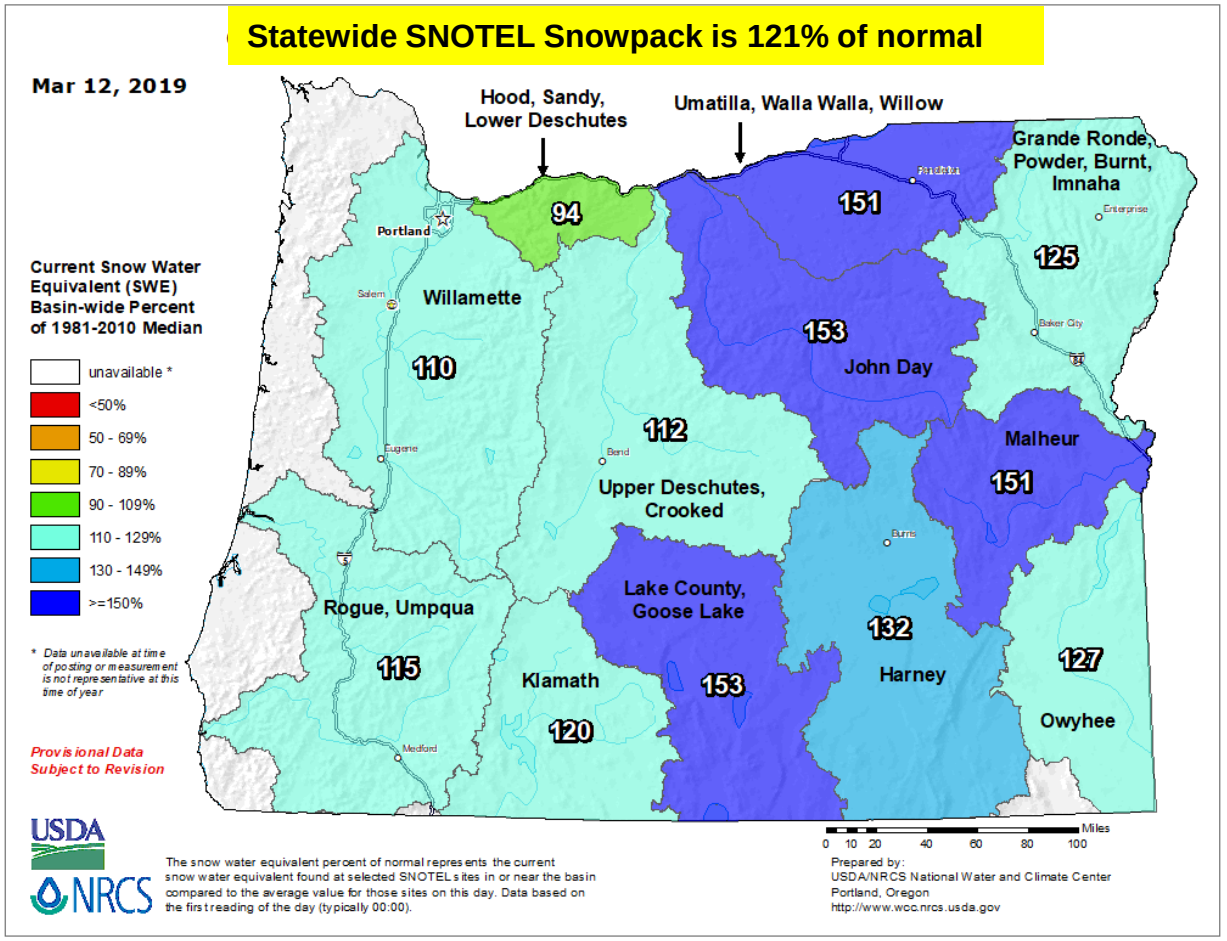
H. Scott Oviatt
Snow Survey Supervisory Hydrologist
USDA Natural Resources Conservation Service
Scott.Oviatt@or.usda.gov
503-414-3271
http://www.nrcs.usda.gov/wps/portal/nrcs/main/or/snow/

SNOWPACK

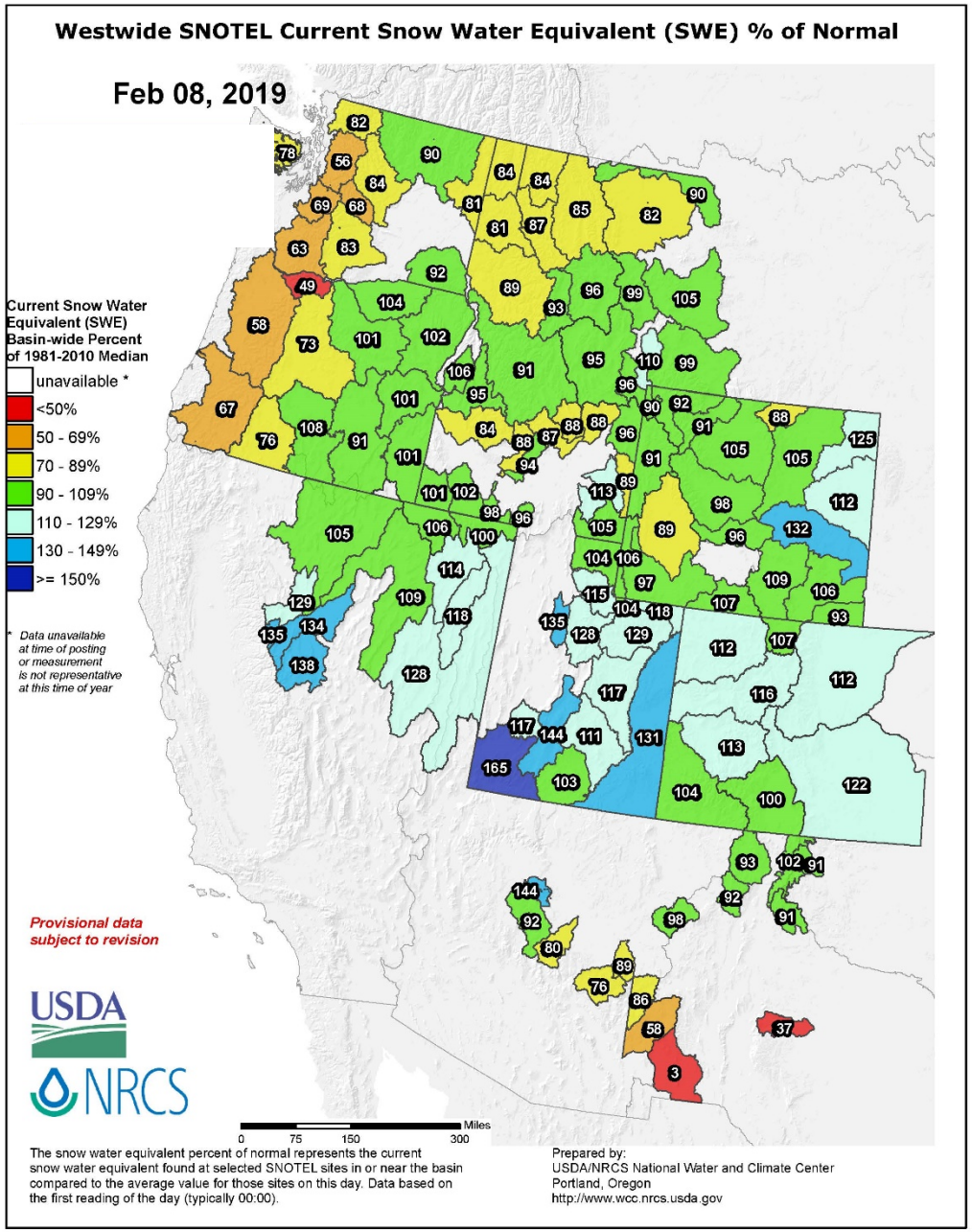
Statewide SNOTEL Snowpack was 73% of normal

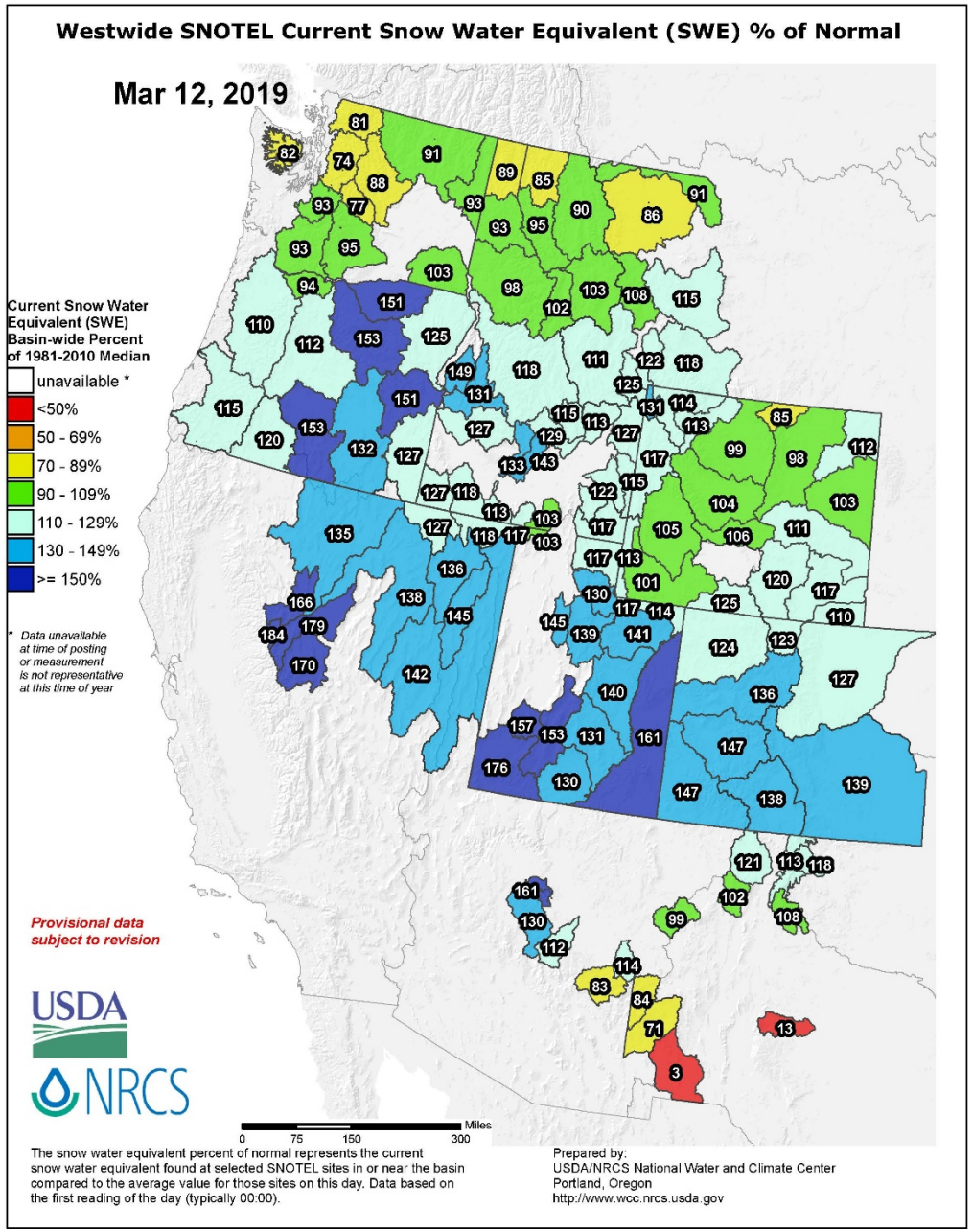


Statewide SNOTEL Snowpack is 121% of normal



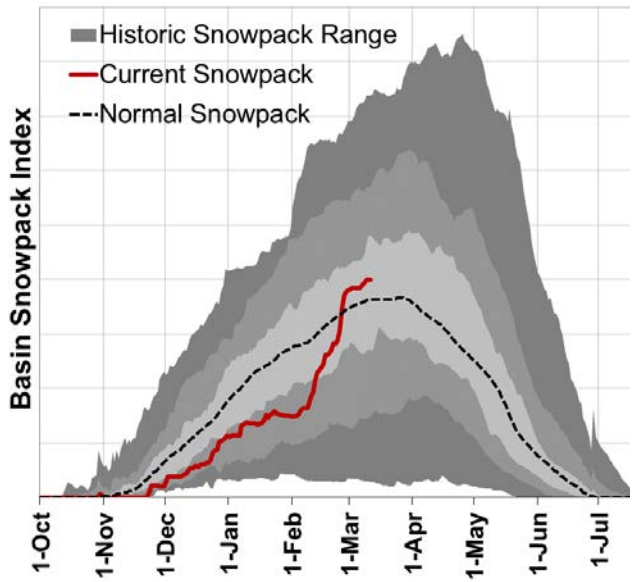
West-Wide Snowpack – February 8, 2019 and March 12. 2109



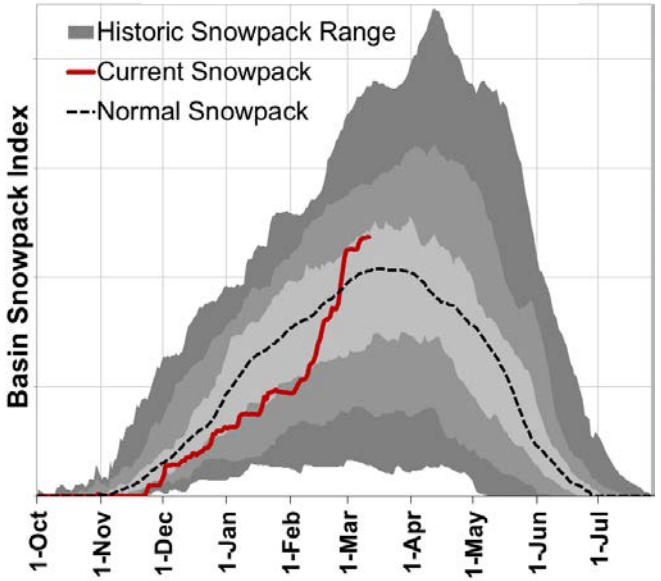


March 12, 2019

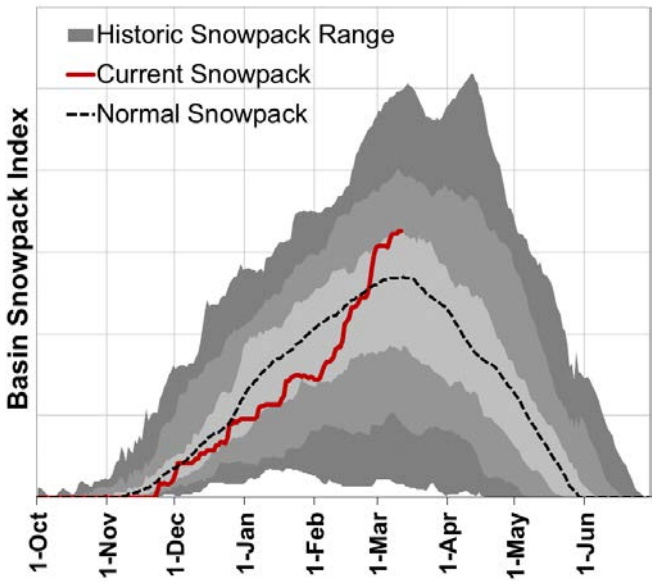
Willamette



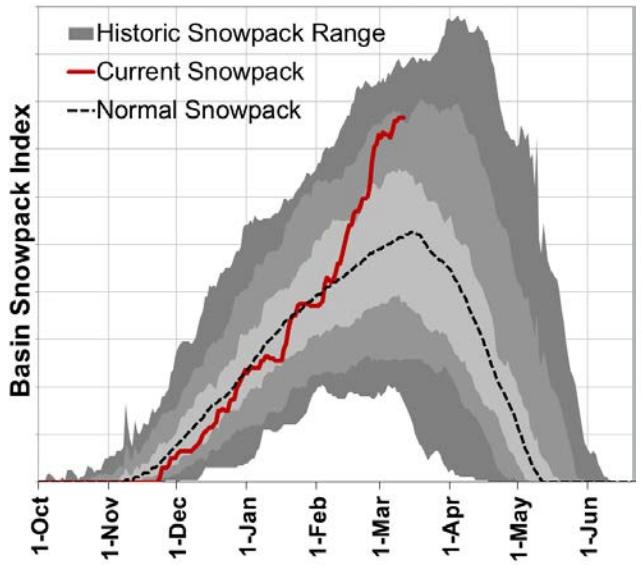
Rogue/Umpqua



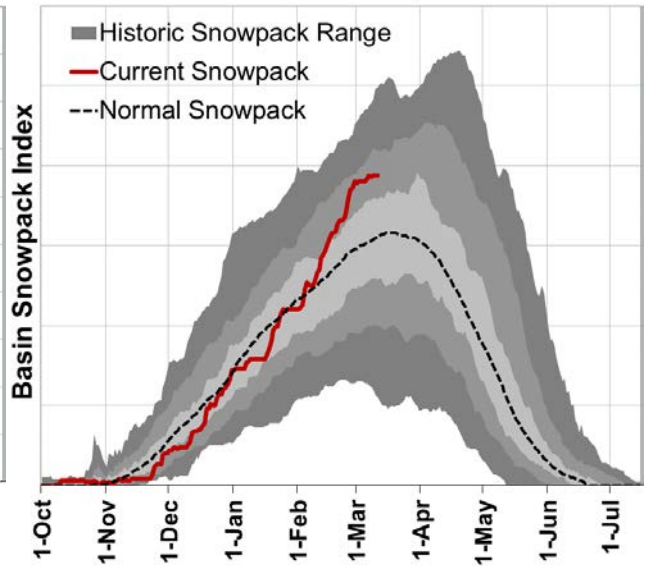
Klamath



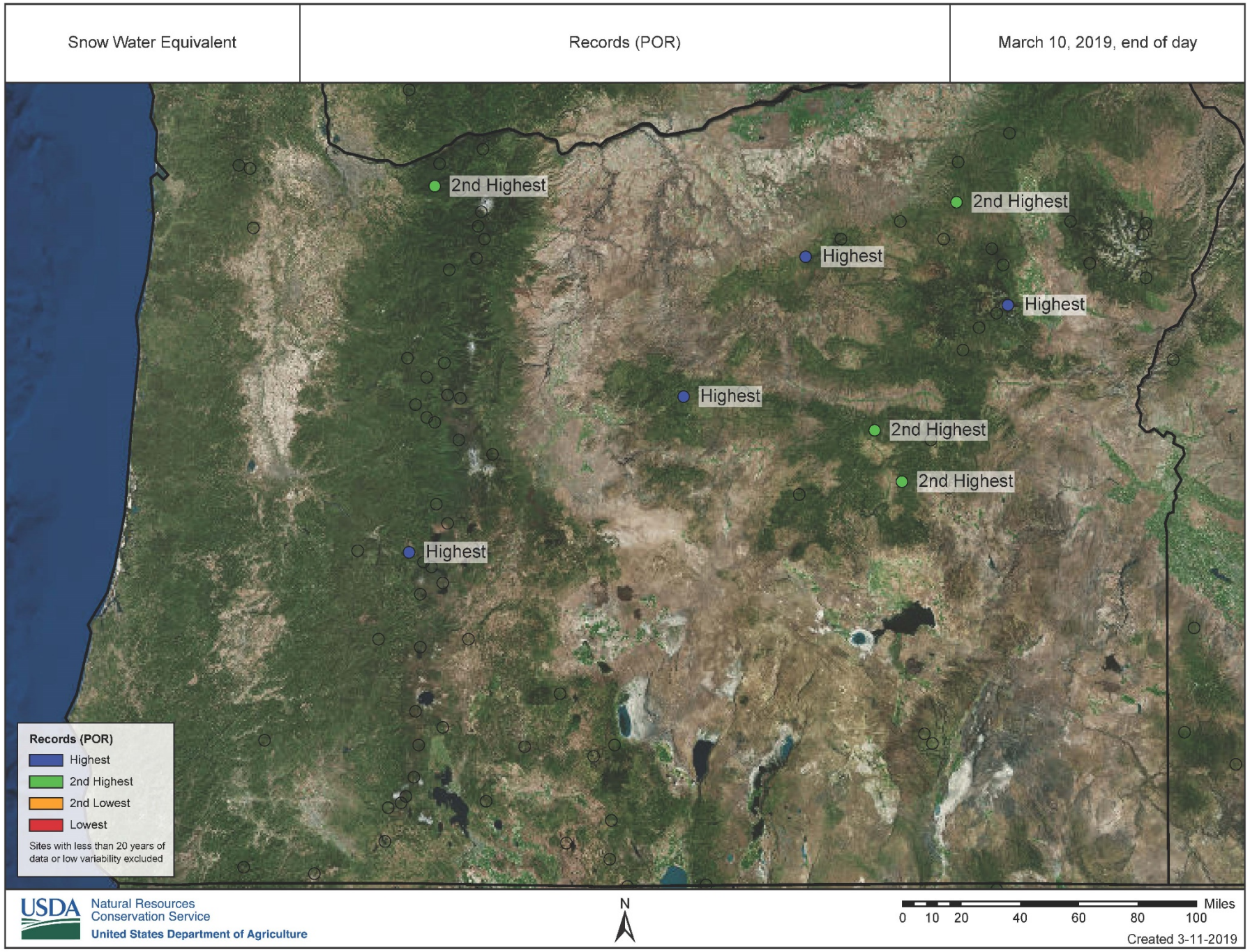
John Day



Grande Ronde/Powder/Burnt

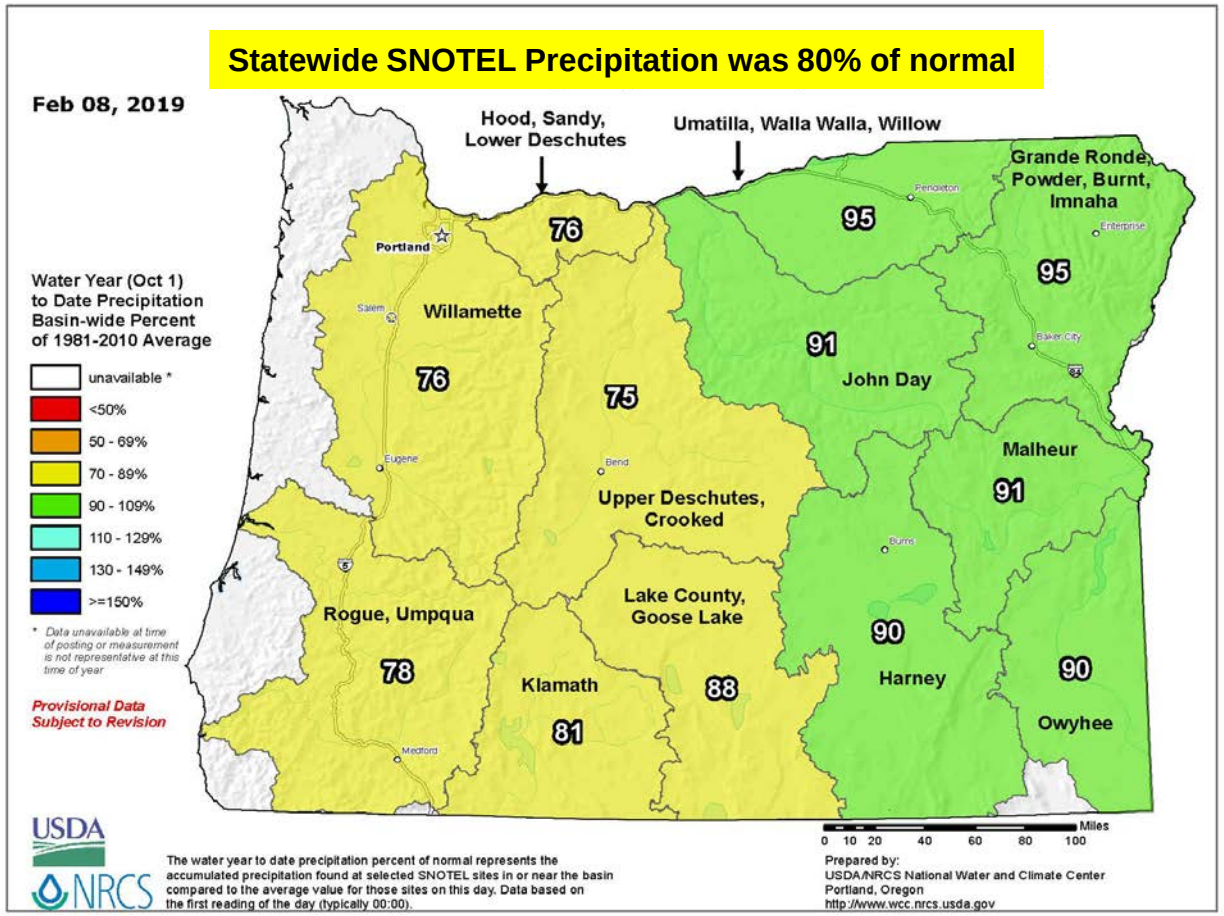


Owyhee/Malheur

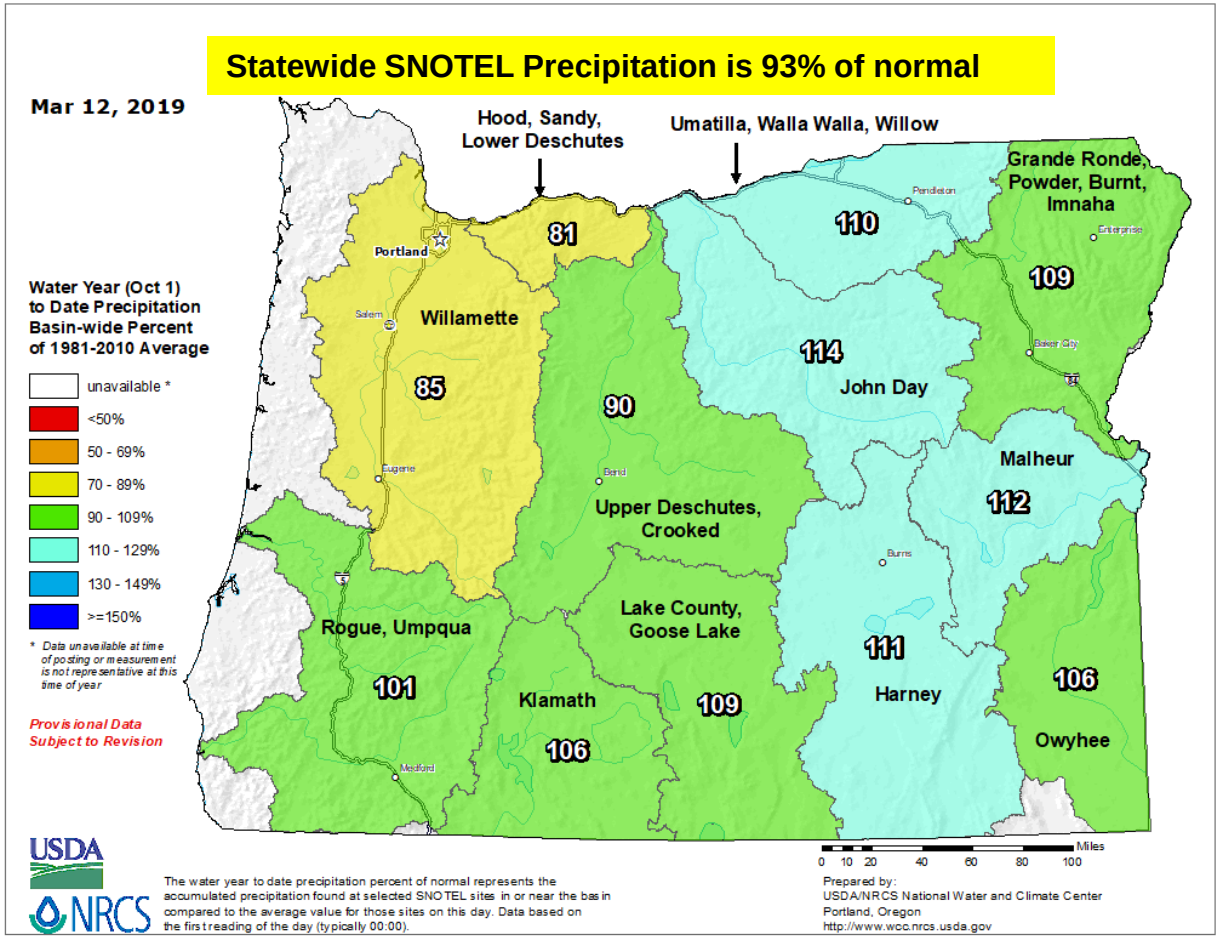

Snow Water Equivalent
Records (POR)
March 10, 2019, end of day
2nd Highest
2nd Highest
Highest
Highest
Highest
2nd Highest
2nd Highest
Highest
Records (POR)
Highest
2nd Highest
2nd Lowest
Lowest
Sites with less than 20 years of data or low variability excluded
USDA
Natural Resources Conservation Service
United States Department of Agriculture
N
Miles
0 10 20 40 60 80 100
Created 3-11-2019

SNOTEL PRECIPITATION

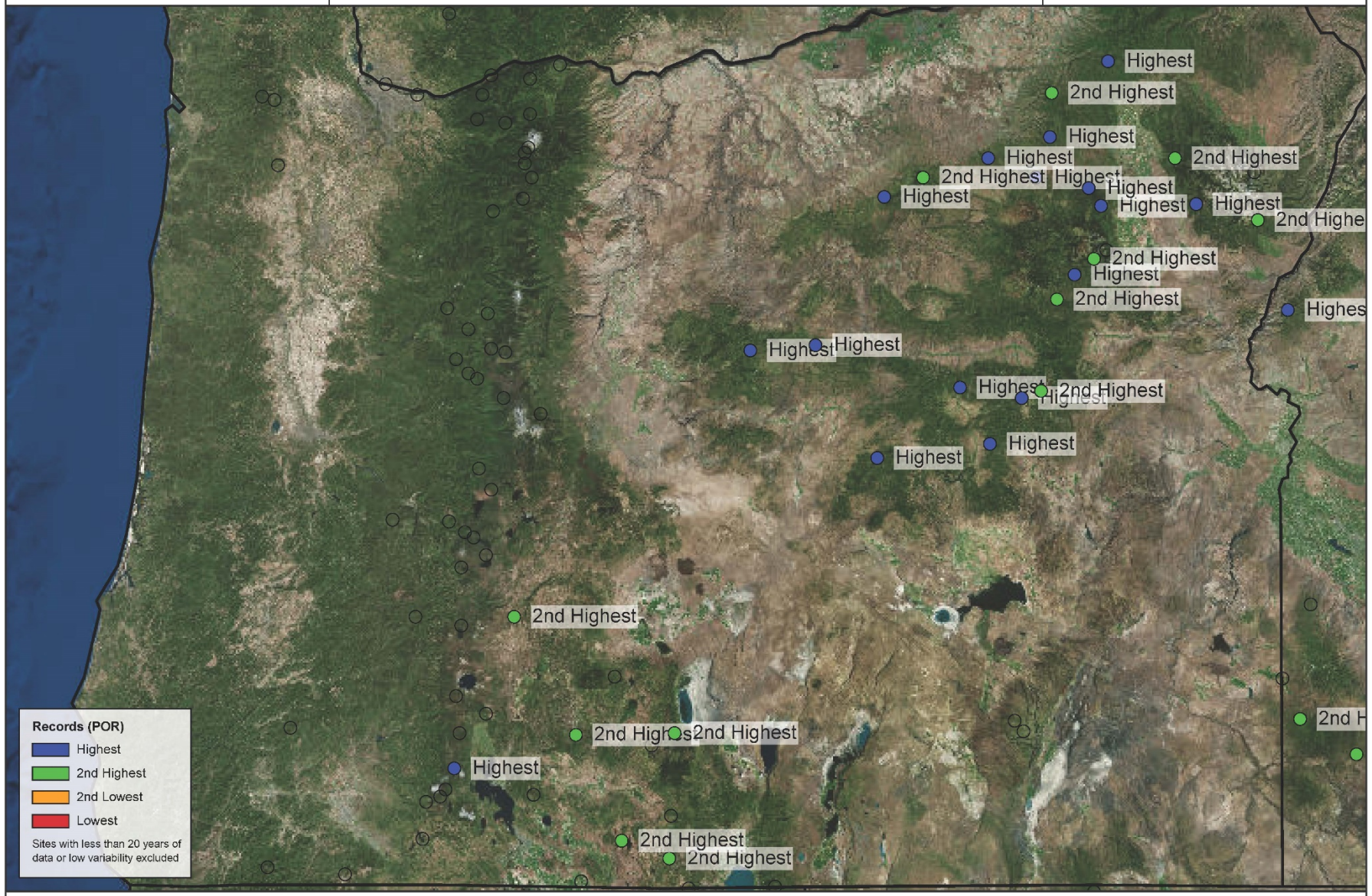
Statewide SNOTEL Precipitation was 80% of normal



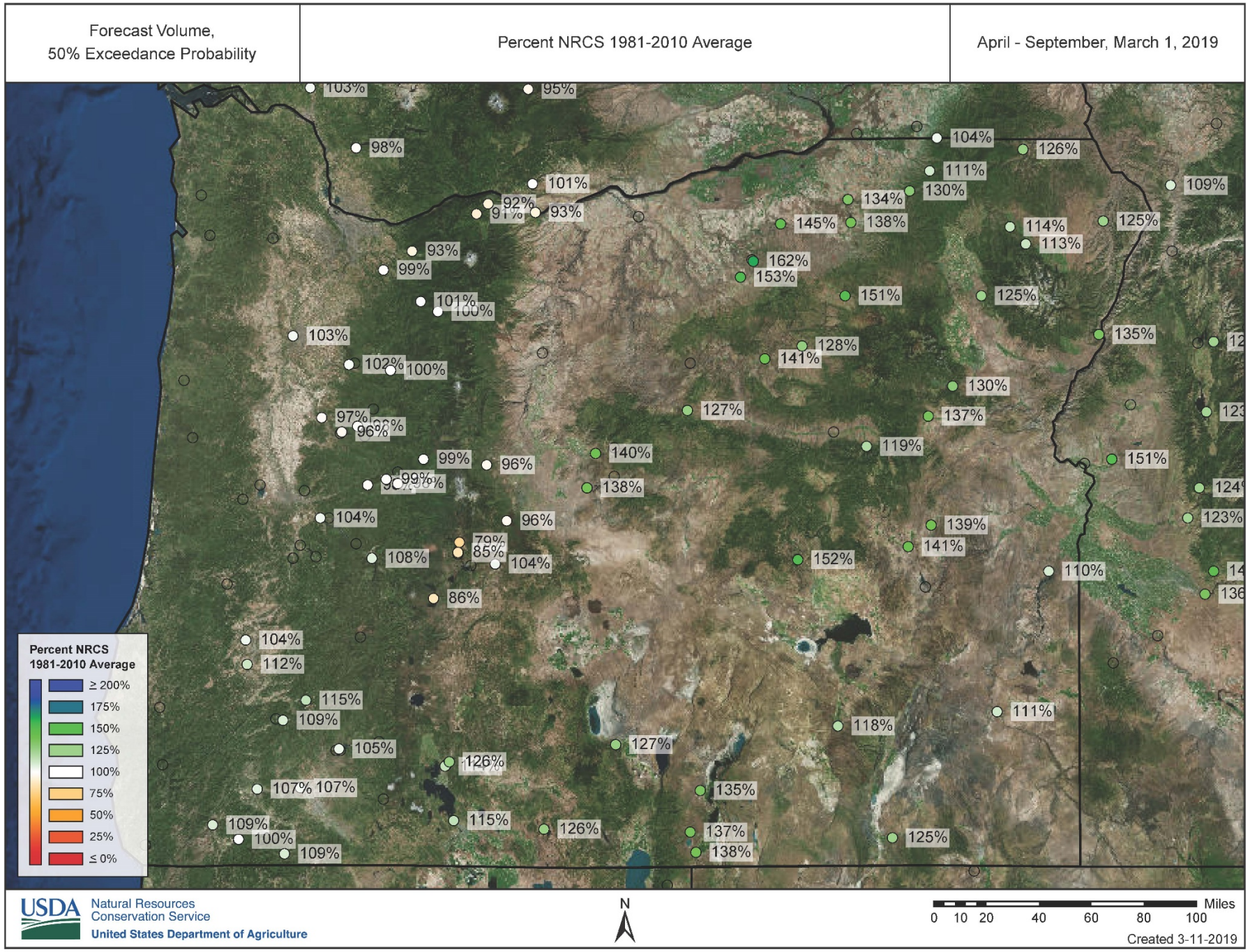
Statewide SNOTEL Precipitation is 93% of normal



28 day Precipitation	Records (POR)	February 1, 2019 - February 28, 2019



NRCS STATISTICAL FORECASTS

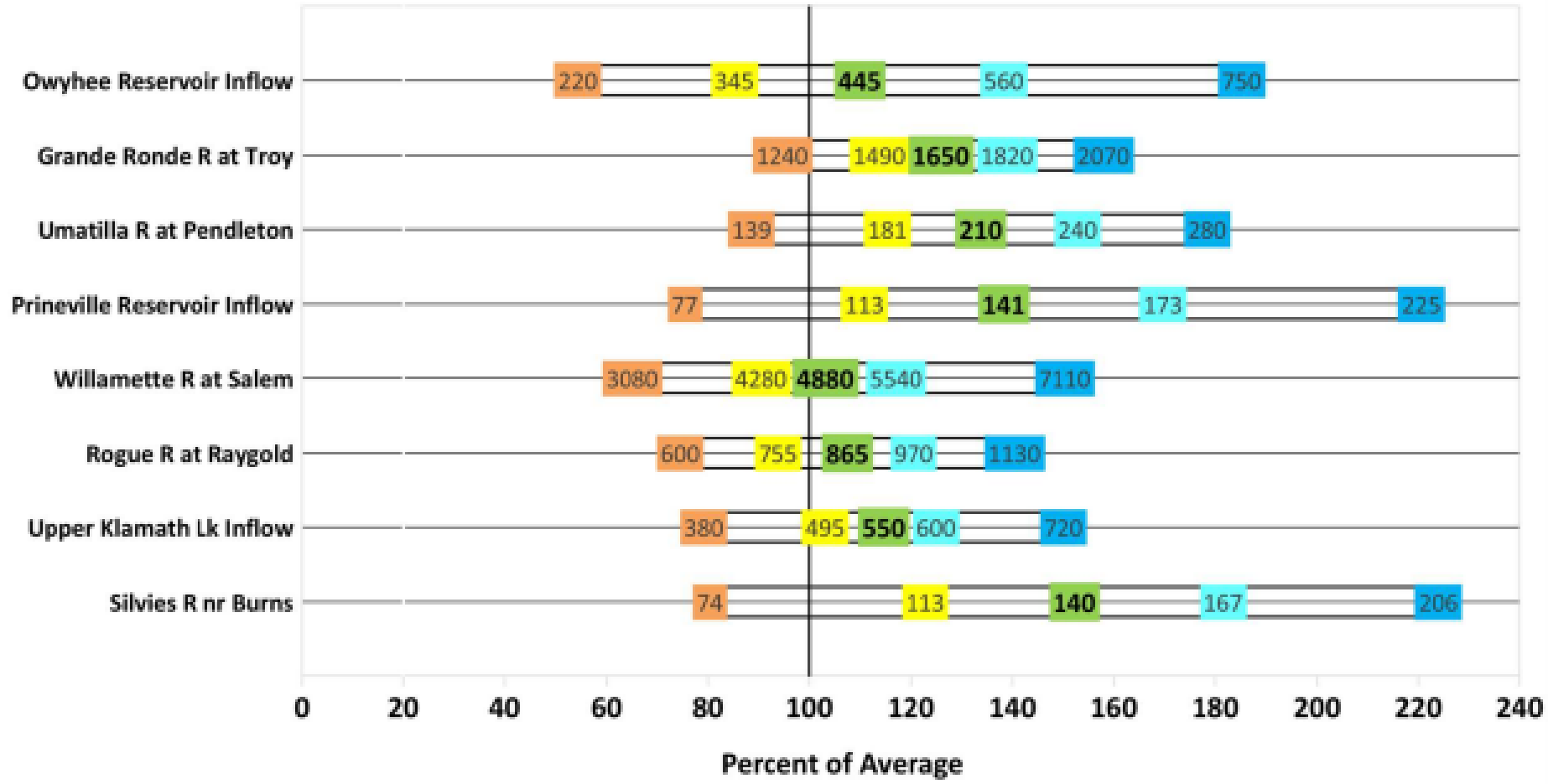

Forecast Volume,
50% Exceedance Probability
Percent NRCS 1981-2010 Average
April - September, March 1, 2019
Percent NRCS
1981-2010 Average
≥ 200%
175%
150%
125%
100%
75%
50%
25%
≤ 0%
USDA
Natural Resources
Conservation Service
United States Department of Agriculture
N
Miles
0 10 20 40 60 80 100
Created 3-11-2019

March 1, 2019

Summary of Streamflow Forecasts across Oregon

April through September Forecast Volumes at a Selection of Streamflow Points

(Volumes listed in KAF)



Legend: ←----------Drier----------**Future Conditions**----------Wetter----------→

90% Exceedance Forecast (KAF)	70% Exceedance Forecast (KAF)	50% Exceedance Forecast (KAF)	30% Exceedance Forecast (KAF)	10% Exceedance Forecast (KAF)
There is a 90% chance that flows will exceed this volume.	There is a 70% chance that flows will exceed this volume.	There is a 50% chance that flows will exceed this volume.	There is a 30% chance that flows will exceed this volume.	There is a 10% chance that flows will exceed this volume.

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.

Oregon Water Supply Availability Committee
March 12, 2019

Van Patten Trailhead Sign – Little Alps Snow Course
Baker County, OR - Powder River Basin
February 27, 2019
Elevation 6360’
53” Depth, 12.8” SWE - 123% Normal
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Oregon Water Supply Availability

March 12, 2019

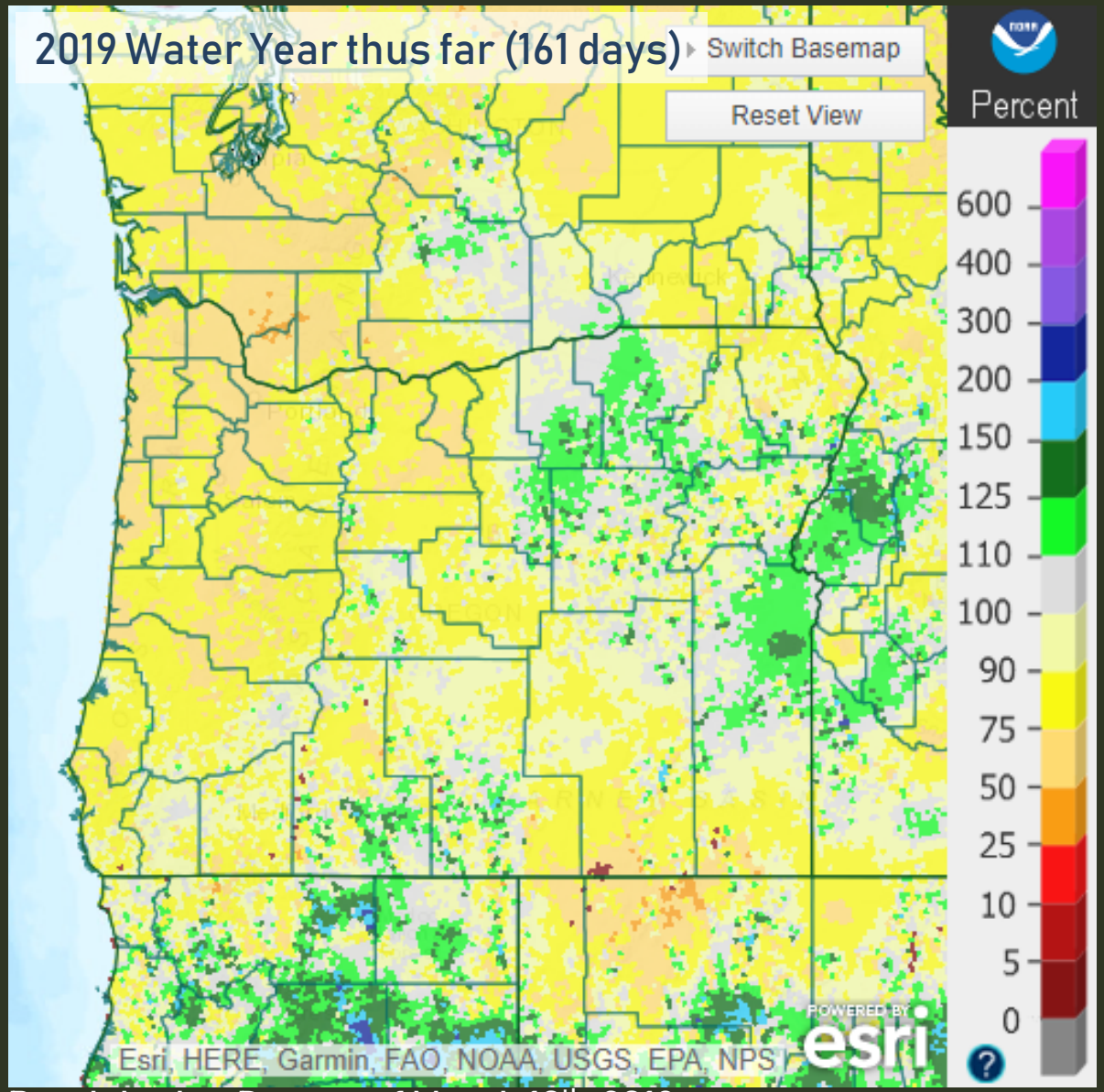
National Weather Service Update

Andy Bryant
NWS Portland Weather Forecast Office

Steve King
NWS Northwest River Forecast Center

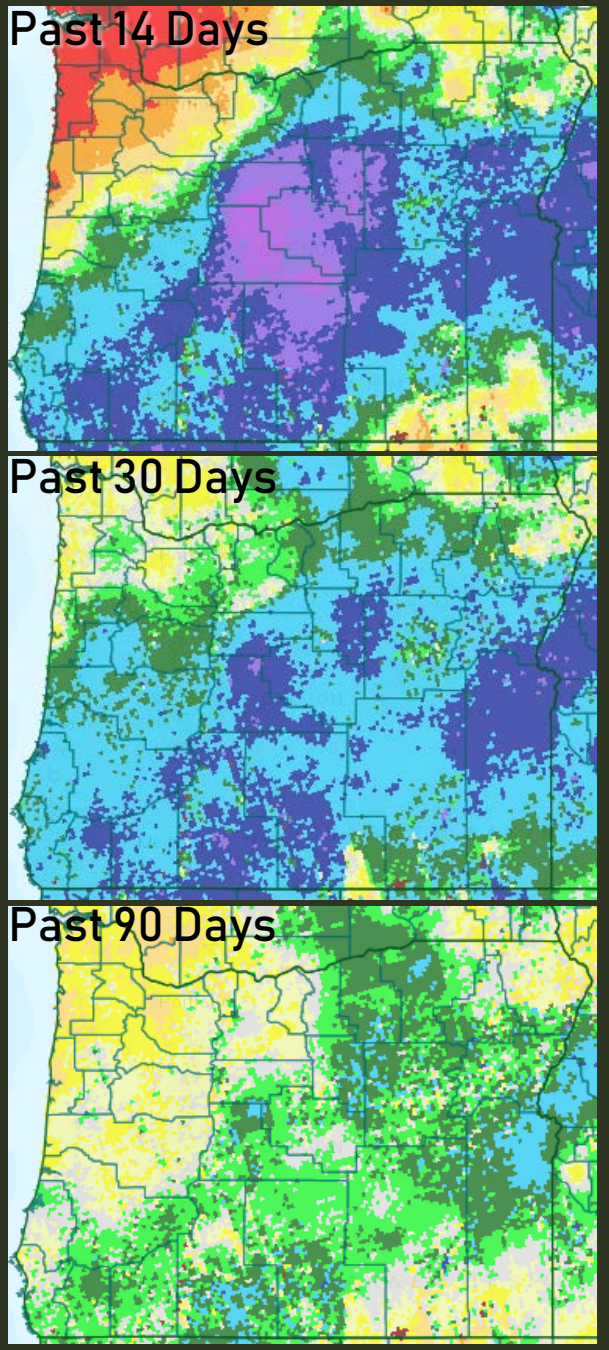
Timberline Ski Area

Precipitation % of Average



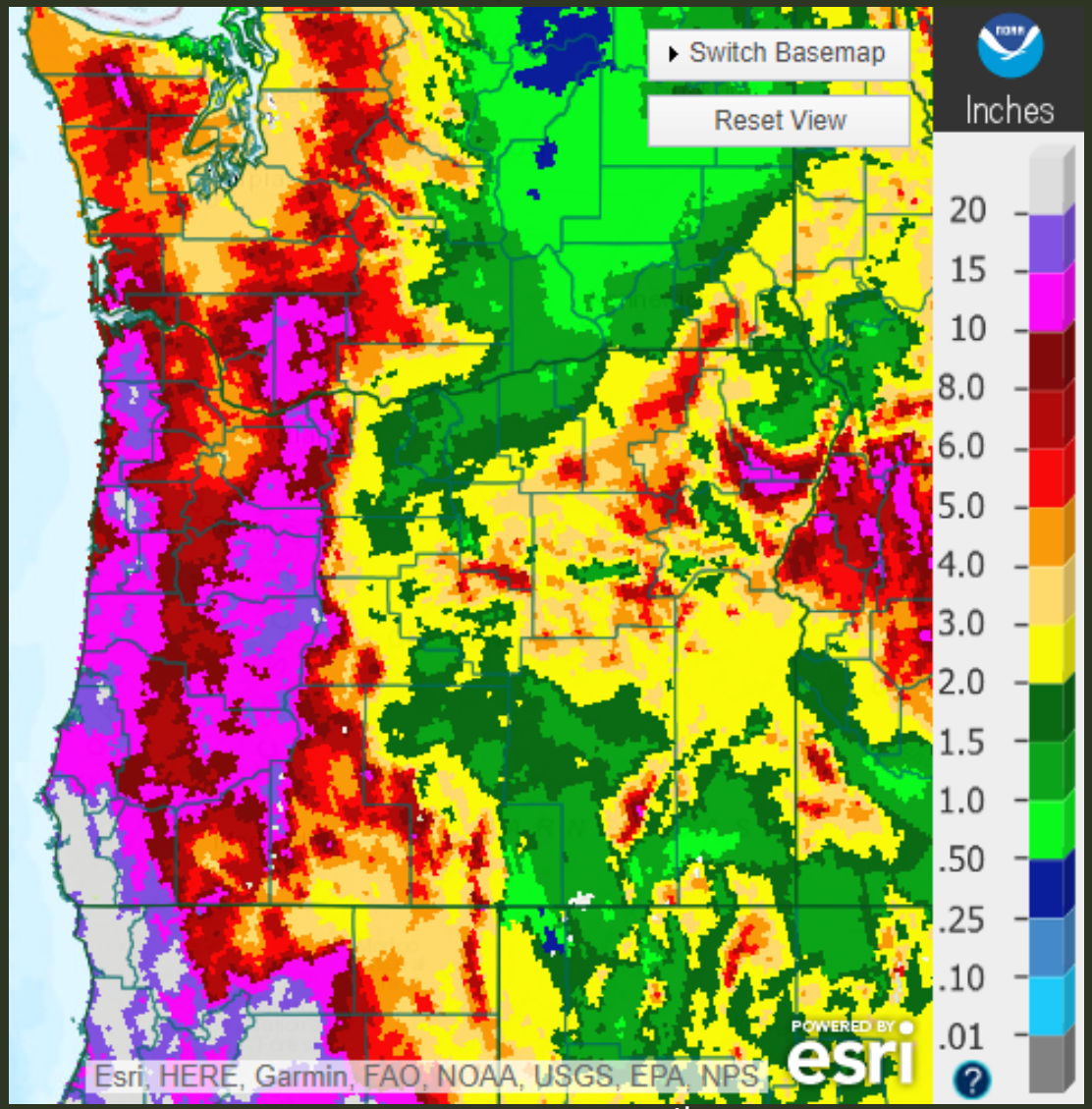
Precipitation Data as of March 10th, 2019

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

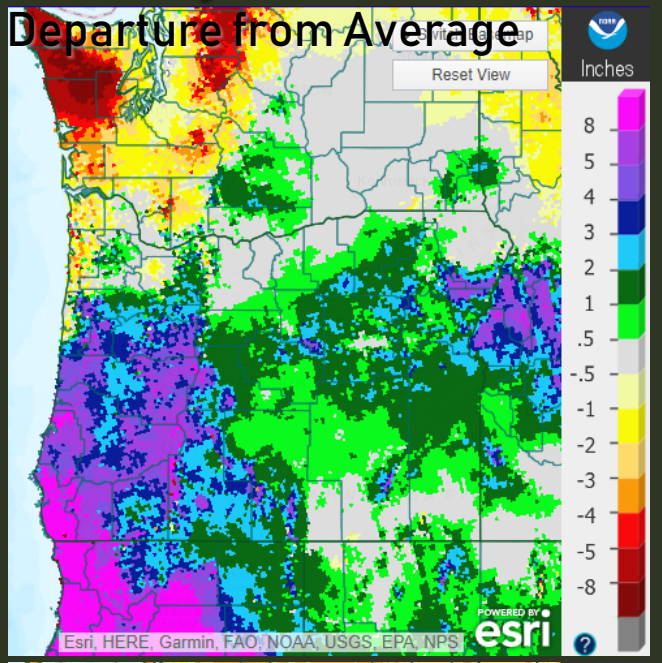


Precipitation Past 30 Days

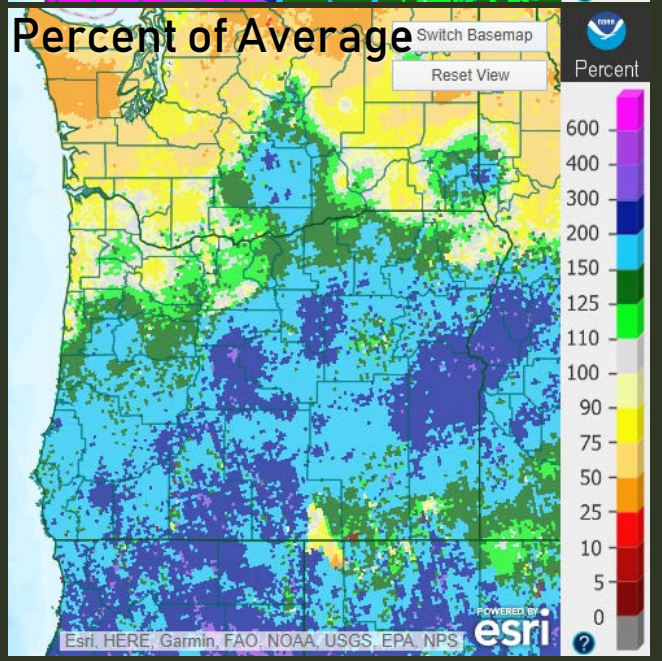
Precipitation Totals



Departure from Average



Percent of Average

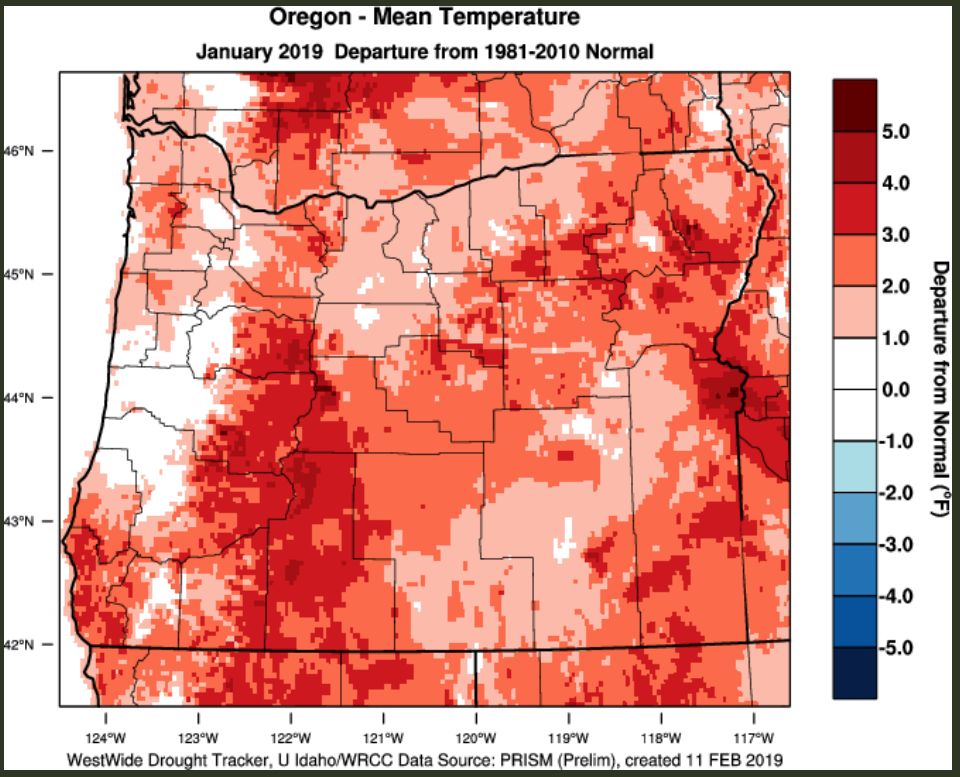


Precipitation Data as of March 10th, 2019

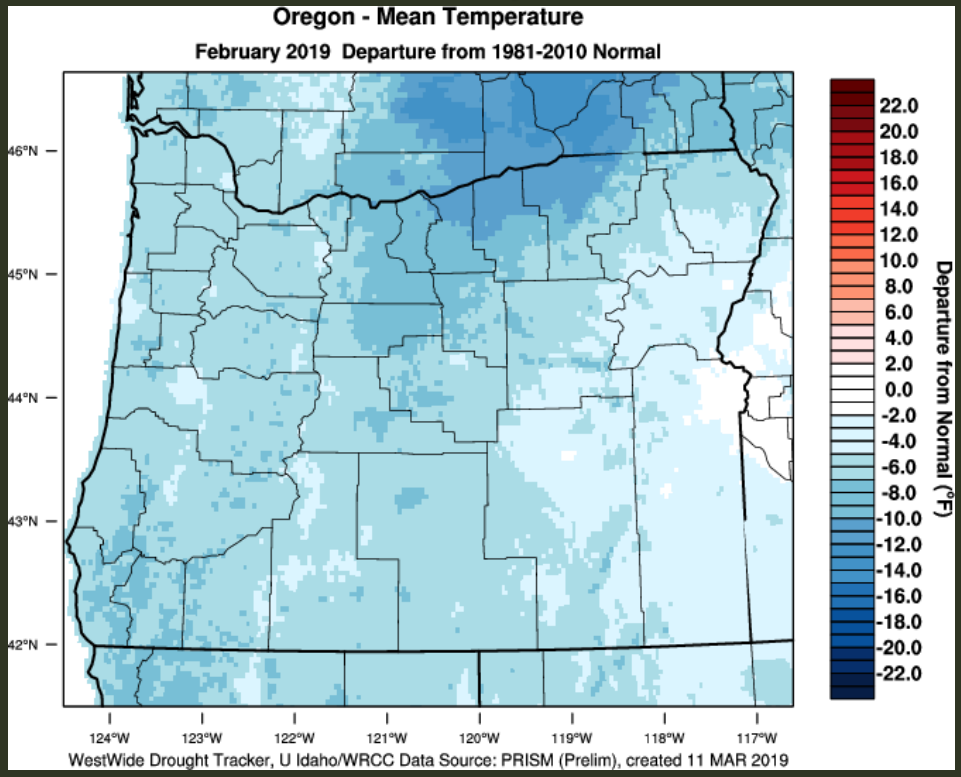
Source: water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr

Recent Temperatures

January 2019



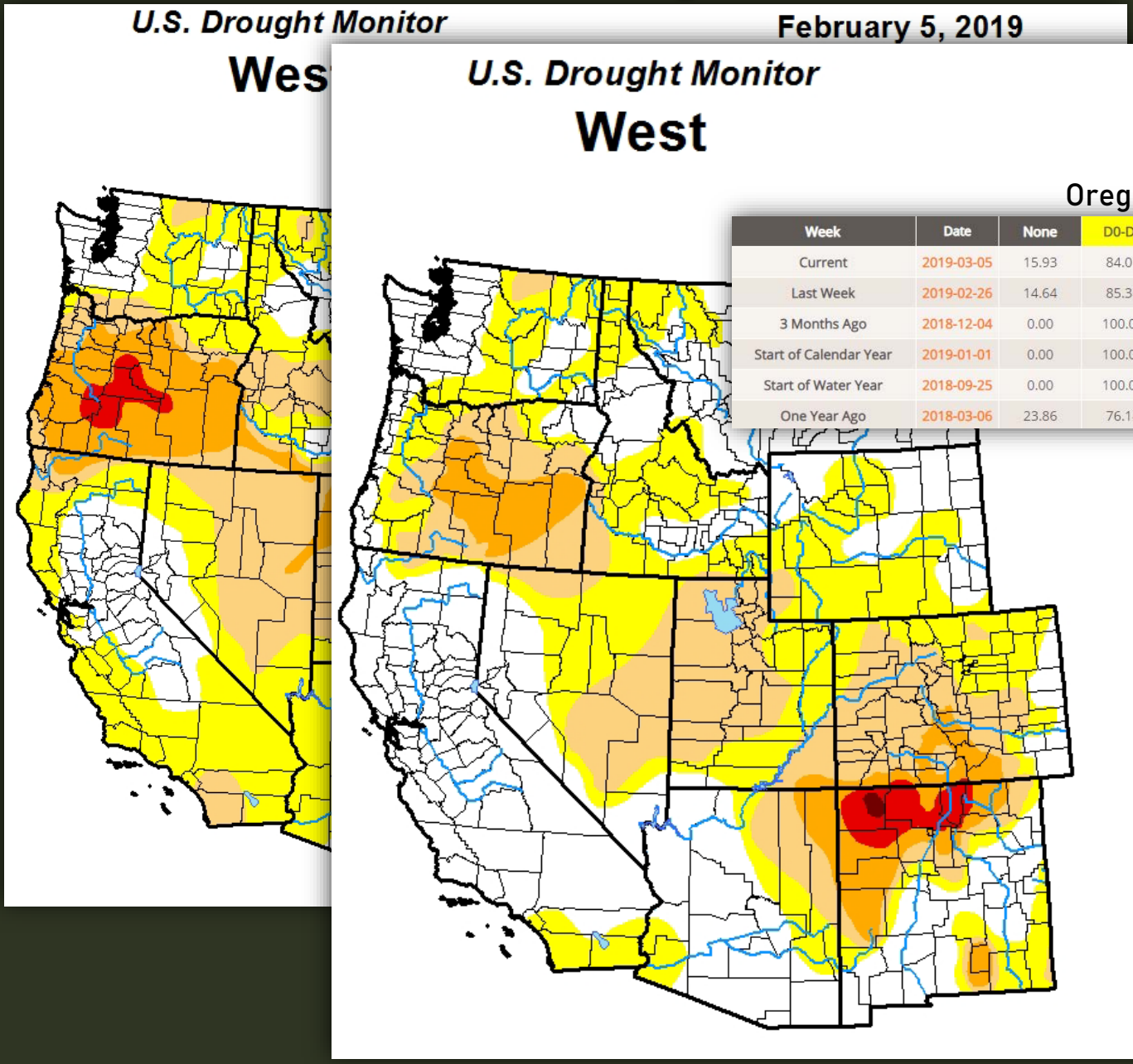
February 2019



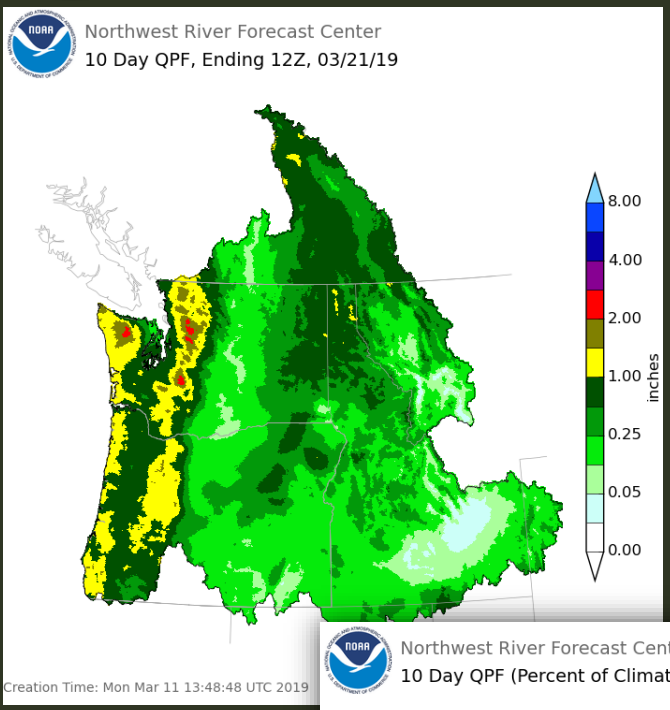
Temperatures thus far in March 2019:
5 to 10 degrees below normal for western Oregon
10 to 20 degrees below normal for northeast Oregon
2 to 5 degrees below normal for southeast Oregon

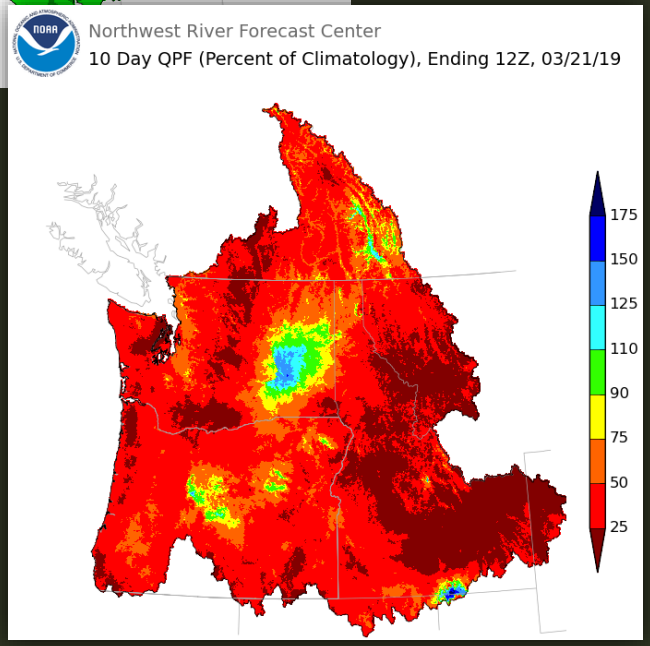
https://wrcc.dri.edu/wwdt/current.php?folder=mdn1

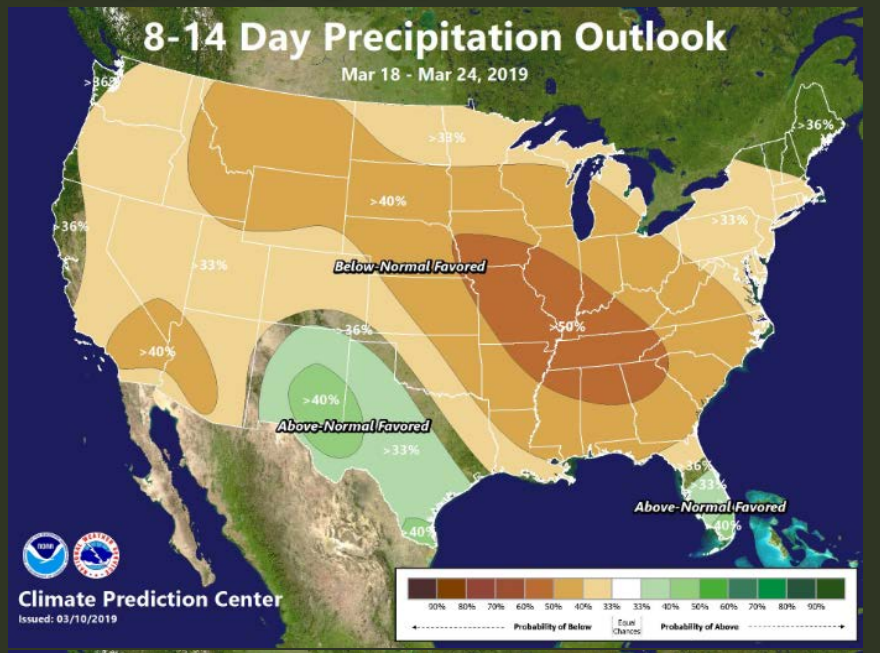
Drought Monitor

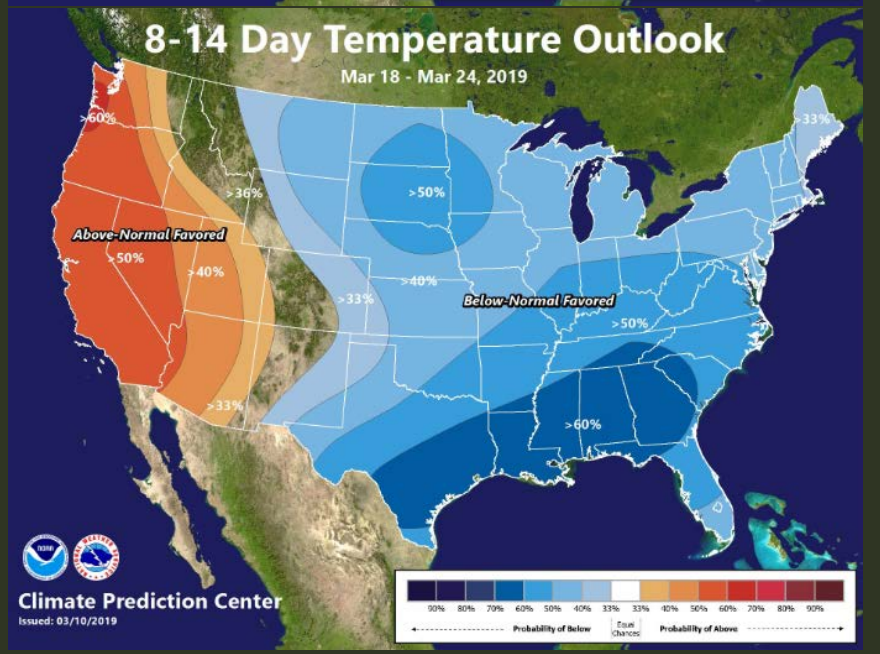


Mid-March Outlook



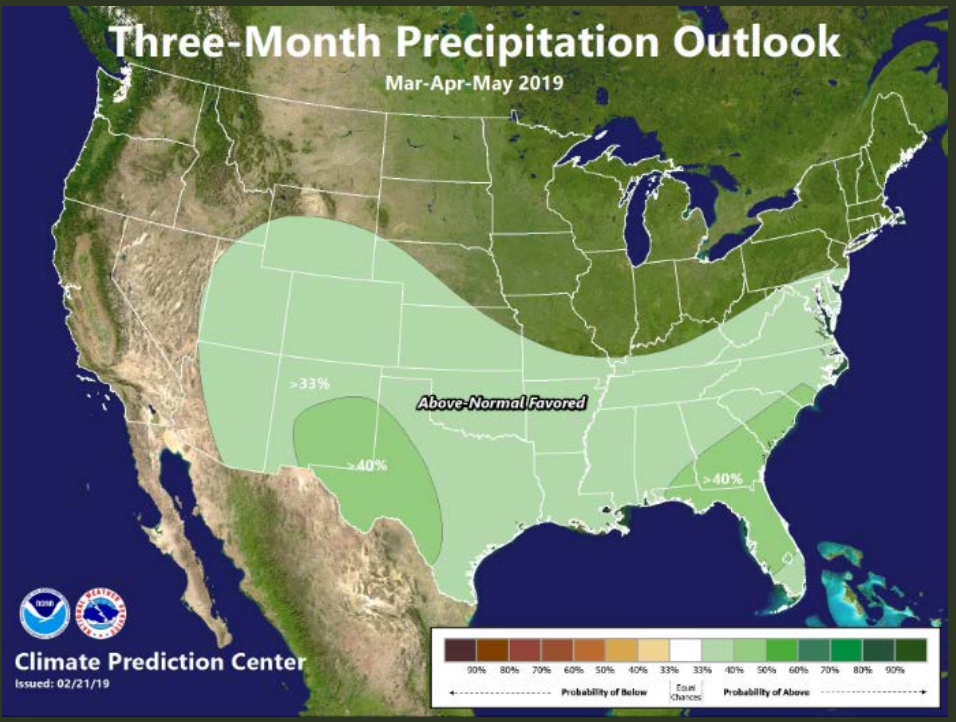


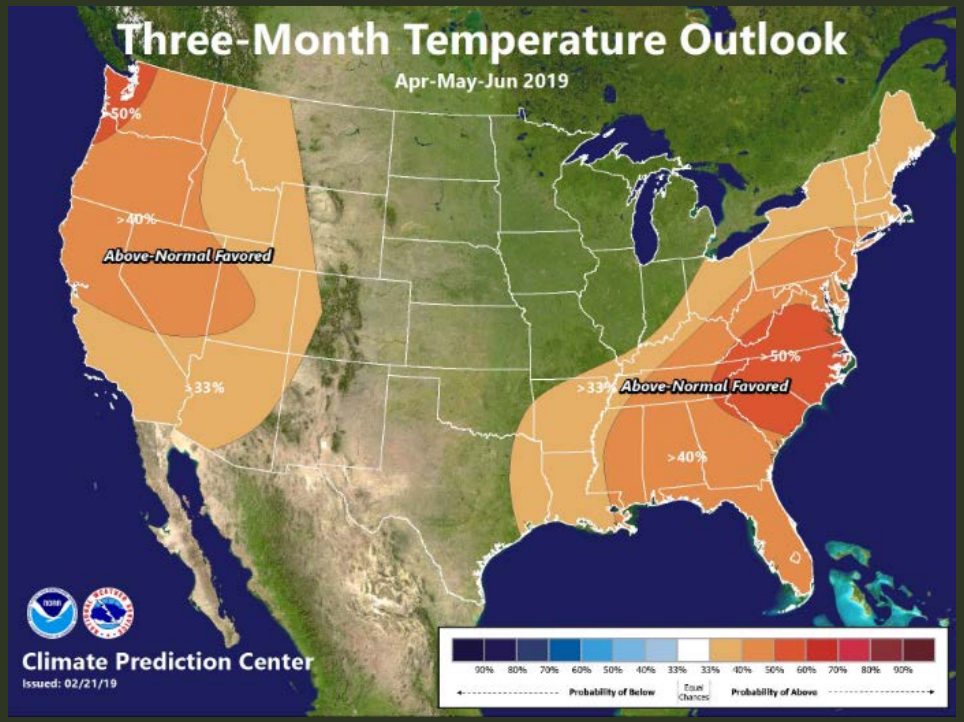




https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=3

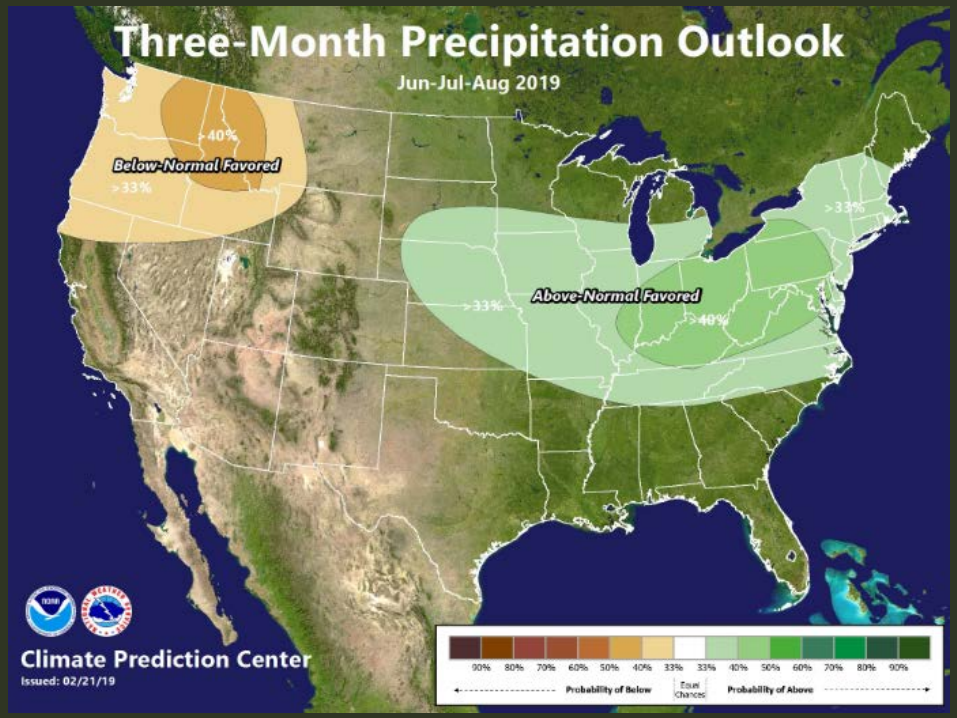
March-April-May Outlook

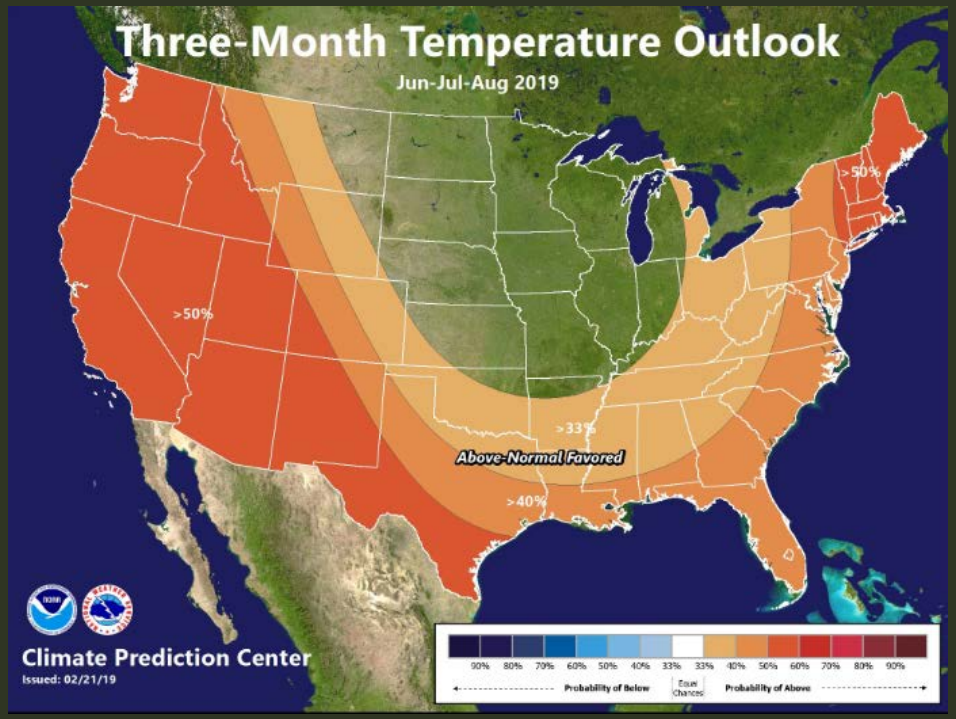




https://www.wrh.noaa.gov/images/sto/GIS_NEW/

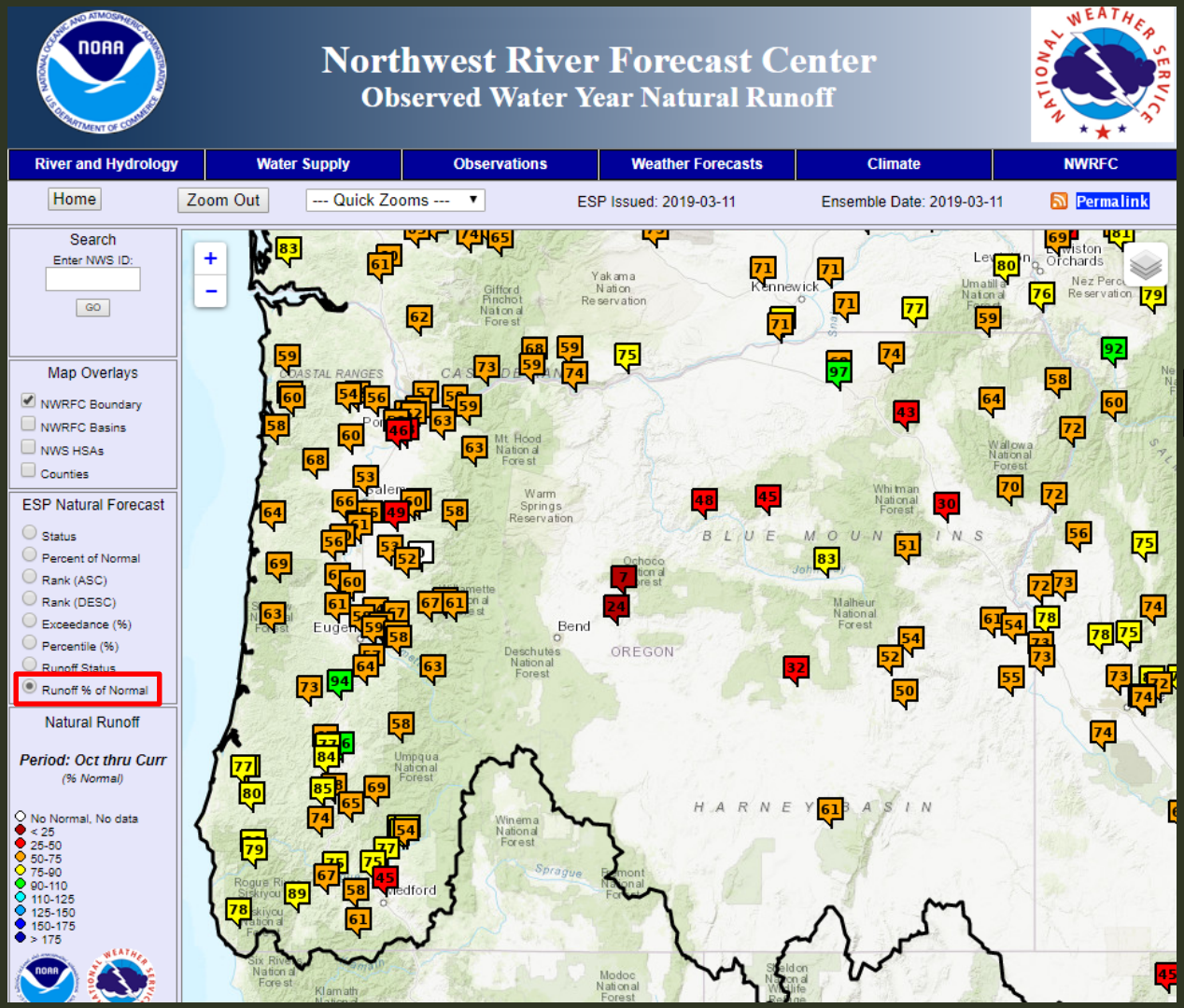
June-July-August Outlook

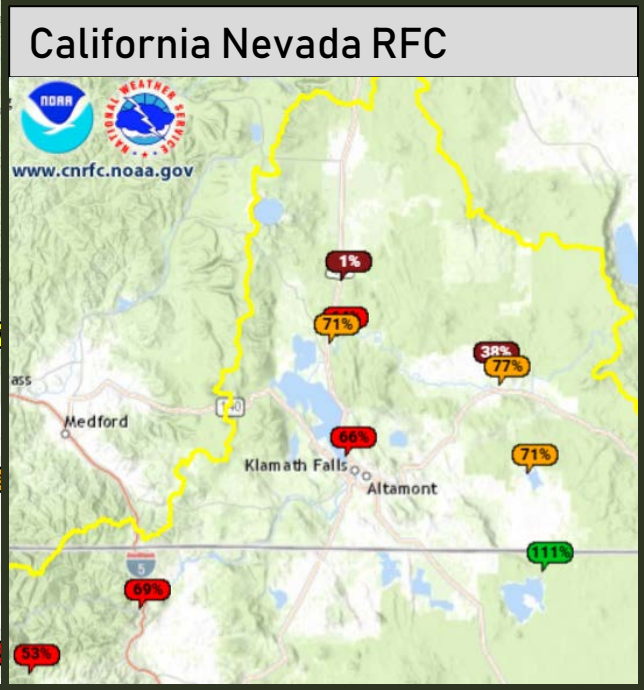




https://www.wrh.noaa.gov/images/sto/GIS_NEW/

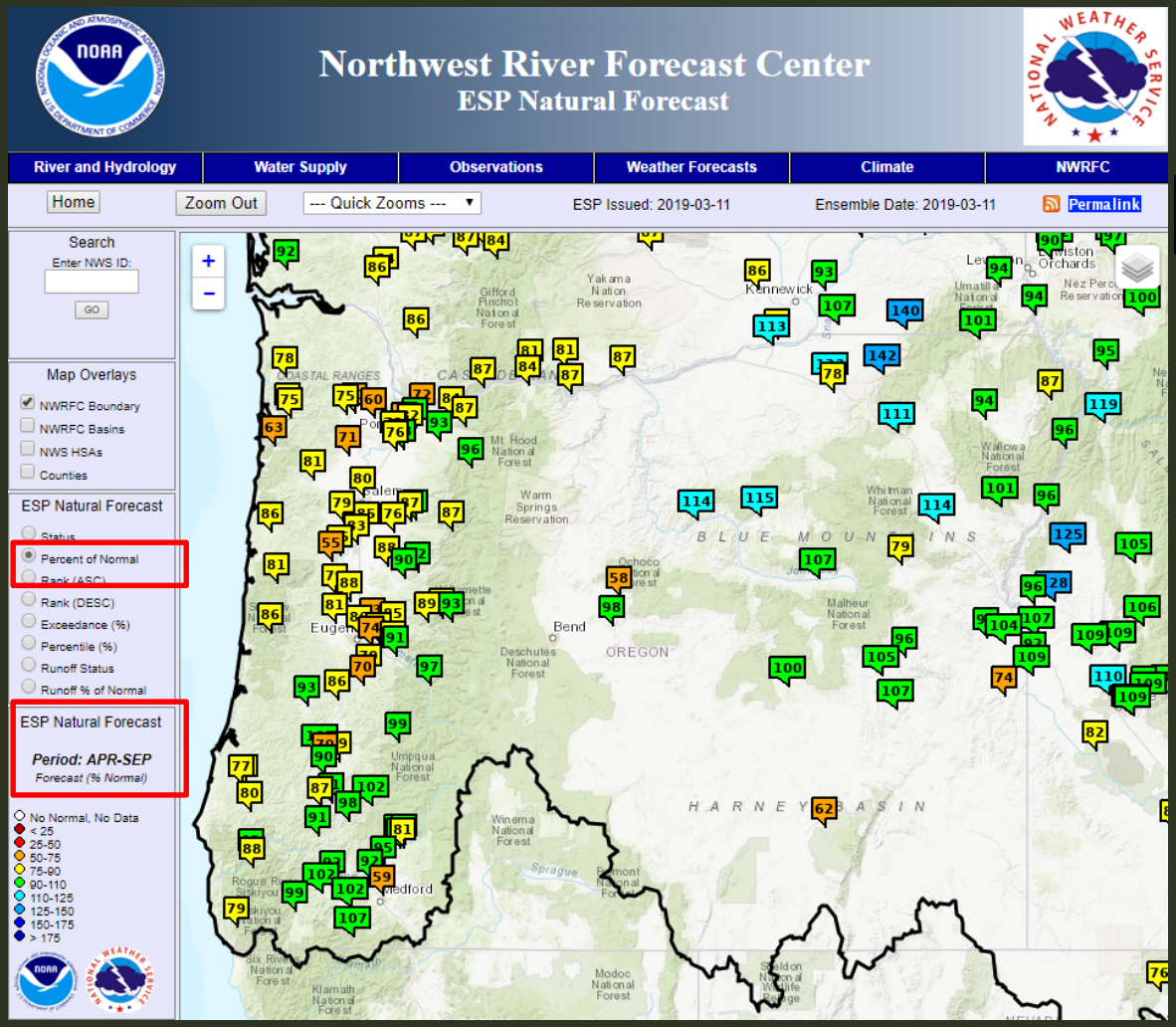
Observed WY19 Runoff thus far



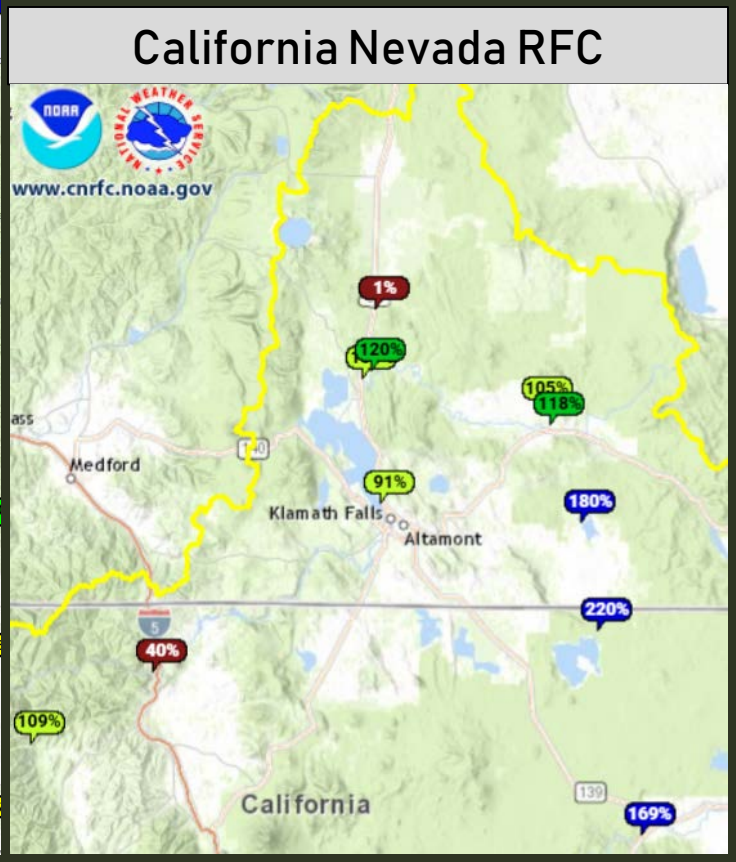


https://www.nwrfc.noaa.gov/natural/index.html?version=20181015v2
https://www.cnrfc.noaa.gov/ol.php?product=espWS

Seasonal Water Supply Forecasts

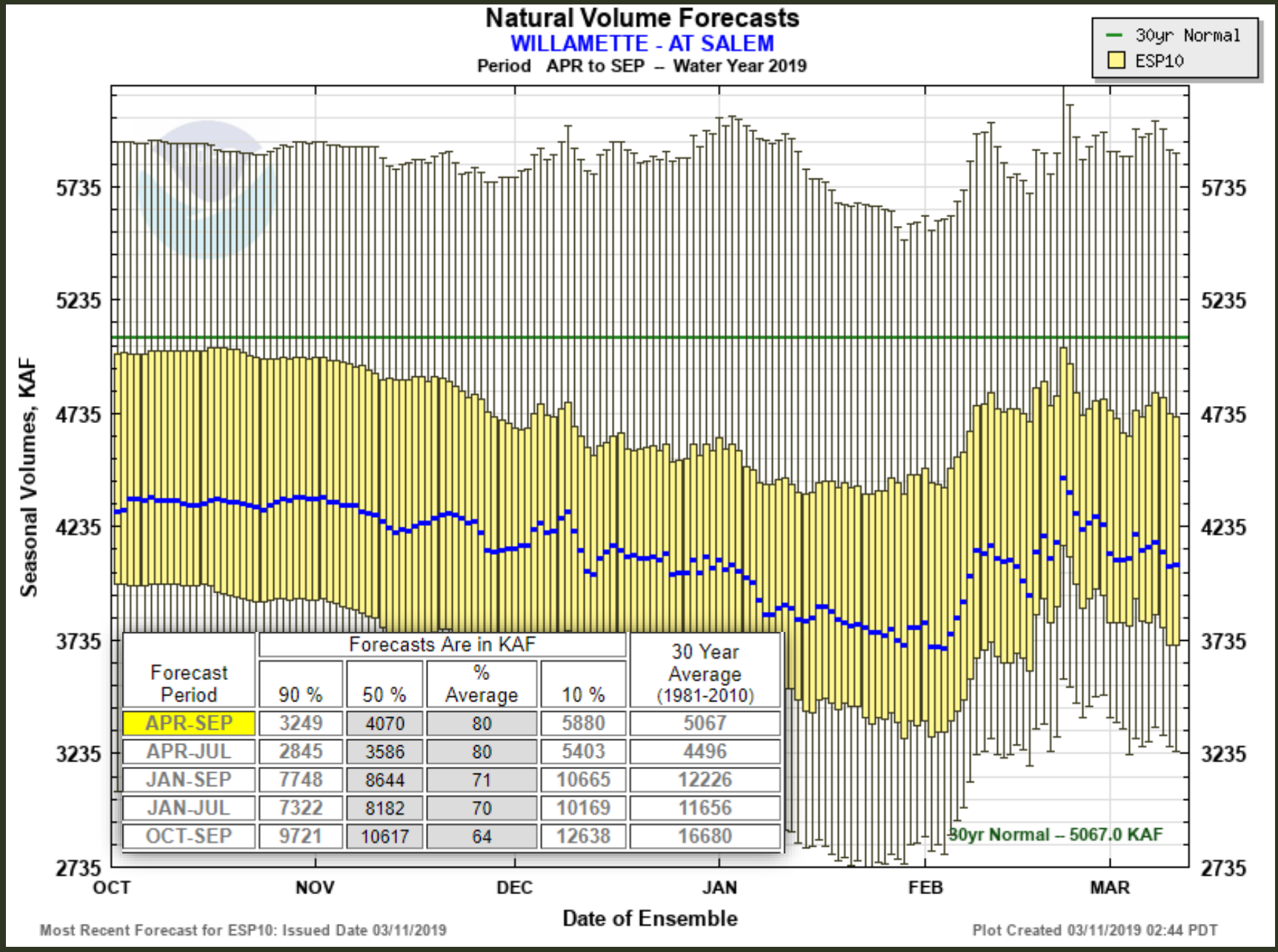


Forecast runoff volume for April – September 2019



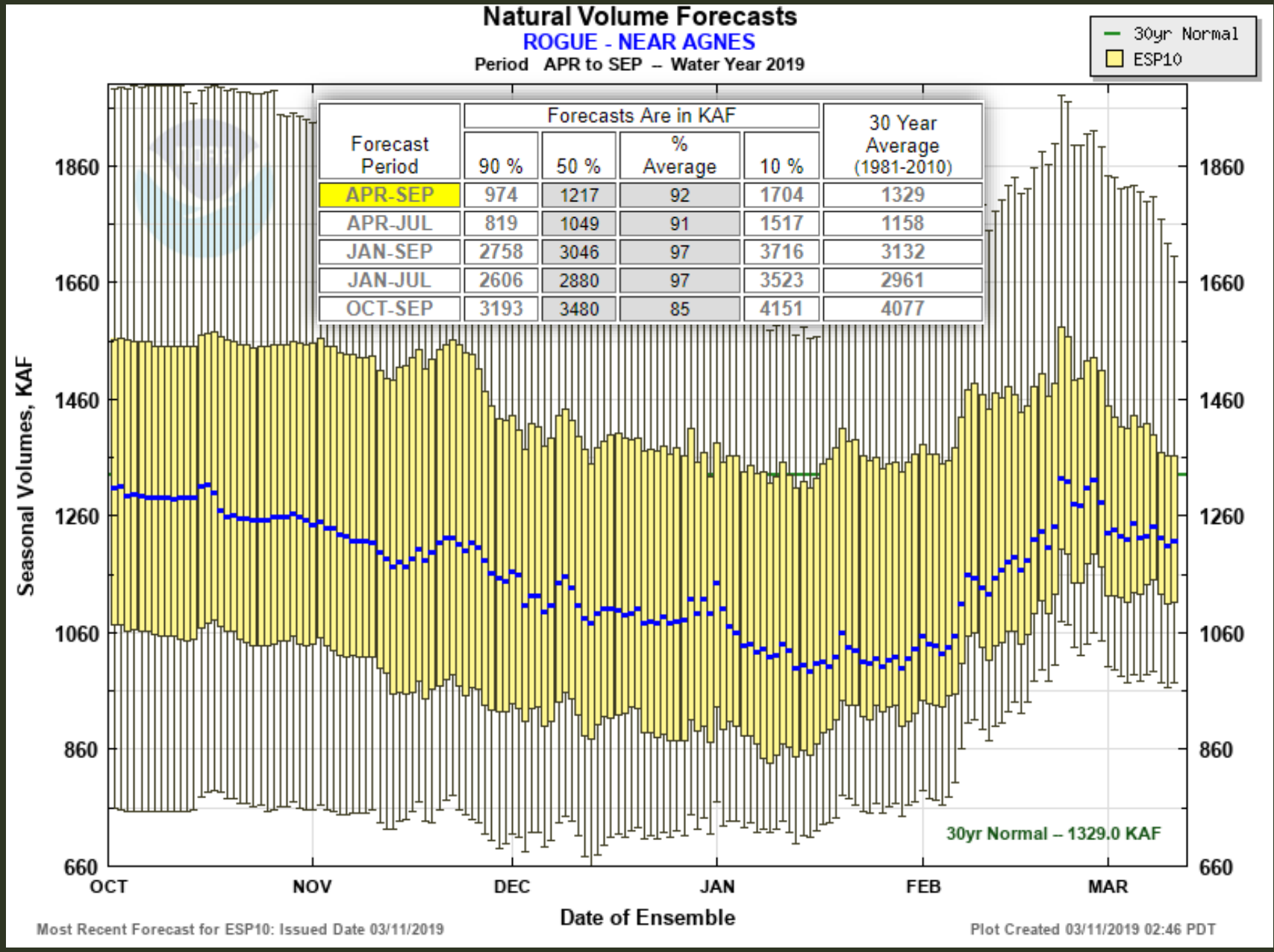
https://www.nwrfc.noaa.gov/natural/index.html?version=20181015v2
https://www.cnrfc.noaa.gov/ol.php?product=espWS

Natural Water Supply Forecasts (1/6)

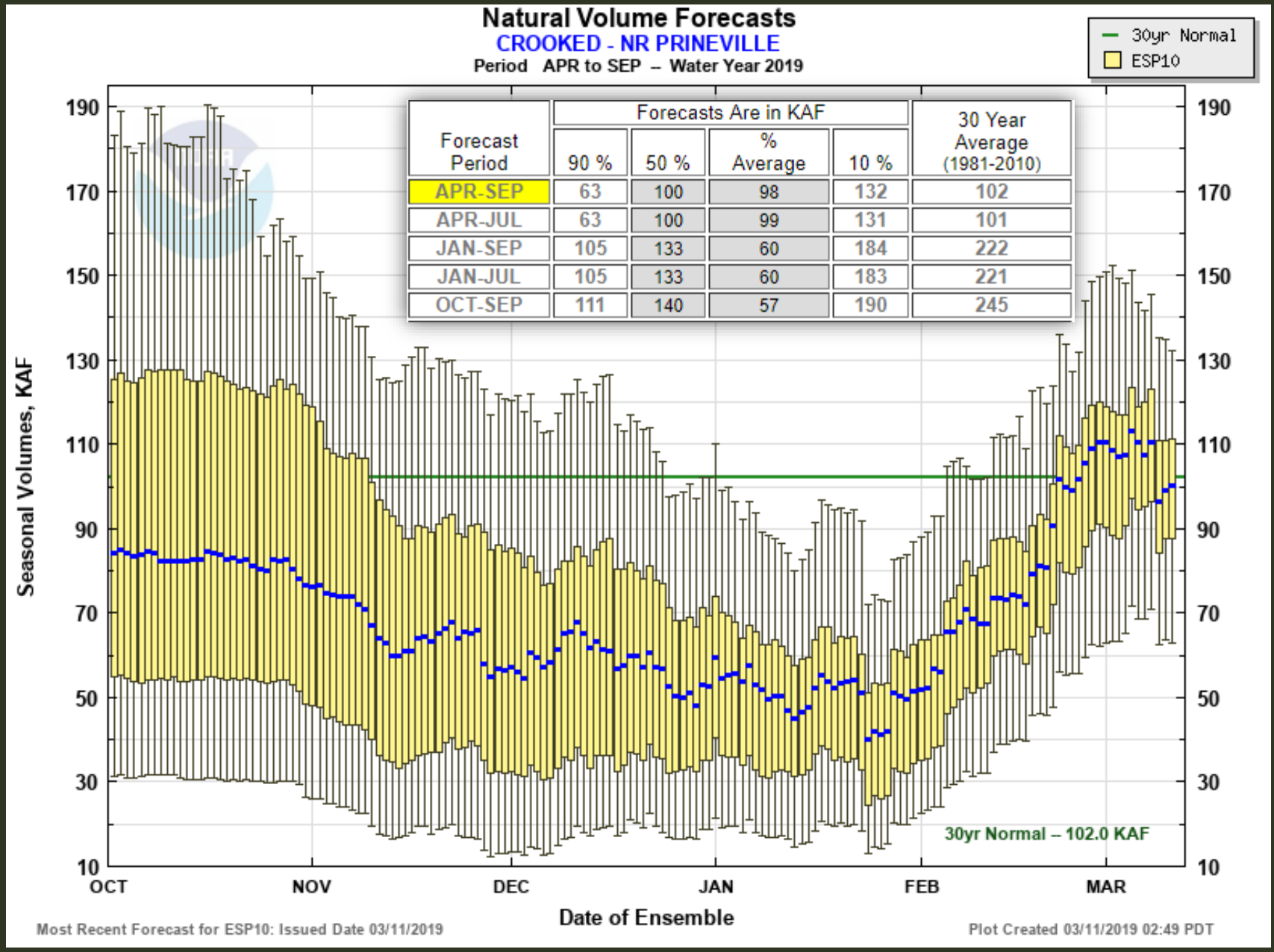


Forecast Period	Forecasts Are in KAF 90 %	50 %	% Average	10 %	30 Year Average (1981-2010)
APR-SEP	3249	4070	80	5880	5067
APR-JUL	2845	3586	80	5403	4496
JAN-SEP	7748	8644	71	10665	12226
JAN-JUL	7322	8182	70	10169	11656
OCT-SEP	9721	10617	64	12638	16680

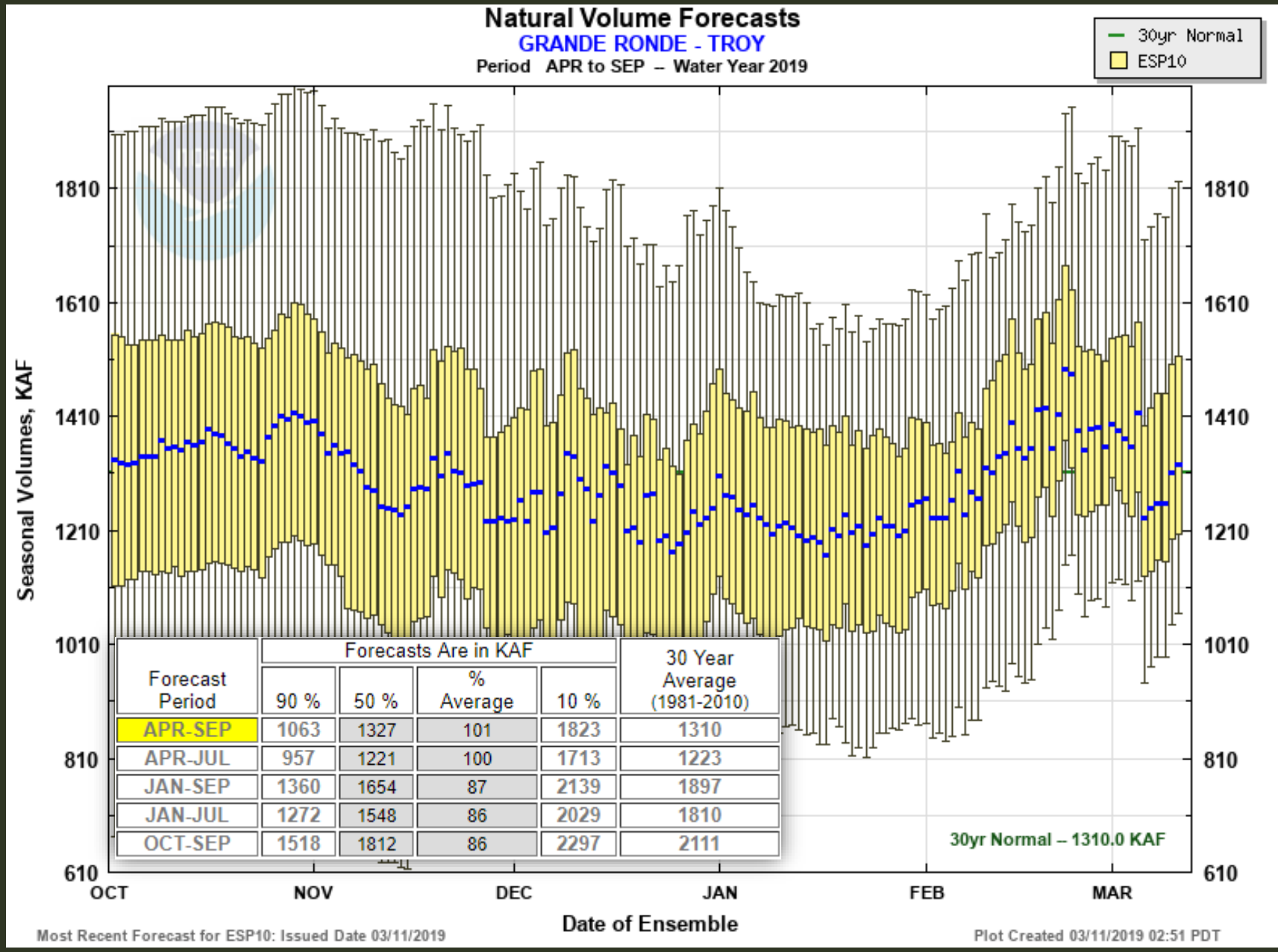
Natural Water Supply Forecasts (2/6)



Natural Water Supply Forecasts (3/6)

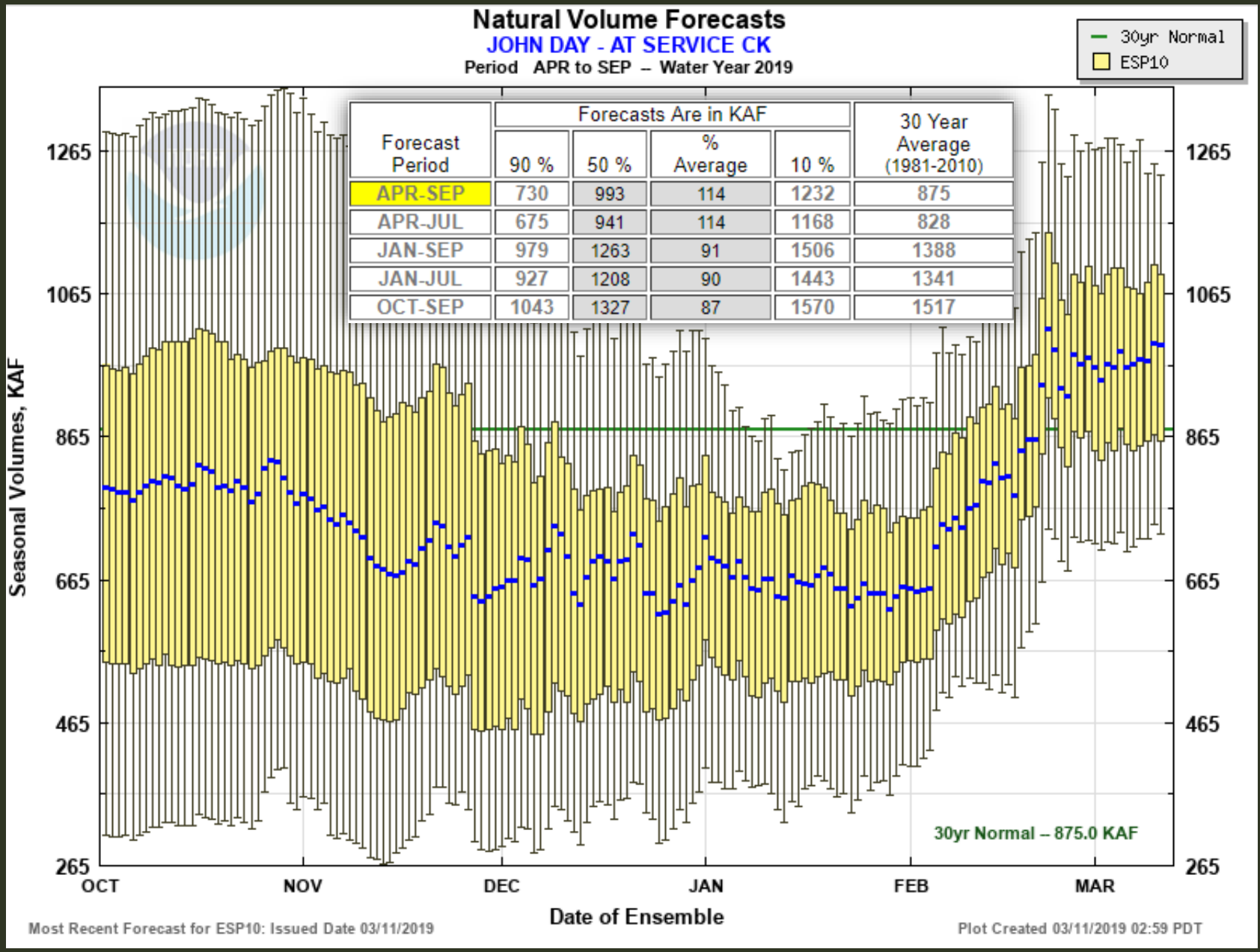


Natural Water Supply Forecasts (4/6)

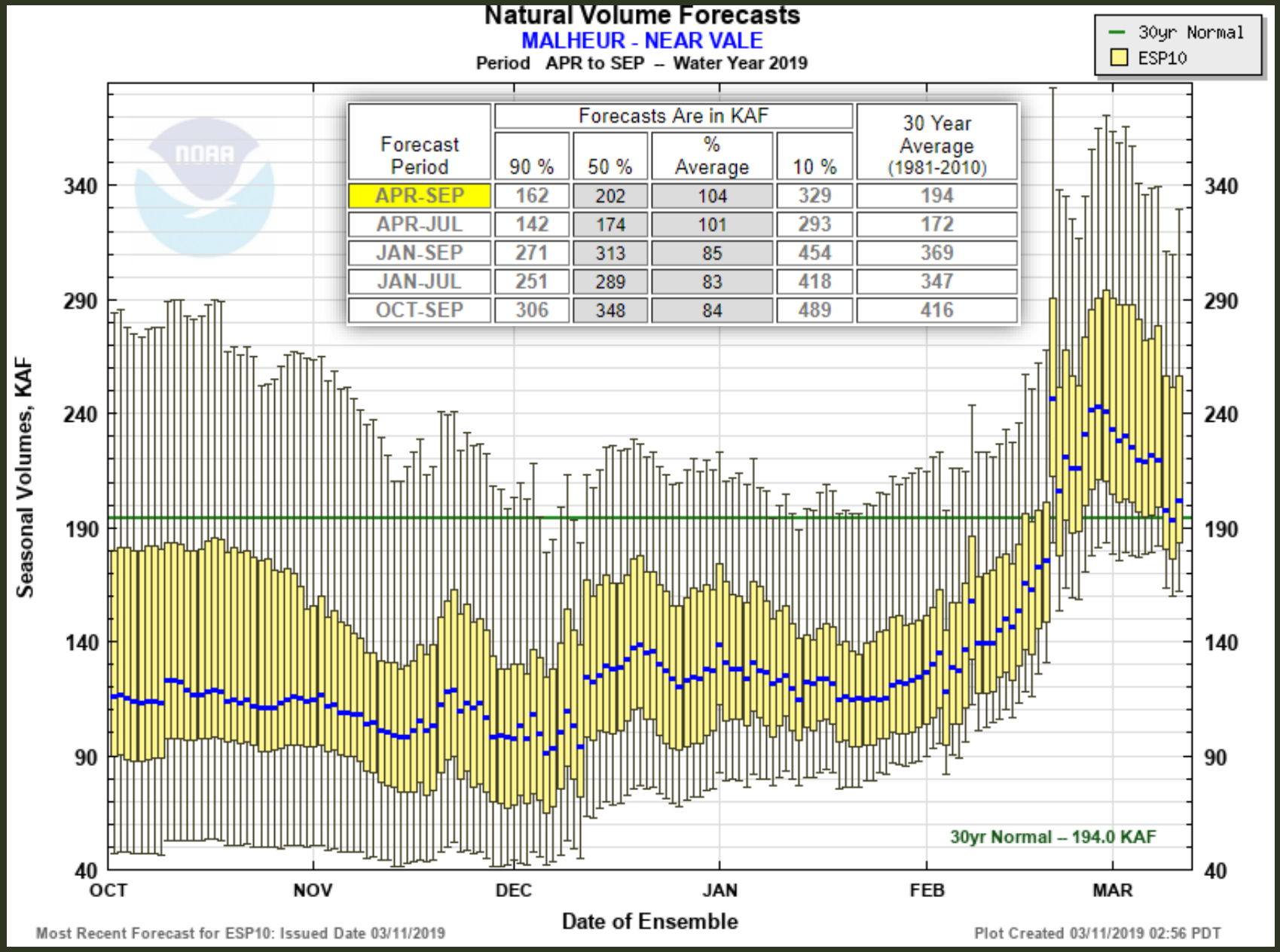


Forecast Period	Forecasts Are in KAF 90 %	50 %	% Average	10 %	30 Year Average (1981-2010)
APR-SEP	1063	1327	101	1823	1310
APR-JUL	957	1221	100	1713	1223
JAN-SEP	1360	1654	87	2139	1897
JAN-JUL	1272	1548	86	2029	1810
OCT-SEP	1518	1812	86	2297	2111

Natural Water Supply Forecasts (5/6)



Natural Water Supply Forecasts (6/6)



Link to Northwest River Forecast Center ESP Natural Forecasts

https://www.nwrfc.noaa.gov/natural

Live Water Supply Briefings

https://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi

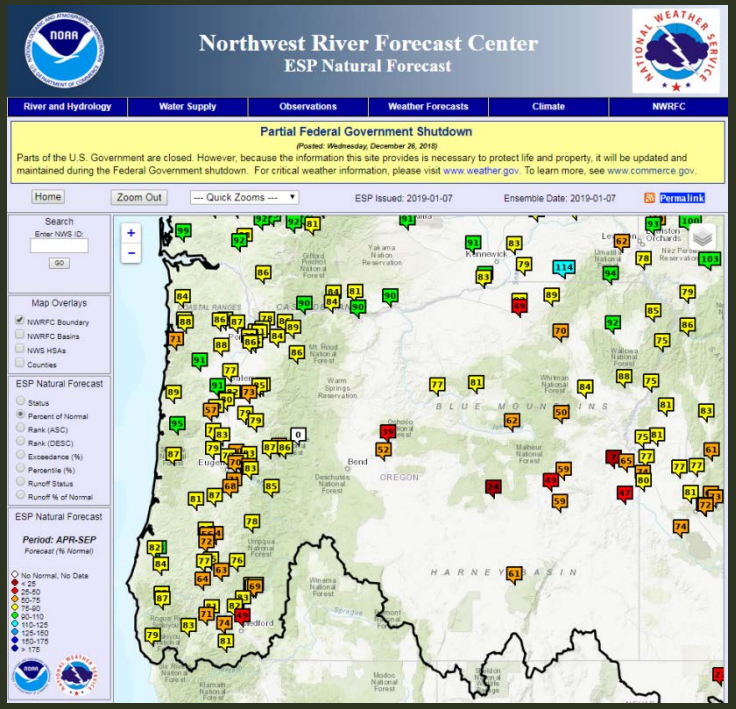
NWRFC Water Supply Forecast
Monthly Briefing Schedule

Monthly water supply briefings will be held January through late spring on the first Thursday of each month. Please refer to the schedule below for briefing dates and times. The briefings are composed of two parts, a telephone conference call and a web-based presentation. The conference call can be joined by calling the number provided below prior to start of the briefing. Enter the provided access code when prompted. To view the web-based presentations, you will need to register prior to each briefing. The briefing slides will be available from the NWRFC presentations page soon after the briefing.

2019 Schedule for *Live* Water Supply Briefings					
Jan	Feb	Mar	Apr	May	June
3	7	7	4	2	6
All presentations held at 10:00am PDT/PST, unless noted otherwise					
Click here for Registration Information					

Telephone Conference Call Number (same for each month's brief):
(415) 655-0060
Pass Code:
217-076-304

Presentation Archive Download Link



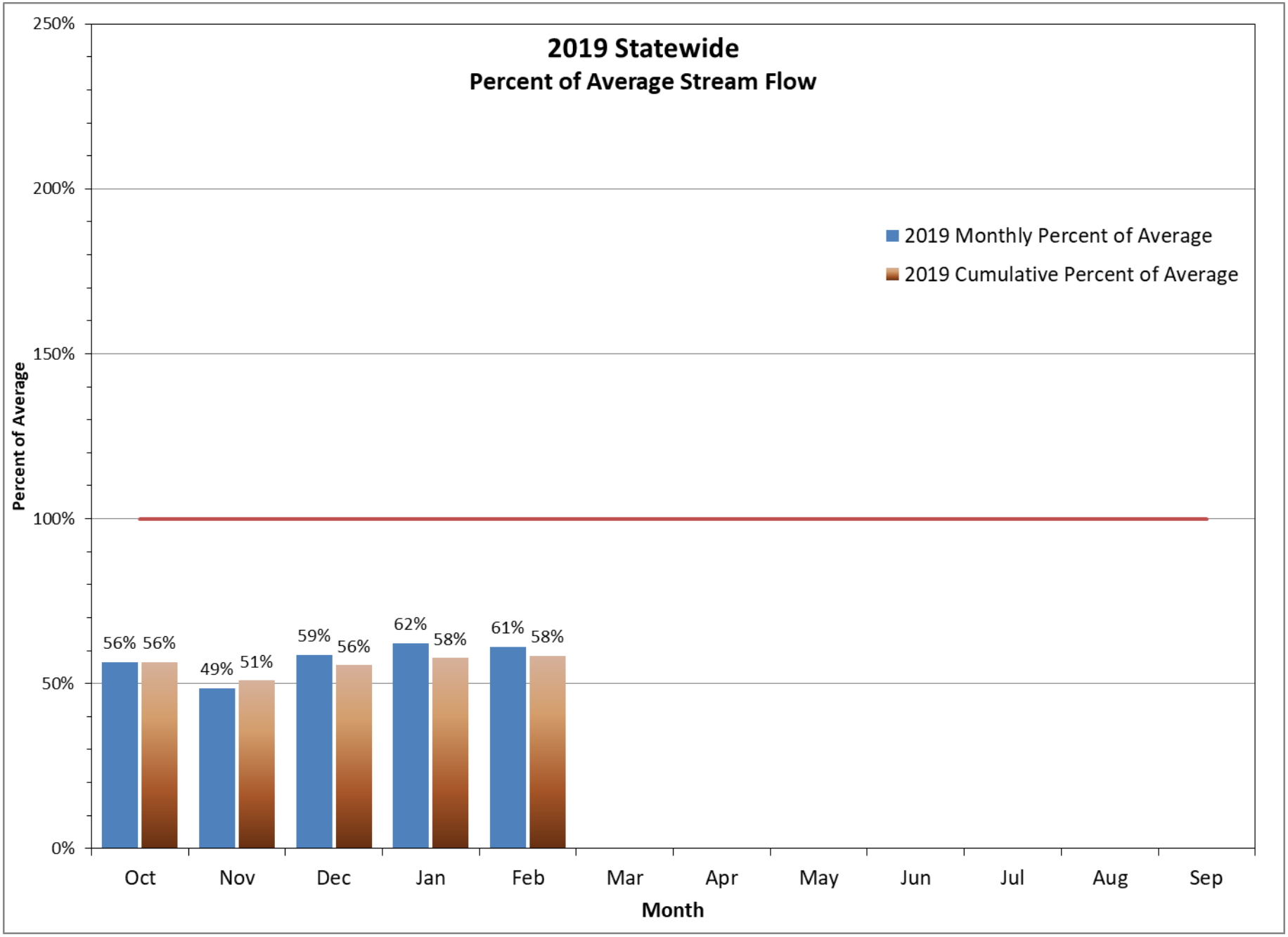
Water Supply Conditions Report

Water Supply Availability Committee

OREGON
WATER RESOURCES DEPARTMENT

Ken Stahr
Oregon Water Resources Department

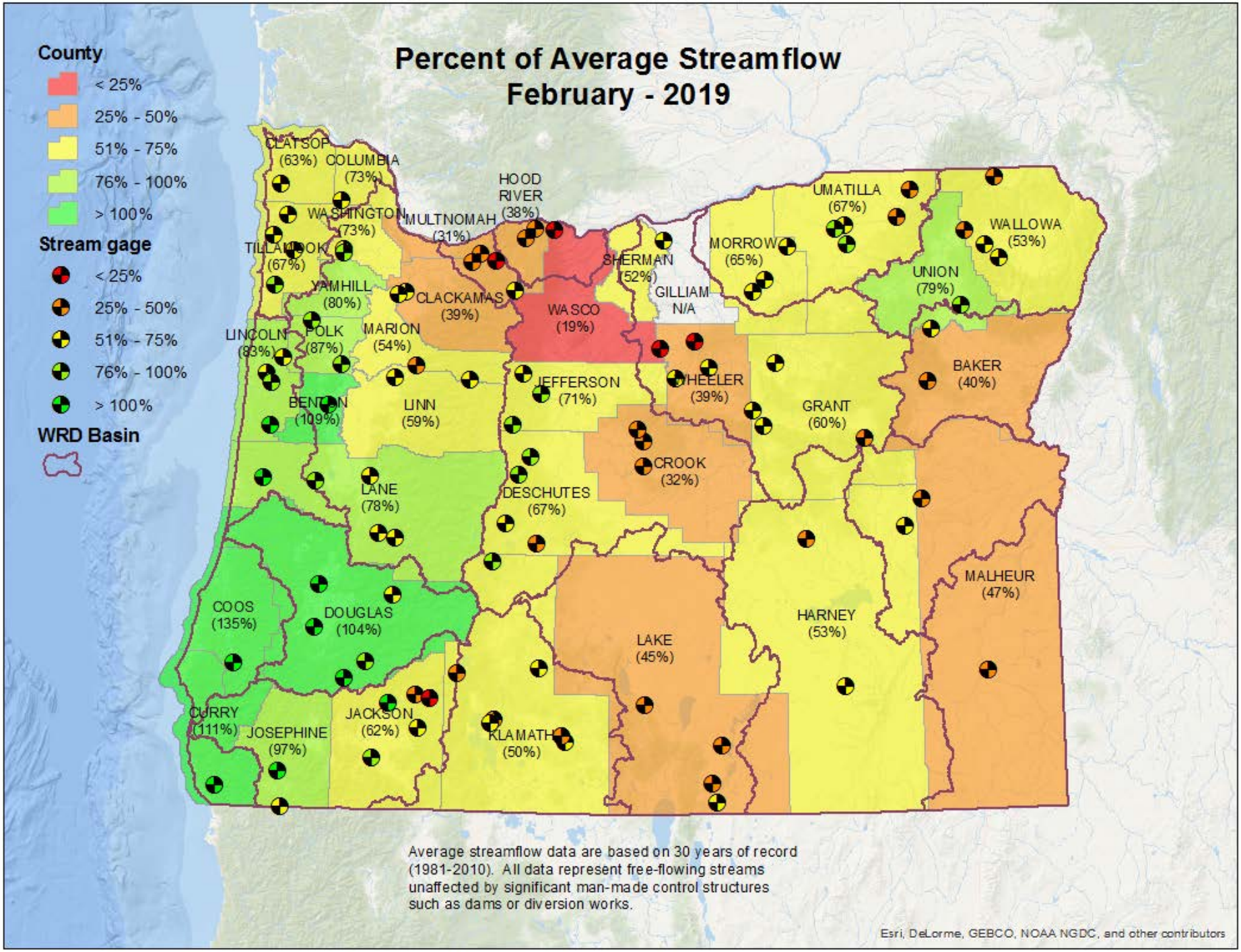
March 12, 2019


2019 Statewide
Percent of Average Stream Flow
2019 Monthly Percent of Average
2019 Cumulative Percent of Average
Percent of Average
250%
200%
150%
100%
50%
0%
56% 56%
49% 51%
59% 56%
62% 58%
61% 58%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Month

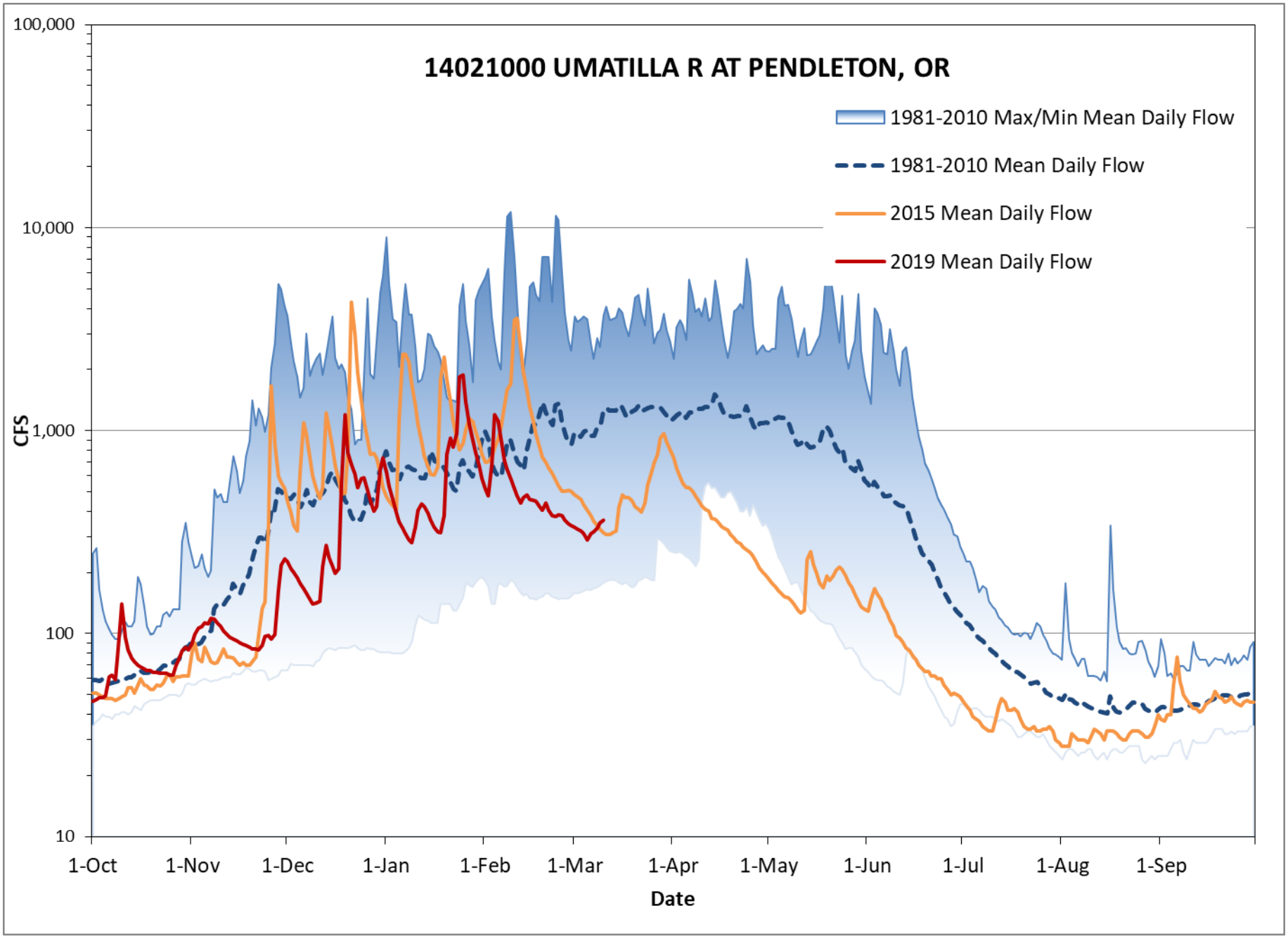
OREGON
WATER RESOURCES DEPARTMENT

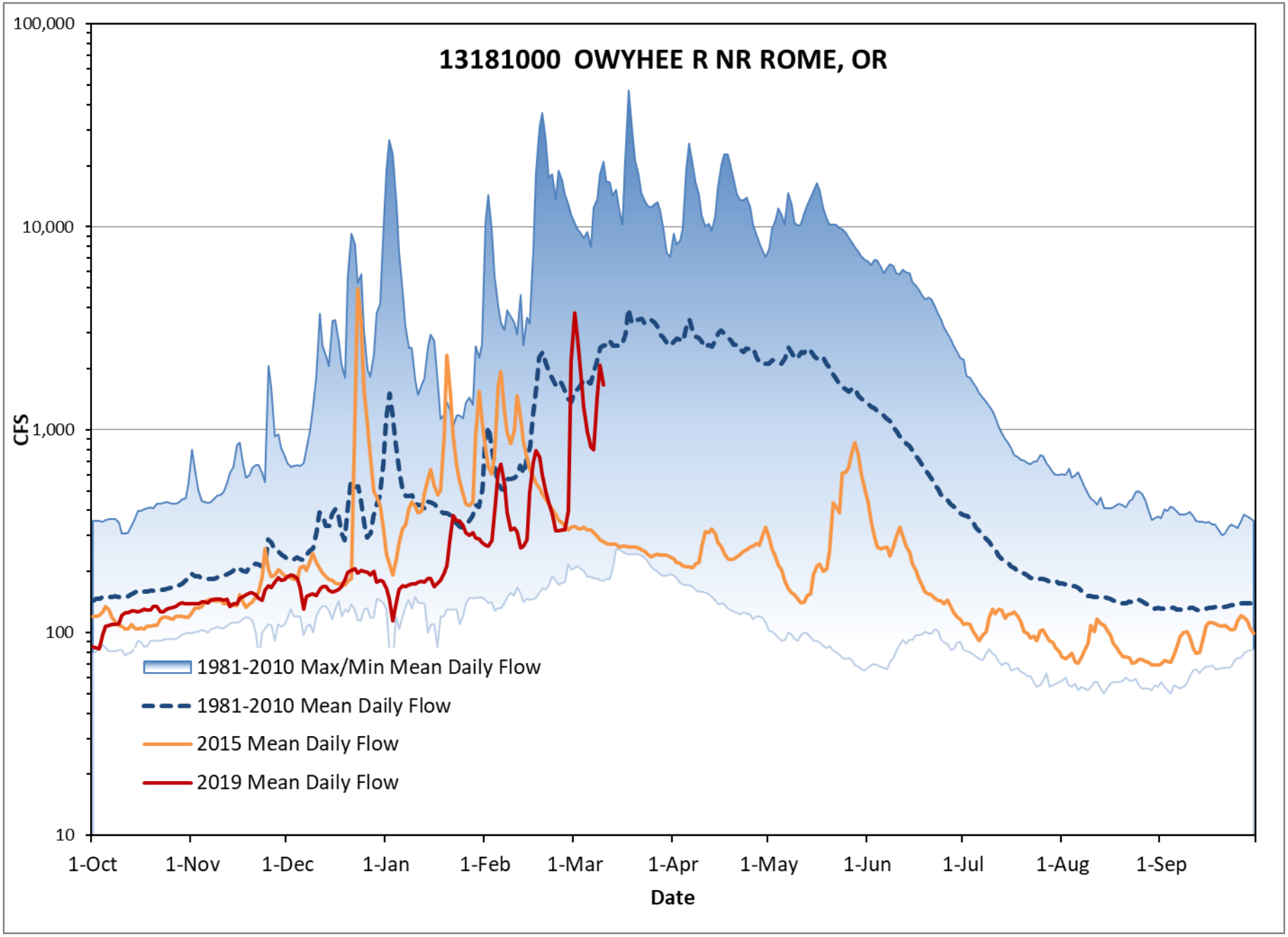
Basin	Water Year % of average thru February	% of average for February	# of data points
West Side	64%	80%	45
East Side	55%	49%	48
State	58%	61%	93

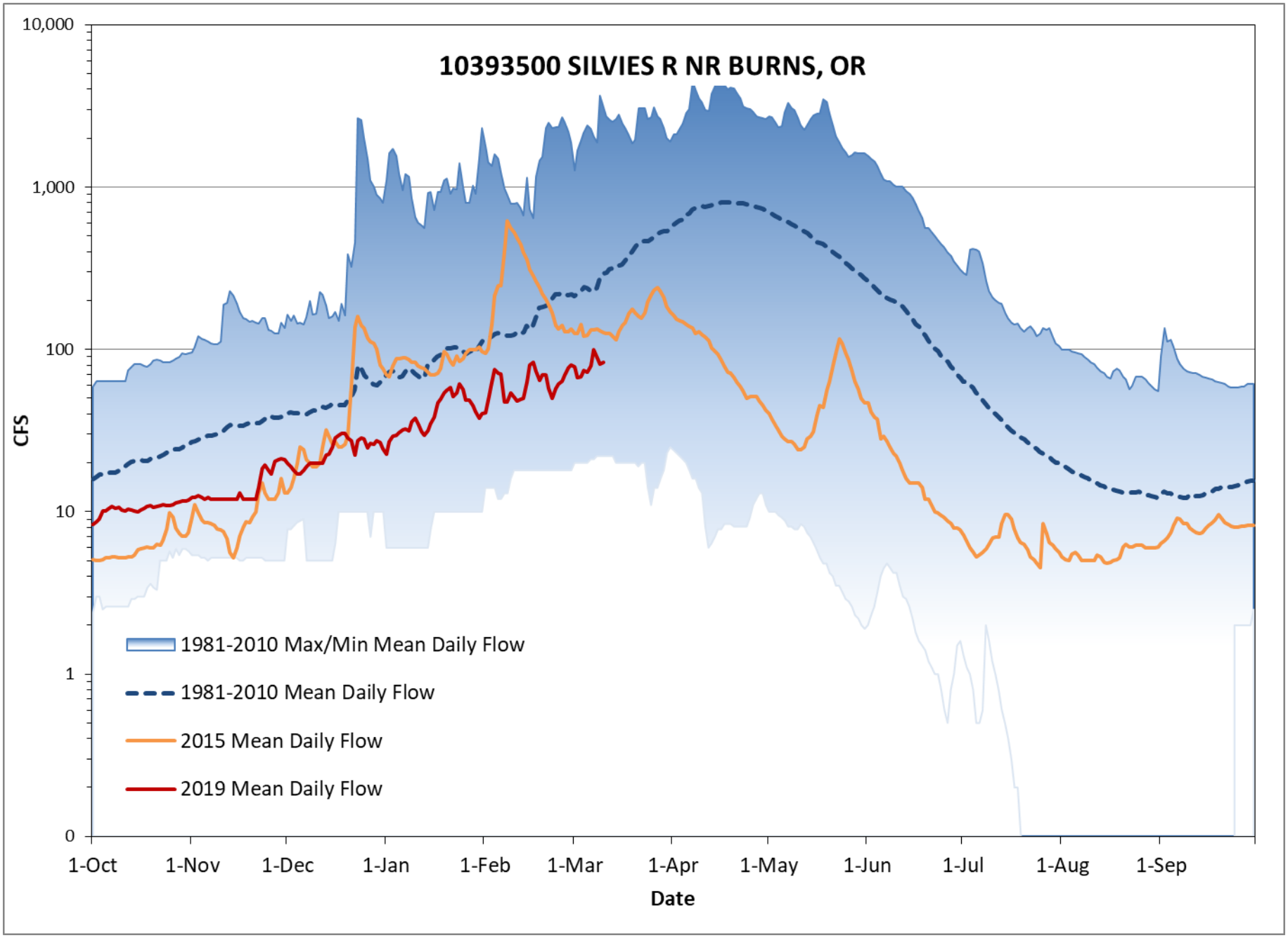
Percent of Average Streamflow
February - 2019

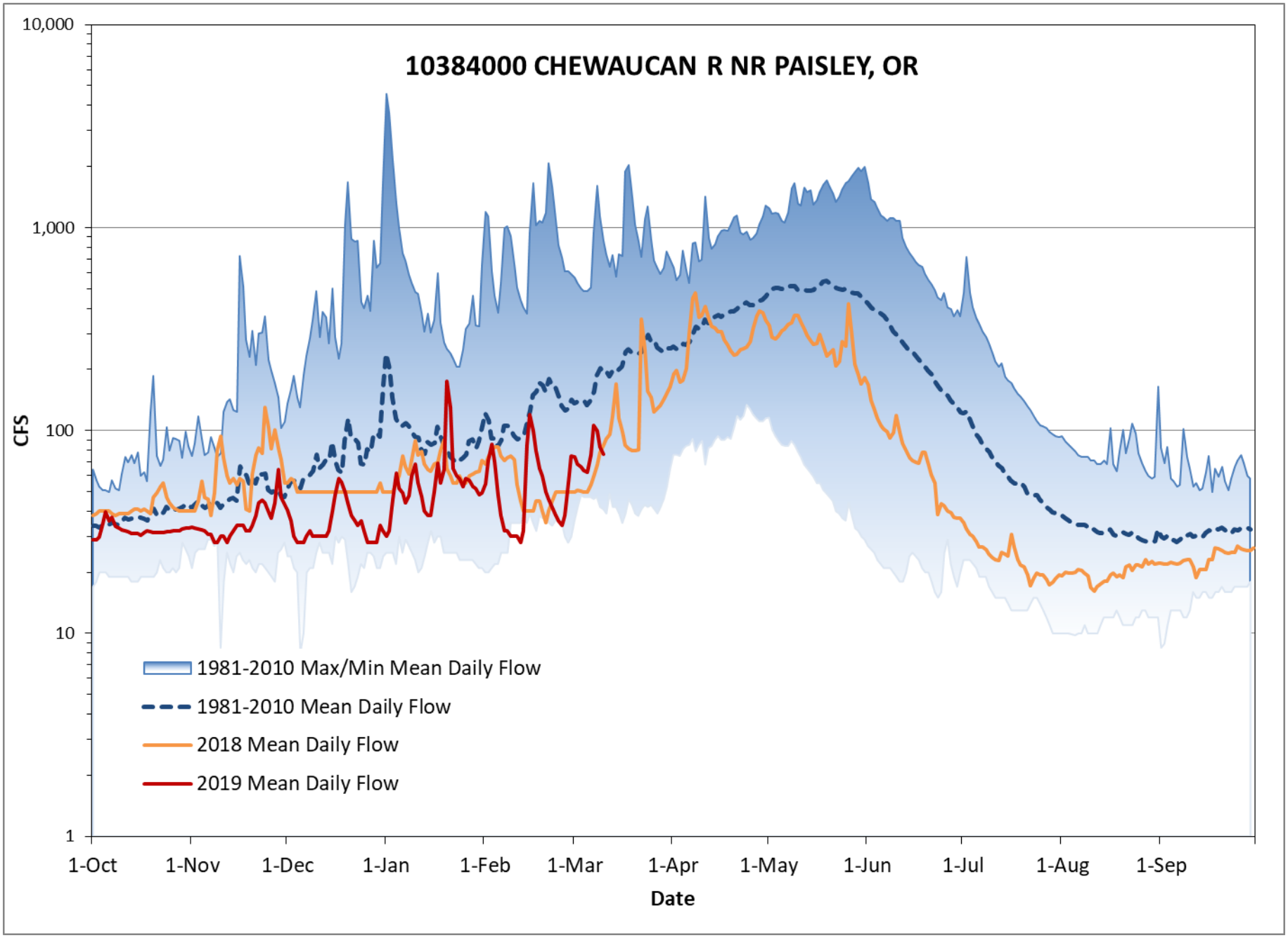


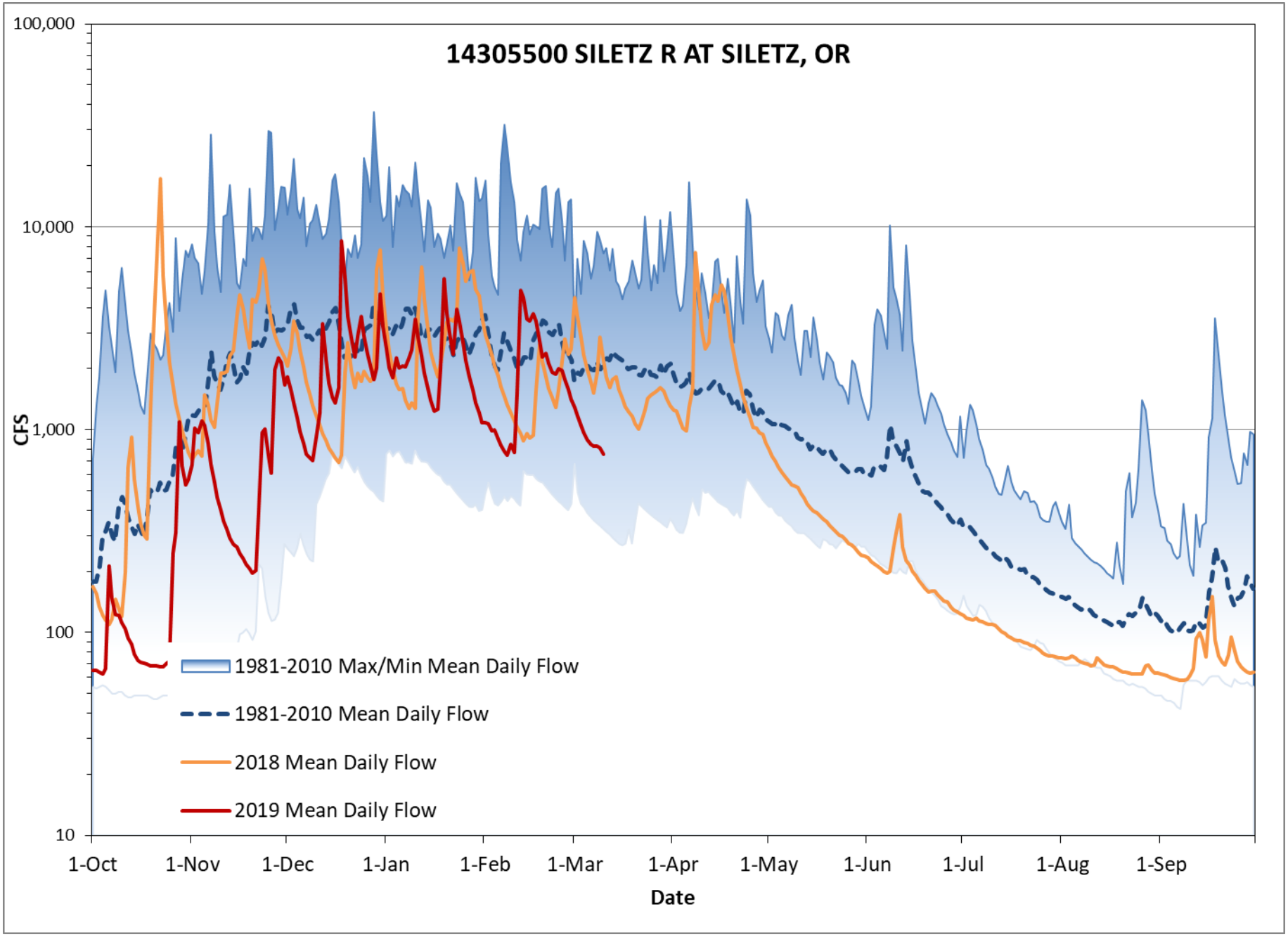
Average streamflow data are based on 30 years of record (1981-2010). All data represent free-flowing streams unaffected by significant man-made control structures such as dams or diversion works.

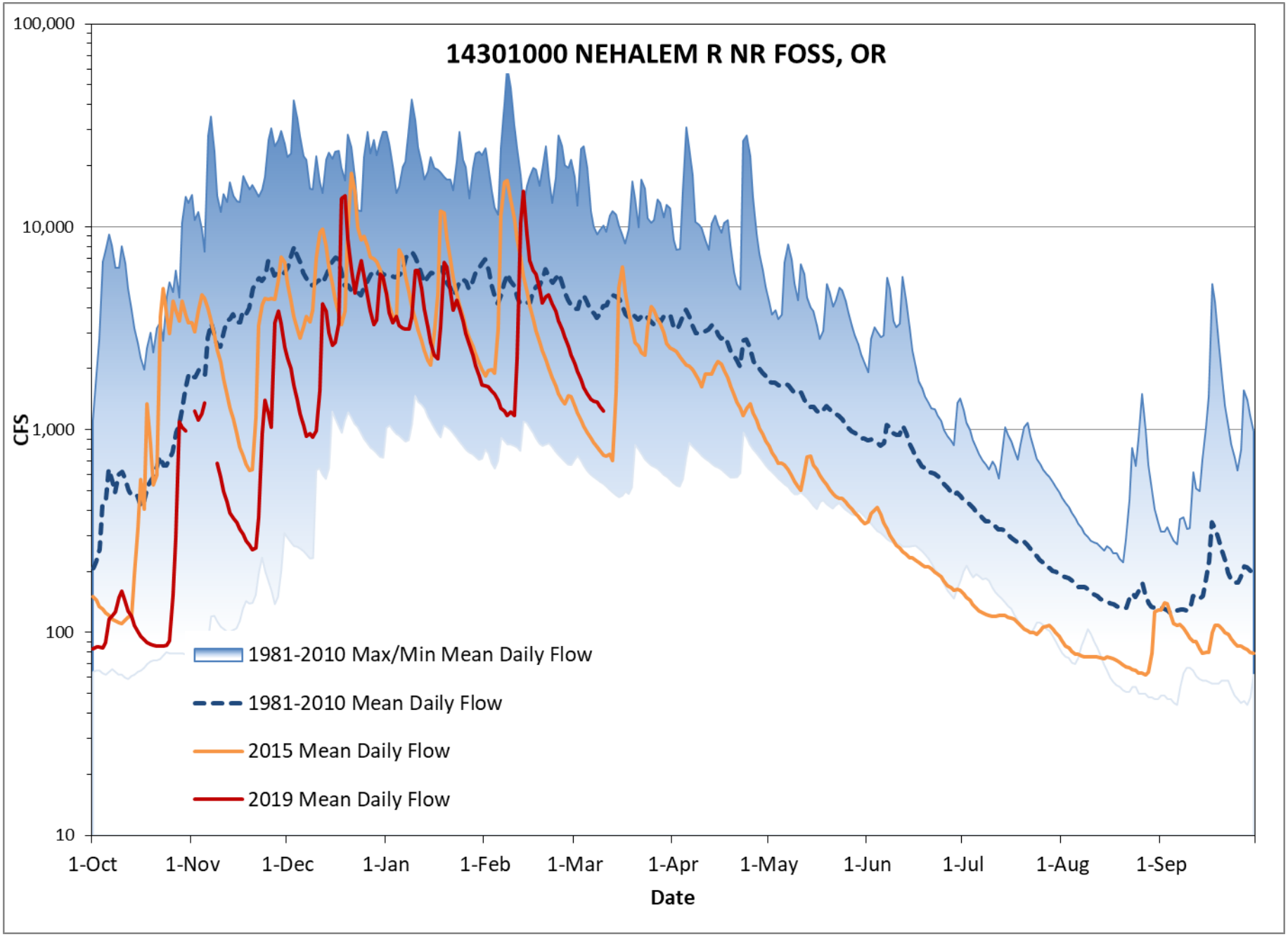

14021000 UMATILLA R AT PENDLETON, OR
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2019 Mean Daily Flow
100,000
10,000
1,000
100
10
CFS
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date


13181000 OWYHEE R NR ROME, OR
100,000
10,000
1,000
100
10
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2019 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
0
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2019 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


10384000 CHEWAUCAN R NR PAISLEY, OR
10,000
1,000
100
10
1
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2018 Mean Daily Flow
2019 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


14305500 SILETZ R AT SILETZ, OR
100,000
10,000
1,000
100
10
CFS
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Date
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2018 Mean Daily Flow
2019 Mean Daily Flow


14301000 NEHALEM R NR FOSS, OR
100,000
10,000
1,000
100
10
CFS
1981-2010 Max/Min Mean Daily Flow
1981-2010 Mean Daily Flow
2015 Mean Daily Flow
2019 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

OREGON
WATER RESOURCES
DEPARTMENT

Thank you.

USGS
science for a changing world

Oregon Water Supply Availability Meeting

March 2019

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

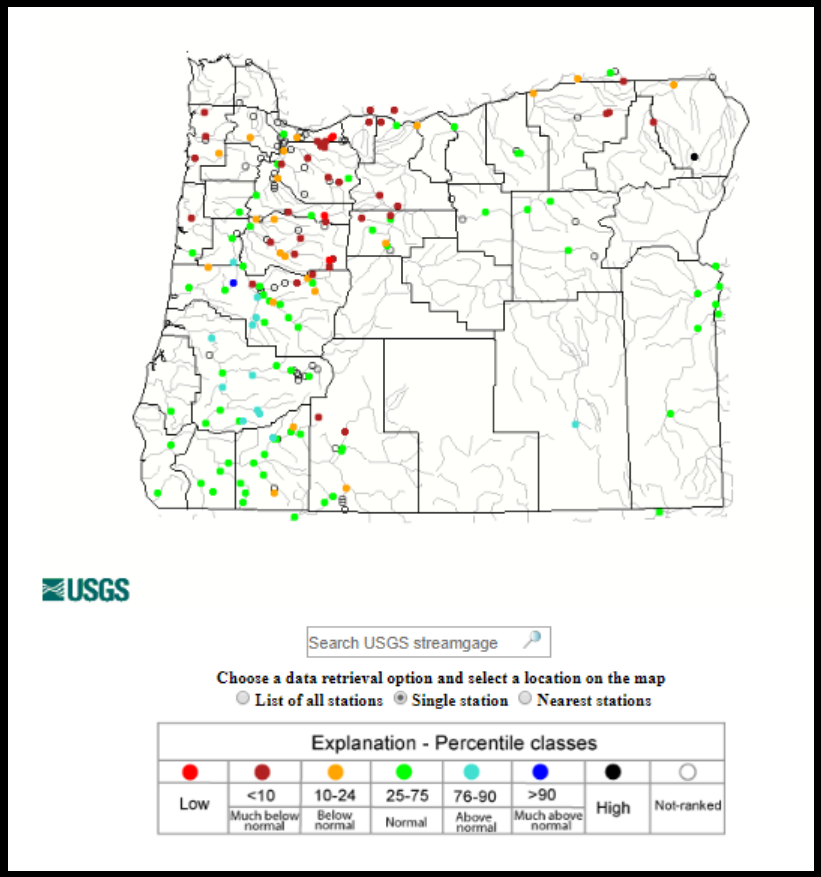
USGS Update on Surface Water Conditions

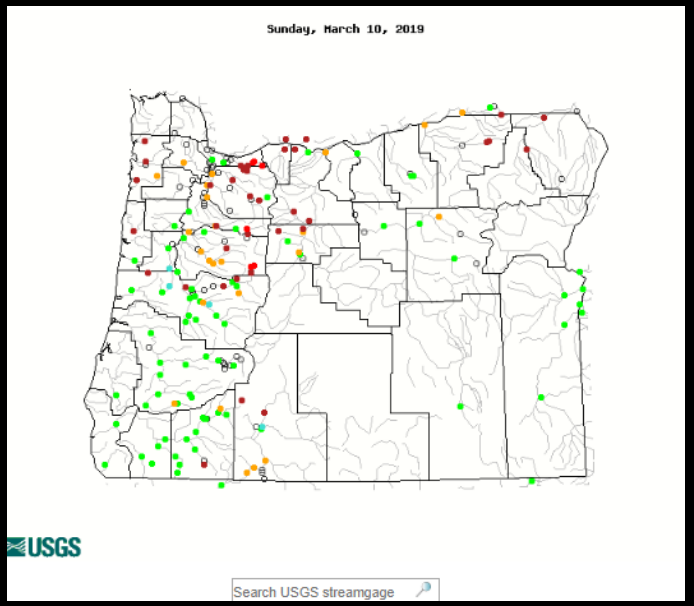
Marc Stewart & Carrie Boudreau

Oregon Water Science Center

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

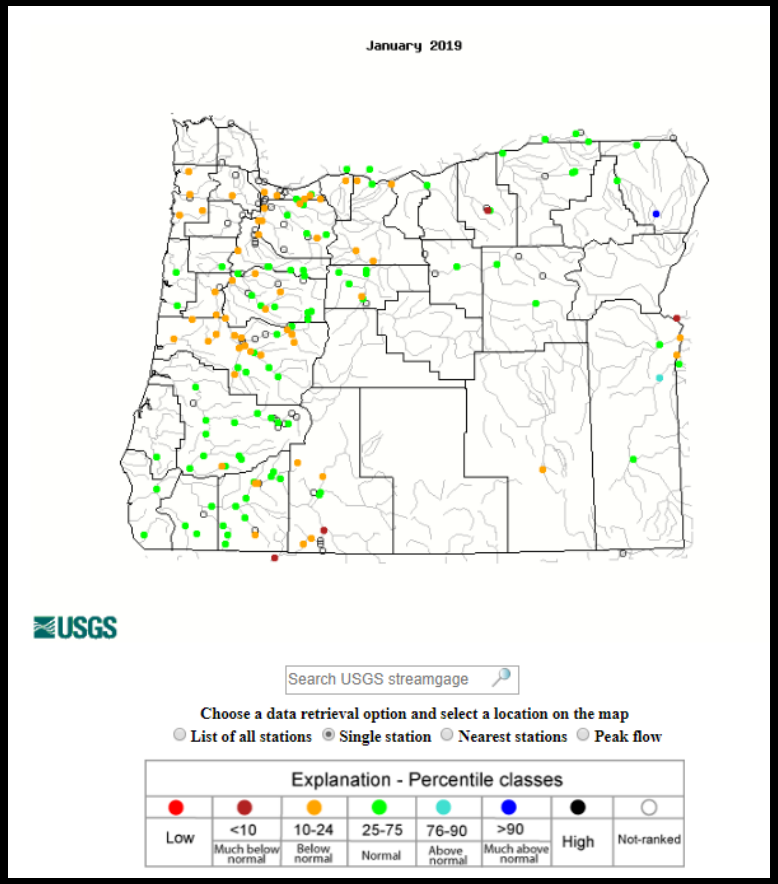
(Below) Daily Streamflow for March 11



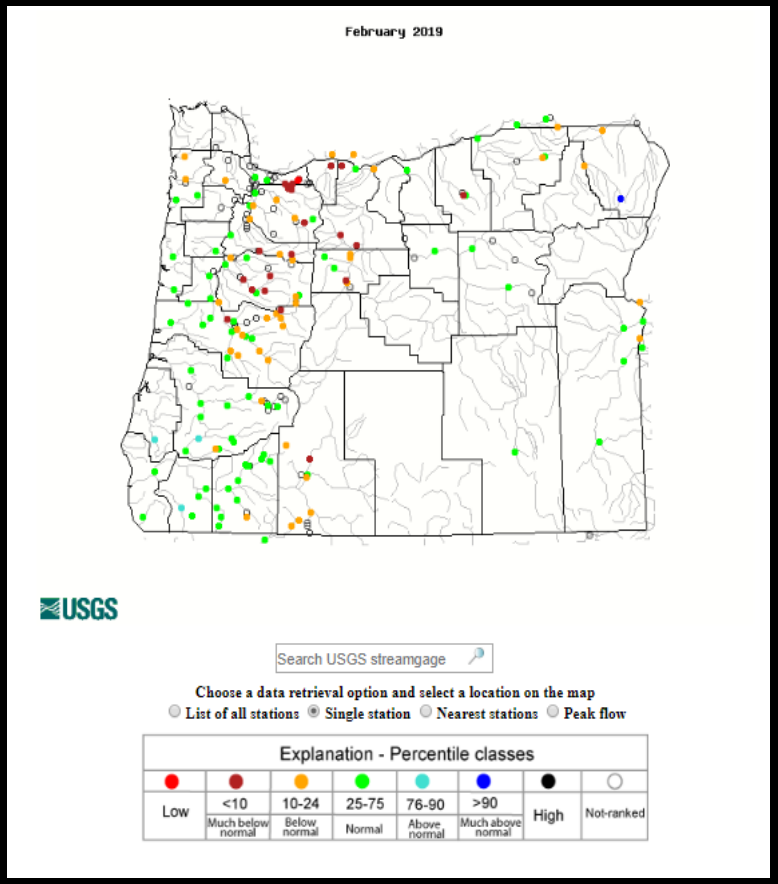


USGS

Map of monthly Streamflow compared to historical streamflow for month of January (2019).



Map of monthly Streamflow compared to historical streamflow for month of February (2019)



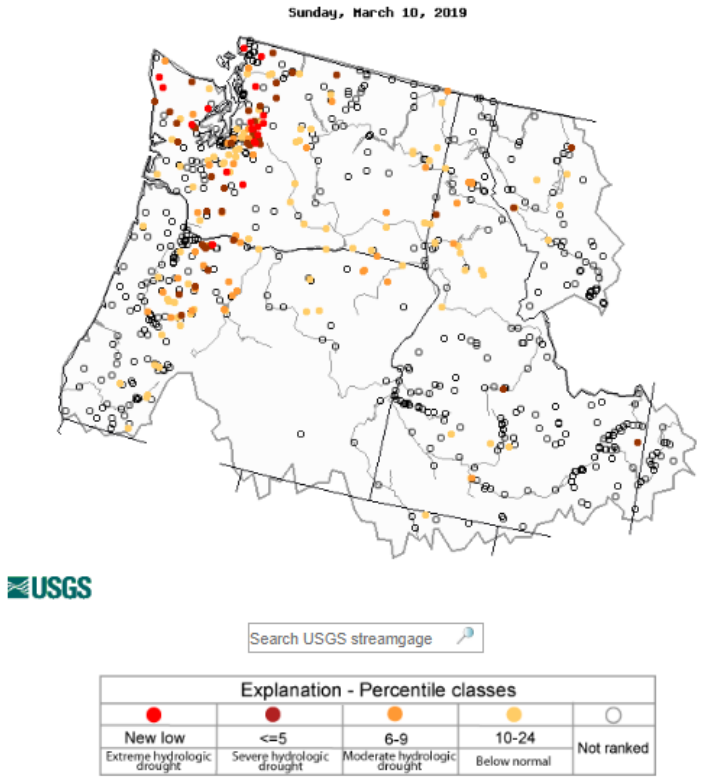
USGS

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 Feb.: Percent of average	Accumulated Runoff For the Period Oct. to Jan.: Percent of average
Donner Und Blitzen nr Frenchglen	Harney	70	76	150	58	51
(*)Deep Creek above Adel	Lake County	47	39	68	36	34
(*)Chewaucan River near Paisley	Lake County	54	43	-7	56	61
Williamson River near Chiloquin	Klamath	740	58	9	69	73
Owyhee River near Rome	Owyhee	488	41	118	48	54
(*)NF Malheur River near Beulah	Malheur	60	51	58	65	71
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	1,710	53	30	65	72
Umatilla River nr Gibbon	Umatilla Lower John Day	196	55	-28	82	95
John Day River at Service Crk	Upper John Day	1,460	56	76	52	49
(*)Little Deschutes River nr LaPine	Upper Deschutes	78	44	-4	56	61
Hood River nr Hood River	Lower Deschutes Mt.Hood	580	40	-36	61	68
Willamette River at Salem	Willamette	24,946	74	-7	55	51
Wilson River near Tillamook	North Coast	1,210	59	-32	68	70
Umpqua River near Elkton	Rogue/Umpqua	15,777	118	57	66	50
Rogue River near Agness	Rogue/Umpqua	12,056	128	41	77	61
SF Coquille River at Powers	South Coast	2,336	150	32	86	66
Chetco River near Brookings	South Coast	5,676	123	17	78	65

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

3/1/2019

Second Column From last Month (Oct –Jan) Some improvement in the South when looking at accumulated runoff.



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

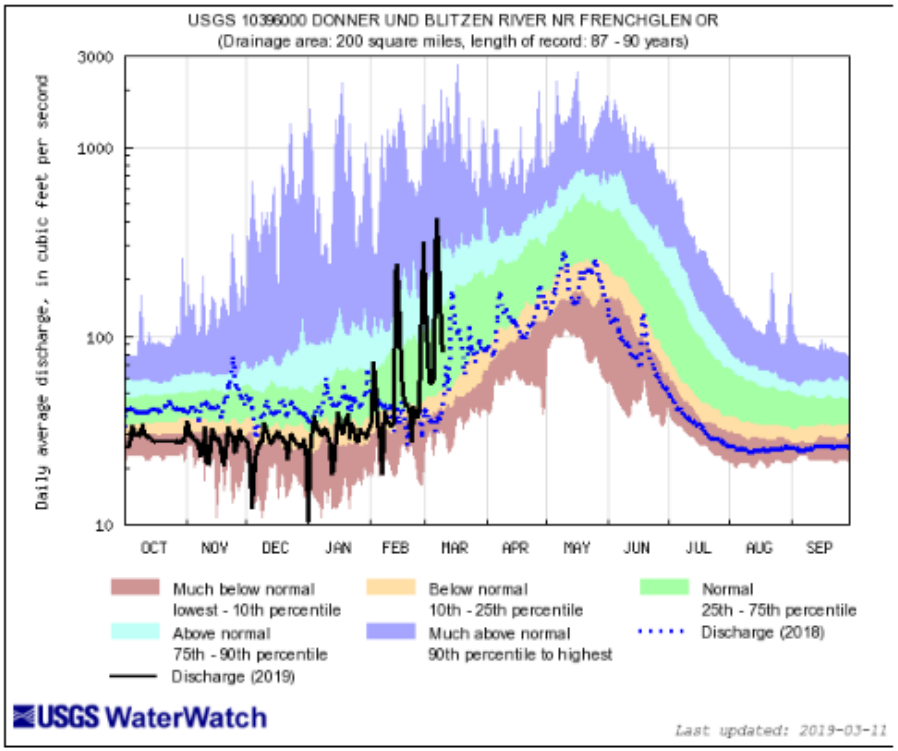
		Accumulated Runoff from Oct to Feb % of Average											
		2019/02	2018/02	2017/02	2016/02	2015/02	2014/02	2013/02	2012/02	2011/02	2010/02	2009/02	2008/02
10396000	Donner French Glen	58	70	75	92	89	69	70	93	191	75	61	61
11502500	Williamson River Chiloquin	69	72	105	83	86	62	69	66	82	63	62	64
13181000	Owyhee River	48	58	219	118	93	42	30	49	154	36	35	28
13333000	Grande Ronde	65	138	110	99	148	91	74	72	108	53	82	56
14033500	Umatilla River	82	167	110	115	152	99	82	82	116	63	91	65
14046500	John Day Service Creek	52	62	130	111	129	59	59	49	156	47	49	53
14120000	Hood River nr Hood River	61	124	106	128	119	90	83	100	117	72	83	97
14191000	Willamette River Salem	55	88	119	107	100	77	97	85	100	68	74	91
14301500	Wilson River Tillamook	68	114	134	154	106	79	104	90	112	90	86	107
14321000	Umpqua river Elkton	66	58	155	134	103	56	101	61	98	52	72	104
14372300	Rogue River Agness	77	58	209	124	95	39	104	54	89	54	55	90
14400000	Chetco River	78	70	156	113	99	47	98	68	92	83	75	100
	Avg Feb	**64.9**	89.9	135.7	114.8	109.9	67.5	80.9	72.4	117.9	**63.0**	68.8	76.3
		**	**	**	**	**	*	*	*	*	*	*	*
		**	Percent of average computed using 30-year base period, water years 1981-2010										
		*	Percent of average computed using 30-year base period, wtr yrs 1971-2000										

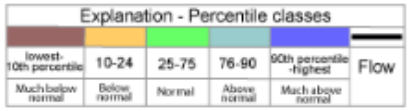
Subset of Sites by basin with % of average numbers pulled from the 2008- 2019 reports for the month of Feb.

“Accumulated Runoff Oct to Feb in % of Average

USGS

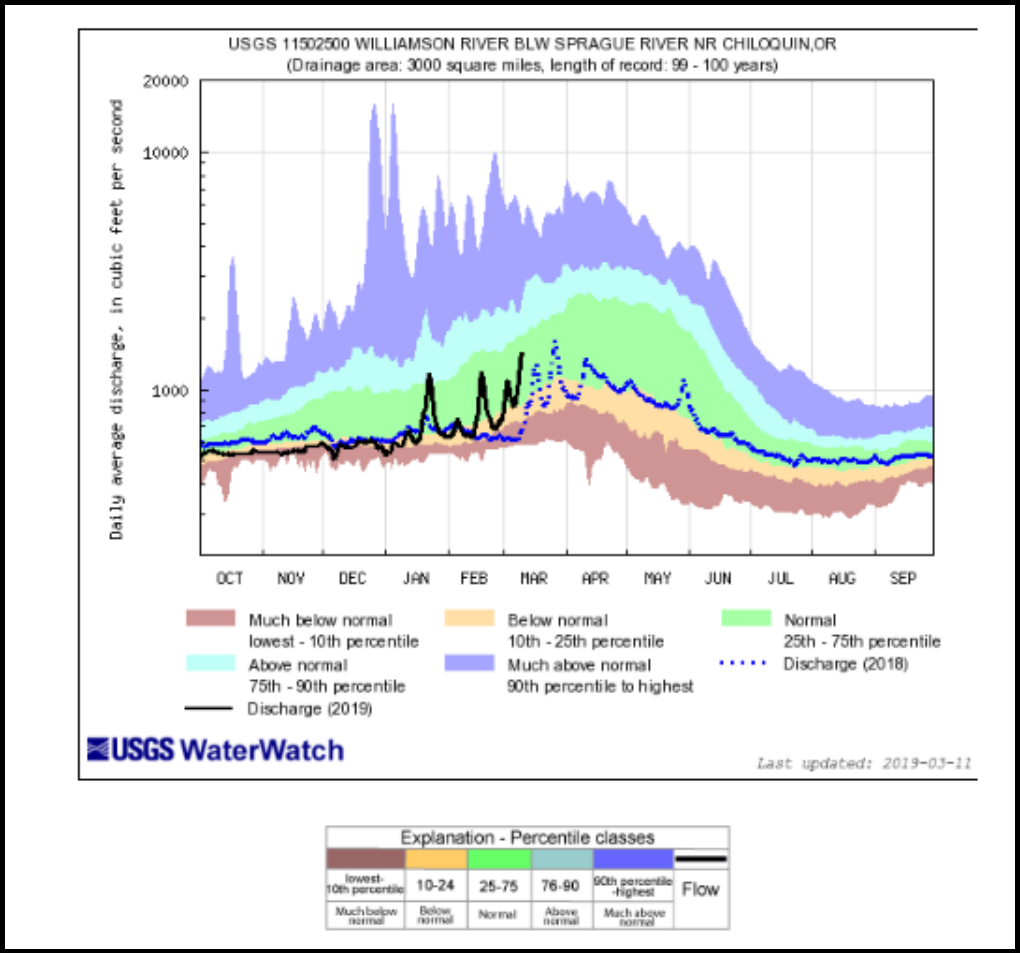
1039600. (Black line Discharge 2019 & Blue dotted line Discharge 2018)



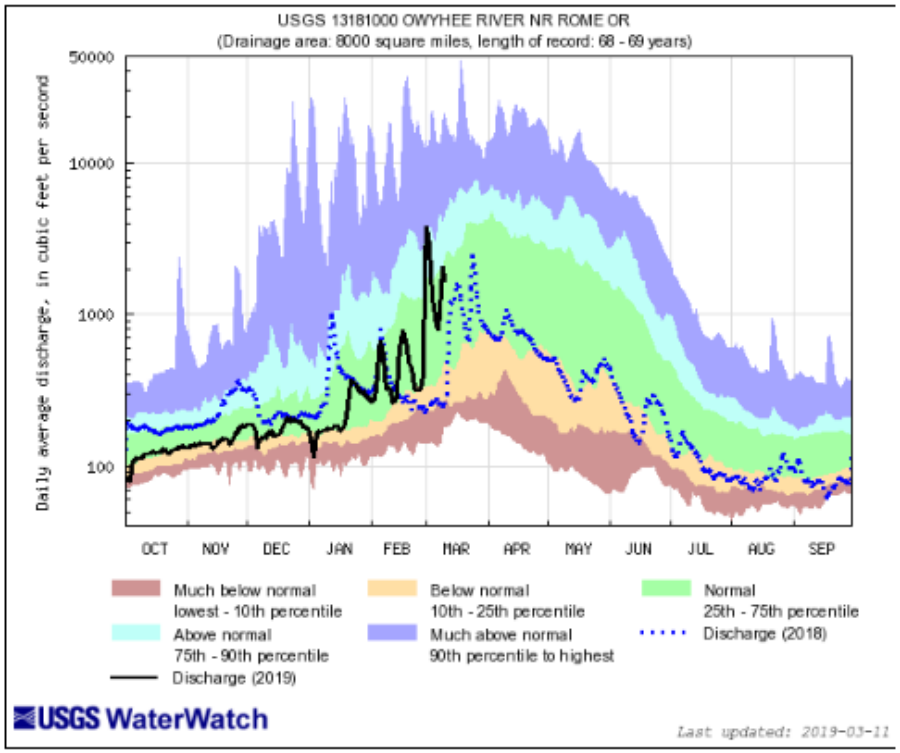


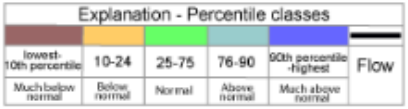
USGS

11502500. (Black line Discharge 2019 & Blue dotted line Discharge 2018)



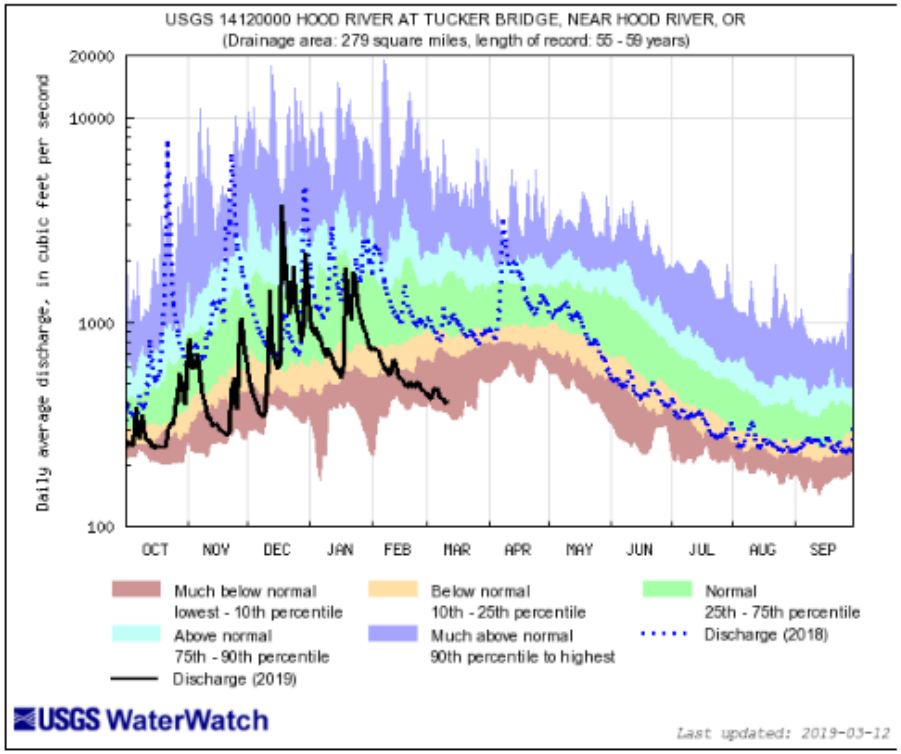
13181000. (Black line Discharge 2019 & Blue dotted line Discharge 2018)

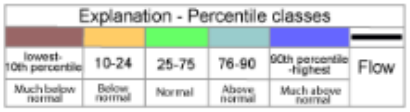




USGS

14120000. (Black line Discharge 2019 & Blue dotted line Discharge 2018)





USGS

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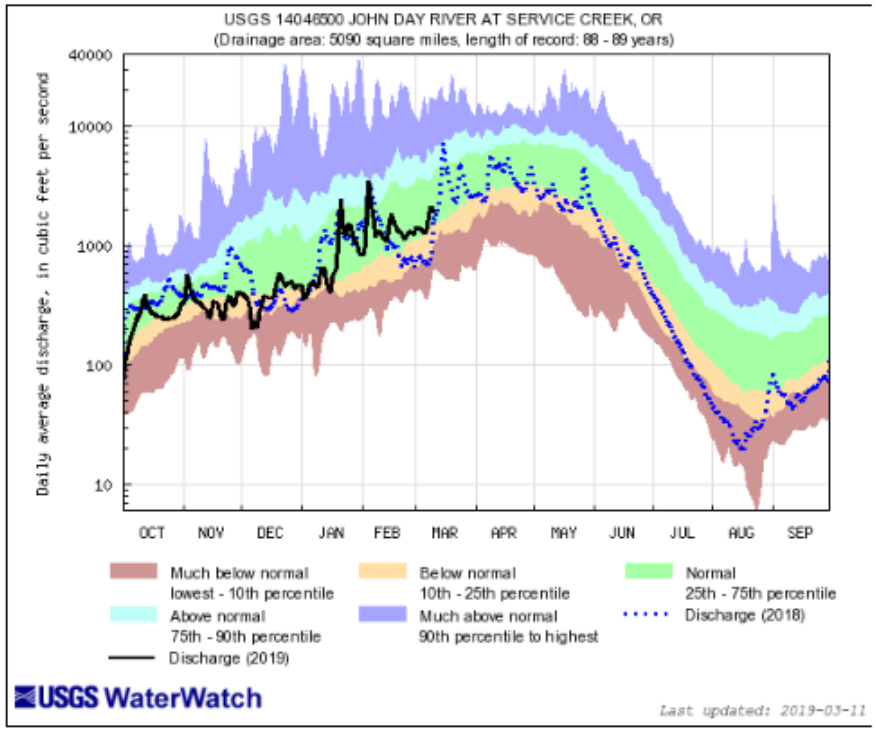

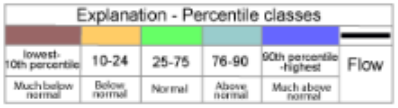

USGS

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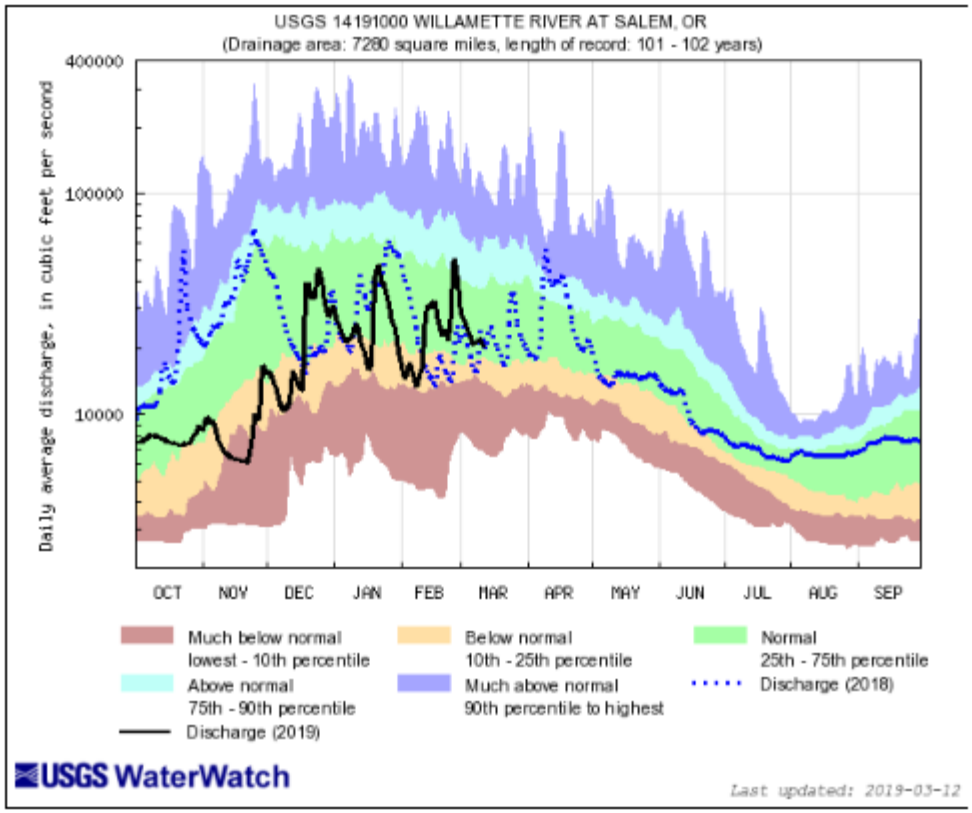
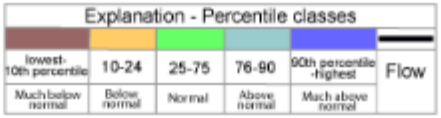
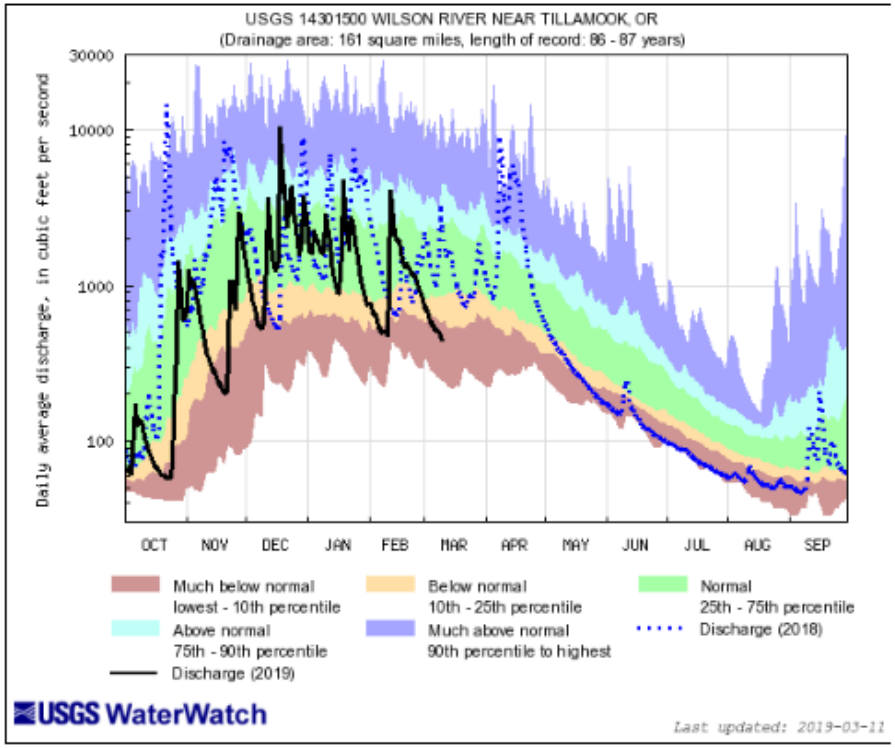


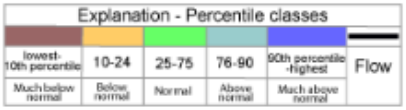


USGS

14301500

(Black line Discharge 2019 & Blue dotted line Discharge 2018)

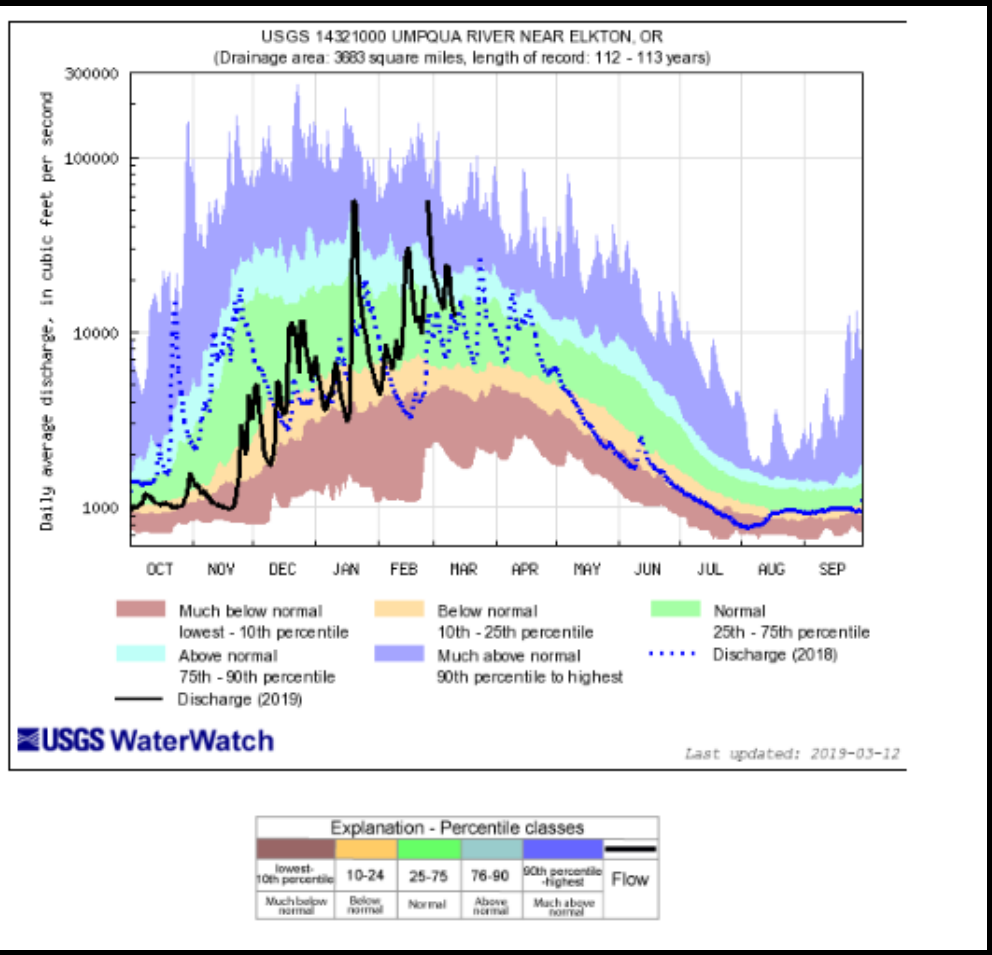




USGS

14321000

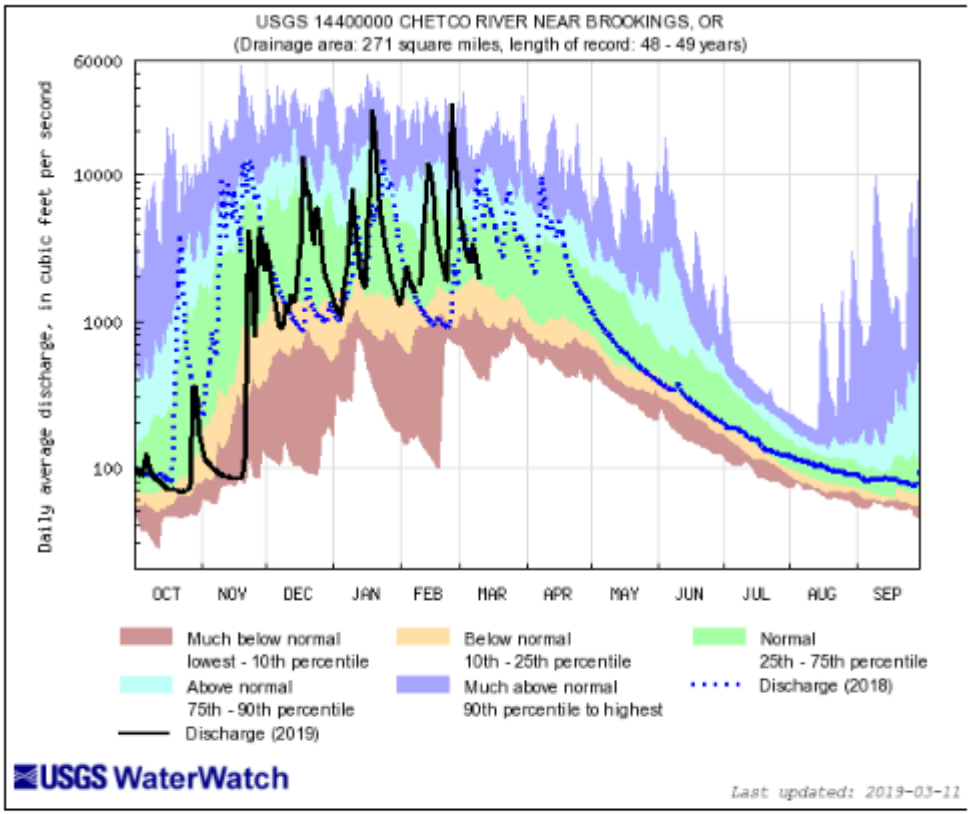
(Black line Discharge 2019 & Blue dotted line Discharge 2018)

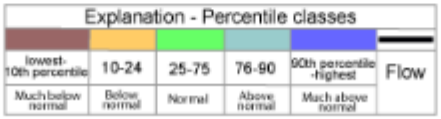


USGS

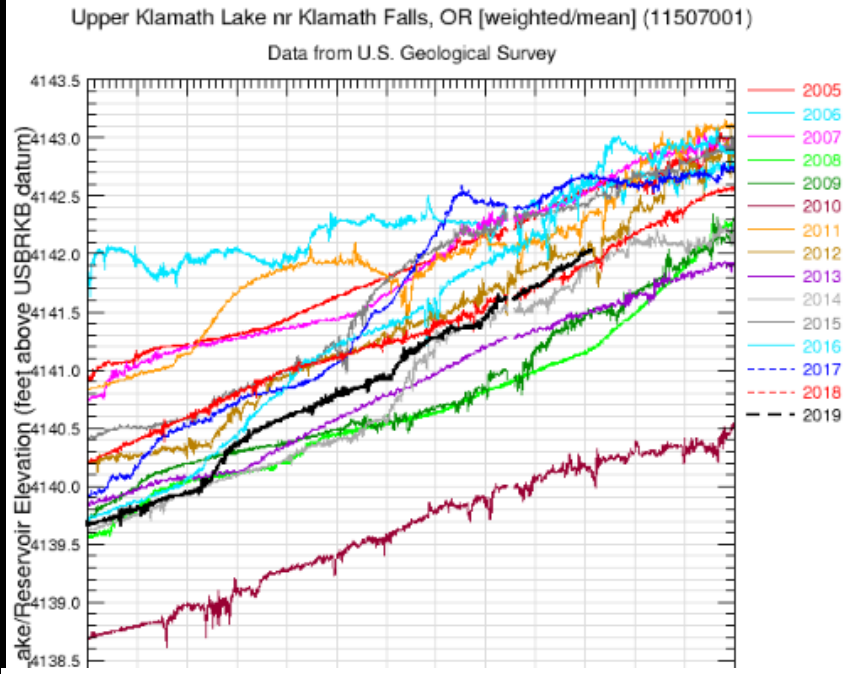
14400000

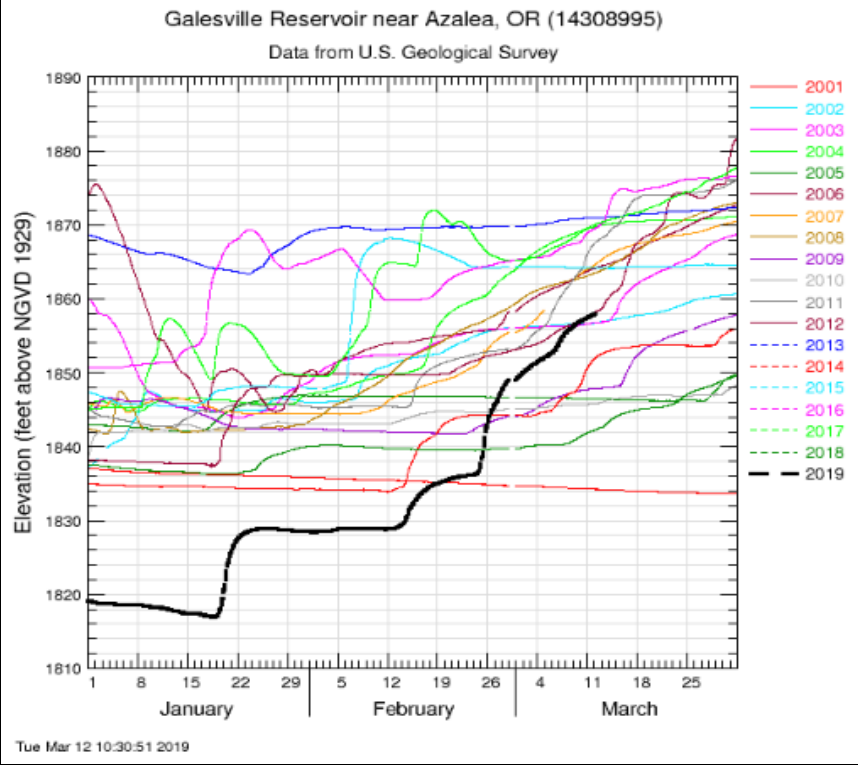
(Black line Discharge 2019 & Blue dotted line Discharge 2018)





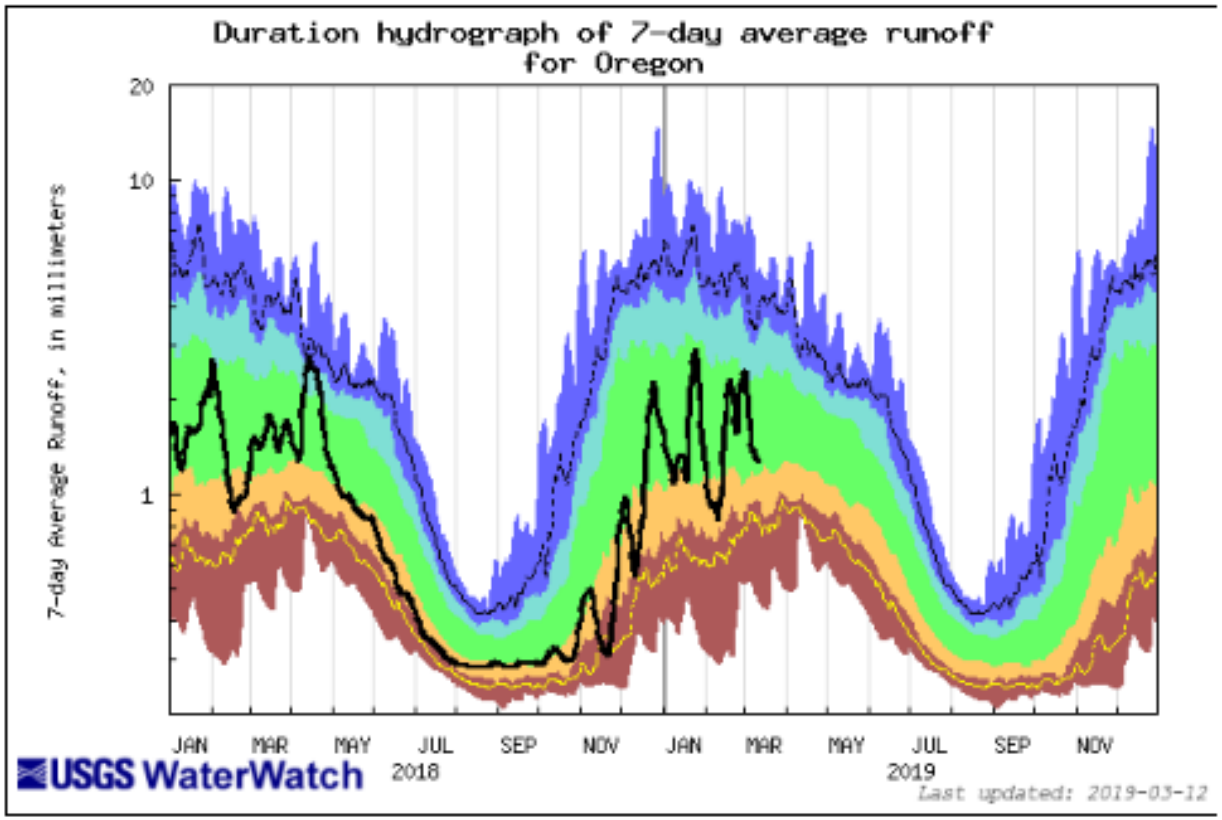
USGS





Klamath Lake & Douglas Reservoir

Jan – March Black Line 2019



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

RECLAMATION

Managing Water in the West

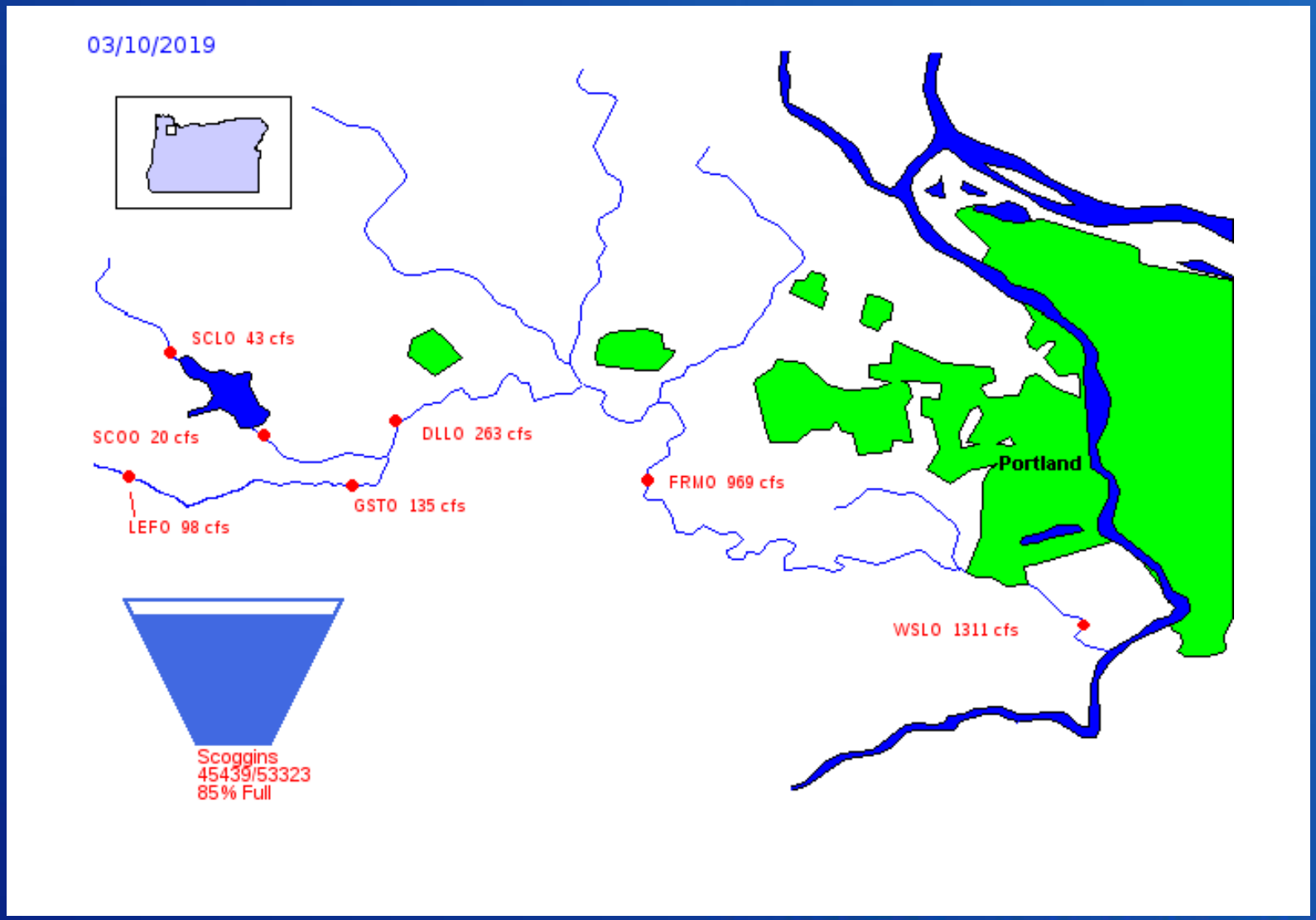
Oregon Water Supply Availability Committee Meeting

Pacific Northwest Regional Office
River and Reservoir Operations
Mar 11, 2019

U.S. Department of the Interior
Bureau of Reclamation

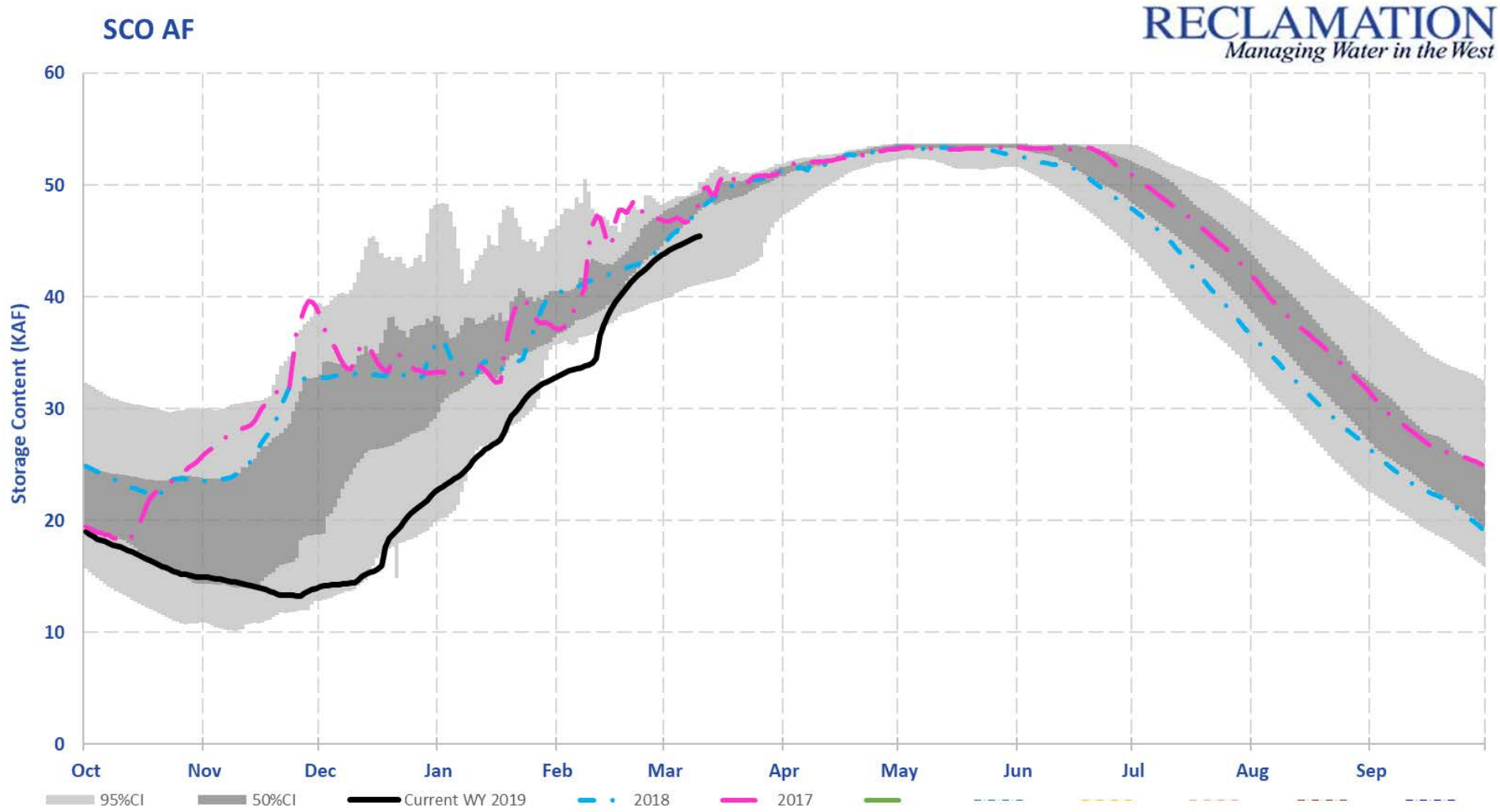
Current Conditions

Tualatin River Basin



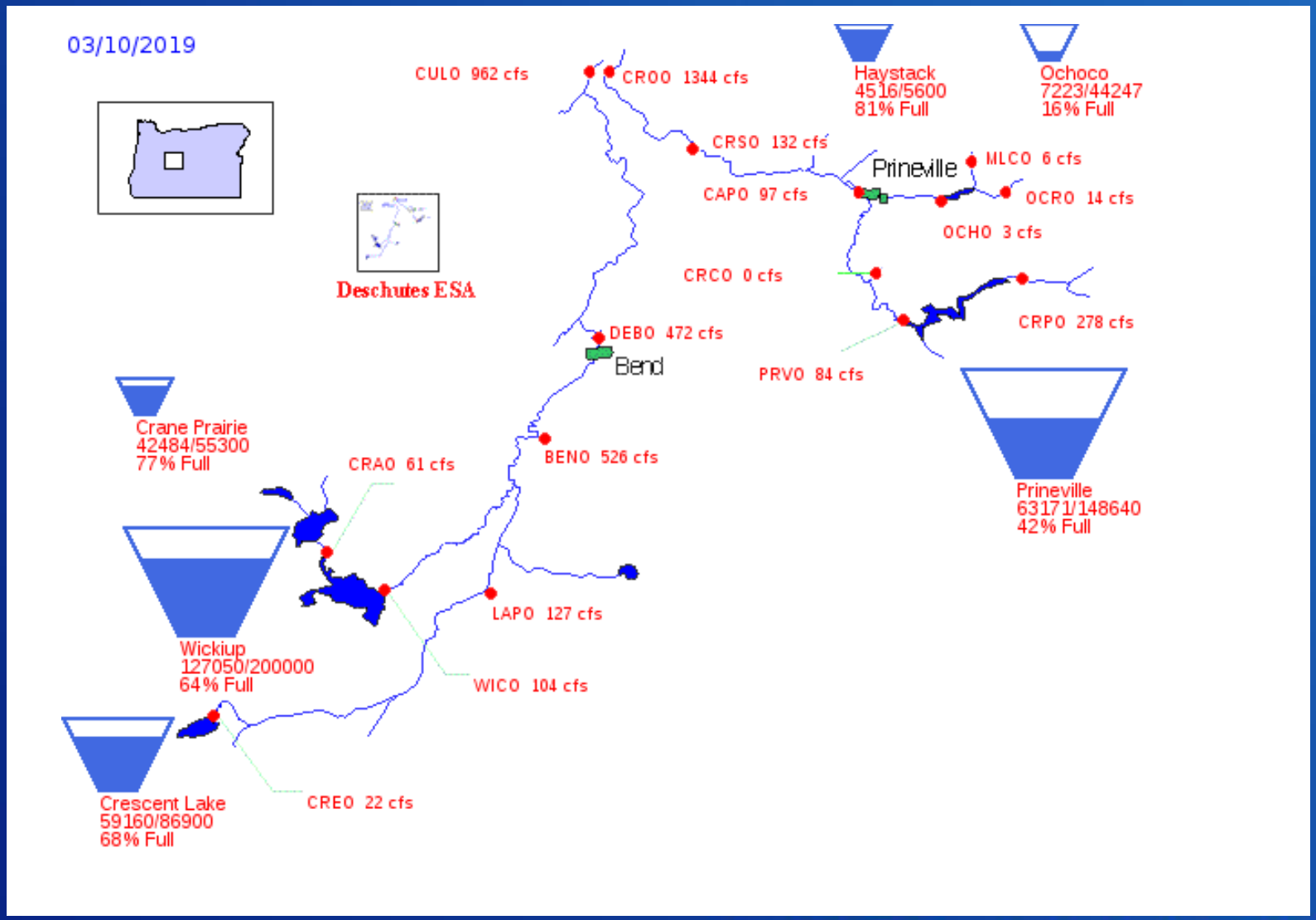
RECLAMATION

Tualatin River Basin: Scoggins



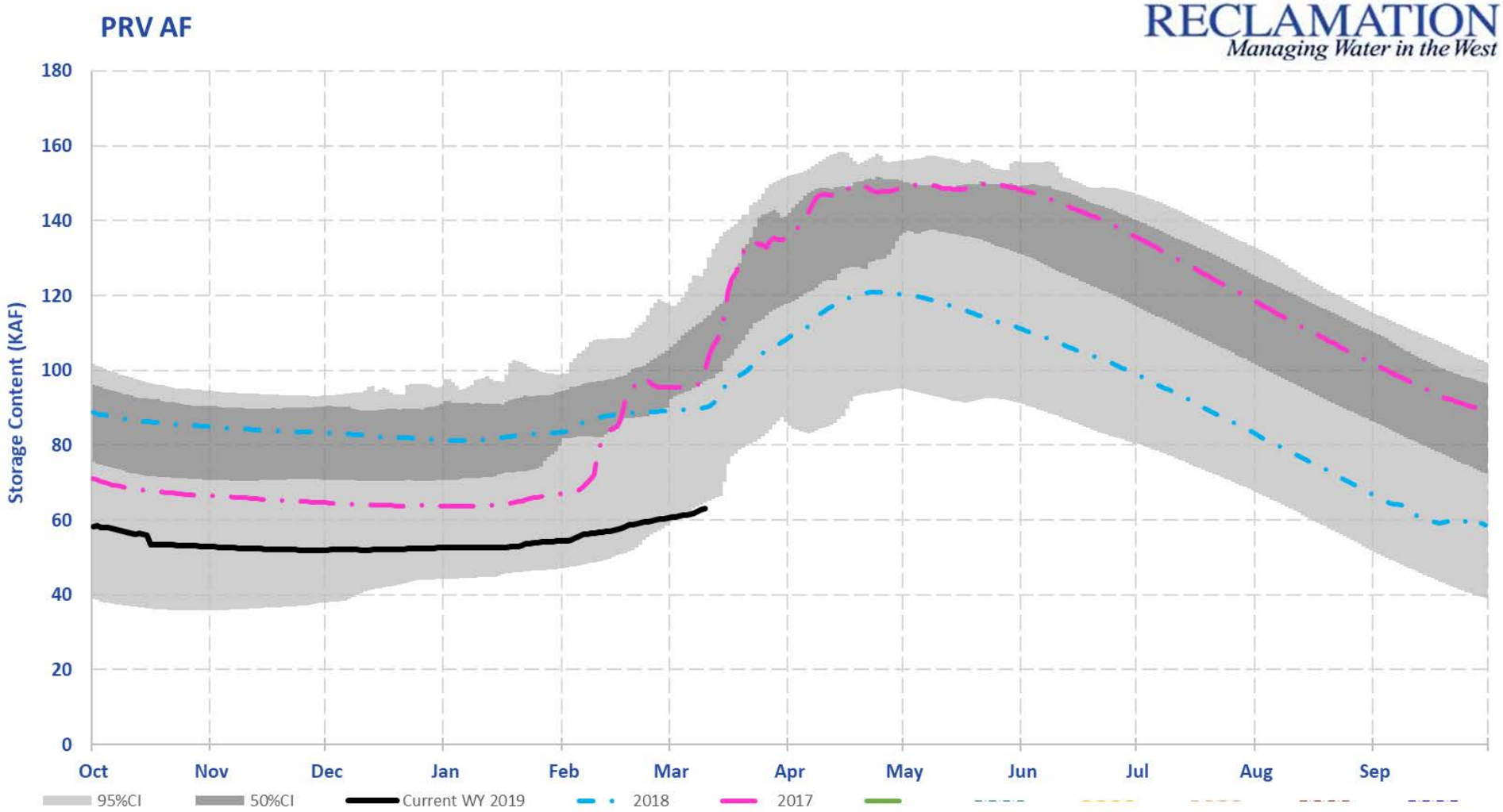
RECLAMATION

Deschutes River Basin



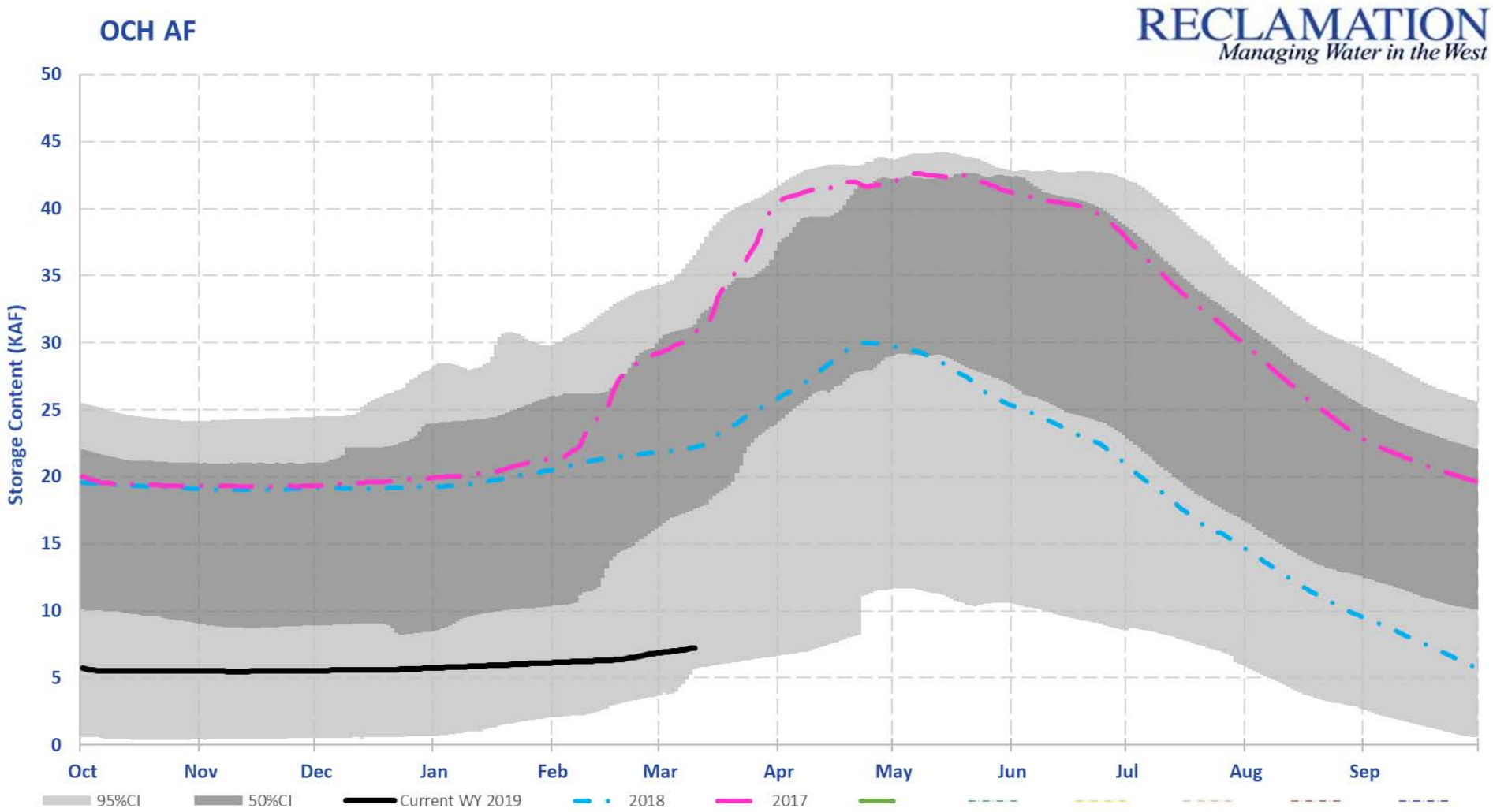
RECLAMATION

Deschutes River Basin: Prineville



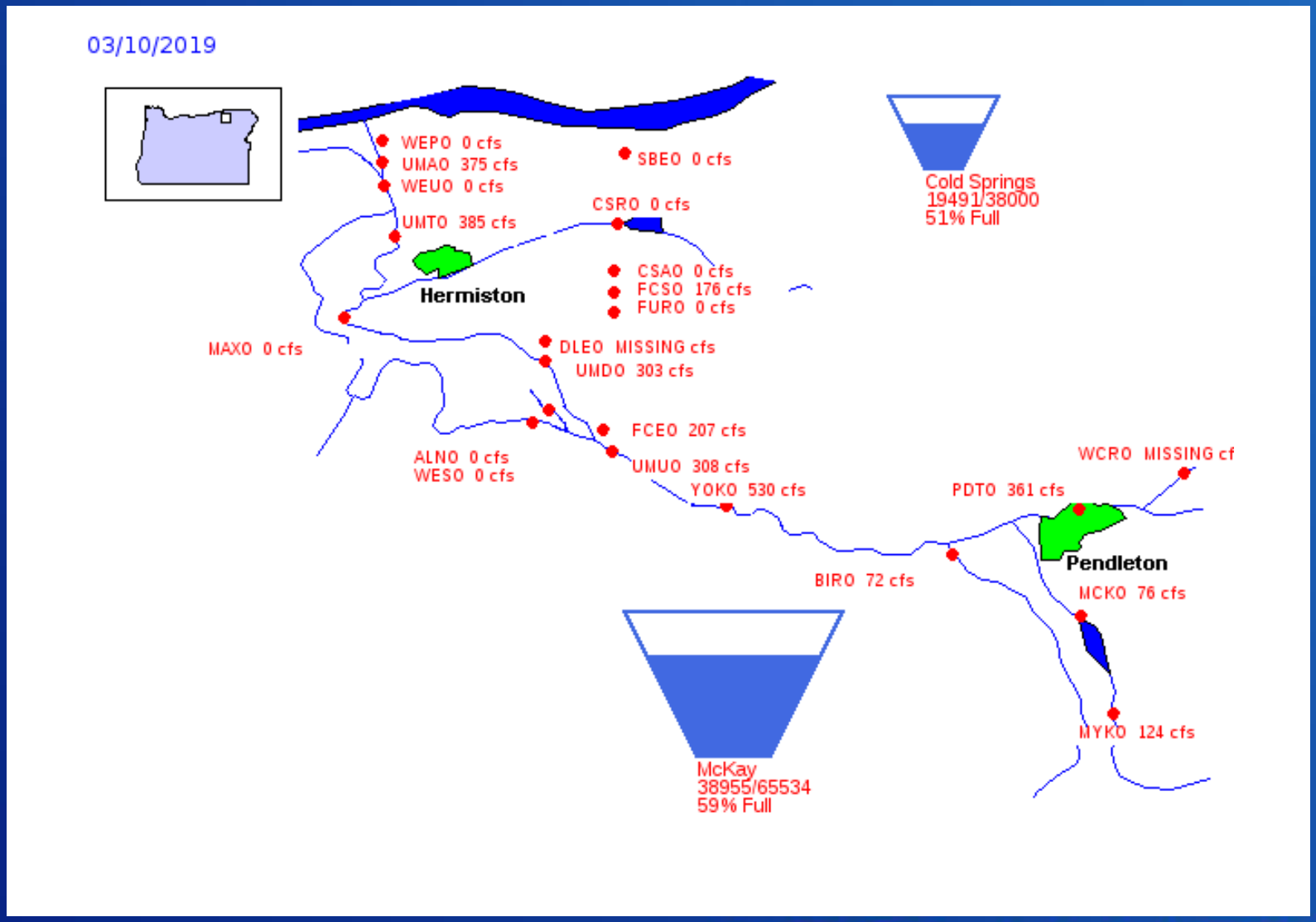
RECLAMATION

Deschutes River Basin: Ochoco



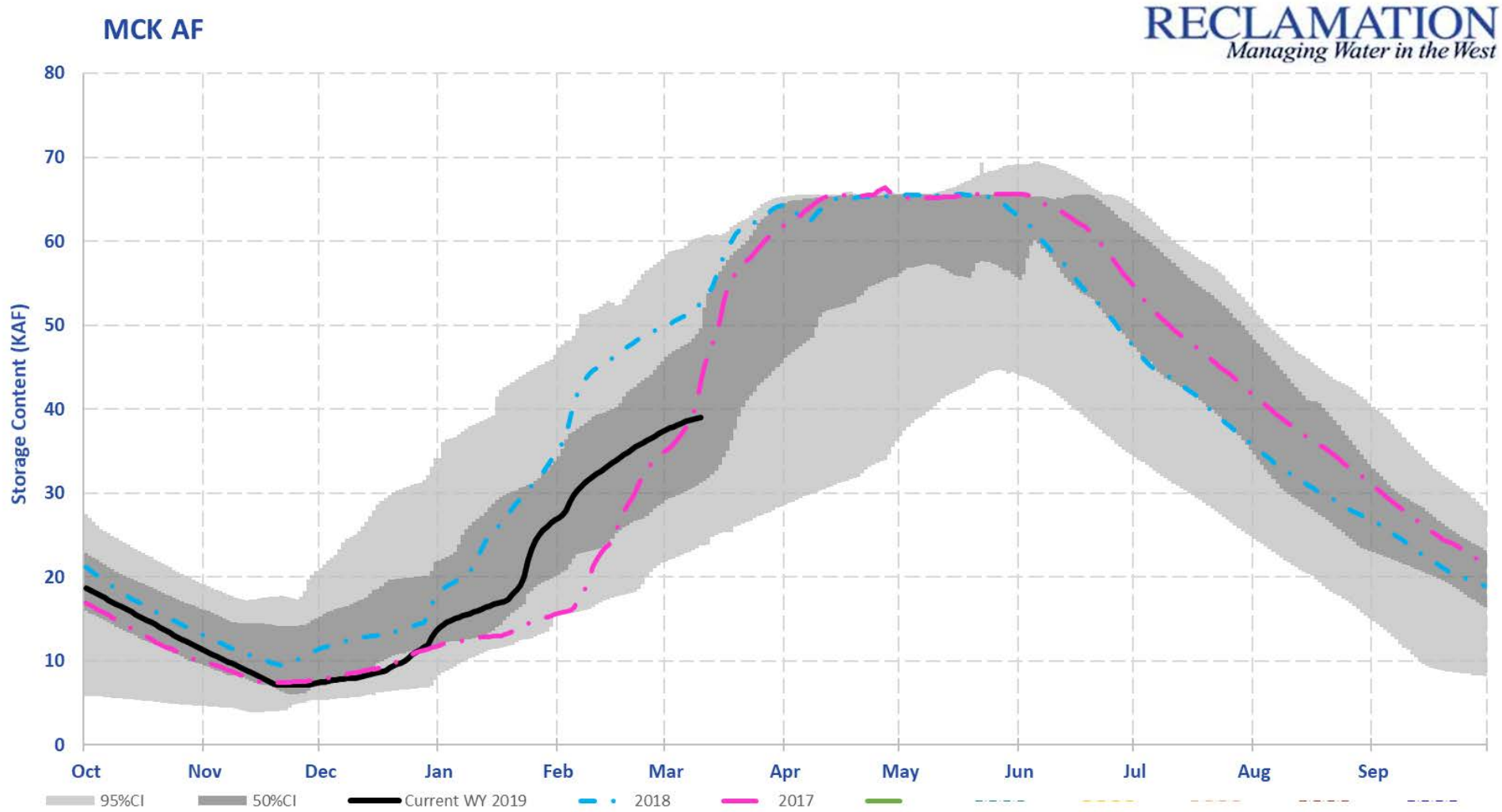
RECLAMATION

Umatilla River Basin



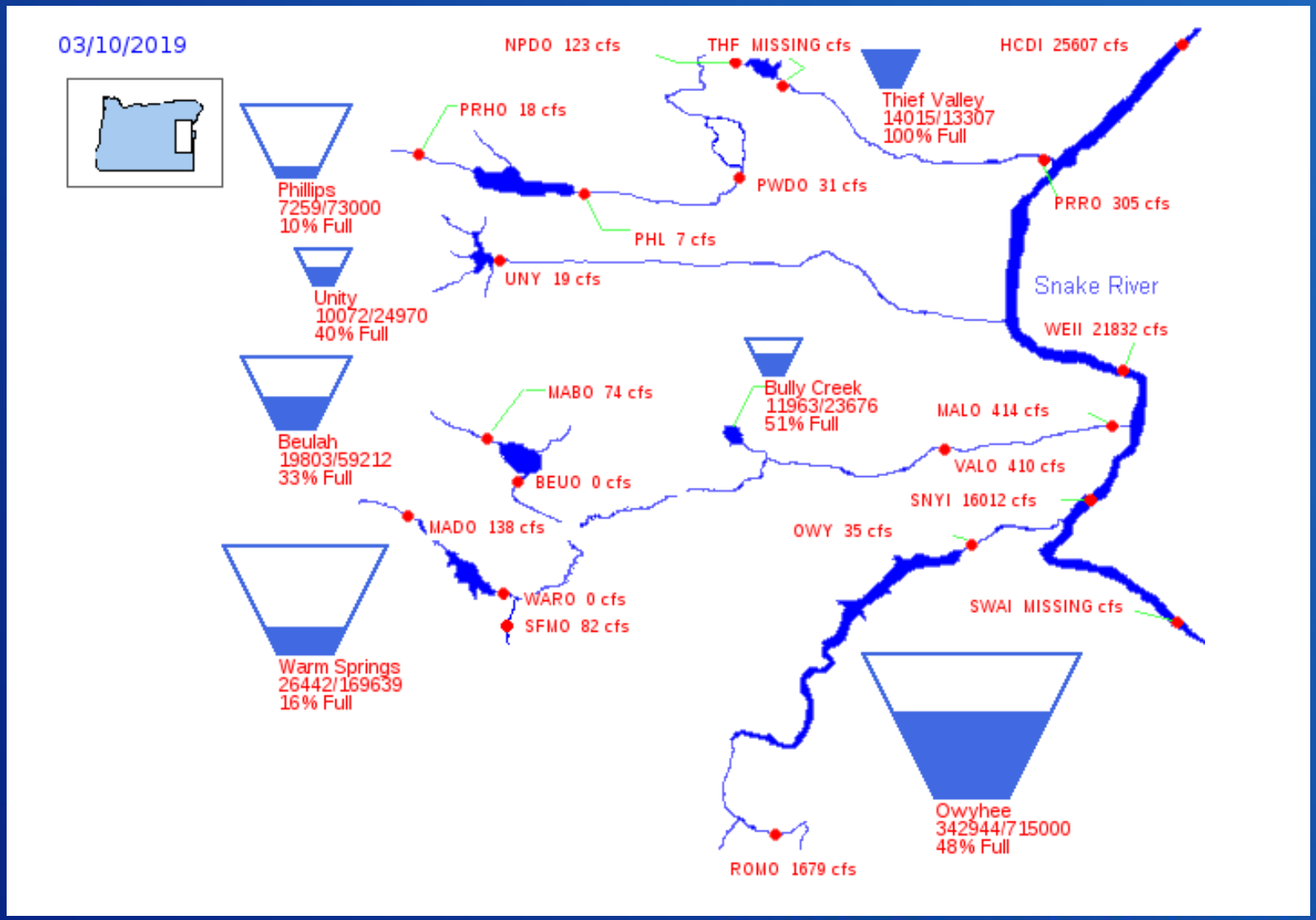
RECLAMATION

Umatilla River Basin: McKay



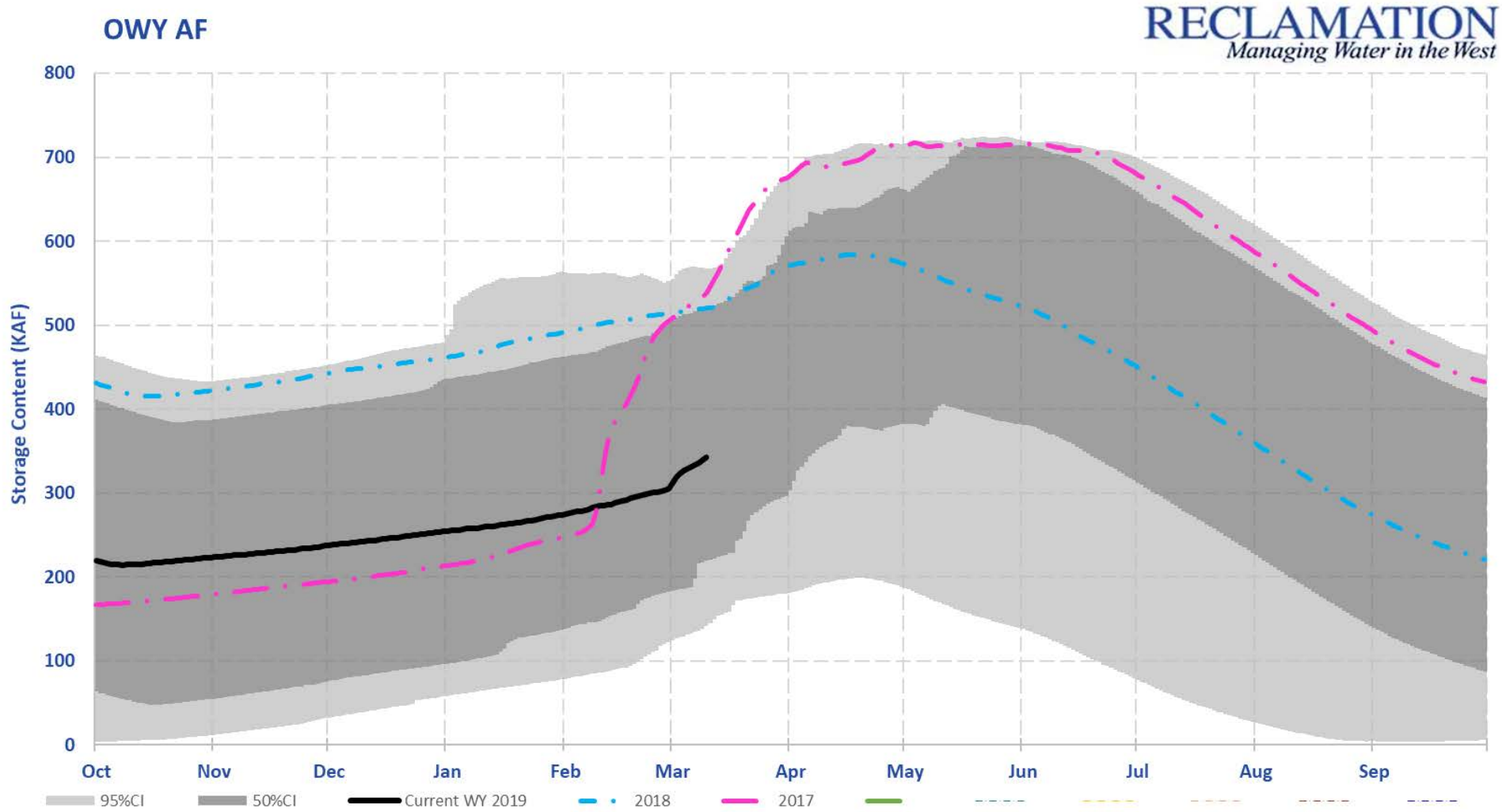
RECLAMATION

Southeastern Oregon



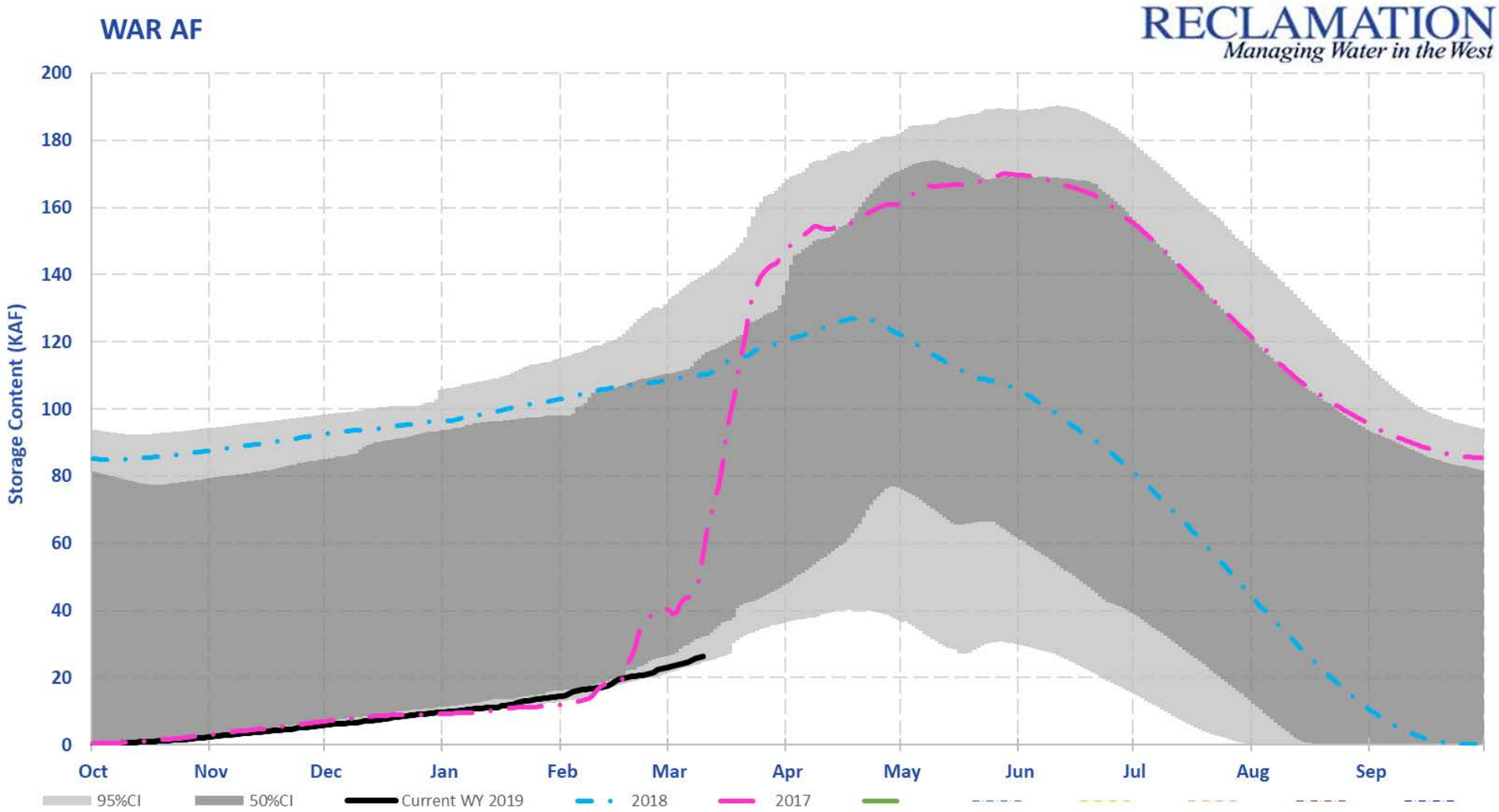
RECLAMATION

Owyhee River Basin: Owyhee



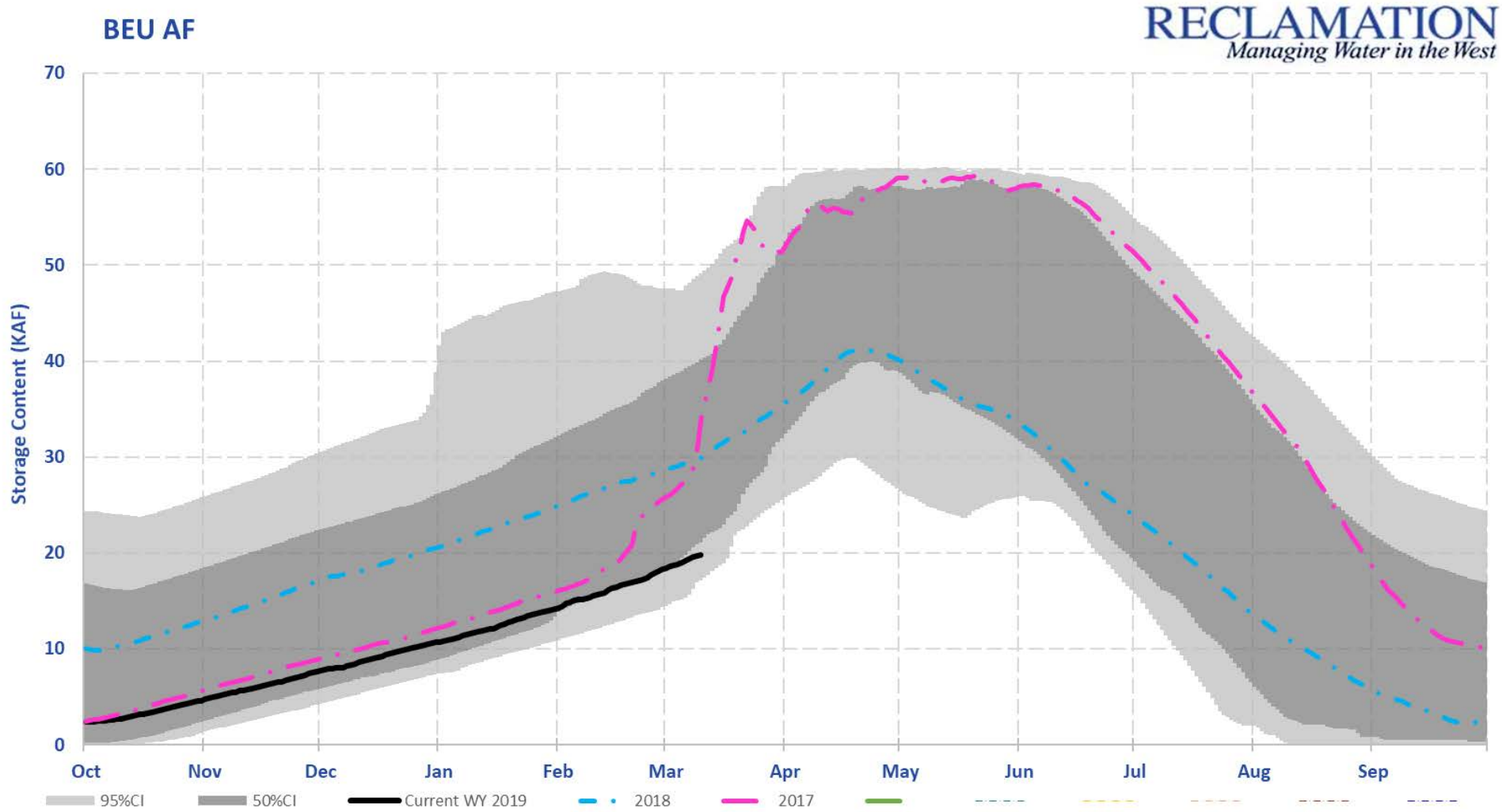
RECLAMATION

Malheur River Basin: Warm Springs



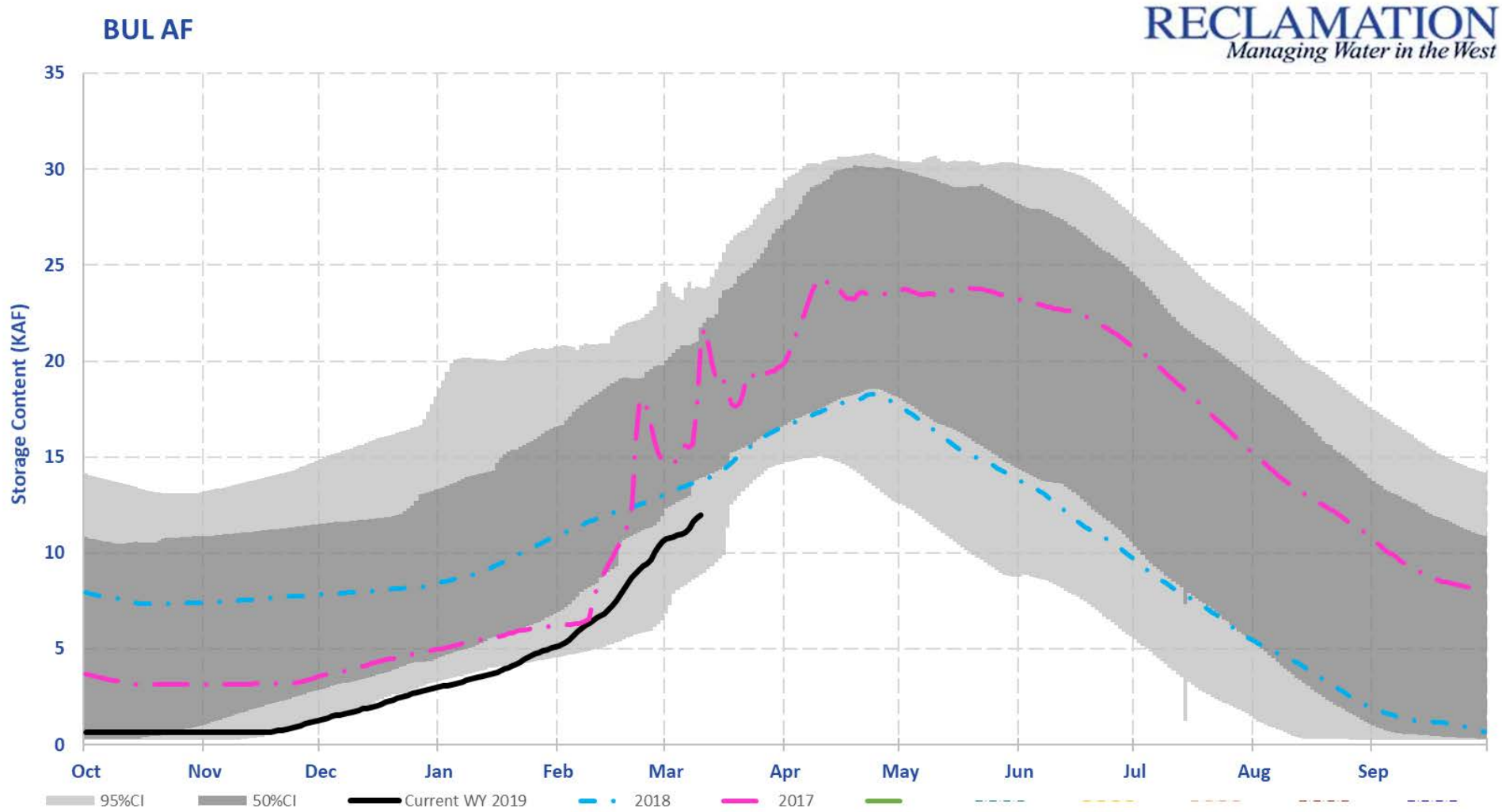
RECLAMATION

Malheur River Basin: Beulah



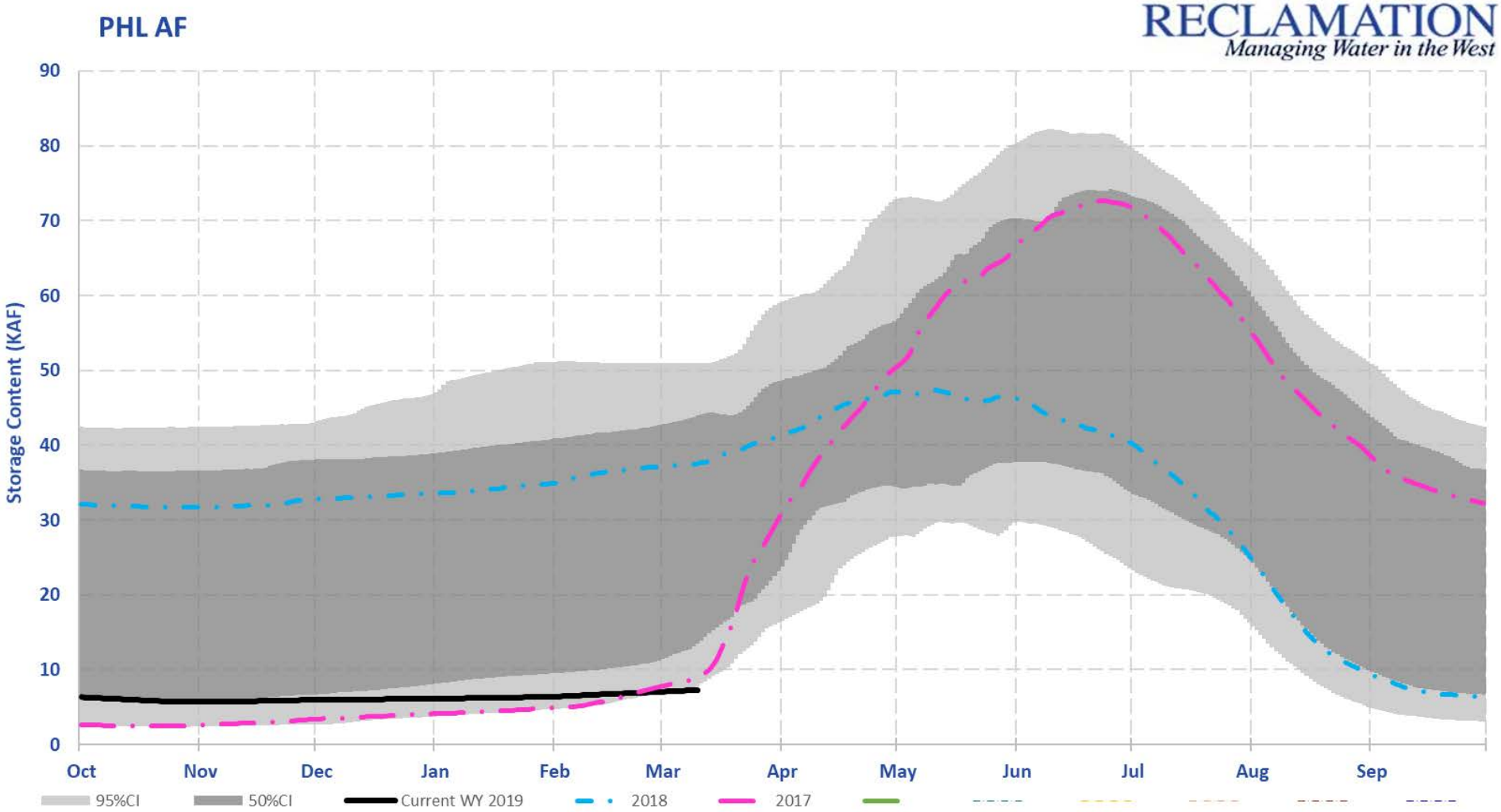
RECLAMATION

Malheur River Basin: Bully Creek



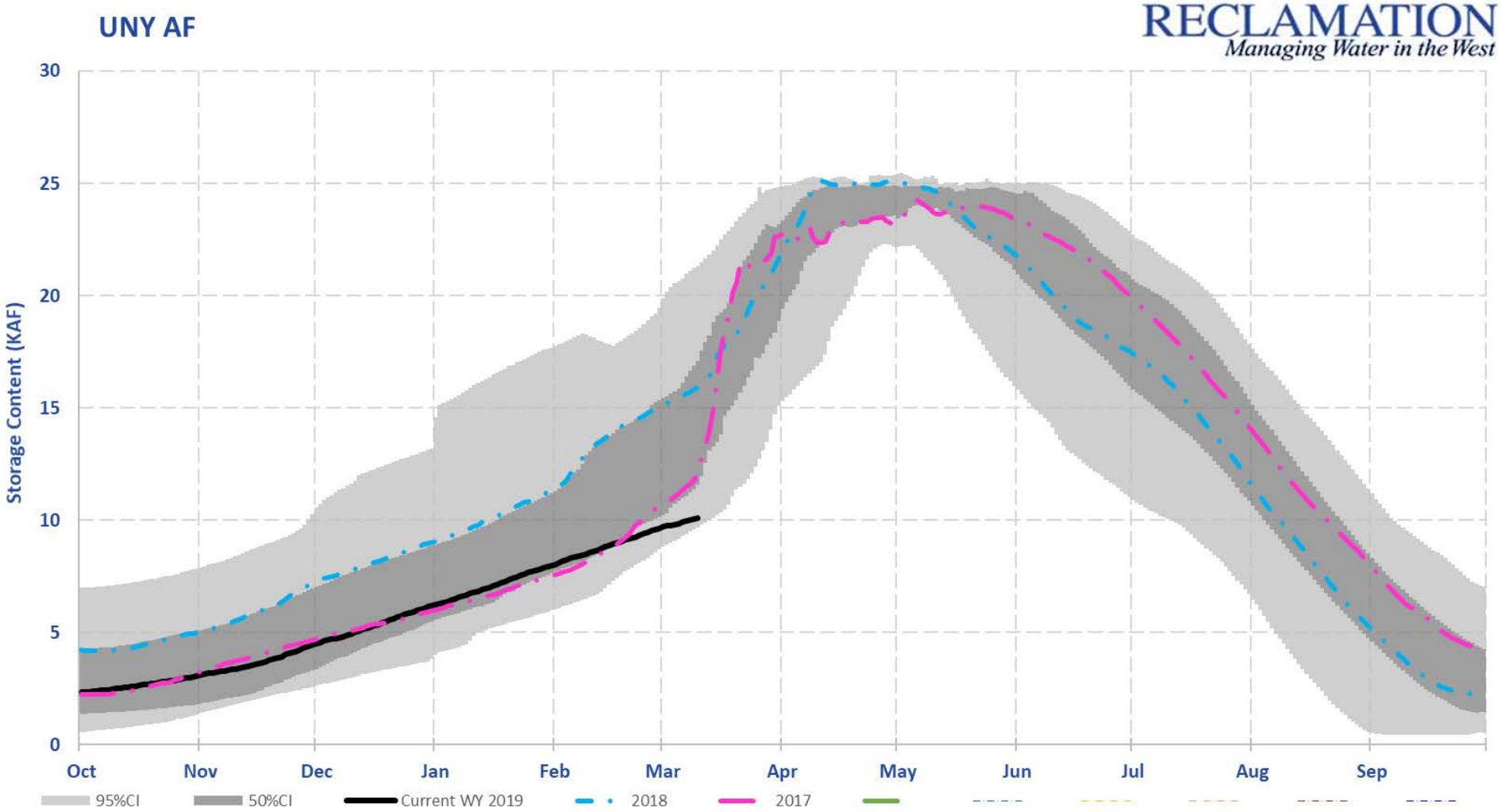
RECLAMATION

Powder River Basin: Phillips



RECLAMATION

Burnt River Basin: Unity



RECLAMATION

Reservoir Inflow Forecasts

Forecast Reservoir	Forecast Period	1981-2010 Average (KAF)	USBR Forecast (KAF)	% Avg	Available Space (KAF)
Phillips	Mar-Jul	70	89	127%	66
Beulah	Mar-Jun	72	115	160%	40
Bully Creek	Mar-Jun	26	46	178%	12
McKay	Mar-Jun	45	74	163%	27
Ochoco	Mar-Jun	34	53	154%	37
Owyhee	Mar-Jun	534	768	144%	372
Prineville	Mar-Aug	171	265	155%	85
Unity	Mar-Jul	47	63	135%	15
Warm Springs	Mar-Jun	109	173	159%	143

Forecasts dated 05-MAR
Space as of 11-MAR

RECLAMATION

Questions