Oregon
Water Conditions Report
December 30, 2019

OREGON
WATER RESOURCES
DEPARTMENT

Current Oregon statewide snow water equivalent (SWE) is 45 percent of normal. Basin values vary from 25 percent of normal in the Hood, Sandy, Lower Deschutes basin to 117 percent of normal in the Owyhee basin. The majority of SNOTEL sites are reporting values less than 8.0 inches of SWE.

Current Oregon statewide water year precipitation at NRCS SNOTEL sites is 50 percent of normal. Basin precipitation values range from 46 percent of normal in the Willamette basin to 71 percent of normal in the Owyhee basin.

Precipitation over the past two weeks has been below-normal, especially west of the Cascades where precipitation ranged from 2 to 5 inches below normal in parts of the southern Willamette Valley. The exception was in the north coast area where precipitation ranged from 1 to 2 inches above normal. For the month of November, precipitation was below-normal across much of the state. In areas west of the Cascades and in southeast Oregon anomalies ranged between 5 and 25 percent of normal. In the northwest corner of the state November 2019 was one of the top 5 driest months of record. December is shaping up to be a little better but still well below normal for this time of year.

Temperatures over the past two weeks have been normal to below-normal across much of south central Oregon. Temperatures across the rest of the state ranged between 2 to 8 degrees above-normal. For the month of November, temperatures were above-normal across most of the state. Especially in the southern Cascades and southwest Oregon where temperatures were up to 7 degrees warmer than normal for this time of year.

Over the next 8 to 14 days, the NOAA Climate Prediction Center is forecasting an increased probability of below-normal temperatures across most of the state. The precipitation outlook for the same period is for above-normal probability across the state. The most recent three month outlook indicates increased probability of above-normal temperatures across most of the state. The precipitation outlook for the same period is for equal chances of above or below normal probability across the state. The next long-term outlook will be issued on January 16, 2020.

ENSO-neutral is favored during the Northern Hemisphere winter 2019-2020 (70 percent chance), continuing through spring 2020 (~65 percent chance). Above-average sea surface temperatures (SSTs) were observed in the central tropical Pacific Ocean during November, with regions of above and below average SSTs observed farther east. For a more complete report, refer to the December 12, 2019 diagnostic discussion issued by the Climate Prediction Center. The next diagnostic discussion is scheduled for January 9, 2020. Another source of information is the latest ENSO blog on the climate.gov website.

With only a few days left in December, it looks like streamflows for the month will end up less than 55 percent of normal. This is a little higher than the 48 percent seen in November. Regionally for December, streamflow conditions were about 60 percent of

normal east of the Cascades and only about 40 percent to the west. Flows in the Umpqua were the lowest at around 22 percent of normal while the highest flows were in the Malheur Lake basin at just over 100 percent of normal. While there has been some recent improvement in western Oregon, some streams in the Umpqua basin are flowing at rates as low as 10 percent of normal.

USACE Reservoirs: **Willamette:** The Willamette system is 3 percent below minimum conservation pool. Green Peter is 15 feet and Detroit is 10 feet into the power pool. Detroit spillway trunnion pin was removed Friday, Dec 6th. Recent weather has helped to elevate inflows and bring several projects closer to rule curve. Flows in the Willamette River at Albany are 6,700 cfs with flows at Salem at 11,800 cfs.

Rogue: The Rogue system is currently 31 percent full and 5 percent below rule curve. Lost Creek is 30 percent full and 6 percent below rule curve and will continue holding flows at around 1,150 cfs. Applegate is at 8 percent full and 3 percent below rule curve and will hold releases at around 115 cfs over the next week. Current fisheries goals are minimizing the dewatering of spring chinook redds in 2019-2020, and minimizing early emergence by spring chinook in the spring of 2020.

Willow Creek: The Willow Creek Project is currently 36 percent full and 9 percent below Rule Curve. The current project objectives are to pass 2 cfs of inflow. Current project inflow is at 5.7 cfs.

USBR Reservoirs: Despite drier than normal conditions, Reclamation reservoirs in Oregon continue to have higher than average storage levels thanks to higher than average carryover at the start of the Water Year. Reclamation reservoirs are currently releasing minimum or zero flows and most currently have *flat-lined* storage levels as we wait for inflows to increase. Water Managers continue to actively monitor potential precipitation events since some reservoirs (Prineville, Bully Creek, Warm Springs, and Scoggins) are potentially a decent rainstorm away from exceeding maximum winter storage requirements as set by flood control regulations.

Umatilla River Basin: McKay reservoir is at 20 percent of capacity. Outflows are close to 10 cfs with inflows of about 20 cfs.

Deschutes River Basin: Ochoco and Prineville reservoirs are at 45 percent and 57 percent full respectively. Ochoco reservoir is releasing less than 5 cfs while Prineville reservoir is currently releasing about 100 cfs with inflows of about 67 cfs. Crescent Lake is at 50 percent, Wickiup is at 45 percent and Crane Prairie is at 76 percent of capacity.

Malheur River Basin: Warm Springs, Beulah, and Bully Creek reservoirs are at 56, 38, and 50 percent full respectively. All three are above normal for this time of year, increasing the chance of available carryover for next year.

Owyhee River Basin: Owyhee reservoir is well above normal at 67 percent. Inflows are currently about 240 cfs.

Burnt and Powder River Basins: Phillips and Unity reservoirs are at 23 percent and 41 percent full respectively. Phillips is releasing about 16 cfs with inflows around 15 cfs while Unity is releasing about 14 cfs.

Tualatin River Basin: Scoggins reservoir is at 43 percent of capacity and releasing just over 20 cfs.

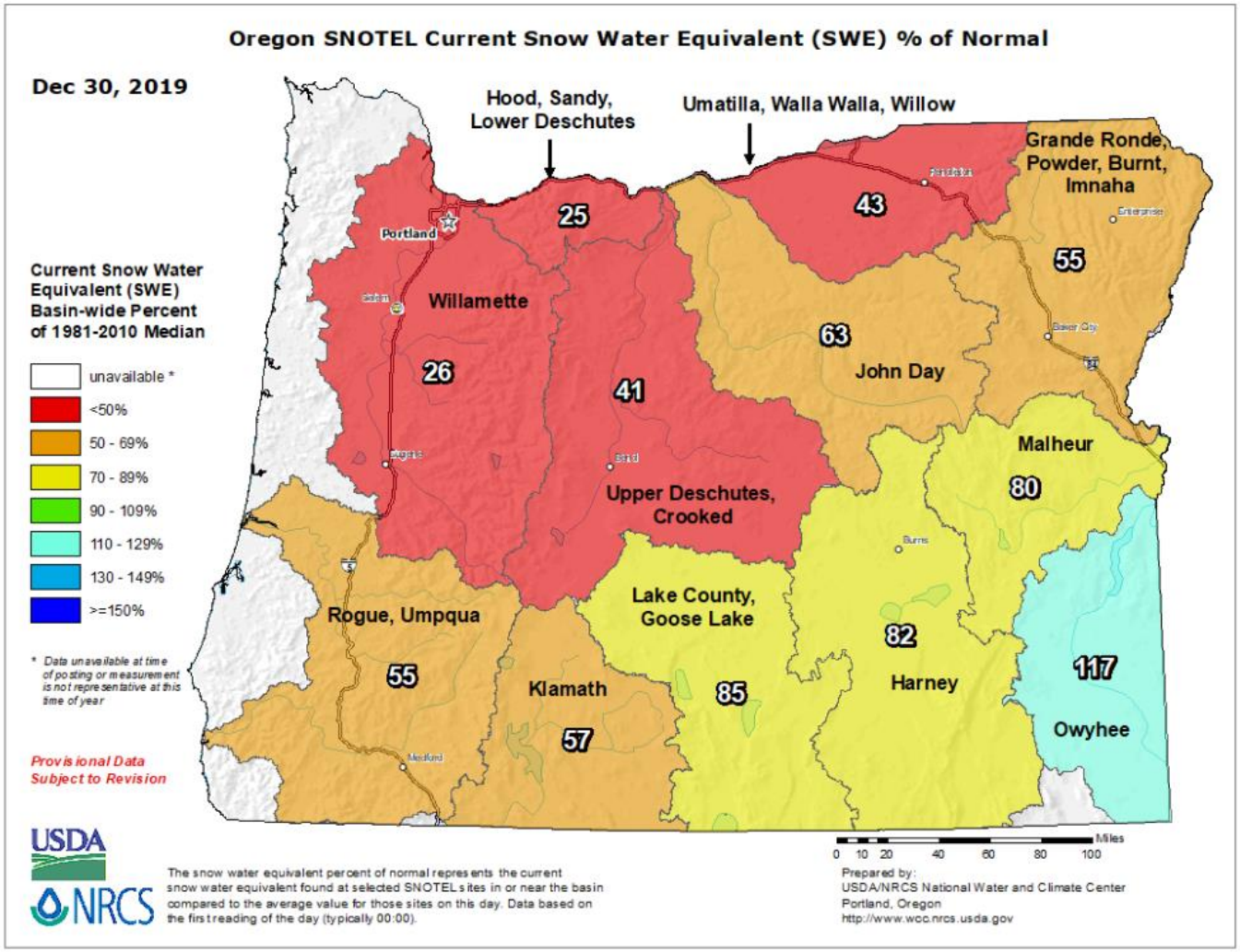
The most recent update to the US Drought Monitor now indicates that almost 98 percent of the state is in D0 (abnormally dry) conditions with almost 25 percent of the state listed as in D1 (moderate drought).

Wildfire potential through December is predicted to be normal across Oregon. According to the National Significant Wildland Fire Potential Outlook, large fire activity has been limited across the Northwest Geographic Area this fire season and should continue to be limited the rest of 2019. At the current time, there are no large fires ongoing in the region. More information can also be accessed through the Northwest Interagency Coordination Center website. Another recommended resource is the Oregon Office of Emergency Management's RAPTOR incident mapping program which includes current situational information, such as wildfire perimeters, thermal satellite, fire evacuation boundaries, and air quality info.

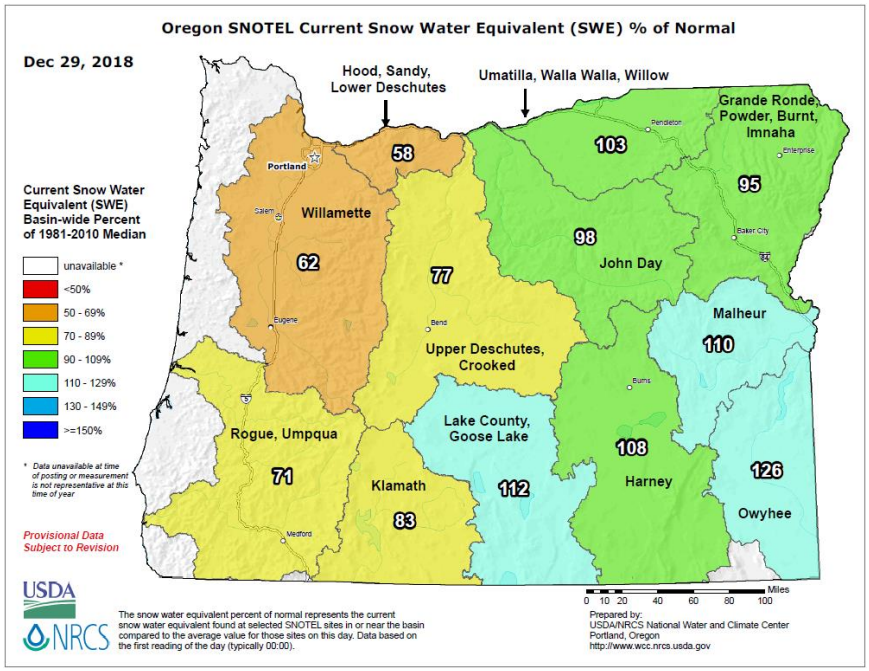
The Oregon Office of Emergency Management has put together a new hydrology/meteorology dashboard featuring many of the data sources used to generate this report.

Data & Products: Page:

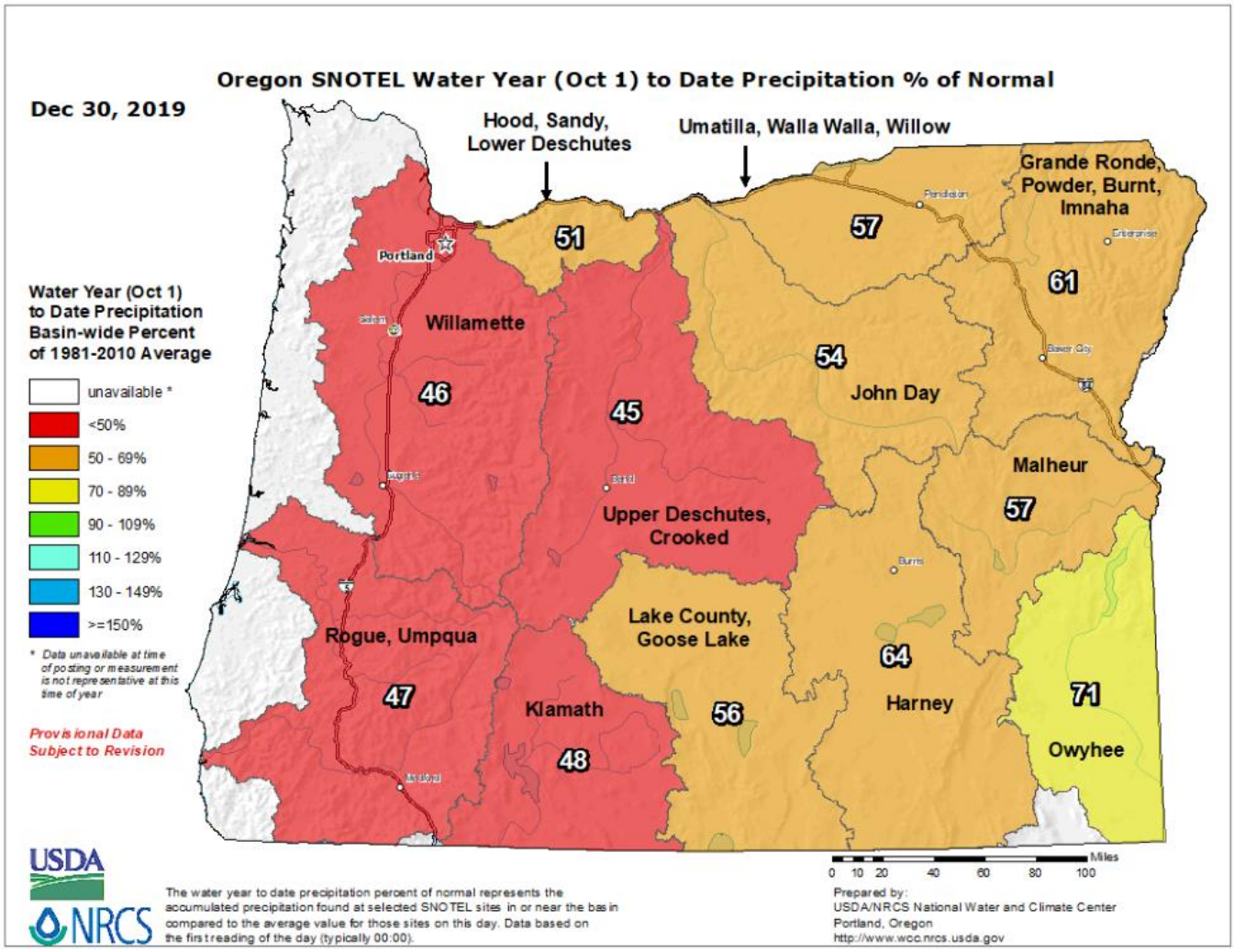
Snow Water Equivalent (SWE) - Percent of Normal



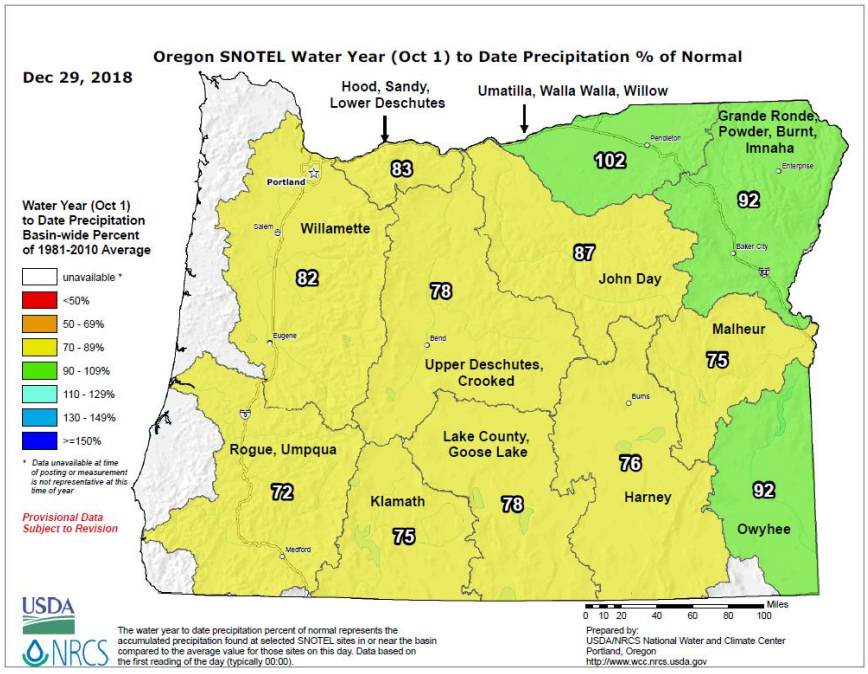
Compared to this time <u>last year</u>:



Precipitation (Mountain) - Percent of Normal



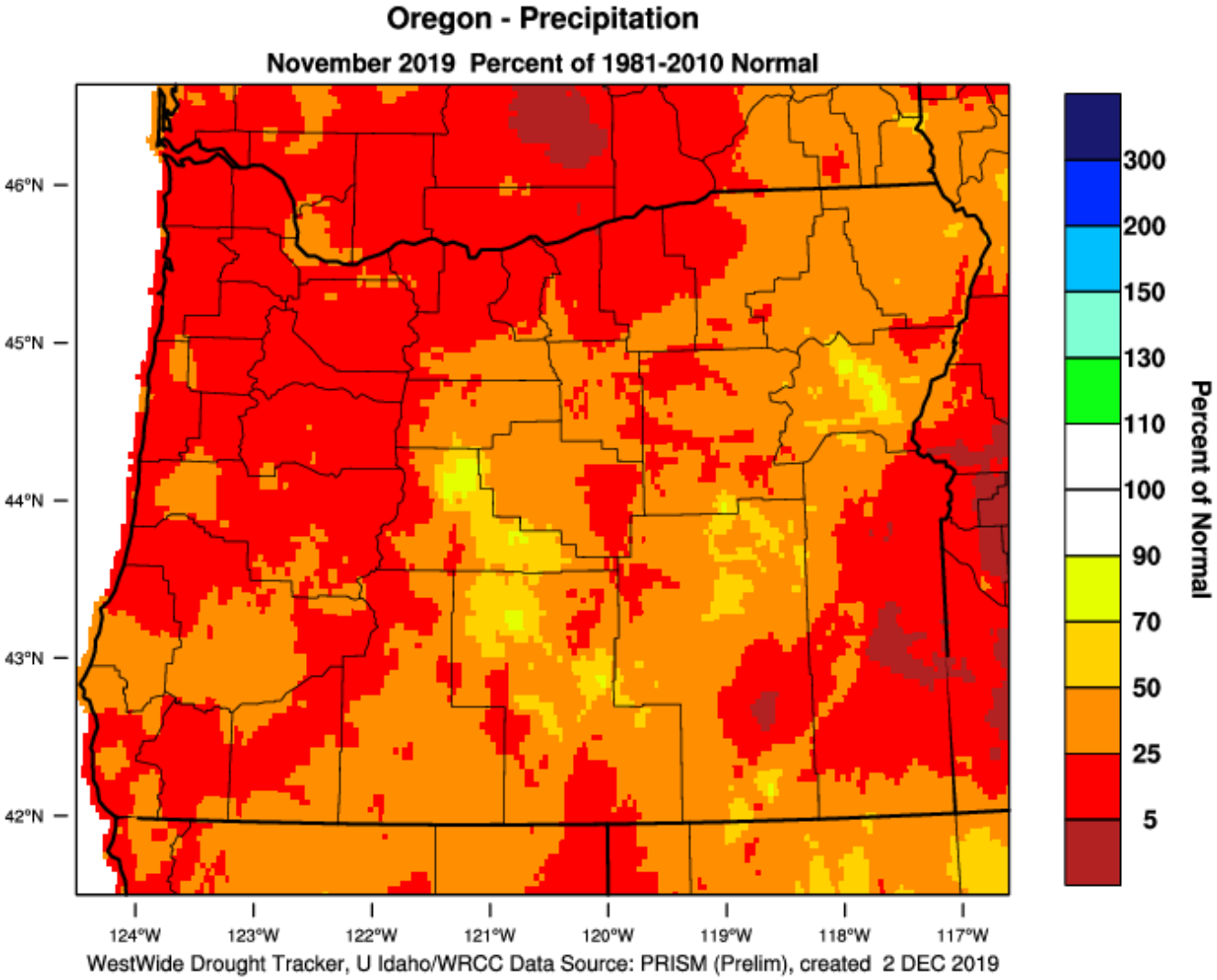
Compared to this time <u>last year</u>:



Precipitation – (1 Month) Percent of Normal

Website: https://wrcc.dri.edu/wwdt/index.php?folder=pon1

PRISM > Precipitation Anomaly 1 Month > Oregon

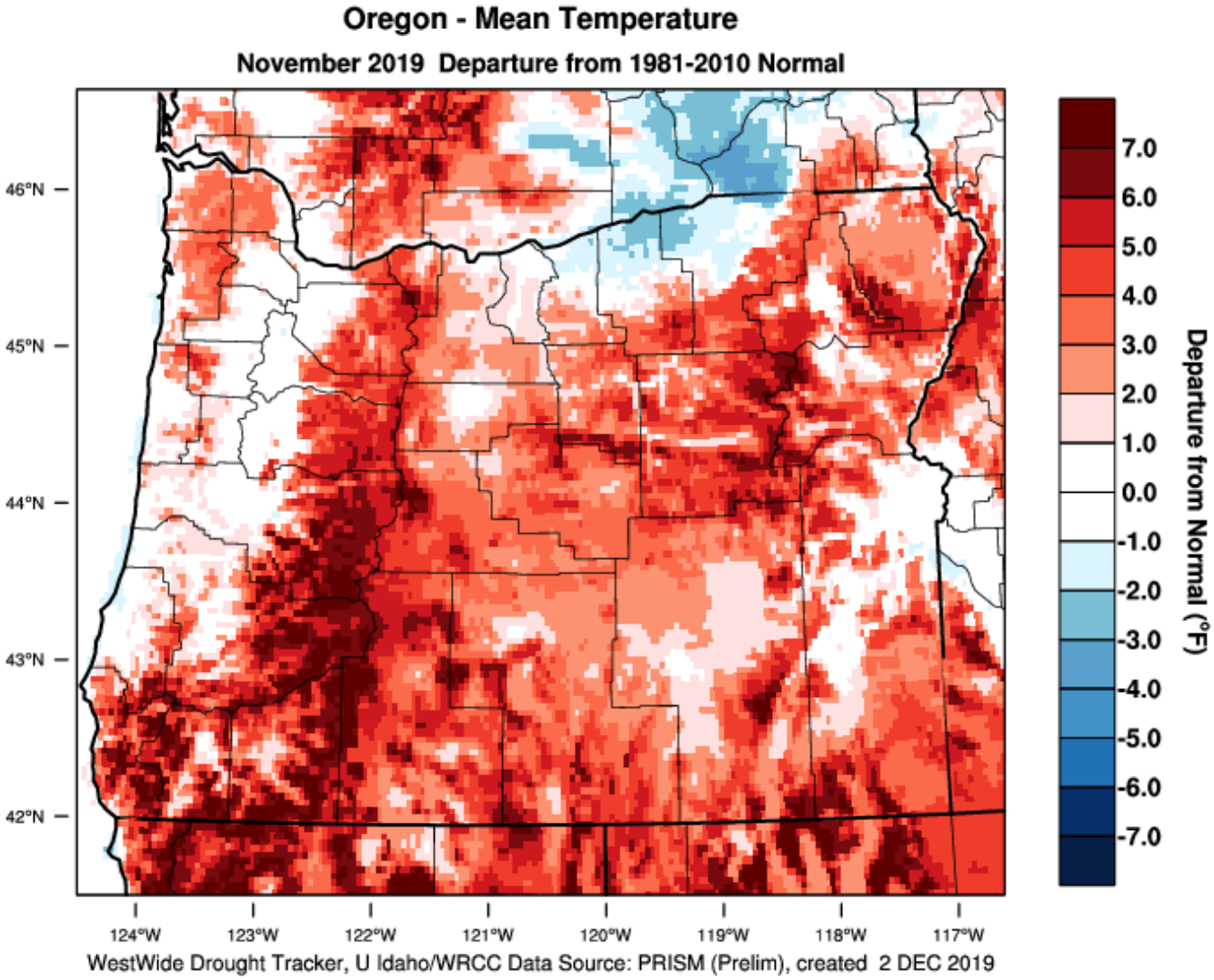


Download PRISM Precipitation Anomaly 1 Month NETCDF Data for United States

Temperature – (1 Month) Departure from Normal

Website: https://wrcc.dri.edu/wwdt/index.php?region=or

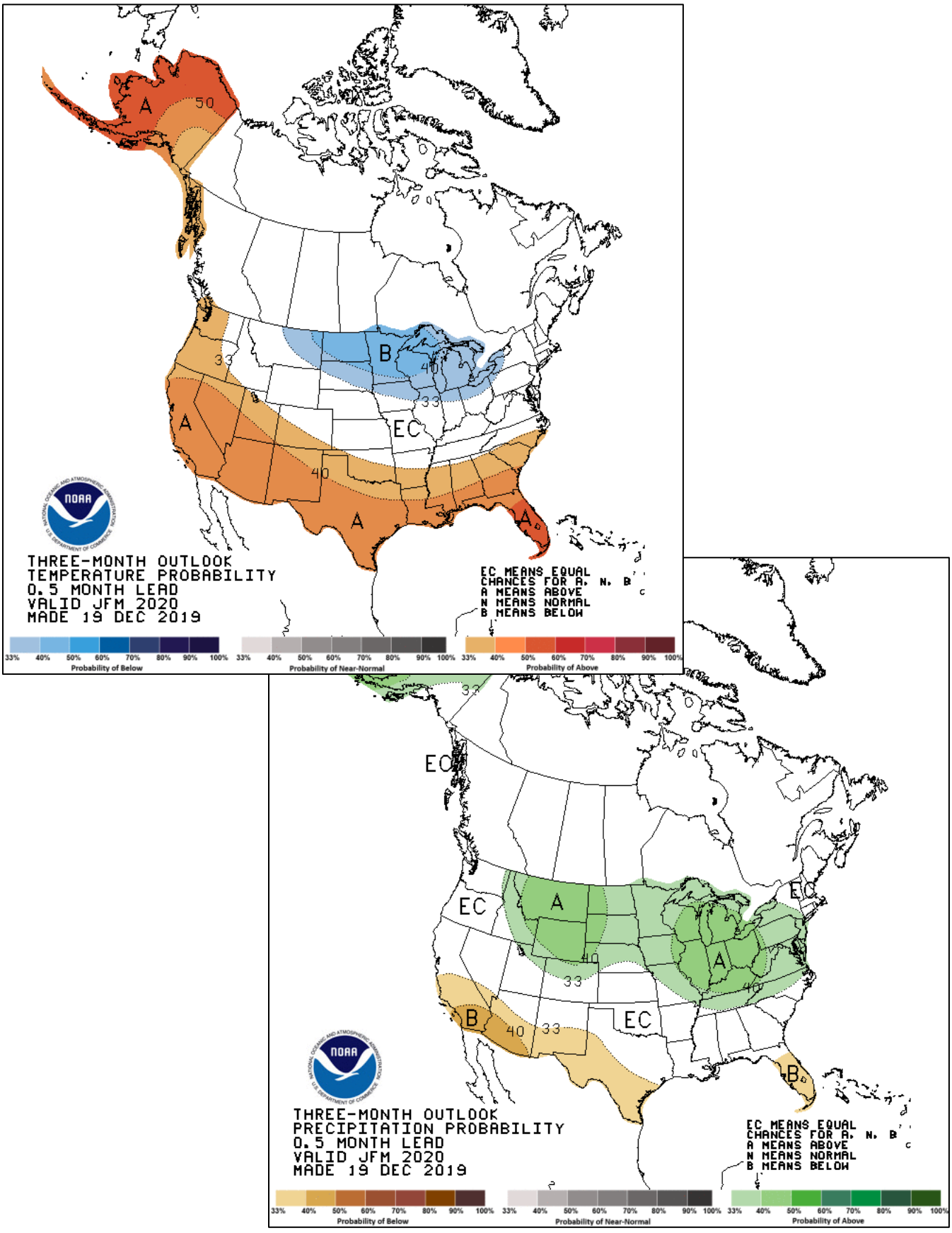
PRISM > Temperature Anomaly 1 Month > Oregon



Three Month Temperature and Precipitation Outlook

January through March

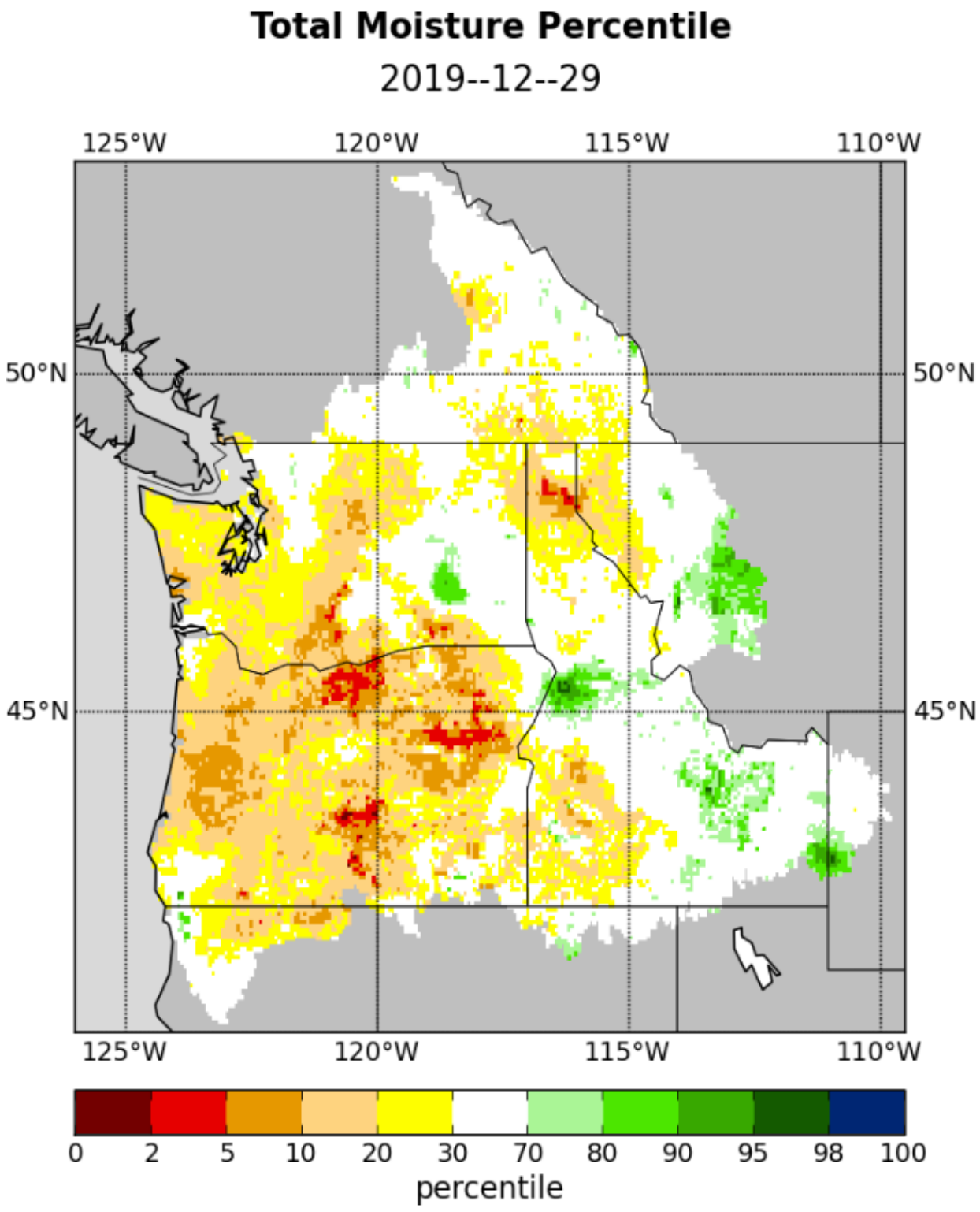
Website: http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1



Total Moisture - Percentile

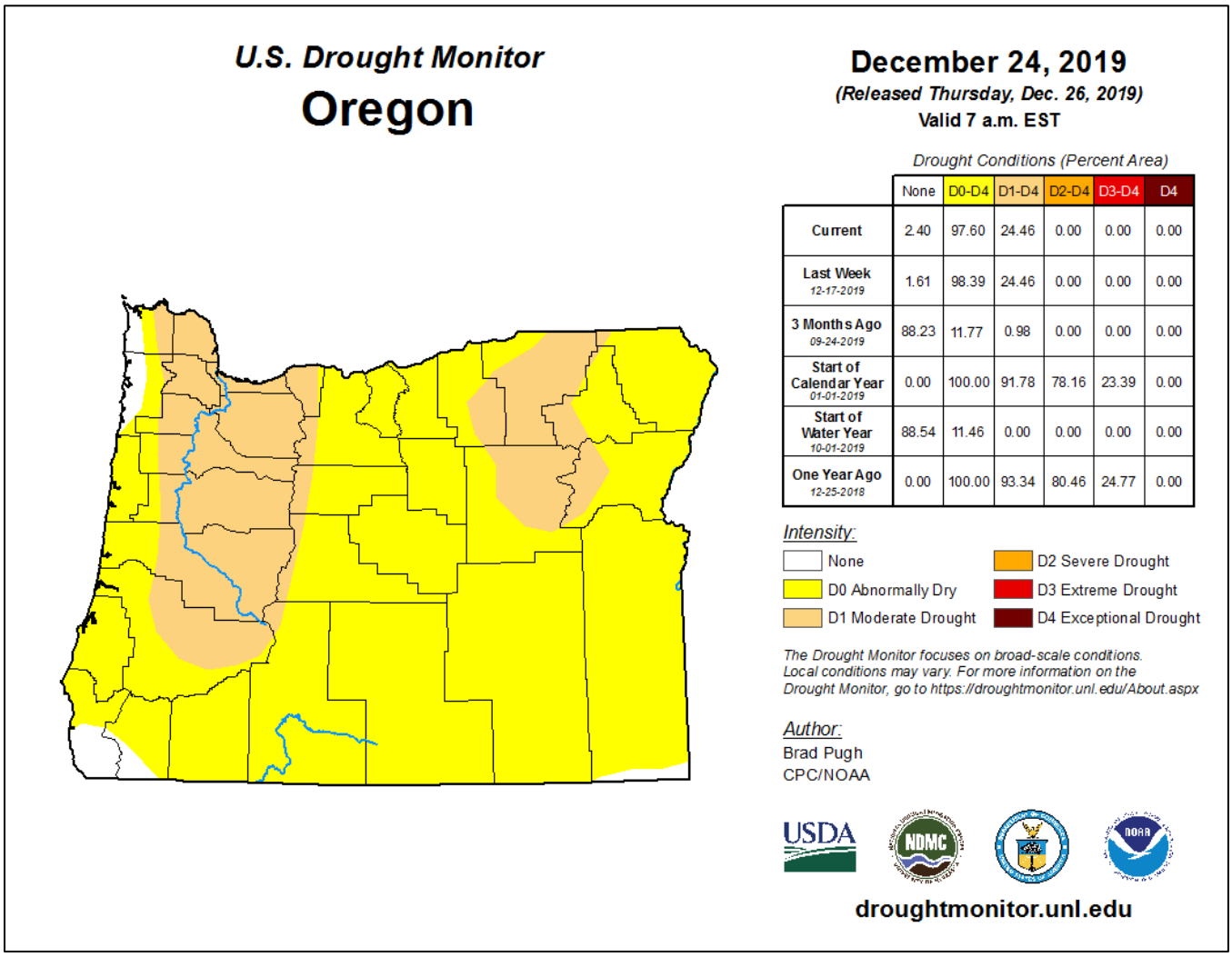
Total Moisture (STOT) is a moisture index calculated by adding Soil Moisture and Snow Water Equivalent. STOT represents the total water content of a region.

Website: http://www.hydro.ucla.edu/SurfaceWaterGroup/forecast/monitor_pnw/index.shtml

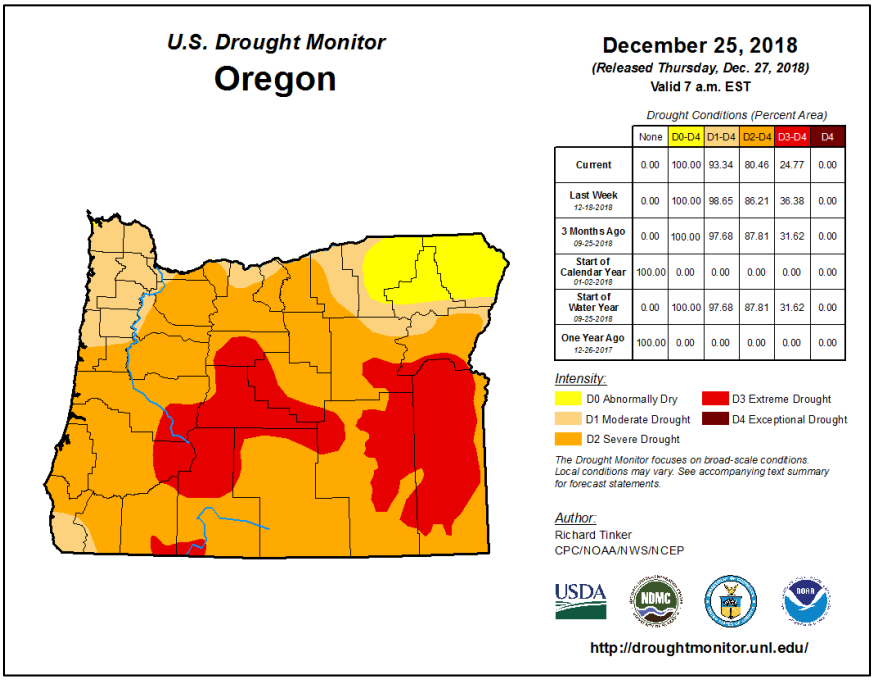


U.S. Drought Monitor for Oregon

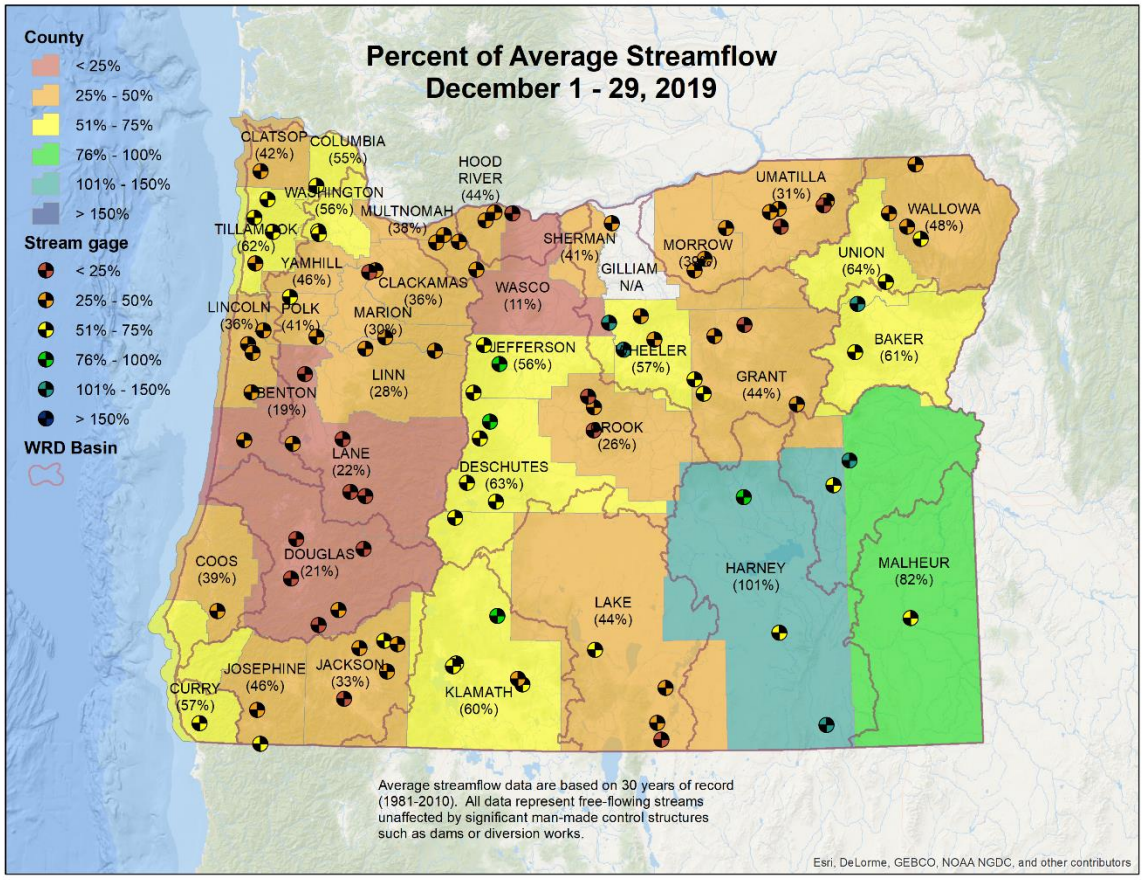
Website: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?OR



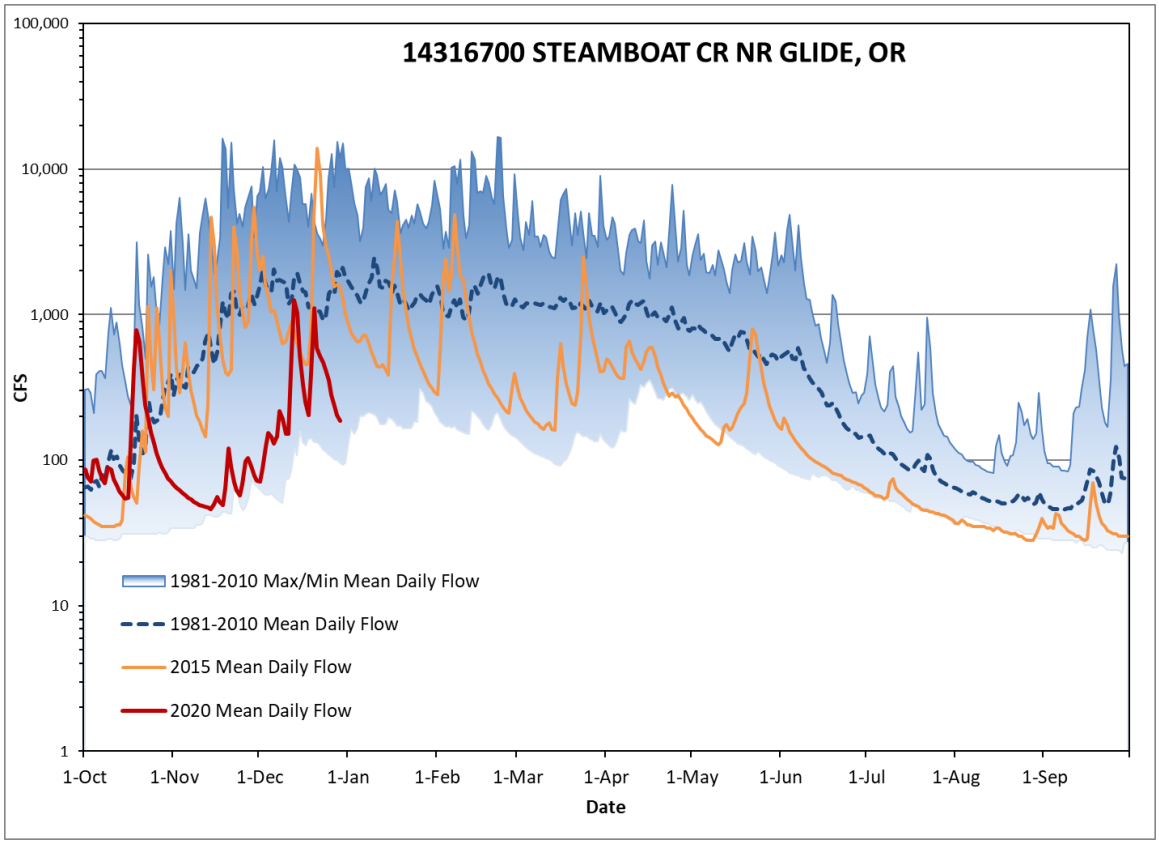
Compared to this time last year:



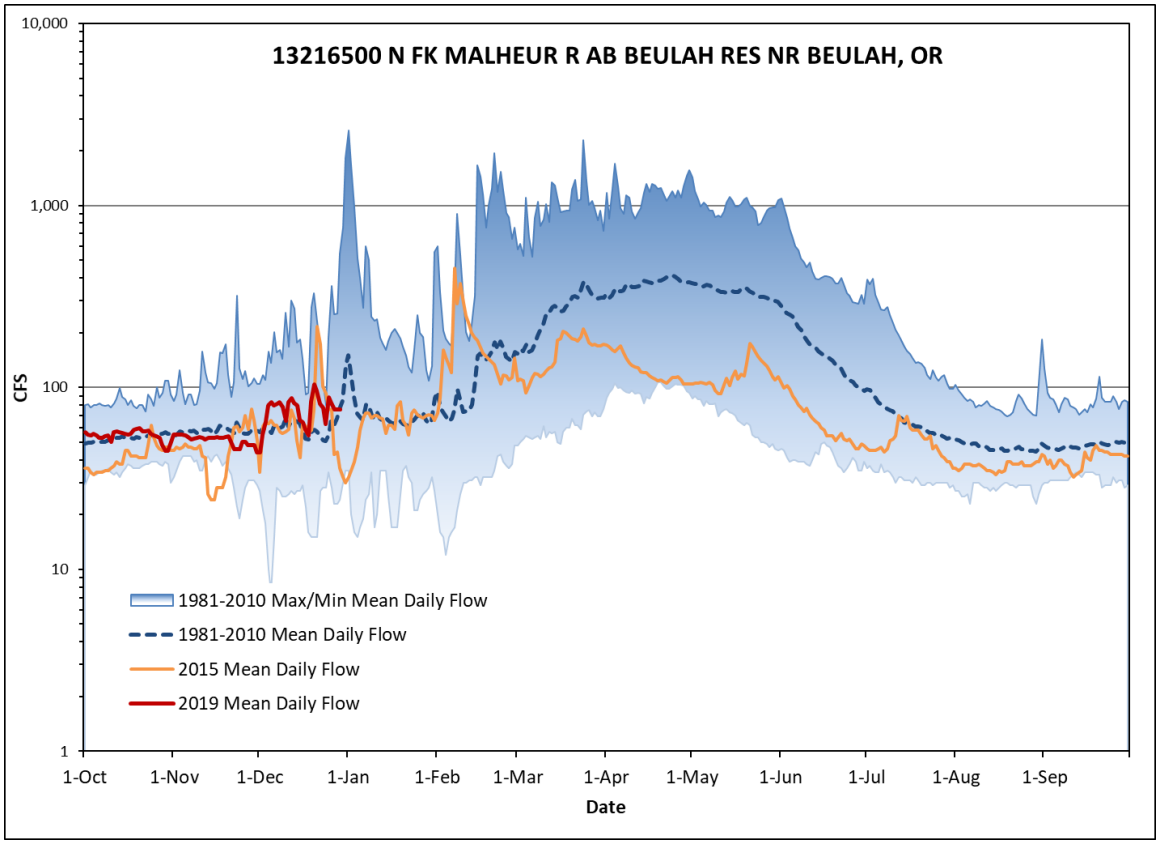
Streamflow Conditions by County – December 29, 2019



Streamflow Conditions – Umpqua Basin (Douglas County)



Streamflow Conditions – Malheur Basin (Malheur County)



Streamflow Conditions – Umatilla Basin (Umatilla County)