

Streamflow Conditions in Washington State as of April 8-9, 2020

Presented by Mark Mastin to the
Washington State
Water Supply Availability Committee
April 10, 2020



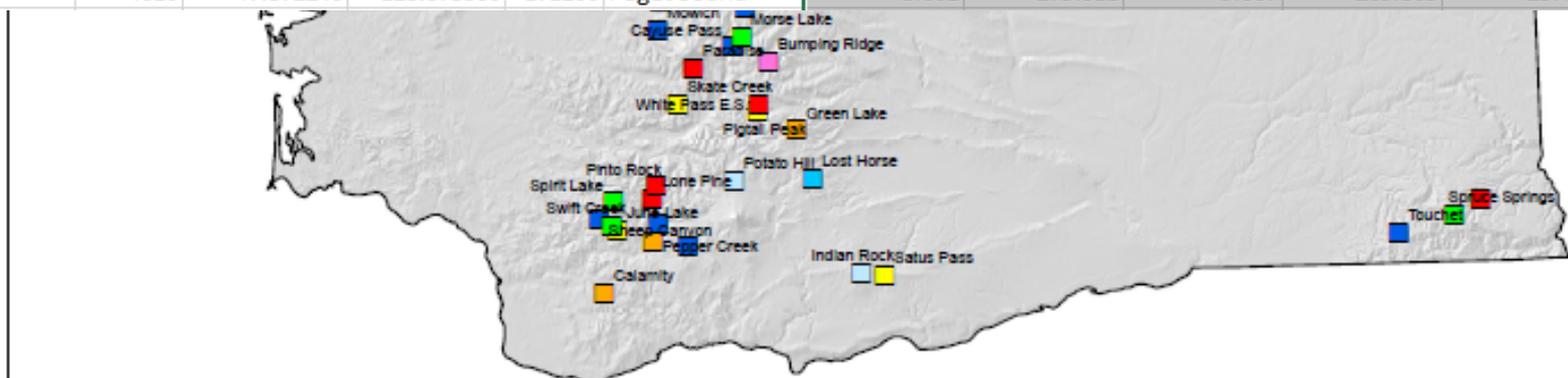
Chambers Creek (Station No. 12091500)

Aspect of slope at SNOTEL Sites

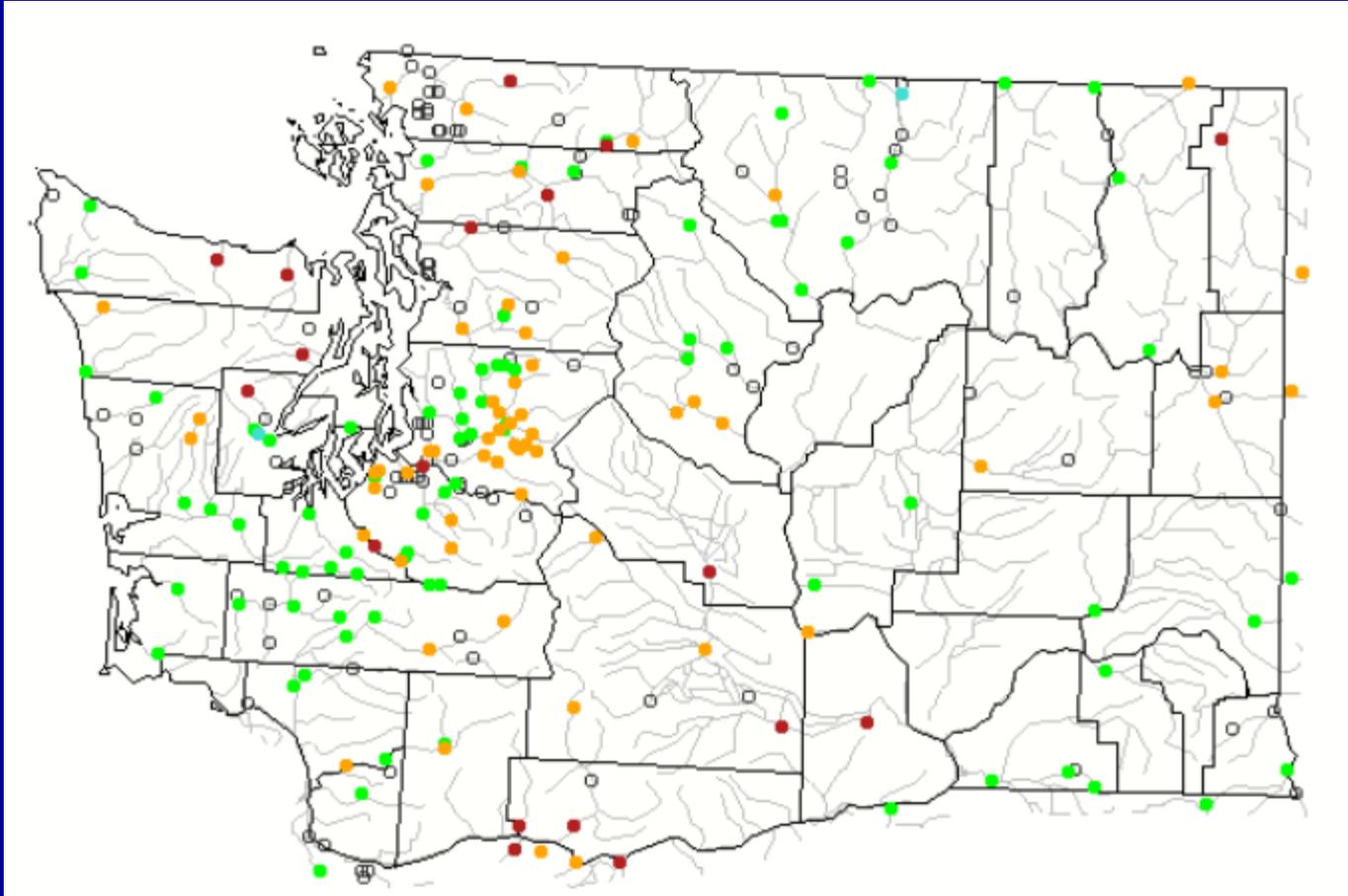
Jeff Marti's Project

EXPLANATION	
SNOTEL_sites	Aspect_10m
■	North 337.5 - 22.5
■	Northeast 22.6 - 67.5
■	East 67.6 - 112.5
■	Southeast 112.6 - 157.5

B	C	D	E	F	G	H	I	J	K	L	M	
Station_Na	Elevation	Latitude	Longitude	HUC6_€	HUC6_Name	Slope_10m	Aspect_10m	Slope_30m	Aspect_30m	Slope_90m	Aspect_90m	
0	Alpine Meadows	3500	47.779570	-121.698470	171100	Puget Sound	1.441	272.081	1.621	264.675	10.895	234.988
0	Beaver Pass	3630	48.879300	-121.255500	171100	Puget Sound	0.728	118.873	0.638	121.216	5.418	77.360
0	Blewett Pass	4240	47.350370	-120.679600	170200	Upper Columbia	3.892	290.375	4.583	291.702	5.068	295.061
0	Brown Top	5830	48.927550	-121.197130	171100	Puget Sound	5.074	170.139	3.337	173.729	6.678	353.917
0	Buckinghorse	4870	47.708600	-123.457470	171100	Puget Sound	7.141	232.368	6.327	238.776	16.866	249.240
0	Bumping Ridge	4610	46.810030	-121.330580	170300	Yakima	2.473	319.278	2.275	308.432	7.481	323.623
0	Bunchgrass Mdw	5000	48.686880	-117.176330	170102	Pend Oreille	0.905	16.905	0.852	14.949	2.305	15.304
0	Burnt Mountain	4170	47.044400	-121.940320	171100	Puget Sound	0.858	164.966	1.480	134.836	0.980	94.087
0	Calamity	2500	45.903620	-122.216330	170800	Lower Columbia	9.590	45.744	6.447	39.218	17.541	38.341
0	Cayuse Pass	5240	46.869540	-121.534300	171100	Puget Sound	2.063	284.864	1.937	179.525	3.710	197.826
0	Corral Pass	5800	47.018720	-121.464640	171100	Puget Sound	1.824	268.050	2.229	257.939	7.487	245.487
0	Cougar Mountain	3200	47.276660	-121.671380	171100	Puget Sound	1.183	350.743	3.566	4.028	8.371	17.469
0	Dungeness	4010	47.872240	-123.078800	171100	Puget Sound	8.001	275.311	9.607	269.865	25.413	263.763



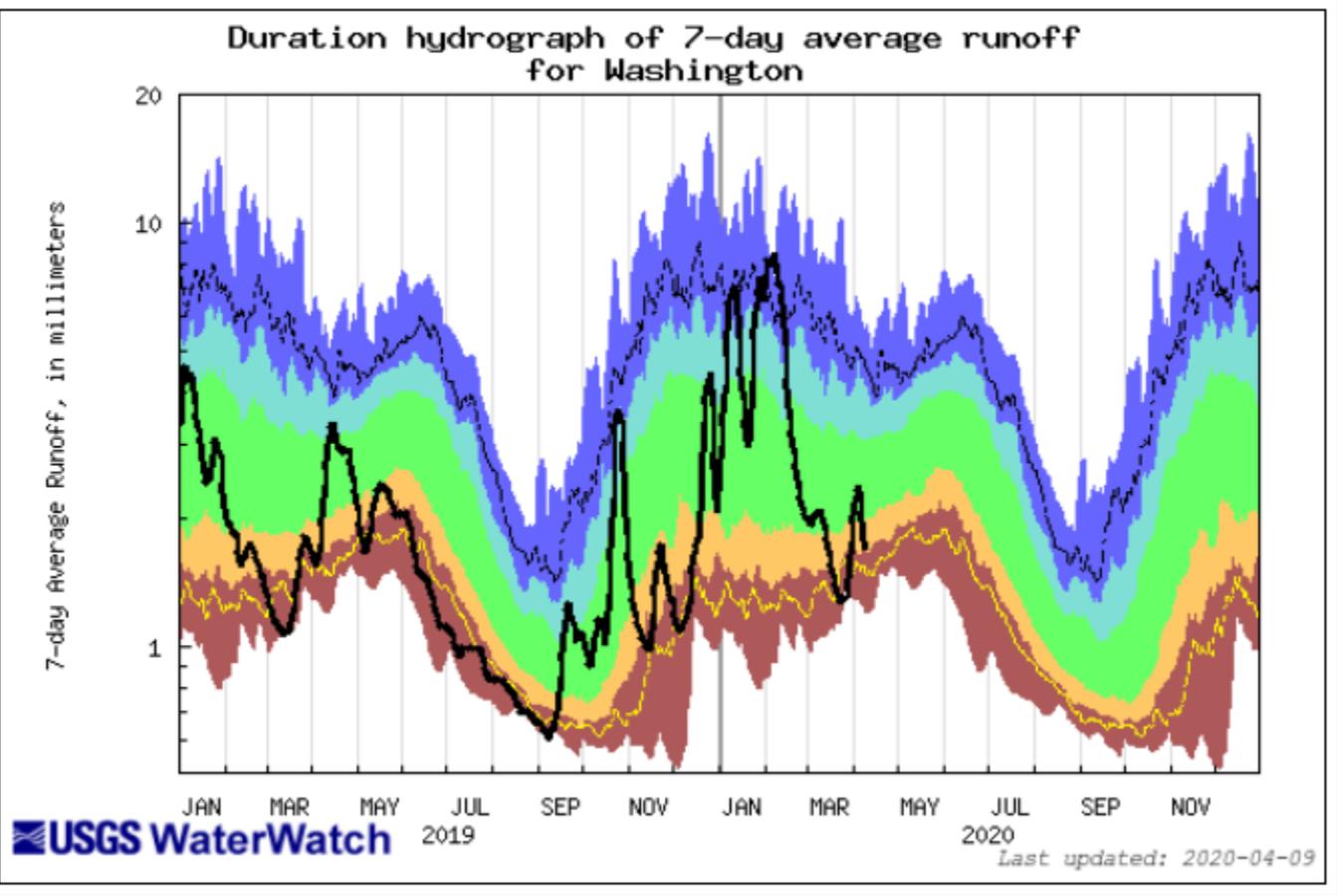
7-day Average Streamflow (for day of the year)



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		

Duration Hydrograph, Washington State

7-day Average Streamflow (through April 9, 2020)

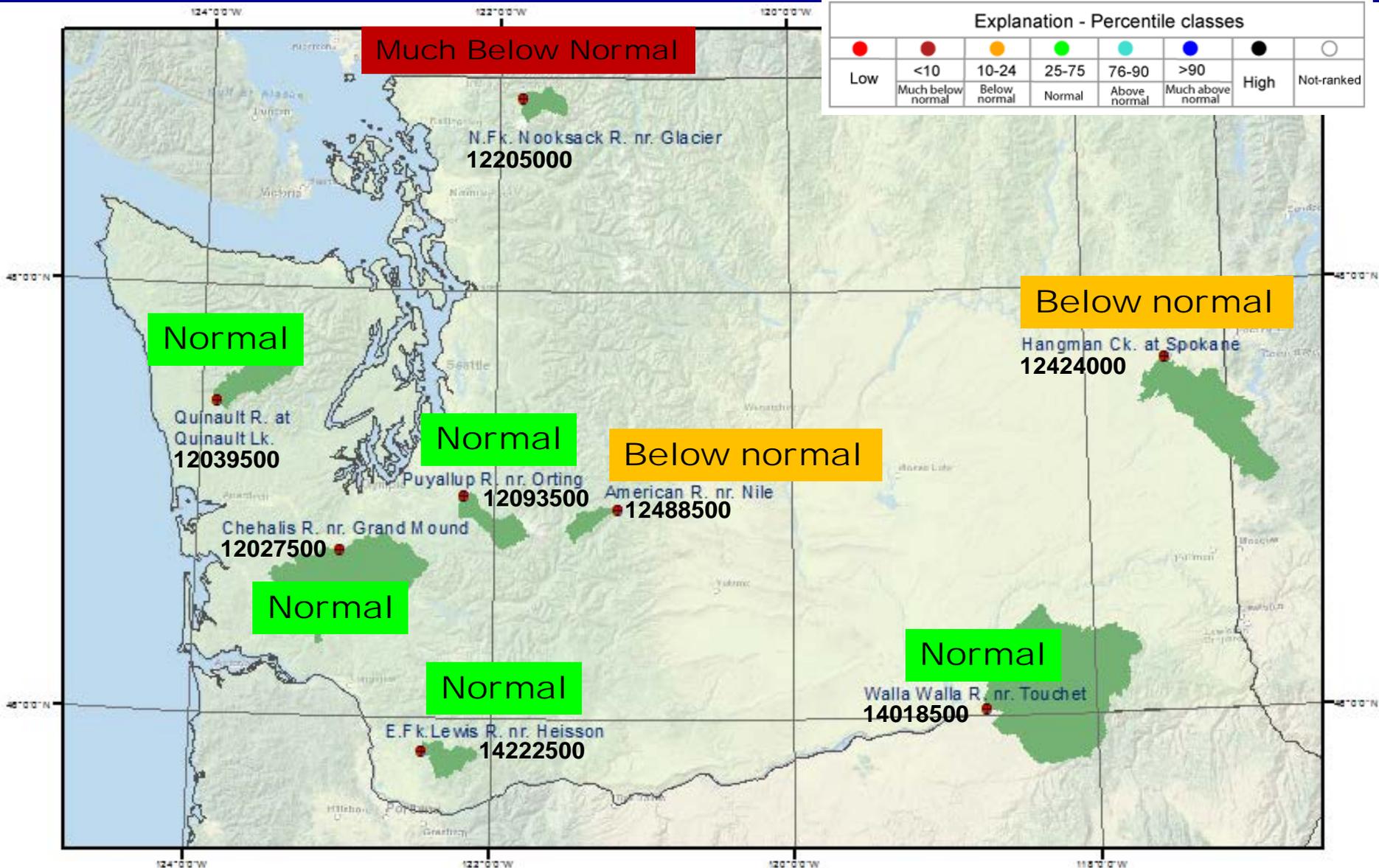


As of April 9, 2020, statewide 7-day average flows are at the border between the Below Normal and Much Below Normal categories.

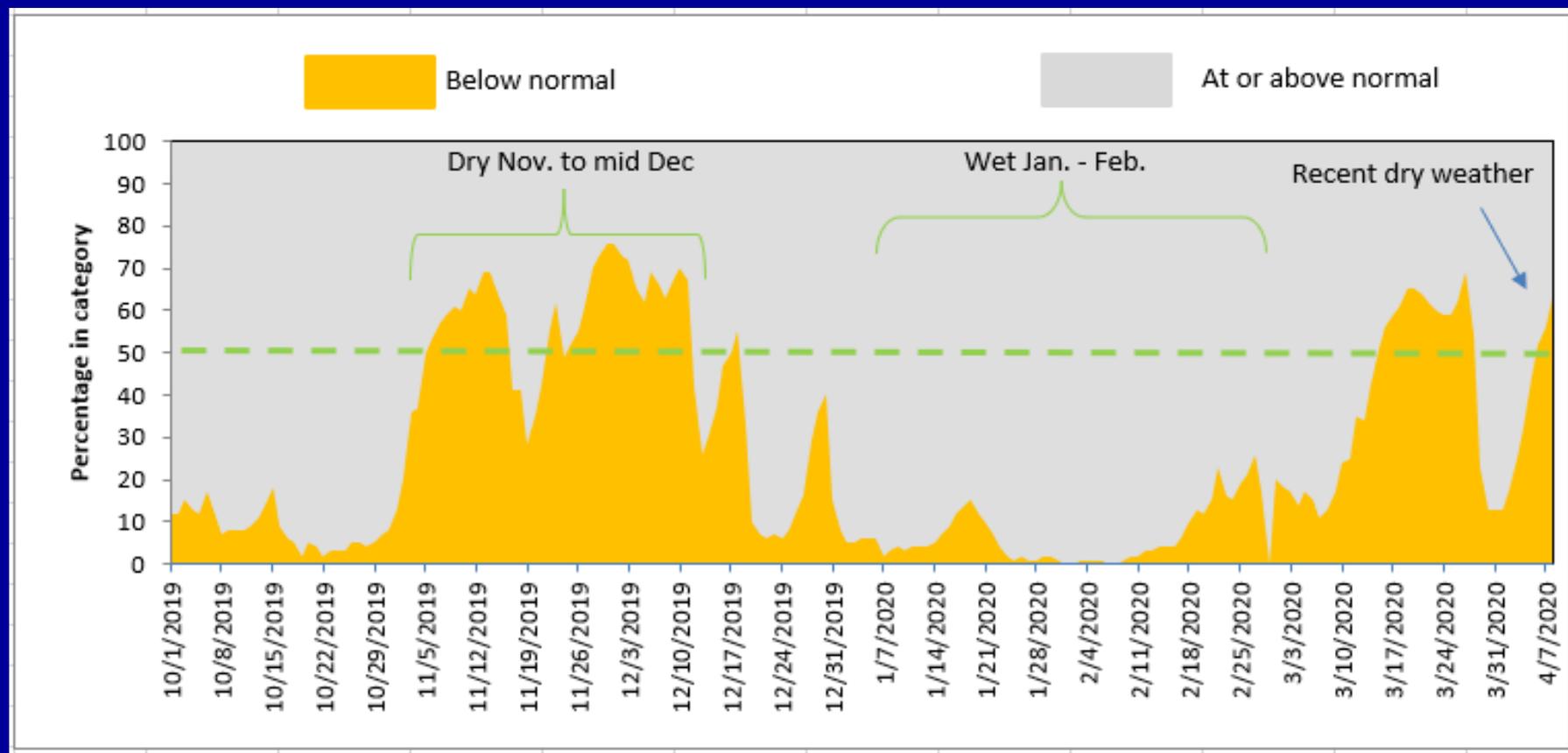
Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

Index Gaging Stations, 7-day average streamflow (as of April 8, 2020)

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

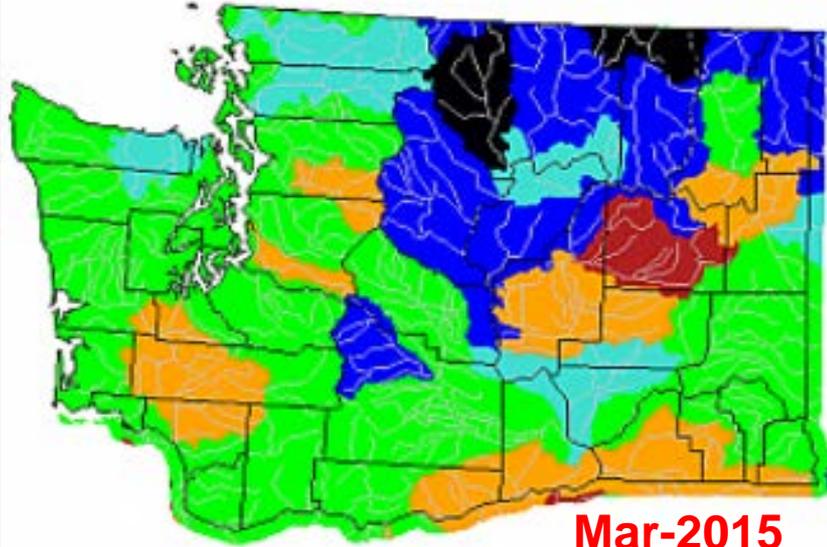


Daily streamflow in Washington Rivers compared to historical streamflow, Oct. 01, 2019 – April 8, 2020

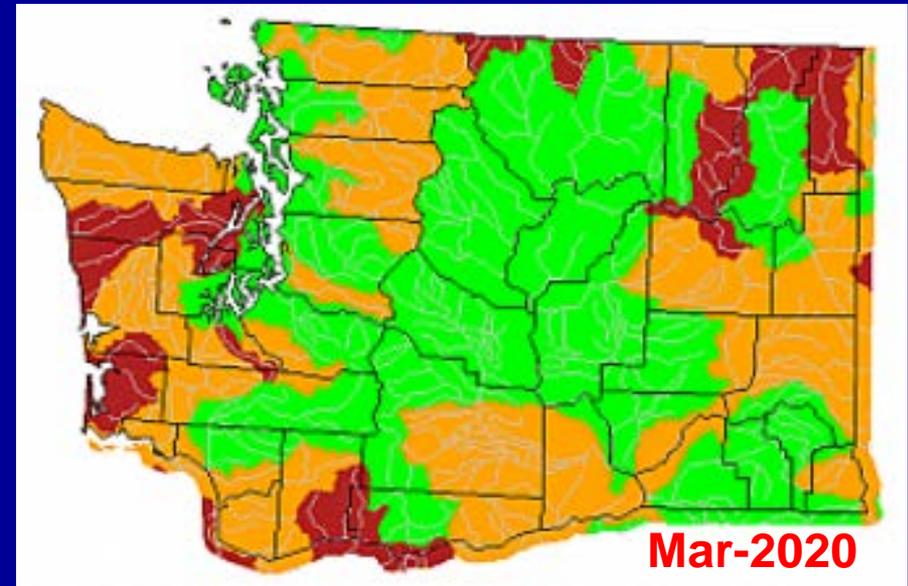
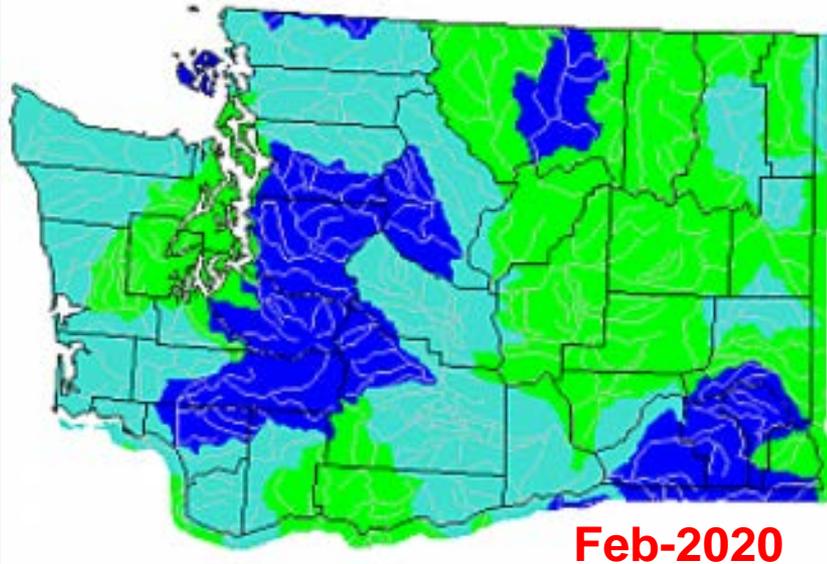


March 2015 and February-March 2020

Monthly Streamflow



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	
	Much below normal	Below normal	Normal	Above normal	Much above normal		



Groundwater Conditions

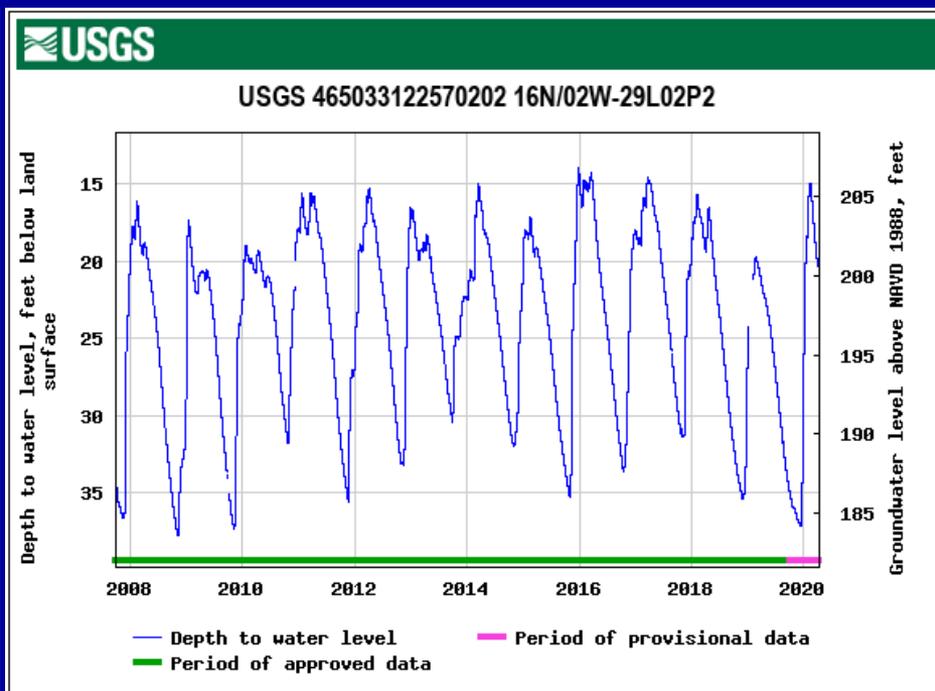
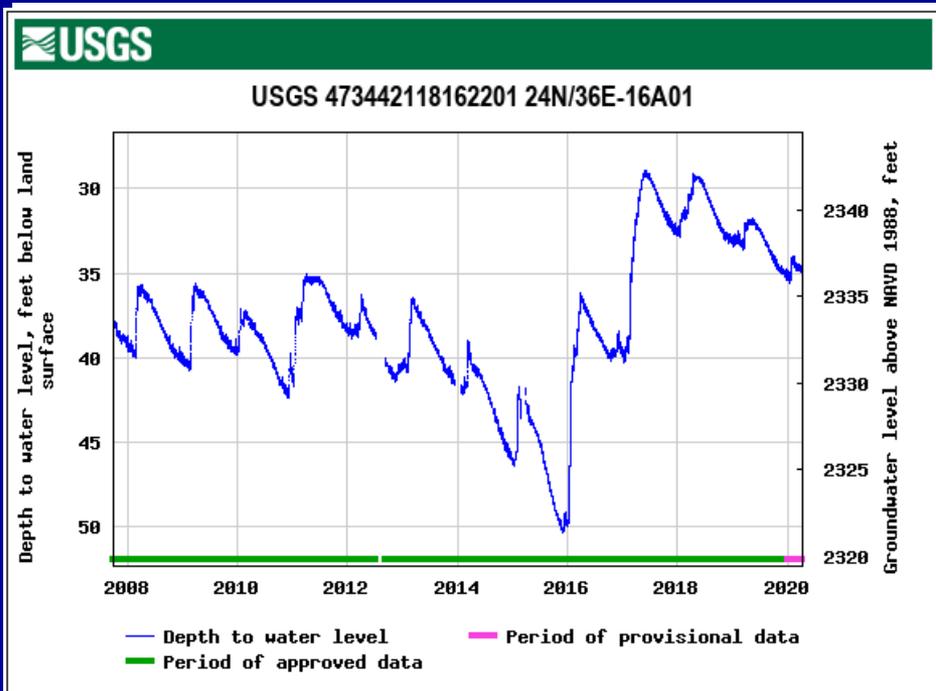
April 2, 2020 to April 9, 2020
and Oct. 1, 2007 to April 9, 2020

Davenport well

- 117-ft deep
- Wanapum Basalt

Scatter Creek well

- 82-ft deep
- Sand and gravel



Summary

Streamflow and Groundwater Conditions as of April 8-9, 2020

- ✓ **7-day average streamflow** showed mostly **Normal** to **Below Normal** conditions throughout the State with some **Much Below Normal** conditions in the north Puget Sound region of the State.
- ✓ As of April 8th, daily mean streamflow is at **Normal and Above** at only 37 percent of the 152 reporting streamflow sites.
- ✓ **7-day average streamflow at eight index gaging stations:**
 - West side: four sites are **Normal**, Nooksack R. is **Much Below Normal**
 - East side: Walla Walla R. is **Normal** and the American R. and Hangman Creek are **Below Normal**.
- ✓ **Both the index groundwater well levels have dropped this week, but the Davenport is still above the long-term average for this time of the year. The Scatter Creek well level drop seems to be occurring earlier in the year than usual.**