



Northwest River Forecast Center



June 2021 Water Supply Briefing

Telephone Conference: (415) 930-5321
Audio Access Code: 524-795-021#

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*Audio PIN is provided when logging into the webinar and will be required if you wish to ask questions at the end of presentation



Water Supply Forecast Briefing Outline

Observed Conditions

- Temperature
- Precipitation
- Snowpack
- Runoff

Forecast Conditions

- 10 Day Precipitation Forecasts
- Water Supply Forecasts

Additional Guidance

- Climate Prediction Center Outlook

Summary



Take Home Messages

Dry past three months brought seasonal precipitation down for the basin

- Most of the basin below normal for the water year

May saw above average temperatures for the interior basin

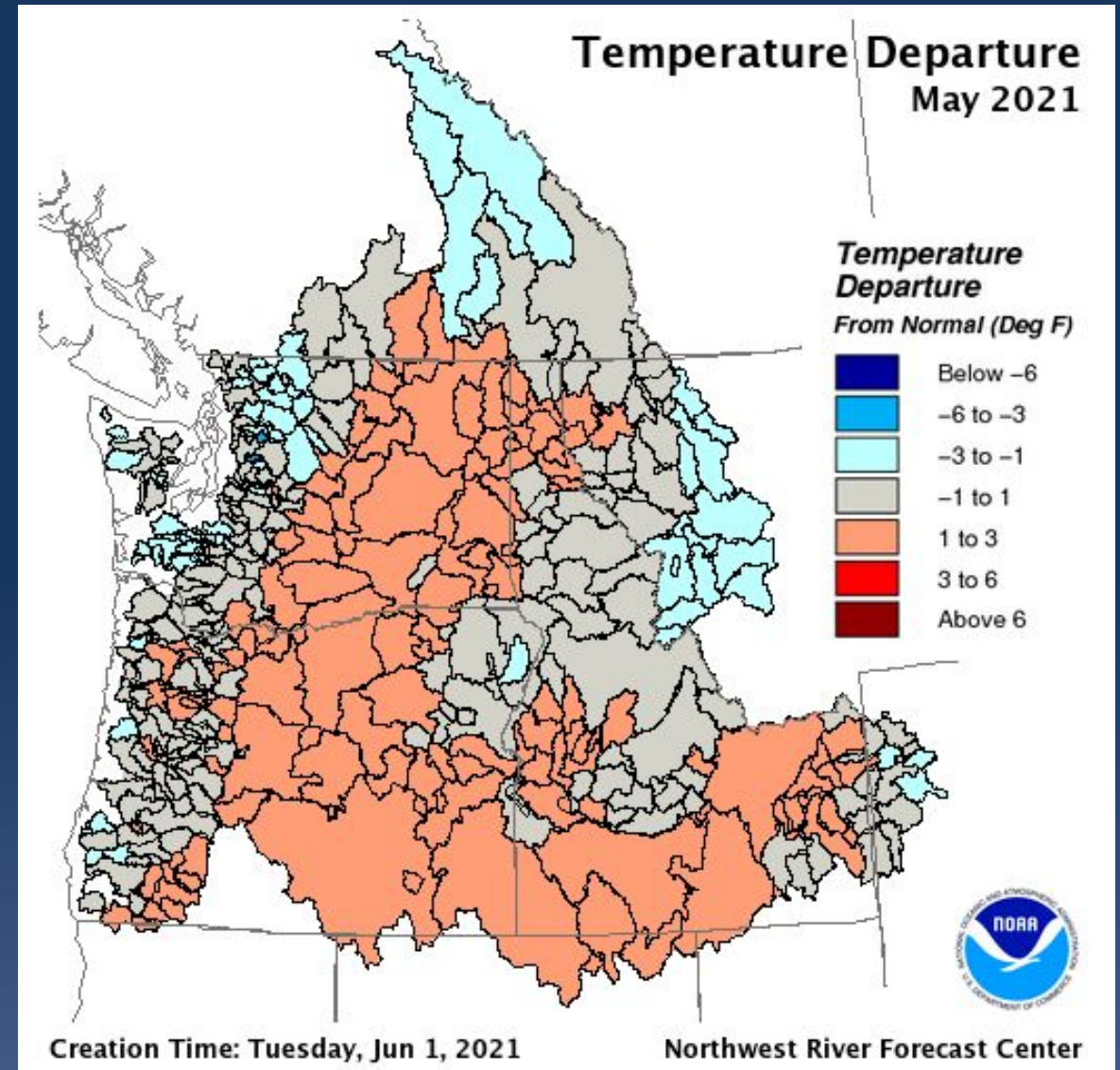
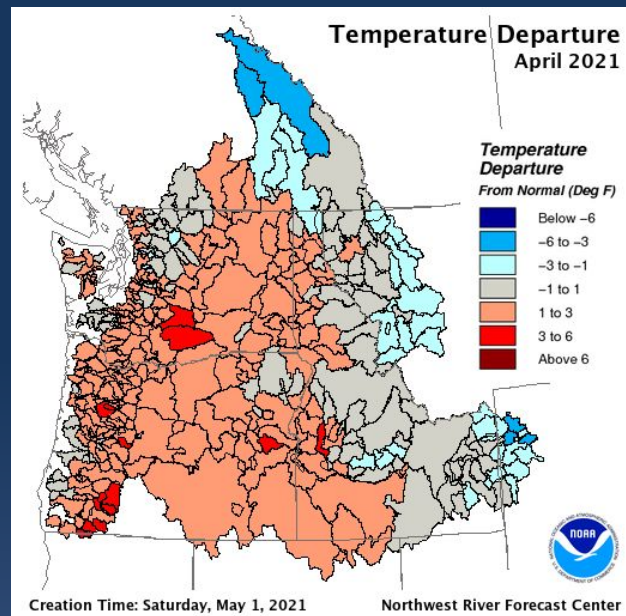
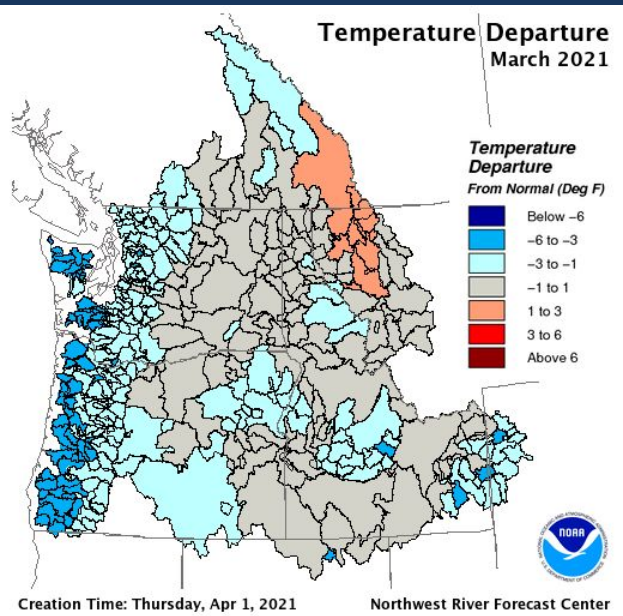
- Snowmelt underway where snow is present

Water supply forecasts for April-September

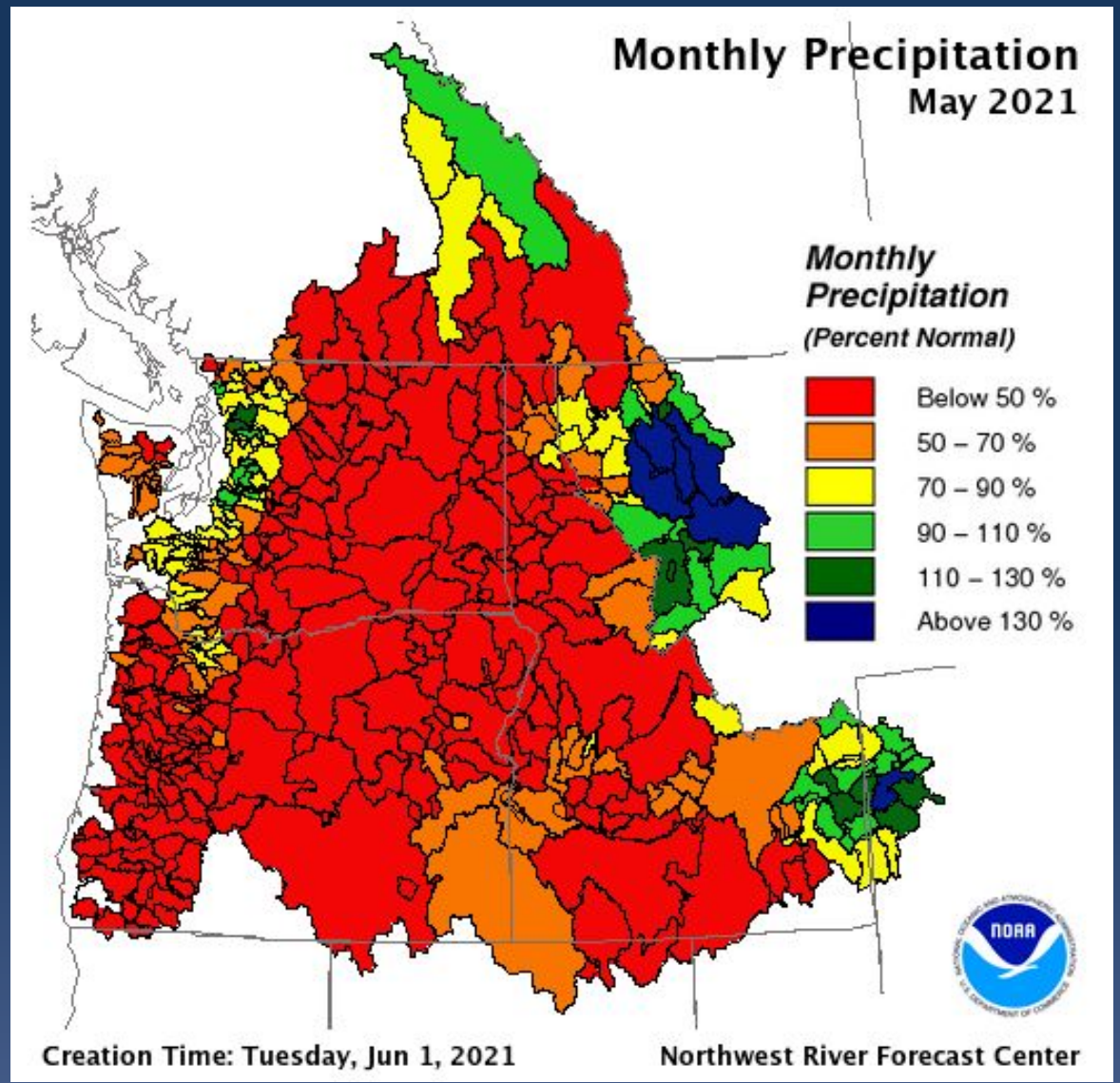
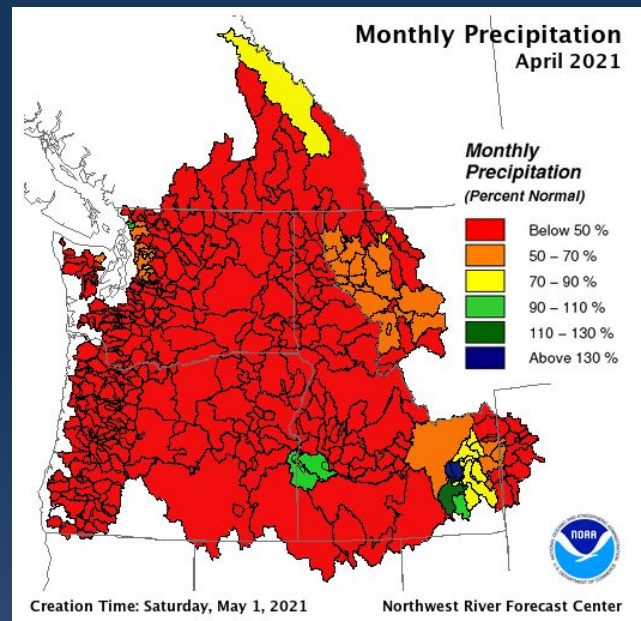
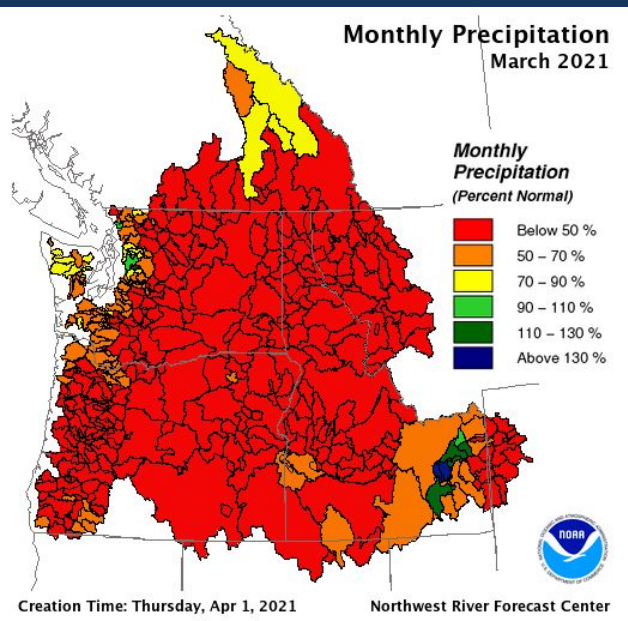
- Slight decline in forecasts basin-wide
- Mixed near and below normal in the north
- Below normal in the south



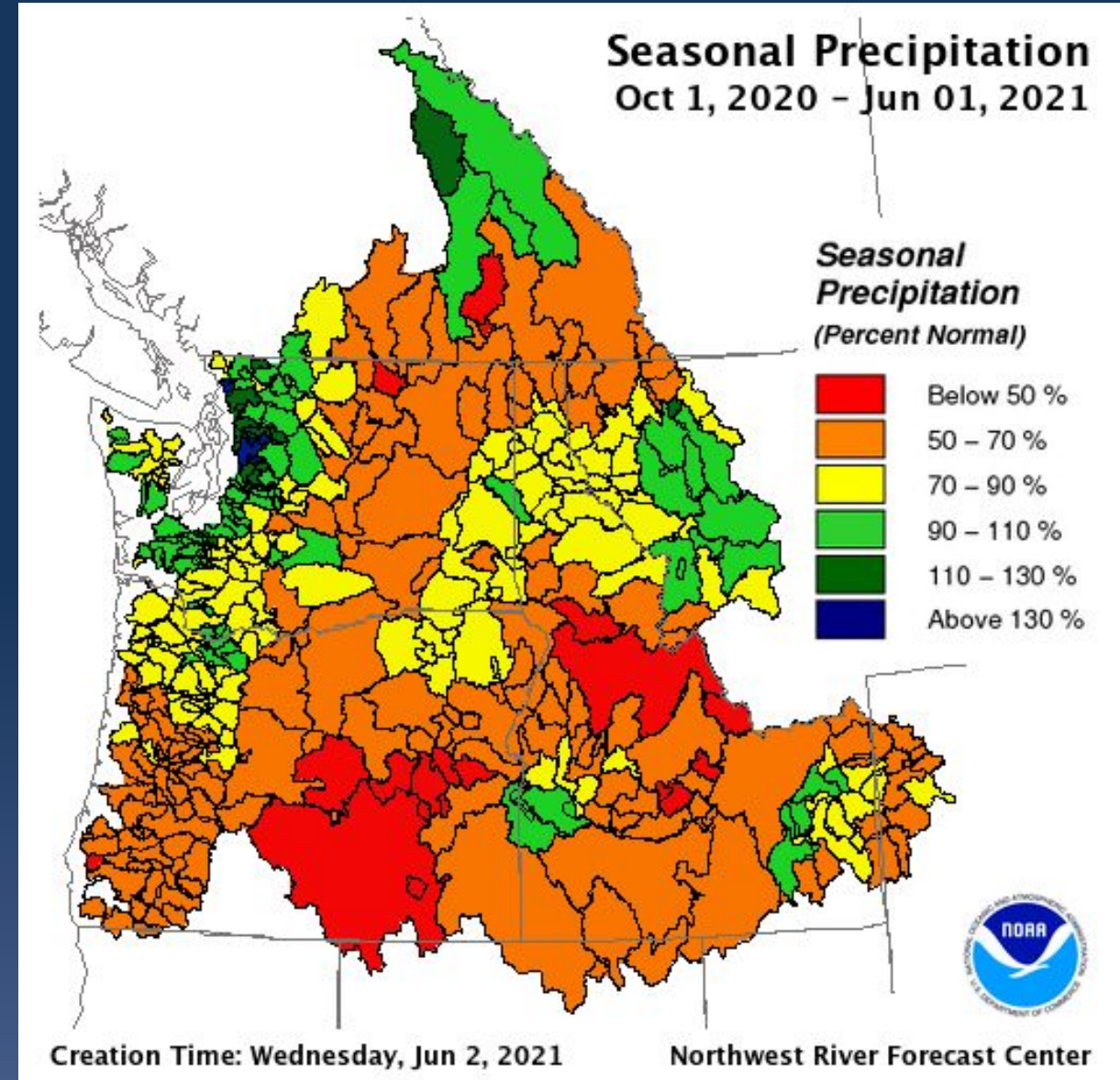
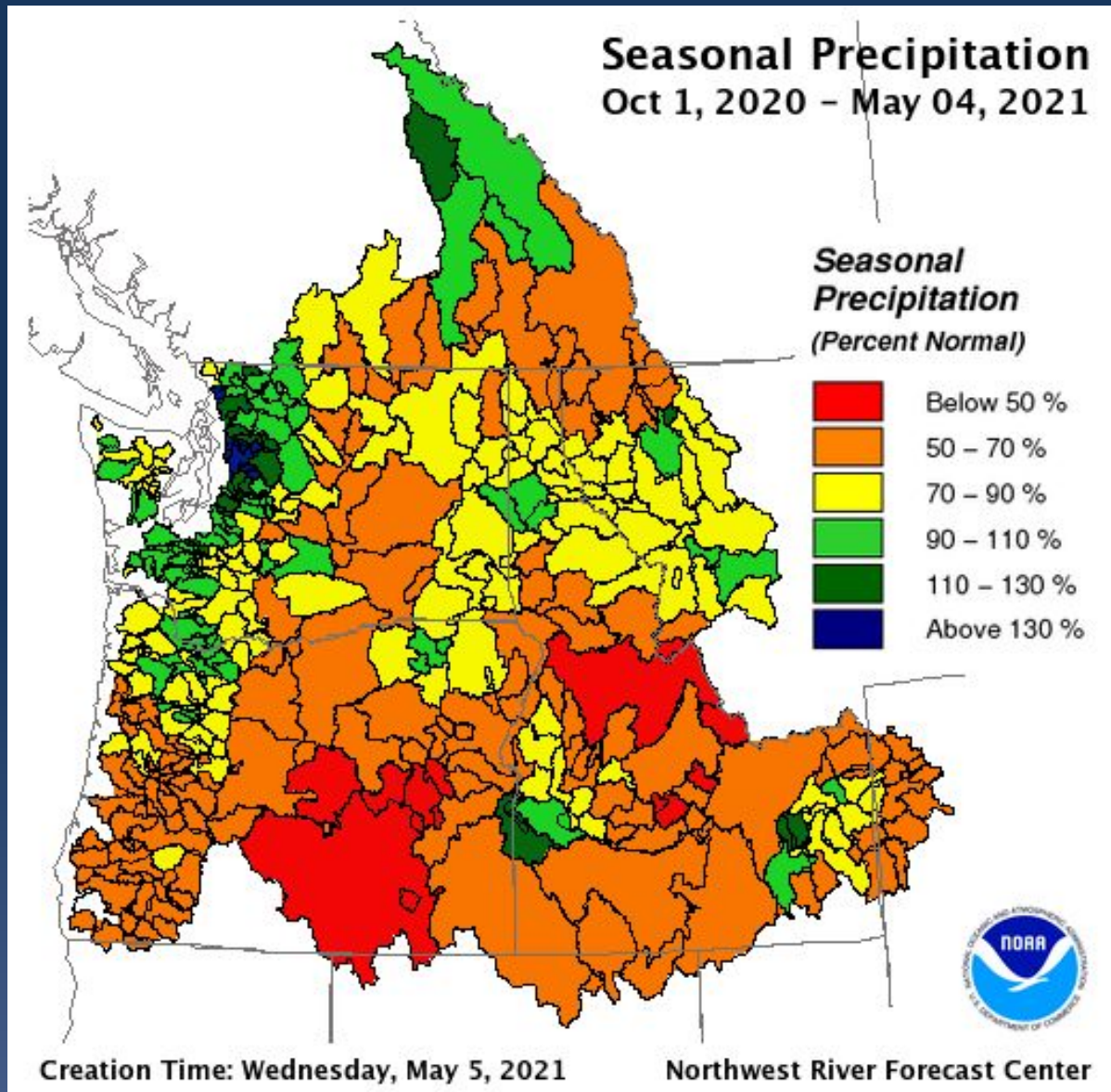
Monthly Temperature Departure



Monthly Precipitation

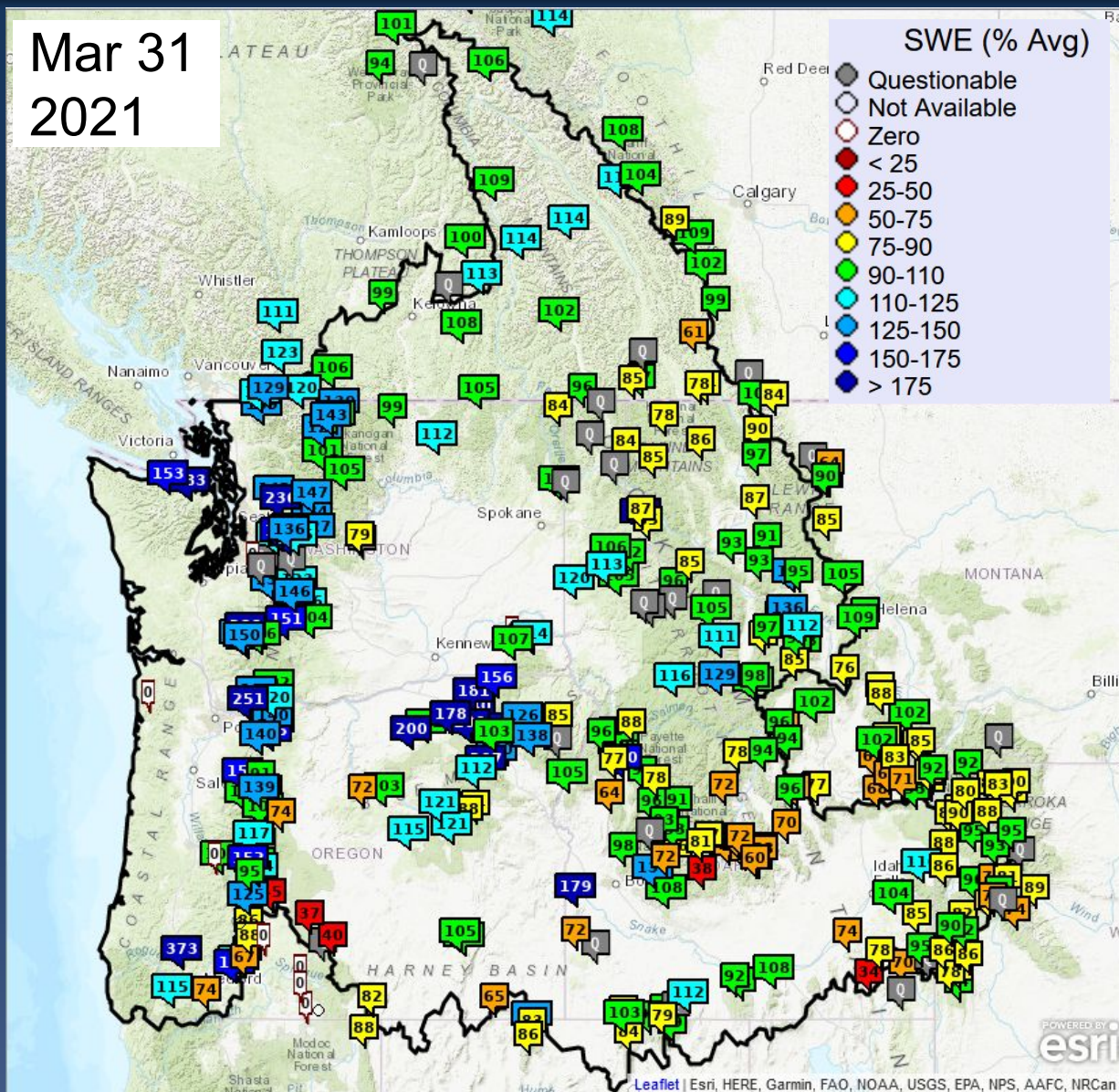


Water Year to Date Precipitation

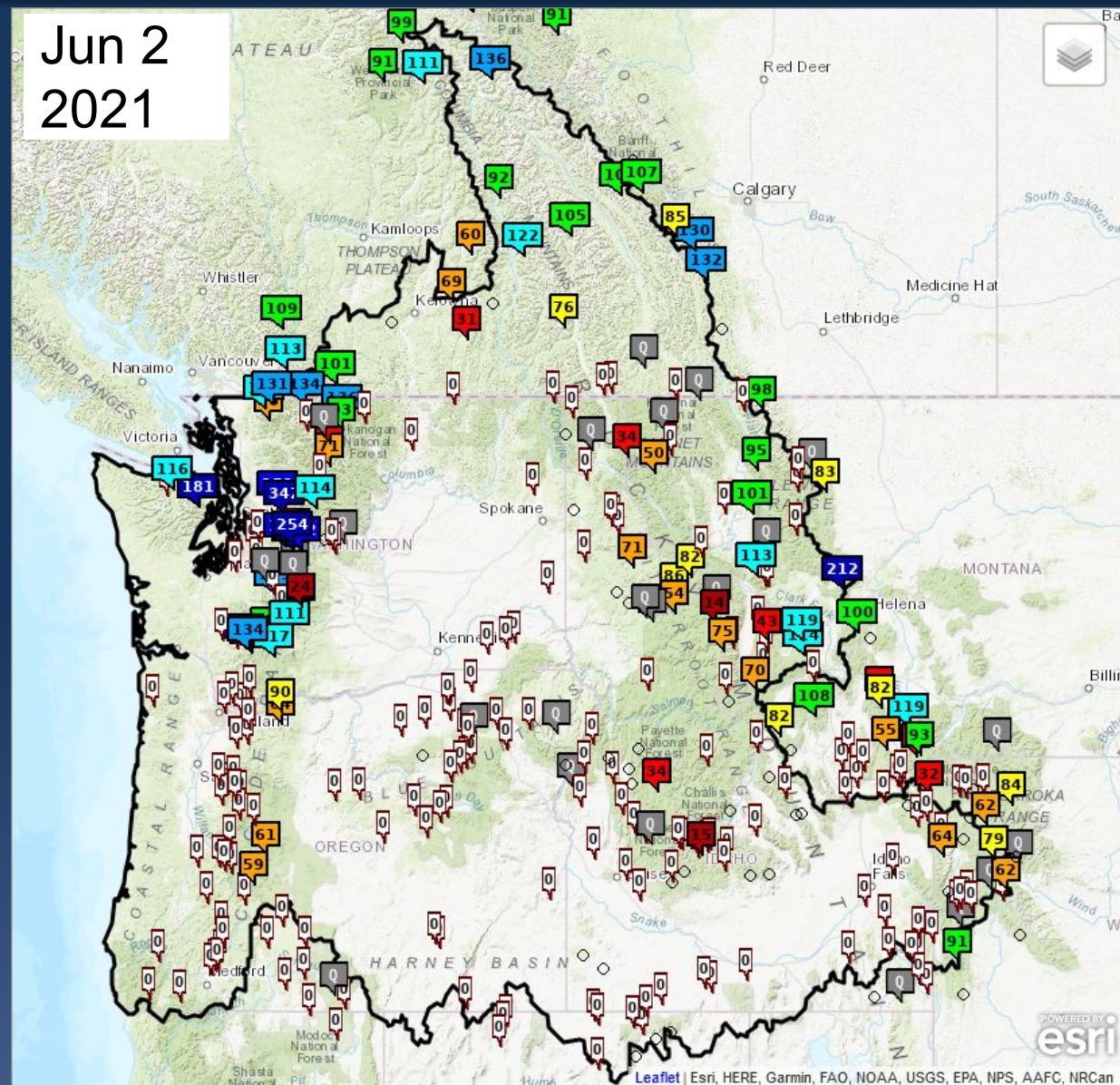


Snowpack

Mar 31
2021



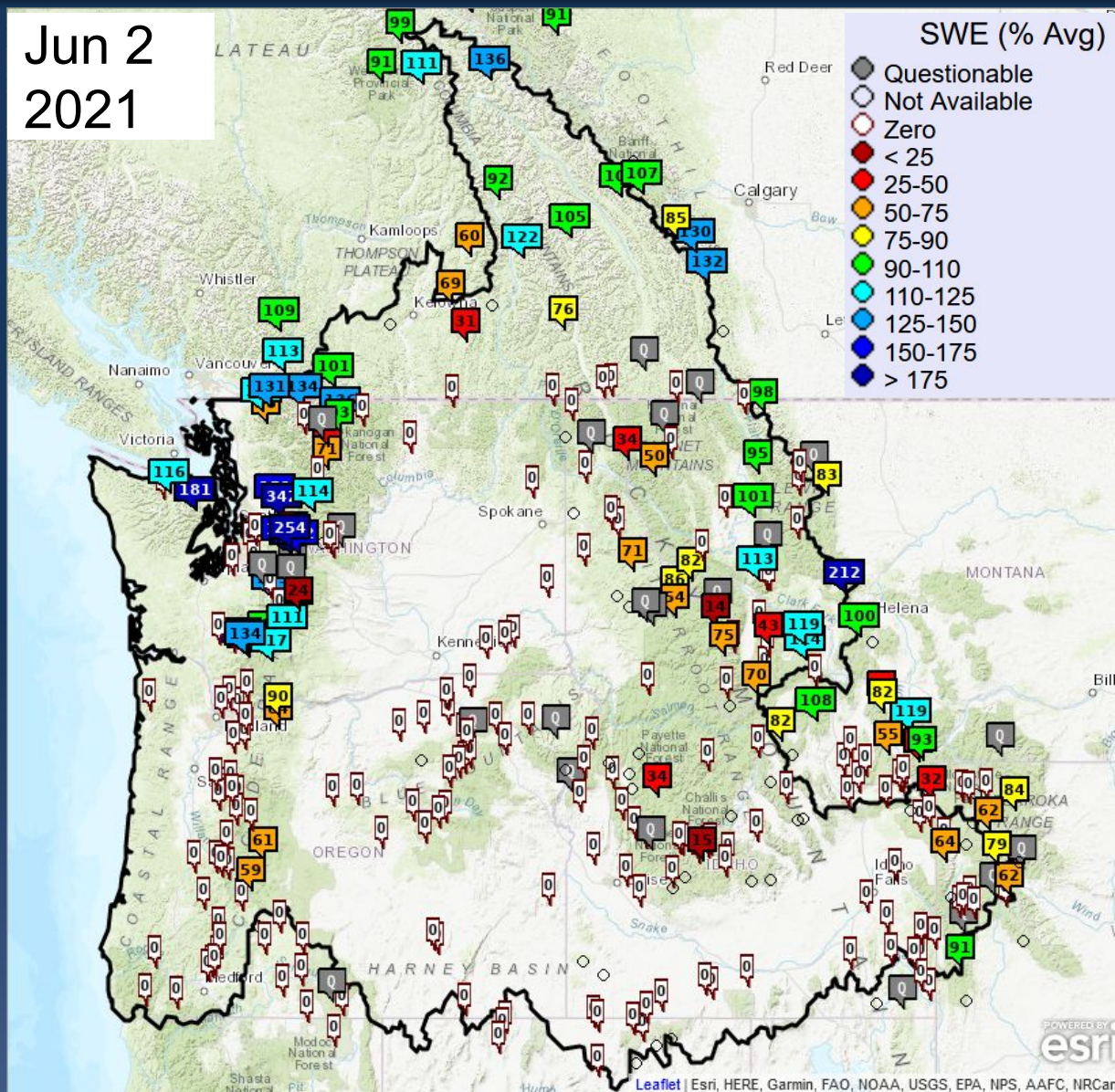
Jun 2
2021



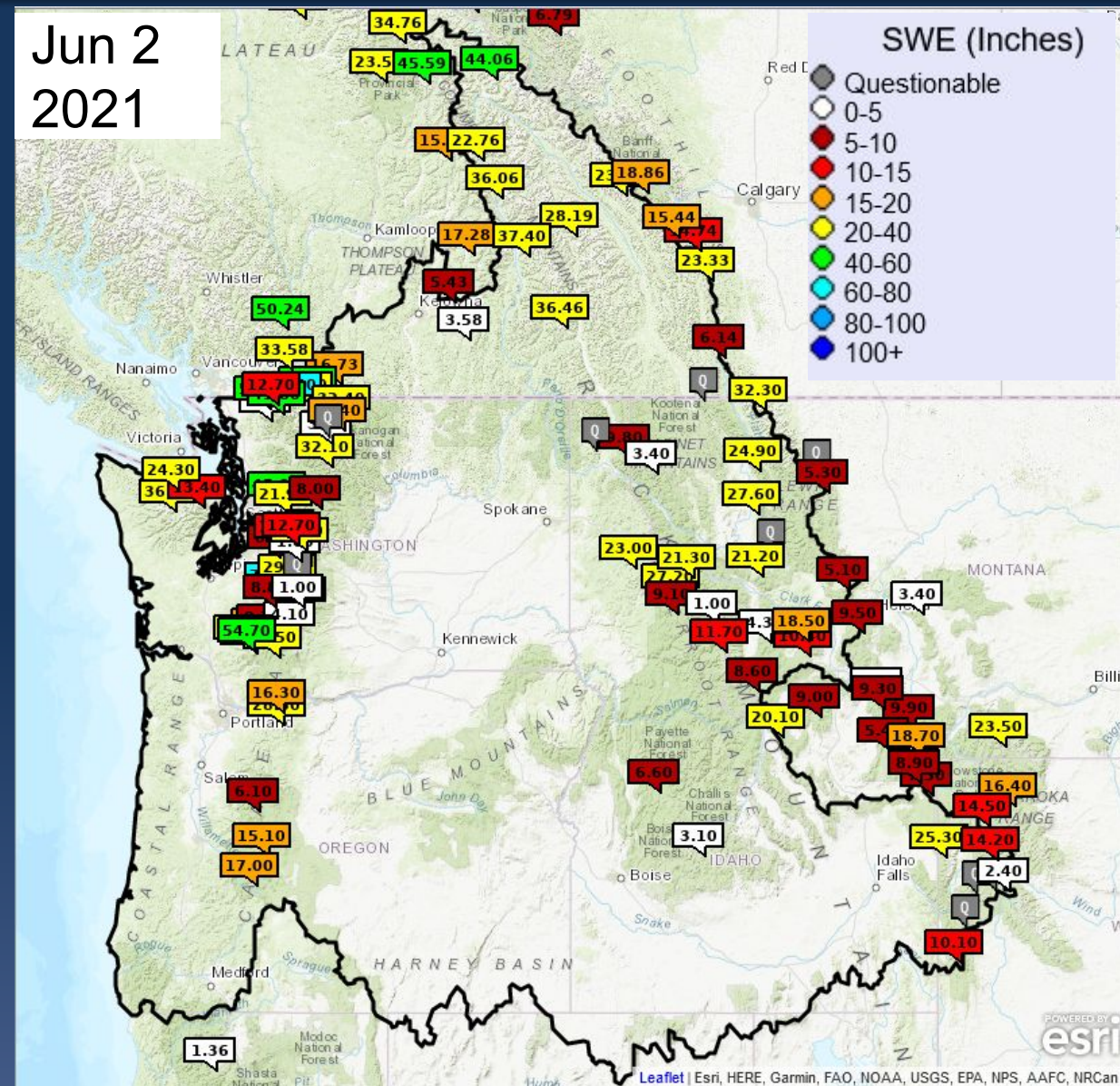
Snow data from Natural Resources Conservation Service (NRCS), BC Hydro, and Alberta Environment and Parks (EP).

Snowpack

Jun 2
2021



Jun 2
2021

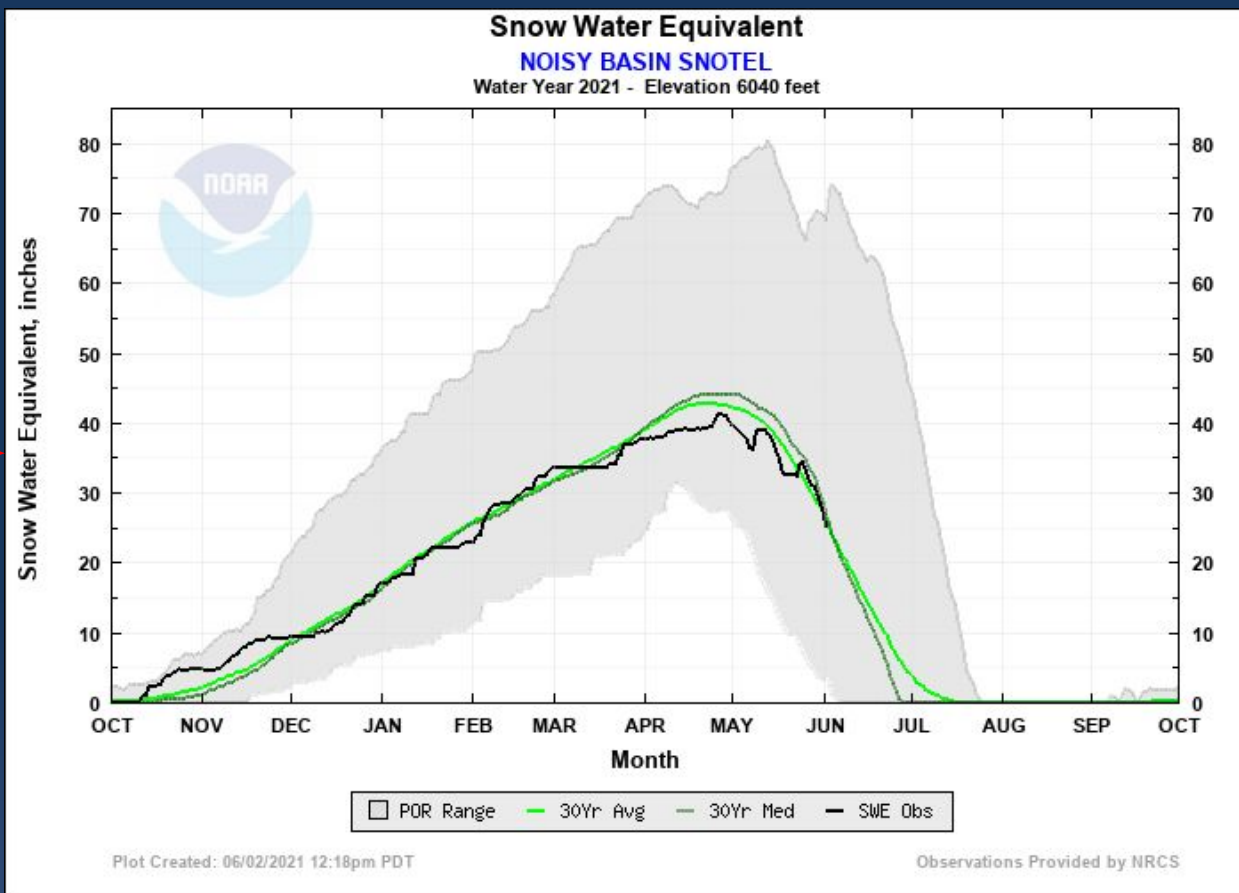
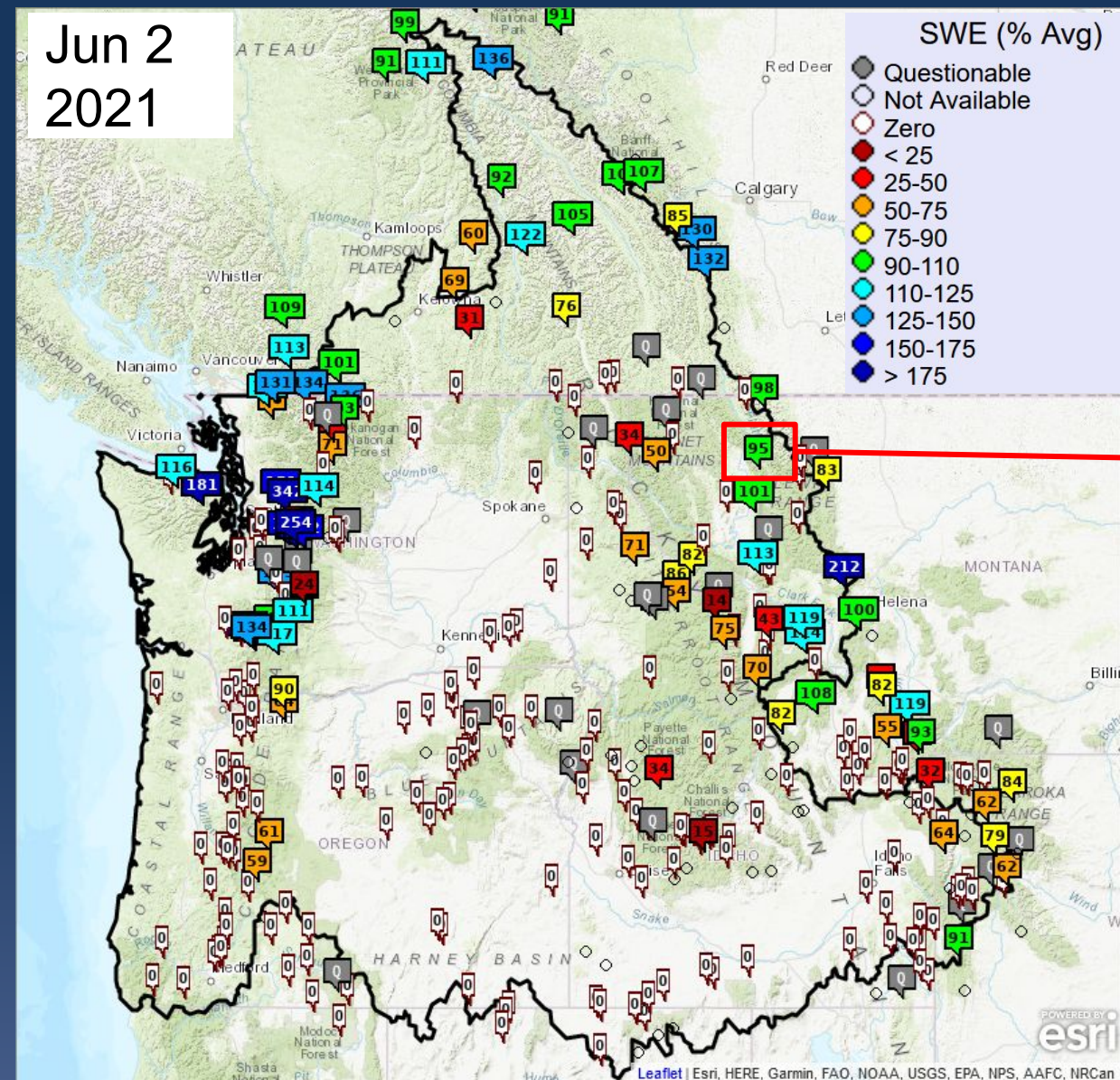


Snow data from (NRCS), BC Hydro, and Alberta EP.



Snowpack

Jun 2
2021

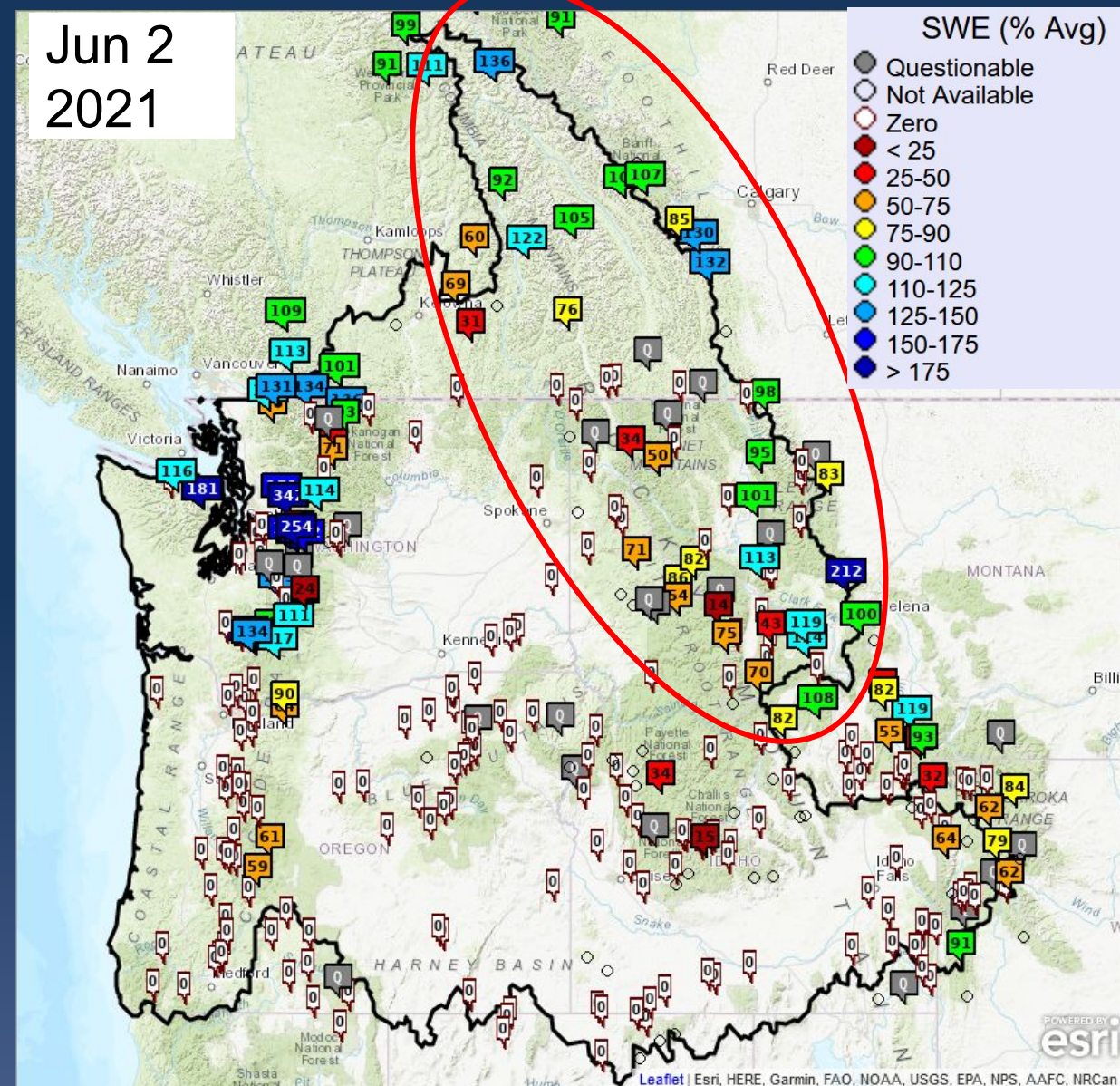


Snow data from NRCS, BC Hydro, and Alberta EP.

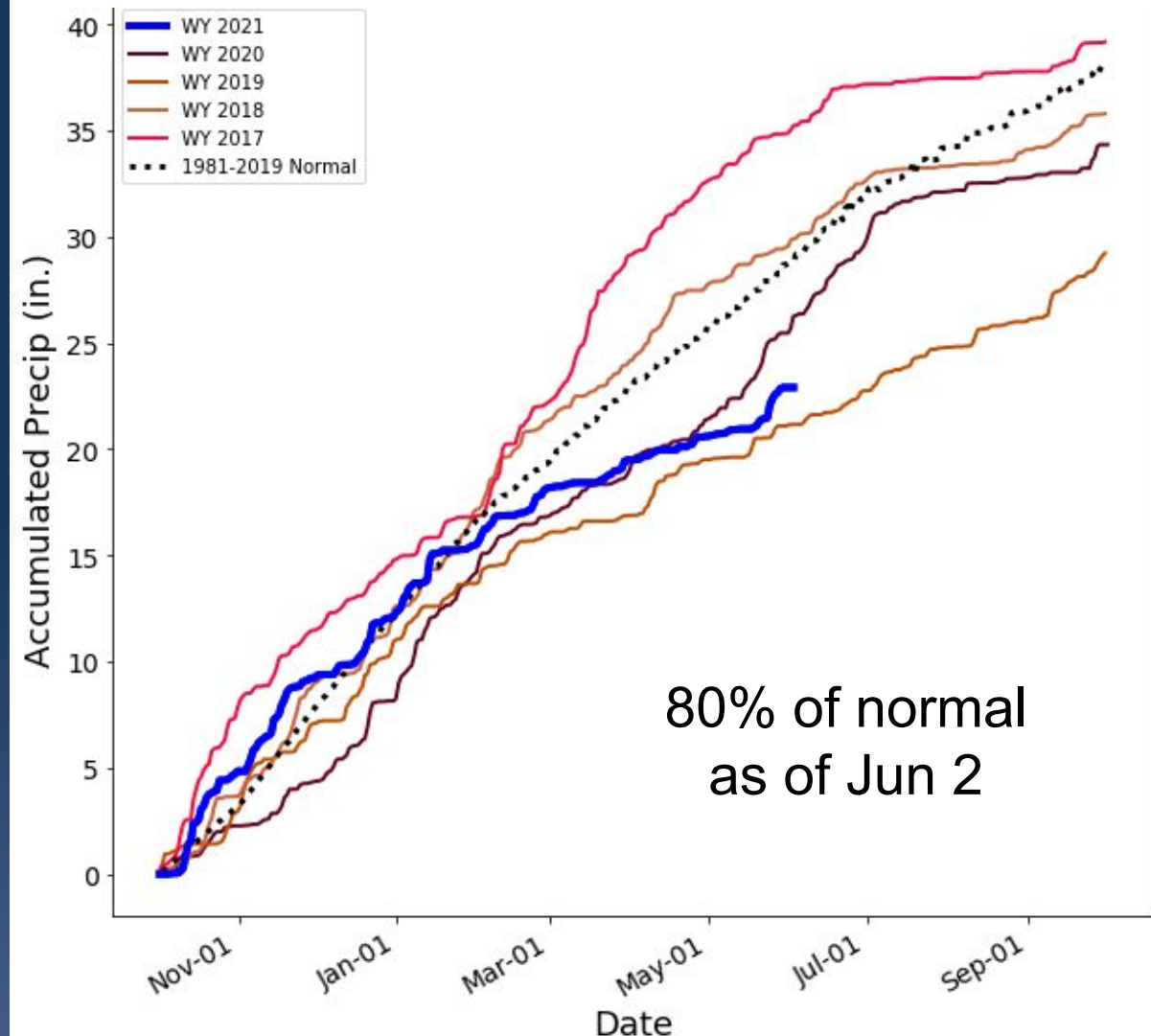


Snowpack and Seasonal Precipitation

Jun 2
2021



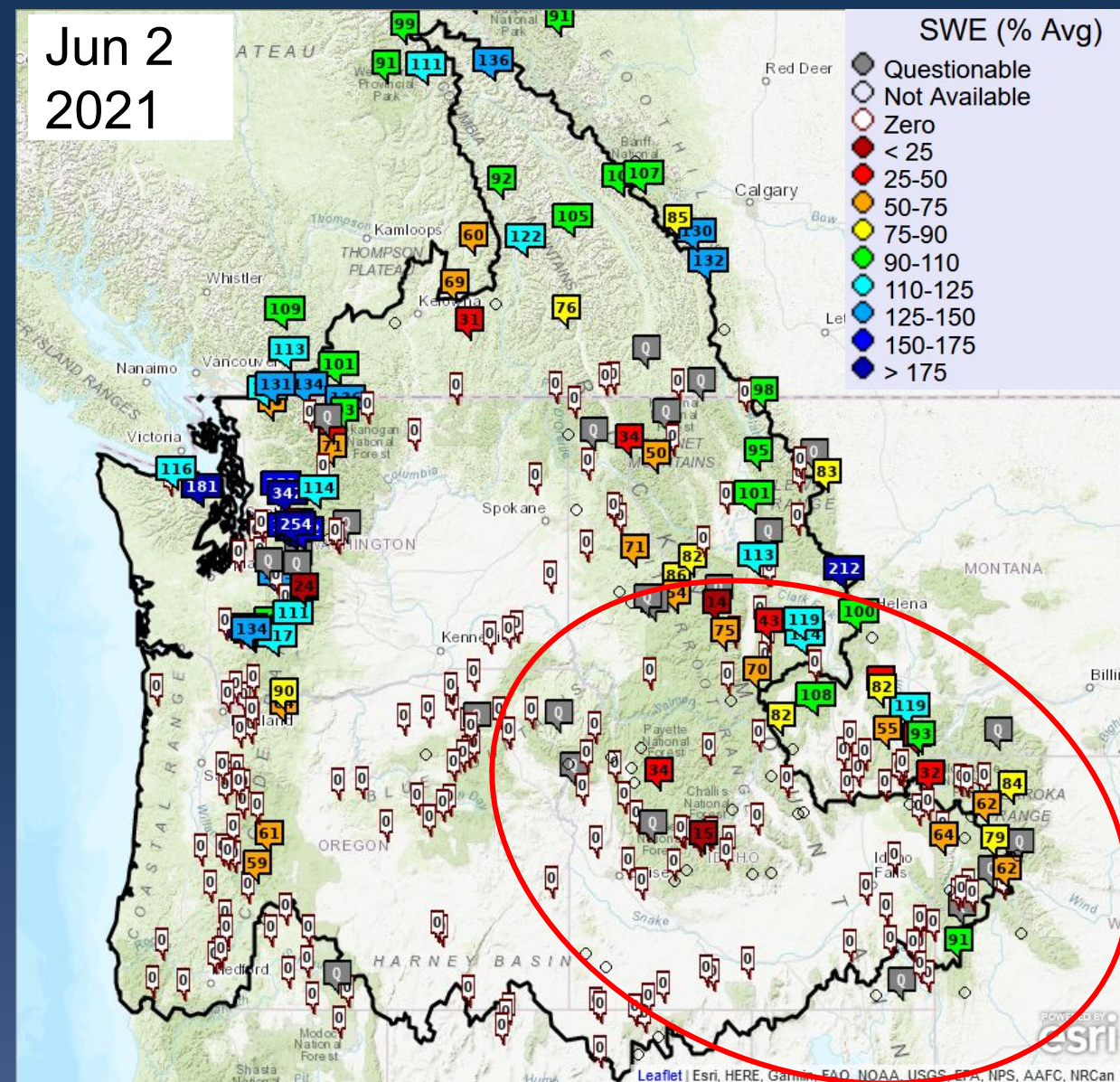
Upper Columbia



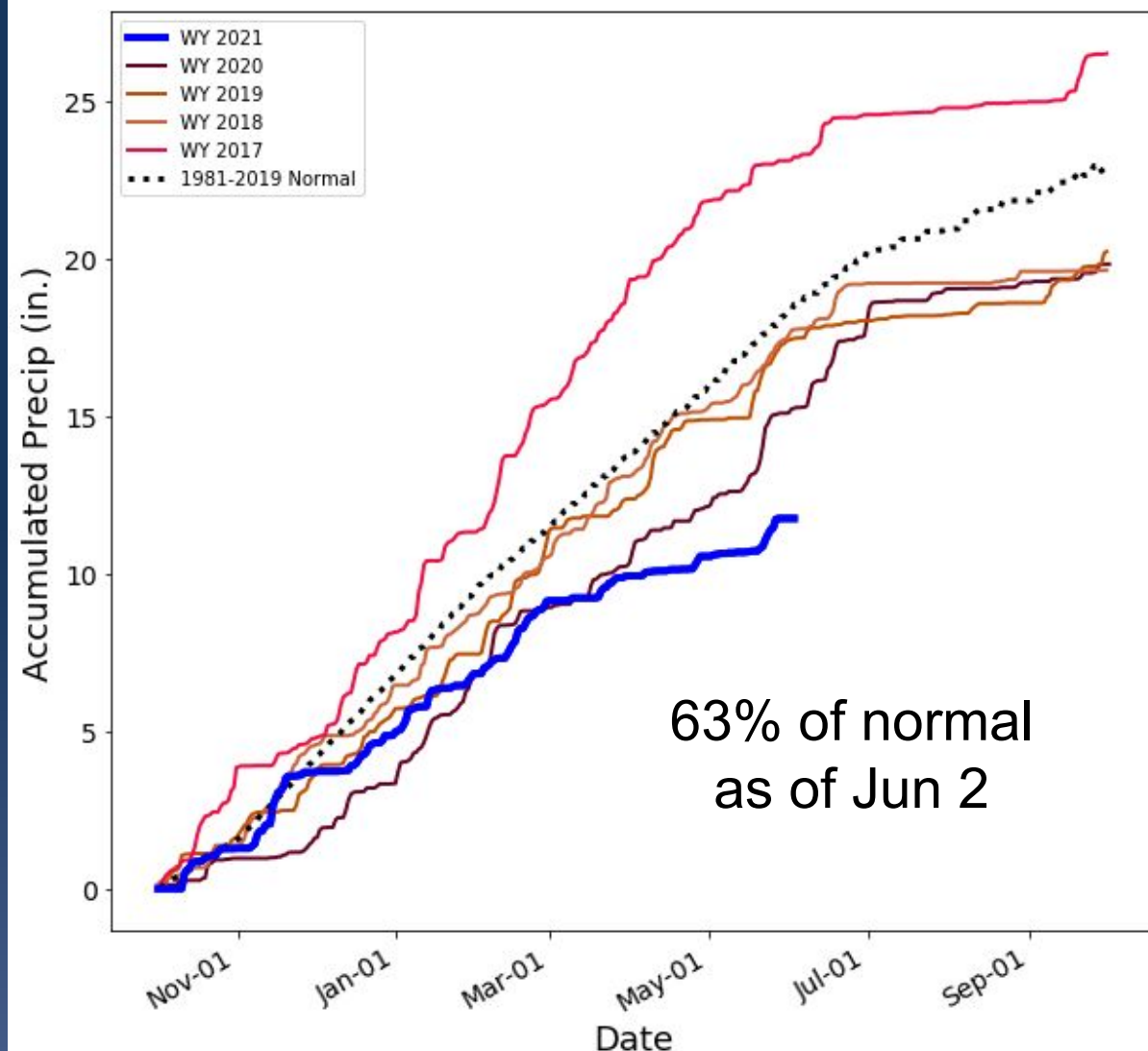
Snow data from NRCS, BC Hydro, and Alberta EP.

Snowpack and Seasonal Precipitation

Jun 2
2021



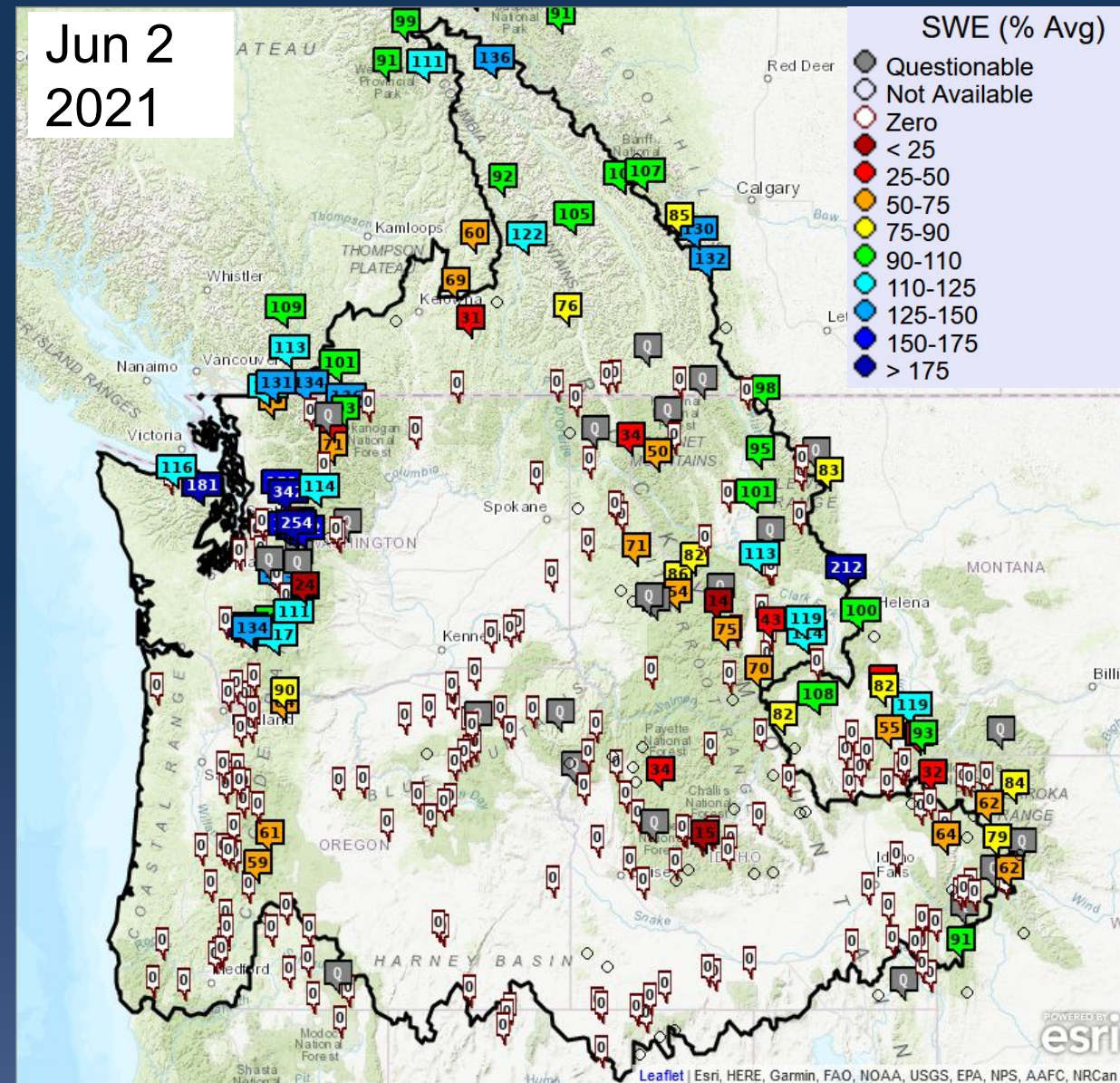
Snake River



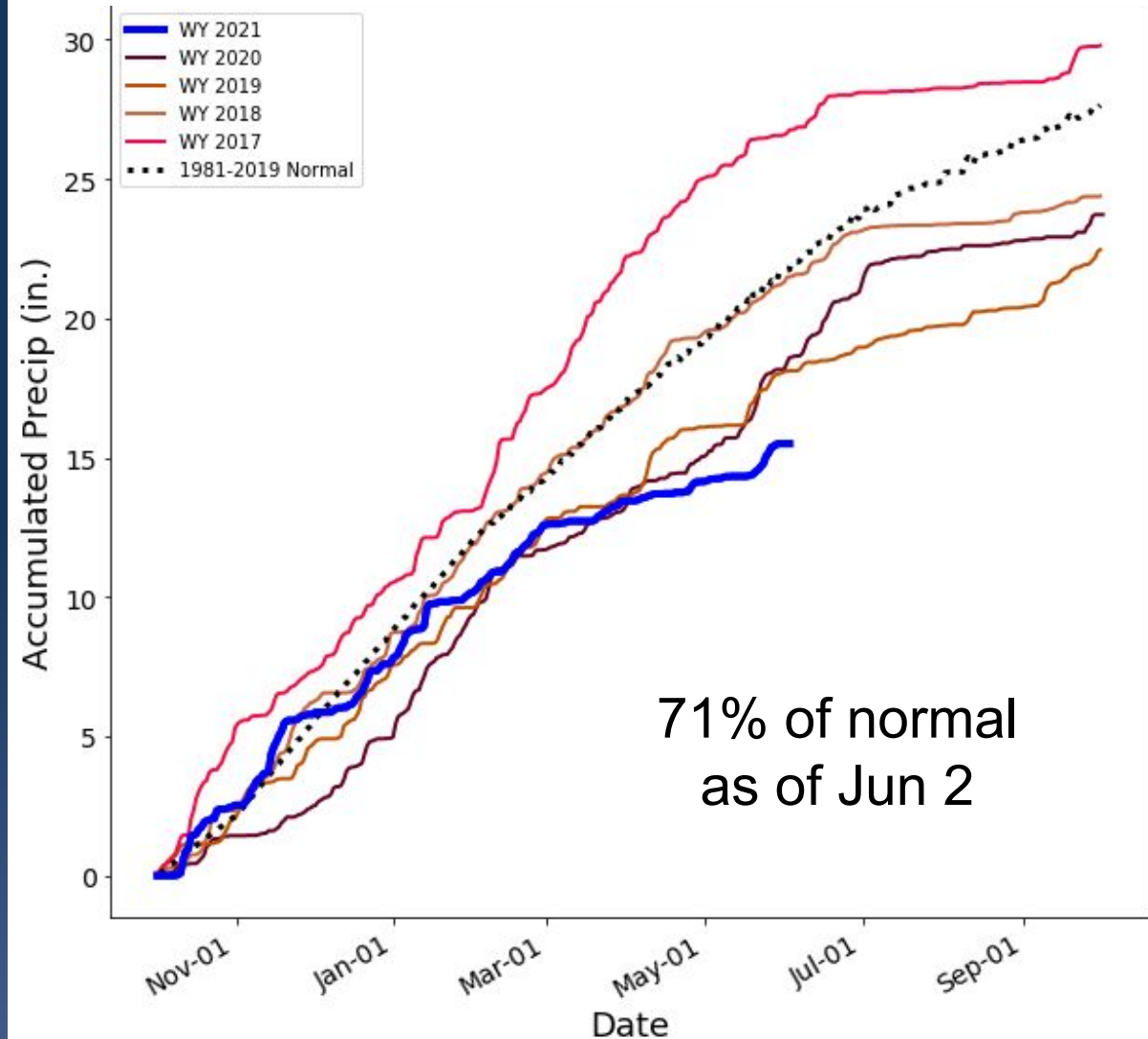


Snowpack and Seasonal Precipitation

Jun 2
2021



Columbia River above The Dalles

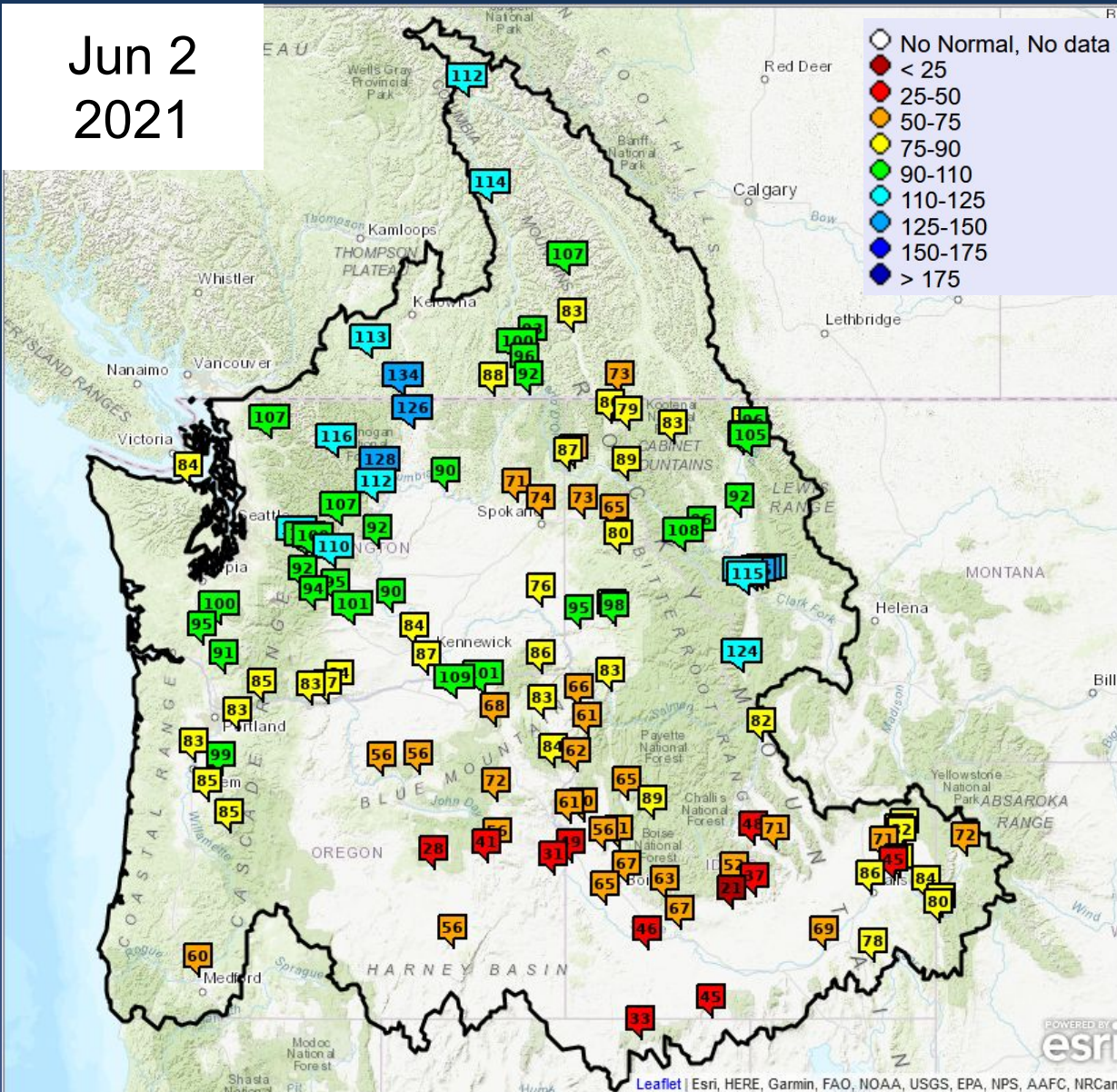


Snow data from NRCS, BC Hydro, and Alberta EP.



Water Year (WY) to Date Adjusted Runoff - East

Jun 2
2021



% Normal Runoff Oct 1- Jun 2

Upper Columbia Basin

Δ (since May 5)

| | | |
|--------------|-----|----|
| Mica | 112 | -1 |
| Duncan | 107 | +5 |
| Queens Bay | 83 | +7 |
| Libby | 83 | +8 |
| Hungry Horse | 105 | +2 |
| Grand Coulee | 90 | +2 |

Snake River Basin

| | | |
|----------------|----|----|
| American Falls | 69 | -7 |
| Lucky Peak | 67 | -5 |
| Dworshak | 87 | +3 |
| Lower Granite | 76 | +1 |

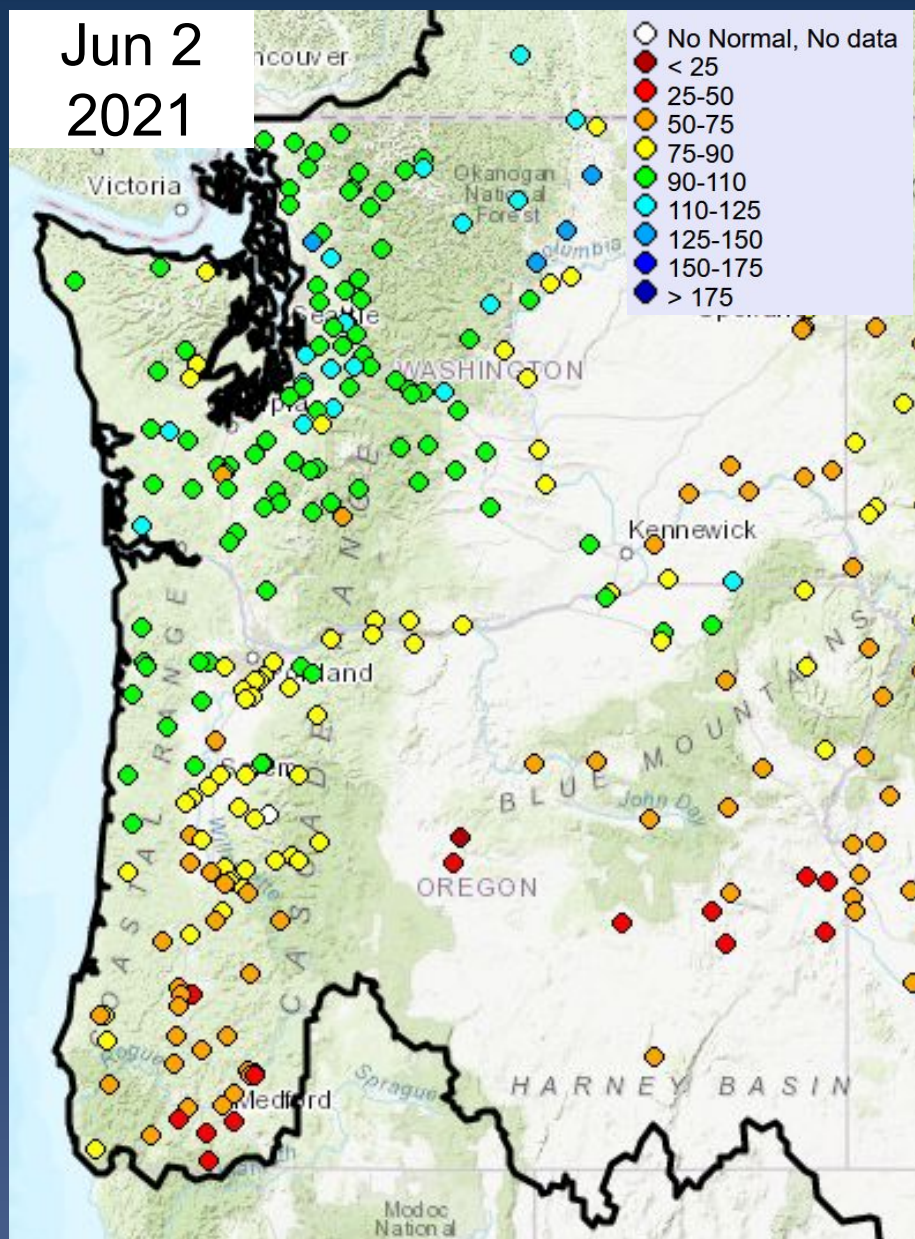
Lower Columbia Basin

| | | |
|------------|----|----|
| The Dalles | 83 | +3 |
|------------|----|----|



WY to Date Adjusted Natural Runoff - OR,WA

Jun 2
2021



% Normal Runoff Oct 1- Jun 2

Washington

Δ (since May 5)

| | | |
|------------------------|-----|----|
| Skagit nr Mt Vernon | 109 | -1 |
| Dungeness nr Sequim | 83 | +2 |
| Chehalis at Porter | 101 | -2 |
| Okanogan at Malott | 127 | +3 |
| Methow nr Pateros | 126 | -6 |
| Yakima at Parker | 99 | +3 |
| Walla Walla nr Touchet | 83 | -5 |

Oregon

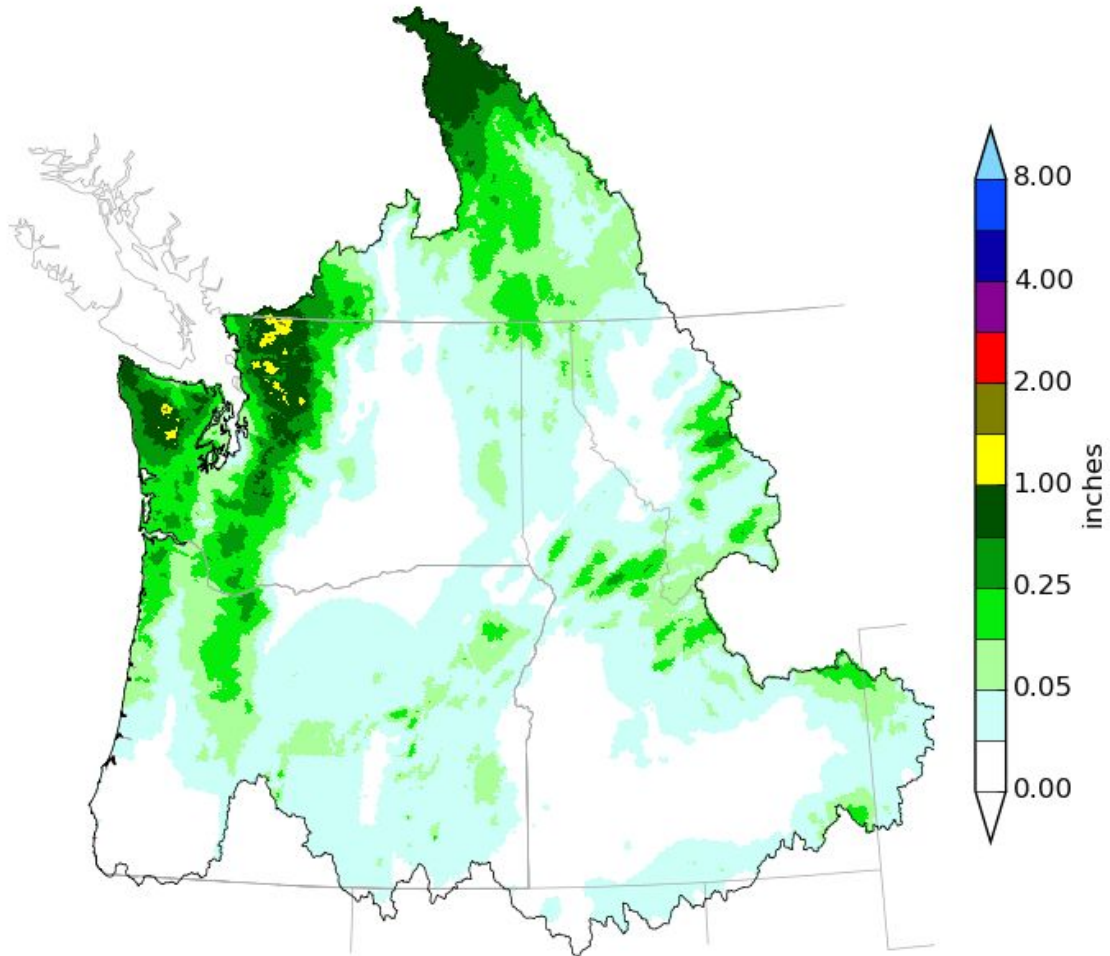
| | | |
|-----------------------|-----|----|
| Willamette at Salem | 74 | -3 |
| Rogue at Raygold | 60 | -1 |
| Umatilla at Pendleton | 109 | -4 |
| Grande Ronde at Troy | 85 | -3 |
| Owyhee Dam | 35 | -4 |



Precipitation Forecast (Jun 2 - Jun 12)



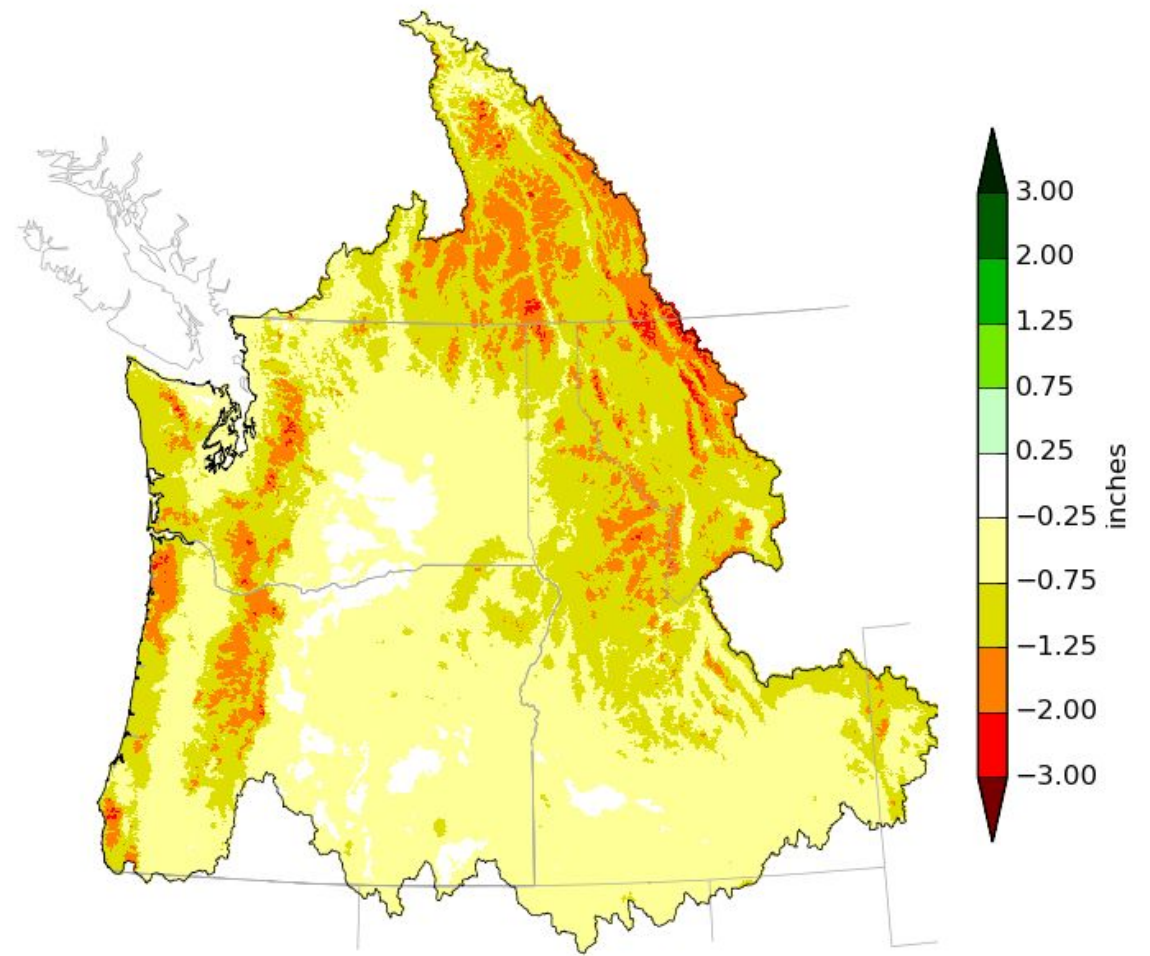
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 06/12/21



Creation Time: Wed Jun 2 15:46:14 UTC 2021



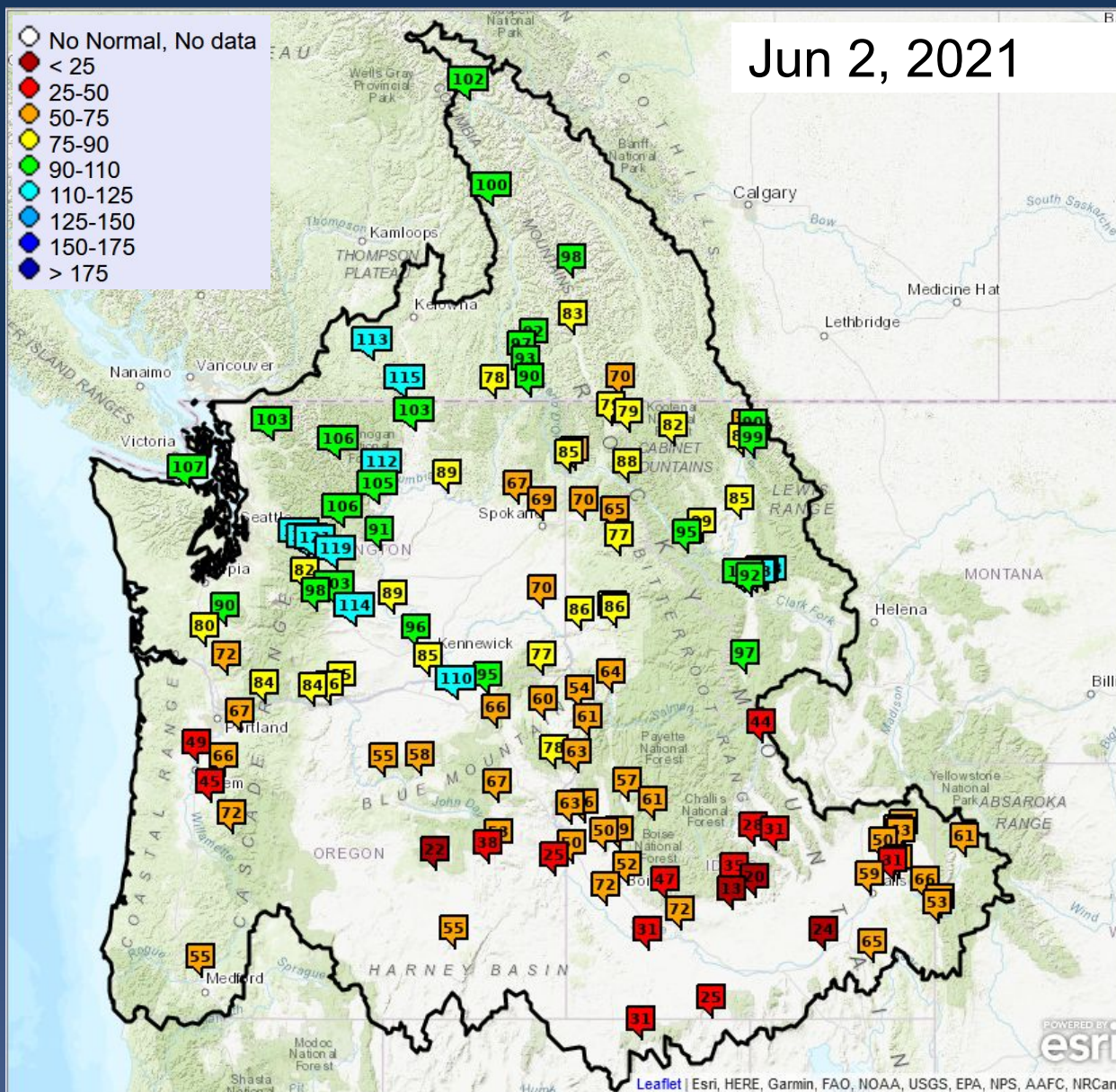
Northwest River Forecast Center
10 Day QPF (Deviation from Climatology), Ending 12Z, 06/12/21



Creation Time: Wed Jun 2 15:47:27 UTC 2021



ESP10 Water Supply Forecasts - East



% Normal Apr-Sep Volume

Upper Columbia Basin

Δ (since May 5)

| | | |
|--------------|-----|----|
| Mica | 102 | +2 |
| Duncan | 98 | -7 |
| Queens Bay | 83 | -6 |
| Libby | 83 | -1 |
| Hungry Horse | 99 | +7 |
| Grand Coulee | 89 | -2 |

Snake River Basin

| | | |
|----------------|----|----|
| American Falls | 24 | -7 |
| Lucky Peak | 52 | -4 |
| Dworshak | 85 | -3 |
| Lower Granite | 70 | -1 |

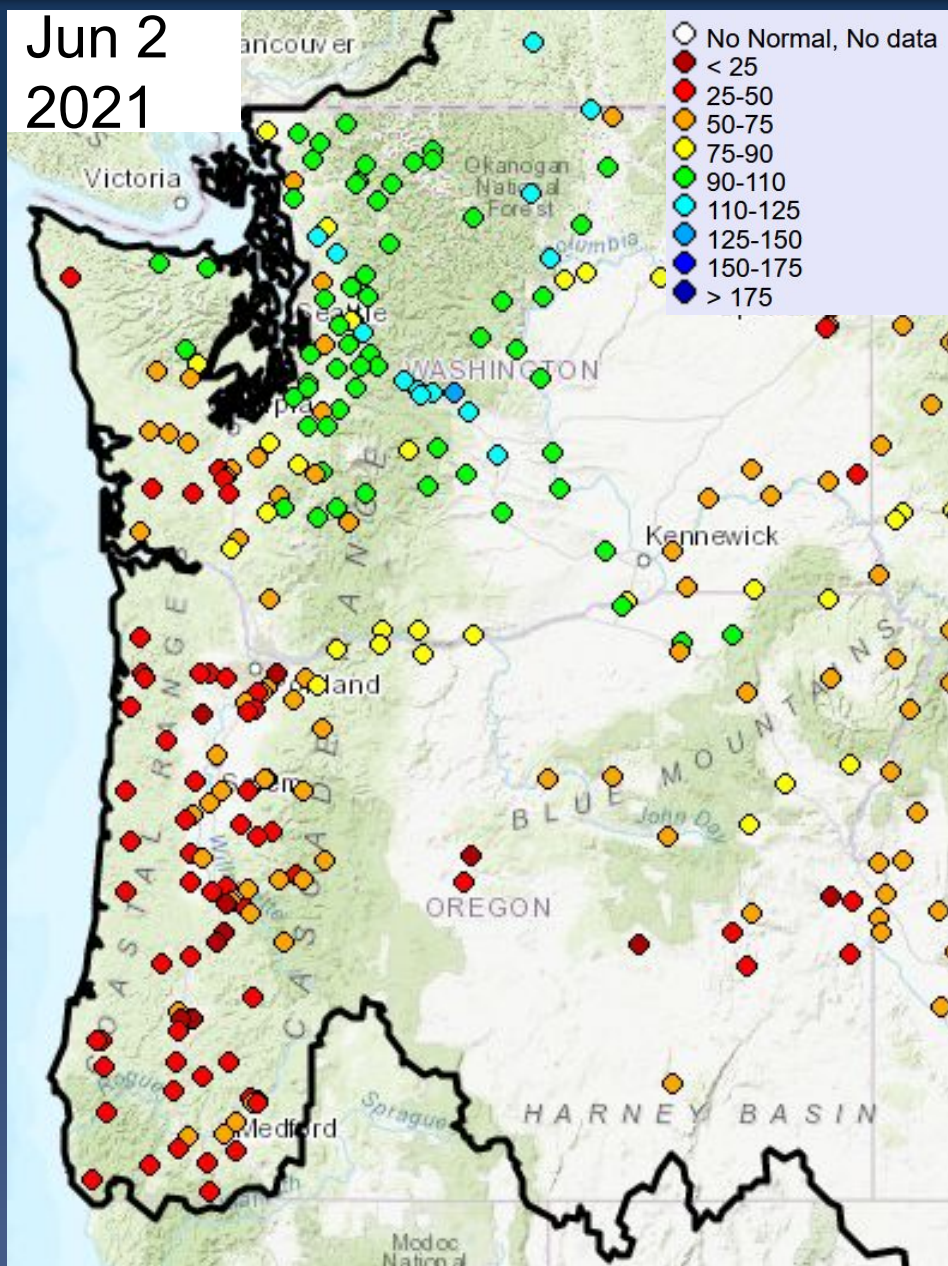
Lower Columbia Basin

| | | |
|------------|----|----|
| The Dalles | 84 | -2 |
|------------|----|----|



ESP10 Natural Forecasts - OR, WA

Jun 2
2021



% Normal Apr-Sep Vol

Washington

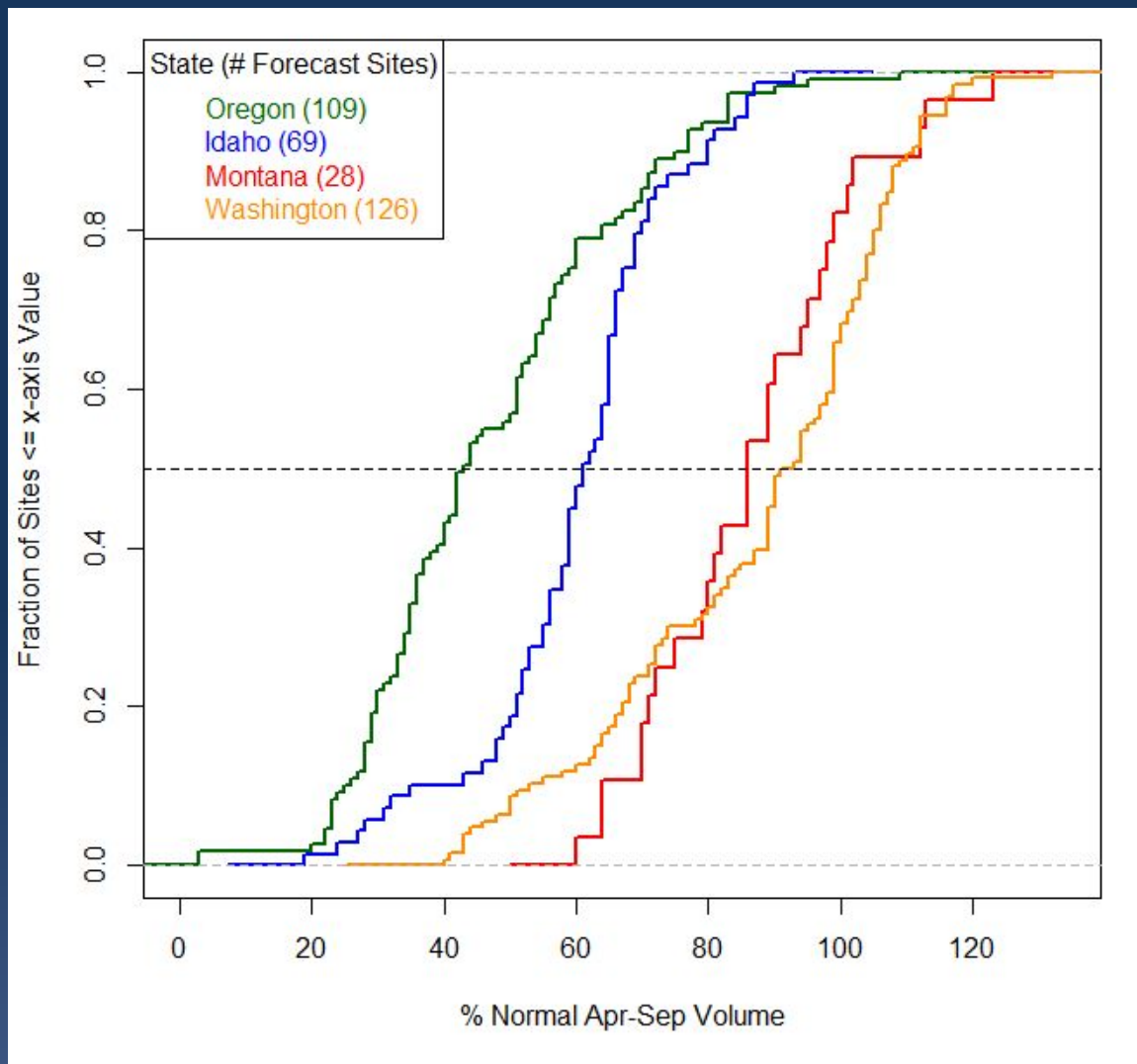
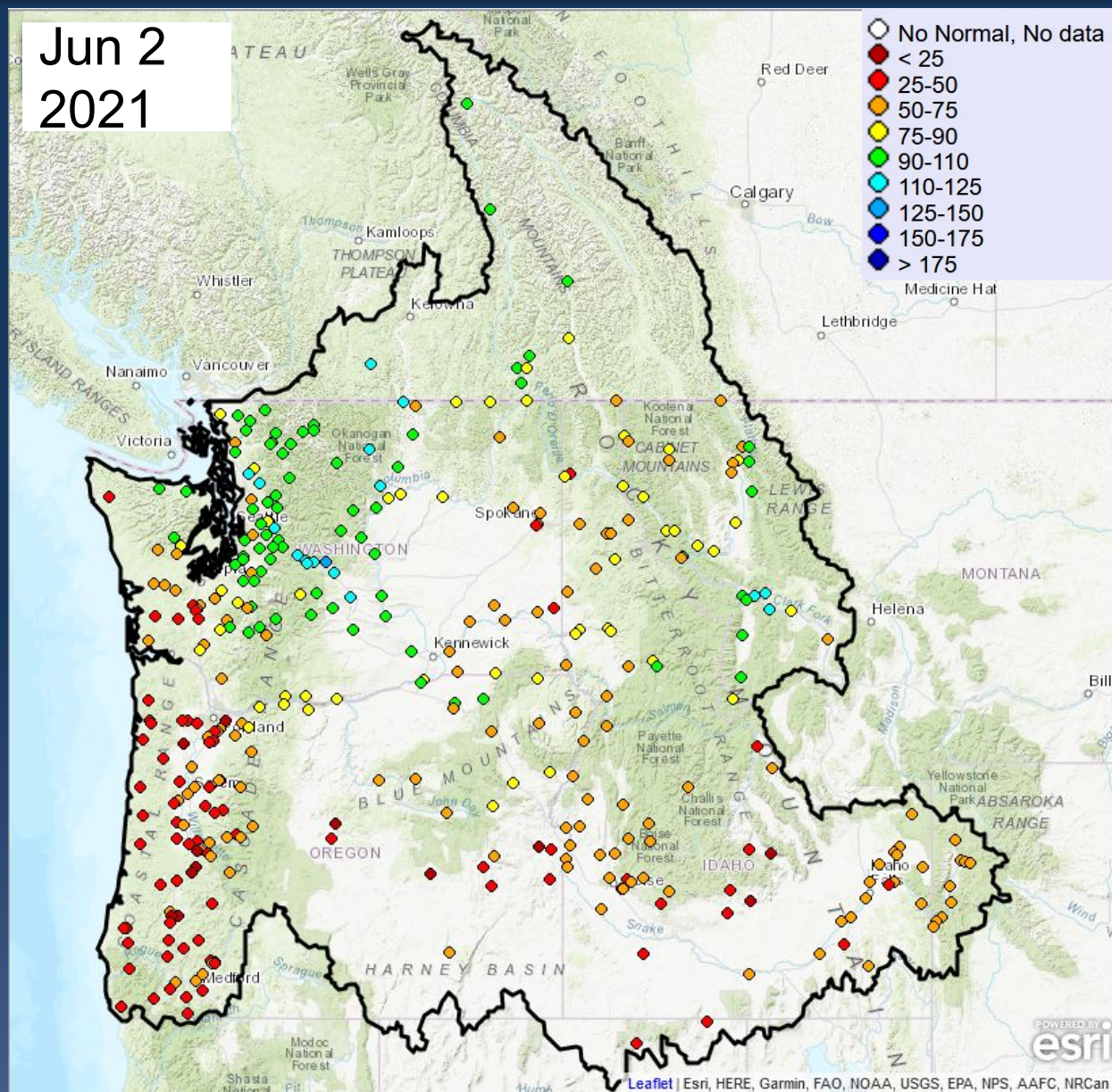
| | | <u>Δ (since May 5)</u> |
|------------------------|-----|------------------------|
| Skagit nr Mt Vernon | 101 | +2 |
| Dungeness nr Sequim | 107 | +5 |
| Chehalis at Porter | 55 | -- |
| Okanogan at Malott | 102 | -9 |
| Methow nr Pateros | 112 | -5 |
| Yakima at Parker | 108 | +4 |
| Walla Walla nr Touchet | 53 | -20 |

Oregon

| | | |
|------------------------|-----|-----|
| Willamette at Salem | 50 | -4 |
| Rogue at Raygold | 57 | -2 |
| Umatilla at Pendleton | 109 | -10 |
| Grande Ronde R at Troy | 77 | -13 |
| Owyhee Dam | 34 | -- |

ESP10 Natural Forecasts

Jun 2
2021





ESP10 Apr-Sep Water Supply Forecasts

COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2021

Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

| Forecast Period | Forecasts Are in KAF | | | | 30 Year Average (1981-2010) |
|-----------------|----------------------|-------|-----------|-------|-----------------------------|
| | 90 % | 50 % | % Average | 10 % | |
| APR-SEP | 51373 | 53684 | 89 | 55975 | 60110 |
| APR-JUL | 43448 | 44666 | 88 | 46917 | 51015 |
| APR-AUG | 48441 | 50001 | 88 | 52664 | 56763 |
| JAN-SEP | 58624 | 60935 | 89 | 63227 | 68694 |
| JAN-JUL | 50699 | 51917 | 87 | 54168 | 59599 |
| OCT-SEP | 67410 | 69721 | 91 | 72012 | 76824 |

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-02 Issued: 2021-06-02

| | | | | | |
|---------|-------|-------|----|-------|-------|
| APR-SEP | 52876 | 54452 | 91 | 57415 | 60110 |
| APR-JUL | 44617 | 45881 | 90 | 47643 | 51015 |
| APR-AUG | 49194 | 50924 | 90 | 53400 | 56763 |
| JAN-SEP | 60127 | 61703 | 90 | 64666 | 68694 |
| JAN-JUL | 51869 | 53132 | 89 | 54894 | 59599 |
| OCT-SEP | 68913 | 70489 | 92 | 73452 | 76824 |

Reference

ESP with 0 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

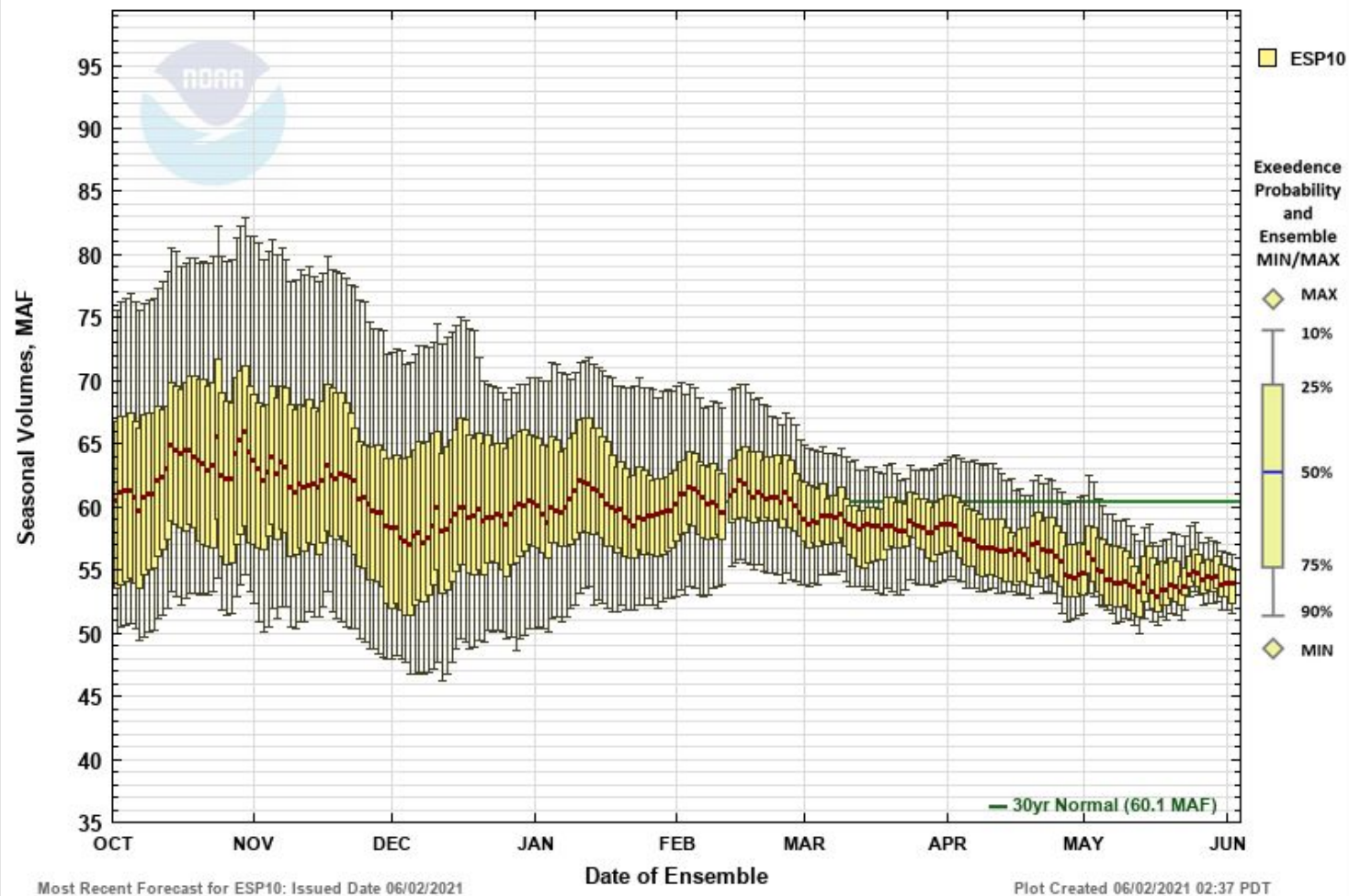
| | | | | | |
|---------|-------|-------|----|-------|-------|
| APR-SEP | 53555 | 55378 | 92 | 59446 | 60110 |
| APR-JUL | 45189 | 46592 | 91 | 49416 | 51015 |
| APR-AUG | 50161 | 51975 | 92 | 55806 | 56763 |
| JAN-SEP | 60807 | 62630 | 91 | 66698 | 68694 |
| JAN-JUL | 52440 | 53843 | 90 | 56667 | 59599 |
| OCT-SEP | 69592 | 71415 | 93 | 75484 | 76824 |

Move the mouse over the desired "Forecast Period" to display a graph.

Water Supply Forecasts

COLUMBIA - GRAND COULEE DAM

Period APR to SEP -- Water Year 2021



☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days ☐ Show Min/Max Ensemble Volume ☐ Show Tooltips Help



ESP10 Apr-Sep Water Supply Forecasts

SNAKE - LOWER GRANITE DAM (LGDW1) Forecasts for Water Year 2021

Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

| Forecast Period | Forecasts Are in KAF | | | | 30 Year Average (1981-2010) |
|-----------------|----------------------|-------|-----------|-------|-----------------------------|
| | 90 % | 50 % | % Average | 10 % | |
| APR-SEP | 15322 | 15529 | 70 | 15963 | 22279 |
| APR-JUL | 13224 | 13371 | 67 | 13590 | 19848 |
| APR-AUG | 14281 | 14472 | 69 | 14750 | 21091 |
| JAN-SEP | 20599 | 20806 | 70 | 21240 | 29872 |
| JAN-JUL | 18501 | 18648 | 68 | 18867 | 27440 |
| OCT-SEP | 24696 | 24903 | 72 | 25337 | 34667 |

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-02 Issued: 2021-06-02

| | | | | | |
|---------|-------|-------|----|-------|-------|
| APR-SEP | 15295 | 15503 | 70 | 15951 | 22279 |
| APR-JUL | 13235 | 13371 | 67 | 13663 | 19848 |
| APR-AUG | 14282 | 14441 | 68 | 14820 | 21091 |
| JAN-SEP | 20572 | 20780 | 70 | 21228 | 29872 |
| JAN-JUL | 18512 | 18648 | 68 | 18941 | 27440 |
| OCT-SEP | 24669 | 24877 | 72 | 25326 | 34667 |

Reference

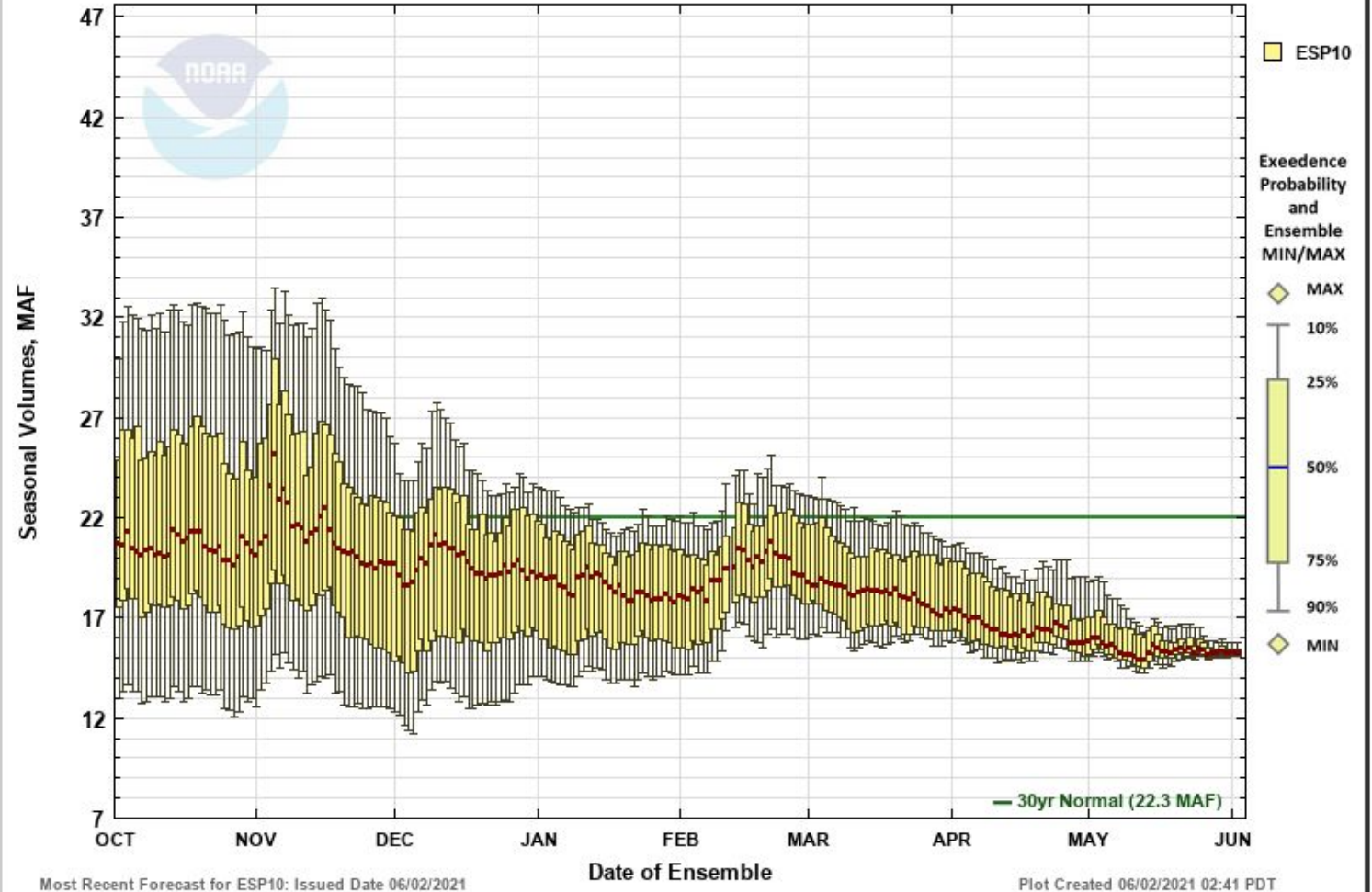
ESP with 0 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

| | | | | | |
|---------|-------|-------|----|-------|-------|
| APR-SEP | 15330 | 15797 | 71 | 17082 | 22279 |
| APR-JUL | 13303 | 13637 | 69 | 14790 | 19848 |
| APR-AUG | 14306 | 14708 | 70 | 15947 | 21091 |
| JAN-SEP | 20607 | 21074 | 71 | 22359 | 29872 |
| JAN-JUL | 18580 | 18915 | 69 | 20067 | 27440 |
| OCT-SEP | 24704 | 25172 | 73 | 26457 | 34667 |

Move the mouse over the desired "Forecast Period" to display a graph.

Water Supply Forecasts

SNAKE - LOWER GRANITE DAM
Period APR to SEP -- Water Year 2021



☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days ☐ Show Min/Max Ensemble Volume ☐ Show Tooltips Help



ESP10 Apr-Sep Water Supply Forecasts

COLUMBIA - THE DALLES DAM (TDAO3) Forecasts for Water Year 2021

Official Water Supply

ESP with 10 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

| Forecast Period | Forecasts Are in KAF | | | | 30 Year Average (1981-2010) |
|-----------------|----------------------|--------|-----------|--------|-----------------------------|
| | 90 % | 50 % | % Average | 10 % | |
| APR-SEP | 75468 | 77732 | 84 | 80582 | 92704 |
| APR-JUL | 64532 | 65778 | 82 | 68581 | 79855 |
| APR-AUG | 71076 | 72604 | 83 | 75748 | 87532 |
| JAN-SEP | 91700 | 93964 | 82 | 96814 | 114216 |
| JAN-JUL | 80765 | 82011 | 81 | 84814 | 101368 |
| OCT-SEP | 106871 | 109134 | 84 | 111984 | 130518 |

Experimental Water Supply

HEFS with 15 days EQPF Ensemble: 2021-06-02 Issued: 2021-06-02

| | | | | | |
|---------|--------|--------|----|--------|--------|
| APR-SEP | 77199 | 78882 | 85 | 82562 | 92704 |
| APR-JUL | 65808 | 66942 | 84 | 69252 | 79855 |
| APR-AUG | 71991 | 73667 | 84 | 76837 | 87532 |
| JAN-SEP | 93432 | 95115 | 83 | 98794 | 114216 |
| JAN-JUL | 82040 | 83174 | 82 | 85485 | 101368 |
| OCT-SEP | 108602 | 110285 | 84 | 113965 | 130518 |

Reference

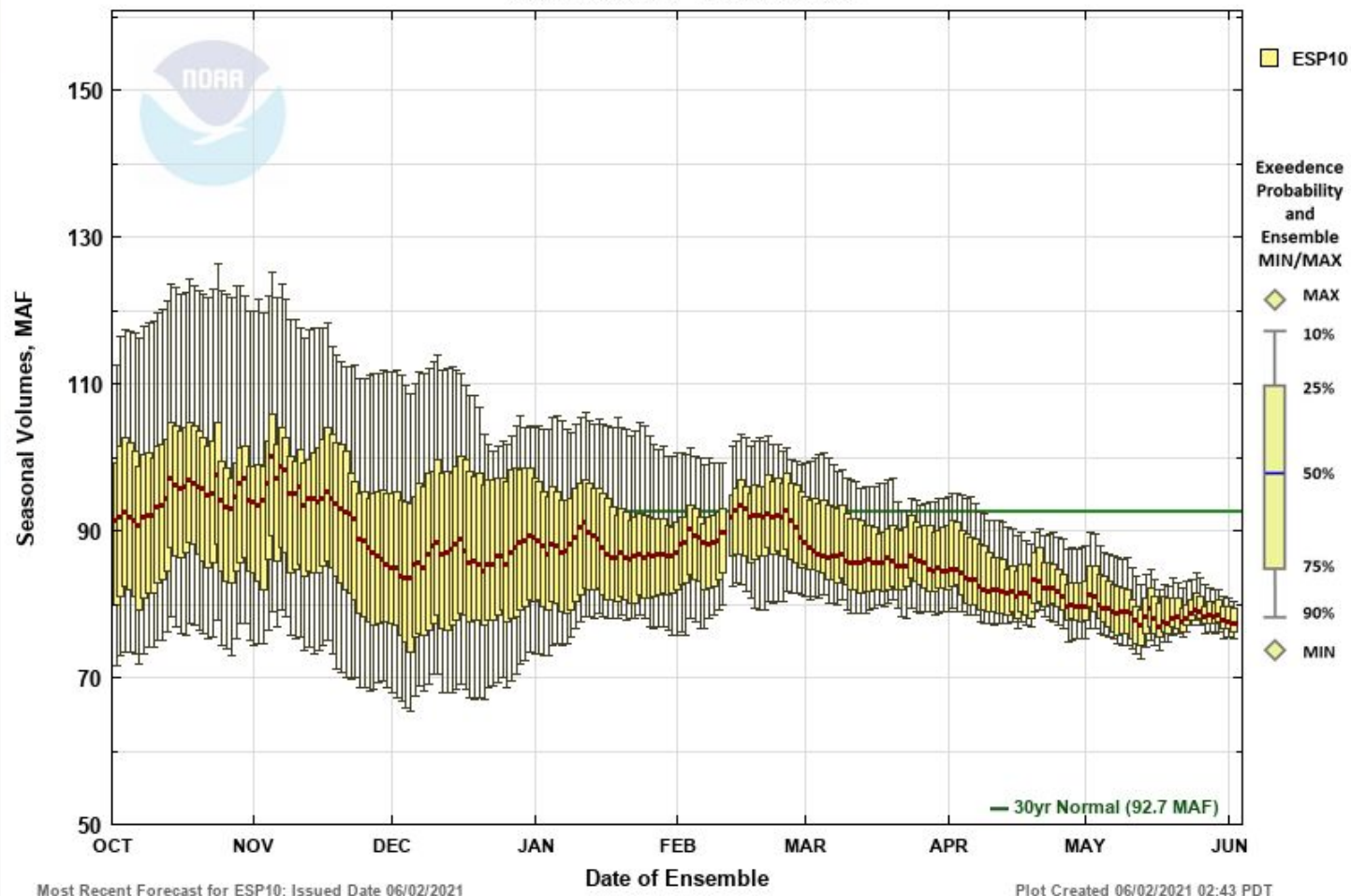
ESP with 0 Days QPF Ensemble: 2021-06-02 Issued: 2021-06-02

| | | | | | |
|---------|--------|--------|----|--------|--------|
| APR-SEP | 78426 | 80194 | 87 | 85107 | 92704 |
| APR-JUL | 66370 | 68163 | 85 | 71893 | 79855 |
| APR-AUG | 72910 | 75212 | 86 | 79732 | 87532 |
| JAN-SEP | 94659 | 96427 | 84 | 101339 | 114216 |
| JAN-JUL | 82603 | 84396 | 83 | 88125 | 101368 |
| OCT-SEP | 109829 | 111597 | 86 | 116509 | 130518 |

Move the mouse over the desired "Forecast Period" to display a graph.

Water Supply Forecasts

COLUMBIA - THE DALLES DAM
Period APR to SEP -- Water Year 2021

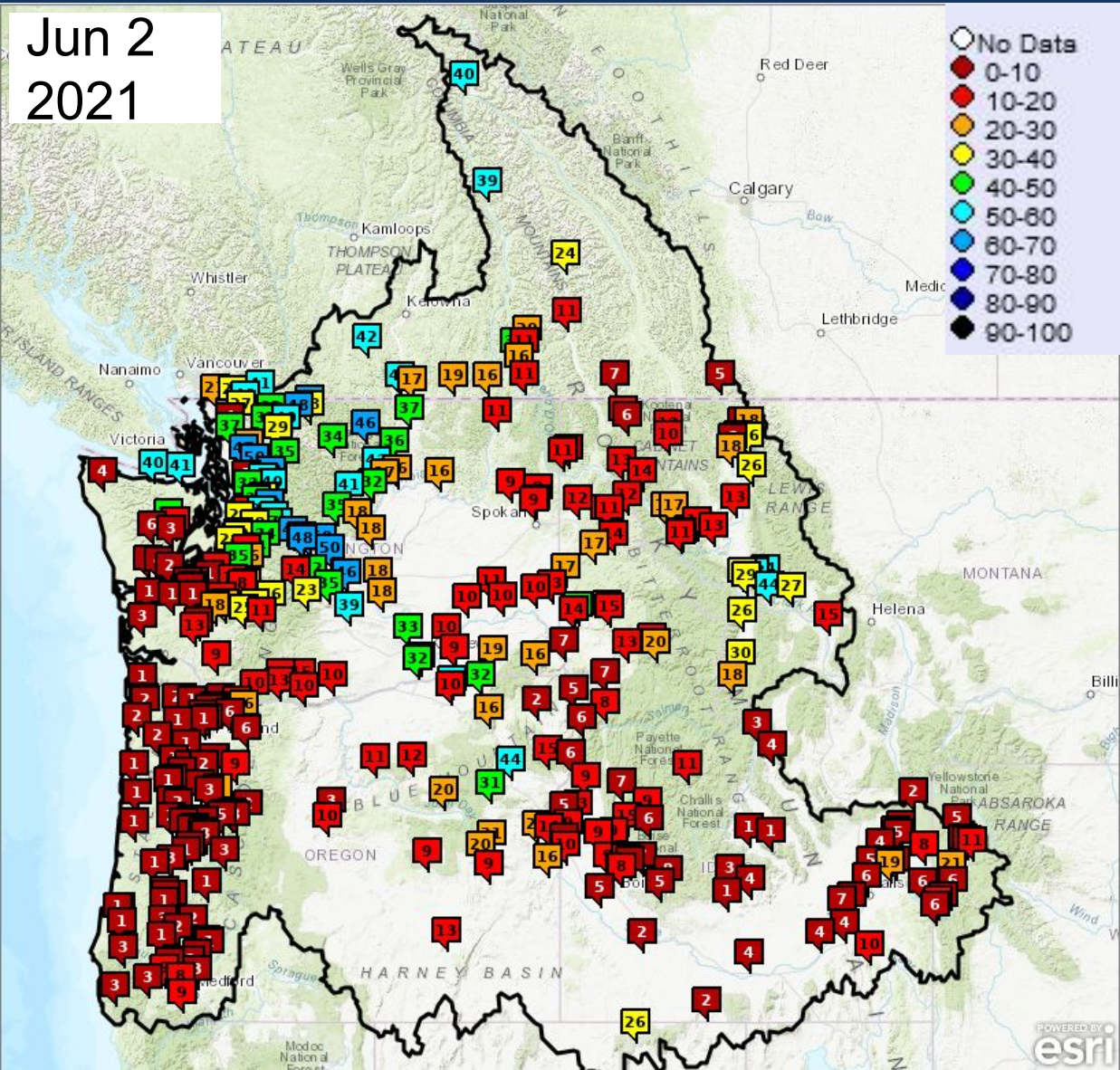


☐ Max Scale ☒ Scale To Data ☐ Scale To Last 45 Days ☐ Show Min/Max Ensemble Volume ☐ Show Tooltips Help



ESP10 Apr-Sep Natural Forecast Rank (Descending)

Jun 2
2021

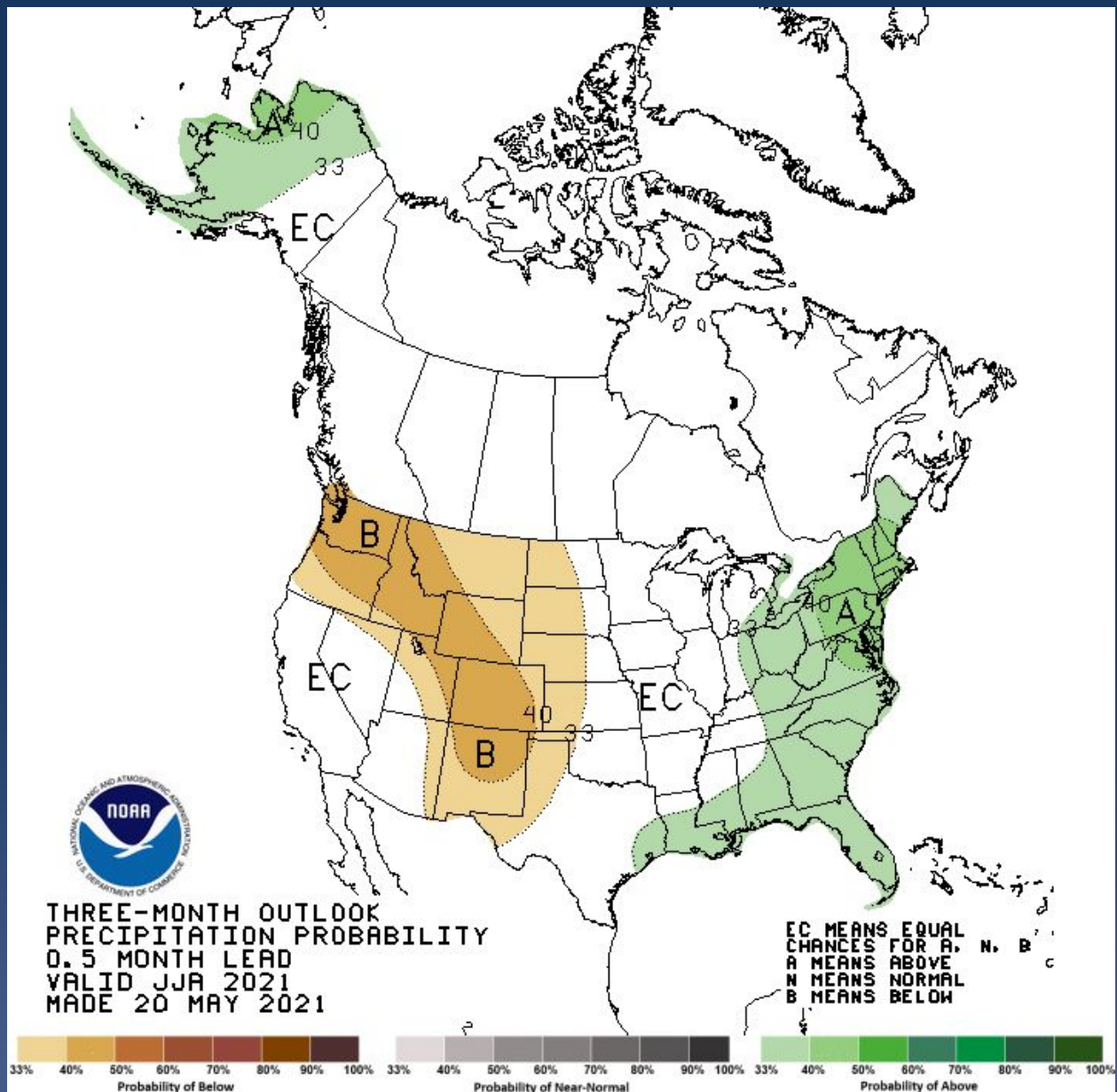
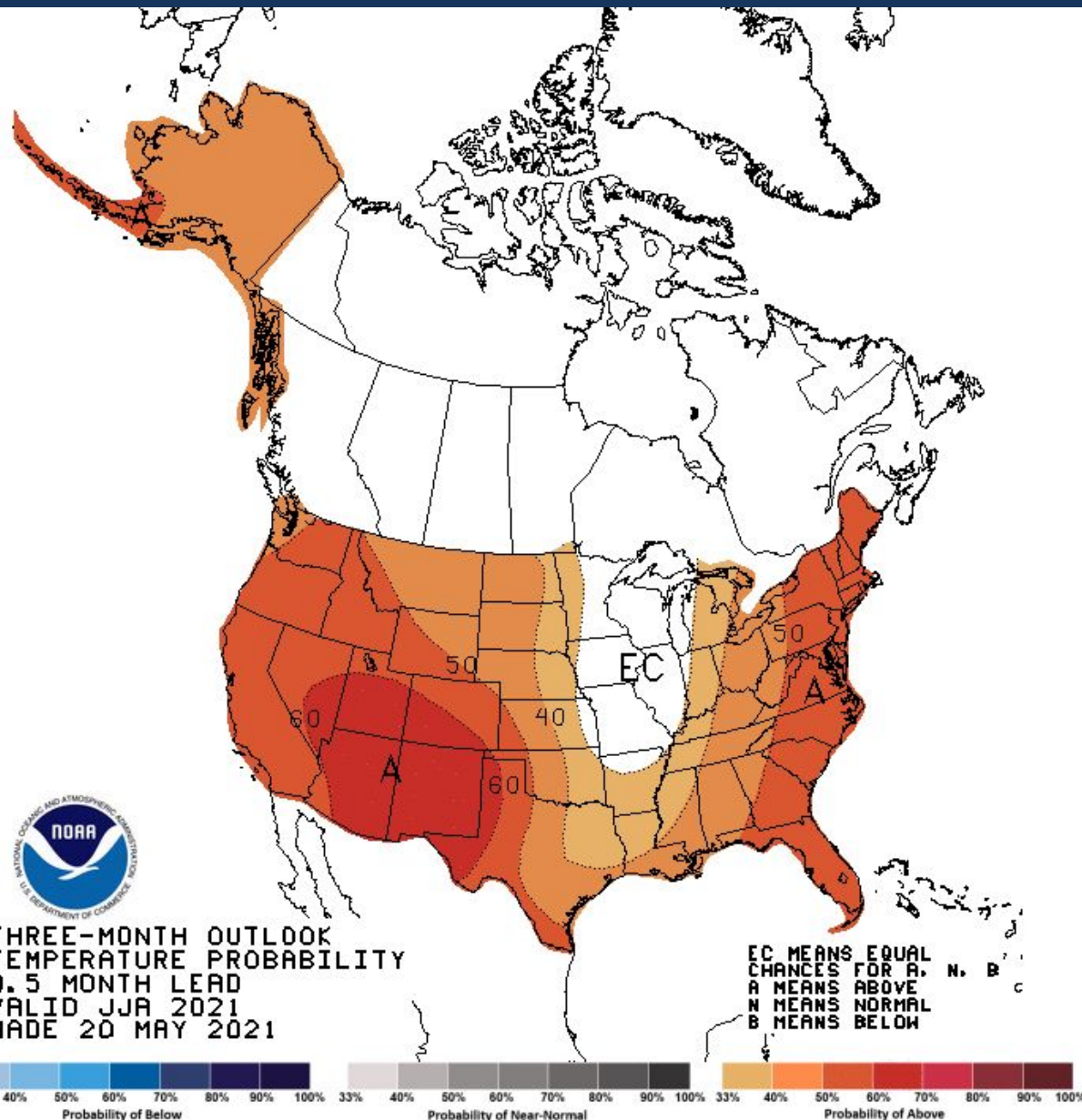


| Location | Apr-Sep Volume (% Average) | State | Forecast Rank (desc) |
|---|----------------------------|-------|----------------------|
| BIG LOST - MACKAY RESERVOIR NEAR MACKAY | 24 | ID | 1 |
| BIG WOOD - MAGIC DAM | 27 | ID | 1 |
| BIG LOST - AT HOWELL RANCH NEAR CHILLY | 28 | ID | 1 |
| SF COQUILLE - AT POWERS | 29 | OR | 1 |
| WILSON - NEAR TILLAMOOK | 42 | OR | 1 |
| NEHALEM - FOSS | 37 | OR | 1 |
| SILETZ - AT SILETZ | 39 | OR | 1 |
| S YAMHILL - AT MCMINNVILLE | 22 | OR | 1 |
| WILLAMETTE - AT CORVALLIS | 54 | OR | 1 |
| LUCKIAMUTE - NEAR SUVER | 30 | OR | 1 |
| COAST FORK WILLAMETTE - COTTAGE GROVE DAM | 23 | OR | 1 |
| LONG TOM - AT MONROE | 28 | OR | 1 |
| COW CREEK - NEAR GLENDALE | 26 | OR | 1 |
| MF WILLAMETTE - AT JASPER | 51 | OR | 1 |
| UMPQUA - NEAR ELKTON | 42 | OR | 1 |
| SIUSLAW - NEAR MAPLETON | 36 | OR | 1 |
| WILLAMETTE - AB FALLS AT OR CITY | 51 | OR | 1 |
| NF COQUILLE - NEAR MYRTLE POINT | 28 | OR | 1 |
| TUALATIN - NEAR DILLEY | 37 | OR | 1 |
| S UMPQUA - NEAR WINSTON | 30 | OR | 1 |
| WILLAMETTE - AT EUGENE | 46 | OR | 1 |
| WILLAMETTE - AT ALBANY | 53 | OR | 1 |
| N UMPQUA - AT WINCHESTER | 51 | OR | 1 |
| SF COQUILLE - AT MYRTLE POINT | 36 | OR | 1 |
| BIG BUTTE CREEK - NEAR MCLEOD | 36 | OR | 1 |
| MARYS - NEAR PHILOMATH | 25 | OR | 1 |
| WILLAMETTE - AT WILSONVILLE | 51 | OR | 1 |
| MOHAWK - NEAR SPRINGFIELD | 31 | OR | 1 |
| TUALATIN - AT FARMINGTON | 30 | OR | 1 |
| PUDDING - AT AURORA | 29 | OR | 1 |
| STEAMBOAT CREEK - NEAR GLIDE | 33 | OR | 1 |
| COAST FORK WILLAMETTE - NEAR GOSHEN | 23 | OR | 1 |
| WILLAMETTE - AT SALEM | 50 | OR | 1 |
| ROW - DORENA DAM | 23 | OR | 1 |
| ALSEA - NEAR TIDEWATER | 40 | OR | 1 |
| S UMPQUA - AT ROSEBURG | 24 | OR | 1 |
| CHEHALIS - NEAR DOTY | 40 | WA | 1 |
| NEWAUKUM - NEAR CHEHALIS | 43 | WA | 1 |
| DESCHUTES - NEAR RAINIER | 50 | WA | 1 |
| WILLAPA - NEAR WILLAPA | 44 | WA | 1 |
| CHEHALIS - NEAR GRAND MOUND | 46 | WA | 1 |

Right table: all listed locations' period of record is from WY 1949-2020



CPC Three-Month Outlook





Take Home Messages

Dry past three months brought seasonal precipitation down for the basin

- Most of the basin below normal for the water year

May saw above average temperatures for the interior basin

- Snowmelt underway where snow is present

Water supply forecasts for April-September

- Slight decline in forecasts basin-wide
- Mixed near and below normal in the north
- Below normal in the south



Questions?

In order to ask questions using your phone, you will need to enter the **AUDIO PIN** followed by the **#** sign using your phone keypad. The **AUDIO PIN** was provided when you logged into the webinar. If you need to enter the PIN after you are connected, try **#PIN#**

You will be muted until the presenter unmutes you. If you have a question, use the 'Raise Hand' function to let us know to unmute your phone.

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