



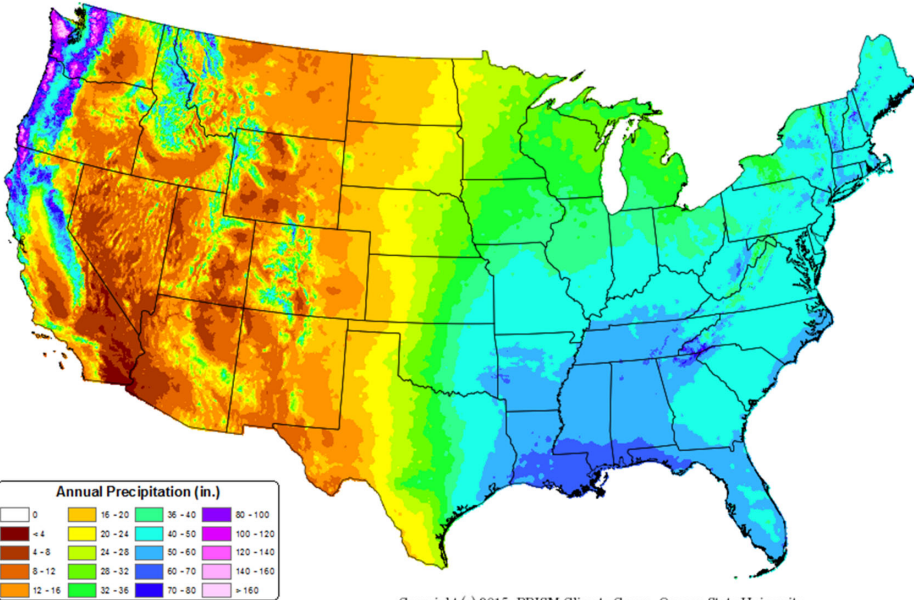
2021 SNOW & WATER OUTLOOK

RUSS QUALLS
STATE CLIMATOLOGIST OF IDAHO
RQUALLS@UIDAHO.EDU

AIUT WEBINAR
APRIL 8, 2021

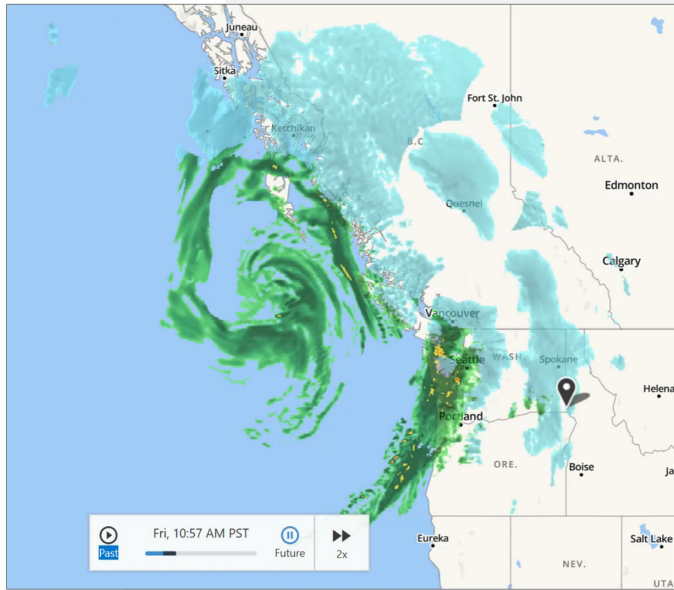
THIS WORK WAS SUPPORTED IN PART BY NIFA GRANT IDA01584

30-yr Normal Precipitation: Annual
Period: 1981-2010



Copyright (c) 2015, PRISM Climate Group, Oregon State University





Model forecast

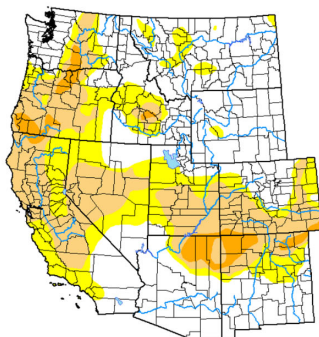
DROUGHT CONDITIONS: 2020 & PRESENT



US DROUGHT MONITOR

**U.S. Drought Monitor
West**

March 31, 2020
(Released Thursday, Apr. 2, 2020)
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 <http://droughtmonitor.unl.edu/About.aspx>

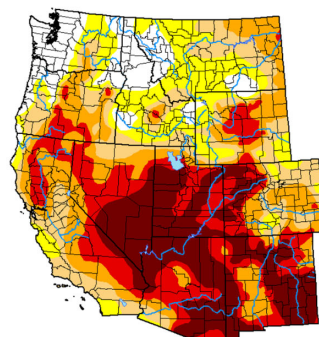
Author:
David Simeral
Western Regional Climate Center



droughtmonitor.unl.edu

**U.S. Drought Monitor
West**

March 30, 2021
(Released Thursday, Apr. 1, 2021)
Valid 8 a.m. EDT



Intensity:

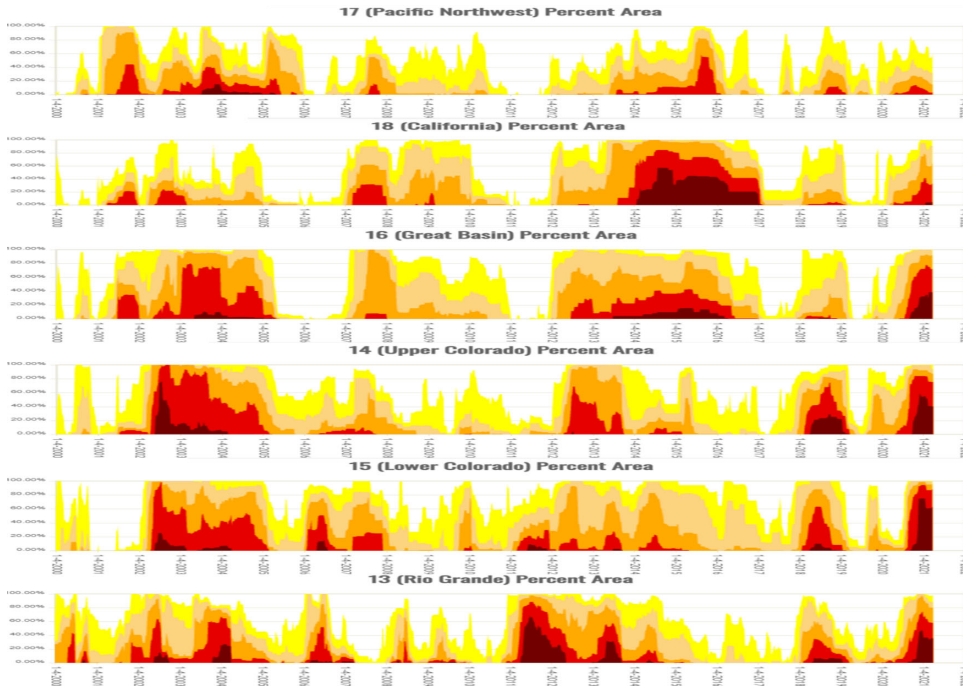
- None
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Author:
Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu



**USDM:
DROUGHT
PERCENT AREA
BY BASIN,
2000-2021**

National Operational Hydrologic Remote Sensing Center
Interactive Snow Information

Navigation Tools: Home, Help, Comments, Map, Zoom, 48.96 N, 123.78 W

Query: Station (2002-present)

Get Time Series for Station ID: [] [Go] Listing
 Get Time Series for Basin ID: [] ABRFC [v] [Go] Listing
 Get Basin Averages for: [] RFC [v] [Go] Listing
 Get Climatology for Station ID: [] [Go] Listing

Redraw Map
 Select Physical Element: Snow Water Equivalent
 Select Date: 2021 April 5 06:00 UTC
 Snap to nearest time
 Select Overlays: Hydrologic Features, DFC Basins

Modeled Snow Water Equivalent for 2021 April 5, 6:00 UTC

CoCoRaHS Data used by

- NWS
- NOHRSC National Snow Map
- Drought Monitor
- You

Inches of water equivalent

> 30
20 to 30
18 to 20
16 to 18
14 to 16
12 to 14
10 to 12
8 to 10
6 to 8
4 to 6
2 to 4
1 to 2
trace to 1
Not Estimated

Elevation in feet

> 13124
8203 to 13124
3281 to 8203
3 to 3281
< 3

HIGH ELEVATION STATIONS

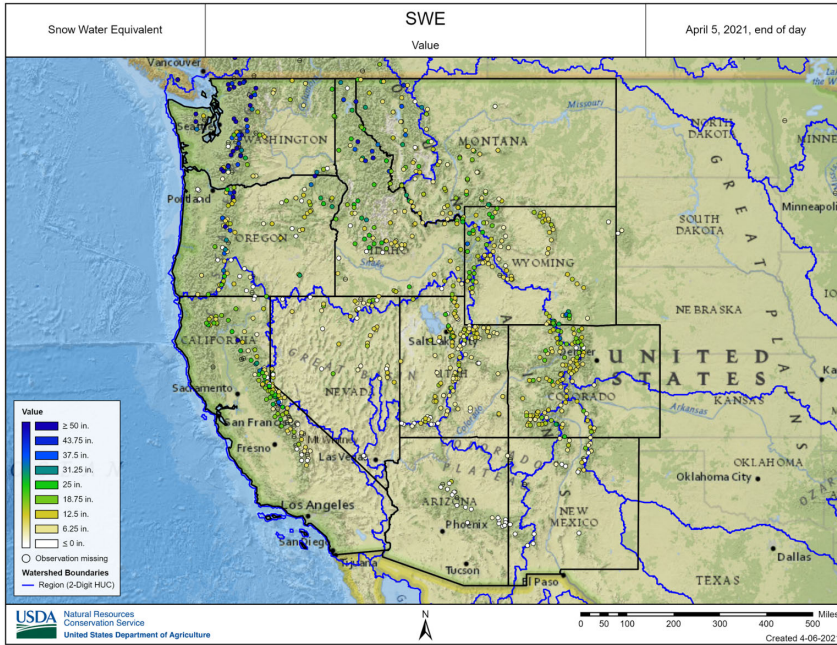


NATURAL RESOURCE
CONSERVATION SERVICE
(NRCS)
SNOTEL (SNOW TELEMETRY)
SNOW MONITORING STATIONS

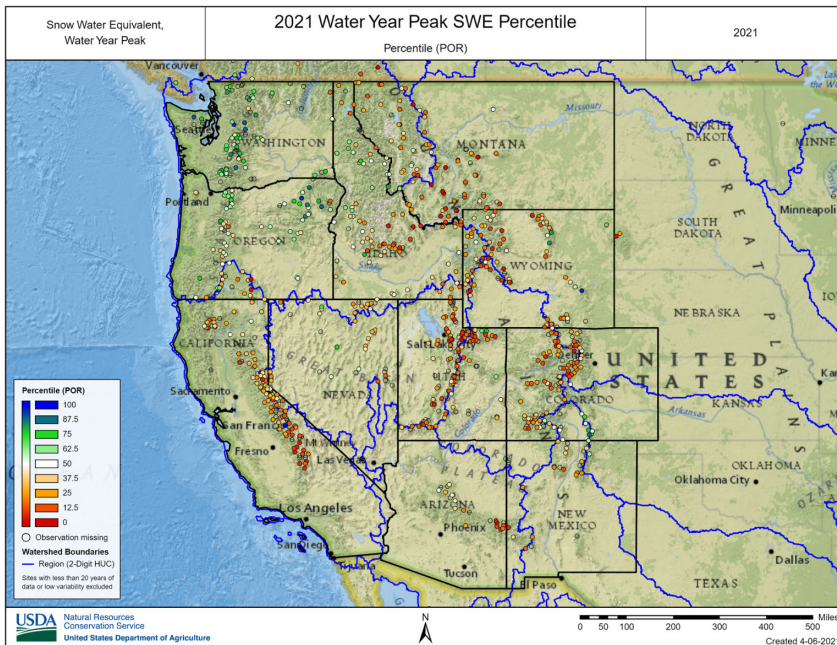
Mount Rainier, Paradise SNOTEL Station



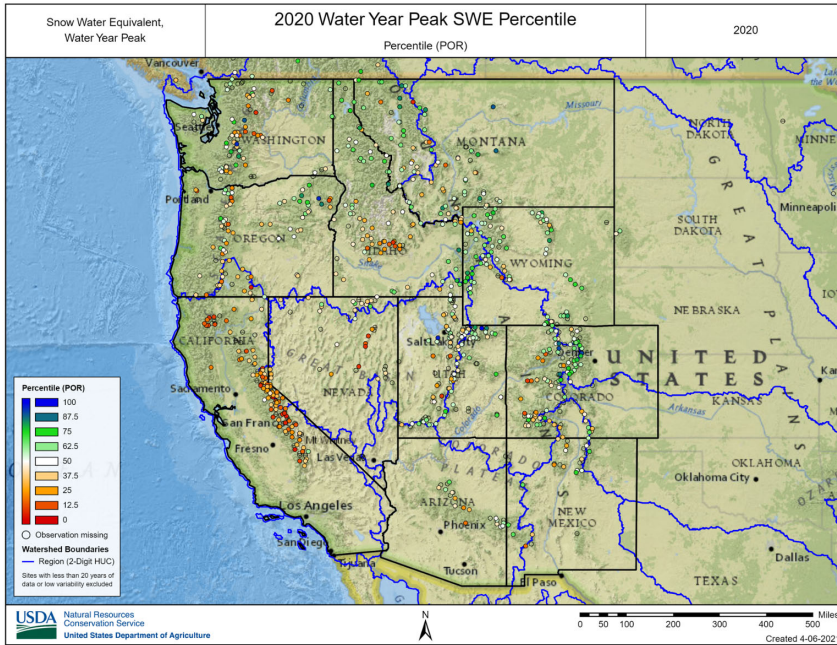
**NRCS
SNOTEL
SWE:
MEDIAN
ANNUAL
PEAK
VALUES**



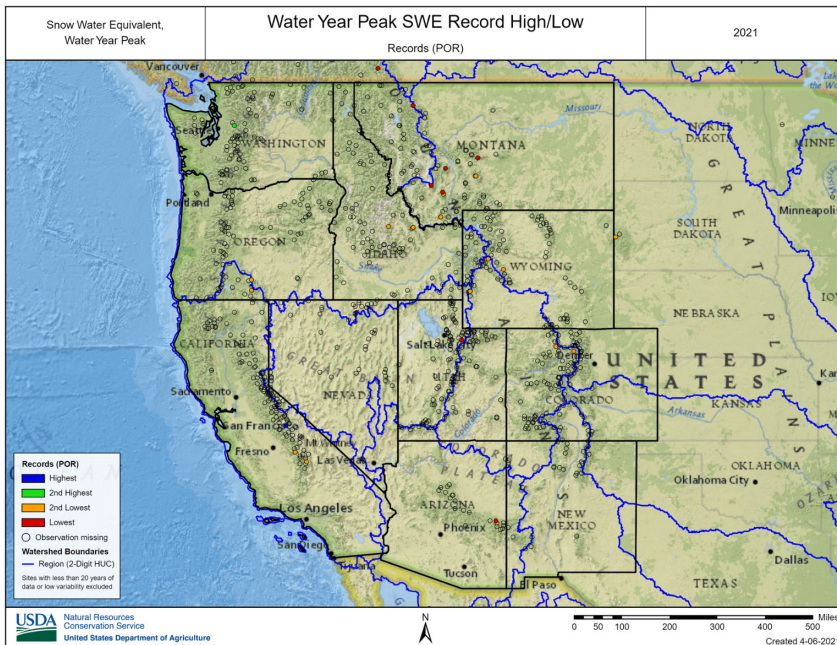
SNOTEL
APRIL 5, 2021
SWE VALUES



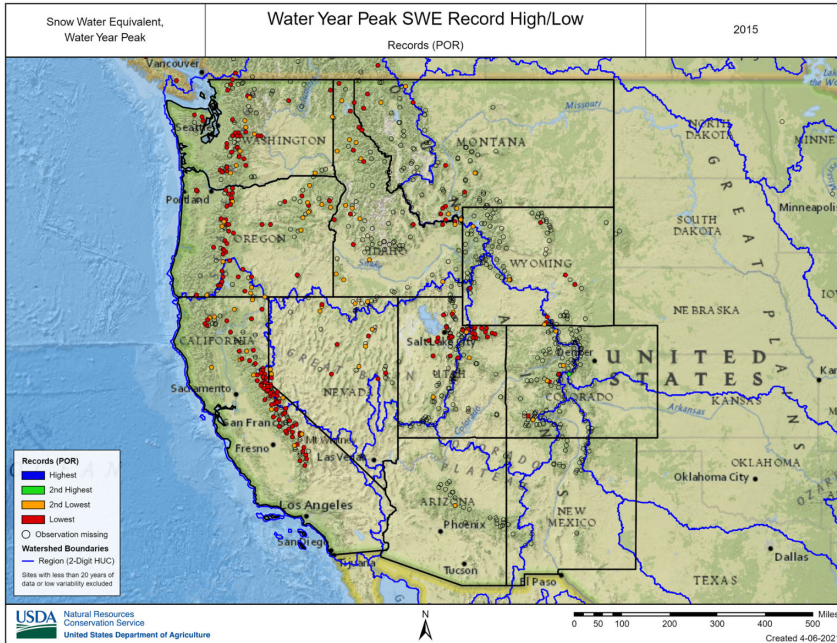
2021 Water Year
Peak SWE Percentile
(POR)



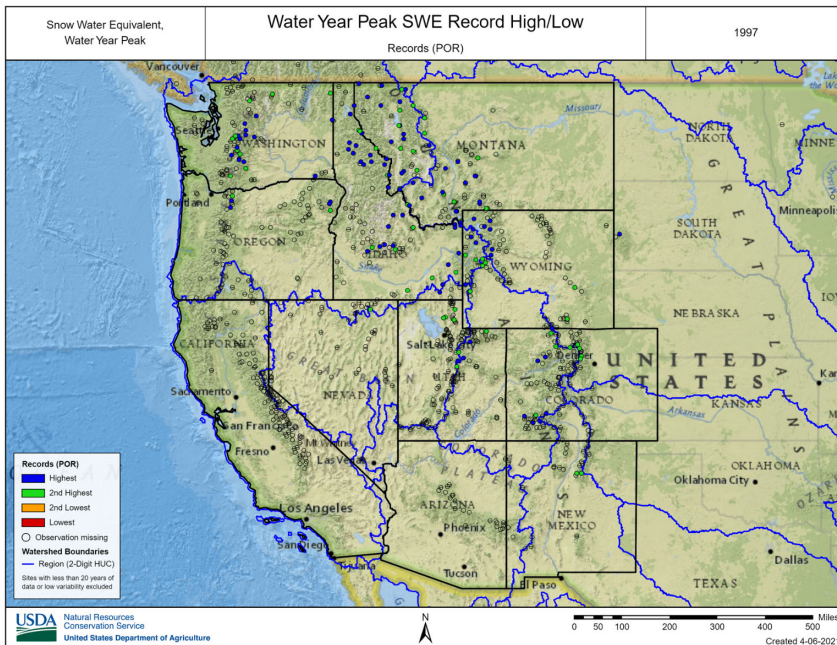
**2020 Water Year
Peak SWE Percentile
(POR)**



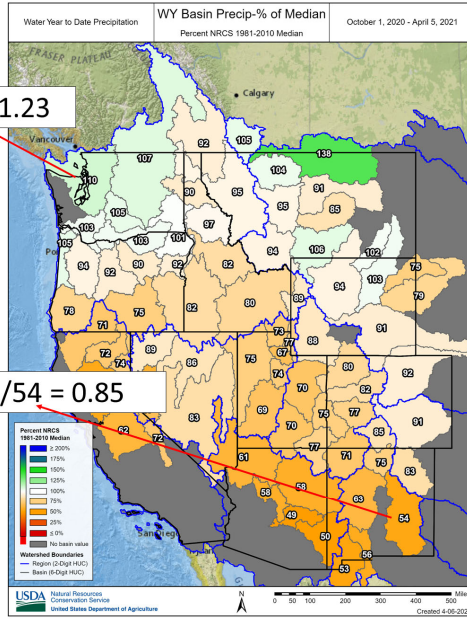
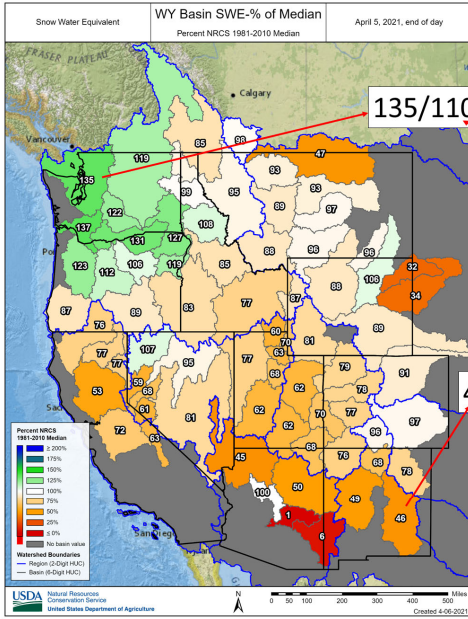
**2021 Stations Setting
Water Year Peak SWE
High/Low Records
(POR)**



2015 Stations Setting
Water Year Peak SWE
High/Low Records
(POR)



1997 Stations Setting
Water Year Peak SWE
High/Low Records
(POR)



NRCs SNOTEL Basin SWE Vs Precip Percent of 1981-2010 Median

Note:
If SWE% > Precip%

Then % Precip retained as SWE is relatively larger.

LOW ELEVATION STATIONS?



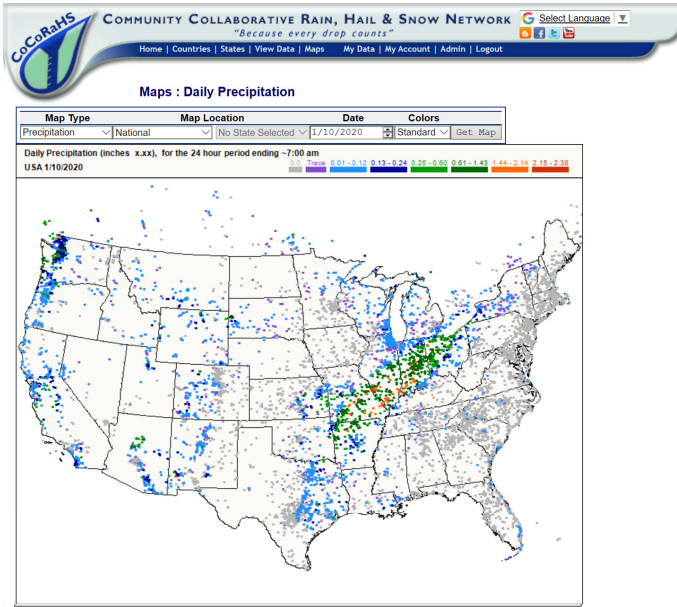
COCORAHS.ORG

VOLUNTEER PRECIPITATION OBSERVATION NETWORK

Measuring
Rainfall with
your Gauge

"Accuracy and consistency are very important"





COCORAHS DAILY PRECIP MAP

- Highest Density Precipitation Network in the US
- Data Accessible
- Extension:
Great way to recruit volunteers



WEATHER OUTLOOK

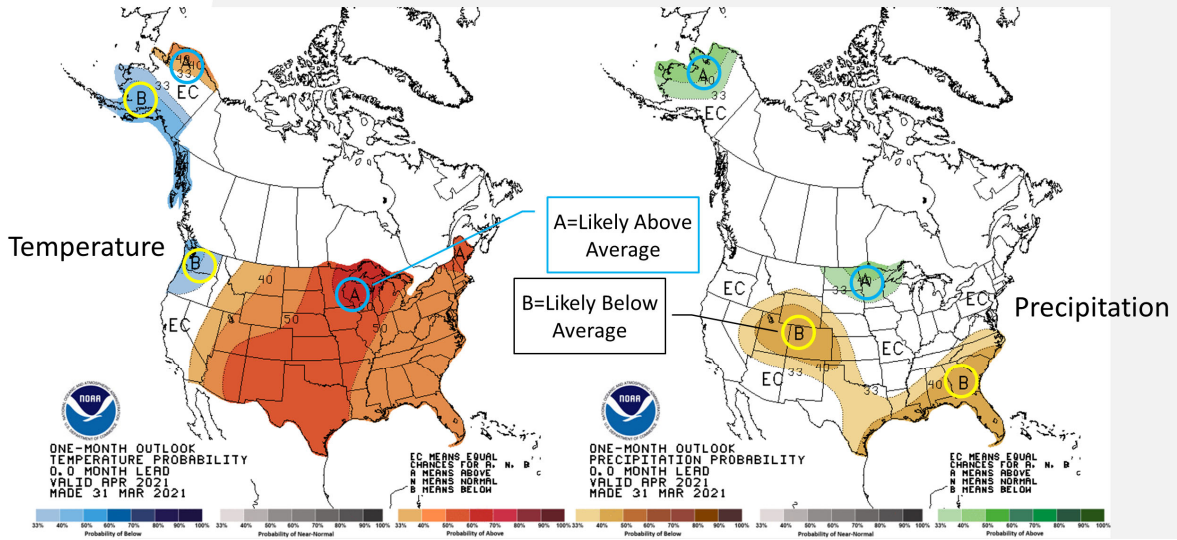
PRESENT THROUGH SUMMER

Climate Prediction Center
www.cpc.ncep.noaa.gov



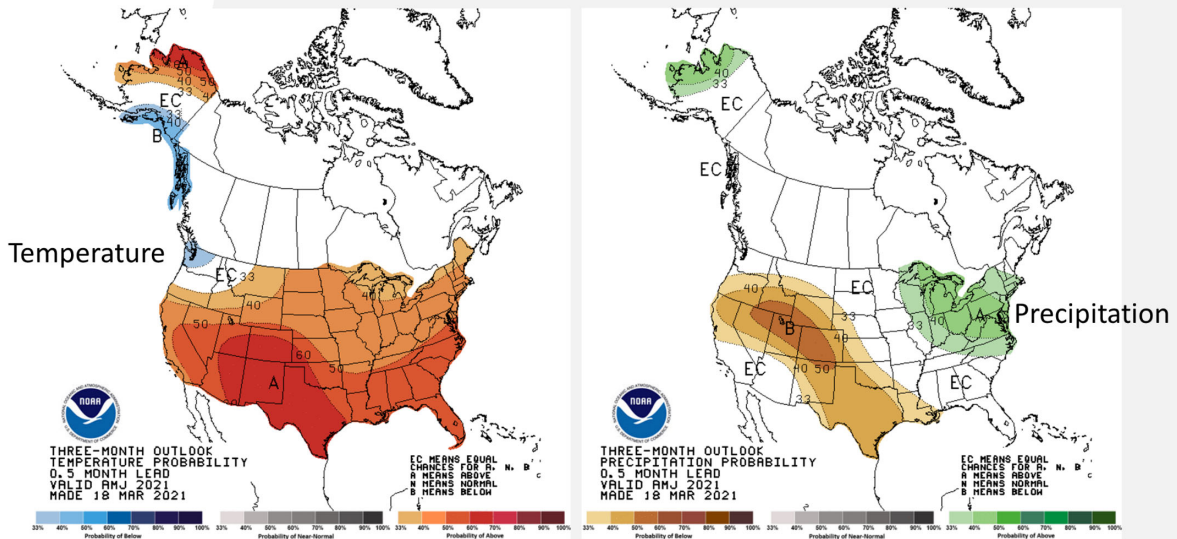
APRIL 2021 OUTLOOKS

CLIMATE PREDICTION CENTER



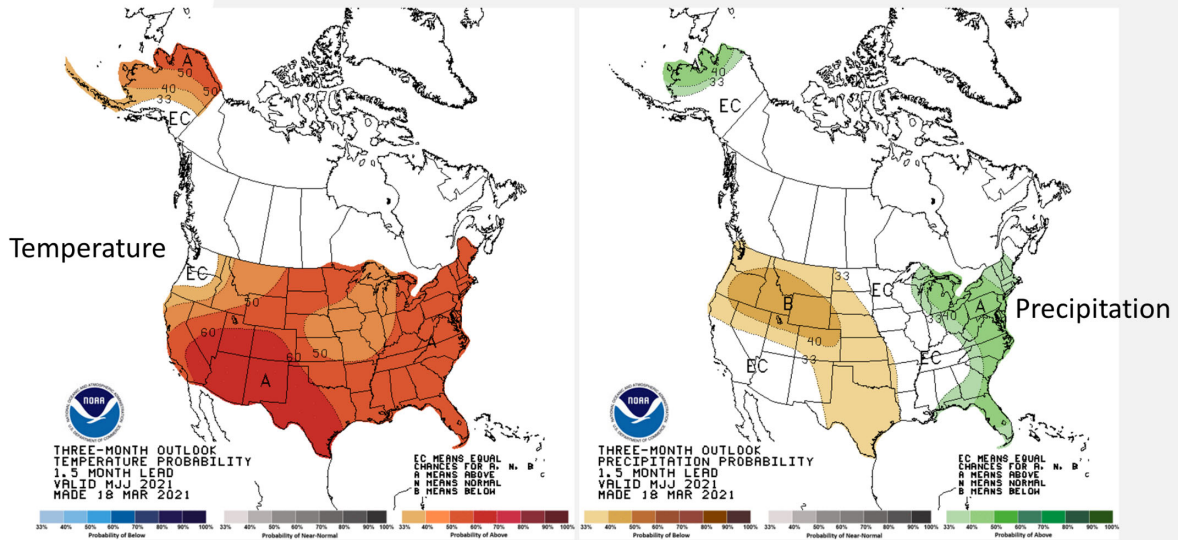
APR-MAY-JUN 2021 OUTLOOKS

CLIMATE PREDICTION CENTER



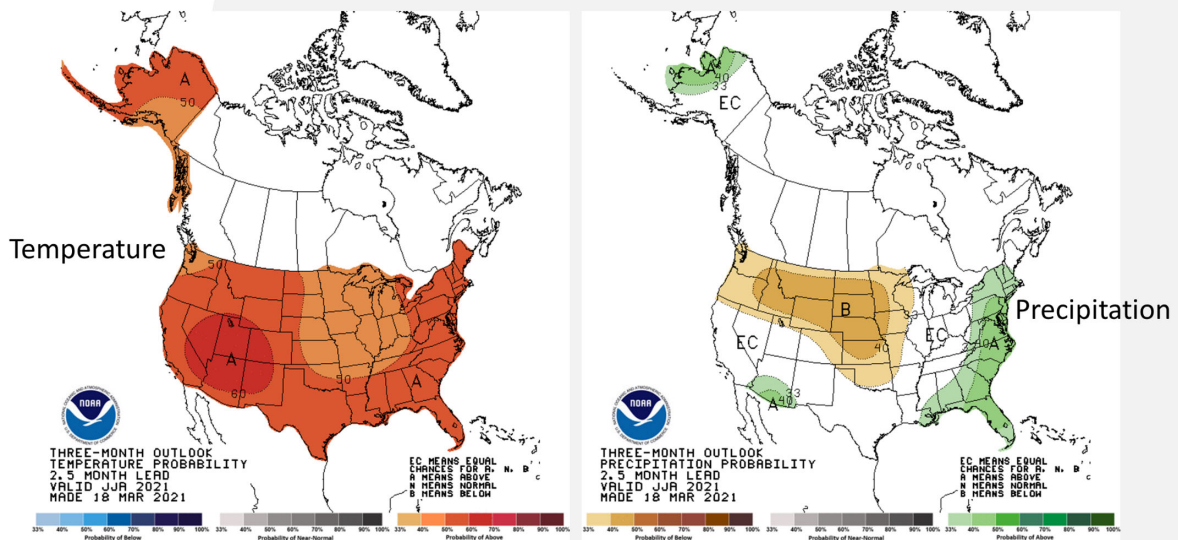
MAY-JUN-JUL 2020 OUTLOOKS

CLIMATE PREDICTION CENTER



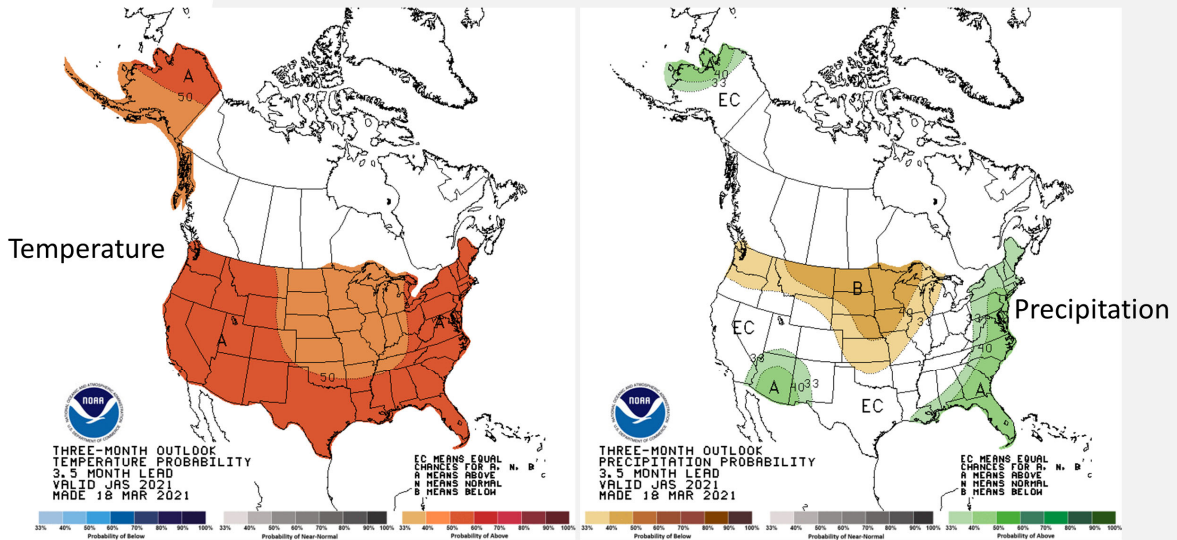
JUN-JUL-AUG 2021 OUTLOOKS

CLIMATE PREDICTION CENTER



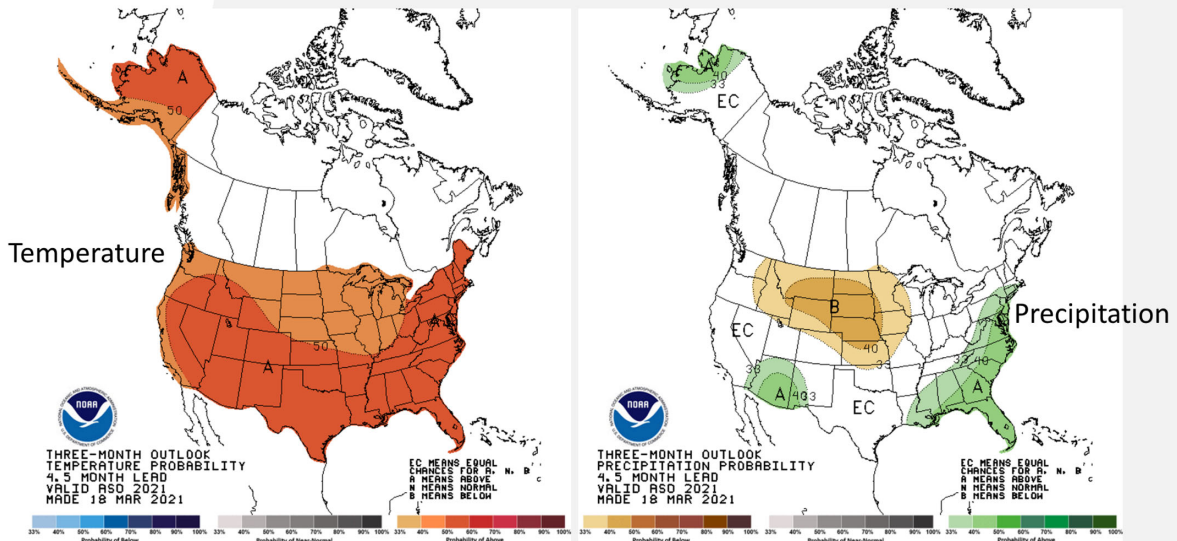
JUL-AUG-SEP 2020 OUTLOOKS

CLIMATE PREDICTION CENTER



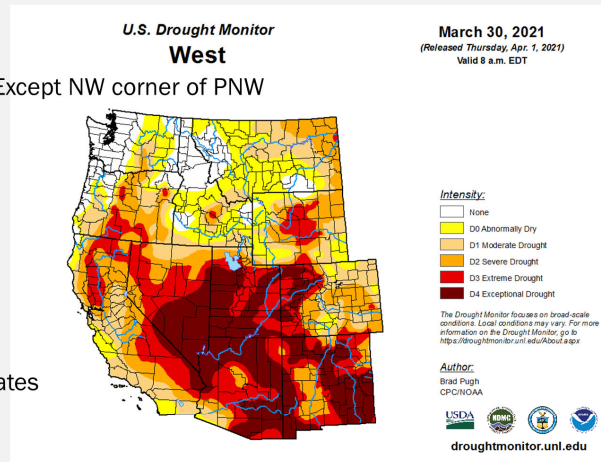
AUG-SEP-OCT 2020 OUTLOOKS

CLIMATE PREDICTION CENTER



SUMMARY

- I Widespread, Significant Drought Especially in SW
- I Snowpack and Precipitation both moderately low Except NW corner of PNW
- I Spring/Summer Outlook (CPC):
 - Likely Above Average Temperatures
 - Below Average Precipitation
- I Late Summer (CPC):
 - Small Pocket Increasing Precip in Arizona
 - Persistent Below Avg. Precip in Northwestern States
 - Persistent Above Ag. Temperatures
- I Based on Current Snow Conditions, and Seasonal Outlook, Drought severity likely to persist/increase, especially in SW.
- I Possible impacts on irrigation



SOURCES

- PRISM (OSU)
- US DROUGHT MONITOR
- NATURAL RESOURCES CONSERVATION SERVICE (NRCS)
- SNOTEL
- COCORAHS
- CLIMATE PREDICTION CENTER (CPC)
- THE WEATHER CHANNEL



University of Idaho
Extension

QUESTIONS?

THANK YOU