

Summer 2021 Water Supply Outlook

Rob Van Kirk, Henry's Fork Foundation

Henry's Fork Watershed Council, May 11 2021



Outline

- We're in a drought, and it's getting worse by the day
- How to interpret the numbers
- Predictions for summer
- The larger context in time and space



Key Indicators as of May 10, 2021

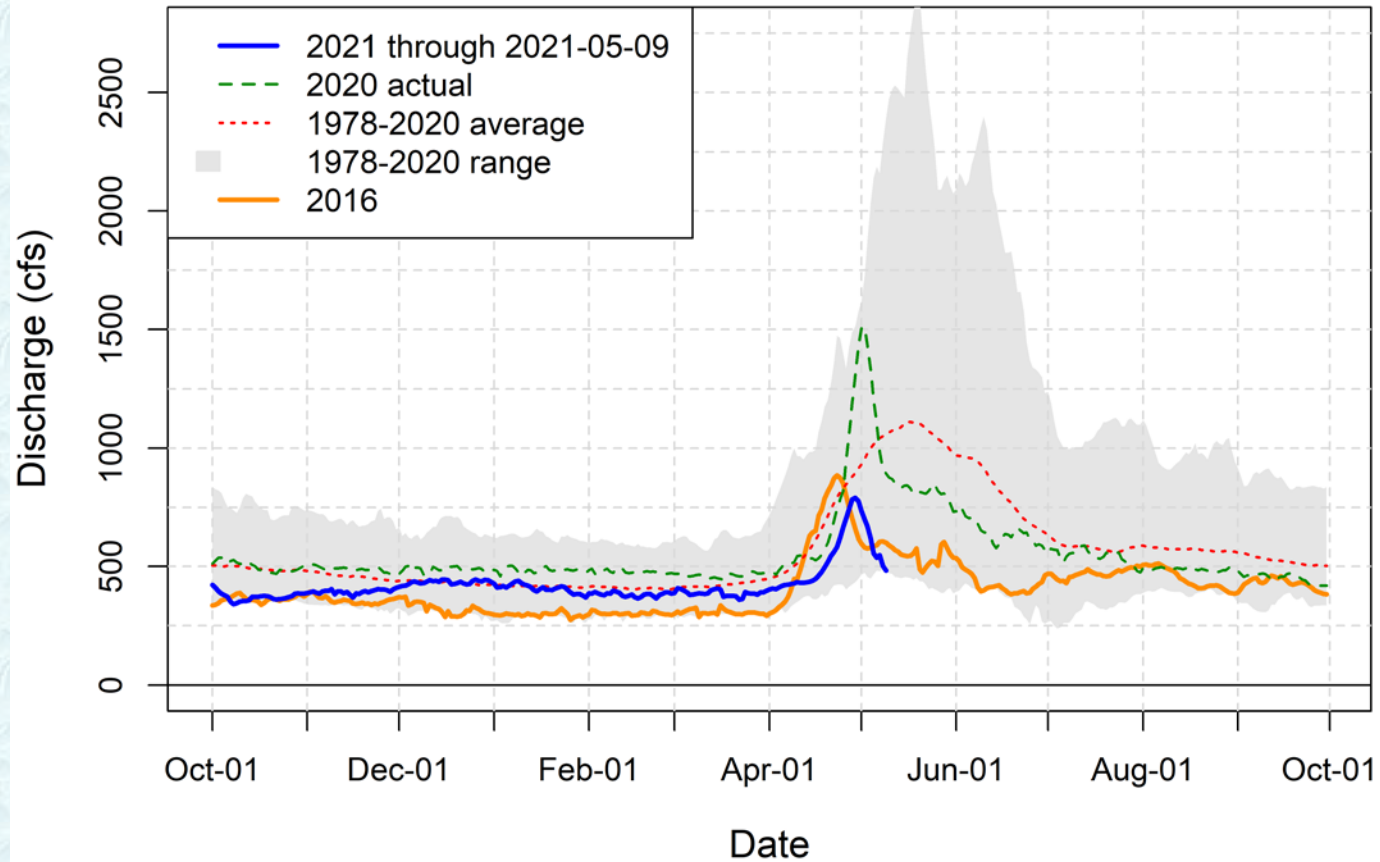
Climate

- Peak SWE: three weeks early and **85%** of 1989-2020 average (mean)
- Current SWE: 57% of average
- 56% of peak snow remains on ground vs. 76% on average
- Water-year precipitation: **76%** of average (5th lowest in last 33 years)
- Temperature March-present: average

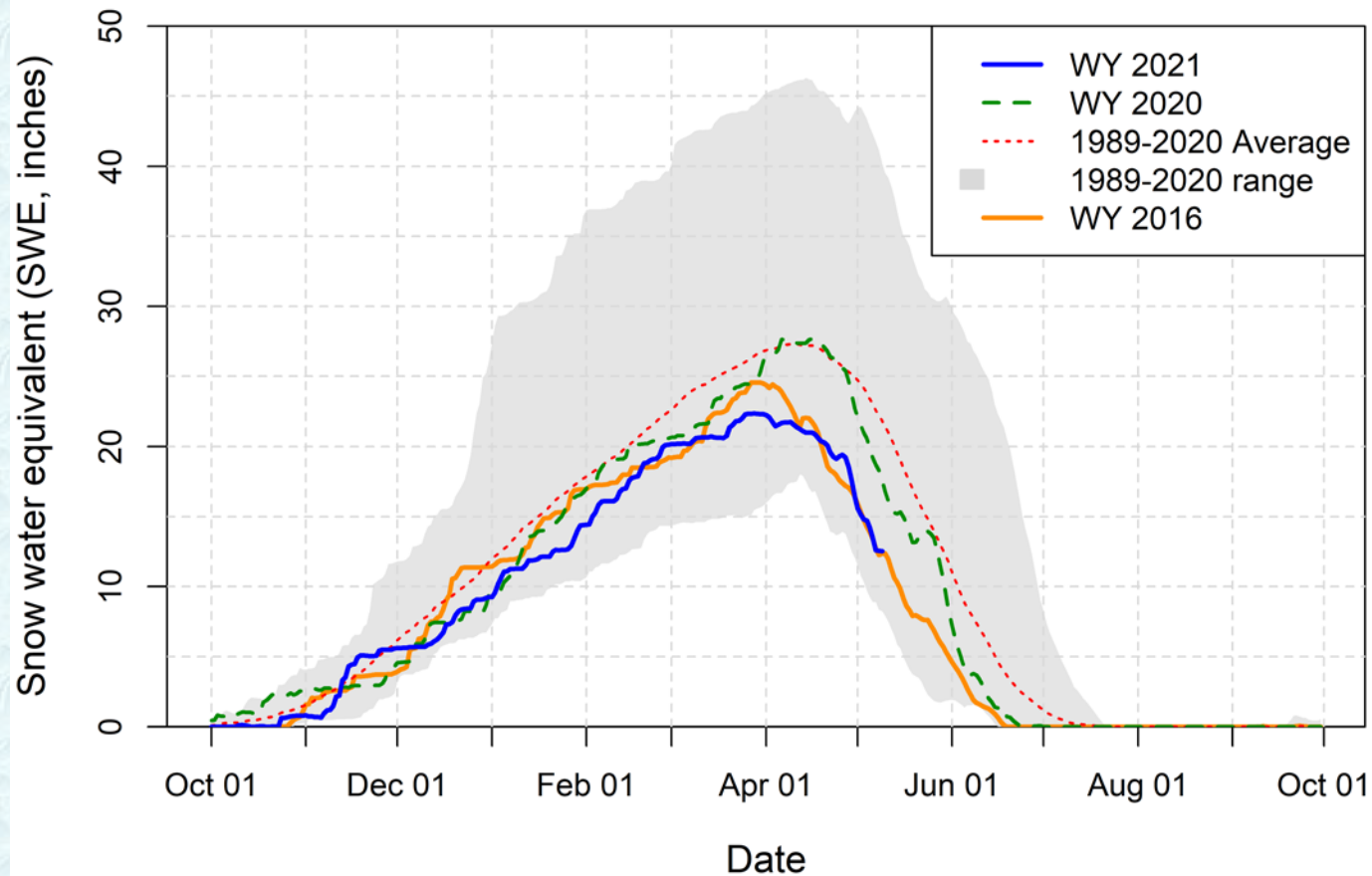
Natural Streamflow

- ~70% of 1978-2020 mean most of the spring
- **88%** of average water-year to date
- 1978-2020 minimums observed so far
 - Henrys Lake inflow (mid-February)
 - Teton River at South Leigh Creek (mid-February, early April)
 - HF at Island Park: now

Natural Inflow Between Henry's Lake and Island Park



Henry's Fork Watershed Mean SWE Accumulation May 10 2021

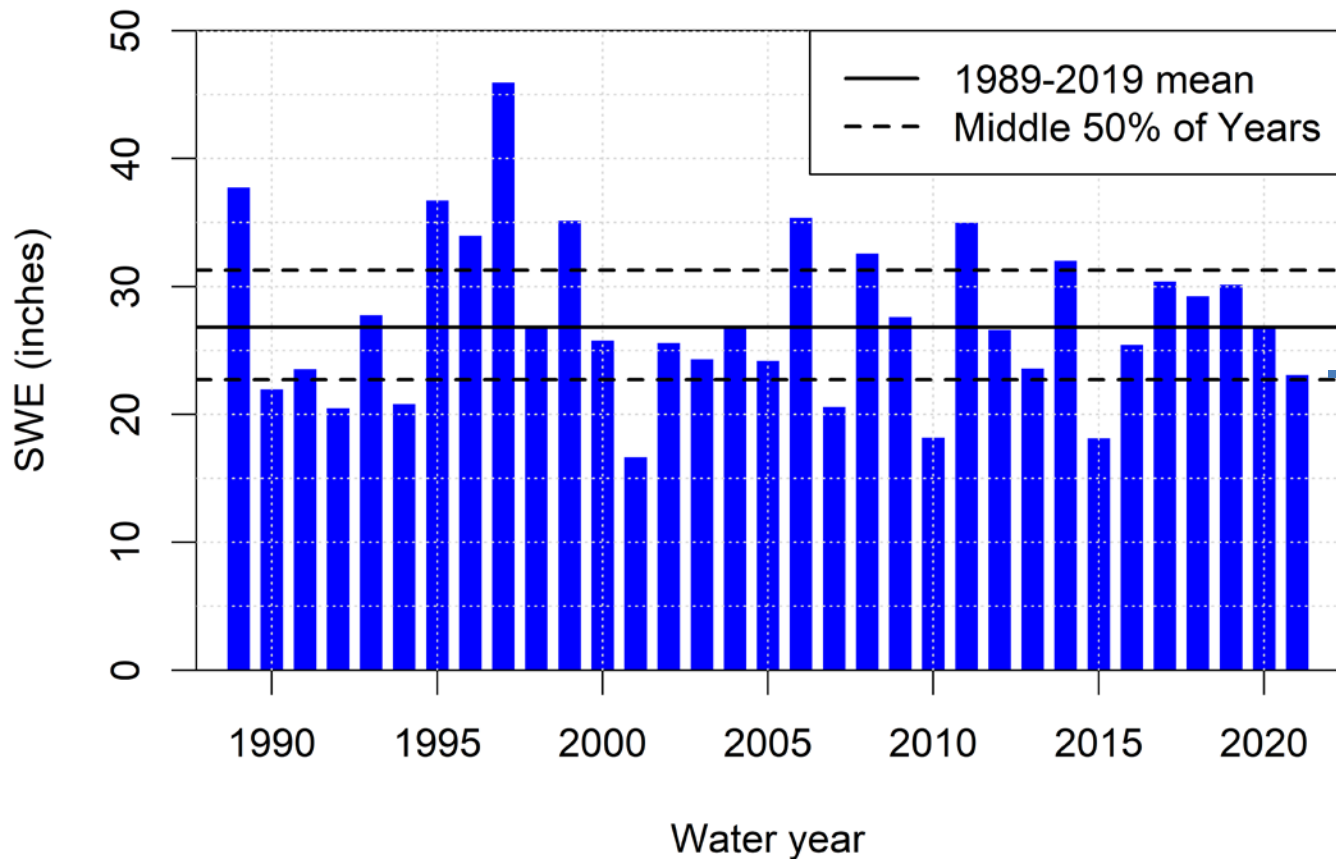


How to Interpret the Numbers

- Median: the value in the middle, i.e. 50th percentile
- Mean: expected value (arithmetic average, sum/count)
- In hydrology, median is less than mean
- Appropriation of water rights: based on years of greatest water availability (more water available = junior users get it)
- Aquatic ecology based on frequency of occurrence (rank)
- From a statistician: Percent of median is **meaningless** (apologies to hydrologic tradition)
- Rank (percentile) is the correct comparison with median

This year's SWE: a solid "B" or racing to the bottom?

Watershed Total April-1 Snow Water Equivalent



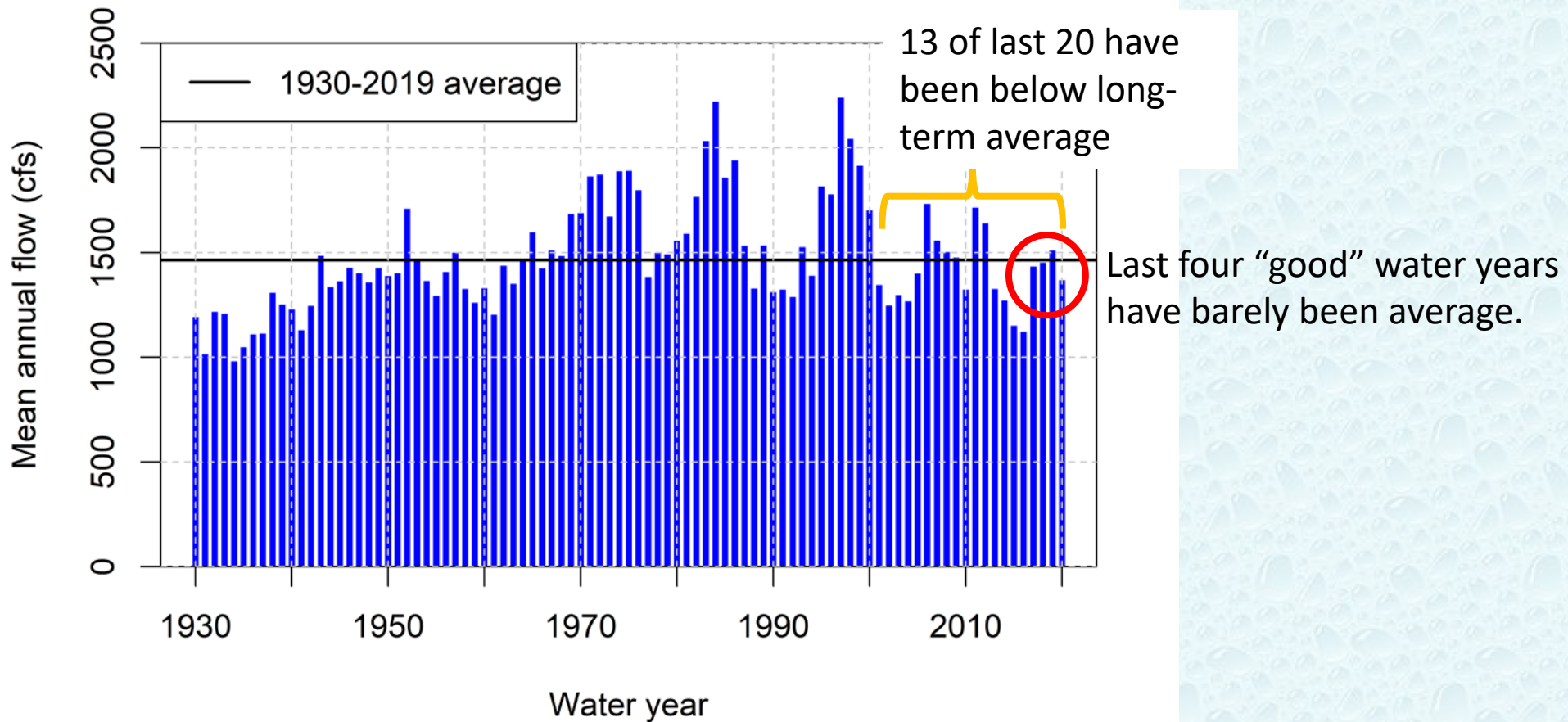
Only 14 of last 33 years are above average.

2021: 83% of mean, 85% of median = 26th percentile; only 7 of last 33 years had lower snowpack

Predictions for the Summer

1. 83% of average natural flow (16% chance of being as low as 2016)
2. IP Reservoir draft needed to meet downstream demand:
 - April-1 model predicted June 25
 - Model: 10% chance of need prior to June 15
 - Current conditions: need by June 8
3. Lower-watershed streamflows will be at/below targets mid-June through mid-September
4. 25% chance Fall River flow drops to ~50 cfs
5. Final IP Reservoir content
 - 17%-47% full (median is 46% full)
 - 10% chance < 17% full
6. Tony: Storage allocations and priorities?

Mean water-year natural inflow: Henry's Lake to Ashton

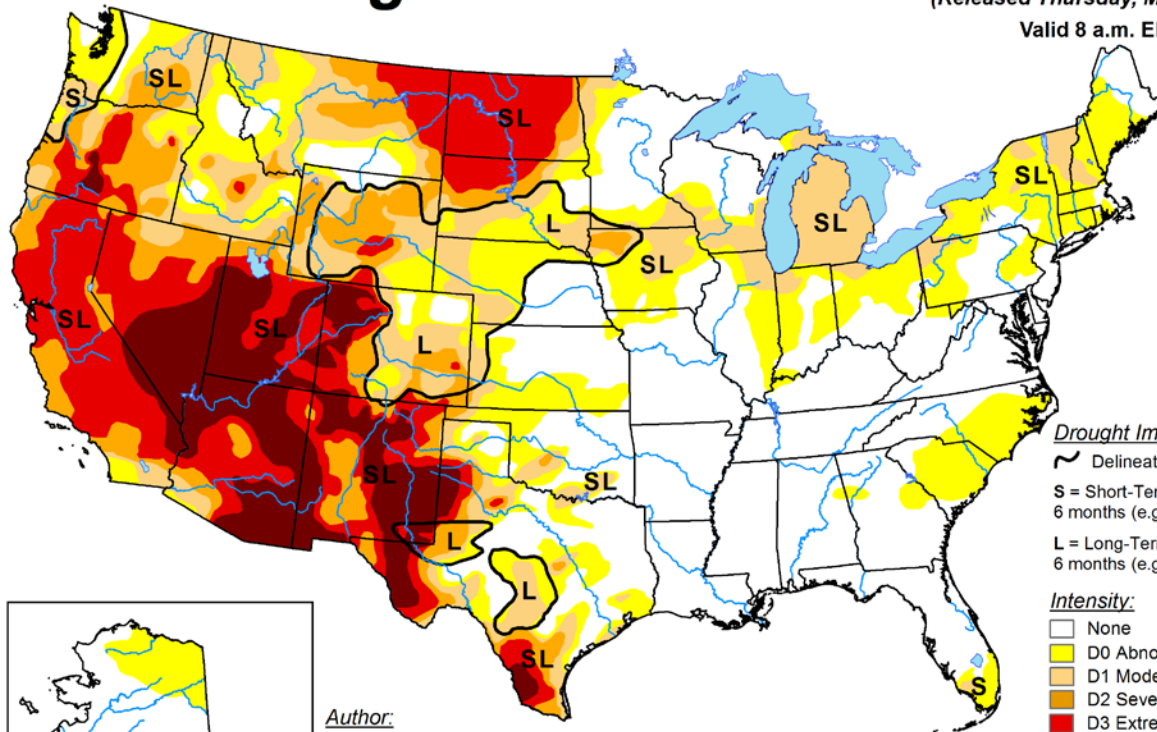


U.S. Drought Monitor

May 4, 2021

(Released Thursday, May. 6, 2021)

Valid 8 a.m. EDT

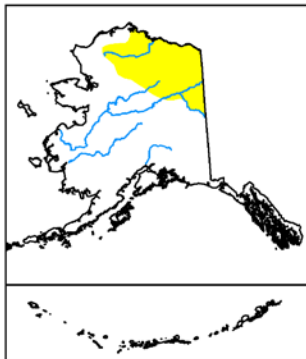


Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

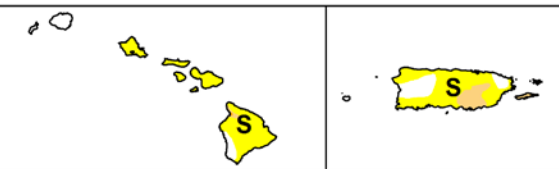
Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought



Author:

David Simeral
Western Regional Climate Center



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



droughtmonitor.unl.edu



Wildfire smoke in eastern Oregon, August 2018