

- Data insights



Plan for Water

Sierra Nevada Mountain Precipitation & Snowpack Trends

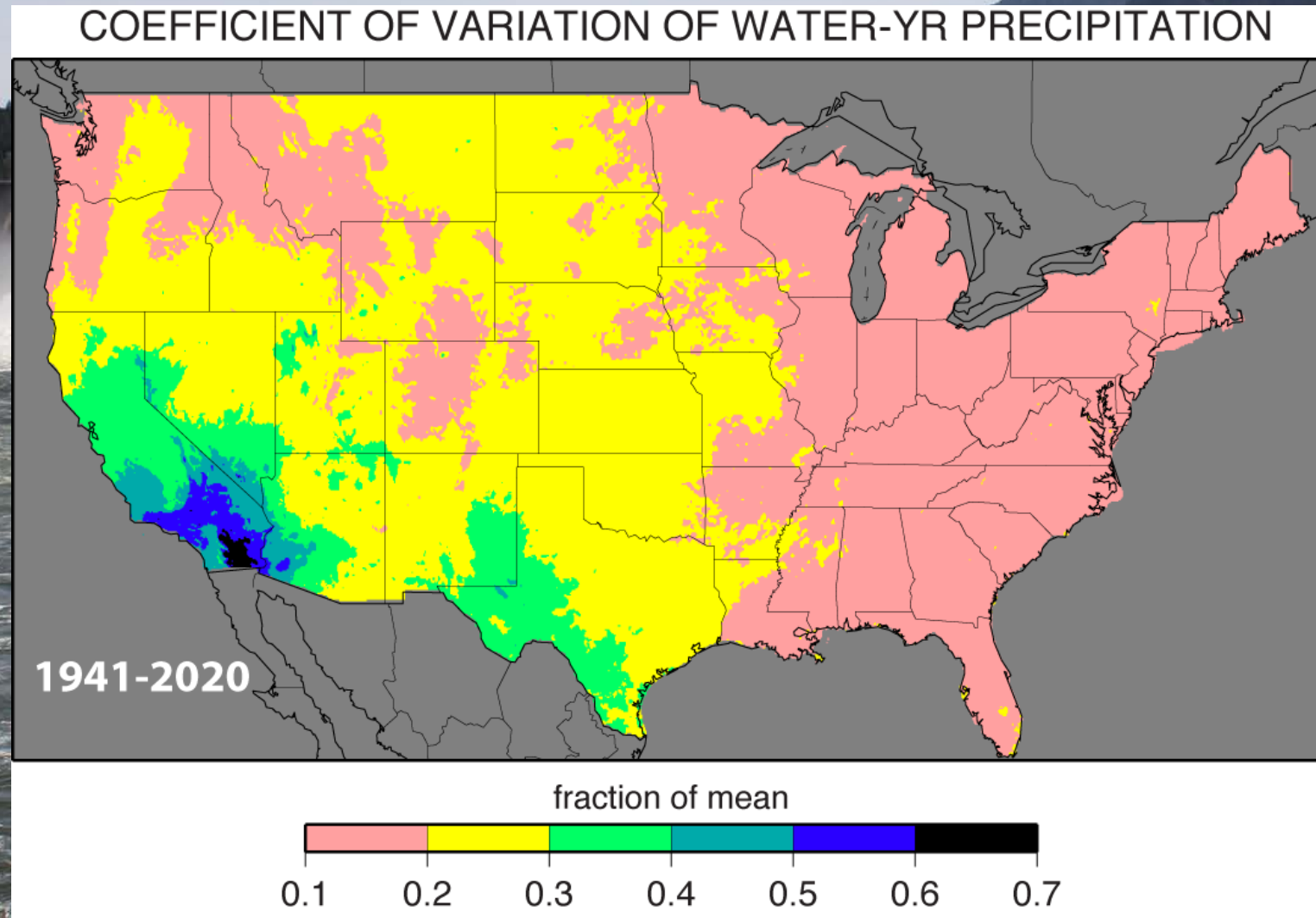


**WEST
CONSULTANTS**

WATER | ENVIRONMENTAL | SEDIMENTATION | TECHNOLOGY



Extreme Variability in the West





Source: CA DWR Photo taken April 9, 2017. Snowpack around a home in Soda Springs, California.



April 1, 1977 →

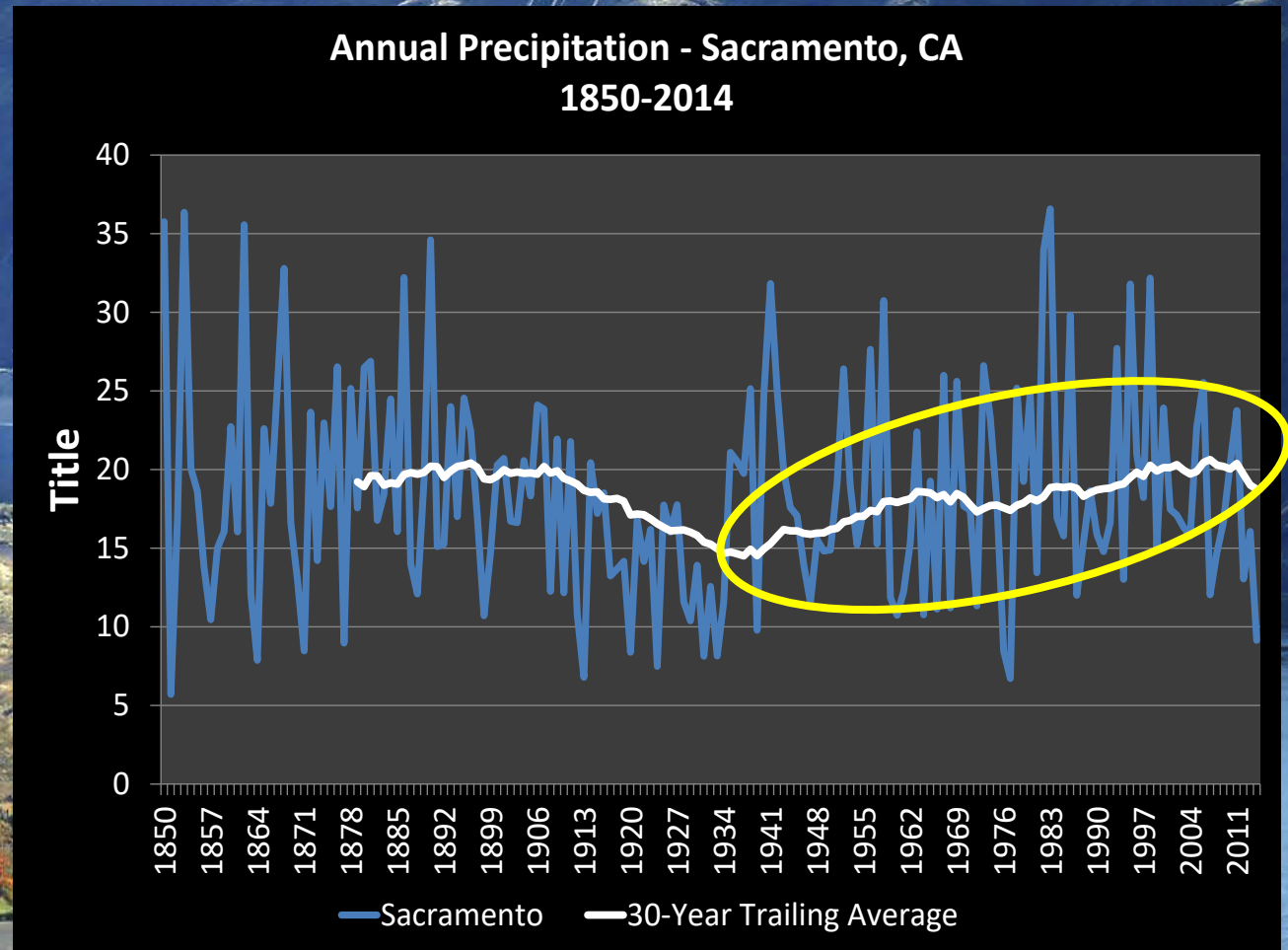
April 1, 2015 →

Source: CA DWR Phillips Station on April 1, 2015

Long-Term Trends?



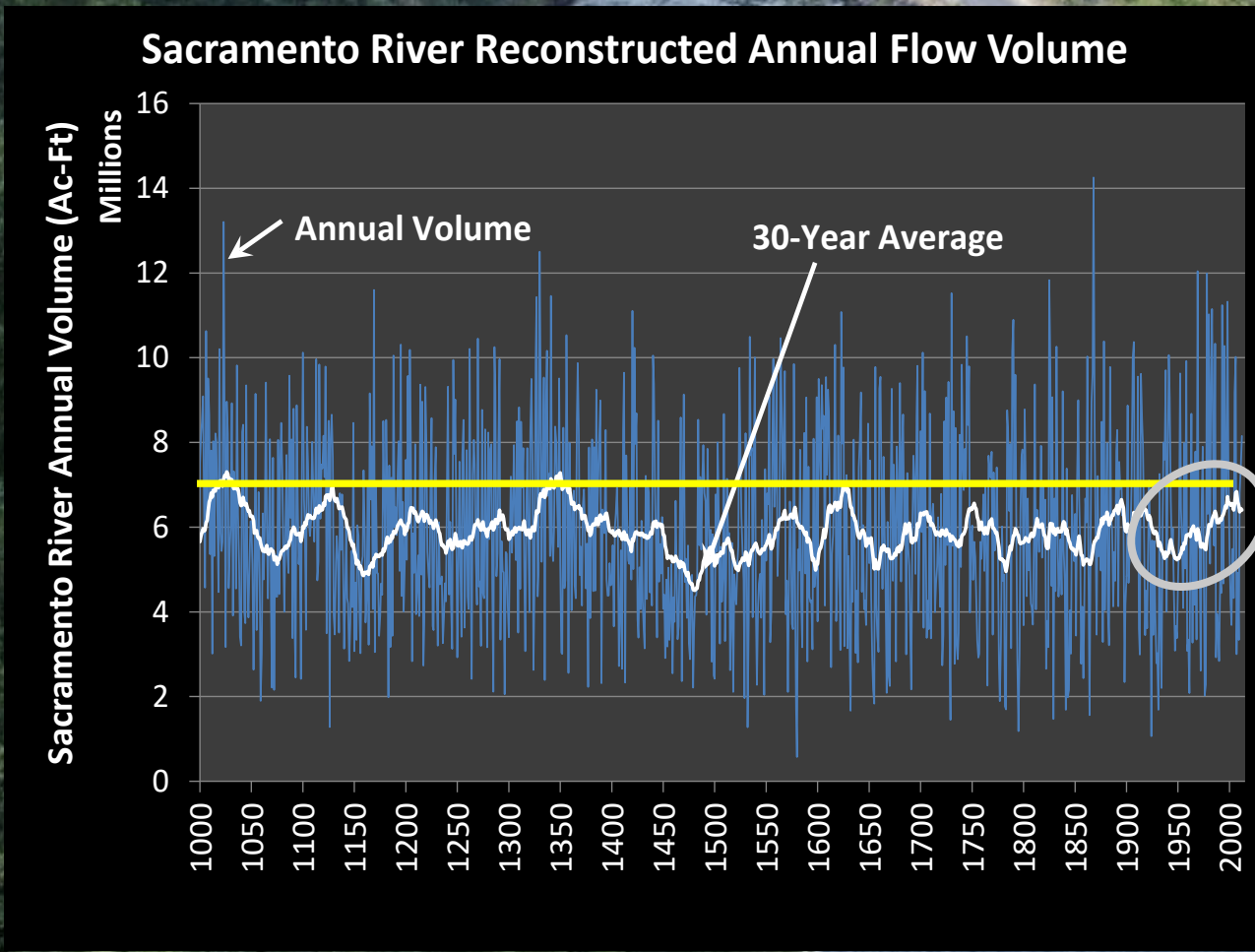
Annual Precipitation





Looking back in time

Looking Back 1100 Years...



Detroit Dam

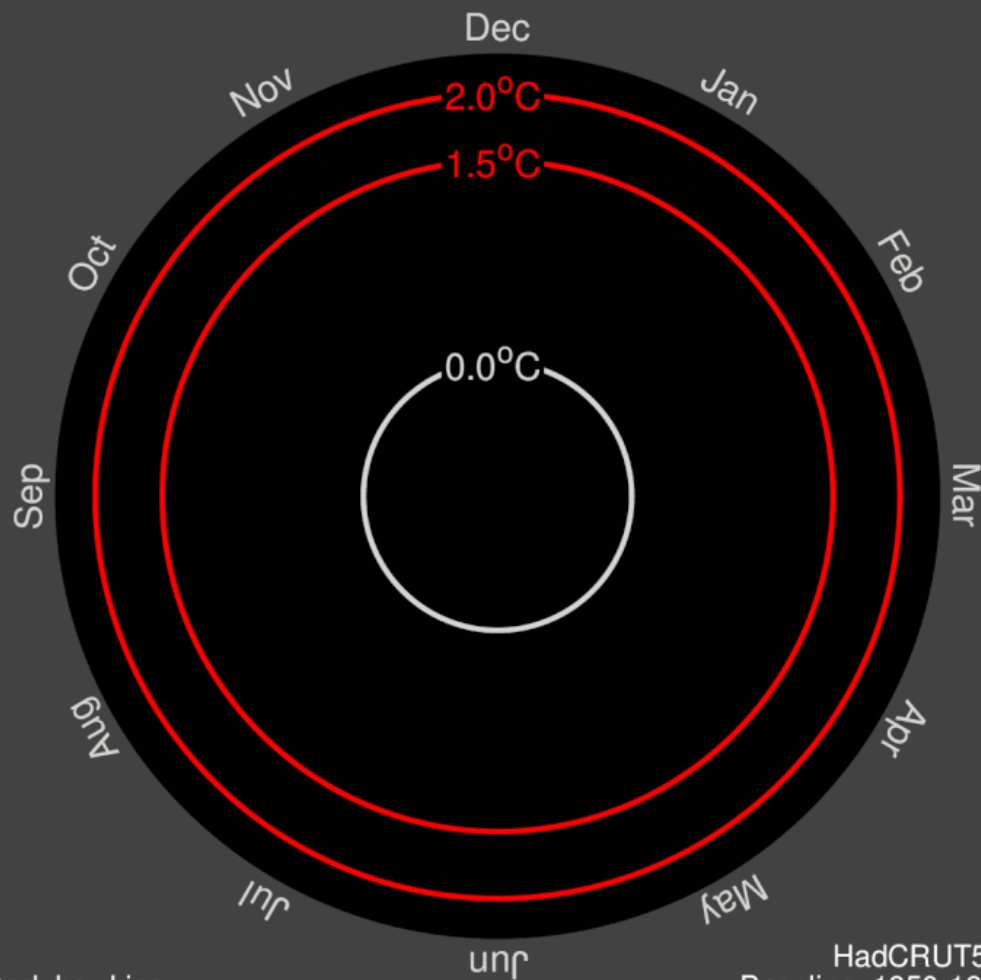
Climates Change.



That's What Climates Do.

Messing with Mother Nature!

Global temperature change (1850-2020)

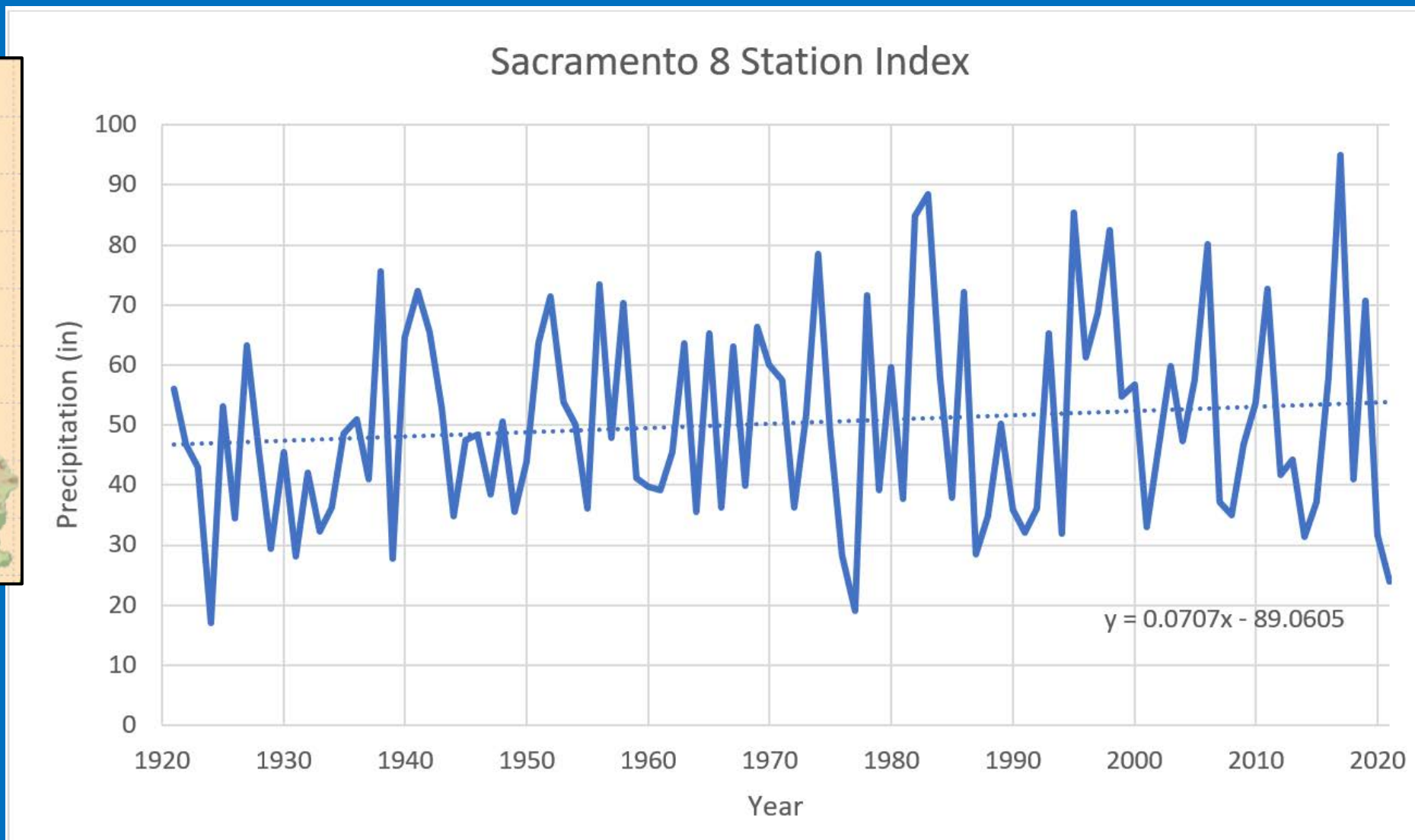
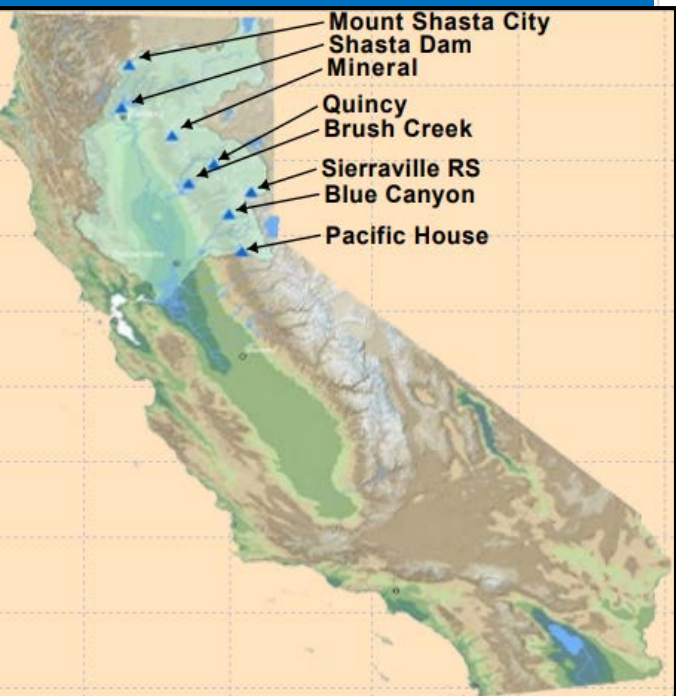


@ed_hawkins

HadCRUT5.0
Baseline: 1850-1900

Lower Granite Dam

Sacramento River Basin Precipitation





April 1 Snowpack

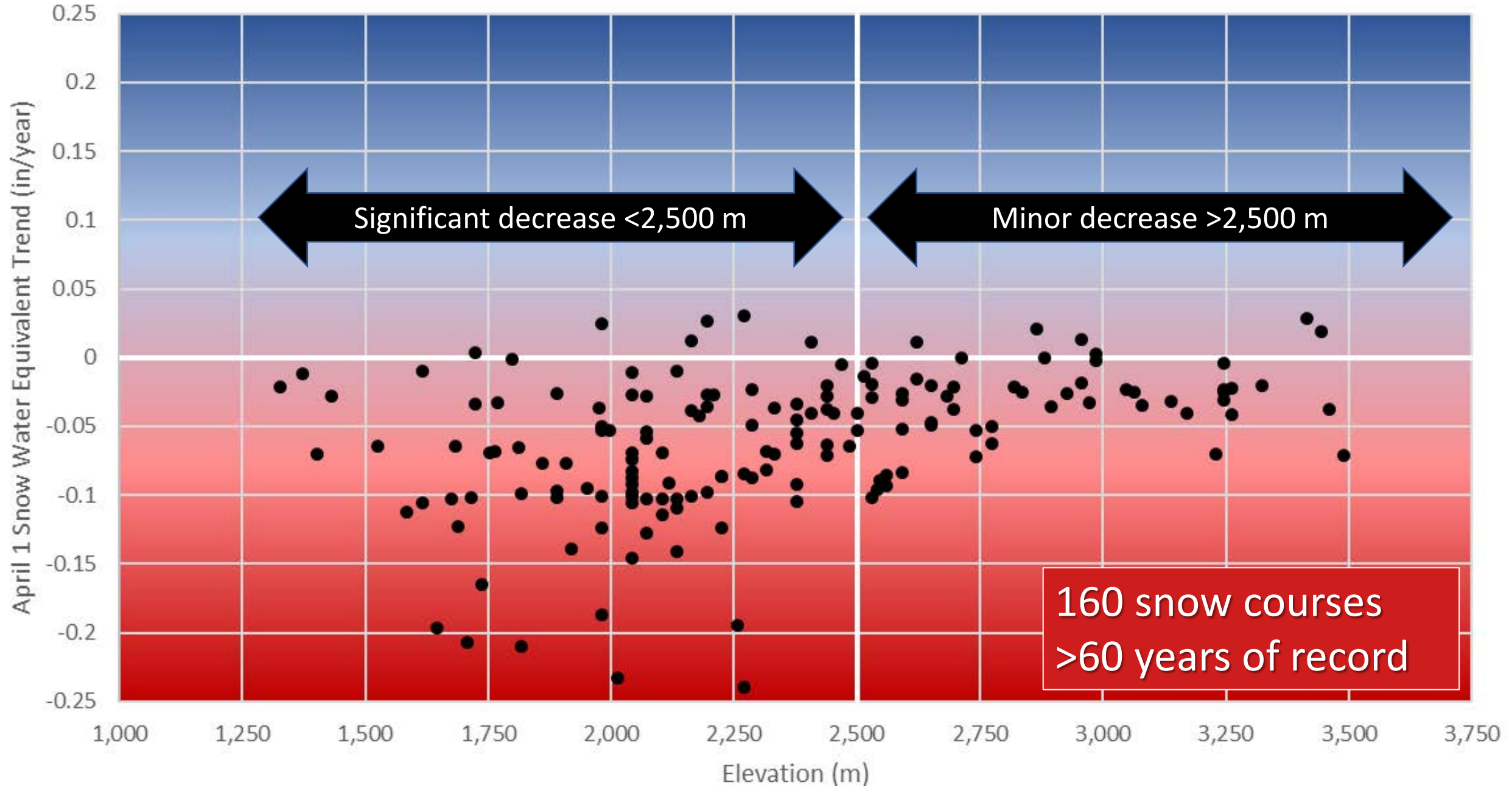
Source: CA DWR Phillips Station on April 1, 2021

California Cooperative Snow Surveys

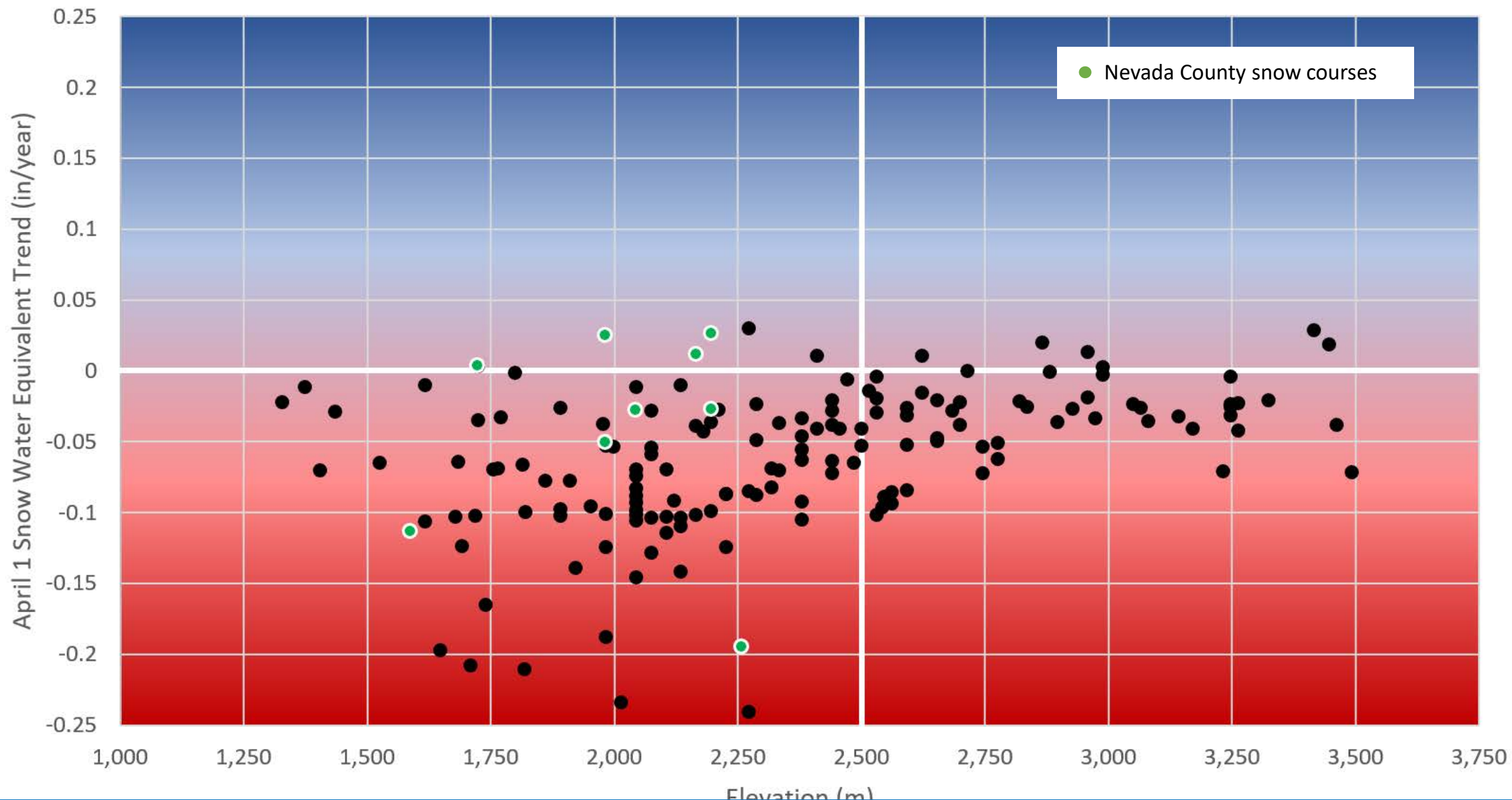


Source: CA DWR Phillips Station taken January 30, 2020.

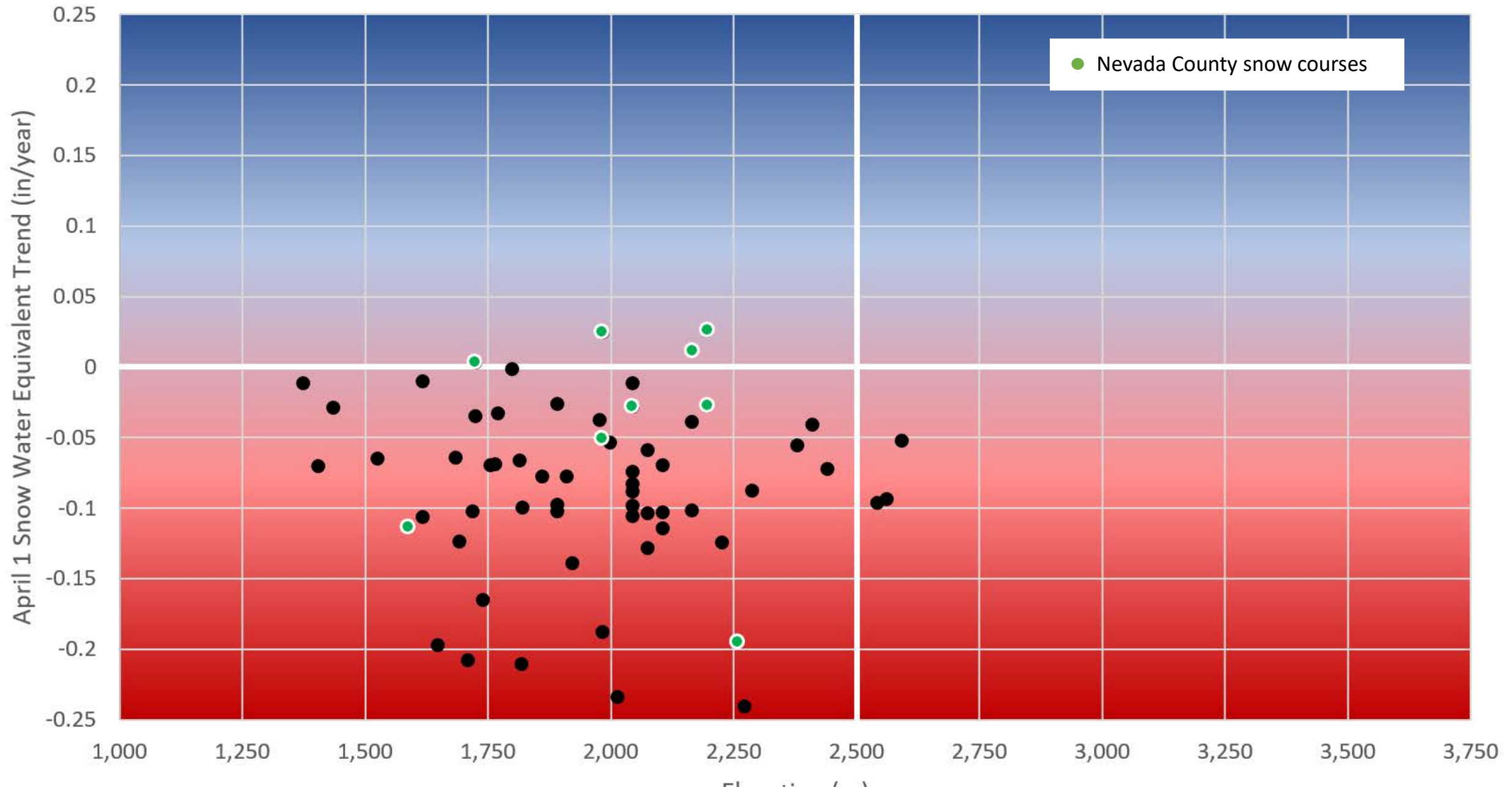
April 1 Snow Water Equivalent Trend



April 1 Snow Water Equivalent Trend



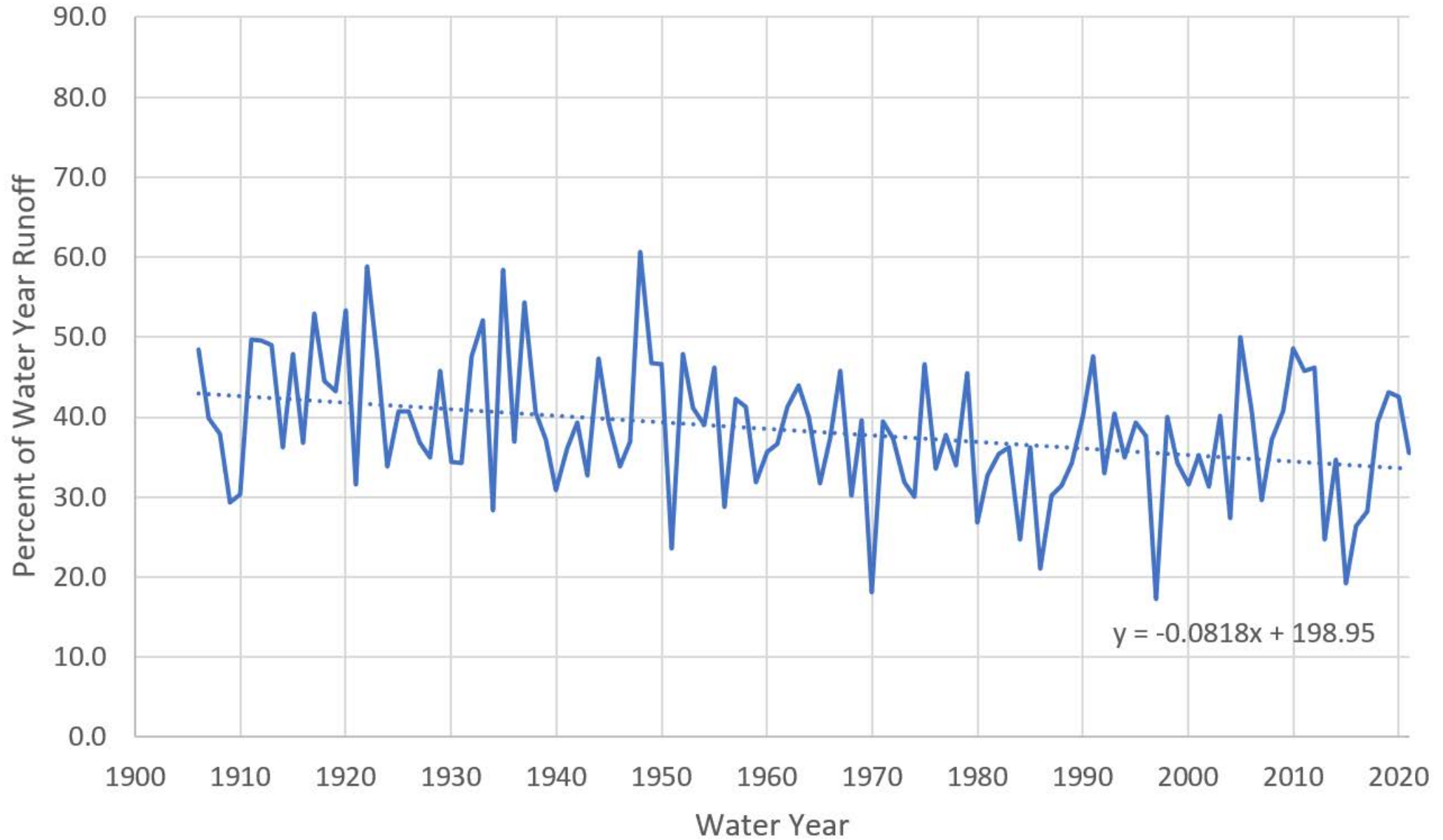
Sacramento River Basin April 1 Snow Water Equivalent Trend



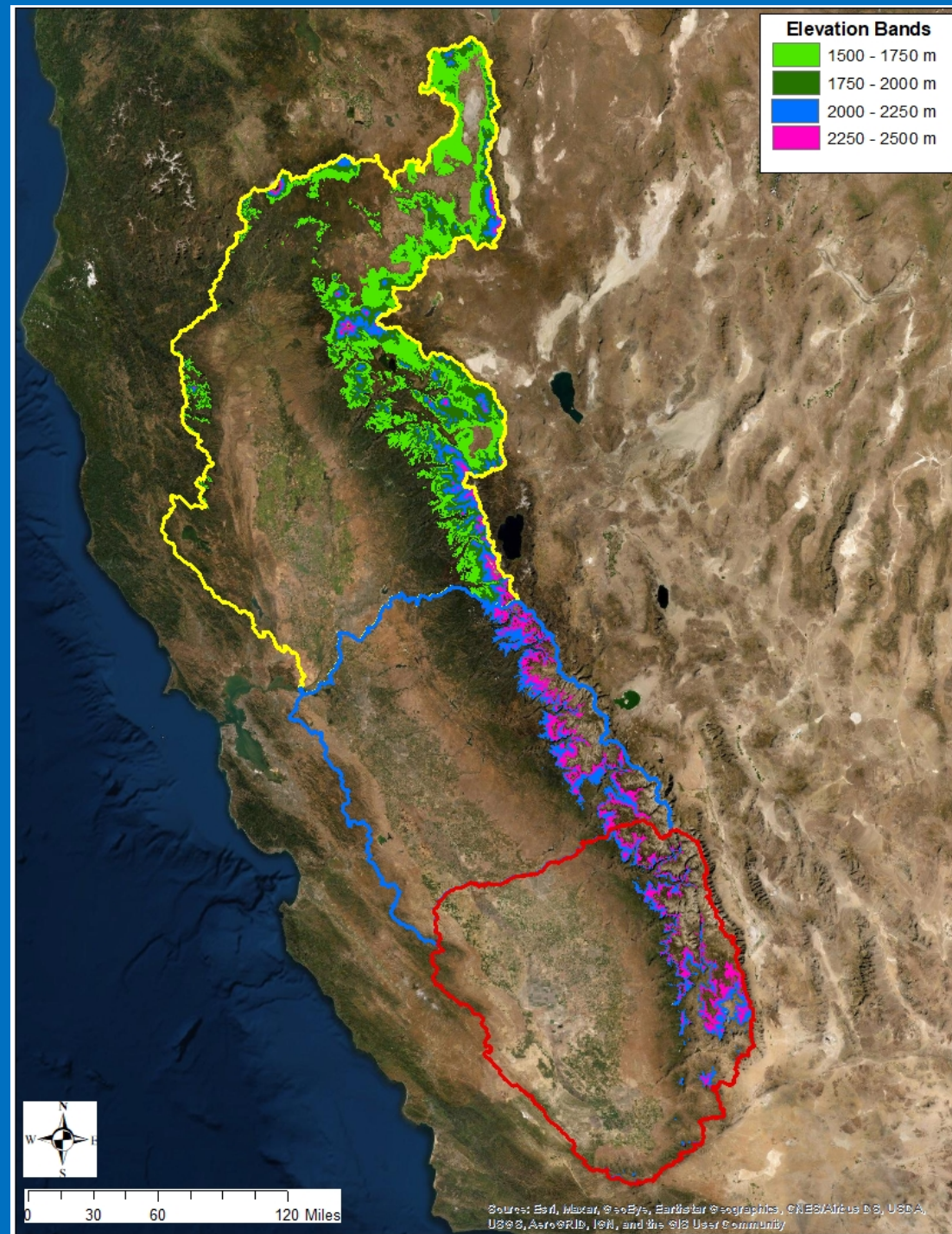
Summary of Precipitation and April 1 SWE Changes

Basin	April 1 SWE Change (in/60 years)	Precipitation Change (in/60 years)
Sacramento River	-5.0	+4.2

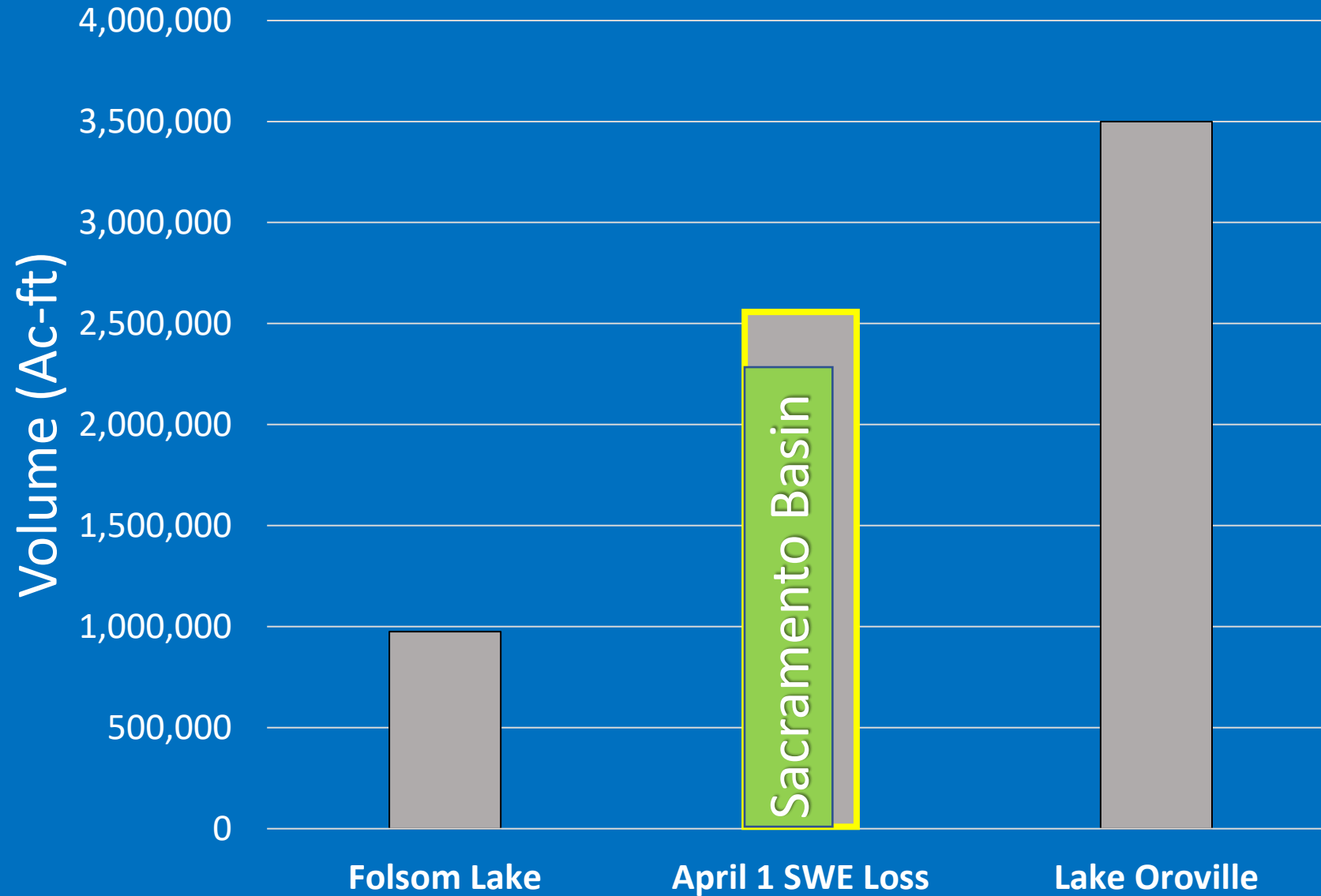
Sacramento River April - July Runoff



Snowpack Region

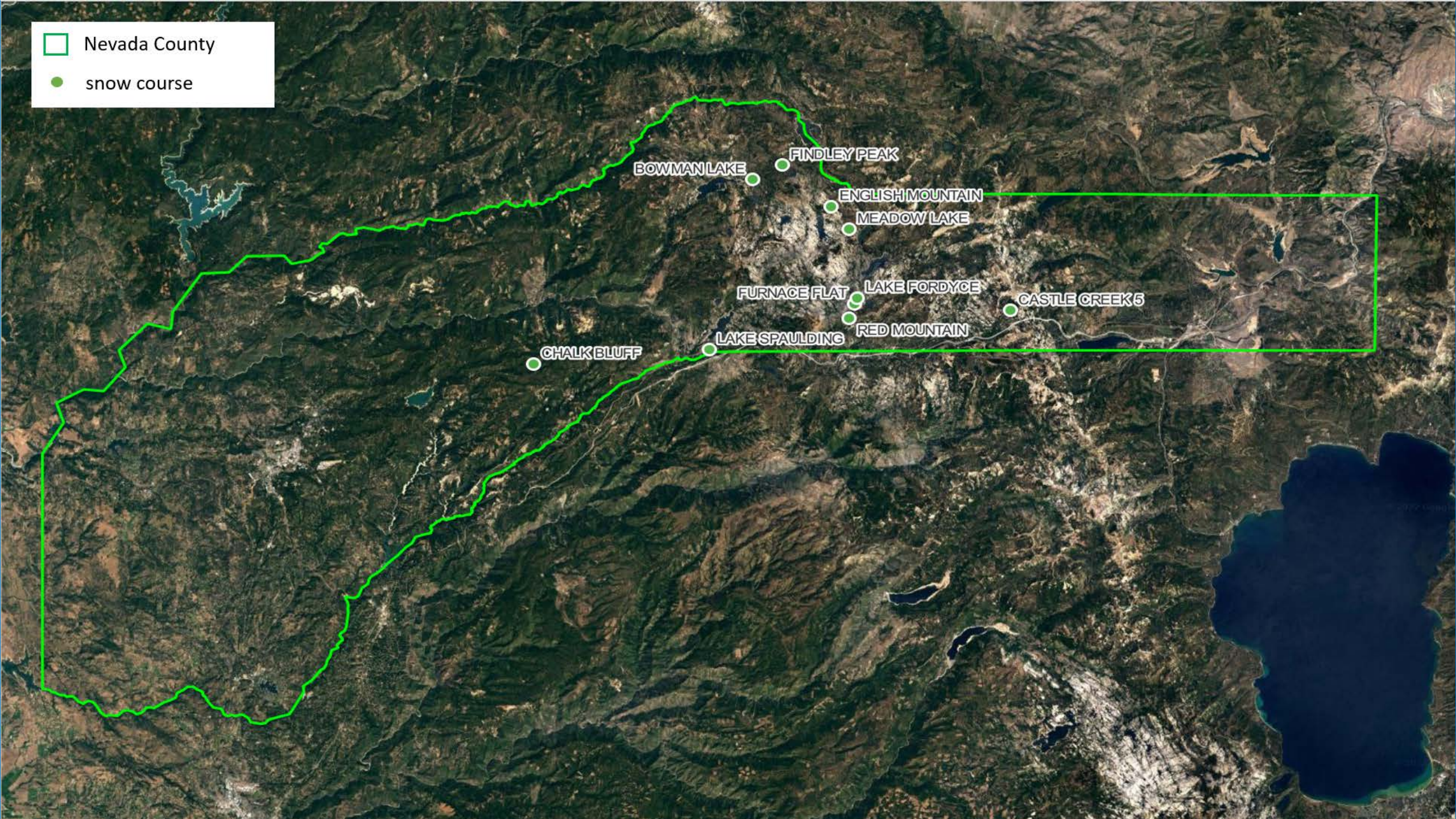


Volume Comparison



□ Nevada County

● snow course





Nevada County

April 1 Snowpack Change → -42,600 ac-ft

Van Giesen Dam, on Combie Reservoir



Planning Implications

- Consider

- Bigger swings

- Faster transitions

Discussion



Source: CA DWR Phillips Station. Photo taken February 27, 2020.