

Drought Information in a Warming World California Perspective

NASEM Information Session October 14, 2025

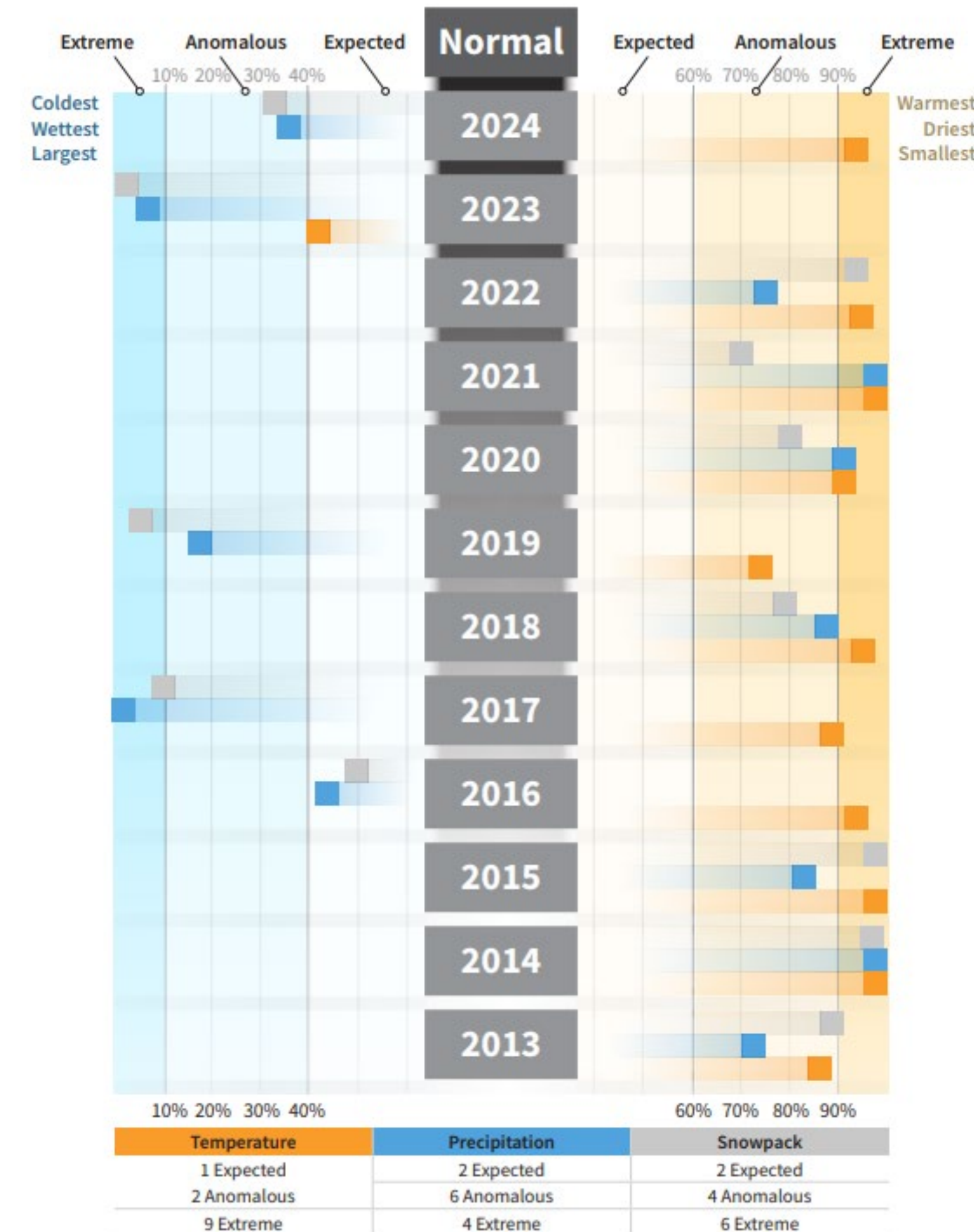
Michael L. Anderson, State Climatologist

More than a Decade of Extremes

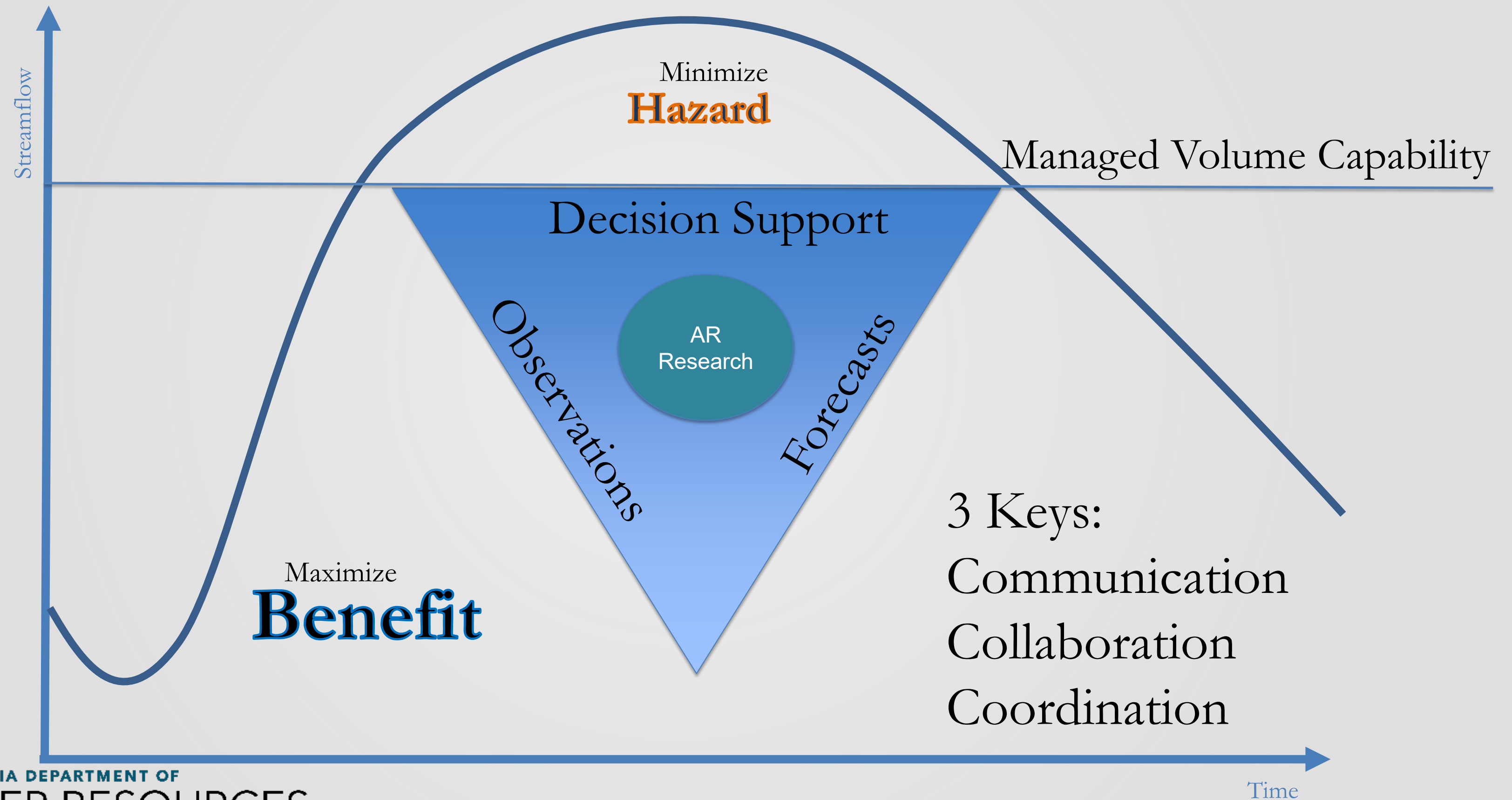
- Multiple Extremes
- New Records
- New opportunities for adaptation



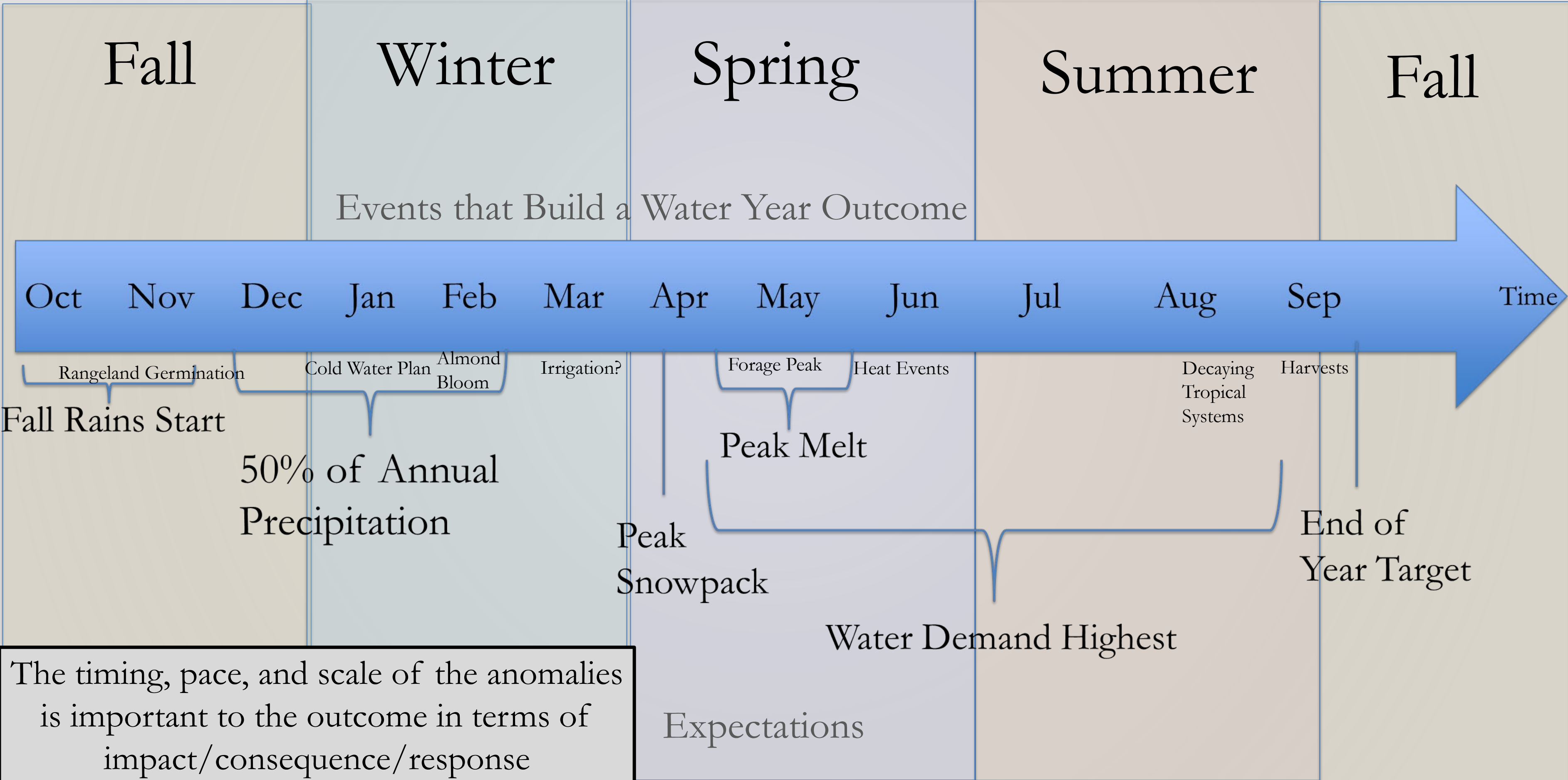
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Real-Time Water Management



Water Year Timeline

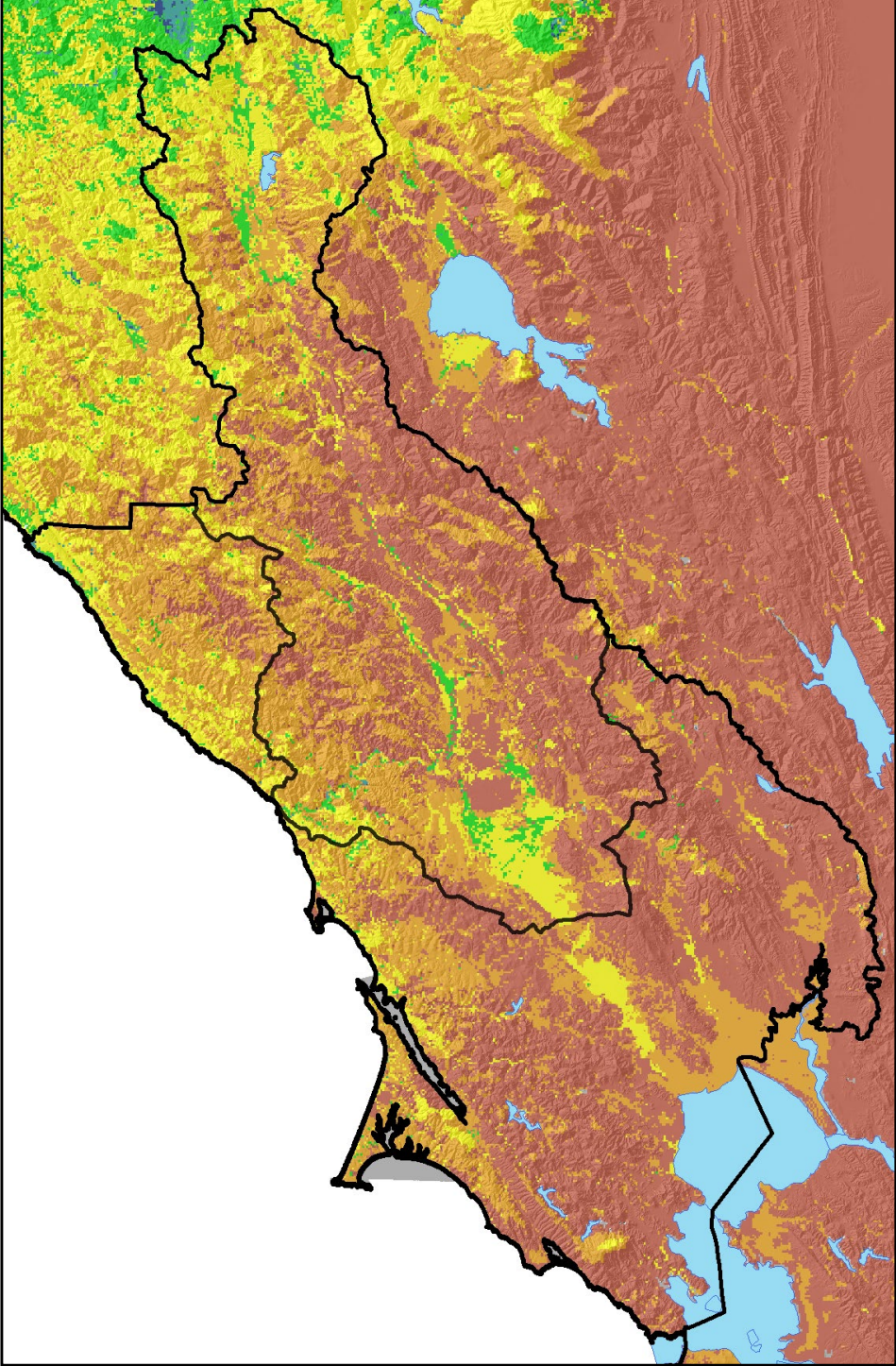
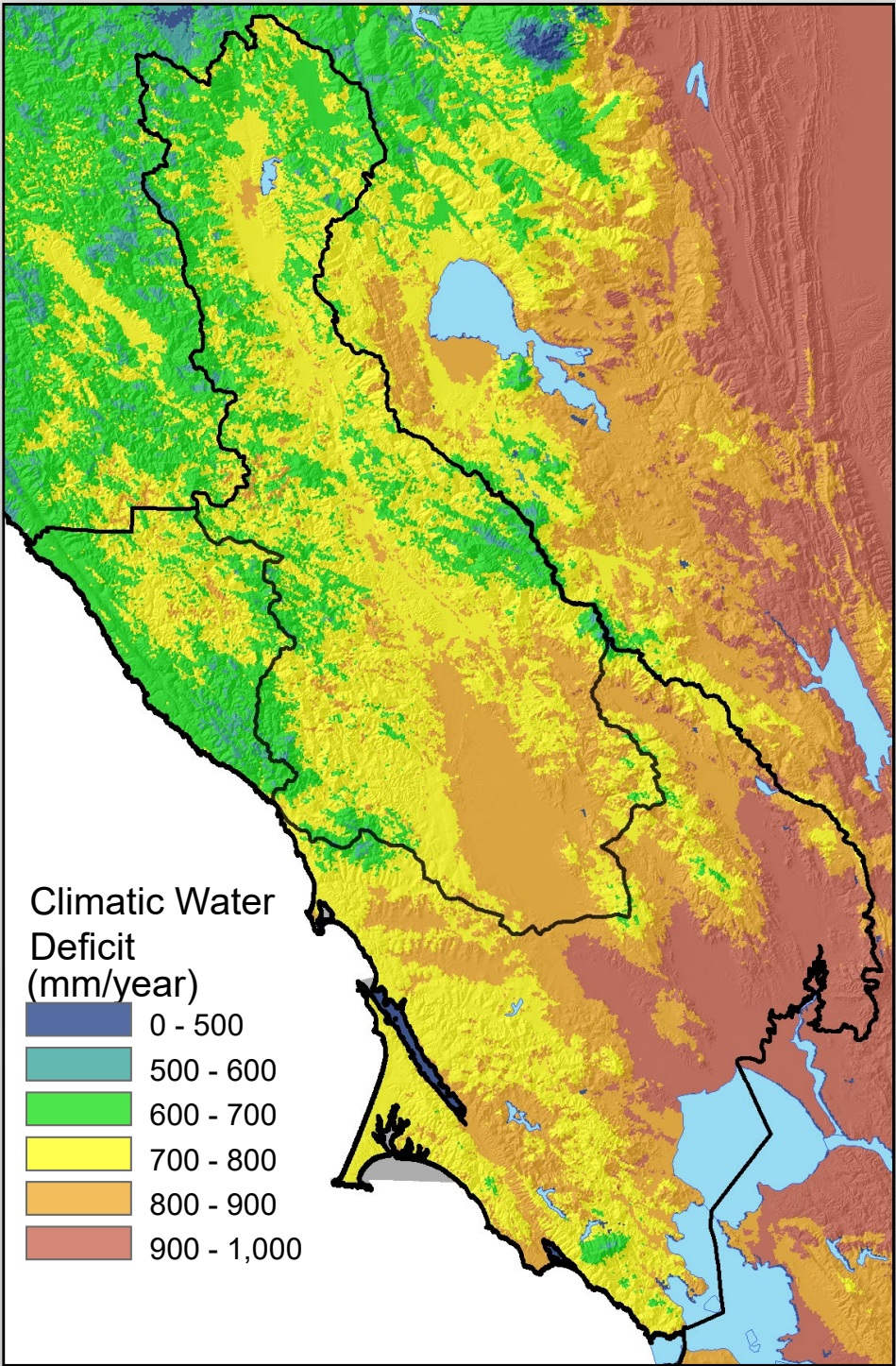


Landscape drought: The influence of temperature

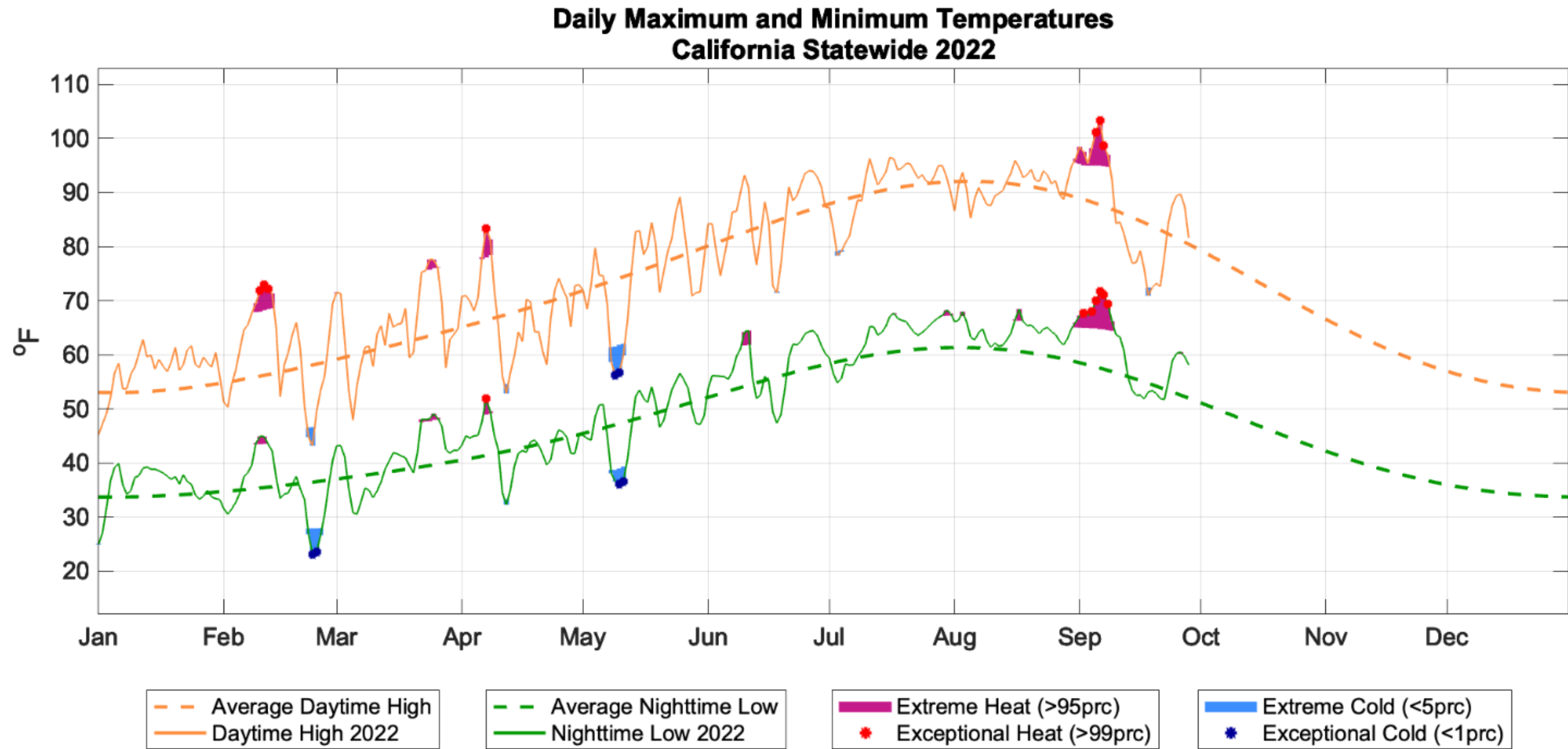
Water Year	Temperature deg F	Precipitation inches
1977	57.4 (21st)	11.94 (2nd)
2014	59.9 (1st)	13.13 (3rd)

1977

Jan 2014



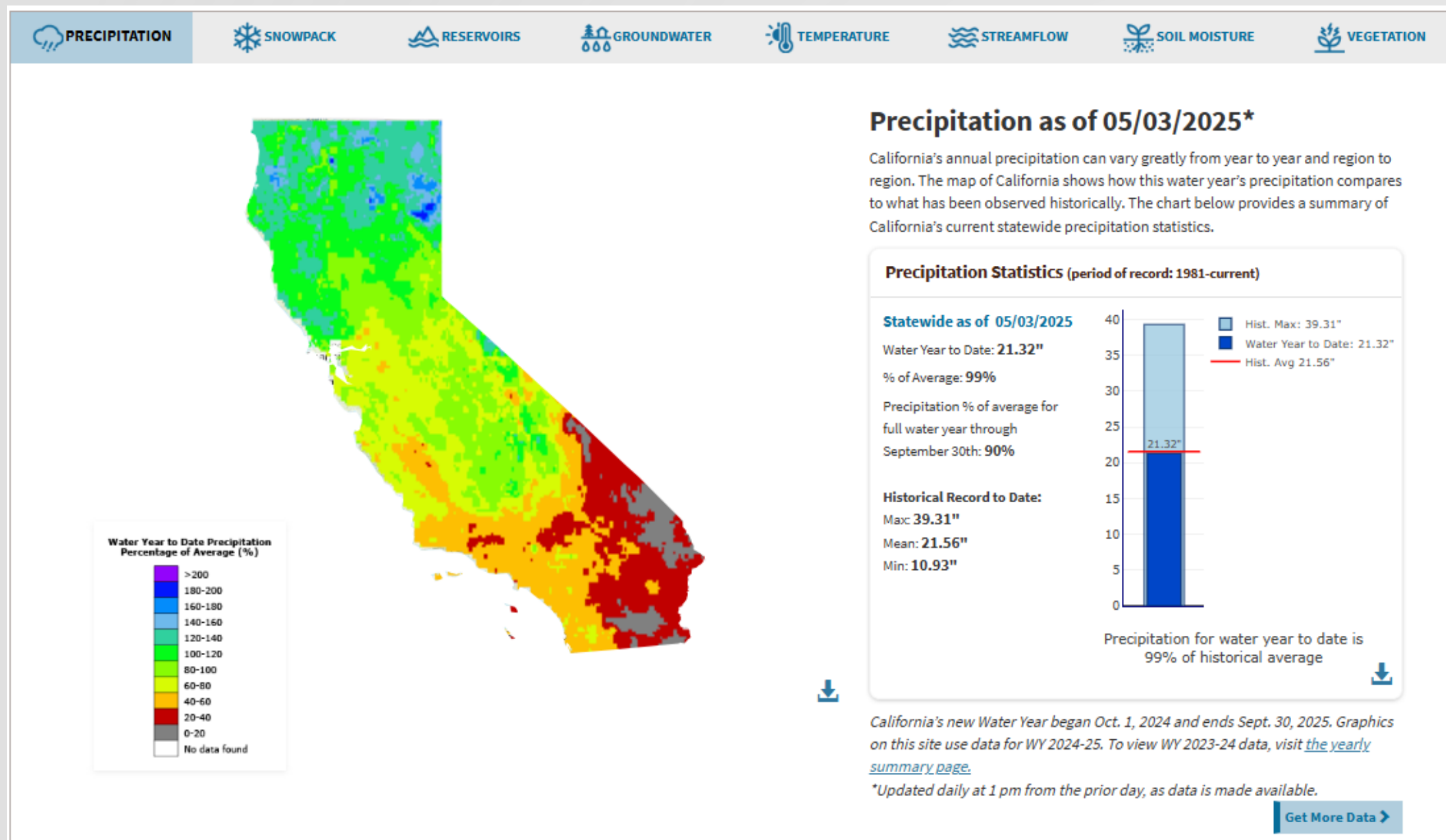
Extreme Heat and Cold in 2022



California Water Watch

Provides current conditions of key water metrics:

- Precipitation
- Temperature
- Snowpack
- Runoff
- Reservoirs
- Groundwater
- Soil Moisture
- Vegetation



California Water Watch
<https://cww.water.ca.gov>



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Building the Water Year

Drought: When does the anomaly result in an impact that requires response?

- Fall (October/November)
 - Precipitation Onset
 - Temperature Anomaly
 - Soil Moisture State with Snowpack Initiation
- Winter (December/January/February)
 - Wet/Dry
 - Notable Anomalies
- Spring (March/April/May)
 - Late-Season Bailout or Early Shutoff?
 - Peak Snowpack Timing and Magnitude
- Summer (June/July/August/September)
 - Drying Pace and Scale
 - Heat Events
 - Tropical Activity
- Multi-Year Prediction – If this year is dry, what about next year?

Climate Change: How different will the next decade be?



Building a Framework for Resilience

- Federal Foundation
- State Customization
- Local Implementation
- Integrated Observing System
- Seamless Forecasting Environment
- Analytics and Tools to Inform Decisions

What information enables resource positioning for the most successful outcomes across the landscape and sectors?

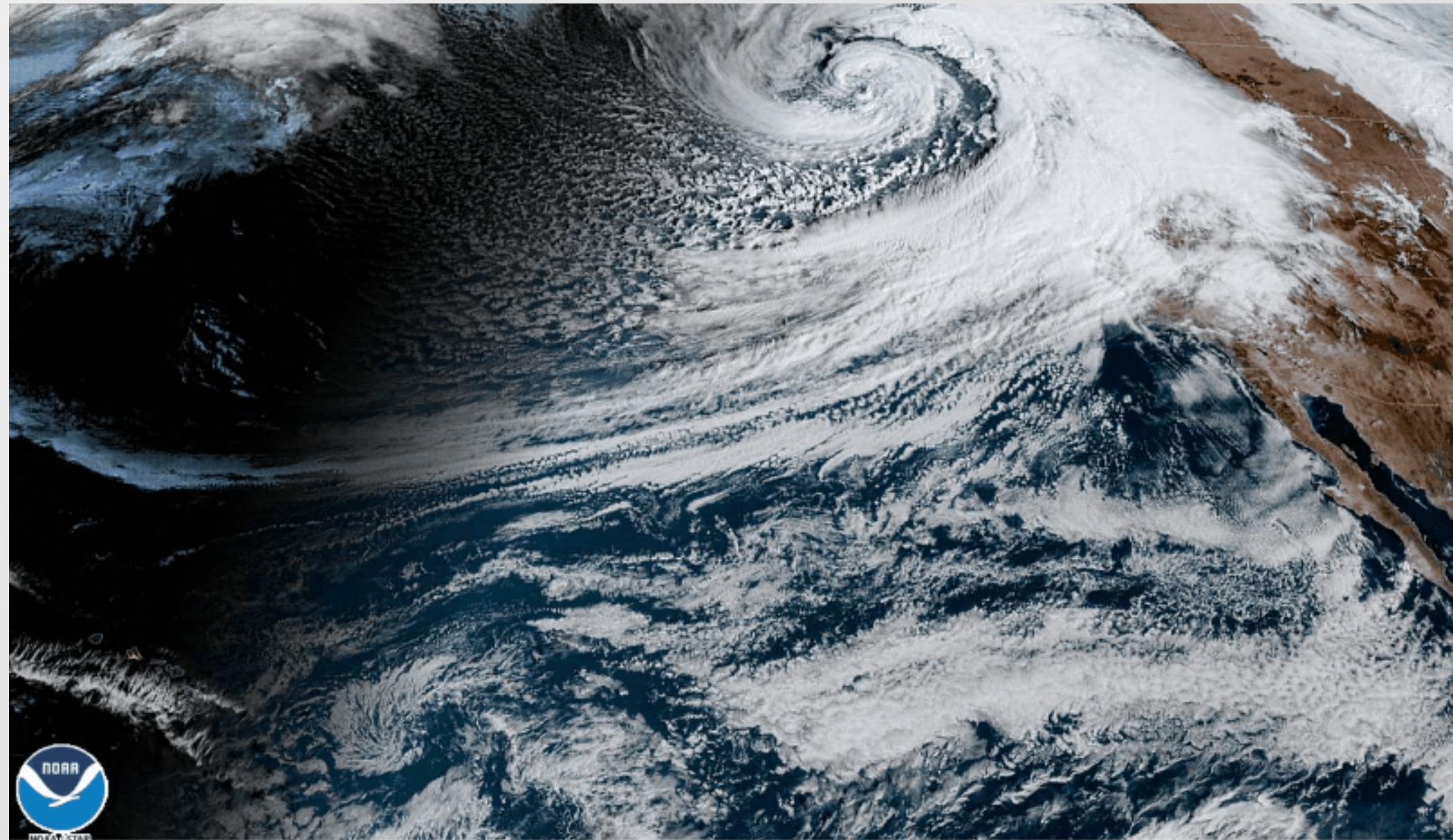


Questions?

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