

Winter Storm Preparedness

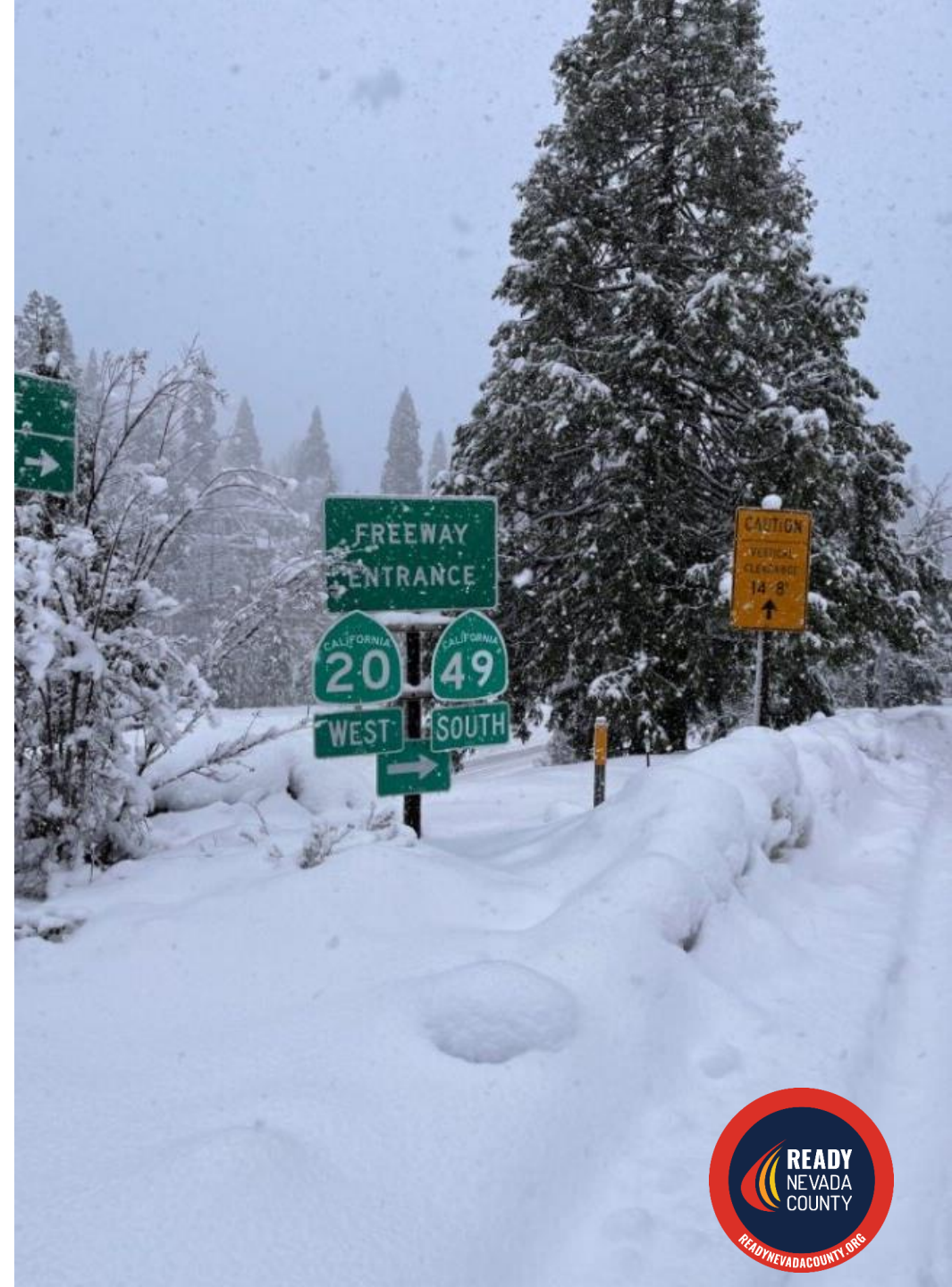
Nevada County
Office of Emergency Services



The Preparedness “Why”

Storm Event Impacts

- Roads - travel
- Infrastructure & building damage
- Limited communication
- Extended power outages
- Limited fuel/propane availability
- Access & Functional Needs challenges
- Economic impacts



Last Winter Storms

- EOC operational 19 days
- Local, state and federal emergency
- Over 10k staff hours for response
- Over 17,500 customers without power
- Major impacts to our roads/infrastructure
- Welfare checks up 600% and rescues up 1,200%
- Operated shelter for 14 days
- Distributed over 5k sandbags
- Over \$1.6 Million in Recovery aid for residents





Winter Outlook

Nevada Co Board of Supervisors Meeting

Presenter: Courtney Carpenter

Warning Coordination Meteorologist

Weather Forecast Office

Sacramento, CA

Tuesday, December 5



January 16, 2023: Yolo Bypass near I-80 and West Sacramento



2023-2024 ENSO Predictions

According to the **Climate Prediction Center**:

El Niño Advisory: El Niño conditions are observed today.

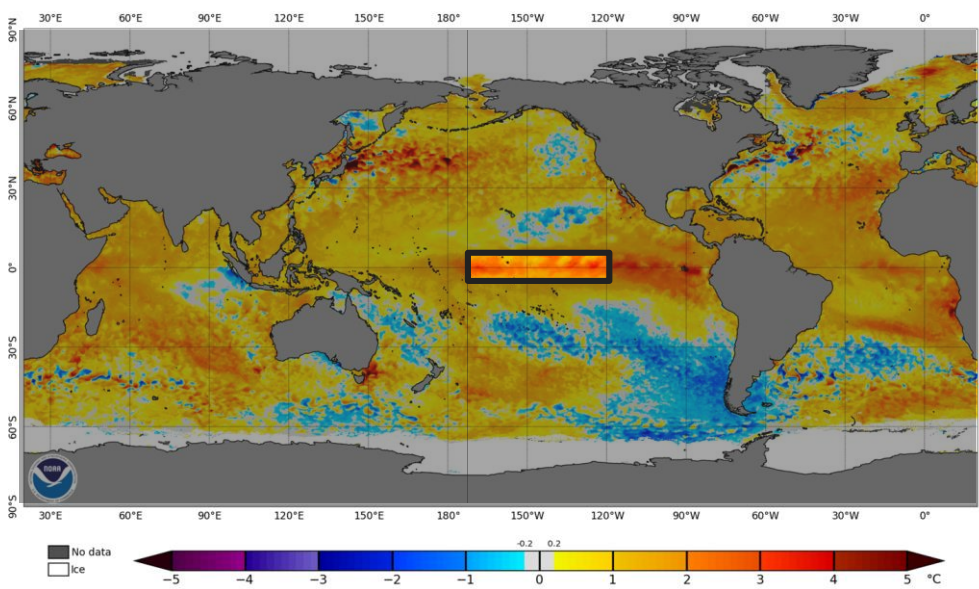
El Niño is anticipated to continue through the Northern Hemisphere spring with an **62% chance through April - June 2024.**

Probability of a **strong El Niño** is **> 55% through January - March**

Probability of a **historically strong event** that rivals 1997-98 and 2015-16 is **35%.**

El Niño: Warmer than normal sea-surface temperatures in the equatorial eastern Pacific.

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 28 Nov 2023



La Niña: Cooler than normal sea-surface temperatures in the equatorial eastern Pacific

Strong El Niño $\geq 1.5^{\circ}\text{C}$ SST Anomaly

Model Predictions of ENSO from Oct 2023

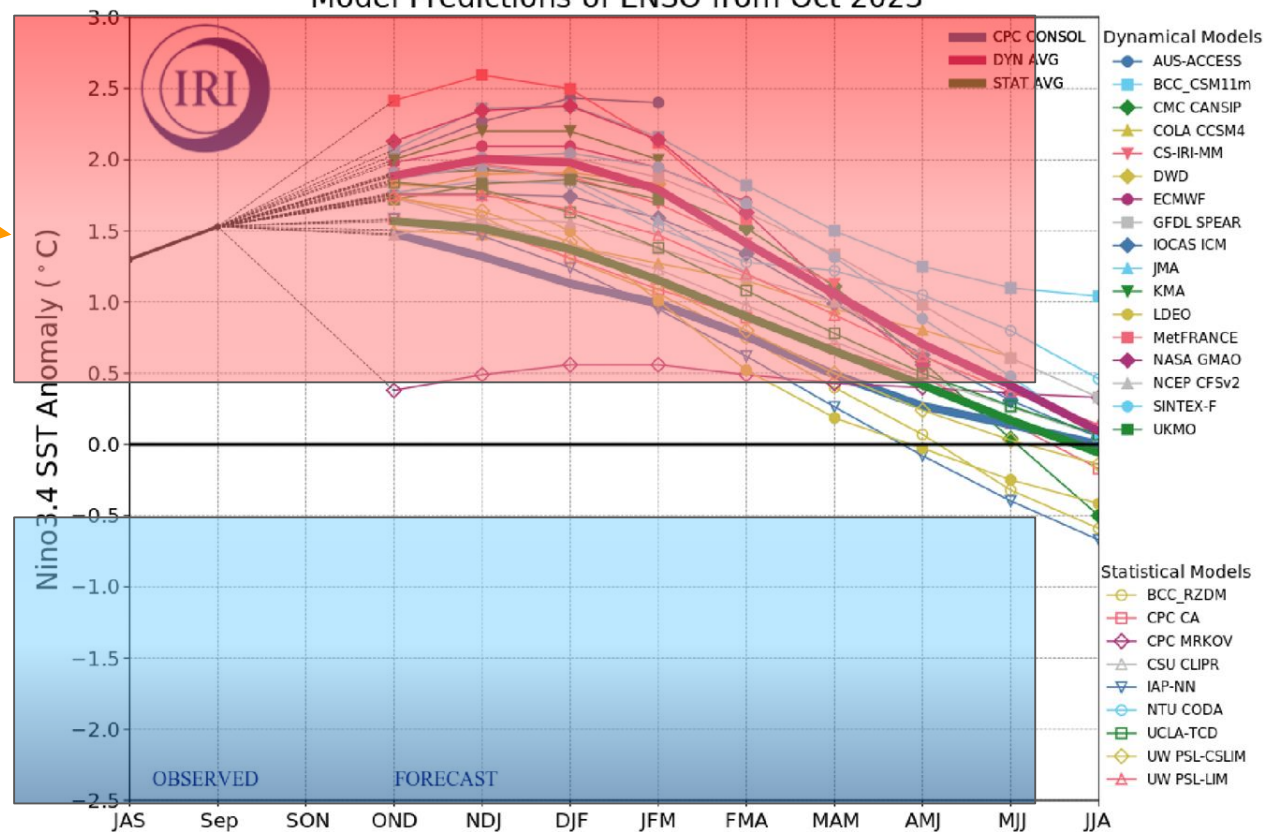
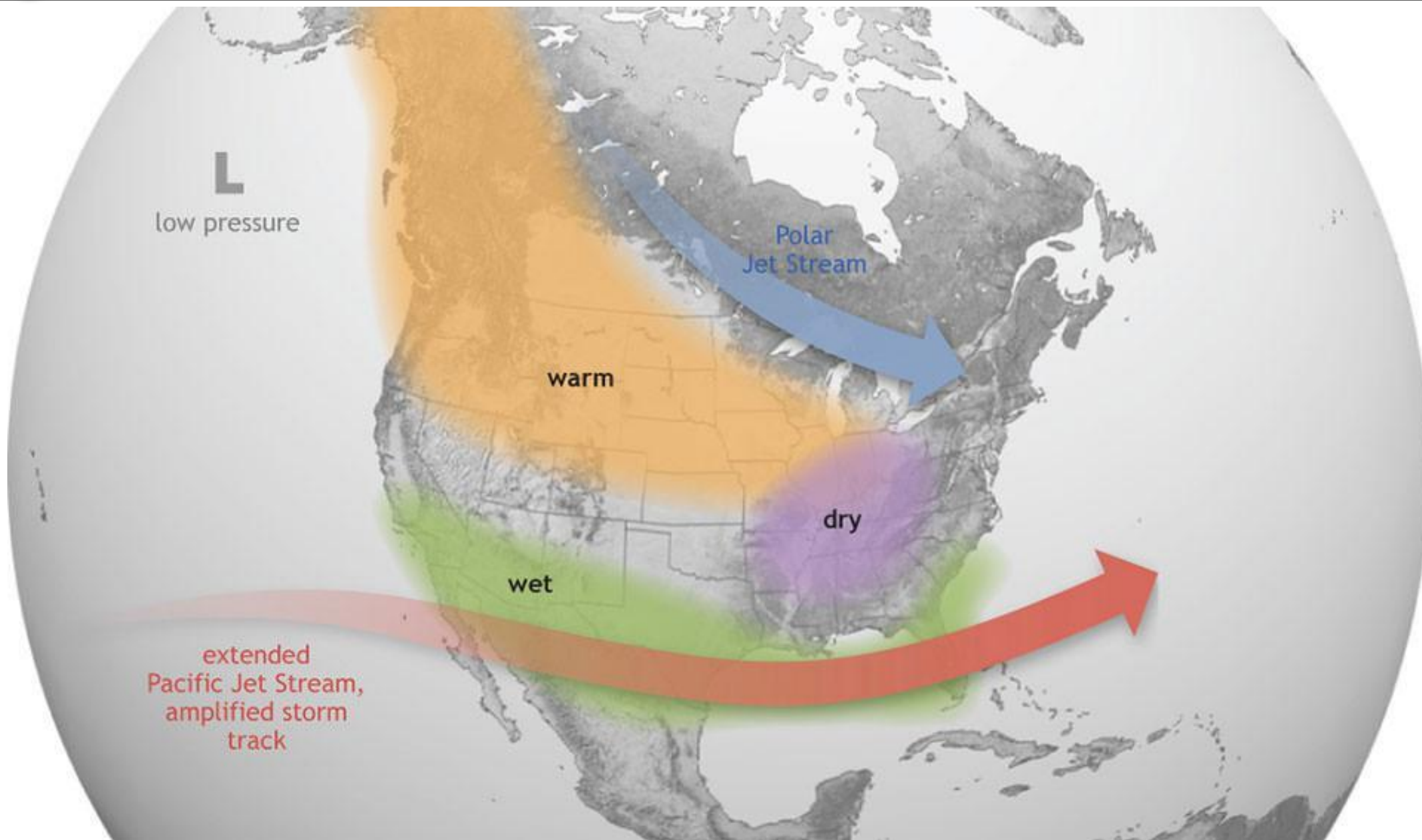


Figure 6. Forecasts of sea surface temperature (SST) anomalies for the Niño 3.4 region (5°N-5°S, 120°W-170°W). Figure updated 19 October 2023 by the International Research Institute (IRI) for Climate and Society.



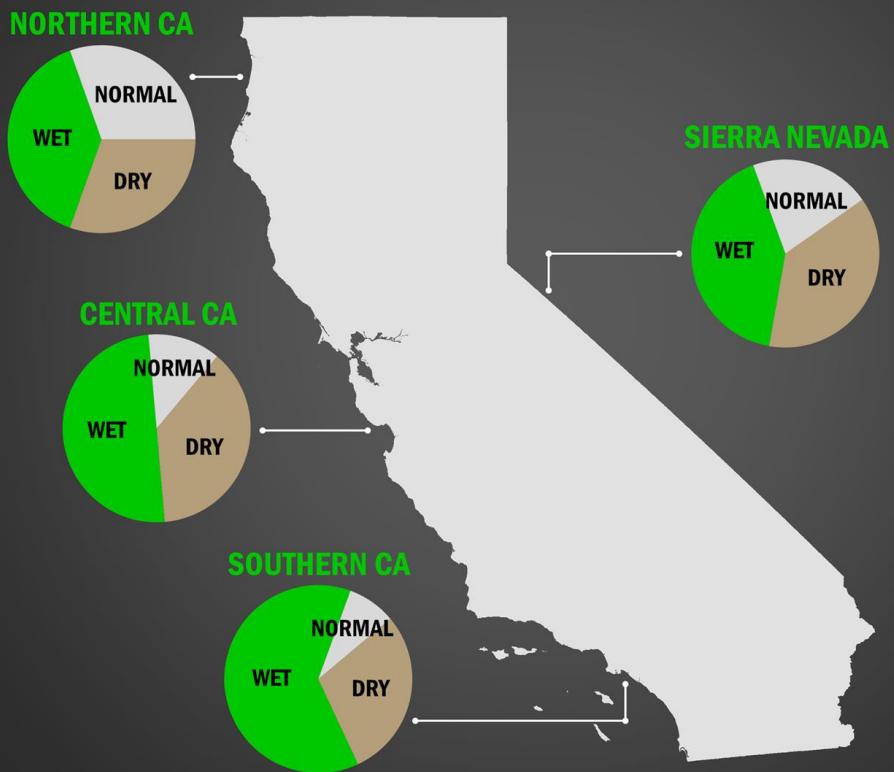
“Typical” El Niño Impacts in the U.S.

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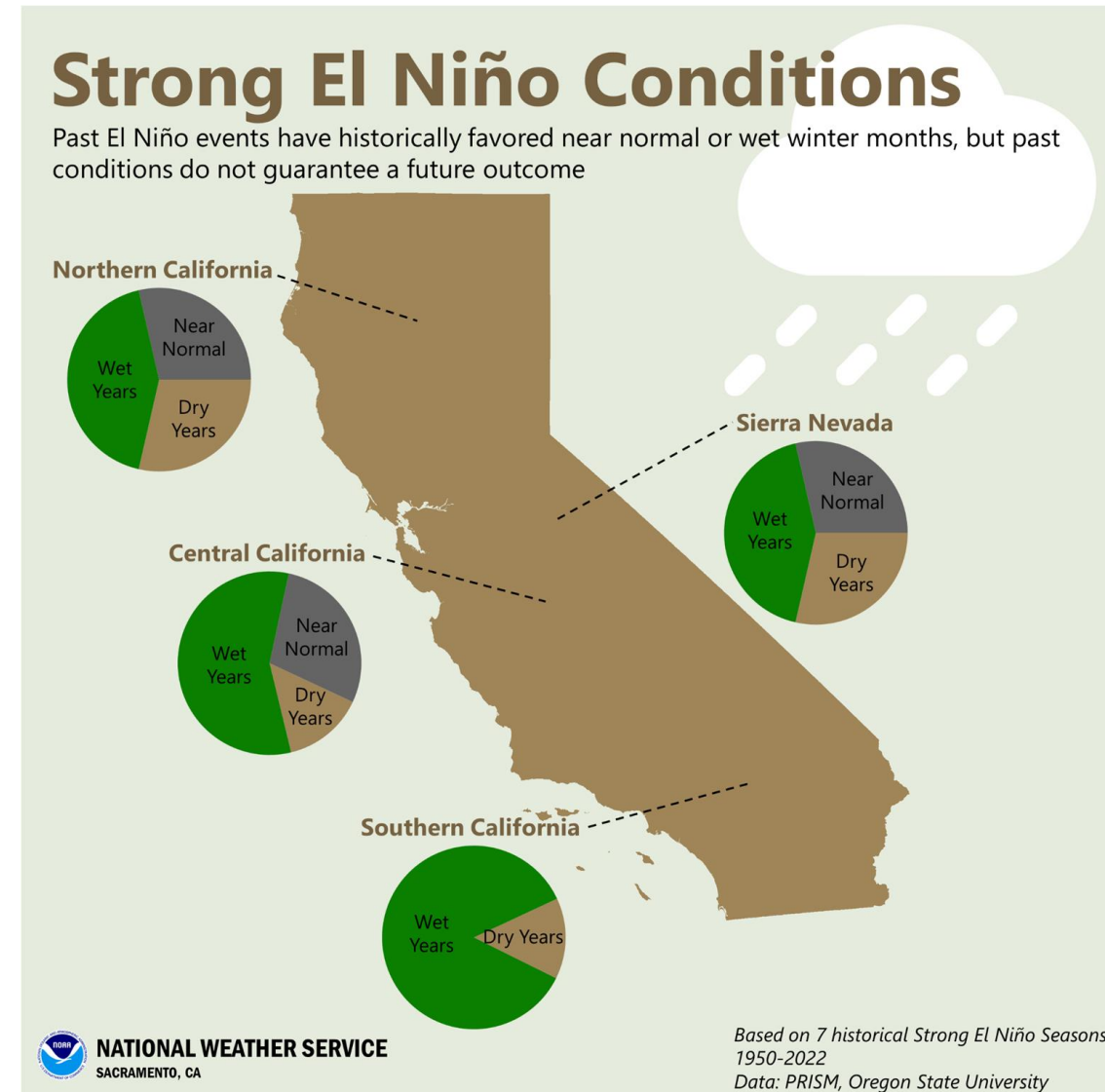
PAST EL NIÑO EVENTS

1950-2022*



- El Niño conditions typically drive the storm track farther south than a average winter
- Southern California has better predictability of precipitation than northern California in El Niño winters
- *El Niños have recorded anywhere from **very dry** to **very wet** winters!*
- Remember, our future water supply will be dependent on individual storms!

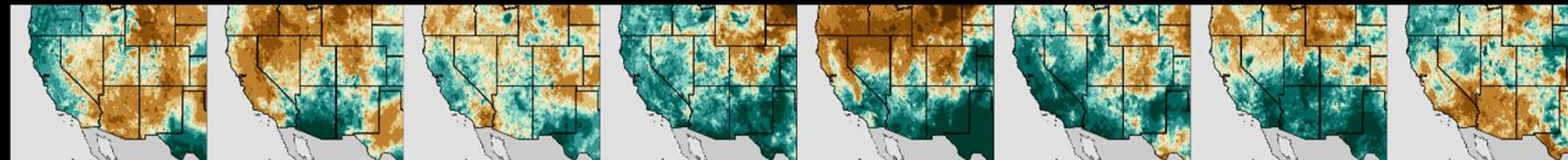
- Presently: > 55% chance of a **strong El Niño**
- Southern California has better predictability of precipitation than northern California in **strong El Niño** winters
- **Strong El Niños** have recorded anywhere from **very dry** to **very wet** winters in NorCal
- Remember, our future water supply will be dependent on individual storms!





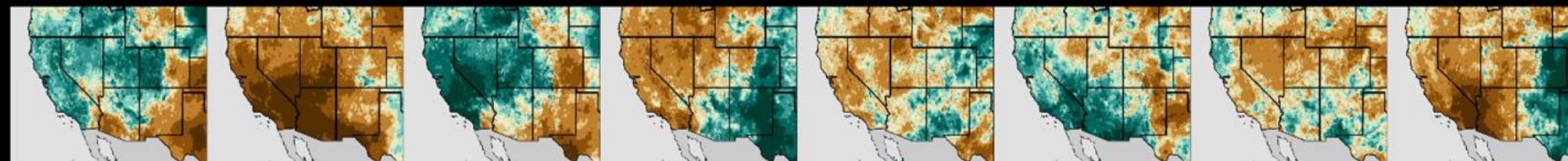
Historical El Niño Precip % of Normal

STRONG



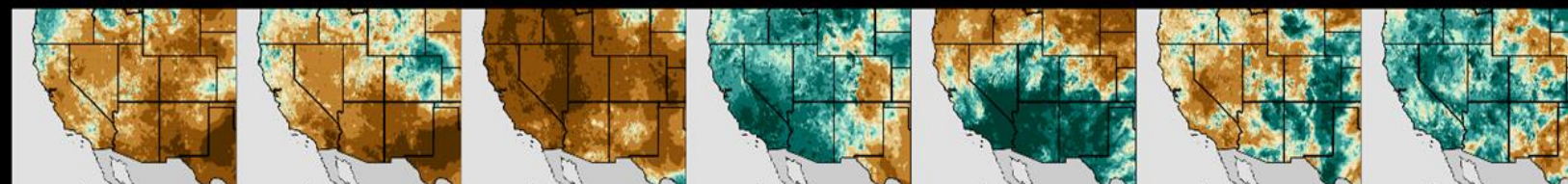
1957-1958 1965-1966 1972-1973 1982-1983 1991-1992 1997-1998 2009-2010 2015-2016

MODERATE



1951-1952 1963-1964 1968-1969 1986-1987 1987-1988 1994-1995 2002-2003 2006-2007

WEAK



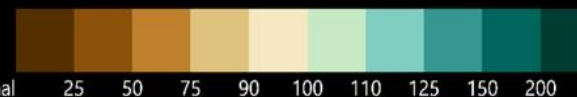
1953-1954 1958-1959 1976-1977 1977-1978 2004-2005 2014-2015 2018-2019

Data: PRISM, Oregon State University



NATIONAL WEATHER SERVICE
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

Precipitation
Percent of Normal





Comparing Past El Niños to Today's El Niño

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- **No two El Niño events are the same**, even strong ones
 - *Think of 1997-1998 (very wet) vs 2015-2016 (below normal to near normal)*
- **Our current El Niño developed earlier in the summer** than previous El Niños have
- **This El Niño is notably warm in eastern Pacific** (off the coast of South America), whereas for the last several decades, the warmest region has been in the central Pacific
- **Overall, the oceans are very warm globally.**
 - *How is that going to impact this year's 'typical' El Niño influence on our weather patterns? To be determined.*
- **All of these factors mean we're going to be less reliant on the past years' El Niños.**



CPC 3 Month Outlooks

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December-January - February



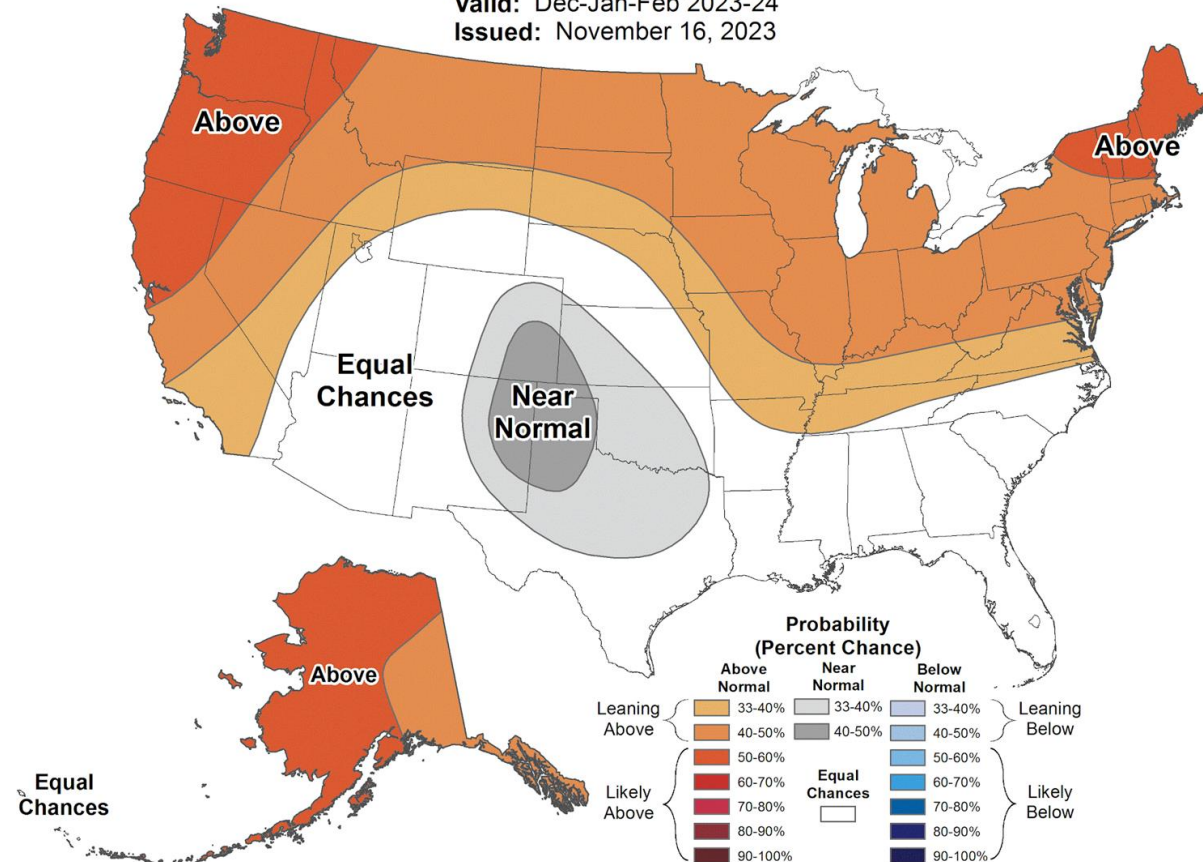
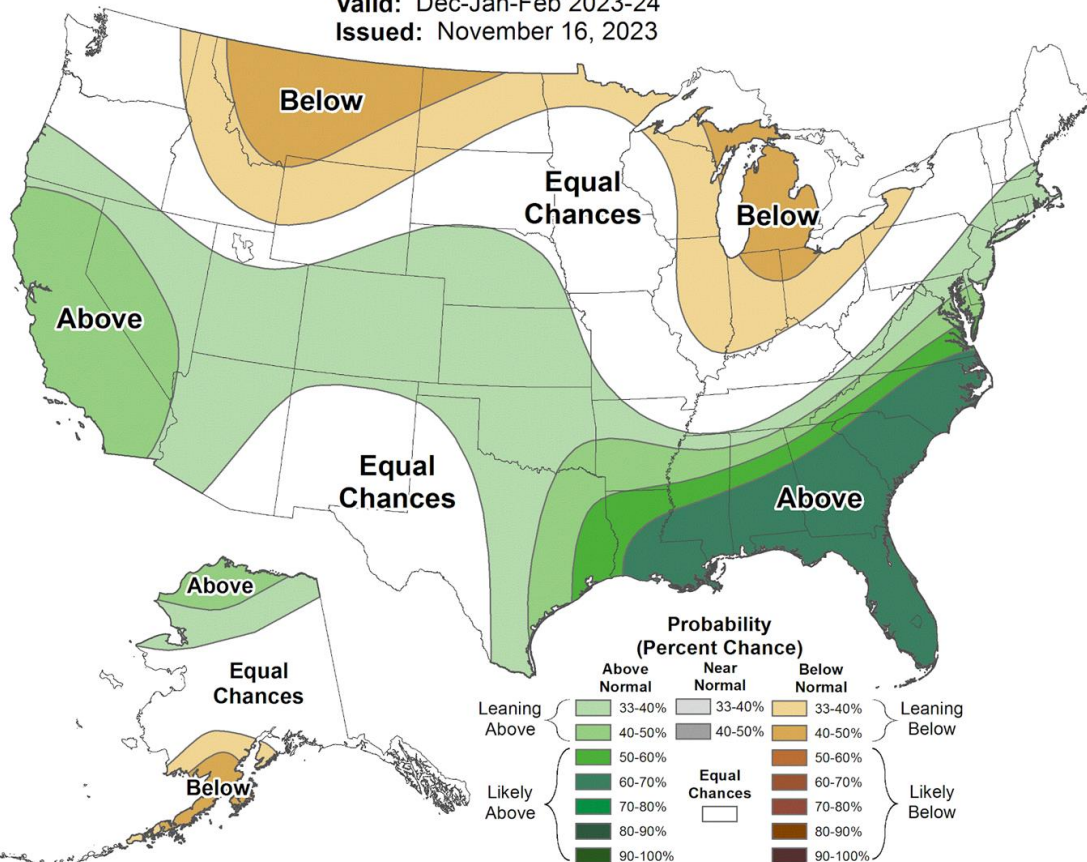
Seasonal Precipitation Outlook

Valid: Dec-Jan-Feb 2023-24
Issued: November 16, 2023



Seasonal Temperature Outlook

Valid: Dec-Jan-Feb 2023-24
Issued: November 16, 2023



Precipitation:

Odds leaning towards **ABOVE NORMAL** precipitation

Temperature:

Odds leaning towards **ABOVE NORMAL** temperatures

- Seasonal outlooks DO NOT capture how wet or dry a winter will be
 - Winters are defined by **individual storms** that occur throughout the season
 - California winters **typically see 5 Strong** (or greater) **atmospheric rivers a year**
 - These storms are apparent in the 7-10 day forecast window & will be highlighted by partner emails



Words of Caution

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Tuesday, December 5

- Reservoirs are in a different situation compared to this same time last year
- Any single storm can produce flooding – localized and/or regional-scale



NWS Products, Services, Resources

TYPE	DEFINITION	THREAT	ACTION
WARNING	Hazard is occurring, imminent, or very likely	Threat to life & property	Take protective action
WATCH	Conditions are <u>favorable</u> for hazard to occur	Threat to life & property	Have a plan of action
ADVISORY	Hazard is occurring, imminent, or very likely	Threat of significant inconvenience	Use caution



TACO WATCH



TACO WARNING



Winter Hazards We Issue Products For...

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- Heavy Rain & Flooding
 - Including debris flows for recent burn scars
- Thunderstorms
- Mountain Snow
- Winds
- Cold Temperatures
- Dense Fog



NWS Partner Emails

Early heads up of impending weather

- Prior to traditional watches and warning

To be added to partner email lists, email:

courtney.carpenter@noaa.gov

Weather Forecast Office
Sacramento
Friday, Oct 22, 2021

Significant Rain and Snow this Weekend into Early Next Week

KEY POINTS

- Periods of moderate to locally heavy rain could cause small stream and urban flooding
- Possible debris and ash flows on recently burned areas
- Breezy winds Sunday
- Winter Storm Watch in effect Sunday evening into Tuesday

CHANGES FROM PREVIOUS BRIEFING

- Winter Storm Watch issued for Sunday night into early Tuesday
- Flood Watch in effect from Late Saturday night through Sunday

WEATHER RISK OUTLOOK

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence.

	Fri 10/22	Sat 10/23	Sun 10/24	Mon 10/25	Tue 10/26	Wed 10/27	Thu 10/28
Valley	Rain	Rain	Rain/Wind	Rain	Rain	Rain	
Foothills	Rain/Debris Flows	Rain	Rain/Wind/Debris Flows	Rain	Rain	Rain	
Mountains	Rain/Debris Flows	Rain	Rain/Wind/Debris Flows	Snow	Snow	Rain	

Risk Levels

Little to None	Minor	Moderate	Major	Extreme
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DETAILS

Valley, Foothills, Mountains

Rain

Impacts:

- Moderate to heavy rain may lead to roadway ponding and minor flooding of poor drainage areas, creating difficult commute conditions
- Periods of heavy rain with ash and debris flows possible on recently burned areas

Timing:

- Through this afternoon

Confidence:

- High

Snow

Impacts:

- Mountain travel delays and chain controls possible

Timing:

Friday

Confidence:

Medium

- Snow levels 7000 - 9000 feet decreasing through the day



Thank You! Any Questions?

Weather Forecast Office
Sacramento, CA
Tuesday, December 5

If you have any questions or want to be added to our partner email list, please

contact:

NWS Sacramento

nws.sacramento@noaa.gov

or

Warning Coordination Meteorologist

courtney.carpenter@noaa.gov

A forecaster can be reached 24/7 at 916-979-3045



nws.sacramento@noaa.gov



(916) 979-3045



weather.gov/sacramento





Winter Storm Preparedness, Response & Recovery Tools

- EOC structure/experience
- Task force creation/enhancements
 - DPW
 - CAL FIRE
 - PG&E
 - Communication providers
 - Local Fire Departments
- Leveraging state/federal resources
- Community storm surveys
- Tax relief options
- Building permit fee waivers
- Direct green waste/debris programs



Winter Storm Preparedness, Response & Recovery Tools

- Current data – 211 Connecting Point
- Enhanced community messaging
- Sheltering resources
- Tahoe Truckee COAD
- On-call contracts
- Regular communication with partners/stakeholders
- Embedded CAL OES rep
- Refining DSW and county staff supportive structures





Partnerships – Collaboration

- Emergency incident response
- Emergency dispatching
- EOC support
- Task force support
- Clearing roadways
- Structure snow removal
- Recovery resource support





Partnerships – Collaboration



- Emergency incident response
- Rescues & welfare checks
- Search and Rescue (SAR)
- Animal rescue
- EOC coordination
- Telecoms coordination
- First responder coordination
- 24/7 Operations



Together We Are Ready!

- Understand basic storm forecast terminology
- Plan for your medical needs
- Have enough propane, fuel, and dry firewood
- Maintain sources of light
- Have shelf stable foods and enough water
- Park vehicles of ease of access & egress
- Charge devices
- Line up resources (*tree services, snowplow services, insurance information, etc*)
- Know generator best practices/maintenance
- **YOUR NEIGHBORS, FRIENDS, AND FAMILY ARE YOUR GREATEST**

RESOURCE



Questions?



**NEVADA
COUNTY**
CALIFORNIA

