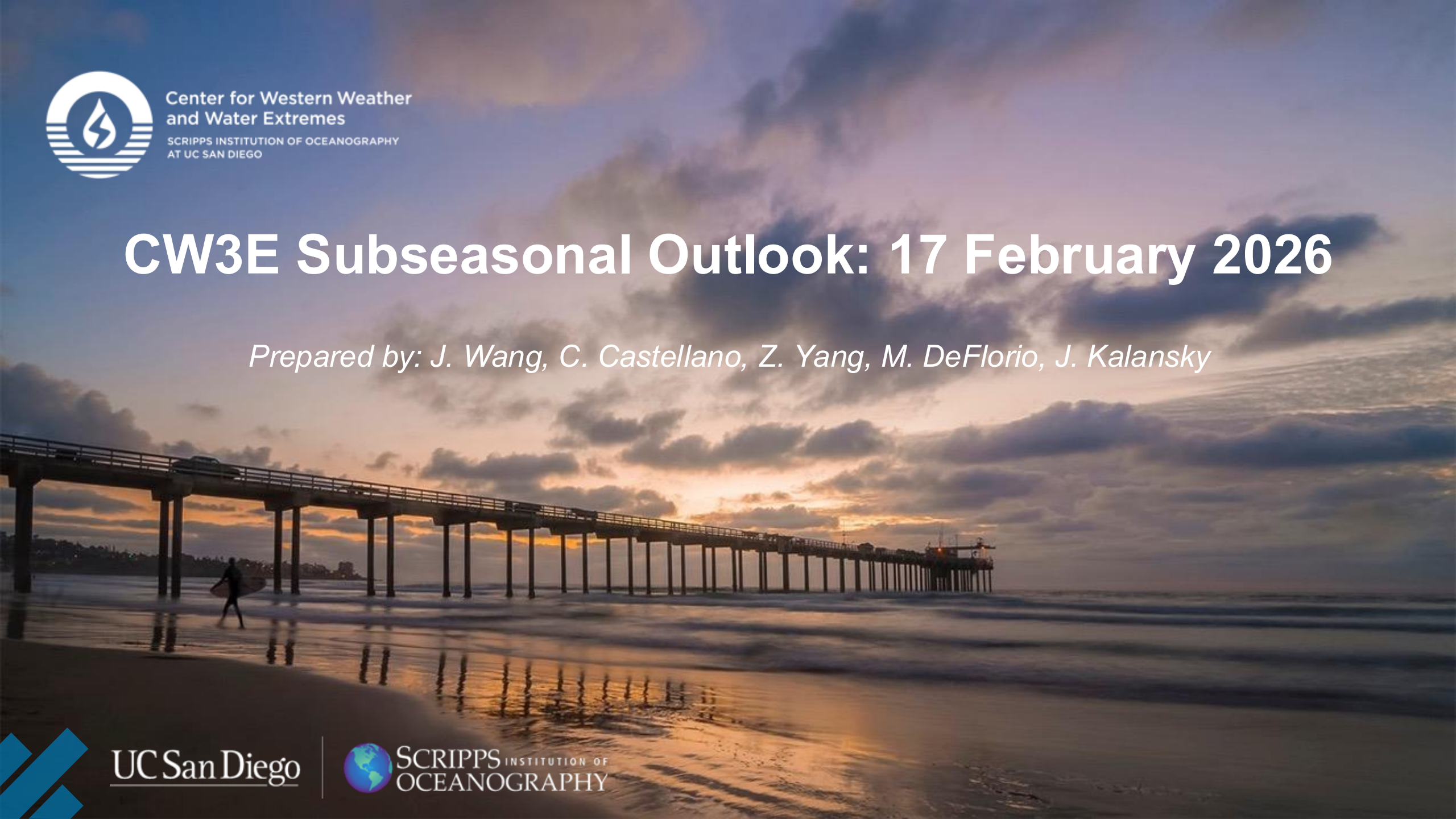
Center for Western Weather
and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO
CW3E Subseasonal Outlook: 17 February 2026
Prepared by: J. Wang, C. Castellano, Z. Yang, M. DeFlorio, J. Kalansky
UC San Diego
SCRIPPS INSTITUTION OF
OCEANOGRAPHY

CW3E Subseasonal Outlooks: Glossary & Context

- **The outlooks are based on CW3E subseasonal forecast products that can be found here: https://cw3e.ucsd.edu/s_and_s_forecasts/**

- **CW3E subseasonal (2–6 weeks lead time) atmospheric river, ridging, and circulation regime products use three different global ensemble prediction systems to create these products:**
  - NCEP CFSv2 (US Model): Weeks 2–4
  - ECCC (Canadian Model): Weeks 2–4
  - ECMWF (European model): Weeks 2–4

- ***On the following slides, the term confidence refers to the forecasters' interpretation of the magnitude of the anomalies, the level of ensemble agreement, and the skill of the products used to generate the forecasts. All the tools used are shown in the outlook presentation.***

- ***The thresholds for below-normal, near-normal, and above-normal conditions are determined by forecast product and noted on each forecast product slide***

Summary: Subseasonal Precipitation Outlook by Model

This slide shows the CW3E synthesis of subseasonal products by model

Forecasts Initialized 16 Feb 2026

Region	Week 2 (23 Feb – 1 Mar)				Week 3 (2–8 Mar)				Week 4 (9–15 Mar)			
	NCEP[1,2,3,4]	ECCC[1]	ECMWF[1,2]	Multi-Model Forecast	NCEP[1,2,3,4]	ECCC[1]	ECMWF[1,2]	Multi-Model Forecast	NCEP[1,2,3,4]	ECCC[1]	ECMWF[1,2]	Multi-Model Forecast
WA/OR		N/A				N/A				N/A		
Northern CA		N/A				N/A				N/A		
Central CA		N/A				N/A				N/A		
Southern CA		N/A				N/A				N/A		

Higher Confidence | Lower Confidence

- Below normal
- Near normal
- Above normal
- ? Uncertain/lack of skill

- Models and different products show high degree of uncertainty in precipitation conditions during Weeks 2–4

Subseasonal products included in this Outlook:

[1]CW3E/JPL Atmospheric River Activity Forecasts (DeFlorio et al. 2019, Zhang et al. 2023)
[2]CW3E/JPL Ridging Forecasts (Gibson et al. 2020)
[3]IRI North American Weather Regime Forecasts (Robertson et al. 2020)
[4]CW3E West Coast Weather Regime Forecasts (Guirguis et al. 2023a and 2023b)

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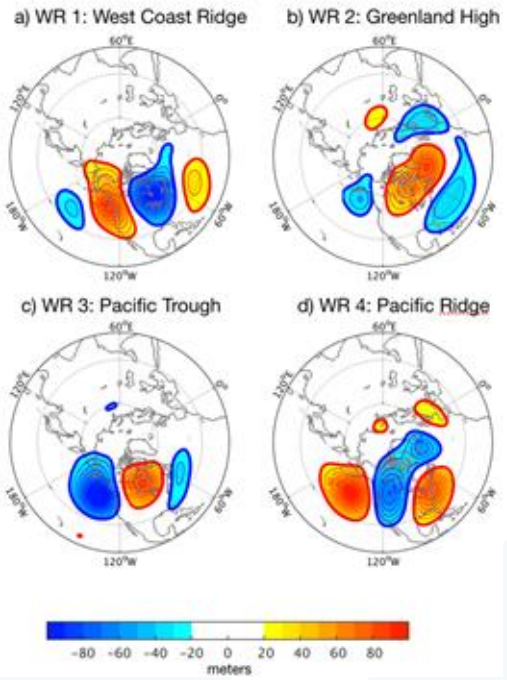
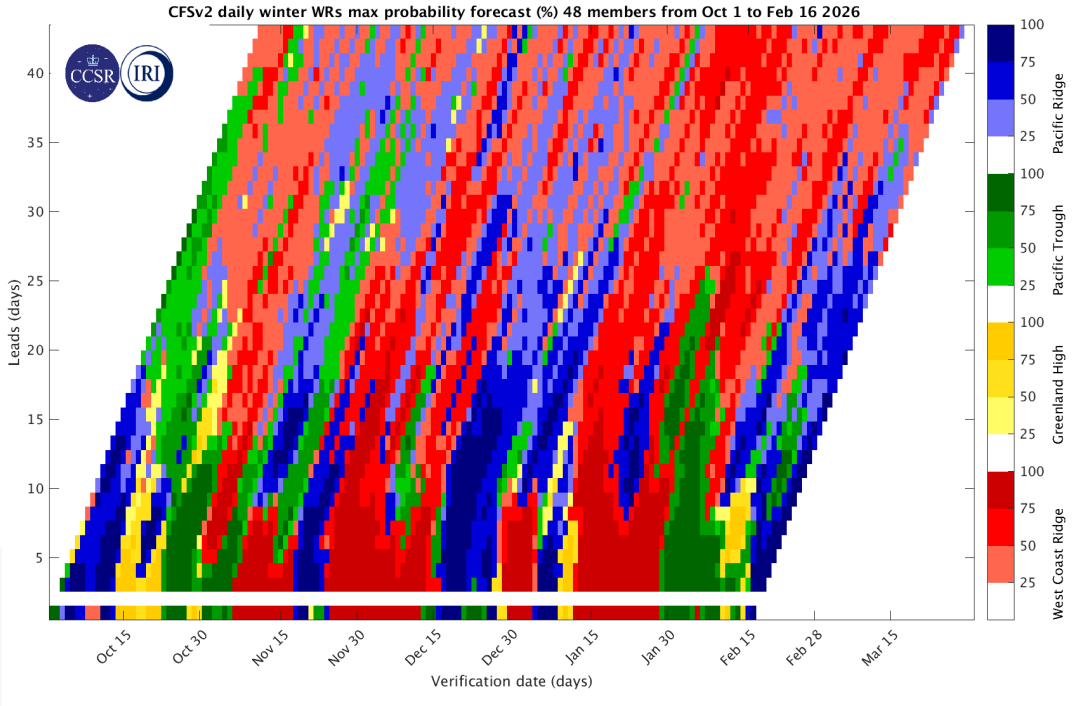
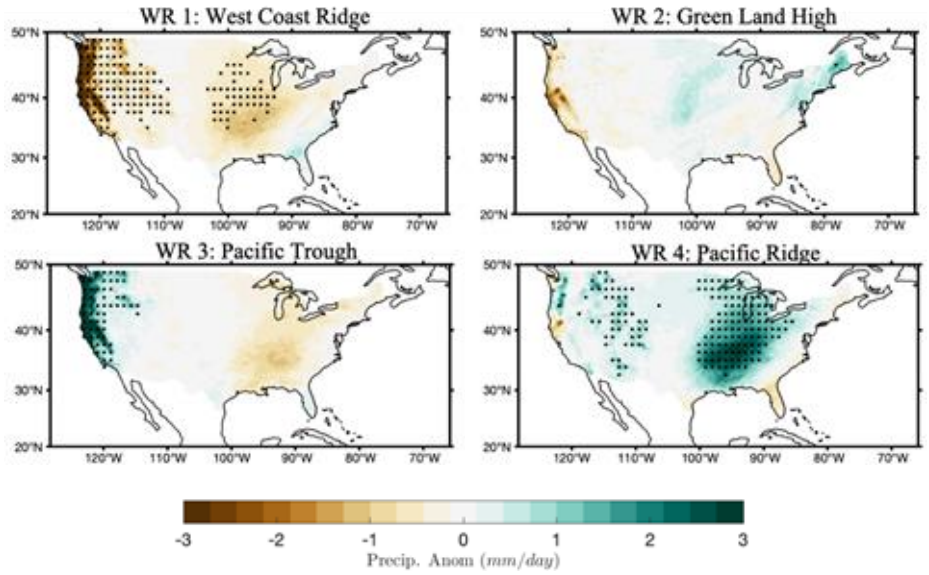
Potential Regime Shifts and Persistence







Product	Week 2 (23 Feb – 1 Mar)	Week 3 (2–8 Mar)	Week 4 (9–15 Mar)
IRI North American Weather Regime Forecasts	**Pacific Ridge**	**Pacific Ridge**	**Pacific Ridge** ↷ **West Coast Ridge**

Regime Persistence (Pacific Ridge) ↷ Regime Shift Uncertain

- Potential for persistent Pacific Ridge (near-normal precipitation condition in CA) through the middle of Week 4
- Potential for regime shift from Pacific Ridge to West Coast Ridge (dry pattern in CA) around the middle of Week 4

Summary

MJO/QBO Conditions

- Strong MJO convection is currently located over the Indian Ocean (Phase 3); QBO is in the easterly phase
  - Without considering QBO/ENSO conditions, MJO in the Indian Ocean is associated with a decrease in extreme precipitation over portions of California at lag times of 1–2 weeks
  - MJO/QBO tool is temporarily unavailable

- NCEP is forecasting MJO convection to slightly weaken over the Indian Ocean during Week 1 and potentially remain relatively weak through Week 2 with eastward propagation into the Maritime Continent

Week 2 Forecasts (23 Feb – 1 Mar):

- Models agree on high confidence in above-normal AR activity in Southern CA
  - In Northern CA, NCEP is forecasting slightly below-normal AR activity with high confidence, whereas ECMWF is forecasting near-normal to above-normal AR activity
  - In Central CA, NCEP is forecasting near-normal to above-normal AR activity, and ECMWF is forecasting above-normal AR activity with high confidence

- Ridging outlooks show some uncertainty in ridging activity near the US West Coast during Weeks 1–2
  - ECMWF is showing moderate confidence in above-normal South-ridge activity (wet conditions in Northern CA and dry conditions in Southern CA), whereas NCEP is forecasting below-normal South-ridge activity

- IRI North American weather regime tool shows moderate-to-high confidence in Pacific Ridge persistence (near-normal precipitation in CA) through the middle of Week 4

- CW3E West Coast weather regime tool shows high likelihood of patterns associated with below-normal precipitation in Northern and Central CA in early Week 2, with more uncertainty during second half of Week 2

Summary

Week 3 Forecasts (2–8 Mar):

- Models generally agree on near-normal AR activity over Northern CA
  - NCEP is forecasting near-normal AR activity over Central and Southern CA, whereas ECMWF is forecasting slightly below-normal AR activity with high confidence

- Ridging outlooks show moderate likelihood of above-normal South-ridge activity during Weeks 3–4
  - NCEP is also showing moderate likelihood of above-normal West-ridge activity (dry conditions over Central and Southern CA)

- CW3E West Coast weather regime tool shows moderate likelihood of patterns associated with slightly below-normal to below-normal precipitation in Southern CA during Week 3

Week 4 Forecasts (9–15 Mar):

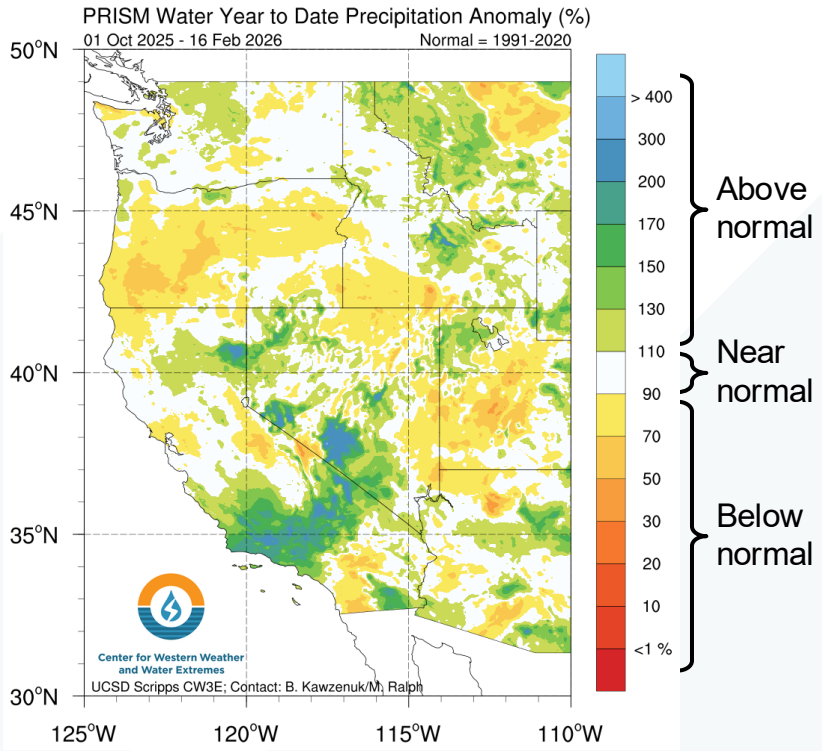
- Models generally agree on near-normal AR activity in Northern and Central CA
  - In Southern CA, NCEP is forecasting near-normal to slightly below-normal AR activity, whereas ECMWF is forecasting near-normal AR activity

- IRI North American weather regime tool shows low-to-moderate confidence in regime transition from Pacific Ridge to West Coast Ridge (dry conditions in CA) during the middle of Week 4

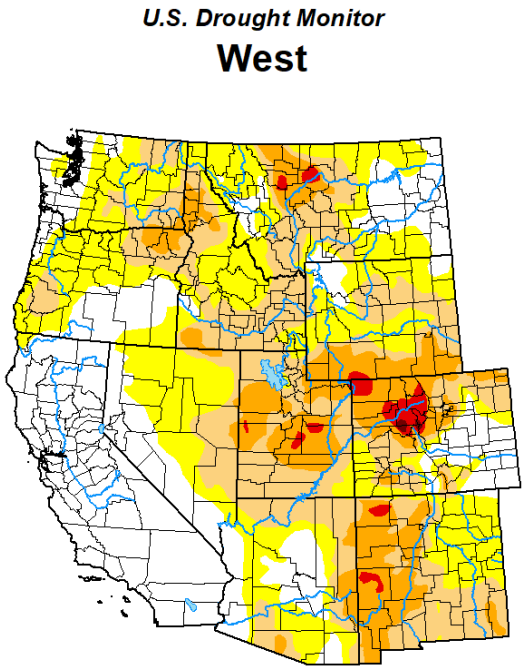
- CW3E West Coast weather regime tool shows high uncertainty in weather regime conditions in Week 4

Hydrologic Summary

Precipitation



Drought Conditions



February 10, 2026
(Released Thursday, Feb. 12, 2026)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	30.36	69.64	39.77	14.54	1.43	0.07
Last Week 02-03-2026	32.47	67.53	38.89	13.78	1.16	0.07
3 Months Ago 11-11-2025	25.98	74.02	56.99	30.42	4.88	0.00
Start of Calendar Year 01-06-2026	40.61	59.39	36.26	14.36	1.16	0.06
Start of Water Year 09-30-2025	18.15	81.85	64.82	44.12	12.00	0.69
One Year Ago 02-11-2025	27.33	72.67	50.68	29.13	13.01	0.26

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 https://droughtmonitor.unl.edu/About.aspx

Author:
Lindsay Johnson
National Drought Mitigation Center

droughtmonitor.unl.edu

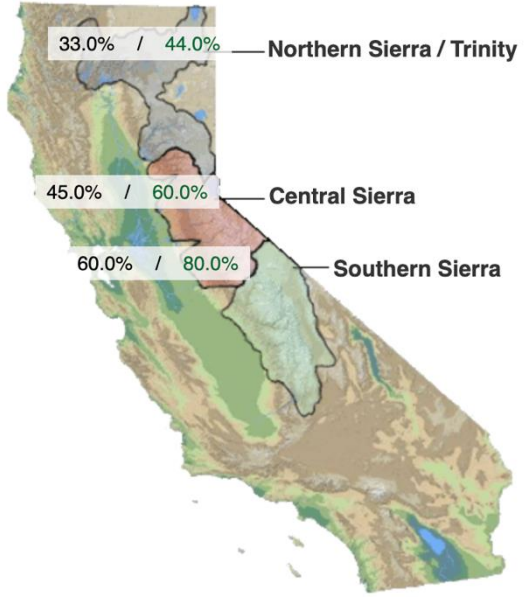
Disclaimer: In addition to climate indicators, the U.S. Drought Monitor also uses impact reports from local observers about crop failures or water restrictions to quantify drought.

Snowpack Conditions

Provided by the California Cooperative Snow Surveys

Data For: **17-Feb-2026**

% Apr 1 Avg. / % Normal for this Date

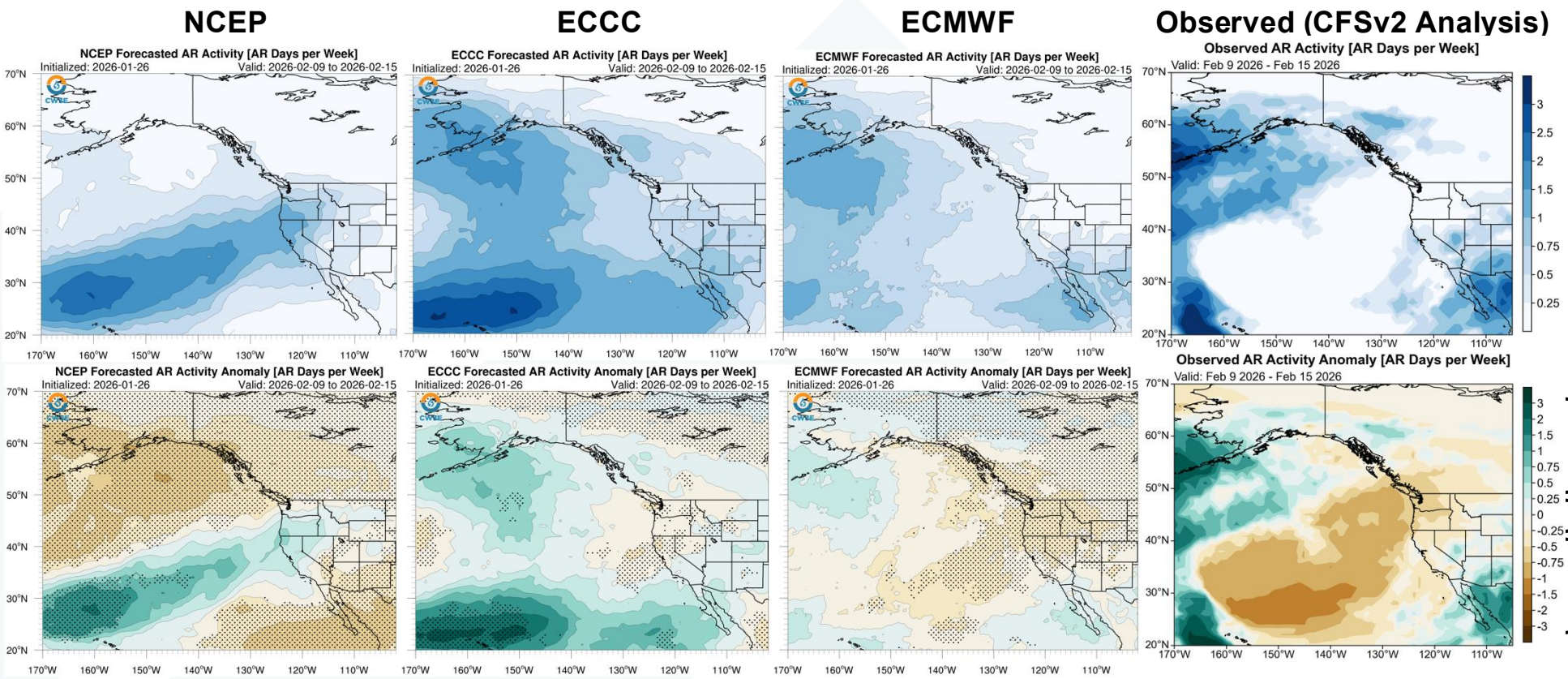


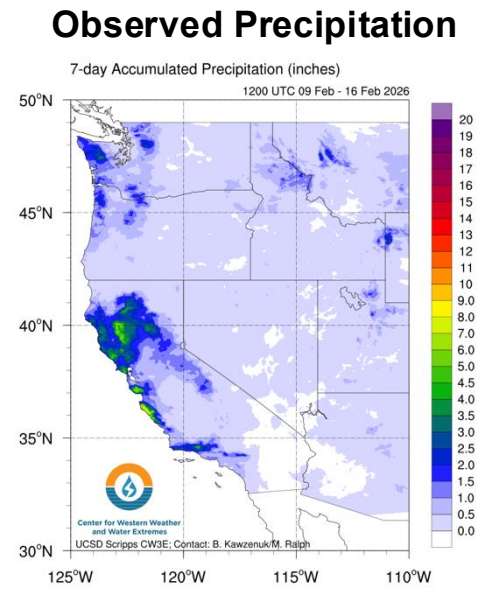
Source: California DWR

- As of 16 Feb, water-year-to-date precipitation is still running **well-above normal (>150% of normal)** in portions of Central and Southern CA and **slightly below normal to slightly above normal (70–130% of normal)** across most of the rest of the state
- The most recent drought monitor update is showing no drought over all of CA
- As of 17 Feb, estimated snowpack is well-below normal in the Northern Sierra Nevada/Trinity region **(44% of normal),** below normal in the Central Sierra Nevada **(60% of normal)**, and slightly below-normal in the Southern Sierra Nevada **(80% of normal)**

Looking Back: Week 3 AR Activity Forecasts

Forecasts Initialized 26 Jan 2026; Valid: 9–15 Feb 2026



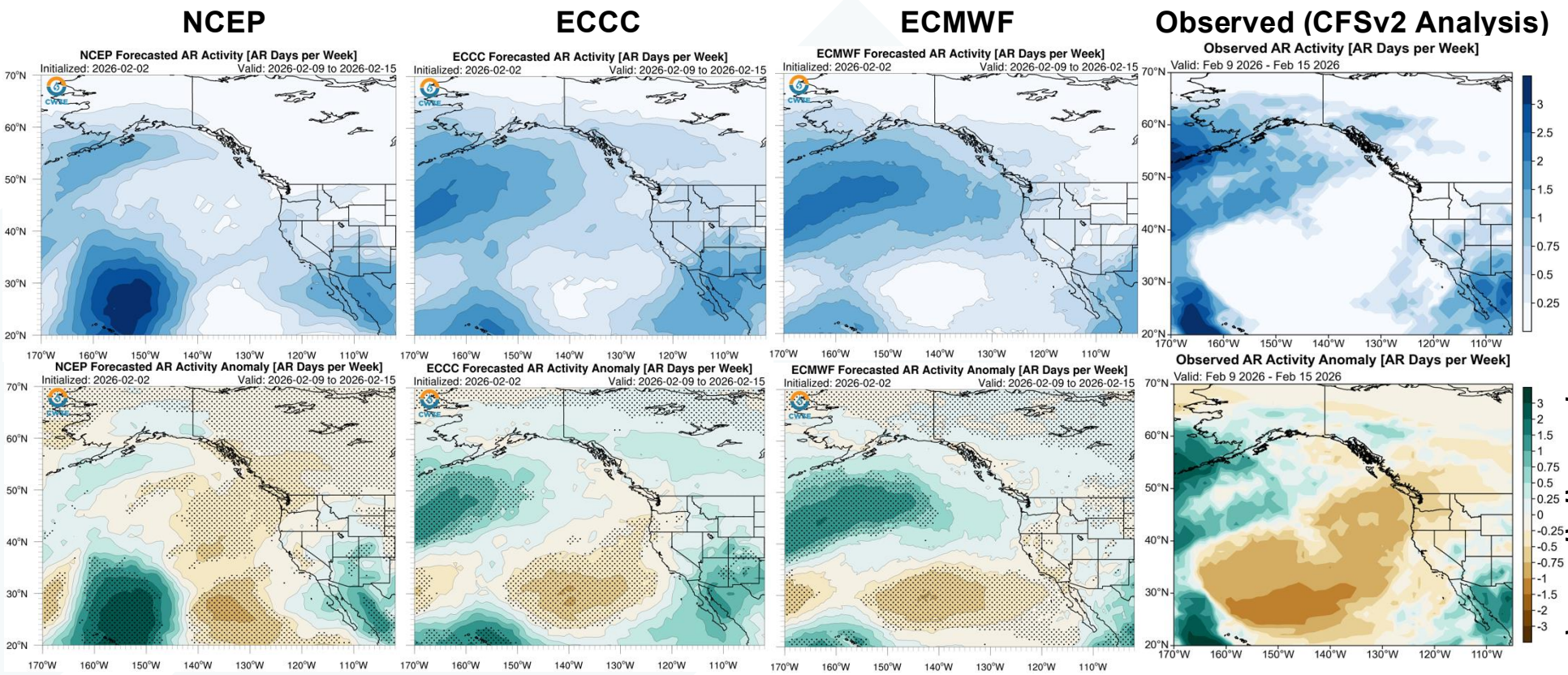


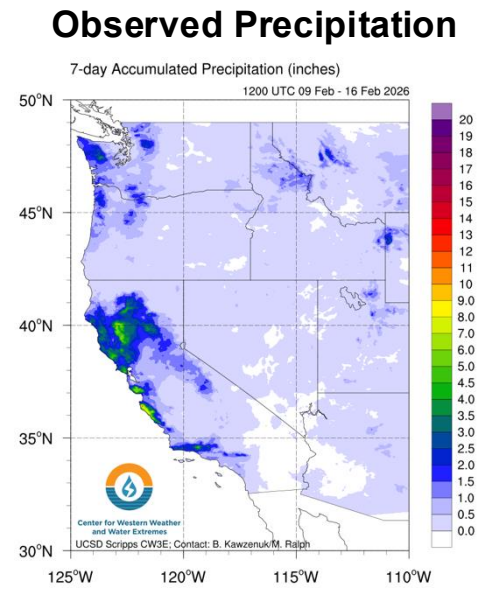
Shading: Fractional # of AR days forecast over a 7-day period (top) and forecast minus model climatology (bottom; green/blue = higher than climatology; brown = lower than climatology)

- At 3-week lead times, ECCC and ECMWF generally captured the meridional axis of AR activity from Central North Pacific to Alaska and lack of AR activity over much of the Northeast Pacific
- All models also captured the AR activity over CA, with an overestimate over Northern CA in NCEP and over Southern CA in ECCC
- Two ARs produced 2–6 inches of precipitation over portions of Northern CA and coastal Central CA during Feb 9–15; Light precipitation was observed over Western WA/OR and coastal Southern CA

Looking Back: Week 2 AR Activity Forecasts

Forecasts Initialized 2 Feb 2026; Valid: 9–15 Feb 2026



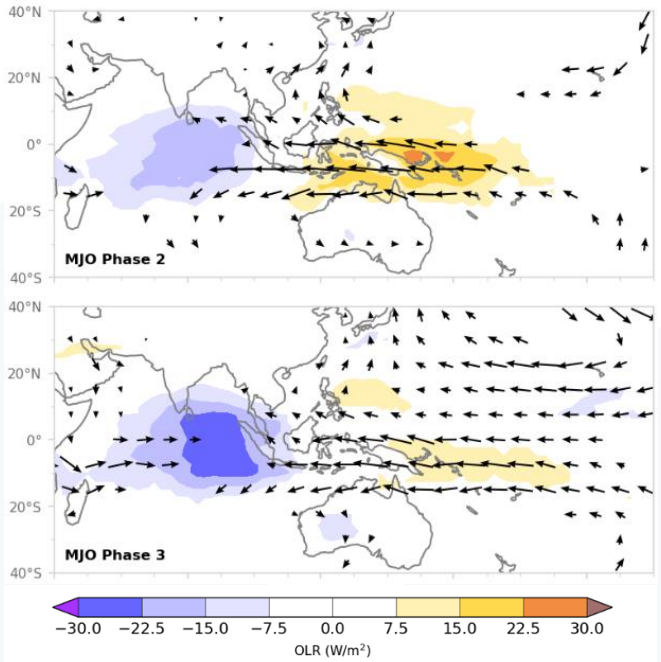


Shading: Fractional # of AR days forecast over a 7-day period (top) and forecast minus model climatology (bottom; green/blue = higher than climatology; brown = lower than climatology)

- At 2-week lead times, NCEP and ECCC better captured the ridging condition near the Pacific Northwest and weak AR activity over CA
- All models captured the AR activity over CA with comparable magnitude with observation over Northern and Central CA but an overestimate in Southern CA in NCEP and ECCC
- Two ARs produced 2–6 inches of precipitation over portions of Northern CA and coastal Central CA, and light precipitation over Western WA/OR and coastal Southern CA during Feb 9–15

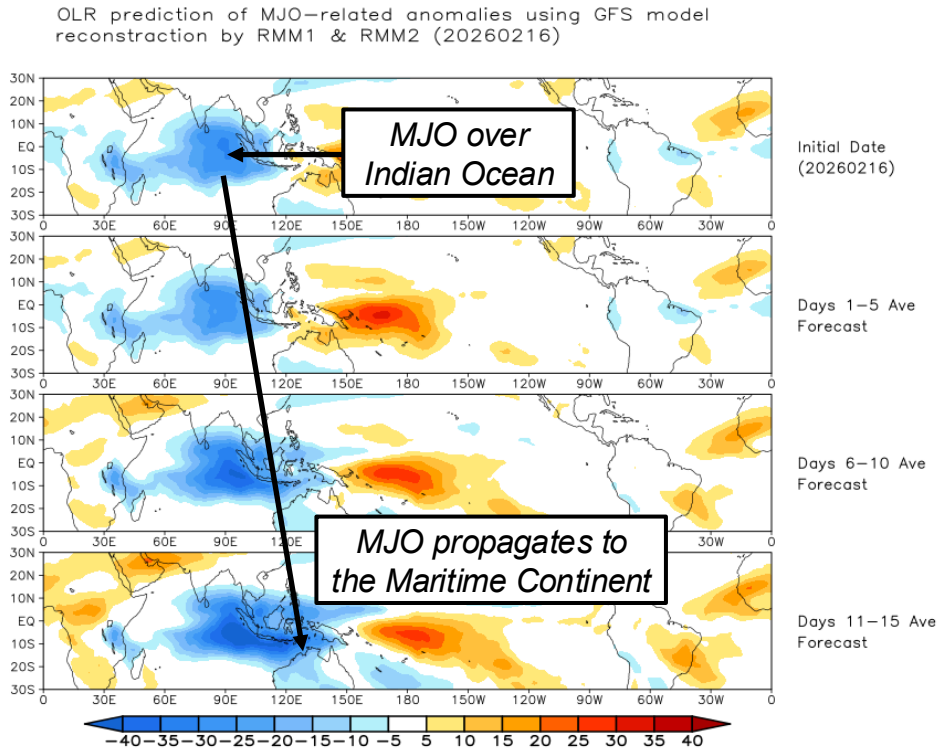
Dynamical Model MJO Forecasts (NCEP)

Observed MJO
Phases 2&3 (Indian Ocean)



OLR = Outgoing longwave radiation

Weeks 1–2 MJO Prediction



Circulation and Moisture Transport Anomalies

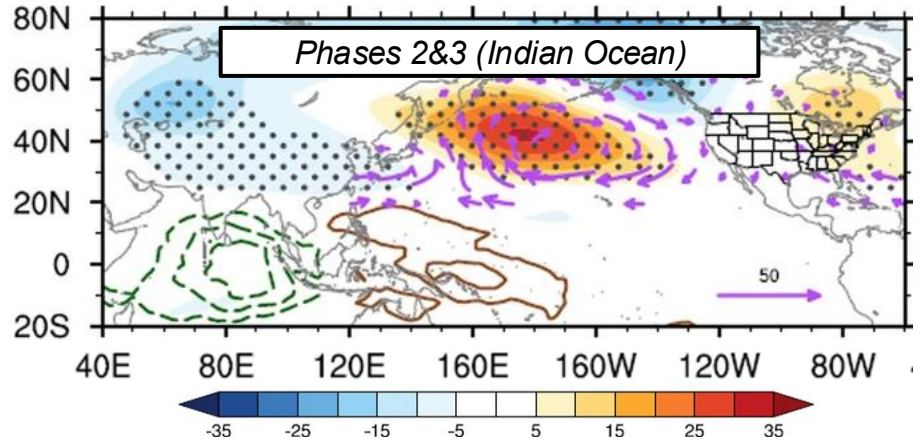


Figure 5 from Wang et al. (2024)

Composite Z500 anomalies (shading; orange = positive; blue = negative), IVT anomalies (vectors); and OLR anomalies (brown = suppressed convection; green = enhanced convection)

Extreme Precipitation Frequency

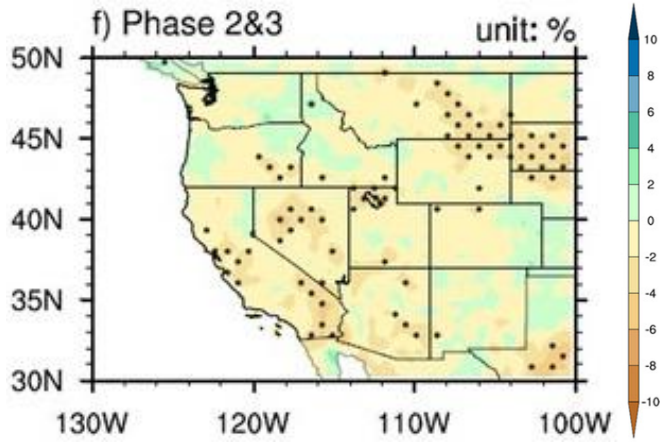


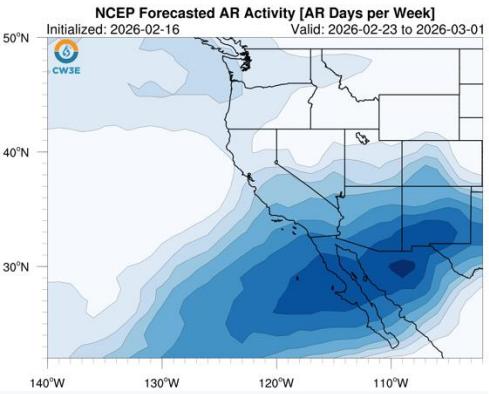
Figure 3 from Wang et al. (2023)

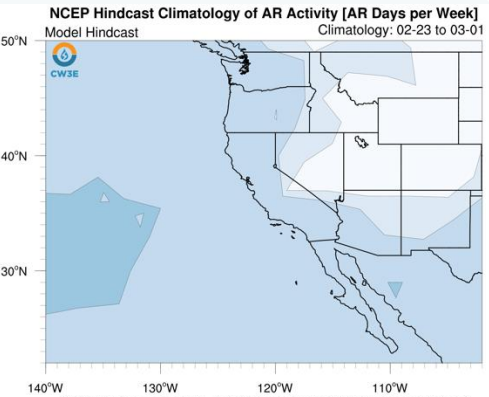
Percent Change in frequency of extreme precipitation (brown = decreased frequency; green/blue = increased frequency)

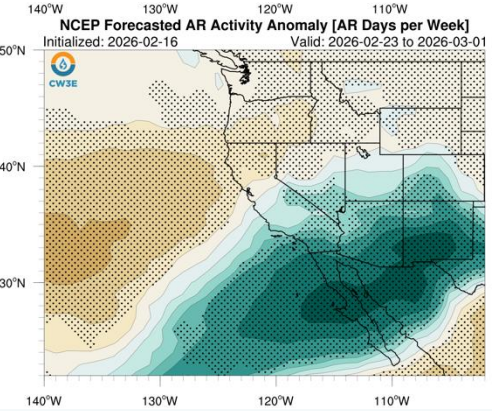
- As of 16 Feb, strong MJO convection is currently located over the Indian Ocean (Phase 3)
- NCEP is forecasting MJO convection to slightly weaken over the Indian Ocean during Week 1, and then propagate to the Maritime Continent in Week 2
- MJO convection over the Indian Ocean is associated with anomalous ridging over the North Pacific at lag times of 1–2 weeks, leading to slightly decreased moisture transport and a decrease in extreme precipitation frequency over portions of CA

AR Activity Forecasts: Week 2 (NCEP vs. ECCC vs. ECMWF)

NCEP

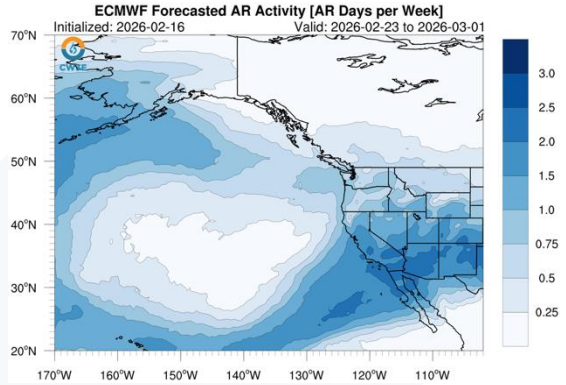


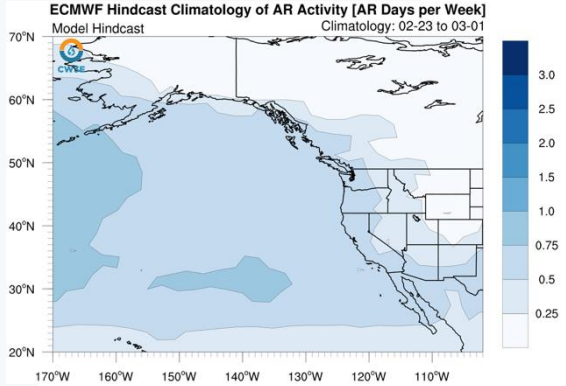


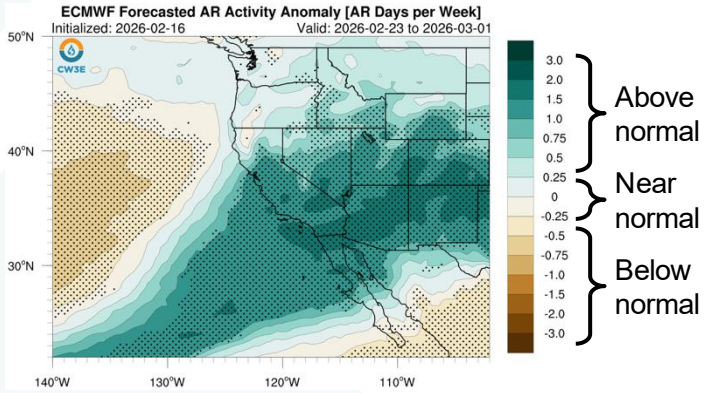


ECCC Unavailable

ECMWF







Shading: Fractional # of AR days forecast over a 7-day period (top), model climatology (middle), and forecast minus model climatology (bottom; green/blue = higher than climatology; brown = lower than climatology)

Forecasts Initialized 16 Feb 2026

- NCEP and ECMWF show high confidence in above-normal AR activity over Southern CA during Week 2 (23 Feb – 1 Mar)
- In Central CA, NCEP is forecasting near-normal to above-normal AR activity, and ECMWF is forecasting above-normal AR activity with high confidence
- In Northern CA, NCEP is forecasting slightly below-normal AR activity with high confidence, whereas ECMWF is forecasting near-normal to above-normal AR activity

Models agree on high confidence in above-normal AR activity over Southern CA during Week 2 (23 Feb – 1 Mar)

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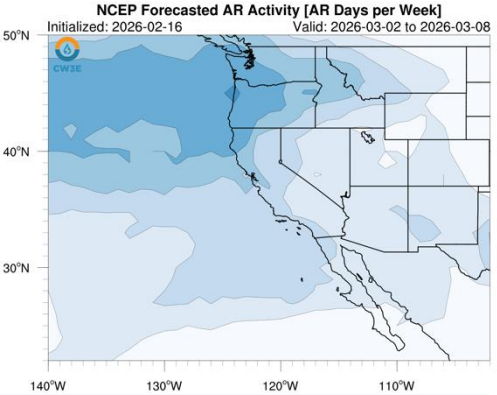
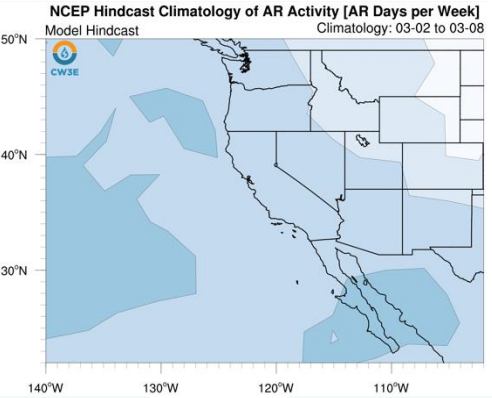
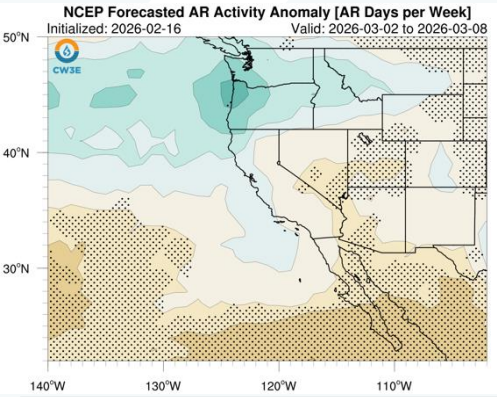
AR Activity Forecasts: Week 3 (NCEP vs. ECCC vs. ECMWF)

Forecasts Initialized 16 Feb 2026

NCEP



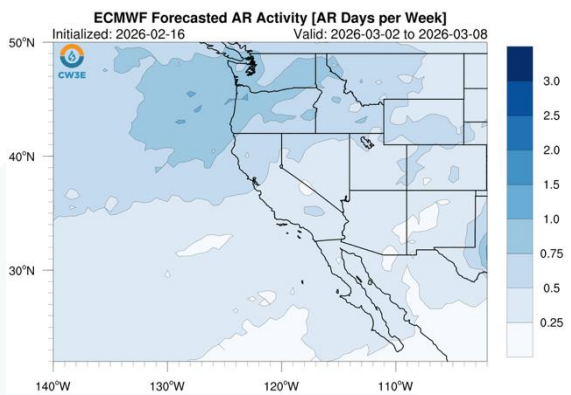


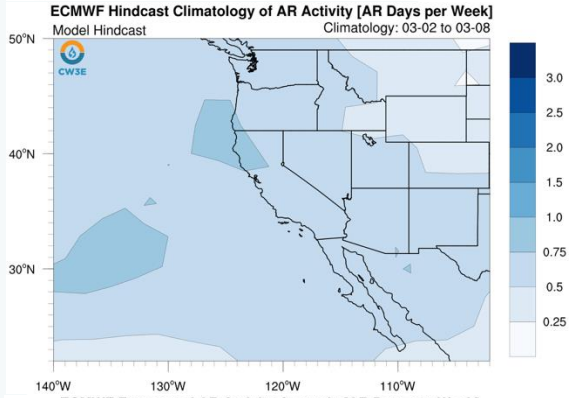


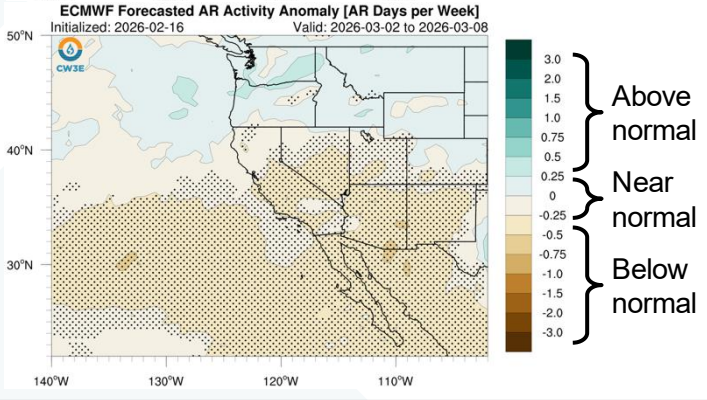
ECCC

Unavailable

ECMWF







Shading: Fractional # of AR days forecast over a 7-day period (top), model climatology (middle), and forecast minus model climatology (bottom; green/blue = higher than climatology; brown = lower than climatology)

- NCEP is forecasting near-normal AR activity over much of CA during Week 3 (2–8 Mar)
- ECMWF is forecasting near-normal AR activity over Northern CA, and slightly below-normal AR activity over Central and Southern CA with high confidence

Models generally agree on near-normal AR activity over Northern CA during Week 3 (2–8 Mar)

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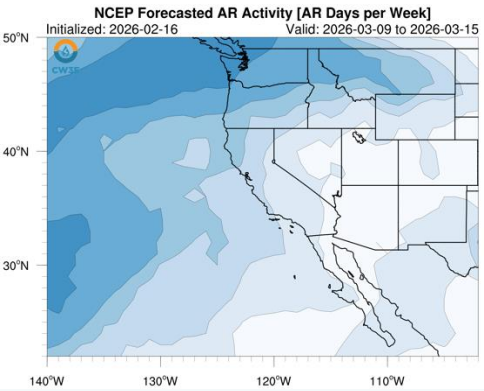
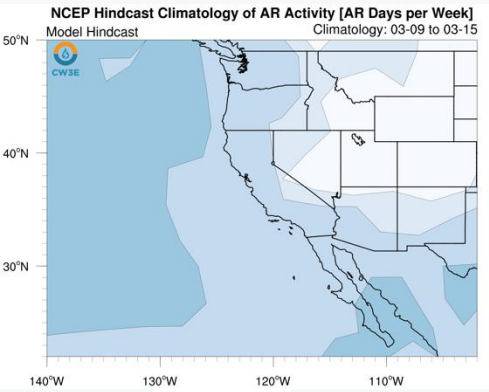
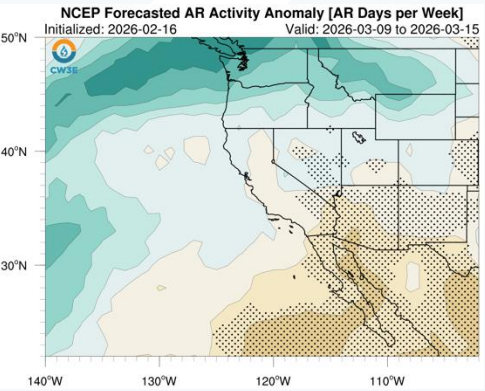
AR Activity Forecasts: Week 4 (NCEP vs. ECCC vs. ECMWF)

Forecasts Initialized 16 Feb 2026

NCEP

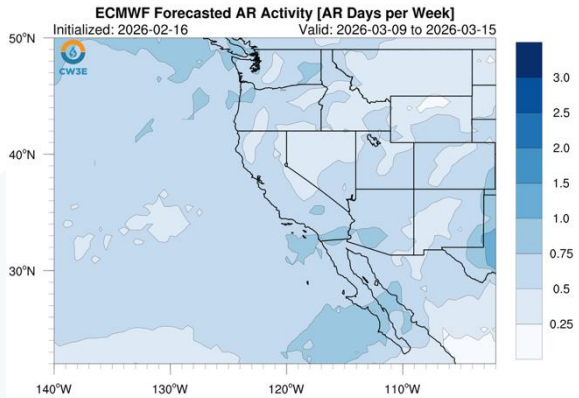


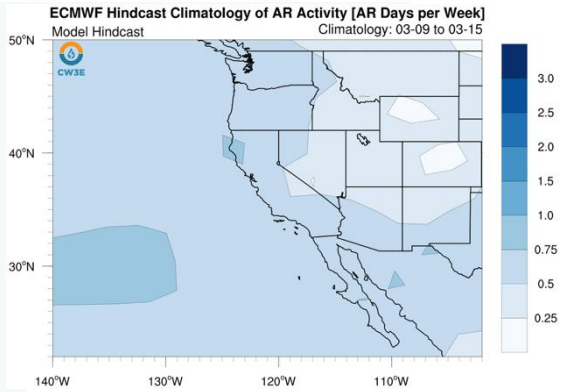


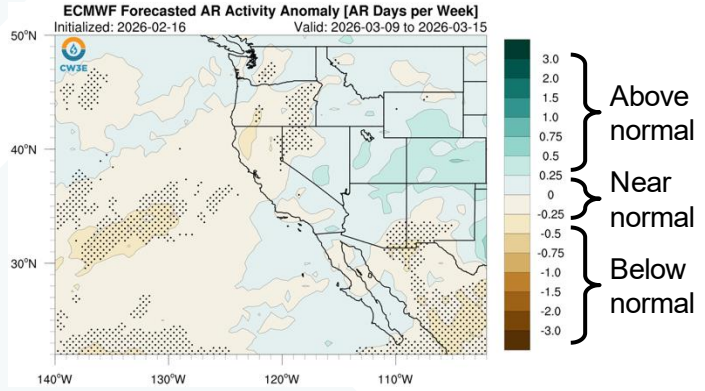


ECCC Unavailable

ECMWF







Shading: Fractional # of AR days forecast over a 7-day period (top), model climatology (middle), and forecast minus model climatology (bottom; green/blue = higher than climatology; brown = lower than climatology)

- NCEP and ECMWF are forecasting near-normal AR activity over Northern and Central CA during Week 4 (9–15 Mar)
- In Southern CA, NCEP is forecasting near-normal to slightly below-normal AR activity with some areas of higher confidence, whereas ECMWF is forecasting near-normal AR activity

Models generally agree on near-normal AR activity in Northern and Central CA during Week 4 (9–15 Mar)

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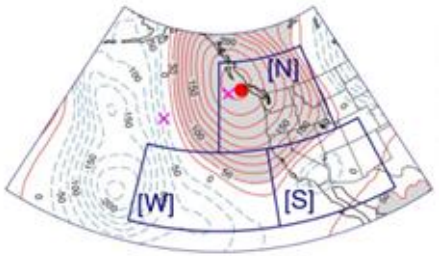
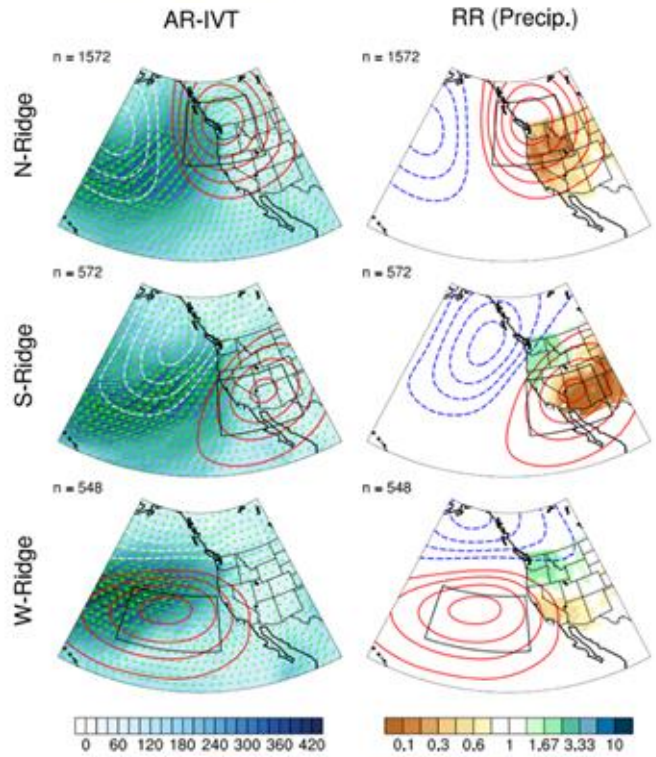
Background Info: Subseasonal Ridging Outlooks



N = North Ridge
S = South Ridge
W = West Ridge

This slide contains background information about the three different ridge types in CW3E's subseasonal ridging outlook tool



How each ridge type typically influences precipitation
Left: Maps showing the average influence of each ridge type (red contours) on integrated vapor transport (IVT, blue shading indicates greater moisture transport, arrows indicate direction) during atmospheric river events
Right: Maps showing the 'Relative Risk' (RR) of precipitation under each ridge type. Brown shading indicates a reduced chance of precipitation when ridging occurs. For example, a RR value of 0.2 indicates a 5-fold reduction in the likelihood of precipitation

- The North-Ridge type is typically associated with widespread dry conditions across the entire western US
- The South-Ridge type is typically associated with dry conditions in Southern CA and the Colorado River Basin and wet conditions in the Pacific Northwest
- The West-Ridge type is typically associated with dry conditions over Central and Southern CA and wet conditions over the Pacific Northwest

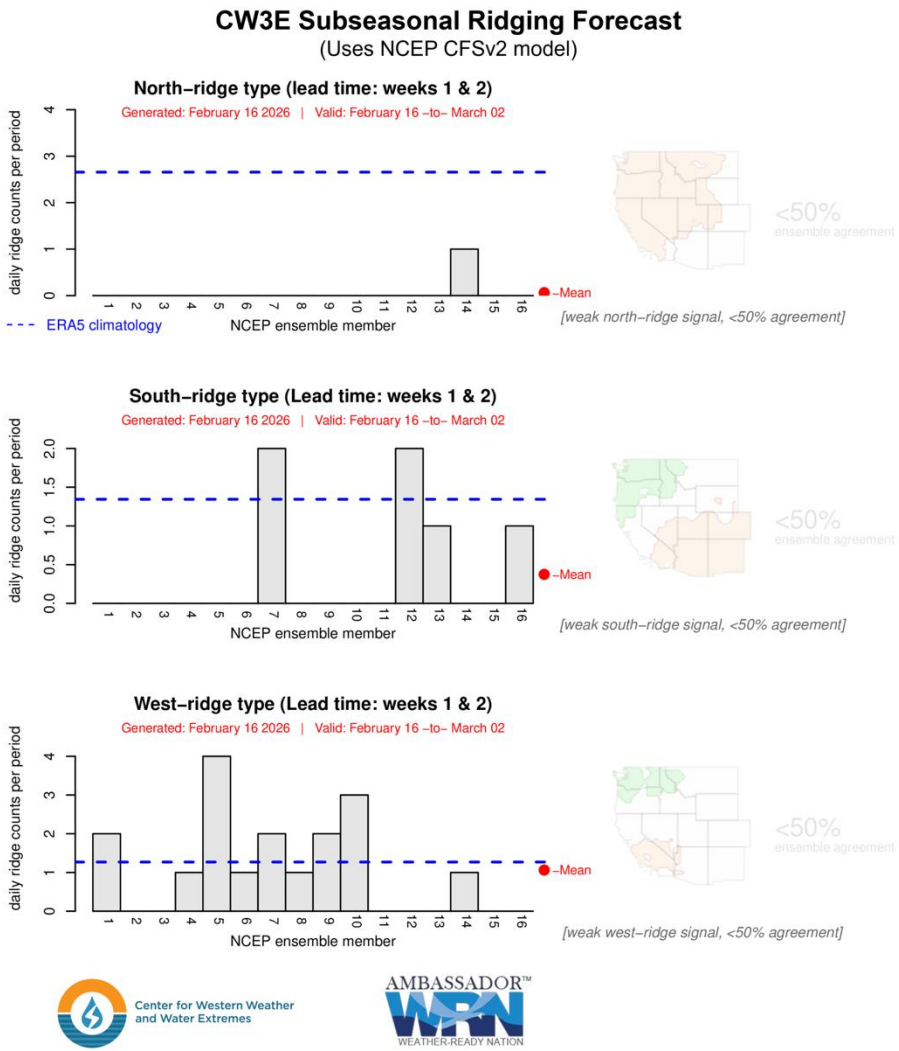
Jet Propulsion Laboratory
California Institute of Technology

Center for Western Weather and Water Extremes
Scripps Institution of Oceanography at UC San Diego

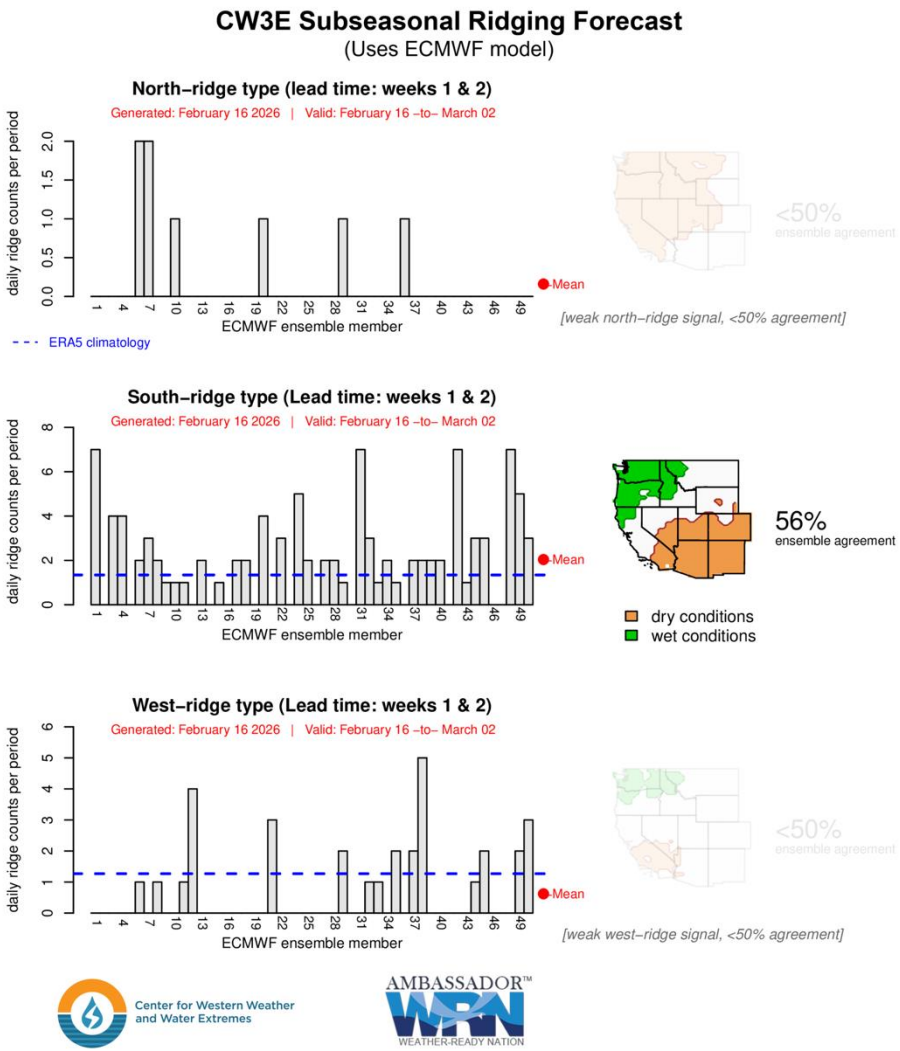
Contact: pgibson@ucsd.edu
Reference: Gibson et al. (2020) Journal of Climate

Ridging Forecasts: Weeks 1–2 (NCEP vs. ECMWF)

NCEP



ECMWF



Forecasts Initialized 16 Feb 2026

- ECMWF is forecasting above-normal South-ridge activity with moderate confidence (56% ensemble agreement) during Weeks 1–2 (16 Feb–2 Mar), whereas NCEP is forecasting below-normal South-ridge activity
- Both models are forecasting below-normal North-ridge activity
- NCEP is forecasting near-normal West-ridge activity, whereas ECMWF is forecasting below-normal West-ridge activity

Models show some uncertainty in ridging activity near the US West Coast during Weeks 1–2 (16 Feb – 2 Mar)

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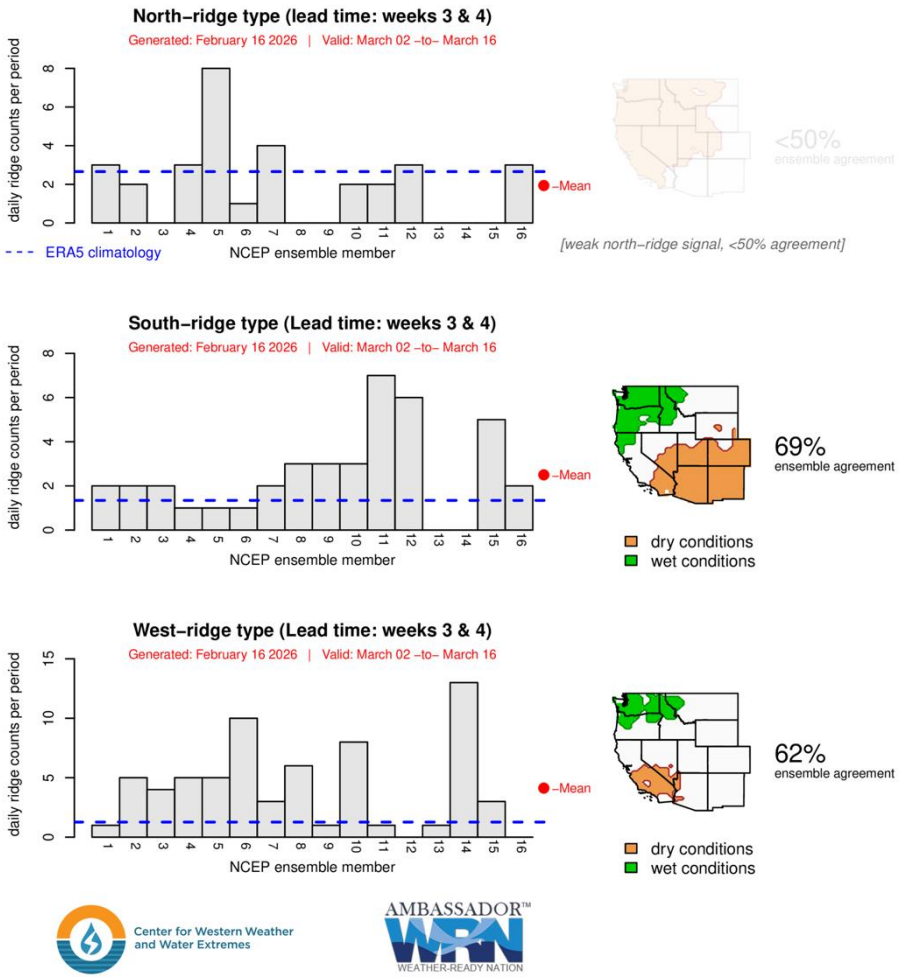
Ridging Forecasts: Weeks 3–4 (NCEP vs. ECMWF)

NCEP

CW3E Subseasonal Ridging Forecast
(Uses NCEP CFSv2 model)



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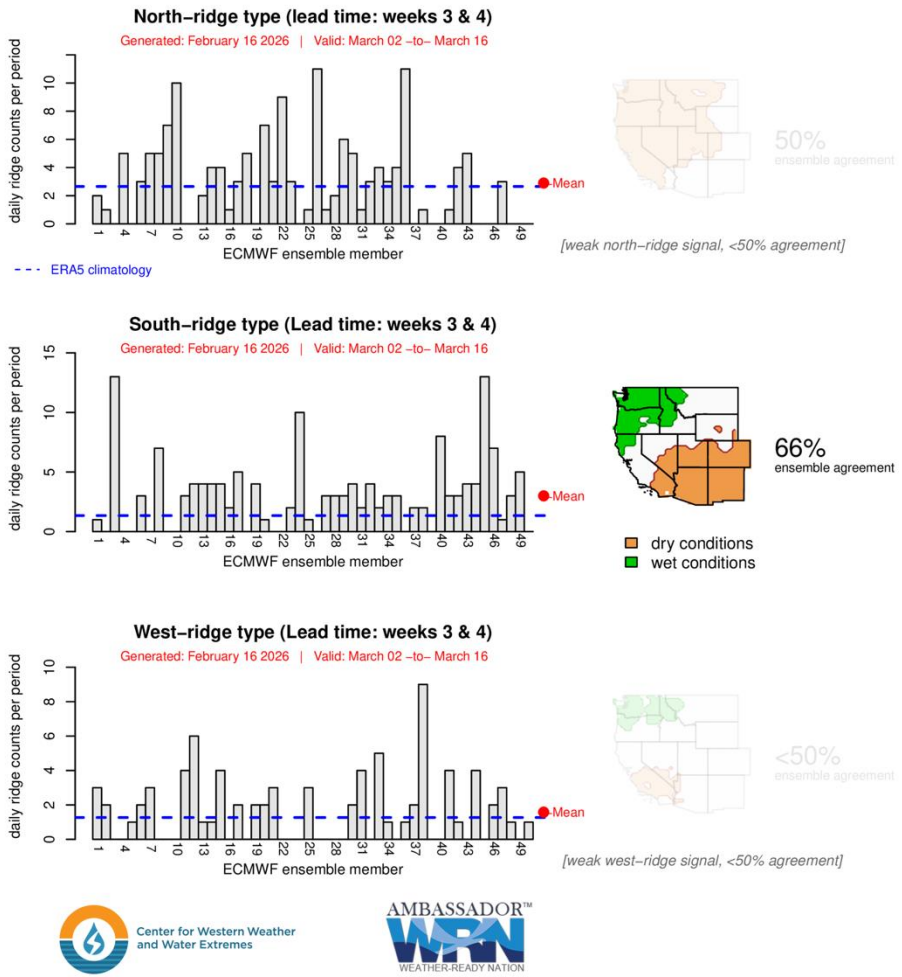
AMBASSADOR™ WRN WEATHER-READY NATION

ECMWF

CW3E Subseasonal Ridging Forecast
(Uses ECMWF model)



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AMBASSADOR™ WRN WEATHER-READY NATION

Forecasts Initialized 16 Feb 2026

- Both models are forecasting above-normal South-ridge activity with moderate confidence (69% ensemble agreement in NCEP and 66% ensemble agreement in ECMWF) during Weeks 3–4 (2–16 Mar)
- NCEP is also forecasting above-normal West-ridge activity with moderate confidence, and ECMWF is forecasting near-normal West-ridge activity
- ECMWF is also forecasting near-normal North-ridge activity, whereas NCEP is forecasting slightly below-normal North-ridge activity

Models show moderate likelihood of persistent ridging activity over the southwestern US during Weeks 3–4 (2–16 Mar)

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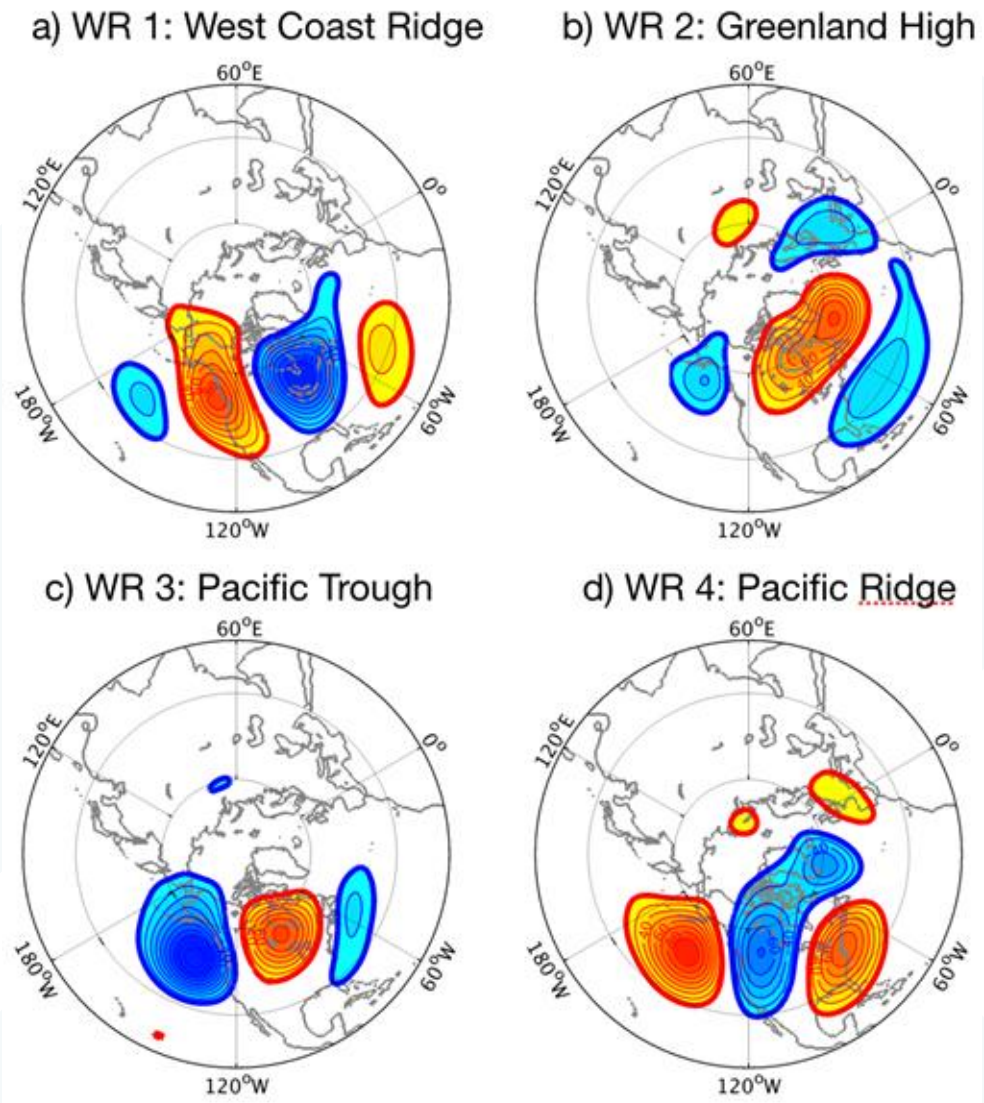
Background Info: IRI Subseasonal Weather Regime Forecasts



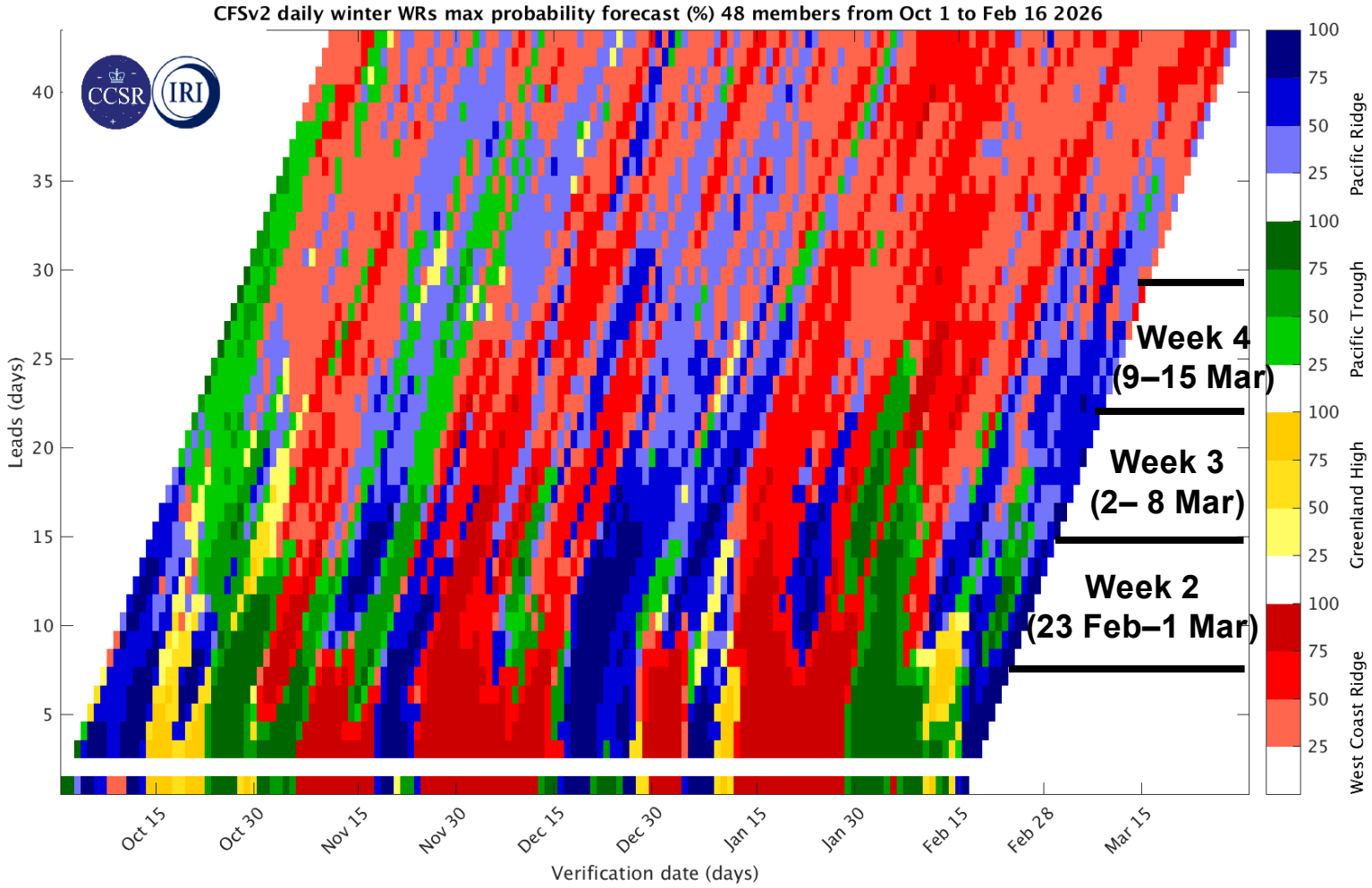
This slide contains background information about IRI's North American weather regime forecast product

- Four dominant weather regimes identified using cluster analysis on daily 500-hPa geopotential height anomalies from MERRA data (1981–2015)

Reference: Robertson et al. (2020)
For more information about the forecast product:
https://wiki.iri.columbia.edu/index.php?n=Climate.S2S-WRs

IRI North American Weather Regime Forecasts

Forecast Initialized 16 Feb 2026

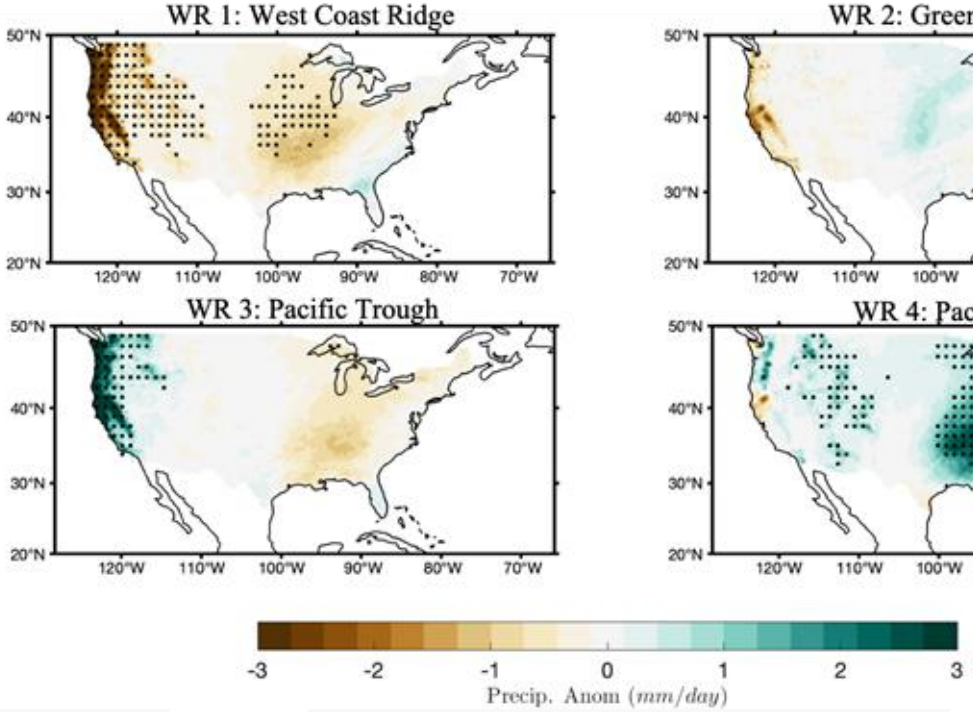


- Daily forecast out to 45-day lead time based on NCEP CFSv2 ensemble
- Moderate-to-high likelihood (50–100% ensemble agreement) of persistent Pacific Ridge during Weeks 2–3 (23 Feb – 8 Mar)
- Low-to-moderate likelihood (25–75% agreement) of transition from Pacific Ridge to West Coast Ridge during the middle of Week 4 (9–15 Mar)

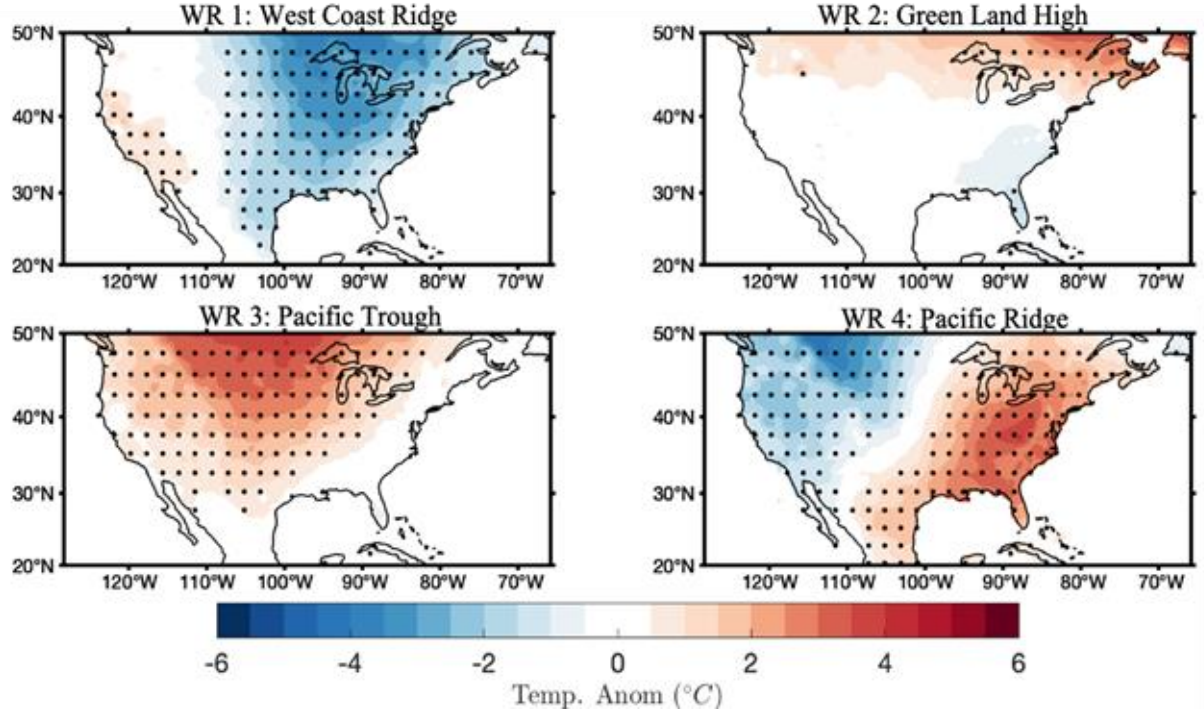
This graphic shows the which of the four North American weather regimes (different colors) is most likely to occur over the next 45 days. Darker (lighter) shading denotes higher (lower) probability of a particular regime. See the next slide for temperature/precipitation implications.

IRI North American Weather Regime Forecasts

Precipitation Anomalies



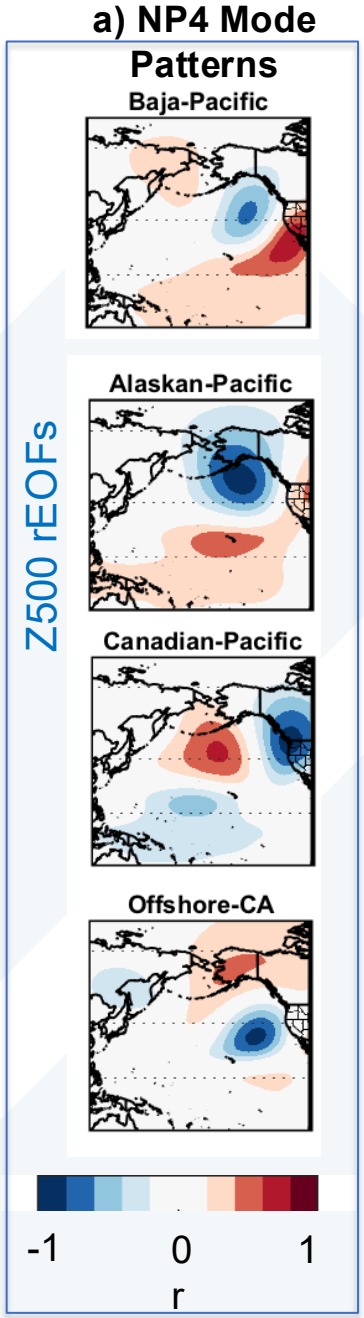
Temperature Anomalies

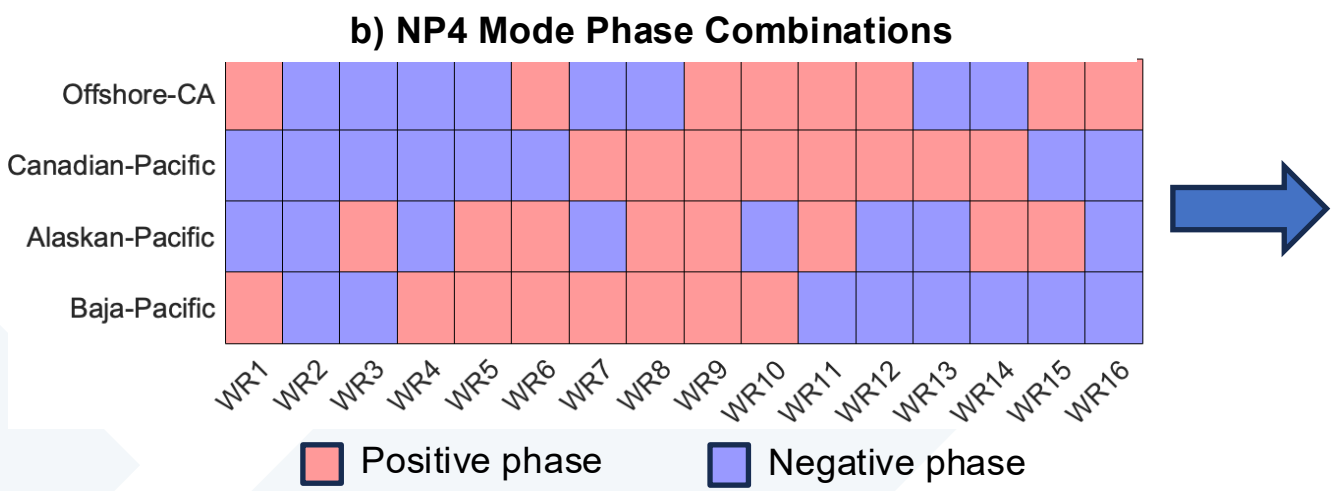


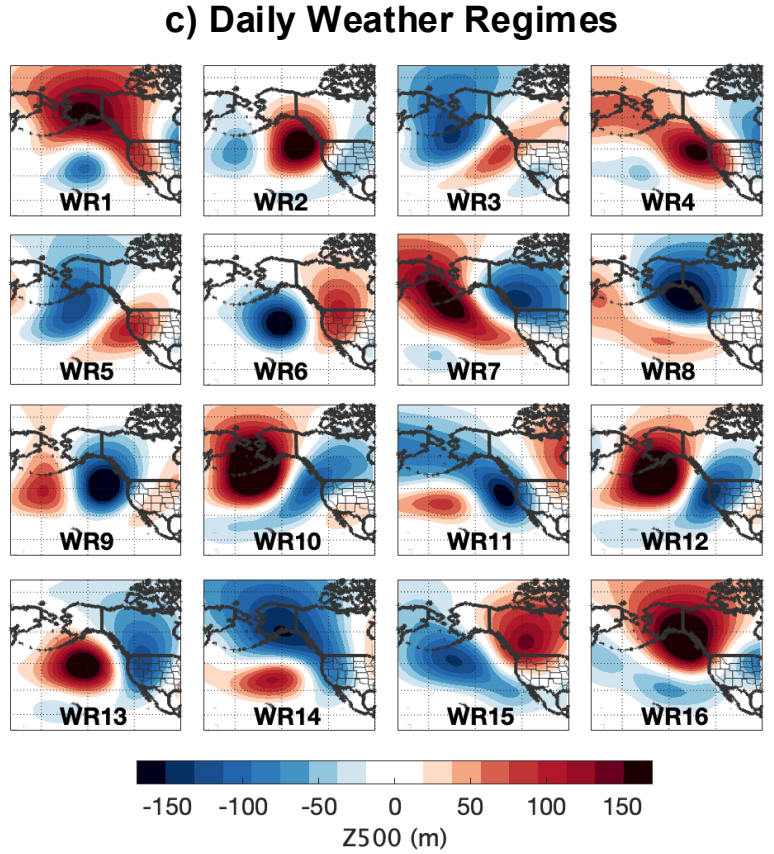
This graphic shows composite mean precipitation (left) and temperature (right) anomalies associated with each weather regime. Stippling (black dots) indicate statistically significant anomalies.

- Near-normal precipitation and below-normal temperature predicted over CA during Weeks 2–3 (23 Feb – 8 Mar) with moderate-to-high confidence in Pacific Ridge regime
- Below-normal precipitation and above-normal temperature predicted over CA during the second half of Week 4 (13–15 Mar) with low-to-moderate confidence in transition from Pacific Ridge to West Coast Ridge regime during the middle of Week 4

Background Info: Hybrid Weather Regime Impacts Forecast







a) NP4 Mode Patterns

Four key modes of atmospheric variability over the North Pacific (called the "NP4 Modes", shown in the positive phase) capture most of the variance in atmospheric circulation in this region.

b) NP4 Mode Phase Combinations

The day-to-day changes in the amplitude and phase of the NP4 modes control ridge-trough positioning over the West Coast.

c) Daily Weather Regimes

Sixteen daily weather regimes are defined by the joint phase state of the four NP4 modes. These represent short-duration daily weather patterns.

This slide contains background information about CW3E's hybrid weather regimes forecast product.

Reference:

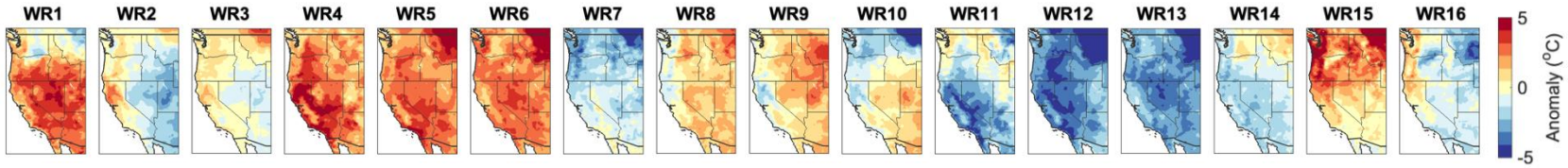
Guirguis et al. 2023a and 2023b

Relevance to West Coast Weather

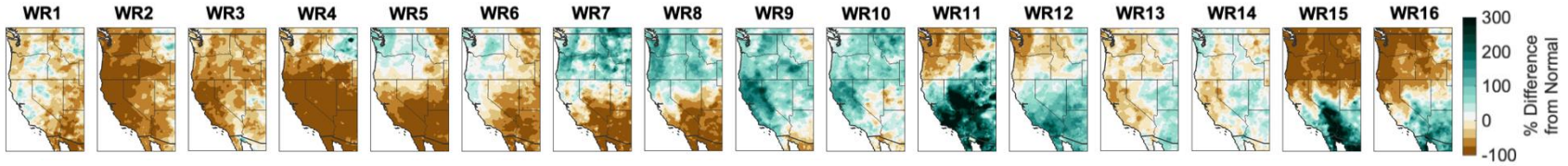
These regimes are historically linked to impactful West Coast weather, including AR landfalls, precipitation and flooding, temperature extremes, Santa Ana winds, and wildfire conditions.

Hybrid Weather Regime Impacts Forecast

a) Temperature Anomaly Associated With Each Weather Regime

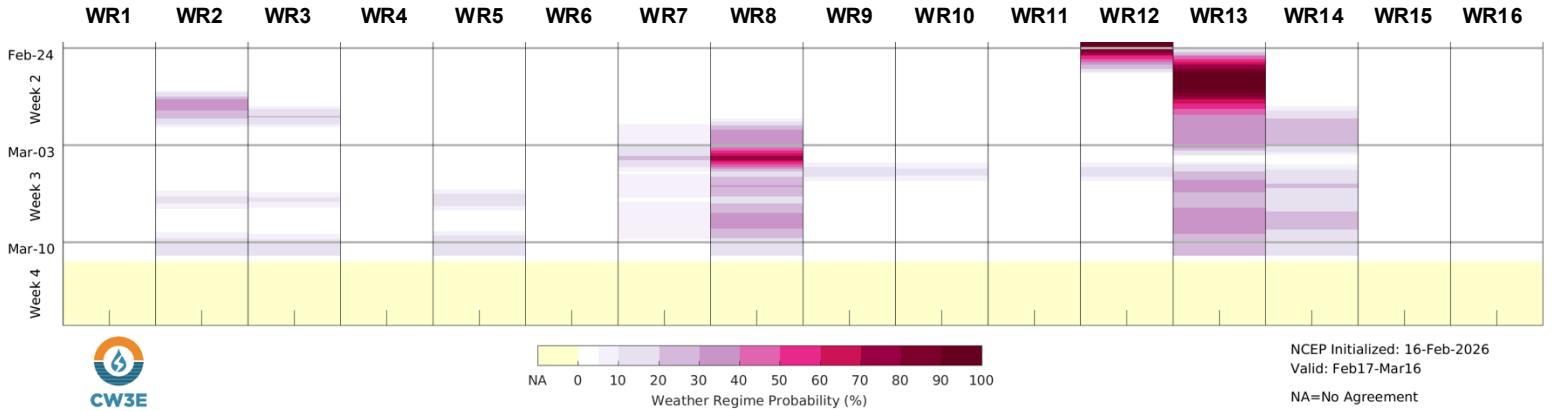


b) Precipitation Anomaly Associated With Each Weather Regime



Valid 17 Feb – 16 Mar

c) Weather Regime Forecast



Forecasts Initialized 16 Feb 2026

Week 2 (24 Feb – 2 Mar): Dominated by WR 13 during 24–27 Feb (following a transition from WR12 at the beginning of the week), which is associated with below-normal precipitation in Northern/Central CA, slightly below-normal precipitation in Southern CA, and below-normal temperature over all of CA. WR8 and WR14 also show higher probability during the latter half of Week 2 (28 Feb – 2 Mar), suggesting near-normal to below-normal precipitation over Southern CA and more uncertainty over Northern and Central CA.

Week 3 (3–9 Mar): Dominated by WR8 and WR13, which are associated with slightly below-normal to below-normal precipitation in Southern CA, but more uncertainty in precipitation in Northern and Central CA and temperature in CA.

Week 4 (10–16 Mar): High uncertainty

NA=No Agreement/Uncertain

a-b: Weather regime impacts based on historical relationships
c: Forecast weather regime probability based on the NCEP dynamical model