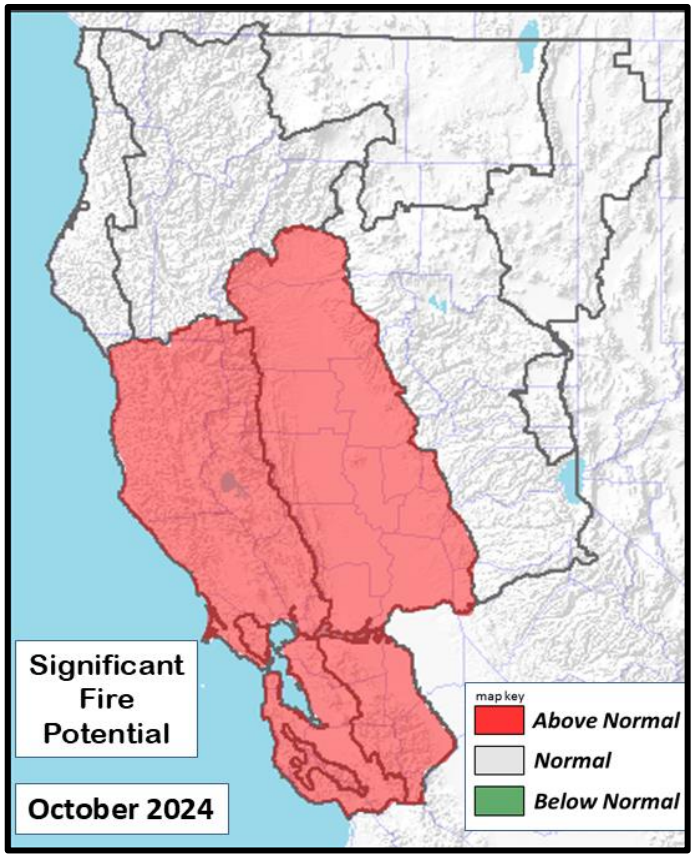
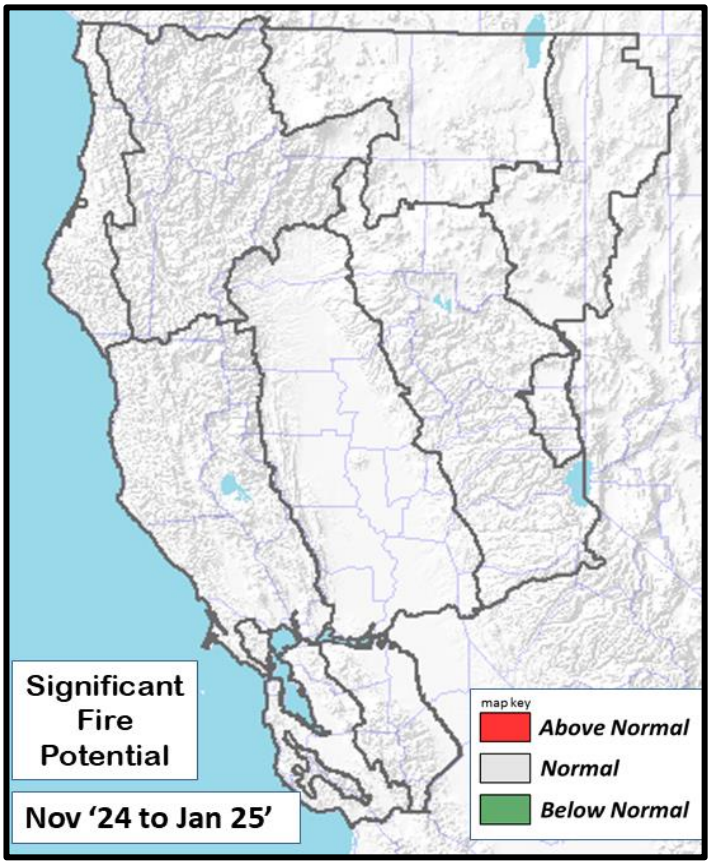
Northern Operations

MONTHLY/SEASONAL OUTLOOKS

ISSUED October 1, 2024 VALID October 2024 - January 2025





***Significant Fire Potential per Predictive Service Area (PSA)**

October 2024 - January 2025 North Ops Highlights

- Extended periods of critically dry live & dead fuels expected during October due to a warmer and drier weather pattern.
- Timely cool-moist intrusions initially favoring the north should occur November through January and help spur on more widespread herbaceous green-up across lowlands.
- The amount of cured herbaceous fuels remains above to well above normal and will aid in large fire development, especially during dry-gusty wind events.
- **Significant Fire Potential is above normal during October from the Sacramento Valley westward to the Coast then all areas return to normal from November through January when large fire activity is historically minimal.**

Weather Discussion

September weather was heavily influenced by atmospheric blocking patterns during most of the month and included an extended dose of warm-dry Ridging. The ridge influences broke down at times, especially during the 15th to 19th, and led to widespread precipitation periods and gusty winds. Average temperatures (**Fig 1**) were generally near to above normal. Precipitation (**Fig 2**) was generally below normal although a few pockets of near to above normal occurred especially favoring the upper Sacramento Valley. Around 3500 lightning strikes were recorded during the month and exceeded the 2012-2022 September average of around 2600 strikes. There were several dry-gusty onshore wind days that required National Weather Service Red Flag Warnings and Predictive Service High Risks during the earlier half of the month. Several, generally weaker dry-northerly wind periods occurred during the latter half of the month with the strongest occurring on the 30th when Red Flag Warnings and a High Risk were issued.

Many of the guidance tools suggest near to above normal temperatures and near to below normal precipitation for October and November. There are more uncertainties for December and January although December is a month when the moist side of the Jet could create more widespread moisture intrusions. Alternating northerly and onshore wind events should also continue the next few months with a higher likelihood of some stronger offshore events during October and to a lesser degree November. The next 4 months are likely to be a dynamic period with whiplash like weather regimes from warm-dry to cool-moist due to extended blocking patterns.

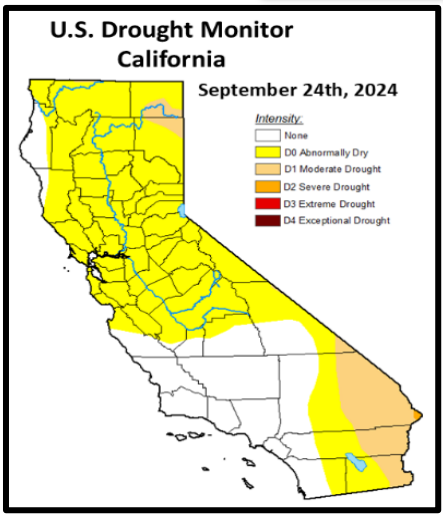


Fig 3 – Drought Monitor

Current and Average Monthly Values

	Chamise		Manzanita	
Month	2023/24	Ave	2023/24	Ave
Oct	65	60	94	81
Nov	68	63	96	85
Dec	73	69	109	92
Jan	75	76	100	94
Feb	79	90	102	96
Mar	89	106	96	99
Apr	112	117	99	116
May	126	108	124	124
Jun	106	87	130	125
Jul	81	72	112	119
Aug	66	65	88	99
Sep	62	61	80	86
Oct		60		81

Fig 4 PG&E live fuel moisture

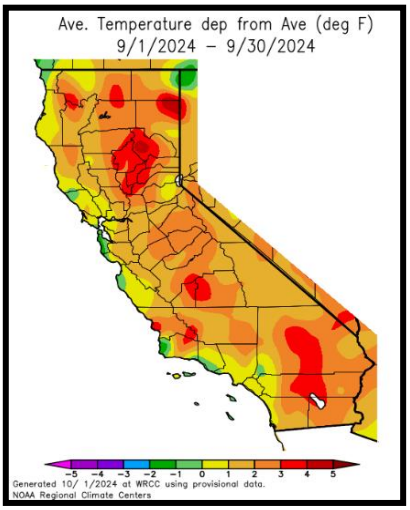


Fig 1 – Precip in September (% of avg.)

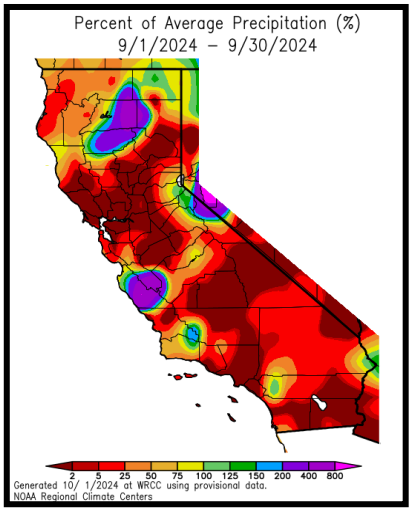


Fig 2 – Temp in September (dep of avg.)

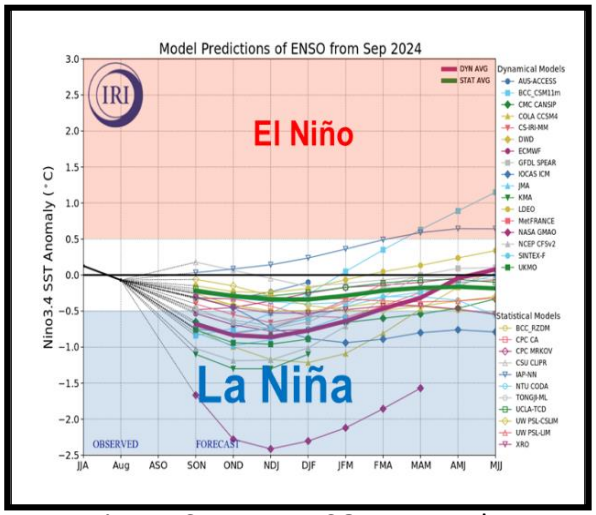


Fig 5 – Current ENSO state and outlook

Fuels Discussion

Dead fuels experienced wild fluctuations during September with critically flammable readings through the first half of the month, then significant moistening before returning to critically flammable values at the end of the month. Live woody fuels continued to cure with flammable to critically flammable moisture values found across the landscape. Herbaceous fuels became cured or mostly cured by the end of the month.

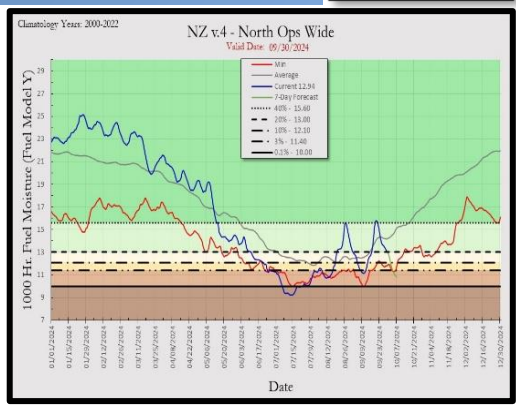


Fig 6 – North Ops 1000-hr Fuel Moisture - September 30th

The blue line found on the North Ops 1000-hour dead fuel moisture chart **(Fig 6)** illustrates the wild moisture swings observed during September. The grey line is the historical average based on 23 years of data. The dashed lines represent various flammable percentile thresholds from the 40th to the 3rd. Values reached the 3rd percentile line during the 9th to 12th and were very flammable.

Live woody fuels continued to cure and became more flammable during September. **Figure 4** shows PG&E moisture averages for Chamise and Manzanita. Values were generally near to below seasonal levels and quite flammable. Most herbaceous fuels became cured or mostly cured across the landscape. **Figure 6** illustrates the curing trend across the higher elevations of Lassen N.P. A light flush of green-up was evident across portions of the upper Sacramento Valley and northwest corner although the amount of standing dead far outweighed the amount of green, moisture laden fuels. The grass fuel bed has experienced some desiccation (**Fig 5**) this past summer but remains abundant and continuous. Moderate drought (**Fig 3**) remained across the northeast although shrunk in area compared to late August. The late September 2-month EDDI graphic (**Fig 7**) illustrates drier impacts across the southern tier of the area and represent areas where live fuels are likely to be more stressed.

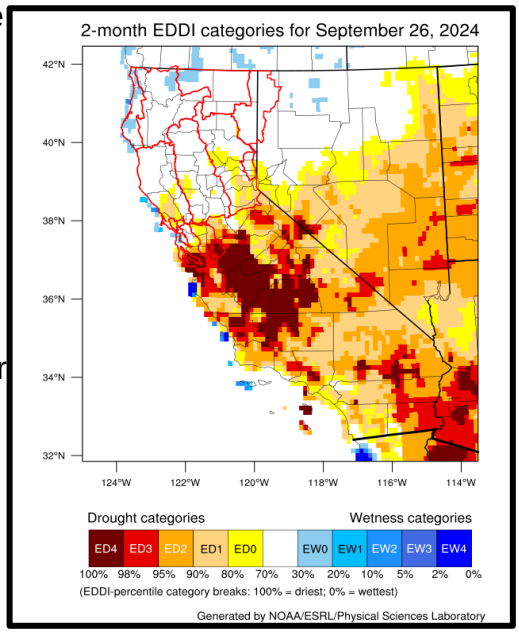


Fig 7 two-month EDDI September 26th

Fig 8 San Jose Foothills webcam & grass dessication

Fig 9 Herbaceous curing comparison Lassen NP

NORTH OPS FIRE BUSINESS & TRENDS

Fire business during September fluctuated due to the changeable weather patterns. The average number of fires reported per day was 13. Two large or costly fires ignited during the month. The Bear fire started on the 2nd near Loyalton and required a complex incident management team to help manage it. The Boyles fire ignited within the city limits of Clear Lake and burned several structures and vehicles across 80 acres. Prescribed burn projects were conducted throughout the month and large (+1000 acre) projects were completed later in the month.

Based on the current fuel state and future weather predictions above normal significant fire potential is projected for the Sacramento Valley westward to the Coast during October while normal should exist elsewhere. During October each Predictive Service Area (PSA) generally observes 1 or less large fires. Extended periods of a critically flammable fuels combined with gusty-dry wind episodes will likely enhance the potential during October, especially across the grassland/brush dominated landscapes.

Normal significant fire potential is forecasted for November through January when large fire activity is historically minimal. Some residual offshore wind events are likely to extend into November but lowering sun angles, shorter daylight periods and some eventual timely cool-moist events should ultimately trend the potential towards near seasonal levels. Large fire potential will remain across the lowlands until there is sufficient widespread herbaceous green-up and that influence will be a wildcard during the next couple of months but should be in place during December and January. Snow cover should also become more evident across the upper elevations during the latter half of the outlook period.

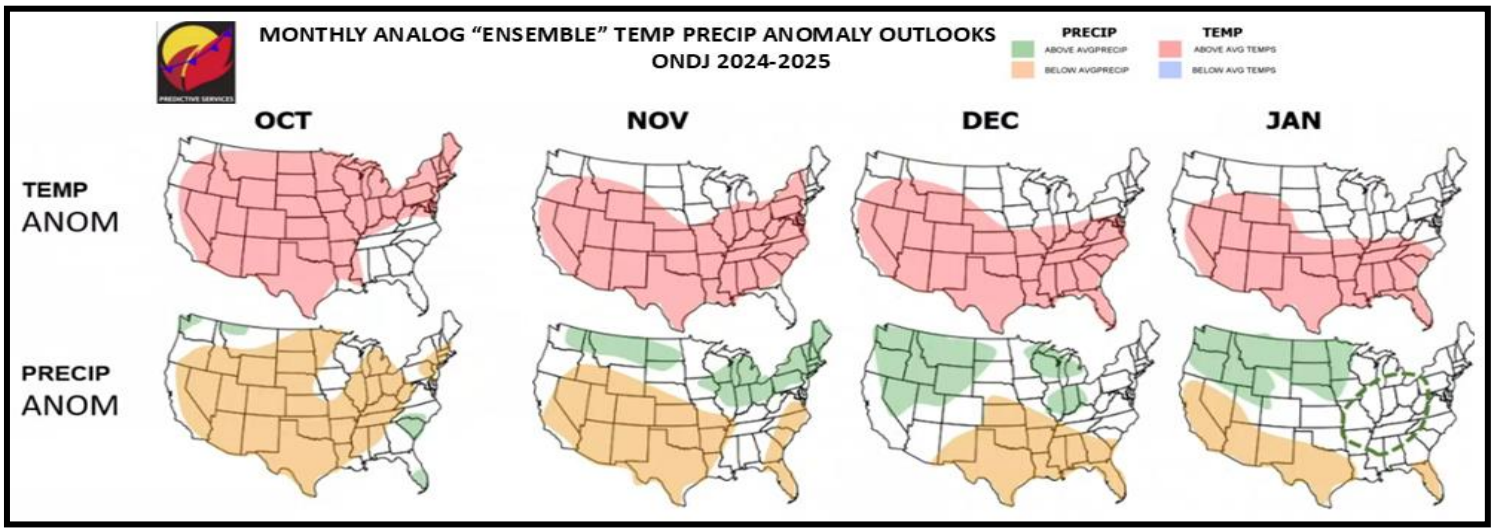
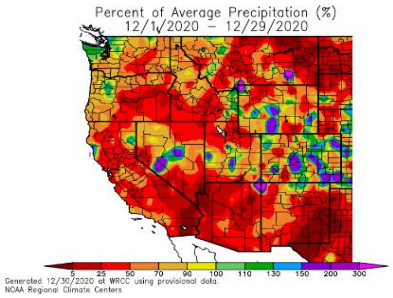


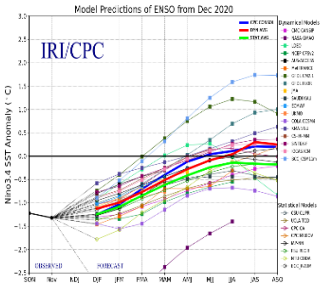
Fig 10 – Predictive Services 4-month Temperature and Precipitation Outlook

Select Links Used in this Outlook

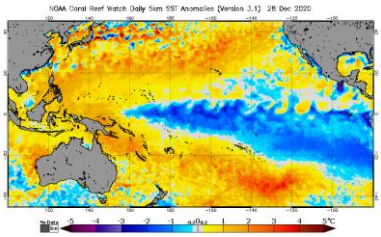


Western Region Climate Center Temperature and Precipitation Anomalies

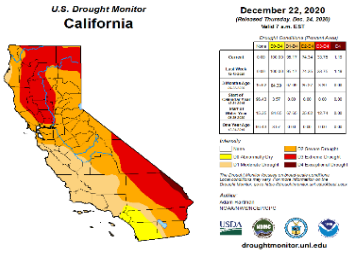
California Daily Snowpack Map



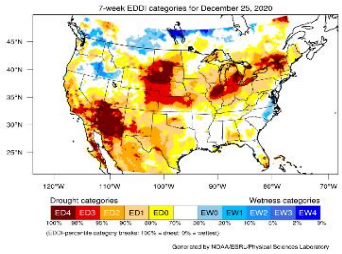
Monthly El Niño Southern Oscillation Analysis and Outlook



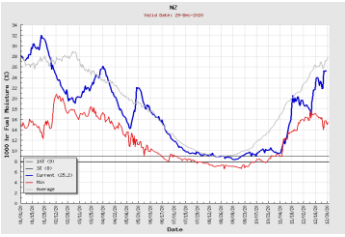
Sea Surface Temperature Anomaly Maps



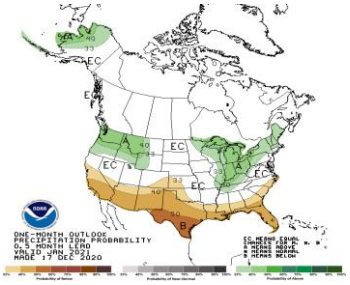
Drought Monitor Product for California



Evaporative Demand Drought Index



Daily Fuels Indices Charts



NOAA/NWS Climate Prediction Center