Wet Season Outlook
Oct 2024 - Apr 2025

- Current conditions
- La Niña and rainfall outlook
- Potential impacts
- Questions?

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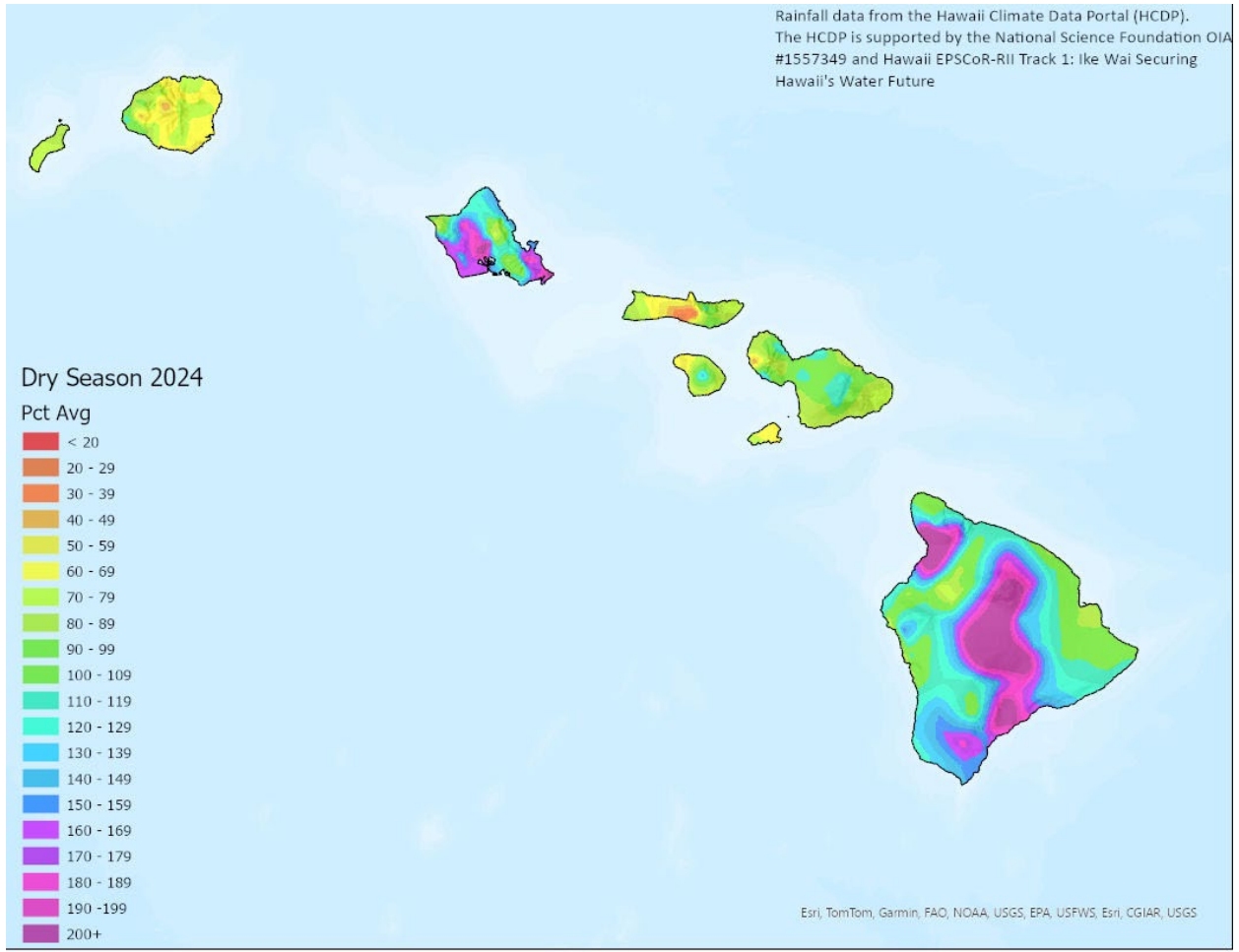
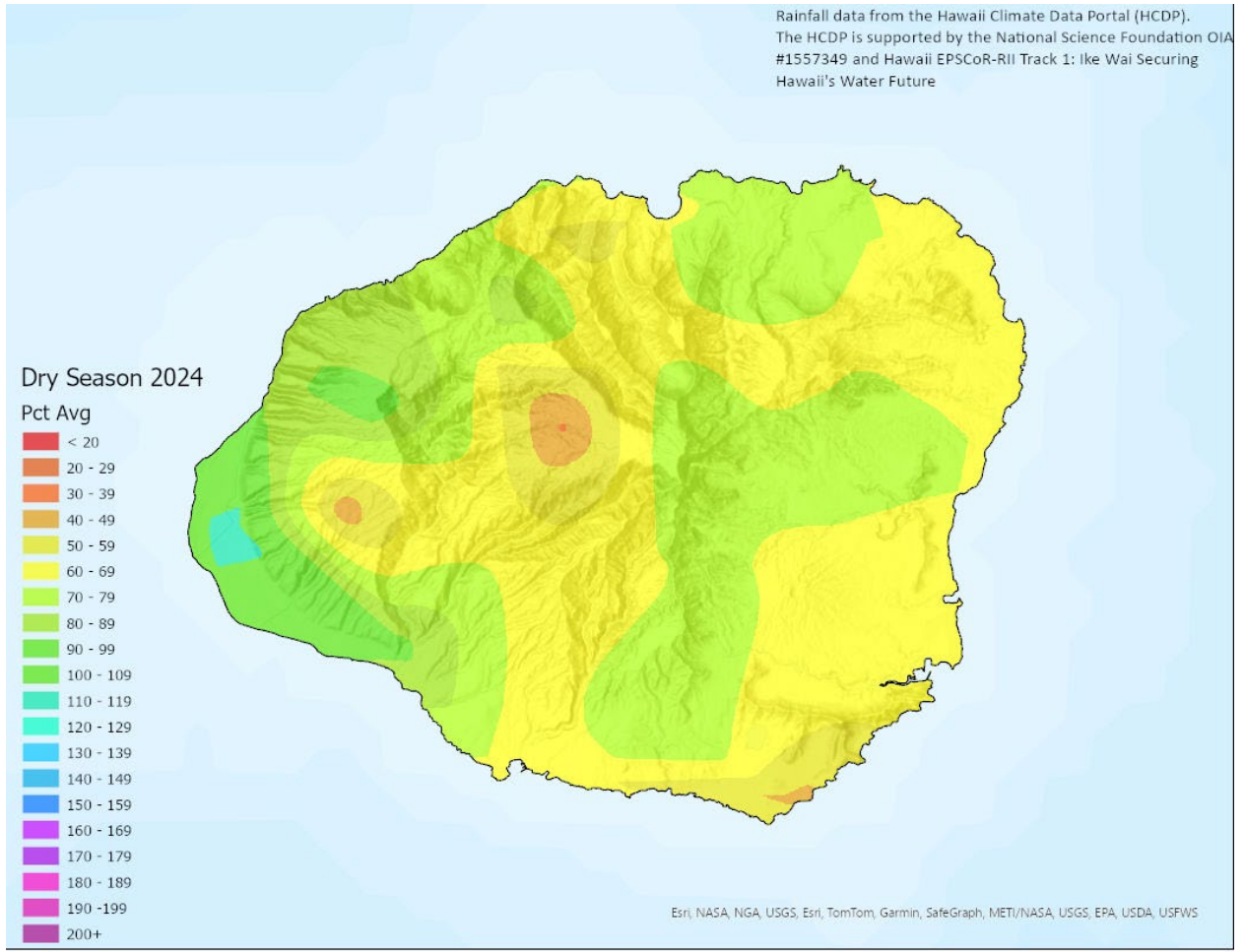
Current Conditions

- Most of the state had near to above average rainfall.
- Statewide: 9th wettest dry season in the last 30 years.
- Latest kona low in at least 20 years and Hurricane Hone boosted rainfall.



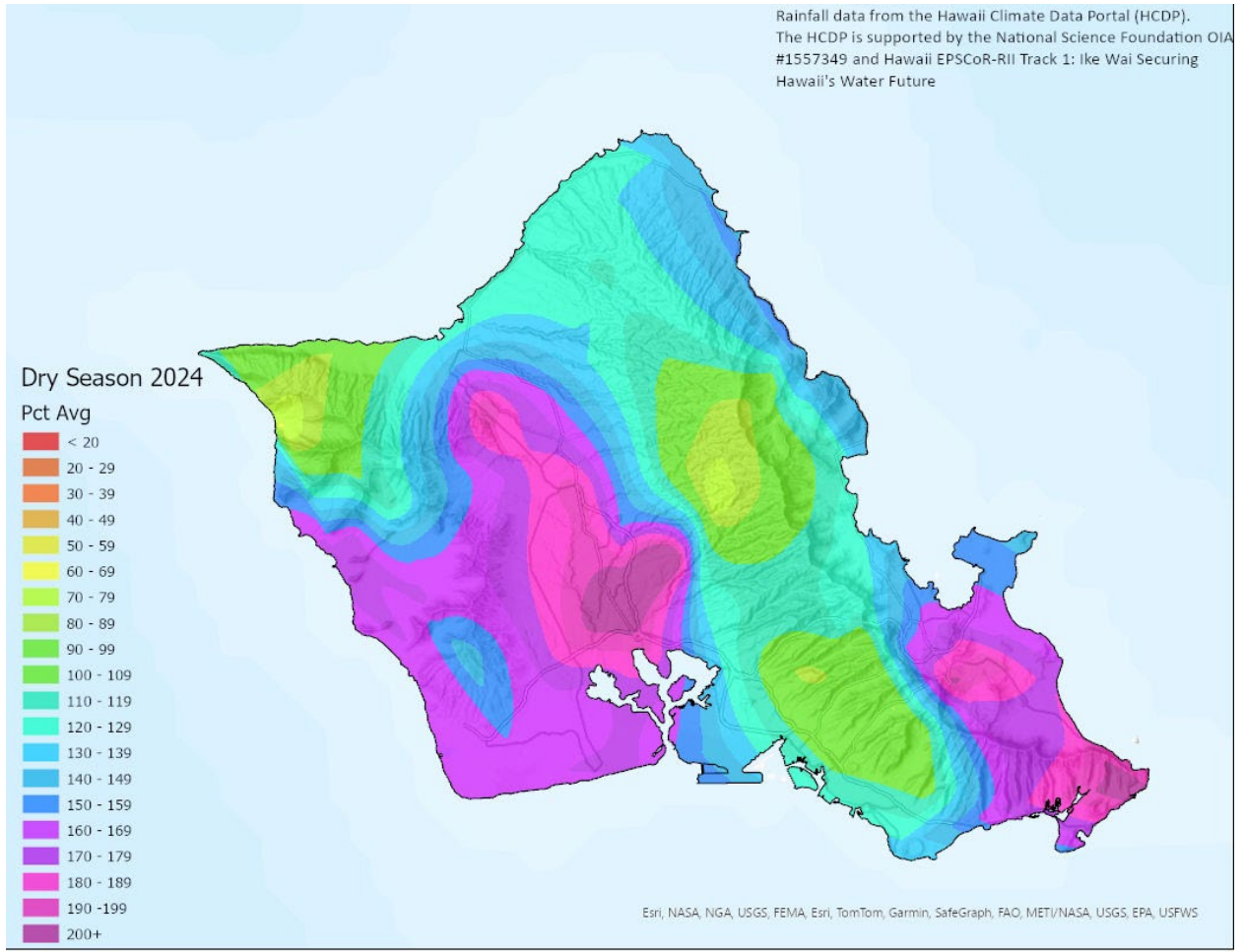
Current Conditions

- Kaua‘i had the driest overall conditions in the state.
- Drier than 2023 and was very dry in August and September.
- Līhu‘e Airport: 5th lowest dry season rainfall total in 30 years.



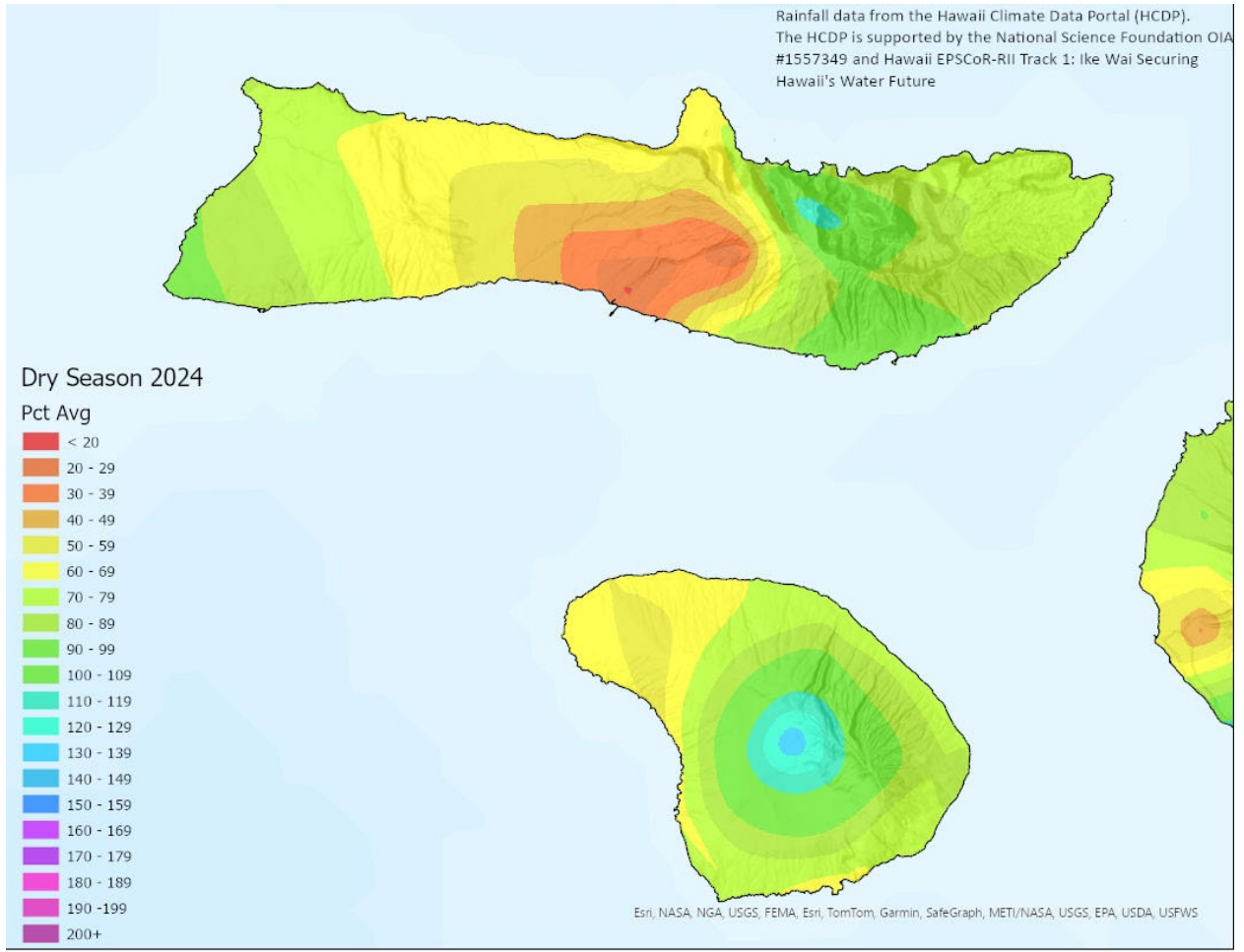
Current Conditions

- O‘ahu mostly near to above average rainfall.
- Record wet May due to very late kona low.
- Honolulu Airport: 6th highest dry season rainfall total in 30 years. May rainfall exceeded entire dry season average.



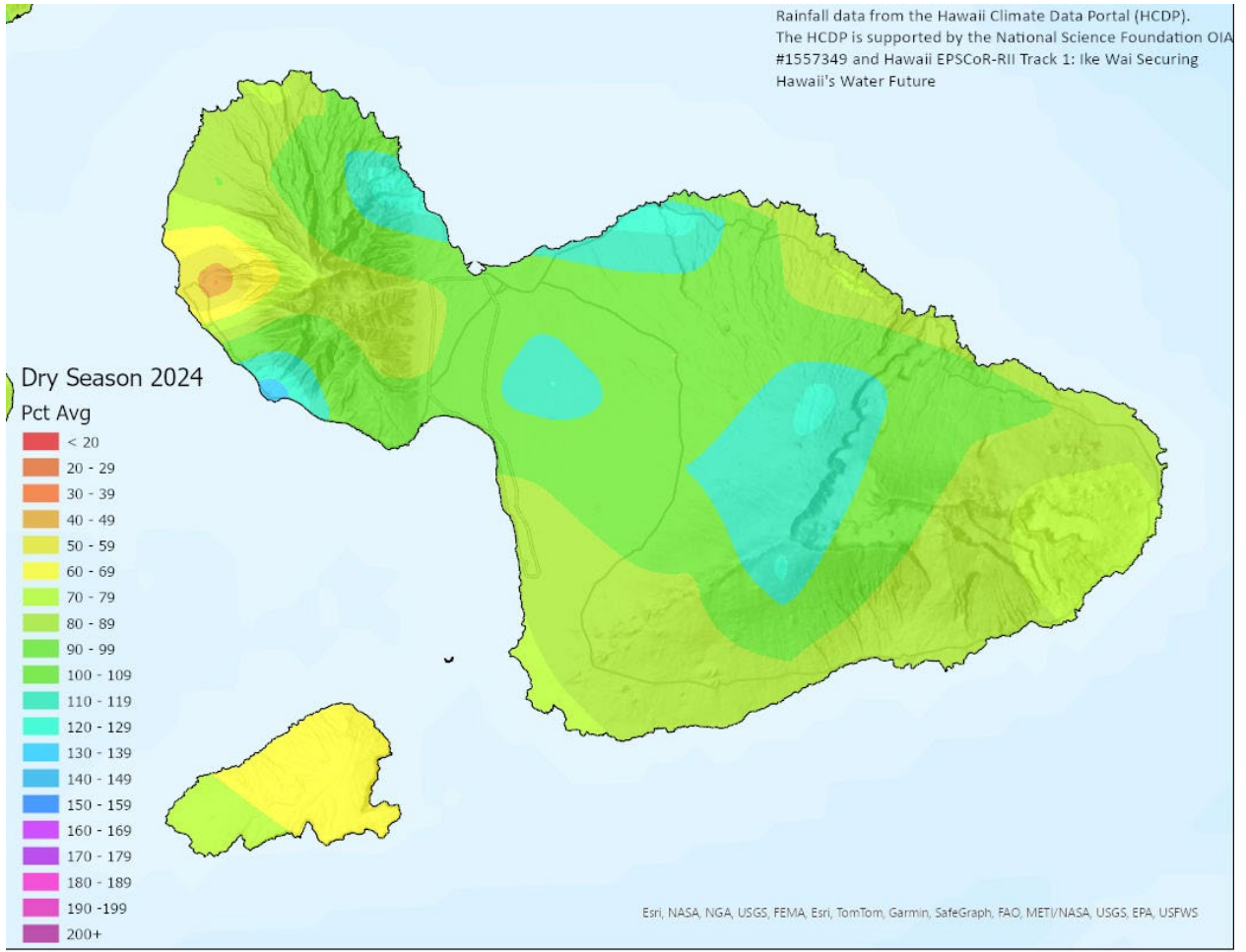
Current Conditions

- Maui County rainfall was mostly near to below average.
- Benefitted from May kona low and to a lesser extent Hurricane Hone.
- Moloka‘i Airport: 15th lowest dry season rainfall total in 30 years.



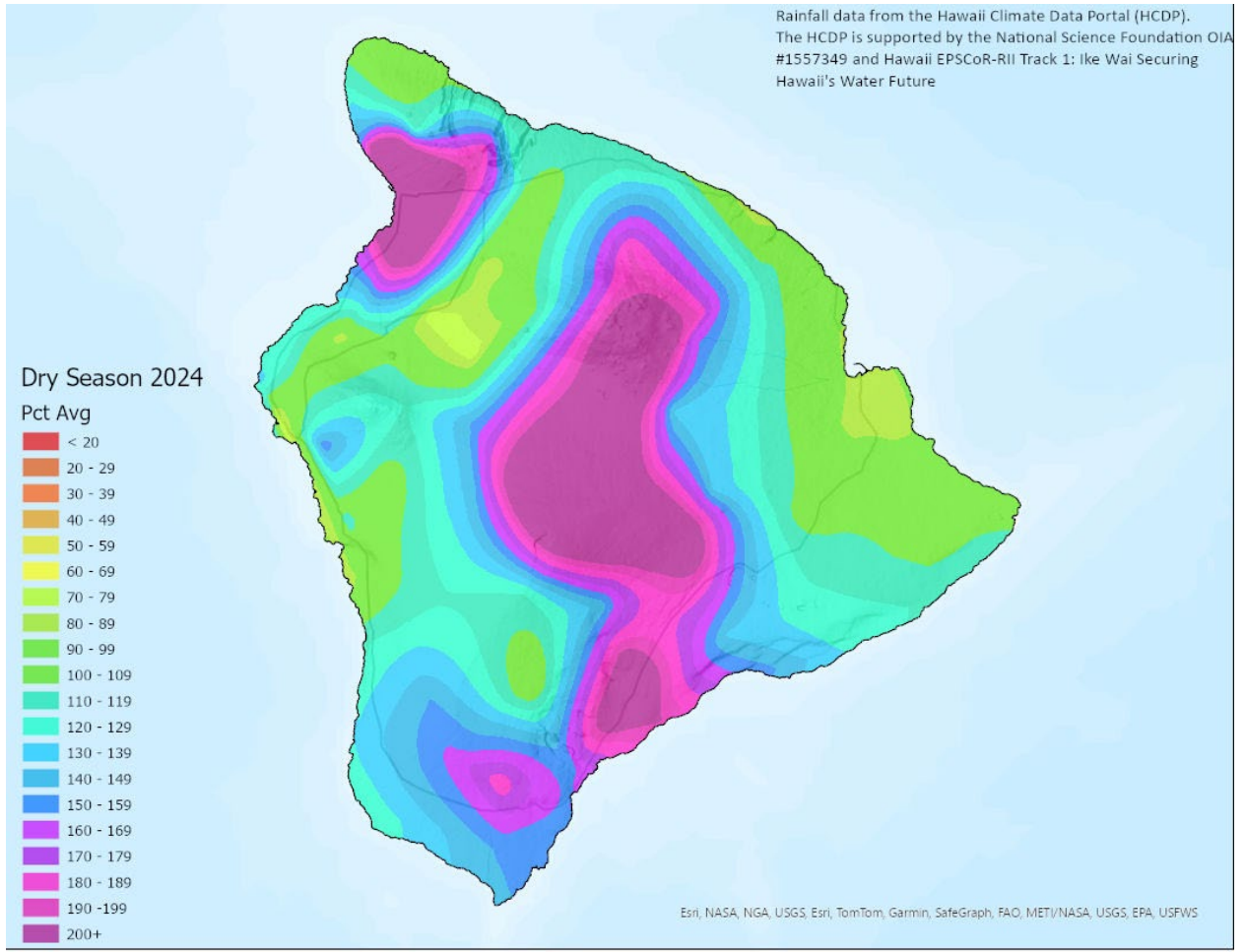
Current Conditions

- Maui County rainfall was mostly near to below average.
- Benefitted from May kona low and to a lesser extent Hurricane Hone.
- Kahului Airport: 11th highest dry season rainfall total in 30 years.



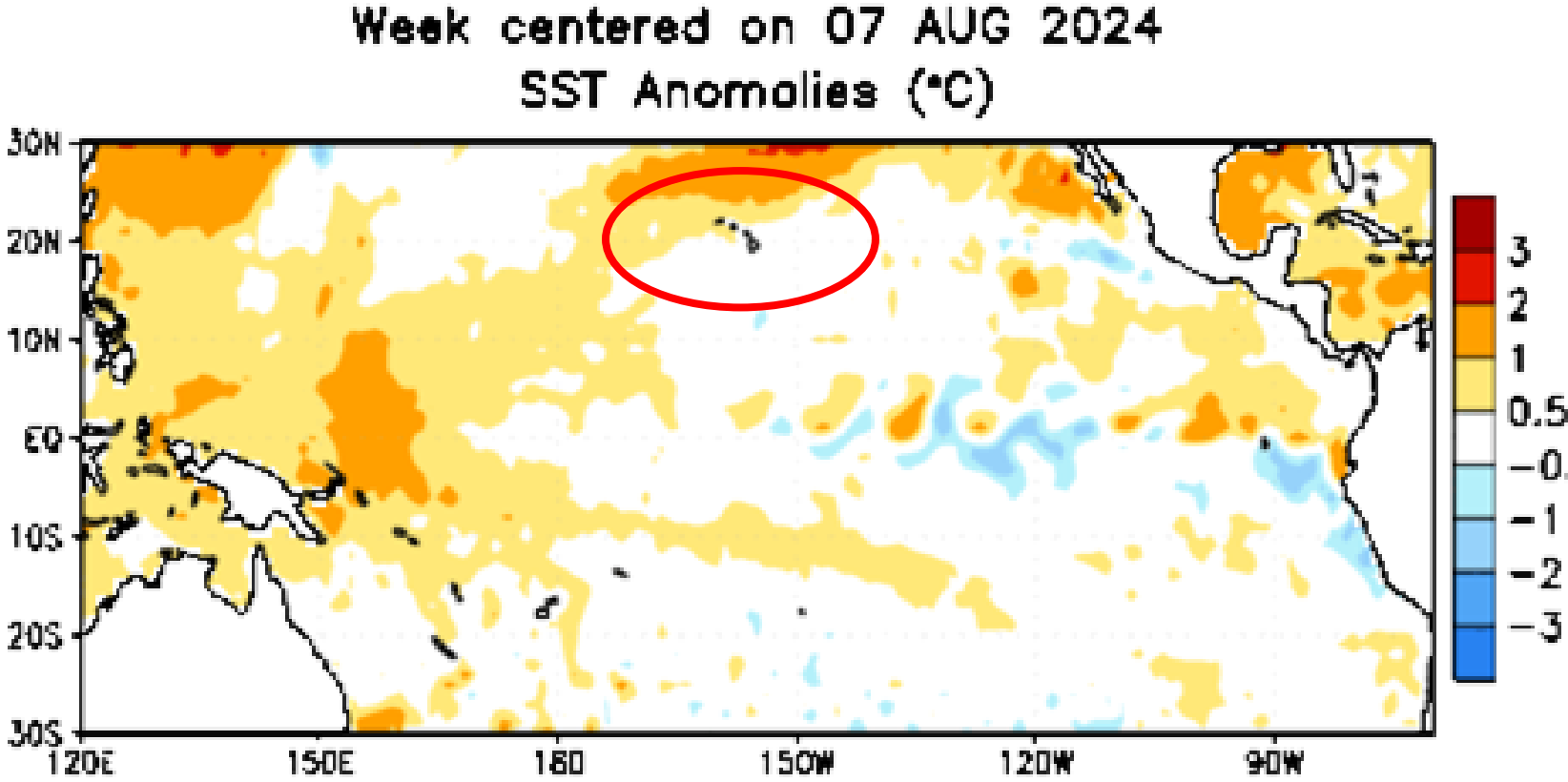
Current Conditions

- Near to above average rainfall in most areas of the Big Island.
- May kona low and Hurricane Hone offset dry June through mid-August.
- Hilo Airport: 17th lowest dry season rainfall total in 30 years.
- Kapāpala Ranch, 2nd highest dry season total in 30 years.



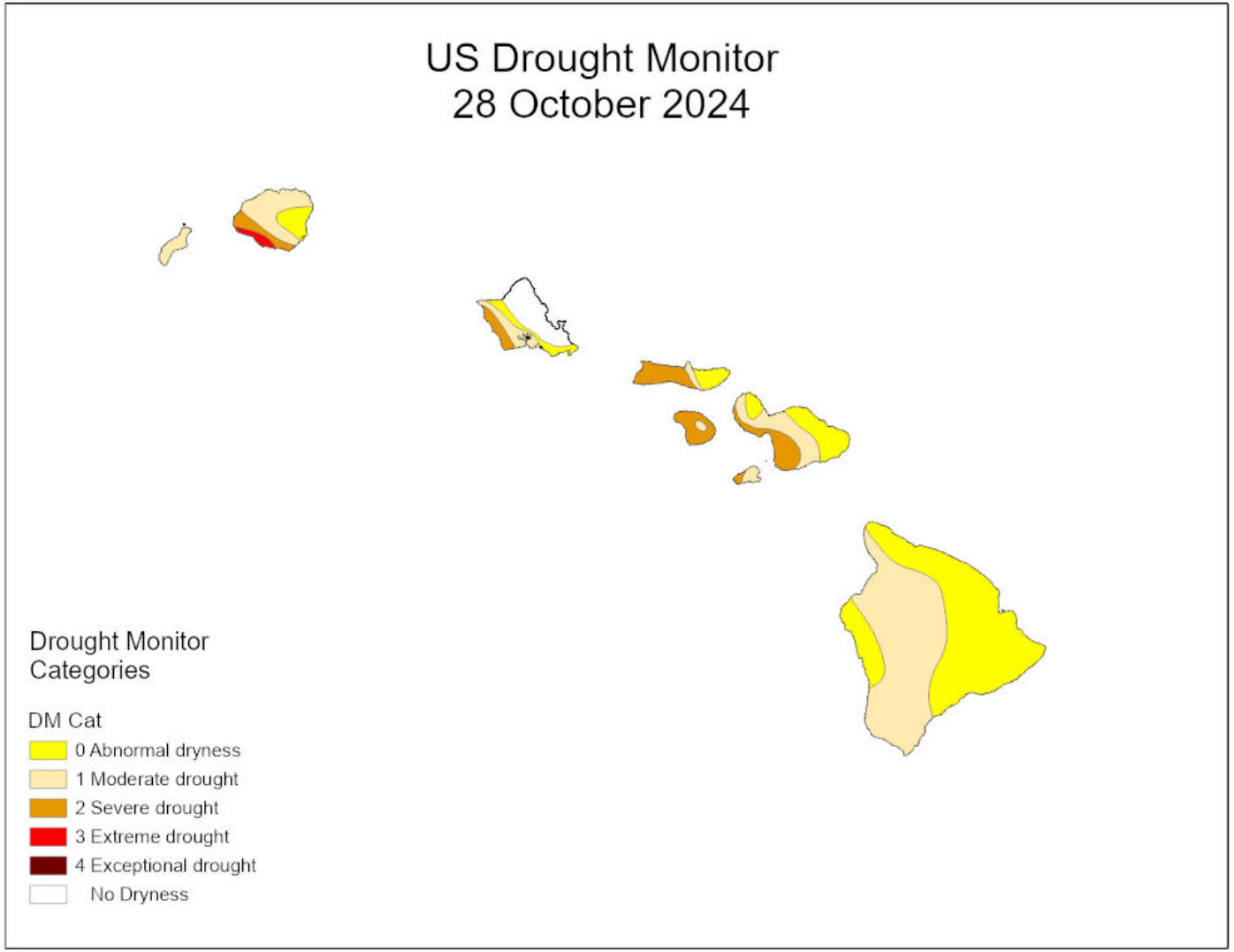
Current Conditions

- El Niño ended and transitioned to ENSO-neutral conditions in the spring of 2024.
- Currently, sea surface temperatures near are below average across a large portion of the equatorial Pacific. This, along with other indicators, shows that a La Niña episode is trying to develop.
- La Niña was expected to develop during the summer, but this process has been slower than expected.
- Sea surface temperatures near Hawai‘i have been near to slightly above average recently.



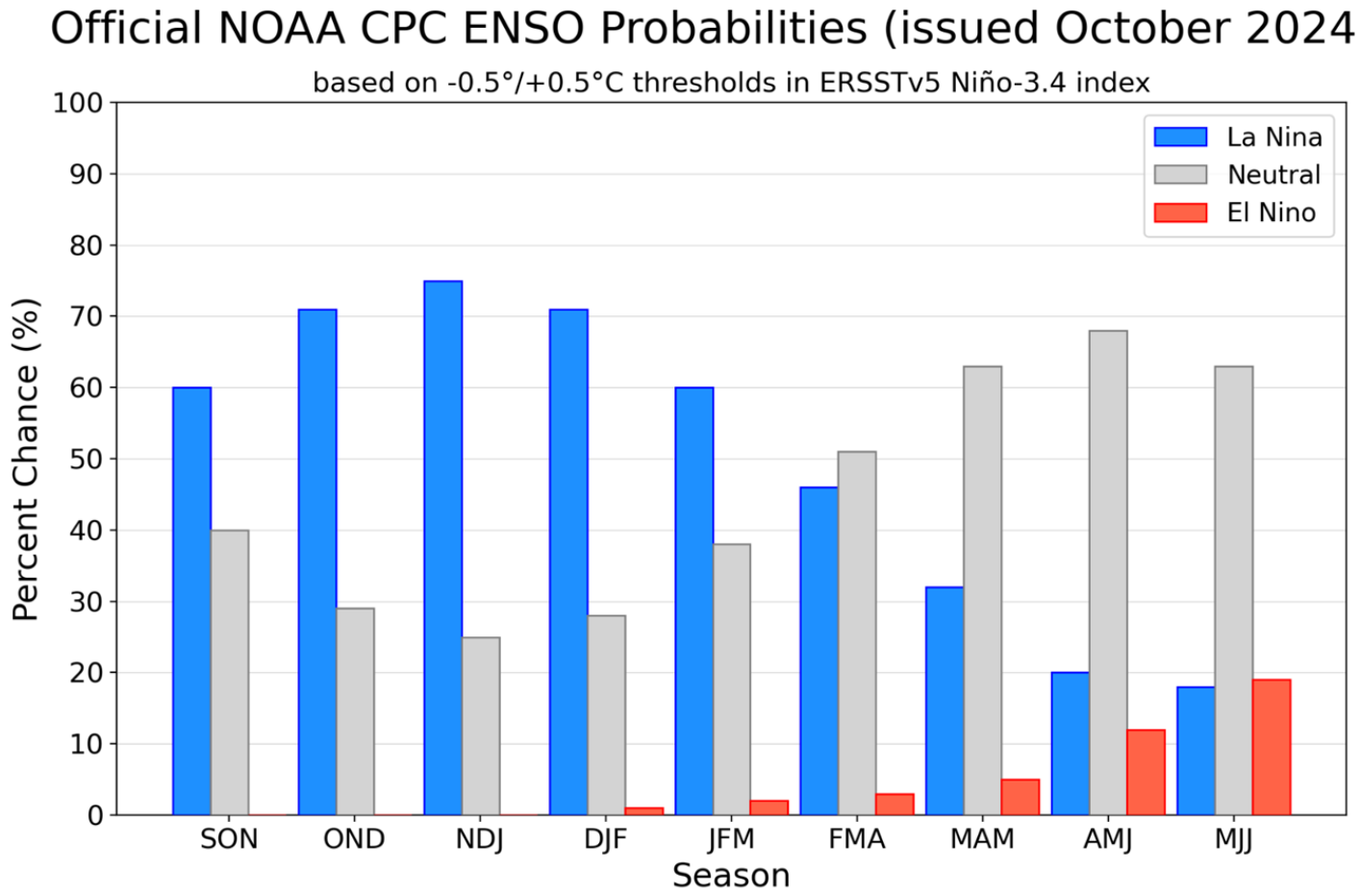
Current Conditions

- Starting the wet season with severe drought (D2) in 3 out of 4 counties.
- Extreme drought (D3) developed over leeward Kaua‘i in early October.
- Mainly affecting non-irrigated agriculture.
- Big Island drought was eliminated by Hurricane Hone in August and a tropical low pressure trough in September. However, recent dryness from late September to mid-October brought back moderate drought (D1).



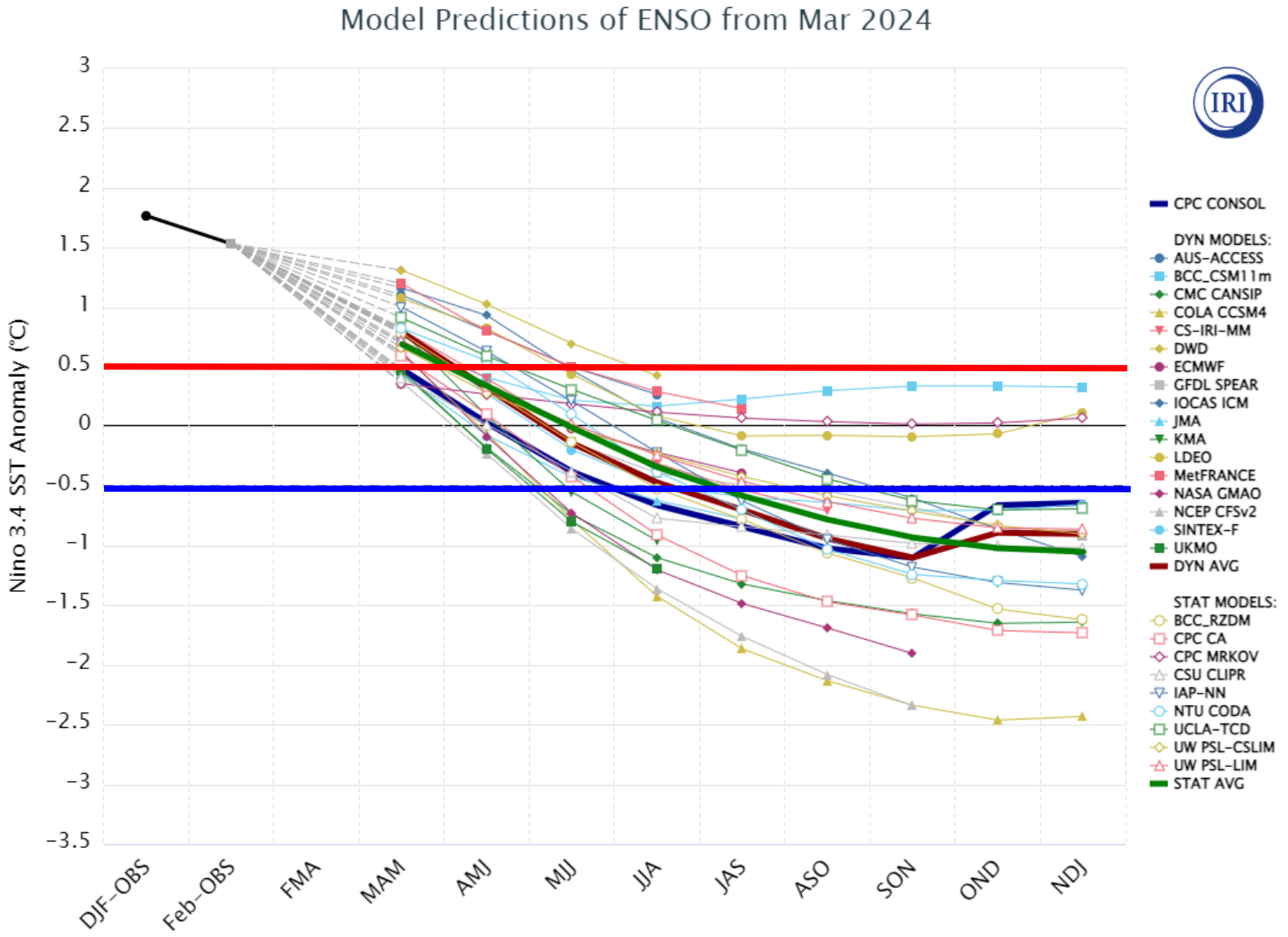
ENSO Outlook
Rest of 2024 and Early 2025

- La Niña continues to develop…slowly.
- The La Niña event is forecast to peak in early winter, then fade out in spring.
- Probabilities currently favor a weak La Niña event at its peak intensity.



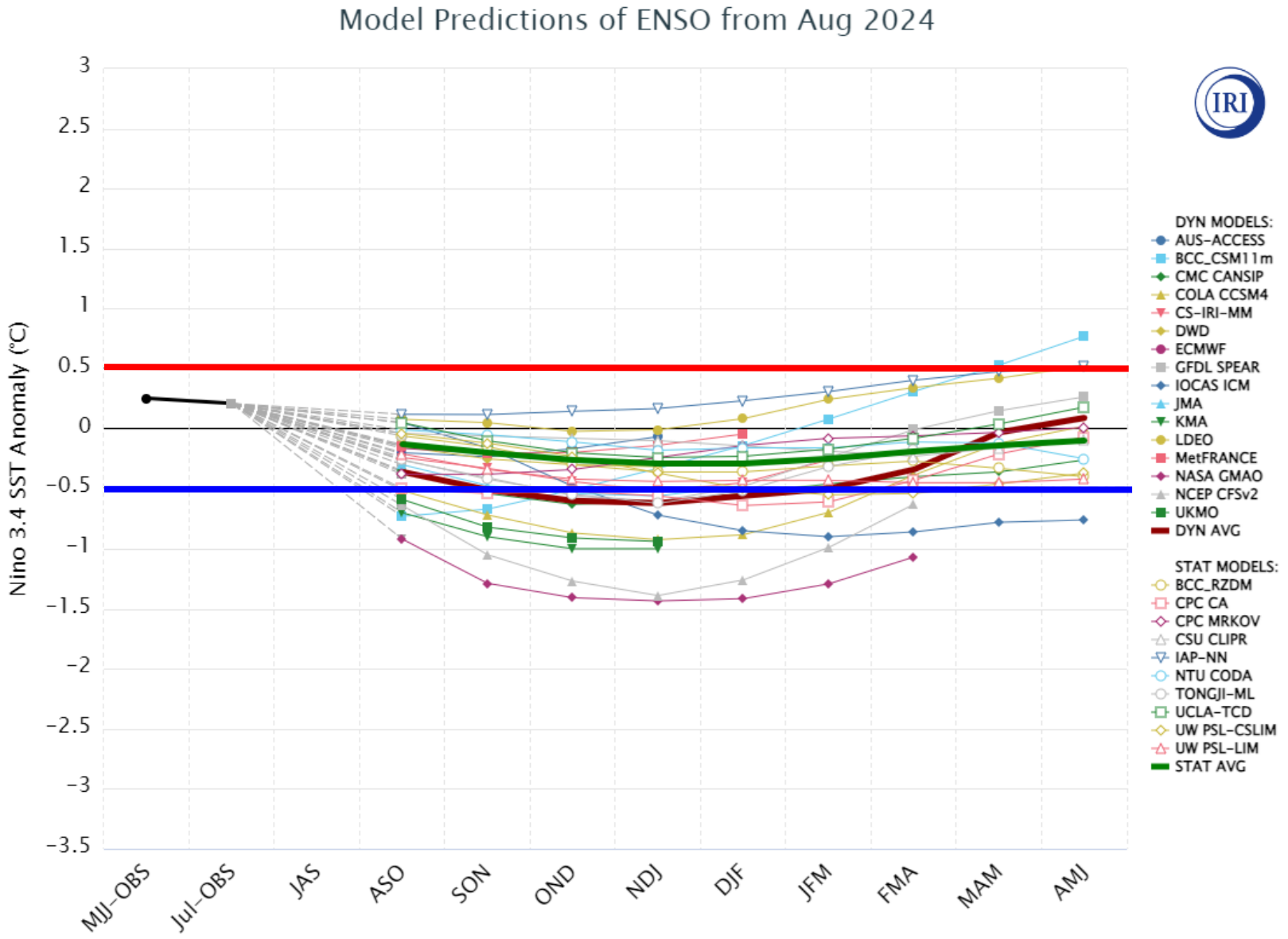
ENSO Outlook

- In March, statistical and dynamical models favored La Niña development in the summer.
- The La Niña was expected to peak in the fall as a weak to moderate event.



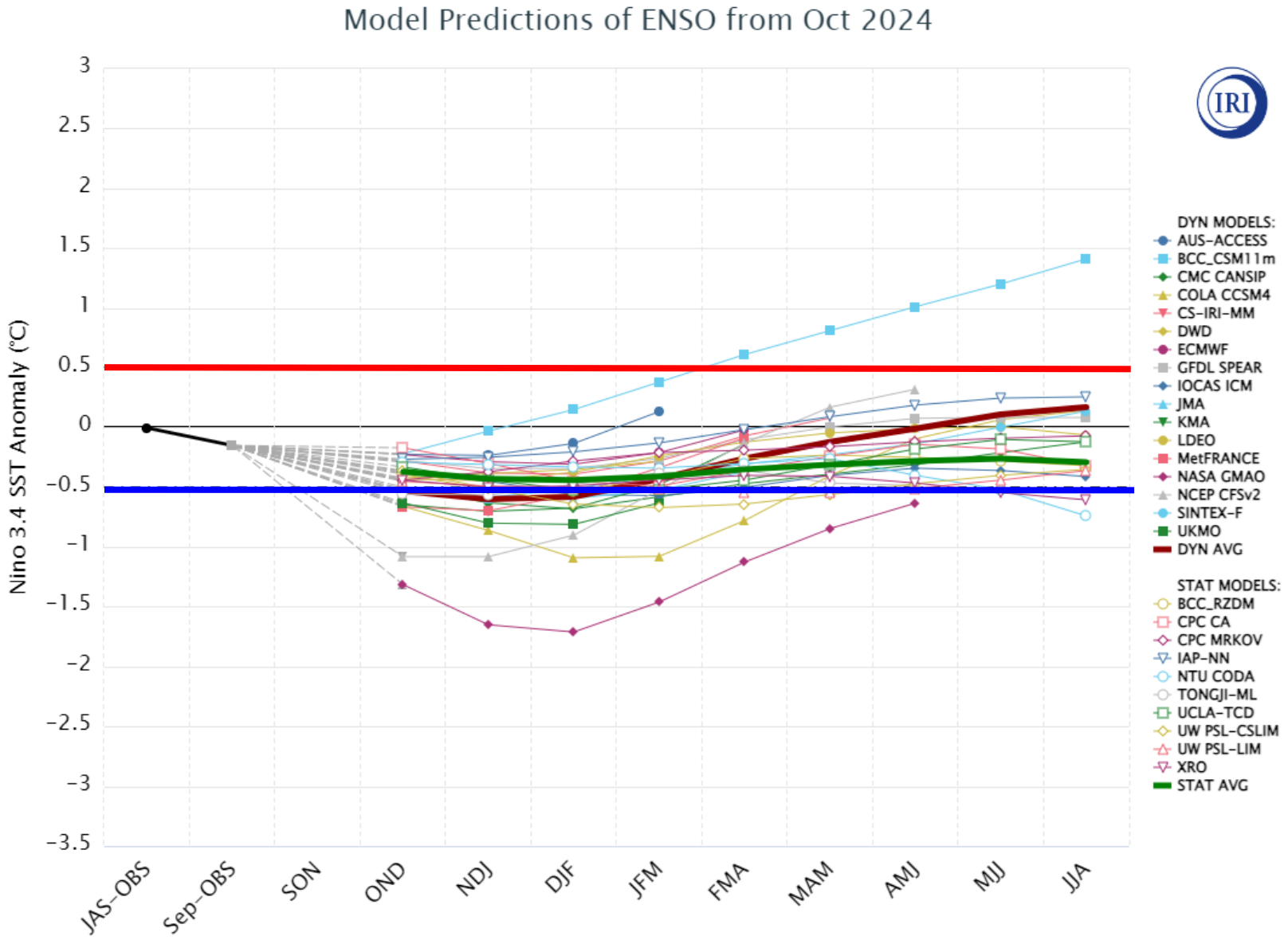
ENSO Outlook

- In August, La Niña had not yet developed. Dynamical models backed off a bit with La Niña onset in the fall and peaking as a weak event.
- Statistical models no longer forecasted a La Niña event. Conditions projected to stay ENSO-neutral.



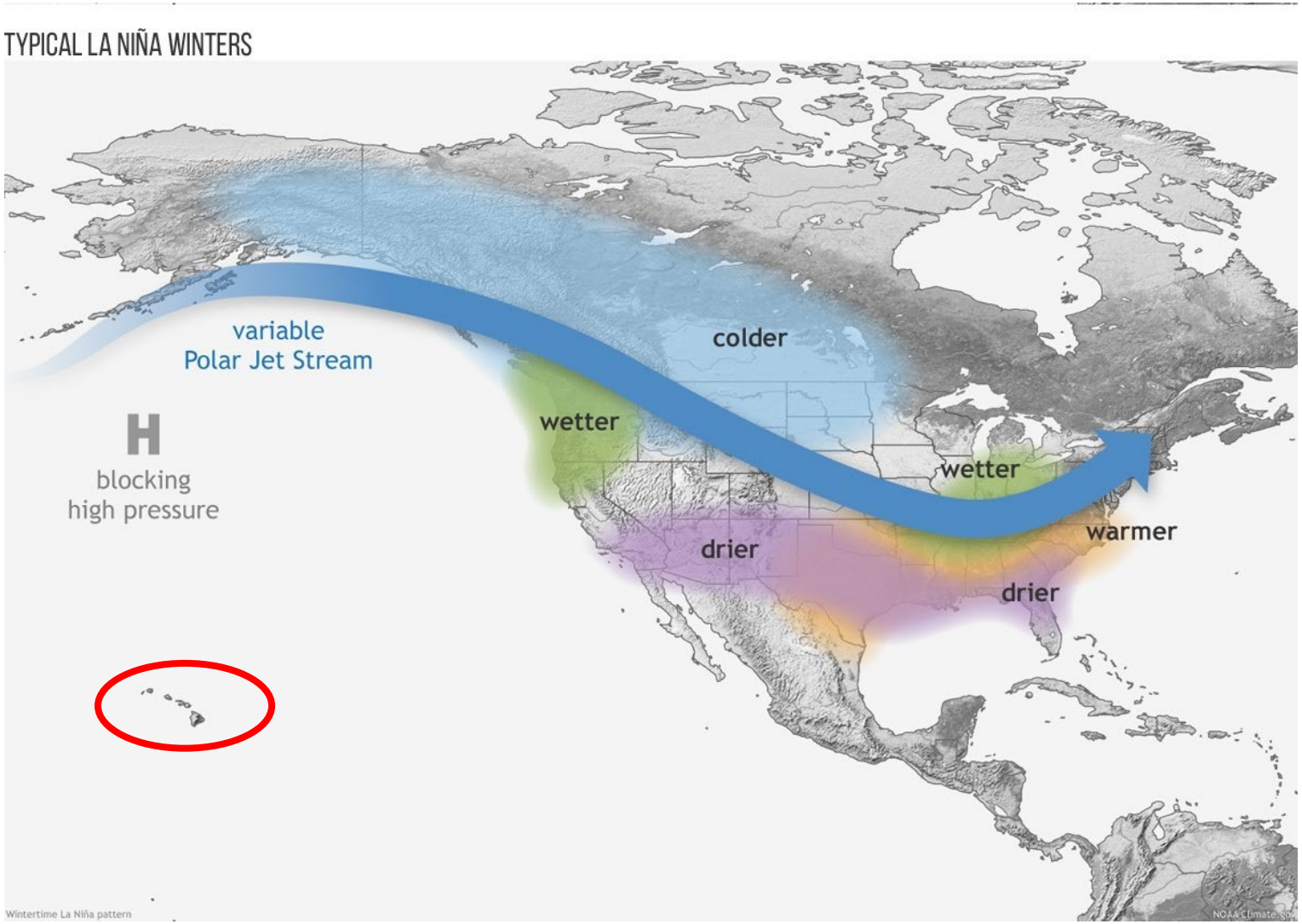
ENSO Outlook

- The latest projections still favor La Niña onset in the fall as a weak event.
- Statistical models still not forecasting a La Niña event. Conditions projected to stay ENSO-neutral.



ENSO Outlook
Rest of 2024 and Early 2025

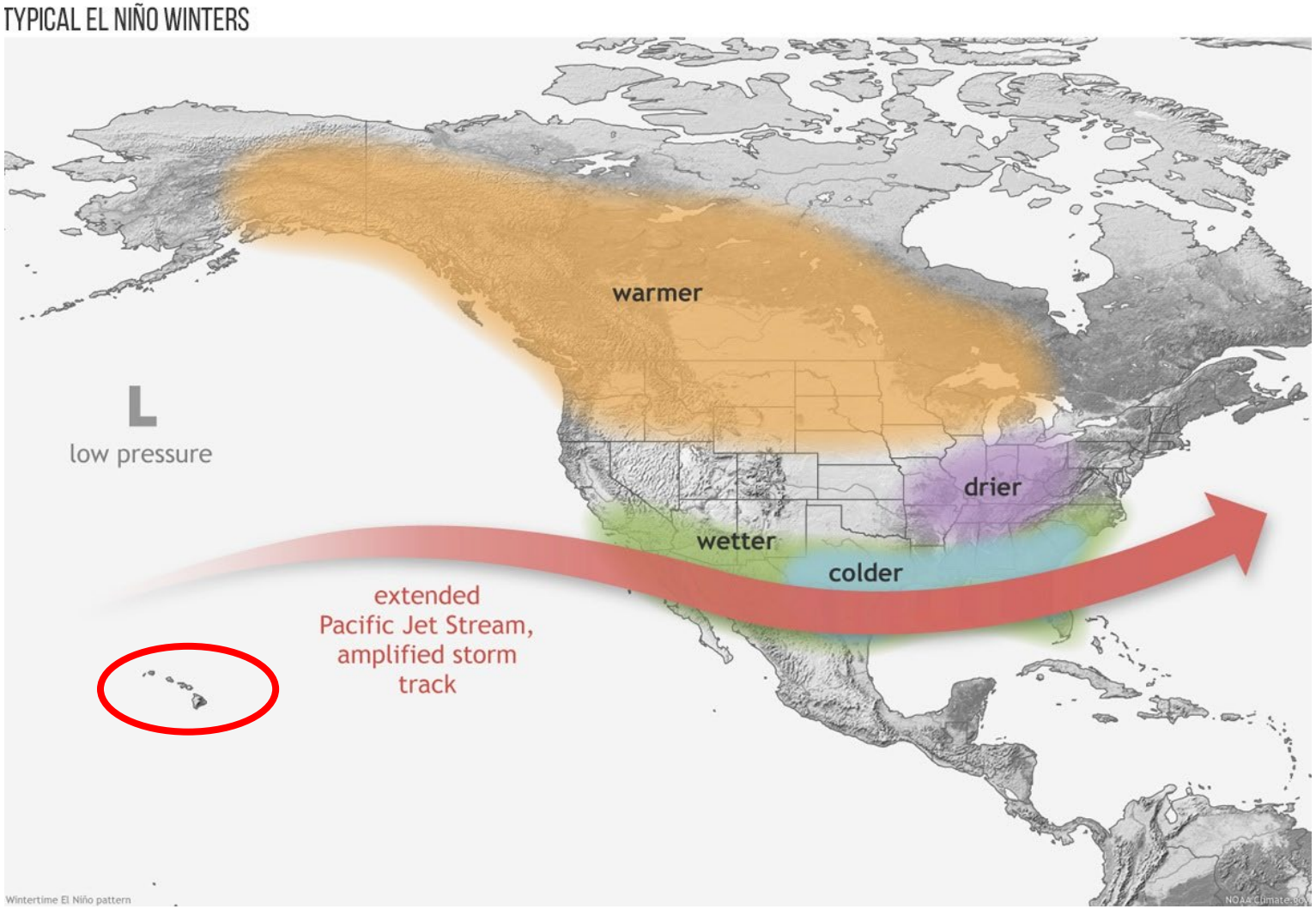
- During La Niña, jet stream becomes more “meridional”, with a larger south to north component in the North Pacific.
- More low pressure systems near Hawai‘i.
- Higher chance for heavy rainfall events.
- Less consistent pattern over Hawai‘i compared to El Niño.



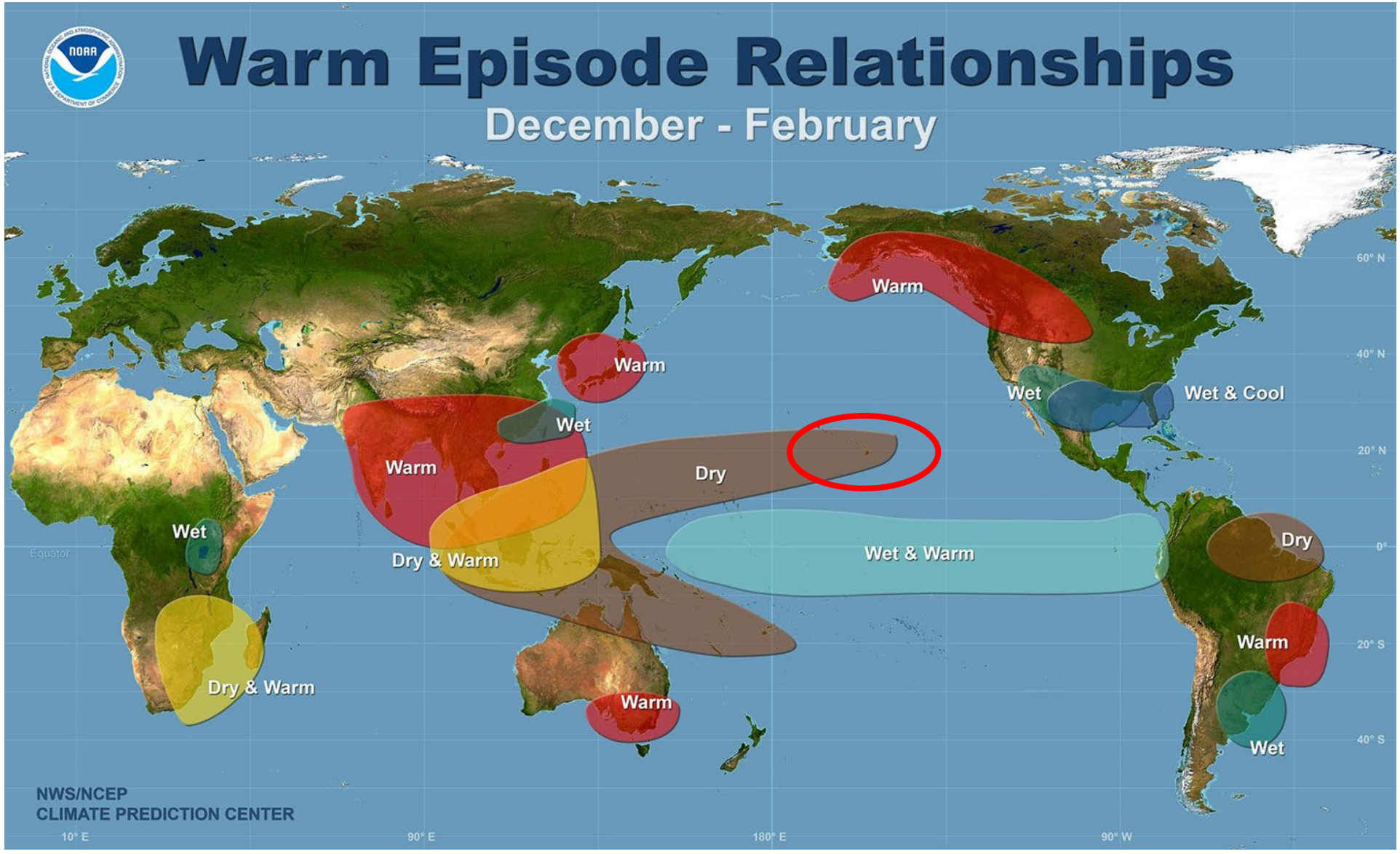
ENSO Outlook
Rest of 2024 and Early 2025

ENSO Outlook
Rest of 2024 and Early 2025

- During El Niño, jet stream becomes “zonal”, blowing west to east in the North Pacific.
- Persistent pattern, with strong low pressure systems far north of Hawai‘i, and storm tracks hitting So. Cal.
- High pressure ridge over or near Hawai‘i, with stable, dry air on many days.
- Many large surf events along the north- and west-facing shores.

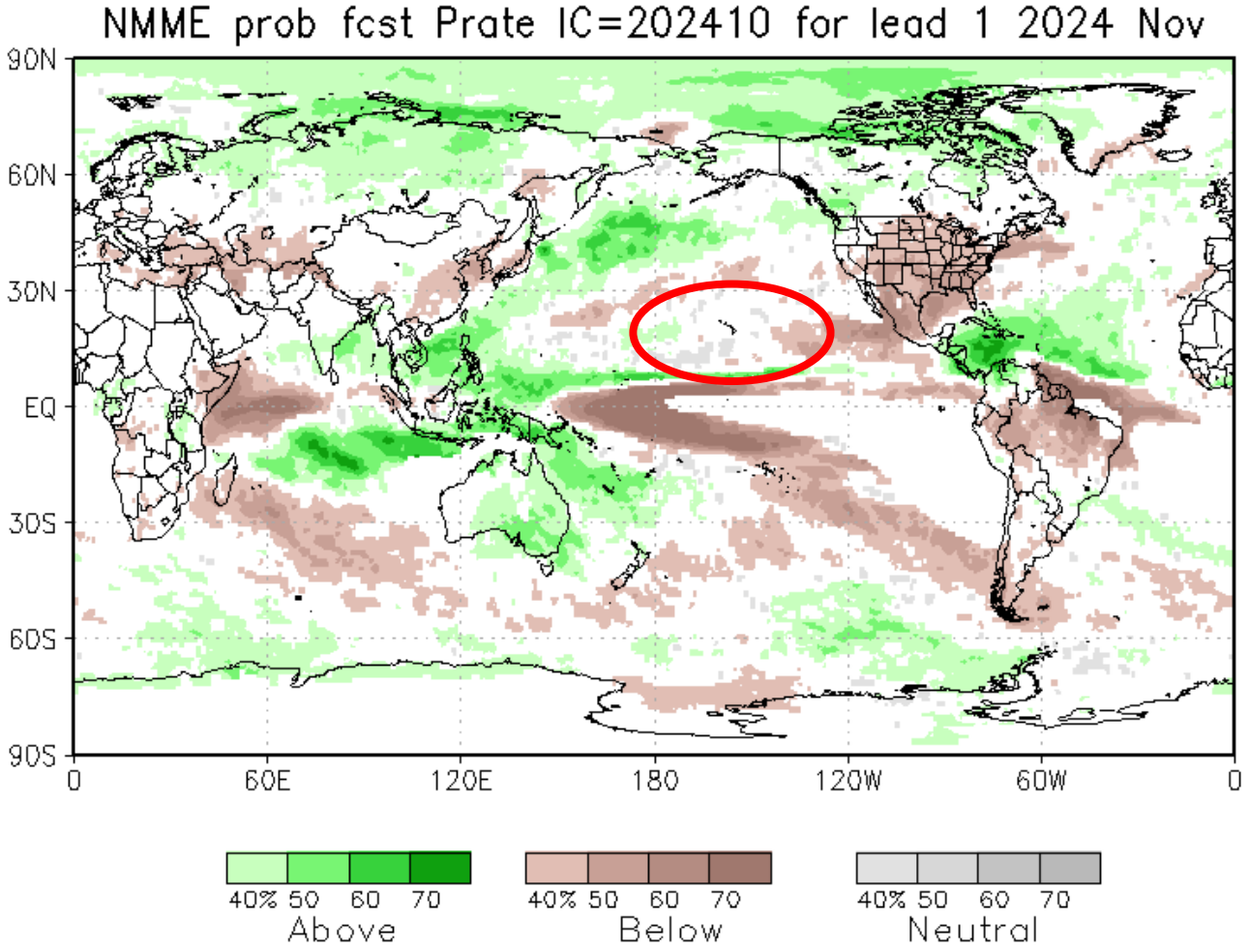


ENSO Outlook
Rest of 2024 and Early 2025



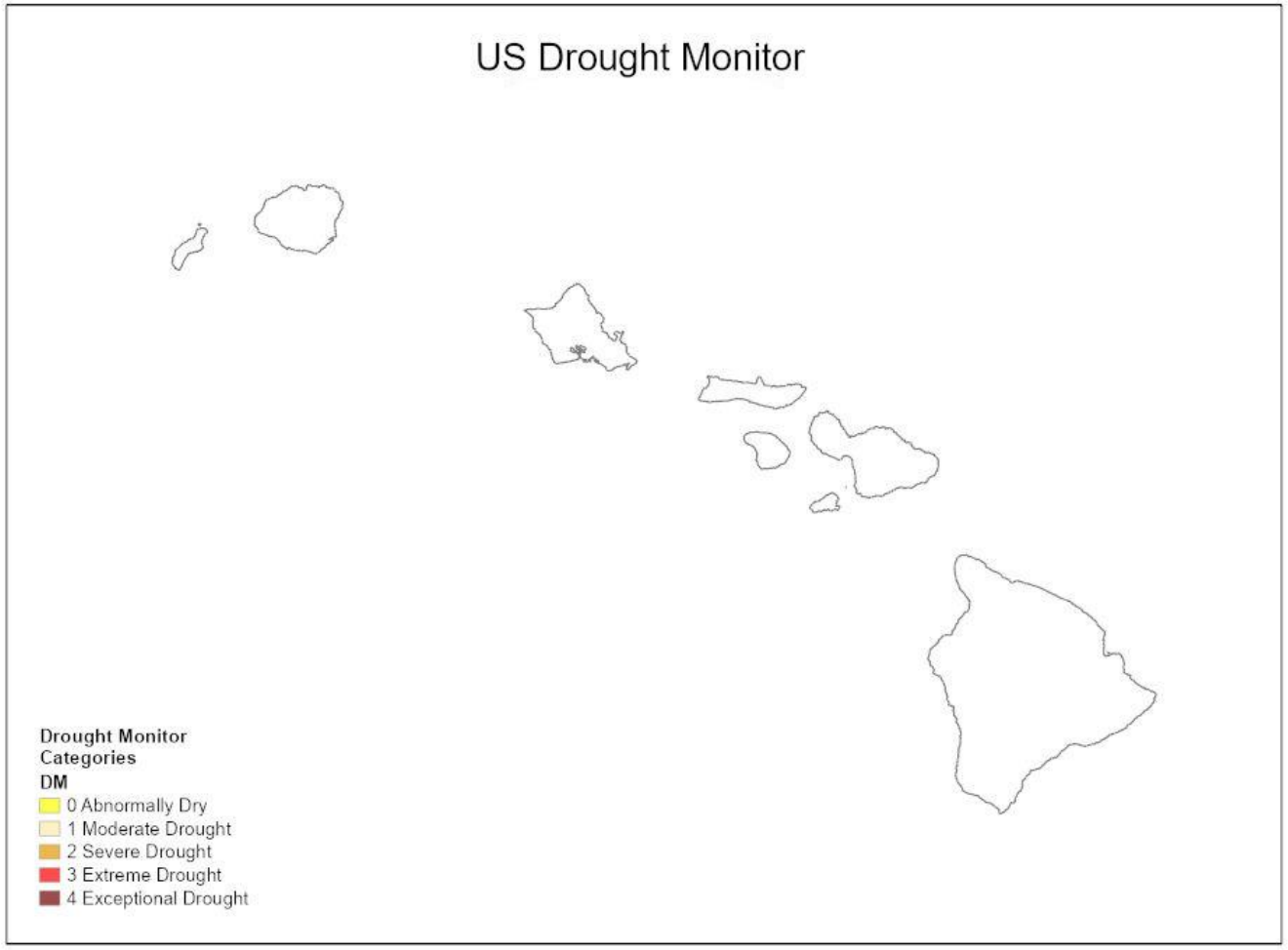
Wet Season Rainfall Outlook

- Climate models favor above average rainfall over the Hawaiian Islands region through April 2025.
- Probabilities favor a weak La Niña event
- Weak La Niña events tend to result in more weather systems that produce significant rainfall on both the windward and leeward sides.



Potential End of Wet Season Drought Map

- Rainfall potential should result in the removal of all drought areas by the end of April, if not sooner.



Potential Impacts

- Weather
  - Higher frequency of flash flood events (more road closures, property damage potential, event postponements/cancellations, water rescues, etc.)
  - Higher chance of severe weather (lightning, hail, tornadoes, winds, etc.)
- Agriculture
  - Improved forage
  - Less feral ungulate impacts (but more insect infestations?)
  - Higher risk for flood impacts (roads, structures, erosion, etc.)
- Water supply
  - Higher intake levels for surface water systems and reservoirs
  - Higher likelihood of sufficient rainfall for catchment systems
- Wildfire
  - Low fire risk, but ample fuel growth for the 2025 dry season.

Summary

- Strong El Niño ended in late spring 2024.
- Weak La Niña expected to develop this fall.
- Probabilities favor above average rainfall for the October 2024 – April 2025 wet season across the state.
  - Slow start to wet season (October and November).
  - Wet conditions from December 2024 through April 2025.
- Drought recovery during the wet season.
- Prepare for more rainy weather impacts.
  - Flash flooding
  - Severe weather

Questions?

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