

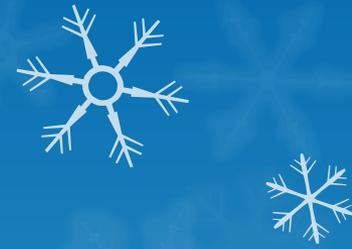
# Significant Weather Observation Program

October 27, 2022

Matt Barnes

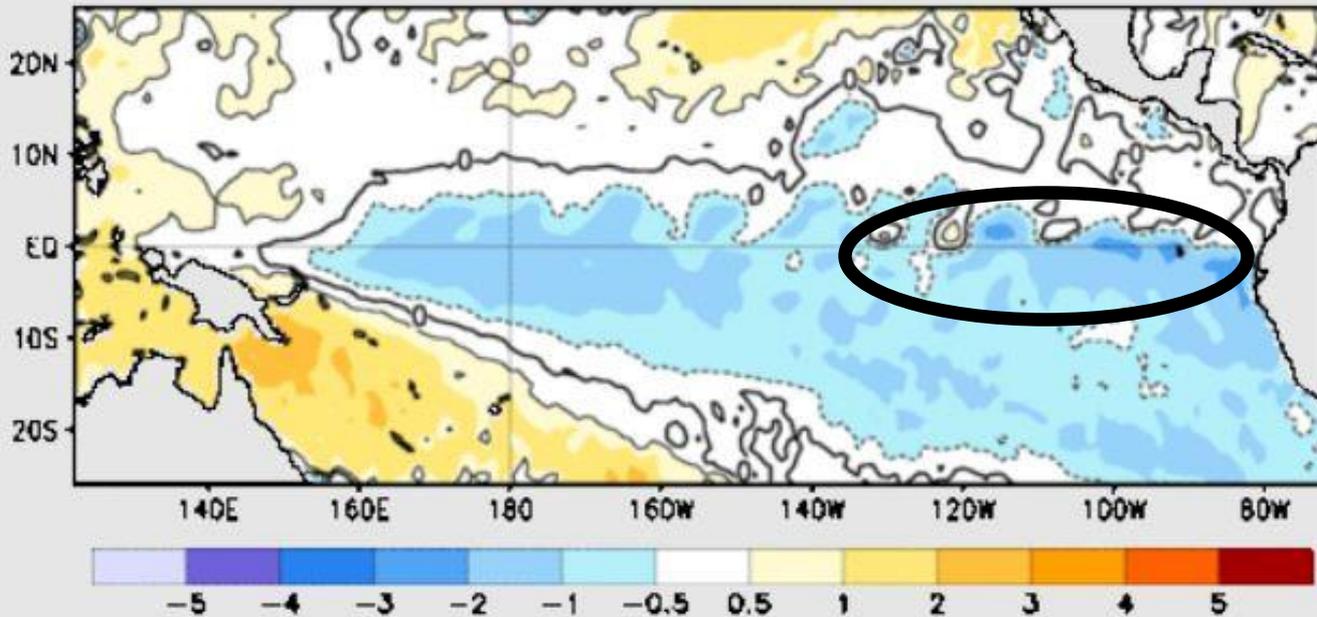


# Winter 2022-2023 Outlook



We're heading into another **La Nina** winter

Observed Sea Surface Temperature Anomalies (°C)



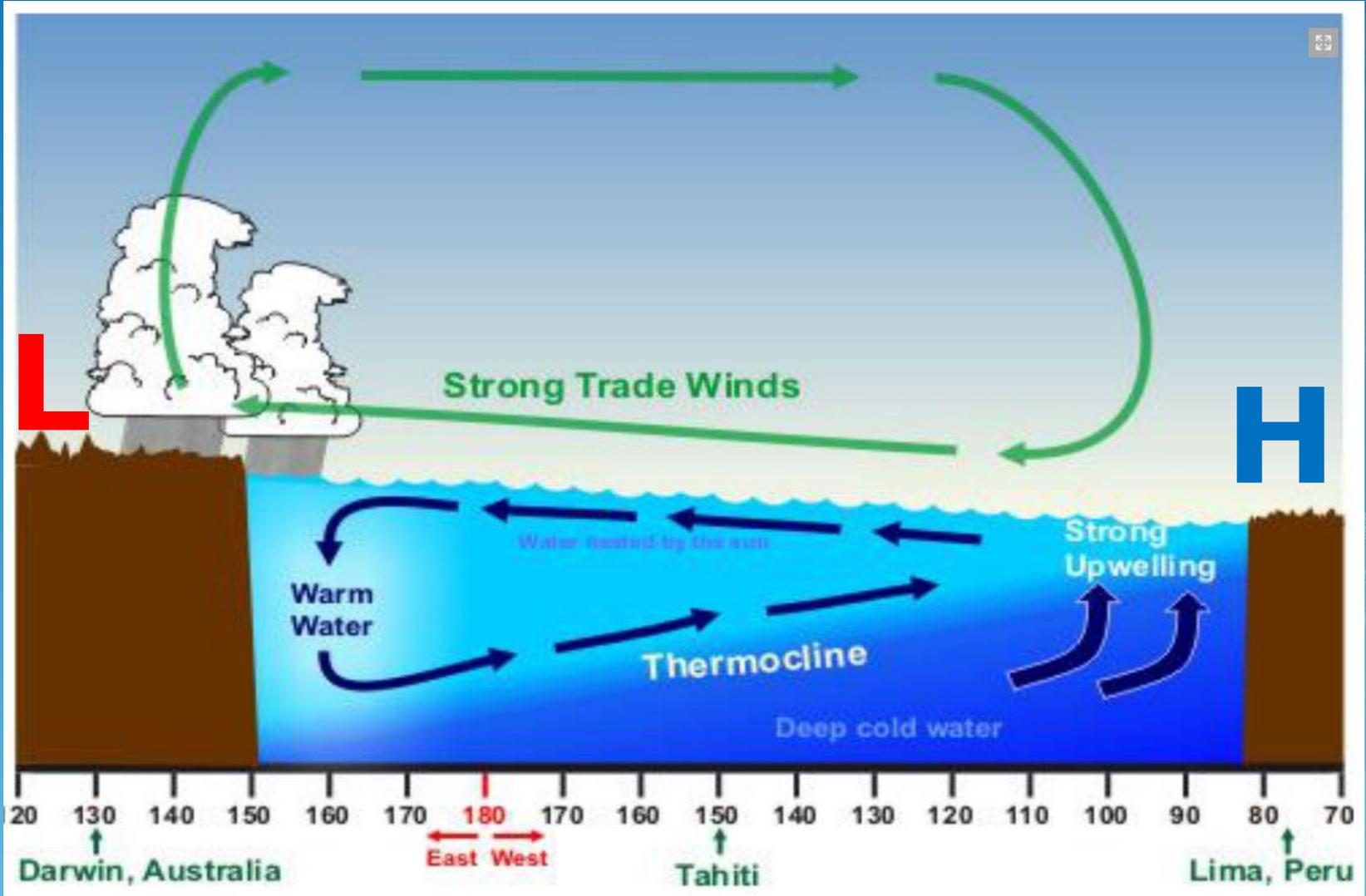
7-day Average Centered on 19 October 2022



Below normal sea surface temperatures in the Equatorial Pacific



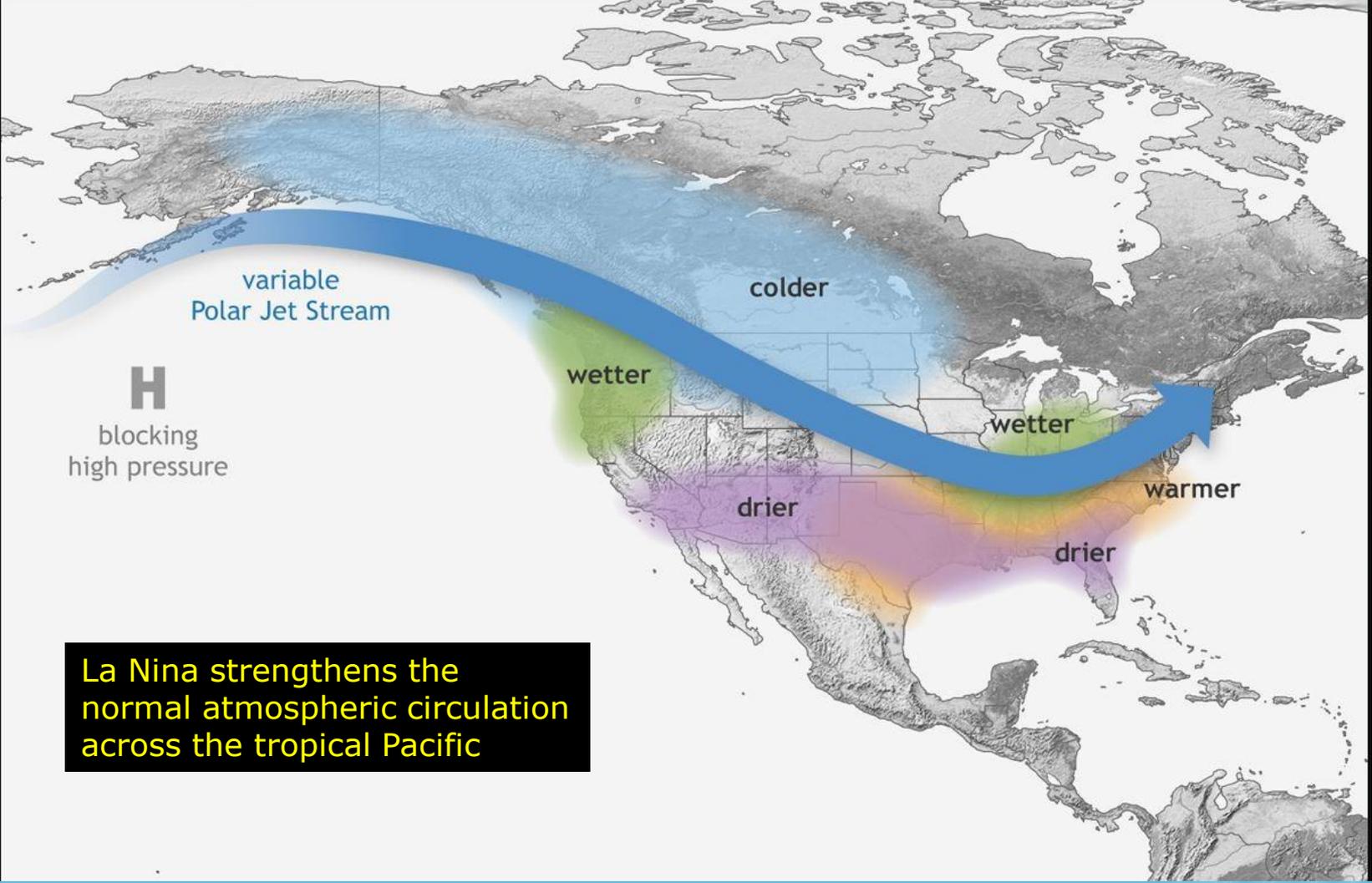
# How Does La Nina Work?



# Typical La Nina Winter Pattern

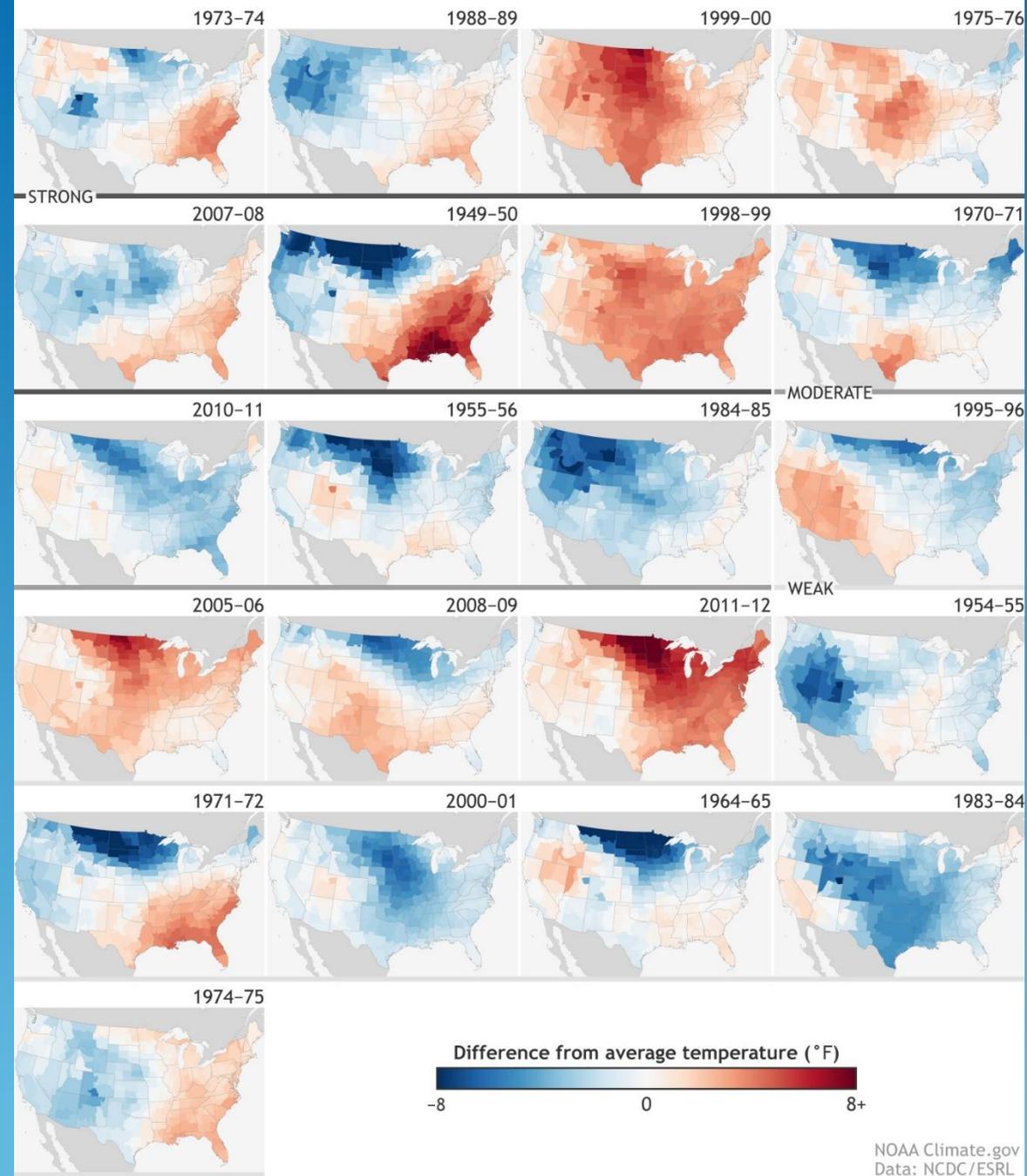


TYPICAL LA NIÑA WINTERS

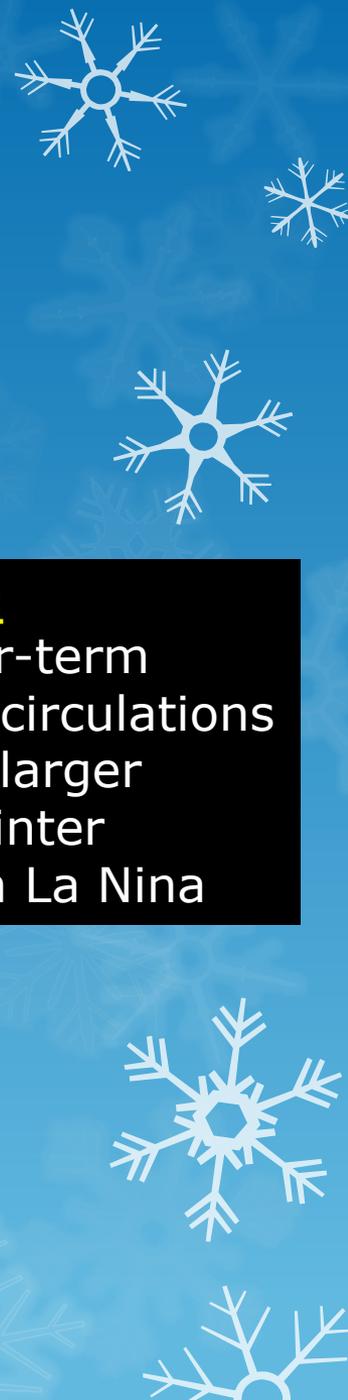


La Nina strengthens the normal atmospheric circulation across the tropical Pacific

Winter (December-February) temperature during strong, moderate, and weak La Niñas since 1950



**KEY POINT:**  
Other shorter-term atmospheric circulations play a much larger role in our winter weather than La Nina



# Other Influencing Factors

- **Arctic Oscillation (AO):** pressure pattern over the Arctic (Will cold air come south?)

When AO is negative: Higher pressure over the North Pole drives cold airmasses southward

- **North Atlantic Oscillation (NAO):** pressure pattern over North Atlantic (What trajectory will the cold air take?)

When NAO is negative: a highly amplified upper pattern develops that allows cold airmasses to drop due southward into the eastern U.S.

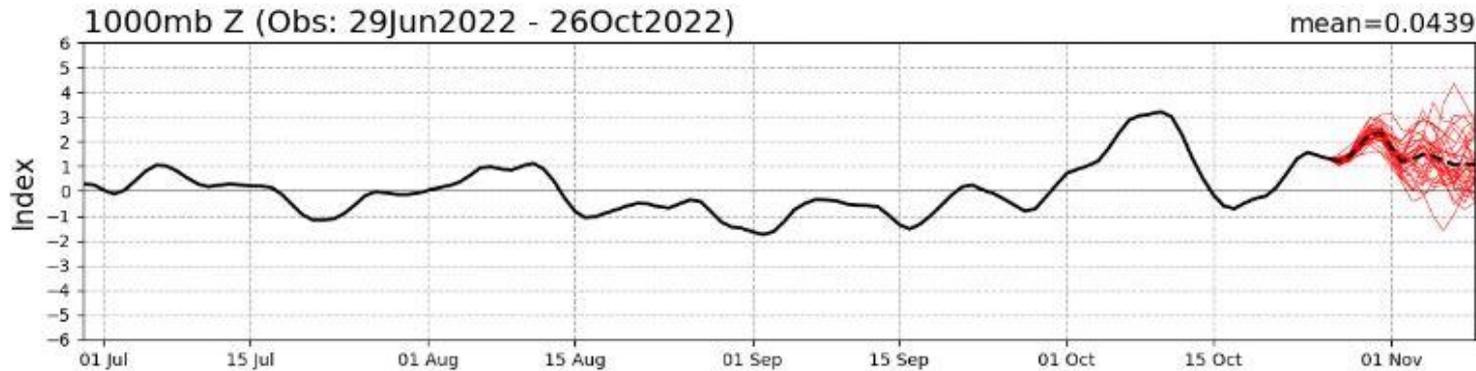
To monitor the latest AO and NAO phases, go to:

**<https://www.cpc.ncep.noaa.gov/>**

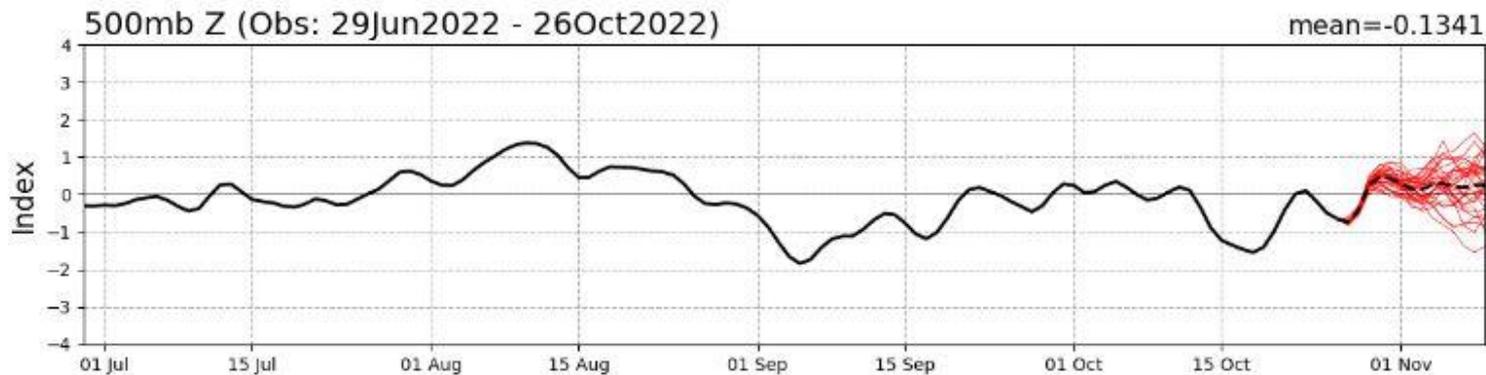
# Current Phases



## AO Index: Observed & GEFS Forecasts



## NAO Index: Observed & GEFS Forecasts

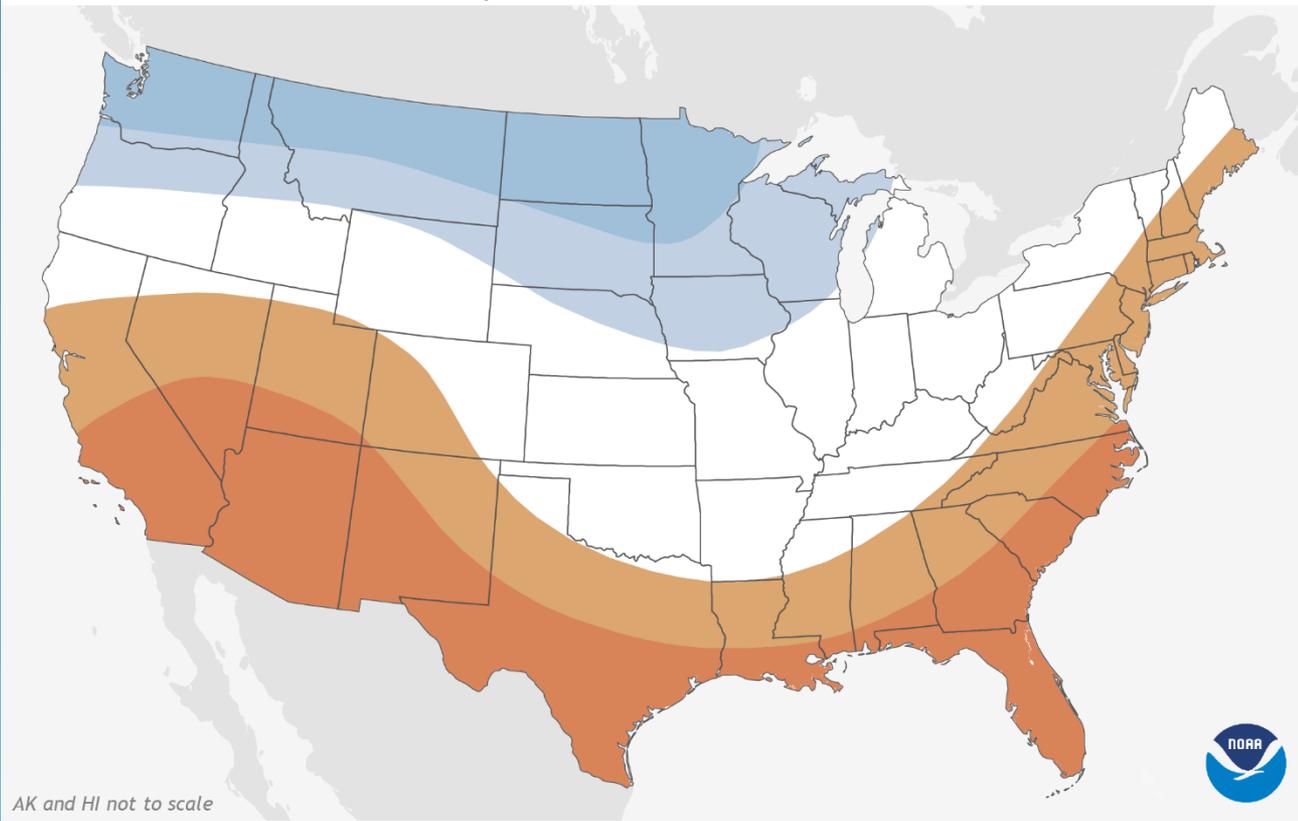


# Other Influencing Factors

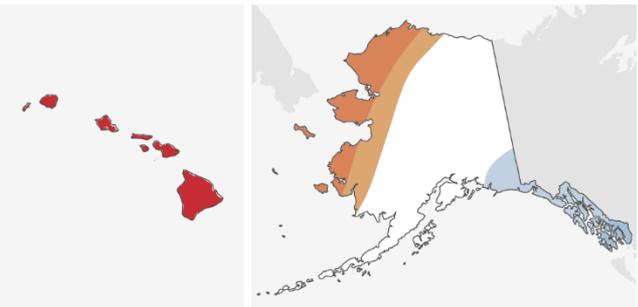


# Winter 2022-2023 Outlook

## Winter 2022-23: U.S. Temperature Outlook



AK and HI not to scale



**Probability (percent chance)**

| Below Normal  |        | Equal Chances | Above Normal  |              |
|---------------|--------|---------------|---------------|--------------|
| Leaning Below | 33-40% |               | Equal Chances | 33-40%       |
|               | 40-50% |               | 40-50%        |              |
| Likely Below  | 50-60% |               | 50-60%        | Likely Above |
|               | 60-70% |               | 60-70%        |              |
|               | 70-80% |               | 70-80%        |              |

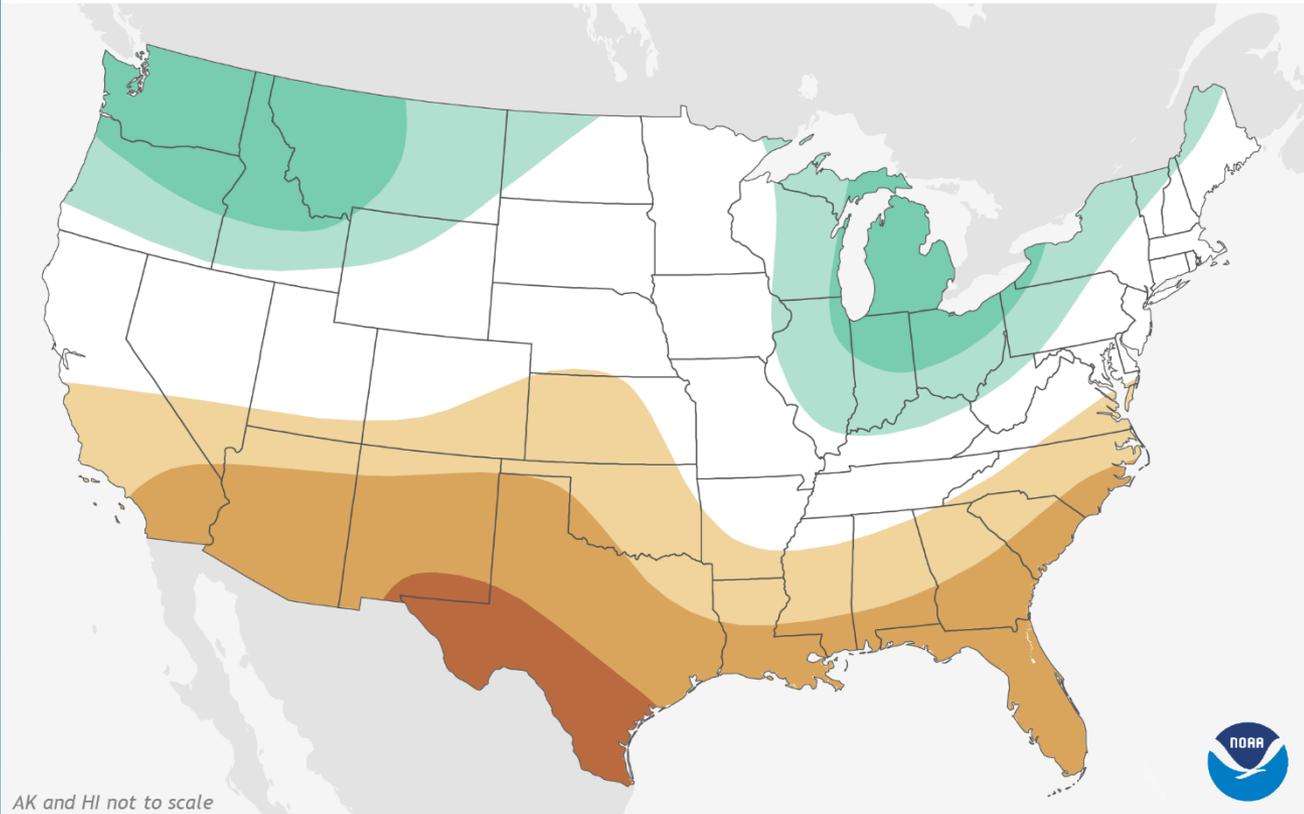
Temperature Outlook  
for December 2022 - February 2023  
Issued 26 October 2022

NWS Climate Prediction Center  
Map by NOAA Climate.gov

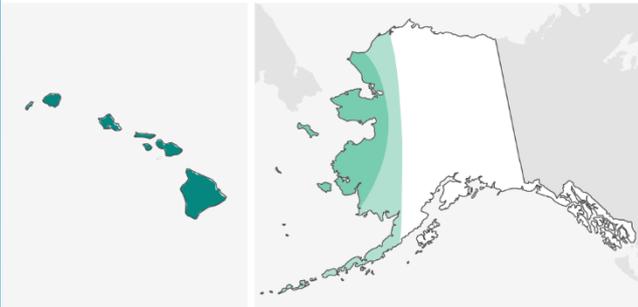


# Winter 2022-2023 Outlook

## Winter 2022-23: U.S. Precipitation Outlook



AK and HI not to scale



| Probability (percent chance) |        |               |               |
|------------------------------|--------|---------------|---------------|
| Below Normal                 |        | Above Normal  |               |
| Leaning Below                | 33-40% | 33-40%        | Leaning Above |
|                              | 40-50% | 40-50%        |               |
| Likely Below                 | 50-60% | 50-60%        | Likely Above  |
|                              | 60-70% | 60-70%        |               |
|                              | 70-80% | 70-80%        |               |
| Equal Chances                |        | Equal Chances |               |
| [White Box]                  |        | [White Box]   |               |

Precipitation Outlook  
 for December 2022 - February 2023  
 Issued 26 October 2022

NWS Climate Prediction Center  
 Map by NOAA Climate.gov



# The Bottom Line

- Look for plenty of the usual “ups and downs” of winter
- Trend toward above normal precipitation. More snow?
- There will be heavy snow and ice events...so the main take-away is to be prepared for anything



**Ethan Schisler  
Near Abingdon  
November 17, 2018**



**Paul Hadfield  
Looking NW from N of Jacksonville  
December 1, 2018**