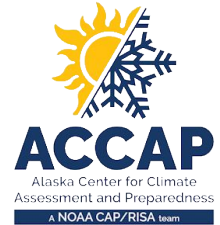
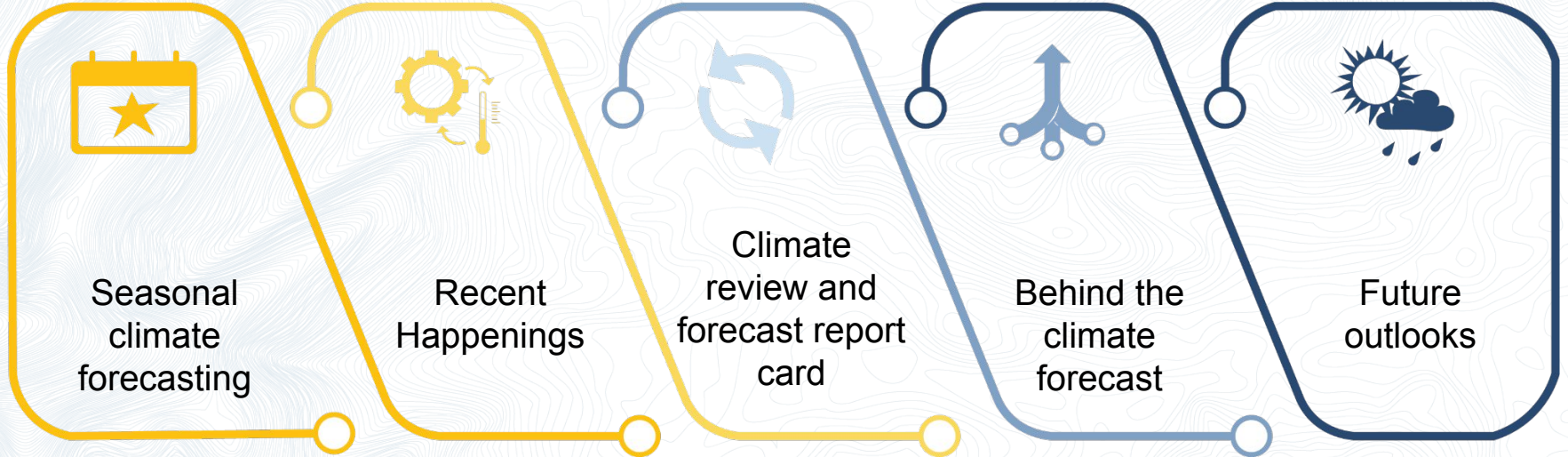




Alaska climate outlook briefing November 2025

Rick Thoman
ACCAP Climate Specialist
November 21, 2025





Seasonal
climate
forecasting

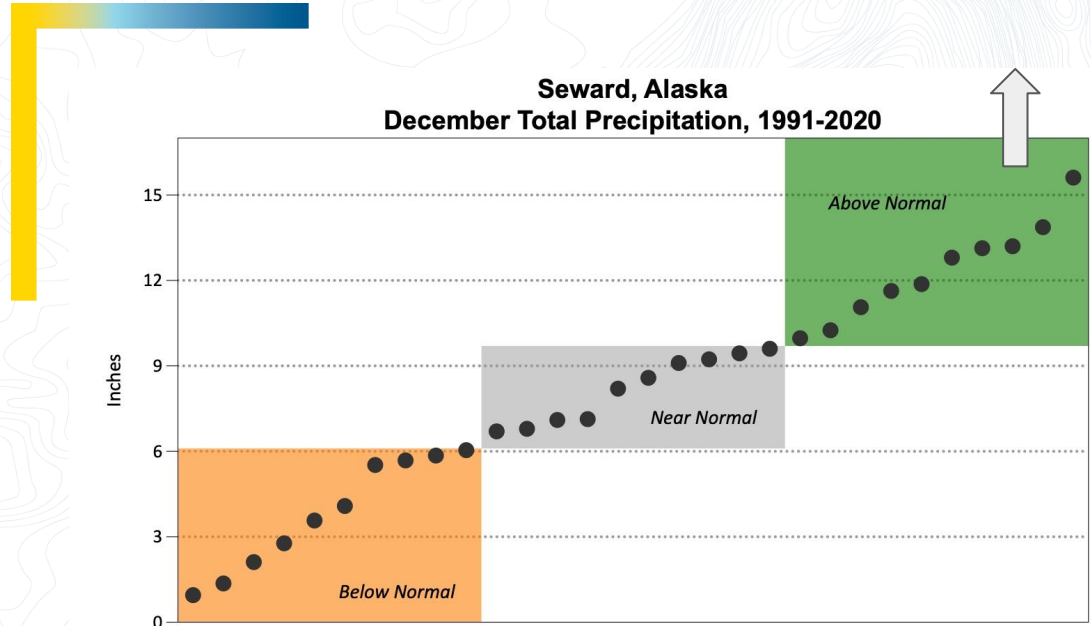


NOAA Center for Weather and Climate Prediction

Climate Prediction Center (CPC) ➤
primary NOAA/NWS forecast responsibility
for two weeks to a year in the future

The basics

- Relation to long-term normal (1991-2020)
- 3 categories
- Probabilistic
- Temperature
 - Centered on average
- Precipitation
 - Centered on median > can significantly differ from “normal”
- Normals temperature and precip ranges for selected Alaska places at ACCAP climate graphics





Recent Happenings

- **Kodiak:** 75 mph wind October 29
- Eventful Halloween (Eve)
 - Damaging winds in Southeast
 - **Metlakatla, Ketchikan, Sitka**
 - **Fairbanks:** rain on Halloween evening
- **Anchorage area:** 6-10" snow Nov 6-7
- **Haines area:** 8-15" snow Nov 8-9 (25" at the Haines Highway Customs station)

All of Alaska that was clear November 11:

Super aurora



Eagle River

November 6, 2025

Photo credit: Alaska DOT & PF



Climate Review

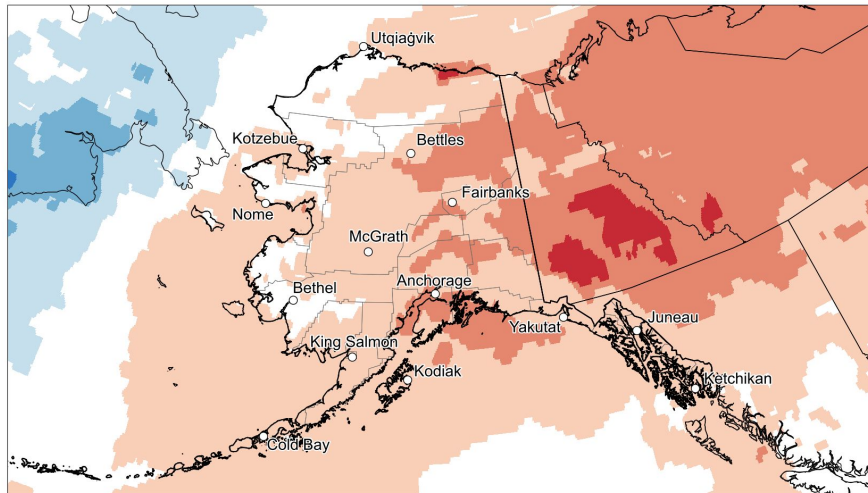
- What happened?
- How did climate outlooks perform?



Poker Flats
November 11, 2025
Photo credit: UAF Geophysical Institute

Model- based regional analysis > Average temperatures

Temperature Classification for Oct 2025



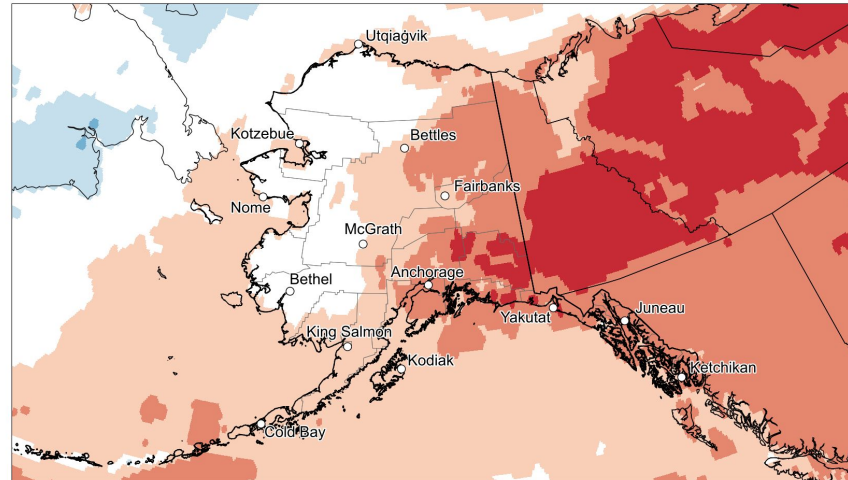
Source: ERA5 Reanalysis

Map by: Brian Brettschneider

Record **Much Below** **Below** **Near Normal** **Above** **Much Above** **Record**

Compared to 1991-2020 Base Period (Records Since 1950)

Temperature Classification for Aug-Oct 2025



Source: ERA5 Reanalysis

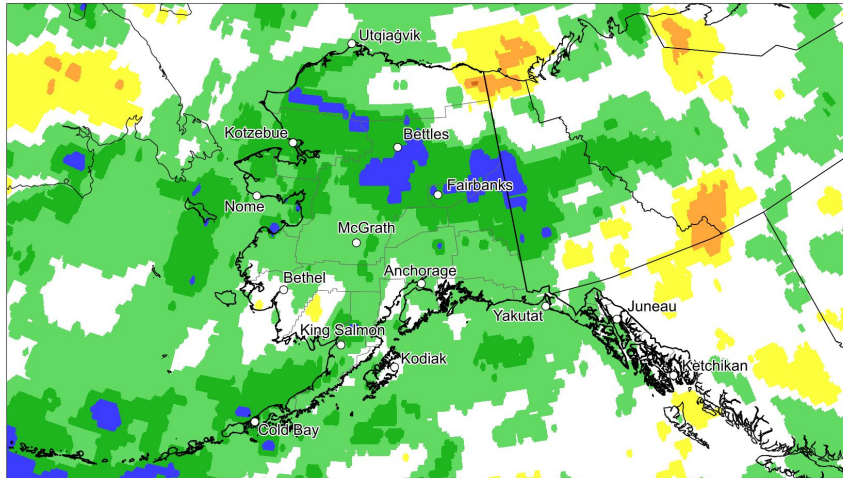
Map by: Brian Brettschneider

Record **Much Below** **Below** **Near Normal** **Above** **Much Above** **Record**

Compared to 1991-2020 Base Period (Records Since 1950)

Model- based regional analysis > Total precipitation

Precipitation Classification for Oct 2025



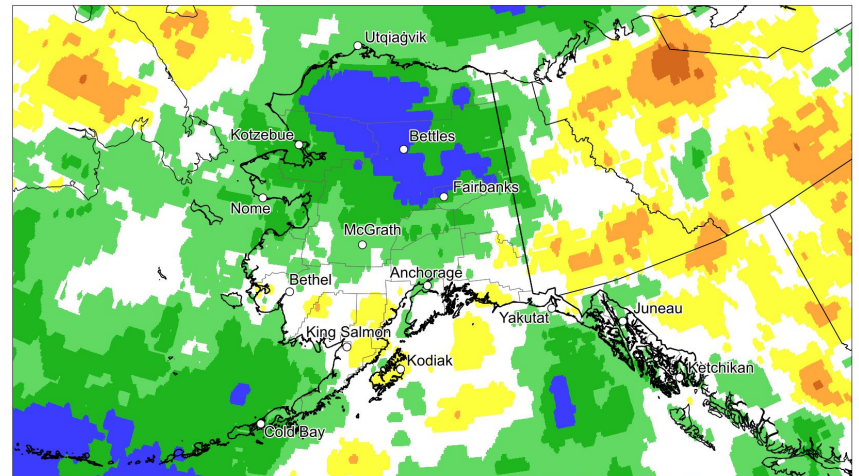
Source: ERA5 Reanalysis

Map by: Brian Brettschneider

Record Much Below Below Near Normal Above Much Above Record

Compared to 1991-2020 Base Period (Records Since 1950)

Precipitation Classification for Aug-Oct 2025



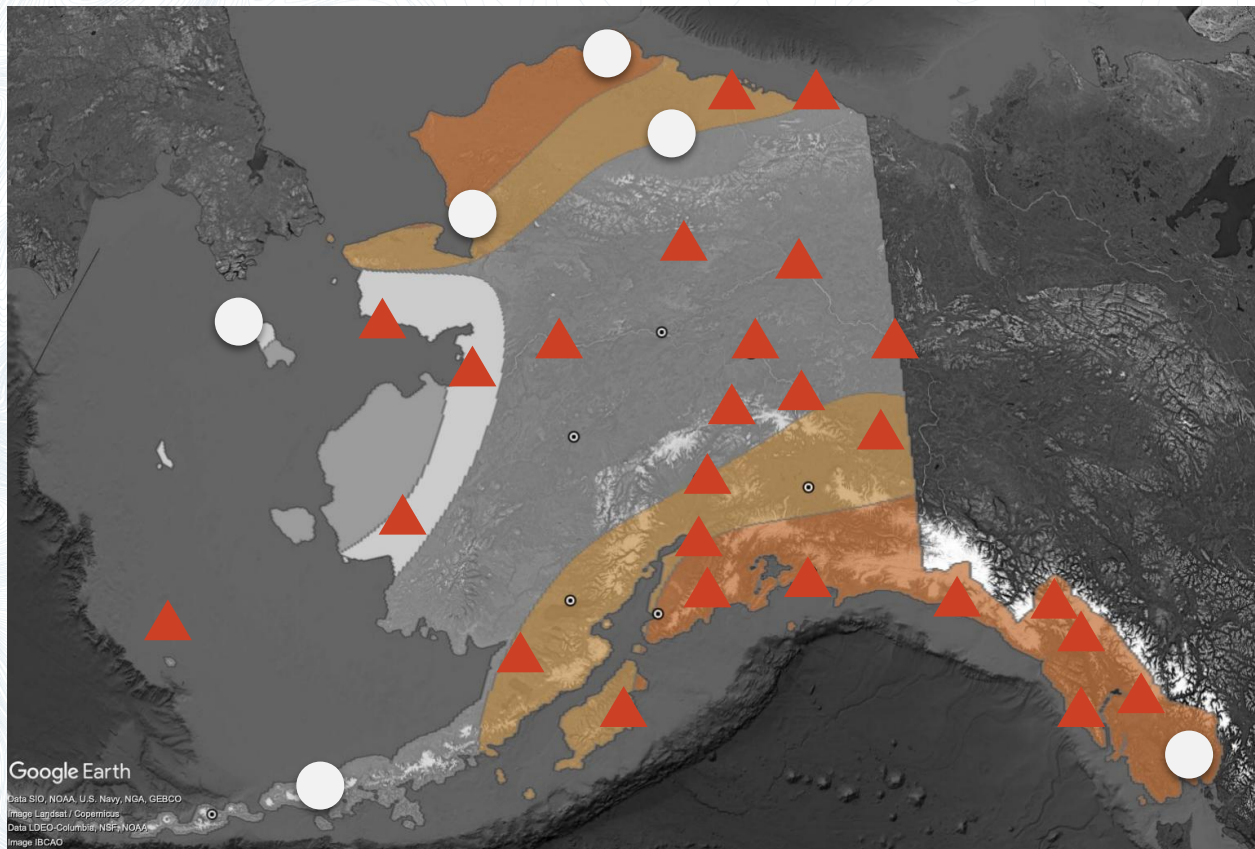
Source: ERA5 Reanalysis

Map by: Brian Brettschneider

Record Much Below Below Near Normal Above Much Above Record

Compared to 1991-2020 Base Period (Records Since 1950)

October 2025 temperature ➤ CPC outlook and observed



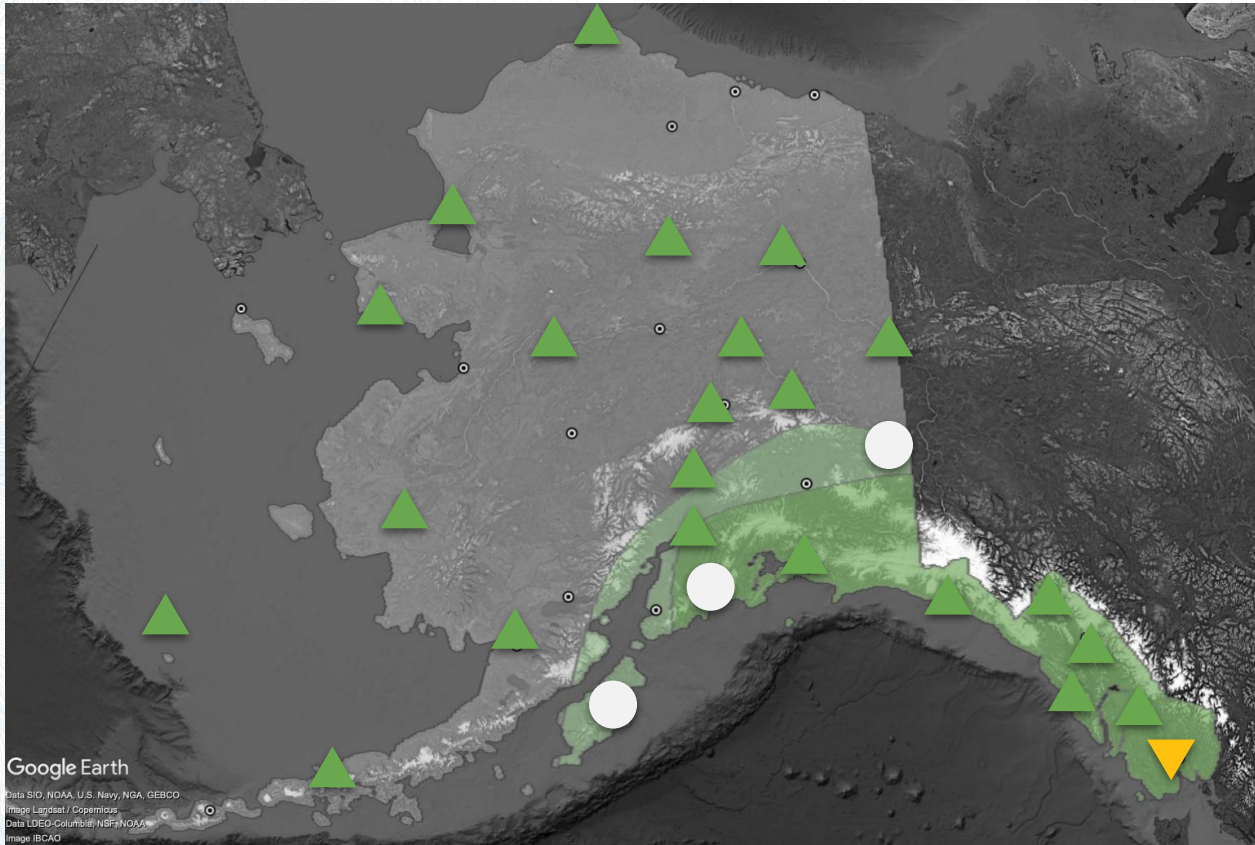
Non-EC skill
score: +52

Percent
correct: 68%

Mid-month
outlook

- ▲ Above normal
- Near normal
- ▼ Below normal

October 2025 precipitation > CPC outlook and observed



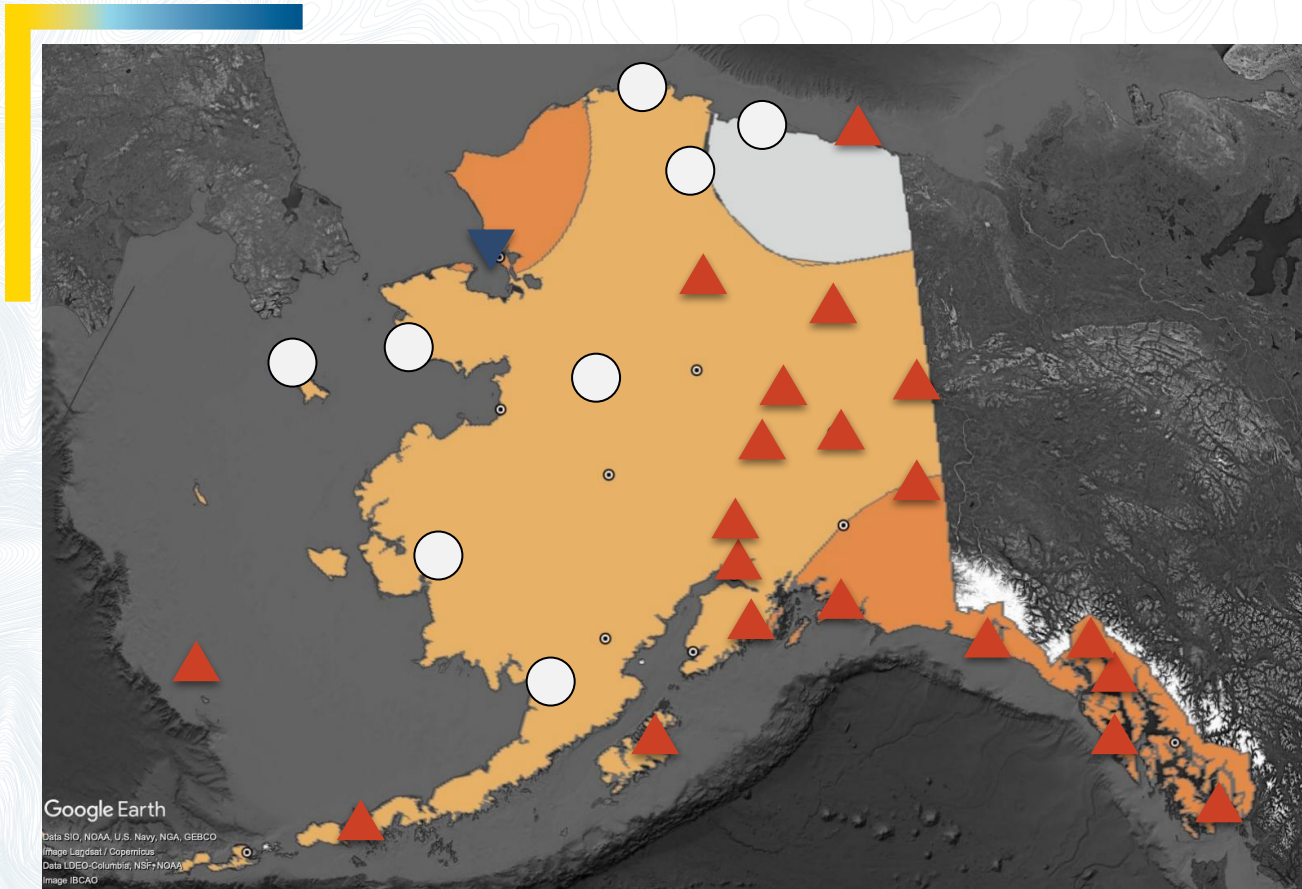
Non-EC skill
score: +45

Percent
correct: 64%

Mid-month
outlook

- ▲ Above normal
- Near normal
- ▼ Below normal

August-October 2025 temperature > CPC outlook & observed

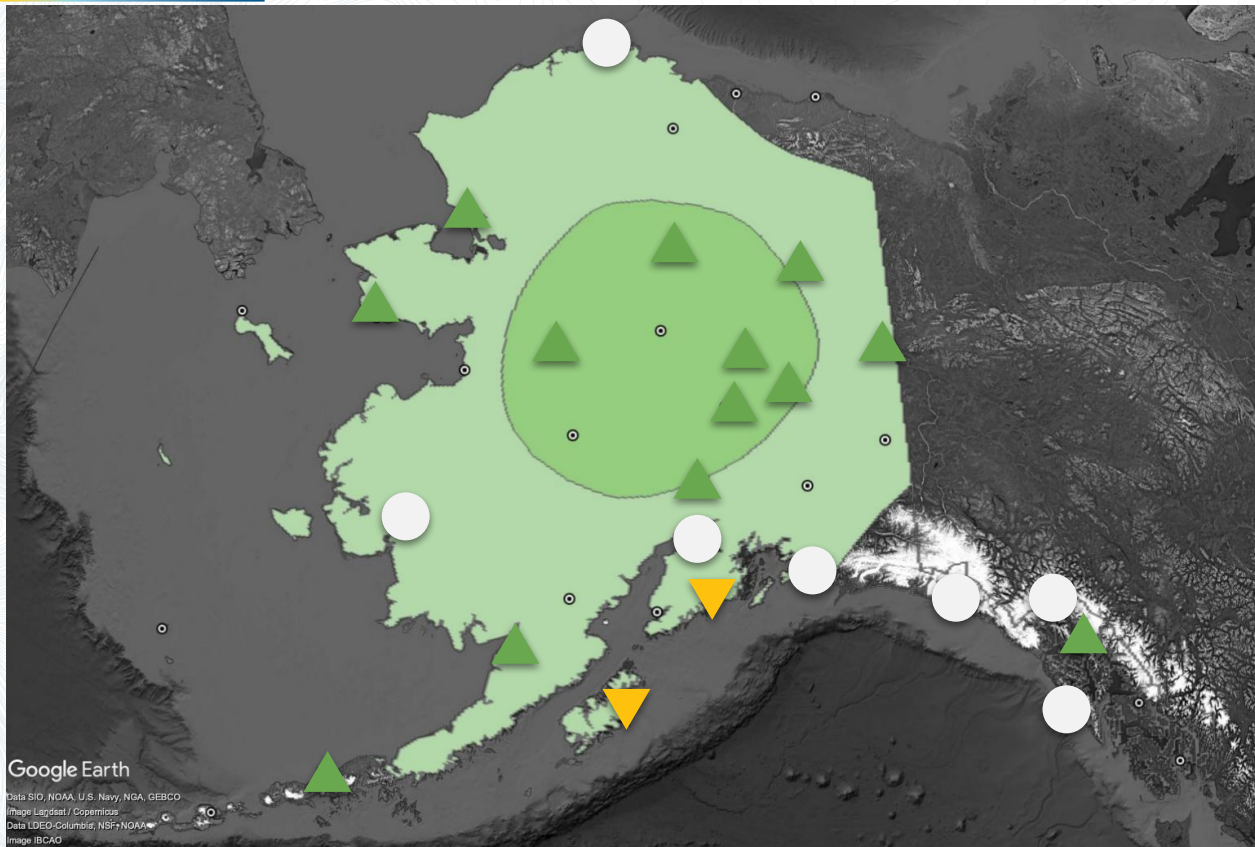


Non-EC skill
score: +54

Percent
correct: 63%

- ▲ Above normal
- Near normal
- ▼ Below normal

August-October 2025 precipitation > CPC outlook & observed

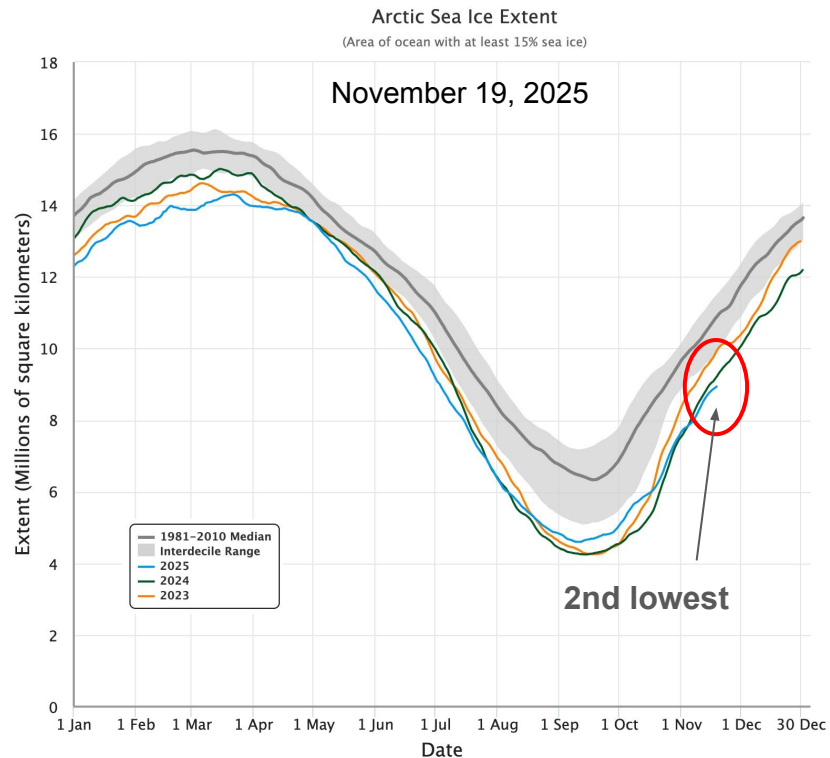


Non-EC skill
score: +44

Percent
correct: 63%

- ▲ Above normal
- Near normal
- ▼ Below normal

Arctic wide sea ice



National Snow and Ice Data Center, Boulder, CO

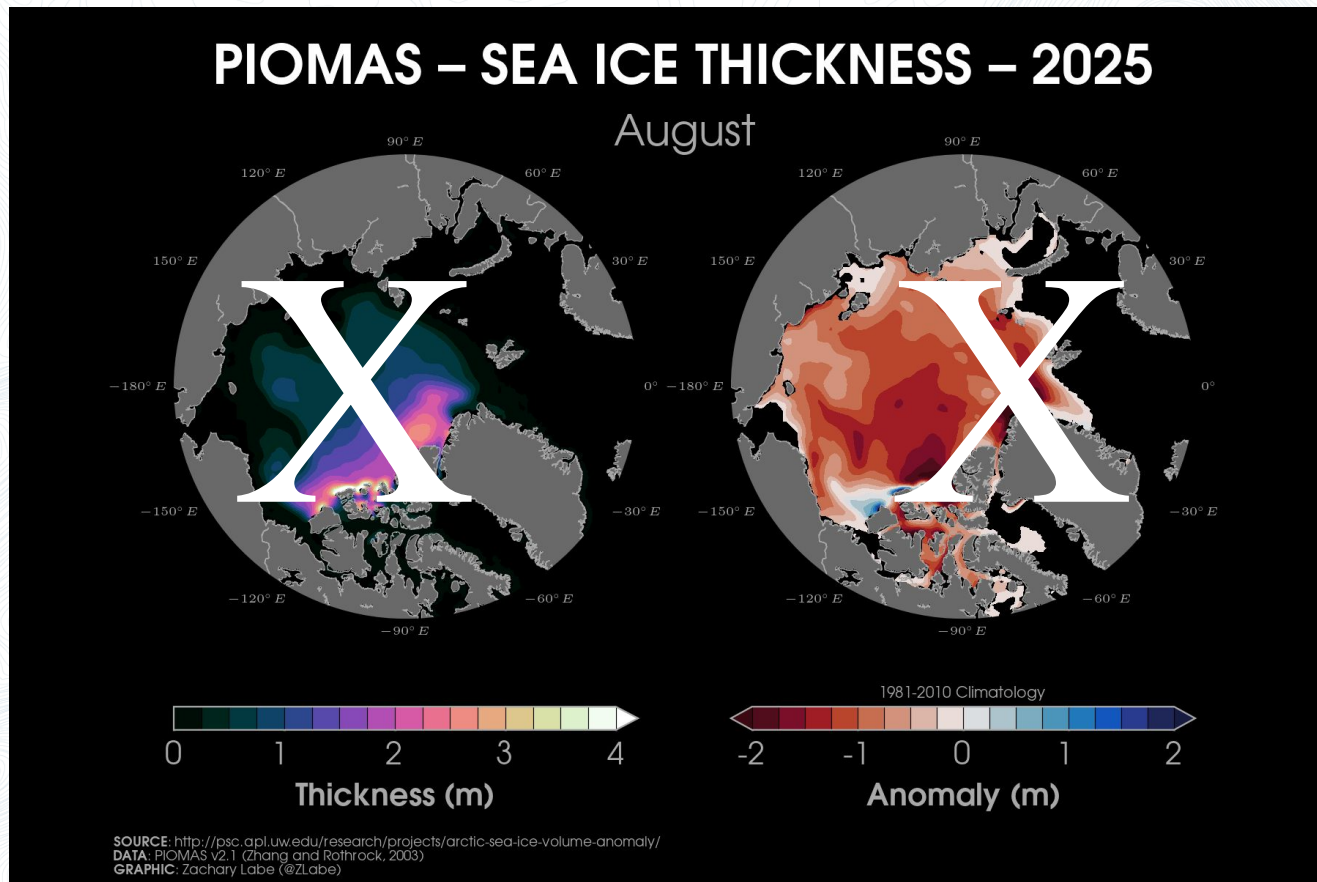
Sea Ice Extent, 19 Nov 2025



National Snow and Ice Data Center, University of Colorado Boulder

Arctic sea ice thickness

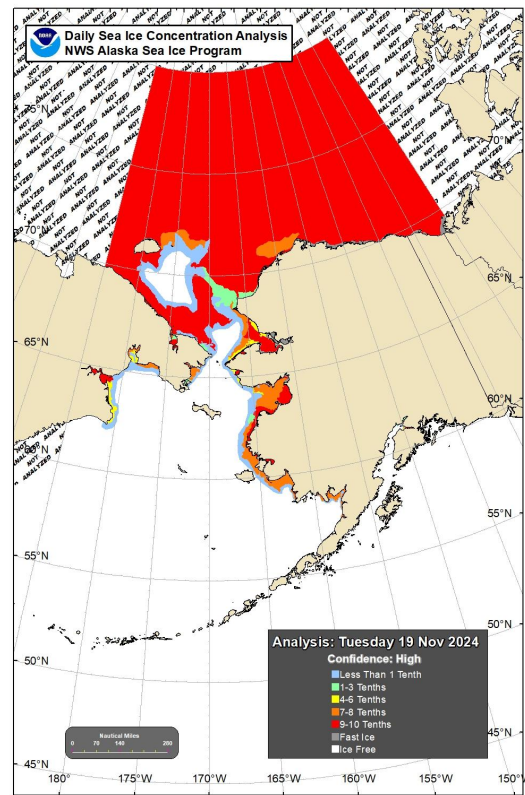
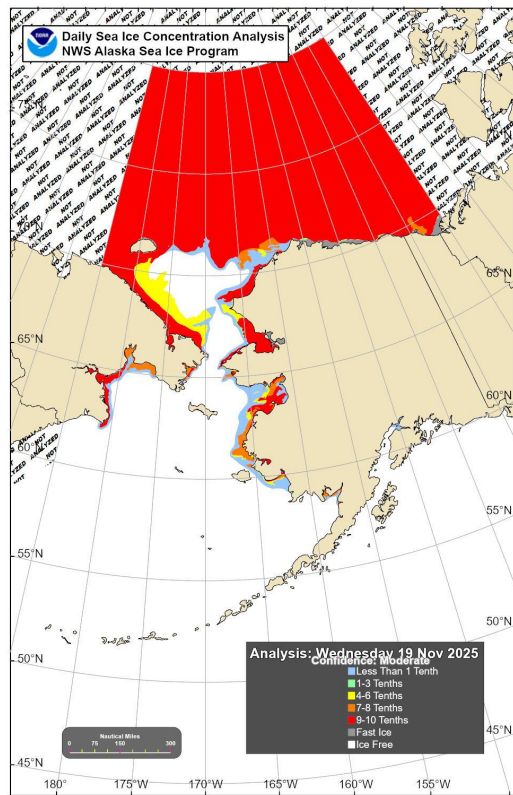
Sources:
Data from U.
Wa./PIOMAS data
Graphics by Z. Labe



November 19, 2025

November 19, 2024

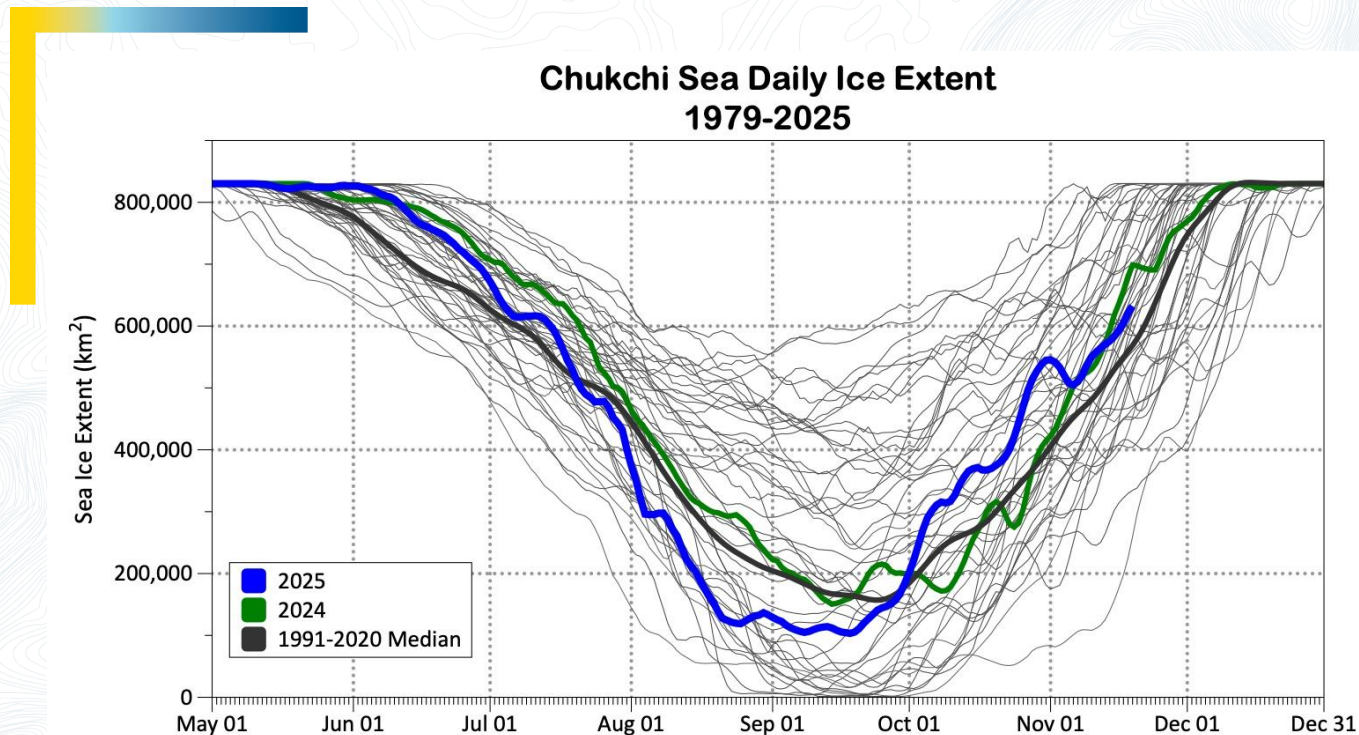
Mid-November sea ice comparison



Source: National Weather Service
Alaska Region Sea Ice Program

Sea ice extent through the season

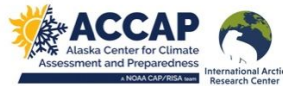
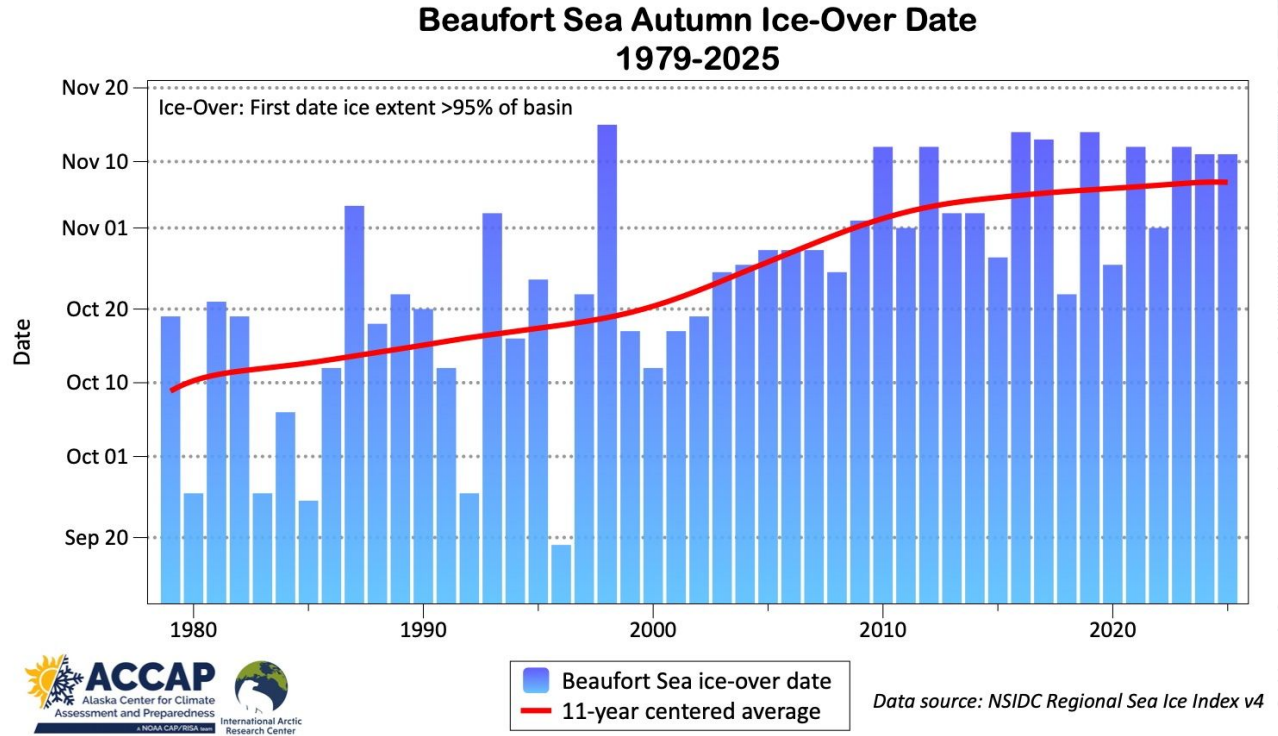
Sources:
Data NSIDC Sea Ice Index,
Version 4.



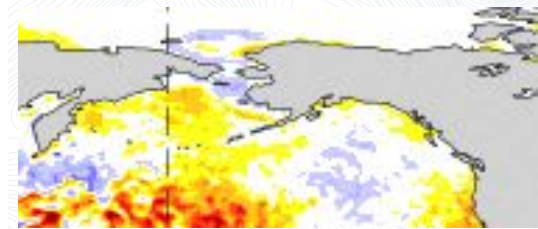
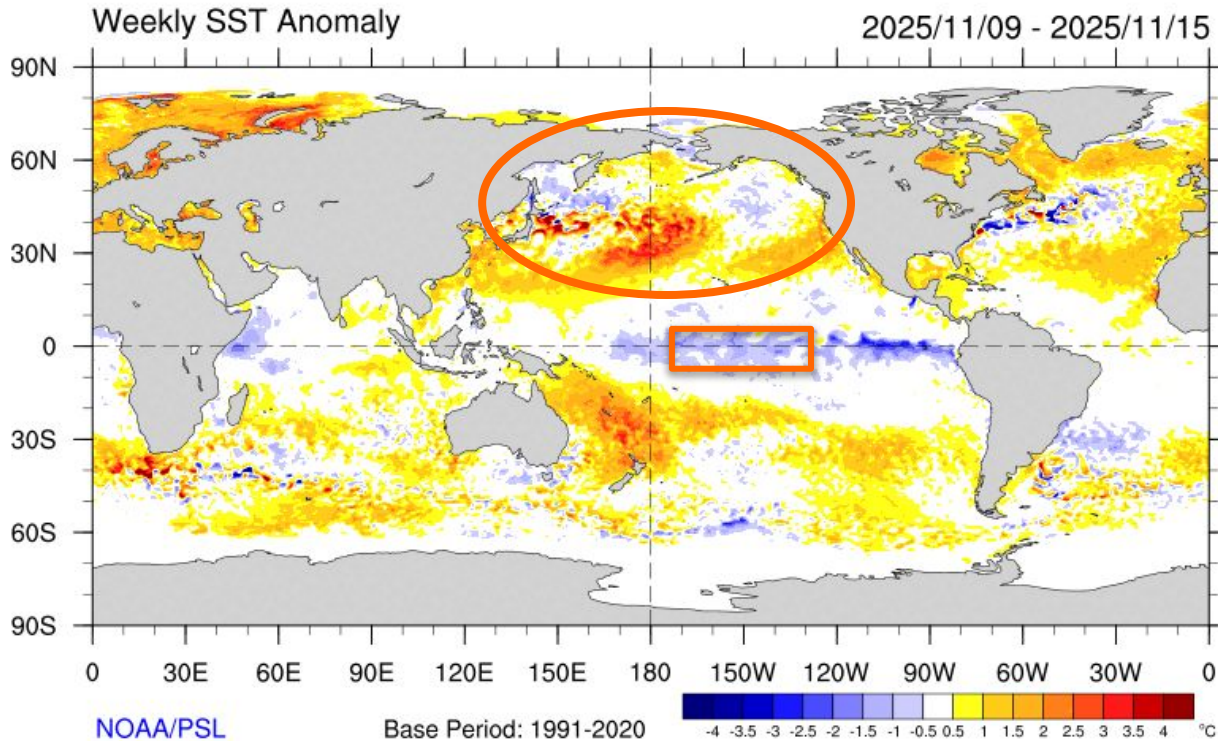
Data source: NSIDC Sea Ice Index, Version 4
Updated through November 19, 2025

End of the open water season

Sources:
Data NSIDC Sea Ice Index,
Version 4.



Global sea surface temperature departure from normal

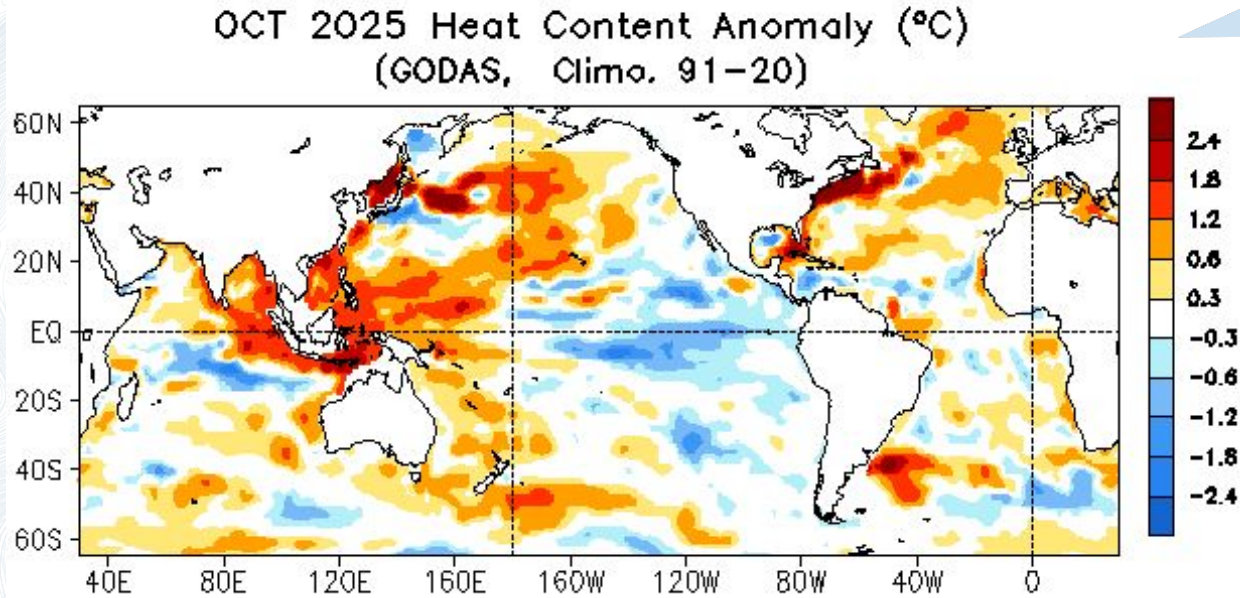


ONI for **Aug-Oct**: -0.5

PDO for **Oct 2025**: -1.4

Sources: ONI from CPC
PDO Index from WCS

Upper ocean heat departure from average



Little change near Alaska

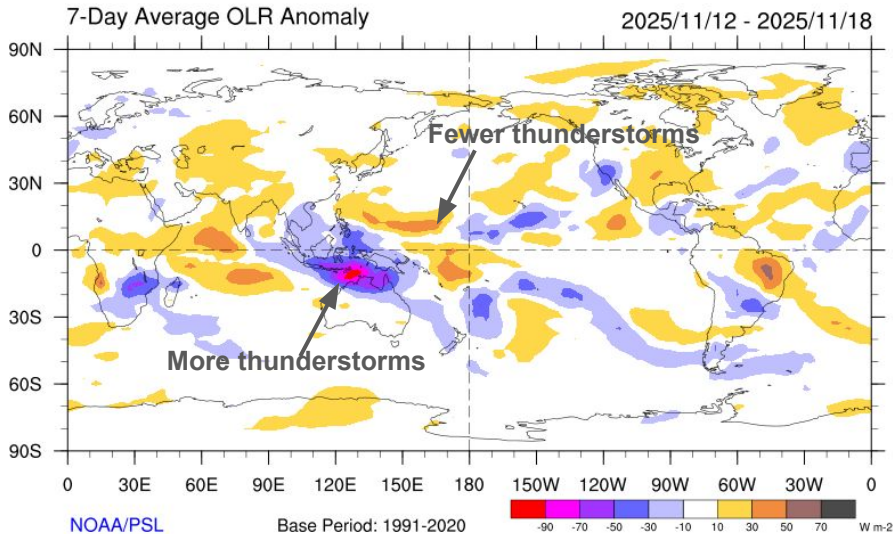
Upper 300 meters of the ocean

Source: NOAA/CPC

Tropical Pacific atmosphere

Aug-Oct Oceanic Niño Index: -0.5

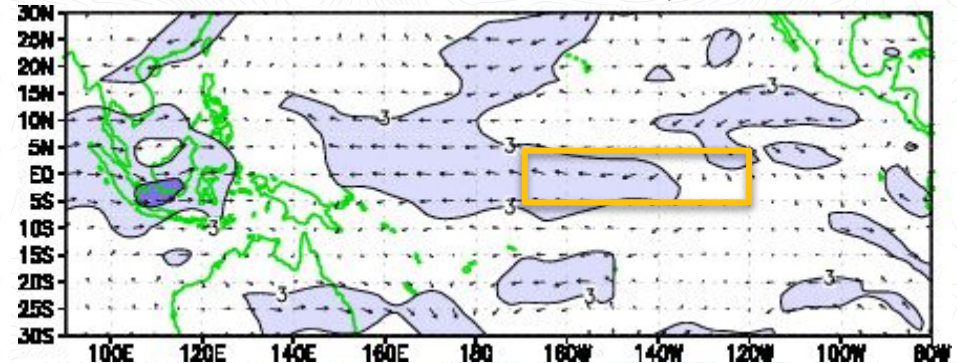
Deep tropical convection
Via “outgoing longwave radiation”



Enhanced trade winds
Niño Region 3.4



Trade winds
850 mb wind difference from average
October 19-November 17, 2025



Behind the
climate
forecast



El Niño/La Niña (ENSO) ➤ expert evaluation

Statistical models ➤ using the past

- Temperature and Precipitation

Dynamical models ➤ All physics, all the time

- Sea surface temperatures
- Sea Ice
- Temperature and Precipitation

CPC Niño 3.4 forecasts > experts

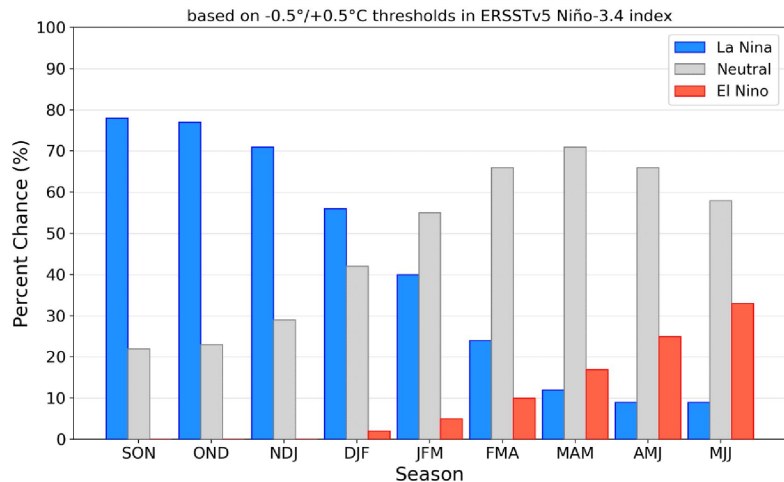
October 2025

November 2025

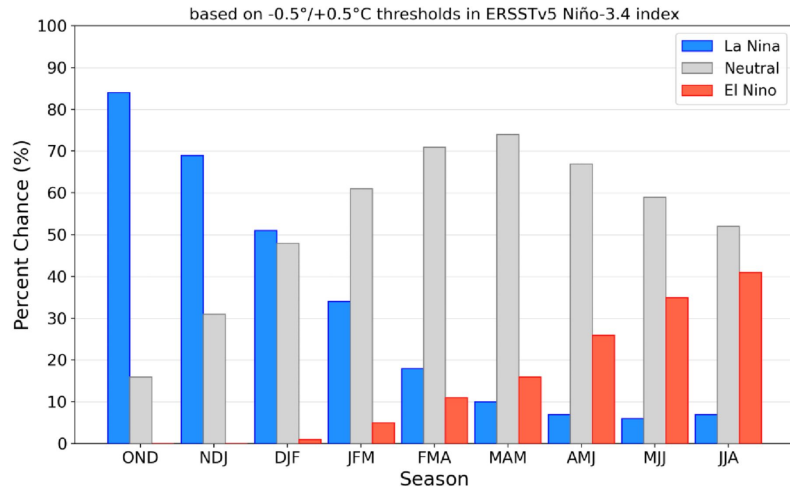
ENSO Alert System Status:

La Niña Advisory

Official NOAA CPC ENSO Probabilities (issued October 2025)



Official NOAA CPC ENSO Probabilities (issued November 2025)



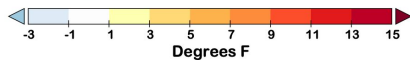
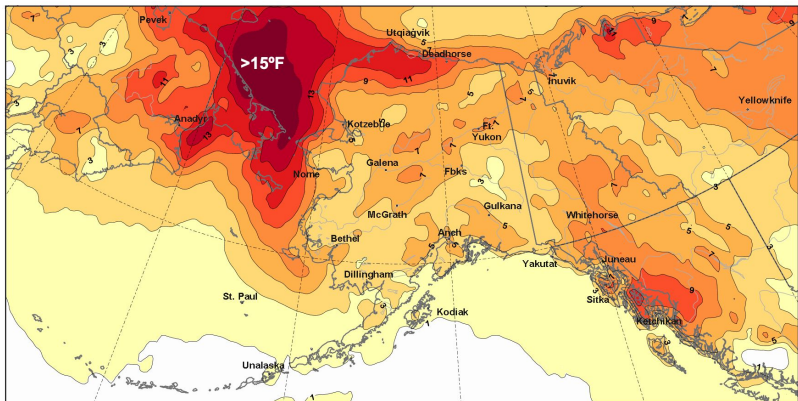
**Statistical
guidance** ➤
using the past
to predict the
future

- Long term trends
- Optimum climate normals: Alaska trends the past 15 years
- What happened in past La Niñas

December half century trends

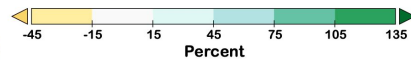
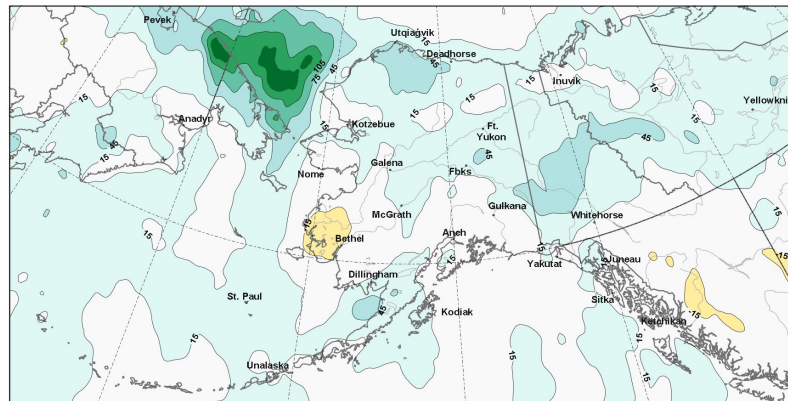
Temperatures

Change in December Average Temperature
1975-2024



Precipitation

Change in December Average Precipitation
1975-2024

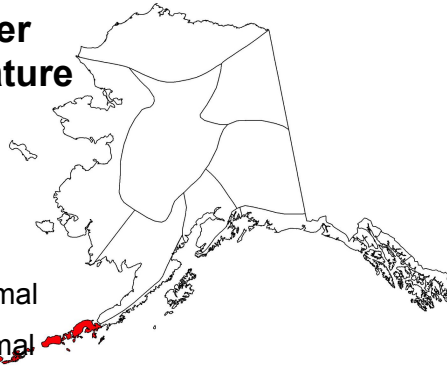
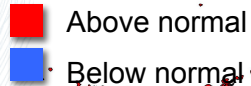


Change in the average
over 50 years

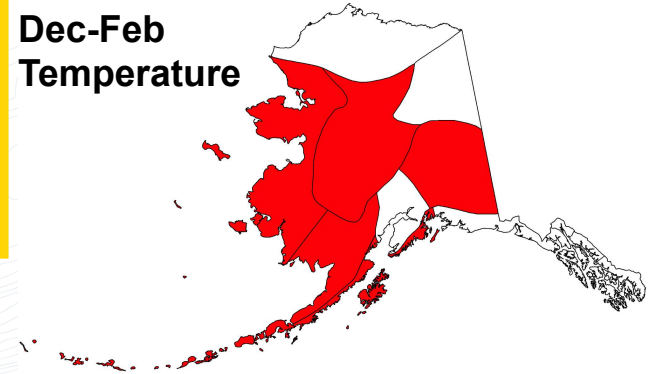
2010-11 to 2024-25 trends

Past 15 years compared
to 1991-2020

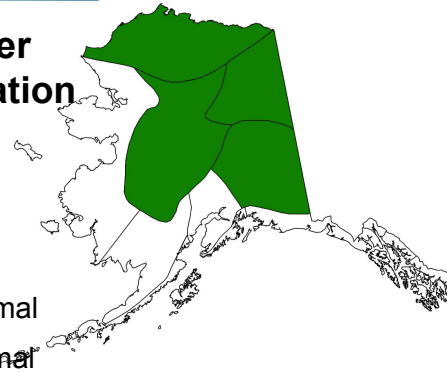
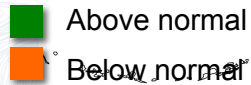
December Temperature



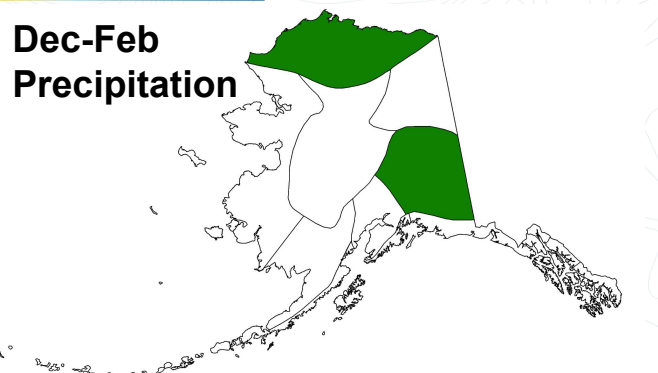
Dec-Feb Temperature



December Precipitation



Dec-Feb Precipitation



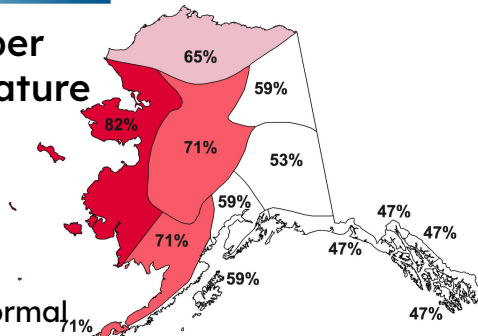
17 La Niña since 1976

1983, 1984, 1988, 1995, 1998, 1999, 2000, 2005, 2007, 2009, 2010, 2011, 2016, 2017, 2020, 2021, 2022

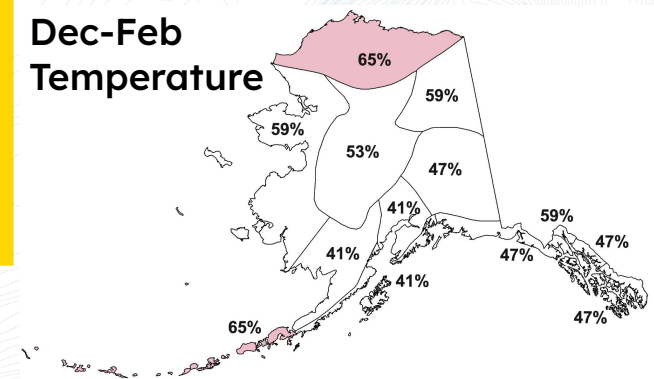
Percent years above average

December Temperature

Above normal
Below normal

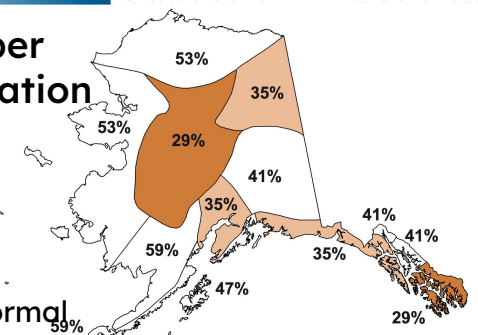


Dec-Feb Temperature

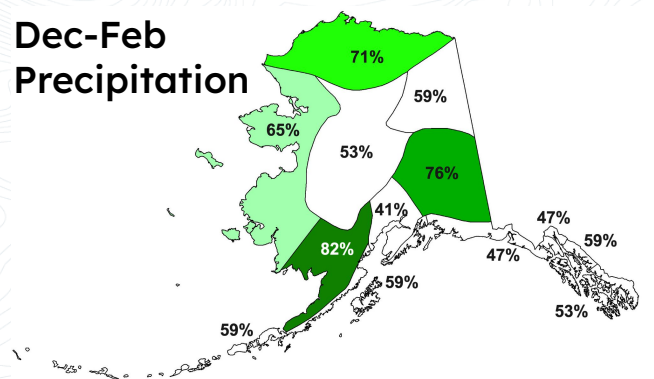


December Precipitation

Above normal
Below normal



Dec-Feb Precipitation



Dynamic model forecasts

Current suite of Dynamic Climate Models

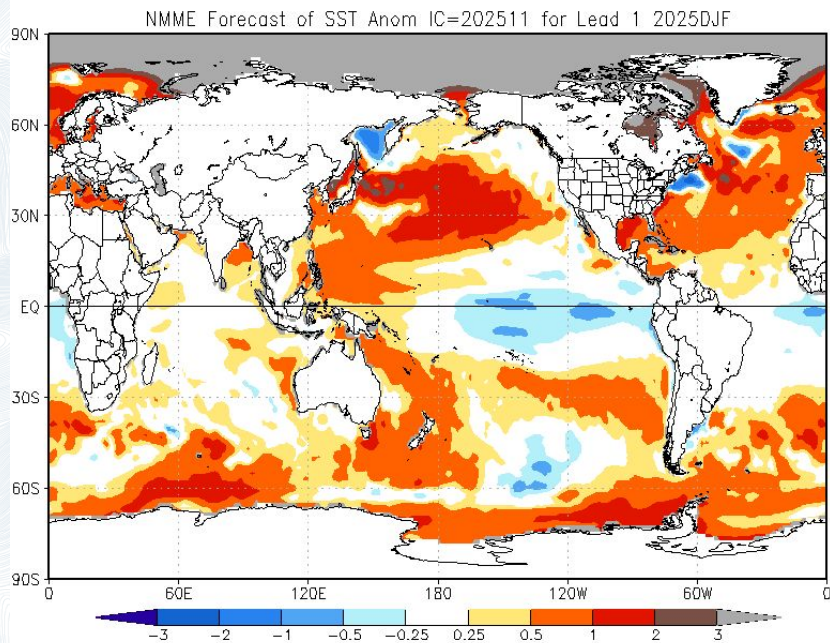
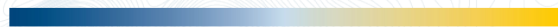
- CPC Experimental Sea Ice Ensemble
- World Climate Service Multi-Model Ensemble
- North American Multi-Model Ensemble (NMME)

What's being forecasted

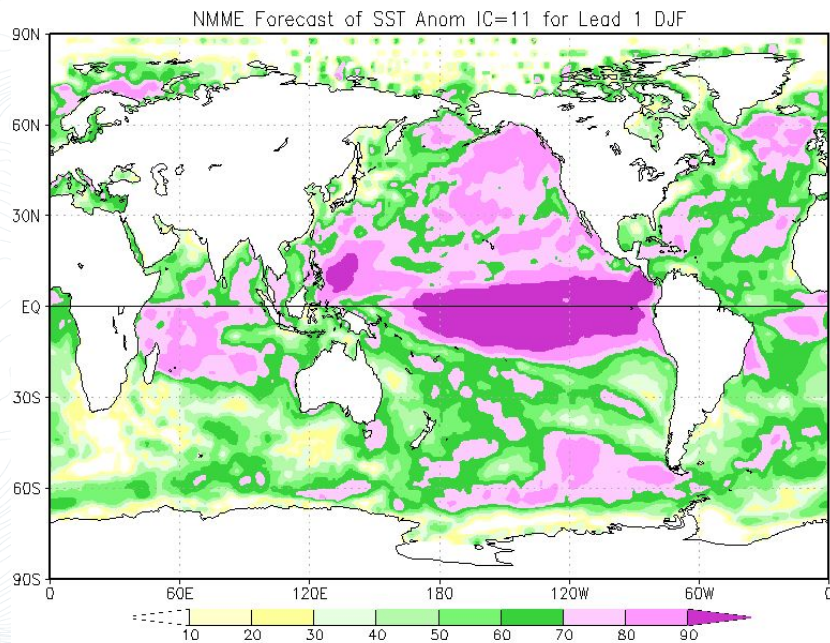
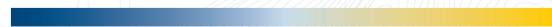
- Sea surface temperatures relative to normal
- Sea ice forecast
- Temperature and precip relative to normal

December 2025-February 2026 sea surface temperature > NMME

Forecast
departure from normal

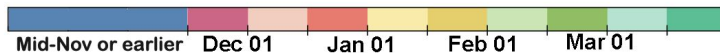
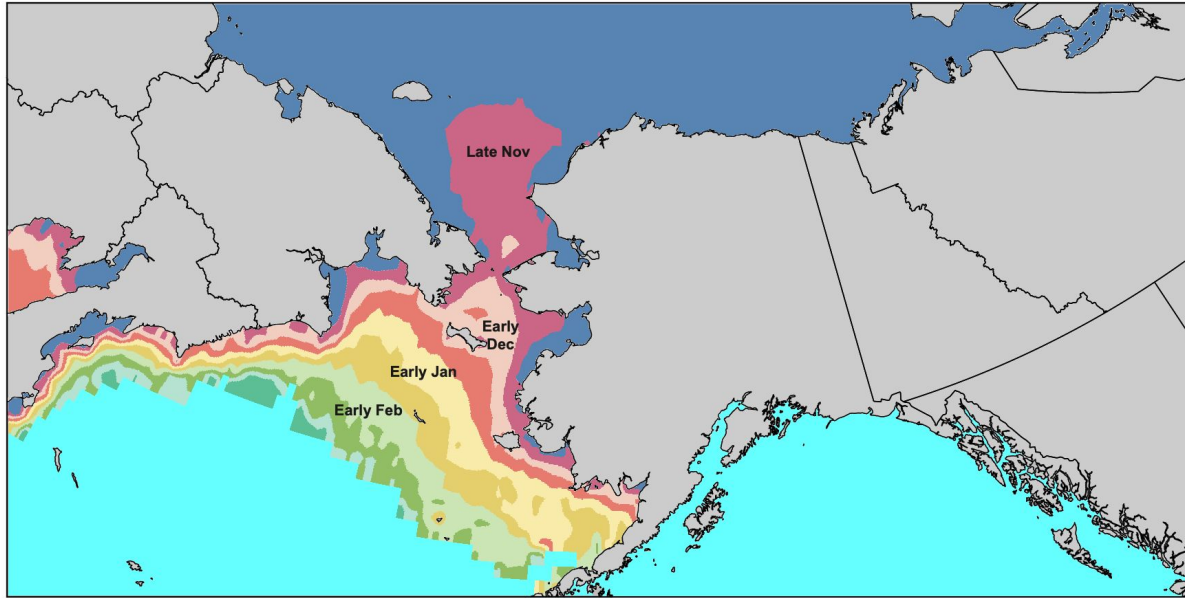


Skill
of the forecast



Experimental sea ice forecast > CPC

First sea ice concentration 15 percent or higher
Fall/Winter 2025-26



Forecast made in late October
Data: NOAA/CPC Exp. Sea Ice Outlook

The 20-models
average of first date
with ice concentration
15 percent or higher
From data though late October

December 2025 calibrated probability forecast ➤ NMME

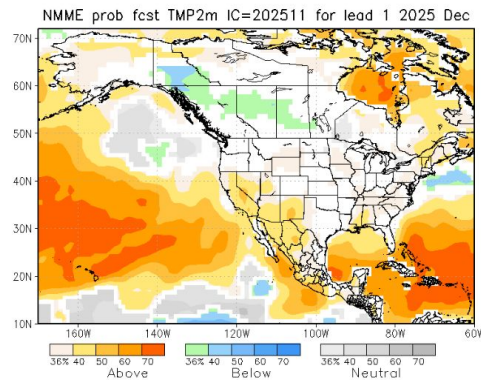
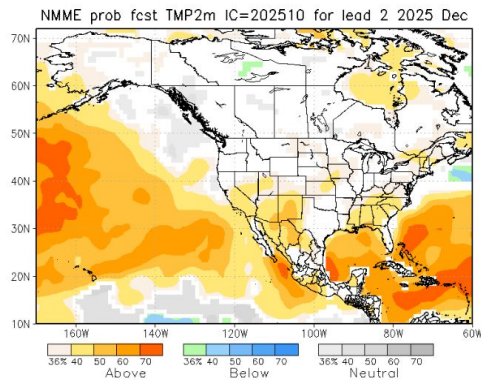
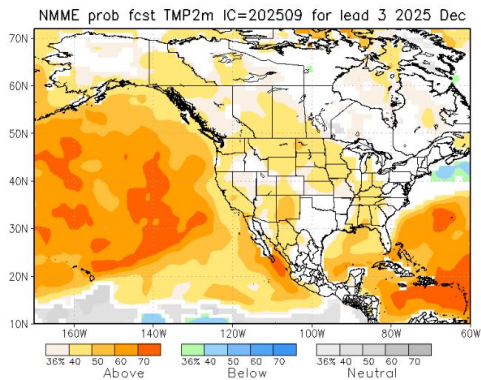
Forecast from →

September

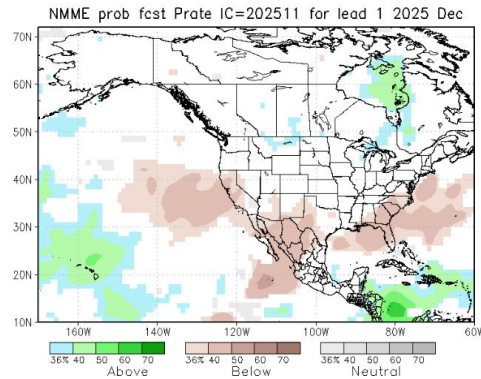
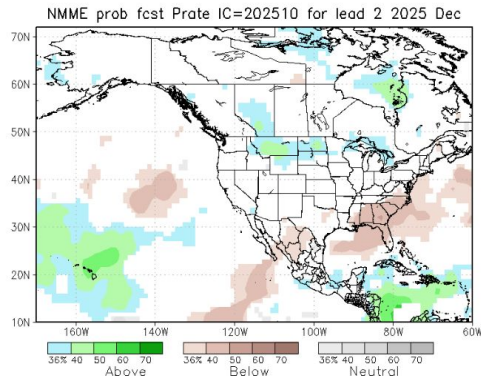
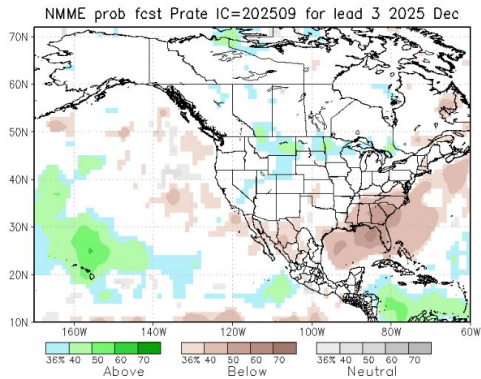
October

November

Temperature

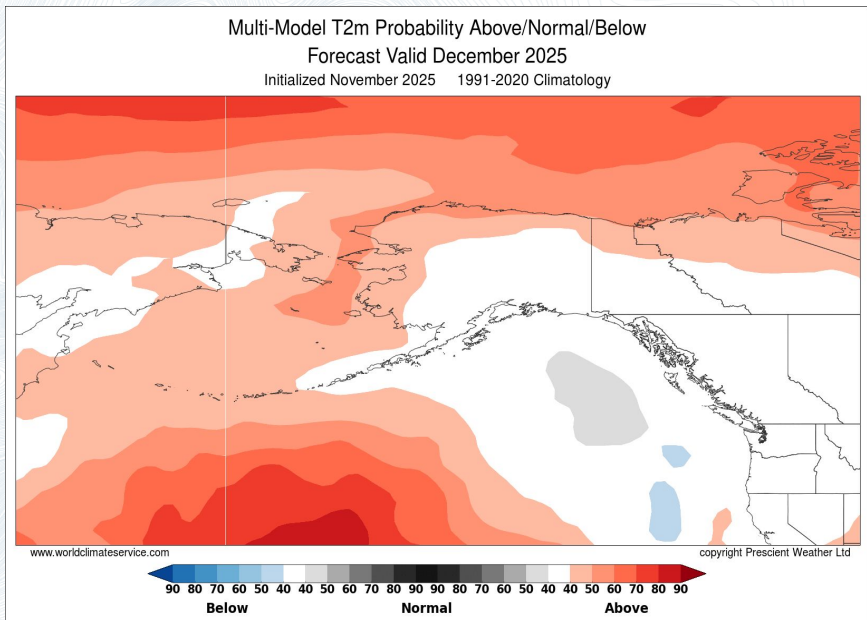


Precipitation

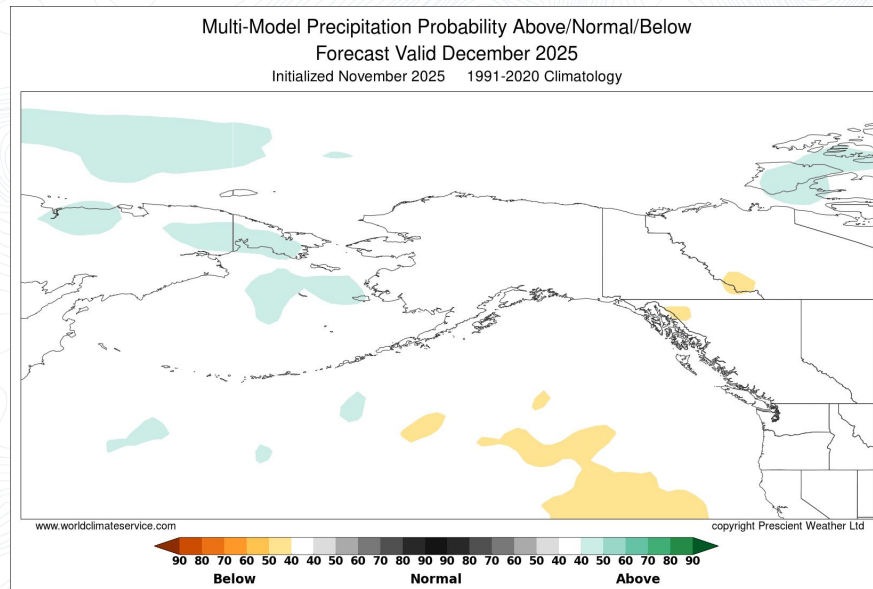


December 2025 outlooks > World Climate Service

Temperature



Precipitation



Bias Corrected, Skill Weighted CFS + ECMWF

December 2025-February 2026 calibrated probability forecast ➤ NMME

Forecast from →

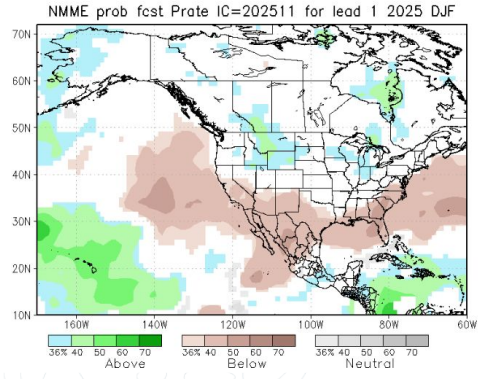
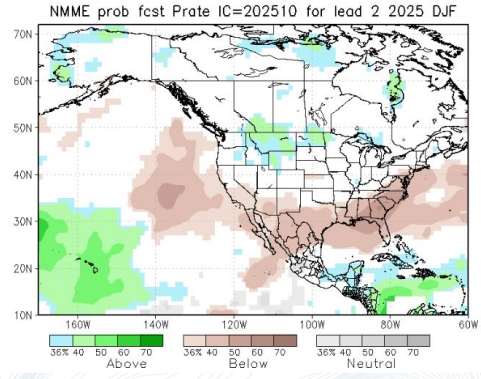
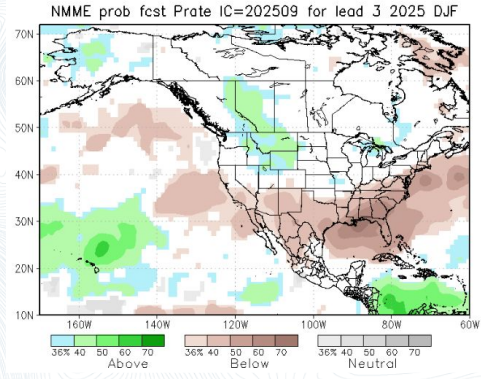
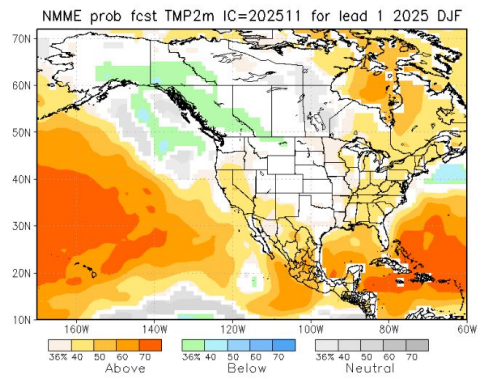
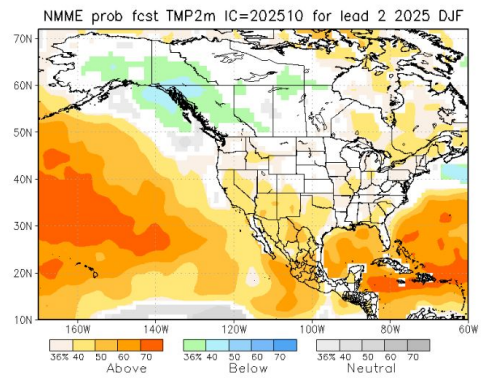
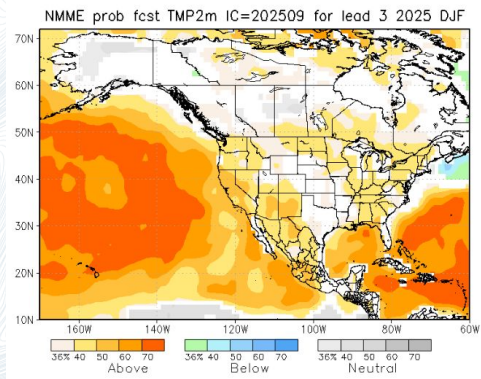
Temperature

Precipitation

September

October

November

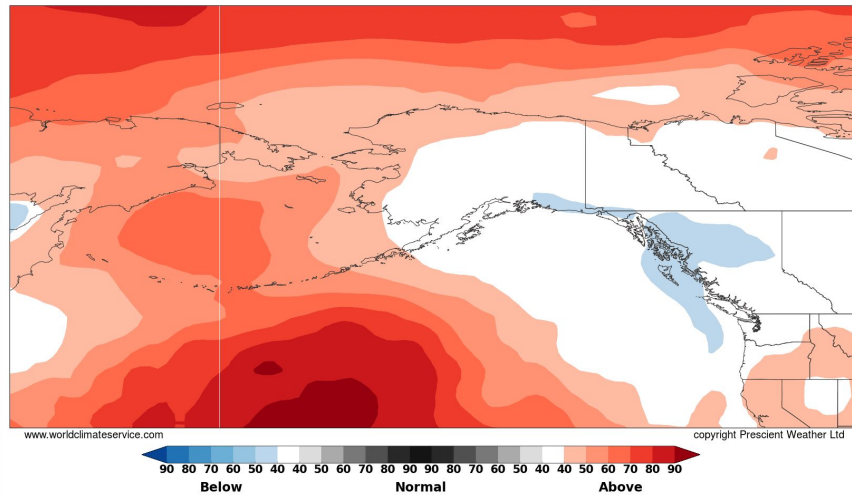


December 2025-February 2026 outlooks ➤ World Climate Service

Temperature



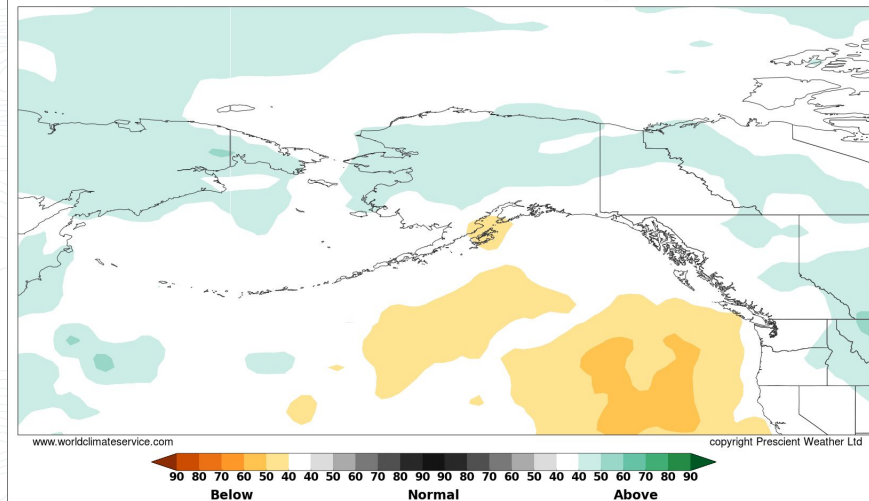
Multi-Model T2m Probability Above/Normal/Below
Forecast Valid Dec 2025 - Feb 2026
Initialized November 2025 1991-2020 Climatology



Precipitation

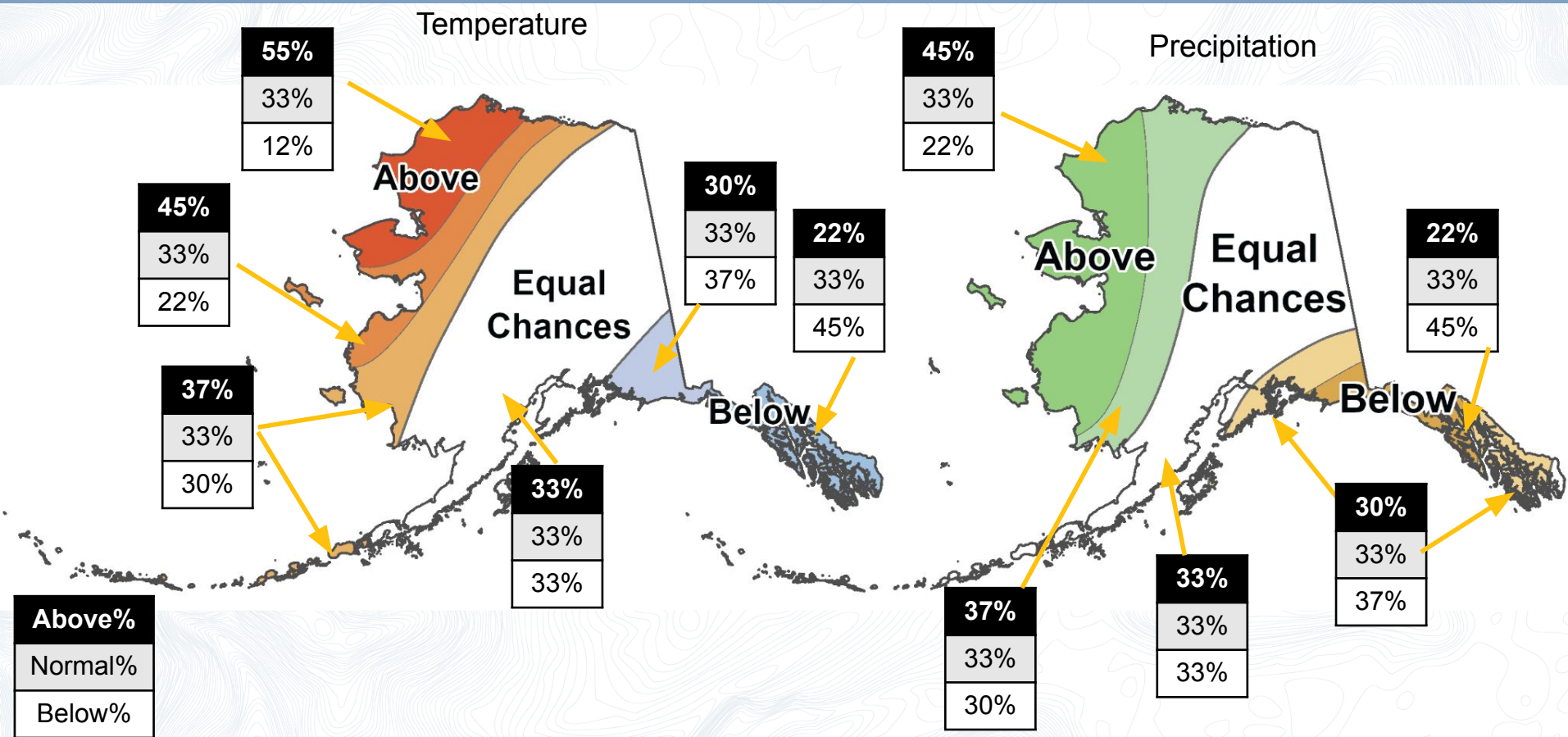


Multi-Model Precipitation Probability Above/Normal/Below
Forecast Valid Dec 2025 - Feb 2026
Initialized November 2025 1991-2020 Climatology



Bias Corrected, Skill Weighted CFS + ECMWF

December 2025-February 2026 outlooks from **October**



Future
outlook

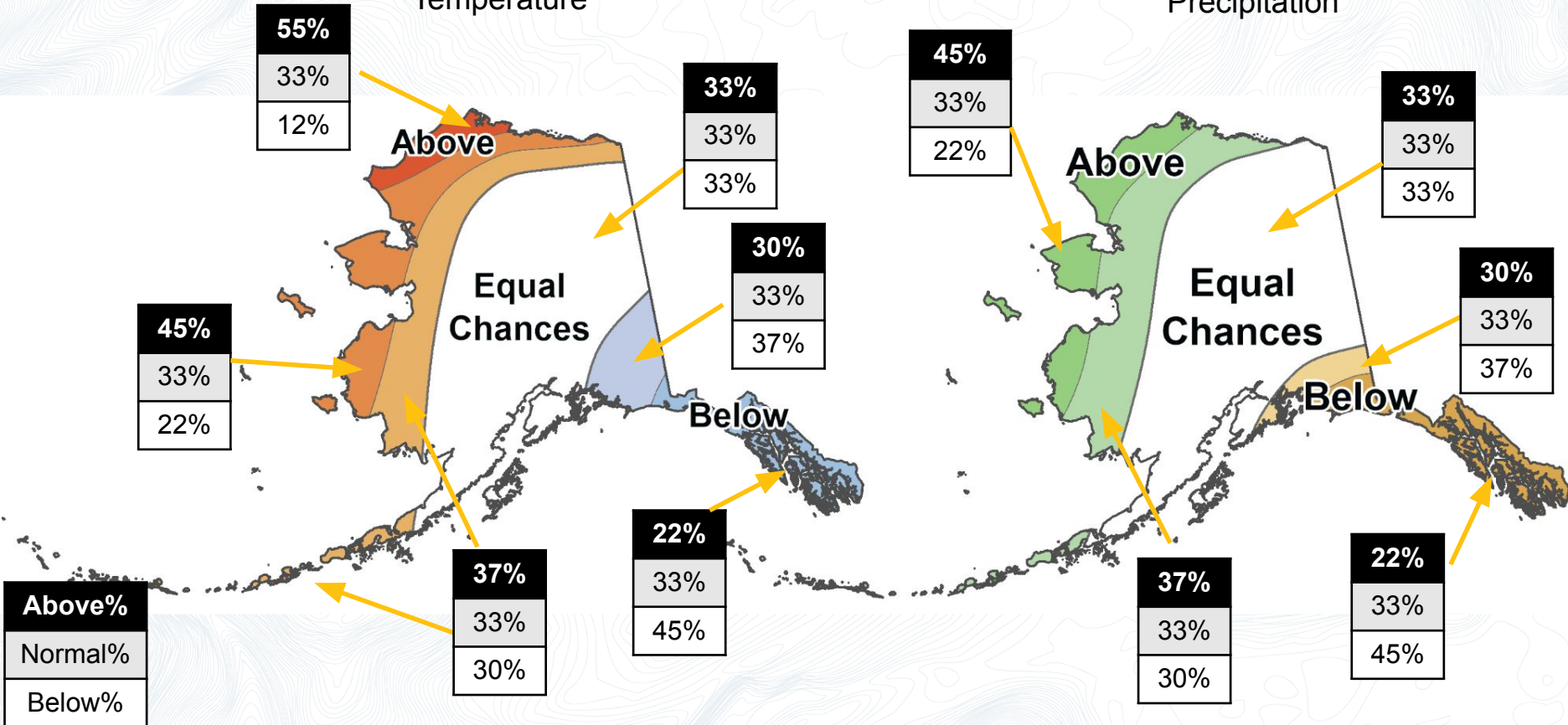


And the answer is...

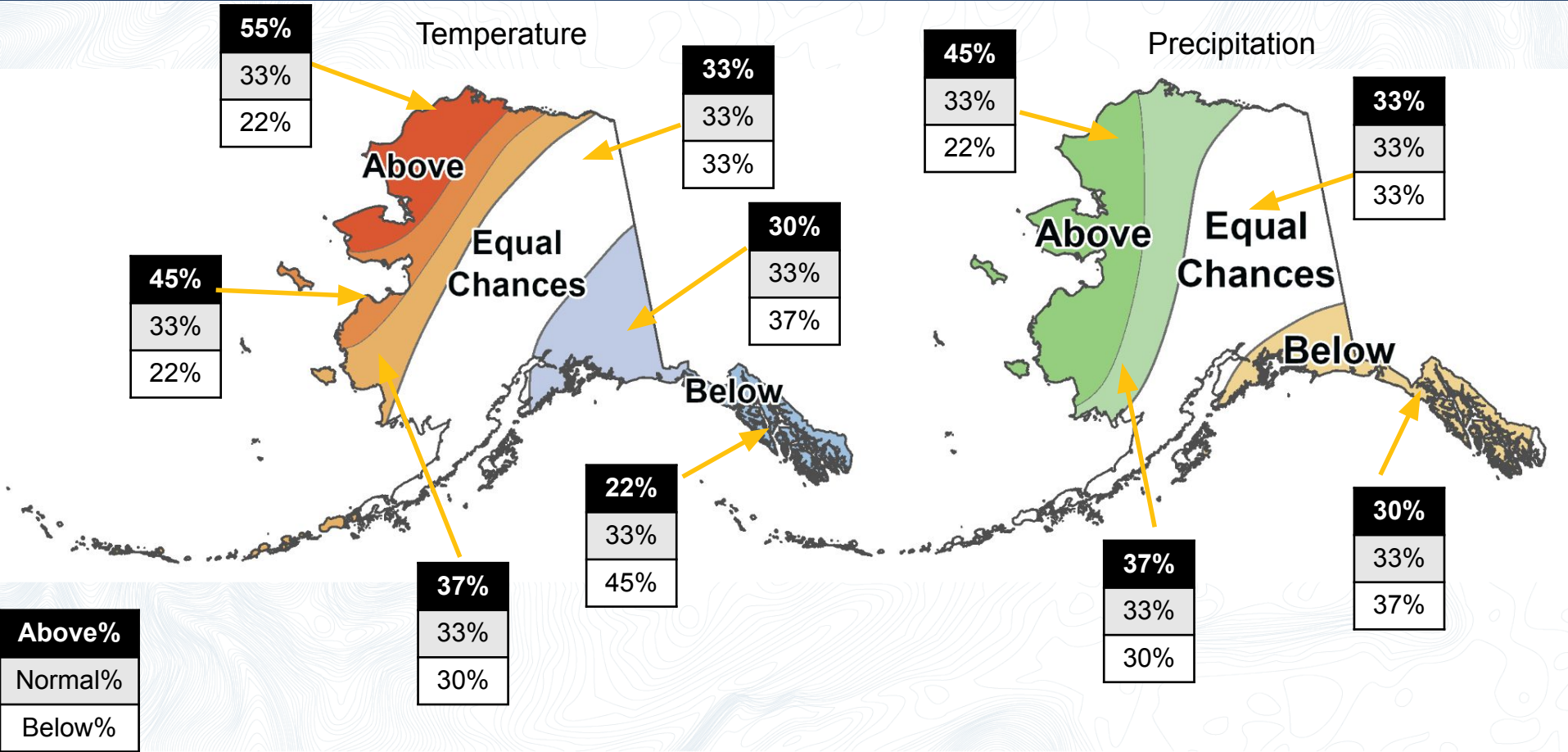
CPC December 2025 outlooks

Temperature

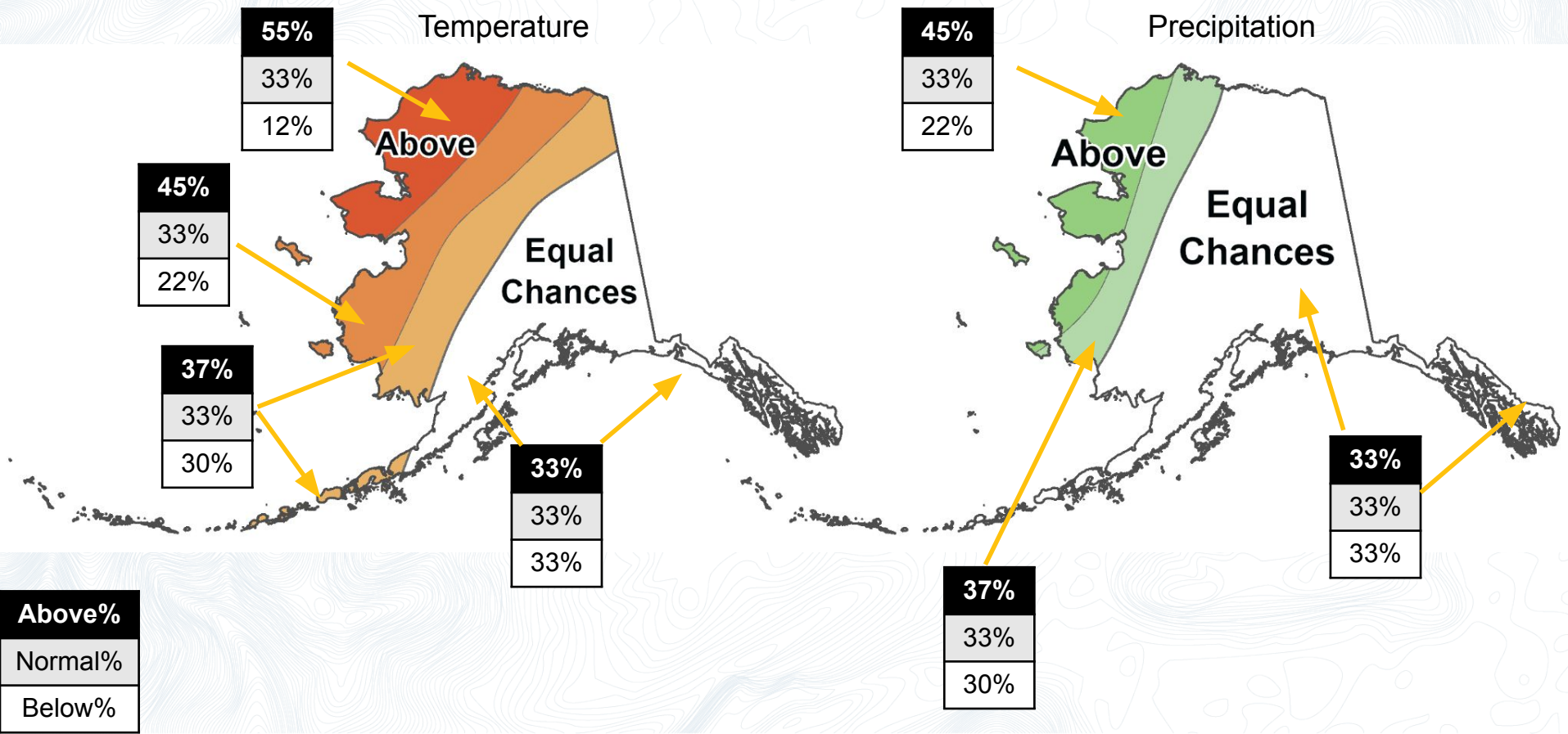
Precipitation



CPC December 2025-February 2026 outlooks



CPC Spring 2026 outlook

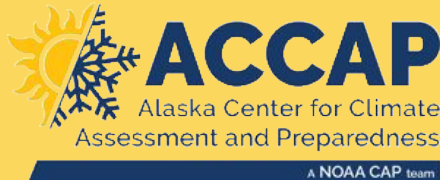


Upcoming ACCAP webinars

Upcoming ACCAP webinars accap.uaf.edu/events

- December 4 ▶ VAWS: Weather and Avalanche Forecasting in Southcentral Alaska
- December 19 ▶ NWS Monthly Climate Outlook Briefing
- January 16 ▶ NWS Monthly Climate Outlook Briefing
- January 27 ▶ Arctic Report Card Review
- January 21 ▶ Understanding tricks to the Windy App as a forecast tool

Email Ed Plumb ewplumb@alaska.edu



ACCAP is housed at the International Arctic Research Center on the University of Alaska Fairbanks Troth Yeddha' Campus