

# Kodiak Regional Advisory Council Spring Climate Outlook

Brian Brettschneider, PhD

National Weather Service – Alaska Region

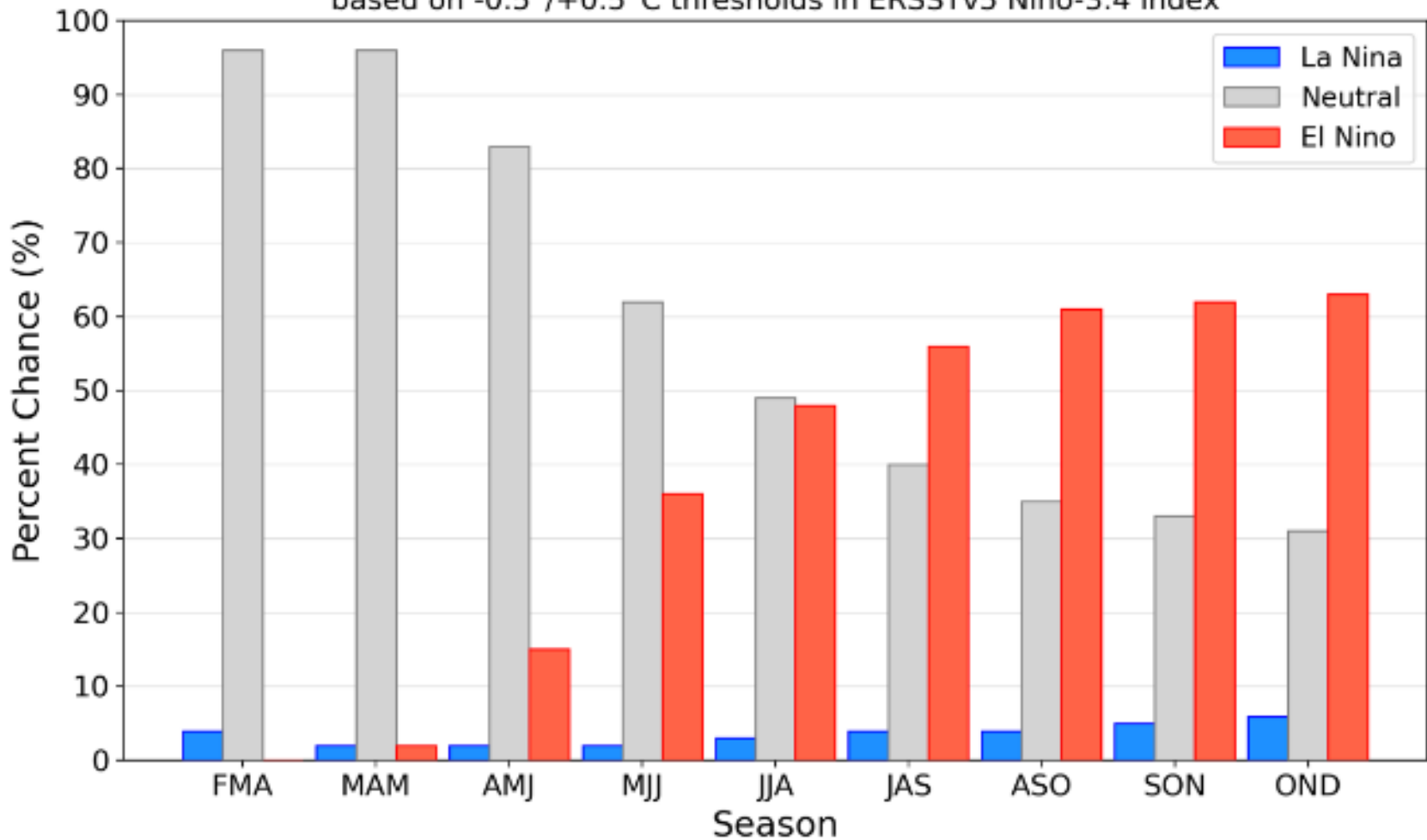
[brian.brettschneider@noaa.gov](mailto:brian.brettschneider@noaa.gov)



# ENSO Often Drives the Seasonal Outlooks

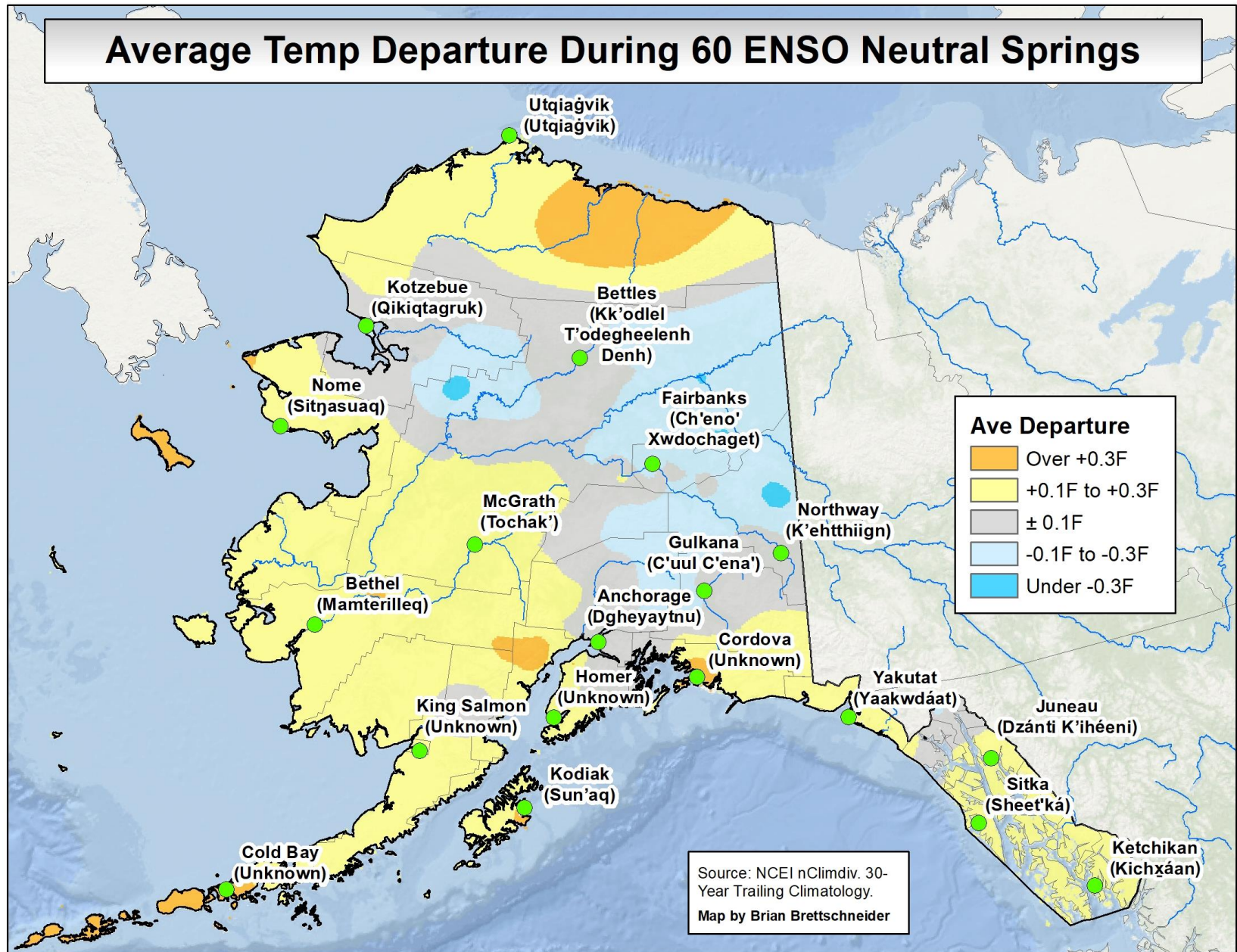
## Official NOAA CPC ENSO Probabilities (issued Mar. 2023)

based on  $-0.5^{\circ}/+0.5^{\circ}\text{C}$  thresholds in ERSSTv5 Niño-3.4 index



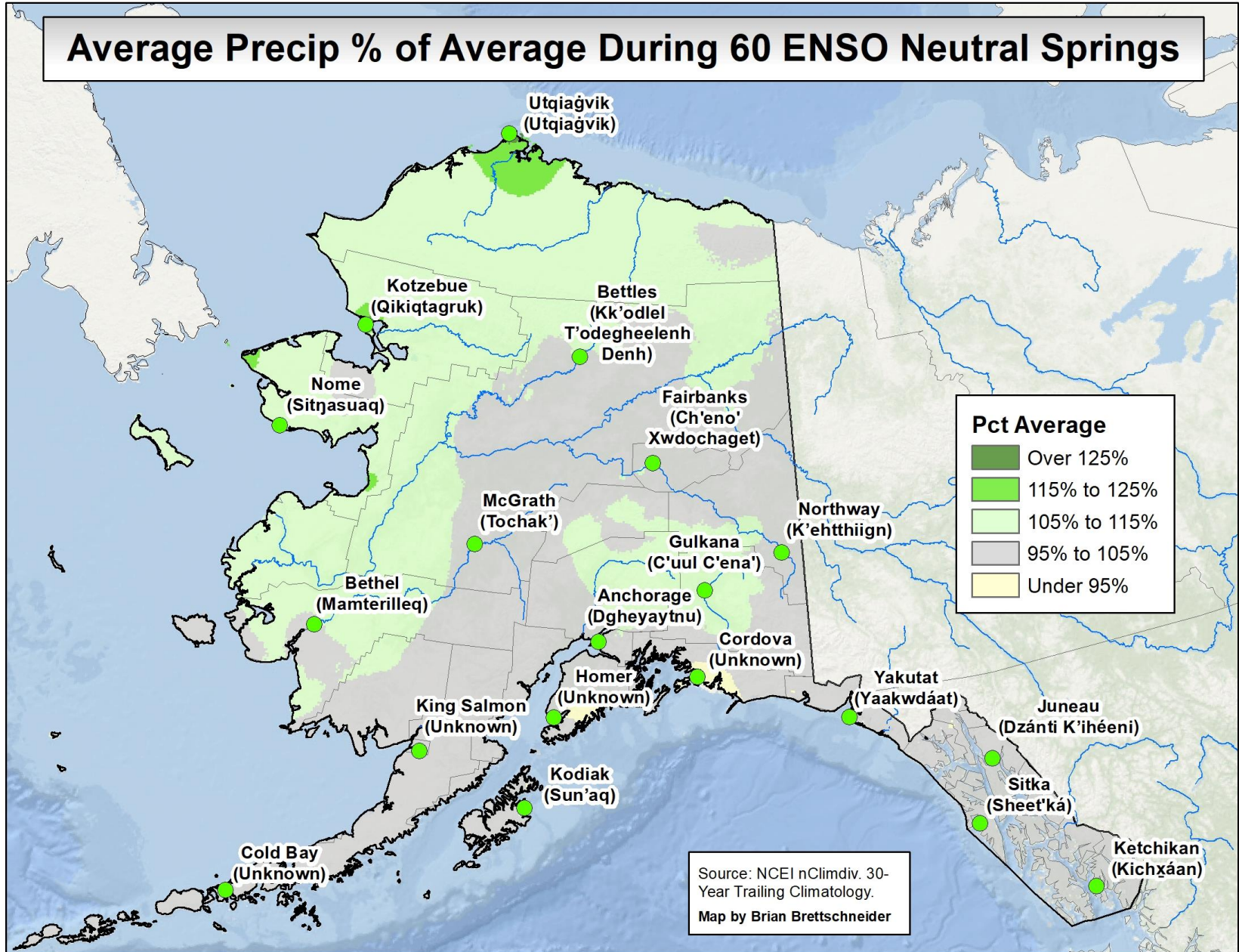
# ENSO Neutral Temperature Composite

Average Temp Departure During 60 ENSO Neutral Springs



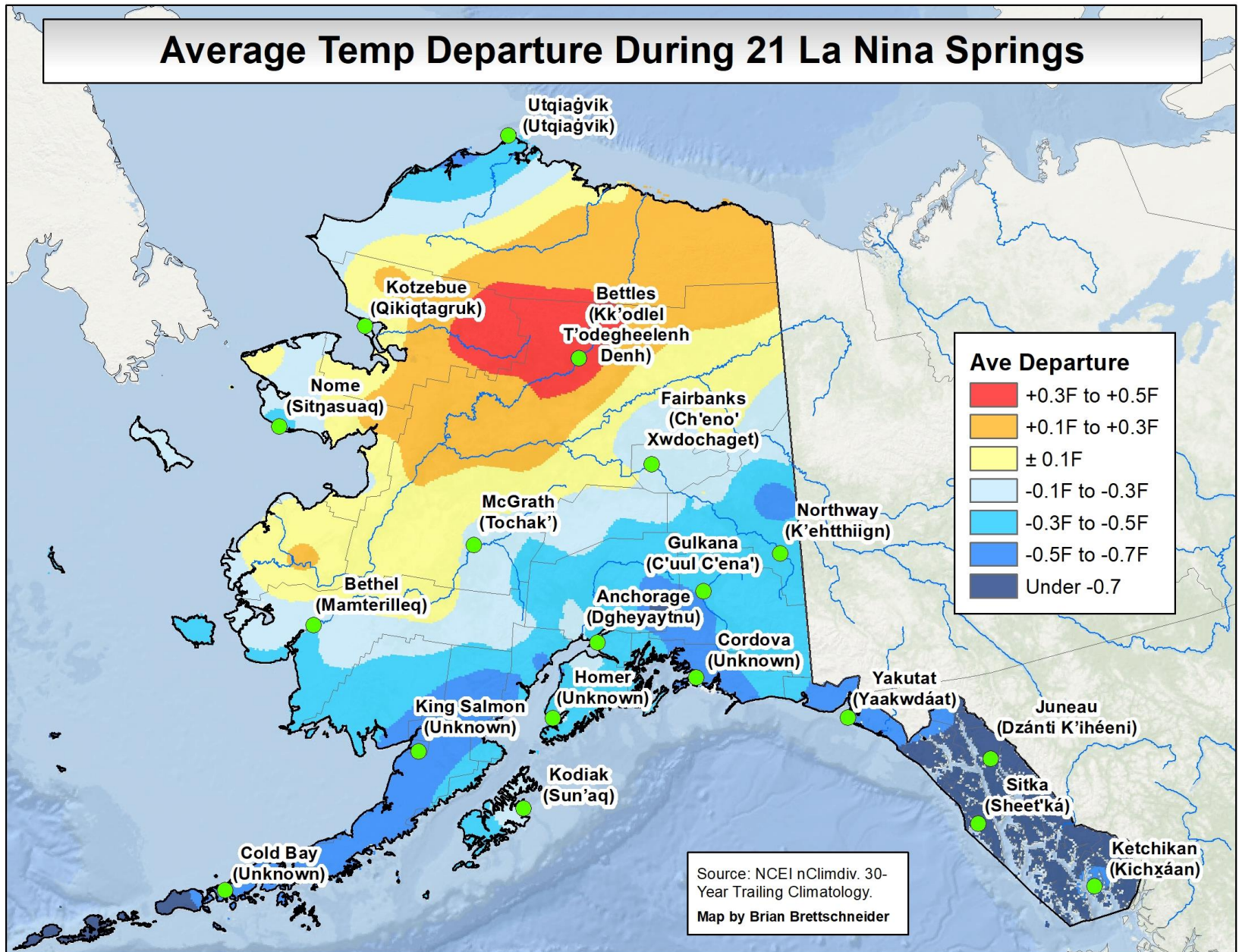
# ENSO Neutral Precipitation Composite

Average Precip % of Average During 60 ENSO Neutral Springs



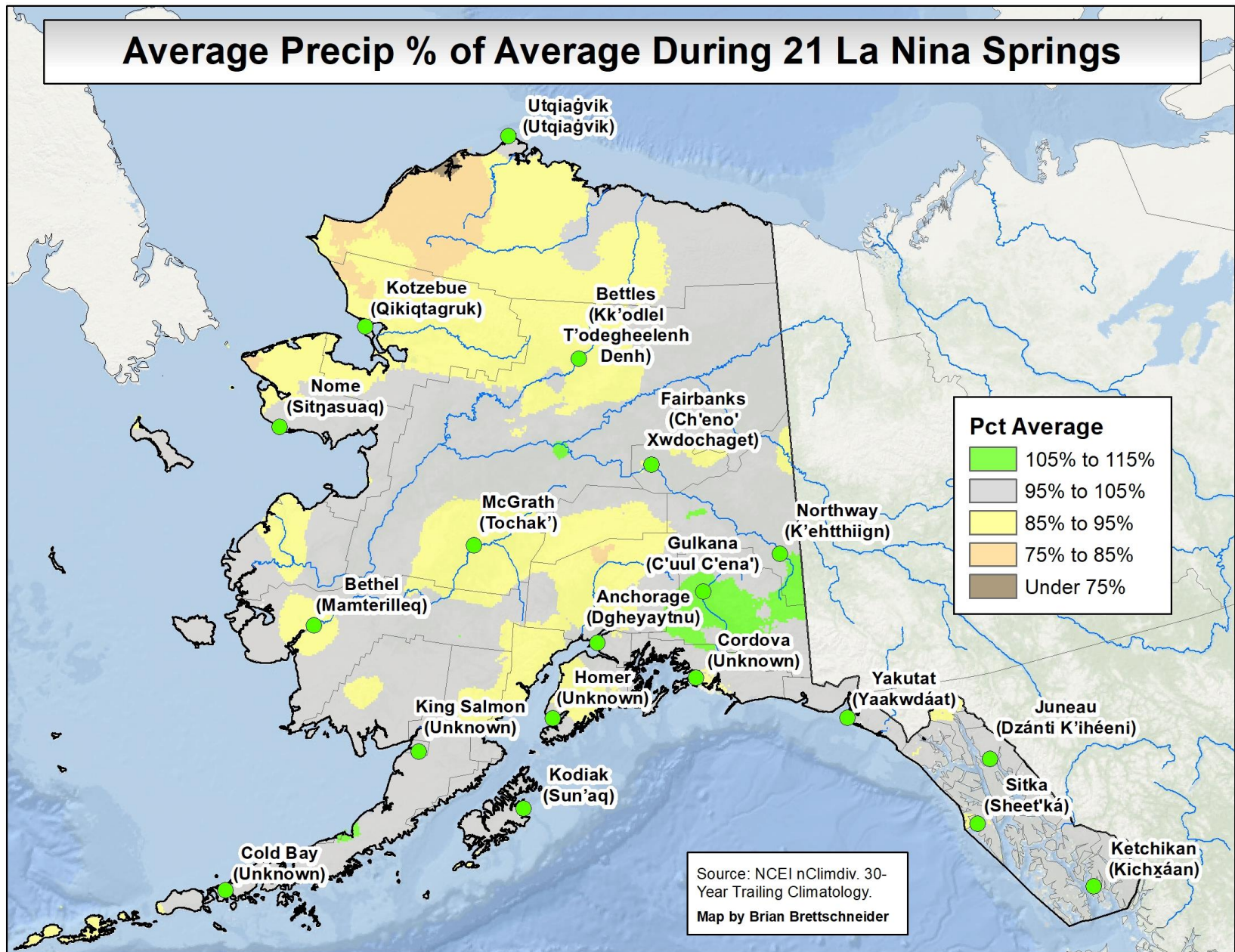
# La Nina Temperature Composite

## Average Temp Departure During 21 La Nina Springs



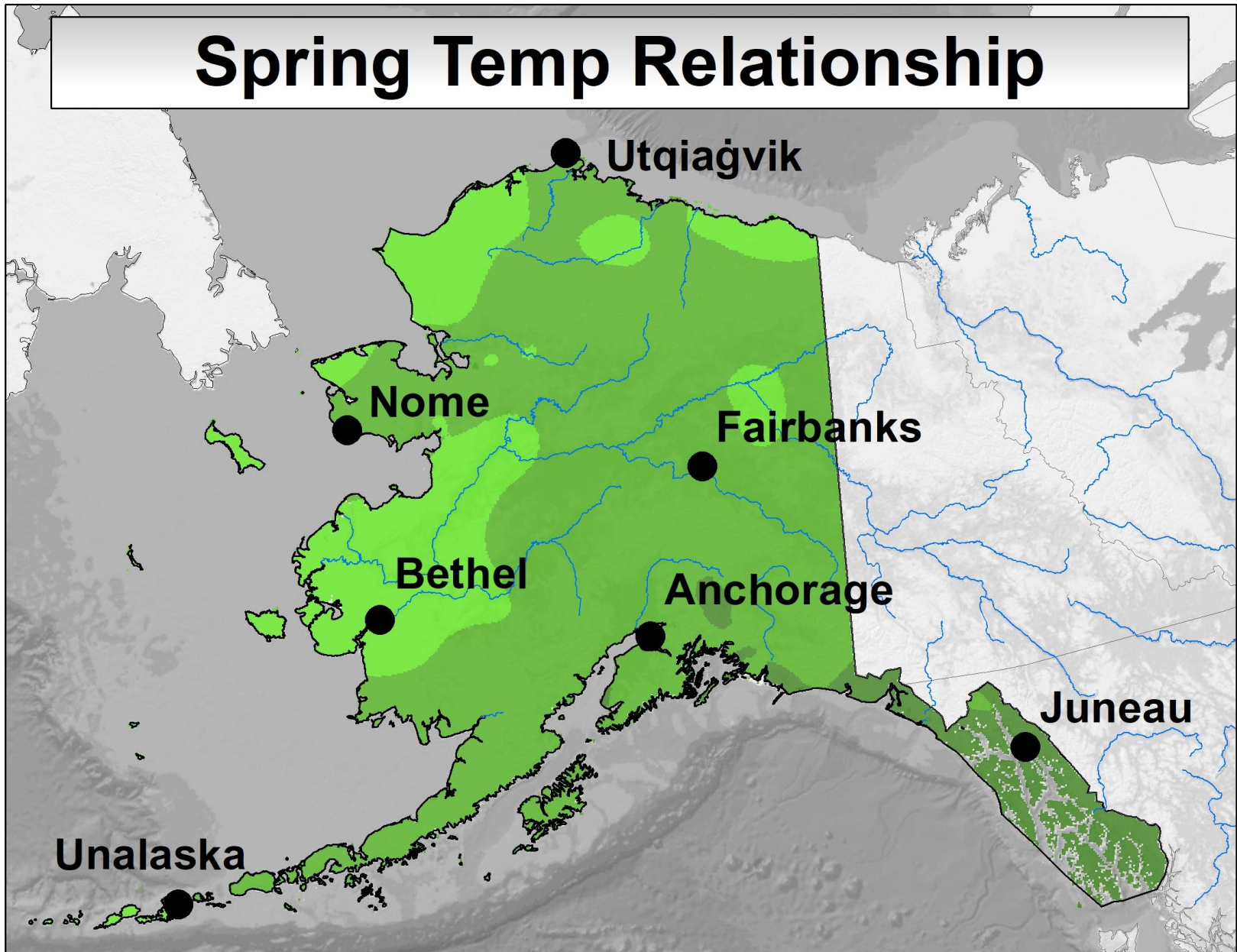
# La Nina Precipitation Composite

Average Precip % of Average During 21 La Nina Springs



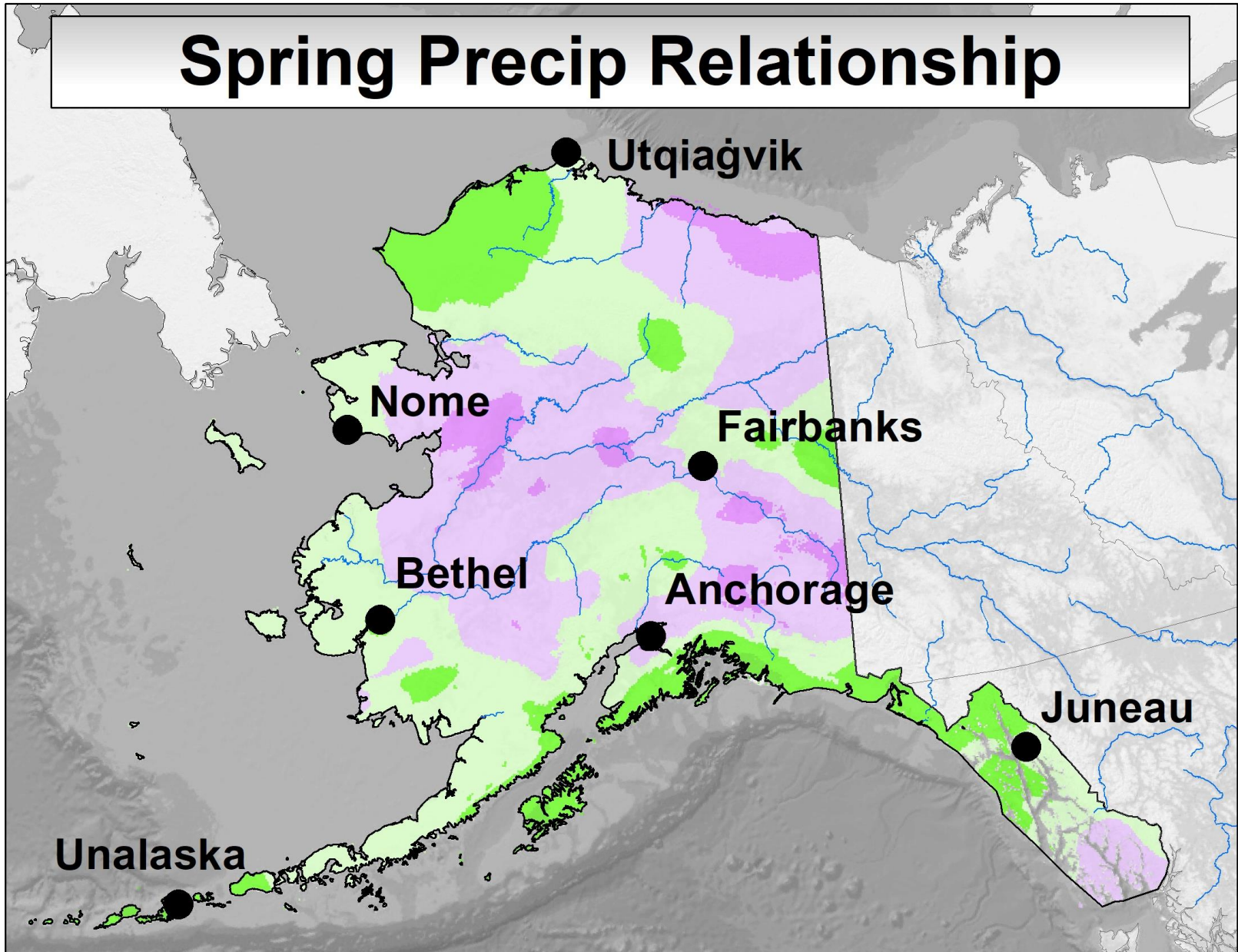
# ENSO Status Correlations With Temps

## Spring Temp Relationship



# ENSO Status Correlations With Temps

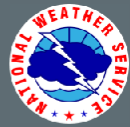
## Spring Precip Relationship





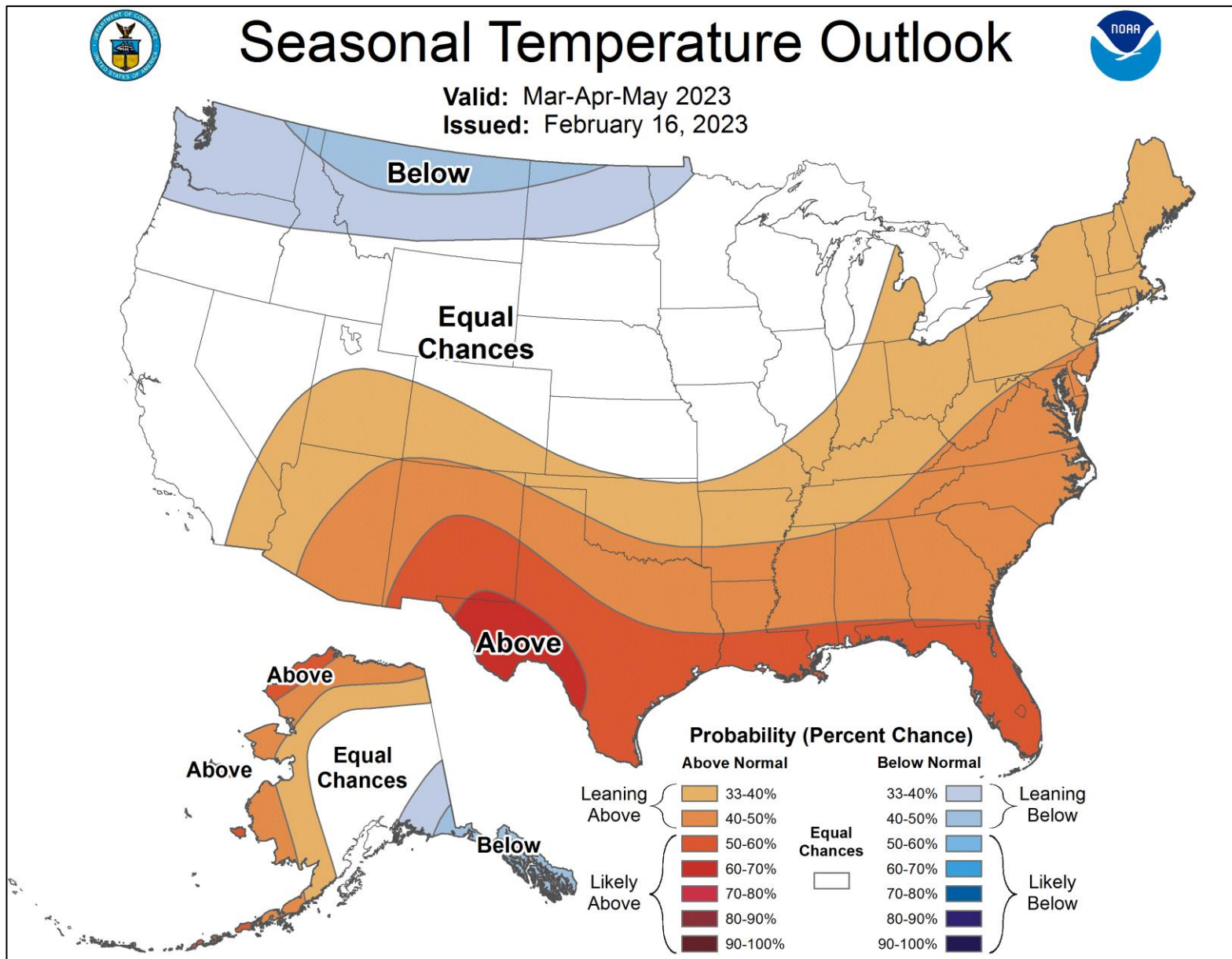
**Sea ice is a major factor in Spring conditions.**

# SEA ICE EXTENT – MARCH 29



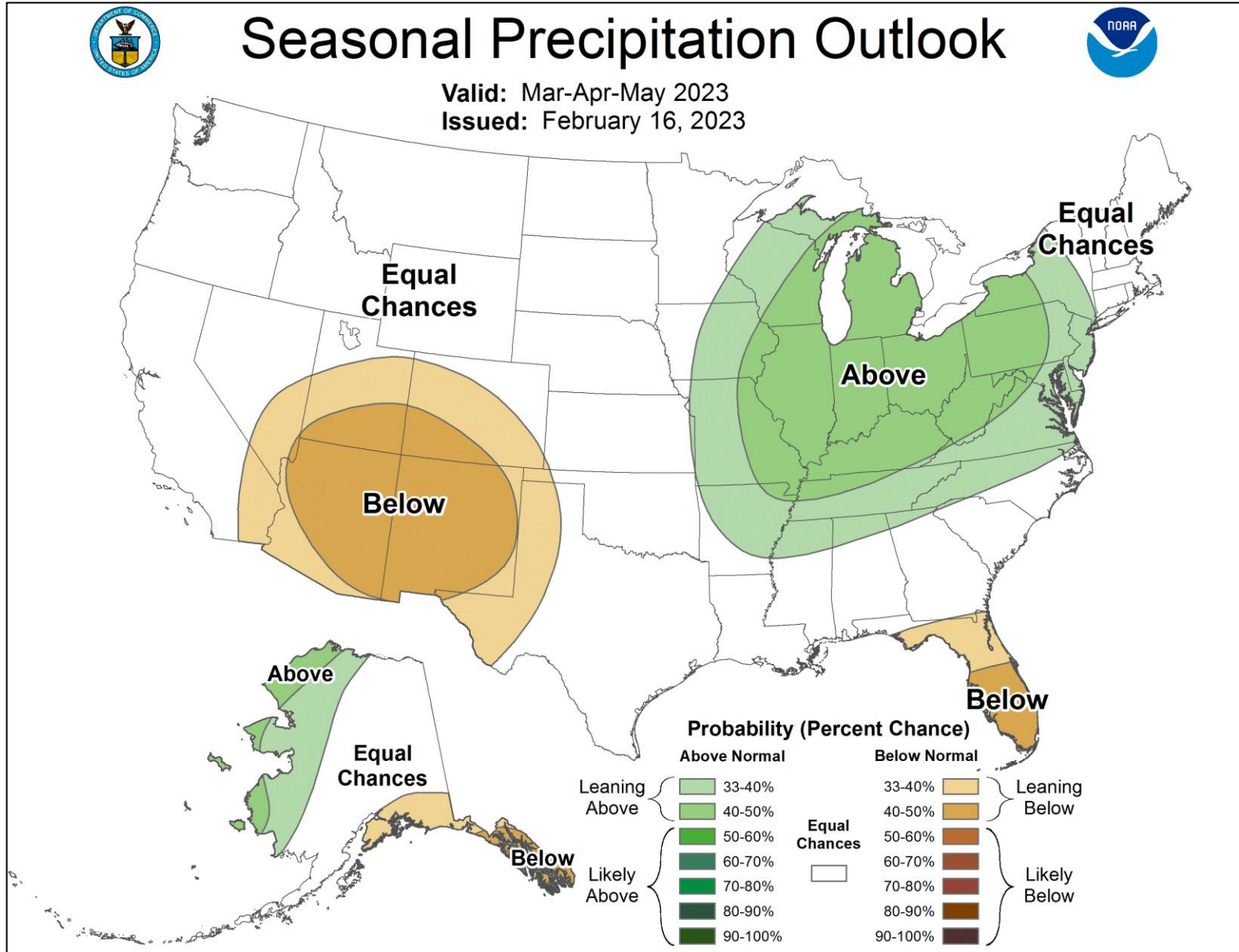
# **Official CPC Outlooks**

# CPC Spring Temp Outlook Issued Feb 15, 2023



Newer Outlooks here: [https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/)

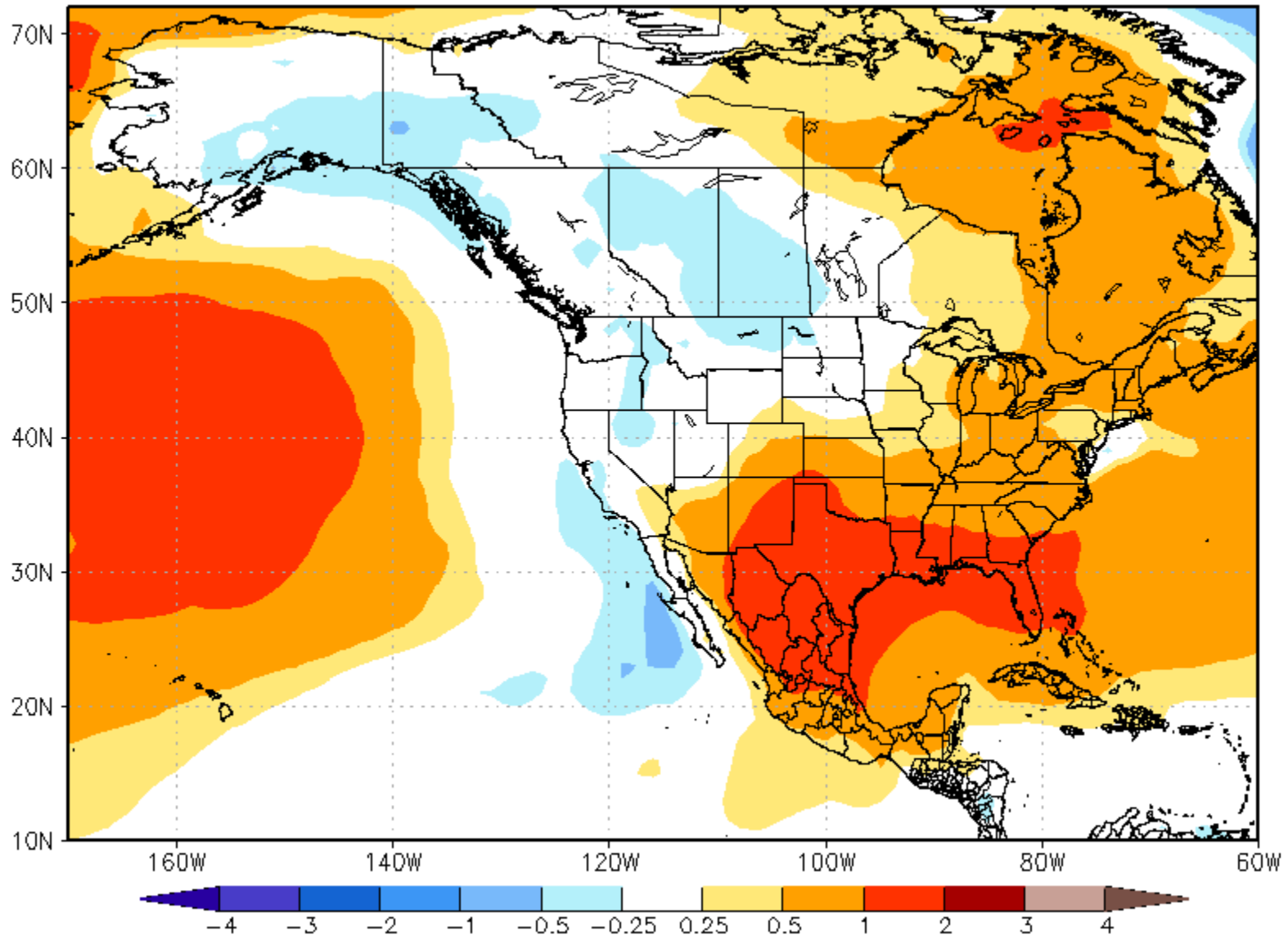
# CPC Spring Precip Outlook Issued Feb 15, 2023



Newer Outlooks here: [https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/)

# NMME Spring Temp Outlook Issued Feb 2023

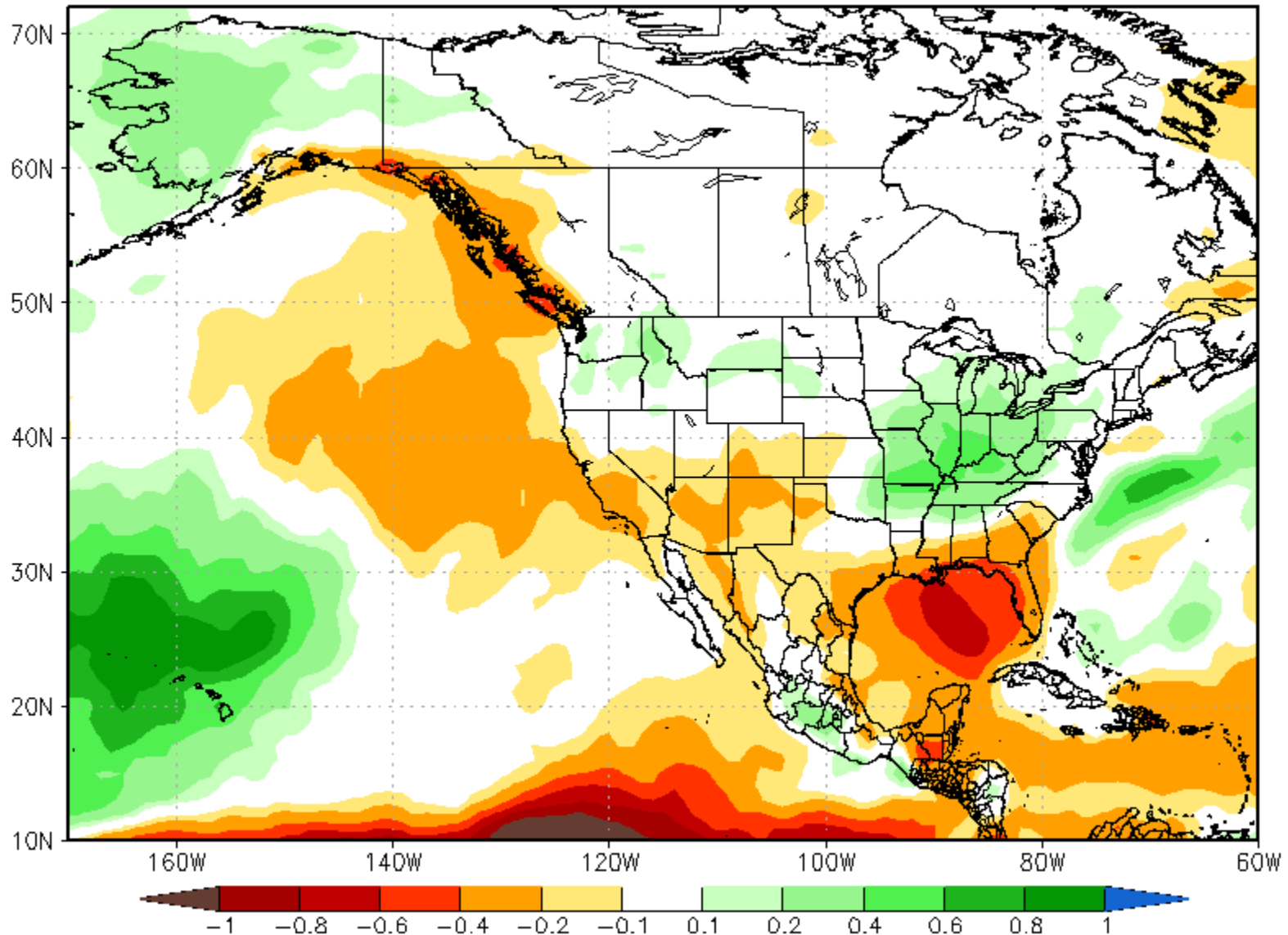
NMME Forecast of TMP2m Anom IC=202302 for Lead 1 2023MAM



[https://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME\\_ensemble\\_tmp2m\\_us\\_season2.png](https://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_tmp2m_us_season2.png)

# NMME Spring Precip Outlook Issued Feb 2023

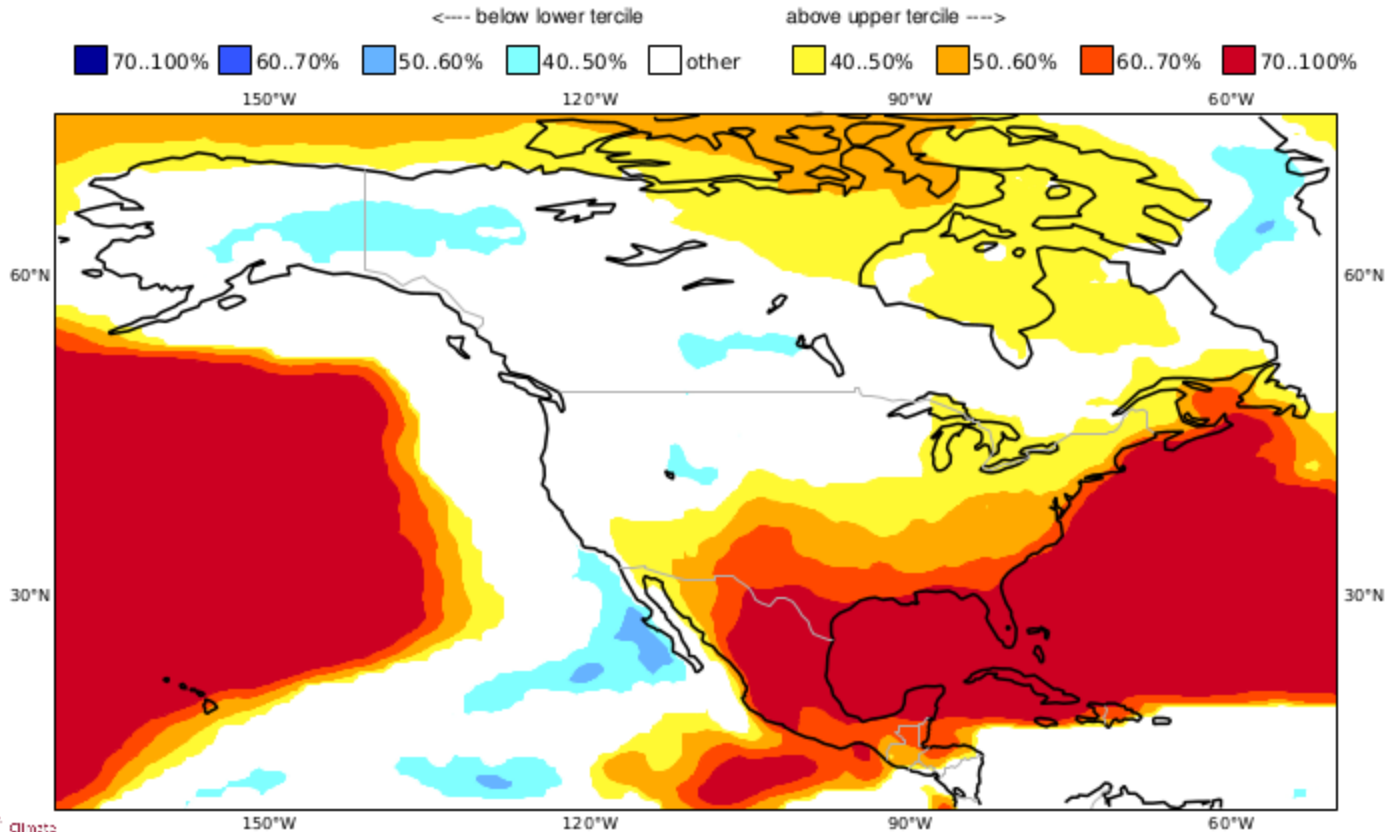
NMME Forecast of Prec. rate Anom IC=202302 for Lead 1 2023MAM



[https://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME\\_ensemble\\_tmp2m\\_us\\_season2.png](https://www.cpc.ncep.noaa.gov/products/NMME/current/images/NMME_ensemble_tmp2m_us_season2.png)

# CS3 Winter Temp Outlook Issued Jan 2, 2023

C3S multi-system seasonal forecast    ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC  
Prob(most likely category of 2m temperature)    MAM 2023  
Nominal forecast start: 01/02/23  
Unweighted mean

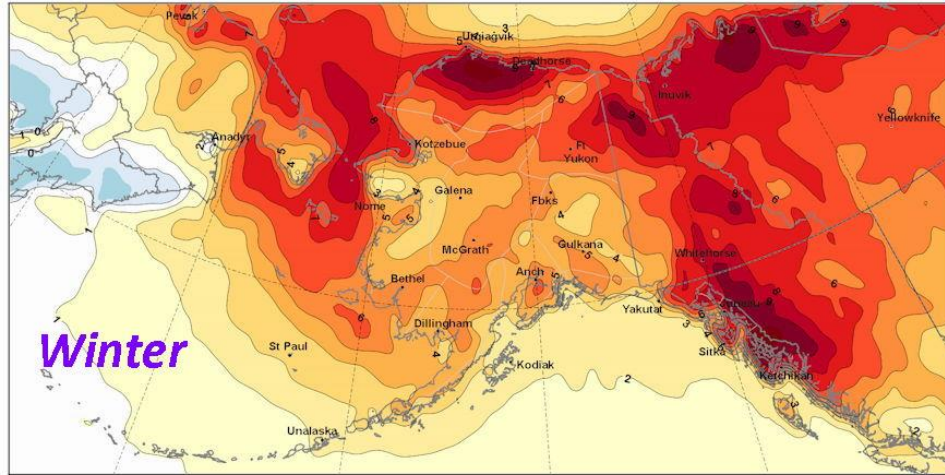




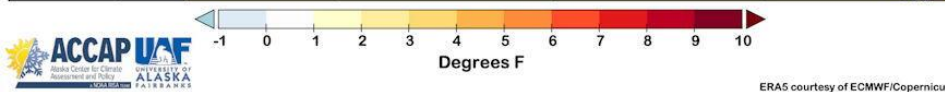
**Trends are a major factor in climate forecasts**

# Trends Are Not Our Friend

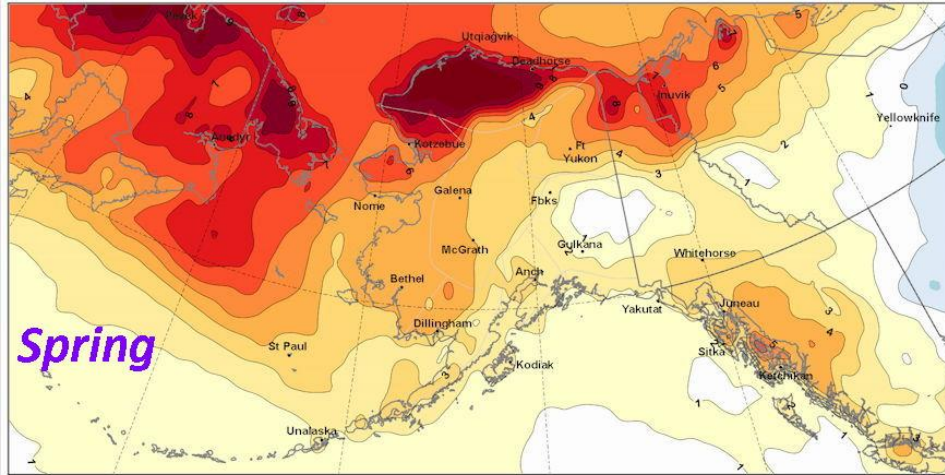
Winter (December-February) Change of Average Temperature  
1971-72 to 2020-21



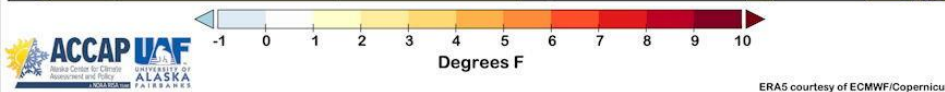
Winter



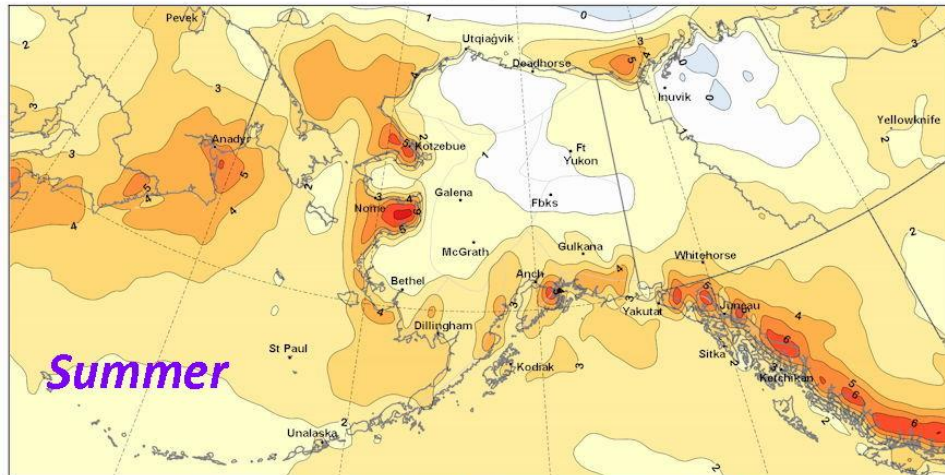
Spring (March-May) Change of Average Temperature  
1972-2021



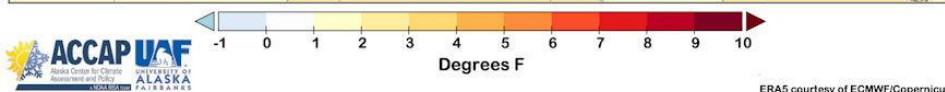
Spring



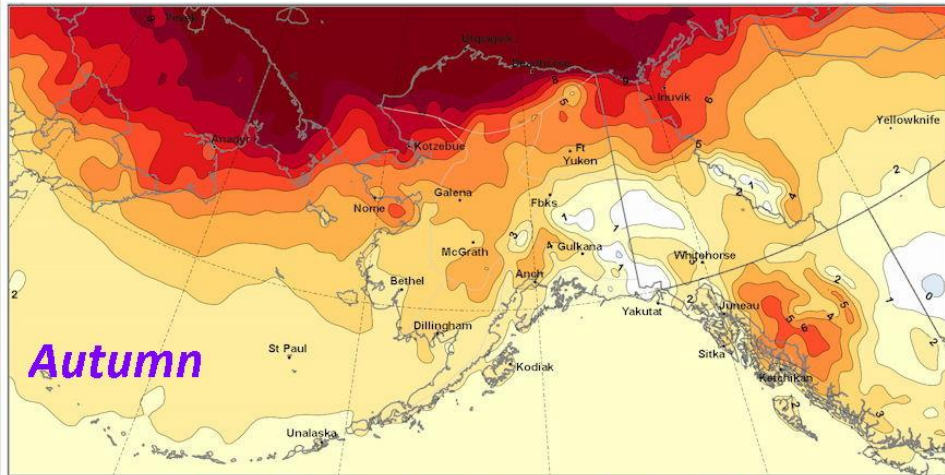
Summer (June-August) Change of Average Temperature  
1972-2021



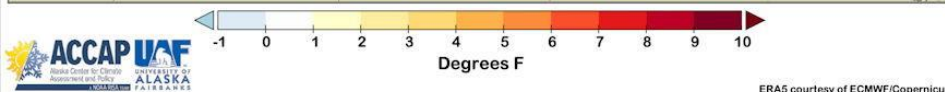
Summer



Autumn (September-November) Change of Average Temperature  
1972-2021

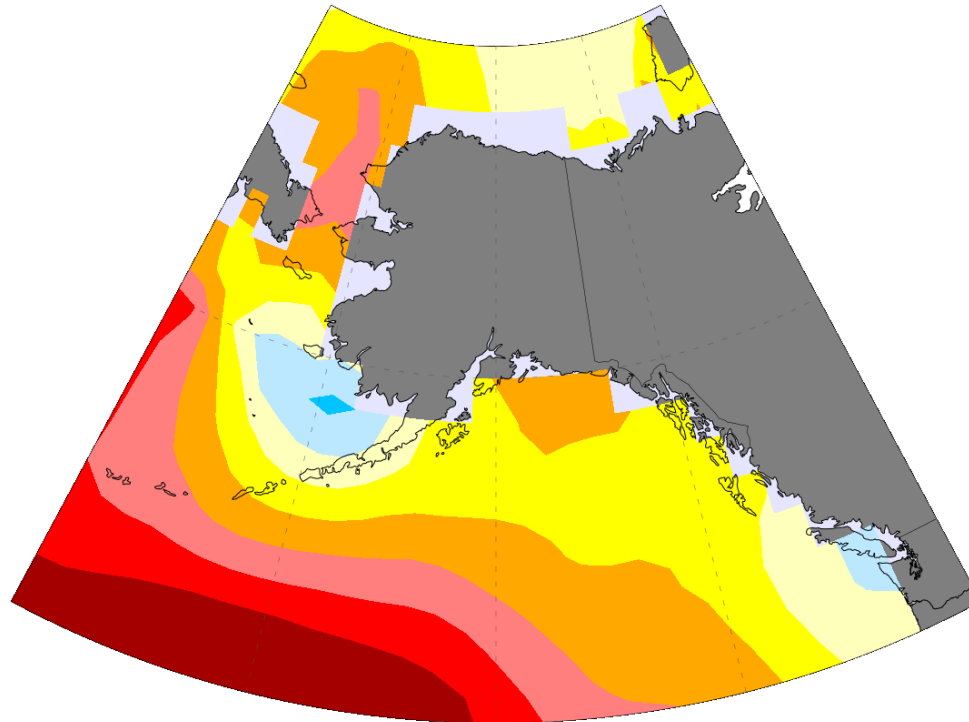


Autumn

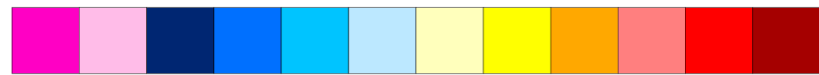


# Sea Surface Temps Around Alaska in 2022

ERSST v5 Temp: Ave Depart from Normal (C) Jan 2022 - Dec 2022



(c) B. Brettschneider 2022 (Data Source: ERSSTv5).  
Based on a total of 12 possible months  
using the 1951-2000 climate normal period.



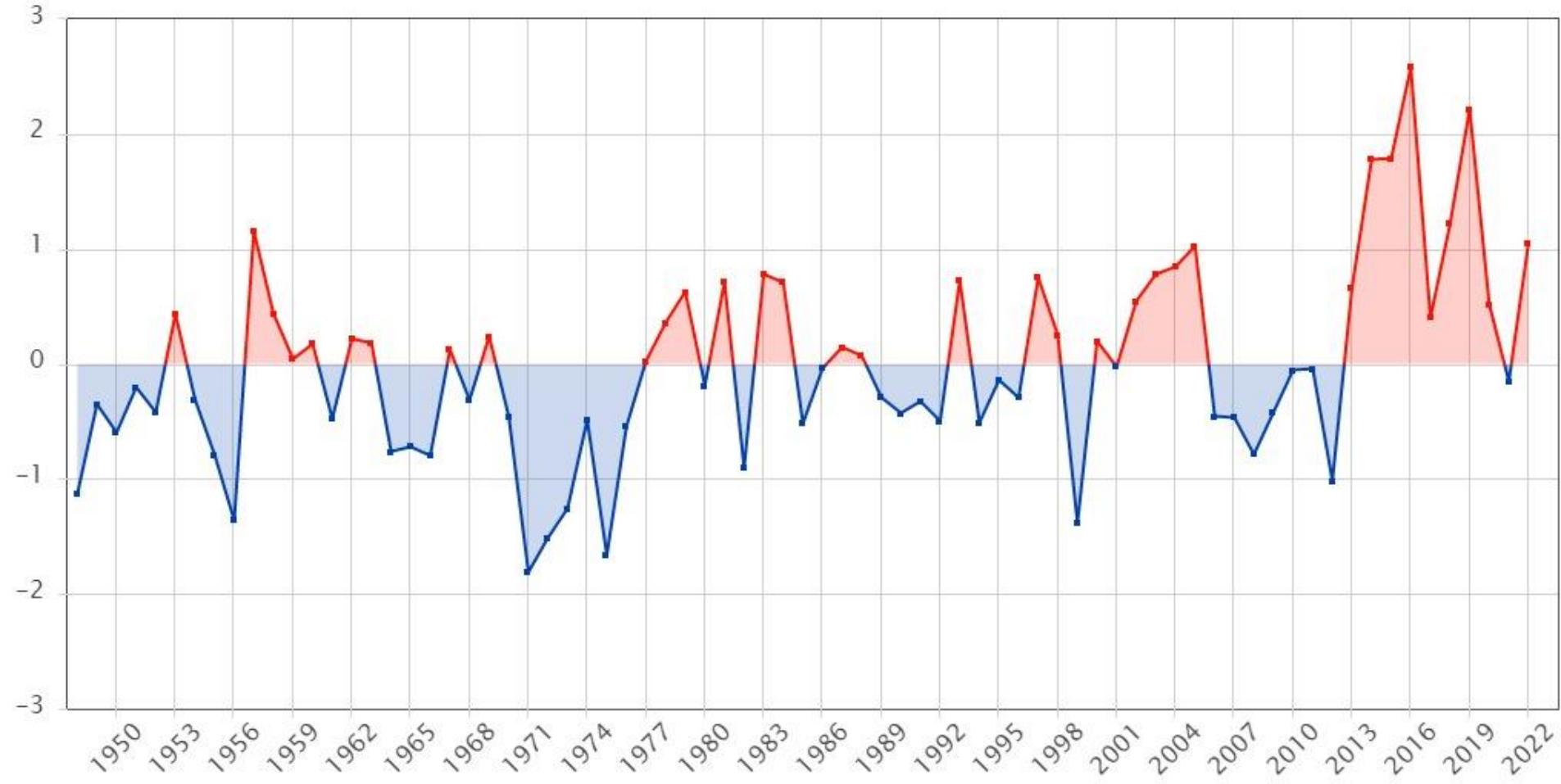
-3 -1.5 -1.2 -0.9 -0.6 -0.3 0 0.3 0.6 0.9 1.2 1.5 3

Analysis of all months between January 2022 and December 2022  
Global Average is: 0.49 C

# Annual Trend In Temperature for Kodiak Region

Annual 2m Temperature Anomaly (°C) [1981–2010]  
Specify Point (57.8°N, 152.4°W)

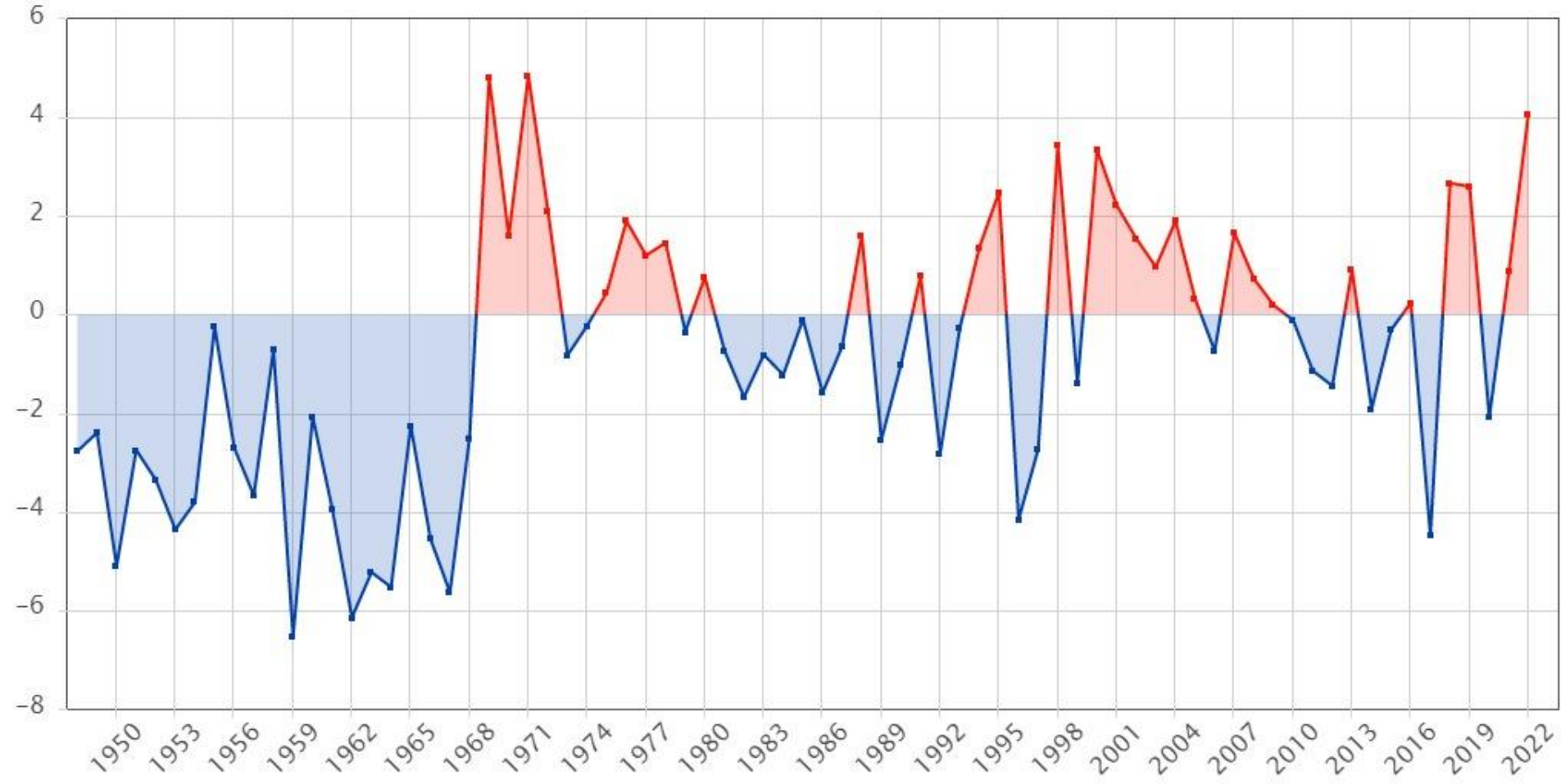
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Cloudiness for Kodiak Region

Annual Total Cloud Cover Anomaly (%) [1981–2010]  
Specify Point (57.8°N, 152.4°W)

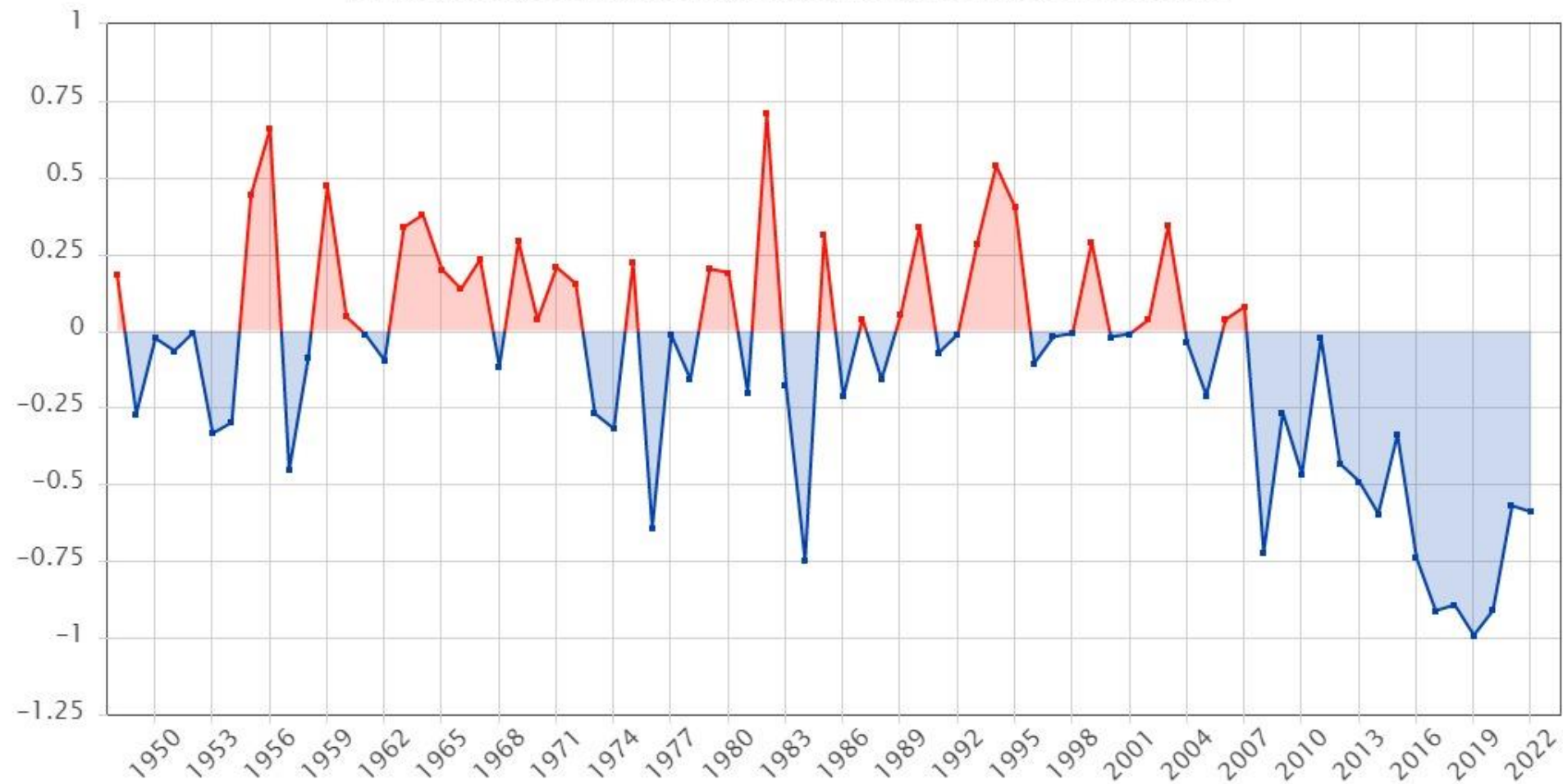
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Wind Speed for Kodiak Region

Annual 1000hPa Wind Speed Anomaly (m/s) [1981–2010]  
Specify Point (57.8°N, 152.4°W)

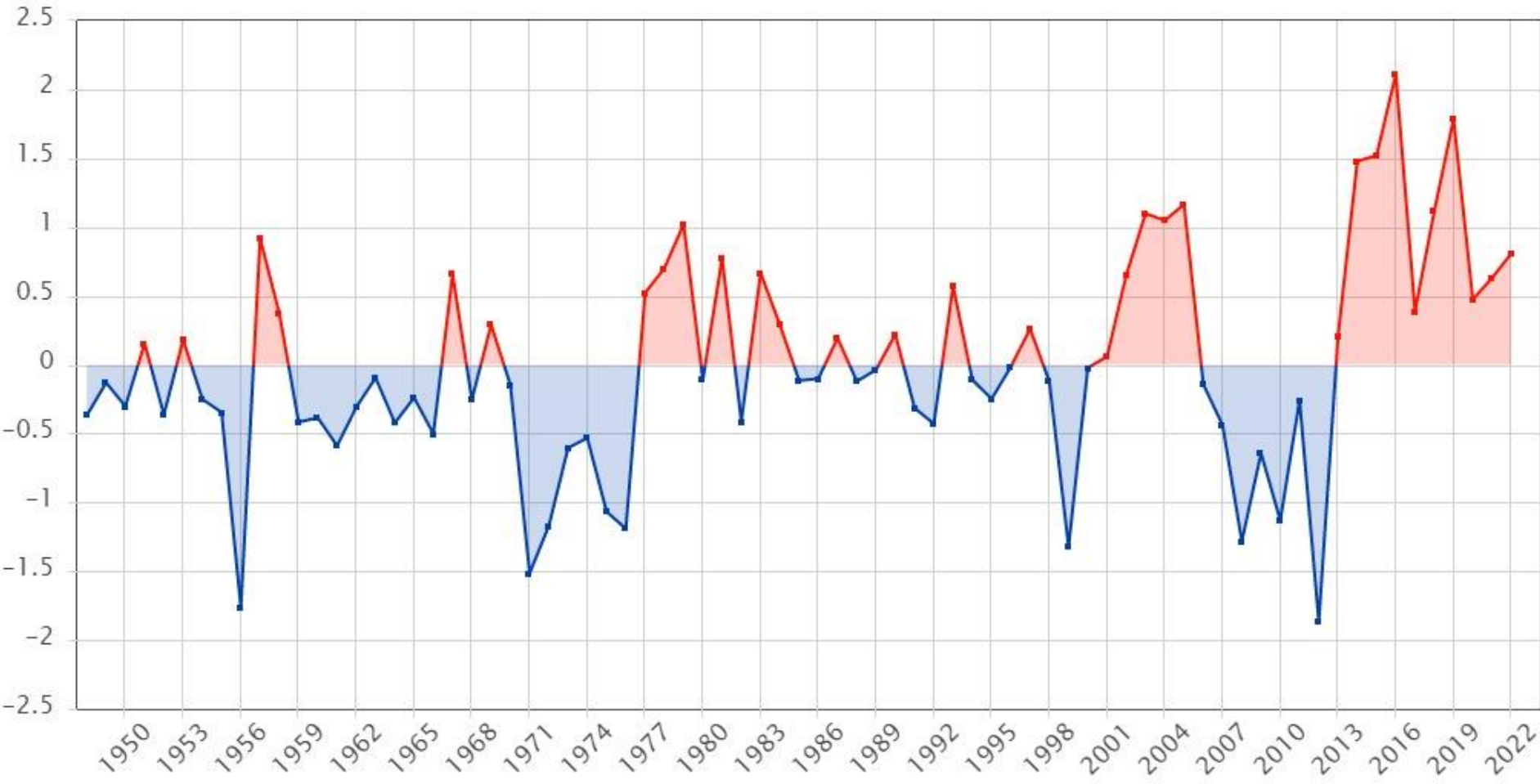
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Temperature for King Cove

Annual 2m Temperature Anomaly (°C) [1981–2010]  
Specify Point (55.0594°N, 162.313°W)

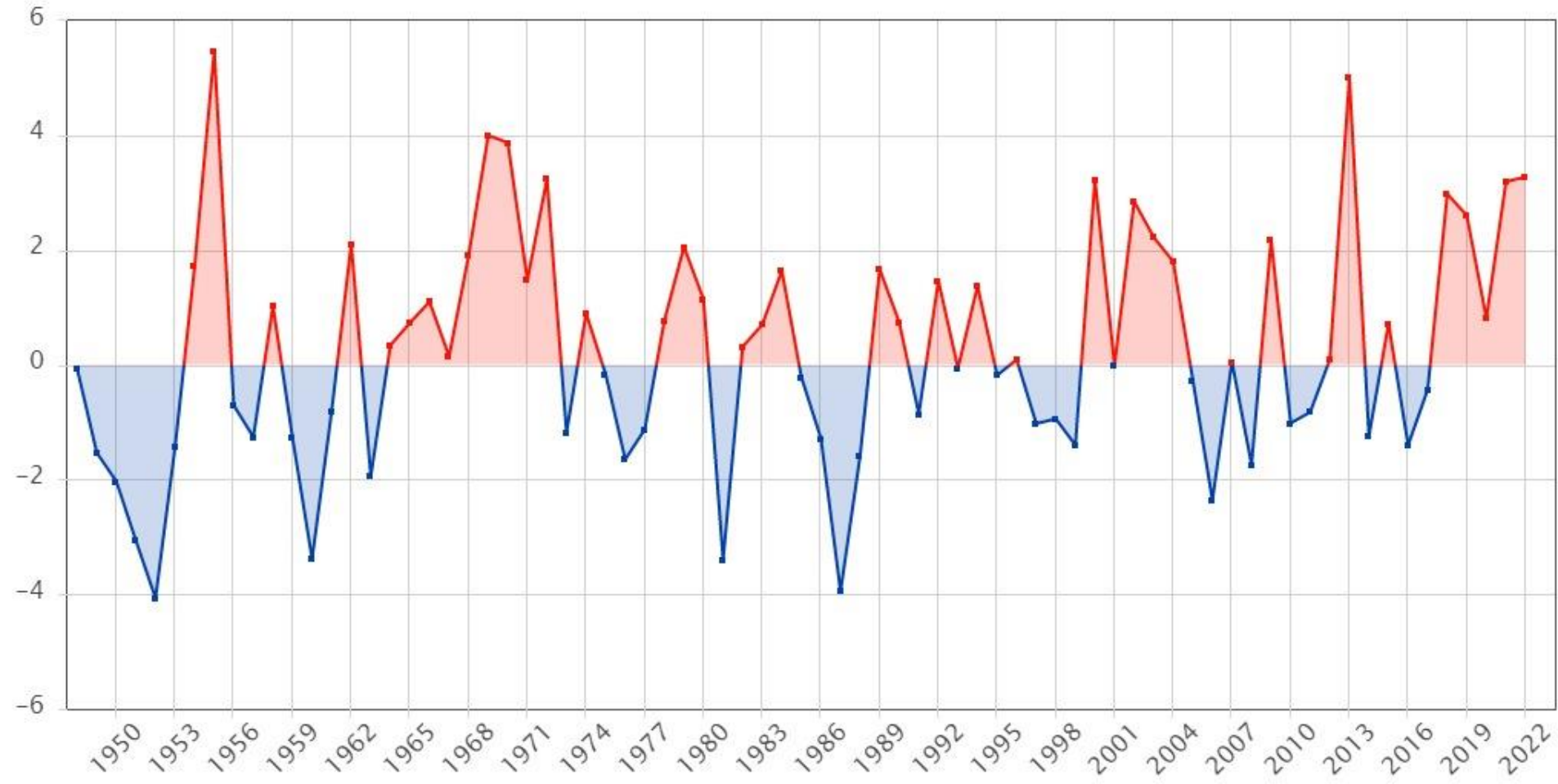
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Cloudiness for King Cove

Annual Total Cloud Cover Anomaly (%) [1981–2010]  
Specify Point (55.0594°N, 162.313°W)

NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine

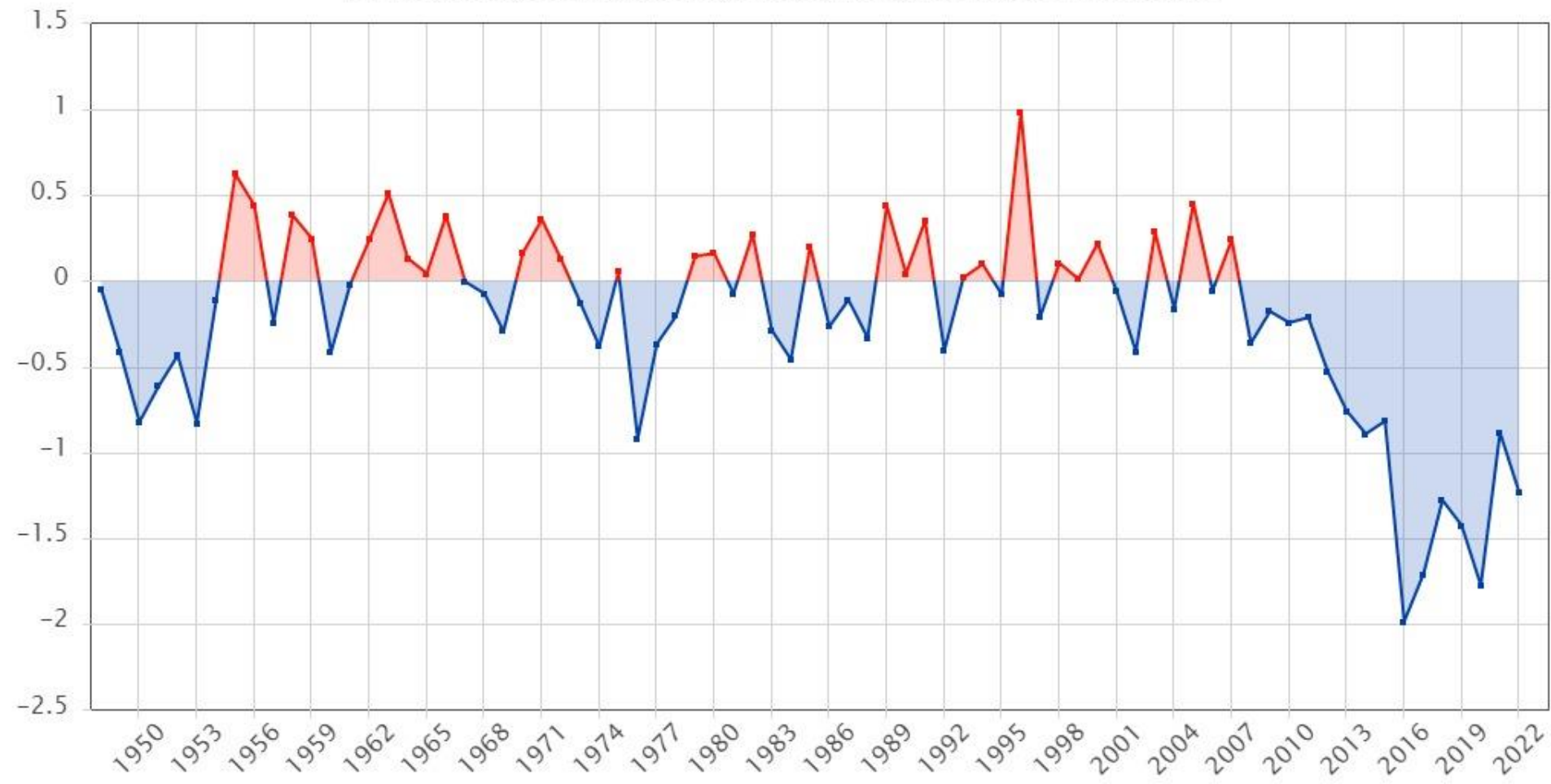




# Annual Trend In Wind Speed for King Cove

Annual 1000hPa Wind Speed Anomaly (m/s) [1981–2010]  
Specify Point (55.0594°N, 162.313°W)

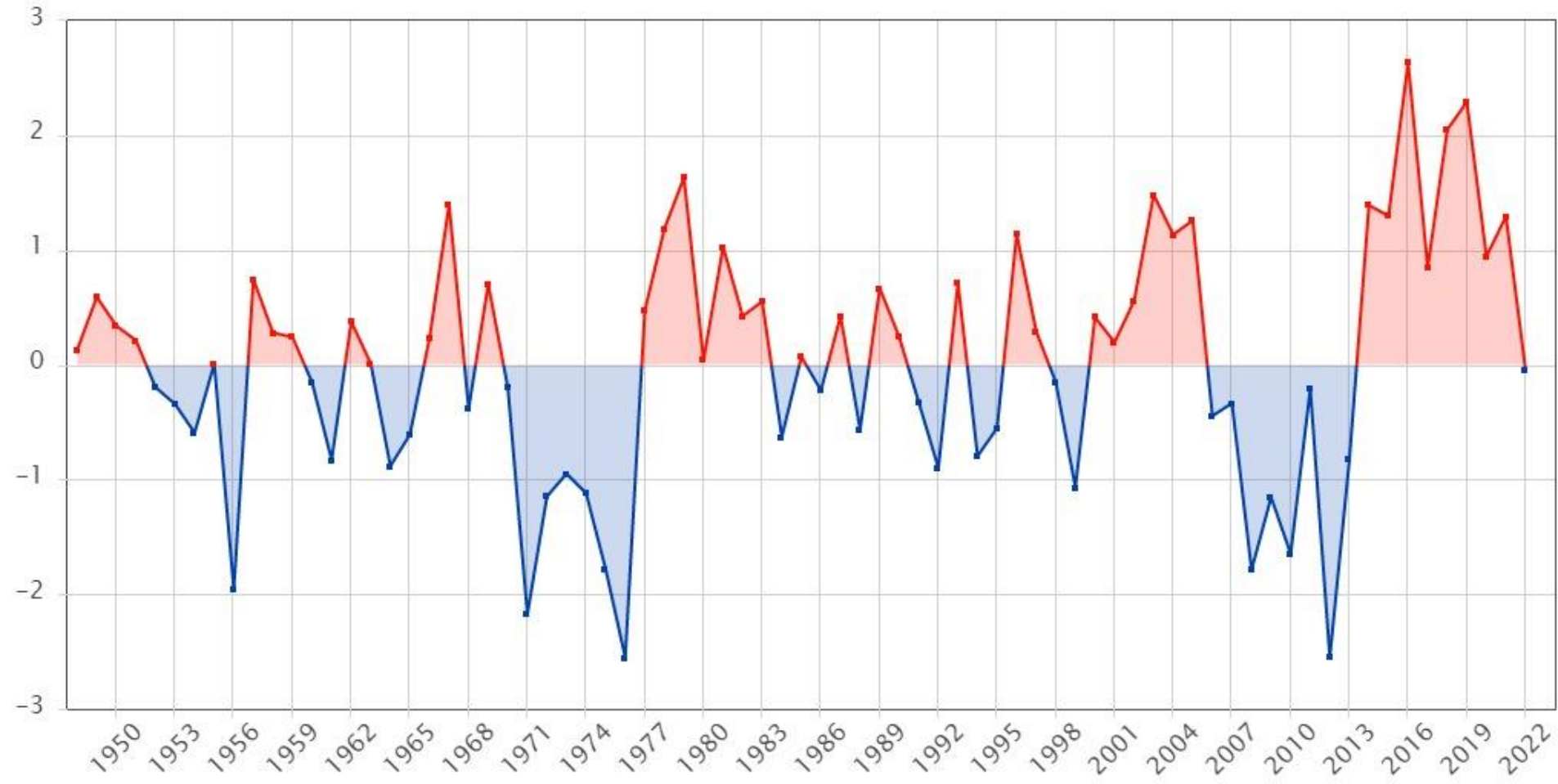
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Temperature for St. Paul

Annual 2m Temperature Anomaly (°C) [1981–2010]  
Specify Point (57.12°N, 170.283°W)

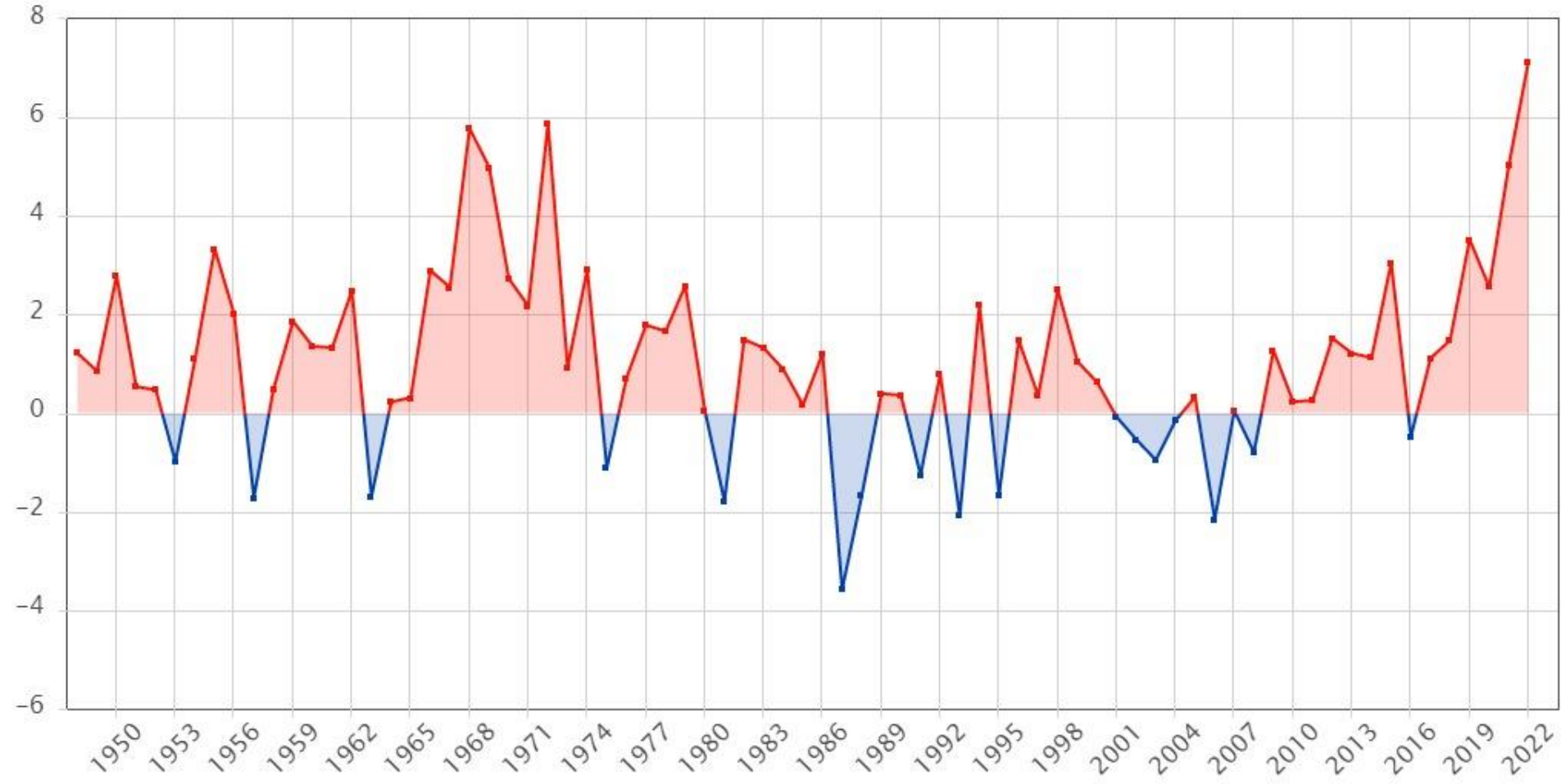
NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Cloudiness for St. Paul

Annual Total Cloud Cover Anomaly (%) [1981–2010]  
Specify Point (57.12°N, 170.283°W)

NCEP/NCAR Reanalysis V1 | ClimateReanalyzer.org, Climate Change Institute, University of Maine



# Annual Trend In Wind Speed for St. Paul

Annual 1000hPa Wind Speed Anomaly (m/s) [1981–2010]  
Specify Point (57.12°N, 170.283°W)

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