

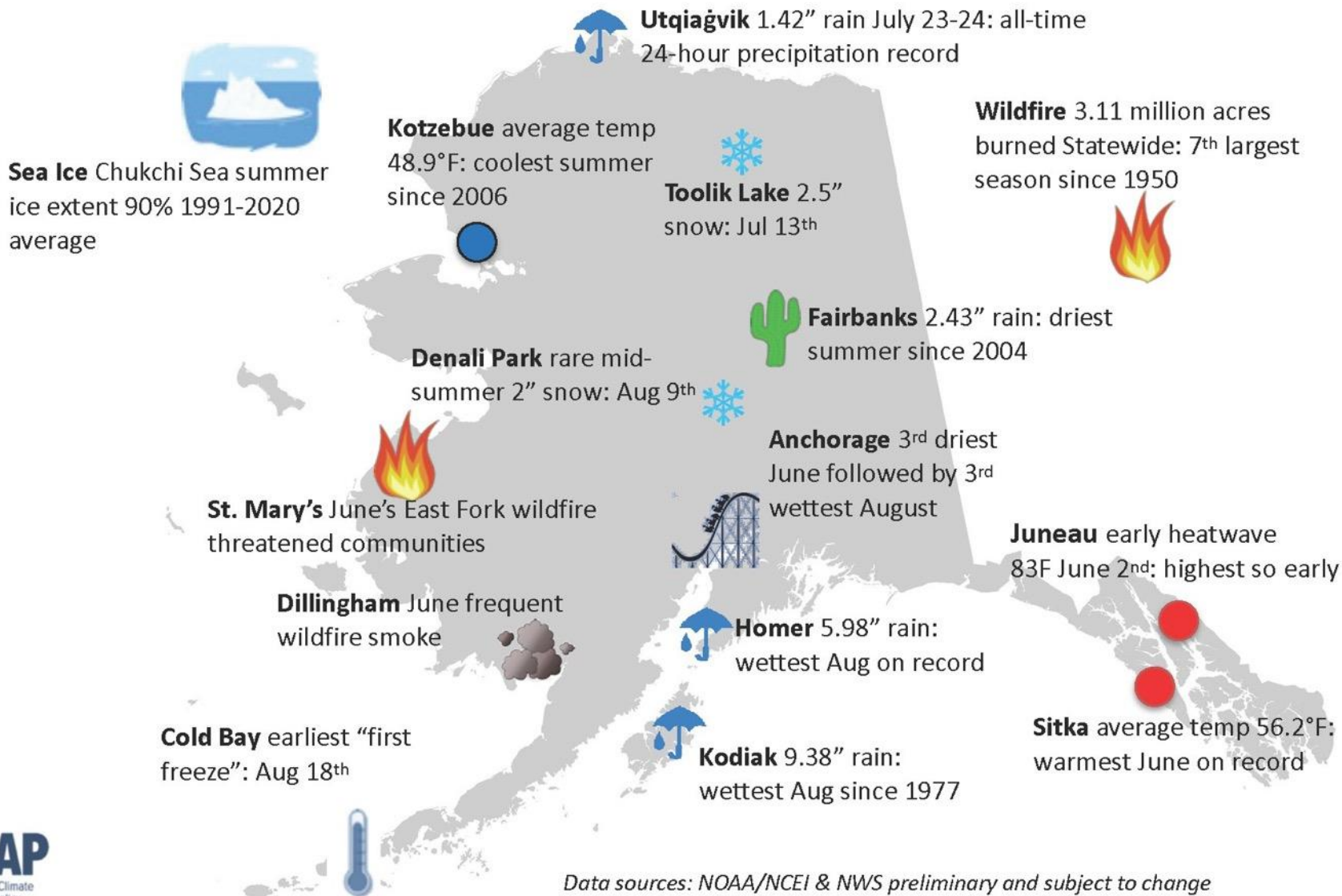
# Circumpolar One Health Summer 2022 Climate Review and Autumn 2022 Outlook

Rick Thoman

Alaska Center for Climate Assessment and Policy  
University of Alaska Fairbanks

# Summer 2022

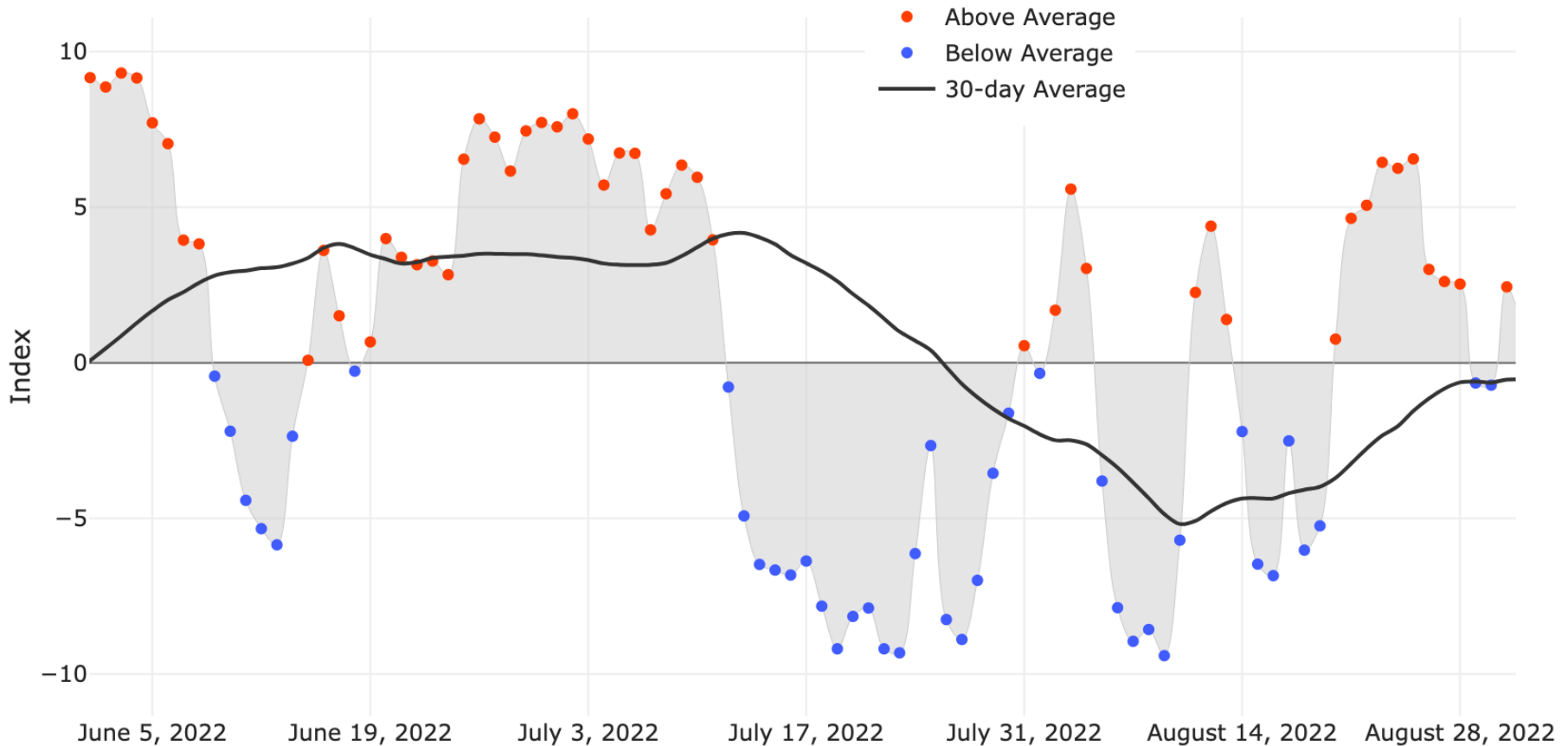
## Alaska Weather & Climate Highlights



Data sources: NOAA/NCEI & NWS preliminary and subject to change

# Alaska Daily Temperature Index

Alaska Statewide Temperature Index  
June 1 to August 31, 2022



Online: <http://accap.uaf.edu/tools/statewide-temperature-index>



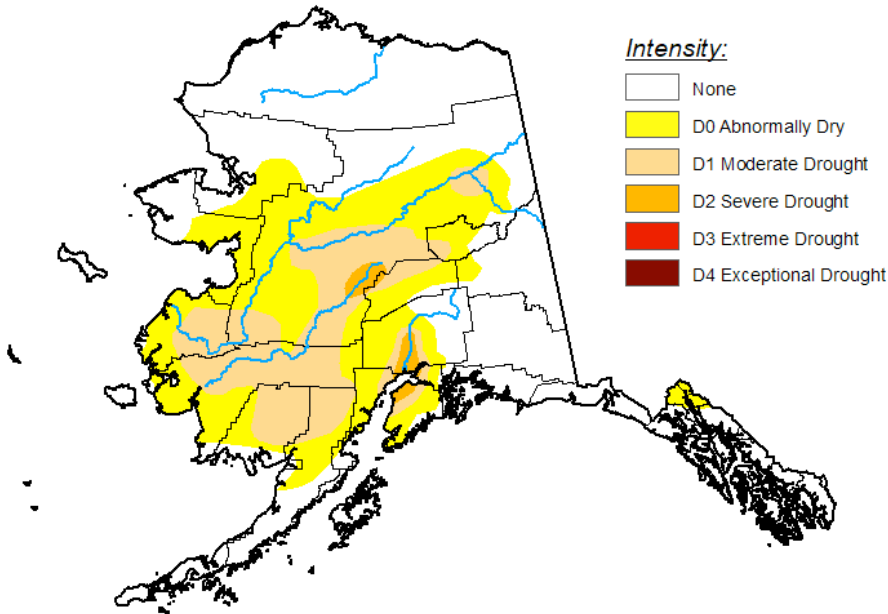
# Drought WAS Alaska

## U.S. Drought Monitor

July 5, 2022

(Released Thursday, Jul. 7, 2022)

Valid 8 a.m. EDT



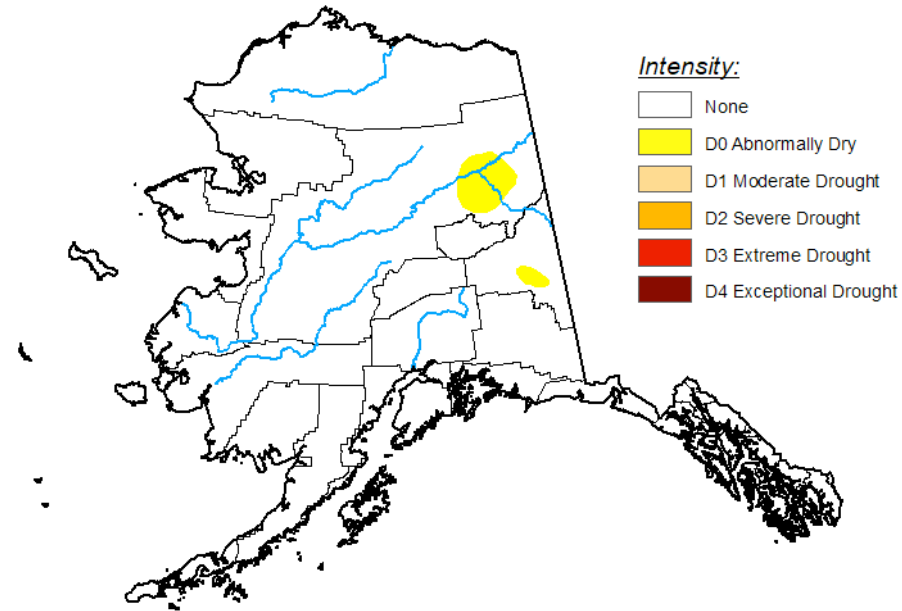
Dry Spring/Early Summer  
Up to Severe Drought

## U.S. Drought Monitor

August 30, 2022

(Released Thursday, Sep. 1, 2022)

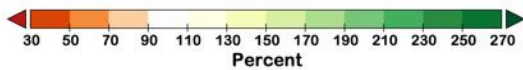
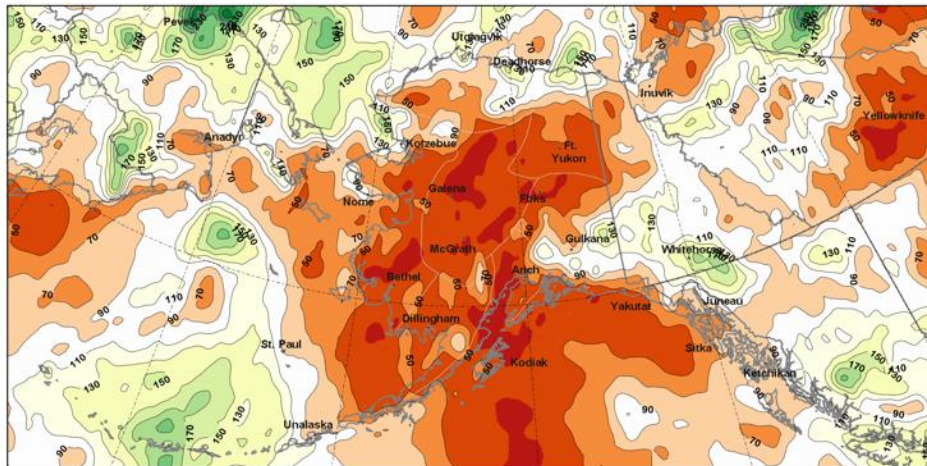
Valid 8 a.m. EDT



Mostly Wet Late Summer  
Bye-Bye Drought

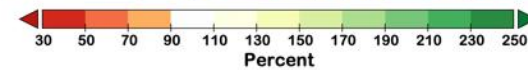
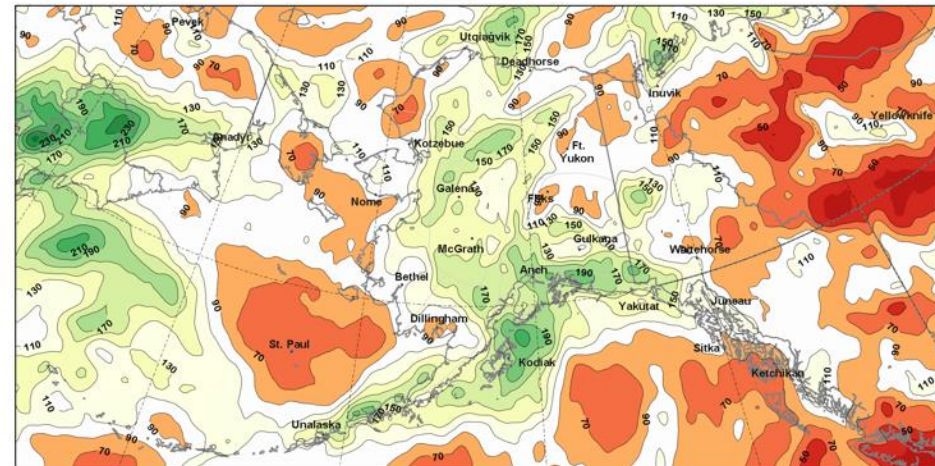
# Dramatic Precipitation Differences

Total Precipitation: Percent of Normal  
June 2022



1991-2020 Baseline  
ERA5 courtesy of ECMWF/Copernicus

Total Precipitation: Percent of Normal  
August 2022



1991-2020 Baseline  
ERA5 courtesy of ECMWF/Copernicus

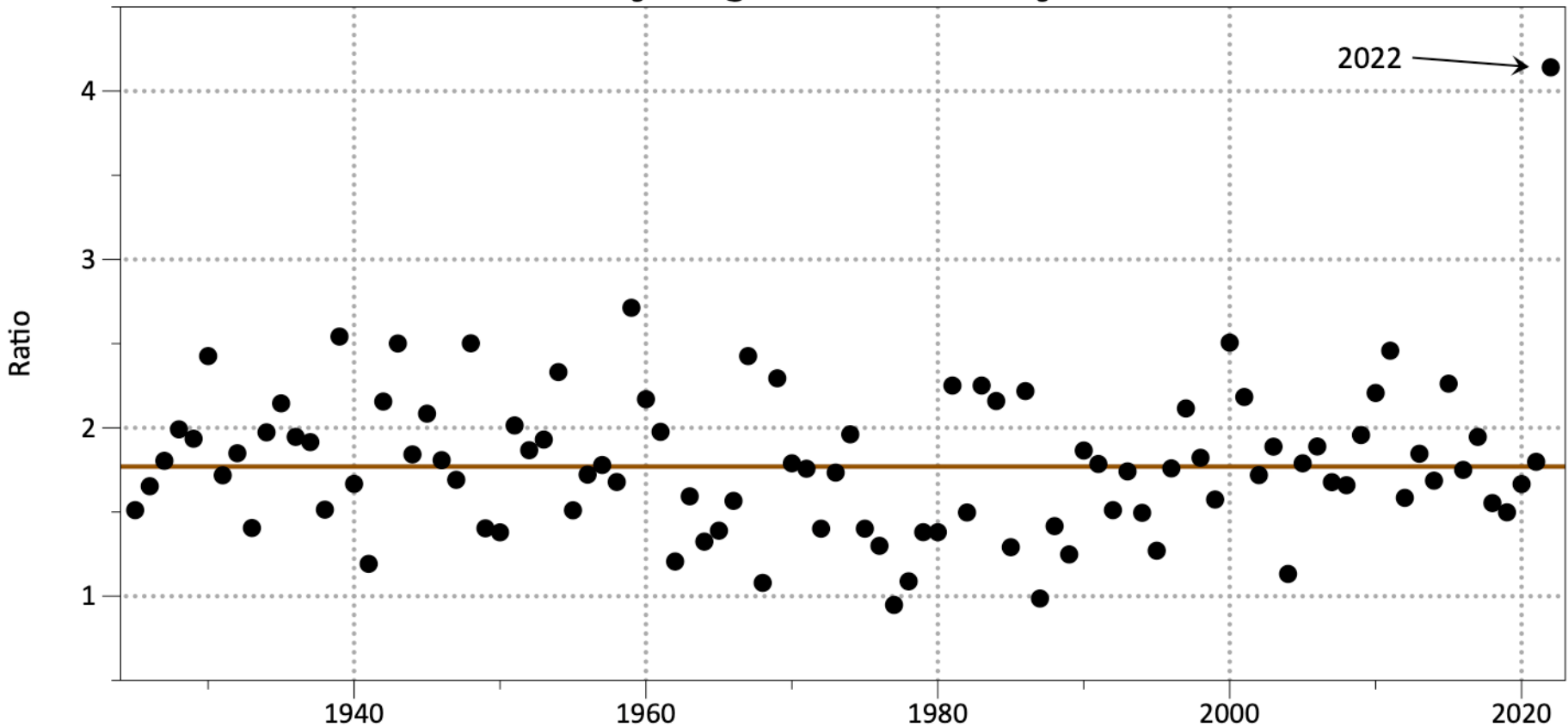
June Precipitation Percent of Average

August Precipitation Percent of Average



# The Great 2022 Precipitation Flip-Flop

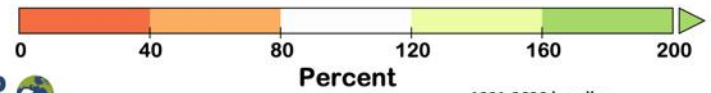
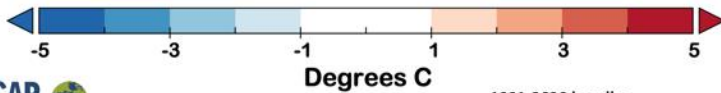
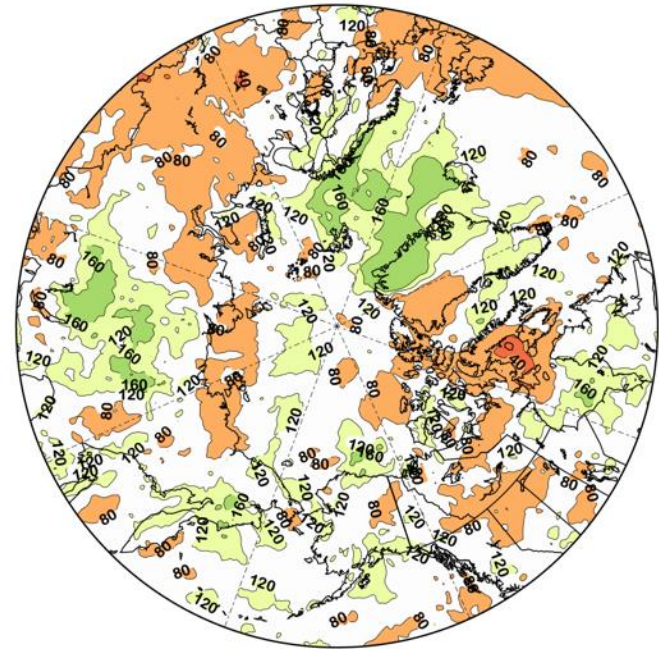
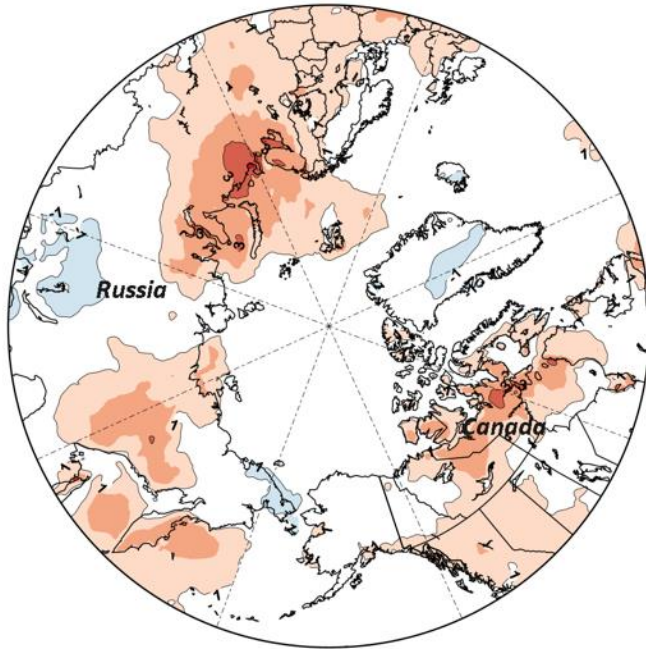
Alaska Statewide Precipitation, 1925-2022  
Ratio of July-August Total to May-June Total



# Summer 2022 Arctic-wide

Average Temperature: Departure from Normal  
Summer (June through August) 2022

Total Precipitation: Percent of Normal  
Summer (June through August) 2022



1991-2020 baseline  
ERA5 courtesy of ECMWF/Copernicus



1991-2020 baseline  
ERA5 courtesy of ECMWF/Copernicus

Temperature Departures from Average

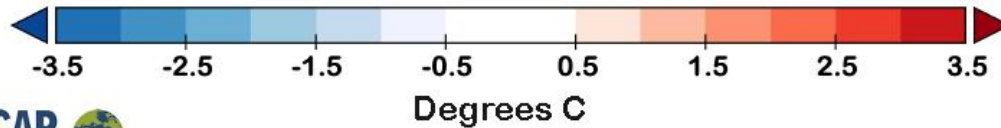
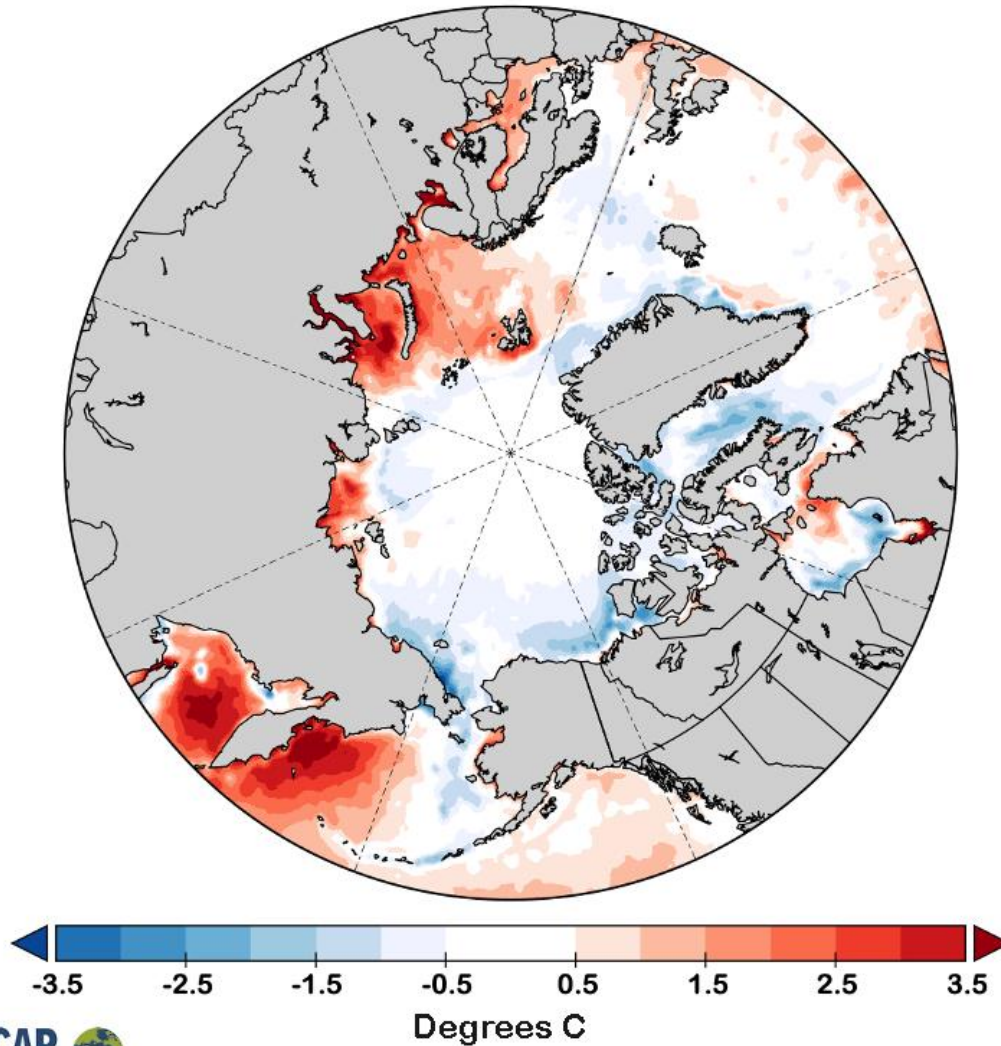
Precipitation Percent of Average

Data: ERA5 courtesy of EMCWF/Copernicus  
1991-2020 Baseline



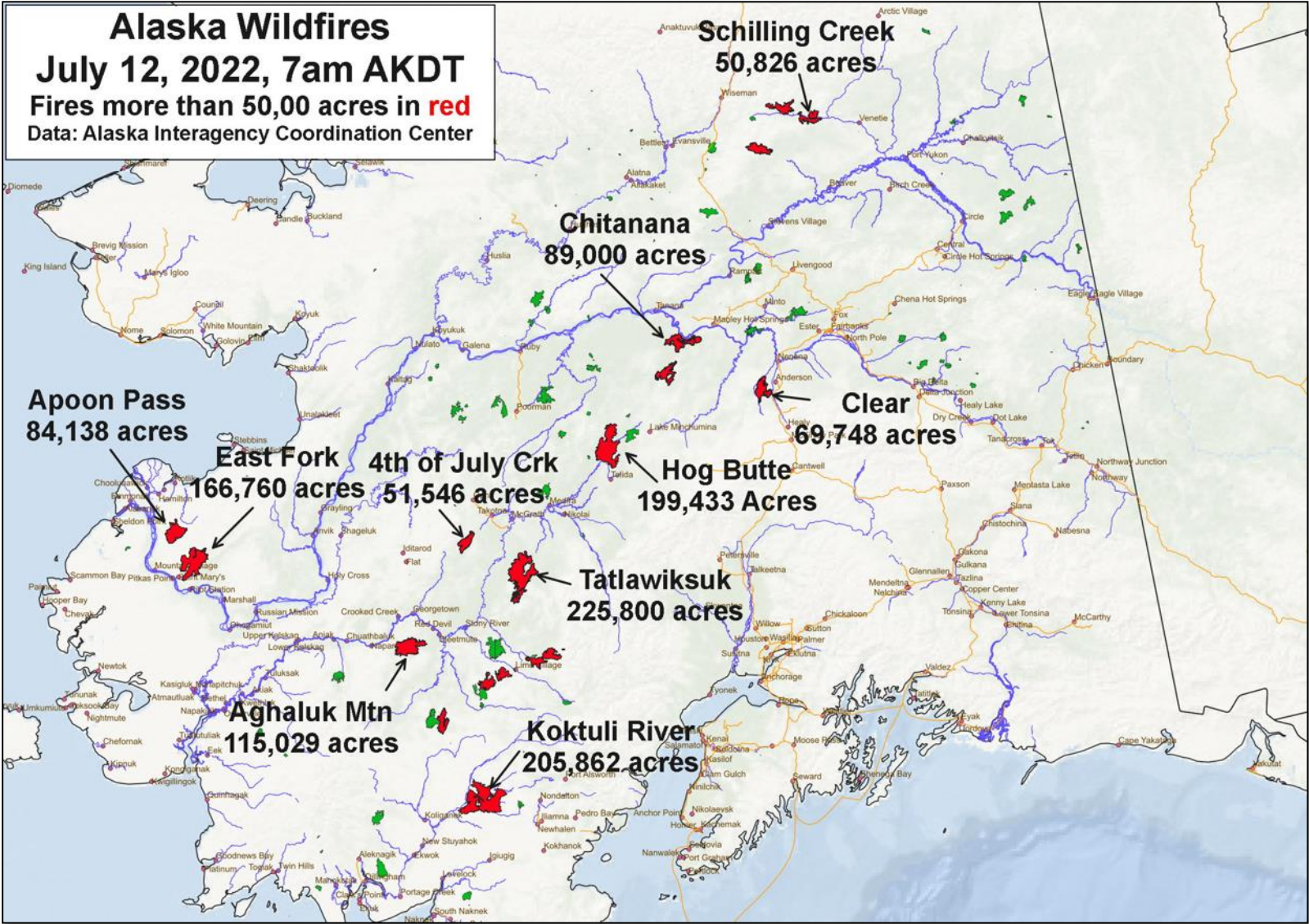
# Summer 2022 Ocean Temperatures

Average Sea Surface Temperature Departure from Normal  
Summer (June through August) 2022



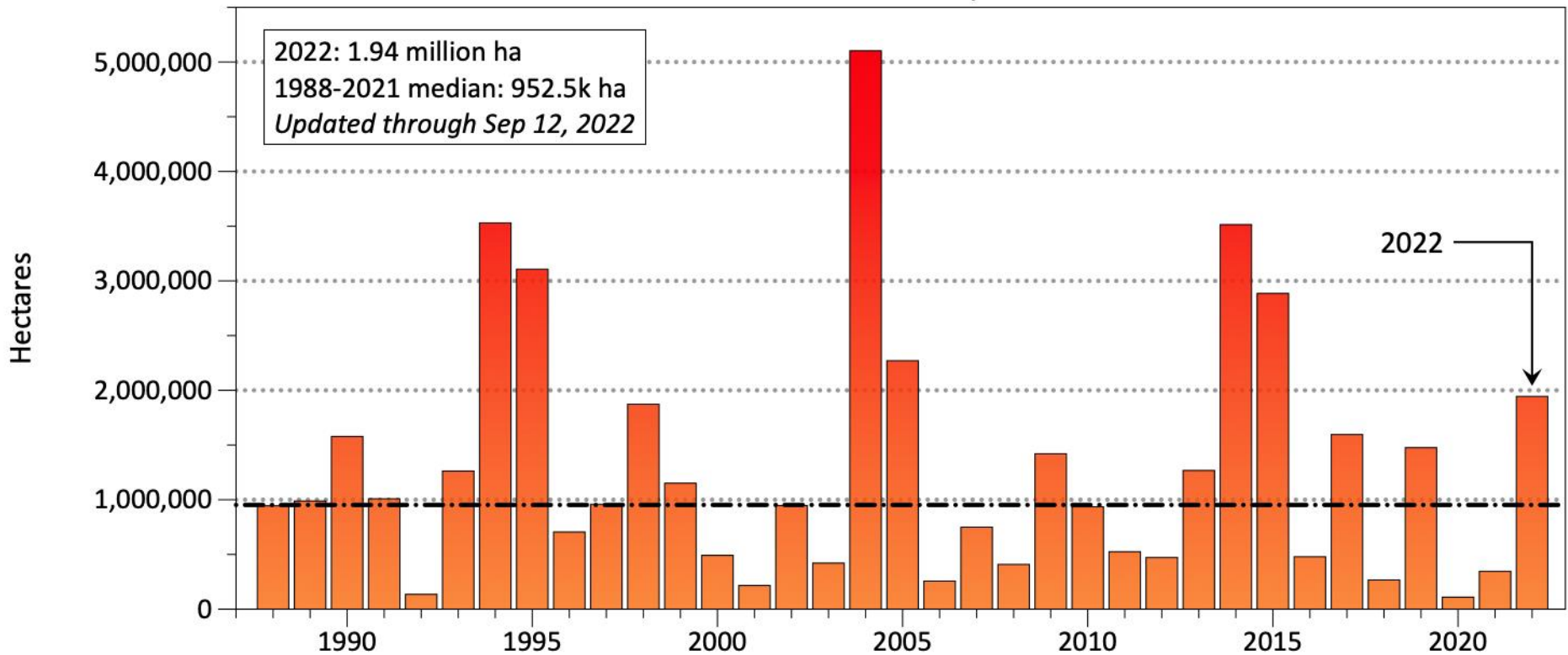


# Alaska 2022 Wildfire



# 2022 Northern North American Wildfire

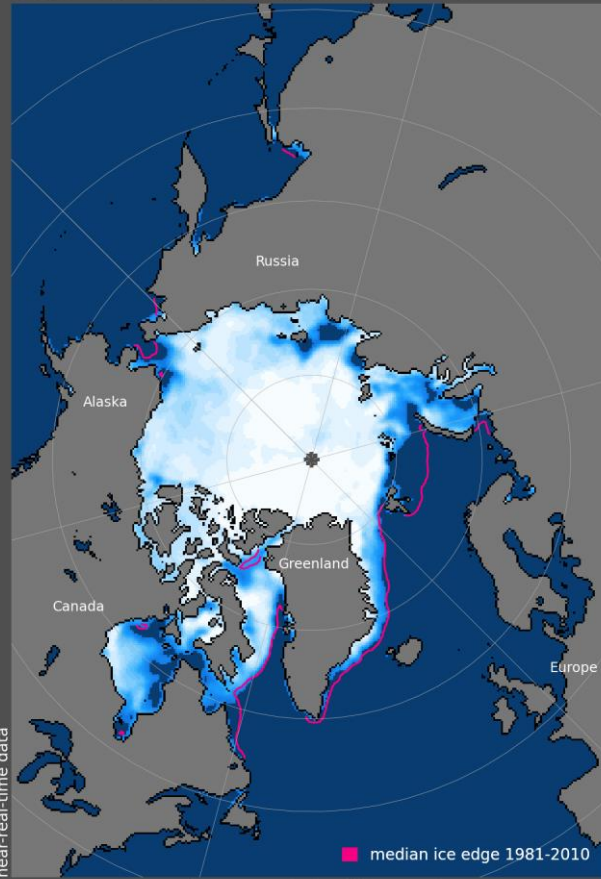
## Boreal North America Alaska, Yukon Territory & Northwest Territories Wildfire Area Burned, 1988 to 2022





# Arctic Sea Ice Extent: Summer 2022

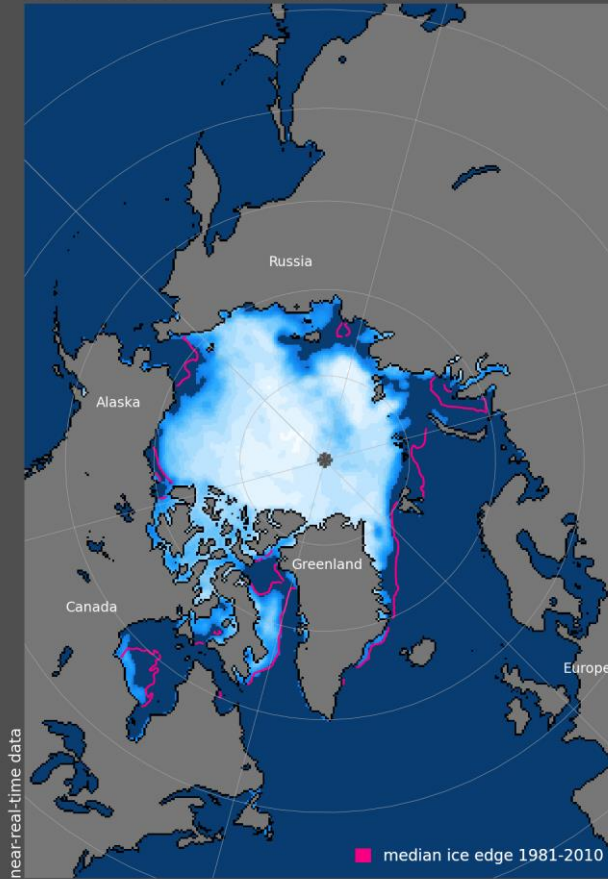
Sea Ice Concentration, Jun 2022



Total Area = 8.6 million sq km

10<sup>th</sup> lowest

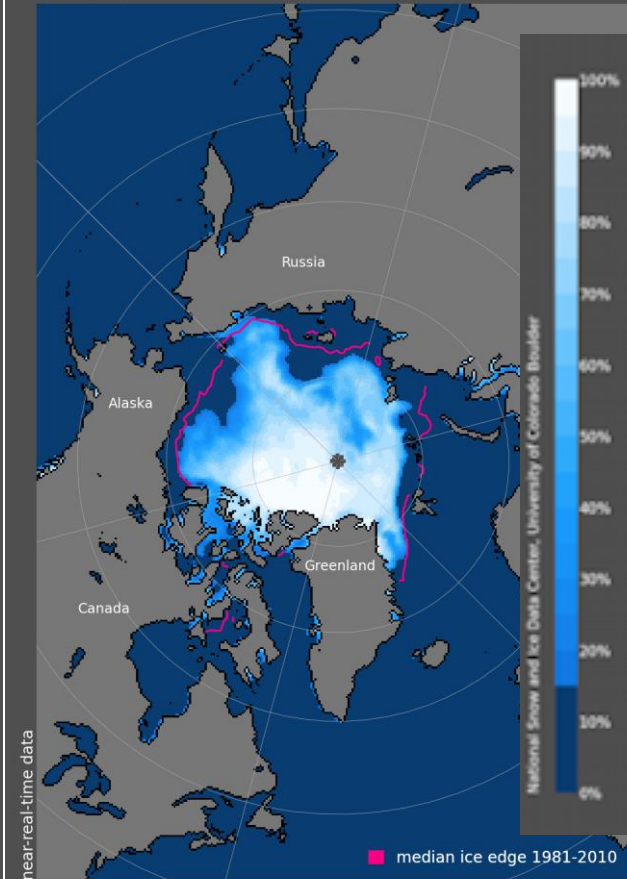
Sea Ice Concentration, Jul 2022



Total Area = 5.9 million sq km

12<sup>th</sup> lowest

Sea Ice Concentration, Aug 2022



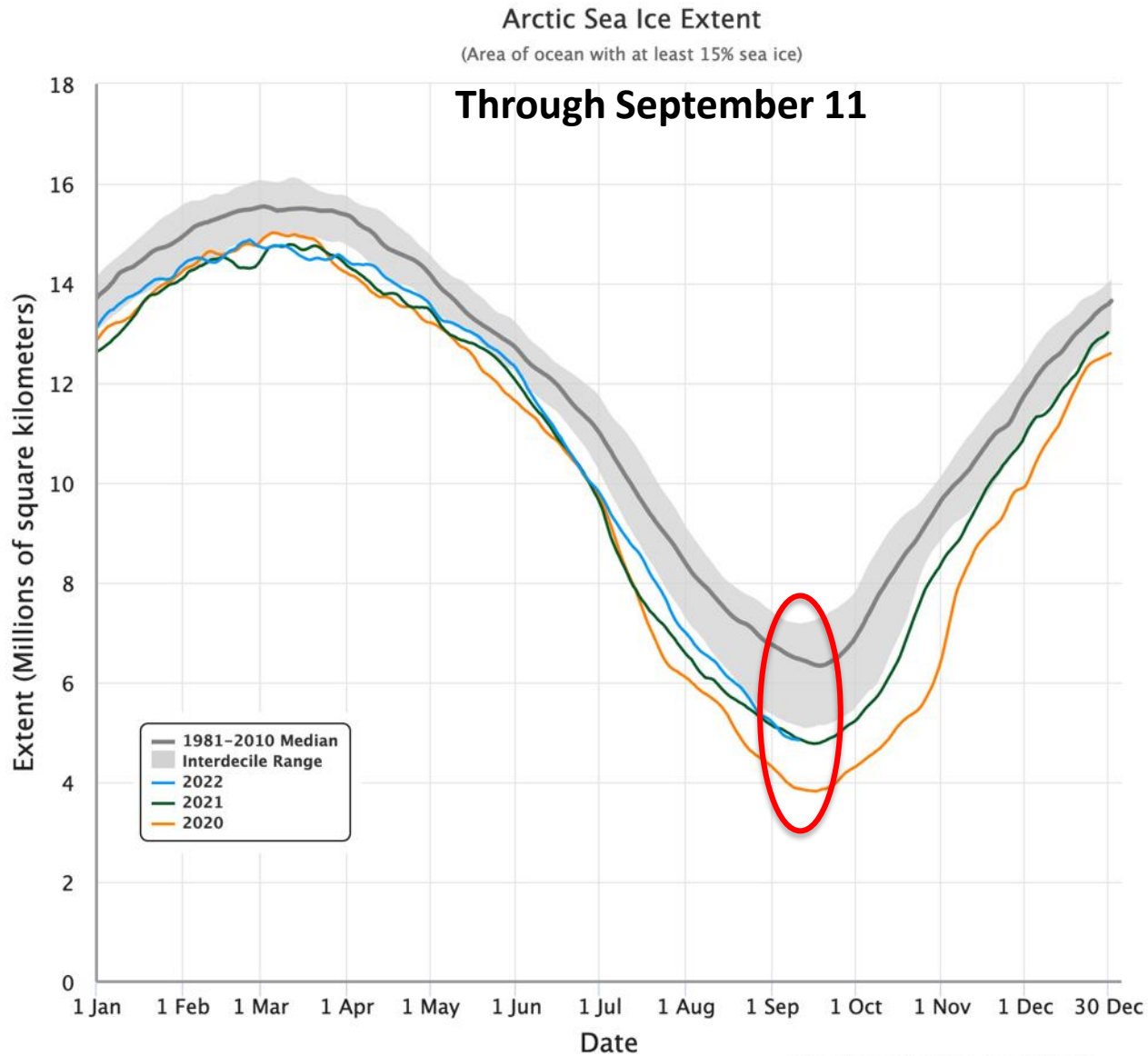
Total Area = 4.0 million sq km

13<sup>th</sup> lowest

Since 1979



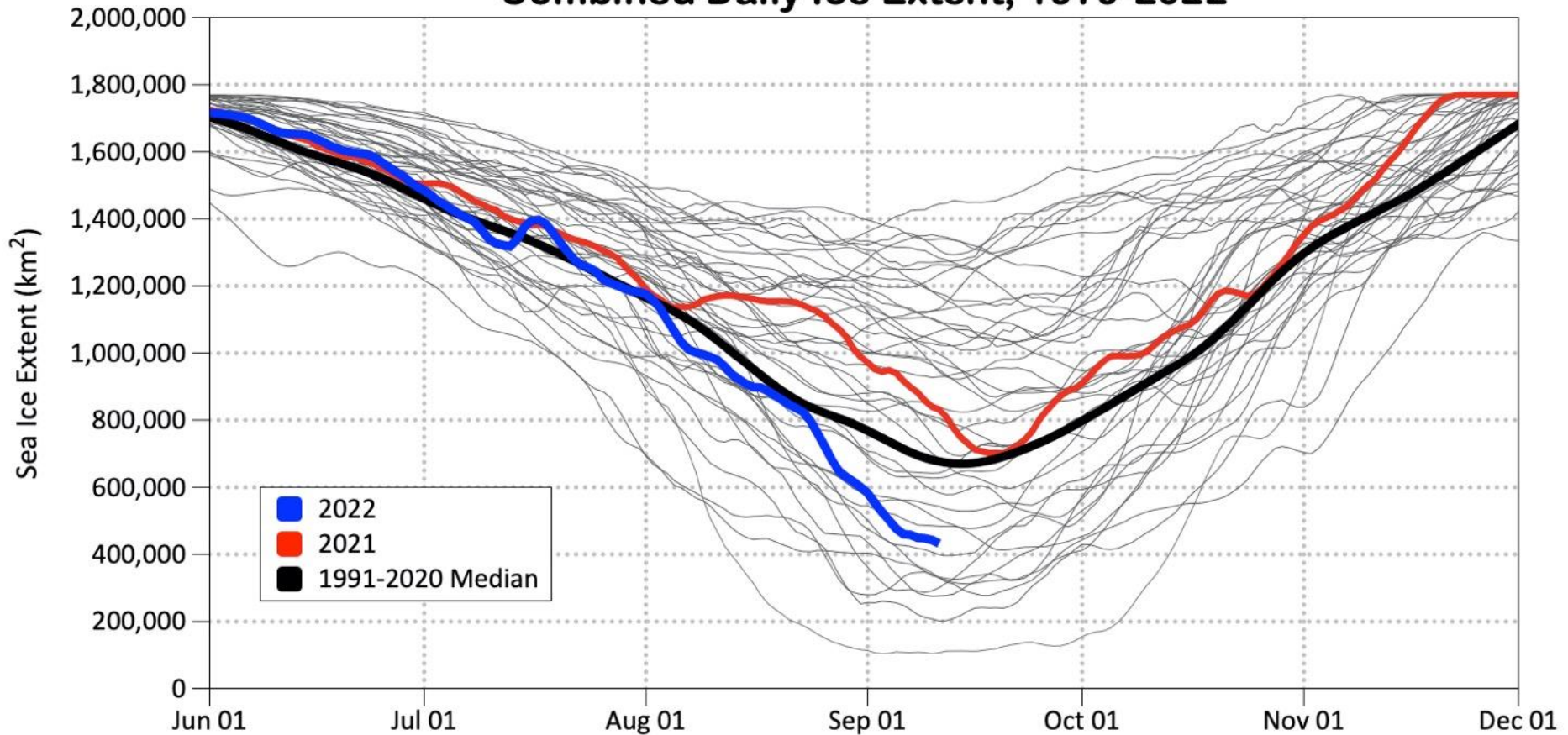
# 2022 Daily Arctic Sea Ice Extent



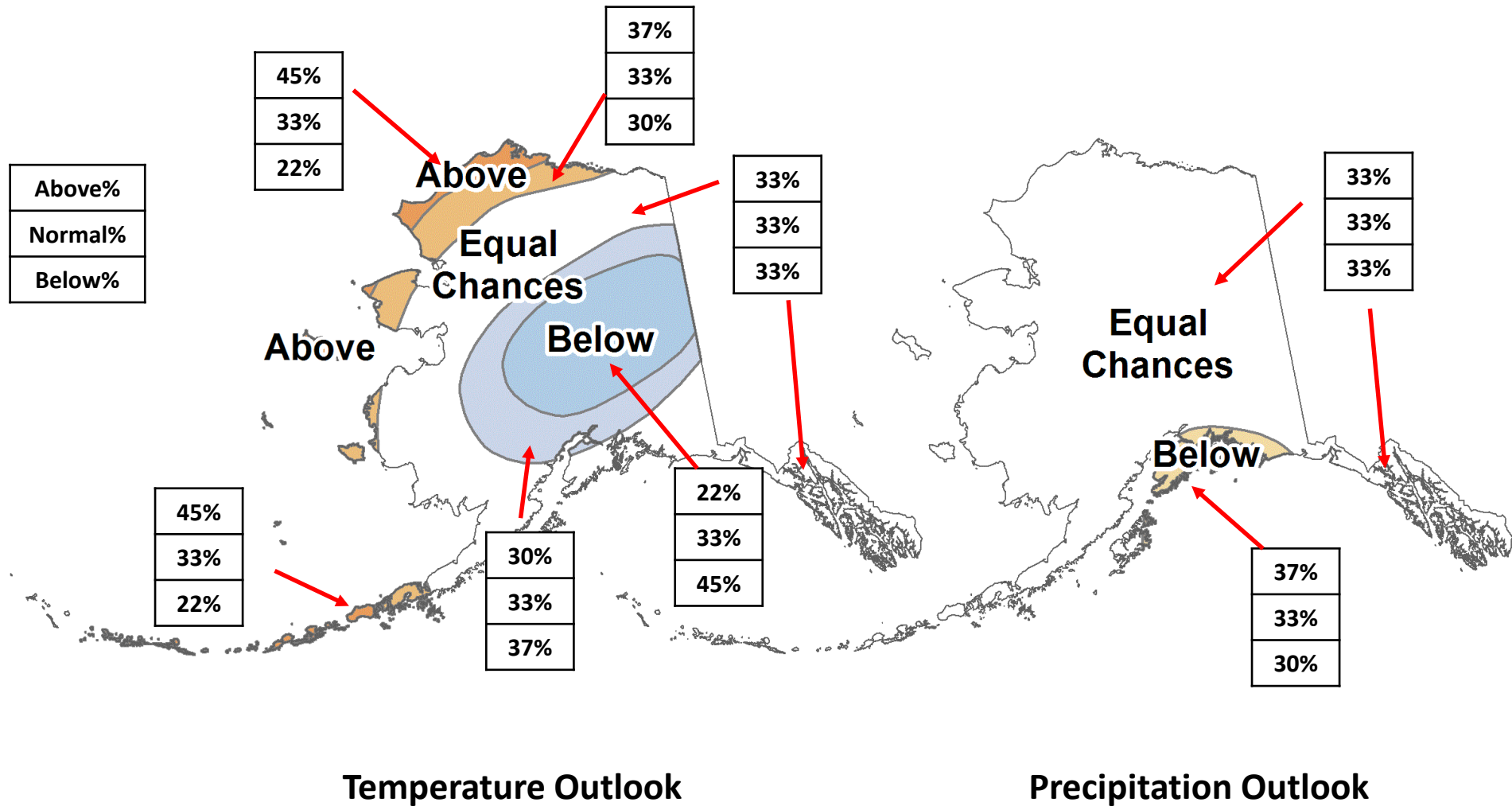


# Summer Sea Ice Around Alaska

## Chukchi & Beaufort Seas Combined Daily Ice Extent, 1979-2022



# CPC September-November 2022 Outlook

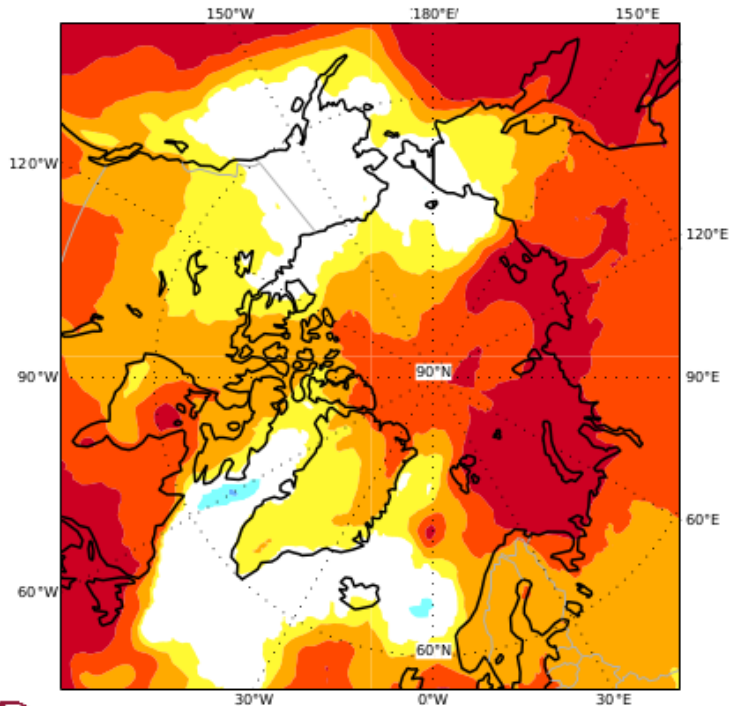


# Autumn 2022

## Arctic Temperature and Precipitation Outlook

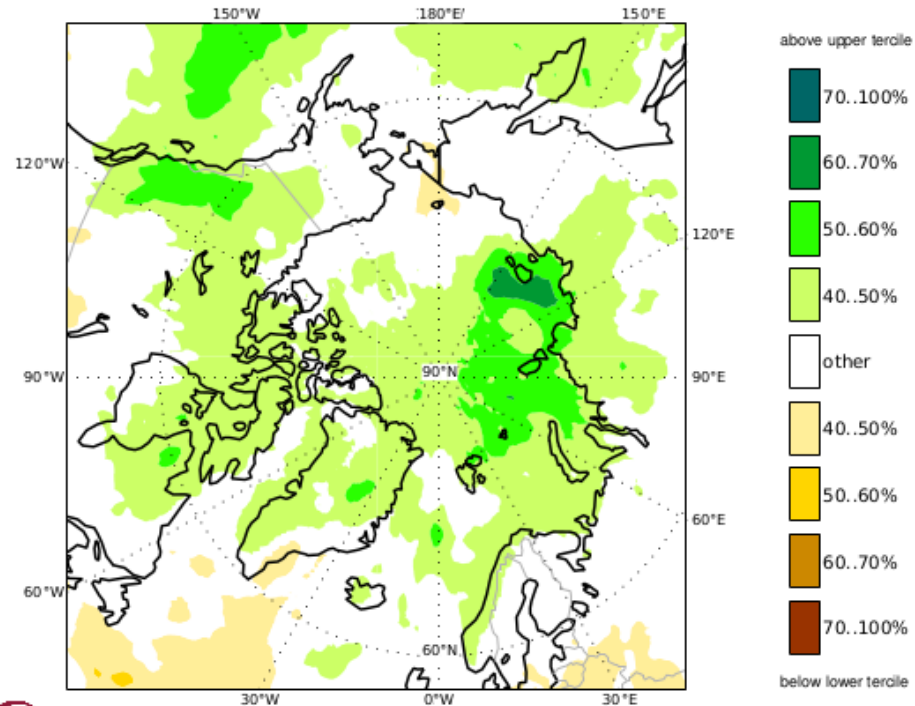
C3S multi-system seasonal forecast  
Prob(most likely category of 2m temperature)  
Nominal forecast start: 01/08/22  
Unweighted mean

SON 2022



C3S multi-system seasonal forecast  
Prob(most likely category of precipitation)  
Nominal forecast start: 01/08/22  
Unweighted mean

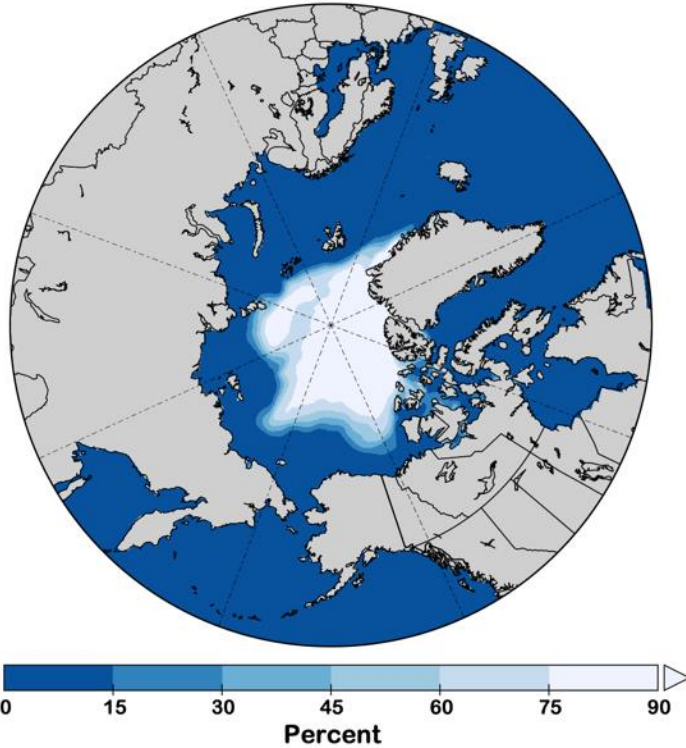
SON 2022



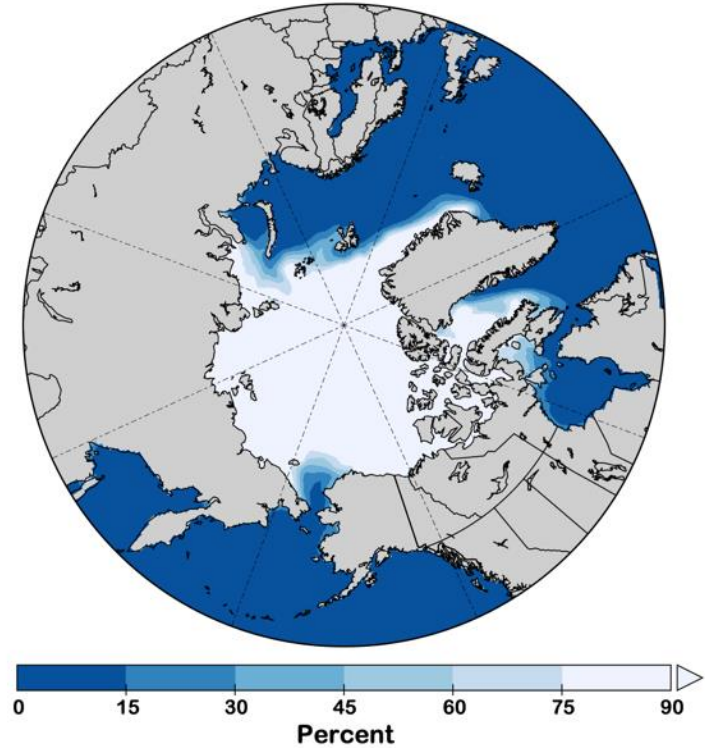
Outlooks courtesy Copernicus C3S (Climate Change Service)

# Autumn 2022 Sea Ice Outlook

Forecast Average Sea Ice Concentration  
September 2022



Forecast Average Sea Ice Concentration  
November 2022



Data: NOAA/Climate Prediction Center Exp. Sea Ice Outlook





# Thanks very much



Clear wildfire, July 7, 2022

Photo: Brian LeRoy

