

# Circumpolar One Health Spring 2019 Climate Review and Summer 2019 Outlook

Rick Thoman

Alaska Center for Climate Assessment and Policy

# May and Spring 2019 Alaska Weather & Climate Highlights

**Chukchi Sea** May average ice extent lowest of record  
13 times more open water than normal



**Utqiagvik**

warmest Spring 13.6F

**Prudhoe Bay**

warmest Spring 15.2F

**Kotzebue** warmest

Spring 30.7F

**Bettles** 2<sup>nd</sup> warmest

Spring 30.7F

**Nome** 3<sup>rd</sup> warmest

Spring 29.3F

**Fairbanks** warmest

Spring 39.5F

**Northway** warmest

Spring 36.5F

**McGrath** warmest

Spring 36.5F

**Bethel** earliest

breakup Kuskowim

River April 12<sup>th</sup>

**Anchorage** wettest

May: 2.18"



**Gulkana** 2<sup>nd</sup> warmest

Spring 37.3F

**Haines** 3<sup>rd</sup> warmest

Spring 45.0F

**Kodiak** 5<sup>th</sup> warmest

Spring 41.5F

**Cold Bay** 3<sup>rd</sup> warmest

Spring 39.2F

**Southern  
Southeast:** severe  
drought continues



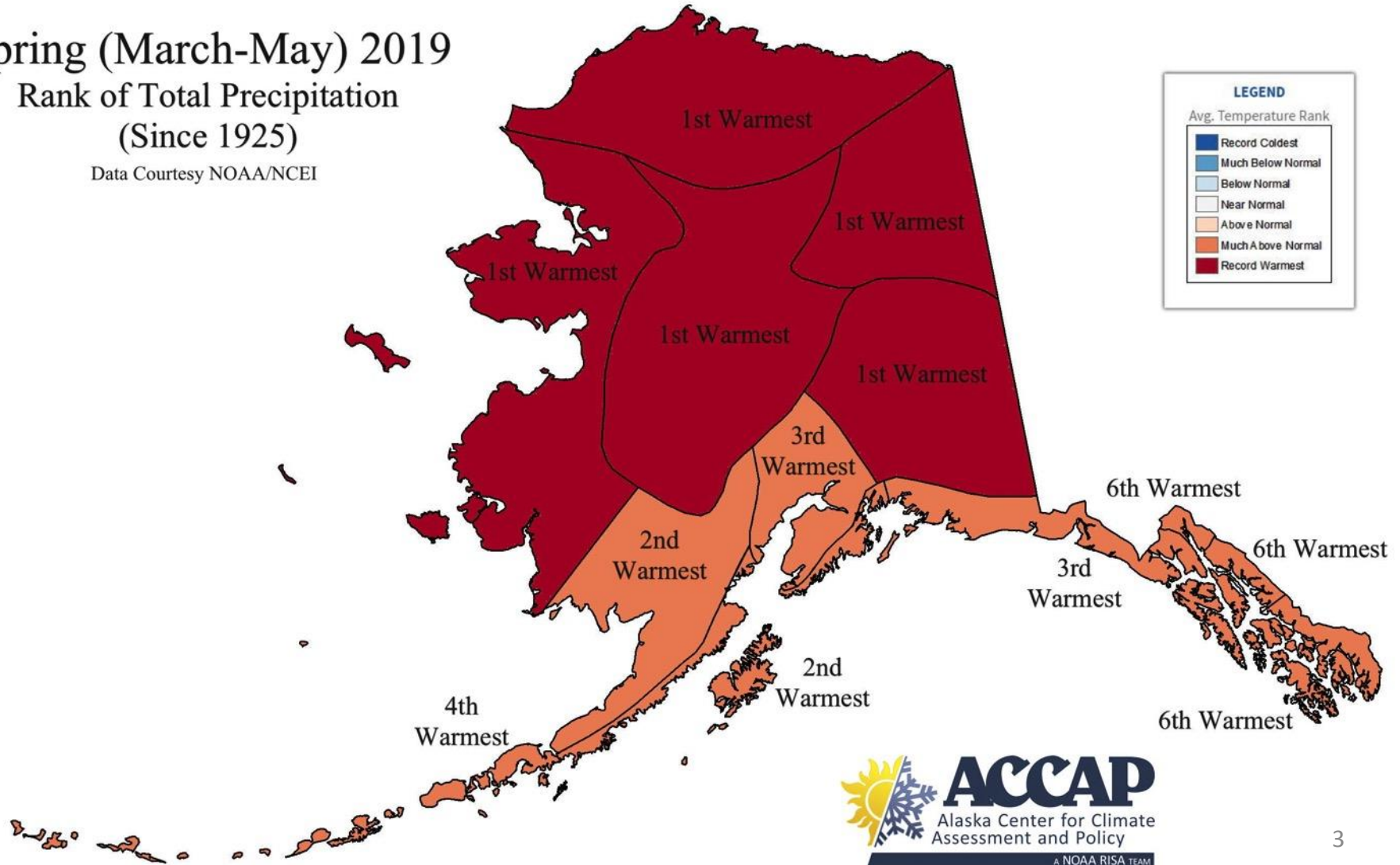
**Bering Sea** 2<sup>nd</sup> earliest  
ice melt-out May 15<sup>th</sup>

# Record or near record warm everywhere

Spring (March-May) 2019

Rank of Total Precipitation  
(Since 1925)

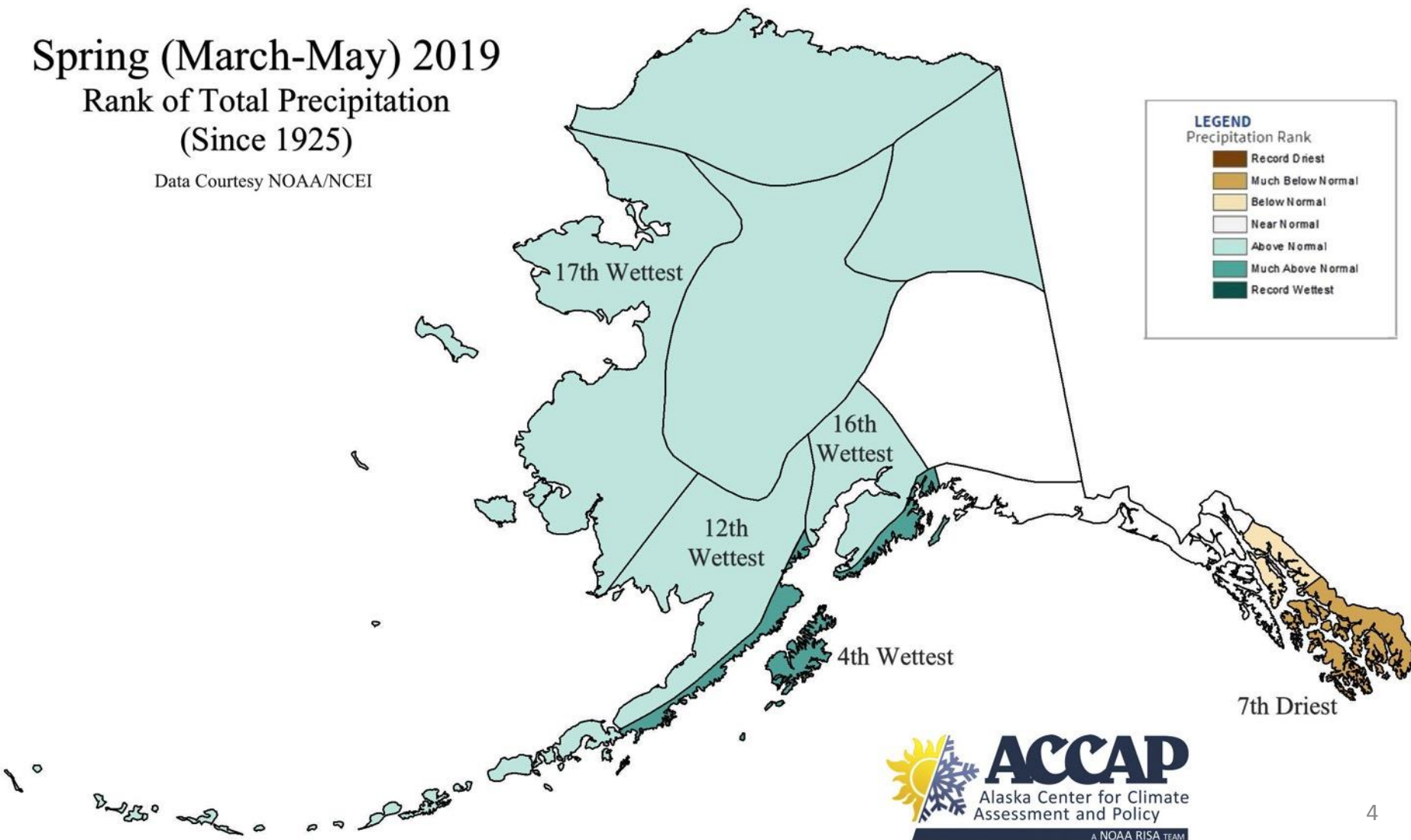
Data Courtesy NOAA/NCEI



# Precipitation: big regional differences

Spring (March-May) 2019  
Rank of Total Precipitation  
(Since 1925)

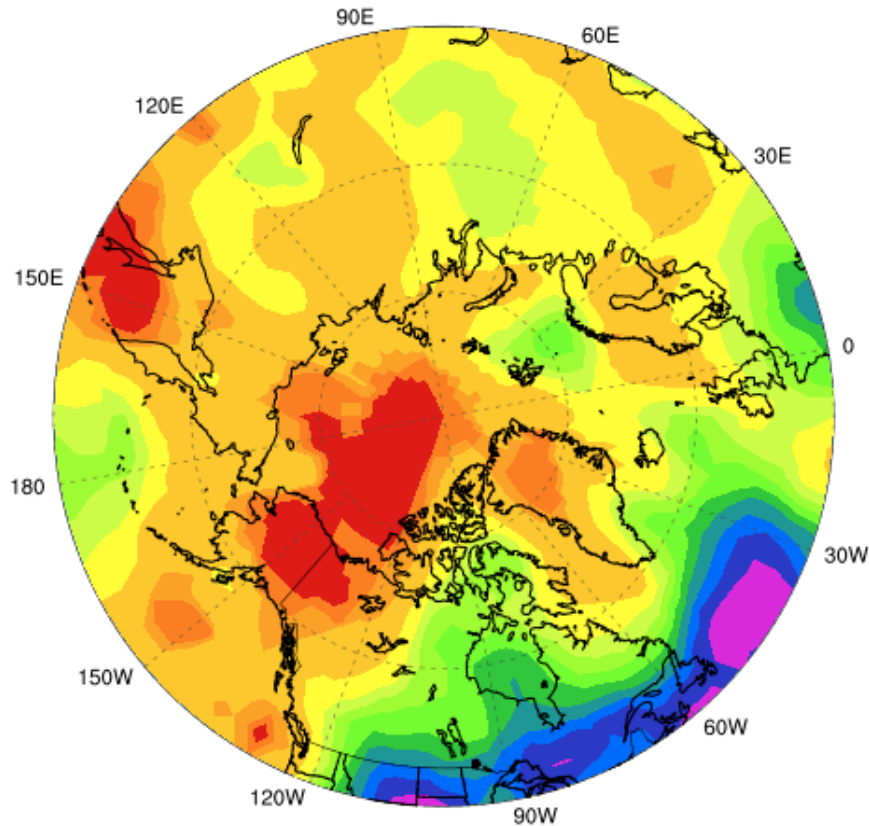
Data Courtesy NOAA/NCEI



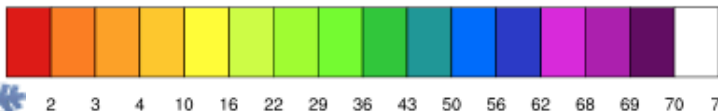


# Pan-Arctic Spring Temps and Precip

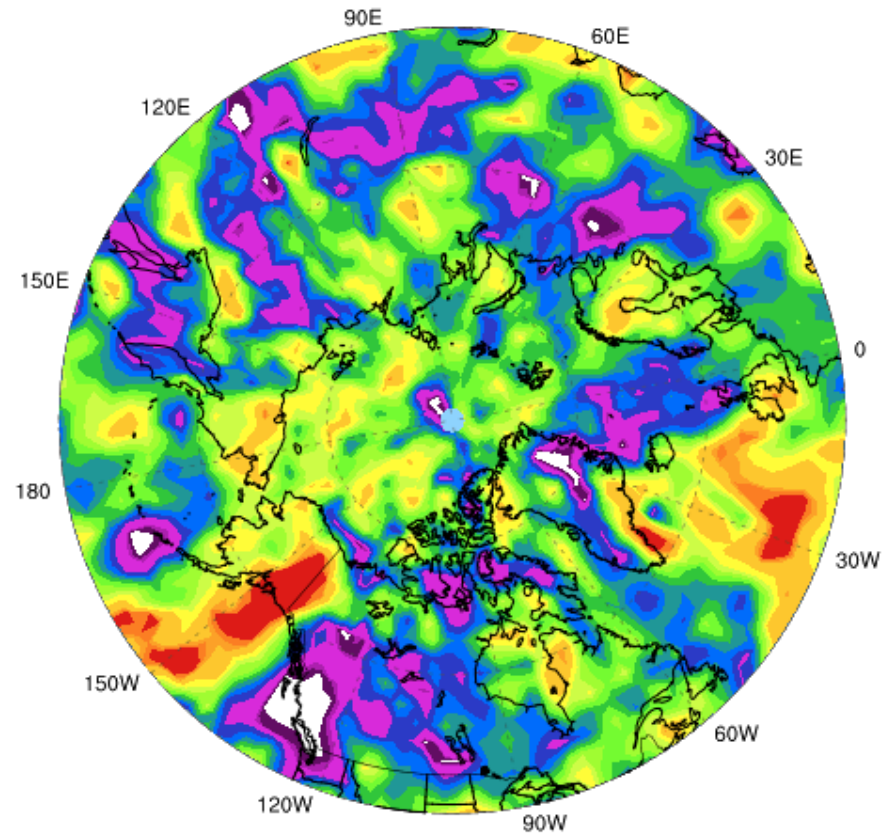
925mb Temp: March 2019 - May 2019 (Ranks)



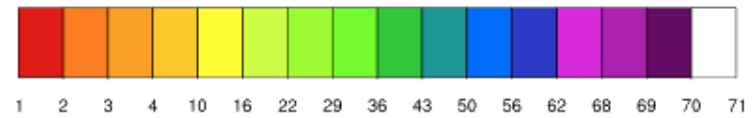
U. Alaska Fairbanks 2019 (Data Source: ESRL R1).  
Ranks are from 1 (High) to 71 (Low). [Since 1949]  
Compared to all March - May periods.



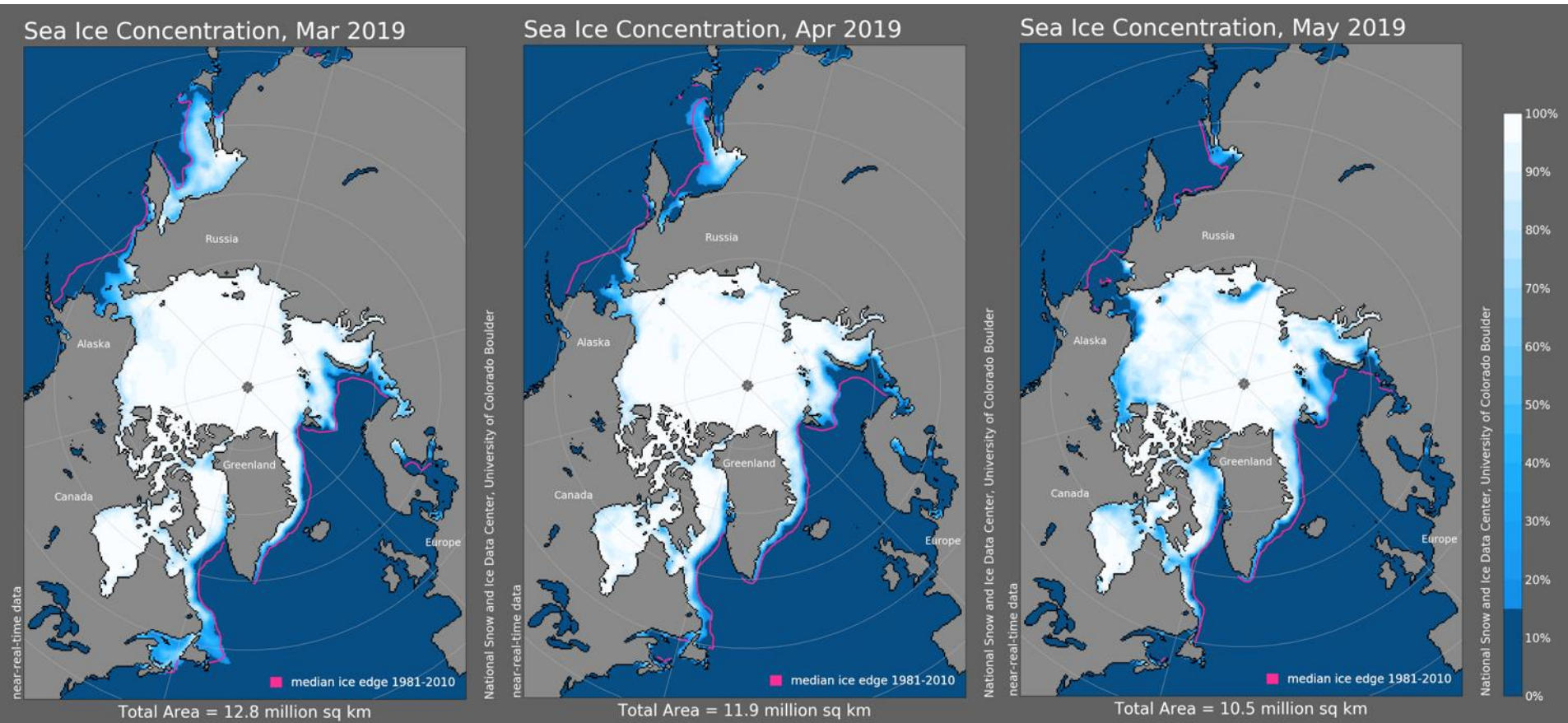
Precipitation Rate: March 2019 - May 2019 (Ranks)



U. Alaska Fairbanks 2019 (Data Source: ESRL R1).  
Ranks are from 1 (High) to 71 (Low). [Since 1949]  
Compared to all March - May periods.



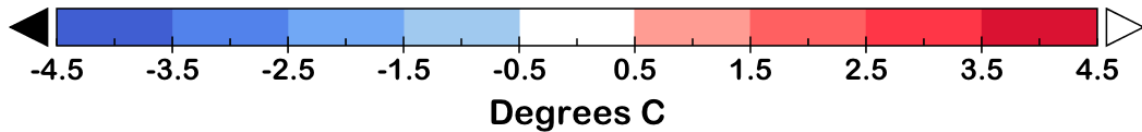
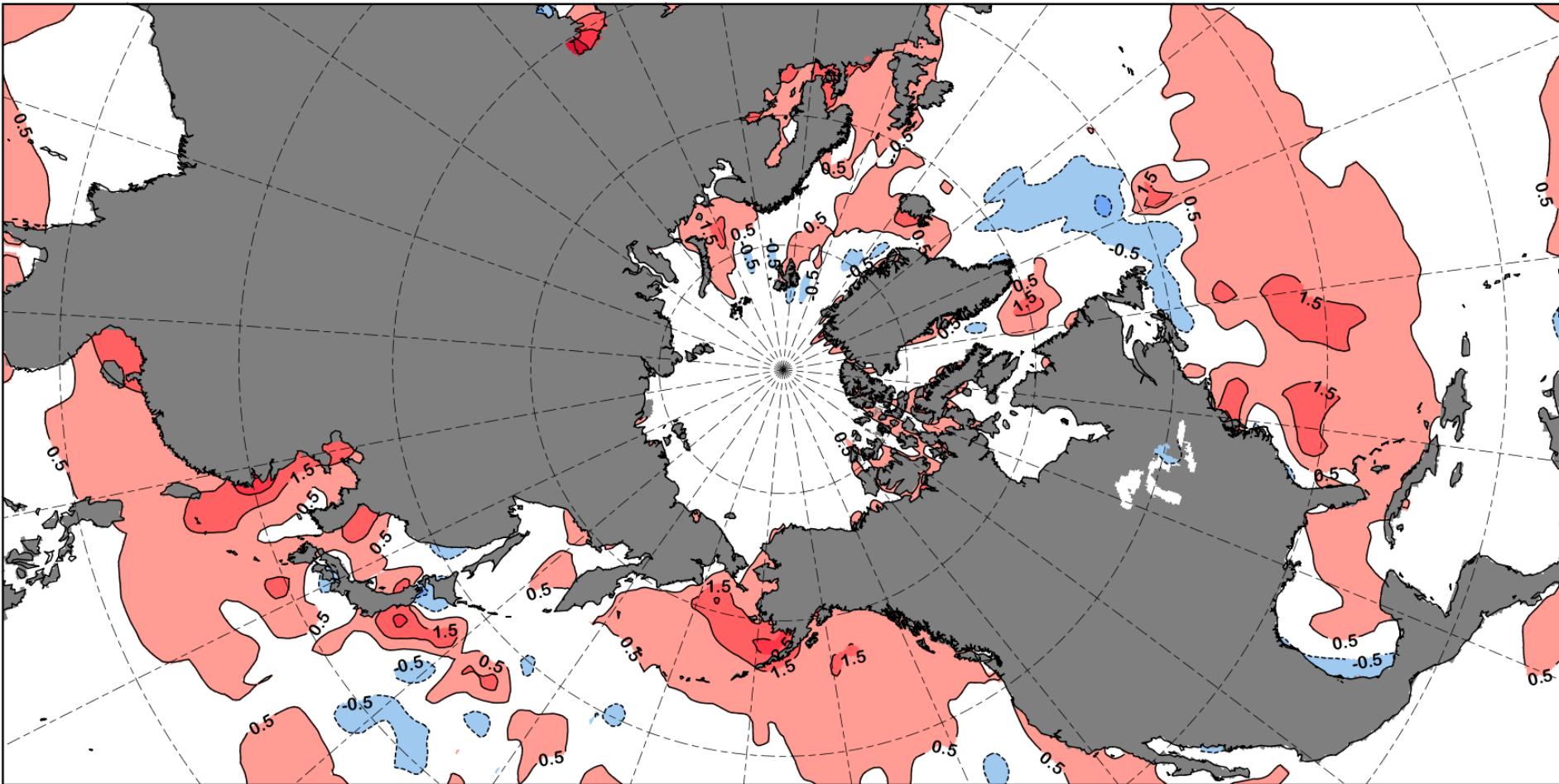
# Sea Ice This Spring



# Ocean Temperatures

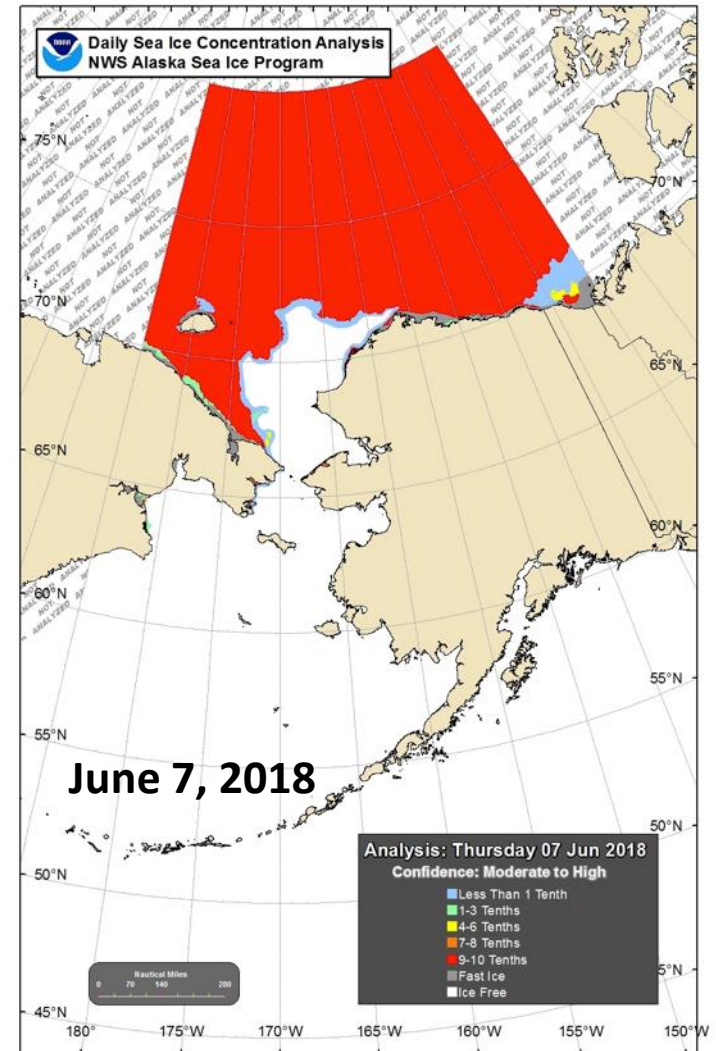
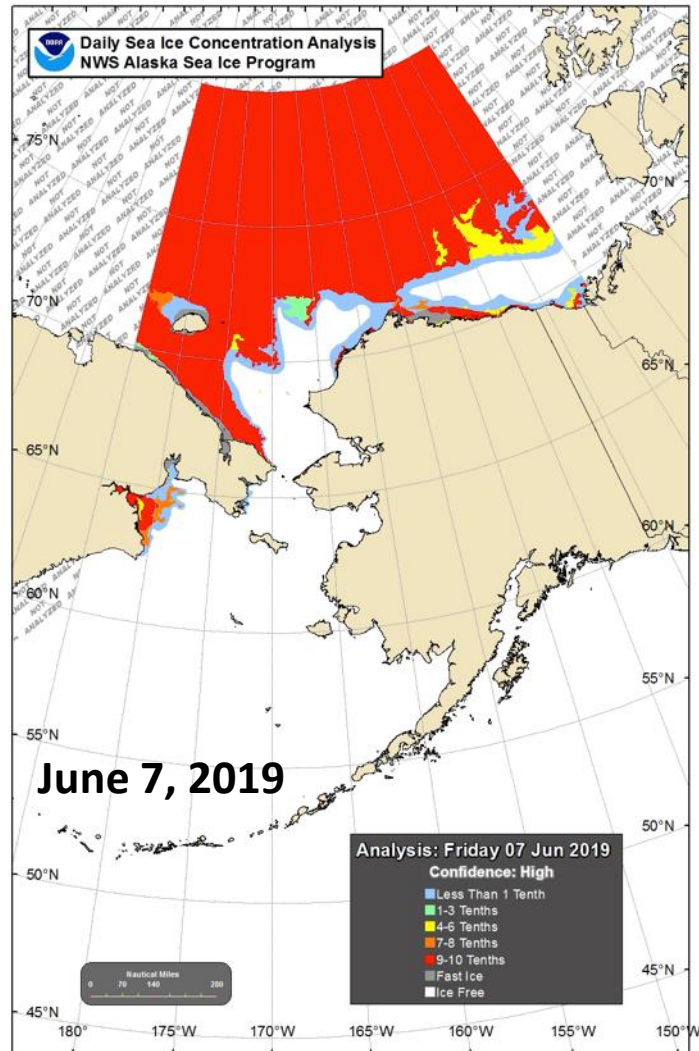
Sea Surface Temperature Departure from Normal

March through May, 2019





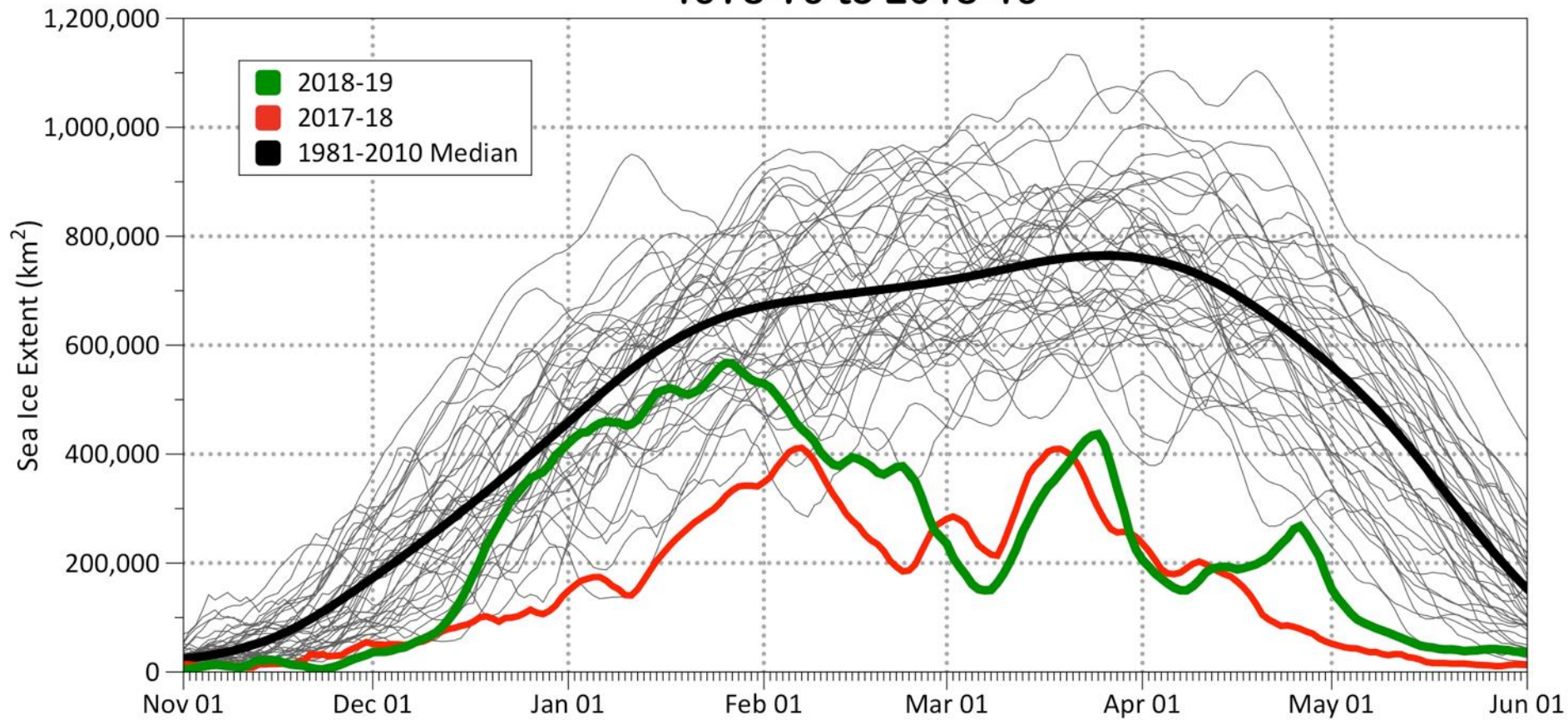
# Near-Alaska Early June Sea Ice Comparison



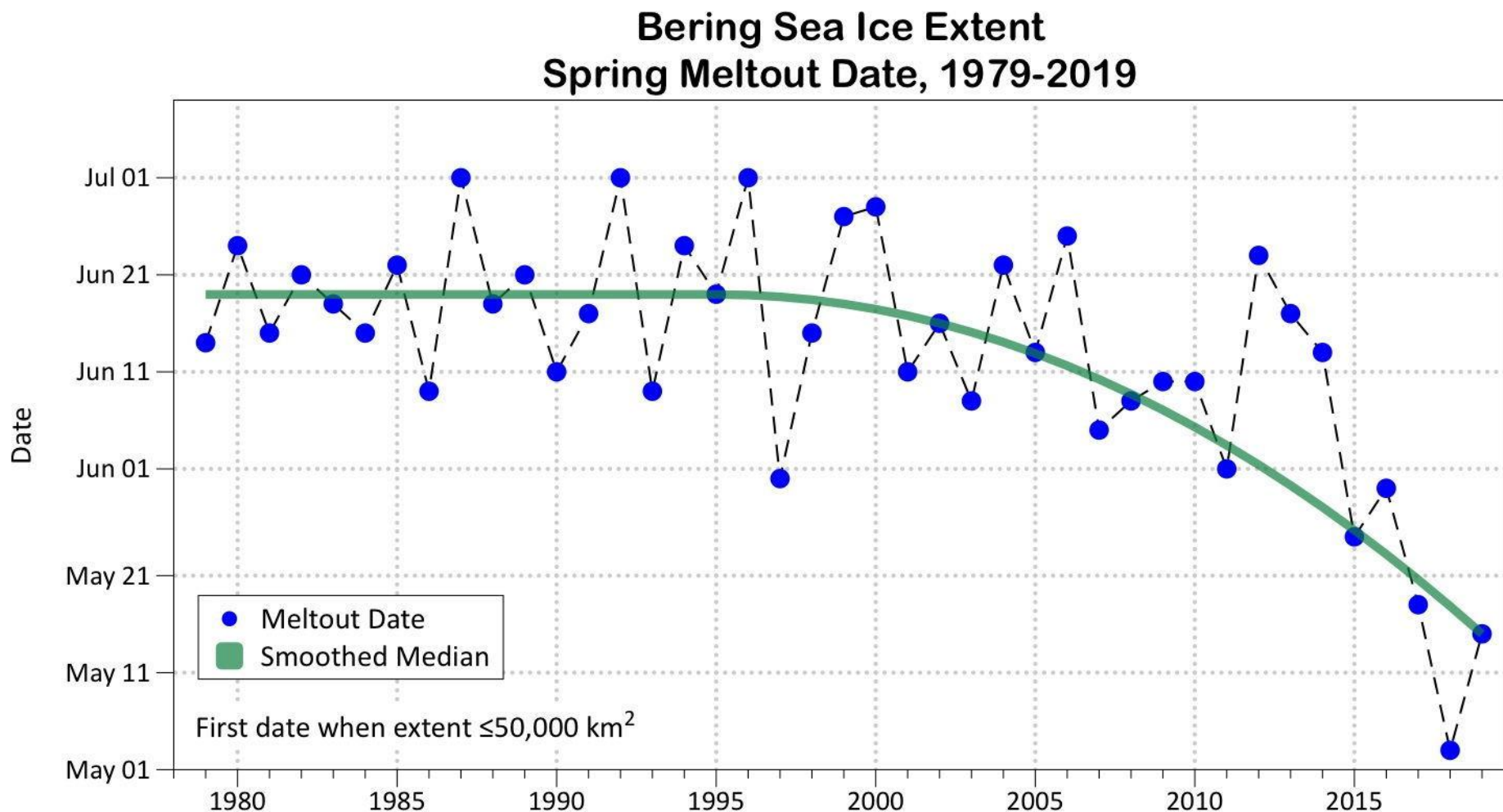


# Daily Bering Sea Ice Extent

Bering Sea Daily Ice Extent  
1978-79 to 2018-19



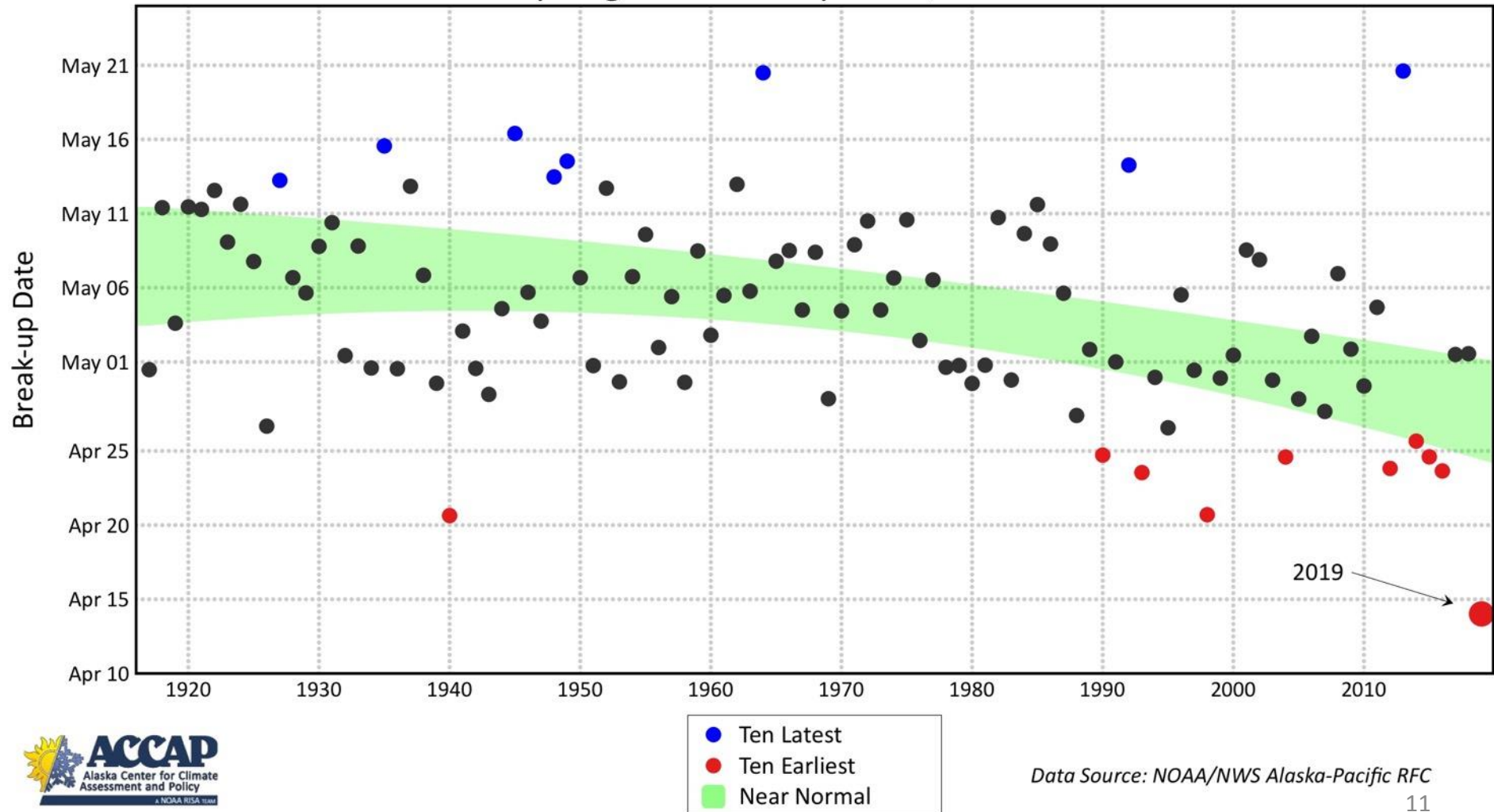
# Bering Sea: Very early ice loss



Data source: NSIDC Regional Sea Ice Index v3  
Graphic and analysis by @AlaskaWx

# Record Early River Break-up

Tanana River at Nenana  
Spring Ice Break-up Date, 1917-2019

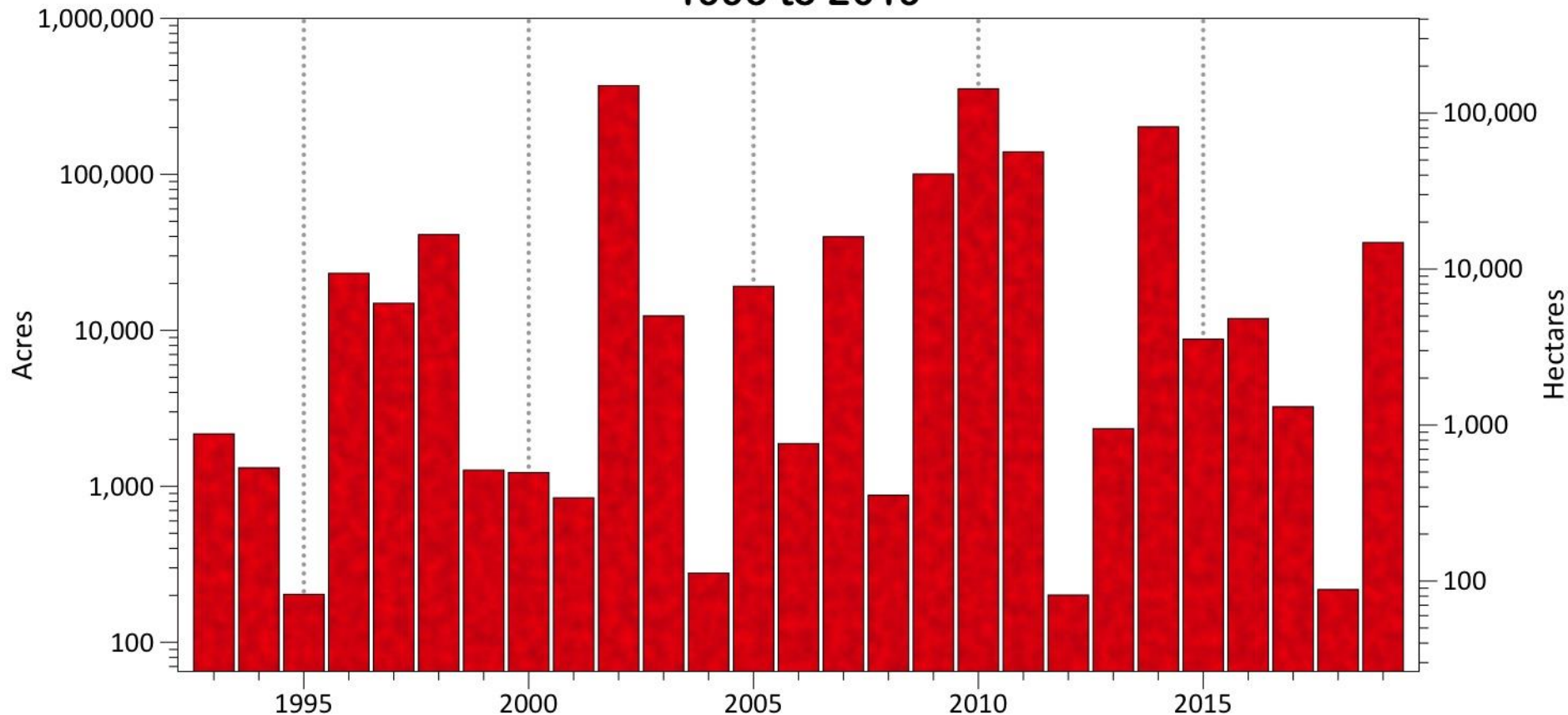




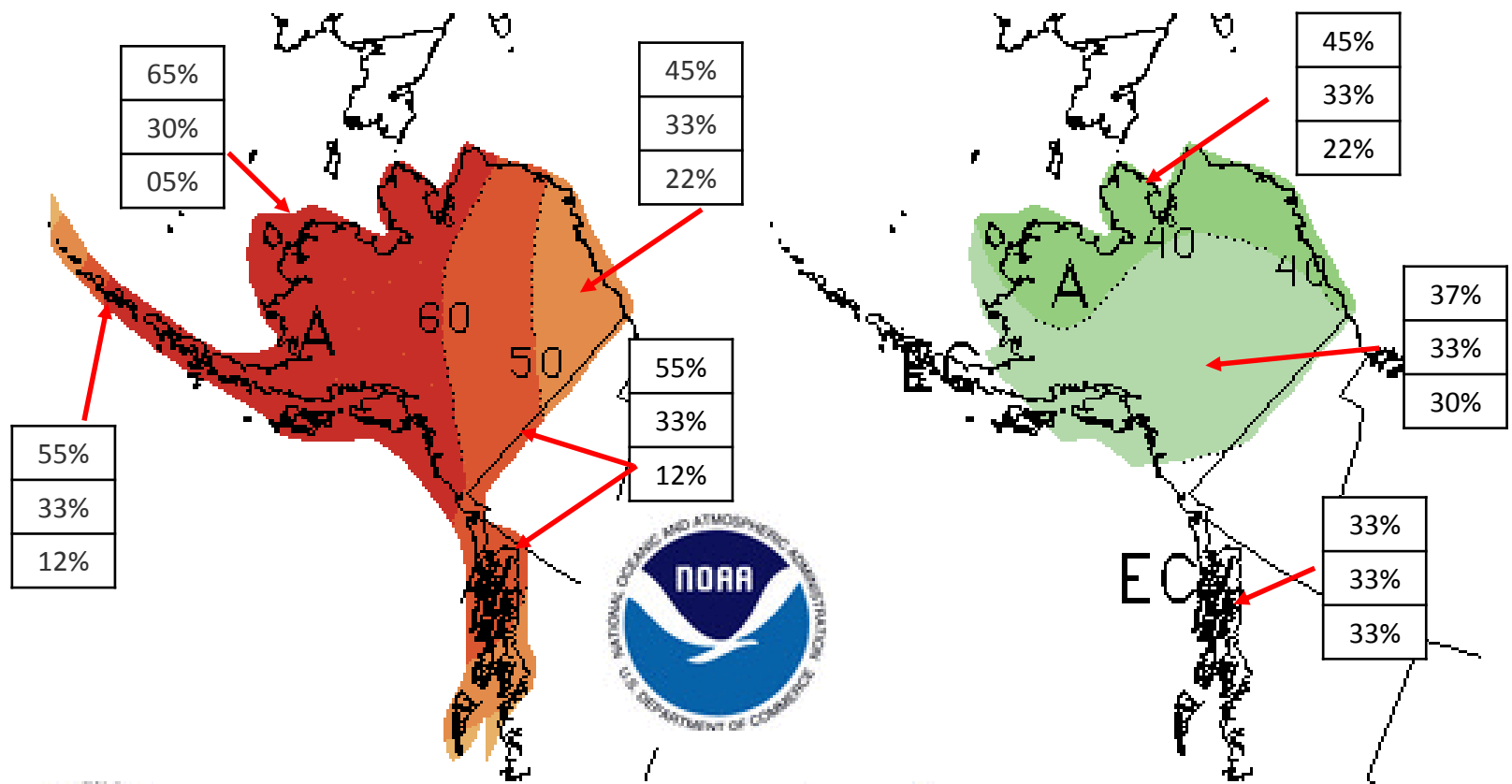
# Early Wildfire Start

*June 9: Alberta wildfires 1.5 million acres (608k ha)*

## Alaska Wildfire Acreage Through May 31 1993 to 2019



# CPC Jun-Jul-Aug 2019 Outlook



THREE-MONTH OUTLOOK  
TEMPERATURE PROBABILITY  
0.5 MONTH LEAD  
VALID JJA 2019  
MADE 16 MAY 2019

THREE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0.5 MONTH LEAD  
VALID JJA 2019  
MADE 16 MAY 2019

Above%
Normal%
Below%

# Summer 2019

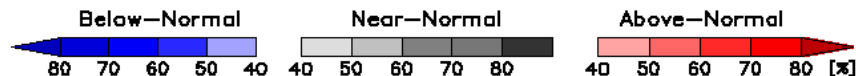
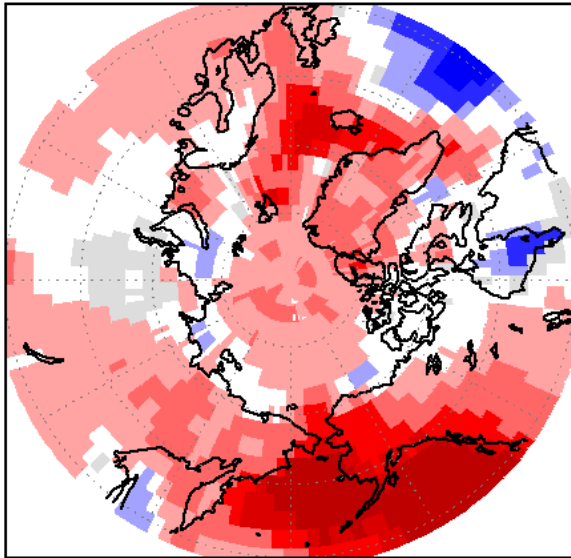
## Arctic Temp and Pcpn Outlook

### Probabilistic Multi-Model Ensemble Forecast

/GPC\_washington/GPC\_tokyo/GPC\_exeter/GPC\_moscow/GPC\_beijing/GPC\_melbourne  
/GPC\_cptec/GPC\_pretoria/GPC\_montreal/GPC\_offenbach

### 2m Temperature : JJA2019

(issued on May2019)

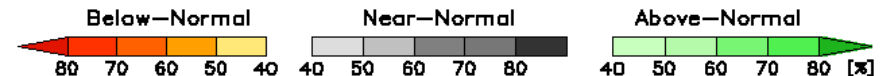
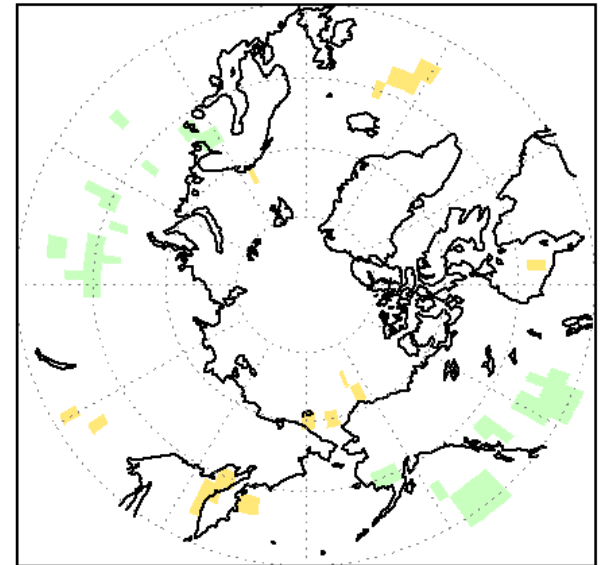


### Probabilistic Multi-Model Ensemble Forecast

/GPC\_washington/GPC\_tokyo/GPC\_exeter/GPC\_moscow/GPC\_beijing/GPC\_melbourne  
/GPC\_cptec/GPC\_pretoria/GPC\_montreal/GPC\_offenbach

### Precipitation : JJA2019

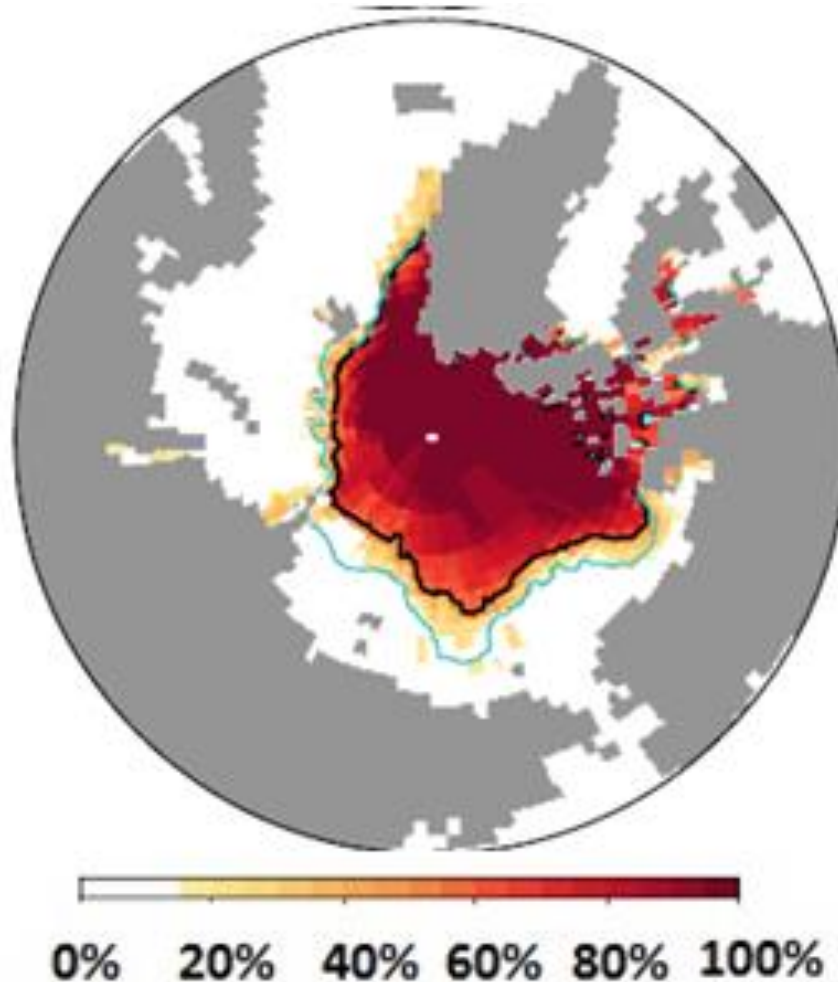
(issued on May2019)



Outlooks courtesy World Meteorological Organization/Arctic Regional Climate Center



# September Sea Ice Outlook



Outlook courtesy World Meteorological Organization/Arctic Regional Climate Center

# Near Gambell, Alaska

## May 12, 2019



2019 05 12

©Clarence Irrigoo Jr.  
Gambell, Alaska

