

# Circumpolar One Health Autumn 2019 Climate Review and Winter 2019-20 Outlook

Rick Thoman

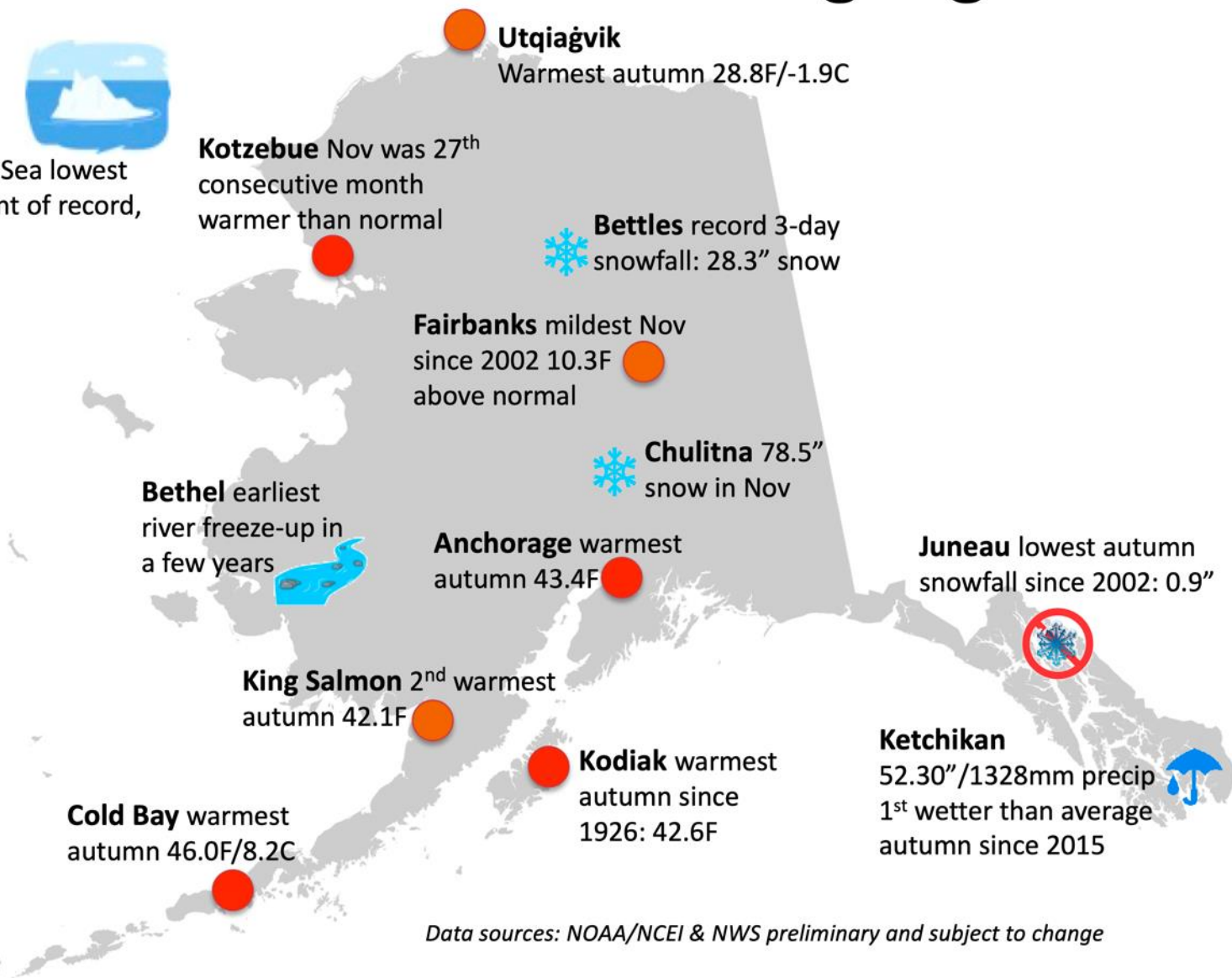
Alaska Center for Climate Assessment and Policy

# Autumn 2019

## Alaska Weather & Climate Highlights



**Sea Ice** Chukchi Sea lowest autumn ice extent of record, 23% of average



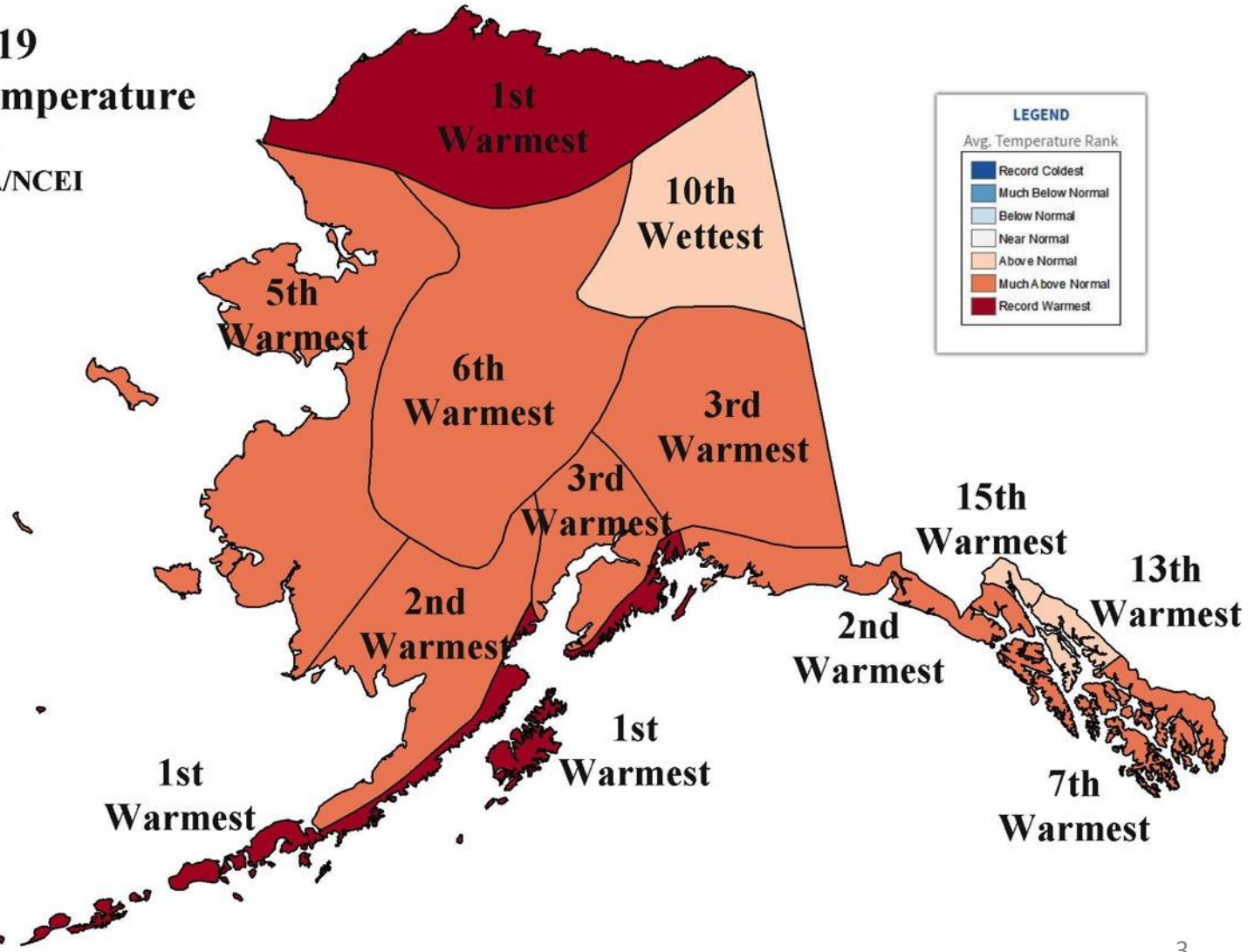
Data sources: NOAA/NCEI & NWS preliminary and subject to change

# Record or near record warm everywhere

Autumn 2019

Rank of Average Temperature  
Since 1925

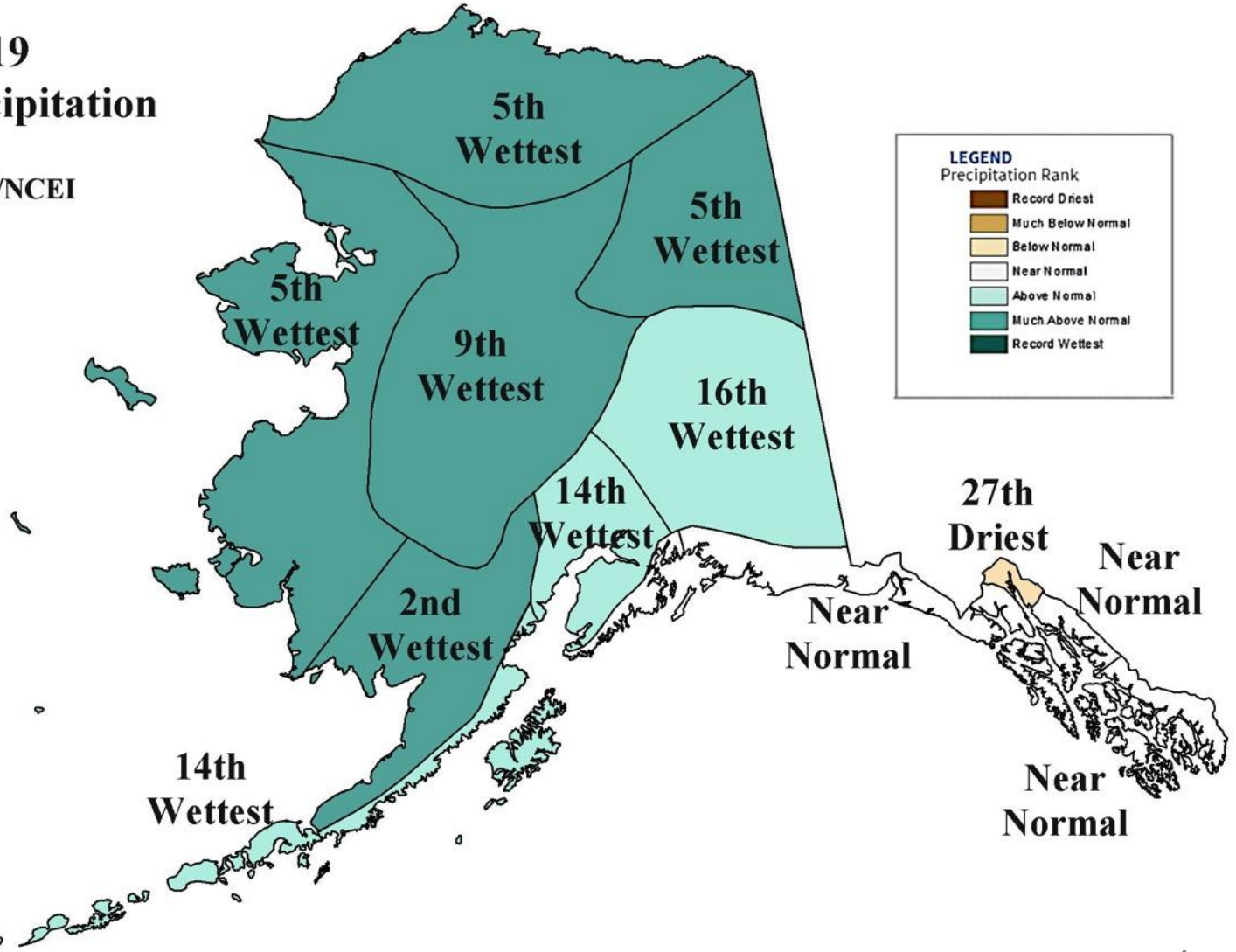
Data courtesy NOAA/NCEI



# Precipitation

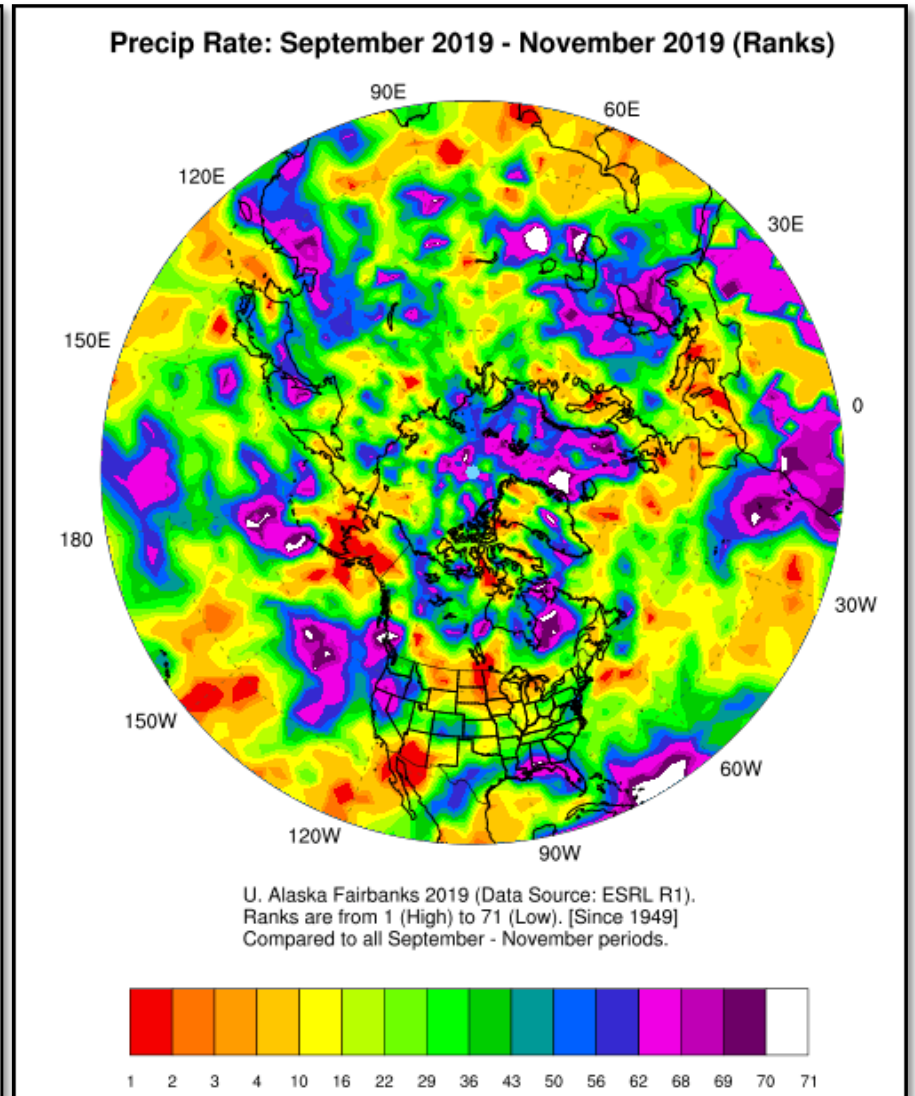
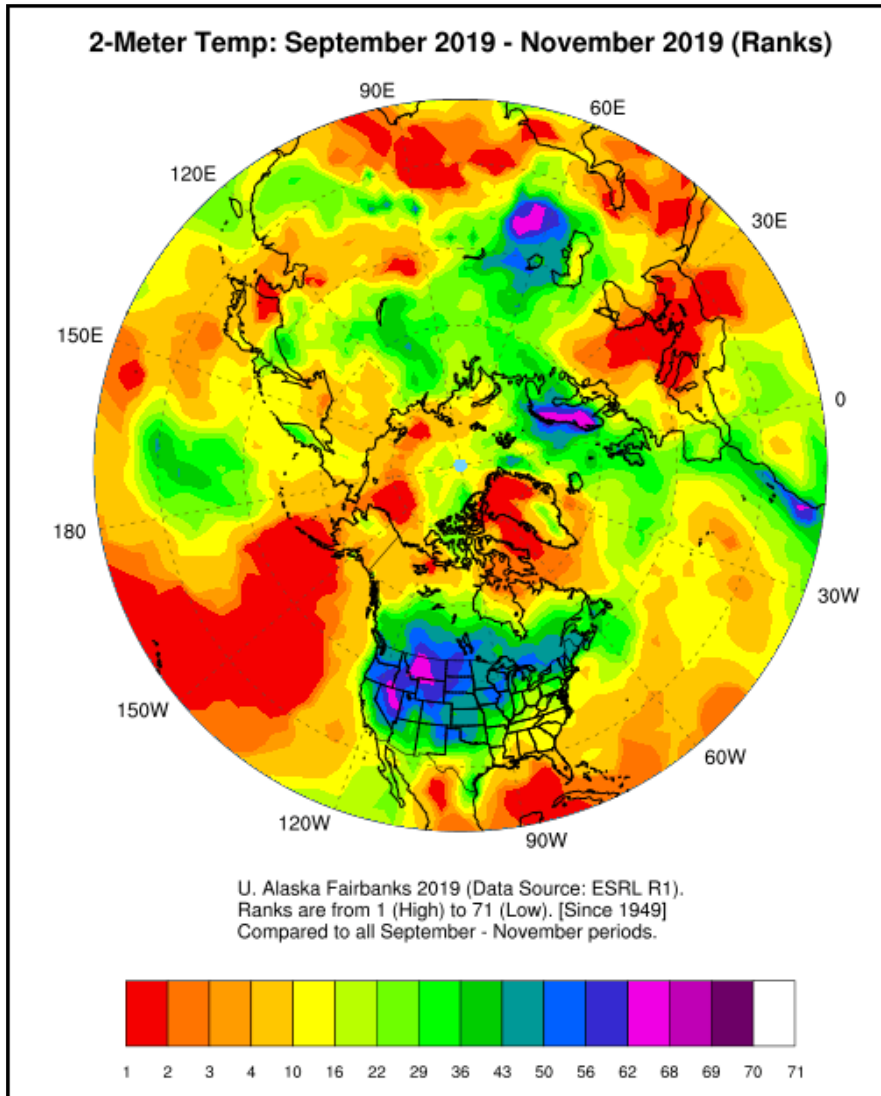
## Mostly wet but regional differences

Autumn 2019  
Rank of Total Precipitation  
Since 1925  
Data courtesy NOAA/NCEI





# Pan-Arctic Autumn Temps and Precip

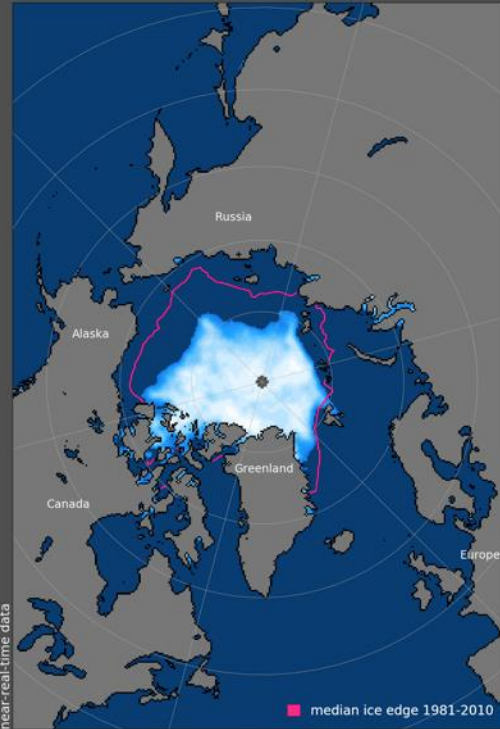


Poleward of 60N: 2<sup>nd</sup> warmest

Poleward of 60N: near average

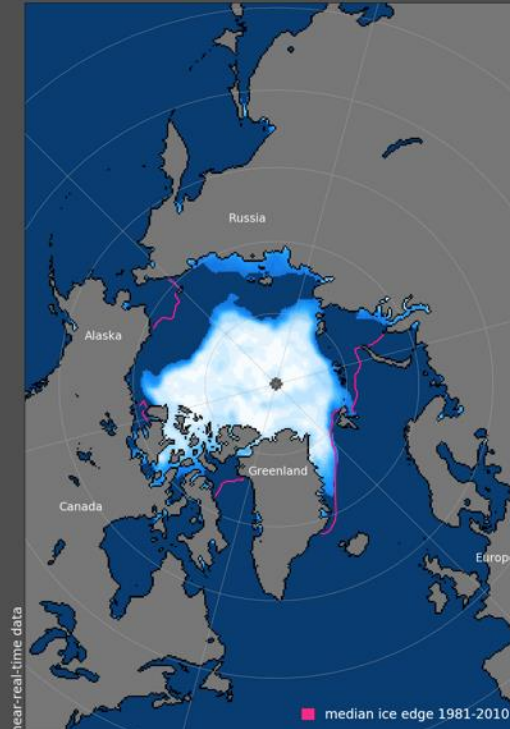
# Sea Ice This Autumn

Sea Ice Concentration, Sep 2019



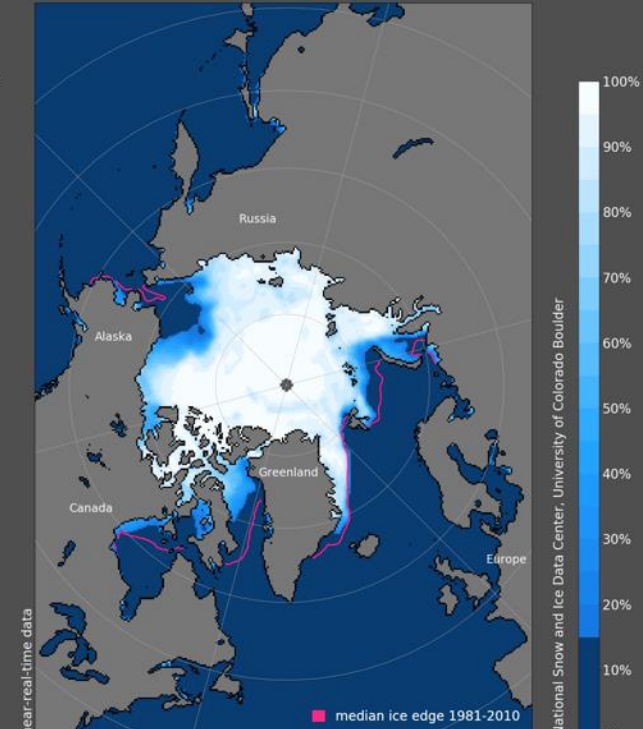
3<sup>rd</sup> lowest

Sea Ice Concentration, Oct 2019



1<sup>st</sup> lowest

Sea Ice Concentration, Nov 2019

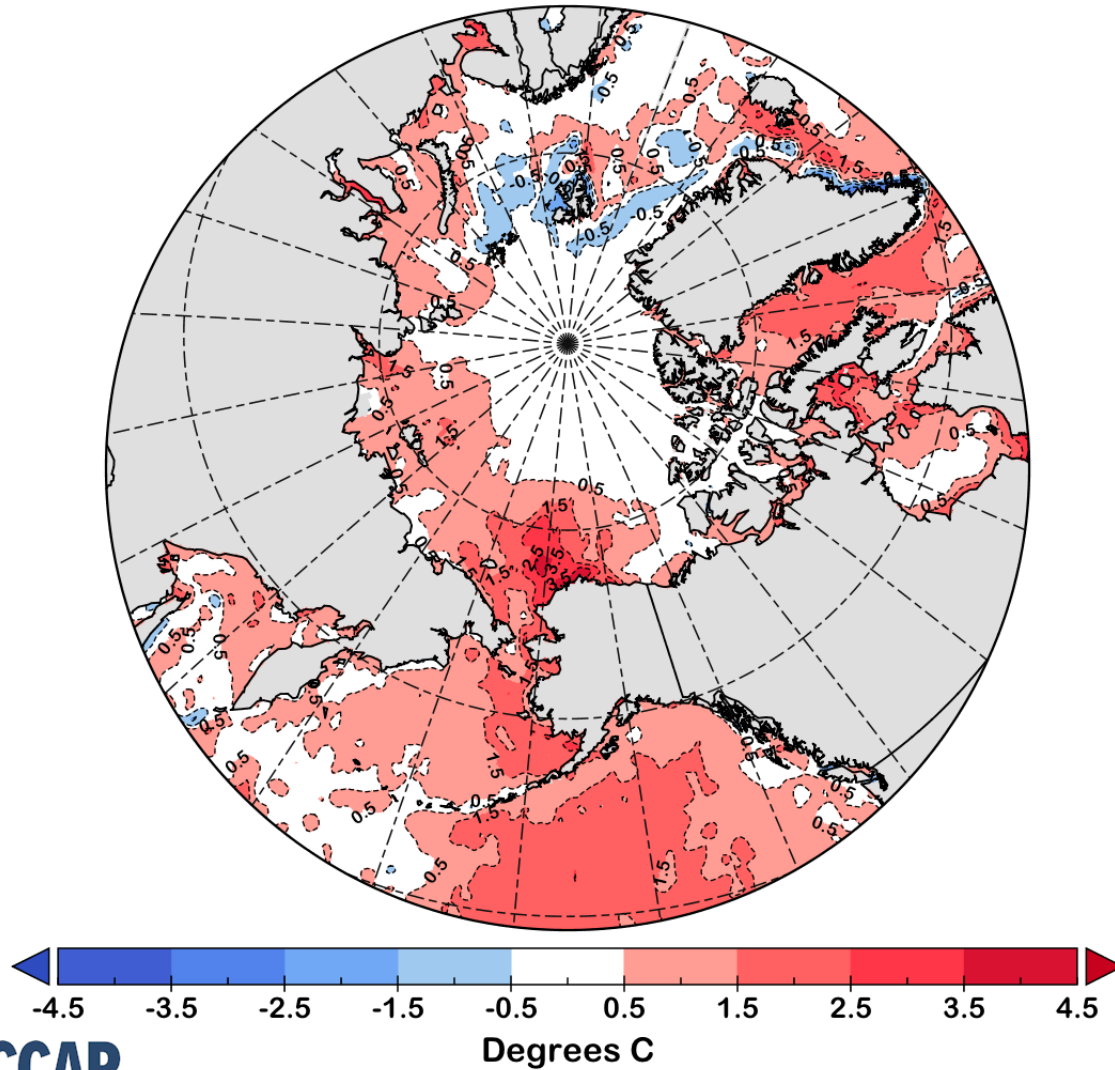


2<sup>nd</sup> lowest



# Ocean Temperatures

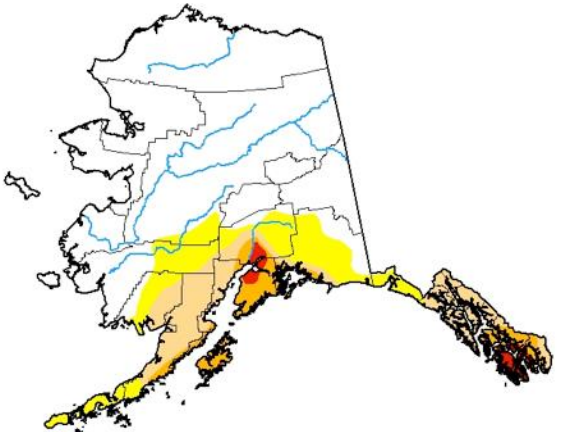
Average Sea Surface Temperature Departure from Normal  
September-November 2019





# Autumn 2019 Drought in Alaska

## U.S. Drought Monitor Alaska



**September 3, 2019**  
(Released Thursday, Sep. 5, 2019)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	69.10	30.90	17.84	6.77	1.50	0.00
Last Week 08-27-2019	66.67	33.33	17.84	6.77	1.50	0.00
3 Months Ago 06-04-2019	94.17	5.83	2.78	1.65	0.88	0.00
Start of Calendar Year 01-01-2019	94.17	5.83	2.35	1.02	0.00	0.00
Start of Water Year 09-25-2018	95.65	4.35	2.34	2.06	0.00	0.00
One Year Ago 09-04-2018	95.65	4.35	2.34	0.00	0.00	0.00

**Intensity**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author**  
David Miskus  
NOAA/NWS/NCEP/CPC



Start of Autumn

## U.S. Drought Monitor Alaska



**November 26, 2019**  
(Released Wednesday, Nov. 27, 2019)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	91.17	8.83	0.83	0.00	0.00	0.00
Last Week 11-19-2019	91.17	8.83	0.83	0.00	0.00	0.00
3 Months Ago 08-27-2019	66.67	33.33	17.84	6.77	1.50	0.00
Start of Calendar Year 01-01-2019	94.17	5.83	2.35	1.02	0.00	0.00
Start of Water Year 10-01-2019	88.64	11.36	5.03	2.00	0.88	0.00
One Year Ago 11-27-2018	94.17	5.83	2.35	2.07	0.00	0.00

**Intensity**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author**  
Brad Rippey  
U.S. Department of Agriculture



End of Autumn

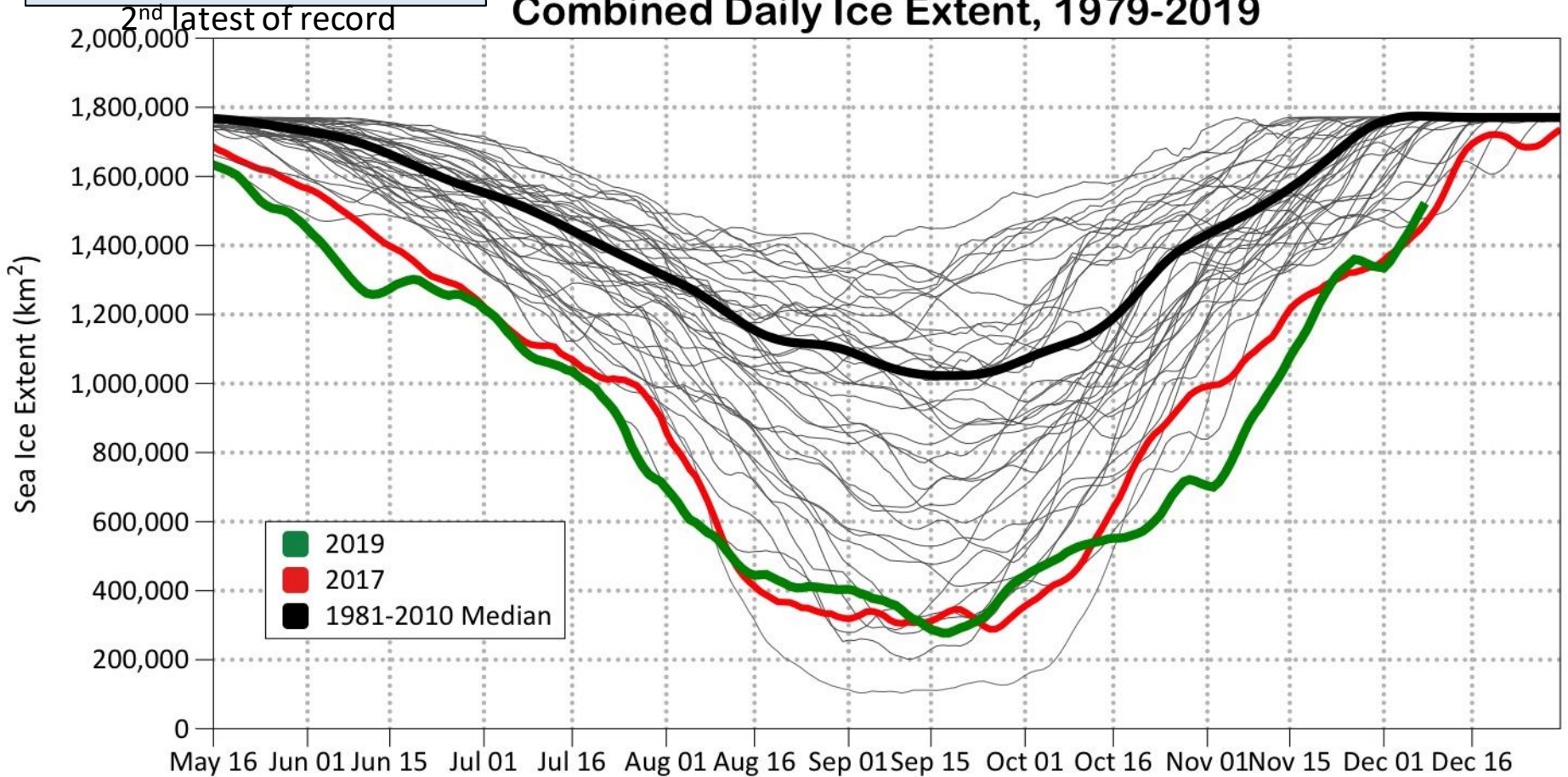




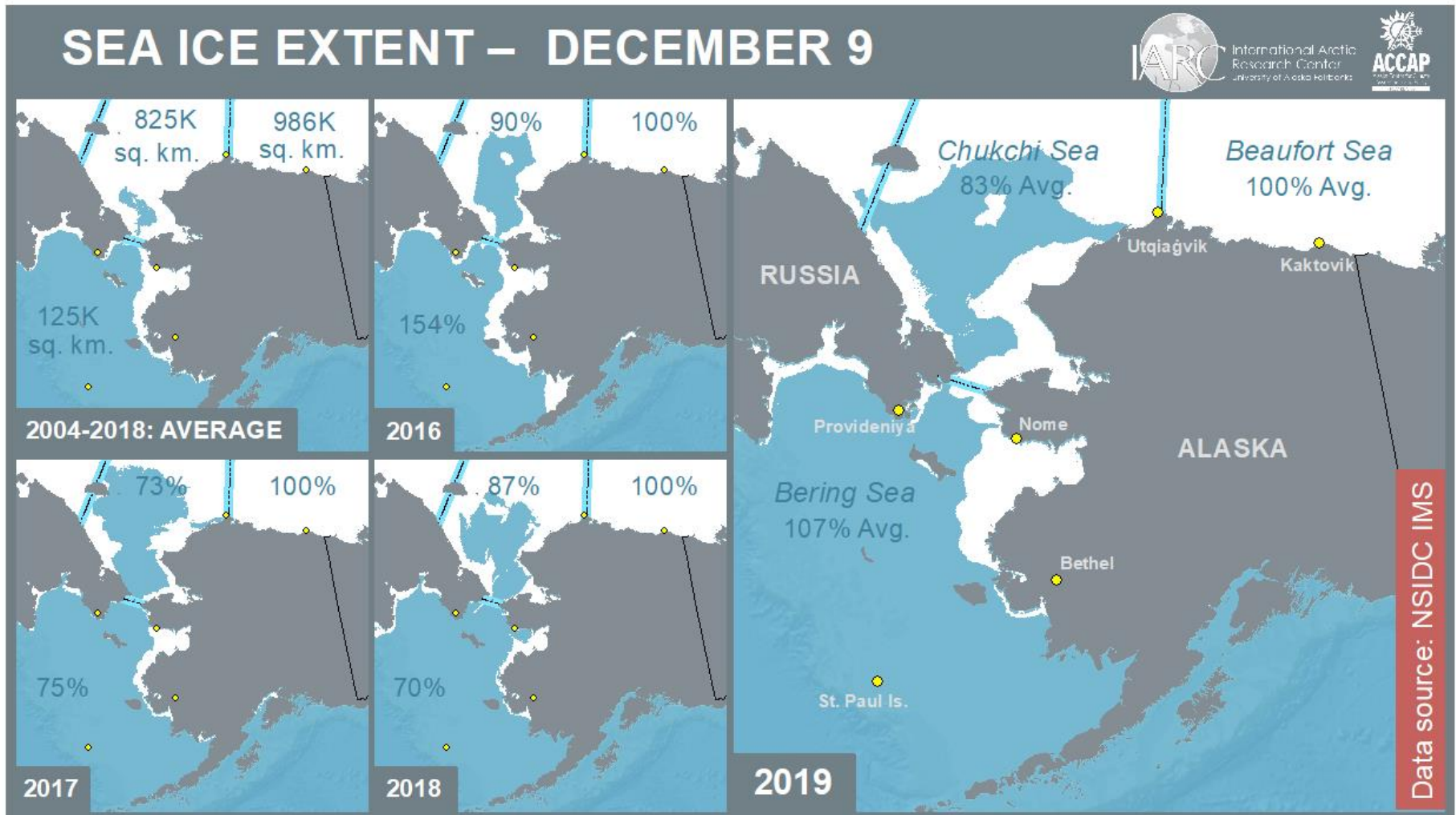
# Daily Sea Ice Extent

Beaufort Sea Ice-over Nov  
14

## Chukchi & Beaufort Seas Combined Daily Ice Extent, 1979-2019

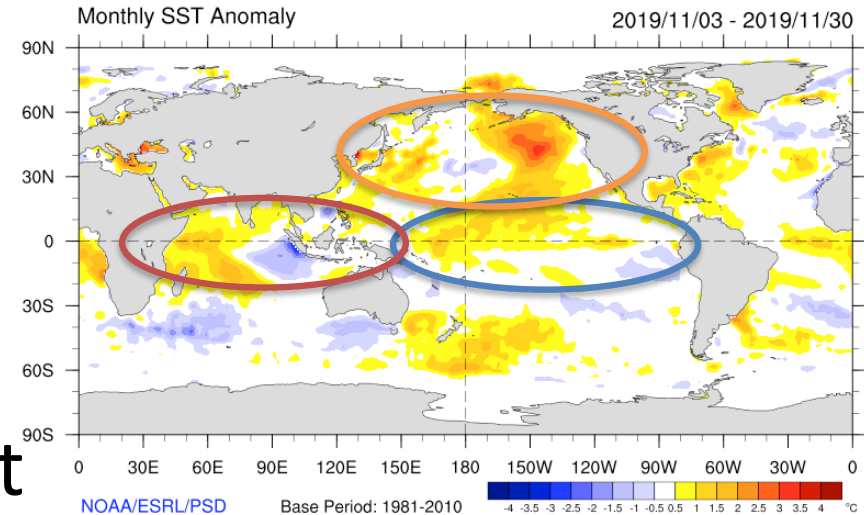


# Current Alaska Sea Ice

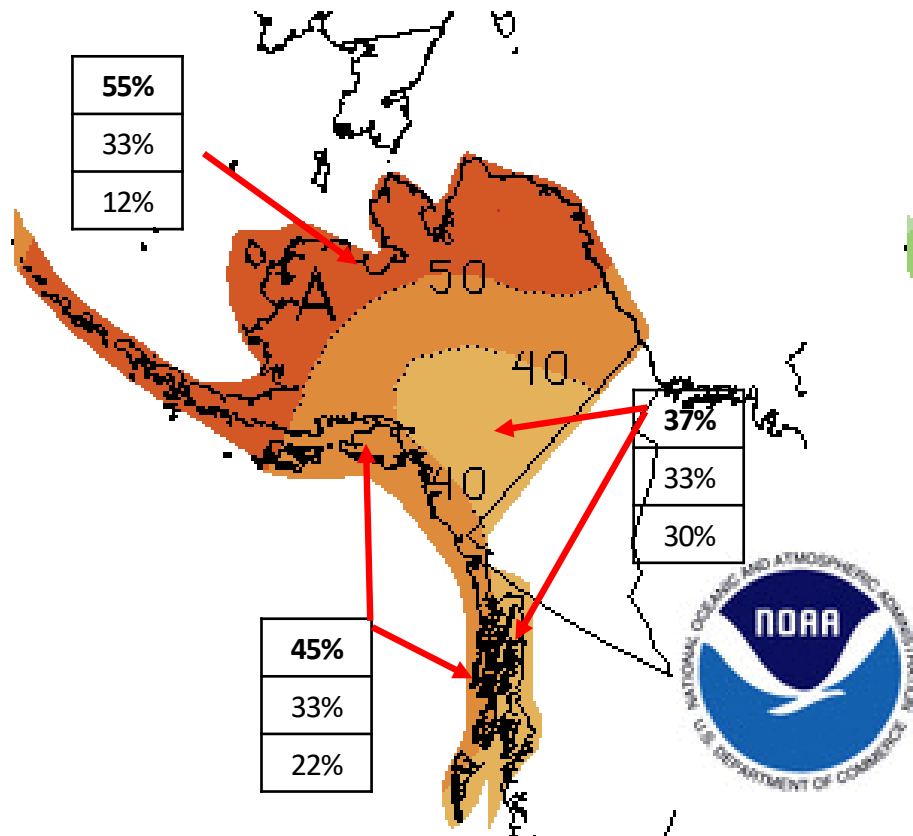


# 2019-20 Winter Outlook

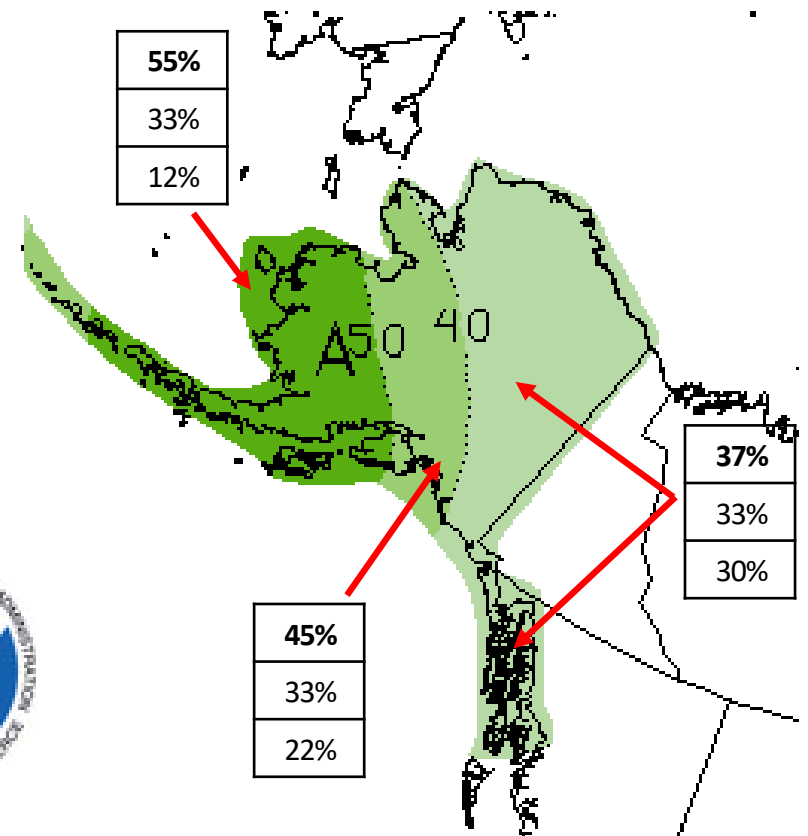
- Neither El Niño or La Niña
- Persistent Indian Ocean SST pattern
- North Pacific mostly warmer than normal
- Low Arctic sea ice extent



# CPC Dec 2019-Feb 2020 Outlook



THREE-MONTH OUTLOOK  
 TEMPERATURE PROBABILITY  
 0.5 MONTH LEAD  
 VALID DJF 2019  
 MADE 21 NOV 2019



THREE-MONTH OUTLOOK  
 PRECIPITATION PROBABILITY  
 0.5 MONTH LEAD  
 VALID DJF 2019  
 MADE 21 NOV 2019

Above%
Normal%
Below%



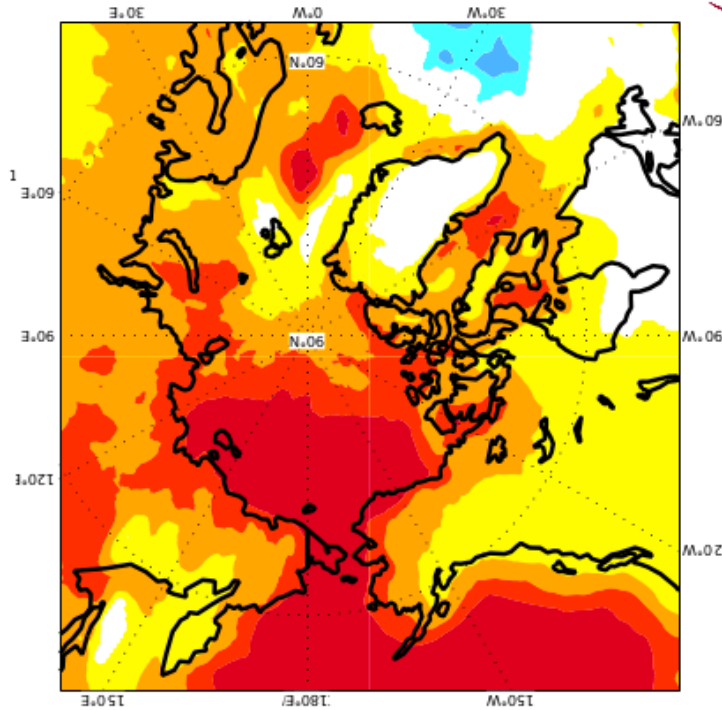
# Circumpolar Winter Outlook

C3S multi-system seasonal forecast

Prob(most likely category of 2m temperature)

Nominal forecast start: 01/11/19

Unweighted mean



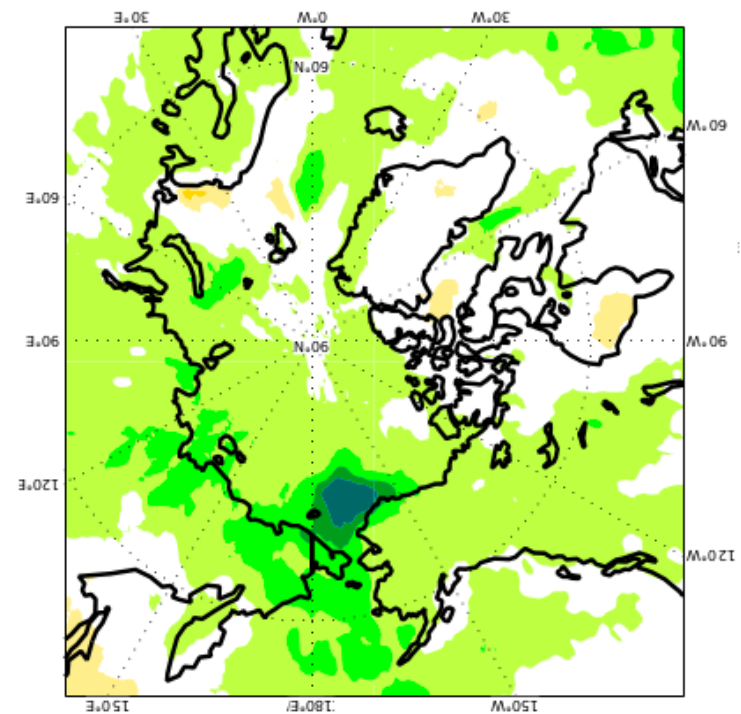
DJF 2019/20

C3S multi-system seasonal forecast

Prob(most likely category of precipitation)

Nominal forecast start: 01/11/19

Unweighted mean



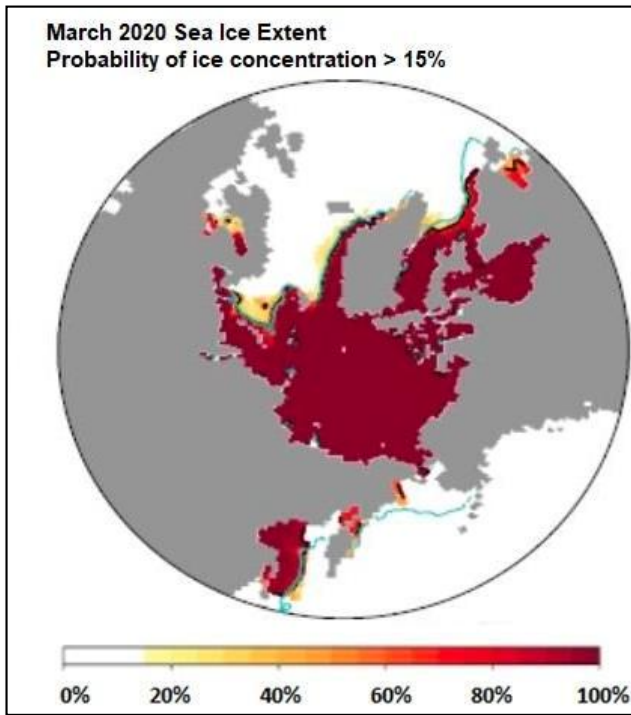
DJF 2019/20



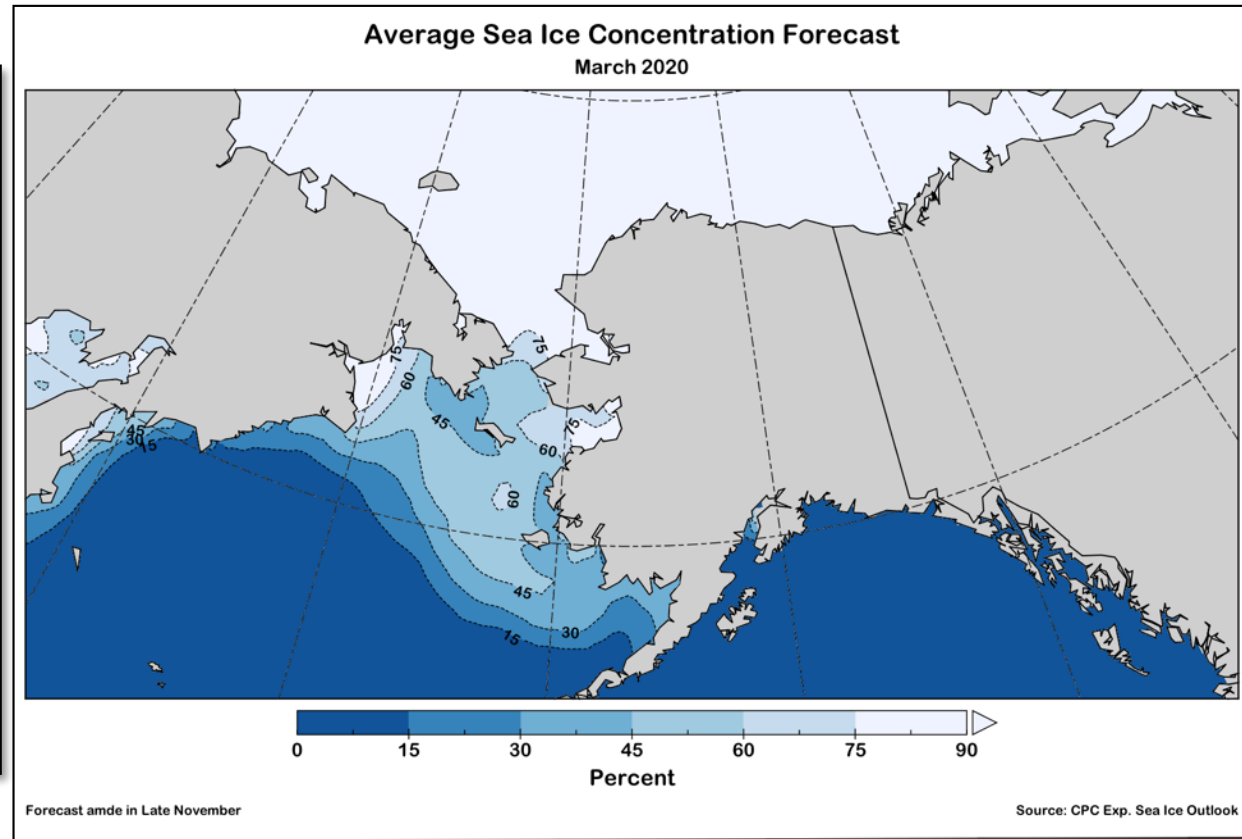
From EU's Copernicus Climate Change Services



# Sea Ice Outlook



WMO Arctic RCC



NOAA/CPC Experimental Sea Ice Outlook



# Waves on the beach at Utqiagvik

## November 28, 2019



Utqiagvik (Barrow) Sea Ice Cam 2019-11-28T12:54:59-0800

