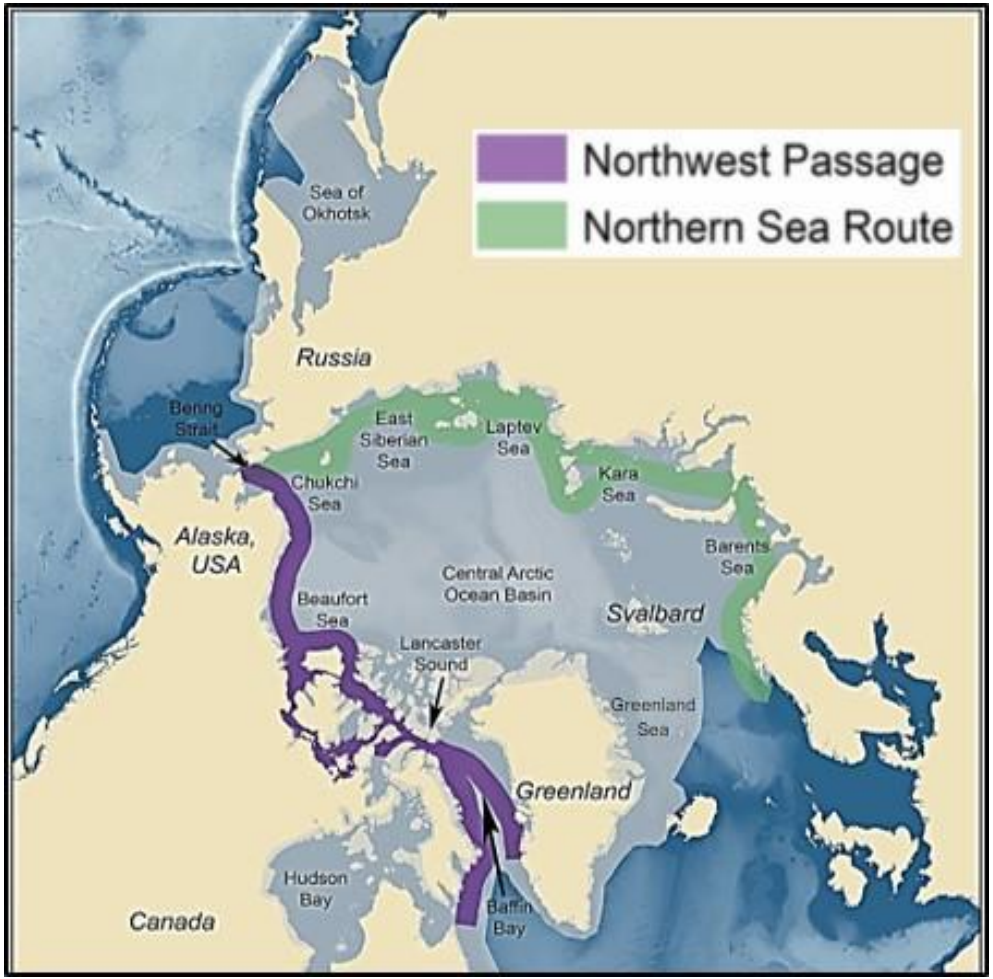
Sea-ice outlook
ACF-4 October 2019

ACF
Arctic Climate Forum

Arctic Regional Climate Center

Regions


Northwest Passage
Northern Sea Route
Sea of Okhotsk
Russia
Bering Strait
East Siberian Sea
Laptev Sea
Kara Sea
Chukchi Sea
Alaska, USA
Central Arctic Ocean Basin
Barents Sea
Beaufort Sea
Svalbard
Lancaster Sound
Greenland Sea
Greenland
Hudson Bay
Baffin Bay
Canada

The sea ice extent and experimental freeze-up forecasts are based on the Canadian Seasonal to Inter-annual Prediction System (CanSIPSv2), an MME of two climate models. A larger multi-model ensemble that will include forecasts from the following WMO GPC-LRFs is under development: ECCC/MSC (CanSIPSv2), NOAA (CFSv2), Meteo-France (System 5), UK MetOffice (GloSea5) and ECMWF (SEAS5). When sea ice extent is at its maximum in March of each year, forecasts are available for the following peripheral seas where there's variability in the ice edge: Bering Sea, Sea of Ohkotsk, Barents Sea, Greenland Sea, Baffin Bay/Labrador Sea, Gulf of St. Lawrence and the Baltic Sea. In addition to these regions, forecasts for sea ice freeze-up are also available for Hudson Bay, East Siberian Sea, Kara Sea, Laptev Sea, Chukchi Sea and the Beaufort Sea. Winter outlooks for key shipping areas are provided by the Canadian and Finnish ice services are based on statistical model guidance and forecast expertise.

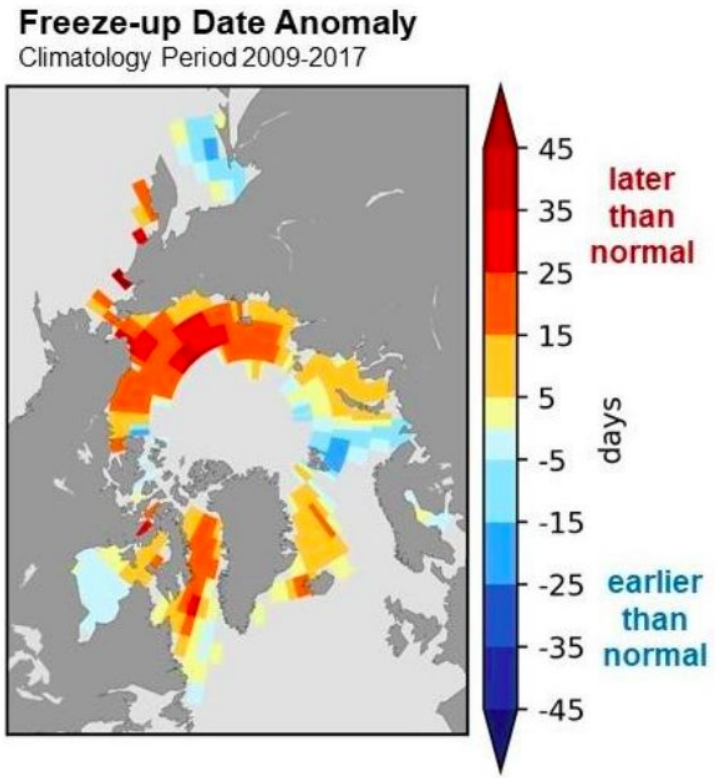


Figure 11: Forecast for the 2019 fall freeze-up expressed as an anomaly (difference from normal), where freeze-up is defined as the date when the ice concentration drops below 50%.

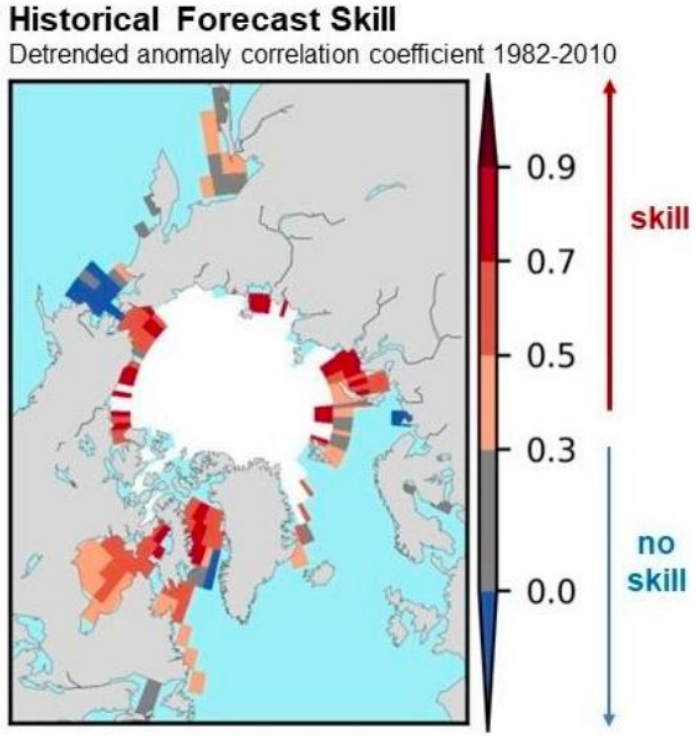


Figure 12: Historical forecast skill defined as the detrended anomaly correlation coefficient based on the 1982-2010 period.

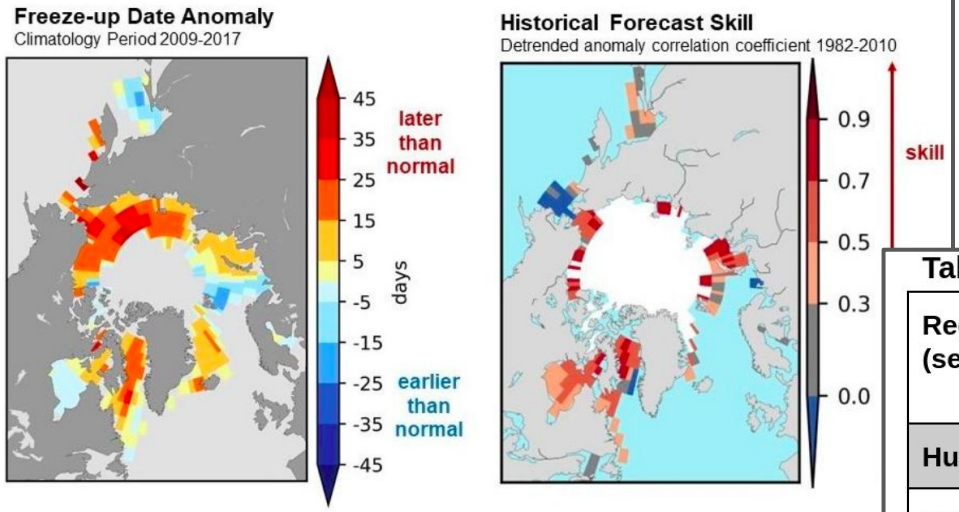
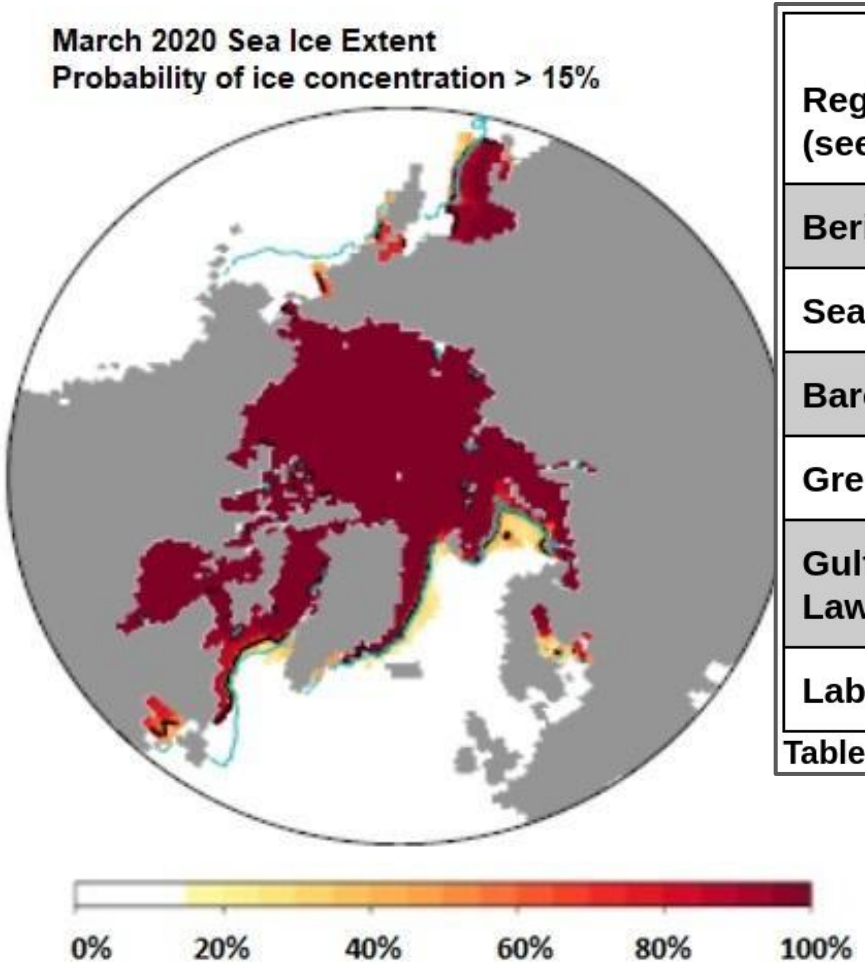


Figure 11: Forecast for the 2019 fall freeze-up expressed as an anomaly (difference from normal), where freeze-up is defined as the date when the ice concentration drops below 50%.

Figure 12: Historical forecast skill defined as th detrended anomaly correlation coefficient based o the 1982-2010 period.

Table 6: Fall 2019: Regional Outlook for Fall freeze-up in the Arctic

Regions (see Figure 2)	CanSIPS Sea-Ice Forecast Confidence	CanSIPS Sea-Ice Forecast
Hudson Bay	moderate to high	near normal
Baffin Bay/Labrador Sea	moderate to high	late freeze-up
Greenland Sea	moderate	late freeze-up
Barents Sea	moderate	early freeze-up
East Siberian/Kara/Laptev Seas	moderate to high	late freeze-up
Chukchi Sea	high	late freeze-up
Beaufort Sea	high	late freeze-up
Sea of Okhotsk	low	late freeze-up
Bering Sea	low	late freeze-up



Regions (see Figure 2)	CanSIPS Sea-Ice Extent Forecast Confidence	CanSIPS Sea-Ice Extent Forecast
Bering Sea	low	below normal
Sea of Okhotsk	low	below to near normal
Barents Sea	low	near normal
Greenland Sea	high	near normal
Gulf of St. Lawrence	low	below normal
Labrador Sea	moderate	below normal

Table 7: Winter 2019-2020: Regional Outlook for Maximum Sea-Ice Extent

Figure 13: March 2020 probability of sea ice at concentrations greater than 15% from CanSIPS (ECCC). Ensemble mean ice extent from CanSIPS (black) and observed mean ice extent 2009-2017 (green).