Arctic Regional Climate Centre Network

ArcRCC-N

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1 Problem

Weather information is provided in the day to week time frame at local scales. Climate Models used in assessments provide information in the decadal time frames at global scales. To meet Arctic adaptation and decision-making needs, regular climate information is needed during the monthly and seasonal time-frame at regional scales.

Time Scale	Days	Weeks	Months (sub-seasonal)	Seasons (3 months)	Years	Decades	Centuries
Weather or Climate Information	Weather forecasting		Arctic Regional Climate Centre (ArcRCC)			Climate Change Models	
Geographic Scale	Local		Regional			Global	

2 Solution

Based on the World Meteorological Organization's (WMO) Regional Climate Centre's (RCCs) concept and as a legacy of the 2007-2008 International Polar Year, the Arctic Regional Climate Centre Network has been established. The ArcRCC-N is a centre of excellence that links Arctic national meteorological and ice services. Canada leads the forecasting services, Norway the data services and Russia the monitoring services. The ArcRCC-N is in year 1 of the 2 year demonstration phase.

NATIONAL		REGIONAL		CIRCUMPOLAR
Countries	Meteorological Organizations	Regional Climate Centres (RCCs)		Arctic Regional Climate Centre Network
United States	NOAA	North American Node	Forecasting	
Canada	ECCC			
Denmark	DMI	Northern European / Greenland Node	Data Services	
Iceland	IMO			
Norway	NMI			
Sweden	SMHI			
Finland	FMI			
Russia	AARI	Eurasia Node	Monitoring	

3 Forums

Pan-Arctic Regional Climate Outlook Forums occur every May (physical meeting) and October (online meeting). These forums allow for the national meteorological and ice services to meet and prepare the upcoming products. Those involved in the ArcRCC-N utilize a variety of atmospheric, oceanic and ice information from observing networks, satellites, the latest in modeling output and historical data. Experts in the ArcRCC-N collaborate and review this information to develop a consensus statement for the upcoming season.

The forum in May is also an opportunity to meet face-to-face with different Arctic users to:

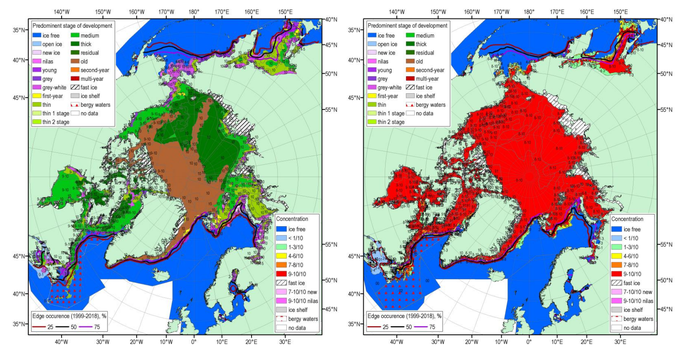
- ❖ Share advances in climate information
- ❖ Show new ArcRCC-N products and how they can be used
- ❖ Better understand users planning and adaptation needs
- ❖ Adapt new and future products to meet user needs
- ❖ Present and review the Winter/Summer consensus statement

The first forum was held in Ottawa, Canada in 2018 and welcomed Arctic Council Permanent Participants, commercial shippers and cruise tourism operators. The 2019 forum was held in Rovaniemi, Finland this May.

The ArcRCC-N is in a demonstration phase since May 2018. The goal is to seek designation from WMO to be declared as an operational Regional Climate Centre Network form summer 2020.

4 Products

Regular products are now available in October for the upcoming winter season and May for the upcoming summer season. The ArcRCC currently provides the following products.

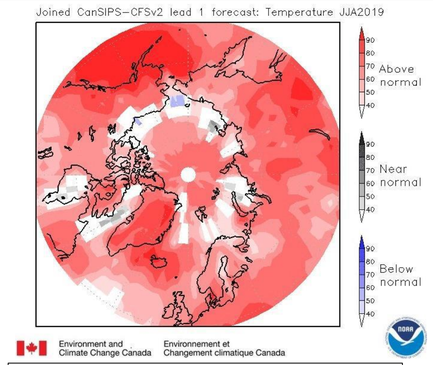


Blended AARI/CIS/NIC ice chart for 19-22 March 2019. Left: total concentration, right: predominant stage of development. Ice edge reference period: 1999-2018.

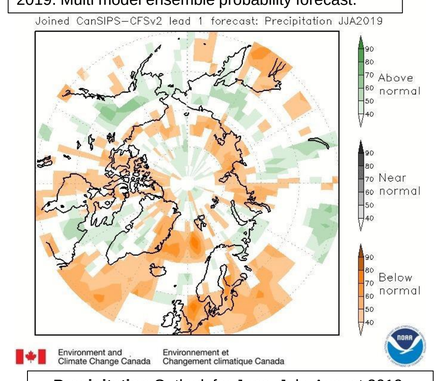
Seasonal Summaries
Of the past season for the circumpolar Arctic: describes atmosphere circulation, actual temperature, precipitation and sea-ice details/trends based on observations, reanalysis and compared to historical trends.

Seasonal Outlooks
For the upcoming season:

- ❖ Temperature: above/below normal based on model outputs
- ❖ Precipitation: above/below normal based on model outputs
- ❖ Sea-ice: extent above/below, break-up/freeze-up late/early based on model outputs



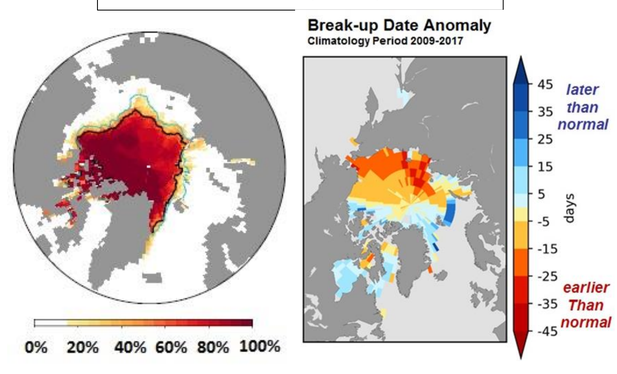
Surface air temperature outlook for June, July, August 2019. Multi model ensemble probability forecast.



Precipitation Outlook for June, July, August 2019. Multi-model ensemble probability forecast,

Arctic Consensus Statement
A collaborate effort by the network which reviews the trends in the historical monitoring data, recent observations, forecasts from models and regional expertise to fill gaps in the data.
The consensus statements explains the forecasts in a text format and provides greater regional details. For example, the Consensus Statement includes regional information on forecasted sea ice conditions for the Northwest Passage, Northern Sea Route, Svalbard and Beaufort Sea.

Please go to the following website to see the products: www.arctic-rcc.org
Contact: helge.tangen@met.no
For more information



Sea-Ice Extent Outlook (left) for September 2019 (probability of sea ice at concentrations greater than 15%) and spring 2019 break-up anomaly (difference from normal based on the 2009-2017) where break-up is defined as the date when the ice concentration drops below 50%. Ensemble mean ice extent from CanSIPS ECCC (black) and observed mean ice extent 2009-2017 (green)