



Environment and  
Climate Change Canada



Norwegian  
Meteorological  
Institute



Russian Federal Service  
for Hydrometeorology  
and Environmental Monitoring

# Role of EC-PHORS in Polar RCC implemetation

**Helge Tangen**  
**Norwegian Meteorological Institute**  
**ArcRCC Network Coordinator**

Scoping Workshop for Antarctic RCC, Bologna, October 7-9, 2019

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU

**SMHI**



FINNISH METEOROLOGICAL INSTITUTE



Icelandic Met  
Office



# EC-PHORS

## WMO's Executive Council's Panel on Polar and High Mountains Observations, Research and Services

- Polar and Himalayan countries nominate experts; all together 35-40 persons

Different task teams,

- Scott Carpentier and Helge Tangen co-chairing Services Task Team, guiding establishment of Arctic, Antarctic (and Third Pole) Regional Climate Centres



# EC-PHORS (2)

## Yearly sessions in the Panel, recommendations to Executive Panel of WMO

- Intersession work in Task Teams
- Arctic Regional Climate Centre Network (ArcRCC-N) has officially started Demonstration Phase (May 2018)
- High Mountain Summit November 2019
- ***Scoping meeting for Antarctic RCC October 2019***



# EC-PHORS/STT and Polar RCCs

EC-PHORS/STT the *formal* linkage to WMO, will submit resolutions to Executive Council when appropriate

WMO Secretariat working with STT and AntRCC is essential for

- Transfer of experience
- Guidance in periods of frustration
- Help sending letters to Members and Partners



# EC-PHORS STT regular work

- Yearly EC-PHORS session (3-4 days). STT reports on existing actions and receives new actions
- Videoconferences in STT, every 2 months. RCCs are always on the agenda
- Long-lasting membership in EC-PHORS → good knowledge and insight in the RCC establishing process
  - Knowledge on the different steps
  - Good collaboration with WMO Secretariat
  - Personal connections!





Environment and  
Climate Change Canada



Norwegian  
Meteorological  
Institute



Russian Federal Service  
for Hydrometeorology  
and Environmental Monitoring

# Towards an Antarctic RCC-Network

**Helge Tangen**  
Norwegian Meteorological Institute  
ArcRCC Network Coordinator

Scoping Workshop for Antarctic RCC, Bologna, October 7-9, 2019

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU

**SMHI**



FINNISH METEOROLOGICAL INSTITUTE



Icelandic Met  
Office



# The Arctic Regional Climate Centre Structure:

NATIONAL		REGIONAL		CIRCUMPOLAR
Countries	Meteorological Organizations	Regional Climate Centres (RCCs)		Arctic Regional Climate Centre
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	Northern Eurasia Node	Monitoring	

**Collaboration/Networking across Arctic regional nodes and Meteorological Organizations**



# New levels of Climate Information

Time Scale	Days	Weeks	Months (sub-seasonal)	Seasons (3 months)	Years	Decades	Centuries
Weather or Climate Information	Weather forecasting		<b>New climate products with scientific advances</b>			Climate Change Models	
Geographic Scale	Local		Regional			Global	

- *Filling an information gap between*
  - *Local and global*
  - *Daily/weekly and decadal*
- *Our focus is on regional coverage at sub-seasonal (monthly) and seasonal (3 months) scales*





# ArcRCC Functions

- ***Mandatory Functions***
  - LRF (Long Range Forecast) for Temperature and Precipitation (T and P)
  - Monitoring for T and P
  - Data handling - ArcRCC-N web site
  - Training - done in conjunction with Regional Climate Outlook Forum (ACF)



# ArcRCC Functions (2)

- ***Other/Highly Recommended Functions***
  - Sea ice outlook (seasonal)
  - Sea ice monitoring (past season)
  - ... later new functions can be added (e.g. snow cover, snow melting outlook...)



# ArcRCC Products

1. **Seasonal Outlooks** for the upcoming season: forecasts from models on
  - temperature,
  - precipitation and
  - sea-ice forecasts
1. **Seasonal Summaries** of the past season: describes actual temperature, precipitation and sea-ice details based on monitoring observations
1. **Arctic Consensus Statement** a collaborate effort by the network which reviews
  - Trends in the historical monitoring data
  - Forecasts from the models
  - Using Met/Ice climate expertise, fill gaps in the data
  - Develop a consensus outlook for the Arctic for the upcoming season



# How are the products disseminated?

- ArcRCC-N website: [www.arctic-rcc.org](http://www.arctic-rcc.org)
- Arctic Climate Forum (ACF), (former: PARCOF)



**ACF**

Arctic Climate Forum





**Arctic Regional  
Climate Centre  
Network**  
*(in demonstration phase)*

- CLIMATE MONITORING
- LONG-RANGE FORECASTING
- DATA ACCESS
- REGIONAL SERVICES
- ABOUT US
- ARCTIC CLIMATE FORUM



Photo: Lene Østvand

**CLIMATE MONITORING** →  
*Latest seasonal summary product*

620km Temperature, CO<sub>2</sub> Composite Anomaly  
8/1/2018 to 8/31/2018  
1000/7000/30000

**LONG-RANGE FORECASTING** →  
*Latest seasonal outlooks*

Probabilistic 480-hr (8-day) Outlook  
2m Temperature - FMA30-8 (based on 2018/18)

**DATA ACCESS** →  
*Search data*

**CONSENSUS STATEMENTS** →

Ulluaq, Canada, May 2018

**Consensus Statement for the Arctic Summer 2018 Season Outlook**

...change in the Arctic is affecting the entire Earth system. Indigenous Peoples and communities...  
...have seen the significant reduction of sea ice, melting permafrost and coastal erosion. To meet...  
...the Arctic Council Secretariat (ARCS) is pleased to announce that the Arctic Council Secretariat...  
...the Arctic Council Secretariat (ARCS) is pleased to announce that the Arctic Council Secretariat...  
...the Arctic Council Secretariat (ARCS) is pleased to announce that the Arctic Council Secretariat...

**LAST ARCTIC CLIMATE FORUM** →

**ABOUT US** →

Icelandic Met Office

**News**

**Pan-Arctic climate outlook forum forecasts above average summer temperatures**

Submitted by Lene Østvand on Thu, 2019-05-23 08:21

The third session of the Pan-Arctic Climate Outlook Forum (PARCOF) was held on 8-9 May 2019 Rovaniemi, Finland, to review the climate conditions during the previous winter season, and to provide...

Tags: [news](#) [wmo](#) [parcof](#)

[Read more](#) [Log in](#) or [register](#) to post comments

**Pan-Arctic climate outlook forum forecasts above average winter temperatures**

Submitted by Lene Østvand on Wed, 2018-11-07 07:54

The second session of the Pan-Arctic Climate Outlook Forum (PARCOF) was held virtually on 30 October 2018 to review the climate conditions during the previous summer season, and to provide an...

Tags: [news](#) [wmo](#) [parcof](#)



# Lessons learnt

- Important to get a common understanding of ***Mandatory Functions*** and ***Highly Recommended Functions***
- Do the minimum required work for Mandatory Functions - examine the need for other functions (Highly Recommended)
- Be specific when asking contributors for relevant input (models, datasets etc)
- Before an implementation workshop: work to have a sketch for an RCC member group - and a coordinator
- Remember other initiatives (GCW etc)





Environment and  
Climate Change Canada



Norwegian  
Meteorological  
Institute



Russian Federal Service  
for Hydrometeorology  
and Environmental Monitoring

# Antarctic Regional Climate Outlook Forum

## What, Why and How?

**Helge Tangen**  
**Norwegian Meteorological Institute**  
**ArcRCC Network Coordinator**

Scoping Workshop for Antarctic RCC, Bologna, October 7-9, 2019

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU

**SMHI**



FINNISH METEOROLOGICAL INSTITUTE



Icelandic Met  
Office



# What is an RCOF?

A mechanism to meet users and stakeholders

- Physical meetings
- Virtual meetings





# Why RCOFs?

- Important arena to meet users of the RCC data/products
- Two-ways communication, important feedback from real persons
- A possible arena for training the users
- Also important for team building within the RCC
- --and it is a requirement to hold RCOFs!



# PARCOF-1 participants. May 2018 in Ottawa



**ACF**

Arctic Climate Forum



Weather • Climate • Water

# How is an RCOF set up?

A 2-days meeting with experts from the RCC and users/stakeholders

OR

A 2-hours virtual meeting

- An RCOF does not have to be run by the RCC; if other meetings/conferences are willing to include RCOF - it's possible
- ArcRCC-N decided to take care of it ourselves



# Content of RCOFs

The ***Consensus Statement*** is the main pillar of an RCOF. Description of the ArcRCC-N:

**Arctic Consensus Statement** a collaborate effort by the network which reviews

- Trends in the historical monitoring data
- Forecasts from the models
- Using Met/Ice climate expertise, fill gaps in the data
- Develop a consensus outlook for the Arctic for the upcoming season



# More content in an RCOF

Explanations of the services/products:

- What is a seasonal outlook/Long Range Forecast (LRF)?
- What are the scores of the models?
- What was last season like?



# Smart way of placing an RCOF

An RCOF session would benefit from co-arranging with other relevant event (people already travelling)

*Arctic experience: Hold the ACF (PARCOF) after Arctic Council Ministerial meeting gives good synergies.*

Antarctic possibilities:

COMNAP, Antarctic Treaty, IAATO, SCAR etc



# Who to invite for an RCOF?

One way to get participants is to invite all interested parties

Another way is to target invitations to specific groups, e.g. Research community, Tourism/shipping industry and others

Format: 2 days meeting for face-to-face RCOFs (adding a 1 day Network meeting after). 2 hours for a virtual meeting



# Experience from ACF (PARCOF)

After 2 physical meetings and 1 virtual (next virtual is October 30):

- Motivated participants, good presentations from users
- Breakout groups to engage all participants
- To plan and execute an ACF is strengthening the Network!
- After 2 face-to-face meetings we have offers from AMAP and leaders from Indigenous Groups to help formulate Consensus Statements and plan the ACF agenda







**World  
Meteorological  
Organization**

Weather · Climate · Water

Thank you!