



**INSIGHT FOR A  
CHANGING WORLD**  
**GEO WEEK 2017**  
23-27 OCTOBER 2017  
WASHINGTON, D.C., USA

# GEO Cold Regions Initiative (GEO CRI)

Yubao QIU and Peter Pulsifer

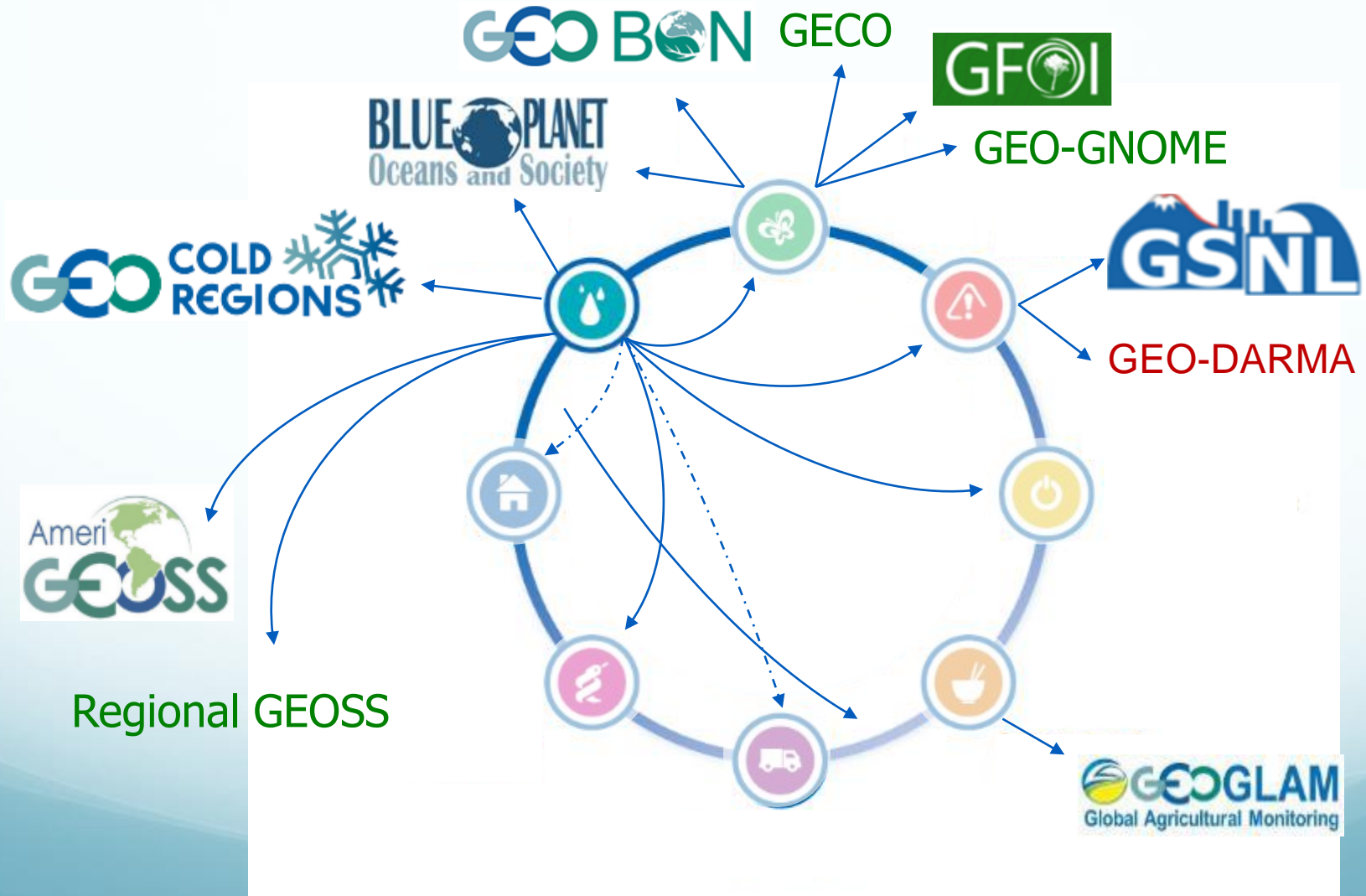
GEO CRI for Data Side Event

# GEOCRI – GEO Cold Region Initiative

Aiming to coordinate global joint efforts for Earth observations and information services over a vast Cold Regions area including the North Pole, South Pole, High Latitude Ocean, Himalaya-Third Pole and Mountain Cold Regions.

- ❑ The *GEO Cold Region Initiative (GEOCRI)* is an initiated initiative in GEO XII at Nov. 2015, listed at GI-11: GEOCR initiative.
- ❑ The AOS summit featured the GEO Cold Region Initiative (GEOCRI) that aims to identify, address and fill observational gaps and improve networks through coordinated observation practices and information services worldwide. See the [\*Statement on the GEO Cold Region Initiative \(GEOCRI\)\*](#).

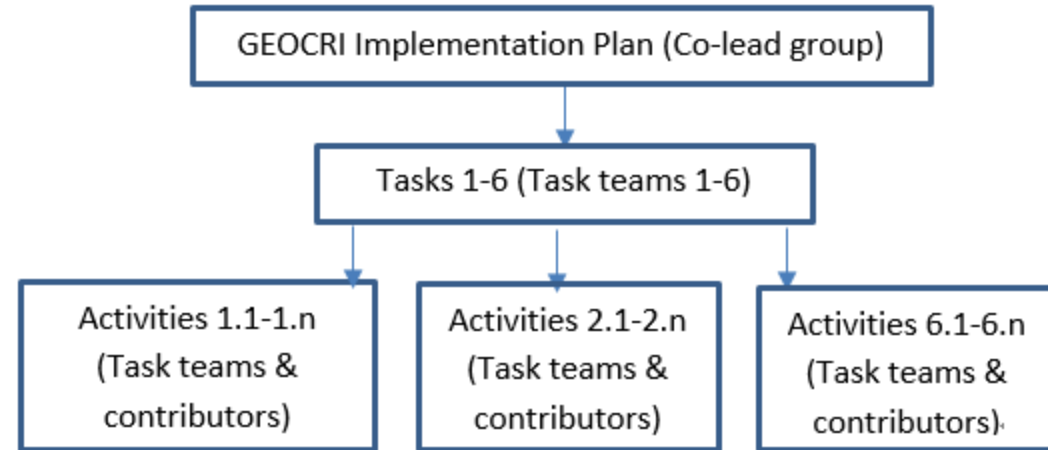
# GEOCRI links to other SBAs



# GEOCRI Task and Implementation Plan

## *Tasks:*

- ❑ Infrastructures
- ❑ **Monitoring Network and Data**
- ❑ Integrating in situ and Remote Sensing Observations
- ❑ User Engagement and Communication
- ❑ Capacity Building and Knowledge Transfer
- ❑ Management and Monitoring



*Hierarchy structure of the activities*

# Community Portal development

- Customized entry point to Cold Region related information in GEOSS Portal: search, visualization, tools, bulletin board, contact/meeting point etc.
- The idea was initiated in Nov 2016 during GEO XIII Plenary
- Supported by ESA and CNR
- Re-use of GEOSS Portal Functionality for Community Portals #1 & #2
- "Community Data Profile" template > to be filled in by mid-April
- ICIMOD website/portal <http://www.icimod.org/>

# ECRVs development

- Existing EV's related partially/also to Cold Regions
  - [GCOS Essential Climate Variables \(WMO\)](#) > 50 parameters
  - [Essential Biodiversity Variables \(GEO BON\)](#)
- Current status?
  - HiMAC 2017 group discussion and actions (please show quick the minutes and next step)
- Next steps?
  - Task Force? ECRVs task force
  - Desk study?
  - Selection of approach? E.g. SDGs, GEO SBAs, Science, or Arctic Framework
  - Candidate variables?

# IEEE Ad Hoc Committee on N&S

## Item #1: Exploratory activities

Creation of a Community through meetings with external organizations, existing groups, experts involved in both Antarctica and Arctic activities	\$ 15K
Designing a focused IEEE event to start an IEEE-centric activity on the topic	\$ 10K

- ▶ Recognizing GEO's international position in respect to EO, **IEEE could co-organize with GEO a CRI/Pole to Pole stakeholders forum** to bring together the national as well as the international agencies and scientists responsible for research and policy in both the Arctic and Antarctica regions.
- ▶ Support GEO and the UN Sustainable Development Goals by co-ordinating acquisition and analysis of EO for "**Indicators for Requiring Cold Region Earth Observation**"



# Recent Past Events

3  
Mar

2017 International Workshop on Observations and Understanding of Changes in High Mountain and Cold Regions (HiMAC 2017)

- ✧ Review the scientific motivations of an observation network of High Mountains and northern Cold Regions, promote the integration of in-situ and space observations, and .
- ✧ Outline the need for Essential Cold Region Variables (ECRVs) and required preparatory work to support the Group on Earth Observation Cold Region Initiative (GEOCRI). (In the afternoon time of 4<sup>th</sup>, March)

6  
Apr

GEO Cold Regions Initiative Meeting  
ASSW2017, Prague, Czech Republic

13 - 15  
Oct Oct

Arctic Circle Assembly: Joint breakout session of GEO, SAON, EPB, WMO, ICC on Scales of Observations –Connecting Arctic data, information and people (TBC)  
Reykjavik, Iceland

2017

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15 - 26  
Jun Jun

POLAR2018: GEOCRI side event (TBC)  
Davos, Switzerland  
[Conference website](#)





## GEO Cold Regions Initiative - GEOCRI



### About

#### What is GEO Cold Regions?

GEO Cold Regions Initiative (GEOCRI) coordinates global joint efforts for Earth observations and information services to provide societal benefits over the world's Cold Regions area including the North Pole, South Pole, Himalaya-Third Pole and Mountain areas.

# GEOCRI Data Activities

Peter L. Pulsifer

Chair, IASC-SAON Arctic Data Committee

Co-Chair, IARPC Arctic Data SubTeam

Co-Lead, GEO Cold Regions Initiative

Co-Chair, Canadian Polar Data Management Committee

PI, Exchange for Local Observations and Knowledge of the Arctic (ELOKA)

Research Scientist, National Snow and Ice Data Center,  
CIRES, University of Colorado



# IASC-SAON Data Activities in Contribution to GEOCRI

- Formed Nov'14
- IASC-SAON partnership
- National, organizational and voluntary members + Indigenous (2017)
- Promote and enable:
  - **Understanding the system**
  - **Effective data policy**
  - **Infrastructure**
  - **Ethically open access**
  - **Attribution**
  - **Standards and interoperability**



<http://arcticdc.org>



### Details

Published: 23 August 2016

# Interoperability Workshop and Assessment Process



7 - 10 November 2016

European Space Agency ESRIN  
Via Galileo Galilei  
Casella Postale 6400044 Frascati (Roma)  
Italy

\*\*\* BE PART OF THE PROCESS - TAKE OUR BRIEF SURVEY \*\*\*

## Related Events

- EU-PolarNet Task 3.3 Annual Meeting (Open) : Afternoon and evening of **November 7th** [Agenda](#)
  - Gathering **at 14:45** at the **Old Reception in Building 1**
- Interoperability Workshop: **November 8th, 9th** [Draft Agenda: Polar Connections Interoperability Workshop and Assessment Process](#)
  - Registration **from 8:30** at the reception desk close to the **Big Hall in Building 14**
- Third Meeting of the Arctic Data Committee (Open) : **November 10th** ([Draft Agenda](#))
  - Gathering **at 8:20** at the **Old Reception in Building 1**

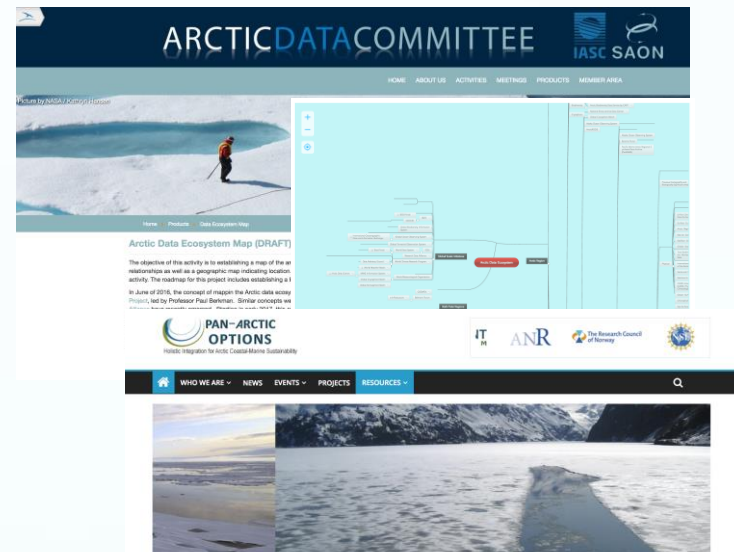
Access to the ESRIN site is restricted to persons pre-registered using the online conference registration system, **presenting a print of the email sent on 2 November** and an original valid form of ID; as you are already registered, security has received your name on the list of participants for the conference. For security reasons, cars cannot be parked inside the ESRIN premises. A private parking area (open until 23:40) is available close to ESA/ESRIN in Via delle Perazzeta (Frascati) in front of the Train Station Tor Vergata.

# Key Points

- Federated search a priority. Need for open protocols and tools.
  - Exploring Arctic Data Explorer, GeoNetwork, GEOCRI Community Portal (study underway in partnership with SOOS, NSIDC)
- Cloud/VRE is a strong emerging trend
- Indigenous participation critical – confirmation of formal representation on ADC
- Many others – presentation today, report pending

# Arctic Data Ecosystem Initiative

- Nov. 2014 – Arctic Data Committee establishes *Mapping Arctic Data Ecosystem* initiative
- June 2016 – Complementary interests in *Pan-Arctic Options Project* (PAO) identified
- RESULT: PAO will lead initiative while sharing results with ADC, and many others (World Data Systems, Belmont Forum, CODATA, Research Data Alliance, SAON, EU-Polarnet)



Title: Postdoctoral Fellow (*Arctic Data e-Cosystem Scientist*)  
Reports To: Professor Paul Arthur Berkman and Dr. Peter Pulsifer  
Location: Fletcher School of Law and Diplomacy, Tufts University  
FTE: 24 Months (with possible extension)

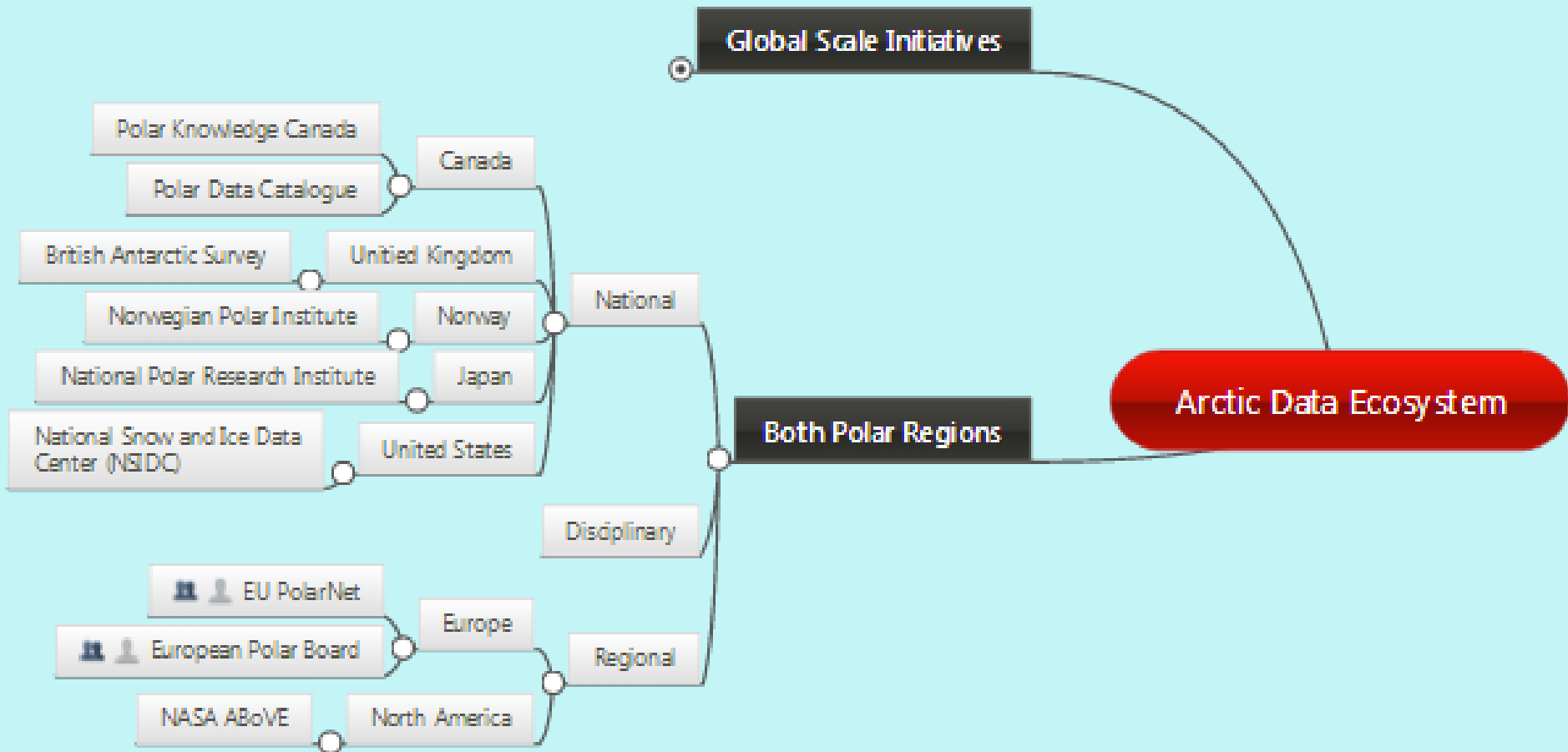
## POSTDOCTORAL FELLOW *Arctic Data e-Cosystem Scientist*

### BACKGROUND OF FLETCHER SCHOOL OF LAW AND DIPLOMACY AT TUFTS UNIVERSITY

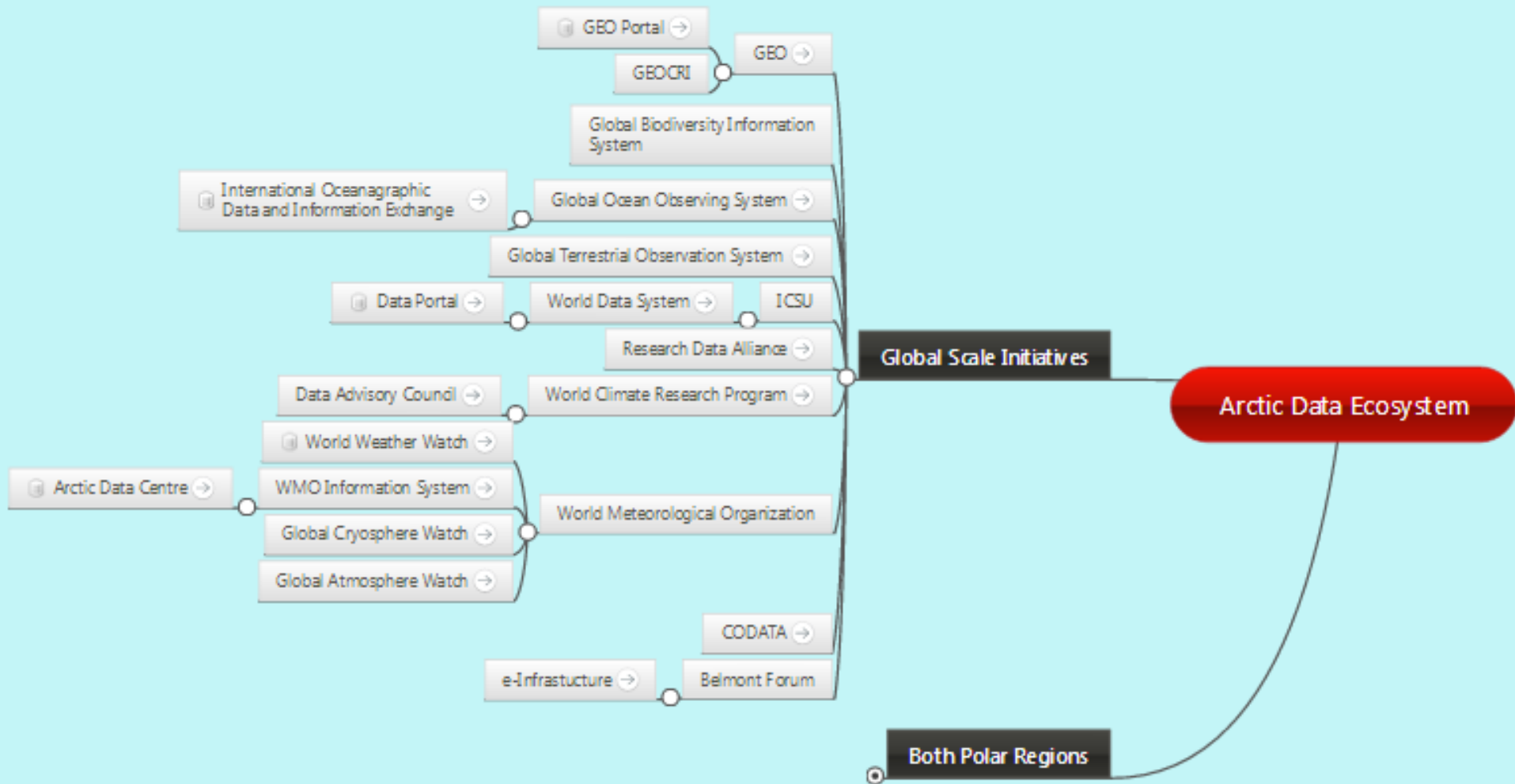
The Fletcher School is committed to educating in an inclusive and supportive environment that welcomes students regardless of national origin, religion or citizenship status. At The Fletcher School, for more than 80 years, we have tried to "know the world." Our job is to prepare our graduates to be practitioners in every dimension of international relations: economics, finance, diplomatic history, politics, culture, security and many other disciplines. The challenges we face in this turbulent 21st century quite literally transcend borders – we must be ready to *connect* in every sense of the word.

We seek to build partnerships between nations, government agencies and the public/private sector in order to be ready to shape international issues and events. Our extensive network of graduates today serves in every venue in the global milieu – heads of state and government, political leaders in power and opposition, judges, diplomats, senior military officers, corporate leaders at every level, international bankers, and development officials. The Fletcher School

# Arctic Data Ecosystem Initiative



# Arctic Data Ecosystem Initiative





**main challenges today are social  
and organizational rather than  
technical**

**Includes “coordinating the  
coordinators”**

# Conclusion and Comments

- The cold regions are particularly important due to the environmental change that we are already seeing there.
- A key need at the moment is to have projects, programs and national efforts working together in a concerted way. This includes building a **technical network** that is interoperable, but also a **human network** that can work together.
- There are many important initiatives. GEOCRI can play an important role in the system in helping to **connecting the cold region to the larger global system and human network.**
- There is a good opportunity to bring people together next May through a **Polar Data Planning Summit** meeting that GEOCRI will be helping to co-organize with the Arctic Data Committee and other groups.

Thank you!