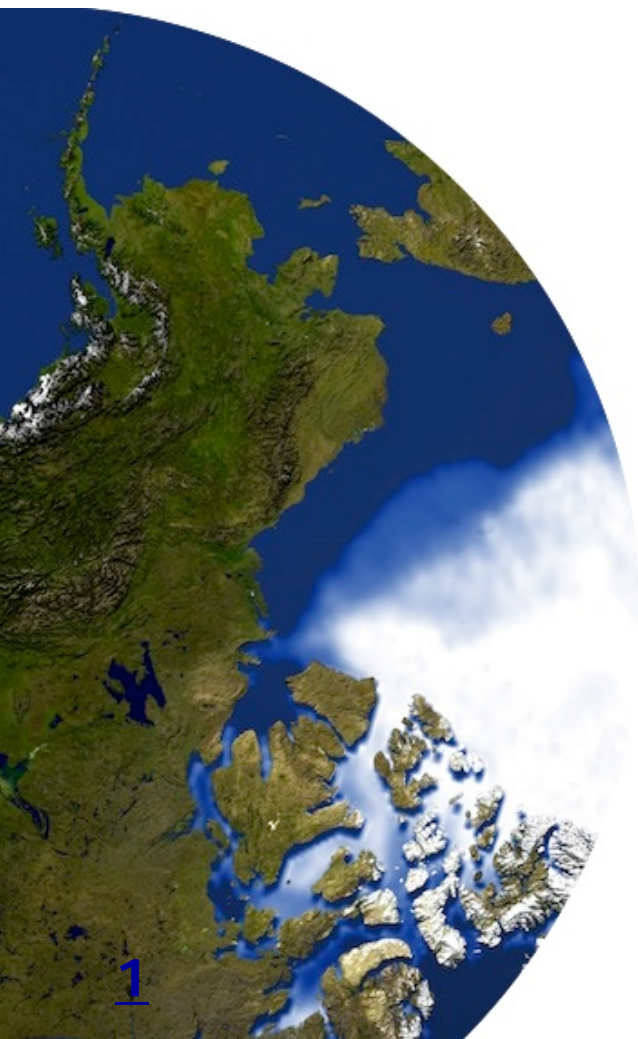
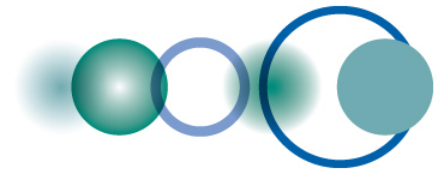


The GEO Cold Regions Initiative

Jeff Key, NOAA

With some slides are from:
Yubao Qiu and Barbara Ryan (GEO)

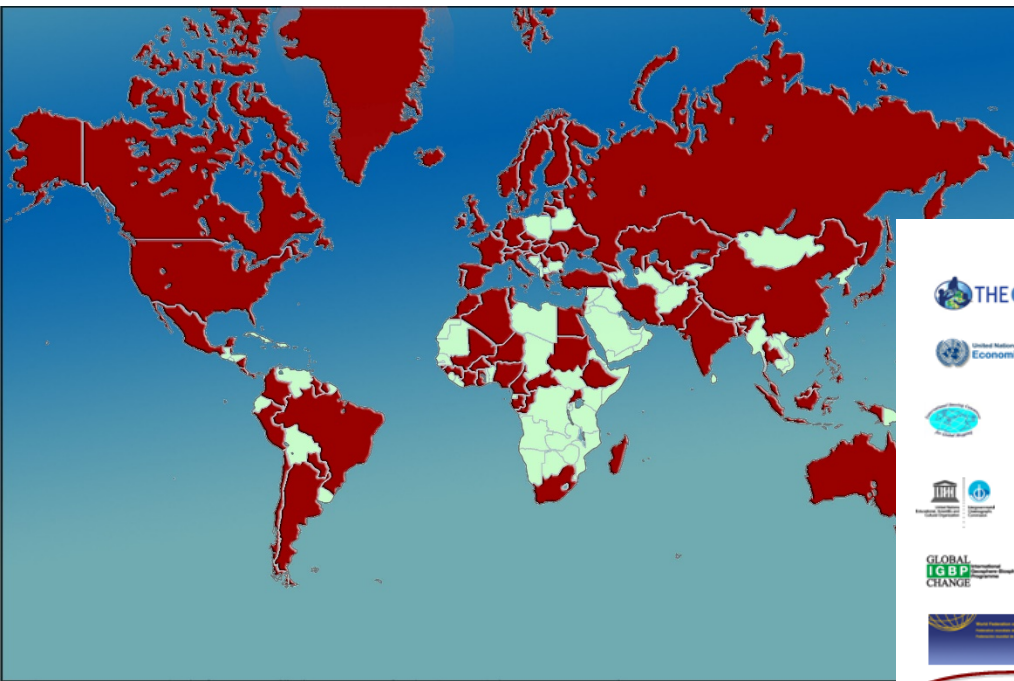


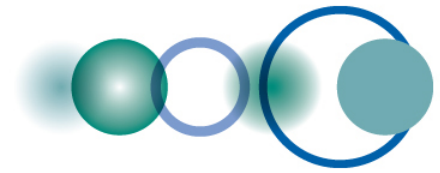


GEO, the Group on Earth Observations

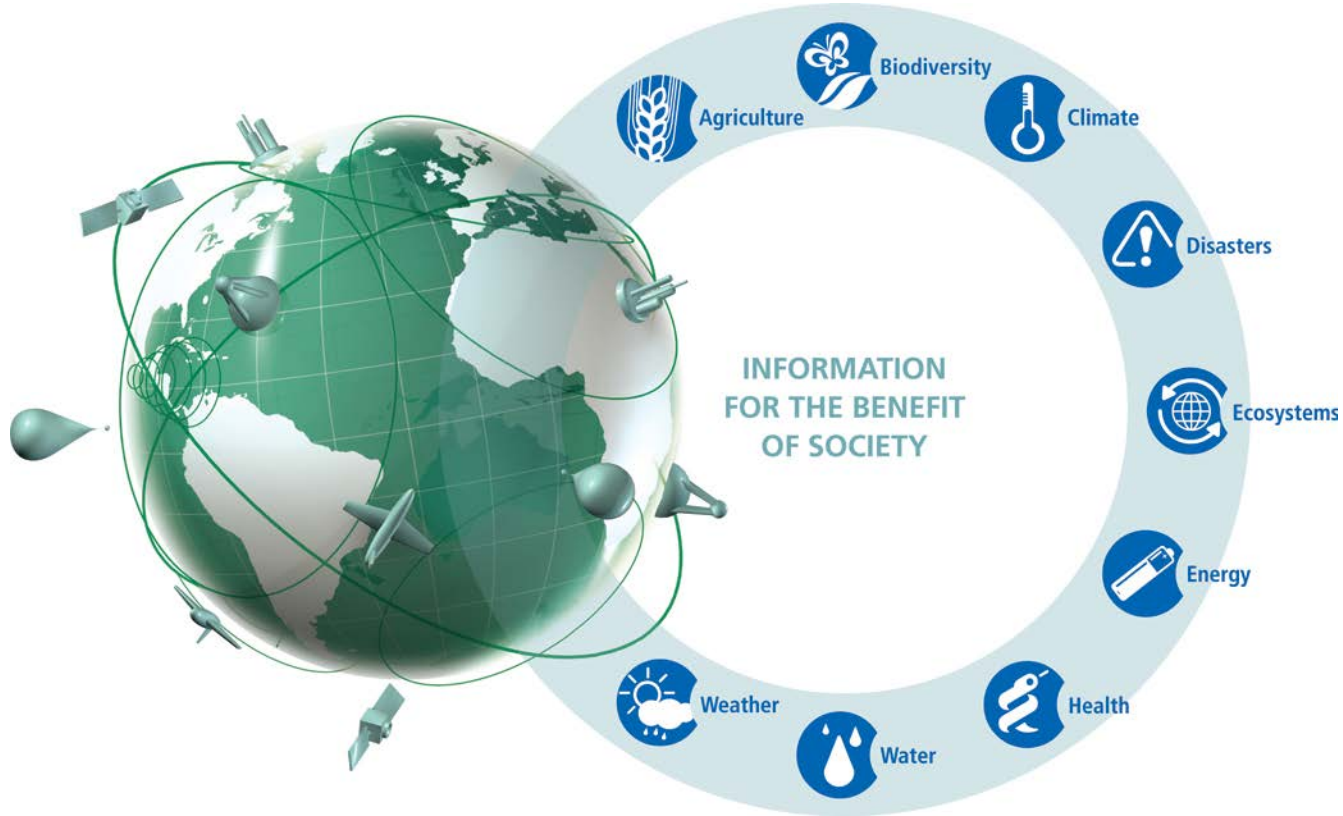
Created at 2005

An **Intergovernmental Organization** with 90 Member Countries, the European Commission and 77 Participating Organizations

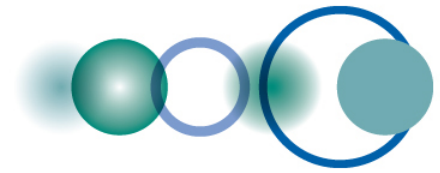




GEOSS : A Global System of Systems



is about **“Information for Society”**



GEO Cold Regions (GEOCRI)

GEOCRI aims to coordinate global, joint efforts to provide Earth observations and information services to decision-makers over the vast cold regions by improving networks, enhancing the synergy, building practices and capacities, and addressing the scientific and societal challenges.

Its goal is to "Promote Earth observations data sharing and cooperation, enabling improved information services for the inter-continent cold regions, facilitate provision of information to various stakeholder, including decision makers, private sectors".

GEO Cold Regions An Arctic Focus

An Arctic Focus

The Arctic Focus of GEO Cold Regions is built upon the principles of free and open access to Earth observation data and information, capitalizes on the synergies of pan-Arctic and global value-added environmental information services, and provides resources for informed decision-making through the GEOSS Cold Region Community Portal.

The Arctic Focus of GEO Cold Regions supports the efforts of scientists, experts and decision makers to ensure the sustainability of these environmentally stressed areas in an increasingly complex political and economic context.

Our vision for the future

Through the GEOSS Information system, exploit and strengthen synergies among observation, monitoring and evaluation activities over the Earth's Poles and mountain Cold Regions to provide easy access to observations and environmental information products by users across the globe.



SAON

The Sustaining Arctic Observing Networks (SAON) is being implemented to connect the Arctic science, observing and data management activities and interests of the Arctic and non-Arctic countries, as well as integrate with global observing systems.

<http://www.arcticobserving.org>



PEEX

Pan-Eurasian Experiment (PEEX) is a new multidisciplinary research aiming at resolving the major uncertainties in the Earth system science and global sustainability questions in the Arctic and boreal Pan-Eurasian regions. PEEX Infrastructure is aimed at filling the observational gap in atmospheric in-situ data in the Siberian and Far East regions.

<https://www.stm.helsinki.fi/peex>



CAFF CBMP

The Circumpolar Biodiversity Monitoring Program (CBMP) is the Monitoring programme of the Conservation of Arctic Flora and Fauna (CAFF), which is the official Arctic Biodiversity Observation Network of the Group on Earth Observations Biodiversity Observation Network (GEO BON) with three coordinated and integrated Arctic Monitoring Plans covering Marine, Freshwater and Terrestrial ecosystems, while the Coastal monitoring plan is still in development.

<http://www.caiff.is>, <http://www.abds.is>



WMO GCW

The World Meteorological Organization's Global Cryosphere Watch (GCW) is providing the information needed to better assess impacts of a changing Cryosphere on society and promoting the addition of standardized cryospheric observations. The core GCW surface-based observational network, called CryoNet, will be comprised of sites with varying capabilities.

<http://gcw.met.no>



CCIN PDC

The Polar Data Catalogue (PDC) is a database of metadata and data that describes, indexes, and provides access to diverse data sets generated by Arctic and Antarctic researchers, providing exchange with other data centres. The records cover natural sciences and policy, to health and social sciences.

<https://www.polardata.ca>



SIOS

Svalbard Integrated Earth Observing System (SIOS) is an international infrastructure project, targeting implement the central node in the global monitoring of the High Arctic. SIOS establishes a cooperating and transparent research infrastructure in the Arctic based on already existing infrastructure.

<http://www.sios-svalbard.org>



INTERACT

International Network for Terrestrial Research and Monitoring in the Arctic (INTERACT) is a network of more than 70 terrestrial research stations located in the Arctic, northern and northern alpine areas. INTERACT builds capacity for research and monitoring, and facilitates the identification, understanding and prediction of environmental and ecological changes in the circumpolar area.

<http://www.su-interact.org>



Others

- Cryosphere Data Archive Partnership (CrDAP)
- Mountain Geoportal at ICIMOD
- Swiss Experiment Platform (SwissEx)
- Third Pole Environment Database (TPE)
- WMO Polar Space Task Group (PSTG)
- POLAR PORTAL

WMO and GEO

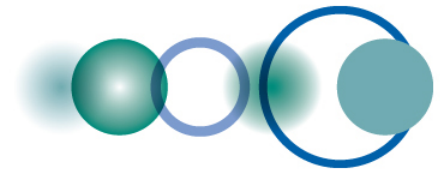
WMO EC-68 (Executive Council, 2016), *Partnerships* agenda item, draft decision 12(6)/1:

Decides to endorse the ten key WMO-GEO collaboration areas listed in the [Annex](#);

From the Annex, WMO-GEO Key Collaboration Areas:

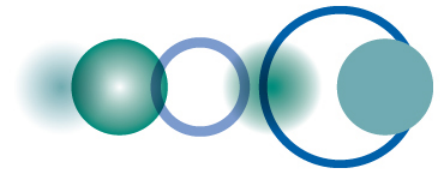
6. Cryosphere activities, as exemplified by GEO Cold Region Activities and the WMO Polar and High Mountain Regions activities, including the Global Cryosphere Watch, Year of Polar Prediction, etc.





GEOCRI IP Tasks Relevant to PSTG

| Tasks | Importance | Difficulty | Progress | Contributors | Milestones and Deliverables & Time schedule |
|---|------------|------------|----------|-------------------------------------|--|
| Task 1. Data Task Team: Jeff Key, Yubao Qiu, Julie Friddell, Peter Pulsifer, Tom Barry, Hiroyki Enomoto, NIPR, Massimo Menenti, Weicai Wang, Carolina Gabarró , and Emili Garcia Ladona... | | | | | |
| Activity 1.1 Identify and document needs and requirements for cold region Earth observation data and information for all users, both within and outside of cold regions. Make regular updates as needs and requirements change and emerge. Coordinate user requirements with WMO and its Rolling Review of Requirements (RRR) mechanism. | 1 | 2 | 1 | CCIN/ PDC RAD/CAS GCW SAON | Milestone: Analysis of existing and ongoing consultations on user needs (XII 2017). Deliverable (: Summary of the identified needs and requirements and action plan to implement the findings. XII2018) |



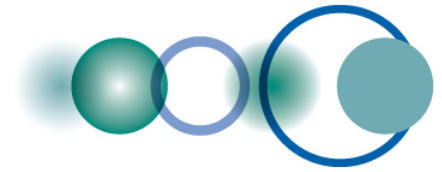
GEOCRI IP Tasks Relevant to PSTG

| | | | | | |
|---|---|---|---|--|--|
| <p>4.6 Promote and advocate the use of coordinated, comprehensive and sustained cold region Earth observations to inform decisions and actions by policy makers, industry, local communities, researchers and others.</p> | 2 | 1 | 1 | <p>INTERACT GCW Co-leads team?</p> | <p>Milestone: Participation with presentation(s) to joint forums with different stakeholders (ongoing 2017-2019) Deliverables: Presentations, abstracts, statements, white papers.</p> |
| <p>4.7 Advocate defining of cold regions earth observations essential variables (EVs) to more effectively meet the cold region Earth observation needs and requirements of users.</p> | 2 | 3 | 2 | <p>SAON INTERACT RADI</p> | <p>Milestone1: Key actors for defining the cold region key variables identified (XII2017) Milestone2: Key actors contacted for discussions (III2018) Deliverable: Work plan for defining the cold regions earth observations essential variables (XII2018)</p> |



GEOCRI IP Tasks Relevant to PSTG

| | | | | | |
|--|---|---|---|---|--|
| <p>Activity 5.1 Establish a forum for meeting and dialogue to encourage links and collaboration of cold regions in situ and remote sensing communities</p> | 1 | 2 | 1 | <p>INTERACT CSIC GCW RADI/CAS TUD CNR TPE</p> | <p>Milestone1: Relevant community members identified and contacted. (IX2017) Milestone2: Joint meeting or webinar arranged (III2019) Deliverable3: Meeting minutes (IV2019) Deliverable4: Joint publication? (XII2019)</p> |
| <p>5.2 Develop a set of Cold Region Sensitive Indicators and ECRVs, based on the excise of ECVs and EBVs, to provide the most needed observations parameter over Earth cold regions.</p> | 1 | 2 | 1 | <p>CSIC RADI/CAS CNR ...</p> | <p>Milestone1: Relevant community members identified and contacted. (IX2017) Deliverable1: list of the variable or indicator for Earth cold regions Deliverable2: Joint Publications (XII2019)</p> |



Final Statement

From M. Drinkwater, May 2016:

PSTG can take the commitment to continue to coordinate space agencies in harnessing the capabilities of satellites for the study of the polar regions.