

GEO Mountains Task Group 1.1b



*Developing and maintaining a list of interdisciplinary
in situ mountain observational infrastructure and
associated datasets*

Meeting #1, 19 January 2022



Housekeeping



- Kindly mute yourselves when not speaking
- Please “raise your hand” to request the floor
- The meeting is being recorded
- Brief notes will be circulated afterwards

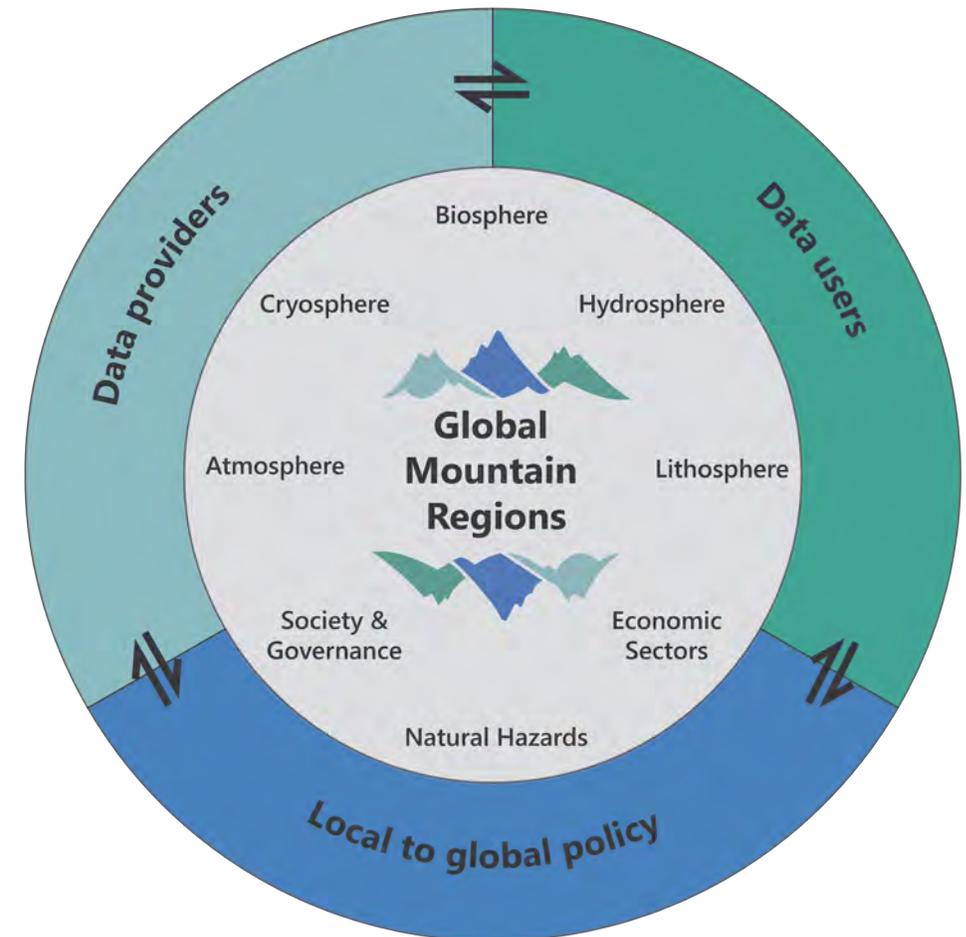
GEO Mountains: an introduction

The Global Network for Observations and Information in Mountain Environments

An Initiative of the Group on Earth Observations (GEO) co-lead by the Mountain Research Initiative (MRI) & the National Research Council of Italy

Objectives:

- ❑ To identify and satisfy the data and information needs of a diverse range stakeholders operating in the mountain sphere
- ❑ To improve monitoring and understanding of mountain processes and phenomena, especially under change
- ❑ To build, connect, and communicate with the community of mountain researchers, practitioners, and policy makers
- ❑ To develop collective reporting capacity that responds to pre-identified assessment and policy needs



Task Groups



| Number | Description | Number of participants |
|--------|---|------------------------|
| 1.1a | Develop, maintain, and share a list of relevant datasets | 31 |
| 1.1b | Develop and maintain a list of interdisciplinary in situ mountain observational infrastructure and associated datasets | 20 |
| 1.2 | Contribute to our series of regional workshops / consultations into data portal requirements and main data needs / gaps | 24 |
| 1.4 | Contribute Knowledge Packages via GEO Mountains to the GEO Knowledge Hub | 20 |
| 2.1 | Analyse the extent to which data from mountain observatories are freely available, and which measurement protocols are followed | 14 |
| 2.2 | Contribute to the MRI's existing Mountain Observatories (MOs) and Elevation Dependent Climate Change (EDCC) Working Groups | 24 |
| 2.3 | Contribute to a GEO Mountains workshop to identify Essential Mountain Societal / Socio-Economic Variables | 34 |
| 2.4 | Develop a global spatial dataset related to mountain socio-economics | 20 |
| 2.5 | Establish links with the paleoscience community to help ensure that paleodata pertaining to mountains are discoverable, accessible, and usable | 8 |
| 3.4 | Develop educational, training, and capacity development materials related to the drivers, processes, and impacts of environmental, ecological, and societal change in mountains | 27 |
| 3.5 | Identify areas in which / how existing resources can be applied to respond to pre-identified policy needs | 28 |

Main Objective

- To contribute to the development of the GEO Mountains In Situ Inventory by contributing metadata describing interdisciplinary mountain stations / infrastructure, as well as links to associated datasets
 - Sites not currently in the inventory
 - Improvising / adding / updating information about sites that are already represented

Scope of the In Situ inventory

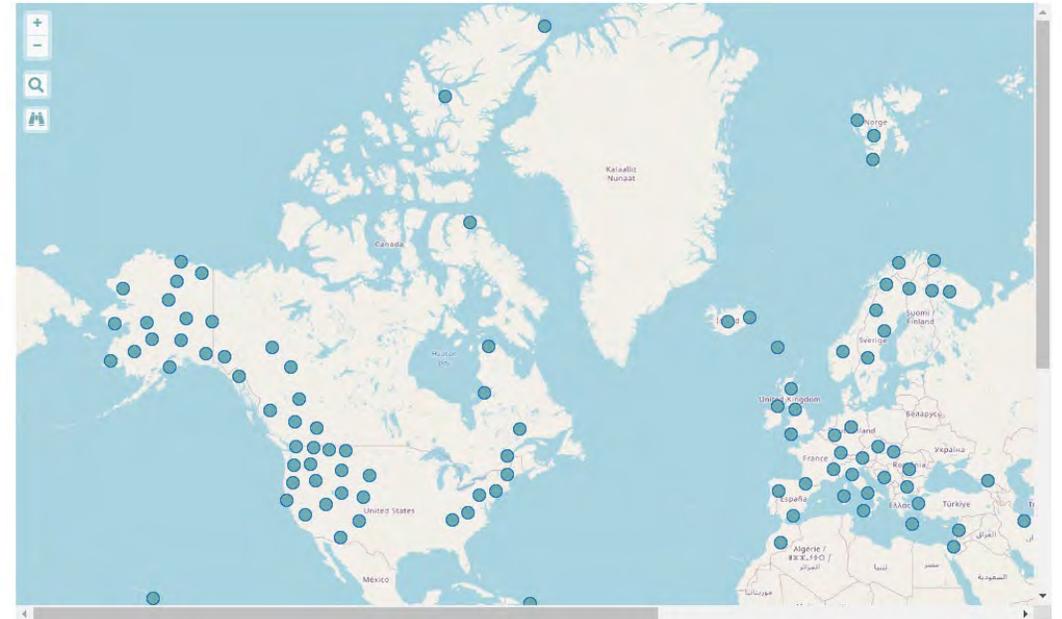
- Broad range of disciplines / themes; global
- Sites should be mountainous (broadly/inclusively defined; see “K” delineations)
- So far focuses predominantly on “research-oriented sites”
- As a minimum, for each station / network, location information must be provided and a link to an external web page providing summary information
- Links to download associated datasets are not mandatory, but at least a contact email should be provided in these cases (with their being some prospect of the data being obtainable)
- For now at least, we are not conducting extensive assessment / QC of the datasets contributed (e.g. checking that metadata is sufficient); *responsibly a dataset is suitable for a given application rests with the user
- Remotely sensed and modelled (i.e. gridded) datasets are excluded > please submit these to the GEO Mountains General Inventory

Foreseen impact of the In Situ inventory

- Data provider side: “showcase” your datasets to a potentially wider community, favouring reuse
- User side: Increase i) the discoverability/findability, and ii) the ease of access of mountain datasets
- Complement the GEO Mountains General Inventory (e.g. enable the MRI’s Mountain Observatories Working Group to identify sites rich in both in situ and remotely sensed data to form a global network of mountain observatories)
- Support project proposals
- Once further populated, form a basis for “gap analyses”, informing assessment exercises (e.g. IPCC reports) and establishing future priorities (regions / disciplines / data types)
- Form a basis for capacity building activities; use / combine various datasets to respond to policy and practical applications (e.g. Sendai Framework, SDGs, etc.)

Timeline

- The first release (v1.0) was made last year > Demo
- v1.1 planned for release in ~Summer 2022
- As such, any additions you are able to make before then will be included
- Periodic updates thereafter, depending on the frequency of further submissions (no “live” update process)



<https://www.geomountains.org/resources-open-surveys/resources-surveys/inventory-of-in-situ-observational-infrastructure>

https://geomountains.org/sftp/GEO_Mountains_In_Situ_Inventory_v1.0_with_K/ (full screen view)

How to make a submission

Via [this form](#) > Demo



Outlook

- Increase the representation of operational sites (e.g. from national environmental monitoring agencies)
- Try and increase the proportion of sites which actually share their data openly (“the final mile”)
- Conform to established machine-readable metadata standards to enable interoperability, e.g. with the [WMO’s OSCAR portal](#)
- Exploit the inventory e.g. for a more interdisciplinary and comprehensive data gap analysis > collaborative effort under GEO Mountains (e.g. building on our recent study which was limited to a few climatological variables at GHCNd stations)

Outlook

Thornton et al. Coverage of in situ climatological observations in the world's mountains

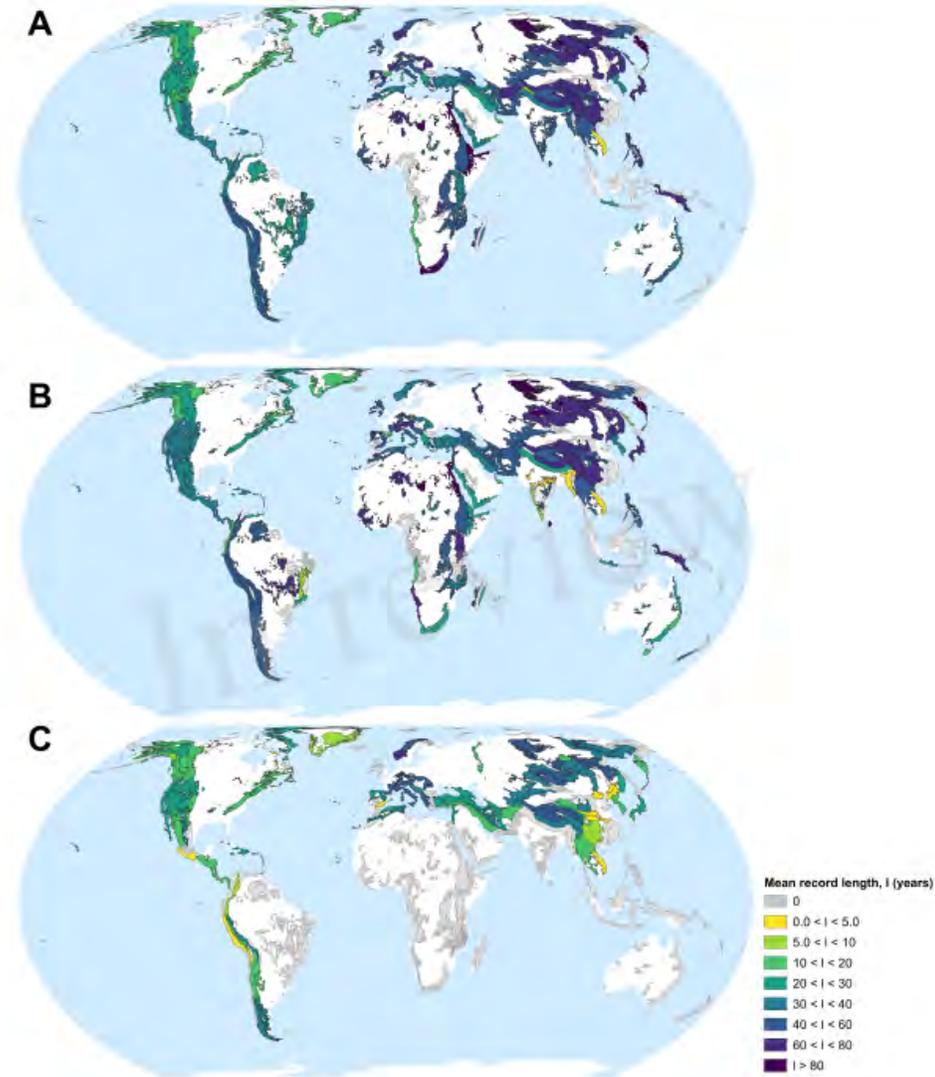


Figure 3. Mean approximate record length of GHCNd stations in mountainous terrain for *PRCP* (A), *TMAX* (B), and *SNWD* (C) by GMBA mountain polygon. The corresponding plot for *TMIN* is provided

Under review, *Frontiers in Climate*

Comments, questions & ideas



Many thanks for your interest and contributions!

geomountains@mountainresearchinitiative.org