

*IACS promotes the advancement  
of cryospheric sciences of  
the Earth and solar system*



IACS

International Association  
of Cryospheric Sciences

# IACS NEWSLETTER

November 2023

## New IACS Working Group on the delineation of glaciers, ice sheets, and ice sheet basins

IACS is pleased to announce a new working group on the delineation of glaciers, ice sheets, and ice sheet basins. The new WG is an effort aiming (a) to build a community standard product defining what is considered the ‘main’ ice sheet and what is a ‘peripheral glacier’, and (b) to define standardized drainage basins within the ice sheets as well as for the peripheral glaciers. This should include developing and making available both the rule-set and tools used for separating glaciers from ice sheets and defining ice sheet basins as well as ice divides for glaciers along with recommendations to facilitate comparison between studies. To ensure broad acceptance, this standardized reference should be developed through an open, democratic process, enabling future revisions.

The lack of a widely accepted standard across communities in delineating ice sheet vs glaciers and defining basins within ice sheets has hampered comparisons between studies and most likely has also led to errors of accounting, for example, in recent IPCC reports, such as AR5, AR6, and the Special Report on the Ocean and Cryosphere in a Changing Climate.

### Objectives:

- Make a community standard agreement on which ice masses in and around Greenland and Antarctica fall into the “glacier” category and which are part of the main ice sheets
- Make a community standard agreement on internal ice sheet basins, subregions and boundaries
- Develop methods and tools to support mass change estimates that avoid under- or over-counting
- Engage a sustainable community

### Organization and membership

The working group is organized with two **co-chairs**: Ken Mankoff and Fabien Maussion. It has a **steering committee** consisting of co-chairs and 10 other scientists.

The working group also open for **members** that are to be determined following an open call for participation on cryo-list.

One can also be involved as **observers** that are invited to annual meetings and kept informed of progress; no expected contribution.

See full proposal on the [IACS homepage for the WG](#).



Ken Mankoff



Fabien Maussion

### Co-chairs:

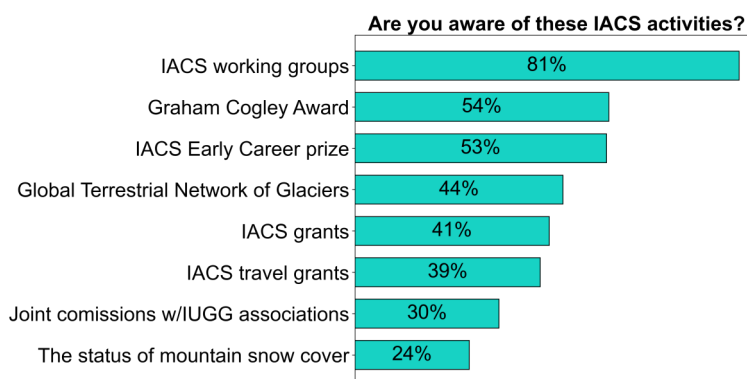
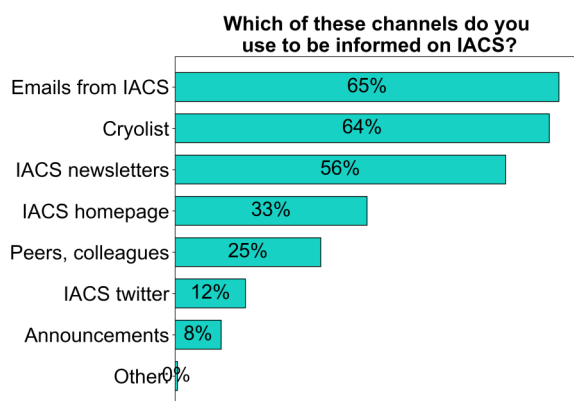
Ken Mankoff, USA  
Fabien Maussion, UK

### Steering committee:

Regine Hock, Norway  
Sophie Nowicki, USA  
Celia Baumhoer, Germany  
Bertie Miles, UK  
Frank Paul, Switzerland  
Heiko Goelzer, Norway  
Mathieu Morlighem, USA  
Will Kochtitzky, USA  
Rachel Oien, USA  
Niels J. Korsgaard, Denmark

## IACS survey

A survey of the IACS members was conducted following the 2023 IUGG General Assembly in Berlin with questions on the Assembly and some general questions. The majority of survey participants were from Europe (45%) and Asia (30%) but Africa, North America, South America and Oceania were also represented (Q10). In total 308 members responded to the survey, of whom 72 participated in the conference and 2 participated online. The main reasons given for not attending the conference were cost, timing and travel distance (Q2). When participants were asked for feedback, the conference received praise for interesting and well organized sessions. We also noted several recurring recommendations for improvement. Members reported an issue of session overlap, suggesting a need for better scheduling. The Fiesta Cryospherica was too expensive for many members and left them feeling excluded. Common suggestions for the next conference in Busan include reducing registration fees and/or economic support for early career and independent scientists. Many members also requested the possibility for full hybrid/online participation. The survey revealed that coffee needs to be easily accessible and in large quantities to satisfy tired and thirsty scientists. IACS thanks all members that responded. This input will be valuable for planning our activities and the next assemblies. See full [results of survey](#).



## One Planet Polar Summit in Paris

On November 8-10 scientists, explorers, heads of international institutions and policymakers were gathered in Paris, France, for the One Planet Polar Summit. They shared their results and concerns about the ongoing changes of the cryosphere. The conclusion was clear: we must strongly and urgently decrease global greenhouse emissions to achieve the goals of the Paris agreement so we limit the consequences of massive ice melt. We need to collaborate internationally and secure long term observations from space and in the field.

IACS was a partner organization of the summit and IACS president Liss M. Andreassen was a member of the Scientific Advisory Board. She gave a 10 min statement from IACS on the first day of the meeting. The Scientific Advisory Board prepared the scientific background in a document building on IPCC recommendations and with recent updates. Antje Boetius and Jerome Chapellaz presented the Scientific Advisory Board statement to President Macron and other Heads of State and government on 10 November. Official video of the presentation here: <https://youtu.beGBa59wR83lo> (statement starts around 5 min 20).



**Group photo after breakfast meeting at the Norwegian embassy in Paris on Nov 10. From left: Tore Furevik, Prime minister Jonas Gahr Støre, Liss M. Andreassen and Camilla Brekke. The three researchers briefed Støre about the findings from the first two days of the meeting.**

On the meeting website [One Planet - Polar Summit](#) you will find the final Scientific Statement from the meeting, the Paris call for Glaciers and Poles, and the program.

## In memory of Richard Armstrong

Richard Armstrong passed away in August. Richard was a very enthusiastic scientist and was amongst our best allies for coordinating the worldwide glacier monitoring. As Senior Scientist and Interim Director of the National Snow and Ice Data Center (NSIDC), Richard was instrumental for the collaboration with the World Glacier Monitoring Service (WGMS). He guided not only the successful transfer of the World Glacier Inventory from Zurich to Boulder, but also accompanied the establishment of the Global Land Ice Measurement from Space initiative and its database at NSIDC. Jointly, we designed the terms of reference for the Global Terrestrial Network for Glaciers (GTN-G), which still today builds the organizational framework of internationally coordinated glacier monitoring and serves the research community with a one-stop portal for free and open access to the global glacier datasets.



*In silent remembrance, Michael Zemp, Isabelle Gärrner-Roer, and Samuel Nussbaumer, WGMS*

## Randolph Glacier Inventory (RGI) version 7.0

A new version (v7.0) of the widely used Randolph Glacier Inventory (RGI) was released on 21 September. The RGI is a global set of glacier outlines intended as a snapshot of the world's glaciers outside the ice sheets. It provides a single outline for each glacier at approximately the year 2000 as well as a set of attributes and other relevant auxiliary information. [user guide and data download page](#).

This version is the result of several years of work by the Working Group on the “Randolph Glacier Inventory (RGI) and its role in future glacier monitoring and GLIMS” of the International Association of Cryospheric Sciences (IACS). It represents a considerable improvement to RGI 6.0 (released in 2017) in the quality of the outlines and the data processing pipeline, as well as the breadth of available data products. In addition to the outlines of each individual glacier, RGI 7.0 for the first time also includes (1) the outlines of all glacier complexes (i.e., contiguous ice masses that encompass all glaciers that share common boundaries), (2) shapefiles of the “divides” or “boundaries” between adjacent glaciers and (3) the glacier centerlines of all glaciers. 73% of all RGI 7.0 glacier outlines are new or updated, representing an improvement for 42% of the global glacier area.

*Fabien Maussion, Bruce Raup, Frank Paul, Philipp Rastner, Regine Hock, and Michael Zemp, on behalf of RGI Working Group of IACS and the [109 members of the RGI 7.0 consortium](#):*

*RGI 7.0 is dedicated to the memory of Dr. Graham Cogley (1948-2018), an inspiring and deeply committed leader and contributor to the RGI, who was instrumental in initiating, developing, generating and curating the RGI from its inception over nearly a decade, demonstrating the value of open data and who embodied*



## Global Glacier Change Bulletin

The World Glacier Monitoring Service (WGMS) has published a New Global Glacier Change Bulletin No. 5, which covers the observation periods 2019/20 and 2020/21, with preliminary values for 2021/22. The bulletin includes a preface from IACS. [https://wgms.ch/downloads/WGMS\\_GGCB\\_05.pdf](https://wgms.ch/downloads/WGMS_GGCB_05.pdf)

## New paper from RAGMAC working group

The IACS working group Regional Assessments of Glacier Mass Change (RAGMAC) has a new paper out in the Cryosphere Discussions. The paper compares results produced from two different types of satellite data between different research groups and against validation measurements from aeroplanes.

*‘Observing glacier elevation changes from spaceborne optical and radar sensors – an inter-comparison experiment using ASTER and TanDEM-X data’ <https://doi.org/10.5194/egusphere-2023-2309>*





Vincent Vionnet

## New IACS bureau member

IACS has appointed Vincent Vionnet (Canada) as deputy in the Snow & Avalanches: division. Lauren Vargo (New Zealand) will also continue as division deputy for glaciers. See all IACS officers on the IACS homepage.



Liss M. Andreassen

## IGS Global Seminar series

IACS president Liss M. Andreassen presented an overview talk on IACS in the seminar series of the IGS on November 1. See talk here: [International Glaciological Society - YouTube](#) (available from ~27 Nov)



Drang Drung Glacier, the biggest glacier (70 km<sup>2</sup>) in Ladakh, India. Monitoring of this glacier is under 'tier-2' level as per WGMS guidelines. The inset shows a proglacial lake that has formed in recent years. Photo: Mohd. Farooq Azam (IIT Indore)

## IACS Co-sponsored events and activities

The IACS bureau has decided to sponsor the following events in 2024:

- [Girls\\* on Ice Aotearoa](#), Mount Ruapehu, New Zealand, 15 – 25 January 2024
- 8th [Snow Science Winter School](#), Sodankyla, Finland, 25 February – 2 March 2024.
- APECS social event at [ASSW 2024](#), Edinburgh, UK, 21 – 29 March 2024
- The Frozen Frontier through the Lens: A Polar Research Exhibition at [ASSW 2024](#), Edinburgh, UK, 21 – 29 March 2024
- [Juneau Icefield Research Program](#), Alaska, summer 2024.

IACS provides financial support for cryosphere-related workshops, educational or other events such as early-career scientists awards at meetings. Application deadlines are 1 February, 1 June and 1 October.

## ISCARP Survey

The fourth International Conference on Arctic Research Planning has launched a [survey](#) to gather input on research priorities for the next decade. There is no closing date for the survey yet, but a first summary of responses will be made in Feb. 2024.

## About IACS

The International Association of Cryospheric Sciences (IACS) is a constituent Association of the International Union of Geodesy and Geophysics (IUGG).

IACS promotes and sponsors workshops, symposia and educational activities.

IACS has targeted working groups, joint commissions and bodies on cryospheric topics.

IACS offers free individual membership: [www.cryosphericosciences.org](http://www.cryosphericosciences.org)

The IACS newsletter is issued 2-4 times a year.