

IACS Working Group on the Randolph Glacier Inventory (RGI) and its role in future glacier monitoring and GLIMS

Annual Status Report of the Working Group 2020

1.) WG meetings

A ½ day in-person **Kick-off meeting** was held in Zurich in January 2020 to plan the WG organization and work for the immediate future and in particular the steps towards a release of a new RGI version (RGI7.0). All members of the steering committee joined in person except for B. Raup who joined remotely. Since January the steering committee has held **online meetings** at least once a month. In addition an online meeting open to all RGI members/contributors was held virtually during the 2020 EGU (May 5, 2020). A second **open RGI WG online meeting** was held on October 23, 2020 using two 1-hr time slots 10 hours apart to accommodate for different time zones. In total there were 19 participants providing feedback on the planned choices of outlines for RGI7.0.

2.) Homepage

A new homepage was established on the IACS page detailing the operation and goals of the WG. Furthermore, an open repository of all RGI related documents (meeting notes, etc.) has been created. These pages have been continuously updated as new information emerges.

<https://cryosphericsscience.org/activities/working-groups/rgi-working-group/>
<https://github.com/GLIMS-RGI/rgidocs>

3.) Call for membership

An open call for WG membership was issued via CRYOLIST and other relevant lists on January 21, to which more than 50 people responded. We offered two types of membership: *WG members* who are expected to actively work towards achieving the WG goals and *WG participants* whose contribution is largely limited to providing data. The WG currently has ~20 members and more than 20 contributors from more than 15 countries.

4.) Preparation and release of new version of the RGI (RGI7.0)

Activities focused primarily on preparing a major update of RGI6.0 with an (optimistic) targeted release date in early 2021. It was decided to keep the outlines' timestamp identical to RGI6.0 (year 2000). An open call was made in February 2020 to solicit submission of new outlines with a deadline of June 1. The new RGI version will include updates and improvements in almost all regions, in particular in High Mountain Asia, South America, New Zealand and peripheral Antarctica.

The WG has carefully considered all submissions and developed objective criteria to justify a particular choice of outlines in case there are multiple available outlines for the same region. A document has been prepared outlining for each region the

rationale for the choices suggested by the steering committee. The main purpose of the open WG meeting planned for October 23 is to allow the entire WG to provide feedback on the steering committee's recommendations.

5.) RGI-on-demand tool

B. Raup developed a tool that allows a new RGI version to be extracted with any targeted time stamp from the GLIMS database. The tool extracts for each region the outlines available in GLIMS that are closest to the desired year. The tool greatly facilitates the compilation of future RGI versions, although currently substantial additional manual adjustments are needed. The tool is available to the public through the GLIMS glacier browser.

6.) Integration into GLIMS

For the first time all outlines to be considered in the new version of the RGI have to be submitted to GLIMS. Thus we continue our efforts to coordinate the RGI efforts with GLIMS and avoid that RGI outlines are not in GLIMS. The new RGI will be hosted and released on the GLIMS homepage. The development of the RGI-on-demand tool from the GLIMS database provides another example of our efforts to integrate RGI efforts with GLIMS.

7.) RGI Tools

A toolkit that processes files from the Randolph Glacier Inventory was further developed. *RGItools* provides several tools to (pre-)process and analyse the glacier outlines provided by the Randolph Glacier Inventory (RGI). The tool was initially started at the Univ. of Innsbruck but the further development has since been integrated into the WG efforts, as the tools are useful for the wider RGI user community. <https://rgitools.readthedocs.io/en/latest/>

8.) Conferences

The new RGI working group was presented in an oral presentation at EGU2020 (<https://meetingorganizer.copernicus.org/EGU2020/EGU2020-9888.html>). An update was presented in a talk at the 2020 European Polar Science Week from 26-30 October (<http://eo4polar.esa.int/>).

9.) Funding request

Due to the uncertain future of travel given the COVID pandemic we have no immediate requests for funding to support WG in-person meetings in 2021. However, we would like to reserve the option (including the option to ask for salary related or other funding) to do so at a later point in time.

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