

1 **Brief communication: Getting Greenland's glaciers right – a**
2 **new dataset of all official Greenlandic glacier names**

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10 **Abstract**

11 Place names in Greenland can be difficult to get right, as it is a big mix of Greenlandic, Danish, and
12 other foreign languages. On top of that orthographies have changed through time. With this new
13 dataset we give the researcher working with Greenlandic glaciers the proper tool to finding the
14 correct name for glaciers and ice caps in Greenland, as well as to locate glaciers described in the
15 historic literature with the old Greenlandic orthography. The dataset contains information of glacier
16 names of 733 glaciers; 285 originating from the Greenland Ice Sheet and 448 from local glaciers
17 and ice caps.

18 **1 Why place names matter**

19 It goes without saying that referring to a geographical feature by the same name saves both the
20 reader and the author a lot of trouble. However, problems may arise when there is no consensus as
21 to which feature is referred, or when the name has changed in time. Particularly in Greenland,

1 history has not been kind to the researcher who wishes to get the place names right. The written
2 Greenlandic language has undergone changes since the first expeditions and names have changed
3 through time. Furthermore, the languages spoken on the east – and west coast of Greenland also
4 differ causing further dissimilarities in the names. Therefore, it can be quite a challenge to apply the
5 correct place name in Greenland. There are already databases of geographic place names available,
6 like the USA National Geospatial-Intelligence Agency GEONet Names Server, however this has not
7 been updated recently and contains errors and place names in the old Greenlandic orthography.
8 While many researchers have gone great lengths to get the glaciers names right(Higgins, 2010;
9 Laursen, 1972; Rignot and Mouginot, 2012; Weidick, 1995), until now no complete list of official
10 glacier names have been presented to the public. It is with this predicament that we wish to share
11 with the cryospheric community this dataset of official names of all Greenlandic glaciers.
12 Furthermore, we match the glacier names dataset with the Randolph Glacier Inventory (GRI), the
13 most complete glacier inventory available(Pfeffer et al., 2014; Rastner et al., 2012)..

14

15 **2 A brief history of Greenlandic place names**

16 The official Greenlandic authority of place names Nunat Aqqinik Aalajangiisartut (NAA)
17 (<http://www.oqaasileriffik.gl>) and the Danish Geodetic Institute now called the Danish Geodata
18 Agency (GDA) (www.gst.dk) have been well aware of the problems that may arise from differing
19 place names, and have initiated a formalization of all Greenlandic place names. This is no easy task
20 with a country of Greenland's size, where humans have lived and traveled for centuries vigorously
21 naming features in the landscape. In addition to names already enlisted in the official data base,
22 names have also been collected from maps, historic literature and from oral accounts by the GDA
23 and later the NNA.

1 Traditionally the Greenlandic place names have been more of a description of the place rather than
2 a name in the classical form. This is also the case with many of the glacier names, however no
3 complete translation exists (Geodatastyrelsen, 2013). Contrary, the Danish/foreign names were
4 often given to the glaciers during expeditions and are rarely descriptive of the glacier. Instead the
5 glacier names were often given to please funders, family, colleagues, and contemporary celebrities.

6 Registration of place names in Greenland became formalized in 1934 when the Greenland Place
7 Names Committee was formed in Denmark (Kleivan, 1990). Efforts to formalize the place names
8 were then made during the creation of a large map-series of the entire coast line. During this process
9 a representative from the Danish Geodetic Institute would travel the coast and record all known
10 names with assistance of locals. All sorts of features were recorded and the geographic location
11 pinned down on the map. The place names were thus a result of the communication with the locals
12 and the quality of the existing maps. This record along with names from previously published maps
13 that passed the board at the Place Name Committee became part of the official list of recognized
14 place names. This data base, known as the “*Berthelsen List*”, consisted of more than 25.000 entries,
15 and was known to contain errors and discrepancies, such as double entries and wrong coordinates.

16 In 1973 Greenland underwent a language reform and the orthography was changed, and in 2001
17 NNA implemented the new Danish way of spelling “glacier” (gletsjer). As an example, the large
18 marine terminating glacier “Kangerlussuaq Gletsjer” on the southeast coast of Greenland (Wager et
19 al., 1937) has changed name from *Kangerdlugssuaq Gletscher* to *Kangerlussuaq Gletscher* to
20 *Kangerlussuaq Gletsjer* in the process. However the pre-1973 orthography is most often used in the
21 scientific literature (Bevan et al., 2012; Joughin et al., 2008; Khan et al., 2014).

22 In 1984 the responsibility of the Greenlandic place names was transferred to the Greenland Home
23 Rule and NNA. In 1996 single authorization of place names was introduced in Greenland, allowing

1 only one official name which is the Greenlandic where applicable. Thus, *Jakobshavn Isbræ*,
2 Greenland's fastest outlet (Joughin et al., 2014) officially became *Sermeq Kujalleq*. Since then more
3 than 6.000 additional names have been added. It is from this list of place names that all glacier
4 names have been extracted. Furthermore, all glacier entries have subsequently gone through a
5 vigorous quality control, erasing double entries and replacing misplaced data points by manually
6 checking all entries in the dataset, and comparing their location with that of maps published by the
7 GST. Higgins, 2010 contains a comprehensive history of Greenlandic place names, which also
8 includes a long list of both official and unofficial place names in northeast Greenland.

9 **3 A new dataset of Greenlandic glacier names**

10 The present dataset is a compilation of all official Greenlandic names of 733 glaciers. 285 glaciers
11 are outlets or passive margins from the Greenland Ice Sheet (GrIS) and 448 are local glaciers or ice
12 caps (LGIC). The 448 LGICs represent ~2,2% of the more than 20.000 Greenlandic LGICs
13 represented in the RGI. However, the LGICs on this list do account for ~41% of the total area on
14 Greenlandic LGICs in the RGI. Figure 1 provides geographic location for GrIS glacier and LGICs
15 and an example of the information available in the database. The database contains the old
16 Greenlandic spelling of the glacier names, as well as the new Greenlandic spelling, the foreign
17 name if one such exists, and the now official place name. The current official place name is the new
18 Greenlandic name, and when no Greenlandic name exists the official name is the foreign name,
19 often with the Danish suffix for glacier "gletsjer". Many of the Danish glacier names are spelled
20 including the letters, Æ(æ), Ø(ø), and Å(å).

21 For each glacier present in the database, information on the glacier's ID in the Randolph Glacier
22 Inventory (RGI) (Pfeffer et al., 2014; Rastner et al., 2012) is available. The RGI ID is added as this
23 is the presently most completed inventory of Greenlandic ice bodies. Furthermore, information

1 regarding whether the name refers to a section or an outlet of the Greenland Ice Sheet (GrIS) or if it
2 is a local glacier or ice cap (LGIC) is also available. Coordinates are given as Latitude/Longitude
3 for the place name location and for the center coordinate of the glacier polygon in the RGI.

4 By examining the dataset, one might notice an intensively studied and unofficially named glacier
5 missing from the list. This can be explained by the fact that the glacier name under question has yet
6 to be recognized as an official name, either because it has not been brought to the attention of the
7 NNA or has been discarded by the authorities in the past. There are several examples of glaciers
8 that have been widely studied and whose name may appear official, yet this is not the case. A
9 prominent example is the most studied local glacier in Greenland, known as the “Mittivakkat
10 Gletscher” (Mernild et al., 2011). The name “Mittivakkat” (formerly spelled “Midtluagkat”) refers
11 to the large nunatak on the glacier, and was mapped in 1932, by the 7th Thule-expedition led by the
12 Danish explorer Knud Rasmussen (Rasmussen, 1933). Later the glacier was given its unofficial
13 name by researchers studying the glacier (Fristrup, 1960; Hasholt, 1976; Larsen, 1959), however
14 the name was never authorized by the proper authorities. There are many similar examples along
15 the coast of Greenland. Another example is the large number of glaciers the were named by
16 Norwegians in central east Greenland in the early 1930s. None of these names made it on the
17 official list as they were regarded politically motivated(Higgins, 2010) as Denmark and Norway
18 were fighting over the right to east Greenland.

19 It should be noted that the database of official Greenlandic glacier names is not exhaustive nor
20 finished – it is a work in progress and the NAA is continuing the process of registering new and old
21 place names. In connection to the publication of the present dataset, we strongly urge the scientific
22 community to send suggestions of old and already established glacier names that does not appear on
23 the list to the corresponding author. It is recommended that these should be sent along with
24 references in which the glacier name appears. We will then gather all these unofficial place names

1 and submit a single application to the NNA, after which the names will be considered. Once the
2 glaciers names are on the official list, they will appear on official maps in the future – according to
3 map scale and purpose. This collaborative scientific effort will greatly assist and ease future work in
4 this area of the world and clarify the nomenclature of Greenlandic place names.

5 **4 Using this dataset**

6 The dataset presented is available online in a spreadsheet, as a ArcGIS shape file and as a KML
7 layer. The dataset can be accessed at *Figshare* where it will be updated and stored under a Creative
8 Commons (CC0) license.

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9 To avoid further confusion regarding the use of the correct name, we suggest that the official glacier
10 name is used whenever referring to a Greenlandic glacier. However, as many glaciers have been
11 studied in the past and literature refers only to the Danish / non-Greenlandic name, we suggest that
12 both names are mentioned in cases where a glaciers unofficial foreign name has become widely
13 accepted within the scientific community. When using this dataset please refer to this publication.

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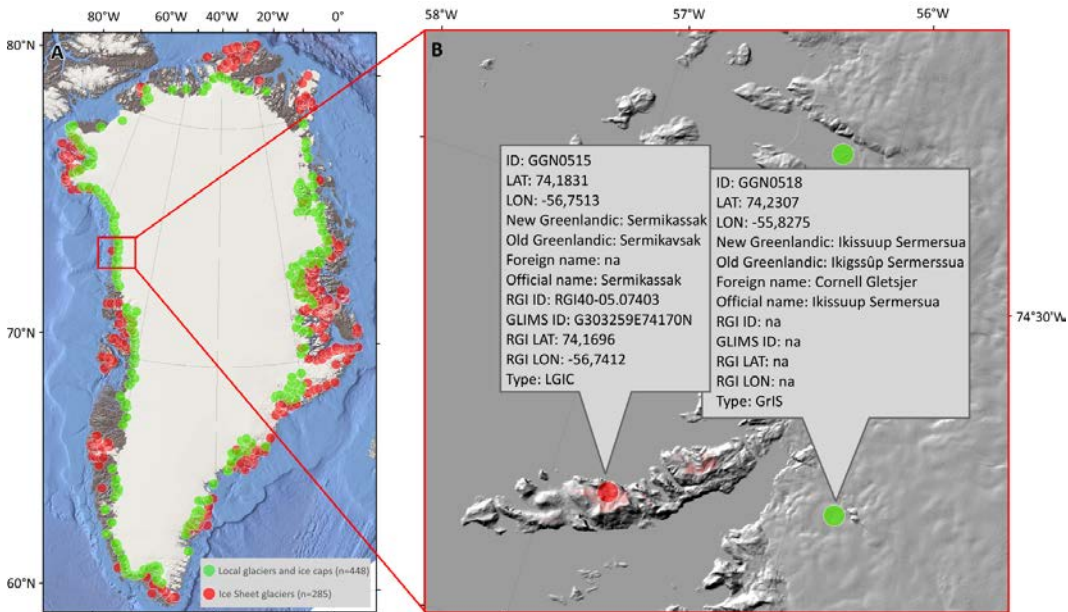
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3 Figure 1. Maps of Greenland with all official glacier names plotted. Local glaciers and
 4 (LGIC) are in red, glaciers from the Greenland Ice Sheet (GrIS) are in green. A) The spatial
 5 distribution of glacier names concentrations are high in the populated areas and in areas that have
 6 been extensively explored – however, there are still fairly large stretches of coastline with no named
 7 glaciers (eg. the southeast and north coasts) Background image: IBCAO ver3.0 (Jakobsson et al.,
 8 2012). B) A zoom in on the Melville Bay in northwest Greenland with examples of the contents of
 9 the database. Background images is a GIMP hillshade(Howat et al., 2014).