Rock glaciers on South Shetland Islands, Antarctic Peninsula, Version 1

USER GUIDE

How to Cite These Data

As a condition of using these data, you must include a citation:


FOR QUESTIONS ABOUT THESE DATA, CONTACT NSIDC@NSIDC.ORG

FOR CURRENT INFORMATION, VISIT https://nsidc.org/data/GGD279
# TABLE OF CONTENTS

1  DETAILED DATA DESCRIPTION .................................................................................................................. 2  
1.1 Current Storage of Data ......................................................................................................................... 3  
1.2 Spatial Coverage .................................................................................................................................... 3  
1.2.1 Study location: ................................................................................................................................. 3  
1.2.2 Geographic extent: ............................................................................................................................ 3  
1.3 Temporal Coverage ................................................................................................................................. 3  
1.3.1 Period of investigation: ...................................................................................................................... 3  
2  REFERENCES AND RELATED PUBLICATIONS ....................................................................................... 3  
3  CONTACTS AND ACKNOWLEDGMENTS ................................................................................................. 4  
4  DOCUMENT INFORMATION ...................................................................................................................... 4  
4.1 Publication Date ....................................................................................................................................... 4  
4.2 Date Last Updated ................................................................................................................................... 5
In the South Shetland Islands we have found eight active rock glaciers, no relict or fossil examples, and seven protalus ramparts. The rock glaciers are located on peninsulas and capes of the two main islands of the archipelago: King George and Livingston. The South Shetland Islands have a cold oceanic climate, characteristic of the maritime Antarctica, with frequent summer rains and moderate thermal amplitude, and a cold and humid morphoclimatic system, of crionival character. These climatic parameters facilitate the operation of periglacial processes, and the presence of a usually saturated active layer in summer. In the South Shetland Islands the presence of rock glaciers have been identified on Livingston Island (Martinez de Pison et al., 1991; Lopez-Martinez et al., 1992a, 1992b), on Admiralty Bay, in King George Island (Birkenmajer, 1981; Barsch et al., 1985) and in Fildes Peninsula (Barsch et al. 1985; Barsch, 1996; Cheng et al., 1996). Four further active rock glaciers have been identified during the present study in King George and Livingston Island (Serrano and Lopez-Martinez, in prep.). The rock glaciers are located in marginal zones, between 300 m a.s.l. and sea level, which has been recently deglaciated, and principally under 70 m a.s.l., near 100 m under the Median Equilibrium Line Altitude (M.E.L.A.). There are indications of a recent diminution of activity, with blurred fronts, mass movements in fronts and sides, lichen colonization and glaciokarstic processes. All of these indicate an inherited dynamic of past conditions in lower altitudes.

References to rock glaciers are scarce in Antarctica, limited to a few examples in the Transantarctic Mountains, Victoria Land, South Georgia, James Ross Island and South Shetland Islands. The spatial pattern of rock glaciers indicates that they are more represented in the periphery of Antarctica than in the interior of the continent, and are particularly numerous in the Antarctic Peninsula region.

1 DETAILED DATA DESCRIPTION

- File: antarcrg.dat
- Comments: Inventory data on 7 rock glaciers
- File: keller.gif
- Comments: Photo of rock glacier in Keller Península, Admiralty Bay, King George Island, South Shetland Island, Antarctica
- File: renier.gif
- Comments: Photo of Renier rock glacier, Livingston Island, South Shetland Island. (Antarctica).
1.1 Current Storage of Data

<table>
<thead>
<tr>
<th>Media</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-ROM</td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>X</td>
</tr>
<tr>
<td>Spreadsheet</td>
<td></td>
</tr>
<tr>
<td>Wordprocesor file</td>
<td>X</td>
</tr>
<tr>
<td>Database</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Data Storage

1.2 Spatial Coverage

1.2.1 Study location:
South Shetland Islands (Antarctica)

1.2.2 Geographic extent:
Northwest Latitude: 61.9836 S
Northwest Longitude: 62.75 W
Southeast Latitude: 63.667 S
Southeast Longitude: 57.667 W

1.3 Temporal Coverage

1.3.1 Period of investigation:
Inventory of rock glaciers: 1994-1997

2 REFERENCES AND RELATED PUBLICATIONS


SERRANO, E.; LOPEZ-MARTINEZ, J.(In prep.).- Rock glaciers in the South Shetland Islands.

3 CONTACTS AND ACKNOWLEDGMENTS

Enrique Serrano (1)
Jeronimo Lopez-Martinez (2)
Juan Jose Duran
Jose Manuel Gonzalez-Casado (2)
Eduardo Martinez de Pison
Pedro Nicolos

4 DOCUMENT INFORMATION

4.1 Publication Date

1998
4.2 Date Last Updated

2021