Title

*Data compilation for Holocene glacial readvance from the Fildes Peninsula, South Shetland Islands, northern Antarctic Peninsula.*

Abstract

*The dataset comprises of chronostratigraphic data from the Fildes Peninsula, King George Island, South Shetland Islands. The data have been used to constrain deglaciation and climate-glacier dynamics on the Fildes Peninsula.*

Funding source

*Data collected in this study were funded by: Centro de Investigaciones en Ciencias de la Tierra (CICTERRA), the Dirección Nacional del Antártico/Instituto Antártico Argentino (DNA/IAA) in the framework of the Project PICTA, 2011 – 0102, IAA “Geomorfología y Geología Glaciar del Archipiélago James Ross e Islas Shetland del Sur, Sector Norte de la Península Antártica”; the Alfred Wegener Institute (AWI) research program Polar regions and Coasts in a changing Earth System (PACES II); IMCONet (FP7 IRSES, action no. 318718); the Natural Environment Research Council (NERC/BAS-CGS Grant no.81); the NERC/BAS science programmes CACHE-PEP: Natural climate variability – extending the Americas palaeoclimate transect through the Antarctic Peninsula to the pole and GRADES-QWAD: Quaternary West Antarctic Deglaciations. We thank the crews of the Argentine research station “Carlini'' and the adjoined German Dallmann-Labor (AWI) Laboratory, the Uruguayan research station “Artigas”, the Russian Bellingshausen Station, the Chinese Great Wall Station, Base Presidente Eduardo Frei Montalva, the Brazilian Navy Almirante Maximiano, the UK Navy HMS Endurance and NERC/BAS James Clark Ross for logistical support during the 2006, 2011, 2014 and 2015 field seasons.*

Keywords

*Deglaciation; geomorphological mapping; radiocarbon dating; South Shetland Islands; stratigraphy; glacial readvance*

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*Steven Binnie5 – cosmogenic nuclide exposure dating data collection and analysis*

*Lukas Wacker6 – radiocarbon dating data collection and analysis*

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*Michael J. Bentley8 – radiocarbon dating data collection and analysis*

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Lineage/methodology

***2. SSI Data compilation:***

*Compilations of new and published age data constraining glacier advance, retreat and aquatic moss layers in lakes from the South Shetland Islands used in data analysis in the following manuscripts constrain deglaciation and glacier dynamics on Potter Peninsula and Fildes Peninsula, King George Island South Shetland Islands:*

*Heredia Barión P, Roberts SJ, Spiegel C, Binnie SA, Wacker L, Davies J, et al. (submitted - a) Mid–late Holocene deglaciation and glacier readvances on the Fildes Peninsula, King George Island, NW Antarctic Peninsula. The Holocene.*

*Heredia Barión P, Strelin JA, Roberts SJ, Spiegel C, Wacker L, Niedermann S, et al. (submitted - b). Holocene glacial dynamics and geomorphology of Potter Peninsula, King George Island (NW Antarctic Peninsula). Frontiers in Earth Science.*

*New and published chronostratigraphic data constraining Holocene glacier readvances from the Fildes Peninsula (n=43), Potter Peninsula (n=29), and KGI (n=76) were compiled and a non-parametric phase model (i.e., a probabilistic version of the Oxcal SUM command) was applied to each dataset using the Bchron v. 4.7.6 in R (Haslett and Parnell, 2008; Parnell, 2021). Density phases produced by similar analysis of published SSI-wide data were less well-defined, likely reflecting local glacier influences and larger errors for some data, and not considered further. The Rcarbon package v. 1.4.2 (Bevan, 2021) was also used for data analysis and plotting. Additional statistical analysis was undertaken, and figures constructed, using R v. 4.1.0/RStudio v. 1.4.1717 (primarily packages Tidyverse, ggplot2, Vegan, Rioja, Ggally v. 2.1.2, RBacon, Rcarbon, Bchron), Sigmaplot v. 14.0, C2 (Juggins, 2007), MATLAB v. R2021a, with final layouts achieved in Adobe Illustrator v. 26.2.1 or CorelDRAW v. 2020. Code, data, all packages used, and package references, can be found at:* [*https://github.com/stever60/Fildes\_Peninsula*](https://github.com/stever60/Fildes_Peninsula) *and* [*https://github.com/stever60/Potter\_Peninsula*](https://github.com/stever60/Potter_Peninsula)

Instrumentation

*None*

Quality

*None*

Related datasets

*Chronostratigraphic data from the Fildes Peninsula, South Shetland Islands.*

*Data from Kiteschsee Lake, Fildes Peninsula.*

*Chronological and sedimentological data from stratigraphic sections on Potter Peninsula, South Shetland Islands.*

*Chronological, geochemical and sedimentological data from a lake sediment record extracted from Lake L5 (Matias Lake) on Potter Peninsula, South Shetland Islands.*

*Chronological, geochemical and sedimentological data from a lake sediment record extracted from Lake L15 (GPS Lake) on Potter Peninsula, South Shetland Islands.*

Related URLs

Code is available on: [www.github.com/stever60](http://www.github.com/stever60)/Fildes\_Peninsula

Temporal coverage

*Cores were extracted and data collected between November 2011 and 2015; data covers the last 8000 years*

Spatial coverage

*Fildes Peninsula, South Shetland Islands*

Resolution

*N/A*

Location

*All data are from King George Island, South Shetland Islands ~62-65° S and 58- 69° W*

References

**2. SSI Data Compilation**

*References listed in the SSI\_db.csv file*

*SSI\_Advance*

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*Oliva M, Antoniades D, Serrano E, et al. (2019) The deglaciation of Barton Peninsula (King George Island, South Shetland Islands, Antarctica) based on geomorphological evidence and lacustrine records. Polar Record 55: 177-188.*

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*SSI\_Retreat*

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*SSI\_Moss.csv*

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Data structure and data format

**2. SSI Data Compilation**

*C14\_prob\_density\_phases.csv – summary of probability phases age ranges for compilation data from the Fildes Peninsula*

*SSI\_db.csv – database of chronostratigraphic constraints on glacier advance and retreat for the South Shetland Islands*

Access constraints

*None after publication but a log in for reviewers to access an embargoed dataset is needed.*

Use constraints

*NERC-funded data, so the* [*Open Government Licence*](http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/) *applies.*