Title

*Data from Kiteschsee Lake, Fildes Peninsula, South Shetland Islands, northern Antarctic Peninsula.*

Abstract

*The dataset comprises of data from Kiteschsee Lake, Fildes Peninsula, King George Island, South Shetland Islands.*

Funding source

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Keywords

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

Personnel

***Data collectors & analysts (ORCID code)***

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*Joanna Davies3 – diatom analysis*

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Lineage/methodology

***Kiteschsee Lake data***

*We undertook multi-proxy analyses (diatom, grain size, geochemical and sedimentological analysis) on a 77 cm-long sediment record extracted from the flat-bottomed eastern basin depocentre of Kiteschsee Lake and compared data obtained with published lake records from the Fildes Peninsula. A chronology for the Kiteschsee Lake sediment record was based on two aquatic moss ages, six bulk sediment AMS radiocarbon ages, and four tephra correlation ages and established using Bayesian age-depth modelling in BACON v. 2.5 in R (Blaauw and Christen, 2011).*

Instrumentation

*High resolution X-ray fluorescence (ITRAX) core scanning (XRF-CS) of bulk sediment was performed at contiguous 0.02 cm (200 µm) intervals following standard procedures on the ITRAX-XRF machine at Aberystwyth University.*

Quality

*To account for downcore variations in count rate, density, water and organic content, XRF-CS data are presented as relative changes in percentages of the Total Scatter Normalised ratio sum (%TSN), which is equivalent to the %cps sum and as natural log ratios and centred log ratios (clr). Log ratios have been shown to produce similar downcore patterns to more traditional, and fully quantitative, Wavelength Dispersive Spectroscopy, WDS-XRF, dry subsample analysis. Data were filtered to remove the small number of downcore spectra with kcps less than mean minus two-SD, caused mainly by small gaps in the core, and MSE values greater than mean plus four-SD as this represents a poor fit of the measured to theoretical energy spectra.*

Related datasets

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

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

*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

*Fildes Peninsula, South Shetland Islands*

*Kiteschsee Lake is located at 62° 11’36.55’’S, 58° 57’59.93’’W*

References

*Blaauw M and Christen JA. (2011) Flexible paleoclimate age-depth models using an autoregressive gamma process. Bayesian Analysis 6: 457-474.*

Data structure and data format

***3 Kiteschsee Lake***

*Age\_depth\_model folder –input and output txt and csv files for age-depth modelling runs from the Kiteschsee Lake record*

*Kite\_ITRAX – folder containing ITRAX XRF core scanning datafiles*

*KITE\_ITRAX\_200um\_cps\_TSN.csv – summary cps (count per second) and Total Scatter Normalised data, equivalent to percentage of cps (count per second) sum data for ITRAX X-ray fluorescence core scanning (XRF-CS) analysis*

*KITE\_ITRAX\_200um\_TSN\_qc.csv – percentage Total Scatter Normalised data, equivalent to percentage of cps (count per second) sum summary data for ITRAX X-ray fluorescence core scanning (XRF-CS) analysis (quality controlled – qc – filtered)*

*Kite1.1\_basal folder – folder containing document settings txt file, summary output txt files, summary average spectra txt file, and optical and X-ray image tifs and a folder with all raw XRF spectra txt files for the Kite 1.1 core section*

*Kite2.1\_top folder – folder containing document settings txt file, summary output txt files, summary average spectra txt file, and optical and X-ray image tifs and a folder with all raw XRF spectra txt files for the Kite 2.1 core section*

*Kite\_C14\_data.csv – radiocarbon ages from the Kiteschsee Lake record*

*KITE\_Diatoms\_pc.csv – percentage count diatom data*

*KITE\_Diatom\_CONISS\_PCA\_sqrt.cvs – diatom data used in PCA analysis*

*KITE\_DMAR\_MSCL\_Density.csv\_subsample density and GEOTEK MSCL (multi-sensor core logger) density data compared*

*KITE\_GEOTEK\_MSCL\_0.5cm.csv – GEOTEK MSCL data*

*KITE\_LOI\_GrainSize.csv – grain size and loss-on-ignition data for the Kiteschsee Lake record*

*KITE\_Tephra\_Count\_data.csv – tephra shard count data for the Kiteschsee Lake record*

*EPMA\_db.csv – new compilation of major element tephra shard geochemistry from South America and the Antarctic used for data analysis and comparison tephra data from to the Kiteschsee Lake record*

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.*