



Ablation Rates of Taylor Glacier, Antarctica

Summary

This data set provides glacier surface ablation rates for a network of approximately 250 sites on Taylor Glacier, spanning a period from 2003 to 2011. Here sublimation is the dominant ablation mechanism, though a few sites have accumulation. Ablation data are provided in meters water equivalent per year.

Data are available via FTP in space-delimited ASCII format.

Citing These Data

We kindly request that you cite the use of this data set in a publication using the following citation. For more information, see our [Use and Copyright](#) Web page.

Cuffey, Kurt, Andrew Bliss, and Jeffrey Kavanaugh. 2007, updated 2012. *Ablation Rates of Taylor Glacier, Antarctica*. Boulder, Colorado USA: National Snow and Ice Data Center. <http://dx.doi.org/10.7265/N5N29TW8>.

Overview Table

Category	Description
Data format	space-delimited ASCII
Spatial coverage and resolution	Southernmost Latitude: 77.9° S Northernmost Latitude: 77.6° S Westernmost Longitude: 160.1° E Easternmost Longitude: 162.2° E
Temporal coverage and resolution	collection period start: 2002-11-19 collection period end: 2011-01-12
File naming convention	TaylorAblationData03_04.txt
File size	Approximately 11 KB.
Parameter(s)	Glacier Surface Ablation Rate
Procedures for obtaining data	available via FTP

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1. Contacts and Acknowledgments

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Acknowledgements

This research was supported by National Science Foundation (NSF) Office of Polar Programs (OPP) grant 0125579 awarded to K. Cuffey.

2. Detailed Data Description

Format

Data files are in space-delimited ASCII format viewable with spreadsheet software.

File Naming Convention

Files are named according to the following convention

TaylorAblationDataY1_Y2.txt

Where Y1 indicates the start year for the data file and Y2 indicates the end year for that file.

Table 1, below, indicates the measurements made during each field season

Table 1. Measurements made during field seasons 2003 to 2011

Year	Description
2003	Ablation poles were installed and measured for the first time during the 2002-03 season.
2004	All ablation poles were remeasured during the 2003-04 season.
L4	73 poles along the center line of the glacier were remeasured at the end of the 2003/04 season, for a summer ablation rate. (File is named "04_L4.txt)
2006	4 poles were measured by Hassan Basagic during the 2005/06 season.
2007	A selection of 163 poles were measured by Hassan Basagic during the 2006/07 season.
2010	10 poles were measured by Daniel Baggenstos during the 2009/10 season.
2011	17 poles were measured by Vasilii Petrenko during the 2010/11 season.

Spatial Coverage

Southernmost Latitude: 77.9° S

Northernmost Latitude: 77.6° S

Westernmost Longitude: 160.1° E

Easternmost Longitude: 162.2° E

Parameter or Variable

Parameter Description

This data set provides glacier surface ablation rate for Taylor Glacier in Antarctica, in meters water equivalent per year. Table 2 below lists the columns in the text files.

Table 2. Parameter Description

Column Number	Parameter
1	Ablation Pole Name
2	Latitude
3	Longitude
4	Northing UTM57C (m)
5	Easting UTM57C (m)
6	Elevation
7	Start Year
8	Start Month
9	Start Day
10	End Year
11	End Month
12	End Day

Sample Data Record

The data below are the first 3 data samples in the TaylorAblationData03_04.txt file.

AV1	-77.82212747	161.075753	1360365	548873.9	997.15	2002	12	7	2004	1	4	0.300683
AV2	-77.82090784161	0.431627	1360528	548111.6	995.17	2002	12	7	2004	1	4	0.24462
AV3	-77.81937786161	0.366401	1360704	547964	993.69	2002	12	7	2004	1	4	0.224399

Volume

The data set is approximately 150 KB.

Related Data Collections

- [Stable isotopes of ice on the surface of Taylor Glacier, Antarctica](#)
- [Surface velocities of Taylor Glacier, Antarctica](#)

4. Data Acquisition and Processing

Sensor or Instrument Description

Aluminum conduit measurement poles

Data Acquisition Methods

Data were acquired using the traditional pole-height measurement technique. Aluminum conduit poles were initially emplaced 2 meters into the ice. Ablation rate is the difference between initial exposure and exposure approximately one year later, divided by the time interval between measurements. Initial measurements were in December 2002 and January 2003, and then again periodically between 2003 and 2011.

5. References and Related Publications

Aciego, Sarah, Kurt M. Cuffey, Jeffrey L. Kavanaugh, D.L. Morse, and J.P. Severinghaus. 2007. Pleistocene Ice and Paleo-strain Rates at Taylor Glacier, Antarctica. *Quaternary Research* 68:303-313.

Bliss, A. K., K. M. Cuffey, and J. L. Kavanaugh. 2011. Sublimation and Surface Energy Budget of Taylor Glacier, Antarctica. *Journal of Glaciology*. 57 (204, 684-696).

Bliss, A. K. 2011. Ablation on Taylor Glacier, Antarctica. PhD Thesis, University of California, Berkeley.

Kavanaugh, J. L., K. M. Cuffey, D. L. Morse, A. K. Bliss, and S. M. Aciego. 2009. Dynamics and Mass Balance of Taylor Glacier, Antarctica: 3. State of Mass Balance. *Journal of Geophysical Research*, 114, F04012, doi:10.1029/2009JF001331

6. Document Information

Acronyms and Abbreviations

The following acronyms and abbreviations are used in this document.

FTP	File Transfer Protocol
NSIDC	National Snow and Ice Data Center
URL	Uniform Resource Locator

Document Creation Date

November 2007

Document Revision Date

April 2012