Rand Corporation Mean Monthly Global Snow Depth, Version 1

USER GUIDE

How to Cite These Data

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

Schultz, C. and L. D. Bregman. 1988. Rand Corporation Mean Monthly Global Snow Depth, Version 1. [Indicate subset used]. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. https://doi.org/10.7265/N57P8W9K. [Date Accessed].

National Snow and Ice Data Center

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1   DETAILED DATA DESCRIPTION

1.1 Overview

All available monthly snow depth climatologies were integrated by the Rand Corporation, in the early 1980s, into one global (excluding Africa and South America) digital data set gridded at 4° latitude x 5° longitude. The U.S. Army Corps of Engineers monthly climatologies were a primary data source. For data-sparse areas such as China, Greenland, the Arctic and Antarctica, special Rand methodologies were used: empirical evaluation of total precipitation, weather source regions, latitude, temperature, terrain and annual snow depth data. Monthly ice-pack limits from U.S. Navy Oceanographic Office were used to extend the zero-snow accumulation line over the oceans. These mean monthly data can be used strictly as a climatological summary or for systematic comparison with simulations from any general circulation model (GCM), or for initiating GCM calculations. Data report copies are also available. The global grid is too coarse to pick up snow accumulation in Africa and South America, but no more than two grid points are involved in these areas.

1.2 Background

To download copy of Rand Corporation Mean Monthly Global Snow Depth, Version 1, access the site as a "Guest" and select the pdf.

An attempt was made to develop snow accumulation values over water areas that are completely or mainly covered with pack ice. For this purpose, the "zero" snow accumulation lines were taken to be the boundaries of areas of greater than 5/10 sea ice cover. All grid points that fell within these lines in a particular month were given snow-accumulation values.

The number "0" in the tabulations denotes either zero accumulation or missing data, whereas the number "1" represents a trace. All data represent conditions on the last day of the month.

Breaks in the isopleths on the Army maps that were available were filled in by consulting temperature and snow data from supplementary sources. The Army data were further expanded during the coldest months with mean monthly ice limits from the U.S. Navy Hydrographic Office.

1.2.1   Grid Description

A global grid of 4° latitude x 5° longitude was used.

1.3 Format

The data and the FORTRAN routine are in ASCII text files. The scanned documentation is in Adobe PDF format.

1.4 File and Directory Structure

The following files contain the global monthly snow accumulation data as well as some FORTRAN code for extraction of the data. Note: This code was developed on an SGI running IRIX 4.0.1 and is only intended as a template. It may require updates by the user for the appropriate operating system.

Rand_N-2687-RC.pdf: Rand note (scanned) providing background information and data (3.3 MB). Use "Guest" and select the pdf.

rand.dat: Data file (179 KB)

read_rand.f: FORTRAN extraction routine (3 KB)

2   SOFTWARE AND TOOLS

2.1 Software and Tools

Data and the FORTRAN routine can be viewed with a text editor. The Rand report can be viewed using Adobe Acrobat or another PDF reader.

3   VERSION HISTORY

Original documentation was based on information provided by L. D. Bregman.

L. E. Husted reformatted this documentation and added the scanned reference "Rand_N-2687-RC.pdf" in February 2006.

4   REFERENCES AND RELATED PUBLICATIONS

Schultz, C., and L. D. Bregman. 1998. Global Annual Snow Accumulation by Months. Rand Note N-2687-RC.

4.1 Related Data Collections

Nimbus-7 SMMR Derived Monthly Global Snow Cover and Snow Depth

5   CONTACTS AND ACKNOWLEDGMENTS

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6   DOCUMENT INFORMATION

6.1 Publication Date

1995

6.2 Date Last Updated

02 October 2023

7   APPENDIX 1 – SAMPLE DATA

This example is for the month of January. The data for each month are divided into parts representing the northwest, southwest, northeast, and southeast quadrispheres.

Table A - 1. Sample Data

GLOBAL SNOW DEPTHS (INCHES) - JANUARY																	
	180 W	175 W	170 W	165 W	160 W	155 W	150 W	145 W	140 W	135 W	130 W	125 W	120 W	115 W	110 W	105 W	100 W	95 W
90 N	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
86 N	6.7	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.2	6.2	5.7	5.7	5.7	5.7	5.7	5.7	5.7
82 N	10.0	9.2	8.5	8.2	7.8	7.8	7.1	7.1	7.1	7.0	7.0	6.0	5.7	5.7	5.0	5.0	5.0	5.0
78 N	10.6	10.3	10.0	9.6	9.2	8.9	8.5	8.2	7.8	7.8	7.2	7.1	6.4	5.7	5.7	5.7	5.6	7.1

GLOBAL SNOW DEPTHS (INCHES) - JANUARY																		
74 N	7.8	8.5	7.8	8.2	8.2	8.2	7.2	7.8	7.5	7.3	7.1	5.7	10.0	5.0	5.7	7.1	13.0	10.6
70 N	3.5	2.8	2.8	5.0	15.0	16.0	15.0	16.0	3.5	3.5	15.0	2.4	2.1	17.0	15.0	10.0	10.0	12.