

Soil temperatures from Disko Island (Qeqertarsuaq/Godhavn), Greenland, Version 1

USER GUIDE

How to Cite These Data

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

Nielsen, N., Humlum, O., and B.U. Hansen 2003. *Soil temperatures from Disko Island (Qeqertarsuaq/Godhavn), Greenland, Version 1*. [Indicate subset used]. Boulder, Colorado USA.

NASA National Snow and Ice Data Center Distributed Active Archive Center.

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

FOR CURRENT INFORMATION, VISIT <https://nsidc.org/data/GGD273>



National Snow and Ice Data Center

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1 DETAILED DATA DESCRIPTION

1.1 Format

Data are in tab-delimited ASCII text format.

1.2 File Naming Convention

"ggd273_soiltmpdisko91_96.txt": 1991-1996 data

"ggd273_soiltmpdisko97_02.txt": 1997-2002 data

1.3 File Size

Both files are approximately 6.2 MB.

1.4 Spatial Coverage

Air and soil temperatures were taken from a meteorological station at 69°15'N, 53°34'W, 20 m above sea level, in the eastern part of Godhavn village, central-west Greenland. This station is located 100 m northwest of the University of Copenhagen's Arctic station. Continuous permafrost underlies the site.

Sediments deposited during the Early Holocene marine regression are fairly uniform from the ground surface to the permafrost surface. The terrain surface is nearly flat at the meteorological station, and is covered by a low, dwarf-shrub heath vegetation. The area around the station is usually covered by snow from mid-September to early June. Snow depth is typically 10 cm to 30 cm, and rarely exceeds 50 cm because of persistent snow drift.

The typical maximum thickness of sandy sediments is 180 cm in late September. The soil begins to freeze in late September to early October. After the soil remains frozen for several months, it begins to thaw quickly in late May to early June when melt water infiltrates the surface.

1.4.1 Spatial Resolution

Data were collected at a single point, 69°15'N, 53°34'W.

1.5 Temporal Coverage

Data extend from 01 January 1991 through 16 November 2002.

1.5.1 Temporal Resolution:

Meteorological instruments automatically measure air and ground temperatures every half hour.

1.6 Parameter or Variable

1.6.1 Parameter Description:

This data set provides air temperatures at 6 m above the ground and soil temperatures at 0.05 m, 0.6 m, 1.75 m, and 3 m below the ground.

1.6.2 Sample Data Record:

Following are the first five lines of "ggd273_soiltmpdisko97_02.txt."

Table 1. Sample Data

Year	Month	Date	Time(min)	AirTemperature(600cm)(C)	TempSed(-5cm)(C)	TempSed(-60cm)(C)	TempSed(-175cm)(C)	TempRock(-300cm)(C)
1997	1	1	0	4.00134	-1.924058	0.03617344	0.007425664	0.007425664
1997	1	1	30	3.543081	-1.924058	0.03617344	0.007425664	-2.098685
1997	1	1	60	4.368266	-1.924058	0.03617344	0.007425664	-2.098685

2 DATA ACQUISITION AND PROCESSING

2.1 Data Acquisition Methods

A meteorological station recorded air temperatures at 6 m above the ground and soil temperatures (°C) at 0.05 m, 0.6 m, 1.75 m, and 3 m below the surface. The thermistors can measure soil temperatures from -44°C to 49°C with a resolution of 0.1°C. The thermistors were installed in the vertical, undisturbed sides of a pit dug into sandy littoral sediments, until the thermistors reached 1.75 m. The thermistors encountered rock at 3 m below the surface.

After initially installing the thermistors, the researchers tested the instruments for several weeks to allow thermal disturbance to subside and to fix minor technical problems.

3 REFERENCES AND RELATED PUBLICATIONS

Hansen, B.U., O. Humlum, and N. Nielsen. 2000. Meteorological Observations in 1996 at the Arctic Station, Qeqertarsuaq (69°15'N), Central West Greenland. *Danish Journal of Geography* 100:85-87.

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Humlum, O., B.U. Hansen, and N. Nielsen. 2002. Meteorological Observations in 2001 at the Arctic Station, Qeqertarsuaq (69°15'N), Central West Greenland. *Danish Journal of Geography* 102:103-105.

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5 DOCUMENT INFORMATION

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5.2 Date Last Updated

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