

Upper soil temperatures in the Kolyma Highland, Version 1

USER GUIDE

How to Cite These Data

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

Alfimov, A.V. 2003. *Upper soil temperatures in the Kolyma Highland, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. <https://doi.org/10.7265/zvjn-da67>. [Date Accessed].

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

FOR CURRENT INFORMATION, VISIT <https://nsidc.org/data/GGD31>



National Snow and Ice Data Center

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1 DATA DESCRIPTION

1.1.1 Format

Soil temperature and meteorology data are in an Excel spreadsheet called "ggd31_kolyma_soil_met.xls." Soil temperature data are in a tab-delimited ASCII text file called "ggd31_kolyma_soil.txt." Both files contain the following headings for soil temperature data:

- Site ID (note: geographic locations are not specified)
- Elevation (m)
- Slope gradient/aspect
- Vegetation type and percent coverage
- Method of measurement (see key below)
- Thaw depth (cm)
- Soil field capacity (%)
- Mean soil water content (% by weight)
- Soil bulk density (g/cm³)
- Soil classification ([World Reference Base, 1998](#))
- Soil degree days at 1 cm, 5 cm, 10 cm, and 20 cm depth
- Annual maximum temperature (°C) at 1 cm, 5 cm, 10 cm, and 20 cm depth
- Annual minimum temperature (°C) at 1 cm, 5 cm, 10 cm, and 20 cm depth
- Maximum annual snow depth (cm)

Key to method of measurement:

- 1: Round-year measurements using recorders
- 2: Seasonal measurements using recorders
- 3: Manual round-year measurements (once a day in summers and once every 5-6 days in winters)
- 4: Short-term measurement series (eight readings daily)
- 5: Maximum thermometers
- 6: Extrapolated values (based on topography, soil type and vegetation)

Finally, meteorological data from three points near the study site (upslope from KVBS weather station, downslope from KVBS weather station, and Detrin weather station) are provided in a file called "ggd31_kolyma_met.txt." Data are averaged from 1977 to 1985. The following columns of meteorological data are provided in "ggd31_kolyma_met.txt" and in "ggd31_kolyma_soil_met.xls":

- Station name
- Latitude (°)
- Longitude (°)
- Elevation (m)
- JanT (January mean temperature, °C)
- JunT (June mean temperature, °C)
- JulT: (July mean temperature, °C)
- AugT: (August mean temperature, °C)
- TDD (thawing degree days)
- FDD (freezing degree days)
- Snow (snow depth, mm)
- Rain (rain amount, mm)
- Year (annual precipitation amount, mm)

1.1.2 File Size

ggd31_kolyma_soil_met.xls: 51 KB

ggd31_kolyma_soil.txt: 19 KB

ggd31_kolyma_met.txt: 1 KB

1.2 Spatial Information

The study site is within 20 km of the Aborigin research station, approximately 300 m asl to 2500 m asl in the Kolyma Highland, Northeastern Russia. Samples are confined to the following geographic boundaries:

61° 52' N to 62° 02' N

149° 30' E to 149° 40' E

The study site lies within a taiga biome with altitudinal belts of thin larch forests and alpine tundra. The mean annual air temperature within the forest belt is -11°C to -12°C, the mean July temperature is 14°C, the mean January temperature is -38°C, and the mean annual precipitation is 300 mm to 360 mm.

The mean annual air temperature within the alpine tundra belt is -5°C to -10°C, the mean July temperature is 10°C to 13°C, the mean January temperature is -28°C to -31°C, and the mean annual precipitation is 330 mm to 670 mm.

Permafrost temperatures range from -3°C to -7°C.

1.3 Temporal Coverage

Data extend from 1977 to 1995.

2 CONTACTS AND ACKNOWLEDGMENTS

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3 REFERENCES

- Alfimov A.V. 1989. Thermal differentiation of geosystem of Upper Kolyma basin. Ph.D. dissertation, Irkutsk State University.
- Alfimov A.V., G.G. Mazhitova, and D.I. Berman. 1994. Thermic control on soil formation in NE Asia and probable effects of Global Change. Proceedings of the International Correlation Meeting on Permafrost-Affected Soils.

4 DOCUMENT INFORMATION

4.1 Publication Date

March 2003

4.2 Date Last Updated

January 2021