

Circumpolar Active Layer Monitoring (CALM) Program Network, Version 1

USER GUIDE

How to Cite These Data

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

Please contact the data provider for the correct Data Citation for this data set.

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

FOR CURRENT INFORMATION, VISIT <https://nsidc.org/data/GGD313>



National Snow and Ice Data Center

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1 DATA DESCRIPTION

The Circumpolar Active Layer Monitoring (CALM) program was established in the 1990s to observe the long-term response of the active layer and near-surface permafrost to changes in climate. The CALM network currently includes 130 active sites in both hemispheres, with 15 participating countries. An additional 20 or more secondary sites are co-located with these primary sites, resulting in a total over 150 sites that report active-layer thickness on an annual basis. 100 sites collect soil and permafrost temperature data; of these, 60 are from boreholes. Maximum active layer thickness is interpolated from these temperature profiles. Most sites in the CALM network are located in Arctic and Subarctic lowlands, although 20 boreholes are in mountainous regions of the Northern Hemisphere above 1300 m elevation. A new Antarctic component is being organized and currently includes 13 sites. Sites that do not report data for a period of three years are considered inactive, but their files are retained in the archives.

The active layer thickness is measured by physical probing on grids ranging in size from 100 to 1000 meters, by probing at a single point or along transects or from permanently installed frost tubes and soil temperature cables. Sites include several coastal to inland transects in North America, a longitudinal array of sites across Eurasia, and individual sites in several mid-latitude, mountainous regions. The majority of the sites are in arctic tundra regions consisting of fine grained sediments. Bouldery and rocky sites in mountains have been added to the network primarily in Europe as part of the EC Permafrost and Climate in Europe (PACE) project. Sites in the Southern Hemisphere are being added.

CALM is part of the Global Terrestrial Network for Permafrost (GTN-P), a global network for permafrost observations coordinated by the International Permafrost Association. GTN-P is itself part of the Global Terrestrial Observing System (GTOS) and the Global Climate Observing System (GCOS), co-sponsored by a consortium of international organizations, including the World Meteorological Organization (WMO) and the Food and Agriculture Organization (FAO), among others.

CALM data can be found at the CALM Web site, <https://www.gwu.edu/~calm/>, which contains information on methods and instrumentation, raw data, summary results, and statistics.

The CALM CD-ROM can be obtained by ordering it from the CALM Landing Page. The first CAPS CD contained GGD metadata forms and summary results for CALM through 1997. CAPS 2 contains expanded metadata entries for all sites. These include annual maximum thaw records for the period of observation, and a limited amount of climate data. A summary of this information is contained in a master table arranged by country and region. Individual site information is searchable on the CD, and each site file is assigned a GGD subnumber based on the original CAPS GGD313 metadata form. A library of over a 100 site photographs is also available on the

CD. The map shows the locations of all sites. This CD also contains additional sites from which active layer data are available, but which have not been formally identified as CALM sites.

2 DOCUMENT INFORMATION

2.1 Please cite these data as follows:

Brown, J. 1998. Circumpolar Active-Layer Monitoring (CALM) Program: Description and data. In Circumpolar active-layer permafrost system, version 2.0. (ed.) M. Parsons and T. Zhang, (comp.) International Permafrost Association Standing Committee on Data Information and Communication. Boulder, CO: National Snow and Ice Data Center.

2.2 Publication Date

January 1998

2.3 Date Last Updated

January 2021