Central Asian Snow Cover from Hydrometeorological Surveys, Version 1

USER GUIDE

How to Cite These Data

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

Bedford, D. and B. Tsarev. 2001. *Central Asian Snow Cover from Hydrometeorological Surveys, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. https://doi.org/10.7265/N51Z4291. [Date Accessed].

National Snow and Ice Data Center

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1 OVERVIEW

The Central Asian Snow Cover from Hydrometeorological Surveys data are based on observations made by personnel for three river basins: Amu Darya, Sir Darya, and Naryn. These observations include end of month snow depth, snow density and snow water equivalent. Only snow depth is included for additional snow points measured by helicopter landings. Temporal coverage varies for each snow point, with the longest station record extending from 1932 through 1990. Data were provided to NSIDC by the State Hydrometeorological Service (Russian acronym SANIGMI) in Tashkent, Uzbekistan.

The original analog records were digitized at SANIGMI, Tashkent, under the leadership of Dr. Boris Tsarev. Snow depth, snow density, and snow water equivalent were measured manually at snow points at the end of each month. Snow depth was measured from helicopter landings at additional points within the same river basins, also at the end of each month. Snow depth measurements were made using a snow measuring rod. Snow water equivalent measurements were made using a snow weighing balance.

2 DETAILED DATA DESCRIPTION

The data for each river basin contains two different file types: ground based snow point data and snow depth data from helicopter landings. Both types of files are ASCII.

Ground Based Snow Points

These files contain snow depth, snow water equivalent and snow density for a single snow point. The file name indicates the data type, the river basin, and the snow point. For example gsp_03037-27.dat indicates ground snow point data from station 27 within the Suusamir tributary (number 03037) of the Naryn river. In all cases, "9999" indicates missing data. Each file contains the following parameters:

Table 1. Ground Based Snow Point Header File Description

Header record	
Column 1	Tributary basin: The numeric code assigned to the tributary river basin into the primary basins were divided. Please see the file k-sp.eng file for a complete listing
Column 2	Snow point - the numeric code assigned to a snow point within a tributary basin
Column 3	Elevation - elevation of the snow point (meters above sea level)
Column 4	Latitude - latitude of the snow point (degrees North)

Header record	
Column 5	Longitude - longitude of the snow point (degrees East)

Table 2. Ground Based Snow Point Data File Description

Data records	
Column 1	Year - years of the snow season
Column 2	Month - month of the measurement
Column 3	Snow Depth: measured snow depth (cm)
Column 4	Snow Water Equivalent: snow water equivalent (mm)
Column 5	Snow Density: snow density (kg/m^3)

Helicopter Measured Snow Points

To increase the spatial coverage of the data, several additional snow points were measured from aircraft. These files contain only snow depth. The file name indicates the data type, the river basin, and the snow point. For example asp_03037-27.dat indicates an airborne snow point data from station 27 within the Suusamir tributary (number 03037) of the Narin river. In all cases, "9999" indicates missing data. These files contain the following parameters:

Table 3. Helicopter Snow Points Header File Description

Header record	
Column 1	Tributary basin: The numeric code assigned to the tributary river basin into the primary basins were divIded. Please see the file k-asp.eng file for a complete listing
Column 2	Snow point - the numeric code assigned to a snow point within a tributary basin
Column 3	Elevation - elevation of the snow point (meters above sea level)
Column 4	Latitude - latitude of the snow point (degrees North)
Column 5	Longitude - longitude of the snow point (degrees East)

Table 4. Helicopter Snow Points Data File Description

Data records	
Column 1	Year - years of the snow season
Column 2	December Snow Depth (cm)
Column 3	January Snow Depth (cm)
Column 4	February Snow Depth (cm)
Column 5	March Snow Depth (cm)

Data records	
Column 6	April Snow Depth (cm)
Column 7	May Snow Depth (cm)

2.1 File Size

The entire data set is 2.86 MB.

2.2 Error Sources

In November 2004, Lev Kitaev, an NSIDC data user, noticed discrepancies in latitude and longitude values between the metadata files and the data files. The following example highlights the discrepancies. The errors will vary, depending upon the specific metadata and data files.

Data file name: asp_01009-13.dan (located in the amudarya.tar file)
Latitude and Longitude values: 45.667, 81.4333

Corresponding metadata file name: k-ask.eng
Latitude and Longitude values: 38.460, 69.746

Dr. Kitaev believes that the coordinate values provided in the metadata files are the more accurate values. NSIDC apologizes for any confusion or inconvenience that results from these errors. Please contact User Services if you require assistance with these data.

2.3 Quality Assessment

This data set is based on hand-digitized analog records. Degradation of the original records and human error can cause missing or inaccurate data values. These data were examined by the principal investigator and compared to expected climatological values to identify and remove large errors before being archived by NSIDC.

2.4 Sample Data Record

Sample Ground Based Snow Points Data

```
03037 27 3015 46.733 75.683
1960-1961 12 9999 9999 9999
1960-1961  1   38 9999  210
1960-1961  2   58 9999  240
1960-1961  3   68 9999  220
1960-1961  4   24 9999  360
```

Sample Helicopter Measured Snow Points Data

```
03037 27   15 46.733 75.683
1976 1977 9999   67   75   73    0 9999
1977 1978   90   97  100  120   83 9999
1978 1979   72   80  102  105   75 9999
1979 1980   35   52   80   82   53 9999
1980 1981   65   60   98  100   70 9999
```

3   REFERENCES AND RELATED PUBLICATIONS

3.1 Related Data Collections

NSIDC has numerous snow data sets. Search the Data Catalog for access to them.

4   CONTACTS AND ACKNOWLEDGMENTS

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5   DOCUMENT INFORMATION

5.1 Document Authors

The original version of this documentation was written by R. Welsh based on information provided by D. Bedford.

5.2 Publication Date

October 2001

5.3 Date Last Updated

July 2006; this document was reformatted and edited. The data set title and citation were changed slightly. F. Fetterer oversaw these changes.