LANTMÄTERIET

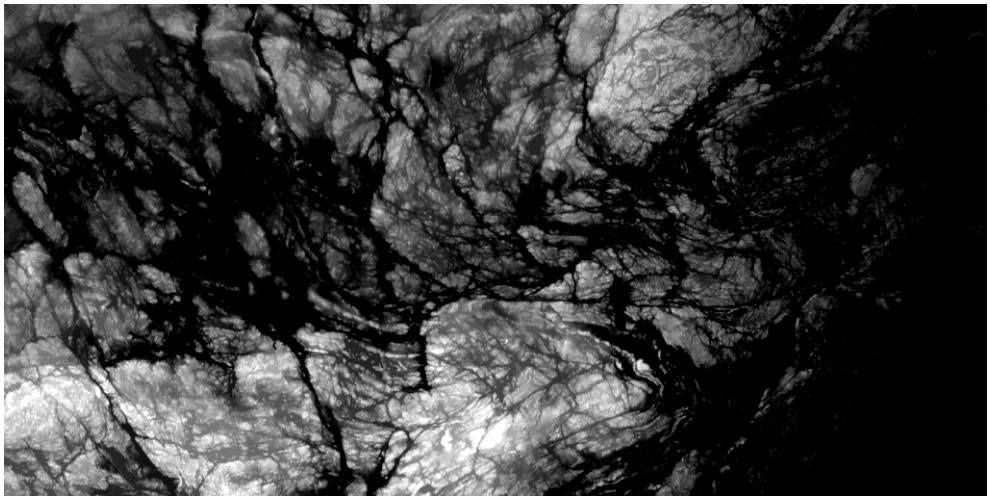
2022-05-31

PRODUCT DESCRIPTION

Terrain Model Download, grid 50+ HDB

DOCUMENT VERSION: 2.5

Figure 1. Example elevation data.



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1 General description

The product Terrain Model Download, grid 50+ HDB based on data in the old Terrain Elevation Databank (”höjddatabanken”, HDB) contain ground height values in grid form with a resolution of 50 m.

1.1 Contents

The grid files are generated in the reference system RT 90 2,5 gon V/RH 70 and then transformed to SWEREF 99 TM/RH 2000. Due to the transformation of every point in the grid, the grid is no longer square with even coordinates in plane. Therefore, the files contain coordinates in plane with one decimal. Height values are given with two decimals.

1.2 Geographic coverage

The Terrain Model Download, grid 50+ HDB is nationwide.

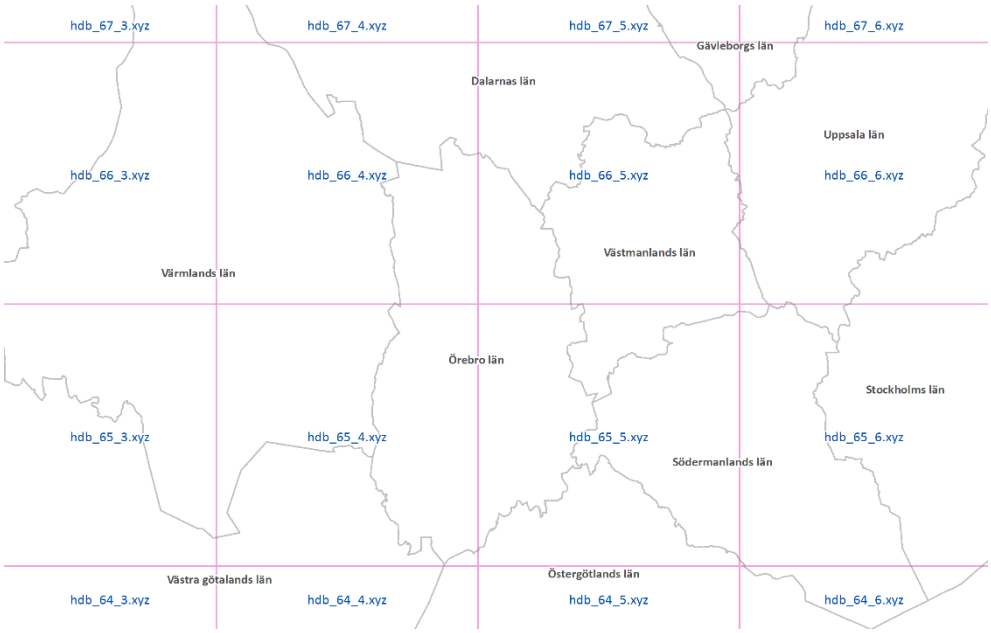
The product includes Swedish land areas, lakes and sea in the coastal area. In foreign areas (Finland and Norway) where it has not been possible to capture data, height values from nearby areas have been inserted.

Small islands are not represented in the sea.

1.3 Geographic cut-out

The elevation data files are in index tiles of 100 x 100 m in SWEREF 99 TM.

Figure 2. Index tiles of 100 x 100 km.



1.4 Reference systems

In plane: SWEREF 99 TM

In height: RH 2000.

2 Quality description

2.1 Purpose and utility

The product has mainly been used for ortophoto production. Other areas of use include generating contour lines, general flood mapping, visualising and terrain shading.

2.2 Data capture

2.2.1 LINEAGE

Three main methods have been used for capturing data in the old Terrain Elevation Databank; measuring profiles in photogrammetric instruments, digitising profiles from glass plates, manual digitising or scanning. Appendix 1 shows where each method has been used in the country. These methods are described below.

Measuring profiles in photogrammetric instruments

Measuring profiles in photogrammetric instruments using imagery at flight altitude 4 600 m and 9 200 m. Height values were measured and registered along the profiles every 60 m in aerial photos from flight altitude 4 600 m respective every 30 m in photos from 9 200 m. The distance between the profiles was 60 m regardless flight altitude. The registrations are digital and stored on magnetic tapes.

Digitising profiles from glass plates

Digitising profiles from glass plates used in the Gigas-Zeiss projector for ortophoto production. The profiles on the glass plates were produced by making measurements in photogrammetric instruments, mainly using imagery at flight altitude 4 600 m. The distance between profiles were 60 m and heights were measured at 30 m intervals along the profiles.

Manual digitising or scanning

The 5 m contour lines from the Property Map have been manually digitised or scanned, by laying a line raster over the material and record where the lines intersect contour lines. The distance between grid lines was 50 m, i.e. 5 mm in the material. This method has been used primarily in hilly areas where the contour lines are dense.

2.3 Maintenance

The digital Terrain Elevation Databank was mainly produced during the 1980s.

A review was completed in 1993. The work that was done in the review included:

- control of the databases and documentation of errors
- correction of (large) errors in the databases
- topographical maps or the Road Map water mask was scanned and vectorised
- all sea surface got uniform height values
- connection of border nodes between different databases containing height information

After this when large errors where encountered they were corrected.

The last revision was made in 2004, and no more revision will be conducted.

2.4 Data quality

2.4.1 POSITIONAL ACCURACY

Standard error in height is 2,5 m. Position in plane is defined by the 50 m grid.

2.5 Metadata

Nationwide shape files showing the method of data capture and estimated accuracy (root mean square error in meter) in data.

3 Data access and contents

Data can be downloaded with Geotorget Beställning or from FTP.

The folders are divided according to Swedish counties. Some files extend over the county border, so if several counties are downloaded, those files will be included more than once.

3.1 Format

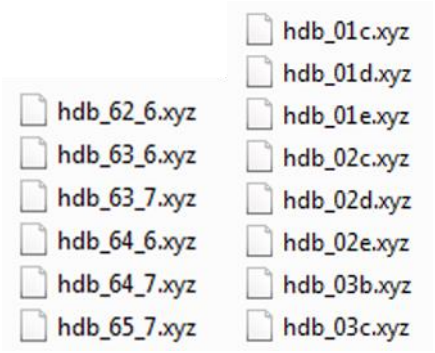
The Terrain Model Download, grid 50+ HDB is available in ASCII tabular format.

3.2 File sets and contents

The data folders are divided according to Swedish counties. There are also folders with data for the whole country (one for each reference system). Metadata files will be found in a separate folder.

The file name for files in SWEREF 99 TM consists of the origin of the grid (hdb means “höjddatabank” in Swedish, the elevation database from the 1980s), and the coordinate of the lower left corner, indicated at 100 km. Example: hdb_64_4.xyz.

Figure 3. Below is an example of filenames after being downloaded. The left-hand side shows files in SWEREF 99 TM.



Example of the ASCII tabular format:

Figure 4. Example contents of an ASCII table file.

```
500000,1 6686282,2 196,30
500000,1 6604211,5 87,98
500000,2 6633001,2 176,18
500000,2 6698527,8 290,90
500000,2 6616557,0 201,08
500000,2 6682183,7 167,60
500000,3 6678085,1 171,50
500000,3 6637099,7 152,88
500000,4 6620655,6 246,88
500000,4 6608310,0 99,38
500000,4 6673986,6 155,00
500000,4 6694429,3 341,80
500000,4 6641198,3 276,38
500000,4 6645296,8 222,89
500000,5 6649395,3 215,89
500000,5 6624754,1 198,78
500000,5 6600062,9 130,88
500000,5 6657592,4 263,59
500000,5 6661691,0 290,69
500000,5 6653493,9 325,49
500000,5 6665789,5 250,39
500000,5 6669888,0 178,20
500000,6 6612408,5 137,18
500000,6 6690330,8 282,00
500000,7 6686232,2 196,30
```

Each row has an E-coordinate, N-coordinate and height value.

A tile with a point every 50th m contains about four million points (~4 019 000). This may vary due to the fact that data have been transformed from RT 90 to SWEREF 99 TM.

Appendix 1: Map showing different production methods used over the country

Figure 5. Production methods per area.