

PRODUCT DESCRIPTION

Topography 250 Download, vector

DOCUMENT VERSION: 1.5

Figure 1 Selection from Topography 250 Download, vector.



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1 General description

This document describes how Topography 250 Download, vector is structured at delivery. The contents are well suited for graphical presentation in the scale area 1:100,000 – 1:500,000.

Topography 250 Download, vector contains, among other things administrative units, buildings, roads, and protected nature.

Topography 250 Download, vector contains Lantmäteriet's reviewed and established names that are included in the Place Names Register.

1.1 Geographic coverage

Nationwide.

1.2 Coordinate system

Plane: SWEREF 99 TM

Height: RH 2000

For information on what other coordinate systems the product can be delivered in, refer to the document [Avgifter och leveransinformation för Lantmäteriets geodata \(pdf, in Swedish\)](#) about fees and delivery information for Lantmäteriet geodata on Lantmäteriet's website.

2 Quality description

2.1 Purpose and utility

Topography 250 Download, vector is often used as a background for several types of theme presentations in the scale ranges 1: 100,000 - 1: 500,000.

The vector format allows you to tailor the map to customize the map to your own business needs.

You can:

- add and link your own information to objects on the map.
- integrate map information in your own system.
- display information as required using the layer division.

2.2 Data capture

2.2.1 LINAGE

The predecessor to Topography 250 Download, vector was GSD General map.

The first collection of data began in 1994 through digitizing and scanning of the original Road Map and General Map materials. Additional collection of data was made from current topographical maps, editorial material (i.e., information from authorities, municipalities, and other organisations), the old

nature conservation objects database, the Placename Register and Statistics Sweden's delimitation of localities.

2.3 Maintenance

The basic data of Lantmäteriet is updated partly periodically by Lantmäteriet itself, and more continuously in collaboration with other government authorities, municipalities, and organizations. Collection methods used by Lantmäteriet are primarily interpretation in stereo aerial images or orthophoto. Basic data and Topography 10 Download, vector form the basis for updating the Topography 250 Download, vector.

In addition to the above, some editorial data collection is also conducted at Lantmäteriet for selected objects that are not collected through aerial image interpretation or municipal collaboration. Administrative units, airports, railway stations and hospitals are collected annually in this way.

Updating of Topography 250 Download, vector is done through the method event-driven updating method. This means that change data from basic data is extracted based on objects, changes in geometry or attributes and date intervals.

The objects updated in this way are transmission lines, nature conservation, military areas, railways, roads, certain building and facility symbols and certain informational text. Error reports that come into Lantmäteriet are also managed in an event-driven manner.

Contour lines with a 25-meter equidistance are generated from the national elevation database.

These methods ensures that the objects in the Topography 250 Download, vector has high timeliness.

2.3.1 MAINTENANCE FREQUENCY

Changes from basic data are captured weekly. Read more in the sections on data capture, history, and maintenance frequency for each layer in Chapter 5, for more detailed information on how Lantmäteriet manages geodata production and collaborates with other organizations.

2.4 Data quality

2.4.1 COMPLETENESS

Completeness is related to the selection criteria of each object type. The selection criteria for each object type are described under the heading "Comment" in Chapter 5.

There are certain generalization rules for the information in Topography 250 Download, vector. Cartographic generalization involves simplifying, symbolizing, and relocating geographic information from its original location to create the clearest and most readable map representation possible. Therefore, generalization may result in the geographic information not always

being presented to scale and position accuracy, and deviations in completeness may occur when objects are generalized for space reasons. The database's generalizations, text placements, and symbol placements are adapted to a scale of 1:250,000.

The quality parameters for completeness are commission and omission. Since there are few measurements of completeness for the included objects in Topography 250 Download, vector, completeness is often described in the product description as very high, high, or low based on experience with the different data collection methods.

For more information about completeness, refer to chapter 5.

2.4.2 LOGICAL CONSISTENCY

For point, line, and polygon object structure the goal is to enable easy topology creation. However, deviations can occur.

Checks are performed to ensure that only valid value ranges and object types are inserted into the database.

2.4.3 THEMATIC ACCURACY

Thematic accuracy varies.

For more information about thematic accuracy, refer to chapter 5.

2.4.4 POSITIONAL UNCERTAINTY

Positional uncertainty describes how well a given position corresponds to the actual position in the terrain.

The hydrography is as geographically accurate as the scale allows. For other objects, cartographic edits have been made.

The standard error for hydrography is estimated to be 50 metres. Due to cartographic editing or generalizations, there may be local deviations up to 300 metres.

3 Contents of the delivery

3.1 Folder structure at delivery

The files delivered are Geopackage files with containing data, and a JSON-file with a description of the contents of the data file.

The Geopackage files can be ordered from Geotorget.

Other files for styling and symbols are available for download on the [product page](#).

3.2 Delivery format

The information is delivered in the [Geopackage](#) format.

3.3 File sets

The information is delivered in a gpkg file, and a description of the data content is delivered in a json file.

3.4 Layering

In the delivery of Topography 250 Download, vector, the information is divided into different themes, where each theme is delivered in a Geopackage file, containing several layers. The layer names are based on the theme, object, and geometry type.

The layer names begin with the theme and extent before the layer name when imported into software.

Example: **kommunikation_sverige ralstrafik**

The attribute set varies between the different layers and is described in detail in Chapter 5.

4 Layout and plotting of data

4.1 Distribution

The theme for land is divided into 100 km grids to improve the drawing performance, when plotting the data.

4.2 On-screen presentation

The styling of the vector product has been performed in scale 1:100,000. Therefore, this scale can be considered suitable for the on-screen presentation of vector styling.

For styling, a LYR file is provided for ArcGIS/ArcMap and a LYRX file for ArcGIS Pro. In ArcGIS/ArcMap, data should be saved in a geodatabase to achieve full functionality.

For QGIS, a QLR file is provided for styling.

The styling files contain a proposed drawing order for the layers.

Symbols specific to Lantmäteriet's data are provided in a symbol file, LMTopografisymboler.ttf.

The styling file and symbol file are available for download on the [product page](#).

4.3 Installation of fonts

The text in the styling file uses the Window's standard font, Arial.

4.3.1 SYMBOLS

Regardless of which software is being used, the included font in the file LMTopografisymboler.ttf must be installed in the Windows font catalogue (c:\\Windows\\Fonts), to obtain a correct symbol presentation.

During symbol styling, the attribute rotation has been used to obtain a correct symbol orientation.

5 Layer description and code list

5.1 Administrative units

Table 1. Layers part of Administrative units

Administrative units	Layer name
Administrative boundary	administrativ_grans
County (yta)	lansyta
Municipality (yta)	kommunyta

5.1.1 DATA CAPTURE

LINAGE

The creation of the administrative units and boundaries is based on the digitization of the old analogue General Map.

5.1.2 MAINTENANCE FREQUENCY

Annual update.

5.1.3 DATA QUALITY

COMPLETENESS

The administrative units are mapped in full, except for enclaves.

LOGICAL CONSISTENCY

Logical consistency is checked when updated and corrected. Boundary lines are hierarchically coded from national boundaries to municipality boundaries, so that no boundaries overlap.

The order is as follows:

1. National boundary
2. Territorial boundary
3. County boundary
4. Municipality boundary

THEMATIC ACCURACY

The thematic accuracy is very high.

POSITIONAL UNCERTAINTY

When boundaries coincide, it is the boundary that is highest in the hierarchy that is depicted.

5.1.4 ADMINISTRATIVE BOUNDARY

Table 2. Content in Administrative boundary (Layer name: *administrativ_grans*)

Object type	Object type number	Definition	Description	Comment
Territorial waters boundary	1561	Sweden's territorial waters boundary towards the free ocean or other nation's sea territory	<p>The territorial waters include internal waters and territorial sea. Internal waters include water areas on land and in the sea inside the national border and baselines. The territorial sea extends 12 nautical miles from the baselines.</p> <p>The baselines are drawn along a low water line along the coast at the level of 0,5 meters.</p> <p>Presented according to the law (2017:1272) about Sweden's sea territory and maritime zones.</p>	<i>The territorial waters boundary at the Finnish border in the Bothnian sea and in Åland's ocean, at the border against Denmark in Öresund as well as the border against Norway in Svinesund, is presented as National boundary.</i>
National boundary	1562	boundary between two nations	The boundary also serves as county, municipality, district, and real property boundary.	
County boundary	1563	boundary for a geographically delimited area that constitutes an administrative unit directly under the state	<p>County and municipality boundaries in public waters are established by The Legal, Financial and Administrative Services Agency (Kammarkollegiet).</p> <p>that constitutes an administrative unit directly subordinate to the state.</p>	Enclaves is not included.
Municipality boundary	1564	boundary for geographically delimited area constituting an administrative unit with its own board and taxation right	Also serves as a register area in the real property register according to the real property register announcement. County and municipality boundaries in public waters are established by The Legal, Financial and	Enclaves is not included

Object type	Object type number	Definition	Description	Comment
			Administrative Services Agency (Kammarkollegiet).	
Cultivation boundary	1565	administrative boundary of importance for the practice of reindeer husbandry rights	Administrative determined boundary between mountain regions and areas suitable for cultivation in Norrbotten and Västerbotten counties. The cultivation boundary is regulated in the Reindeer Husbandry Act (SFS 1971:437).	Completely included.
Province boundary	1560	historical regional border based on an older political division and founded on cultural and geographical characteristics	Until the 1634 constitution, many provinces operated as independent political entities with their own laws and have since then lost their governmental function	

Table 3 Set of attributes for Administrative boundary.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates that the type is Administrative boundary	The object type is Administrative boundary

5.1.5 COUNTY

Table 4 Contents in County (Layer name: lansyta)

Object type	Object type number	Definition	Description	Comment
County	5112	geographically defined area that constitutes an administrative unit directly subordinate to the state	County and municipal boundaries in public water are determined by the Legal, Financial and Administrative Services Agency.	Enclaves are not included.

Table 5 Set of attributes for County.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicating the type of administrative boundary	
lanskod	Text	2	two-digit code for counties	

5.1.6 MUNICIPALITY

Table 6 Contents in Municipality (Layer name: kommunyta)

Object type	Object type number	Definition	Description	Comment
Municipality	5113	a geographically defined area constituting an administrative unit with its own governance and taxation rights	It also serves as a registration area in the real estate register under the Real Property Register Ordinance. County and municipal boundaries in public water are determined by the Legal, Financial and	Enclaves are not included.

Object type	Object type number	Definition	Description	Comment
			Administrative Services Agency.	

Table 7 Set of attributes for Municipality.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicating the type of administrative boundary	
kommunkod	Text	2	four-digit code for municipality	

5.2 Facility area

Table 8. Included layers in Facility area theme.

Facility area	Layer name
Facility area (polygon)	anlaggningsomrade
Facility area point	anlaggningsomradespunkt
Runway (polygon)	start_landningsbana
Airport point	flygplatspunkt

5.2.1 DATA CAPTURE

LINAGE

The information about airports comes from AIP, the Swedish Civil Aviation Administration's publication and KSAK, the Royal Swedish Aero Club.

5.2.2 MAINTENANCE FREQUENCY

Airports and helicopter pads are updated annually through editorial collection.

5.2.3 DATA QUALITY

COMPLETENESS

The completeness for airports is high.

LOGICAL CONSISTENCY

The objects in the facility layers are independent.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

Due to cartographic generalization, the positional uncertainty may vary. For objects represented with symbols, the complete extent is not displayed.

5.2.4 FACILITY AREA (POLYGON)

Table 9. Contents in Facility area (Layer name: anlaggningsomrade)

Object type	Object type number	Definition	Description	Comment
Civil firing range	2834	a restricted area where civilian dangerous, such as firing with live ammunition, detonations, or rocket launching are regularly conducted		Minimum area mapped is 1 square kilometre.

Table 10 Set of attributes for Facility area.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	

Attribute	Type	Length	Definition	Description
objektyp	Text	255	indicates type of facility area	The object type is Civil firing range.
skjutfaltstext	Text	100	informative text for firing range	Valid only for the object type <i>Civil firing range</i> .

5.2.5 FACILITY AREA POINT

Table 11 Contents in Facility area point (Layer name: *anlaggningsomradespunkt*)

Object type	Object type number	Definition	Description	Comment
Industrial area, point	2841	a facility area represented by a point primarily used for industrial activities		

Table 12 Set of attributes for Facility area point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objektypnr	Integer	4	a unique integer for the object type	
objektyp	Text	255	indicates type of facility point	The object type is Industrial area, point
andamal	Text	255	purpose for industrial area.	Only value "gruvområde" (mining area) is valid.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees

Attribute	Type	Length	Definition	Description
				(360 degrees in a circle).

Table 13 Value range Industrial purposes

Attribute	Type	Length	Definition
Gruvområde (Mining area)	area where mining activities take place	Also includes sludge reservoirs and land with facilities for the mining operations.	Mapped if the mining facility is in use, if it constitutes a distinct topographic feature (e.g., a mining pit) if it is of significant size, or if it is a larger collection of mine pits within a limited area.

5.2.6 AIRPORT POINT

Table 14 Contents in Airport point (Layer name: flygplatspunkt)

Object type	Object type number	Definition	Description	Comment
Airport symbol	2851	An established location from which air traffic departs		Airport with grass field. Licensed airports should be mapped with the airport's name. Unlicensed airports are mapped without the airport's name
Helicopter pad	2852	designated spot from which air traffic or helicopter traffic originates	Helicopter pads normally have one or more helicopter landing pads and may have limited infrastructure such as fuel stations, hangars, and workshops.	They are mapped if they are licensed by the Swedish Transport Agency (Luftfartsverket) according to AIP.

Table 15 Set of attributes for Airport point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	States type of airport point	Value range described valid values.
iata	Text	3	three-digit identification code for airports	IATA-codes are only available for airports with regular flights, Examples: ANR - Arlanda CPH - Kastrup airport. Not used for helicopter pads.
icao	Text	4	four-lettered code of the geographic position of airports, only used by pilots and air traffic control	Examples ESSA - Arlanda (Europe Sweden Stockholm Arlanda) EKCH - Kastrup airport
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.2.7 RUNWAY, LINE

Table 16 Content in Runway (Layer name: start_landningsbana_linje)

Object type	Object type number	Definition	Description	Comment
Runway, line	2857	prepared surface for take-off and landing of airplanes, presented as a line	Runway within an airport.	Taxiways are not included.

Table 17 Set of attributes for Runway, line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	states that the type is Runway, line	A text value that should always be Runway, line.

5.3 Structures

Table 18. Included layers in the Structures theme.

Structures	Layer name
Building (polygon)	byggnad
Building facility line	byggnadsanlaggningslinje
Building facility point	byggnadsanlaggningspunkt
Building point	byggnadspunkt

5.3.1 DATA CAPTURE

LINAGE

Collection and reported updating are retrieved from the Lantmäteriet's basic data.

Buildings are represented with point symbols without linked attributes. These symbols are not to scale.

5.3.2 MAINTENANCE FREQUENCY

Tower, mast, buildings, wind power station, nuclear power station and hospital are updated through the work method event-driven updating.

5.3.3 DATA QUALITY

COMPLETENESS

The completeness of the items that are updated through editorial collection is high. For other objects, the completeness is low.

A house symbol often represents several buildings.

LOGICAL CONSISTENCY

The objects are independent.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

Due to cartographic generalization, major position errors occur.

5.3.4 BUILDING FACILITY LINE

Table 19 Contents in Building facility line (Layer name: byggnadsanlaggningslinje)

Object type	Object type number	Definition	Description	Comment
Cable traffic	1978	wire-borne transportation system with carriages, baskets, loops, sticks or harness that run above ground level	Cable cars and ski lifts.	Mapped if it is operating and at least 500 m long. Also used for funiculars. Examples: funicular aerial tramways, gondolas chair lift, drag lift or zipline.

Table 20 Set of attributes for Building facility line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of building facility line.	Range of values for valid values.

5.3.5 FACILITY AREA POINT

Table 21 Contents in Facility area point (Layer name: anlaggningsomradespunkt)

Object type	Object type number	Definition	Description	Comment
Mast	2019	tall and vertical construction erected on a small area, often anchored with cables	Not intended to contain or hold a notable space (in comparison to a tower).	Mapped for tele, radio and TV masts that are at least 75 metres high.
Chimney	2022	vertical pipe-shaped construction to divert smoke		Free standing or as a part of a building. All prominent chimneys in the landscape that are at least approximately 25 meters tall are to be mapped.

Table 22 Set of attributes for Building facility point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	

Attribute	Type	Length	Definition	Description
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of building facility point	Range of values for valid values.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.3.6 BUILDING POINT

Table 23 Contents in Building point (Layer name: byggnadspunkt)

Object type	Object type number	Definition	Description	Comment
One or more buildings	2052	One or more buildings represented by a point.		Not included within built-up area.
Mountain lodge	2033	tourist facility with buildings for services, activities, and accommodation	Outside of the tourist season, access to an open emergency shelter is available.	STF-owned mountain lodge are included as well as Låktatjåkko mountain lodge.
Lighthouse	1051	device for sea traffic that, through light or other signals, provides positional controls or warnings		Historical lighthouses and coastal lighthouses are mapped.
University	2044	post-secondary school classified as a university in the university regulation		
Church	1042	a building permanently used for religious	A distinctive building in the	Processed material with support

Object type	Object type number	Definition	Description	Comment
		worship outside the Church of Sweden	landscape with a pronounced religious character.	from information found on Google. Examples: Mosque, synagogue, temple, free church.
Sami cot	1044	basic conical or dome shaped building in mountain regions intended for stays		Updated only within the coverage area for Lantmäteriet's mountain range information. Mapped if there are three or more, or if they are located along a trail.
Nuclear power plant	2035	facility that generates electricity from nuclear power	Also includes decommissioned nuclear power plants.	Completely included. Example: Forsmark
Hospital	2042	facility for closed care and specialized outpatient care		Hospitals with emergency medical care are mapped.
Castle	2038	monumental historical building that is or has been owned by a royal or noble person		
Tower	1045	tall and vertical structure built on a relatively small area or on another building	intended to contain or hold a notable space (in comparison to a mast)	Mapped for a selection of towers. Examples: Mining tower, fire tower, view tower and water tower.
University	2043	post-secondary school classified as a university in the university regulation		Mapped for all universities in Sweden.
Wind turbine	2025	tower or mast with a device that converts wind energy to electricity		Mapped for all wind turbines that are at least about 25 metres high, including the maximum heights of the rotor blades

Object type	Object type number	Definition	Description	Comment
				above the ground. The symbol can represent one or more wind turbines.

Table 24 Set of attributes for Building point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objektypnr	Integer	4	a unique integer for the object type	
objektyp	Text	255	states type of building point	List of valid types of building points.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.4 Hydrography

Table 25. Layers included in the Hydrography theme.

Hydrography	Layer name
Hydro facility line	hydroanlaggningslinje
Hydro facility point	hydroanlaggningspunkt
Hydro line	hydrolinje

5.4.1 DATA CAPTURE

LINAGE

The hydrography has been taken from the Road Map (scale 1: 100,000).

5.4.2 MAINTENANCE FREQUENCY

Single changes can be made in connection with changes to other objects, otherwise, no updates are made to the hydrography.

5.4.3 DATA QUALITY

COMPLETENESS

Minimum length for watercourses is 5 km. Shorter watercourses can be included in some flat areas to emphasize the geographical character.

LOGICAL CONSISTENCY

The watercourses are not coherent and therefore do not form a network.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

The mean error for the hydrography is estimated to be 50 m. Due to cartographic edits and generalizations, local deviations of ≥ 300 m may exist.

5.4.4 HYDRO FACILITY LINE

Table 26. Contents in Hydro facility line (Layer: hydranlaggningslinje)

Object type	Object type number	Definition	Description	Comment
Dam construction	1903	permanent barrier over a water course that dams or controls its flow		Construction for creation of mirror ponds is not included. Minimum mapped length is 250 metres.

Table 27 Attribute set for Hydro facility line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.

Attribute	Type	Length	Definition	Description
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	specifies the type of hydro facility line	Range of values for valid values.

5.4.5 HYDRO FACILITY POINT

Table 28 Contents in hydro facility point (Layer name: hydroanlaggningspunkt)

Object type	Object type number	Definition	Description	Comment
Dam construction, point	1923	permanent barrier over a water course that dams or controls flow		Construction for creation of mirror ponds is not included. Longer dam constructions are presented as <i>Dam construction (line)</i> . No data has been collected yet.
Lock gate	1922	construction for raising and lowering the water level in a waterway to enable boat traffic	A lock always consists of at least two lock gates.	Mapped in full except where they are closely spaced where a cartographic selection is made.

Table 29 Set of attributes for hydro facility point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	specifies the type of hydro facility point	Range of values for valid values.

Attribute	Type	Length	Definition	Description
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.4.6 HYDRO LINE

Table 30 Contents in Hydro line (Layer name: hydrolinje)

Object type	Object type number	Definition	Description	Comment
Water-course	1581	natural or man-made flowing water that is part of a drainage system	Watercourse part of the drainage network and are narrower than 100 meters and are 5 kilometers or longer are included.	Water course class 1, 2, 3 and 4 is used in 1:250 000, where class 1 is shortest. .

Table 31 Attribute set for Hydro line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is created date if no change has been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	specifies the type of hydro line	Range of values for valid values.
storleksklass	Text	255	classifies the water-courses with respect to their significance	The length of the watercourse and the size of the drainage basin determines the size class.

Attribute	Type	Length	Definition	Description
				See value range <i>Water course class</i> .
kanal	Text	255	man-made water course for ships	Value range: Ja, Nej, Ingen information (<i>Yes, No, No information</i>).

Table 32. Value set *Water course class*.

Value	Description
1	A watercourse that is 5–10 km long and is part of a drainage basin larger than 1 square kilometer.
2	A watercourse that is longer than 10 km long and is part of a drainage basin larger than 100 square kilometer.
3	A watercourse that is longer than 40 km long and is part of a drainage basin larger than 1000 square kilometer.
4	A watercourse that is longer than 40 km long and is part of a drainage basin larger than 10 000 square kilometer.

5.5 Height

Table 33. Included layers in the theme *Height*.

Height	Layer name
Contour line	hojdlinje
Contour line text	hojdkurvstext
Height point	hojdpunkt

5.5.1 DATA CAPTURE

LINAGE

Elevation point is an unmarked surveyed point or surveyed water surface and is mapped after a certain selection. The height-determined water surface shall apply to mean water level. In regulated water, the highest and lowest water levels are specified.

Information originally comes from Lantmäteriet's geodetic archive and older map material as well as editorial collection of regulated water from Swedish Meteorological and Hydrological Institute.

The contour lines are generated from the National Height Database.

5.5.2 MAINTENANCE FREQUENCY

Elevation points are not updated.

Contour lines are updated continuously.

5.5.3 DATA QUALITY

COMPLETENESS

Completeness of elevation points follows selection.

Equidistance 25 meters throughout the country.

LOGICAL CONSISTENCY

Elevation points are stand-alone point objects and have no requirements for logical consistency.

The contour lines are for visual use only. There is no logical structure. Contour lines have height values.

THEMATIC ACCURACY

The thematic accuracy is very high for elevation points.

Thematic accuracy is not relevant for contour lines.

POSITIONAL UNCERTAINTY

Contour lines show a visual height position. There is no calculated mean error for contour lines.

5.5.4 CONTOUR LINE

Table 34. Contents in Contour line (Layer name: *hojdlinje*)

Object type	Object type number	Definition	Description	Comment
Contour line25	2408	contour line for height that represents the equidistance 25 m	Adjacent contour lines together illustrate differences in elevation in the terrain.	The equidistance is 25 m.

Table 35 Attribute set for Contour line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of contour line	Range of values for valid values.
hojdvarde	Text	4	height above the sea in metres	
stodkurva	Text	255	contour lines that represent a certain elevation in the terrain	Every fifth elevation contour line is presented more prominently. Value range: Ja/Nej (Yes/No)
i_glaciar	Text	255	indicates if the contour line is on a glacier	Value range: Ja/Nej (Yes/No)


5.5.5 CONTOUR LINE VALUE

Table 36 Contents in Contour line value (Layer name: hojdkurvstext)

Object type	Object type number	Definition	Description	Comment
Contour line value	2403	elevation value for a contour line		

Table 37 Attribute set for Contour line value.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for exchange objects	

Attribute	Type	Length	Definition	Description
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
textkategori	Text	255	grouping is used to control the printing of text	The text category is used to control font style (normal/italic/bold/light) and colour (black/blue/green/...). Text type can also be used to control style.
textstorleksklass	Text	255	specifies which font size to use depending on the scale	In combination with text category, scale, and possibly text type, the printing of text is controlled.
textlage	Integer	3	insertion point for text	The insertion point of the text is specified by a number between 1-9. All contour line values have text position 5. <i>Figure 2 Image showing the text's insertion point.</i> 
texttyp	Text	255	indicates type of text	Contour values are always of type U (information text) Text type can be used to control style
karttext	Text	4	cartographic text	The map text can be hyphenated or abbreviated.
textriktning	Floating point	6.2	rotation for text	Text rotation is specified in degrees (0.00 – 360.00, increasing anti-clockwise). 0.00=Unoriented text.

5.5.6 ELEVATION POINT

Table 38 Contents in Elevation point (Layer name: *hojdpunkt*)

Object type	Object type number	Definition	Description	Comment
Spot elevation	2411	unmarked elevation point	Elevation point that does not need to be marked, ex. at a junction, on a summit or similar. Presented in whole metres.	

Table 39 Attribute set for Elevation point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of elevation point	Range of values for valid values. Only <i>Ground height</i> is valid value.
hojdvarde	Integer	4	height above the sea in metres	
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.6 Communication

Table 40 Included layers in the theme Communication

Communication	Layer name
Road line	vaglinje
Road point	vagpunkt
Ferry route (line)	farjeled
Other road (line)	ovrig_vag
Rail traffic (line)	ralstrafik
Rail traffic station (point)	ralstrafikstation

5.6.1 DATA CAPTURE

LINAGE

Road line and road point

At the original data collection, a selection of roads was made from the Road map. The Land Survey updates the information about the road network throughout the country through aerial image interpretation and collaboration. Public roads are primarily updated through collaboration with the Swedish Transport Administration and the [NVDB \(National Road Database\)](#). NVDB contains municipal, state, private and forestry roads as well as ferry routes.

For the Topography 250 Download, Vector product, a general recoding has been done so that the road coding matches the coding in the Swedish Transport Administration's Road Type product.

Rail traffic and rail traffic station

Originally, most railways and railroad symbols were entered using ortho-photos and Lantmäteriet's previous fieldwork.

Trails

Municipalities can provide hiking trails through the collaboration agreement.

5.6.2 MAINTENANCE FREQUENCY

Roads, road symbols, railways and railway stations are updated through the work method event-driven updating. Changes come from the Swedish Transport Administration.

Tunnels are updated in connection with changes in the railway network.

Ferry routes are updated annually through editorial collection.

5.6.3 DATA QUALITY

COMPLETENESS

Road line and road point

The completeness of public roads is generally high because Lantmäteriet works in collaboration with the Swedish Transport Administration but varies due to cartographic generalization. A reduction of the roads has occurred due to the scale, more in southern than in northern Sweden. Private roads shorter than 800 m that end blindly have generally been excluded, except for those deemed to be of special significance.

Ferry routes with road ferries in regular traffic within the country are mapped if operated by the Swedish Transport Administration Ferry service. Other ferry routes are mapped if they connect to the national road network or have year-round traffic with a fixed timetable.

Cartographic generalization is applied to road symbols, so the completeness may vary.

Rail traffic and rail traffic station

The completeness of railways is generally high but varies due to cartographic generalization, for example in station areas.

Where regular traffic has ceased, the railway will be included if the track remains.

The completeness of railway stations is high. Mapped in full in accordance with Samtrafik i Sverige AB.

Trails

Only national and county hiking trails, with a minimum length of approximately 20 km, as well as trails in mountainous areas are mapped and have high completeness.

LOGICAL CONSISTENCY

Lines in a geometric line network are coherent and are divided into connection points (see figure below).

Figure 3. A geometric line network where the roads are divided in the connection points.



Railway

The lines form a geometric network that is continuous and divided at junction points.

Road symbols and railway traffic station

Logical consistency is not checked for road and railroad symbols.

Trails

There are no requirements for logical consistency for hiking trails.

THEMATIC ACCURACY

Road line and road point

Cartographic generalization of roads occurs. This can happen where it becomes too crowded to report the correct road class. A road can never be generalized up to a better road class.

Because the previous coding of roads and the Swedish Transport Administration's coding of roads were not entirely translatable, there are some errors in the coding of the roads.

Rail traffic and rail traffic station

The thematic accuracy is high.

Trails

Hiking trails primarily come in through municipal collaboration.

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

The position uncertainty of the objects varies due to cartographic generalization.

For objects that are represented with symbols, the full extent is not mapped.

5.6.4 ROAD LINE

Table 41 Contents in Road line (Layer name: vaglinje).

Object type	Object type number	Definition	Description	Comment
Motorway	1801	road that corresponds to traffic regulations for motorways		
Two-lane expressway	1802	road that corresponds to the regulations for a two-lane expressway		
Divided road	1803	road where oncoming traffic is separated by a median barrier	Motorways and two-lane expressways are not included. However, other four lane roads and regular roads where traffic directions are separated by a median barrier is included.	
Country road	1804	main road with one lane in each direction separated by a centre line		Some cartographic generalization occurs, for example, the removal of short driveways to churches and certain cross-connections within urban areas.
Country road, small	1805	state road with road number >499		Some cartographic generalization occurs, for example, the removal of short driveways to churches and certain cross-connections within urban areas.

Object type	Object type number	Definition	Description	Comment
Small road	1806	private road, suitable for cars	<p>Included here are state-funded private roads that are allowed to be trafficked as well as private roads outside of built-up areas that the municipality has classed as a good car road and in some cases receive municipal contributions.</p> <p>The road often has a basic standard and can normally be trafficked by car.</p>	Some cartographic generalization occurs. Minor roads of no particular significance, which end blindly and are shorter than 800 meters, are not included.

Table 42 Attribute set for Road line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of road line	Range of values for valid values.
bro_och_tunnel	Text	255	indicates if the road section includes any form of bridge or tunnel	Refer to value range Level.
vardvagnnummer	Text	255	complete road number for the main road	<p>Combination of main number, sub-number, and European road.</p> <p>Used for printing in map products.</p>

Attribute	Type	Length	Definition	Description
				Examples: E4, E20.8, 859, 891.1
gastvag1nummer	Text	255	complete road number for guest road 1	Combination of main number, sub-number, and European road. Used for printing in map products.
gastvag2nummer	Text	255	complete road number for guest road 2	Combination of main number, sub-number, and European road. Used for printing in map products.

Table 43 Value range Level.

Value	Definition
överfart (<i>overpass</i>)	road or rail traffic that passes over another object
underfart (<i>underpass</i>)	road or rail traffic that passing under another object
tunnel (<i>tunnel</i>)	underground road or rail traffic
överfart och underfart (<i>overpass and underpass</i>)	road or rail traffic that passes over or under another object
Ingen information	

5.6.5 ROAD POINT

Table 44 Contents in Road point (Layer name: vagpunkt)

Object type	Object type number	Definition	Description	Comment
Interchange	2209	plane separated junction where entrance and exit can be accessed	Centre point for interchanges is mapped.	

Table 45 Attribute set for Road point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of road point	The object type is always Interchange.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).
trafikplatsnummer	Integer	4	The Swedish Transport Administration's number for interchanges	Examples: 174, 110b

5.6.6 FERRY ROUTE

Table 46 Contents in Ferry route (Layer name: farjeled)

Object type	Object type number	Definition	Description	Comment
Ferry route	1891	route for ferry traffic	Ferry route with car ferries in regular traffic.	<p>Within the country the following is mapped:</p> <ul style="list-style-type: none"> - Ferry routes operated by the Swedish Transport Administration's ferry company. - Other ferry routes that connect the

Object type	Object type number	Definition	Description	Comment
				<p>state road network.</p> <ul style="list-style-type: none"> - Other ferry routes with year-round traffic and a fixed timetable. <p>International ferry routes are also included.</p>

Table 47 Attribute set for Ferry route.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objektypnr	Integer	4	a unique integer for the object type	
objektyp	Text	255	indicates the type of <i>Ferry route</i> .	The object type is always <i>Ferry route</i> for this object.
destination	Text	50	destination for the <i>Ferry route</i>	Examples: Nynäshamn-Visby, Kvarsebo-Skenäs, International examples: Riga (LV), Turku (FI).
vagnummer_nationell	Text	20	road number for domestic ferry routes	

5.6.7 OTHER ROAD

Table 48 Contents in Other road (Layer name: ovrig_vag)

Object type	Object type number	Definition	Description	Comment
Hiking trail	1846	marked trail along a path or road intended for hiking		Most major national or county hiking trail is mapped. Shortest length mapped is 20 km. Example of trails are <i>Sörmlandsleden</i> , <i>Kungsleden</i> and various Pilgrim trails.

Table 49 Attribute set for Other roads.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	specifies the type of <i>Other road</i>	Range of values for valid values.
alternativt_manér	Text	255	states that the organization object should be separately treated during cartographic presentation	Makes the presentation of hiking trails by the side of a road possible. Value quantity: Ja, Nej, Ingen information (Yes, No, No information)

5.6.8 RAIL TRAFFIC

Table 50 Contents in Rail traffic (Layer name: ralstrafik)

Object type	Object type number	Definition	Description	Comment
Railway	1861	rail traffic that is part of the national railway network as well as industrial tracks		Presented according to a cartographic selection. Parallel railway tracks are presented with a single line instead of two. Significant generalization on marshalling yards and station areas. Closed railways are mapped. Dismantled railways are not mapped.
Heritage railway	1862	rail traffic with museum activities	A heritage railway can either be built for this purpose have been used in regular train traffic before being shut down and converted to a heritage railway.	

Table 51 Attribute set for Rail traffic.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of rail traffic	Range of values for valid values.

Attribute	Type	Length	Definition	Description
bro_och_tunnel	Text	255	indicates the stretch through a tunnel or the level for roads or railways in relation to another road or railway	See value range <i>Level</i> .

Table 52 Value set *Level*

Value	Definition
överfart (<i>overpass</i>)	road or rail traffic that passes over another object
underfart (<i>underpass</i>)	road or rail traffic that passing under another object
tunnel (<i>tunnel</i>)	underground road or rail traffic
överfart och underfart (<i>overpass and underpass</i>)	road or rail traffic that passing over or under another object
ingen information (<i>no information</i>)	

5.6.9 RAIL TRAFFIC STATION

Table 53 Contents in Rail traffic station (Layer name: *ralstrafikstation*)

Object type	Object type number	Definition	Description	Comment
Railway station	1871	location along a railway line intended for trains to make a stop	Mapped for railways that dispatches passengers or freight traffic. It does not need to have an associated station building.	Only stations with passenger exchanges are presented, a certain cartographic selection occurs.

Table 54 Attribute set for Rail traffic station.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	

Attribute	Type	Length	Definition	Description
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of rail traffic station	Range of values for valid values.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.7 Cultural-historical remains

Table 55. Included layers in the theme Cultural-historical remains

Cultural-historical remains	Layer name
Cultural-historical remains, point	kultur_lamning_punkt

5.7.1 DATA CAPTURE

The cultural-historical remains presented have been selected by the Swedish National Heritage Board (RAÄ).

5.7.2 MAINTENANCE FREQUENCY

Cultural-historical remains are not updated.

5.7.3 DATA QUALITY

COMPLETENESS

Cultural-historical remains are mapped in full in the Swedish National Heritage Board's database for heritage information, the Cultural Environment Register (KMR). This product contains a cartographic selection of these.

LOGICAL CONSISTENCY

The cultural-historical remains are independent and have no requirements for logical consistency.

THEMATIC ACCURACY

The thematic accuracy is considered high.

POSITIONAL UNCERTAINTY

The positional uncertainty for ancient monuments varies due to cartographic generalization.

5.7.4 CULTURAL-HISTORICAL REMAINS, POINT

Table 56. Contents in Cultural-historical remains, point (Layer name: kultur_lamning_punkt)

Object type	Object type number	Definition	Description	Comment
Ancient remains, large information symbol	2511	large information symbol at ancient monument	They are mapped with information symbols.	Presented according to the selection from Swedish National Heritage Board

Table 57 Attribute set for Cultural-historical remains, point

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates type of cultural-historical remains	Range of values for valid values.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.8 Transmissions

Table 58. Included layers in the theme Transmissions (Ledningar)

Transmission	Layer name
Transmission line	ledningslinje

5.8.1 DATA CAPTURE

LINAGE

Updating of transmission lines is conducted in collaboration with the electricity companies in Sweden. Lantmäteriet updates transmission lines using the material provided by the electricity companies, and with some help of aerial image interpretation.

5.8.2 MAINTENANCE FREQUENCY

Transmission lines are updated every other year when the electricity companies deliver information about the transmission lines to Lantmäteriet. This is done through event-driven updates.

5.8.3 DATA QUALITY

COMPLETENESS

Completeness of the national transmission lines is high. For regional transmission lines, the completeness is not as high. Due to cartographic generalization, completeness can be lower. Underground transmission lines are not included.

Due to cartographic generalization, completeness can be lower. Underground power lines are not included.

LOGICAL CONSISTENCY

Due to cartographic generalization, no requirements for logical consistency can be imposed.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

Due to cartographic generalization, positional uncertainty can vary.

For objects represented with symbols, the full extent is not mapped.

5.8.4 TRANSMISSION LINE

Table 59. Contents in Transmission line (Layer name: ledningslinje)

Object type	Object type number	Definition	Description	Comment
Electricity transmission line, national	1702	transmission line for electricity distribution, usually with a voltage higher than 200 kV		Minimum length mapped is 3 km.
Electricity transmission line, region	1703	transmission line for electricity distribution, usually with a voltage between 25 and 200 kV		Minimum length mapped is 3 km. Some older regional transmission lines can be 20 and 24 kV. For parallel transmission lines, only the power line with the highest voltage is mapped.

Table 60 Attribute set for Transmission line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of transmission line	Range of values for valid values.

5.9 Land cover

Table 61. Layers included in the Land cover theme.

Land cover	Layer name
Land cover	mark

Land cover	Layer name
Land cover boundary lines	markkantlinje
Wetlands	sankmark

5.9.1 DATA CAPTURE

LINAGE

The creation of land data is based on the old analogue Overview Map.

5.9.2 MAINTENANCE FREQUENCY

All major changes of built-up areas are updated in accordance with Statistics Sweden's update interval of urban areas. Otherwise, almost no areas are updated.

5.9.3 DATA QUALITY

COMPLETENESS

At present, there is no updating of the land data. Exceptions are built-up areas.

LOGICAL CONSISTENCY

For performance reasons, the land cover layers are always divided at the edge of the index squares, except for built-up areas.

The topology is checked after each change of the areas and the boundary lines for these are updated.

The land cover is treated as a continuous layer with surfaces that do not overlap each other. The exception is wetlands, which are treated as a separate layer with independent surfaces.

Land cover boundary lines must enclose the entire area of the land cover layer. The lines are created via a customized function and are never edited manually.

THEMATIC ACCURACY

Large areas are usually easy to map and have a high thematic accuracy. Smaller areas are generalized away and included in the surrounding areas.

POSITIONAL UNCERTAINTY

Positional accuracy is as geographical correct as the scale range allows. Where objects have been generalized or moved for cartographic reasons, there are major local deviations.

5.9.4 LAND COVER

Table 62. Contents in Land cover (Layer name: mark)

Object type	Object type number	Definition	Description	Comment
Built-up area	2649	land with residential, industrial, or commercial buildings		
Open land	2640	land below the treeline, mainly including natural open land, unmanaged and extensively managed meadow	Open land where the height of vegetation is less than approximately 1,5 metres but where individual trees, bushes, and smaller groves higher than 1,5 metres may be included. Also included are former agricultural land, low production pastures, natural meadows and grasslands, plot of lands and gardens with an open character outside built-up areas, undeveloped allotment areas, moorlands, sandy beaches, and shingle fields. Land leased for special activities are also included, such as ski slopes, firing ranges, gravel pits and quarries. Areas by the coast with rock outcrops are also classed as open land.	Minimum area for mapping is 60,000 square meters (6 hectare). Arable land and fruit orchard are also part of Open land.
Alpine tundra	2644	all land above the tree line, except for water surfaces and glaciers	Low trees, bushes and smaller groves may occur.	Minimum area for mapping is 60,000 square meters (6 hectare).

Object type	Object type number	Definition	Description	Comment
Forest	2650	land with coniferous or deciduous trees		Minimum area for mapping is 60,000 square meters (6 hectare).
Sea	2631	waterbody that receives water from waterbodies located on land and that are coherent with other seas	The sea level should be mapped in the normal water level if possible. Water with sparse and/or temporary reeds should be mapped as <i>Sea</i> . Dense, persistent belts of reeds should be mapped as <i>Wetland</i> .	Sea is mapped for the index squares that include the economic zone.
Lake	2632	permanent, widespread regulated or unregulated surface water body on land without significant flow velocity	Natural standing water or with limited impact by a low dam threshold. Also includes smaller surface waterbodies such as forest ponds or similar.	Minimum area for mapping is 60,000 square meters (6 hectare).
Watercourse surface	2633	surface waterbody with significant flow velocity connecting to lakes or seas	Including both natural and artificial water bodies.	The watercourse width should be at least about 100 meters wide.
Glacier	2635	permanent mass of snow and ice in high mountains that slowly slide down the mountain slope	The data is collected with the support of information from the Natural Geographic Institution at Stockholm University.	Minimum area for mapping is 60,000 square meters (6 hectare).
Unmapped area	2648	area that is not mapped	Includes areas outside the national border.	

Table 63 Attribute sets for Land cover (Layer name: Mark)

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of land cover	Range of values for valid values.
hojd_over_havet	Text	20	indicates the water surface elevation in meters above sea level	Is only specified for the object types of <i>Lake</i> and <i>Watercourse surface</i> .
reglerat_vatten	Text	255	indicates whether the water level is regulated	Is only specified for the object types of <i>Lake</i> and <i>Watercourse surface</i> . It is a mandatory attribute. Example: water surface can vary between e.g., 398 and 412 meters above sea level. Range of values: Ja/Nej/Ingen information (Yes/No/No information.)

5.9.5 LAND COVER BOUNDARY LINE

Table 64 Contents in the layer Land cover boundary line (Layer name: markkantlinje)

Object type	Object type number	Definition	Description	Comment
Boundary line, unmapped area	2611	land cover boundary	Used to delimit and close surfaces in the land	Mapped completely for areas bordering unmapped areas.

Object type	Object type number	Definition	Description	Comment
		line for unmapped area	cover layer that are adjacent to unmapped areas.	Mapped along the national border with Norway. The national border with Finland is mainly formed by boundary rivers (Torneå-, Könkämä-, Muonio rivers). The water surface of the boundary river shall be delimited by a shoreline on the Swedish side and by a boundary line for unmapped area on the Finnish side of the national border.
Shoreline, sea	2612	land cover boundary line between sea and land	Boundary line between sea and built-up areas, open land, or forest.	Against a lake or a watercourse surfaces the land cover boundary line <i>Closure against sea</i> is used.
Shoreline, lake	2613	land cover boundary line between lake and land	Boundary line between lake and glacier, built-up area, open land, or forest.	Against a watercourse surfaces, the land cover boundary line <i>Closure</i> is used. Against the sea, the land cover boundary line <i>Closure against the sea</i> is used.
Shoreline, watercourse surface	2614	land cover boundary line between water course surface and land	Boundary line between water course surface and glacier, built-up area, open land, or forest.	When it is against a lake, the land cover boundary line <i>Closure</i> is used. When it is against the sea the land cover boundary line <i>Closure against the sea</i> is used.
Closure against the sea	2616	land cover boundary line between sea and lake or watercourse surface	<i>Closure against the sea</i> is a constructed, usually straight line used to separate the sea from a lake or a watercourse surface.	

Object type	Object type number	Definition	Description	Comment
Closure	2617	land cover boundary line between lake or watercourse surface	<i>Closure</i> is a constructed, usually straight line used to separate lakes from watercourse surfaces. It is also used where there are two adjacent lakes or two or more main watercourse branches joining. <i>Closure</i> is also used for regulation ponds as well as the beginning and end of locks.	
Glacier boundary	2618	land cover boundary line for glacier		Presented between glaciers and alpine tundra but is replaced with <i>Shoreline, lake</i> or <i>Shoreline, watercourse surface</i> against surfaces that are bordered by these.
Built-up area boundary	2619	land cover boundary line for grouped built-up areas		Presented for <i>Built-up area</i> but is replaced with <i>Shoreline (sea, lake, or watercourse surface)</i> against surfaces bordered by these.
Open land boundary	2622	land cover boundary line for open land or alpine tundra		Presented for open land or alpine tundra but is replaced by <i>built-up area boundary</i> , and <i>shoreline (sea, lake, or watercourse surface)</i> against surfaces bordered by these.

Table 65 Attribute set Land cover boundary line.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of land cover boundary line	Range of values for valid values.

5.9.6 WETLANDS

Table 66 Contents in wetlands (Layer name: sankmark)

Object type	Object type number	Definition	Description	Comment
Wetland	2653	land that is saturated with water for a large part of the year and usually has the water table near the ground surface or above it	Even very shallow lakes with vegetation and wet meadows are classified as wetlands. Many wetlands are peat-forming.	Minimum area for mapping is approximately 360,000 square metres (36 hectares). Even smaller areas can be mapped so that the area does not lose its character.

Table 67 Attribute set for wetlands.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	

Attribute	Type	Length	Definition	Description
objektyp	Text	255	indicates the type of wetland	The object type is <i>Wetland</i> .

5.10 Military area

Table 68. Included layers in the theme Military area

Military area	Layer name
Military area	militart_omrade

5.10.1 DATA CAPTURE

LINAGE

Older decisions regarding boundary lines for military areas have been digitized from paper maps. Some updates have been conducted using data from, among other sources, the Fortifications Agency. From 2011 to 2017, a detailed determination of the boundary lines for the military areas still in use by the Swedish Armed Forces was conducted.

5.10.2 MAINTENANCE FREQUENCY

Military areas are updated through the work method event-driven updating.

5.10.3 DATA QUALITY

COMPLETENESS

The areas have high completeness. Areas smaller than 1 square kilometre are not included.

LOGICAL CONSISTENCY

Military areas are independent objects that are not connected to any other objects.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

The position accuracy of the objects varies due to cartographic generalization.

The boundary lines on the map indicate an approximate location of where the boundary of a firing range or training area is in the terrain. It is always the signs posted by the Armed Forces in the terrain that determine where the actual border is.

5.10.4 MILITARY AREA

Table 69. Contents in Military area (Layer name: militart_omrade)

Object type	Object type number	Definition	Description	Comment
Military training area	5501	Military area primarily used for grouping, firing practice, and other types of exercises that do not involve live ammunition.	Detonation of single charges or firing at a low-risk height can be conducted, see local instructions.	Minimum area mapped is approximately 1 square kilometre. Carefully pay attention to any current barriers. The public are prohibited from access when activities are ongoing.
Military firing range	5503	Military area where dangerous activities such as firing with live ammunition and detonations are regularly conducted.	Military firing ranges can be owned or used by the state and are available mainly for the Swedish Armed Forces Defence Materiel Administration or the National Defence Radio Establishment. An area with potential risk is cordoned off, which normally constitutes a restricted area for aviation (R-area). Firing ranges over adjacent water are not part of the firing range but are delimited in the same way as firing ranges.	Minimum area mapped is approximately 1 square kilometre. Carefully pay attention to any current barriers. The public are prohibited from access when activities are ongoing.

Table 70 Set of attributes for Military area

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	

Attribute	Type	Length	Definition	Description
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of military area	Range of values for valid values.

5.11 Nature conservation

Table 71. Included layers in the Nature conservation theme.

Nature conservation	Layer name
Nature conservation point	naturvardspunkt
Protected nature	skyddadnatur

5.11.1 DATA CAPTURE

LINAGE

Information about nature conservation areas is obtained through collaboration with the Swedish Environmental Protection Agency. The Swedish Environmental Protection Agency, in turn, receives the information from the respective county administrative boards. The areas have been digitized by the county administrative boards against existing property boundaries and aerial photographs. More recent nature conservation areas have been surveyed in the field using GPS, but some of the older areas have also been surveyed with GPS or other high-precision surveying technology.

5.11.2 MAINTENANCE FREQUENCY

Nature conservation areas are updated through the work method event-driven updating. Decision dates and additional information regarding nature conservation objects can be found at the Swedish Environmental Protection Agency, [protected nature](#)

5.11.3 DATA QUALITY

COMPLETENESS

The areas have very high completeness and are mapped according to decisions from the County Administrative Board.

Nature reserves and national parks are mapped in full, while smaller areas have been excluded for other protected areas.

LOGICAL CONSISTENCY

Within the group of areas, there is a hierarchical order for the different boundaries. Bird protection areas and seal protection areas can overlap with nature reserves. The order within the group is as follows:

- National Park
- Nature reserve
- Culture reserve
- Bird protection area and seal protection area

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

The position accuracy of the objects varies due to cartographic generalization.

5.11.4 NATURE CONSERVATION POINT

Table 72. Contents in Nature conservation point (Layer name: naturvardspunkt)

Object type	Object type number	Definition	Description	Comment
Nature conservation, point	5805	protected nature according to <i>Miljöbalken</i> (SFS 1998:808) 7 Ch. 4-6 §§ or corresponding older law		Areas smaller than 0.5 square kilometres are mapped. If several small nature reserves are located close to each other on land, they are represented as a single point. Areas larger than 0.5 square kilometres are mapped as a surface.

Table 73 Attribute set for Nature conservation point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.

Attribute	Type	Length	Definition	Description
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	indicates the type of Nature conservation point	Range of values for valid values. Only <i>Nature Reserves</i> , point is a valid value for Nature Conservation Point in 1:250,000.
rotation	Floating point	6.2	indicates orientation for a symbol	Orientation based on horizontal position with anti-clockwise rotation. Orientation is given in degrees (360 degrees in a circle).

5.11.5 PROTECTED NATURE

Table 74 Contents in Protected nature (Layer name: skyddadnatur)

Object type	Object type number	Definition	Description	Comment
National Park	5603	protected nature according to <i>Miljöbalken</i> (SFS 1998:808) 7 Ch 2 § or corresponding older law		National Park is always mapped with a name, for example Abisko national park. Presented completely.
Nature reserve	5604	protected nature according to <i>Miljöbalken</i> (SFS 1998:808) 7 Ch. 4-6 §§ or corresponding older law		Nature reserve is always mapped with name, for example Agnäs nature reserve. Minimum area mapped is 0.5 square kilometres. Minimum area for enclaves within nature reserves is 1 square kilometres Smaller nature

Object type	Object type number	Definition	Description	Comment
				reserve is mapped as <i>Nature reserve, point</i> .
Nature conservation area	5608	protected nature according to the <i>nature conservation law</i>	The decision to establish nature conservation areas was made by the County Administrative Board or municipalities. The possibility to establish nature conservation areas ceased when <i>Miljöbalken</i> came into act in 1998.	No data has been collected yet.
Animal protection area	5606	protected nature according to <i>Miljöbalken</i> (SFS 1998:808) 7 Ch. 12 § or corresponding older law	<i>Animal protection area</i> is divided into <i>bird protection area, seal protection area</i> or <i>animal protection area</i> .	Minimum area mapped is 0.5 square kilometres.
Culture reserve	5607	protected nature according to <i>Miljöbalken</i> (SFS 1998:808) 7 Ch. 9 §		Decided by the County Administrative Board. Minimum area mapped is 1 square kilometres.

Table 75 Attribute set for Protected nature.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for generalized objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
objekttypnr	Integer	4	a unique integer for the object type	

Attribute	Type	Length	Definition	Description
objekttyp	Text	255	indicates the type of protected nature	Range of values for valid values.
djurskyddstyp	Text	255	type of animal protection area	Valid only for the object type <i>Animal protection area</i> , is mandatory. See value range <i>Animal protection type</i> .

Table 76 Value range Animal protection type.

Value	Definition
Säl- och fågelskyddsområde	animal protection area for seals and birds
Djurskyddsområde	animal protection area for animals other than seals and birds
Fågelskyddsområde	animal protection area for birds
Sälskyddsområde	animal protection area for seals
Ingen information	no information

5.12 Northern Artic Circle

Table 77. Included layers in the theme Northern Artic Circle

Northern Artic Circle	Layer name
Northern Artic Circle	polcirkeln

5.12.1 DATA CAPTURE

LINAGE

The Artic Circle is a line that represents the Northern Artic Circle. It is mathematically generated.

5.12.2 MAINTENANCE FREQUENCY

The Artic Circle is updated approximately every five years.

5.12.3 DATA QUALITY

COMPLETENESS

The Artic Circle has a high completeness.

LOGICAL CONSISTENCY

The Artic Circle is a stand-alone object and have no requirement of logical consistency.

THEMATIC ACCURACY

The thematic accuracy is very high.

POSITIONAL UNCERTAINTY

The Artic Circle is mathematically calculated.

5.12.4 NORTHERN ARTIC CIRCLE

Table 78. Contents in Northern Artic Circle (Layer name: polcirkeln)

Object type	Object type number	Definition	Description	Comment
Northern Artic circle	1881	southern boundary north of the equator for the area where the sun, at some point, is above the horizon for more than 24 hours in a row	The Artic Circle is presented with its mean circle for a certain year. The Artic Circle moves by approximately 0.47'' (arcseconds) per year, which represents approximately 15 metres on the ground.	Presented completely.

Table 79 Attribute set for the Northern Artic Circle

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for exchange objects	
versiongiltigfran	DateTime	23	indicates that a certain version becomes valid and is only used to keep track of versions (does not refer to the validity of information or decision dates)	Specified in the format: 2019-04-26T11:28:03.000
lagesosakerhetplan	Floating point	6.3	average deviation from the	The value is described in the unit metre.

Attribute	Type	Length	Definition	Description
			"true" value in plane	
lagesosakerhethojd	Floating point	6.3	average deviation from the "true" value in height	The value is described in the unit metre.
ursprunglig_organisation	Text	255	indicates which process or collaboration form that is responsible for the change	Lantmäteriet
objekttypnr	Integer	4	a unique integer for the object type	
objekttyp	Text	255	Only indicates the object type <i>Northern Arctic circle.</i>	

5.13 Text

Table 80. Included layers in the theme Text

Text	Layer name
Text line	textlinje
Text point	textpunkt

5.13.1 DATA CAPTURE

LINAGE

The text is retrieved from Lantmäteriet's Place Names Register.

Place names

The collection of place names began in the 1930s. Place names established by Lantmäteriet have also been collected during field work by taking records, where the local population provided information. The name has then been reviewed by place name experts and compared with the records in the name archive in Uppsala at the Institute for Language and Folklore

Since the field work was completed in 2005, collaboration between different authorities and municipalities has become a significant part of today's collection of place names for Lantmäteriet's basic data.

Place names established by the government, county administrative boards, or municipalities are delivered through collaboration agreements. These place names are reviewed by Lantmäteriet's place name section before publishing.

A selection of the collected place names is presented in Topography 250 Download, vector.

Informational text

Presented based on a list of informational texts that has been changed over time. The purpose of the informational text is to provide the user with additional information about phenomena of general interest.

5.13.2 MAINTENANCE FREQUENCY

The place names are updated according to decisions from Lantmäteriet's place name section. Information text through event-driven updating of topographic objects.

5.13.3 DATA QUALITY

COMPLETENESS

Cartographic generalization is performed; otherwise, place names and information text have high completeness and nationwide coverage. In minority areas, place names are also presented in Finnish, Meänkieli and Sami.

LOGICAL CONSISTENCY

Place names and information text are placed as cartographic texts and are not linked to the objects the text refers to. There are certain place names that are also mapped as attributes to topographic objects, e.g., lakes, watercourses, nature reserves, and churches.

THEMATIC ACCURACY

The thematic accuracy is high.

POSITIONAL UNCERTAINTY

Place names and informational text are presented as cartographic texts, the positional uncertainty is not relevant.

5.13.4 TEXT LINE


Table 81 Contents in Text line (Layer name: textlinje)

Text category	Definition	Description	Comment
Administrative unit	name of the division of the kingdom of Sweden into counties and municipalities		

Text category	Definition	Description	Comment
Facility area/Building facility	name of a building facility or facility area	A facility can be a single building, a collection of buildings, or otherwise developed areas intended for production, service, or recreation.	
Settlements	name of smaller settlements or single farms		
Mountain information text	name of objects in the mountain area	Examples can be Emergency phone, Mountain lodge, etc.	
Hydrography	name of hydrographic object	Lake, watercourse, wetland, glacier.	
Cultural-historical remains	name of cultural-historical remains	Can be name of ancient remains or other cultural-historical remains.	
Church	name of church		
Protected nature	name of an area with long-term legal protection		In cases where the decided name form by the Government or County Administrative Board does not correspond with the established name form by Lantmäteriet, only the information text is presented, e.g., Nature reserve.
Terrain name	name of nature and terrain objects		

Text category	Definition	Description	Comment
Urban area	name of densely built-up area		
Informational text	name that is not a place name text		Mapped according to an established list of informational texts.

Table 82 Attribute set for for Text line

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for exchange objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.
textstrang	Text	100	specifies the entire text without hyphenations	Text string corresponds to informational text or register text for decided place names.
textkategori	Text	255	grouping is used to control the printing of text	The text category is used to control font style (normal/italic/bold/light) and colour (black/blue/green/...). Text type can also be used to control style.
textstorleksklass	Text	255	specifies which font size to use depending on the scale	In combination with text category, scale, and possibly text type, the printing of text is controlled. Value range is 1–10.
textlage	Integer	1	insertion point for text	Text insertion point (1-9). <i>Figure 4 Image showing the text insertion point.</i> 
texttyp	Text	255	indicates type of text	Type of text according to value list.

Attribute	Type	Length	Definition	Description
				N= place name U= information text Text type can be used to control style
textsparring	Integer	3	distance between letters	Stated in %. 100% is normal distance.
karttext	Text	100	cartographic text	The map text can be hyphenated or abbreviated.
textdelnr	Integer	1	specifies whether the text is hyphenated or not	Hyphenation part 0= not hyphenated otherwise 1–9 for each part string

5.13.5 TEXT POINT


Table 83 Contents in Text point (Layer name: textpunkt)

Text category	Definition	Description	Comment
Administrative unit	name of the division of the kingdom of Sweden into counties and municipalities		
Facility area/Building facility	name of a building facility or facility area	A facility can be a single building, a collection of buildings, or otherwise developed areas intended for production, service, or recreation.	
Settlements	name of smaller settlements or single farms		
Mountain information text	name of objects in the mountain area	Examples can be Emergency phone, Mountain lodge, etc.	

Text category	Definition	Description	Comment
Hydrography	name of hydrographic object	Lake, watercourse, wetland, glacier.	
Cultural-historical remains	name of cultural-historical remains	Can be name of ancient remains or other cultural-historical remains.	
Church	name of church		
Protected nature	name of an area with long-term legal protection		In cases where the decided name form by the Government or County Administrative Board does not correspond with the established name form by Lantmäteriet, only the information text is presented, e.g., Nature reserve
Terrain name	name of nature and terrain objects		
Urban area	name of densely built-up area		
Informational text	Name that is not a place name text		Presented according to an established list of informational texts.

Table 84 Attribute set for Text point.

Attribute	Type	Length	Definition	Description
objektidentitet	Text	36	a globally unique identity for exchange objects	
skapad	DateTime	23	time when the object was created	Is creation date if no changes have been made.

Attribute	Type	Length	Definition	Description
textstrang	Text	100	specifies the entire text without hyphenations	Text string corresponds to informational text or register text for decided place names.
textkategori	Text	255	grouping is used to control the printing of text	The text category is used to control font style (normal/italic/bold/light) and colour (black/blue/green/...). Text type can also be used to control style.
textstorleksklass	Text	255	specifies which font size to use depending on the scale	In combination with text category, scale, and possibly text type, the printing of text is controlled. Value range is 1–10.
textlage	Integer	1	insertion point for text	Text insertion point (1-9). <i>Figure 5 Image showing the text insertion point.</i> 
texttyp	Text	255	indicates type of text	Type of text according to value list. N= place name U= information text Text type can be used to control style
textsparning	Integer	3	distance between letters	Stated in %. 100% is normal distance.
textriktning	Floating point	6.2	rotation for text	Text rotation is specified in degrees (0.00 – 360.00, increasing anti-clockwise). Decimal number, up to two decimals: -360.00 to 360.00 degrees.
karttext	Text	100	cartographic text	The map text can be hyphenated or abbreviated.

Attribute	Type	Length	Definition	Description
textdelnr	Integer	1	specifies whether the text is hyphenated or not	Hyphenation part 0= not hyphenated otherwise 1–9 for each part string

Table 85 Recommended font size

Font size	Text size class
5.0	1
6.0	2
7.0	3
8.0	4
9.0	5
10.0	6
12.0	7
14.0	8
16.0	9
20.0	10

6 List of changes

Table 86. Table for list of changes.

Version	Date	Reason and change from previous version
1.5	2024-10-18	Chapter 5.2.4 <i>Civil firing range</i> – Comment changed. Chapter 5.6.8 <i>Railway</i> - Comment changed.
1.4	2024-07-18	Chapter 5.3.6 Minimum height changed for <i>Wind turbine</i> . Chapter 5.4.6 Description added, and comment updated for <i>Watercourse</i> . Definition and description changed for attribute <i>storleksklass</i> . Value set Watercourse class added. Chapter 5.9.5 Definition is changed for <i>Open land boundary</i>
1.3	2024-02-28	Chapter 5.3.4 <i>Church</i> has received a new definition, description, and comment. List of change added.
1.2	2023-12-20	Chapter 5.9.4 Description is changed for <i>Sea</i> . Chapter 5.9.5 Description updated for <i>Shoreline, sea, Shoreline, lake and Shoreline, watercourse surface</i> .
1.1	2023-11-20	First version in English.