72 years of reconstructed boundaries

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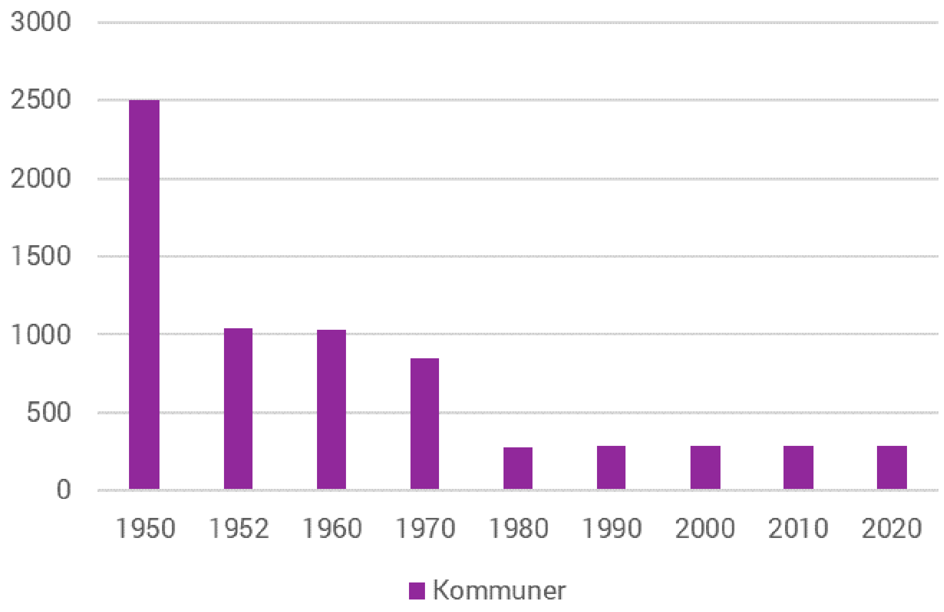
SCB

Sveriges officiella statistik

European Commission

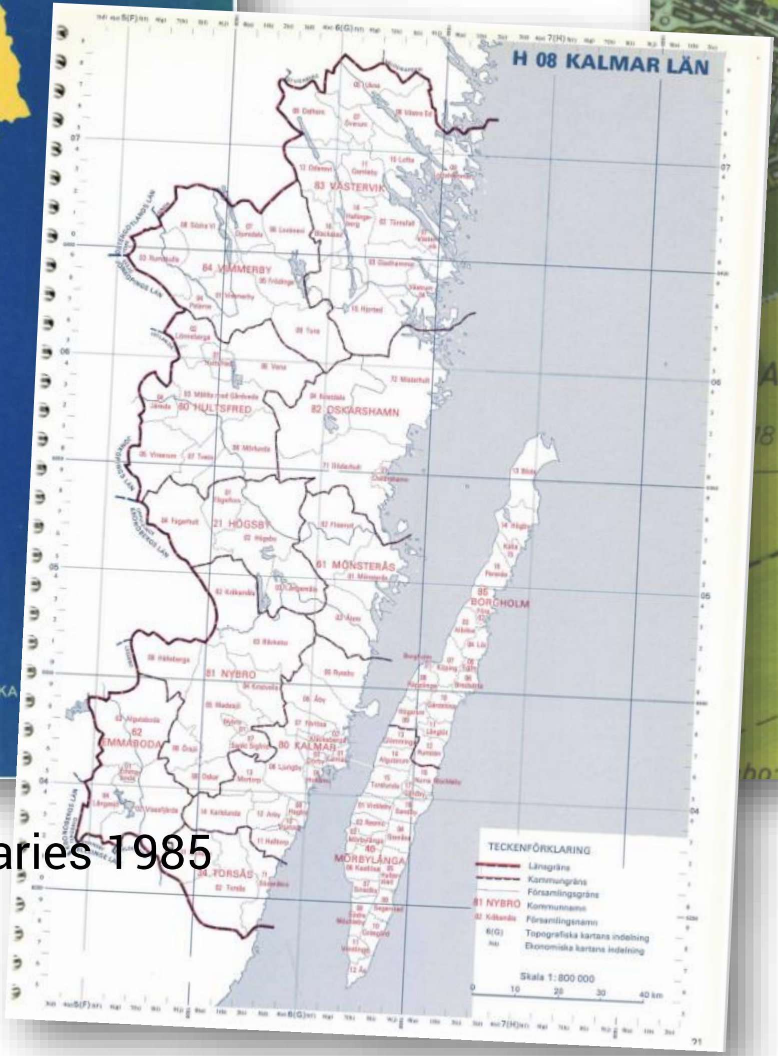
Background

- 1952 = huge administrative reform
- The birth of the ”modern” municipality
- The old parish based governance structure was replaced
- After 1952 = several major reforms decreasing the number of municipalities
- In between the reforms, hundreds of minor boundary adjustments



Problem

- No digital historical boundary data have been saved
- Changes in the administrative geographies recorded but not possible to depict the situation ”on the ground” at a certain point in time
- No geographies to ”attach” historical statistics to
- Many requests from different users (mostly researchers) about historical municipalities which cannot be met



Municipality boundaries 1985

Municipality boundary 1965

Approach

Worked out quite well!

Combination of two different approaches:

A) From 1952 and onwards and,

B) from 2010 and backwards

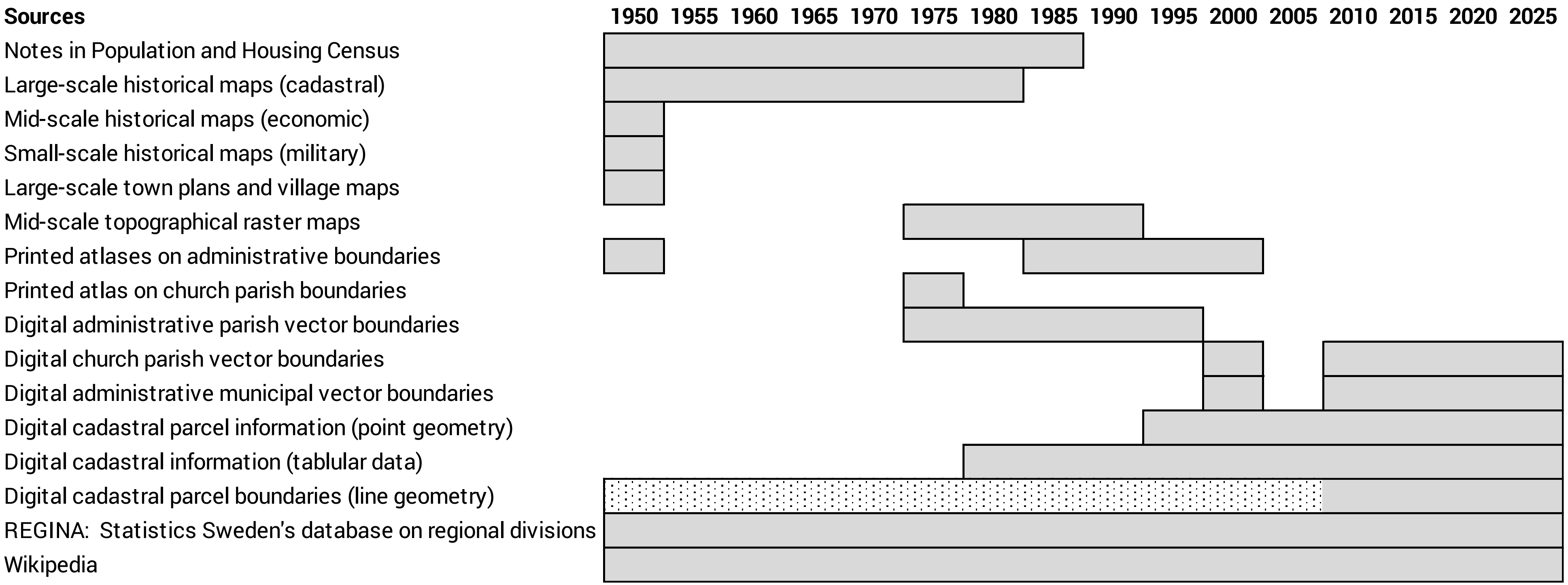
2010 oldest avaliable high-quality municipality boundaries from Lantmäteriet

Meet halfway

Around 1990 ”ish”

1952 → ← **2010**

Data sources used for reconstruction of municipality boundaries 1952-2024



Challenges

- Temporal discrepancy between reference year of data (boundaries) and avaliable historical maps (Big gaps in the northern part of the country!)
- If the historical map is newer than the boundary reference year, this is what it should look **AFTER** the change has occured (*ex-post*)
- If the historical map is older than the boundary reference year, this is what it should look **BEFORE** the change has occured (*ex-ante*)
- Not always possible to get a good verification. Numerous ”best guesses”!
- Improvement of the accuracy of a boundary or actual replacement of a boundary? Sometimes difficult to tell the difference
- Exclaves (small part of a municipality inside another) are particularly tricky!

System for consistent identification of objects over time

- Municipalities traditionally identified by means of a code (and a name)
- The code is hiearchical and changes if counties change (also other reasons)
- Not a good way of identifying an object over time
- Use of UUID which is unchanged troughout the lifespan of an object
- So what defines the lifespan?
- A ruleset was created and agreed with Lantmäteriet

System for consistent identification of objects over time

Event types:

- Change of code
- Change of name
- Smaller land areas are shifted between municipalities
- Mergers
- Splits

System for consistent identification of objects over time

Ruleset part 1:

- **Change of code (all other equal)** = id unchanged
- **Change of name (all other equal)** = id unchanged
- **Change of code and name (all other equal)** = id unchanged
- **Smaller land areas shifted between entities (all other equal)** = id unchanged
- **Two ore more entities merged. New entity inherit code and name from one of the previous entities** = id unchanged for the entity inheriting the code and name. Lifespan terminated for the other entity

System for consistent identification of objects over time

Ruleset part 2:

- **Two ore more entities merged. New entity inherit code from one of the previous entities but new name** = Lifespan terminated for both of the previous entities. The new entity get new id
- **Entity split into two or more new entities. One of the new entities inherits the code and name** = id unchanged for the entity inheriting the code and name. New entity get new id
- **Entity split into two or more new entities. Non of the new entities inherits the code and name =** The new entities get new ids
- **Entity previously being merged with other enity re-emerges** = New entity re-activates the id it had before the merge

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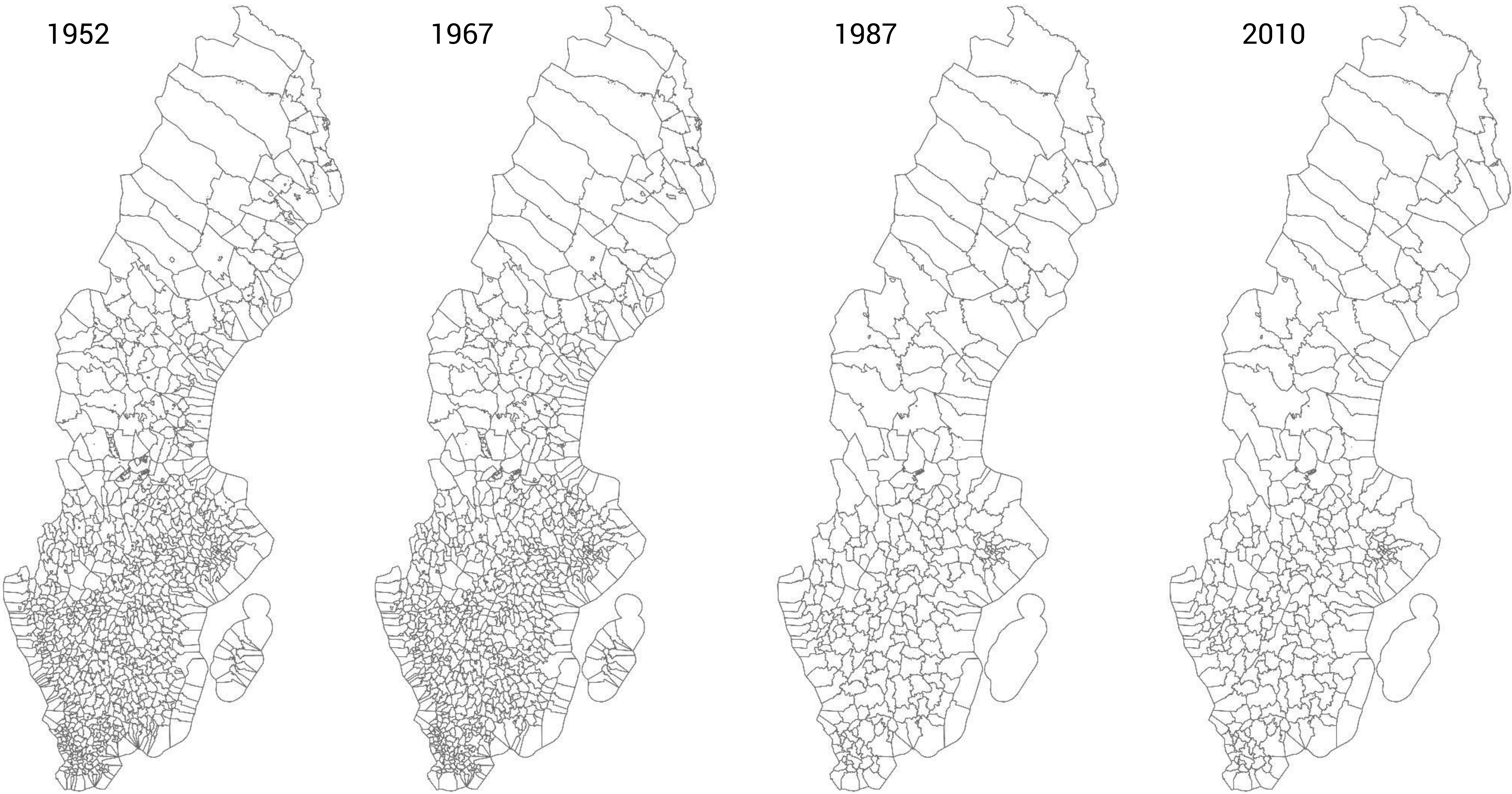
What will happen after the end of the project?

- The result will be immediately incorporated into regular business processes in Statistics Sweden
- Statistics Sweden is leading a thematic work on Administrative and statistical geographies in the National Fundamental Data Domain for geospatial data (under lead of Lantmäteriet)
- Data will be open data (CCO) avaliable in the National Geospatial Platform (NGP) integrated in a service provided by Lantmäteriet (covering both historical and current boundaries)

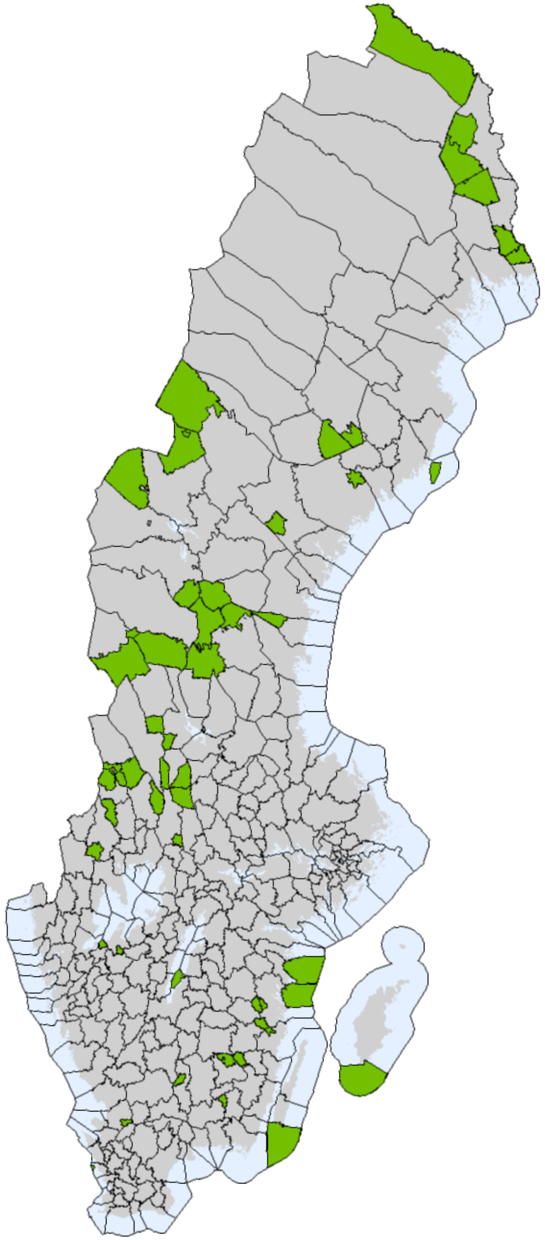

1952
1967
1987
2010

Population 2020 within 1952 boundaries

Kommun 1952	Kommun 2020	Typ av kommun	Befolkning 2020
Holmön	Umeå	Landskommun	63
Hotagen	Krokom	Landskommun	252
Örträsk	Lycksele	Landskommun	276
Fredrika	Åsele	Landskommun	288
Ramsjö	Ljusdal	Landskommun	340
Sankt Ibb	Landskrona	Landskommun	372
Trehörningsjö	Örnsköldsvik	Landskommun	404
Gustav A[illegible]	Hagfors	Landskommun	523
K[illegible]	Åre	Landskommun	533
[illegible]	Högsby	Landskommun	550
[illegible]	Lidköping	Landskommun	557
[illegible]	Mora	Landskommun	570
[illegible]	Berg	Landskommun	570
[illegible]al	Härjedalen	Landskommun	613
[illegible]seda landskommu	Uppvidinge	Landskommun	638
Hietaniemi	Övertorneå	Landskommun	645
Los	Ljusdal	Landskommun	661
Tärendö	Pajala	Landskommun	669
Haverö	Ånge	Landskommun	681
Helgum	Sollefteå	Landskommun	693
Vitsand	Torsby	Landskommun	705
Visingsö	Jönköping	Landskommun	723
Hogdal	Härjedalen	Landskommun	743
Junosuando	Pajala	Landskommun	763
Säfsnäs	Ludvika	Landskommun	788
Frostviken	Strömsund	Landskommun	788
Gryt	Valdemarsvik	Landskommun	799

48 municipalities with less than 1 000 inhabitants

Källa: *Bearbetningar © SCB*



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