R-04-67

A study on landscape and the historical geography of two areas – Oskarshamn and Forsmark

Ulf Jansson, Johan Berg, Annika Björklund
Stockholms universitet
Kulturgeografiska institutionen

June 2004

Svensk Kärnbränslehantering AB
Swedish Nuclear Fuel
and Waste Management Co
Box 5864
SE-102 40 Stockholm Sweden
Tel 08-459 84 00
+46 8 459 84 00
Fax 08-661 57 19
+46 8 661 57 19

ISSN 1402-3091
SKB Rapport R-04-67

A study on landscape and the historical geography of two areas – Oskarshamn and Forsmark

Ulf Jansson, Johan Berg, Annika Björklund
Stockholms universitet
Kulturgeografiska institutionen

June 2004

Contents

1 Introduction

This report is compiled by work made by a number of people at the Department of Human geography during the period December 2003 to May 2004. The bulk of the data capture and creation of the often complex maps is done by Anne Philipson and Therese Fast. Annika Björklund has carried out the main work when historical records are concerned. Ulf Jansson has written the texts in this preliminary report dealing with introduction, methodology on cadastral maps, land-use in history, summary, future studies, and preliminary layout of the final report. Ola Hall and Stefan Ene have created the method and written the appendix on the methods for the work on the small-scale maps. Johan Berg and Annika Björklund have written the section on settlement and population. Johan Berg and Ulf Jansson have jointly written the section concerning the detailed analysis.

2 Aim

The aim of this project is to investigate the land-use; the settlement and the way people have used and affected the landscape in two areas, Forsmark and Simpevarp.

This preliminary report aim mainly at describing the sources and methods used in the project. Some analyses are undertaken, but a more complete interpretation will take place in the final report of Phase two.

This is a project that forms a part of the environmental impact assessment work that is done for examining potential locations for a plant for a deep repository for spent nuclear fuel. Both areas are located on the East Coast of Sweden. A number of scientific studies are carried out in this project. Fields that are included studies for the EIA and the safety assessment include geology, quaternary geology, limnology, biology and other natural sciences that focus on vegetation and the terrestrial as well as the aquatic environment.

The study that is carried out at the Department of Human geography at Stockholm university is basically a study of the historical land-use, the changes in settlement and how people have been working and using the landscape over the last centuries.

The methods used include historical maps, cadastral material and in a later phase interviews and fieldwork. In the first phase that ends the summer 2004 the bulk of the historical material is probed and analysed. A big effort is put into the creation of GIS-data sets that can be used for further analyses. The work during spring 2004 resulted in this preliminary report that deal with historical land-use, population, settlement from medieval times to the present and both detailed and general descriptions and investigations of the historical geography of the areas.

Both the investigated areas are located by the Baltic, but are very different both physically, especially with the land upheaval in the north, and historically with a different land-use system, ownership structure and distribution of settlement. The results of this study will be put in a more societal and historical context during the next phase.

3 Staff

The first phase of the project involves a number of people for shorter or longer times.

Ulf Jansson (Ph.D.) – Project leader, general description and responsible for the report.

Ola Hall (Ph.D.) – GIS, methods and organisation of data.

Stefan Ene (director of Geo Processing Unit) – GIS, methods, support and presentation.

Johan Berg (Ph.D.) – Historical geography, responsible for the cadastral material, settlement, people and production.

Research assistants

Therese Fast – GIS and historical landscape.

Anne Philipson – GIS and historical landscape.

Annika Björklund – Historical geography.

Annett Heerklotz (intern) – GIS.

4 Structure of the study

The study revolves around the questions of settlement changes, land-use and the rural society as a whole. Firstly the areas of investigation are described. Then the different methods are discussed. The first study deals with the overall changes in land-use in the larger regions. The second study deals with settlement and population in these areas and the final study deals with local examples of landscape and society.

5 Areas of investigation

The study will be carried out in various levels of scale. Some investigations will be of an overview character. The investigated areas consist of parishes. This is due to the fact that most of the sources for historical periods are organised in parishes. It is also a level that enables us to study the human activities, i.e. follow the use of forests in the context of a village. By studying a larger area we can also get o more comprehensive view of the society. The parishes in the Forsmark region are smaller. The Forsmark region hence consist of Gräsö parish, Börstil parish, Forsmarks parish, the town Öregrund, Hållnäs parish, Valö parish and Osterlövsta parish; whereas The Oskarshamn region is made up of: Misterhult parish, Döderhults parish, town of Oskarshamn and Kristdala parish). The areas cover both about 1,000 km^2. In Uppland detailed investigations have been carried out in the following settlements; Storskär, Valö, Lund, Vreta, Lundsvedja, Tomta, Kämbo and Dannebo. The market places Figeholm and Döderhultsvik were located within the area. Around 1850 Döderhultsvik was given full privileges as a town and the name was changed to Oskarshamn. The detailed investigation in this area has been carried out in the parish of Misterhult, where the settlements Lilla (Small) Laxemar, Ekerum, Stora (Large) Basthult, Gässhult and Simpevarp have been examined.

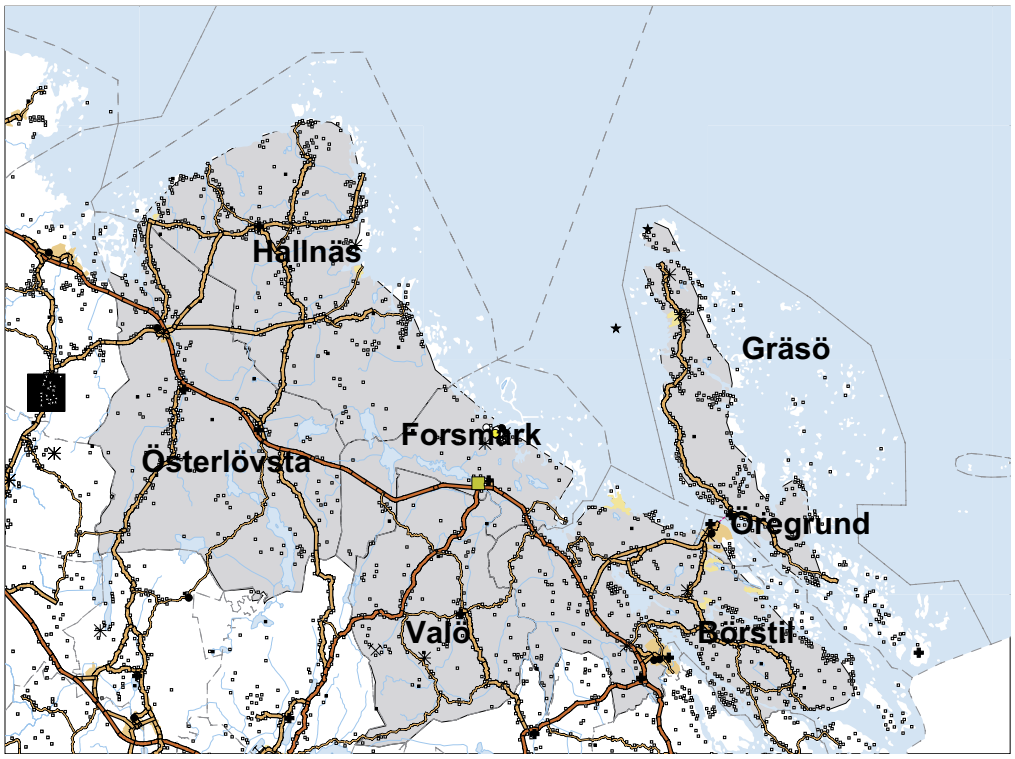


Figure 5-1. *The area of investigation in the Forsmark region, six parishes, c 1,000 km^2.*

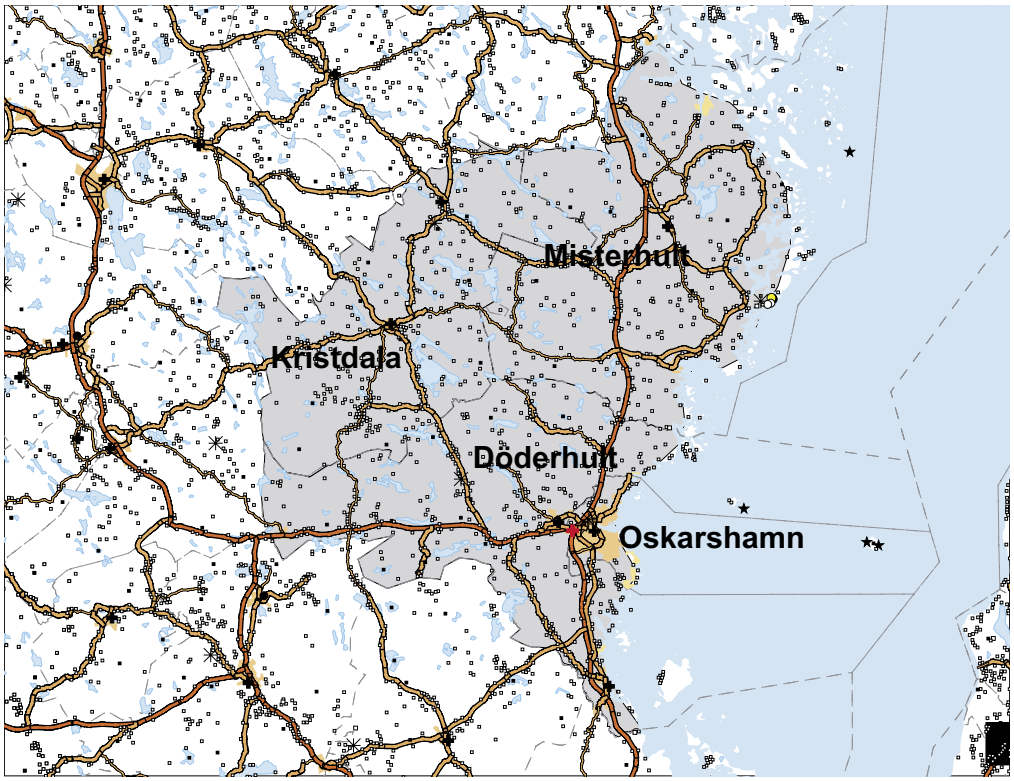


Figure 5-2. *The area of investigation in the Oskarshamn region, three parishes, c 1,000 km².*

6 The method for the detailed analyses

The following section summarises the process whereby the map from the 17th, 18th and the 19th centuries were digitised and georeferenced in such a way that they could be treated and visualised together. The aim was to make the maps correspond to each other, so as to enable a comparison between different periods in time, e.g. settlement, land under cultivation, pastures and roads.[1]

The method follows a line of work that has been developed at the Department of Human geography at Stockholm University over the last 10 years. The method uses only existing software and is fairly straightforward and follows a general model of how to handle digital data in a GIS. The work consists of different stages. The first one is data capture; it is often scanning a map or the photograph of a map. The second phase is often referred to as pre-processing; this includes work with the scanned image. We often want to reduce the image size by adjusting the resolution and reducing the colour depth. The next stage is to geometrically adjust or rectify the image to fit to a modern co-ordinate system. This also includes adjusting for the errors the surveyor made during his mapping. Generally the older the maps are, the worse the geometrical quality is. This stage is conducted in a raster based GIS. The next phase, if we want to extract information from the image, is to do a vectorisation the image. That includes manually drawing the contours of features in the geometrically corrected map. This can be done in many different "levels" from extremely detailed information of each parcel of land and adding all kinds of attribute data to a more superficial selection of features. The level must be decided by the analysis we want to conduct. The analysis phase is the next one. The types of analyses that can be done with digital information are almost endless and must also be guided by the research question at hand. The last phase is presentation of the information, this should not be forgotten, because it is important to communicate the analyses. It is not always a map that is the best way of representing the information. It could be a graph or a table with the information.

In this case the maps were of varying ages and supplied in different formats and at different scales. The maps that were not in a digital format from the beginning were photographed with colour positive film that was scanned.

The images were then reduced to tif-files with 256 colours to be easier to work with. The size can be considerably reduced, and it makes the work easier without loosing too much colour information. These tif-files were imported into a raster based GIS, in this case both ENVI and ArcMap were used. The process of rectifying consists of a selection of points, often known as ground control points when we deal with aerial photos. The work consists of trying to find points on a modern map, that correspond with objects in an older map. This transformation can be made more or less "severe", from a simple afine transformation to a polynomial warp of the image and makes the older map fit to a modern one as well as assigning it a coordinate system. When georeferencing old maps, it is important to find as many corresponding points, as possible. It is difficult to find points of similar location if the landscape has changed dramatically between the time periods that are to be compared. One way of avoiding this is by using a sequence of maps covering the same area, that are close in time. Thereby, the landscape changes could be followed more easily, facilitating the finding of corresponding points. Another important consideration is to spread out the points over the map, as the result of the resampling operation is depending on the interrelation of

[1] The method and analyses are described in /Ene et al. forthcoming/.

the selected points. If the points are agglomerated to one place, the location error is likely to increase with the distance from this cluster, see Appendix 1 for an example of a coordinate-file.

If the map is too difficult to stretch or warp, it is sometimes easier to divide the map into smaller sections. This had to be done for some maps in this project.

The effects of a resampling or rectifying are calculated in RMS, simply put it is the amount the image has been distorted in the process. An error is natural when dealing with old maps, but it should not be too high. By checking the location of the points with highest error on the map, it was possible to give explanations for the occurred error. Some of the maps used only a few control points because they were so small. The positional errors were aimed to be less than 20 metres, but it is sometimes hard to do this because a positive identification of control points is not always possible. This is particularly true concerning the coastline. Shorelines are always hard to survey with the techniques that were at hand prior to the 20th century.

The projection and coordinate system used here is the Swedish national grid – RT90. It has a coordinate precision of 7 digits (equals 1 m ground-resolution).

Creating land use vector layers

The next step was to create vector layers for each type of land use in the georeferenced maps. A system with separate files for different land-use and other features was used. The main objective for this study was to study the land-use changes. Land ownership was also vectorised

The vector layers were originally made in ArcMap. The names of the files follow a structure that makes it easy to see the contents and the sources. As an example we can look at the file names in the map that cover a grater part of Valö parish. The first part of the filename is equal to the name of the map in the archive. This number A13-17:1 tells us that this map is from Stockholm (A) and from parish number 113, i.e. Valö, and village number 17 and that this is the first maps of that village.

Table 6-1. An example of vector filenames and their contents.

a113_17_1_åker	(cultivated fields)
a113_17_1_äng	(meadows)
a113_17_1_byggnad_p	(building, point)
a113_17_1_byggnad_y	(building, area)
a113_17_1_bygräns	(village, boundary)
a113_17_1_fastighet	(real estate, polygon of land ownership)
a113_17_1_hägnad	(fences)
a113_17_1_odlingsmark	(cultivated land*)
a113_17_1_tomt	(toft)
a113_17_1_utmark	(forest, pasture and misc. land)
a113_17_1_väg	(road)
a113_17_1_våtmark	(wetland, bogs, marsh)
a113_17_1_vatten	(water)

*cultivated land denotes an area that after the land reform could be made into arable and meadows.

The attribute data to each map was limited to information about the objects that were drawn. The first two is for identification of geometrical object. This might be of special interest if the objects are moved into another file or some sort of SQL is done involving several files. The calculations of area (m^2) and perimeter (m) are made in ArcView.

Table 6-2. Name of the attributes used in the files.

Id	**An identification number, e.g. 1**
Beteckning	The type of object, e.g. meadow
Namn	Name of a feature if it exists
Nr	Number of a feature if it exists
Grad	Quality of a region
Akt	The archival name of the map
Verk_år	The year the maps was made
Fast_år	The year the map was accepted as a legal document
Yta	The area of a polygon in metres
Längd	Length of a linear object in metres
Omkr	The perimeter of a polygon in metres
Anm	Annotations

7 Method for processing large amounts of raster based information

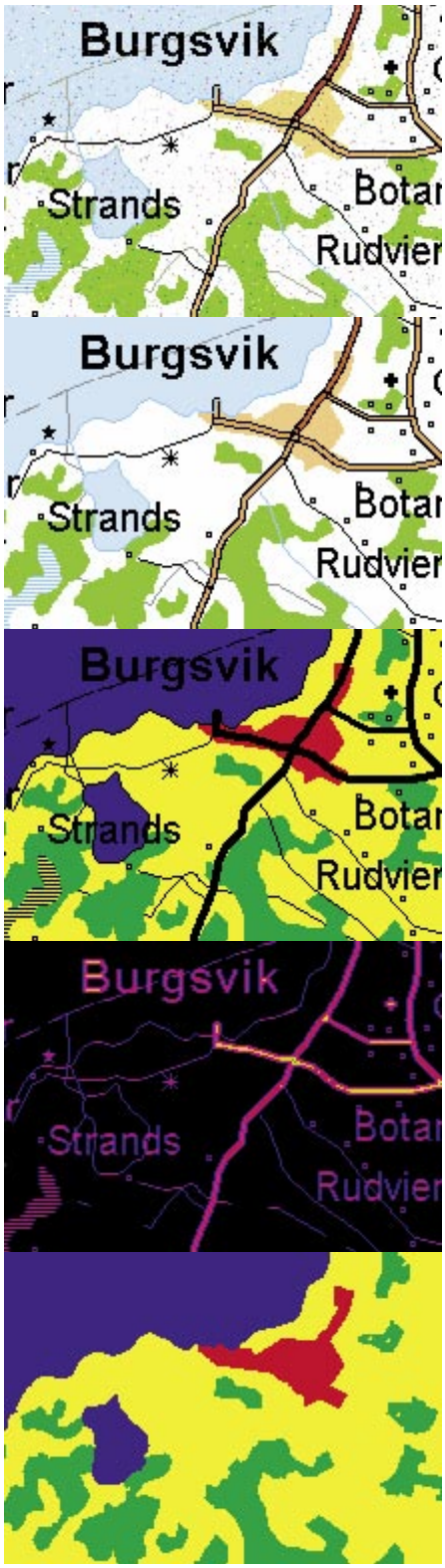
In this project all the maps had to be digitally resampled to fit to the coordinate system. This was relatively easy for the maps from the 20th century, but some of those were also of lesser quality. Some of the maps from the 19th century were however very hard to "conform" to the modern projection.

In this study large areas were studied for understanding the land use changes. A total of c 300 maps both economic and older maps were used and this were to many to handle manually, as was done for the more detailed cadastral maps. Instead a method for more or less automatically extracting the features in the map was conceived. This work is based on a method proposed by Stefan Ene in 1978 /Ene, 1998/.

This method uses the colour information and extracts the land-use from the maps. Printed maps have however some problems. One is that the colours assigned to a certain feature are not as straightforward as one might think. Older maps have considerable variations in colour, both due to the manufacturing process and the ageing of paper and print. More modern maps as the Swedish economic maps have other problems. They use a backdrop of a photo that is overlaid with colours. This means that there is sometimes a blur of colours that has to be dealt with. A scanned map is a convenient way of obtaining digital geographic data. However maps often contain information that might not always be of spatial relevance e.g. text and cartographic symbols. As these objects might range very much in size conventional filtering is not a very good approach when we want to get rid of these features. Instead we have found that using ordinary distance operators provides a very smooth and accurate way of solving the problem if two conditions are fulfilled; i) the objects to be removed do have a colour that is different from objects to be kept, ii) the features to be kept are neither dithered or patterned. (If so filtering might solve the problem at the expense of resolution).

- If necessary use a noise removal filter. If your map is "fuzzy" you might need more filtering of different types in order to get it as "clean" as possible. (If you are scanning a large series of similar maps – take your time to test – it will pay off in the long run).
- Thematically classify your map into whatever number of classes you want to extract. Put all the stuff you want to get rid of in separate class (= colour). Let us call it the "scrap class".
- Measure the distance from every pixel in the "scrap class" to any of the other classes.
- Change the value of the pixel in your image to the value of the closest "none scrap class".

The method includes four steps. These steps are described in detail in Appendix 2. The first step is to import the georeferenced raster map to IDRISI and make a reclassification. The second step entails the removal of text and cartographic symbols in IDRISI. Removing text and cartographic symbols is a time-consuming process (processing a 10,000×10,000 image take something like 45 minutes) and this work is governed by a macro command. Step three consists of a raster to vector conversion where the binary image files are vectorised. The software used was ArcMap. The fourth step was to convert the vector files to different vector formats and assigning a projection this was done with MapInfo using the Universal translator.



a) The scanned map.

b) Map after noise removal.

c) Map classified in 5 classes.

Water (blue)
Forest (green)
Open land (yellow)
Built area (red)
Scrap class (black)

d) Distances measured are from all pixels in the "scrap class" to any "non-scrap" pixel.

e) Resulting map with text and symbols removed.

Figure 7-1. *Illustration of the principles of the method, where scanned images are treated digitally in order to capture the colours and thereby the land-use without manually vectorising the information. Stefan Ene developed the method.*

8 Method and sources for population and settlement data

The historical landscape survey is based on settlement information in cadastral books *(Sw jordeböcker)* 1550–1880, information on population size from Tabellverket 1759–1855, registers on harvest *(Sw tiondelängder)* and livestock *(Sw boskapslängder)*. In the detailed investigations in Valö and Misterhult registers on priest's interrogations *(Sw husförhörslängder)* have been used.

8.1 Cadastral registers

The regional studies of the settlement and land owning structure are based on cadastral books, *kronans jordeböcker* and *årliga räntan*. Before the beginning of the 20th century the taxes in Sweden were based on land. The cadastral books were made by the Crown in order to control and manage the revenue in the country. Every farm in Sweden, except the demesnes of the aristocracy, was supposed to pay taxes. The amount of the taxes was decided by the size of the farm. The cadastral ledgers were made for each parish and show every single farm in the parish. If two or more farms are registered under the same name it is a village. It is therefor possible to study the settlement and its structure in these registers, and even pick out individual farms from farms in villages. It is also possible to get information about the size of the villages. The amount of the taxes was also depending of who owned the land. The aristocracy did pay less tax for their tenant farms than did the free farmers. During the medieval period the same was true for the land owned by the church. Therefor it is possible to follow the land ownership structure in the investigated areas. The cadastral registers were systematically made in the middle of the 16th century during the reign of Gustav Vasa. In order to get control of the resources of the country he started to register the taxes paid by each farm in Sweden /Dovring, 1951/. At that time the medieval land owning structure was still in function. That means that even the land owned by the church was registered, even if Gustav Vasa later confiscated that land. The records give a reliable picture of the settlement and land owning structure on farm and village level. Households and settlement that were paying land based taxes, for example cottagers, craftsmen and others, is not registered in the registers. For these categories of people is the *Tabellverket* and the *husförhörslängder* are more suitable.

Original cadastral ledgers from c 1630, 1680, 1730, 1780, 1825 and 1880 have been used (copied) in the National Archive (Riksarkivet) and the Kammarkollegie Archive (Kammarkollegiets arkiv). DMS[2]-material has been used to get access to cadastral register c 1550.

In the cadastral register from 1680 over Misterhult, one sheet is missing. By comparing the cadastral books from 1680 and 1631 it is clear that some changes have been made. These changes imply that it is not possible to reconstruct the names of one half crown farm (kronohemman), one crown crofter's holding *(kronotorp)* and one king's heritage farm (arv och eget hemman) in the 1680 cadastral book. However the missing church farms (kyrkohemman) could possibly be reconstructed with help from the 1631 cadastral book.

[2] DMS: Det Medeltida Sverige is a project within the Bureau of national antiquities (Riksantikvarieämbetet).

In 1631 there were two church farms, both one *mantal* in size, called *Späckemåla* and *Klockaregården*. Furthermore there was one church crofter's holding called *Baggemåla*. In the cadastral book from 1680 there were two church farms of one *mantal* and one 1/4th church farm. This points to that the full size church farms in the 1680 cadastral book probably are Späckemåla and Klockaregården and the 1/4th church farm is likely to be Baggemåla.

Furthermore it is possible to reconstruct the missing noblemen farms *(frälsehemman)* in 1680 by using the cadastral book from 1631. The missing noblemen farms are likely to be; Tjustgöl 3 fr, Imbramåla 1 fr, Arvidsmåla 1 fr and Grönö 3 fr. The reconstructed units are italicised in the table.

8.2 Tabellverket

The regional studies of the population are based on statistical material from Central board of statistics, founded in 1749, the so-called *Tabellverket* (later *Statistiska centralbyrån*). The material consists of pre-printed forms, which were filled in by the priests of the parishes every fifth year. On these forms there are columns for the numbers of different kind of people living in the parish during the period. The population is differentiated in several classes. These classes are changing over time, which are a problem when comparing the population structures of different times from 1749 and forward. In order to make such a comparison easier we have grouped classes of people. The statistical materials from the *Tabellverket* are often used as a source in historical studies and its value as a source for the population and the social differentiation of the population are good. The data from *Tabellverket* gives a good quantitative picture of the population and the growth of the population over time. It also gives a good picture of the social structure of the population and changes of the social structure over time.

The population statistics are based on the Tabellverket database, available on line: http://www.ddb.umu.se/tabellverk/Atkomst/tabnet.htm, which comprises the period 1749–1855. The priests were obliged to fill in the pre-printed forms with information on population size and social structure. From this database, information on both the total population size and the social population structure in the six parishes has been collected. Earlier statistics on population size (i.e. 1571–1735) have been gathered from Andersson Palm, and the 20th century population statistics are from the SCB database /Andersson Palm, 2000/. In Misterhult original population documents from the Regional Archive *(Sw Landsarkivet)* in Vadstena was used, since Misterhult not is included in the database. However only one document on population structure from 1785 is available on Misterhult. The social structure in 1850 is reconstructed based on information on the whole county of Tunalän.

8.2.1 Methods of selection – the Tabellverket

Over the fully 100 years (i.e. 1749–1855) the *Tabellverket* pre-printed forms changed six times, and different population categories were used. In order to make comparisons on population changes possible, the statistics have therefor been classified into the following eleven new categories: (See Appendix 9 for detailed information).

- Persons of rank *(Sw Ståndspersoner)*.
- Farmers *(Sw Bönder)* (Some years separated into farmers cultivating their own farms and farmers cultivating others farms).
- Crofters *(Sw Torpare)*.

- Soldiers *(Sw Soldiers)*.
- Works- and mine workers *(Sw Bruks- och gruvarbetare)*.
- Others without property *(Sw Övriga obesuttna/egendomslösa)*.
- Craftsmen in the countryside *(Sw Hantverkare på landet)*.
- Seamen and fishermen *(Sw Skärkarlar och fiskare)*.
- Townsmen in the countryside *(Sw Borgare på landet)*.
- Inn keepers *(Sw Gästgivare)*.
- Others *(Sw Övriga)*.

The social population structures in the parishes are based on statistical information on the male part of the population above the age of 15. Women and children are not included here because Tabellverket's statistics are difficult to compare in this aspect, since the pre-printed forms changed frequently. In some periods women and children are separated, but in many years they are registered together, which implies that different social groups can't be identified. So, in order to illustrate the population social structure, this part of the study comprises only the male part of the population over 15 years old, which is described separately in the whole period, i.e. 1749–1855. In order to receive comparable statistics, unmarried men above 15 years old in the categories "farmers" and "crofters", are included in the category "others without property".

8.3 Registers on tithe (Sw Tiondelängder) and livestock (Sw Boskapslängder)

The geographer Torsten Lagerstedt's summaries on harvest and stock farming, gathered in the 1940s, have been used as source material /Lagerstedt, 1968/. The disadvantages about not using the original source material are that there could be mistakes made by Lagerstedt that is difficult to discover. There are however great benefits by using this material, as Lagerstedt's summaries are clear and easy to get access to. In all parishes Lagerstedt's summaries of registers on harvest from the year 1640 have been used. There have been some difficulties in deciding what kind of units that were used at this time, as different units were used in different areas of Sweden. However, according to Lagerstedt's notes that the units tunnor, fjärdingar and kappor were used in Uppland in 1640, and in Småland the units tunnor, skäppor and kannor were used.

Torsten Lagerstedt's summaries of registers on stock farming *(Sw boskapslängder)* have been used to find out how stock farming varied in the different parishes. Information on Österlövsta and Hållnäs is from the year 1627, but concerning the parishes Valö, Börstil and Forsmark the year is missing. There are some difficulties in comparing the two areas in Uppland and Småland since Mr Lagerstedt's summaries lacks information in specific parishes in Småland. Here the registers on stock farming comprise the whole counties *(Sw härader)* of Tunalän and Stranda from the year 1628.

8.4 Registers of parish catechetical meetings (Sw Husförhörslängder)

The local studies areas are partly based on the registers of parish catechetichal meetings, the so-called husförslängder. These registers were made every fifth year when the parish priests visited every single household in the parish and made control of the religious knowledge of the people in the household. The registers therefor are a good source in order to catch all of the households, which are not farmers. The register covers craftsmen, sailors, salesmen and other people living in the parish. In the detailed studies areas there are such registers preserved from the time after 1750. In this investigation we have used the register for every 50 year from 1750 and forward to the end of the 19th century. This material gives reliable and detailed information of different kind of households on a local level. In this material it is also possible to get information about the people and households which are not farmers. It is also possible to get information about the actual subdivision of farms, which is not taken up in the official cadastral books. The husföhörslängder is a very time demanding source material and it has therefore only been possible to use them in the local studies.

Medieval sources and 1312-års markgäldsförteckning

In the local studies it has been possible to investigate the settlement and land owning structure during the Middle Ages. Sources from the medieval times are very scarce in Sweden, partly because of the fire in the Stockholm castle in the end of the 17th century when a lot of medieval documents were destroyed. In Northern Uppland there are commonly just a few documents at all. At the other hand, there is an almost unique source from the early 14th century, the so-called *Markgäldsförteckningen*. This is a land register created at 1312 in order to get an extra tax from the inhabitants in Sweden. This register is only preserved for the northern part of Uppland. The register takes up every taxpayer in the area. Some of the people mentioned in the register are farmers and other are probably not farmers, dealing for example with fishery and craft for example. In Eastern Småland there are commonly more documents preserved. Unfortunately this is not the case for the detailed investigated area in Misterhult.

In order to get a picture of the areas during the Middle Ages it is commonly used method to combine the land taxation register from the mid 16th century with the scarce medieval documents.

Registers on priest's interrogations have been used in the detailed study. Based on priest's interrogation it is possible to illustrate household size and household structure. However, as going through these registers is a very time consuming activity, only selected parts of the parishes Misterhult and Valö have been studied. Furthermore, the names of the people living in some of the farmsteads have been noted for a series of years.

9 Land-use in history

This section deals with the study of the economic maps and in the Forsmark region the map of hundreds (häradskartan). This is actually two separate maps one from Uppsala County covering Lövsta from 1863–64 and one covering Frösåker from 1905. The Frösåker area covers the parishes of Forsmark, Valö, Börstil, Gräsö and Öregrund. These maps were based on a number of more detailed base-maps that have been used in this project (see Appendix 5). This enables us to see in great detail the land-use and general characteristics in the landscape.

In Forsmark in the late 19th century the land-use can be seen in the map of hundreds (häradskartan). This is a very detailed map, here, not the original but a draft (konceptkarta) is used this is to the scale of 1:20,000, that reveal more information than the printed maps that are more small-scale, 1:50,000 /Jansson, 1993/. It is possible to view arable, meadows, settlement and other information in the map. In this project arable and meadow has been vectorised, using the above-mentioned automatic method. The rest of the information can be viewed in the raster maps that can be displayed in a GIS.

The economic maps following the map of hundreds uses a photo as a backdrop and were published in many varying versions. Here there are some early ones from the second world war that are very detailed but often poor when it comes to geometrical quality. There are also some maps of relatively poor thematic information from Forsmark region. That is because it is a simplified version.

The vector layers from the early economic map (häradskartan) and the information from later economic maps from 1940, 1950 and 1980 a simple comparison is carried out. This is done by converting the vector layers to raster facilitate further analysis. The two regions are not completely compatible because the information comes from different years. Even though we lack information from the late 19th century for the Oskarshamn region. It is possible that the area of arable in 1940 is not that far from the amount at the turn of the century.

It is clear that there is an increase in arable in Forsmark. In Forsmark most of the arable is the same between the early 20th century and the 1950s. Some of the fields have been abandoned in the period, about 26 million square metres. Almost 65 million new square metres of arable fields were created. Making the total amount of arable in the Forsmark region in 1950, 148 million square metres.

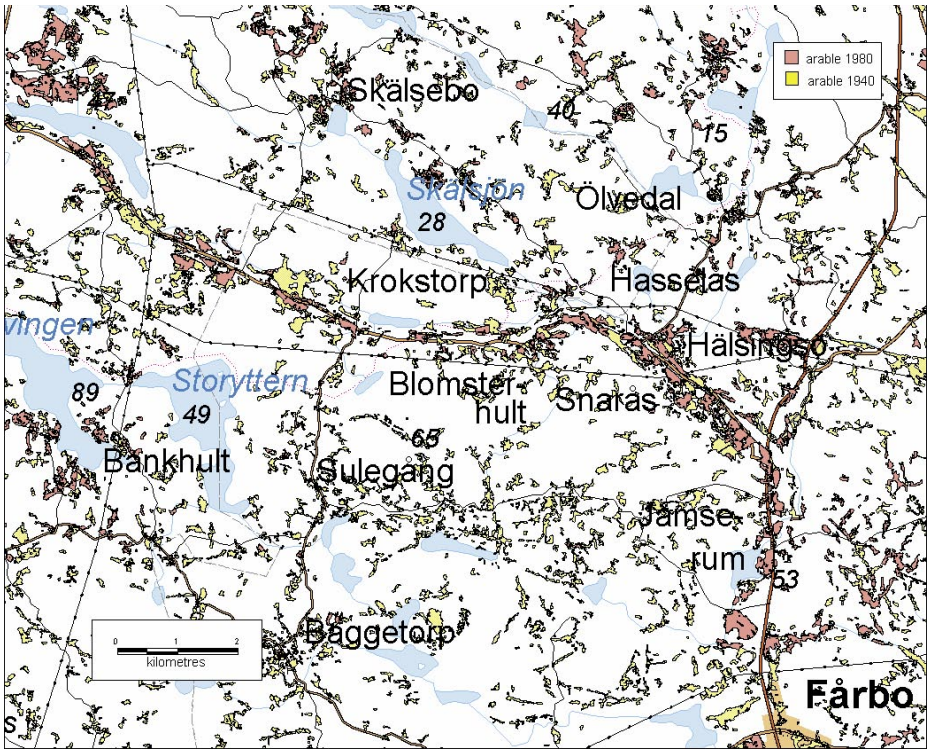


Figure 9-1. *This map show us the changes, as far as arable is concerned, that have taken place in the period between the 1940s and 1980s. Some areas have been abandoned for arable farming.*

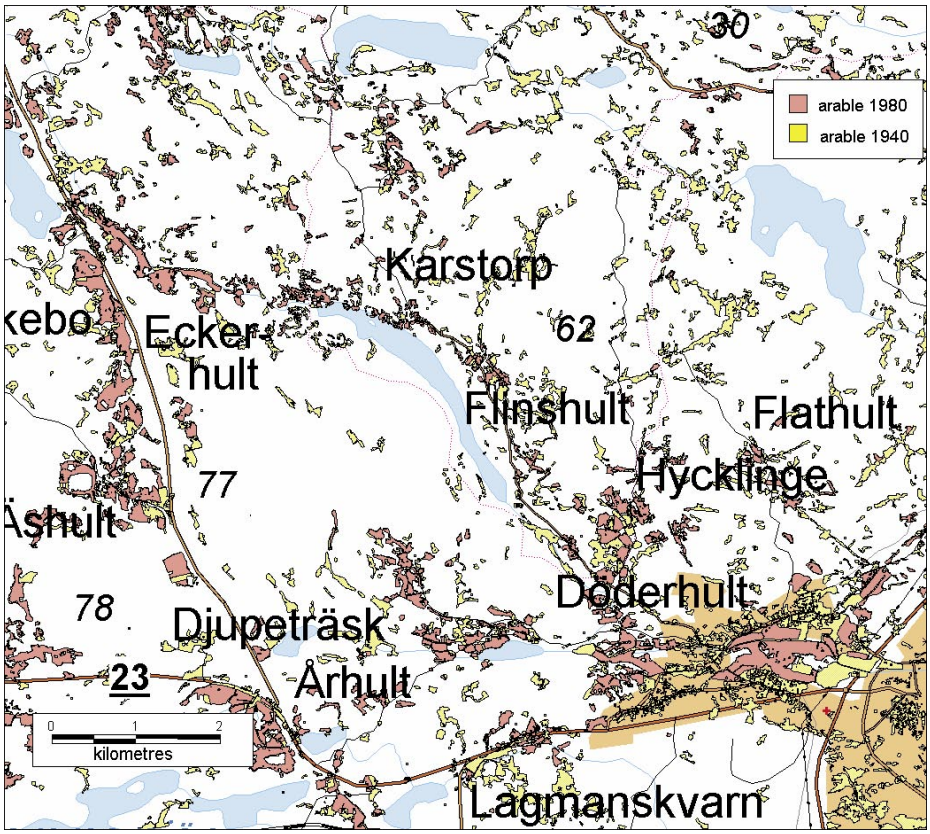


Figure 9-2. *This map show us the changes, as far as arable is concerned, that have taken place in the period between the 1940s and 1980s. Some areas have been abandoned for arable farming.*

In Oskarshamn the changes in the landscape were dramatic between the two time series that were studied, i.e. 1940 and 1980. About 74 million square metres were abandoned between 1940 and 1980. According to the calculations only 3.8 million new square metres were plowed in 1980. Of the original 114 million square metres of arable in 1940 only 41 million were kept in 1980.

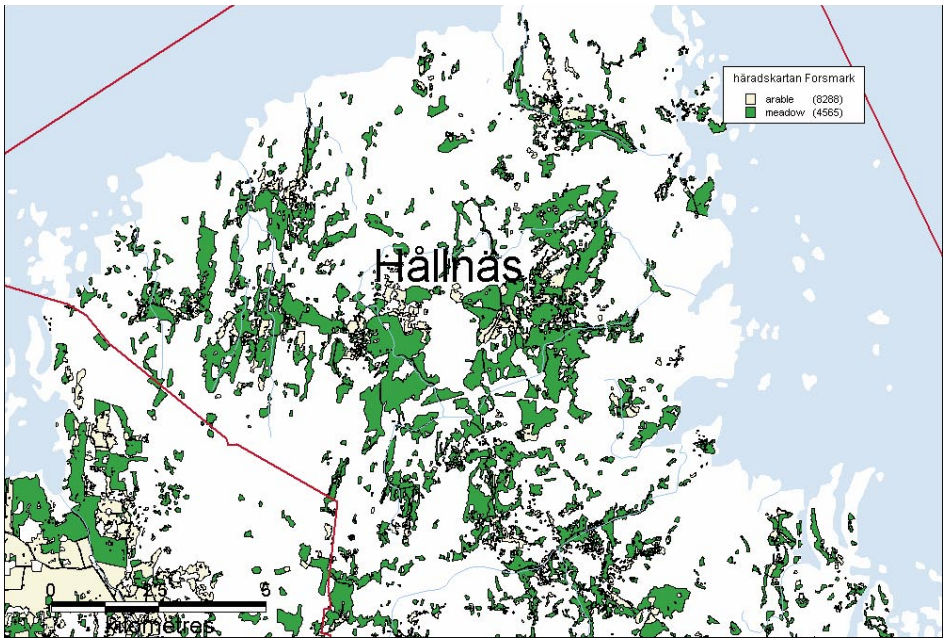


Figure 9-3. *The arable and meadow from the map of hundreds (häradskartan) in the 1860s. In the northern part of the investigating area, Hållnäs parish, the meadows are dominating.*

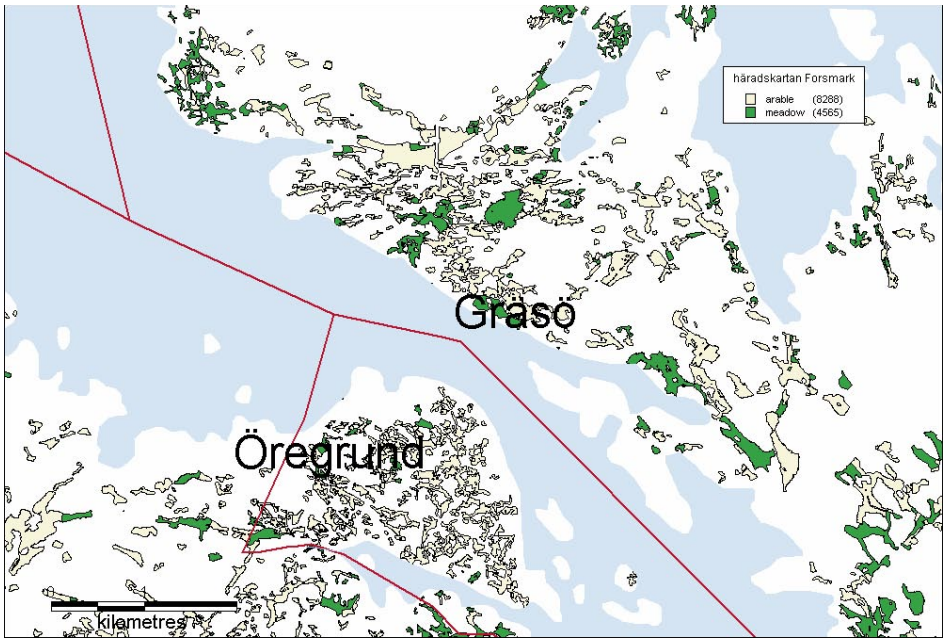


Figure 9-4. *The arable and meadow from the map of hundreds (häradskartan), 1905. In the archipelago the land-use as far as arable and meadows are more of a small-scale nature. The many small fields are dominating the landscape.*

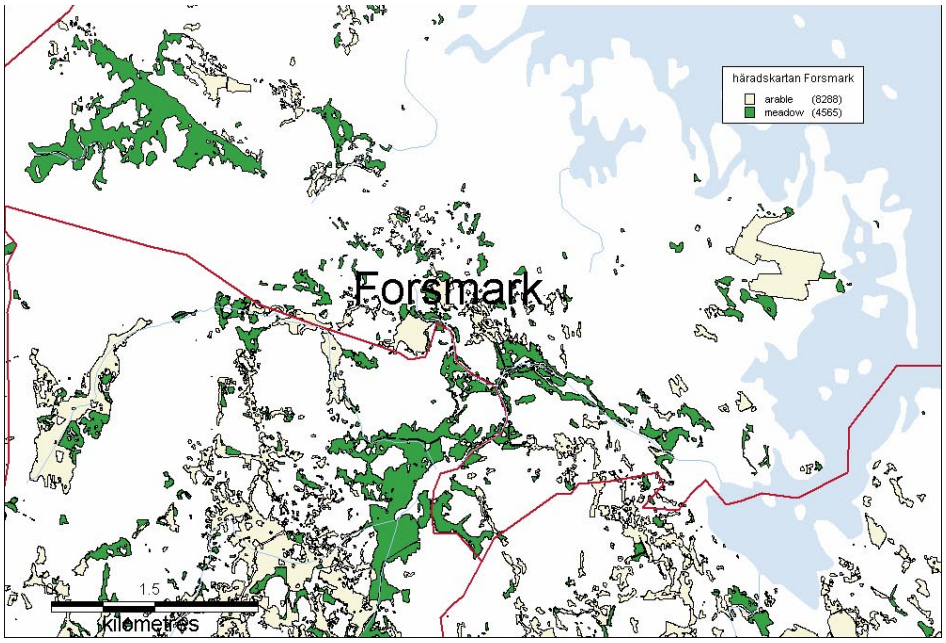


Figure 9-5. *The arable and meadow from the map of hundreds (häradskartan), 1905. In the Forsmark area large areas of meadow covered the lower parts of the landscape.*

Table 9-1. The arable fields during different periods and their changes, i.e. continuously used, abandoned or new, hd = häradskartan.

Forsmark	
Arable 1860–1900 abandoned later	26,150,400 m^2
Arable in 1950	64,972,500 m^2
Arable hd and 1950	82,766,400 m^2
Oskarsham	
Arable 1940 abandoned later	73,699,500 m^2
Arable in 1980	3,848,600 m^2
Arable 1940 and 1980	41,609,600 m^2

In these areas we have to look at other options to understand the land use changes. We have to incorporate the modern arable and ask critical questions about the sources used. There are significant changes in the landscape and great regional and local differences. This requires greater attention and scrutinising studies of other factors leasing of arable and demographic structures. Further analyses including soil types, topography and sizes and spatial structure of the holdings would reveal more information about the areas land us in history.

9.1 Cadastral maps

There are not that many maps in either of the areas. There are some maps from 1640 in Forsmark, then a gap to the end of the 17th century. One abrupt change in the curve can be observed in 1746. It is 46 maps from Österlövsta parish that are the work of one surveyor Olof Gerdes that conducted a survey and regulation of the public roads in that parish. Otherwise it is obvious that in the Oskarshamn region that there are relatively few maps from the 18th century.

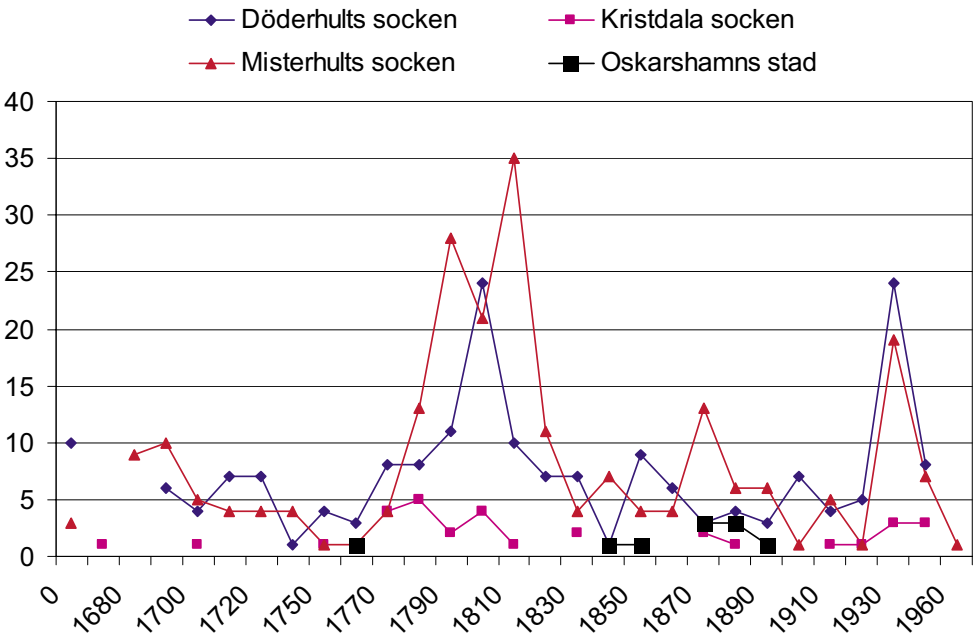


Figure 9-6. *Diagram showing the number of maps every decade in the parishes in the Oskarshamn region.*

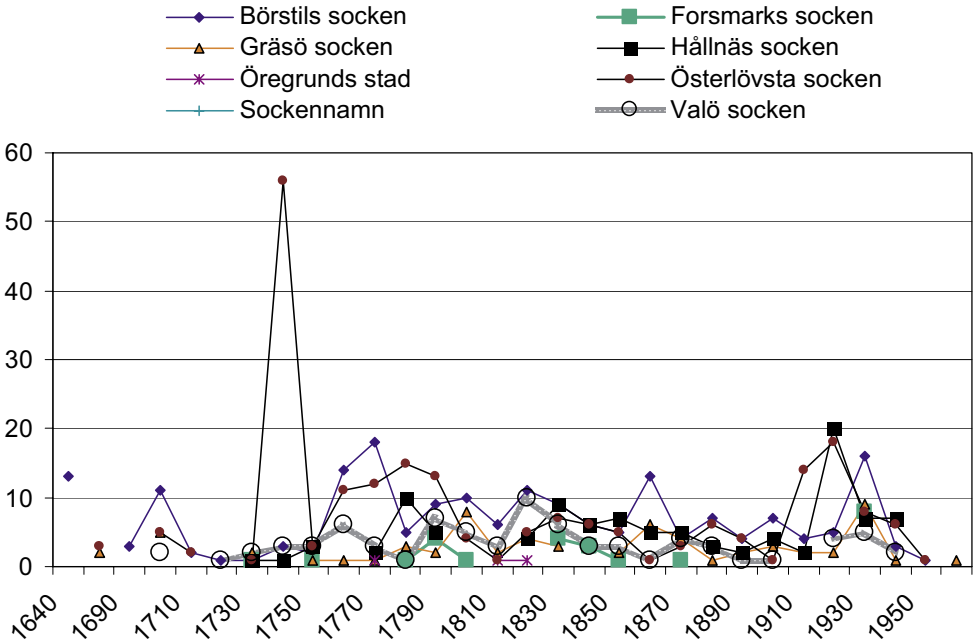


Figure 9-7. *Diagram of the number of cadastral maps per decade in the Forsmark region.*

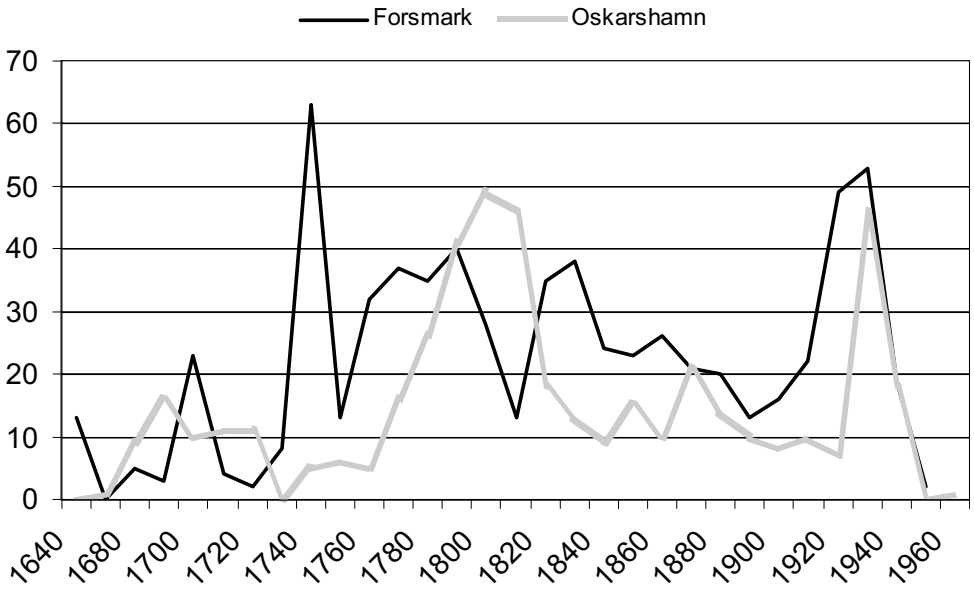


Figure 9-8. *Diagram showing the comparison between the two regions. The lines show the total number of maps per decade.*

Table 9-2. The number of maps according to the digital register in Lantmäteristyrelsens arkiv (LSA) at the National land survey of Sweden.

Parishes in the Forsmark region	Number of maps	Parishes in the Oskarshamn region	Number of maps
Börstils socken	206	Döderhults socken	191
Forsmarks socken	26	Kristdala socken	33
Gräsö socken	74	Misterhults socken	231
Hållnäs socken	112	Oskarshamns stad	10
Öregrunds stad	3		
Österlövsta socken	221		
Sockennamn	6		
Valö socken	84		
Totaly	732	Totaly	465

10 Settlement and population

10.1 Settlement history

This section deals with settlement. The information is drawn from a variety of sources: Cadastral books *(Sw Jordeböcker)*, earliest written documentation *(Sw tidigaste skriftliga belägg)*, registers on harvest *(Sw tiondelängder)* and registers on stock keeping *(Sw boskapslängder)*.

Östhammar was founded in 1368. Öregrund was established in 1491, because the harbour in Östhammar had become too shallow due to the elevation of the land in the area. The townsmen in Östhammar complained about this and asked for permission to move the town. As Östhammar was burned down by the Russians and many townspeople moved back to Östhammar. The King Gustav Vasa prescribed that no townspeople were allowed to live in Öregrund, and to get rid of the citizens Gustav Vasa gave Öregrund to a bailiff. However the bailiff sold pieces of land to fishermen and the town survived. Östhammar was expanding, even though the town's expansion area was very limited, since Östhammar lacked town land. The lack of town land caused a lot of arguments between the townsmen and the farmers in the surrounding villages, about the right to use pasture land for the town cattle and about fishing rights. These conflicts made Gustav Vasa decide that the townspeople had to move back to Öregrund in 1554 and Öregrund was granted new privileges. In the 17th century Öregrund cared for the transports of iron from the iron works in Uppland to Stockholm. The major source of supply for the people in Öregrund was however the sea and many seamen and fishermen lived in the town /Sandelin, 1992 p 12 ff/.

On Gräsö Gustav Vasa formed a State demesne *(Sw Kungsgård)* by buying almost all farms on the island between the years 1549 and 1552. In 1622 Gustav Vasa gave the State demesne, Risten and Fårön to Nils Bielke and Gräsö State demesne was turned into a manor called Dudregården (=Duderö?) /Sandelin, 1992 s 33/. In 1685 it was taken back by the Swedish crown and the manor had by then 19 subordinated crofter's holdings. In 1787 Samuel af Ugglas bought the manor and the af Ugglas family owned the manor until the middle of the 19th century /Borgegård, 1998 p 59/.

In 1646 the small market town *(Sw lydköping)* Döderhultsvik was established. Döderhultsvik was granted town rights in 1856 and the name was changed to Oskarshamn /Nilsson, 1992 p 105/.

10.1.1 Medieval period

The tax register *(Sw markgäld)* from 1312, which among others includes Hållnäs, Valö and Österlövsta, makes it possible to show the settlement changes between 1312 and c 1550. The prerequisites of this are particularly favourable in Hållnäs and Österlövsta, where the actual farmstead of each taxable person is registered. In Valö only a few farms are mentioned by name in the tax register *(Sw markgäld)*, which makes detailed analyses of settlement expansion more difficult here.

We do not know if the 1312 tax register *(Sw markgäld)* really mentions all settlement units in the parishes at this time, the church farms and the noblemen farms are probably not included (DMS 1:1 p 44). However the majority of farmsteads in c 1550 were tax farms, with only a few church and noblemen farms in the investigated area. A comparison between

the tax register in 1312 and the cadastral book c 1550, indicate a substantial decrease in settlement units. In Valö the reduction implies a diminution of settlement units from 122 in 1312 to 65 units in 1540. In Hållnäs the number of settlement units reduced from 135 in 1312 to 57 in 1546. However, the number of settlement names more than doubled in Hållnäs. In 1312 there were 11 registered names and in 1546 25 settlement units are mentioned, i.e. 13 new names can be registered. The same development pattern is found in Österlövsta, as the number of settlement units reduced from 166 in 1312 to 82 in 1554. It is interesting to notice that 24 cadastral units without settlement *(Sw utjordar)* are registered in the 1554 cadastral book in Österlövsta, something that usually indicates deserted settlement units. As in Hållnäs, the number of settlement names in Österlövsta has increased between 1312 and 1554. In the tax register from 1312 only 14 settlement names are mentioned. In 1554 there are 53 settlement names registered, i.e. an increase of 39 units. It is particularly interesting to notice that the vast majority of the "new" settlements in both Hållnäs and Österlövsta consist of settlement names with the suffix –bo and –boda.

Since the 1312 tax register *(Sw markgäld)* is based on persons liable to taxation, the register can also be usable to estimate the population size at this time, if the numbers of taxable persons are assumed to represent one household. All in all, there are 166 persons in Österlövsta, 135 persons in Hållnäs and 122 persons in Valö liable to taxation. If the average household is estimated to c 6–8 persons, i.e. 4–5 adults and some children, the population size in Österlövsta would be c 996–1,328 individuals /Broberg, 1990 p 92/. The estimated population size in Hållnäs would be c 810–1,080 persons, and in Valö c 732–976 individuals, see Table 10-1. This can be compared to the estimated population size in 1571 (based on "Älvsborgs lösen"[3]), when Österlövsta had c 604 inhabitants, Hållnäs c 513 inhabitants and the population in Valö was c 264 persons /Andersson Palm, 2000/.

Table 10-1. Estimated population in three parishes.

Village	Estimated population 1312	Approximated population 1571	Population 1620
Österlövsta	996–1,328	604	953
Hållnäs	810–1,080	513	628
Valö	732–976	264	455

As we can see in Table 10-1, the figures indicate a rather strong reduction of population size between 1312 and 1571. In Österlövsta and Hållnäs the approximate population size in 1312 could have been about twice as large as the estimated population size in 1571. In Valö the estimated population size in 1312 was almost three times larger than in 1571. This could correspond to the population reduction after 1349 in the medieval crises. The estimated figures in 1312 correspond more to the population size in 1620, than in 1571. Are the estimations of household size (6–8 individuals per household) in 1312 exaggerated or is the approximate population size set too low in 1571? Or perhaps the causes from the medieval crises still effected the population size? These are interesting questions, which indicates the need of further investigations.

[3] A specific tax that was collected for the payment of Älvsborgs castle that had been captured by the Danes in September 1563 and in May 1612.

10.2 Early modern period until today

As shown in the Figure 10-1, the settlement units have increased in most parishes. However the increases are generally rather small, which means that the number of settlement units have been quite stabile during the investigated period (i.e. from the middle of the 16th century to the end of the 19th century). The greatest increase is found in Döderhult, where the settlement units increased c 51%. In some parishes the number of units have even been reduced, as in Börstil and Valö. These results raise interesting questions, both concerning the notably stability, since the general picture of the historical settlement development show a distinct increase of settlement units in Sweden, and on the reduction of settlement units in Börstil and Valö. What are the reasons behind these developments? Are there connections to the iron works and/or to the noble estates in the area?

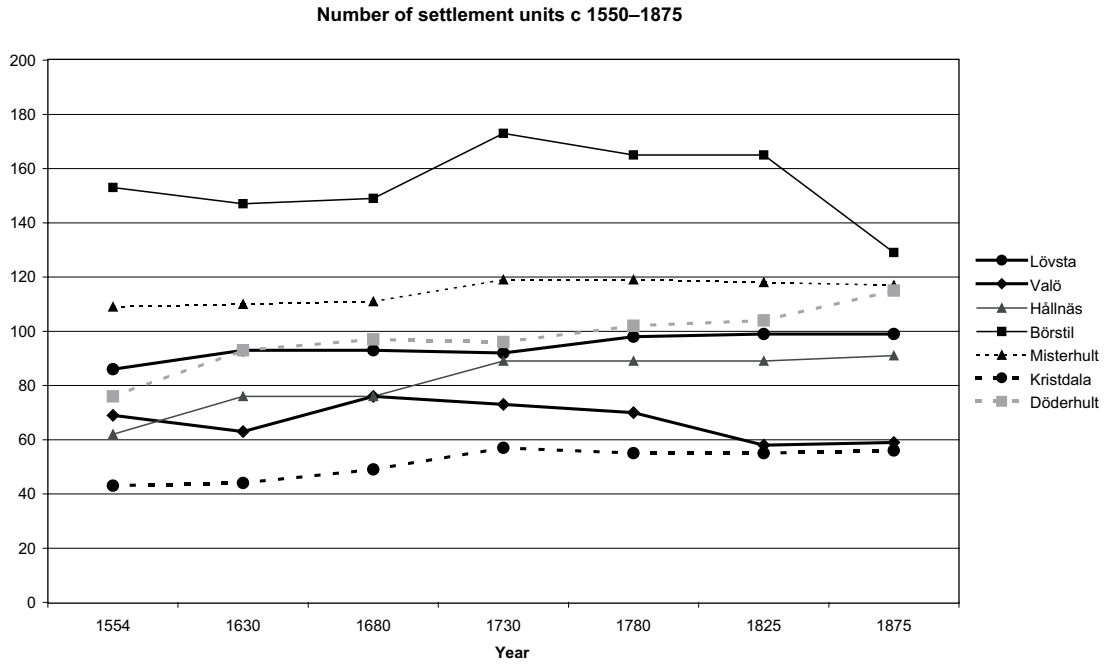


Figure 10-1. *Number of settlement units (farms) in the Forsmark region. Source: Cadastral books in Österlövsta, Valö, Hållnäs, Börstil, Misterhult, Kristdala and Döderhult.*

A general picture of the settlement history is that there has been a change from mostly full size *(Sw hela)* farms in the 16th and 17th century to more divided farms in the 18th and 19th centuries, as for instance halves, 1/4th, 3/4th and 3/8s farms became common, see Table 10-2. This is a picture that corresponds with the common settlement development in Sweden during this period. The numbers of crofter's holdings were generally small in Kristdala, Misterhult and Döderhult and here there was no increase in the number of crofters during the 18th and 19th centuries according to the cadastral books. In Döderhult the number of crofter's holdings were in fact larger in the 16th century – c 30 crofter's holdings – than in the 18th and 19th centuries. According to the social population structure, which is confirmed by the cadastral books, the number of crofters increased between 1750 and 1850. In Uppland there was a general increase in crofter's holdings during the 18th and 19th centuries. In Österlövsta, Hållnäs and Valö the increase was however rather modest, as there were c 2–8 crofter's holdings in each parish during this period. In Börstil, on the other hand, there were strong increases of crofters, as there were between 20–32 crofter's holdings from c 1730 to the end of the 19th century. However, it must be remembered that probably not all crofters' holdings are registered in the cadastral books, since these settlements were not taxed. Hence the number of crofter's holdings in the 18th and 19th centuries are likely to have been higher.

Table 10-2. Österlövsta parish is illustrating the pattern. Source: Cadastral registers, Österlövsta.

Härad **Socken** **År**	**Oland** **Lövsta** **1554**	**Oland** **Lövsta** **1630**	**Oland** **Lövsta** **1680**	**Oland** **Lövsta** **1730**	**Oland** **Lövsta** **1780**	**Oland** **Lövsta** **1825**	**Oland** **Lövsta** **1875**
Skattehemman							
Hela	82	49	49	18	18	18	18
5/8dels							
9/16dels							
3/4dels							
Halva		28	27	6	6	6	7
3/8dels							
1/4dels		1					
1/8dels					2	2	2
Ängar							
Utjordar	24					1	1
Summa skattehemman	**106**	**78**	**76**	**24**	**26**	**27**	**28**
Kronohemman							
2 mantal		5	5	1		1	1
Hela							
3/4dels							
5/8dels							
Halva		3	3	1	1	1	1
3/8dels							
1/4dels		1	3				
1/8dels				2			
Prästgård					1		
Klockarbol				1	1	1	1
Torp				2	1	1	
Lägenhet							1
Utjordar				1	1		

Härad Socken År	Oland Lövsta 1554	Oland Lövsta 1630	Oland Lövsta 1680	Oland Lövsta 1730	Oland Lövsta 1780	Oland Lövsta 1825	Oland Lövsta 1875
Ängar					1	1	
Vret			1				
Summa kronohemman		**9**	**12**	**8**	**6**	**5**	**4**
Kronohemman, tidigare frälse							
Hela							
Halva							
Torp							
Summa krono, tidigare frälse							
Arvegods							
Hela							
Halva							
Utjordar							
Ängar							
Summa arvegods							
Kyrkohemman							
Hela	4						
Summa kyrkohemman	**4**						
Frälsehemman							
Hela		5	5	31	31	33	31
3/4dels							
Halva		1	1	23	23	22	23
3/8dels							
1/4dels				5	5	5	5
1/8dels				2	2	2	2
Torp					8	2	2
Utjordar					1		1
Vret							1
Ängar							
Uppodling							
Öar							
Summa frälsehemman		**6**	**6**	**61**	**70**	**64**	**65**
Frälsesäterier							
2 mtl							3
Hela				2	4	3	
Uppodling						1	
Summa frälsesäterier						**4**	**3**
Rå- och rörshemman							
1 ½							1
Hela					1	1	1
Halva					2	3	2
2/3dels					1	1	1
Vret						1	
Utjordar						1	
Summa rå- och rörshemman					**4**	**7**	**5**
Summa totalt	**110**	**93**	**94**	**95**	**110**	**107**	**105**
Summa utan torp utj mm	**86**	**93**	**93**	**92**	**98**	**99**	**99**

Concerning the cadastral units without settlement *(Sw utjordar)* the general picture in the investigated areas show that the *utjordar* were more frequent in the Uppland parishes than in the Småland region. In Kristdala the number of *utjord* were low during the investigated period. In Misterhult the number of utjord were even more rare, since the only two mentioned are found in the 1730 cadastral book. In Döderhult the number of cadastral units without settlement was a bit more frequent, than in the other two Småland parishes. Here we can also see a clear change in the number of *utjord*, as they were quite common in the 16th and 17th centuries (c 7–10), and reduced in the 18th and 19th centuries, when only one *utjord* was registered. This reduction of the amount of *utjord* in the 18th and 19th centuries is quite similar to the development in Hållnäs, Valö and Österlövsta and corresponds to the national Swedish pattern. In Österlövsta however, there was as many as 24 of these units registered in the oldest cadastral book. In Börstil a somehow different pattern is found, as the number of utjord were much more frequent and actually quite stabile during the investigated period. In the middle of the 16th century there were as many as 47 in Börstil. A hundred years later the number of utjord were 11, but in the following investigated period the number of utjord increased and stayed stabile around 25. The concept or term *utjord* is often seen as former settlement units that were deserted during the medieval crises. They are often quite common in the oldest cadastral books in the 16th century, but as the colonisation of land continued they were often re-colonised in the following centuries. It is interesting to ask why there were so many utjord in Börstil still in the 19th century. Another question of interest is what the reasons are behind the 47 *utjord* in Börstil in the middle of the 16th century. Was the desertion extremely large here in the Middle Ages or can other reasons be traced? How does this correspond to the rather large number of crofter's holdings in Börstil?

In the investigated area in Småland a vast number of deserted farms are registered in the 1631 cadastral book. In Döderhult nearly 50% of the settlement units were wholly or partially deserted in 1631. In Kristdala the deserted farms reach c 17% and in Misterhult c 22% of the farmsteads were deserted at this time. Why were these farms deserted? A possible explanation can perhaps be found in the expansive Swedish wars that had a great impact on the population. An interesting question is where in the landscape these deserted farms were located. Is there a connection between desertion and location, i.e. are the abandoned units located in less fruitful areas?

10.3 Landed property categories (Sw Jordnatur)

A general trend in the investigated area, which corresponds to most Swedish areas, is that the number of landed property categories *(Sw jordnaturer)* decreased between the 16th and 20th centuries. Before the national Swedish reduction by the end of the 17th century, the number of landed property categories were divided into several different categories, like freehold farms *(Sw skattehemman)*, crown farms *(Sw kronohemman)*, noble farms *(Sw frälsehemman)*, king's heritage farms *(Sw arv och eget)*, churchfarms *(Sw kyrkohemman)*, monastery farms *(Sw klosterhemman)*, Bråhult farms *(Sw Bråhultshemman)* and S:t Erik's farms *(Sw S:t Erikshemman)*. This multiplicity was reduced into basically three kinds of settlement units; freehold farms, crown farms and noble farms, at the beginning of the 18th century. However, the distribution of landed property categories was quite dissimilar in the two investigated areas in Uppland and Småland.

In the parishes in Uppland the tax farms were almost completely dominating in the 16th and 17th centuries together with a few church farms, king's heritage farms and noblemen farms. In the 18th century this changed and during the 18th and 19th centuries the majority of farms were noblemen farms. Again, Börstil show a somewhat different pattern, since tax farms still were quite common in this parish, together with an increase in noblemen farms. In Börstil and Österlövsta, but not in Valö and Hållnäs, noble estates were established in the 18th century. Still the representation of noblemen was considerably widespread also in Hållnäs. Mr Louis de Geer, the owner of Lövsta iron works *(Sw Lövsta bruk)*, bought in 1646 almost all farmsteads in Österlövsta and Hållnäs and he was also granted the rights from the Swedish crown to receive the farm's taxes. The farmers became "noblemen freeholders" *(Sw frälseskattebönder)* and the farms were considered as noblemen farms. An illustrating example is that Hållnäs in 1645 consisted of c 90% tax farms and c 10% crown farms. Lövsta iron works owned in 1700 c 70% of the farm /Renting, 1996 p 61/. The farmers had to pay the tax in charcoal. The establishment of Lövsta iron works implied new possibilities of supply for the country people, as charcoal was very coveted. At the same time it meant that the farmers no longer could be fully self-supporting. This opened up for the establishment of a provisions shop at Lövsta iron works /Renting, 1996 p 8/. According to the cadastral books in 1680 Louis De Geer owned almost all farms in Hållnäs and Valö. He also possessed the vast majority of the farms in Österlövsta and Börstil, even though they were categorised as tax farms in the cadastral books. Lövsta iron works' most productive period was the middle of the 18th century, when 1,200 tons of bar iron were produced per year /Renting, 1996 p 10/.

In Misterhult and Kristdala the majority of farms were crown farms in the middle of the 16th century. In Misterhult there were nearly 80% crown farms and 20% noblemen farms in 1543. In Kristdala the amount of crown farms were not that dominating, around 44%, and the landed property categories *(Sw jordnaturer)* were rather scattered. Here about 16% were freehold farms, c 12% church farms and c 21% unity farms *(Sw sämjehemman)*. Likewise in Döderhult the landed property categories *(Sw jordnaturer)* was quite divided, but also somewhat different, since about 34% were king's heritage farm (arv och eget hemman) and c 32% noblemen farms (frälsehemman), around 17% were church farms (kyrkohemman), c 12% were freehold farms (skattehemman) and only c 7% were noblemen farms. By the end of the 19th century c 56% of the farms in Misterhult were tax farms and 22% were noblemen farms. Furthermore c 11% were noblemen manors and around 6% were subordinated farms *(Sw rå- och rörshemman)*. This implies that the noblemen were quite dominating in Misterhult in the late 19th century and the former crown farm domination had completely disappeared. In Döderhult the tax farms reached c 39% and about 37% were noble farms. Here the crown farms had increased from only a few percent in the middle of the 16th century to c 23% in the 1880s. In Kristdala there was a considerable domination of freehold farms in the 18th and 19th centuries, around 76%. The crown farms reached c 12% and the total amount of farms in the hands of the nobility were about 11%. This poses the question why were the noblemen that dominating in Misterhult and why was Kristdala to such a great extent dominated by freehold farms in the 19th century?

10.3.1 Småland

Döderhult

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	7.9	3.9	88.2
1630	9.7	20.5	68.8
1680	9.3	26.8	56.4
1730	28.1	35.4	36.5
1780	44.1	16.7	39.2
1825	50.0	11.5	38.5
1880	46.1	14.8	39.2

Krono = krono, sämjeh. Bråhultsh.
Frälse = frälse, kyrko- och klosterjord, aoe, St Eriksh.

In Döderhult the categories of landed property has no completely dominating category. The share of freeholders has increased over time and she share of farms belonging to the nobility has decreased. Concerning farms belonging to the crown, there was an increase in the 17th and beginning of the 18th centuries, probably due to the reduction of land belonging to the privileged categories. Farmers buying crown land *(Sw skatteköp)* which turned the farms into freeholders probably cause the decrease in farms belonging to the crown after 1730.

Kristdala

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	16.3	65.1	18.6
1630	34.7	45.5	15.9
1680	42.9	24.5	32.6
1730	59.6	26.3	14.0
1780	76.4	9.1	14.5
1825	78.2	10.9	12.7
1880	78.6	10.7	12.5

In Kristdala the share of freeholders increased over time and was dominating in the 19th century, partly due to freeholders buying crown land *(Sw skatteköp)* in the 18th and 19th centuries. Behind the large share of farms belonging to the crown in 1550 are c 20% sämjehemman. The share of farms belonging to the crown has decreased over time. The share of farms belonging to the nobility has decreased a little, except for in 1680 when there was a large increase. The increase is caused by a number of church farms.

Misterhult

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	–	78.9	21.1
1630	–	79.1	20.9
1680	–	78.4	21.6
1730	32.8	26.9	40.3
1780	44.5	15.1	40.3
1825	48.3	11.9	39.8
1880	57.3	3.4	40.2

In Misterhult the share of crown farms was completely dominating (c 80%) in the 16th and 17th centuries and the share of noblemen farms was c 20%. Freeholders were missing. After 1680 the share of crown farms decreased and both farms belonging to the nobility and freeholder increased.

10.3.2 Uppland

Significant for all the investigated parishes in Uppland is the decrease of freeholders and the increase of farms belonging to the nobility. In the 16th and 17th centuries the share of freeholders was generally large when the share of farms belonging to the nobility was generally small. After 1680 the share of farms belonging to the aristocracy increased significantly and at the same time the share of freeholders decreases. The share of farms belonging to the crown was generally quite small.

Hållnäs

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	93.5	–	6.5
1630	85.5	14.5	–
1680	85.5	3.9	10.5
1730	21.3	18.0	60.7
1780	34.8	4.5	60.7
1825	34.8	4.5	60.7
1880	36.3	4.4	59.3

In Österlövsta, Valö and Hållnäs the share of freeholders dominated in the 16th and 17th centuries and the share of farms belonging to the nobility was very dominating in the 18th and 19th centuries.

Valö

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	94.2	–	5.7
1630	88.9	9.5	1.6
1680	85.6	3.9	10.5
1730	30.0	3.0	76.1
1780	27.4	2.8	67.0
1825	19.0	1.7	79.3
1880	18.6	3.4	78.0

Österlövsta

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	95.3	–	4.7
1630	83.9	9.7	6.5
1680	81.7	11.8	6.5
1730	26.1	5.4	68.5
1780	26.5	3.1	70.4
1825	26.3	3.0	70.7
1880	27.3	3.0	69.7

Börstil

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1550	85.0	–	15.1
1630	83.7	–	16.3
1680	79.2	4.7	16.1
1730	46.2	13.9	23.7
1780	63.3	14.5	21.8
1825	66.6	11.5	21.8
1880	59.7	12.4	28.0

In Börstil the share of farms belonging to the nobility has not increased to such a great extent as in the other investigated parishes in Uppland. Here the share of farms belonging to the crown in the 18th and 18th centuries is a bit larger than in the other investigated parishes. The share of freeholders was quite substantial in the 19th century, much larger than the share of farm belonging to the nobility.

Forsmark[4]

	Freehold (Sk)	Crown (Kr)	Noble (Fr)
1825	56.3	–	43.8
1871	57.1	–	42.9

In Forsmark the share of freeholders and the share of farms belonging to the nobility was quite equal, even though the freeholders dominated.

10.3.4 A comparison

Early 1540s, from /Larsson, 1985 p 67 table 3/.

	Freehold	Crown	Noble
Småland	33	10	57
Uppland	45	3	52
Sverige	46	6	48

Compared to the national Swedish share of landed property categories in the middle of the 16th century, the county of Uppland is quite average. In Småland however the share of farms belonging to the nobility was a bit larger than the average, and the share of freeholders was smaller. In Kristdala and Misterhult the share of farms belonging to the crown was unusually large and the share of freeholders was very small. In Döderhult the share of farms belonging to the nobility was completely dominating in c 1540.

The investigated parishes in Uppland show a rather different pattern than the average, as the share of freeholders was very dominating in the middle of the 16th century, and the share of farms belonging to the nobility was very small.

10.4 Demography

This section deals with the reconstruction of the population in the investigated areas during a long period of time. The main sources are Tabellverket and SCB.

10.4.1 The population change in the area surrounding Forsmark

An estimation of the population size in the investigated parishes in Uppland implicate that 2,856 people lived here in 1571. However, it must be remembered that this figure is an approximation, since there are no comprehensive source material on Swedish population size before c 1750. The Figure 10-1 shows a strong population growth in the 17th and the beginning of the 18th century in several parishes. The question is if there really were such a large population increase, or if this instead indicates that the estimation is set too low in 1571. Population growth was significant in all investigated parishes up to the year 1900.

[4] The farms in Forsmark parish were before Forsmark was created parts of Valö and Börstil.

However the population increase was not linear, but was characterised of periods of growth and periods of temporary regression. In 1900 15,882 people lived in the investigated area. The smallest population size during the investigated period is found in Forsmark. Österlövsta had the largest population size, except for a period around 1571 and between 1880 and 1900, when the population in Börstil was larger. In the 20th century (1952–1990) there has been a negative population trend in all parishes except for Börstil. In Börstil there was a considerable increase in population from a little less than 2,200 persons in 1960 to c 4,000 inhabitants in 1990. The population growth in Börstil is probably caused by the fact that many people moved to the area around Östhammar in this period. 20th century town expansion was usually located on the town land, i.e. the former arable land granted to the towns in medieval and early modern times. However Östhammar had one of the smallest town lands of all Swedish towns, and as the town expanded the settlement had to be located outside the town, i.e. in Börstil. In 1990 all in all 10,252 persons lived in the investigated area.

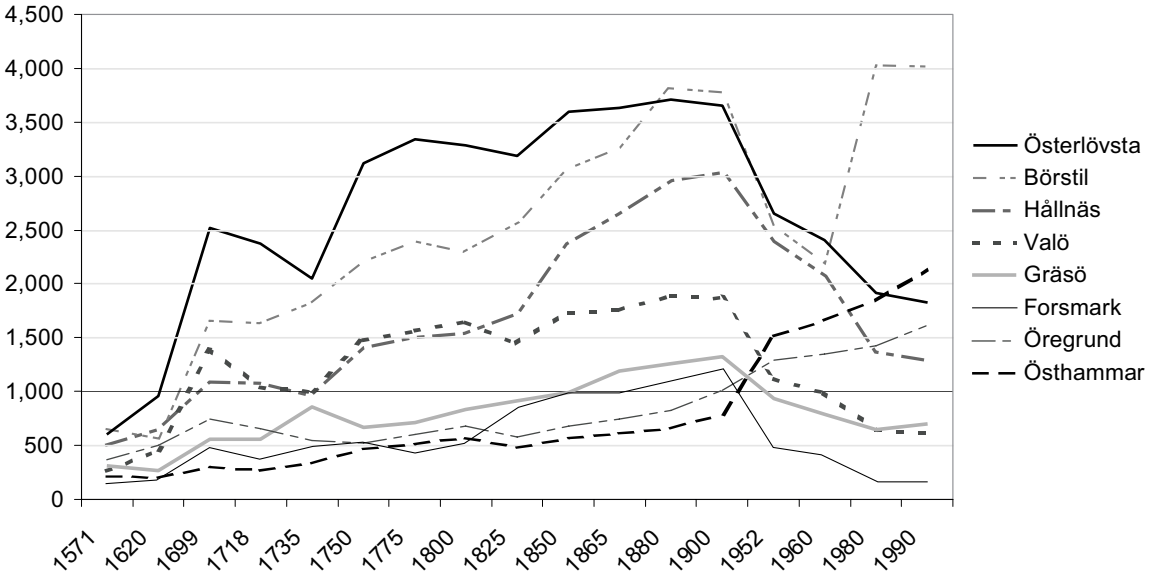


***Figure 10-2**. Graph showing the Population changes in the parishes surrounding Forsmark 1571–1990. Source: Tabellverket, and /Andersson Palm, 2000/.*

10.4.2 The population change in the area surrounding Oskarshamn

In 1571 the estimated population size in the three investigated parishes in Småland was all in all c 1,266 persons. As for Uppland it is important to point out that this figure is an approximation. The population growth was quite modest in Misterhult, Döderhult and Kristdala until the middle of the 18th century and particularly after c 1800, when there was a strong population growth, especially in Döderhult. Kristdala and Misterhult show a quite similar population trend, although Misterhult's population size generally was larger. Döderhult follow the same trend, as Kristdala and Misterhult, until c 1865, when a very large population growth began in Döderhult that lasted until c 1900. This peak might be explained by the fact that the town Oskarshamn was established in 1856. Between 1856 and 1900 Oskarshamn and Döderhult were shown together in the statistics. After 1900 however, Oskarshamn was separated from Döderhult and hence the population size in Döderhult was reduced. During the 20th century there was a negative population trend in the three investigated parishes. After 1960 the trend has turned into a population growth in Döderhult, and the same thing happened in Misterhult after 1980. In 1990 the population size was calculated to all in all 10,640 persons in Misterhult, Döderhult and Kristdala.

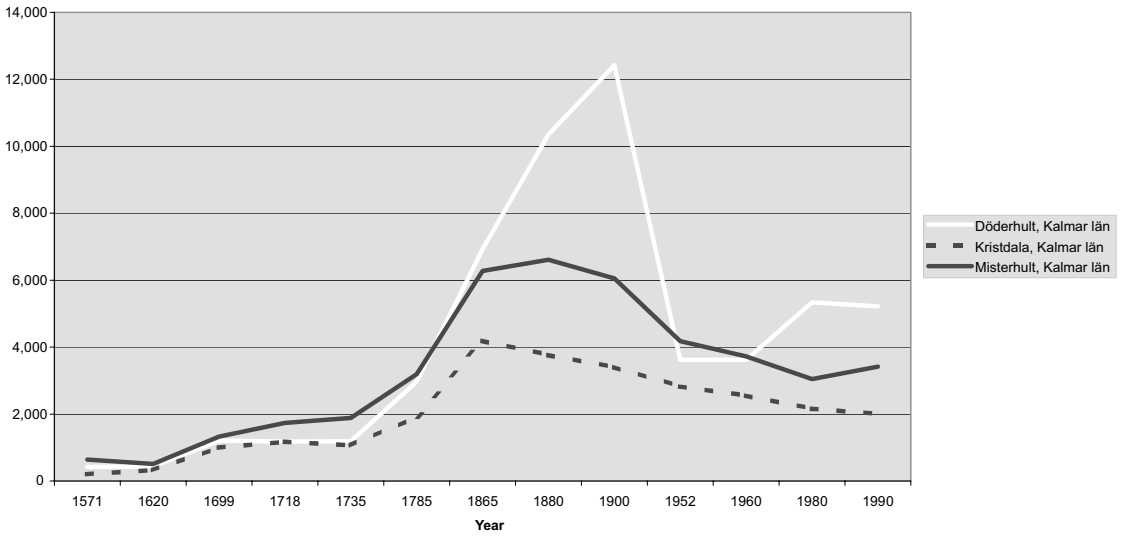


Figure 10-3. *The population changes in the Oskarshamn area. Source: Tabellverket, and /Andersson Palm, 2000/.*

10.4.3 The social population structure

In order to illustrate social population changes over time, the population structures in the investigated parts of Uppland and Småland in 1750 is compared to the population structure in 1850. Furthermore, the area surrounding Forsmark in Uppland is contrasted to the Småland area around Oskarshamn to demonstrate any regional variations. The changes in each parish are finally presented.

As the Figure 10-4 shows, some general changes between 1750 and 1850 can be emphasised. In the six investigated parishes in Uppland the share of farmers *(Sw bönder)* has decreased and at the same time the share of crofters has increased. Furthermore the share of works- and mine workers has been substantially reduced and the share of others without property has increased considerably. In addition craftsmen in the countryside has amplified. All in all, the social structure development shows an increase in poor people without landed property and a slight increase in noblemen.

In the investigated Småland parishes the changes are to some extent a bit different than it was in Uppland. In Småland the share of farmers has diminished only a little, it is roughly the same in 1850 as it was in 1750. The most significant difference compared to Uppland is that the share of crofters has not increased in the Småland parishes between 1750 and 1850. Instead there has been a rather substantial decrease of crofters. Furthermore the share of works- and mine workers are considerably smaller in Småland than in Uppland. As in Uppland the share of others without property has increased, as well as the share of craftsmen, and a general increase in poor people without landed property can be noticed.

The general changes in social structure, i.e. an increase in people without landed property, are observed in both Småland and Uppland. These changes are likely to be due to the general Swedish development at this time period. However the local variations in each parish are reflecting local differences, which has affected the local social population structures.

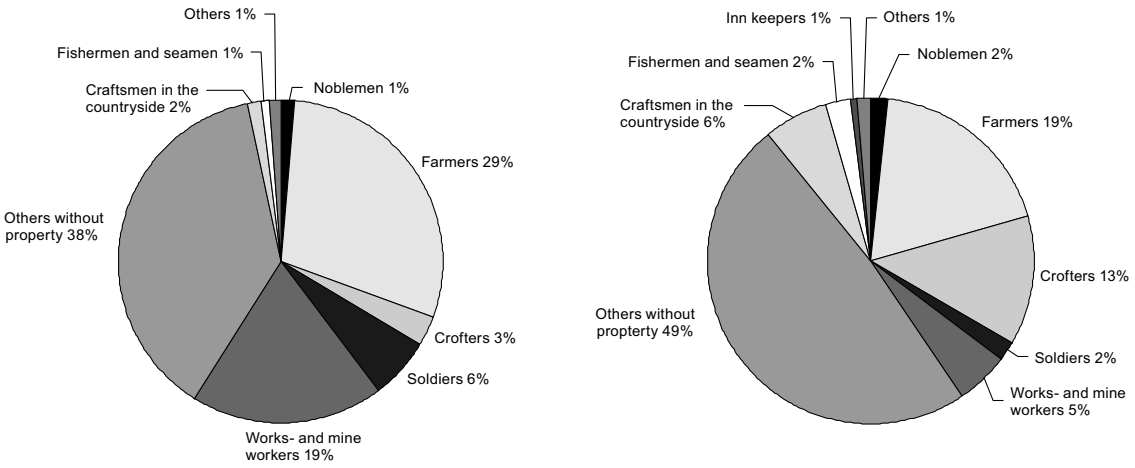


Figure 10-4. *Social population structure in 1750 and 1850 in Uppland. Source: Tabellverket.*

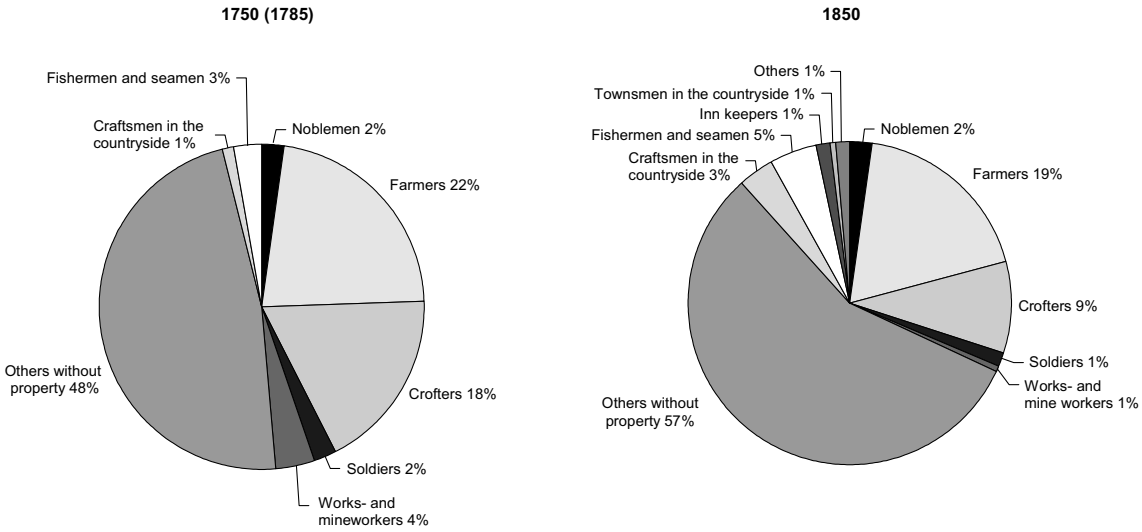


Figure 10-5. *Social population structure in 1750 and 1850 in Småland. Source: Tabellverket.*

10.5 Misterhult

In Misterhult the social structure was quite similar in 1850 as it was in 1785, see Figure 10-6. What are the reasons behind this relative stability? The major difference is that the share of works- and mine workers in 1785 has disappeared in 1850. Instead there is a small share of soldiers registered in 1850. Furthermore the share of crofters has decreased a little.

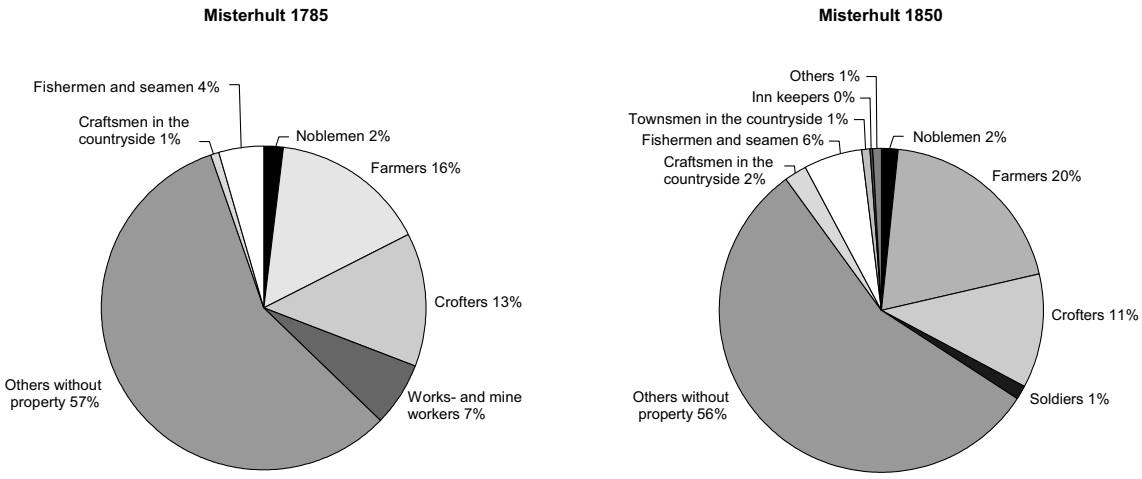


Figure 10-6. *Social population structure in Misterhult. Source: Tabellverket.*

10.6 Döderhult

In Döderhult there has been substantial changes in the social population structure. As shown in Figure 10-7, the share of farmers, crofters and soldiers have decreased significantly and the share of others without property has increased a lot. Furthermore, a quite significant increase in fishermen and seamen is noticeable and a slight increase in noblemen. It is interesting to notice that in the investigated area, the highest share of noblemen is found in Döderhult.

Why has the share of farmers and crofters decreased so drastically? This is not due to a population decrease among farmers and crofters. The actual numbers of farmers and crofters have increased between 1750 and 1850, but at the same time the number of people without property have increased significantly. Could this development be connected to the relatively high share of noblemen in Döderhult?

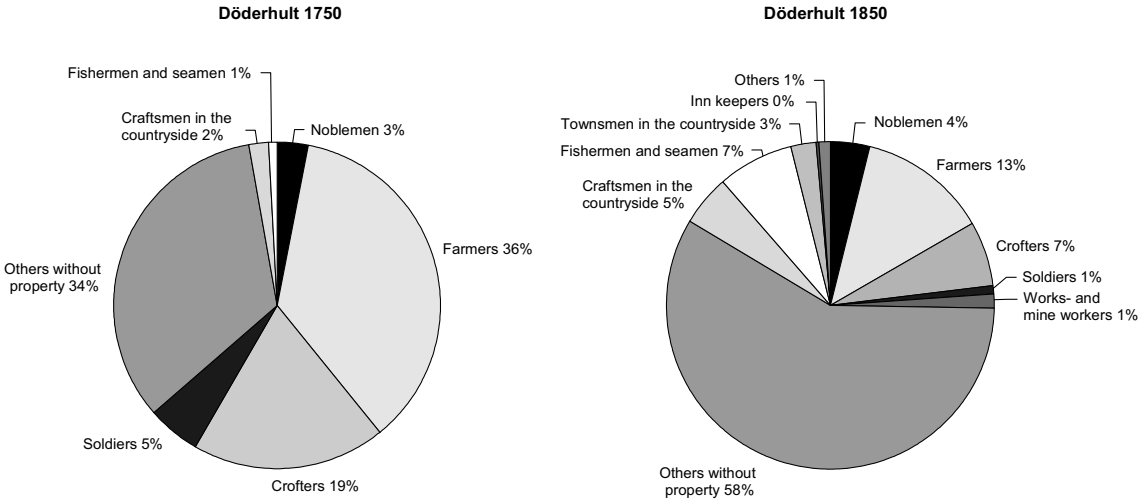


Figure 10-7. *Social population structure in Döderhult. Source: Tabellverket.*

10.7 Kristdala

As in Döderhult the share of others without property has increased quite substantially in Kristdala between 1750 and 1850, see Figure 10-8, and as in the other two investigated parishes in Småland, the share of crofters have diminished in Kristdala. Furthermore the share of soldiers has decreased, as the share of noblemen.

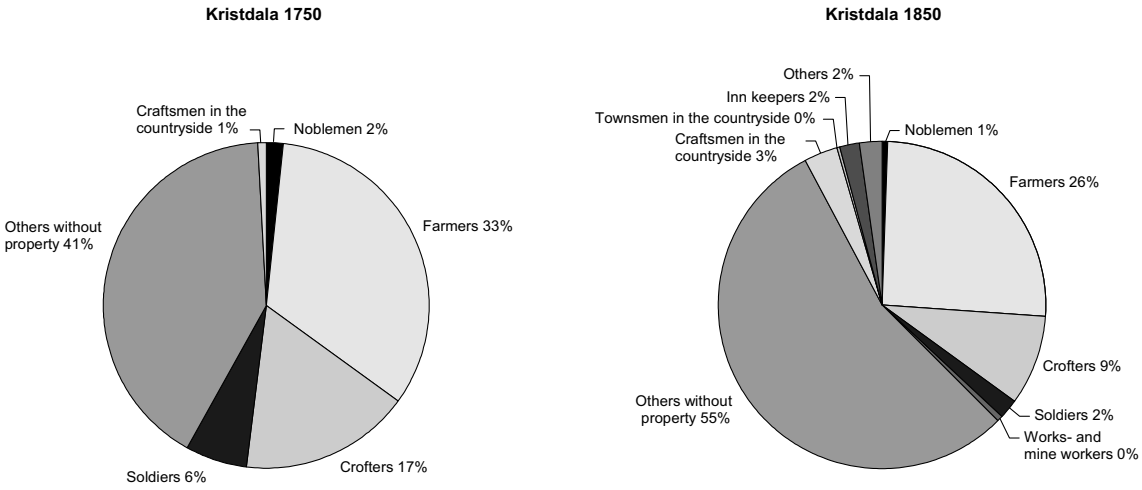


Figure 10-8. *Social population structure in Kristdala. Source: Tabellverket.*

10.8 Börstil

In Börstil Figure 10-9 illustrates how the share of farmers has decreased and the share of crofters has increased in 1850 compared to 1750. Resembling the general pattern of social structure development, the share of others without property has increased in Börstil. Furthermore the share of craftsmen and fishermen has increased a little.

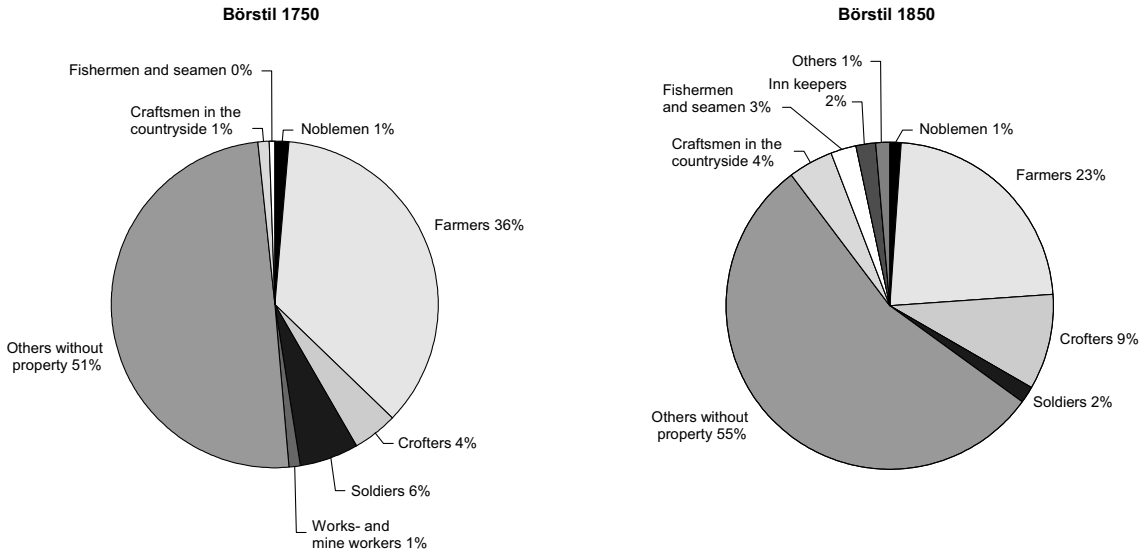


Figure 10-9. *Social population structure in Börstil. Source: Tabellverket.*

10.9 Hållnäs

The changes in Hållnäs resemble significantly the development pattern in Börstil. The share of farmers in Hållnäs has decreased considerably and the share of crofters has increased a lot. In addition the share of others without property has grown, and so has the share of fishermen and seamen.

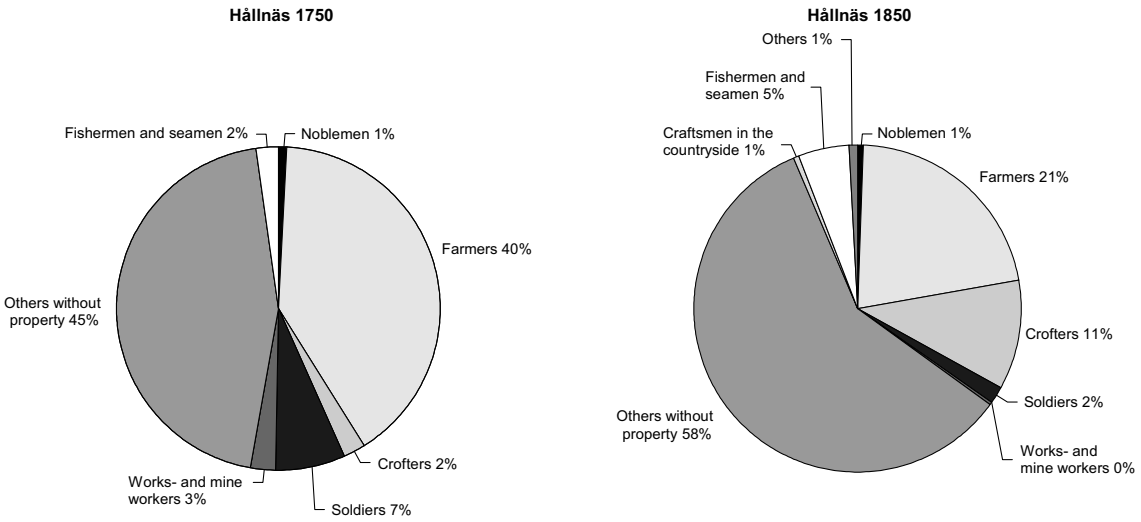


Figure 10-10. *Social population structure in Hållnäs. Source: Tabellverket.*

10.10 Valö

In Valö the social population structure was rather steady between 1750 and 1850. The most significant changes were the decrease of soldiers and works- and mine workers. There was also a small increase in the share of farmers and crofters, but the share of others without property has been significantly stabile.

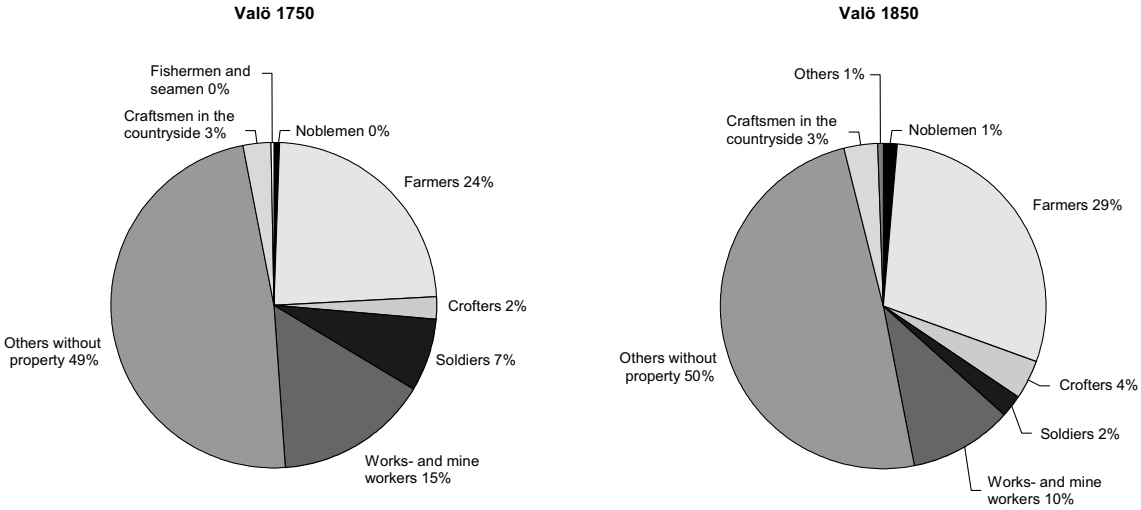


Figure 10-11. *Social population structure in Valö. Source: Tabellverket.*

10.11 Forsmark

In Forsmark the social population structure in quite different from the other investigated parishes, as the share of works- and mine workers were very dominating in 1750. In addition there were no farmers, but quite a large share of others without property. In 1850 this structure had changed rather drastically. The share of works- and mine workers had decreased significantly and the share of craftsmen had increased extensively. At the same time the share of crofters increased and a small share of farmers can be noticed in 1850. Furthermore, the share of noblemen decreased a little between 1750 and 1850.

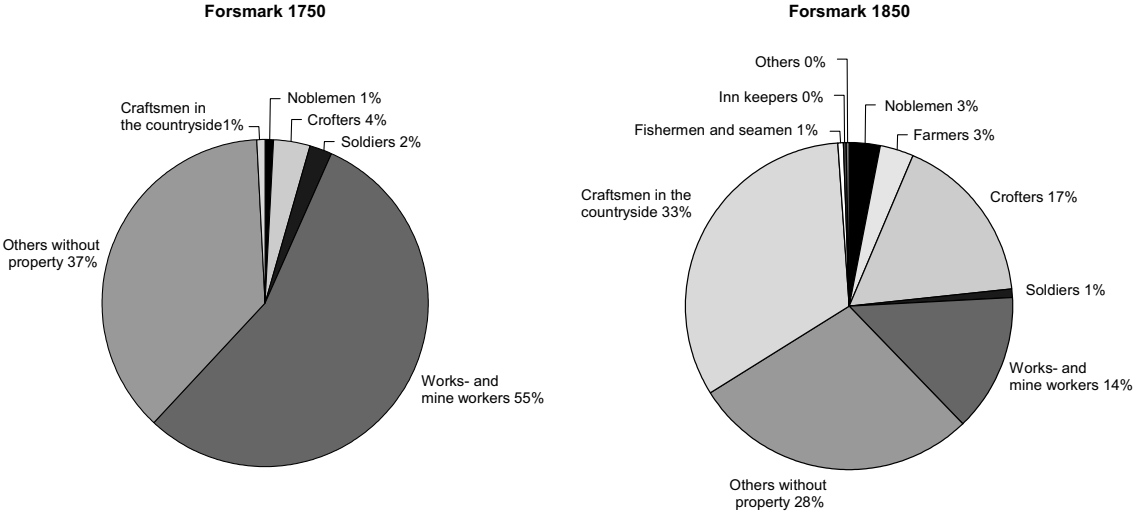


Figure 10-12. *Social population structure in Forsmark. Source: Tabellverket.*

10.12 Österlövsta

In Österlövsta the social population structure resembles the pattern in Forsmark, as the share of works- and mine workers was very substantial in 1750. This large share had diminished quite considerably in 1850. The share of farmers and soldiers has decreased, but the share of crofters has increased significantly. Furthermore, the share of others without property has increased.

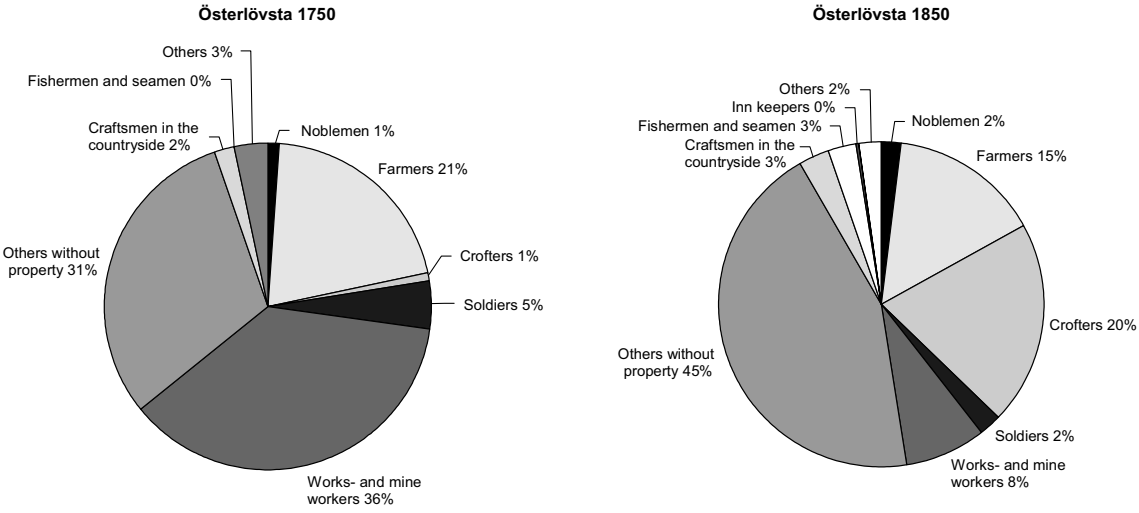


Figure 10-13. *Social population structure in Österlövsta. Source: Tabellverket.*

10.13 Gräsö

Since Tabellverket's statistics on Gräsö is missing after 1795 the comparison covers less time than other investigated parishes. Still quite a large change in social population structure can be seen. The share of noblemen was relatively large in 1750, but had diminished in 1795. The share of farmers, crofters and soldiers has decreased quite substantially. In contrast to the other investigated parishes, the share of others without property has diminished considerably. However, the most significant change here is the considerable increase in fishermen and seamen.

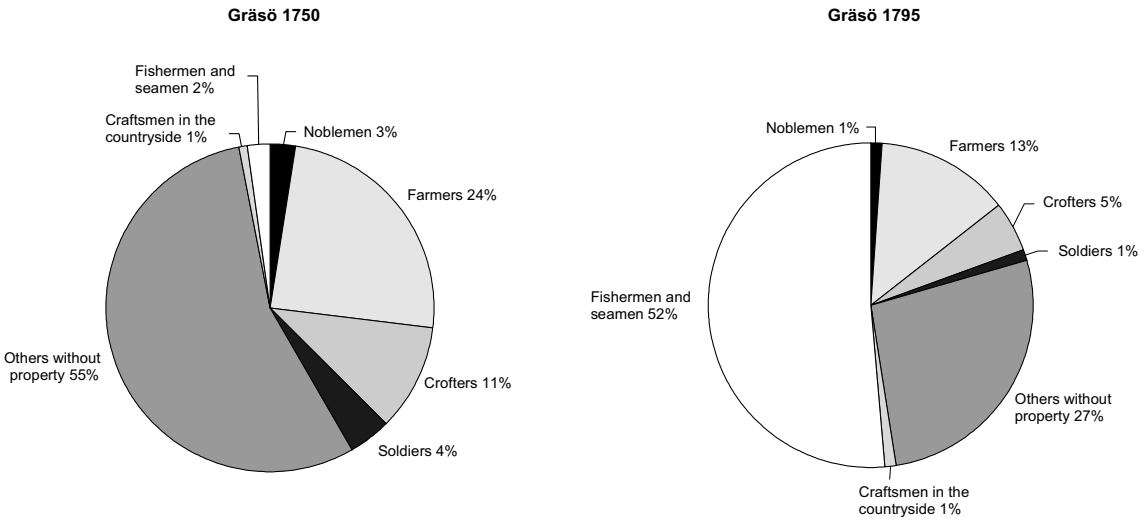


Figure 10-14. *Social population structure in Gräsö. Source: Tabellverket.*

10.14 Movements

Due to the detailed and comprehensive nature of the source material concerning movements, it has not been possible to go through the necessary statistics in this preliminary part of the report.

11 Local studies

In order to analyse the settlement development and land-use on local level some villages have been studied in detail. The aim with this study is to provide a model concerning the settlement development for each area. In Misterhult the village Lilla Laxemar and Ekerum has been chosen and in the Forsmark area, the central part of Valö parish and Forsmarks bruk have been chosen.

This is more of e presentation of some of the maps treated in this project, and only to a limited extent an analysis. The method used in this study is to combine old cadastral maps with land taxation registers from different times. Also other written sources from the Middle Ages and the 16th century are used. These sources together may give a picture of the settlement development from the medieval times and forward. They also form a basis for future field investigations.

11.1 Lilla Laxemar, Misterhult

Lilla Laxemar, together with the farms Ström and Ekerum, are situated at the coastline in Misterhults parish, just north of Simpevarp. The three farms were mapped together in the end of the 17th century. The reason for mapping them together was that the farms shared the woodlands. They constituted a so-called *skogelag*. The map shows that the three farms were situated as single farms quite near to each other. Every farm has its own arable land but the three farms were sharing a large part of the meadowlands and the woodlands. The aim the map from 1689 was to separate the farms in the woodlands.

The three farms are mentioned in the mid 16th century land taxation register of Misterhult. At that time Lilla Laxemar was two farms and Ström one farm owned by the crown. Regarding that Lilla Laxemar in the map 1689 was only one farm, the other farm in the mid 16th century probably was Ekerum. About 1530 there are a fishery mentioned in Lilla Laxemar (DMS 4:4 p 219 and p 223).

According to the map 1689 the three farms had very little arable land. In spite of the small areas of arable land the farms were considered as full tax paying units *(Sw hemman)*. These circumstances indicate that the main income for then farmers in the area came from other than agriculture. At the coastline in Misterhult it was fishery and other incomes from the sea that were most important.

The fishery at the coast of Misterhult is well known in the written sources from at least the mid 16th century. At that time Gustav Vasa established crown fishery at Simpevarp. Simpevarp was also the centre for the whole area and fishery in the area took place with Simpevarp as a starting point. There was a fishery bailiff at Simpevarp during the later part of the 16th century. According to the record from the Simpevarp fishery at 1557 the main capture was small fish *(Sw abborre, braxen, gädda id, mört, ål, knipor)*, but also seal, the later captured during the summertime at *Simpevarps skär* (DMS 4:4 p 221). There are no document from the Middle Ages preserved for Lilla Laxemar and the other farms in the detailed studied area. The ancient monuments from the late iron age at Simpevarp indicate that Lilla Laxemar and Simpevarp were important places for fishery during the whole period from late iron age to the mid 16th century /Norman, 1993 p 110/. The field evidence containing remains of seasoned based fishery, the so called *tomtningar*, on the islands of

the outer part of the archipelago in the Misterhult area from the early and high Middle Ages also indicate that fishery was as a main source of income for the people in the coast area /Norman, 1995 p 44/. Probably the people living in the area used agriculture just as a sideline during the whole period from at least late Iron Age to at least the 19th century.

On the map from 1689 there are also two crofters, Ärnhult and Sandsböle. Sandsböle was transformed to a tax-paying farm at 1689 while Ärnhult remained as a crofter to the mid-19th century. Neither Sandsböle nor Ärnhult are mentioned in the land register from the mid-16th century. That suggests that these crofters were colonised after that time but before 1689. There is also a possibility that Sandsböle and Ärnhult were crofters in the Middle Ages. Crofters were not registered in the official land registers.

In the area a few hundred meters north west of Ekerum there are a small plot of arable land called Torpet. The name of the plot clearly indicates a deserted settlement, probably a crofter. It is not possible to decide if the croft was deserted during the medieval crises after the mid-14th century or if it was colonised and deserted between the mid-16th century and 1689. This indicates that the area of Ekerum and Lila Laxemar was more densely settled before 1689 than it was that year.

Figure 11-1. *The croft called in this map simply "torpet".*

During the 18th and 19th century the arable land and the meadow increased. Especially the meadows increased. It was wetlands in the woods that were now used as meadows. At the same time the old meadows near the settlement were transformed into arable land. The increase of population and the increase of the number of farms during the period may partly explain this. Another explanation may be that fishery and incomes from the sea decreased in relation to other incomes and that agriculture increased as the source for incomes at the same time. That does not mean that the incomes from the sea decreased to nothing, but that agriculture became relatively more important.

In the mid-18th century the enclosure *(Sw laga skifte)* took place in Ekerum and Lilla Laxemar. At that time the number of farms in the area had increased. Ekerum consists of 7 farms and Lilla Laxemar consists of 7 farms, see below. At that time the arable land had increased even more. A consequence of the enclosure in Ekerum and Lilla Laxemar was that some farms were forced to move from the former toft of the villages. In this area two farms from Ekerum moved to the crofters place Ärnhult. This forced the crofter at Ärnhult to move away. Another direct consequence of the enclosure was the establishment of the borderlines of the properties. From that time all the farms in the area were single farms managing its lands on their own.

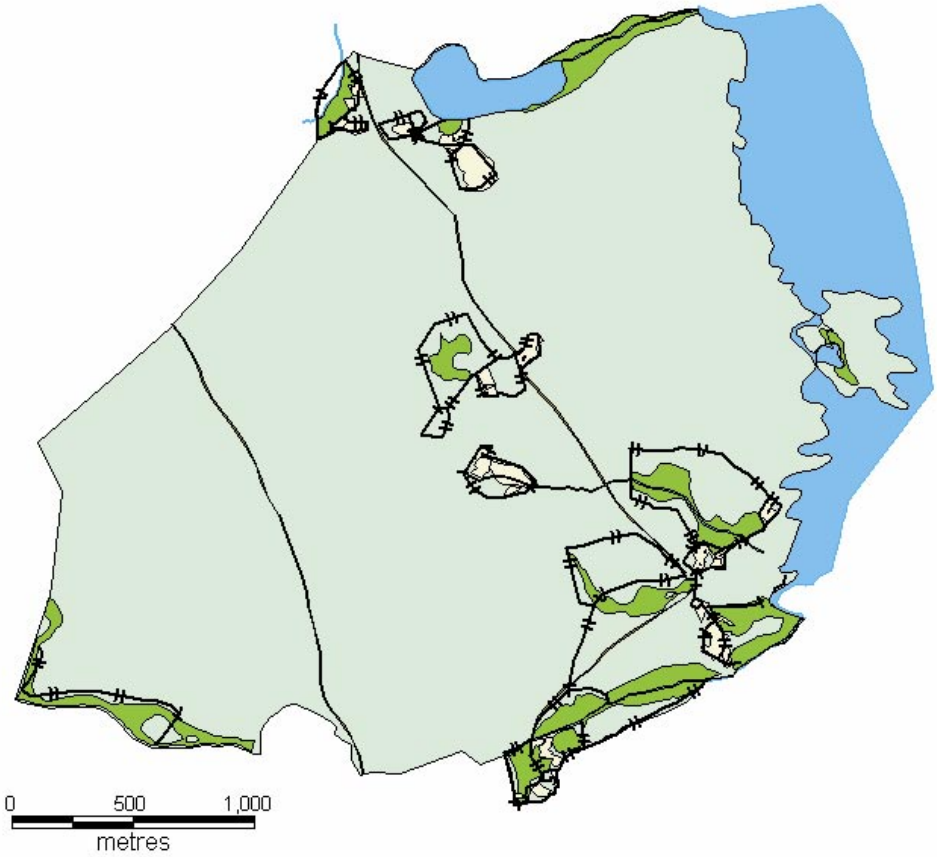


Figure 11-2. *This is the earliest map of the area of Ekerum and Lilla Laxemar. LSA G63-51:1, 1689.*

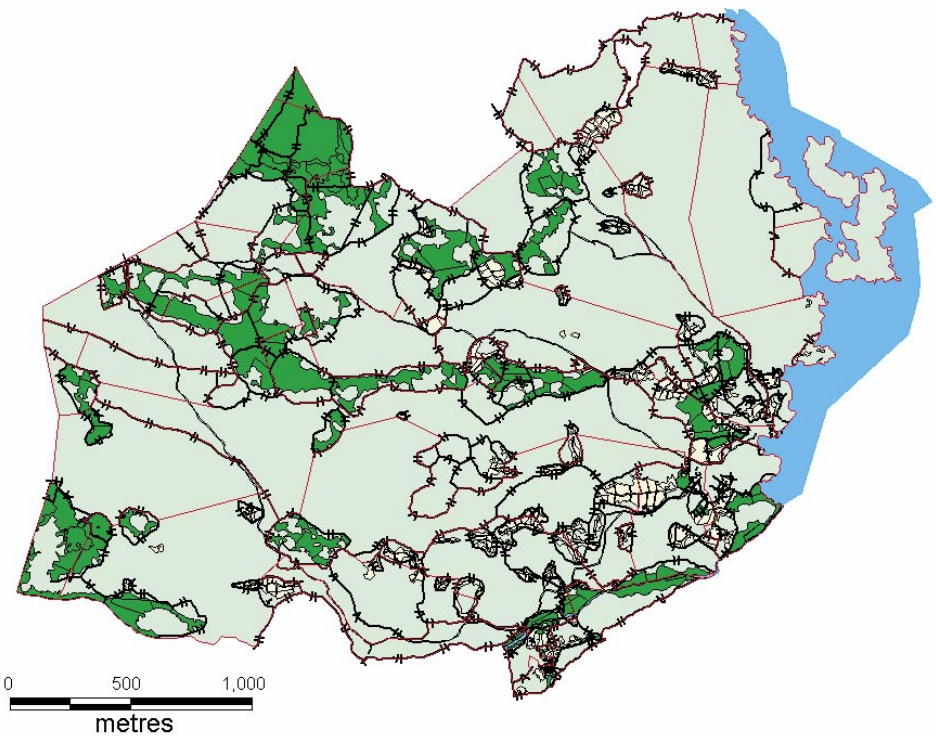


Figure 11-3. *In this image the effects of creating fences in the forest can be observed. This is often referred to as "förhagning" and is connected to an increase in livestock map from. LSA G63-51:2, 1793.*

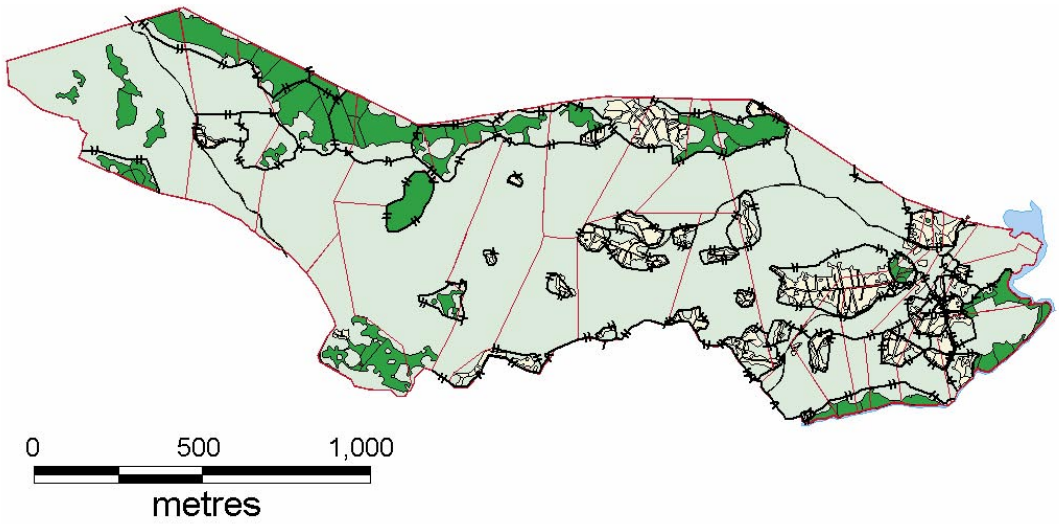


Figure 11-4. *This map shows the southern part of the areas in pervious maps. It is easy to see that the arable increases LSA G63-51:4, 1831.*

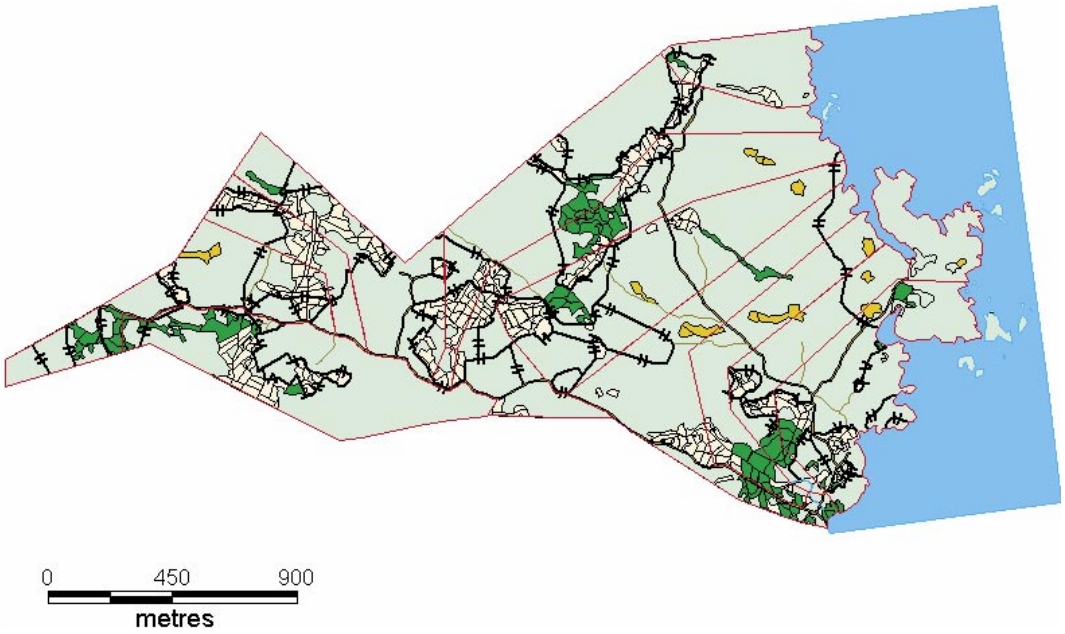


Figure 11-5. *In this map of the northern part, shows the subdivision of farms that occurred during the period. LSA G63-51:5, 1872.*

11.2 Valö and Forsmark

In the Forsmark area the central part of Valö parish and Forsmark parish have been studied at a local level. This area is representative for the coast area in Northern Uppland, where settlement and land use were characterised by the land upheaval and shore displacement during the iron age and the Middle Ages. In the flat landscape the land upheaval caused dramatic effects of the shore displacement, which then had effects of the settlement structure and land use. Another typical feature in the northern part of Uppland was the ironworks, often founded during the 16th and 17th centuries and in function until the beginning of the 20th century. In the area of Valö and Forsmark two ironworks were present, Forsmark in a physical sense and Österbybruk in a more abstract sense as a big landowner in Valö parish during the 18th century and forward.

The shore displacement in Northern Uppland and its effect on the settlements and the people living in the area has bee treated in earlier research. One result from this research is that the shore displacement and the elevated land gave possibility to an increasing population and colonisation of former wetlands and colonisation in the woodlands /Dahlbäck, 1974/. Another result from this research is that the shore displacement caused dramatic effect on the economy /Broberg, 1990/. Farms which in the late Iron Age were situated at the coastline, and therefore had a large part of the incomes from the sea (fishing and hunting birds and seal), where just some hundred years later situated in the inland and had no longer contact with the coastline. This, in turn, forced the farm to change from an economy based on incomes from the sea to an economy based on agricultural. In the beginning the main part of the newly elevated land was wetlands not suitable for agriculture. This situation in combination with an increasing population and the establishment of new settlements on the new land caused a crisis in the area during the 13th and 14th centuries. This crisis is obvious in the archaeological material, where the health of people who died in the period was poor in comparison with earlier periods.

The Forsmark ironwork, land and settlements

Forsmark ironwork is situated inside the coastline at the borderline between Valö and Börstil parishes. The name Forsmark is first mentioned in the written sources in 1558. At that time Forsmark was a fishery in a lake at Simundö, south of the later Forsmark ironwork. At 1583 the name Forsmark was connected to ironwork. The ironwork was probably founded at about that time. The ironwork was built at the former village Bolunda. At the beginning Forsmark ironwork was owned by the crown, but at 1624 it was leased out to a private owned company. Except the former village Bolunda the land that belonged to the ironwork consisted of the village Norrby and a couple of single farms, Gunnarsbo, Dannebo and Frebbenbo, in the northern part of Valö parish and the estate Kallriga, the single farm Länsö and the woodlands of Simundö in Börstil parish. The Forsmark parish was created in 1612 by the northern parts of Valö and Börstil parishes.

During the 19th century agricultural land was established at the island Storskäret, east of Forsmark. To judge from the map of Storskäret at 1840 the land were used by the workers at the ironwork (LSA A27-6:4.).

There are no maps in the official archives of the part of the ironwork that was situated in Börstil parish. That means that it has not been possible to study land use and settlement in detail in that part of Forsmark ironwork and the estate Kallriga.

The oldest map of the other part of the land that belonged to the ironwork, the northern part of Valö parish, is from 1699. This map shows the village Norrby and the single farms in the northern woodland. From this map it is also possible to conclude that a major part of the land that belonged to ironwork consists of the village Norrby and its woodlands. Norrby was a large village and consisted of 7 farms in the mid 16th century. All the farms were at that time owned by freeholders. The fact that the ironwork later owned the whole village means that the ironwork must have bought the freeholders farms sometimes before the end of the 17th century. At Norrby there are also ancient monuments from the late Iron Age, indicating that the village was established at that time. As the name Norrby means a settlement north of something else, it indicates that the village was a secondary settlement in the area. The primary settlements in the area, which Norrby is situated north of, are probably Vamsta or Lund in the central part of Valö parish. In Lund there are also ancient monuments from the Iron Age.

To judge from the map, the village Norrby was former very extensive. The three single farms in the Norrby forest, Gunnarsbo, Dannebo and Frebbenbo, all have place names ending with –bo. This –bo-names have, in earlier research about northern Uppland, been connected to a colonisation during the early Middle ages /Dahlbäck, 1974/ and /Windelhed, 1995/. This colonisation took place in the woodlands of the existing villages. During the late medieval times and the 16th century these –bo-places become holdings with its own borders *(Sw Avgärdning)* /Windelhed, 1995/. The fact that these –bo-holdings were surrounded by the woodlands of Norrby in 1699 shows that they were colonised on the land belonging to the village Norrby. To conclude, in late Iron Age Norrby was extended over the whole area north of the village. During the early Middle Ages, about 1100 to 1300, the area north of the village was colonised by settlers. In the beginning these new farms belonged to the village Norrby. In the late Middle ages and the 16th century these farms were parcelled out from the mother village.

In the early 18th century there were also a lot of crofters on the forest of Norrby (at this time the forest belonged to Forsmark ironwork). On a map from 1734 there were 19 crofters spread over the area. The crofters had small areas of arable land and meadows near their houses. Probably this crofter's places were established during the 17th century as a consequence of the need of labour to the ironwork. The crofter's places were localised

in small valleys with fruitful soil in the woodlands. In the beginning of 20th century the number of crofters had increased to 120. The crofter's places represent a new wave of colonisation in the area, which took place from the 17th century and onwards. The crofter's places also represent the physical mark of the need of labour at the Forsmark ironwork. In the beginning of the 20th century, then, the area was quite densely settled.

Figure 11-6. *The crofter's place Kopparslagars in northern part of the Forsmark and Norrby Woodlands. A typical croft probably established during the 17th century with small plots of arable land and meadows surrounded by woodland.*

The central part of Valö parish

The central part of Valö is situated in the inland area south of Forsmark ironwork. The natural landscape is characterised by valleys with arable land and wetlands in the lower part of the terrain and till and woodlands in the higher situated parts. During the period early Iron age to the early Middle ages the land upheaval transformed the area from an inner archipelago to an inland area where the sea are several kilometres away. From the late Iron Age and the early Middle ages the settlement units in the central part of Valö lost their contact with the sea.

The old cadastral maps from the Valö area are from 1709 and 1741–42. At that time, and already in the Middle Ages, all the central part was one settlement unit. This large settlement unit contained several villages and farms with their own names. All these villages and farms shared arable land, meadows and woodlands. The villages were Lund and Lundsvedja and the farms were Sunnanäng, Prästgården, Tomta, Dannebo, Juvansbo, Vreta and Östmora. The fact that these settlements were sharing the land indicates that their genesis were one large village. See /Tollin, 1999/ for examples from the southern part of Sweden. In the central part of large settlement unit are Lund, Lundsvedja and Tomta situated. In this area are a grave field from the late Iron Age and the medieval church situated. The name Lundsvedja indicates that this village is secondary to Lund. The name Tomta is not possible

to interpret chronological in relation to Lund and Lundsvedja. Most of the other farms in the large settlement unit are situated in the surrounding woodlands. The name of these farms indicates that they were established during the early Middle Ages. The settlements were the result of a colonisation by settlers as the population increased and new land was available for agriculture due to the land upheaval.

The interpretation of the settlement development from the late Iron Age during the Middle ages in the Valö area is that the whole area was one large settlement unit during the late Iron Age. According to the grave field the settled area during the Iron Age was at Lund. The landscape was an inner archipelago. During the late Iron Age and the early Middle ages the land upheaval caused a shore displacement and that former wetlands were transformed to dryer land. This, in turn, opened up for colonisation and a condensation of the settlements during the early Middle ages. Lundsvedja and the other farms were settled during this period as crofters or small farms on the land of Lund. According to the land taxation register 1312 compared with land taxation registers from the 16th century indicates that the number of settlements decreased during the late Middle ages there. During the 16th and 17th centuries the number of settlements increased again, and in around 1700 all the settlements in the Valö area were settled again. Still in the 18th century the settlements in the Valö area were sharing arable land, meadows and woodlands.

During the 17th century there was new settlement expansion. From this period and forward crofters colonised the woodlands in the Valö area. About 1709 there were 31 crofters in the Valö area and 200 years later, at 1905, there were 114 crofters. Probably most of the crofters worked at the ironworks in Forsmark and Österbybruk. Another important function for the crofters was to provide these ironworks and the blast furnace in Vigelsbo with charcoal and transportation. In the 18th century Österbybruk bought up most of the farms in the Valö area, including the crofters. The Valö area, as well as the Forsmark area, was quite densely settled about 100 years ago.

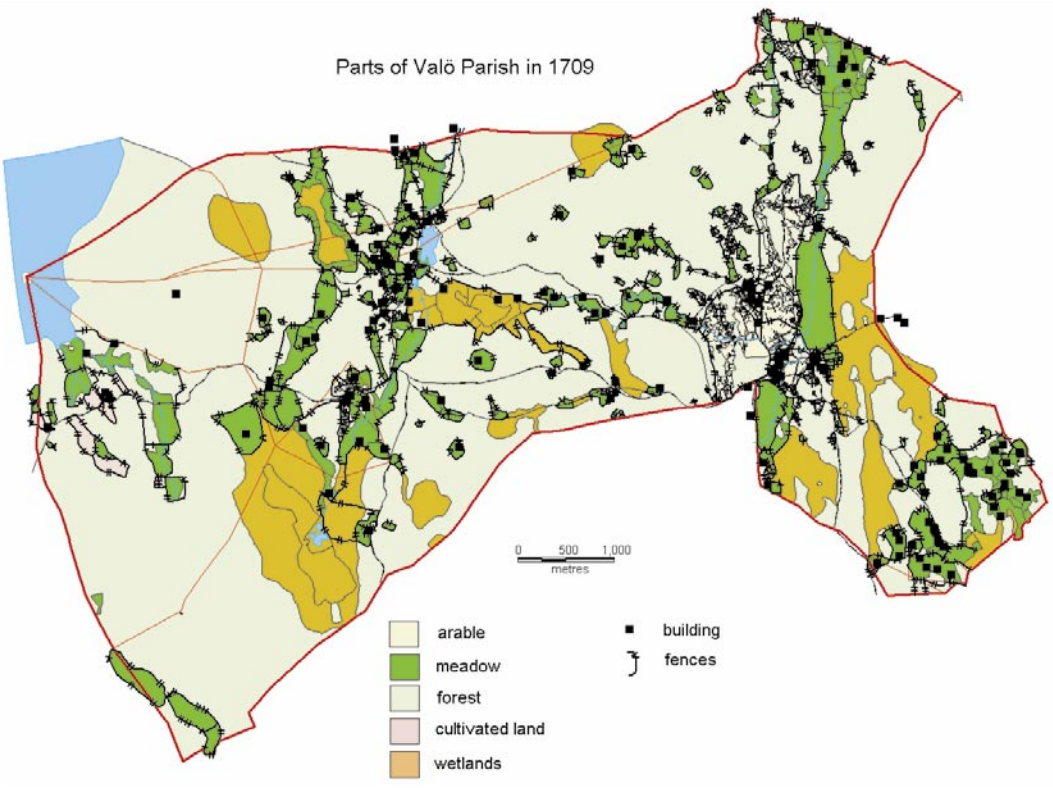


Figure 11-7. *The central part of Valö in 1709.*

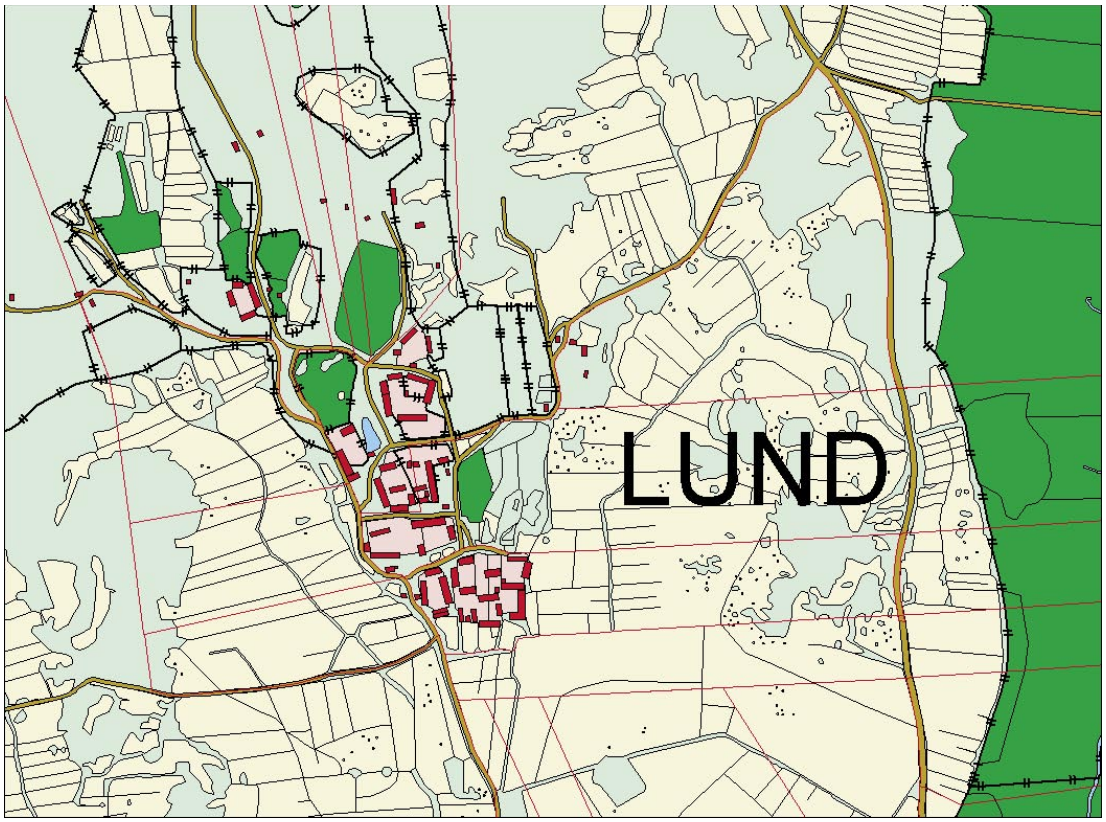


Figure 11-8. *In the maps it is possible to study details and the more modern maps from the 19th century the actual layout of the buildings. Note the amount of clearance cairns to the east of the village.*

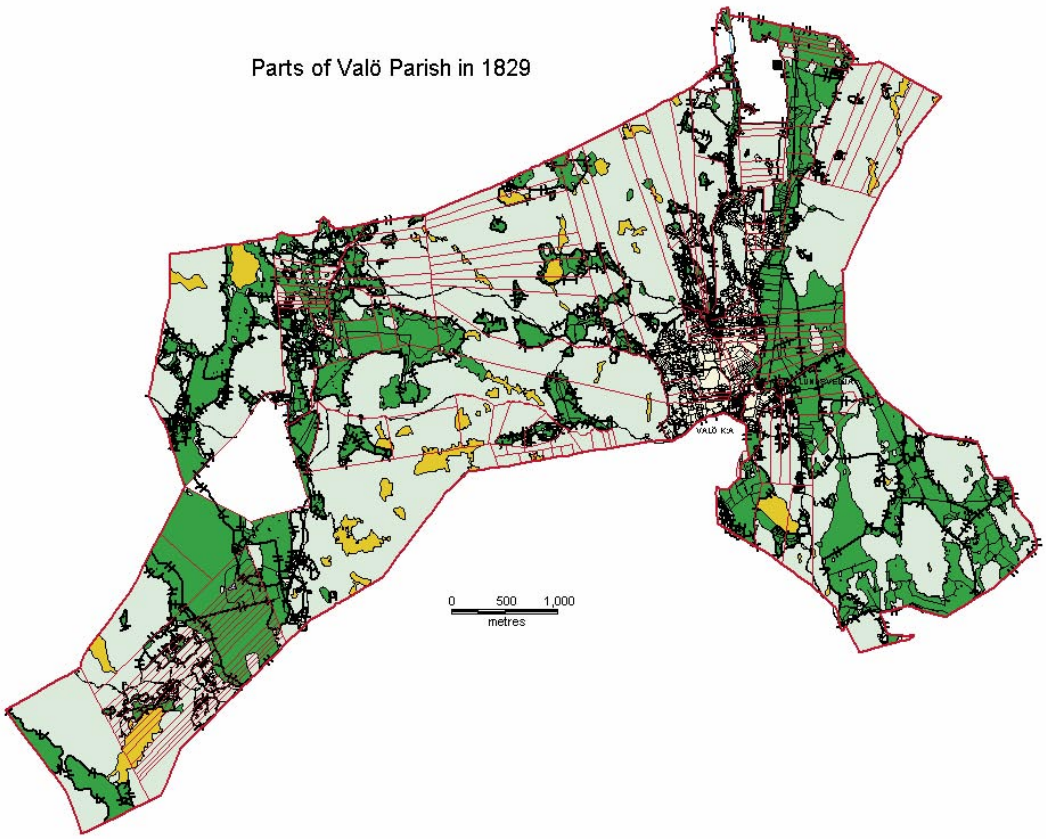


Figure 11-9. *The vectorised version av the map from 1829 over a large area of Valö parish.*

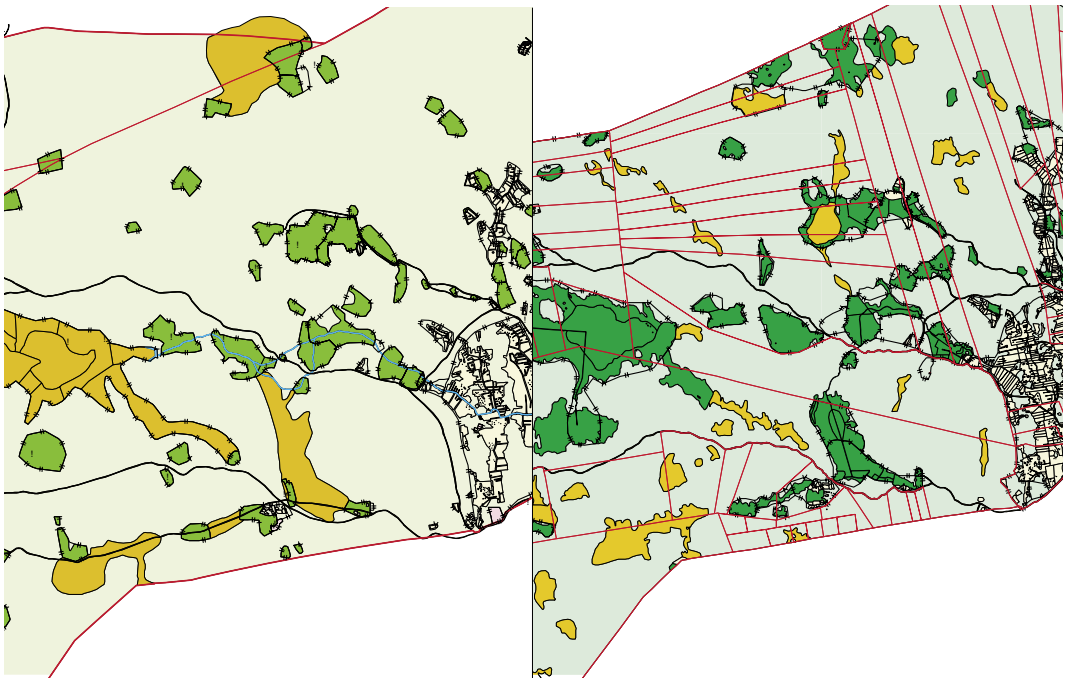


Figure 11-10. *The same area in Valö 1709 and 1829. It is possible to see that the meadows have expanded into the wetlands and the forest.*

Table 11-1. The area of the arable in the areas mapped in Valö. Observe that the areas differ a bit. The older map from 1709 covers a larger area. It is however clear that the arable has increased as well as the meadow.

	1709		1829	
Arable	890,597	(2.15%)	1,400,276	(4.75%)
Meadow	5,919,645	(14.30%)	8,031,235	(27.23%)
Wetlands	5,232,176	(12.64%)	990,382	(3.36%)
Water	1,651,885	(3.99%)	51,335	(0.17%)
Total	41,387,890	100.00%	29,489,330	100.00%

11.3 Household population size

In Misterhult the priest's interrogation registers have been used for two periods of years, 1851–60 and 1893–99. Priest's interrogation registers are missing in Misterhult before 1812. In Valö however, priest's interrogations from 1751–62, 1800–06, 1850–54 and 1891–95 have been used. The registers show the increase of crofter's holdings and other new establishments in the 19th century and also the population growth, see Table 11-2. The average household size in Valö has generally decreased between c 1750 and c 1895, from almost 10 persons per household in 1751–62 to c 6 individuals per household in 1891–95. When the farm households are separated from the crofter's holdings in Valö the average number of persons per household in 1751–62 is over 12. This is more than the average household size among the crofter's holdings, which comprises almost 9 persons per household at the same time. In 1891–95 the average farm household size was 7,5 persons per household and at the same time the crofter's holdings comprised c 5,7 persons per household in average.

In Misterhult the changes between 1851 and 1893 indicates a similar pattern. In these c 50 years the average household size decreased from almost 7 persons per household in 1851–60 to c 5,5 persons per household in 1893–99. If farms are separated from crofter's holdings some differences can bee seen. In 1851–60 the farm household size can be estimated to almost 8 persons per household. Crofter's holdings however have an average household size of just over 5 persons. At the end of the 19th century the farm household size has increased to a little more than 6 persons and the crofter's holdings still is c 5 persons per household.

Table 11-2. Average household size (number of persons per household) in Misterhult and Valö. Farms and crofters holdings separated. Source: Parish catechetical meeting registers in Misterhult 1850[5] and 1895[6] and in Valö 1750[7] and 1895[8].

	c 1750	c 1850	c 1895
Misterhult (all households)		6.7	5.5
Farms in Misterhult		7.9	6.7
Crofter's holdings in Misterhult		5.2	5.1
Valö (all households)	9.8	6.3	6.1
Farms in Valö	12.6	7.7	7.5
Crofter's holdings in Valö	8.9	5.4	5.7

As we can see, the general average household size has decreased over time and farm household seems to have been more populated than the crofter's holdings, which is probably due to the number of fram-hands and maids in the farm households. Crofter's holdings in Valö had generally more household members than the crofter's holdings in Misterhult. Household size around 1895 among farms in Valö seems to have been a bit more populated than the farms in Misterhult at this time. In 1850 however the average farm household size was a bit larger in Misterhult than in Valö.

11.4 The subdivision of farms (Sw Hemmansklyvningen)

A common trait, but regionally specific, is the subsequent partitioning of farms in the 19th century. This can be observed in the suit of maps presented here. And can also studied through a number of different sources.

[5] Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:6A. År 1851–1860.

[6] Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:17B. År 1893–1899.

[7] Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:1. År 1751–1762.

[8] Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:20. År 1891–1894.

Table 11-3. Number of units *(Sw mantalssatta enheter)* in Misterhult and Valö. 1550, 1630, 1680, 1730 and 1871 are based on cadastral records whereas 1750, 1800, 1850 and 1895 are based on the priests records (husförhörslängder), that means that the information from the later mentioned records more represent households than cadastral units.

	1550	1630	1680	1730	1750	1800	1850	1871	1895
Basthult, Stora	2	1	1	1			11	1	7
Ekerum							18		9
Laxemar, Lilla	3	3	2	2			12	2	8
Simpevarp	1	1	1	1			8	1	7
Botarsbo					2	10	9		12
Lund	4	4	4	4	8	22	11	4	11
Vreta				1	1	2	1	1	1
Lundsvedja	4	4	4	4	7	12	10	4	20
Tomta	1	1	1	1	3	3	3	1	1
Kämbo							1 (torp)		2 (torp)
Dannebo	1	1	1	1	5	7	2	1 (torp)	4

This table gives us a good idea of the difficulties, when using this kind of sources. The cadastral units do not always correspond with the number of households in a village. The general trend is however clear in the table. There were also people owning land in villages they did not inhabit. So a farm might be divided into three parts, but one of the parts is not the base for a farm, but rather an addition of land to a landowner living near or far from the place.

One example is Lilla Laxemar. There were seven small plots in 1831. Bengt Adamsson, who lived in Lilla Basthult owned 1/8, 1/16 was owned by Sven Olsson, another 1/16 was owned by Didrik Nilsson, that both apparently lived in the village. The rest of the owners one pilot called Alexander Persson. In Langö (1/16), Peter Olsson in "Westerbo" (1/16), the widow Lisa Magnidotter in Äverö (1/16) and the children of Lage Olsson (1/16) were not living or using the lands.

11.5 The people in the area

In order to populate the landscapes described above, examples of households are given here, where we meet the families living in some of the houses and crofters in a number of years. The names of the inhabitants are given and their present family situations are described.

Valö in the county of Uppsala

Vreta 1751–62

In the middle of the 18th century Jacob Jansson (b 1684) and his wife Anna (b 1688) live in Vreta. The household includes their son (his firsts name is not possible to read) Jacobsson (b 1721) and his wife Margareta (b 1727), and Jacob's and Anna's other son Olof Jacobsson (b 1733) and his wife Lisa (b 1731). Olof and Lisa had a son named Jacob (b 1760). Additionally one more person (b 1731) is included in the household, but nor name or connection readable.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:1, s 131. År 1751–1762)

Vreta 1800–06

In the years between 1862 and 1800 a generation shift has been carried through. Now the farmer Jacob Olsson (b 1760) cultivates Vreta. In the previous priest's register above, he was a little child – at the most a two-year-old boy – now he is about 45 years old. Jacob lives here with his wife Cajsa Mattsdotter (b 1766, now 37 years old). They have no children. The household also comprises the farmhand Joh. Nilsson (b 1787), the farmhand Erik Jansson (b 1782), and the maids Stina Jansdotter (b 1781), Maria Lars(?)dotter (b ?), Cajsa Jansdotter (b 1784) and Cajsa ? (her surname could possibly be Jansdotter too, but it is a bit unclear) (b 1788). However, the two maids named Cajsa did not live at the farm at the same time. The maid Cajsa who was born in 1784 moved from Vreta in 1804 and the other Cajsa (b 1788) moved in in 1800.

There is a second household at Vreta, which comprises of Jacob Olsson's parents, Olof Jacobsson (b 1733) and Lisa Andersdotter (b 1733). We also get to know that Jacob's father Olof Jacobsson is a verger *(Sw kyrkovaktmästare)*.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:4b, s 27. År 1800–1806)

Vreta 1850–54

In the middle of the 19th century a man named Olof Jansson (b 1803) and his wife Anna Larsdotter (b 1805) lives at Vreta. They don't seem to be related to the inhabitants in 1800. Olof and Anna have three daughters Johanna Margareta (b 1841), Anna Charlotta (b 1843) and Sofia Christina (b 1845). A widow named Greta Olsdotter (b 1767), who is the mother of J.M.S. has recently died in 1851. (There is no information on who J.M.S. could be) Olof's brother Matts Jansson (b 1798) is farmhand at Vreta and there are two maids named Maja Greta Jansdotter (b 1827) and Anna Wahlberg (b 1834).

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:12, s 37. År 1850–1854)

Vreta 1891–95

Now the farm is set to 1/4th mantal. Vreta is cultivated by Gustaf Forsberg (b 1844 in Forsmark) and his wife Anna Charlotta Olsdotter (b 1843). Anna Charlotta was one of the three daughters who lived here in 1850. Apparenlty she is the one who inherited the farm. In the household lives the farmhands Petter (Topp) Karlsson (b 1865) and Mattias Olsson (b 1873), and the maids Maria Margareta Mattsdotter (b 1859) and Maria Augusta Hållinder (b 1869).

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:20, s 40. År 1891–1894)

Lund 1751–62

Anders Persson (b 1716) and his wife Brita (f 1714) lives here together with their sons Per (b 1743) and Anders (b 1751), and their four daughters Katarina (b 1740), Anna (b 1745), Maria (b 1749) and Brita (b 1754). Anders' father (b 1685) (the name is not possible to read) and his mother Anna (b 1681) is part of the household. However, Anders' father has recently died (in 1761). Furthermore the farmhand Matts (b 1729) and the maid Maria (b 1722) is included in the household.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:1, s 133. År 1751–1762)

Lund (Lunds by) 1800–06

Household nr 1: The dismissed solider Mats Glad (b 1734 d 1805) and his wife Cajsa Jansdotter (b 1749 or 1748, 65 years old) lives here. Their son the unskilled worker *(Sw grovarbetare)* Erik Wahlund (b 1764, 44 years) and his wife Stina Wahlund (b 1783, 22 years old) also lives here together with their son Erik (b 1806). The household also comprises the "mother" (could be Stina's mother) Cajsa Jönsdotter (b 1751), who is "blind and miserably poor", and the old maid Ingrid (b 1785). The brother Matts Mattson (b 1778, 27 years old) and his wife Maria Jansdotter (b 1778, 27 years old) lives here with their son Matts (b 1804) and their daughter Cajsa (b 1800). The widow Cajsa Persdotter (b 1787 d 1804) used to be pert of the household.

Household nr 2: Erik Hansson (b 1771, 34 år) and his wife Anna Persdotter (b 1761, 44 years old) lives in the second household with their son Jan (b 1797, 8 years old) and the mother in law Cajsa. (She is probably deceased since her name is crossed out).

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:4b, s 35. År 1800–1806)

Lund (under Forsmark) 1850–56

The farmstead is set to 4 ½ mantal. Until 1854 Matts Pehrsson (b 1791) and his wife Anna Jansdotter (b 1792) lived here with their daughter Christina Catarina (b 1825) and their sons Pehr (b 1828) and Johan (b 1832). In 1854 the family moved to Tierp.

After that Anders Jansson (b 1826), who moved in 1854, lived here. The household comprises the maid Anna Charlotta Mattsdotter (b 1830) and Anders Jansson's father the verger *(Sw kyrkovaktmästare)* Jan Mattson (b 1789) and the verger's wife Maria Mattsdotter (b 1794). In addition Anders Jansson's siblings; the sister and maid Katarina Jansdotter (b 1822), the sister and maid Greta Stina Jansdotter (b 1830), the sister and maid Charlotta Jansdotter (b 1832) and the brother and farmhand Erik Jansson.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:12, s 73. År 1850–1854)

Lund (nr 3) 1891–95

The farm is set to ½ farm. The stableman Anders Petter Blom (b 1851) and his wife Kristina Wahlström (b 1854) lives here. They have seven children: the son Per Johan (b 1875), the son Mattias (b 1876), the daughter Johanna Sofia (b 1878), the son August Albert (b 1880), the son Gerhard Wilhelm (b 1883), the daughter Ester Kristina (b 1886) and the daughter Hilda Maria (b 1889).

The stableman Karl Adolf Karlsson (b 1866) and his wife Helena Matilda Larsdotter (b 1866) is part of the household too. They have two sons Karl Fredrik (b 1890) and Erik Joel (b 1891). In addition Gustaf Holmgren (b 1858) and his wife Anna Gustava Blom (b 1850) comprises the household.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:20, s 71. År 1891–1894)

Tomta 1751–62

The widow Agneta Nordelid (b 1705) and her sons Per (b 1733), Nils (b 1741) and Jacob (b 1744) lives here. The names of Per and Nils are crossed over, but there is no information if they died or moved. Agnetas daughter Kristina (or Stina) (b 1737) is crossed over, since she died in 1761. A farmhand – Jan (b 1733) and three maids; Margareta (b 1730), Maja (b 1734) and Cajsa (b 1731) is part of the household.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:1, s 144. År 1751–1762)

Tomta 1800–06

The farm comprises two households. The crofter Anton (d 1803) and his daughter Margareta (b 1750) cultivate number one. The maids Stina (b 1761), Cajsa Jansdotter (b 1771), Greta Andersdotter (b 1774) and Greta Larsdotter (b 1767) are part of the household. However the maid Greta Andersdotter moved to Prästgården in 1801. The farmhand Anders Eriksson (b 1782) lives at Tomta too.

In the second household the farmer Erik Andersson (b 1758, 47 years old) and his wife Stina Ohlsdotter (b 1768, 37 years old) lives. They have eight children: their sons Anders (b 1782), Olof (b 1786), and Johan (b 1802), their daughters Marta (b 1788), Stina (b 1789), Cajsa (b 1796) and Greta (b 1800) and the son Erik (b 1805).

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:4b, s 40. År 1800–1806)

Tomta 1850–54

On the farm Per Eriksson (b 1816) and his wife Brita Maja Jansdotter (b 1820) lives together with their daughter Maria Helena (b 1841), the sons Johan Erik (b 1843) and Anders (b 1845) and the daughter Christina (b 1852). In addition two twin daughters Charlotta and Anna Catarina was born the 10/6 1850. Both of them died two days later, the 12/6 1850.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:12, s 81. År 1850–1854)

Tomta 1891–95

The farm is set to a half mediated assessment unit of land *(Sw förmedlat mantal)*. The crofter Johan Erik Persson (b 1843) lives here. In 1870 he married his wife Johanna Charlotta Davidsdotter (b 1850). They have eight children; the son Johan Henrik (b 1871), the daughter Anna Agda (b 1873), the son Anders Petter (b 1875), the son Erik (b 1877), the daughter Kristina Charlotta (b 1879), the daughter Elin Maria (b 1881), the sons Sven (b 1883), and Knut (b 1887), the daughter Lovisa (b 1888) and the son Albert (b 1890). The stableman Frans Viktor Jansson (b 1866) and his wife Emma Lovisa Wahlström (b 1868) is part of the household too. They married in 1893 and have one daughter Ebba Viktoria (b 1894). Furthermore the farmhand Anders Andersson (b 1871) lives here.

(Source: Riksarkivet Arninge, Husförhörslängder, Uppsala län, Valö socken, AI:20, s 40. År 1891–1894)

Misterhult in the county of Kalmar

The crofter's holding Grönlid 1851–60

The shoemaker Olof Nilsson (b 1800) and his wife Maja Nilsdotter (b 1802) live here. They have the sons Nils Johan (b 1842) and Per (b 1845), and the daughters Lisa Karin (b 1834) and Lotta (b 1831). Lotta moved to Grönlid in 1852 from Uthammar and she has two sons; Otto Fredrik (b 1854) and Carl Johan (b 1856). Both of her sons died before they were one year old. Furthermore the farmhand Carl Westerberg (b 1822) is part of the household. He had been divorced from his wife in 1854, which must have been fairly uncommon.

(Source: Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:6A, s 309. År 1851–1860)

The crofter's holding Grönlid 1893–99

The crofter's holding comprises three households. In number one there has been a generation shift between 1860 and 1893 and the sailor Nils Johan Olofsson (b 1842) has taken over the crofter's holding at Grönlid from his parents. He was their oldest son, see Grönlid 1851–60 above. Nils Johan lives here with his wife Stina Karolina Nilsdotter (b 1834 i Misterhult). They married in 1866, but have no children (mentioned). The worker Karl Johan Nilsson (b 1858) and their foster-son Karl Axel Karlsson (b 1889) live here too.

In the second household the seaman Viktor Nilsson (b 1867) used to live. He was married to his wife Hilda Ottilia Nilsdotter (b 1867) in 1891 and they have one son; Karl Henrik (b 1893). However this family moved from Grönlid in 1894. Now the widow Lovisa Nilsdotter (b 1842) lives here with her four sons Karl Peter Nikodemus (b 1879), David Martin (b 1885), Josef Albin (b 1887) and Erik Emanuel (b 1892). The son David Martin moved away from the crofter's holding in 1899.

The third household comprises Axel Erik Gran (b 1874) and his wife Albertina Wilhelmina Källinge (b 1869). They were married in 1896 and have on son Bengt August (b 1898). Axel Erik's father the worker Gustaf Nilsson Gran (b 1816) lives here too. Furthermore the dependent *(Sw inhyses)* maid Anna Sofia Alexanderdotter (b 1846) is part of the household. However, this third household moved away from Grönlid in 1898.

(Source: Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:17A, s 142. År 1893–1899)

Lilla Laxemar 1851–60

This farm is set to 1/8th assessment unit of land *(Sw mantal)*. Nils Joh. Nilsson (b 1820) and his wife Greta Lisa Svensdotter (b 1823) live here. The family has six children and three of them are called stepchildren. This probably indicates that Greta was married to another man before and has three children from this marriage. The children are called; Sven Petter Pettersson (b 1841, step son), Johan Fredrik (b 1849), Stina Maria Josefina (b 1843, step-daughter), Greta Matilda (b 1846, step-daughter), the son Carl Oskar (b 1852) and the daughter Stina Sofia (b 1857). Two farmhands are part of the household; Carl Pet Andersson (b 1837) and Sven Johan Persson (b 1833) and the two maids Anna Maria Andersdotter (b 1820) and Charlotta Olofsdotter (b 1835). Furthermore two other persons (called "girls") that belongs to the household; Carolina Arvidsdotter (b 1835) och Maja Lisa Sörensdotter (b 1837).

(Source: Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:6B, s 107. År 1851–1860)

Lilla Laxemar 1893–99

This farm is divided between two farmers. The first farm is set to 1/8th asessment units of land. This farmstead is owned by Karl Anton Lundgren (b 1871). His wife is called Augusta Matilda Karlström (b 1878) and they were married in 1895. They have two sons; Karl Tage Arthur (b 1878) and Sture Robert (b 1898). Two farmhands; Gustaf Leonard Andersson (b 1877) and Karl Johan Johansson (b 1881) and four maids; Susanna Anderström (b 1873), Syster Amanda Berg (b 1879), Maria Lovisa Fransdotter (b 1871) and Amanda Josefin Johansdotter (b 1876) lives here too.

The second 1/8th assessment units of land is cultivated by Karl Mickelm Larsson (b 1841) and his wife Eva Maria Sonesdotter (b 1839). They were married in 1866 and they have two sons, the twins Sven Magnus och Karl Johan (both b 1866) and one daughter Augusta Matilda (b 1878).

(Source: Riksarkivet Arninge, Husförhörslängder, Kalmar län, Misterhult socken, AI:17B, s 971. År 1893–1899)

12 Rural production and its changes

12.1 Arable production and livestock

This section deals with the production in the rural areas investigated here. One way of studying this is through sources that deal with tithe and livestock. These sources have been used extensively in historical studies /Lagerstedt, 1968; Myrdal and Söderberg, 1991; Andersson Palm, 1993/.

12.1.1 Livestock

Concerning stock keeping Table 12-1 shows some regional variations. In the four parishes Österlövsta, Hållnäs, Valö and Börstil the distribution pattern is quite the same. The distribution in Forsmark is different however, since the share of horses, oxen/bullocks/bulls and goats/sheep is lower here. In Forsmark the share of cows is much higher than in the other parishes in Uppland. In the Oskarshamn area the pattern of distribution is different from the areas in Uppland. In this area of Småland the share of horses is much lower than in the investigated area in Uppland. Instead the share of oxen/bullocks/bulls is far greater. The share of goats/sheep and pigs in the Oskarshamn area resembles the pattern in the parishes in Uppland.

Table 12-1. The distribution of animals. Figures in percent. Source: Torsten Lagerstedt's excerpter the years 1627–1628.

	Horse	Cow/heifer	Ox/bullock/bull	Goat/sheep	Pig
Österlövsta Hållnäs	23.9	51	7.4	15.1	2.7
Valö	22.8	50.3	10	14.8	2.1
Börstil	20.7	56.6	5.7	14.7	2.3
Forsmark	16.1	73.1	1.5	7.3	2
Tunaläns härad	10.6	45.8	26	15.5	2.1
Stranda härad	12.2	43	28.9	13.4	2.5

12.1.2 Arable production

Table 12-2. Arable production 1640. råg: rye, korn: barley, havre: oats, wheat: vete. The measures vary regionally *tunna* equals a barrel and the others are subdivisions of that. Source: Torsten Lagerstedt's excerpter.

Härad	Socken	År	Sädesslag	Tunna	Fjärding	Kappor	Fat
Olands	Österlövsta	1640	Råg	65	2	3	
Olands	Österlövsta	1640	Korn	78	6	3	
Olands	Österlövsta	1640	Vete	1	7	1	
Olands	Österlövsta	1640	Havre				
Olands	Hållnäs	1640	Råg	50	1	1.75	
Olands	Hållnäs	1640	Korn	21	6	2	
Olands	Hållnäs	1640	Vete				
Olands	Hållnäs	1640	Havre				
Frösåker	Valö	1640	Råg	39	2	0	
Frösåker	Valö	1640	Korn	23	2	0	

Härad	Socken	År	Sädesslag	Tunna	Fjärding	Kappor	Fat
Frösåker	Valö	1640	Vete				
Frösåker	Valö	1640	Havre				
Frösåker	Börstil	1640	Råg	57	6	3.2	
Frösåker	Börstil	1640	Korn	64	6	3.2	
Frösåker	Börstil	1640	Vete				
Frösåker	Börstil	1640	Havre				
Tuna län	Misterhult	1640	Råg	11	3	1	
Tuna län	Misterhult	1640	Korn	21	3	0	
Tuna län	Misterhult	1640	Vete				
Tuna län	Misterhult	1640	Havre				
Tuna län	Kristdala	1640	Råg	8	0		6
Tuna län	Kristdala	1640	Korn	31	1		6
Tuna län	Kristdala	1640	Vete				
Tuna län	Kristdala	1640	Havre				
Stranda	Döderhult	1640	Råg	14	2.25	0	
Stranda	Döderhult	1640	Korn	28	3.19	0	
Stranda	Döderhult	1640	Vete				
Stranda	Döderhult	1640	Havre				

As we can see in Table 12-2 above, there are some regional changes between the investigated parishes in Uppland and Småland. The production of barley *(Sw korn)* was the major crop in all the investigated parishes in Småland. In Uppland the distribution pattern is different since rye *(Sw råg)* was most common in Hållnäs and Valö. In Österlövsta and Börstil the barley production was the major crop, but the production of barley and rye was much more equal, than in the parishes in Småland.

According to the figures there seems to have been a larger production of arable in the parishes in Uppland than in Småland. However it is important to point out that the figures are not comparable, since different sizes of barrels *(Sw tunnor)* were used in different parts of Sweden. To get a more detailed analysis more information on production will have to be used. Some methods of creating estimates for the region will also be necessary to device.

In Gräsö the conditions of cattle raising have been particularly good. Because of the land uplift extensive lowlands were common, which have been used as meadows /Borgegård, 1998 p 9/. In the 16th century fishing was more important than farming according to measures of taxation, as the tax levels were determined on fishing. The arable lands were quite small, with extensive pastures.[9] Furthermore charcoal making and charcoal transportation to the iron works in Forsmark were important /Borgegård, 1998 p 28/ and some iron mines have been located on the island in Norrboda (18th century) and in Söderboda (end of 19th and beginning of 20th century) /Borgegård, 1998 p 28, 41, 44/.

It is clear that the two areas are interlocked with the surrounding society in various ways. This has to be investigated further to fully understand why for instance land-use is changing over the years. The iron works in Forsmark and Österlövsta have of course been very important in the region. As an example there were four blast furnaces and six hammers in Forsmark in 1604 /Nisser, 1984 p 12/. Charcoal making became more and more important in Hållnäs in the 17th century and due to this the fishing and sailing seems to have lost some of its importance in the 17th century. The extensive charcoal making could have implied a decrease in corn- and root vegetable production /Stridsberg, 1992 p 64 f /.

[9] Borgegård 1998 p 21. This is described in a quotation from the18th century but without references.

13 Future studies

Future studies consists of two types of more detailed studies. One deals with further analyses of the GIS-layers and understanding the changed of land-use and settlement structure over the centuries. The other consists of field investigations of two types. The first one consists of a more detailed study of the old landscape. What type of remains of ancient settlement can be seen in the present day landscape? Another study will deal with the perception of the landscape today and the changes during the 20th century. This will be carried out with interviews and surveys.

There are significant changes in the landscape and great regional differences. The maps showing arable in different periods, collected for the larger area has not been analysed to a full extent. Some indications have been shown in this report. Further analyses including soil types, topography and sizes and spatial structure of the holdings would reveal more information about the areas land us in history.

The overall settlement structure that changes over time will also be further studied, discussed and explained, as will the interesting features concerning the land ownership. Continue to study the evolution of the farms in the detailed areas. Then the population and settlement can be related to one another. Also the land-less has to be studied in more detail. They are the new group that emerges in the Swedish agrarian society.

One of the things that we have not presented here is the relation between ancient monuments and the medieval settlement. The traits of the older landscape, including the medieval and early modern landscape and the modern period will be studied in detail in the investigated areas.

The modern inhabitant's view of the landscape holds also an interesting potential for further investigation. The policies are changing on how farmers are going to keep up their landscape. Interviews with farmers and other will reveal more qualitative information on both modern and historical landscapes.

14 Preliminary layout of the final report

The final report will include the substantial parts of this preliminary report. There will be additions, since there are going to be further studies carried out as outlined in the previous section. There will also be more examples from the already digital maps. One larger addition will be the information from field investigations, both the survey on the ground and the interviews with people in the areas.

15 Sources

Archives
Riksarkivet (the National Swedish Archive) Marieberg

Kammararkivet, Jordeböcker, Stockholms län, 1640
Kammararkivet, Jordeböcker, Stockholms län, 1653
Kammararkivet, Jordeböcker, Stockholms län, 1730
Kammararkivet, Jordeböcker, Stockholms län, 1777:1–2
Kammararkivet, Jordeböcker, Stockholms län, 1825:1–5

Kammararkivet, Jordeböcker, Uppsala län, 1632:23
Kammararkivet, Jordeböcker, Uppsala län, 1636
Kammararkivet, Jordeböcker, Uppsala län, 1680
Kammararkivet, Jordeböcker, Uppsala län, 1730
Kammararkivet, Jordeböcker, Uppsala län, 1780
Kammararkivet, Jordeböcker, Uppsala län, 1825:3

Kammararkivet, Jordeböcker, Kalmar län, 1631:9
Kammararkivet, Jordeböcker, Kalmar län, 1631:7
Kammararkivet, Jordeböcker, Kalmar län, 1680:1–3
Kammararkivet, Jordeböcker, Kalmar län, 1730
Kammararkivet, Jordeböcker, Kalmar län, 1780
Kammararkivet, Jordeböcker, Kalmar län, 1825:1–4

Kammarkollegiets arkiv (the Kammarkollegie Archive) Riddarholmen, Stockholm

Jordeböcker, Stockholms län, 1871:1–12
Jordeböcker, Uppsala län, 1875:1–5
Jordeböcker, Kalmar län, 1880:1–5

Landsarkivet, Vadstena

Tuna läns och Sevede kontrakt, H 4, Folkmängdsstatistik (om Misterhults totala folkmängd 1860–63, 1866, 1869–1906)

Tuna läns och Sevede kontrakts prostarkiv: G 2, Befolkningsstatistiska tabeller 1776, 1785, 1788, Folkmängdstabell 1785. (Om Misterhults sociala befolkningsstruktur 1785)

Tuna läns och Sevede kontrakt, Statistiska tabeller 1802–1808, 1810–1859, H 3. (1850 använt för att beräkna den sociala befolkningsstrukturen i Misterhult 1850)

Riksarkivet Arninge: Husförhörslängder

Kalmar län, Misterhult socken, AI:6A–B. År 1851–1860
Kalmar län, Misterhult socken, AI:17A–B. År 1893–1899

Uppsala län, Valö socken, AI:1. År 1751–1762
Uppsala län, Valö socken, AI:4a–b, 1800–1806

Uppsala län, Valö socken, AI:12, 1850–54
Uppsala län, Valö socken, AI:20. År 1891–1894

Kulturgeografiska institutionen, Stockholms universitet

Torsten Lagerstedts excerpeter, Kulturgeografiska institutionen.

Information on cadastral units c 1550

Ferm, Brunius (ed) (1990) Det Medeltida Sverige Småland, Handbörd, Stranda, 4:2. Riksantikvarieämbetet, Stockholm

Rahmqvist, Sigurd (ed) (1999) Det Medeltida Sverige, Småland, Aspeland, Sevede, Tuna län, 4:4, Riksantikvarieämbetet, Stockholm

References

Andersson Palm L, 1993. Människor och skördar. Studier kring agrarhistoriska metodproblem 1540–1770. Institutet för lokalhistorisk forskning, skriftserie nr 4. Avhandlingar från Historiska institutionen i Göteborg, 6. Göteborg.

Andersson Palm L, 2000. Folkmängden i Sveriges socknar och kommuner 1571–1997: med särskild hänsyn till perioden 1571–1751, L A Palm, Göteborg, Visby.

Borgegård S-O, 1998. Upplev Gräsön. En vandring i tid och rum genom ett levande kulturlandskap, Gräsöfondens natur- och kulturguide, Gräsöfonden.

Broberg A, 1990. Bönder och samhälle i statsbildningstid: en bebyggelsearkeologisk studie av agrarsamhället i Norra Roden 700–1350, Upplands fornminnesförening.

Dahlbäck G, 1974. Landhöjning och bebyggelse i nordligaste Uppland, in Fornvännen 1974/3 pp 121–131.

Dovring F, 1951. De stående skatterna på jord 1400–1600. Lund.

Ene S, 1998. Removal of text and cartographic symbols in scanned maps, http://www.humangeo.su.se/gpu2/scanfilter/scanfilter.htm (Jan 1998).

Ene S, Hall O, Jansson U (forthcoming). Geografisk informationsbehandling och landskapsanalys i Jansson, Ulf (red). Kartlagd land: Kartor som källa till de areella näringarnas geografi och historia. Skogs- och lantbrukshistoriska meddelanden. Kungl. Skogs- och lantbruksakademien. Stockholm.

Jansson U, 1993. Ekonomiska kartor 1800–1934. En studie av småskaliga kartor med information om markanvändning. Riksantikvarieämbetet. Stockholm.

Lagerstedt T, 1968. Sädesodling och boskapsstock under 1600-talet. Ymer 1968.

Larsson L O, 1985. Jordägofördelningen i Sverige under Gustav Vasas regering, i Scandia 51 pp 61–90.

Myrdal J, Söderberg J, 1991. Kontinuitetens dynamik. Agrar ekonomi i 1500-talets Sverige. Acta universitatis Stockholmiensis. Stockholm studies in economic history 15. Stockholm.

Nilsson L, 1992. Historisk tätortsstatistik. Del 1: Folkmängden i administrativa tätorter 1800–1970, Stads- och kommunhistoriska institutet, Stockholm.

Nisser M, 1984. Forsmarks bruks historia i Jansson & Jansson (red) 1984 Forsmarks bruk – en uppländsk herrgårdsmiljö, LTs förlag, Stockholm.

Norman P, 1993. Medeltida utskärsfiske. En studie av fornlämningar i kustmiljö. Nordiska museets handlingar 16. Stockholm.

Norman P, 1995. Sjöfart och fiske. Fornlämningar i Sverige 3. Riksantikvarieämbetet, Stockholm.

Renting A, 1996. I skuggan av Lövsta bruk. Järnbruksrörelsens inverkan på agrarsamhället i norra Uppland 1630–1930, Rapporter från Barknåreprojektet nr 6, Meddelanden nr 96, Kulturgeografiska institutionen, Stockholms universitet.

Sandelin S, 1992. Öregrund, Roslagens pärla, Streiffert Stockholm.

Stridsberg E, 1992. Hållnäsbygden under kolskogsepoken 1626–1926, Meddelanden serie B 77, Kulturgeografiska Institutionen, Stockholms universitet.

Tollin C, 1999. Rågångar, gränshallar och ägoområden: rekonstruktion av fastighetsstruktur och bebyggelseutveckling i mellersta Småland under äldre medeltid, Kulturgeografiska institutionen Stockholms universitet.

Winberg C, 1977. Folkökning och proletarisering, Bo Cavefors Bokförlag.

Windelhed B, 1995. Barknåre by. Markanvändning och bebyggelse i en uppländsk by under tusen år. Meddelanden serie B92. Kulturgeografiska institutionen Stockholms universitet. Stockholm.

Appendix 1

Structure of a point file

old X	old Y	New X (E)	New Y (N)
3.451847	12.112421	1627806.998588	6691302.402958
3.733345	15.880487	1627831.548386	6691782.990499
17.014823	5.895802	1629593.375500	6690578.183210
15.349245	12.058441	1629342.475364	6691337.420479
1.587436	10.528911	1627567.890987	6691081.240014
19.853882	9.191247	1629928.529106	6690998.334930
5.373528	9.282047	1628067.254314	6690938.138520
17.821897	10.491121	1629658.627537	6691152.518535
12.120329	5.204835	1628964.892280	6690441.330819
11.566181	3.064578	1628901.627115	6690161.000691
11.150701	7.427539	1628824.292286	6690720.490085
3.947500	11.557300	1627872.728122	6691217.958166
1.705455	5.646120	1627597.475969	6690440.245719
4.061727	2.693147	1627921.272592	6690069.406000
2.849873	0.696530	1627773.637347	6689799.658890
1.269427	1.076144	1627563.945252	6689851.206112
6.575012	3.226398	1628253.214229	6690155.050723
7.946685	13.721874	1628388.588680	6691516.605300
5.925843	15.375954	1628114.715752	6691727.477041
6.756266	13.702848	1628238.635442	6691517.646642
8.535816	10.071491	1628477.623415	6691055.290824
8.490065	9.267550	1628472.416706	6690951.156630
4.989868	4.481483	1628038.448538	6690306.060663
8.126085	12.693506	1628414.860610	6691388.407564
8.471970	7.833748	1628473.245280	6690766.365933

Structure of a point file (A113_17_7_a) This is one of 10 parts of this map all of them consists of about the same amount of points. The first two columns, old x and old y, are the coordinates of the points in the not rectified image. The next two columns are the location of those points in a georegistered image. That is in a modern map. With the help of these points the image has been resampled (warped). The result of this resample is that the the old maps has been stretched in various directions to fit the modern coordinate system.

Appendix 2

Manual on extraction of thematic information from of scanned paper maps with ENVI, IDRISI and ADOBE PHOTOSHOP

Stefan Ene och Ola Hall 2004-01-15

This manual deals with the pre-processing steps, registration, subsetting, and mosaicking, of scanned paper maps. It also deals with the classification and extraction of thematic map information.

In this working example we assume the presence of scanned versions of the Cadastral map of Sweden, 1940—19XX, 1:10,000 (Ekonomiska kartan).

Map orientation

Before you start. Check the orientation of maps with Photoshop. Orientate maps with north pointing to the top of your monitor. Use ROTATE CANVAS under menu IMAGE. Save file to the same filename. This is now your original data.

Registration of maps with acceptable geodetic quality (e.g. from the 70's and onward)

Use ENVI and the function IMAGE-TO-MAP at menu MAP/Registration. Chose registration projection SWEDEN and 1 m pixel size. Use the cursor to identify coordinate crosses in the image and type the corresponding coordinate pair in the empty field marked as N and E. If correct, add the point to the coordinate list. Repeat the same procedure for all corners. Check RMS, it should be zero or close to zero. Go to OPTIONS menu and select WARP FILE. In the next dialog window, select RST as transformation algorithm and Nearest Neighboor as resampling algorithm. The syntax for the output filename is: *\bladkod_year_rek.*.

Check the result visually! Use CURSOR LOCATION at TOOLS in your image window.

Meta data: Note number of points used for transformation, algorithm name, and save the transformationpoints file to: syntax: \bladkod_year_rek.*

Subsetting of registered maps

Open menu BASIC TOOLS, select RESIZE DATA. Select your input file and select SUBSET by MAP. Type the top-left and bottom-right coordinate pairs for use in subsetting the file. Note: due to certain conventions in ENVI you need to add respectively subtract 1 meter from the original coordinates to avoid adding columns and lines to the file. The way around this is to select a coordinate 1 meter within the actual frame. For example, top-left 1620000/6750000 translates to 1620001/6749999. Select OK where appropriate and give the output file the name \bladkod_year_rek_sub.*.

Check the result with the cursor and use the function LINK DISPLAYS at the TOOLS menu. The file should be 5,000×5,000 pixels.

Registration of maps with low geodetic quality (e.g. cadastral map from the 50's)

Open the file that contains the base map (e.g. the one with best geodetic quality) and the file that you want to register (WARP). Use ENVI and the function IMAGE-TO-IMAGE at menu MAP/Registration. Select which image that contains the base image and the warp image. Use the cursor to locate visually similar (but geometrically different) points. Start with map corners and then add points in image center. Check RMS during the registration and de-select points when RMS becomes to high. Go to OPTIONS meny and selct WARP FILE. Use RST and Nearest Neighboor as algoritms. The syntax for the output file name is: *\bladkod_year_rek.*.

Check the result with the cursor and use the function LINK DISPLAYS at the TOOLS menu.

Meta data: Note number of points used for transformation, algorithm name, and save the transformationpoints file to: syntax: \bladkod_year_rek.*

Subset the file according to conventions in Subsetting of registered maps.

Mosaicking of registered maps

Open the files to be mosaicked. Go to MAP menu, select MOSAICKING and GEOREFERENCED. Import files under the IMPORT menu. Check the result. If maps are erroneous placed, then go back and check the registration. Go to APPLY at the FILE menu. Select pixel size 1 m and Nearest Neighbor. The output filename should have the syntax: if input maps are: 12I 9e, 12I 9f, 13I 0e and 13I 0f then write like this: 12I9ef_13I0ef_temp:*

Go to FILE MENU and EDIT ENVI HEADER. Check that the number of samples and lines are 10,000×10,000 pixels. If not, open RESIZE DATA at the main menu BASIC TOOLS. Select input file (*_temp.*). Set lines,= 10,000 and samples,= 10,000 and be sure that resampling algorithm is set to nearest neighbor. Save the file to the same filenamne but WITHOUT the _temp part. Thereafter, go back to EDIT ENVI HEADER and select EDIT ATTRIBUTES. Register the upper-left corner by choosing pixel size 1.00000 for X and Y, and then register the corner to corresponding RT90 coordinate. ENVI will automatically define the other 3 corners.

Export mosaic as TIFF/GeoTIFF

Open the image and select SAVE IMAGE AS and IMAGE at the FILE MENU in the image window. Set the parameters Resolution= 8-bit (color table), Output file type= TIFF/GeoTIFF, and output filename to same as the original image. This file is now readable in IDRISI by first using the IMPORT command.

Semi-automatic extraction of thematic land-cover from mosaic images with ENVI

Load you image file into ENVI. In the image window menu select OVERLAY and REGION OF INTEREST. The assignment is to define representative regions that can be used in supervised classification. Click with the cursor to delimite a region, right-click to close the polygon. Note that the number of pixels within the region is displayed in the dialog window. Use the EDIT function to select a meaningful name for the region. Save the Regions of interest (ROI) file by selecting Save ROIs, select all ROIs from the list and use the syntax 12I9ef_13I0ef_ROI.*.

We suggest that you define regions in the following order and with the following names and number of pixels:

Name	Content	Number of pixels
Åker1	Bright yellow fields	25,000 – 30,000
Åker2	Normal yellow fields	=
Åker3	Dark yellow to dark green fields	=
Skog1	Bright to almost white areas	=
Skog2	Mixed	=
Skog3	Very dark green areas	=
Text	All the black in the image with emphasize on text within arable fields	~1,000

Go to the CLASSIFICATION menu at the ENVI main menu; select supervised classification and MAXIMUM LIKELIHOOD. Select the image to use in the classification. In the MAXIMUM LIKELIHOOD PARAMETERS dialog, select all classes to be used in the classification. Enter a output classification filenamne, use the form 12I9ef_13I0ef_tempklass.*. Select no at the Output rule images. Select OK and the classification starts. Load the classification output to another window. Select POST-CLASSIFICATION and MAJORITY/MINORITY ANALYSIS. Select the classification output as input and select OK. Select Åker1, Åker2, and Åker3 as classes to be used in the analysis. The analysis method should be MAJORITY and the kernel size set to 7×7. Select an output filename with the syntax 12I9ef_13I0ef_tempmaj.*. Press OK. Note that these files are only steps to the final classification image.

Select POST CLASSIFICATION once more and COMBINE CLASSES. Select the output file from the majority analysis. Select input clas Åker2 and output class Åker1, press ADD COMBINATION. Select input class åker3 and output class åker3, press ADD COMBINATION. Repeat for Skog but not for text. Select an output filename with the syntax 12I9ef_13I0ef_klass. Press OK.

Check the result! There should be one class describing all the arable land, one class describing the text and one class describing the rest of the image. Use LINK DISPLAYS to see if this is correct.

Export to Idrisi

Go to FILE and SAVE IMAGE AS. SELECT TIFF/GeoTIFF. Select the classification file and check that the file information is correct. Select a filename with this syntax 12I9ef_13I0ef_klass_exp. Press OK.

Text and cartographic symbol removal and vectorizing – Manual on postprocessing scanned maps

This part of the manual deals with the postprocessing of scanned maps. Before the below steps are peformed, be sure that the input file is processed according to the above described steps.

The results of that process are assumed to have resulted in TIFF/GeoTIFF-images (TFW/TIF pairs). The coordinate system should be the Swedish National System (RT90) with a coordinate presicion of 7 digits (equals 1m ground-resolution). It is also assumed that the image resides in an indexed color 8-bit format with no compression.

Folder-structure

SKB-work (should not be used)

Envi-TIF (contains the TFW- and TIF-files to be processed)

Raw-RST (will contain the files that is to be used as input in the text and cartographic symbol removal process)

Filter-RST (will contain the resulting Idrisi-files of the text and cartographic symbol removal process)

Filter-TIF (will contain the final TIF-files)

Esri-SHP (will contain shapefiles created when the when creating the raster to vector conversion)

MapInfo-TAB (will contain the files created when convertering from Shape to MapInfo-format)

temp (will contain temporary files created during processing)

resources (contains files used when running macros in Idrisi)

Before starting put all the files to be processed in the forlder c:\SKB-work\Envi-TIF. Check that all tif-files have a corresponding tfw.

Step 1

Import to IDRISI and reclassification.
Software used IDRISI.

Start IDRISI and select Data Paths/Project Environment. The Main working folder should be set to c:\SKB-work\Raw-RST\ and Resource folders to c:\SKB-work\Envi-TIF\

Import the TIF-image with TIFIDRIS and check “Output reference parameters”. If nessecary make appropriate corrections. Change the reference system to RT90. The resulting output file should be given the same namn as the TIF-image that is to be imported.

Reclass the image so that the arable land will recieve the value 1, all other landuse the value 255 and the class containing the text etc that is to be removed should recieve the value 0. Give the resulting file the same name as thi inputfile butt add _CLASS in the end of the name. When the reclassification is finished check the result.

Repeat this procedure with all the files that you whant to apply the text removal procedure on.

Step 2

Removal of text and cartographic symbols in Idrisi.
Software used IDRISI, Notepad.

Copy the file textfilter.iml from the folder c:\SKB-work\resources and place it in c:\SKB-work\temp.

Open the file c:\SKB-work\temp\textfilter.iml in Notepad.

It should contain the rows below.

COPY x c:\SKB-work\Raw-RST**INFILE**_class..rst*class.rst
COPY x c:\SKB-work\Raw-RST**INFILE**_class..rdc*class.rdc
DISTANCE x c:\SKB-work\temp\class.rst* x c:\SKB-work\temp\distance.rst
ALLOCATE x c:\SKB-work\temp\distance.rst* c:\SKB-work\resources\class.rst*
c:\SKB-work\Filter-RST**OUTFILE**.rst

Exchange INFILE with the name of the file created in Step 1 above (e.g. 12i0ef_12i9ef_class), Exchange OUTFILE with the name that you gave the file that was imported by TIFIDRIS above (e.g. 12i0ef_12i9ef).

Now copy the four rows and change INFILE and OUTFILE to the name of the next file that you want to process and export respectively.

Repeat this with all the files that is to be processed in one single makro-execution in IDRISI and save the textfiler.iml file.

Start IDRISI and select Data Paths/Project Environment. Main working folder should be set to c:\SKB-work\temp\

Choosel Modeling and select Run Macro. Select textfilter.iml as the macro that soul be run and start the processing.

Removing text and cartografic symbols is a time-consuming process (processing a 10,000×10,000 image takes something like 45 minutes) and this is macro described:

- COPY x c:\SKB-work\Raw-RST**INFILE**_class.rst*c:\SKB_work\temp\class.rst
  Renames the indata-file and place it in the temp-folder.
- COPY x c:\SKB-work\Raw-RST**INFILE**_class.rdc*c:\SKB_work\temp\class.rdc
  Renames the rasterdocumentation-file and place it in the temp-folder.
- DISTANCE x c:\SKB-work\temp\class.rst* x c:\SKB-work\temp\distance.rst
  Calculate the distance from all pixels with a value of 0 to the closest other pixel with a non-0 value. DISTANCE uses c:\SKB-work\Raw-RST\class.rst as indata and the result is saved as distance.rst.
- ALLOCATE x c:\SKB-work\temp\distance.rst* c:\SKB-work\resources\class.rst* c:\SKB-work\Filter-RST\OUTFILE.rst
  Each pixel with a value of 0 in the file c:\SKB-work\temp\distance.rst recieves the value of the closest non-0 pixel and the result is saved as **OUTFILE**.rst.

Step 3

Export to TIF and TFW.
Software used IDRISI.

Start IDRISI and select Data Paths/Project Environment. The Main working folder should be set to c:\SKB-work\Filter-TIF\ and Resource folders to c:\SKB-work\Filter-RST\ and c:\SKB-work\resources\

Use the Idrisi export-module TIFIDRIS to export the files in c:\SKB-work\Filter-RST\. Use the same filename for output as for input (the files created will have the extensions tif and tfw). Enter binary as Idrisi palette (found in c:\SKB-work\resources\).

Step 4

Vectorizing and editing the binary imagefiles.
Software used ArcMap.

First check that all tif-files in c:\SKB-work\Filter-TIF has a corresponding tfw-file.

Start ArcMap and open the files to be vectorized (should reside in the folder c:\SKB-work\ Filter-TIF). Select Convert from the 3D Analyst-menue. Select the file that you would lite to vectorize at Input raster, check that Output geometry type reads Polygon.Also check thet the radio-button Generalize lines is selected and write the same filename at Output features as you used when specifying Input raster but select c:\SKB-work\Esri-SHP\ as the folder where the resulting shape-file is to be saved. Click OK to start the vectorization.

Now select l Editor in the Editor Toolbar and click Start Editing.
Use Selection – Select by Attribute and choose the backgroundpolygons (with a value of 255) by executing the SQL-query GRIDCODE=255 and delete these plygons by simply pressing the delete-button on the keyboard. Save the file by cklicking Save Edits in the Editor menu.

Repeat this with the other images that you want to vectorize

Step 5

Convert to MapInfo format.
Software used MapInfo.

Start MapInfo and select Universal Translator from the Tools-menu.

At Source – Format select ESRI Shape. Then select the files that you would like to convert at Source – File(s). You should find these in the folder c:\SKB\work\Esri-SHP\. Click Projection and select Swedish coordinate systems under Category and then Swedish National System (RT90) under Category members.

At Destination – Format choose MapInfo TAB and at Directory select c:\SKP-work\ Mapinfo.TAB\.

At Log you select where conversion messages are to be saved (should be c:\SKB-work\ temp\).

Start the conversion.

Appendix 3

Metadata, economic maps, Forsmark

Bladkod	Bladnamn	yngre ekonomisk karta	äldre ekonomisk karta
12l 5e	Bummelmora	4 rekt. pts, RMS 1,2, rekt:RST/närmaste granne. 12i5e_79_rek, 12i5e_79_rek_sub	15 rekt. pts, RMS 6,8, rekt:RST/närmaste granne. 12i5e_53_rek, 12i5e_53_rek_ sub. Kartan ingår i mosaiken 12i5e_ 12i6ef.
12l 6e	Östmora	4 rekt. pts, RMS 1,05, rekt:RST/närmaste granne. 12i6e_79_rek, 12i6e_79_rek_sub	14 rekt. pts, RMS 7,2, rekt:RST/närmaste granne. 12i6e_53_rek, 12i6e_53_rek_ sub. Kartan ingår i mosaiken 12i5e_ 12i6ef.
12l 6f	Hackbol	4 rekt. pts, RMS 0,4, rekt:RST/närmaste granne. 12i6f_79_rek, 12i6f_79_rek_sub	20 rekt. pts, RMS 7,1, rekt:RST/närmaste granne. 12i6f_53_rek, 12i6f_53_rek_sub. Kartan ingår i mosaiken 12i5e_12i6ef.
12l 6g	Hanunda	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 17pts RMS 8.92. 12l6g_53_rek_sub
12l 6h	Uppskedika	4 rekt. pts, RMS 0,8, rekt:RST/närmaste granne. 12i6h_79_rek, 12i6h_79_rek_sub	22 rekt. pts, RMS 6,8, rekt:RST/närmaste granne. 12i6h_53_rek, 12i6h_53_rek_ sub.
12l 7c	Vikasjön	RST, närmaste granne. 4pts RMS 1,4	RST, närmaste granne. 21pts RMS 10.0. 12l7c_53_rek_sub
12l 7d	Andersbo	RST, närmaste granne. 4pts RMS 1.3	RST, närmaste granne. 16pts RMS 9.7
12l 7e	Vigelsbo	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 12i7e_79_rek, 12i7e_79_rek_sub	19 rekt. pts, RMS 6,9, rekt:RST/närmaste granne. 12i7e_53_rek, 12i7e_53_rek_ sub.
12l 7f	Valö	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 12i7f_79_rek, 12i7f_79_rek_sub	20 rekt. pts, RMS 5,8, rekt:RST/närmaste granne. 12i7f_53_rek, 12i7f_53_rek_sub.
12l 7g	Stummelbo	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 12i7g_79_rek, 12i7g_79_rek_sub	18 rekt. pts, RMS 5,1, rekt:RST/närmaste granne. 12i7g_53_rek, 12i7g_53_rek_ sub. Kartan ingår i mosaiken 12i7gh_ 12i8gh. En del fel i mosaikens passning mellan de två nedre bladen /12i7g-12i7h.
12l 7h	Norrskedika	RST, närmaste granne. 4pts RMS 0.5	RST, närmaste granne. 17pts RMS 5.7
12l 7j	Långalma	RST, närmaste granne. 4pts RMS 0.6	
12l 8b	Fälaren	RST, närmaste granne. 4pts RMS 0.5	
12l 8d	Finnsjön	RST, närmaste granne. 4pts RMS 1.2	RST, närmaste granne. 20pts RMS 12.0 12i8d_53_rek_sub
12l 8e	Gålarmora	RST, närmaste granne. 4pts RMS 1.2	RST, närmaste granne. 22pts RMS 8.5 12i8e_53_rek_sub
12l 8g	Simundö	RST, närmaste granne. 4pts RMS 1.0	RST, närmaste granne. 14pts RMS 5.1 12i8g_53_rek_sub
12l 8h	Snesslinge	4 rekt. pts, RMS 0,8, rekt:RST/närmaste granne. 12i8h_79_rek, 12i8h_79_rek_sub	21 rekt. pts, RMS 6,0, rekt:RST/närmaste granne. 12i8h_53_rek, 12i8h_53_rek_ sub. Kartan ingår i mosaiken 12i7gh_ 12i8gh. En del fel i mosaikens passning mellan de två nedre bladen /12i7g-12i7h.
12l 8i	Bolka	RST, närmaste granne. 4pts RMS 0.8	RST, närmaste granne. 20pts RMS 7.0 12l8i_53_rek_sub
12l 8j	Öregrund	4 rekt. pts, RMS 0,9, rekt:RST/närmaste granne. 12i8j_79_rek, 12i8j_79_rek_sub	21 rekt. pts, RMS 5,2, rekt:RST/närmaste granne. 12i8j_53_rek, 12i8j_53_rek_sub. Kartan trasig i vänstra hörnet. Kartan ingår i mosaiken 12i8ij_12i9ij. En del fel i mosaikens passning mellan de två nedre bladen 128i_128j.

Bladkod	Bladnamn	yngre ekonomisk karta	äldre ekonomisk karta
12l 9a	Skallbo	RST, närmaste granne. 4pts RMS	
12l 9b	Elinge	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 12i9b_79_rek, 12i9b_79_rek_sub	19 rekt. pts, RMS 6,9, rekt:RST/närmaste granne. 12i9b_52_rek, 12i9b_52_rek_sub. Kartan ingår i mosaiken 12i8ab_12i9ab.
12l 9c	Åkerbysjön	4 rekt. pts, RMS 1,6, rekt:RST/närmaste granne. 12i9c_79_rek, 12i9c_79_rek_sub	22 rekt. pts, RMS 6,8, rekt:RST/närmaste granne. 12i9c_52_rek, 12i9c_52_rek_sub. Kartan ingår i mosaiken 12i9cd_13i0cd.
12l 9d	Giboda	4 rekt. pts, RMS 1,4, rekt:RST/närmaste granne. 12i9d_79_rek, 12i9d_79_rek_sub	20 rekt. pts, RMS 6,1, rekt:RST/närmaste granne. 12i9d_53_rek, 12i9d_53_rek_sub. Kartan ingår i mosaiken 12i9cd_13i0cd.
12l 9g	Habbalsbo	rek:RST närmastegranne 4pts RMS 0	rek: RST närmaste granne. 9pts RMS 5.6
12l 9h	Glupudden	rekt: RST närmaste granne. 4pts RMS 1.9. Kartan har varit vikt.	rek:RST närmaste granne. 23 pts RMS 11,8. Svårrektifierad karta. Många små öar som inte gick att få rätt trots många pts. 12l9h_53_rek_sub
12l 9i	Djursten	RST, närmaste granne. 4pts RMS 1.9	RST, närmaste granne. 15pts RMS 6.3 12l9i_53_rek_sub
12l 9j	Gräsö	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 14pts RMS 5.9 12l9j_53_rek_sub
12J 5a	Östra Tvärnö	RST, närmaste granne. 4pts RMS 1.1	RST, närmaste granne. 22pts RMS 5.9. 12J5a_53_rek_sub. Ingår i mosaiken 12J5ab_12J6ab
12J 5b	Slätön	RST, närmaste granne. 4pts RMS 0.7	RST, närmaste granne. 14pts RMS 4.3. 12J5b_53_rek_sub Ingår i mosaiken 12J5ab_12J6ab
12J 6a	Yttersby	RST, närmaste granne. 4pts RMS 1.2	RST, närmaste granne. 22pts RMS 6.8. 12J6a_53_rek_sub. Ingår i mosaiken 12J5ab_12J6ab
12J 6b	Fälön	4 rekt. pts, RMS 2,9, rekt:RST/närmaste granne. 12j6b_78_rek, 12j6b_78_rek_sub. Kartan förefaller ha felplacerade koordinatkors.	21 rekt. pts, RMS 6,9, rekt:RST/närmaste granne. 12j6b_53_rek, 12j6b_53_rek_sub. Förändringar i strandlinjen mellan kartskikten.
12J 6c	Ellan	RST, närmaste granne. 4pts RMS 0.8	RST, närmaste granne. 13pts RMS 6.8. 12J6c_53_rek_sub.
12J 7a	Alnön	RST, närmaste granne. 4pts RMS 1.1	RST, närmaste granne. 16pts RMS 7.2. 12J6c_53_rek_sub
12J 7b	Ormön	RST, närmaste granne. 4pts RMS 1.1	RST, närmaste granne. 20pts RMS 9.4. 12J 7b_53_rek_sub
12J 7c	Garpen	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 11pts RMS 5.7. 12J7c_53_rek_sub
12J 8a	Bjurön	RST, närmaste granne. 4pts RMS 1.1	RST, närmaste granne. 27pts RMS 10.8. 12J8a_53_rek_sub
12J 8b	Högsten	RST, närmaste granne. 4pts RMS 0.5	RST, närmaste granne. 17pts RMS 11.9
12J 8d	Norrsten		
12J 9a	Högklyke	RST, närmaste granne. 4pts RMS 0.7	RST, närmaste granne. 14pts RMS 9.4 12J 9a_53_rek_sub
12J 9c	Västerbådan		Ingår i mosaiken 13l0cd_12l9cd
12J 9d	Storgrunden		Ingår i mosaiken 13l0cd_12l9cd
13l 0a	Ingarsbo	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 13i0a_79_rek, 13i0a_79_rek_sub	13 rekt pts, RMS 5.1, rekt: RST/närmaste granne. 13i0a_52_rek, 13i0a_52_rek_sub
13l 0b	Österlövsta	RST, närmaste granne. 4pts RMS 0.4. 13i0b_79_rek_sub	RST, närmaste granne. 22pts RMS 11.8. 13i0b_52_rek_sub
13l 0c	Lövstabruk	4 rekt. pts, RMS 1,8, rekt:RST/närmaste granne. 13i0c_79_rek, 13i0c_79_rek_sub	14 rekt pts, RMS 5.5, rekt: RST/närmaste granne. 13i0c_52_rek, 13i0c_52_rek_sub

Bladkod	Bladnamn	yngre ekonomisk karta	äldre ekonomisk karta
13l 0d	Skälsjön	RST, närmaste granne. 4pts RMS 1.4	RST, närmaste granne.16 pts RMS 12.5. 13i1b_52_rek_sub. Ingår i mosaiken 13l0cd_12l9cd
13l 0g	Höggrunden	4 rekt. pts, RMS 0, rekt:RST/närmaste granne. 13i0g_79_rek, 13i0g_79_rek_sub	19 rekt pts, RMS 9.1, rekt: RST/ närmaste granne. 13i0g_53_rek, 13i0g_ 53_rek_sub, kommentar: kartbladet innehåller kuststräcka med öar. Sämre överensstämmelser mellan kartskikten vad gäller öar i kartans högra del.
13l 0i	Mårtensboda	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 10pts RMS 5.8 13l 0i_53_rek_sub. Ingår i mosaiken 13i1ij_13i0ij
13l 0j	Kallboda	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 10pts RMS 7.8 Ingår i mosaiken 13i1ij_13i0ij
13l 1a	Gällbo	4 rekt. pts, RMS 2,0, rekt:RST/närmaste granne. 13i1a_79_rek, 13i1a_79_rek_sub	15 rekt pts, RMS 3.7, rekt: RST/närmaste granne. 13i1a_52_rek, 13i1a_52_rek_sub
13l 1b	Skärplinge	RST, närmaste granne. 4pts RMS 0.3. 13i1b_79_rek_sub	RST, närmaste granne. 17pts RMS 5.6 13i1b_52_rek_sub
13l 1c	Griggebo	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 13i1c_79_rek, 13i1c_79_rek_sub	15 rekt. pts, RMS 5,8, rekt:RST/närmaste granne. 13i1c_52_rek, 13i1c_52_rek_sub
13l 1d	Vavd	RST, närmaste granne. 4pts RMS 1.1. 13i1d_79_rek_sub	RST, närmaste granne. 18pts RMS 8.9. 13i1d_52_rek_sub
13l 1e	Göksnåre	4 rekt. pts, RMS 1,0, rekt:RST/närmaste granne. 13i1e_79_rek, 13i1e_79_rek_sub	14rekt. pts, RMS 7,0, rekt:RST/närmaste granne. 13i1e_52_rek, 13i1e_52_rek_ sub. Kartan ingår i mosaiken 13i1ef_ 13i2e
13l 1f	Bredbådan	RST, närmaste granne. 4pts RMS 0.7. 13i1f_79_rek_sub	RST, närmaste granne. pts RMS
13l 1g	Länsman		Ingår i mosaiken 13i1ij_13i0ij
13l 1i	Norrboda	4 rekt. pts, RMS 0,8, rekt:RST/närmaste granne. 13i1i_79_rek, 13i1i_79_rek_sub	18 rekt. pts, RMS 6.0, rekt:RST/närmaste granne. 13i1i_53_rek, 13i1i_53_rek_sub
13l 1j	Malbådan	RST, närmaste granne. 4pts RMS. 0.5. 13i1j_79_rek_sub	RST, närmaste granne.13 pts RMS 9.0. 13i1j_53_rek_sub
13l 2a	Karlholm	RST, närmaste granne. 4pts RMS 1.5.13i2a_79_rek_sub	RST, närmaste granne. 18pts RMS 8.0. 13i2a_rek_sub
13l 2b	Grönö	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne. 22pts RMS 5.3
13l 2c	Hållnäs	RST, närmaste granne. 4pts RMS 2.2	RST, närmaste granne. 11pts RMS 6.4. 13i2c_52_rek_sub
13l 2d	Barknåre	4 rekt. pts, RMS 1,3, rekt:RST/närmaste granne. 13i2d_79_rek, 13i2d_79_rek_sub	16 rekt. pts, RMS 5,0 rekt:RST/närmaste granne. 13i2d_52_rek, 13i2d_52_rek_ sub.
13l 2e	Gudinge	RST, närmaste granne. 4pts RMS 1.6. 13i2e_79_rek_sub	RST, närmaste granne. 17pts RMS 9.0. 13i2e_52_rek_sub
13l 2f	Mickelsgrund		
13l 2i	Örskär	4 rekt. pts, RMS 0,9, rekt:RST/närmaste granne. 13i2i_79_rek, 13i2i_79_rek_sub	16 rekt. pts, RMS 6,9 rekt:RST/närmaste granne. 13i2i_53_rek, 13i2i_53_rek_sub.
13l 2j	Utterbådan		
13l 3a	Flatgrund	RST, närmaste granne. 4pts RMS 0.9	RST, närmaste granne.9pts RMS 9.5
13l 3b	Edsätra	4 rekt. pts, RMS 0,2, rekt:RST/närmaste granne. 13i3b_79_rek, 13i3b_79_rek_sub	21 rekt. pts, RMS 6,6, rekt:RST/närmaste granne. 13i3b_52_rek, 13i3b_52_rek_ sub, dålig överensstämmelse mellan kartskikten. Ingår i mosaiken 13i2ab_ 13i3ab
13l 3c	Sikhjälma	RST närmaste granne.4pts. RMS 1.2.	RST, närmaste granne. 11pts RMS 6.8. 13i3c_rek_sub. Kartan ingår i mosaiken 13i4c_13i3c

Bladkod	Bladnamn	yngre ekonomisk karta	äldre ekonomisk karta
13I 3d	Slada	4 rekt. pts, RMS 1,1, rekt:RST/närmaste granne. 13i3D_79_rek, 13i3d_79_rek_sub.	22 rekt. pts, RMS 5,1 rekt:RST/närmaste granne. 13i3d_52_rek, 13i3d_52_rek_ sub. Kartbladet ingår i mosaikbilden 13i3de_13i4de.
13I 3e	Killskär	RST , närmaste granne. 4pts RMS 0.6. 13i3e_79_rek_sub	RST, märmaste granne. 21pts RMS 8.5. 13i3e_53_rek_sub
13I 3i	Skvatudden	RST , närmaste granne. 4pts RMS 0.6. 13i3i_79_rek_sub	RST , närmaste granne. 9 RMS 22.1. 13i3i_52_rek_sub. Kartan består till ca 95 % av vatten. Svårrektifierad.
13I 4c	Rossholm	RST, närmaste granne.4pts RMS 0.77 13i4c_rek_sub	RST, närmaste granne. 11pts RMS 7.0. Svårrektifierad, då det endast finns land i kartans nedre högra hörn. 13i4c_rek_sub. Kartan ingår i mosaiken 13i4c_13i3c
13I 4d	Fågelsundet	4 rekt. pts, RMS 1,2, rekt:RST/närmaste granne. 13i4d_79_rek, 13i4d_79_rek_sub	14 rekt. pts, RMS 4,6, rekt:RST/närmaste granne. 13i4d_52_rek, 13i4d_52_rek_ sub. Kartbladet ingår i mosaikbilden 13i3de_13i4de. Kartan är riven i det vänstra hörnet. Skogsmarken är inte karterad.
13I 4e	Måsörarna	4 rekt. pts, RMS 1,2, rekt:RST/närmaste granne. 13i4e_79_rek, 13i4e_79_rek_sub	6 rekt. pts, RMS 3,4, rekt:RST/närmaste granne. 13i4e_52_rek, 13i4e_52_rek_ sub.Kartbladet ingår i mosaikbilden 13i3de_13i4de. Kartan är riven i det vänstra hörnet.
13J 0a	Gället	RST, närmaste granne. 4pts RMS 0.7	RST, närmaste granne. 15pts RMS 5.6, warp2

Appendix 4

Metadata, economic maps, Oskarshamn

Bladkod	Bladnamn	Yngre ekonomiska kartan	Äldre ekonomiska kartan
5G 6i	Em	RST, närmaste granne. 4pts RMS 0.3.	RST, närmaste granne. 32pts RMS 11.9
5G 7h	Påskallavik	RST, närmaste granne. 4pts RMS 0.6	RST, närmaste granne. 31pts RMS. 11.1
5G 7i	Runnö	RST, närmaste granne. 4pts RMS 1.1. 5G7i_81_rek_sub	Polynominal, närmaste granne. 38pts RMS 7.9, warp 2. 5G7i_41_rek_sub
5G 8g	Boda	4 rekt. pts, RMS 1,4 rekt:RST/närmaste granne. 5g8g_82_rek, 5g8g_82_rek_sub. Kartan ingår i mosaiken 5g8gh_5g9gh_82.	41 rekt. pts, RMS 6,2 rekt:RST/närmaste granne. Warp grad 3. 5g8g_42_rek, 5g8g_42_rek_sub Kartan ingår i mosaiken 5g8gh_5g9gh_42.
5G 8h	Skorpetorp	4 rekt. pts, RMS 0,8 rekt:RST/närmaste granne. 5g8h_82_rek, 5g8h_82_rek_sub. Kartan ingår i mosaiken 5g8gh_5g9gh_82.	25 rekt. pts, RMS 6,3 rekt:RSTl/närmaste granne. Warp grad 2. 5g8h_42_rek, 5g8h_42_rek_sub Kartan ingår i mosaiken 5g8gh_5g9gh_42.
5G 8i	Storö	RST, närmaste granne. 4pts RMS 0.7. Ingår i mosaiken 5G8i_5G9I_81	Polynominal, närmaste granne. 30pts RMS 8.5. Warp 2. Ingår i mosaiken 5G8i_5G9I_41
5G 9c	Gösebo	4 rekt. pts, RMS 0,7 rekt:RST/närmaste granne. 5g9c_81_rek, 5g9c_81_rek_sub. Kartan ingår i mosaiken 5g9c_5g9d_81.	36 rekt. pts, RMS 7,7 rekt:polynominal/ närmaste granne. Warp grad 2. 5g9c_ 42_rek, 5g9c_42_rek_sub Kartan ingår i mosaiken 5g9c_5g9d_42.
5G 9d	Bockara	4 rekt. pts, RMS 0,5 rekt:RST/närmaste granne. 5g9d_82_rek, 5g9d_82_rek_sub. Kartan ingår i mosaiken 5g9c_5g9d_82.	42 rekt. pts, RMS 10,0 rekt:polynominal/ närmaste granne. Warp grad 2. 5g9d_ 42_rek, 5g9d_42_rek_sub Kartan ingår i mosaiken 5g9c_5g9d_42.
5G 9e	Bohult	RST, närmaste granne. 4pts RMS 0.7. 5G9e_82_rek_sub. Ingår i mosaiken 5G9ef_81	RST, närmaste granne. 45pts RMS 7.9. Warp3. 5G9e_42_rek_sub
5G 9f	Möckhult	RST, närmaste granne. 4pts RMS 0.06. 5G9f_82_rek_sub. Ingår i mosaiken 5G9ef_81	RST, närmaste granne. 4pts RMS . Warp3. Ingår i mosaiken 5G9ef_81
5G 9g	Forshult	4 rekt. pts, RMS 0,6 rekt:RST/närmaste granne. 5g9g_82_rek, 5g9g_82_rek_sub. Kartan ingår i mosaiken 5g8gh_5g9gh_82.	45 rekt. pts, RMS 5,4 rekt:polynominal/ närmaste granne. Warp grad 4. 5g9g_ 42_rek, 5g9g_42_rek_sub. Kartan ingår i mosaiken 5g8gh_5g9gh_42.
5G 9h	Oskarshamn	4 rekt. pts, RMS 0,5 rekt:RST/närmaste granne. 5g9h_82_rek, 5g9h_82_rek_sub. Kartan ingår i mosaiken 5g8gh_5g9gh_82.	24 rekt. pts, RMS 8,2 rekt:RST/närmaste granne. Warp grad 2. 5g9h_42_rek, 5g9h_42_rek_sub Kartan ingår i mosaiken 5g8gh_5g9gh_42.
5G 9i	Ärnemar	RST, närmaste granne. 4pts RMS 0.4. 5G9i_81_rek_sub. Ingår i mosaiken 5G8i_5G9I_81	RST, närmaste granne. 40pts RMS 8.1. 5G9i_41_rek_sub. Ingår i mosaiken 5G8i_5G9I_41
6G 0c	Lönnekulla	4 rekt. pts, RMS 1,3 rekt:RMT/närmaste granne. 6g0c_1981_rek, 6g0c_1981_rek_ sub.	35 rekt. pts, RMS 8,08 rekt:RMT/ närmaste granne. 6g0c_1942_rek, 6g0c_ 1942_rek_sub Kartan ingår i mosaiken 6g0c_6g1d_1940
6G 0d	Ingebo	4 rekt. pts, RMS 1,05 rekt:RMT/närmaste granne. 6g0d_1981_rek, 6g0d_1981_rek_ sub	19 rekt. pts, RMS 2,44 rekt:RMT/ närmaste granne. 6g0d_1942_rek, 6g0d_ 1942_rek_sub Kartan ingår i mosaiken 6g0c_6g1d_1940
6G 0e	Libbershult	RST, närmaste granne. 4pts RMS 0.3. 6G0e_81_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_81.	Polynominal, närmaste granne. 30 pts RMS 95.7 warp 3. 6G0e_42_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_42

Bladkod	Bladnamn	Yngre ekonomiska kartan	Äldre ekonomiska kartan
6G 0f	Lockebo	RST, närmaste granne. 4pts, RMS 0.1. 6G0f_81_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_81.	Polynominal, närmaste granne. 32 pts, RST 45.2, warp 3. 6G0f_42_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_42
6G 0g	Flinshult	4 rekt.pts, RMS 0,7 rekt:RSt/närmaste granne. 6g0g_81_rek, 6g0g_81_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_81.	55 rekt.pts, RMS 8,4 rekt:polynominal/ närmaste granne. Warp grad 3. 6g0g_41_rek, 6g0g_41_rek_sub. Dålig överensstämmelse mellan kartskikten. Kartan ingår i mosaiken 6g0gh_6g1gh_ 41.
6G 0h	Flathult	4 rekt.pts, RMS 0,5 rekt:RST/närmaste granne. 6g0h_81_rek, 6g0h_81_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_81.	35 rekt.pts, RMS 8,8 rekt:RST/närmaste granne. Warp grad 3. 6g0h_41_rek, 6g0h_41_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_41.
6G 0i	Saltvik	RST, närmaste granne. 4pts RMS 0.4. 6g0I_81_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_81.	RST, närmaste granne. 22 pts. RMS 9.8. 6g0I_42_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_42.
6G 0j	Furö	RST, närmaste granne. 4pts RMS 0.1. 6G0j_81_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_81.	Ingår i mosaiken 6G0ij_6G1ij_42.
6G 1c	Mossebo	4 rekt. pts, RMS 1,85 rekt:RMT/närmaste granne. 6g1c_1981_rek, 6g1c_1981_rek_ sub	28 rekt. pts, RMS 3,1 rekt:RMT/närmaste granne. 6g1c_1942_rek, 6g1c_1942_rek_ sub Kartan ingår i mosaiken 6g0c_6g1d_ 1940
6G 1d	Fallebo	4 rekt. pts, RMS 1,06 rekt:RMT/närmaste granne. 6g1d_1981_rek, 6g1d_1981_rek_ sub	19 rekt. pts, RMS 2,48 rekt:RMT/ närmaste granne. 6g1d_1942_rek, 6g1d_ 1942_rek_sub Kartan ingår i mosaiken 6g0c_6g1d_1940
6G 1e	Bråbo	RST, närmaste granne. 4pts RMS 1.4. .6G1e_81_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_81.	Polynominal, närmaste granne. 31 pts, RMS 5.7, warp 3. 6G1e_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_42
6G 1f	Lämmedal	RST, närmaste granne. 4pts RMS 0.2. 6G1f_81_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_81.	Polynominal, närmaste granne. 35 pts, RMS 6.2, warp 3. 6G1f_42_rek_sub. Ingår i mosaiken 6G0ef_6G1ef_42.
6G 1g	Skrikebo	4 rekt.pts, RMS 0,3 rekt:RST/närmaste granne. 6g1g_81_rek, 6g1g_81_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_81.	31 rekt.pts, RMS 4,5 rekt:RST/närmaste granne. Warp grad 3. 6g1g_41_rek, 6g1g_41_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_41.
6G 1h	Stensjö	4 rekt.pts, RMS 0,2 rekt:RST/närmaste granne. 6g1h_81_rek, 6g1h_81_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_81.	32 rekt.pts, RMS 6,7 rekt:RST/närmaste granne. Warp grad 3. 6g1g_41_rek, 6g1g_41_rek_sub. Kartan ingår i mosaiken 6g0gh_6g1gh_41.
6G 1i	Virkvarn	RST, närmaste granne. 4pts RMS 0.1. 6G1i_81_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_81.	RST, närmaste granne. 30pts RMS 6.4, warp 3. Ingår i mosaiken 6G0ij_6G1ij_42.
6G 1j	Ekö	RST, närmaste granne. 4pts RMS 0.4. 6g1j_81_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_81.	RST, närmaste granne. 31pts RMS 7.7, warp2. 6G1j_42_rek_sub. Ingår i mosaiken 6G0ij_6G1ij_42.
6G 2e	Kristdala	4 rekt. pts, RMS 0,72 rekt:RMT/närmaste granne. 6g2e_1981_rek, 6g2e_1981_rek_ sub	25 rekt. pts, RMS 4,8 rekt:RMT/närmaste granne. 6g2e_1943_rek, 6g2e_1943_ rek_sub Kartan ingår i mosaiken 6g2e_ 6g3f_1940
6G 2f	Hummeln	4 rekt. pts, RMS 0,64 rekt:RMT/närmaste granne. 6g2f_1981_rek, 6g2f_1981_rek_ sub	34 rekt. pts, RMS 5,67 rekt:RMT/ närmaste granne. 6g2f_1943_rek, 6g2f_ 1943_rek_sub Kartan ingår i mosaiken 6g2e_6g3f_1940
6G 3e	Skinshult	4 rekt. pts, RMS 0,64 rekt:RMT/närmaste granne. 6g3e_1981_rek, 6g3e_1981_rek_ sub	35 rekt. pts, RMS 6,38 rekt:RMT/ närmaste granne. 6g3e_1943_rek, 6g3e_ 1943_rek_sub Kartan ingår i mosaiken 6g2e_6g3f_1940

Bladkod	Bladnamn	Yngre ekonomiska kartan	Äldre ekonomiska kartan
6G 3f	Bankhult	4 rekt. pts, RMS 0,71 rekt:RMT/närmaste granne. 6g3f_1981_rek, 6g3f_1981_rek_sub	31 rekt. pts, RMS 5,91 rekt:RMT/närmaste granne. 6g3f_1943_rek, 6g3f_1943_rek_sub. Kartan ingår i mosaiken 6g2e_6g3f_1940
6G 3i	Plittorp	RST, närmaste granne 4pts. RMS:0.6.6g3i_rek_sub. Ingår i mosaiken	
6G 3j	Mederhult	RST, närmaste granne 4pts. RMS: 0.3. 6G3j_rek_sub.	
6G 4e	Dalsebo	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6g4e_80_rek, 6g4e_80_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_80.	31 rekt.pts, RMS 6,9 rekt:RST/närmaste granne. Warp grad 2. 6g4e_43_rek, 6g4e_43_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_43.
6G 4f	Ishult	4 rekt.pts, RMS 0,6 rekt:RST/närmaste granne. 6g4f_80_rek, 6g4f_80_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_80.	30 rekt.pts, RMS 6,2 rekt:polynominal/närmaste granne. Warp grad 2. 6g4f_43_rek, 6g4f_43_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_43.
6G 4g	Skälsebo	RST, närmaste granne. 4pts RMS 0.6. 6G4g_80_rek_sub. Ingår i mosaiken 6G4gh_6G5gh_80	Polynominal, närmaste granne. 35pts RMS 7.9. 6G4g_43_rek_sub
6G 4h	Ölvedal	RST, närmaste granne. 4pts RMS 1.0. 6G4h_80_rek_sub. Ingår i mosaiken 6G4gh_6G5gh_80	Polynominal, närmaste granne. 35pts RMS 7.0. Warp 2. 6G4h_43_rek_sub
6G 4i	Misterhult	4 rekt.pts, RMS 0,5 rekt:RST/närmaste granne. 6g4i_80_rek, 6g4i_80_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_80.	28 rekt.pts, RMS 4,7 rekt:RST/närmaste granne. Warp grad 2. 6g4i_42_rek, 6g4i_42_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_42.
6G 4j	Götemar	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6g4j_80_rek, 6g4j_80_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_80.	30 rekt.pts, RMS 6,7 rekt:RST/närmaste granne. Warp grad 2. 6g4j_42_rek, 6g4j_42_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_42.
6G 5f	Kulltorp	4 rekt.pts, RMS 1,6 rekt:RST/närmaste granne. 6g5f_80_rek, 6g5f_80_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_80.	40 rekt.pts, RMS 8,6 rekt:polynominal/närmaste granne. Warp grad 2. 6g5f_43_rek, 6g5f_43_rek_sub. Kartan ingår i mosaiken 6g4ef_6g5f_43.
6G 5g	Slisshult	RST, närmaste granne. 4pts RMS 0.7. 6G5g_80_rek_sub. Ingår i mosaiken 6G4gh_6G5gh_80	Polynominal, närmaste granne.50pts RMS 7.3. Warp 3. 6G5g_43_rek_sub
6G 5h	Mörtfors	RST, närmaste granne. 4pts RMS 1.0. 6G5h_80_rek_sub. Ingår i mosaiken 6G4gh_6G5gh_80	Polynominal, närmaste granne.35pts RMS 7.0. Warp3. 6G5h_43_rek_sub
6G 5i	Grönhult	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6g5i_80_rek, 6g5i_80_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_80.	40 rekt.pts, RMS 7,4 rekt:RST/närmaste granne. Warp grad 3. Dålig överensstämmelse mellan tidsskikten. 6g5i_42_rek, 6g5i_42_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_42.
6G 5j	Hökhult	4 rekt.pts, RMS 1,1 rekt:RST/närmaste granne. 6g5j_80_rek, 6g5j_80_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_80.	28 rekt.pts, RMS 6,9 rekt:polynominal/närmaste granne. Warp grad 2. 6g5j_43_rek, 6g5j_43_rek_sub. Kartan ingår i mosaiken 6g4ij_6g5ij_42.
6G 6i	Solstadström	RST, närmaste granne. 4pts RMS 0.5. 6G6i_80_rek_sub. Ingår i mosaiken 6G6ij_80	Polynominal, närmaste granne.29pts RMS 8.7, warp 2. 6G6i_43_rek_sub. Ingår i mosaiken 6G6ij_43
6G 6j	Hunö	RST, närmaste granne. 4pts RMS 0.5. 6G6j_80_rek_sub. Ingår i mosaiken 6G6ij_80	Polynominal, närmaste granne. 34pts RMS 8.0, warp 2. 6G6j_43_rek_sub. Ingår i mosaiken 6G6ij_43
6H 2a	Rönnarna	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6h2a_80_rek, 6h2a_80_rek_sub. Kartan ingår i mosaiken 6h2a_6h3a_80.	14 rekt.pts, RMS 3,7 rekt:RST/närmaste granne. Warp grad 2. 6h2a_42_rek, 6h2a_42_rek_sub. Kartan ingår i mosaiken 6h2a_6h3a_42.
6H 3a	Ävrö	4 rekt.pts, RMS 0,4 rekt:RST/närmaste granne. 6h3a_81_rek, 6h3a_81_rek_sub. Kartan ingår i mosaiken 6h2a_6h3a_81.	35 rekt.pts, RMS 7,1 rekt:polynominal/närmaste granne. Warp grad 2. 6h3a_42_rek, 6h3a_42_rek_sub. Kartan ingår i mosaiken 6h2a_6h3a_42.

Bladkod	Bladnamn	Yngre ekonomiska kartan	Äldre ekonomiska kartan
6H 4a	Gersebo	RST, närmaste granne. 4pts RMS 0.7. 6H4a_80_rek_sub	RST, närmaste granne. 28pts RMS 7.3. 6H4a_43_rek_sub
6H 4b	Boskär	RST, närmaste granne. 4pts RMS 0.3. 6H4b_80_rek_sub	RST, närmaste granne. 17pts RMS 8.1. 6H4b_43_rek_sub
6H 5a	Klintemåla	RST, närmaste granne. 4pts RMS 0.7. 6H5a_80_rek_sub	RST, närmaste granne. 30pts RMS 7.5. 6H5a_43_rek_sub
6H 5b	Strupö	RST, närmaste granne. 4pts RMS 0.7. 6H5b_80_rek_sub	RST, närmaste granne. 20pts RMS 11.3. 6H5b_43_rek_sub
6H 6a	Hamnö	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6h6a_80_rek, 6h6a_80_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_80.	28 rekt.pts, RMS 5,8 rekt:polynominal/ närmaste granne. Warp grad 2. 6h6a_ 43_rek, 6h6a_43_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_43.
6H 6b	Örö	4 rekt.pts, RMS 0,6 rekt:RST/närmaste granne. 6h6b_80_rek, 6h6b_80_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_80.	17 rekt.pts, RMS 8,6 rekt:polynominal/ närmaste granne. Warp grad 2. 6h6b_ 43_rek, 6h6b_43_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_43.
6H 7a	Eknö	4 rekt.pts, RMS 0,2 rekt:RST/närmaste granne. 6h7a_80_rek, 6h7a_80_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_80.	22 rekt.pts, RMS 5,9 rekt:RST/närmaste granne. Warp grad 2. 6h7a_43_rek, 6h7a_43_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_43.
6H 7b	Kälmö	4 rekt.pts, RMS 0,9 rekt:RST/närmaste granne. 6h7b_80_rek, 6h7b_80_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_80.	25 rekt.pts, RMS 7,5 rekt:polynominal/ närmaste granne. Warp grad 3. 6h7b_ 43_rek, 6h7b_43_rek_sub. Kartan ingår i mosaiken 6h6ab_6h7ab_43.

Appendix 5

Metadata, map of hundreds (häradskartan), Forsmark

Bladbeteckning	
112_100_21	64 rekt. pts, RMS 2,5 rekt:polynominal/närmaste granne. 4 graden warp. Eko.blad: 112_ 100_21_rek. 12i9j, 12j 9ab,13i0j, 13j0ab.
112_92_13a	6 rekt. pts, RMS 1,6 rekt:polynominal/närmaste granne. 1 graden warp. 112_92_13a_rek. Eko.blad: 12i5e.
112_92_14b	6 rekt. pts, RMS 1,6 rekt:polynominal/närmaste granne. 1 graden warp. 112_92_14b_rek. Eko.blad: 12i5e.
112_92_3A	112_92_3A_0_rek är rektifierad emot en mosaik med kartorna 12I7cde_12I8cde_12I9cde. Polynominal 4, närmaste granne. 71 pts. RMS 2.8
112_92_3B	
112_92_4	Omfattar eko-bladen 12I7def_8def_9def. Polynominal 4, närmaste granne, RMS
112_92_5	Polynominal, närmaste granne. 47 pts, RMS 3.1. Omfattar ekobladen 12I_789efg
112_92_8a	Polynominal, närmaste granne. 58 pts. RST 7.7, warp 3. Omfattar ekonomiska kartbladen 12I7cde och 12I8cde
112_92_8b	RMS, närmaste granne. 21 pts RST 3.2. Omfattar ekonomiska kartbladen 12I7e_12I6e
112_92_9A	Polynominal, närmaste granne. 61 pts. RMS 2.0. Omfattar ekonomiska kartbladen 12I6ef och 12I7ef
112_92_9B	RST, närmaste granne. 4 pts RMS 4.7 Omfattar ekonomisaka kartbladet 12I6e. Endast lite gräns på kartan.
112_93_1	polynominal, närmaste granne. 67 pts. RST 6.1, warp 4. Omfattar ekonomiska kartbladen 12I7j, 12I8j, 12I8j och 12J7ab, 12J8ab och 12J9ab
112_93_2	Polynominal, närmaste granne. 31 pts. RMS 8.0. Omfattar ekonomiska kartbladen 12J7bc och 12J8b
112_93_6	polynominal, närmaste granne. 88 pts RST 2.8. Warp 4. Omfattar ekonomiska kartbladen 12I7j, 12I6j, 12I5ab. 12J6ab och 12I7ab. Väldigt svår att få rätt i hörnen.
112_93_7_klippt	Polynominal närmaste granne. 56 pts. RMS 3.4Warp 4. Omfattar ekonomiska kartbladen 12J5b, 12J6bc och 12J7bc
112_93_11_klippt	RST närmaste granne. 22 pts. Warp 2. Omfattar ekonomiska kartbladen 12J5ab och 12J6ab
112_93_12_klippt	Polynominal. Närmaste granne. 27 pts. Warp 2. RMS 4.4. Omfattar ekonomiska kartbladen 12J5b och 12J6b
112_99_12_klippt	Polynominal närmaste granne. 37pts. RMS 7.4 warp3. Omfattar ekonomiska kartbladen 13I23abc
112_99_13	polynominal, närmaste granne. 65 pts. Rms 7.1 warp 4. Omfattar ekonomiska ksrtbladen 13I3cde och 13I4cde.
112_99_15_klippt	Polynominal, närmaste granne. 21 pts. RMS 5,0.omfattar ekonomiska kartbladet 13I3I
112_99_17	71 rekt. pts, RMS 4,6 rekt:polynominal/närmaste granne. 3 graden warp. Eko.blad: 112_99_ 17_rek. 13i1abc, 13i2abc, 13i3abc.
112_99_18	72 rekt. pts, RMS 3,8 rekt:polynominal/närmaste granne. 4 graden warp. Eko.blad: 112_99_ 18_rek. 13i 1cde, 13i2cde, 13i3cde.
112_99_19	47 rekt. pts, RMS 4,0 rekt:polynominal/närmaste granne. 3 graden warp. 112_99_19_rek. Fel mellan kartskikten vid kustlinjen, öar och skär. Eko.blad: 13i1ef, 13i2ef.
112_99_20_klippt	polynominal, närmaste granne. 50 pts. RMS1.9, warp4. Omfattar ekonomiska kartbladen 13I3ij, 13I3ij ovh 13I1ij
112_99_22_0	45 rekt. pts, RMS 3,0, rekt:polynominal/närmaste granne. 3 graden warp. 112_99_22_0_rek. Eko.blad: 12i9abc, 13i0abc, 13i1abc.
112_99_23a	75 rekt. pts, RMS 4,3, rekt:polynominal/närmaste granne. 4 graden warp. 112_99_23a_rek. Eko.blad: 12i9cde, 13i0cde, 13i1cde.
112_99_23b	15 rekt. pts, RMS 4,0, rekt:polynominal/närmaste granne. 1 graden warp. 112_99_23b_rek. Eko.blad: 12i9de, 13i0e.

Bladbeteckning	
112_99_24a	55 rekt. pts, RMS 2,8, rekt:polynominal/närmaste granne. 3 graden warp. 112_99_24a_rek. Eko.blad: 12i9efg, 13i0efg, 13i1fg.
112_99_24b	23 rekt. pts, RMS 2,3 rekt:polynominal/närmaste granne. 2 graden warp. 112_99_24b_rek. Eko.blad: 13i0efg, 13i1efg.
112_99_25a	32 rekt. pts, RMS 3,7 rekt:polynominal/närmaste granne. 112_99_25a_rek. 2 graden warp. Kartan uppdelad i två halvor pga stora felritningar i orginalkartan. Eko.blad: 12i9gh, 13i0gh.
112_99_25b	37 rekt. pts, RMS 4,8 rekt:polynominal/närmaste granne. 112_99_25b_rek. 2 graden warp. Stora felritningar i orginalkartan. Eko.blad: 12i9ij, 13i0ij, 13i1ij.

Appendix 6

Metadata, old cadastral maps, Forsmark

A27_6_1_4	A27_6_1	A113-17:1	A113-17:7
1839–1840. Ägoredovisning över Storskäret.	1734–1736. Ägomätning äver Forsmark nr 2.	1709. Ägoredovisning skattl beredn, Valö kyrkby.	1829–37 Fastställd: 1845 Laga skifte Valö kyrkoby.
A27_6_4_h: Polynominal, närmaste granne. RMS 7.0. A27_6_4_a: Polynominal, närmaste granne. RMS: 14.4. A27_4_1_i: Polynominal, närmaste granne. RMS: 23.9. A27_6_4_f: Polynominal, närmaste granne. RMS: 32.0. A27_6_4_e:Polynominal, närmaste granne. RMS 25.7. Betesmark som på kartan är markerad som inmark ingår i ängslagret. Hagar som i textlagret är beskrivna tillsammans med tomterna och på kartan markerade som inmark ingår i ängslagret.	A27_6_1_a: Polynominal, närmaste granne. RMS 56.8. A27_6_1_2a: Polynominal, närmaste granne. RMS 36.1. A27_6_1_2b: Polynominal, närmaste granne. RMS 48.7. A27_6_1_z: Polynominal, närmaste granne. RMS 42.8. A27_6_1_y: Polynominal, närmaste granne. RMS 27.3	32 rekt.pts. RMS 4,6, rek: polynominal. Warp grad 2. A_113_17_7_a_rek. A_113_17_1_a_rek. 45 rekt.pts. RMS 16,9, rek: polynominal. Warp grad 3. A_113_17_1_b_rek. 12 rekt.pts. RMS 4,9, rek: polynominal. Warp grad 3. A_113_17_1_cbit_rek. 40 rekt.pts. RMS 14,0 rek: polynominal. Warp grad 3. A_113_17_1_d_rek. 25 rekt.pts. RMS 18,3 rek: polynominal. Warp grad 3. A_113_17_1_e_rek. 26 rekt.pts. RMS 11,1 rek: polynominal. Warp grad 3. A_113_17_1_f_rek. 24 rekt.pts. RMS 15,5 rek: polynominal. Warp grad 2. A_113_17_1_g_rek. 36 rekt.pts. RMS 11,8 rek: polynominal. Warp grad 3. A_113_17_1_h_rek. 38 rekt.pts. RMS 21,2 rek: polynominal. Warp grad 3. A_113_17_1_i_rek. 40 rekt.pts. RMS 13,3 rek: polynominal. Warp grad 3. A_113_17_1_j_rek. 24 rekt.pts. RMS 28,9 rek: polynominal. Warp grad 3. A_113_17_1_k_rek. 24 rekt.pts. RMS 21,6 rek: polynominal. Warp grad 3. A_113_17_1_l_rek. 20 rekt.pts. RMS 24,7 rek: polynominal. Warp grad 2. A_113_17_1_m_rek. 17 rekt.pts. RMS 17,9 rek: polynominal. Warp grad 3. A_113_17_1_n_rek. 7 rekt.pts. RMS 8,6 rek: polynominal. Warp grad 1. A_113_17_1_o_rek. 3 rekt.pts. RMS 0,0 rek: polynominal. Warp grad 1. A_113_17_1_p_rek. 12 rekt.pts. RMS 11,2 rek: polynominal. Warp grad 2. A_113_17_1_q_rek. 11 rekt.pts. RMS 42,1 rek: polynominal.	52 rekt.pts. RMS 16,0, rek: polynominal. Warp grad 3. A_113_17_7_b_rek. 24 rekt.pts. RMS 14,2, rek: polynominal. Warp grad 2. A_113_17_7_c_rek. 42 rekt.pts. RMS 8,7, rek: polynominal. Warp grad 2. A_113_17_7_d_rek. 43 rekt.pts. RMS 10,4, rek: polynominal. Warp grad 3. A_113_17_7_e_rek. 24 rekt.pts. RMS 13,4, rek: polynominal. Warp grad 2. A_113_17_7_f_rek. 16 rekt.pts. RMS 6,7, rek: polynominal. Warp grad 2. A_113_17_7_g_rek. 23 rekt.pts. RMS 20.0, rek: polynominal. Warp grad 2. A_113_17_7_h_rek. 36 rekt.pts. RMS 18,8, rek: polynominal. Warp grad 2. A_113_17_7_i_rek. 40 rekt.pts. RMS 12,1, rek: polynominal. Warp grad 3.

Appendix 7

Metadata, old cadastral maps, Oskarshamn

G63-51:5.	G63-51:3	G63-51:2	G63-51:1
1872. Laga skifte över Ekerum.	1813. Åbodelning över Lilla Laxemar	1793.Storskifteskarta över Ekerum, Lilla Laxemar och Ström.	1689. Ekonomisk avmätning över Lilla Laxemar, Ekerum, Ström och Sandsböle.
Kartan över Ekerum från 1831 är uppdelad i tre delar.Kartan över Ekerum från 1831 är uppdelad i tre delar: G63_51_4_a, G63_51_4_b och G63_51_4_c. G_63_51_4_a: Polynominal, närmaste granne. RMS 10.2. G63_51_4_b:Polynominal, närmaste granne. RMS 7.3. G_63_5.	Kartan är uppdelad i två delar, G63_51_1_a: Polynominal, närmaste granne. RMS 12,9. G63_51_1_b: polynominal, närmaste granne. RMS 18.7.	3:e graden polynominal, närmaste granne. RMS 10.1. Kustlinjen var svårrektifierad och ligger inte helt rätt i förhållande till fastighetskartan.	Svårrektifierad karta. Vissa delar av odlings marken har rektifierats separat. G63_51_1: Polynominal, närmaste granne. RMS:63.2. G63_51_1_c: Polynominal, närmaste granne. RMS 21.3. G63_51_1_b: polynominal, närmaste granne. RMS 69.5. G63_51_1_c1: polynomi.

Appendix 9

Definitions for population

Based on /Winberg, 1977/ *Folkökning och proletarisering* s 41 ff.

Ståndspersoner

Godsägare
Civila och militära ämbetsmän
Präster
Högre studerande och lärare
Brukspatroner
Possessionater, dvs godsägare
Tjänstemän: Directeurer, Kamererare, Inspectorer, Gårdsfogdar, Bokhållare, Fogdar, Rättare
Auditeurer, Regements- och Mönsterskrifvare
Informatorer som ej är präster

Bönder

Besuttna – egen jord (skatte), annans jord (frälse, krono)
(Seminanter)

Torpare

Soldater

Ryttare, dragoner, soldater, båtsmän

Övriga jordlösa/egendomslösa

Backstugusittare, inhyses m fl
Nybyggare
Tjänstefolk och betjänter
Drängar
Ogifta
Torparsöner
Bondsöner
Fångar
Spinneri-Idkare och dervid Arbetande på Landsbygd.
Jägare

Bruksarbetare

Arbetare och hantverkare på "Bärgbruket"
Sågverksarbetare
Kolare
Brännmästare, dvs en person som förestod bränningen vid ett tegelbruk
Kalkbrytning och Bränning
Pottaske-bränning

Hantverkare på landet

Hantverkare, främst skomakare, skräddare, smeder, hovslagare och snickare, men även andra
Mjölnare

Gästgivare

Tractör eller värdshusvärd

Skeppare och sjömän

Fiskare
Skärkarlar

Borgare

Minuthandlande Borgerskapet
Af sig komne Ledamöter af Borgerskapet
Borgerskapets öfrige handlande Ledamöter
Fabriques Idkare i allmänhet

Övriga

Apotekare
Arrendatorer
Främmande religionsförvanter
Fältskärare
Lantmän, som ej är bönder, torpare eller ståndspersoner
“Lappar Kringstrykande och Vallhjon”
Pensionerade
Personer som ej höra till annan titel
“Stånd Bet” (Överlövsta 1751)
“Stånd Hed” (Överlövsta 1749–50)
Trädgårdsmästare
Konstnärer som icke äro Borgare

Appendix 10

Example of a data table made from original cadastral material

source: Jordebok 1871

År	Härad	Socken	By	Antal gårdar	Jord-natur	Hemmans-tal	Anmärkning
1871	Frösåker	Valö	Annö	6	fr	4+1/2+1/2	
1871	Frösåker	Valö	Bennebo	1	fr	1/4	1887 överförd till skatte
1871	Frösåker	Valö	Bergsjö	1	sk nyb		
1871	Frösåker	Valö	Bergsjötorp	1	fr torp		på Pålsmora ägor
1871	Frösåker	Valö	Bol	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Dannebo	1	fr torp		på Vigelsbo ägor
1871	Frösåker	Valö	Dannebo	1	fr äng		
1871	Frösåker	Valö	Djuprudan	1	fr torp		på Pålsmora ägor
1871	Frösåker	Valö	Frebbenbo	1	fr	1	
1871	Frösåker	Valö	Greberg	1	sk äng		Grebergsäng
1871	Frösåker	Valö	Gubbo	1	fr	1/4	
1871	Frösåker	Valö	Gålarmåla	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Hackbol	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Juvansbo	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Karö	2	sk	1/2+1/2	
1871	Frösåker	Valö	Karö	1	fr	1	
1871	Frösåker	Valö	Kjällinge	4	fr	3+1/2	
1871	Frösåker	Valö	Kjällinge	1	fr utj		
1871	Frösåker	Valö	Klockaregård	1	fr	1/4	
1871	Frösåker	Valö	Kyrkojorden	1	kr lgh		upptagas i jordebok enl Kammarkoll beslut 1920
1871	Frösåker	Valö	Källinge eller Skrätttan	1	sk äng		
1871	Frösåker	Valö	Källsvedsäng	1	sk äng		
1871	Frösåker	Valö	Lund	4	fr	4	1887 överförd till skatte
1871	Frösåker	Valö	Lund	1	fr utj		
1871	Frösåker	Valö	Lundsvedja	2	fr	2	1887 överförd till skatte
1871	Frösåker	Valö	Lundsvedja	2	fr	2	
1871	Frösåker	Valö	Norrby	7	sk	6+1/2	
1871	Frösåker	Valö	Prästgården	1	kr	1 1/4	
1871	Frösåker	Valö	Pålsmora	2	fr	2	
1871	Frösåker	Valö	Rovsättra	1	kr	1	
1871	Frösåker	Valö	Rovsättra	4	fr	4	1887 överförd till skatte
1871	Frösåker	Valö	Stummelbo	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Sunnanäng	1	fr	1	1887 överförd till skatte
1871	Frösåker	Valö	Svalsbo	2	fr torp		på Pålsmora ägor
1871	Frösåker	Valö	Tomta	1	sk	1/2	
1871	Frösåker	Valö	Uckerö	2	fr	1/2+1/2	1887 överförd till skatte
1871	Frösåker	Valö	Uckerö	1	fr utj		

År	Härad	Socken	By	Antal gårdar	Jord-natur	Hemmans-tal	Anmärkning
1871	Frösåker	Valö	Vamsta	5	fr	2+1/2+1/2+1/2	1887 överförd till skatte
1871	Frösåker	Valö	Vigelsbo	2	fr	1/2+1/2	
1871	Frösåker	Valö	Vreta	1	sk	1/4	
1871	Frösåker	Valö	Västerbol	1	fr torp		1887 överförd till skatte
1871	Frösåker	Valö	Östensbo	1	fr	1/2	1887 överförd till skatte
1871	Frösåker	Valö	Östensmora	1	fr	1	