User Manual for the Digital Edition of the Oldest Geometrical Maps in the Database GEORG

The Oldest Geometrical Maps, 1630 – 1655 http://www.riksarkivet.se/geometriska

The database GEORG contains:

1/ Transcriptions of texts belonging to the maps, *Notarum Explicatio* (notes concerning the numbers and classifications of the map, along with explanatory descriptions); transcriptions of all other text in the maps.

2/ Registration of quantitative data in *Notarum Explicatio* such as field size, yields from meadows, *byamål* (proportional share in hamlet), *jordvärdering* (land evaluation) and number of hop poles.

3/ Registration of qualitative data in *Notarum Explicatio* and information shown in the map; including such matters as access to resources on outlying land, access to fishing waters, number of mills, number of hop gardens, vegetable gardens and orchards.

4/ Coordinates for hamlets, villages or corresponding settlement are specified. A Geographic Information System (GIS) is used for this. The location of the settlement on the seventeenth century geometrical map is identified on the modern topographic and cadastral map. Thus, each settlement is given a pair of coordinates (x-y) in a coordinate system (RT90 and WGS84). The coordinates are centrally placed in relation to the settlement and represent the land (infields and outfields) belonging to the settlement.

5/ Coordinates for thematic features on the map are specified. Around 20 classes of features occur: gård, hemman (farmstead); torp (cottage); övriga bebyggelser (other settlement) and ödegård (derelict settlement); kyrka (church); klockstapel (bell tower); väder- och vattenkvarn (windmill and water mill); humlegård (hop garden); trädgård (orchard); kålgård (vegetable garden); fasta fisken (regular fishing waters); industri (industry); damm (pond);

dämme (dam); bro (bridge); råmärke (boundary mark); fornlämning (ancient monument) and övriga object (other features). The same method is used for the GIS registration of features as for the registration of settlements, with the difference that each pair of coordinates corresponds to a feature.

How to use and search GEORG for information

The database has several facilities for searching:

VIEW THE MAPS

This is a digital facsimile of all the collections of maps. Each collection of maps can be viewed page by page, from the title page and index, through all the maps, to the back page. The transcribed text is shown to the left with the digital picture of the map on the right-hand side.

SEARCH THE REGISTER AND EXPORT

All hamlets, villages and similar settlements that are marked on a geometrical map from the years 1630–1655 are listed in alphabetical order in the register. Searches can be limited to parish, district or county, or any specific word. Topographic divisions (parishes etc.) are specified according to seventeenth century boundaries and follow the divisions in the oldest geometrical land register.

The results of the search can be exported as an excel-file. In the process of exporting, quantitative and qualitative data can be added; for instance, field size and hay yield. A maximum of 2500 settlements, along with optional associated information, can be exported at a time. To export more units, the search can be limited, for example by exporting one county at a time

SEARCH A MAP

All settlements and thematic features on the map with specified coordinates are shown in Google maps. The Google map can be zoomed in and out by pressing the SHIFT key or by scrolling with the mouse; the Google zoom tool can also be used, it is found on the upper left-hand side of the map. A legend showing the features of the map is displayed on the right-hand side. All features can be turned off and on when required.

The features of the map are shown in two ways. On the first general level, all coordinates are displayed as static points on the map. On the second detailed level, which can be reached by zooming several steps into the map, a maximum of a hundred dynamic clickable features are shown. The dynamic features are displayed with larger icons in the Google map than the static points; the names of the settlements, as they occur in the register, are also shown.

By clicking on a dynamic feature, a dialogue box with two tabs is displayed. The first tab provides basic information about name, parish, district and county (the same information as in the register) as well as the coordinates and the precision of the coordinates. Precision is defined in a scale of three levels; 3 = high precision (with a divergence of up to 50 metres); 2 = medium precision (divergence of up to 200 metres); 1 = low precision (located within a square kilometre).

Under the other tab, there is a list providing information on which maps and associated documents correspond to the specified coordinate or settlement. Click on a map file to open the map or specified collection of maps in a new window.

SEARCH THE ORIGINAL TEXT AND DISPLAY ON MAP

All text in the maps is indexed and searchable through a free-text search. Note that the search is made in the original text and that the transcribed text follows the spelling of the land surveyors. The language of the maps is not standardised; the same word may occur with several different spellings. For instance, *gärde* (field) may be spelt *gärde*, *gierde*, *giarde*, *gerde*.

A wild card * or ? might help in the search. The asterisk replaces one or several letters in the beginning or end of a word. The question mark replaces certain letters in a given place in a word; for instance, $ha\beta el$ and hasel (hazel) can be found with the word ha?el, while *hage (enclosed pasture) matches various words with the ending -hage, such as kohage, slatterhage, kalvhage. One or several words can be used at the same time in a search. It is also possible to exclude certain words by including a - (minus sign) before the search word. An example is if you wish to search for the tree ek (oak), but want to exclude the place name Ekeby from the search. The search words could then be ek*eek*-ekeby-eekeby.

Other examples of a free-text search might be for a place name such as *Häästa*, *Brooby*; or feature such as *quarn* (mill), *humblegård* (hop garden); an assessment of cultivated fields or meadows such as *hårdwaldh* (dry and firm ground), *leerjord* (clay soil); or other features such as *fiske* (fishing waters), *mulebete* (pasture for cattle).

A search involving several words, results in a list of map files including some of the matching words. If you want matches that only show maps including all selected searchwords, the option 'alla ord' ('all words') can be chosen. An example of this is a search for svedje (swidden) that might be mentioned as svedjeskog (swidden forest) or as fälleskog (cleared forest). The search words *swedie* svedie** result in around 500 matches (map files) while *fälles** results in around ten matches. Both words can be found on one map file (E1:58-59), using the search alternative 'alla ord' (all words).

A search from the default setting results in a search among all map files. The search can also be limited to a particular collection of maps, a county or a specific land surveyor.

In order to simplify the selection of search words, a free-text search ignores the use of square brackets [] and brackets (), which occur in the transcribed original text. For instance, a search including the word 'uthsäde' (seed for sowing) also matches u[ths]äde. Neither is there any distinction between upper case and lower case letters; e.g. a search for 'engh' (meadow) also provides matches for 'Engh'.

On a Swedish keyboard, the German letter β is written by pressing ALT+0223.

The list of matches provides links to map files with the specified collection of maps. When you open a file, the matches are highlighted in yellow in the transcribed text. You can also use the search function of your web browser to make further searches in the map file. In several types of web browser, the search function is activated when you press Ctrl-F.

VIEW FREE-TEXT SEARCHES ON THE MAP

When the free-text search is performed, a link is provided that displays all the matches on a map (Google Maps). The coordinates of settlements and map files that were the result of the search, are displayed in red on the Google Map.

Note that a free-text search of e.g. *humle*, *humble* (hops) matches with all the maps containing text where the word occurs, independent of whether the context was *humle finns* (occurrence of hops) or *humle saknas* (non-occurrence of hops).

SEARCH FOR PLACE NAMES OR NAMES OF PERSONS

The Institute for Language and Folklore in Uppsala (SOFI) have made excerpts of *place* names, landscape names, names of property and names of persons. The name register, which will include all these types of names on the maps, is under construction and will be ready for use in 2013.

Please notify us if you find any mistakes

The sheer size and detail of the material is liable to give rise to mistakes, either in transcribed text, in quantitative data or in the placing of thematic features or settlements. Therefore, when users discover mistakes, it is of great value to report them, either using the form on the web site of the database, or straight to the map department at the National Archives (Riksarkivets kartenhet, Marieberg, Stockholm); mats.hoglund@riksarkivet.se.

Referring to GEORG

For references to the address of the web site: www.riksarkivet.se/geometriska

References to information about a certain map in the database should be written in the following way:

GEORG kartsamling:aktnummer; for instance, GEORG A2:54-55 or GEORG Sockenpärmar:22

(GEORG, collection of maps: file number; for instance, GEORG, A2:54-55 or GEORG, Sockenpärmar:22.)

Refer to exported quantitative and/or qualitative data from the register in the following way: GEORG followed by the date of access; for instance, GEORG accessed 14 March 2013.

Technical requirements for viewing maps

The maps are displayed in high-definition DJVU format; each file is 2-4 Mb in size. This means that the digital publication corresponds in quality with the original high-definition files (TIFF format). For DJVU to function in your web browser, you need to install an application

(plugin) on your computer. Adding DJVU to the web browser makes it possible to zoom in and out of the maps, it also allows you to save the maps on your computer. Free downloads of this program are available at www.caminova.net.

Personal use of maps and database

The maps and the information in the database can be saved on your personal computer for personal use according to the principle of open access to scientific publications on the internet (more information about open access can be found on the web site of the National Library of Sweden (Kungliga biblioteket) www.kb.se/openaccess. However, all digital maps are the property of the National Archives and may not be published without permission from the National Archives.

Principles for registration in GEORG

As far as possible, principles for registration follow the routines and practices of the land surveyors.

Quantitative data about cultivated fields, meadows, soil assessment, proportional share in hamlet, hop poles. Quantitative information is registered partly as a total for each farmstead and partly as a total of a hamlet or settlement. Information given by the land surveyor concerning the size of single fields is not registered separately. The type of fields and meadows termed as *utjord* (uninhabited cadastral units) and *fjäll* (separated cultivated land) (alternatively *urfjäll*, *hump*, *but*, or similar term) are specified along with the settlement where they are physically located and not with the settlement that is noted as owner of the land (which might be a farmstead in another village).

Sometimes, the information on the map is incomplete. The land surveyor might have forgotten to note a number, or perhaps the original map was damaged or unreadable. In these cases, no data is registered in GEORG, but a comment is included. Occasionally, the sizes of the separate farmsteads are mentioned indirectly; for instance, in the land surveyor's own calculations or comments illuminating the size of farms, perhaps in a comment that one farm is the same size as another. In such cases, this is registered in GEORG as quantitative data.

Measurement units in GEORG also follow the original source. During the seventeenth century, the acreage of fields was normally stated in *tunnland* (14 000 square Swedish ells, 4937 m²) and the yield from meadows (harvest) was measured in *(sommar) lass,* (summer) loads of hay. In some cases, *kappland* has been used as a measurement unit; in GEORG this has been converted into *tunnland* (1 kappland = 1/32 tunnland).

For land evaluation, the only term used in the counties of Svealand was *markland* (1 markland = 8 öresland = 24 örtugland = 192 penningland), which was not a measurement of size, but a qualitative estimate of the value of the property. In GEORG, these land evaluation measurements are registered as precisely as possible in *penningland*, the smallest fraction of the *markland*. When the land evaluation measurements are exported to Excel in GEORG, the *penningland* unit is automatically converted into *öresland*. *Byamål* (A farm's proportional share in the land of the hamlet or village) was stated by the land surveyors as the width of fields in *aln* (ells, a Swedish ell = c. 0.59 cm) and *stänger* (rods) and registered in GEORG in this way.

Land types: the sizes of cultivated fields or meadows were registered without regard to the type of soil or other qualitative and functional statements from the land surveyors. However, such evaluative statements as *lerjord* (clay soil), *sankäng* (marshy meadow), *vret* (small cultivated field in the woods), *horva* (small enclosed field) *ödejord* (derelict land) etc. can be found in a free-text search.

The National Edition of the Oldest Geometrical Maps

The project "The National Edition of the Oldest Geometrical Maps" was carried out during the years 2004–2010. As a result, the bound collections of maps from 1630–1655, which have come to be called *äldre geometriska jordeböcker* (The Oldest Geometrical Land Register) was scanned together with 2000 unbound associated maps and documents from the same period.

The database GEORG (GEOmetRiska-Gustav), which was built up within the project, is a digital primary source publication of the original maps. Furthermore, copies on archive quality paper of all maps in original scale are available at the National Archives in Marieberg, Stockholm.

In all, this is a matter of 10 000 maps showing the agrarian landscape around the year 1640 (1630-1655), with around 120 000 settlements of different kind, presented in a systematic and standardised way. The Swedish landscape of 200 years before the agrarian revolution and the large-scale land reforms is illuminated in detail including spatial organisation, settlement and economic resources. These maps are unique on a world-wide scale; no other country has a corresponding collection of maps from this period encompassing such a wide range of information.

This project was financed by Kungliga Vitterhetsakademien (The Royal Swedish Academy of Letters, History and Antiquities) and Riksbankens jubileumsfond (funds from the Swedish Central Bank). The results of the project were handed over to Riksarkivet (the National Archives) and are freely available on their website. Funds to enable publication and application on the internet were provided by Vetenskapsrådet (the Swedish Research Council) through the project "Historiskt GIS och databas på internet" (Historical GIS and Database on the Internet).

FIGURES

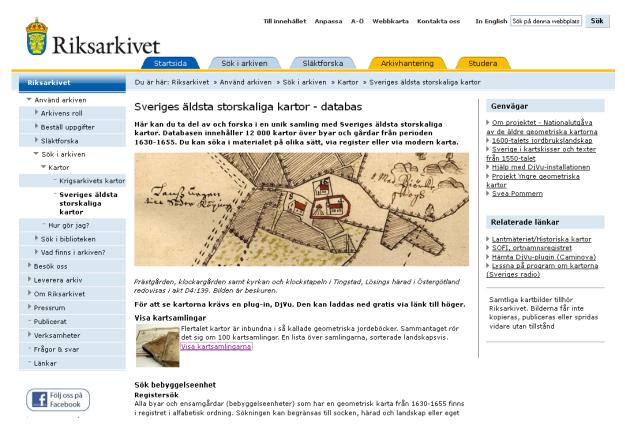


Fig 1. Home Page www.riksarkivet.se/geometriska

Visa kartsamlingar

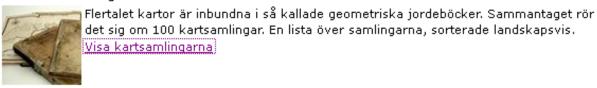


Fig 2. View Map Collections

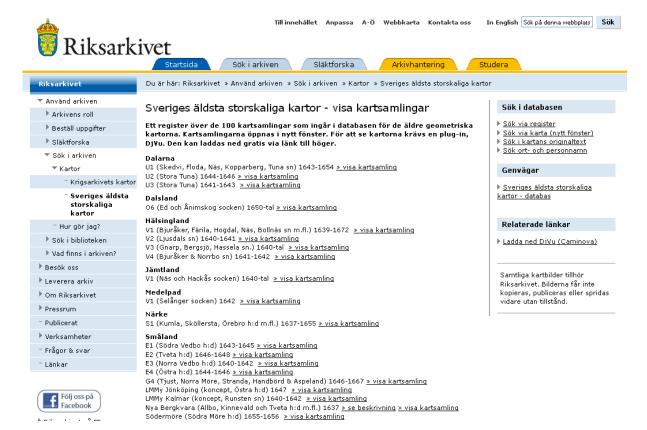


Fig 3. List of Map Collections

Dalarna

U1 (Skedvi, Floda, Näs, Kopparberg, Tuna sn) 1643-1654 » visa kartsamling

U2 (Stora Tuna) 1644-1646 » visa kartsamling

U3 (Stora Tuna) 1641-1643 » visa kartsamling

Dalsland

O6 (Ed och Ånimskog socken) 1650-tal <u>» visa kartsamling</u>

Hälsingland

V1 (Bjuråker, Färila, Hogdal, Näs, Bollnäs sn m.fl.) 1639-1672 » visa kartsamling

V2 (Ljusdals sn) 1640-1641 » visa kartsamling

US (Coord Boracia Haccola de VIII 40 tal vivida barteamlina

Fig 4. List of Map Collections; click on the link "visa kartsamling" (View Map Collection)

Sök bebyggelseenhet

Registersök och exportera

Alla byar och ensamgårdar (bebyggelseenheter) som har en geometrisk karta från 1630-1655 finns i registret i alfabetisk ordning. Sökningen kan begränsas till socken, härad och landskap eller eget sökord. Efter sökning går det att exportera uppgifter om bl.a. åkerstorlek till en Excel-fil.

Sök bebyggelseenhet via register och exportera

Fig 5. Search the register and export to Excel

Sveriges äldsta storskaliga kartor - sök bebyggelseenhet via register

Alla byar och ensamgårdar (bebyggelseenheter) som har en geometrisk karta från 1630-1655 finns i registret i alfabetisk ordning. Sökningen kan begränsas till socken, härad och landskap eller eget sökord. Sökresultatet kan sedan exporteras till en Excel-fil. För att se kartorna krävs en plug-in, DjVu. Den kan laddas ned gratis via länk till höger.

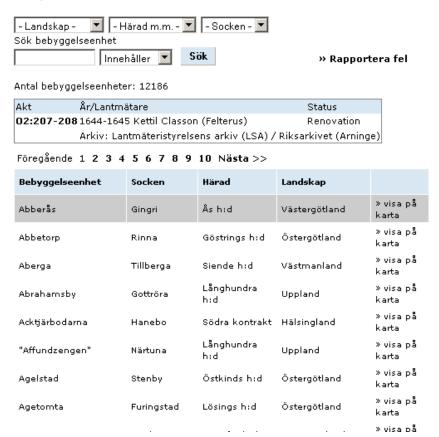


Fig 6. In the register, click on a hamlet or settlement to view the document containing a link to the requested map collection.

Sveriges äldsta storskaliga kartor - sök bebyggelseenhet via register

Alla byar och ensamgårdar (bebyggelseenheter) som har en geometrisk karta från 1630-1655 finns i registret i alfabetisk ordning. Sökningen kan begränsas till socken, härad och landskap eller eget sökord. Sökresultatet kan sedan exporteras till en Excel-fil. För att se kartorna krävs en plug-in, DjVu. Den kan laddas ned gratis via länk till höger.



Fig 7. A search in the register enables the option "exporter till Excel-fil" (Export to Excel-file).

Sveriges äldsta storskaliga kartor - sök bebyggelseenhet via register

Alla byar och ensamgårdar (bebyggelseenheter) som har en geometrisk karta från 1630-1655 finns i registret i alfabetisk ordning. Sökningen kan begränsas till socken, härad och landskap eller eget sökord. Sökresultatet kan sedan exporteras till en Excel-fil. För att se kartorna krävs en plug-in, DjVu. Den kan laddas ned gratis via länk till höger.

Urvalet gäller 21 bebyggelseenheter [ny sökning] Notarum Explicatio Inkludera -Väli-▼ minst 🗖 Kommentarer/Referenser höast l Bebyggelseenheternas Gruppera efter koordinater (RT-90/WGS84) Bebyggelseenhet 💌 Format • Excel (.xls) Exportera Äldre geometriska kartor 1630-1655 2012-08-22

Fig 8. In the export function, it is possible to select which information in *Notarum Explicatio* is to be exported. Here, the option can be chosen either to sort the information according to farmstead or according to hamlet or settlement. It is also possible to include comments/references that were added during the registration work, as well as the coordinates of the hamlets or settlements. Coordinates of single thematic features cannot be exported in the current version of GEORG.

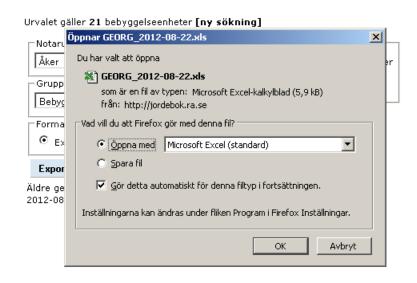


Fig 9. When choosing the export option, a dialogue box is displayed and information is saved on the computer as an Excel-file.

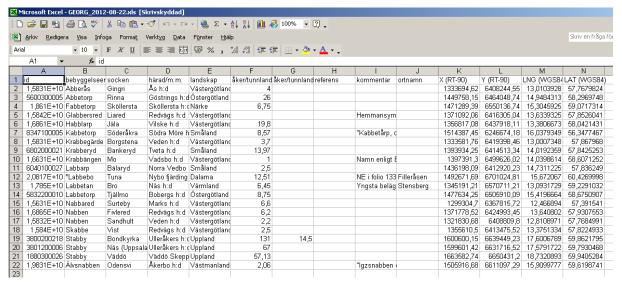


Fig 10. Example of export from GEORG to an Excel file.

	А	В	С	D	Е	F	G	Н	I
1	id	bebyggelseenhet	socken	härad/m.i	landskap	åker/tunnland till	åker/tunnland	till bebyggels	seenheten
2	3800300003	Gamla Uppsala	Gamla Uppsala	Vaksala I	Uppland	378	22,5		
3	3813200006	Gästre	Frösthult	Simtuna	Uppland	361,61			
4	3800400001	*Sätuna gård	Vaksala	Vaksala I		303			
5 6	3800300021	Fullerö	Gamla Uppsala	Vaksala I	Uppland	263,1			
6	3800200201	Ultuna	Bondkyrka	Ulleråker:		217,5			
7	3803300001	Alsike	Alsike	Ärlinghun		216,62			
8	3600500054		Tierp	Tierp h:d		211,92			
9	3800300012		Gamla Uppsala			205,06			
10	3800500009		Danmark	Vaksala I		199,04			
11	1250800001		Färentuna	Färentun:		176,01			
12	3801300102		Läby	Ulleråker:		170,75			
13	3600500018		Tierp	Tierp h:d		170,24			
14	3813100025		Simtuna	Simtuna		170			
15	3820900007		Alunda	Olands h		168,74			
16	3600500024		Tierp	Tierp h:d		167,05			
17	1911000004		Lunda	Semingh		163,5			
18	19810400012		Norrby	Simtuna		161			
19	3804200001		Rasbokil	Rasbo h:		160,68			
20	1910700010		Skånela	Semingh		160,41			
21	3600500023		Tierp	Tierp h:d		157,7			
22	3804100023		Rasbo	Rasbo h:		157,4			
23	3800500005		Danmark	Vaksala l		156,52			
24	3800600012		Funbo	Rasbo h:		156,39			
25	3813400004		Torstuna	Torstuna		155,5			
26	3600500019		Tierp	Tierp h:d		155,16			
27	19810400023		Norrby	Simtuna		154,62			
28	1910700001		Skånela	Semingh		154,51			
29	3800900006		Balingsta	Hagunda		154,38			
30	3800600001		Funbo	Rasbo h:		153,17			
31	3804200012		Rasbokil	Rasbo h:		151,61			
32	19810400021		Norrby	Simtuna		149,5			
33	3600500010		Tierp	Tierp h:d		145,03			
34 35	3800400021		Vaksala Näs (Uppsala)	Vaksala I Ulleråker:		144,91			
36	3801200016			Hagunda		144 143,5			
36 37	3800700005 3800300001		Hagby Gamla Uppsala			143,5			
37 38		Västra Halls	Tierp	Tierp h:d		142,25			
39	3813300002		Härnevi	Torstuna		142,25			
59 40	3813100023		Simtuna	Simtuna		139,04	17		
41	38041000023		Rasbo	Rasbo h:		138,97	17		
42	3800600013		Funbo	Rasbo h:		138,12			
+ <u>2</u> 43	1250700013		Sånga	Färentun:		136,78			
44 44	3800500006		Danmark	Vaksala I		135,48			
4 5	3801900003		Börje	Ulleråker:		135,46	6		
46	3800400024		Vaksala	Vaksala I		134,95			
+0	3000400024	UKUISLA	vanoaid	v ansaid i	Oppialiu	154,33			-

Fig 11. Information can be handled in several different ways in Excel. In this example, information on the size of arable fields at all settlements in Uppland was exported and sorted according to size. The data concerning the size of fields is an aggregation of the data on sizes of fields at all the separate farms.

Ange ett eller flera sökord Notera att '*' och '?' kan a			öka.
humble		Sök	» Rapportera fel
Träffar: O Några ord O .	Alla ord		
Kartsamling:	Landskap:	Lantmä	tare:
Alla kartsamlingar	Alla	Alla	▼
Sökresultat för: humble 470 resultat hittade. » Visa 47 resultatsidor. 1 2 3 4 5	•	ı >>	
(1) C7 (1) D1 (2) D2 (27) LMMy Jönköping (22) O6 (1) P2 (7) P3 (28) Främmestad (25)	19) Södermöre (2 3 (2) P4 (20) Bo g	1) E1 (4)) O1 (2) gesund (2) ten (45) F	E3 (2) E4 O2 (24) O3 (13) O4 Lönnarp t1 (50) R2 (3) R3
P4:92-93 [P4] Västtorp, Floby socken » V Johan Botvidsson, 1642-16 hemman 1 Vtsäde alz 10 skatte 1	44	0 <mark>Humble</mark> gå	ård 2 Suen Torsons gård
P4:152-153 [P4] Skår, Gökhem socken » Vi Johan Botvidsson, 1642-16 Vtsäde i vreten B 1 2/5 i	44	<mark>e</mark> gård till 4 l	b Hård valz höö 30 2
A2:134-135 [A2] Väsby, Alunda socken » Vi Johan Persson (Thoring), 1 byn 7 1/4 tunnor C Höö byn är skogh och	645	<mark>umble</mark> gårdh	er 370 stänger Till dänna
Lönnarp:17-18 [Lönnarp] Kölingared, Kölingared soci [lantmätare okänd/ej ident	ken » Visa på kart a	1	

Fig 12. An example of a free-text search for *humble*, i.e. humle (hops).

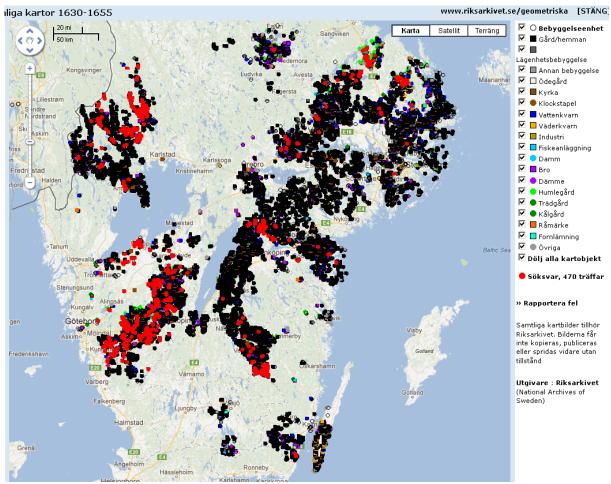


Fig 13. An example of a search for hops, shown as a distribution map in Google Maps. This can be done by selecting the link "visa söksvar på karta" (view matches on map) that appears after the free-text search is performed. Settlements on a map where hops was noted are marked with red symbols. In the current version of GEORG it is not possible to export the coordinates from the Google Map.

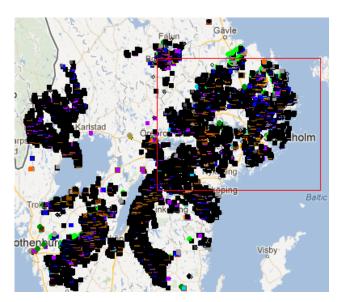


Fig 14. One way to zoom in and out of the map is to hold the SHIFT-key down and draw a box over the area with the cursor.



Fig 15. Coordinates become clickable when the map is zoomed in; under the tab "Akter" (Files), there is a link to the map.

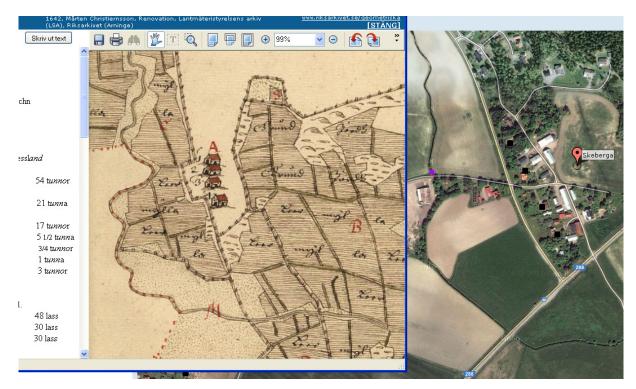


Fig 16. The map and text is opened in a new window.