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the European Rural Landscape:
Methodological issues and agrarian change 1770 - 1914

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Historical map overlays: A method for the analysis and planning of the agrarian landscape

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Abstract

A method for the historical analysis of the landscape has been developed at the Department of Human Geography, Stockholm University. It is based on the simple methods of comparing maps from different times, but on the same scale. The main practical work is in reconstructing the land use and the spatial organisation depicted on the earliest cadastral maps on historical map overlays. The overlays are produced on the same scale and with the same division into map sheets as the modern map series. In the paper, some examples of work will be discussed. Up to now, a large number of ancient remains, such as cairns, mounds and whole cemeteries, have been discovered through the use of these overlays. Furthermore, more than a hundred abandoned farms and hamlets, which are also protected by law, have been discovered. In addition, our general knowledge of the 17th and 18th century land use and settlement types has increased. At present, some 4000 square kilometres in southern and central Sweden are covered by overlays. Overlays are now being produced by several county administrations and at Stockholm University.

Keywords: landscape history, cadastral maps, planning, methods

Introduction

The historical aspects of the man-made landscape have attracted increased interest in the planning and preservation of the countryside in Sweden. At the same time, there is a general lack of knowledge of how to extract and classify relevant historical data from the present landscape. There are, of course, numerous methods of recording and describing landscapes and their content. Landscape architects have gone far in capturing the aesthetic and perceptual values in the landscape. Nature conservationists have generally limited their attention to a few biotopes and especially areas with little human interference. Both these approaches are, however, of limited value for the preservation of the historical aspects of the landscape.

On the other hand, the approaches to landscape that are directed towards the preservation of the historical aspects are usually mainly oriented towards objects in the landscape rather than to the landscape itself. The recording of ancient monuments, buildings, etc. in Sweden has been very well developed by archaeologists and art historians, who by tradition dominate the administrative bodies responsible for the cultural heritage. But, although there is, on a general level, a strong interest in a holistic analysis of the landscape, the methods of recording landscapes are not yet developed for such an application. The records of the cultural heritage administrations are full of data on historical objects in the landscape, but data on the landscape itself - its former land use, vegetation, ownership pattern, etc. - are generally not recorded.
Furthermore, by the nature of these data, two periods time have had priority in the registers and thus in the assessment of historical landscapes: on the one hand, the prehistoric era (Viking period and earlier), with its cemeteries, field systems and settlement sites and, on the other, the last one or two hundred years with their standing buildings, 19th-century stone walls, boundaries dating from the time of the enclosures, etc. This latter period still represents for many people their childhood landscape and thus has a strong position in the common heritage. For the intervening periods - the medieval and early modern period - there is much less knowledge about both the landscape and the objects in the landscape.

One reason for this difficulty is that well-defined methods of handling data on the historical landscape have not been developed. The historical geographers have used their methods within a limited research framework but have not developed them into a general, widely applicable method suited to the practical work of the cultural-heritage administrations. The aim of the development of "historical-map overlays" has been to overcome this difficulty and formalise well-known research methods into a craft, that could be included in the daily work of these administrations.

In this developmental work, we have drawn upon three circumstances, which in some respects may be specific to Sweden:

(1) Sweden has good, large-scale, cadastral maps dating from the 1630's onwards. They cover most of the farms, hamlets and villages in the then settled parts of the country. The original maps are stored in the central and regional archives of the Land Survey.

(2) Swedish physical planning comprises not only urban agglomerations, but nowadays also the countryside. The preservation of the natural and cultural environment is, by law, included in the physical planning.

(3) Sweden has very strict legislation concerning ancient monuments, which includes not only the spectacular monuments, but practically all abandoned remains of settlement, cultivation, industry, etc. In cases in which the authorities give permission to destroy one of these sites, the costs of excavation and documentation have to be covered by the developer.

On the basis of this, a method for the historical analysis of the landscape has been developed at the Department of Human Geography, Stockholm University. It is based on the simple methods of comparing maps from different times, but on the same scale. The main practical work is in reconstructing the land use and the spatial organisation depicted on the earliest cadastral maps on historical map overlays. The development work has, to a large extent, been financed from consultancy work, paid for either by firms wanting to avoid ancient monuments in their development of gas pipelines or by administrations responsible for planning the landscape and dealing with rescue excavations.

We have considered three main components in our analysis of the historical landscape. First, there is the overall geographical structure: faults and valleys, uplands and lowlands, woodland and open land, etc. It is often given by nature but is also influenced by man. Secondly, there are the man-made structures, both those still functioning and those that have been abandoned and fossilised. Thirdly, there is the man-influenced vegetation, such as old pollards, grasslands, and typical plants connected with a special form of land management.

The large scale, historical maps are heterogeneous in their contents and styles depending on their date of production and on the objectives behind the survey. One has therefore to decide what elements to extract from the maps. On the maps or on the accompanying form, the following elements are recorded:
(a) Type of settlement and settlement form (single farmsteads, hamlets, villages or manors),

(b) Type of field system, mainly to be interpreted from the fences, which are marked on most maps before 1850,

(c) Type of rotation, especially the share of the land that was fallow each year,

(d) Structure of holdings, whether the arable was subdivided or held in severalty

(e) Ownership of land (freeholders, Church, Crown or nobility)

Production of overlays

The production of the overlays can be divided into three main steps (Fig. 1): (1) tracing the chosen parameters of the original map with pencil on drafting film, (2) reduction to the scale of the official, modern, economic map (1:10 000) and (3) rectifying, editing and tracing with ink on drafting film with the modern map underneath. In addition, a form is filled in with verbal and quantitative information from the map and the map text.

The overlays are thus produced on the same scale and with the same division into map sheets as the modern map series. This simplifies storing, retrieval and comparison. The official maps also contain all the known ancient monuments from the official record. The overlay, together with its printed map, thus contains an abundance of historical information on the landscape.
Some examples

In the following pages, some examples of work will be discussed. In 1989 a 160-kilometre-long pipeline for natural gas was projected through the province of Uppland, north of Stockholm (Fig. 2). The archaeological costs of previous pipelines in southern Sweden had been unexpectedly high. Partly because of this, the developer wished to finance the production of historical-map overlays for a c. two-kilometre-long corridor along the pipeline. Despite the fact that the province of Uppland is one of the most intensively investigated areas in Sweden, our knowledge of its agrarian landscape increased in many ways during the study. The field system differed greatly from north to south, in spite of the fact that the whole province practised a two-course rotation.
Rosersberg, Uppland

In Fig. 3, a detail from the manor of Rosersberg is shown. Note the consequent two-field system, with separate fields for each year. From the ratio between arable and meadow, it can be seen that crop production predominated. But it is also evident from the map that, in connection with the formation of the estate shortly before the mapping, previously arable land was turned into meadows and pastures in what are called lindor.

Note the abandoned site (ödetun) of the farm of Luttergärde. This site was probably deserted in connection with the creation of the estate of Rosersberg. Note also the name Norsa, which was the name of the hamlet that preceded the manor. The planned pipeline cuts the fenced field boundaries at two or three critical points. Without the overlay, it would have been very difficult to understand what kind of field boundary we were dealing with in this case. From the forms on the map, we may conclude that, in the primary stage, there was only one field. At a later stage, this was divided into two fields, presumably at the time of the introduction of a two-course rotation. If we were lucky, it would be possible to date the field boundaries and thus the introduction of the two-course rotation into the area.

Fjällunda and Allberg, Halland

The next example is from the fully cultivated plains of Halland county (Fig. 4). In this type of landscape in the extreme south of Sweden, it is very difficult to deduce previous land-use history from the present landscape and to detect archaeological features. The historical overlay provides the tool for retrogressive analysis.

![Diagram of Fjällunda and Allberg]

Fig. 4.

From the cadastral maps of 1776 covering Fjällunda and Allberg we can see that most of the land at that time was a treeless common used for pasture. A boundary encircled a large area of meadow-land and infields (small patches of arable land). The farmsteads were not concentrated to a village site but were scattered along this main boundary for more than a kilometre. On each farm, there is a separate cattle path and small, enclosed fields for pasture. Some of the farms are still in use, while some are now abandoned. In addition, there are later settlements. Note also the two specially marked hillocks, which must have been Bronze Age
burial mounds which were later ploughed and flattened. The northern mound was used as a boundary-marker, when the common pastures were enclosed to Fjällunda and Allberg respectively. Near the River Åtran there were two pigsties, which indicate extensive pig-breeding.

The precision of the overlay is very great. The discrepancy between locations in this case seldom exceeds ten metres. In a field survey, several of the deserted sites could be confirmed with finds of charcoal, brick fragments, etc. Probably the centres of the burial mounds are still intact under the plough level.

In this case, the work on the overlay led to the discovery of many ancient monuments previously unknown, but under legal protection: at least four deserted settlement sites of probably medieval origin and two Bronze Age burial mounds. Furthermore, this analysis showed how recent the present, fully cultivated landscape is.

Fig. 5.
The last example (Fig. 5) shows work on the reconstruction in the field of a historical landscape. All the houses in this small hamlet of Äskhult, in the county of Halland, are well-preserved wooden buildings from the 18th century. The county authorities aim at creating a complete environment of a pre-industrial agrarian unit here. With the help of old cadastral maps on the scale of 1:4000, which are very detailed, it is possible to reconstruct both the previous vegetation and to identify and date the relict and fossil forms in the landscape.

The cadastral maps from the beginning and the middle of the 19th century contain enough information to enable this aim to be achieved. Furthermore, they show some interesting changes in the land use in the middle of the 19th century. Before 1850, the cattle path led to the south and the common pastures. Around 1860, two new cattle paths were constructed to the north and the east. The reason for this was that the old parish common of Förlanda had been enclosed to the different hamlets and farms and was no longer accessible from Äskhult. On the map, one can also see the stone walls dating from different periods and the small patches of arable land, now abandoned, which were never cultivated with modern implements. Only a very small proportion of the land was woodland.

The plan for the reconstruction of the old farming landscape had to be radically changed after this analysis of the old maps. However, the evidence made it possible to recreate a real 18th-century landscape and not only a vague pastiche of what was thought to be an old-fashioned landscape.

Conclusion

The historical landscape overlays, with their accompanying forms containing verbal information, provide a detailed and uniform source material for planning and research on the agrarian landscape. Up to now, a large number of ancient remains, such as cairns, mounds and whole cemeteries, have been discovered through the use of these overlays. Furthermore, more than a hundred abandoned farms and hamlets, which are also protected by law, have been discovered. In addition, our general knowledge of the 17th and 18th century land use and settlement types has increased. Previously unknown regional differences in landscape types have emerged.

This rather simple, geographical method of drawing maps on the same scale soon turned out to be the key method of giving the historical landscape a fair treatment in planning and preservation. The large-scale breakthrough of this manner of working was due to the fact that the developers have been faced with greatly increased costs for archaeological investigations, especially because of the newly discovered settlement sites. The developer therefore has an interest in knowing, as early as possible, about the prospects of finding new ancient monuments within the area planned to be developed. The big firms projecting gas pipelines through Sweden have been in the forefront in employing historical geographers as consultants. For planners and conservationists in general, the overlays have become a useful tool, as the pressure on the countryside and the need for planning have increased. At present, some 4000 square kilometres in southern and central Sweden are covered by overlays. Overlays are now being produced by several county administrations and at Stockholm University.