

Comparing the Past and the Timeless

Landscape Use, Change, and Affordance in Central Blekinge, Sweden,
Between the Iron Age and the Medieval Period

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Abstract

Recent archaeological excavations have uncovered an Iron Age temple house in Vång providing new context to the centrality of Iron Age central Blekinge in Sweden, as well as its development into the Medieval period. This thesis aims to examine how that development unfolded using the lens of affordance theory combined with a GIS assisted source pluralistic analysis. Comparing Iron Age monuments with historical settlements and structures generates an understanding of central Blekinges landscape as largely continuous through epochs. The start of the medieval age heralds a new ideology and subsequent new meanings to the landscape. Some environmental features with established meaningfulness retain their meaningfulness, but often in a christianized form while other places lose their previous importance. Investigating the applicability of affordance theory on a macro scale landscape analysis constitutes an additional aim of this paper. Combined with datasets that correspond with visual potential, Affordance theory is proven suitable for large scale pattern detection. Flaws are identified in affordance theory's inherent determinism, creating potential inability to interpret anomalies.

Keywords: Medieval, Middle Ages, Late Iron Age, Affordance, Landscape, GIS, Blekinge, Medelstad, Västra Vång, Hjortsberga, Hjortahammar, Björketorp, Listerby, Edestad, Förkärla, Historical Archaeology.

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Introduction

Despite a richness of stone settings, cairns and extraordinary runestones the Swedish province of Blekinge has long suffered from archaeological negligence. Perhaps it is its awkward position between Lund and Kalmar, two of Sweden's university cities with archaeological institutions, that has made Blekinge a scientific borderland. Or perhaps it has to do with its unique position in both Danish and Swedish history. Blekinge is considered a periphery, a poor backwater and after the peace of Roskilde in 1658 it lost territory to Denmark. When it was acquired by Sweden the province had never played a major part in history. Blekinge was more of an appendix to the much richer Scania, acquired at the same time, and probably would have remained such if the Swedish crown didn't see a strategic value in Blekinge's archipelago. While there has been archaeological research in and about Blekinge, it has never been considered a particularly important or interesting province except to those few with personal, or otherwise special interests in the province. Perhaps it is this perception that has caused researchers to overlook it. Or perhaps it was just a lack of unique finds to capture people's imaginations. But recently that has changed.

Blekinge has been subjected to two of the most significant Swedish excavation projects of the 2010s. Maritime archaeologists excavated Gribshunden, a 15th century carrack that served as King Hans' flagship. The other find is the Iron Age cult place in Vång. The excavations in Vång resulted in numerous finds strongly indicating it to be a significant place of worship. Among the finds were gold foil figures with an unknown use, but strong associations to known Iron Age temple sites, including Uppåkra in Scania and Sorte Muld in Bornholm (Watt 2016). Other artefacts indicating far away contacts, trade and local production have been excavated (Görman & Henriksson 2006; 2016). The finds in Vång point towards the place being used not only as a place of worship, but a place of significant centrality.

The discussion of central places in archaeology has steadily developed and gained new dimensions since the 1930s (Wienberg 2020). They tend to play an important cultural role which is significant even for the peoples outside of it. Subsequently, the density of people and cultural activity leaves more, and often rarer material for the archaeologist to examine. The significance of Vång lies in it being the first central place with ties to the Iron Age which have been discovered in Blekinge. It is a discovery that could potentially recontextualize the early history of the region and provide archaeologists with a new node in a prehistoric network. Vång leads to questions about the landscape which merits examination.

Just how Vång was connected to the landscape and the people within it can be examined with modern methods. Digital software such as GIS has unlocked such new perspectives. However, the boundaries of its true potential remain to be either developed or discovered. But new finds offer the possibility to implement new methods. Such approaches will either strengthen or undermine past narratives. Vång was part of an organized landscape that was disrupted in favor of a new Christian ideology. By examining the discrepancies in landscape organization before and after this new ideology, it should be possible to identify patterns and meaningful change.

Purpose and Aims

The purpose of this thesis is to contextualize the landscape of central Blekinge with the newfound importance of Iron Age Vång. Vång was part of a landscape organization, and when its importance as a central place seized at the turn of the Middle Ages a new landscape, one independent of Vång, was bound to take form. Comparing the structures of different time periods will further the understanding of how decisions in the landscape in the transition from the Iron Age to the Medieval period can be rationalized.

An additional aim of this thesis is to test the application of an affordance perspective within landscape archaeology and evaluate its viability for understanding landscapes on a macroscale and decisions taken in relation to it. The use of affordance theory in landscape archaeology is growing as its possible uses, applications and methodologies are being expanded (Gillings 2015; Kempf 2020). Though first proposed twenty years ago it has just started to gain traction in landscape archaeology, serving as a theoretical framework for GIS application.

Method

This thesis will consist of a landscape analysis of central Blekinge using a combination of literary sources, acquired geodata with the assistance of a geographical information system (GIS) software. A substantial part of the analysis will be dependent on existing datasets as well as the previous research focusing on the region. This thesis will use different datasets from the Late Iron Age and combine them with acquired environmental data and historical sources to study the utilization of the landscape from an affordance perspective. To reach the landscape affordances, a digital elevation model, as well as a soil type map will be used and compared with historical maps and data sets of registered cultural heritage sites. Borders and communications will be examined to determine their relationship to visible cultural heritage, the natural environment, and the people who interacted with it.

Differing human needs and uses of the landscape have transformed it through time. In some cases, this means that the preserved cultural heritage is sparse. The major excavations of Blekinge have been few and primarily focused on ancient sites. This means that the archaeologist seeking to research later time periods cannot be picky with material. Therefore, the method of source pluralism will be used to reconstruct landscape features. The source pluralistic method operates on the principle that independent sources can be combined and related to generate new or more certain information (Myrdal 2007). This method allows the archaeologist to utilize multiple

different sources of various levels of reliability to strengthen or otherwise discredit each other to answer a question or a set of questions (Myrdal 2007). It furthermore allows the archaeologist to investigate the complexity of the past by comparing different perspectives, without necessarily discarding any of them as invalid or false (Chang 2020). The materials used will not be limited to a certain timeframe, but will rather be pragmatically selected based on source criticism and whether or not they can provide insight into the change and development of the central Blekinge landscape. The various sources and data layers will be integrated into GIS for combination and comparison.

Geographic information system (GIS) software has developed into capable tools both in archaeology and in many other fields of research (Wheatley & Gillings 2002). In archaeology, GIS has contributed not only with ease of data management, spatial analysis, and visualization, but with entirely new methods of performing it (Gillings 2015). This thesis will use ESRI's ArcGIS software for data visualization, comparison and analysis. A variety of different types of positional data will be used for the analysis, including historical maps, cultural heritage sites, and analysis-oriented created data-point. All positional data are attuned to Sweden's official coordinate system SWEREF 99 TM (Lantmäteriet 2021). ArcGIS will be used to combine and visualize different layers of information for spatial analysis.

Material

The Landscape is composed of the physical environment, structures and monuments of the past, as well as the then contemporarily developing structures and landscape features. For the purposes of this study, a variety of maps and positional datasets will be used, supported by previous research. I will use data relating to the environmental features and the visible cultural heritage of central Blekinge. The area of study will be limited to Medelstads hundred within the province of Blekinge. The Medieval parishes of Edestad, Listerby, Hjortsberga, and Förkärla will be especially in focus (Fig. 1). I define the Iron Age as the period lasting until the year 1050. Blekinge was incorporated into

Denmark around this time, after which implications of a royal Danish presence appear in the source material along with indications of wider Christianization (Lihammer 2007: 125f). The Danish Medieval period ended in the year 1536 with the protestant reformation.

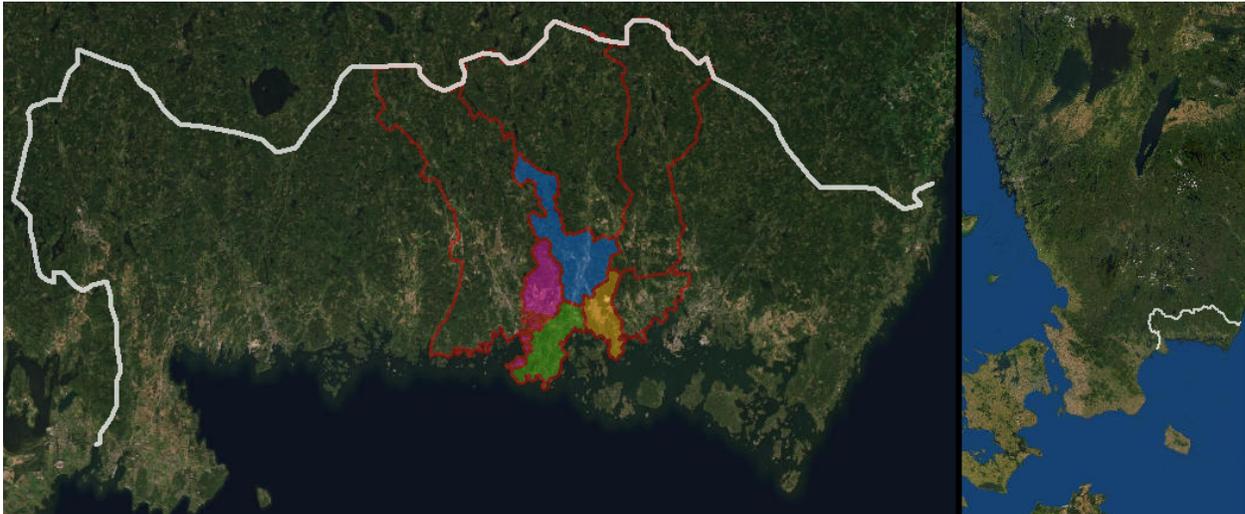


Fig. 1: Ortophoto of Blekinge and relevant divisions imposed. Blekinge in white outline. Medelstads hundred, and parishes in red outline. Edestad in pink. Listerby in green. Hjortsberga in blue. Förkärla in yellow. Displayed with ArcGIS. Henrik Bernro 2021.

Cadastral Register

The cadastral register of tithes (in Swedish: *Decimantjordeboken*) was created by order of the Danish king Fredrik III in 1651 (Skansjö & Tuvestrand 2007: 9). In a letter to the church, King Fredrik wrote to the bishops that they should create a register of all tithe paying households. They were divided into whole-farms, half-farms and homesteads, each indicating how land and resources were connected, and subsequently how much the household had to pay in tax (Skansjö & Tuvestrand 2007: 20f). The tithe was a tax that each household paid to the church, consisting of a tenth of that household's entire produce. In Denmark, this tax had been extracted since 1135 (Skansjö & Tuvestrand 2007: 13). Keeping track of how many tithe-paying households each parish of the realm had, gave the king a good idea of how rich his realm really was. Thus, the cadastral register was an administrative document containing information about the parishes of

the realm, the names of villages and farms, the taxpaying households and subsequently the parishes' economic viability, as well as the names of the men who were the heads of household at that time. The relevant part of the cadastral register of 1651 is regarding the parishes of Medelstads hundred. 26 out of 37 parishes in Blekinge are Medieval in origin, of which nine belong to Medelstads hundred (Björnsson 1946:

21f). I am helped by the unpublished work of Martin Hansson who has provided approximate coordinates for all tithe paying farms in Medelstads hundred. These coordinates contain information on how many households paid a tithe at each location. Due to the register being conducted after the Medieval period, these sizes can only be used as an indication of how large the settlements may have been during the Medieval period and highlight the population centers of each parish.

Historical Maps

One of the most useful materials for studying historical landscapes are the numerous early modern maps that have been preserved. Many of these maps are geometrically measured, and in a general sense accurate. When using historical maps for landscape analysis it is crucial to be critical of the source. A researcher must know for what purpose the map was first made as it will be designed for that purpose, and not necessarily to capture the exact proportions or features of reality (Johnsson 2006: 85ff). Historical maps are no snapshots of reality like an orthophoto, but rather representations of reality created with a specific task in mind. The majority of Sweden's historical maps have been digitized and can be integrated and visualized in GIS through the tag image file format (TIFF or TIF). The historical maps can be combined with modern data to generate new information (Stenberg 2009). All historical maps are collected from Swedish mapping, cadastral and land registration authority *Lantmäteriet's* database. The only exception is one version of Peter Geddas geographical map which has been sourced from the Swedish national archive *Riksarkivet*.

Between 1688-1689 a series of hand-drawn maps were produced by cartographer Peter Gedda detailing the geometric measurements of Skunkenbergs (later Johannishus) estate (Lönborg 1903: 81). These are the oldest maps of the area. They were made for administrative and economical purposes. The geometric measurement of the various infieldes means these maps portray relatively reliable estimates of field size and shape. Gedda has also drawn the first geographical maps of Blekinge's entirety, detailing roads, parish borders and place names. The maps are produced in the scale of 1:95 000. While not reliable in a geometric sense, this map shows which settlements were established in the early modern period.

The general staff map (Swedish: generalstabskartan) is a series of reconnaissance maps produced and released between 1805-1979 for military interests (Ottoson & Sandberg 2001). They were initially created to secure a strategic advantage of terrain information during the Napoleonic wars (Ottoson & Sandberg 2001). The map is made in the scale of 1:10 000. It details the terrain, communications and structures for the purposes of military tactics and maneuverability. The map grants insight into the last structures of a pre-industrialized society. Though it is far removed in time from the Medieval structures this thesis aims to study, many of the communications in use during the 19th century follow the same routes as they did during the Iron Age (Björkqvist & Persson 1973; Stenholm 1986: 36ff).

The economical map (Swedish: häradseconomiska kartan) is an administrative cartographic series conceived between 1859-1934 (Jansson 1993: 20). They are based on geometric land measurements of varying scale. The maps of Blekinge are in the scale 1:20 000 (Jansson 1993: 23). The economical map of Blekinge was made in 1915 and contains more exact measurements than the general staff map. It also illustrates the extent of property and agricultural land, which the general staff map does not. Due to its closeness in time and scale to the general map but differing purpose it complements the general staff map well with details of the pre-modern landscape.

Digital Data Maps

Two sets of completely digital data maps from the online database of The Swedish University of Agricultural Services *Sveriges Lantbruksuniversitet* (SLU) will be used. SLU hosts an online collection of maps with data collected from a variety of government and university bodies. A digital elevation model (DEM) raster with data supplied by the Swedish mapping, cadastral and land registration authority *Lantmäteriet* will be used in the analysis.

A DEM (Digital Elevation Model) is a raster map consisting of individual pixels where each pixel is assigned a value corresponding to elevation. DEMs are most commonly created through Light detection and ranging (LiDAR), a remote capture system that utilizes laser reflection to measure distance. The captured data points can be algorithmically categorized and selected depending on what surface is relevant for the model. A digital elevation model discards all data points which do not correspond with the ground layer, meaning foliage, structures, and other surfaces not part of the elevation is discarded. The elevation model illustrated in this thesis displays a new color at regular intervals of five meters. Only the first category deviates to account for values below sea level, as well as water waves impact on shorelines. The data for the DEM in use was collected by the digital elevation models; metadata can be found in the appendix.

The soil type map details the variety of ground soils in a given surface. The data has been collected and summarized into a shapefile map by the agency for geological survey of Sweden, Svenska Geologiska Undersökningar (SGU). Most of the soil type data of central Blekinge has been collected through a field survey with a digital elevation map in scale 1:25.000 used as a backdrop (SGU 2021). The exception is the area stretching north from Johannishus and Kallinge. In that area the data has been created through interpretations of aerial photography in combination with field controls.

Collected Geodata

The ancient and historical monument geodata used in this thesis is downloaded from Sweden's national heritage board *Riksantikvarieämbetet* (RAÄ), Sweden's central administrative agency in cultural heritage. The monumental geodata has been collected for the purpose of recording and protecting cultural heritage (RAÄ 2021). The national heritage board allows anyone to download the collected data in a shapefile (.shp) format, allowing for easy import into GIS programs. In Blekinge alone, 16.364 different cultural heritage sites are registered, geocoded, and with metadata attached. The methods of recording have varied from manual collection to the use of digital GPS and acquisition through total station. The coordinate accuracy can therefore not be considered completely reliable, as some variations may occur when the data is compared to the real heritage. For the purposes of this thesis, however, the monuments recorded coordinates have been deemed to be within the acceptable margin of error. The macro scale and the vast amount of data applied in this thesis eliminate the need for pinpoint precise data. The probability that minor inaccuracies impact the final result when dealing with a large quantity of data is slim.

Churches are important to understanding any Medieval landscape. Churches have played a central role in the Scandinavian Medieval agrarian landscape as a monumental place of congregation and worship. The majority of churches are made from stone, and therefore, in a rural context are usually one of the few visible cultural heritage sites which remain standing from the time period. Churches are monuments to Christianity. Their position indicates a place of importance and a Medieval population center. Taking them into account is usually vital to understanding rural centrality on a local scale.

Theory

Understanding Landscape

The study of landscape is a broad and established field within archaeology. That is, however, historically how widespread the extent of agreement among the researchers stretches. By the time archaeologists started to engage reflexively with the landscape concept, the interpretations were already far too diverse to enclose the word landscape within a single finite and tangible definition (Gramsch 1996; Lihammer 2007: 22ff). The present theoretical framework of landscape research does not demand a neatly defined landscape concept which naught but limits itself to set semantic parameters. Modern researchers rather emphasize the landscape in relation to how subjects experience it, and the subsequent interaction with it, as well as the historiography of the landscape concept itself (Gramsch 1996; Johnsson 2006: 2ff; Lihammer 2007: 23ff). There is however a requirement for perspective when investigating landscape.

A traditional way to divide landscapes is to categorize them purely as physical phenomena, as either as cultural or natural landscapes, landscapes with, or without past human interaction. (Gramsch 1996). This thesis will disregard such notions. There is only one world in which we interact, no matter how altered it is by our predecessors. Dividing landscapes based on evidence of human activity or the absence of such, would not consider the constant interaction and interplay between the human psyche and the environment it perceives (Gibson 1986: 130). Landscape should be understood in the interaction between a person and her physical environment. Landscape is a psychologically, and socially constructed context which includes both people and their physical environment (Welinder 1992: 44; Tilley 1994: 22ff; Lihammer 2007: 27f).

Discarding the nature/culture dichotomy has opened up for new perspectives of understanding landscape, not as a material fact, but rather as a meaningful space in negotiation with human psychology (Johnsson 2006: 4). Building on Ancient landscapes

will be understood as a division of the physical environment into a psychological dichotomy of 'space' and 'place' (Ingold 1993). 'Space' is the physical and observable plane of reality in which people interact, while 'place' is limited space that appears in a meaningful socio-cultural context (Ingold 1993; Gramsch 1996; Webster 1999). This distinction creates a tangible way to talk about the relationship between humans and their environment and allows us to use their past actions upon the landscape as indicative of which space was meaningful to them, or in other words: a place.

The landscape is often viewed as a palimpsest, used and reused, but still bearing traces of its earlier state. Its shape is a negotiation between past, present and future generations (Johnsson 2006: 57). This thesis will incorporate various emblems of human-landscape interaction. Monuments will play a central role as a marker of a significant space. Through landscape monumentalism, humans can relate to ideology, to politics, and to what various social functions the monument may have in the contemporary context (Gren 1994; Weinberg 2016). These contexts are by no means static. Political realities and ideological thought are in a long-term perspective fickle and will shift numerous times throughout history. The treatment of old monuments is also indicative of the new ideologies' mechanisms (Wienberg 2016). The monuments cultural context, geographical placement and relation to the landscape enables the archaeologist to reflexively engage with it.

Most monuments are created to be experienced and to communicate through that experience (Gren 1994). They are carefully placed in locations relating to this task. Monuments are constructed with the intention of a future. No one can communicate back in time, but through the efforts of constructing permanence, messages can be sent to future generations (Gren 1994). They are meant to remain and continue communicating for eternity. Different strategies can be employed when constructing monuments. Single unique monuments attract people with their often impressive anomalous nature, while multiple scattered but similar monuments are meant as a

constant reminder, repelling those who are unwanted (Gren 1994). Though constructed for different reasons, both types of monuments are meant to be experienced. That way they may communicate their message to their intended receivers. Thus, monuments will often be erected in places where many people traverse and gather, usually in a visible location.

Digital Development

In the 1990s, landscape archaeology was pulled in two directions between theorists emphasizing the need for a more human experiential perspective, and the early digital archaeologists who had started utilizing computational tools which enabled a further dehumanization of the landscape through satellite perspective (Gillings 2012). The post-processualists developed experiential theory, and through new perspectives invented new ways of working with archaeology (Fleming 2006; Gillings 2012). The development of digital tools in contrast offered methods without theory. This is the very notion that the experiential theorists criticized in the 1990s. Staunch criticism was launched towards the processualist 'new' archaeologists' approach to space in the landscape, proclaiming that it hardly existed within their theoretical framework and that it was viewed as an empty area (Johnsson 2006 61ff; Tilley 1994;7ff). Christopher Tilley's view was that the processualist perception of landscape was "literally a nothingness, a simple surface for action, lacking depth." (Tilley 1994: 9) In that sense the archaeologists had been blinded by their own ideology, preventing them from exploring interactions with the landscape, something which cannot be measured but rather experienced through the human senses.

Tilley's critiques, among others, caused major problems of theoretical application for the landscape archaeologists who were completely estranged to such a framework (Fleming 2006: Gillings 2012). However, the debates sparked new creativity and reflexivity into the usage of GIS and other digital tools in archaeology. The critiques generated a need to further develop the theoretical framework for GIS. To some

researchers the answer seemed to adapt post-processualist theory, but such attempts never gained much ground on account of the sensory emphasis of experiential theories being the antithesis of the remote analysis of a GIS-technician (Gillings 2012).

Over the past thirty years the digital tools and analytical methods have seen both enthusiastic development and application in archaeology (Gillings 2009; Llobera 2012; Taylor & Perry 2018). In that time the methods of utilizing GIS in archaeology has become more accessible to the average archaeologist through more powerful, and predesigned software tools, as well as increasingly simplistic user interfaces (Wheatley & Gilling 2002).

As technology has progressed to become more accessible, the importance of understanding the soft- and hardware has become less critical in order to produce results (Huggett 2015). However, the increased ease of usability may be a poisoned chalice for those who do not take into account how input data affects the outcome. It is crucial to be aware of potential sources of errors both when data is input and when data is read. Recorded data, such as coordinates may be inaccurate to various degrees. The acceptable margin for error should vary from case to case based on what type of analysis is being performed. It is important to reflect on every part of the process. It is equally important to remember that the final result reflects a series of decisions made by the archaeologist and does not necessarily represent an accurate reality (Huvila & Huggett 2018).

Affordance

In the late 1970s, psychologist James J Gibson launched the neologism Affordance as a means to understand the relationships of meaning between physical environmental properties and those who observe them (Gibson 1986: 36, 127). Everything an observer experiences invites them to also perceive meaning, a thing's potential use.

Subsequently, it begs the question of what possible actions the thing offers the

observer. This is affordance: the meaningful potential of a thing that is created upon observation of the thing.

Affordance offers the archaeologist a theory that bridges the relationship between perception and action. The bridge is spelled meaning, and that can be observed in the cultural material which has been shaped by human action. Gibson does not describe affordances as a phenomenon limited to conscious reflexive observation. Affordances apply to whatever an observer perceives, be they positive or negative for the perceiver (Gibson 1986: 127ff). This means that everything with a shape contains affordances to the observer, which is evident in the mode in which we observe, not one thing, but rather a physical environment containing many things.

Landscape features change, be it biological or artificial change. Vegetation grows, spreads and dies, rocks are shaped by weather, wind and hand, and paths are made through the landscape by those who tread it. In this way the landscape changes. But there is also permanence in the landscape upon which these changes take place. Topography, hydrology and geology, the layout of the terrain is so grand in scale that it gains a perceived permanence, not only throughout a person's lifetime but through multiple generations (Gibson 1986: 93ff). Humans perceive the landscape's physical properties, which in turn generates meanings and possible actions through the way the physical properties appear to us. The importance of the affordance theory lies in its ability to explain actions in a spatial context. Landscape features, through their physicality, present the observer with a potential set of actions upon said physicality. By acting on the landscape, by altering it, humans have in turn altered what it affords him (Gibson 1986: 129f).

The first attempt of utilizing GIS to examine landscape affordances was made by Marcos Llobera in 1996. Llobera combines Anthony Giddens structures with Gibson's affordance in order to supply a theory through which GIS can be used as an effective

tool for research. The project was later remarked as both creative as a thought experiment and technically innovative (Gillings 2012). The attempt was met by initial criticism, notably by David Webster (1999), who declared a reading of the affordance concept as something too subjective in creation to be adequately integrated into a generalized GIS model. Because individuals are different and perceive and think differently, an invented mean observer as used in Llobera's GIS model would not be a viable solution to catch the affordances. Webster's, and other criticisms were grounded in but one reading of affordance, when there was still theoretical debate just what the concept constituted (Gillings 2012). Within GIS-based research, it is precisely Llobera and Gillings who have contributed most to the implementation of affordance theory. Both Gillings and Llobera have used the methodological approach of topographical analysis combined with viewsheds to create new innovative ways of understanding landscapes of the past (Llobera 1996; 2012; Gillings 2008). Vision from set points and landscape physicality have been greatly emphasized within the GIS research employing affordance theory. The introduced idea is to recreate conditions for visual perception in a set point in time or to illustrate the viewscape through a sequence of movements in the landscape. It focuses on the individual's experience, the affordance of certain features in certain places at a certain point in time.

While initially slow to be adapted, the potential of affordance theory in archaeology has recently caught on (Llobera 2012; Gillings 2015; Kempf 2020). The development of possible implementations still continues to unfold. While affordance has been used as a way to examine the immediate relation between an individual observer and her spatial context in the immediate moment of observation, there are more permanent components to it. The landscape, while changeable in some regards, possesses qualities that may not appear changeable in an affordance sense. Topography, hydrology, geology, flora, and fauna are all permanent features of the landscape with which a perceiver would have to interact on a daily basis and build up a hermeneutic relationship with throughout the course of her life. Subsequently, these meanings may

have been conveyed through language and added to the cultural and collective memory.

There may even be components to affordance which expand in the pattern of a hermeneutical circle; meaning which is built over time with repeated encounters and experiences of the same landscape. Then for people who traverse a landscape, who live within it and sustain themselves from it, the meaningful relationship with their inhabited environment must be under constant negotiation. Soil types and elevation, as will be discussed in this thesis, are perceived parts of the physical environment. These perceptual phenomena shift only when acted upon by other forces, such as the actions of humans.

Background

Research History

A lack of scientific excavations in Blekinge has yielded little material for archaeologists to analyze and put into context. The notable exception is the research conducted around the unexcavated cultural heritage, meaning monumental and settlement analysis. Blekinge possesses a variety of visible heritage from the Bronze Age onwards. This material has allowed some notable scholars to lay a solid foundation of settlement and landscape analysis throughout Blekinge.

Sven Björnsson completed his work *Blekinge: En studie av det Blekingska Kulturlandskapet* in 1946. It contains very little in an archaeological sense, but it represents an early attempt at summarizing and categorizing the cultural landscape from the early modern period and forward. Björnsson offers us a detailed and still applicable geographical study of the physical features of Blekinge as well as the cultural society which sprouted out of it.

Karl-Axel Björkqvist and Thomas Persson have been central figures in the antiquarian discovery of Blekinge. They have worked together in publishing articles about the cultural landscape and history of central Blekinge (Björkqvist & Persson 1973; 1990). Their most notable work is their 1979 collaboration *Stenarna där vi lekte som barn*, an early contribution to Blekinge's Bronze- and Iron Age landscape archaeology in which the authors try to connect landscape features through space and time (Björkqvist & Persson 1979). The thesis contains an impressive amount of collected data on monumental grave sites in central Blekinge and a chronological classification of said features. It culminates in an analysis of landscape development up until the end of the Iron Age.

Leif Stenholm's 1986 thesis *Ränderna går aldrig ur* is the most extensive settlement analysis of Blekinge compiled so far. Stenholm's purpose is to illuminate the hidden history of Blekinge, the parts which had not been chronicled but rather left for archaeologists to discover and piece together. The thesis contains a vast array of descriptions of landscape features, including geography, monuments, different kinds of settlements, administrative divisions, and illustrates how these settlements have developed through history. Stenholm takes a removed, processualist approach in studying these features, which consequently enables the use of the thesis as an overview of cultural heritage features. This is helped by the many maps Stenholm uses to illustrate settlement and monumental distributions. Later Stenholm would publish *Berättelsen om Blekinge* (2009), which serves as a revised format of his original thesis, with some added context.

Anna Lihammer has provided the most recent major contribution to the landscape archaeology of Blekinge, primarily through her 2007 PhD thesis *Bortom Riksbildningen: Människor, Landskap och Makt i Sydöstra Skandinavien*. The thesis is dedicated to re-examining the narrative of Denmark's realm-creation as a process, critiquing older perspectives of the Danish kingdom as something which was bound to form. The thesis investigates several regions of the Late Iron Age and early Medieval landscapes of

eastern Denmark and highlights the vast regional differences in their incorporation into the Danish realm. A good portion of the thesis is dedicated to investigating eastern and central Blekinge. The selected perspective focuses on the landscape as a social construct, examining it as a theater for human action, especially in regard to power. Lihammer achieves this by studying communications and how they relate to sites connected to political power. She further argues that displays of power and control are context dependent and that different strategies have been implemented in accordance with landscape conditions. Lihammer's emphasis on communications was crucial for understanding Blekinge's landscape and development. However, Lihammer's thesis was released in 2007 and thus predates the most significant excavations in Västra Vång. The key aspect for Lihammer is power. Her landscape analysis is constructed for the purpose of challenging the established narrative of a 'natural' realm creation process. Thus, the lens Lihammer elects to use is one of power, of Blekinge in the larger narrative of Denmark. I will stray from the larger context and instead build upon what Lihammer and predecessors have written specifically of central Blekinge as a local environment, and more specifically what those treading there would perceive and interact with.

The most recent research relating to the area of central Blekinge has been published by Blekinge museum. Two shorter anthologies focusing on the context and finds of the Iron Age Västra Vång have been published since 2014. *Skatterna från Vång* (Henriksson 2014) was first published in 2014 and contains seven short articles for an exhibition relating to Västra Vång's history, spatial context, finds, and the archaeological excavations which took place there between 2004-2009. It was the first published work that analyzed the area and the cultural heritage within the context of Vång as a place of importance. The second anthology *Vikten av Vång* (eds. Henriksson & Nilsson 2016) was released in 2016. Within it, authors introduced new hypotheses about landscape features relating to Vång (Anglert 2016; Hansson 2016).

A selection of articles sourced from Blekinge's hembygdsförbund annual journal *Blekingeboken* has served as the foremost platform for the cultural heritage studies of Blekinge. The journal has been released annually since 1923, and many of the aforementioned authors have published archaeological research in one or multiple numbers of *Blekingeboken*. Variety of articles sourced from the journal relate to the cultural landscape of Blekinge in some way or another. The efforts of Blekinge's hembygdsförbund to collect and publish articles relating to Blekinge's cultural heritage over the course of a century warrant special recognition.

Topography

Blekinge is, with its 2941 square kilometers, the second smallest province of Sweden. The province, at its largest extent, stretches 49 kilometers north-south and 103 kilometers east-west. It is situated in the southeastern part of the country, bordering Scania in the west, Småland in the north and the coast of the Baltic sea to the south and east.

The rough terrain and many valleys which constitute Blekinge means that the landscape is best understood as several conjoining micro landscapes rather than one vast one (Lihammer 2007: 96f). The province is often classified into three types of landscape zones running east to west through the province (Björnsson 1946: 16). These zones are from north to south: Woodlands, the central valleys, and the coastal region. The zones give strong indications of what sort of landscape can be found in Blekinge. It is a region that rises from the sea, is topographically divided by ridges, and ends in a vast northern forest. The landscapes are in negotiation with each other, which is evident in the transitional zones.

The woodland zone is characterized by its extensive forests and moorlands. Various lakes, wetlands, and raised bogs can be found within this zone. Many of the northern lakes have drains which flow south towards the coast. The woodlands density and soils

have rendered it unviable for wider agricultural development. This inhospitable landscape constitutes a natural northern border into Småland. The vast forests constituted a natural border region which was not colonized until the Middle Ages (Stenholm 1986: 10; Lihammer 2007: 96). The small farms which were settled at that point have been described as poor (Björnsson 1946: 16).

The central valleys or settlement zone is not clearly defined. Blekinge is a place of transition, and the central valleys are where the zone transitions between woodland and coast are made manifest. This zone is characterized by hills and ridges dotting the landscape and forming thin valleys stretching north (Björnsson 1946: 4f). These corridors contain mostly sandy soil, well suited for agriculture (Björnsson 1946:5). Consequently, this is the zone where the majority of Blekinge's historical settlements and cultural heritage are situated.

The coastal region stretches a few kilometers inland from the sea. Compared to the central valleyland, the coast is mostly plain landscape but often separated into smaller sections by moraine drumlines. Like the woodlands, the farms situated in the coastal region have been described as both scarce and few (Björnsson 1946: 16).

Central Blekinge contains elements from all three zones transitioning from coast to valley to woodland. The zones themselves are not clearly defined by natural borders, but blend into each other successively through shifts in terrain and flora. When consulting a DEM the different zones can be observed in the landrise (Fig. 2). The uneven valley topography acquired its shape during the latest ice age. The retreating glaciers had a profound impact on the landscape, crushing stone and leaving sediments as observable topographical features.

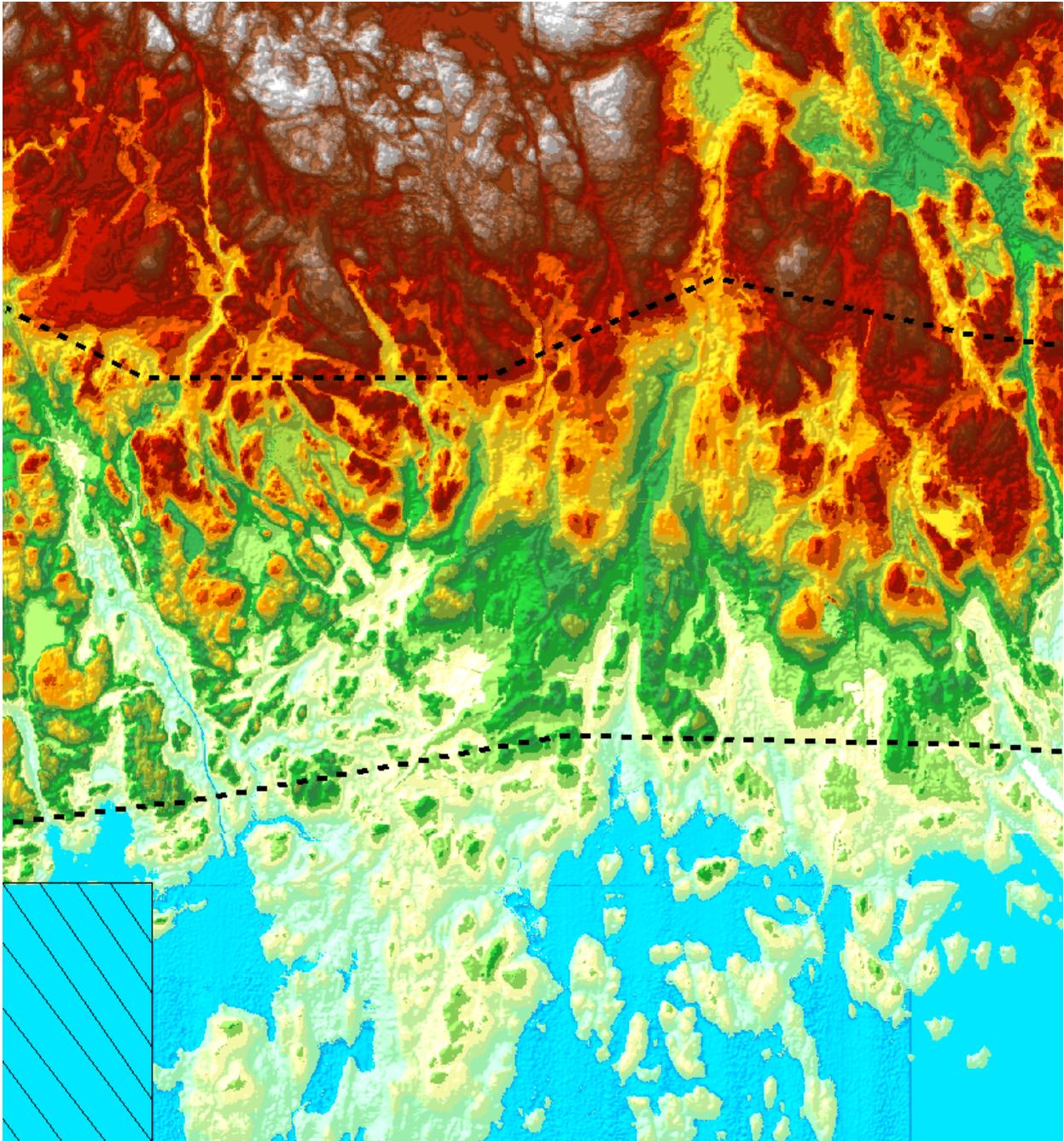


Fig. 2: Digital Elevation Model (DEM) of central Blekinges topography. Black dotted lines indicate the three topographical zones, coast in the south, valleys in the middle and woodlands to the north. Scale 1:80.000. Displayed with ArcGIS. Henrik Bernro 2021.

Glacially created topographical features run throughout the province. Most prominent are the drumlins between which the valley landscape is formed. Smaller eskers, ridges of sediment that have been formed by the retreating ice, can be found throughout Blekinge. The Johannishus esker, which stretches out from Solvik by the Baltic sea, through Hjortsberga and Vång, is the most prominent and central esker in this landscape. Its geographical position and topography appear to have rendered it a vital feature of the landscape, as a multitude of prehistoric monuments has been erected along its length.

Geology

The geological conditions are vital in determining the relation between humans and their landscapes, as the crust of the earth sets a multitude of conditions of how humans can interact with the landscape. The bedrock constitutes a foundation from which soil horizons are shaped, and which consequently form the conditions for vegetation and subsequent ecology (Stenholm 1986: 13). The bedrock of Blekinge is primarily composed of Precambrian basement rock, which consists of variations of granite and gneiss (Björck 1984). Exposed bedrock is a common sight in Blekinge which can be found in a myriad of places throughout the province (Fig. 3). The study area's bedrock is primarily composed of gneiss and minor elements of granite and greenstone (Björnsson 1946: 11, 13).

The soils of Blekinge acquire their physical and chemical properties from the underlying mountain. A variety of moraine constitutes the dominant soil type throughout the province. It is commonly blended with loose stones. The moraine of Medelstads hundred is described as finer than the areas of granite bedrock. The area's sediment depth varies from 0 meters depth to up to around 20 meters at its greatest depth. Sediment depth severely impacts the conditions for soil fertility, agricultural potential as well as floral distribution.

Different soil types have different affordances. A place, given a large enough area, depth, and consisting of nutritious soil types may afford humans viable and continuous agriculture; other places may not. The history of agriculture has been a history of expansion unlocked by new knowledge and technological development. The expansion of farmlands has been traced with the help of historical maps, and when compared to the soil types a hierarchy of land use can be observed (Stenberg 2009).

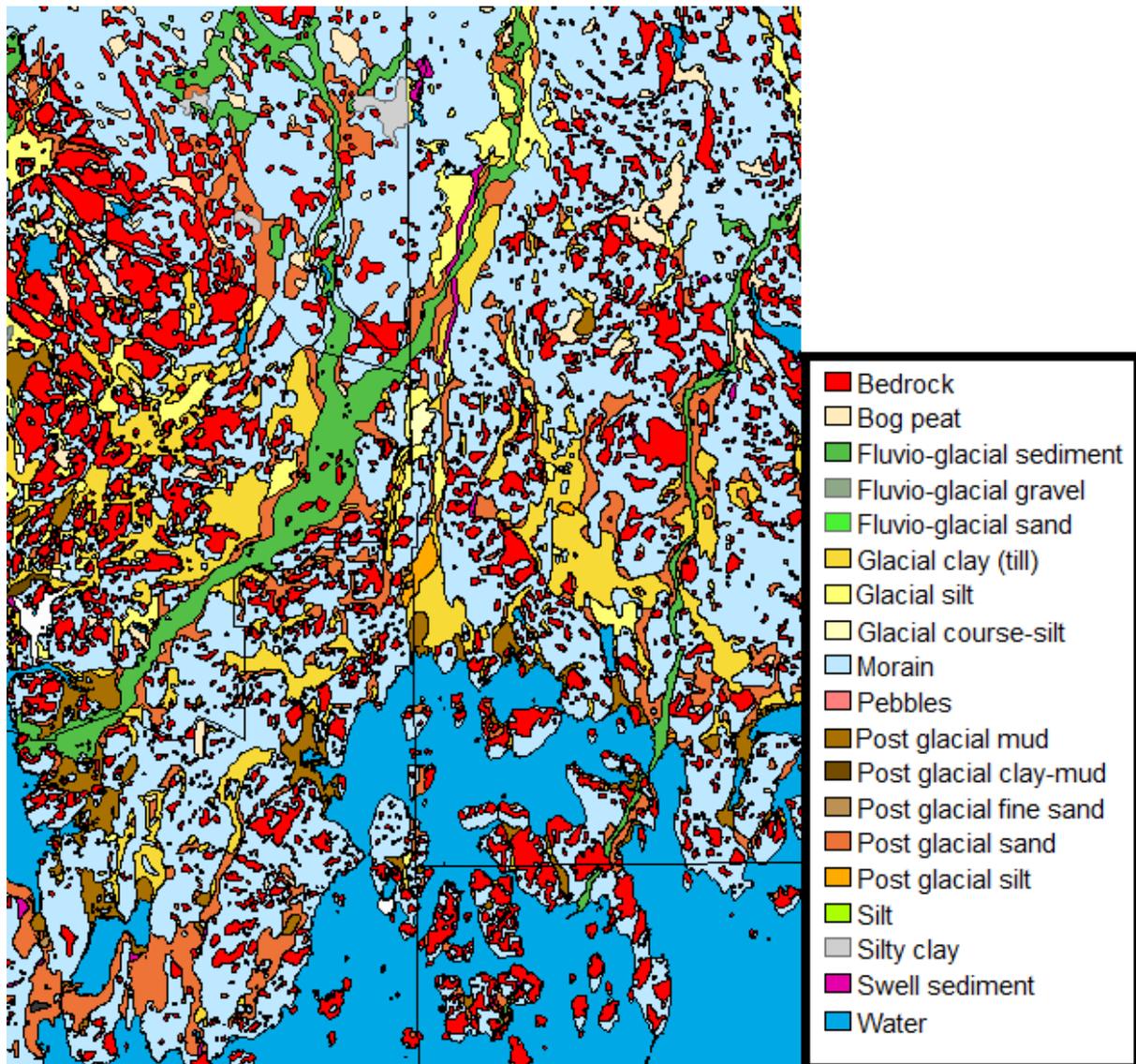


Fig. 3: Soil type map of central Blekinge. The province is composed primarily of moraine and exposed bedrock, with veins of arable soil types in between. Displayed with ArcGIS. Henrik Bernro 2021.

Compared to the surrounding areas, central Blekinge is relatively free of exposed bedrock. The drumlins which separate the landscapes are mostly moraine, and the valleys inbetween possess a variety of glacial and post-glacial sediments (Fig. 3). Before the 18th century agricultural reforms, the fine fluvio-glacial sediments were the most desirable for agriculture (Stenberg 2009). Sandy fluvio-glacial sediments correlate with meadows, while Moraine has been most commonly utilized as grazing grounds.

Hydrology has played a part in what the landscape may afford humans. A body of water depth, width and topography has certainly played a part in the way a landscape may be used. Streams, rivers, and larger bodies of water would certainly afford people different landscape experiences and interactions than land does. Water is a resource people cannot live without and it flows naturally through many of the valleys in Blekinge, usually from the hills in the north to the sea in the south. Larger bodies of water constitute natural borders in the landscape. People prefer to cross water without getting wet, and some large bodies of water are impossible to cross without a boat. Streams form natural lines in the landscape, a break in the landscape patterns which are easily recognizable no matter where they are found. The Medieval agricultural landscape may have contained more wetlands than the modern-day landscape due to a widespread trend of draining from the 19th century onward.

Vång

Today Vång is divided between Östra Vång (east) and Västra Vång (west). The modern Vång consists of a few scattered houses and farms on the slope of a drumline in Hjortsberga parish, overlooking the valley. It is in this valley, just a hundred meters east of Västra Vång's real estate where the temple was excavated. Iron Age Vång was located on a small hill in the agricultural lands, in what would be an eye-catching position for anyone traversing the valley. The first excavations started in 2004 and yielded finds indicative of both an agricultural area, as well as settlements. This launched a further series of excavations throughout the 2010s. Thus far the excavations

have resulted in remarkable finds including gold foil figures, decorative roman bronze masks and other finds indicating Vång to be a place of importance (Görman & Henriksson 2016; Watt 2016; Brorsson 2016). The Iron Age settlement of Västra Vång in Blekinge has not yet been clearly defined in time and space. The settlement's size, its jurisdictional domain, and area of resource exploitation are still shrouded in mystery (Henriksson 2016). The place has, however, been classified as a temple site, as indicated by large post-holes and the aforementioned finds. Even more notable is the apparent permanence of Vång. The temple parallels the temple house in Uppåkra, as do the ceramic Late Iron Age ceramic patterns (Brorsson 2016). Vång was not simply a remote place of worship. The quantity of ceramics, slag from iron production, and imported glass, which have been excavated, indicate that it was both an inhabited place, a place of production and that its inhabitants had faraway contacts (Görman & Henriksson 2016; Näsman 2016). The vast difference in amounts of registered artefacts dated to the Iron Age and Medieval Period at the excavations in Västra Vång indicates a sharp decline in activity in the temple area (Henriksson 2016).

Analysis

Communications

Blekinge's inhospitable topography has rendered the routes of communication vital in understanding the ancient landscape. Both rock, elevation and woodlands would have provided challenges for anyone wishing to travel in between the micro landscapes. This has limited the options for travel into different modes. Three types of communications have been identified which serve different purposes, and opportunities to travel for the people traversing them (Stenholm 1986: 36).

The king's road stretches out from east to west through the entire length of Blekinge. This road connects the cultural landscape rooms despite the many topographical variabilities normally separating them (Stenholm 1986: 36ff; Lihammer 2007: 98). Those

traversing between the smaller regions within Blekinge would likely have been dependent on this road as the woodland and rocky terrain would have been a challenge to successfully navigate. The road was important in the Medieval landscape. All of the central Blekinge's churches were connected to this road, placed square on its route, or at most a few kilometers away from it. Ancient monuments along it indicate that the king's road has been in use far longer than the Middle Ages, with a potential origin as far back as the Bronze Age. (Björkqvist & Persson 1973; Stenholm 1986: 36ff). It stretches out through the length of Medelstad hundred (Fig. 4).



Fig. 4: Section of Peter Geddas 1664 geographical map displaying named settlements and the number of tithe payers therein. The king's road is clearly marked, as is the single north-south road from Listerby, to Vång and beyond. The Ronneby river is marked more distinctly than the streams in the rural landscape, implying its size and navigability. Displayed with ArcGIS. © Lantmäteriet.

Various north-south oriented roads intersect the king's road throughout all of Blekinge, connecting the sea in the south with the resource rich forests in the north. Historically at least one of these roads has connected the valley landscapes of central Blekinge with Småland to the north, providing a route to the sea for the inhabitants on the northern side of the provincial border (Stenholm 2009: 57) This road passes through Hjortsberga and Vång (fig. 4). Along these roads iron, lumber and other natural resources were transported south to be shipped out from harbors at the roads' end. In the valley landscape between Ronneby and Nättraby these roads form a broad funnel of communication. The north-south roads run from a variety of coastal harbors and settlements only to converge around modern-day Hjortsberga and Johannishus. From there only a single road leads north to Vång and beyond. This creates the impression of the north-south roads as funneling towards Vång and the woodlands beyond. This generates the question of whether all roads lead to the temple house in Vång, or if the temple house was deliberately located at the furthest point in the zone of movement.

The north-south orientedness of Blekinge ultimately ends where the Baltic Sea begins. The sea has been vital for interregional communications. Its importance is visible in the archaeological record as multiple places bearing names relating to defense and control can be found around the coast and in the archipelago (Stenholm 1986: 82f; Lihammer 2007: 120ff). The coastline of Blekinge is uneven with multiple peninsulas, bays and islands forming archipelagos. Thanks to this topography multiple places throughout the landscape form natural harbors, affording ships shelter from hard winds and stormy waters. The verticality of the landscape, however, means that only some of these places are viable as places connecting travel between sea and land. This means there are few but vitally important harbors that have been under heavy control. Underwater excavations have found that the inlets around such harbors have been heavily controlled. The remains of blockades made from wooden stakes have been recorded on multiple locations, especially in the inlets around Hjortahammar grave field (Stenholm 1986: 82f; Lihammer 2007: 120ff).

Multiple smaller historical harbors have been recorded along the coast of Blekinge, peasant harbors (Swedish: bondehamnar) for fishing, sailing, and in the 16th-17th century as harbors for local trade outside of urban jurisdictions (Stenholm 1986: 106f). The Medieval town Ronneby was just four kilometers west of Edestad. The town is the best example of the deliberate use of the communication affordances in Blekinge. Ronneby is situated four kilometers inland by the last sailable part of the Ronneby river where the king's road crosses. Medelstads only castle is situated near the river's inlet, but not in a strictly controlling position. The strategic location implies a desire to exert control over the area (Lihammer 2007: 127f, 140). The authorities in the city could control the river and the trade which it brought with taxes and crown representation from the royal Estate situated in Ronneby (Stenholm 1986: 113). The easiest crossing of the Ronneby river is on the kings road, which intersects with the town of Ronneby, granting the city further control of the landscape (Lihammer 2007: 127f). It is no coincidence the town became the central place of Medieval Blekinge. The landscape affordances lent themselves to control in a time when the Danish crown was looking for just that.

Monuments in Stone

The Iron Age lithic monuments of Blekinge are extremely varied but paradoxically uniform in their variation throughout the province. Archaeological regions tend to separate themselves by adopting one, or a few types of monument (Svanberg 2003:142ff). Blekinge differentiates itself by the sheer amount of monumental variation within the region (Svanberg 2003: 146). Two main cluster areas of Iron Age heritage have been observed in Blekinge, one in the area of modern-day Bräkne-Hoby, and the other is located in Medelstads hundred between Ronneby and Nättraby (Hyenstrand 1984: 128ff). This area of central Blekinge has the largest density of ancient heritage in the entire province (Björkqvist & Persson 1979; Hyenstrand 1984; Stenholm 1986:41ff). Blekinge possesses a large variety of monumental ancient grave fields, especially from the Late Iron Age (Hyenstrand 1984: 128ff). The grave fields are marked by a concentrated amount of stone monuments, the shapes of which are exceptionally varied

(Hyenstrand 1984: 131f; Svanberg 2003: 146, 313ff). Excavated materials from these grave fields are exclusively dated to the Late Iron Age (Svanberg 2003: 313ff).

Due to geographical features created in the latest ice age, the area of interest possesses an abundance of loose stones. They have frequently been moved and adapted into building material for constructions with a variety of functions. The most notable shapes are the stone ships, mounds, geometric stone settings, and raised stones which have been utilized to visually mark a place in the landscape as significant. The monument shapes include stone ship settings, tricones, square stone settings, rectangular stone settings, circles, stone rows, stone piles, and single raised stones. These stone settings are usually raised in correlation with grave fields containing cremation burial, which constituted the normal burial system in Blekinge until Christianization (Svanberg 2003: 146). The monumental stone constructs are often found along routes of communication (Fig. 5). The most notable grave fields are found in Hjortahammar, Förkåla parish, and in Hjortsberga, situated on eskers.

Hjortahammar's grave field (RAÄ Förkåla 11 & 12) consists of multiple forms of stone constructs situated on a small isthmus in the intersection between two waterways and a north-south leading road (Fig. 5). The isthmus soil consists of fluvio-glacial sediments which form an esker. It is on this raised bit of land stretching into the water that the locals of the Iron Age decided to construct 70 sound stone settings, ten stone ship settings, four tricones, eight square stone settings, eight standing stones, and five stone rows (Svanberg 2003: 316). Excavation finds give a strong indication that the grave field was used in the Late Iron Age ca: 500-1050 AD. The grave field of Hjortahammar is one of three in Förkåla parish. The other two, Lilla Vambåsa grave field (RAÄ Förkåla 16) and Förkåla grave field (RAÄ Förkåla 39) are connected to farmlands, and nowhere near the same size or levels of monumentality as Hjortahammar's grave field (Björkqvist & Persson 1979: 88f).

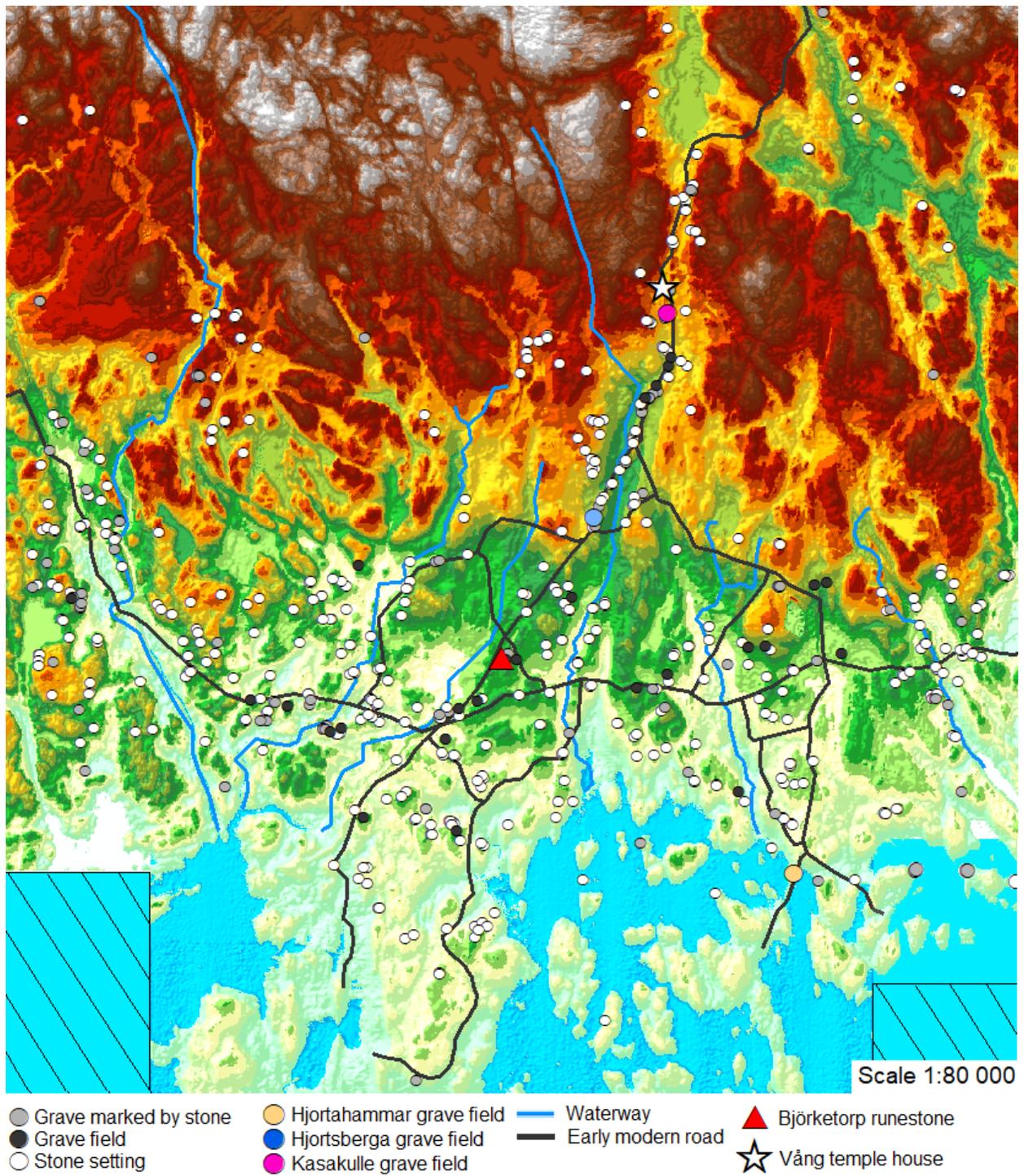


Fig. 5: DEM displaying the Iron Age landscape features and the major roads of 1870. The king's road stretches east-west in the landscape, while the north-south roads and monuments form a funnel towards Vång. Displayed with ArcGIS. Henrik Bernro 2021.

In contrast, Hjortahammar is situated on an important harbor. Just inland from Hjortahammar is Vambåsa, which was a royal estate in the Medieval period, and they are connected by a road. It was most likely used as a royal checkpoint for anyone traveling between Hjortahammar and Blekinges interior.

The Hjortsberga grave field possessing 120 visible graves is the largest Iron Age grave field in Blekinge (Persson 2012). The grave field of Hjortsberga (RAÄ Hjortsberga 8) is situated at a crossroad zone (Fig. 5), the last one where all of the known roads leading north to Vång converge, thus forcing anyone who travels in the area to interact with it. A variety of stone constructions have been identified here, including ten stone ship settings, 56 mounds, eleven square stone settings, nine tricorns, two stone rectangle settings, eight standing stones, a stone pile and two stone rows (Svanberg 2003: 316).

Like Hjortahammar, the stone monuments of Hjortsberga grave field are prominently situated on the Johannishus esker, which runs through the middle of the valley, creating an elevated platform. The stone constructs in their elevated position in the landscape supposed to be visible and seen by all who traversed the landscape. Hjortsberga is not the only grave field on the road along the Johannishus esker. There are multiple stone constructs along the esker which are not connected to Hjortsberga grave field in the register for ancient heritage, at least not formally. But the entire visible ridge of the Johannishus esker forms a necropolis, vastly monumental with its many registered heritage sites, least of not various forms of stone settings (Persson 2012). It is most prominent between Hjortsberga and Vång (fig. 6)

These stone settings often mark further grave fields. Six grave fields have been registered along the Johannishus esker between Hjortsberga and Vång, and a further four are situated further south along the vein of fluvio-glacial soil. The one closest to Vång is Kasakulle (RAÄ: 45-46), which has been partially excavated. The grave field of Kasakulle contains 42 round stone settings, eight ship settings, four round stone

settings, seven tricorns, eleven square settings, two stone circles, two rectangular stone settings, a stone row, and an irregular stone setting (Svanberg 2003: 318f). All finds which have been dated indicate the grave field was used during the Viking age.

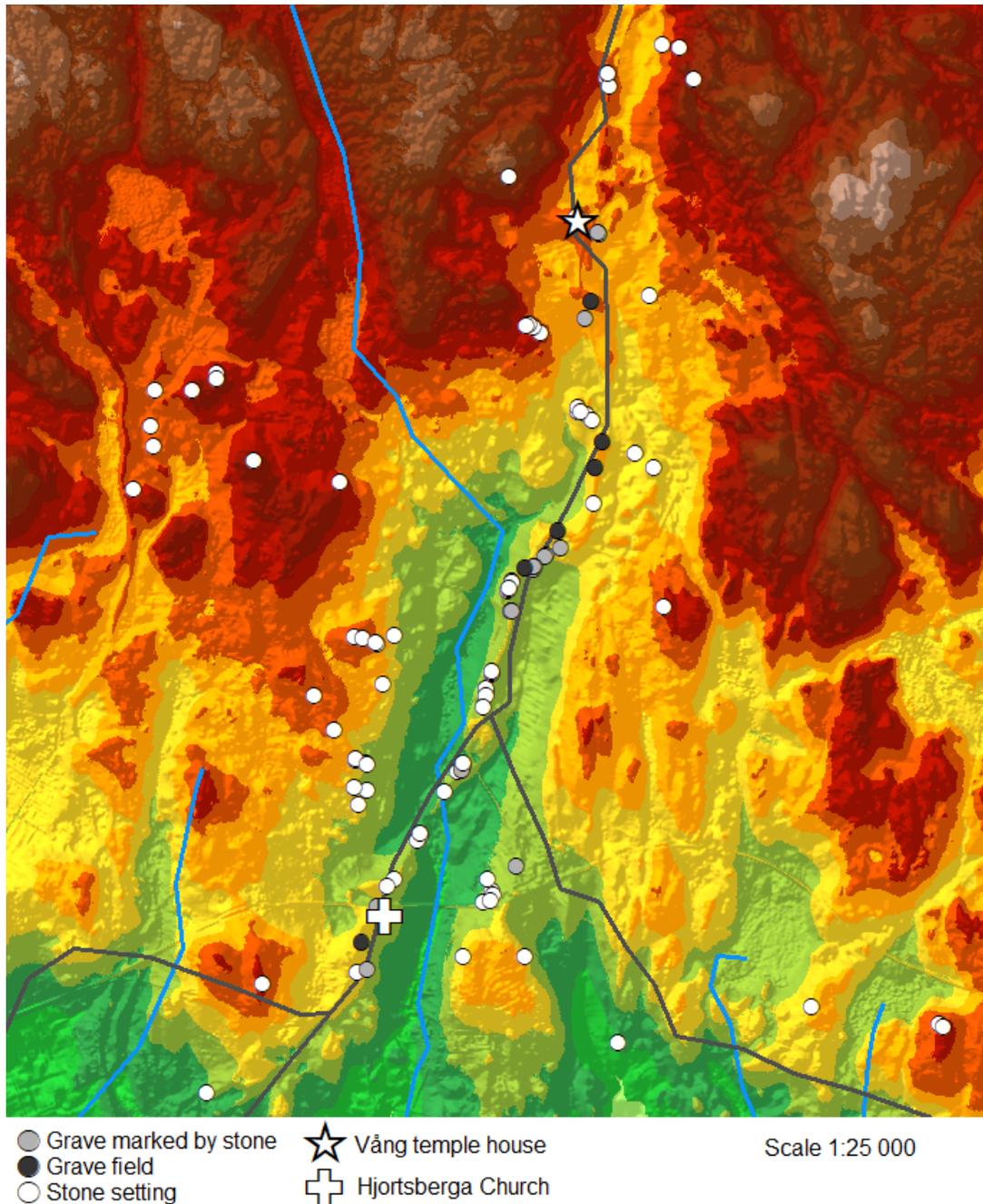


Fig. 6: DEM and Iron Age monuments along the Valley between Hjortsberga and Vång. The ridge is the Johannishus esker. The map shows a micro landscape with a valley as the center of human activity. The lithic monuments tend to avoid large hills and lowlands. Displayed with ArcGIS. Henrik Bernro 2021.

It is critical to consider later landscape transformation when relating to the monuments. Time has progressed for the past thousand years, and so has the usage of more efficient farming techniques and agricultural expansion, especially since the agricultural reforms of the 18th century onwards (Stenberg 2009). The modern agricultural expansion saw old monuments removed in order to make way for fields and pastures. Thus, there may be a biased distribution of Bronze- and Iron Age monuments in areas and hills unsuited for agriculture (Björkqvist & Persson 1973). It is likely that as a result of this expansion of farmlands that the surviving monuments are located primarily on soil types that are not connected to historical farmlands.

The vast majority of Iron Age monuments are found on moraine, fluvio-glacial sediment, and bedrock. Pre-modern farmlands correlate with post-glacial sediments and fine glacial sediments (Stenberg 2009). It should be noted that, while monuments are often found near these soil type areas, not a single stone construct or stone marked within central Blekinge is located within areas of glacial sediment and only five are standing on post-glacial sand (RAÄ: Förkärla 52:2; Hjortsberga 32:1; Hjortsberga 32:3; Hjortsberga 89; Hjortsberga 90).

Topographically, most monuments tend to occupy an elevated position within the landscape, avoiding the lowlands of the valleys. Once more this could be ascribed to farmland expansion, as the areas with soil suitable for agriculture tend to be in these same valleys. It is probable that the lowland monuments have been removed during such expansions. But it is notable that extra effort has been put into erecting stone monuments on hills and otherwise elevated areas (Fig. 7). If there was no ideology behind the placement of the monuments then people would have chosen the low-effort route instead of hauling large stones up hillslopes.

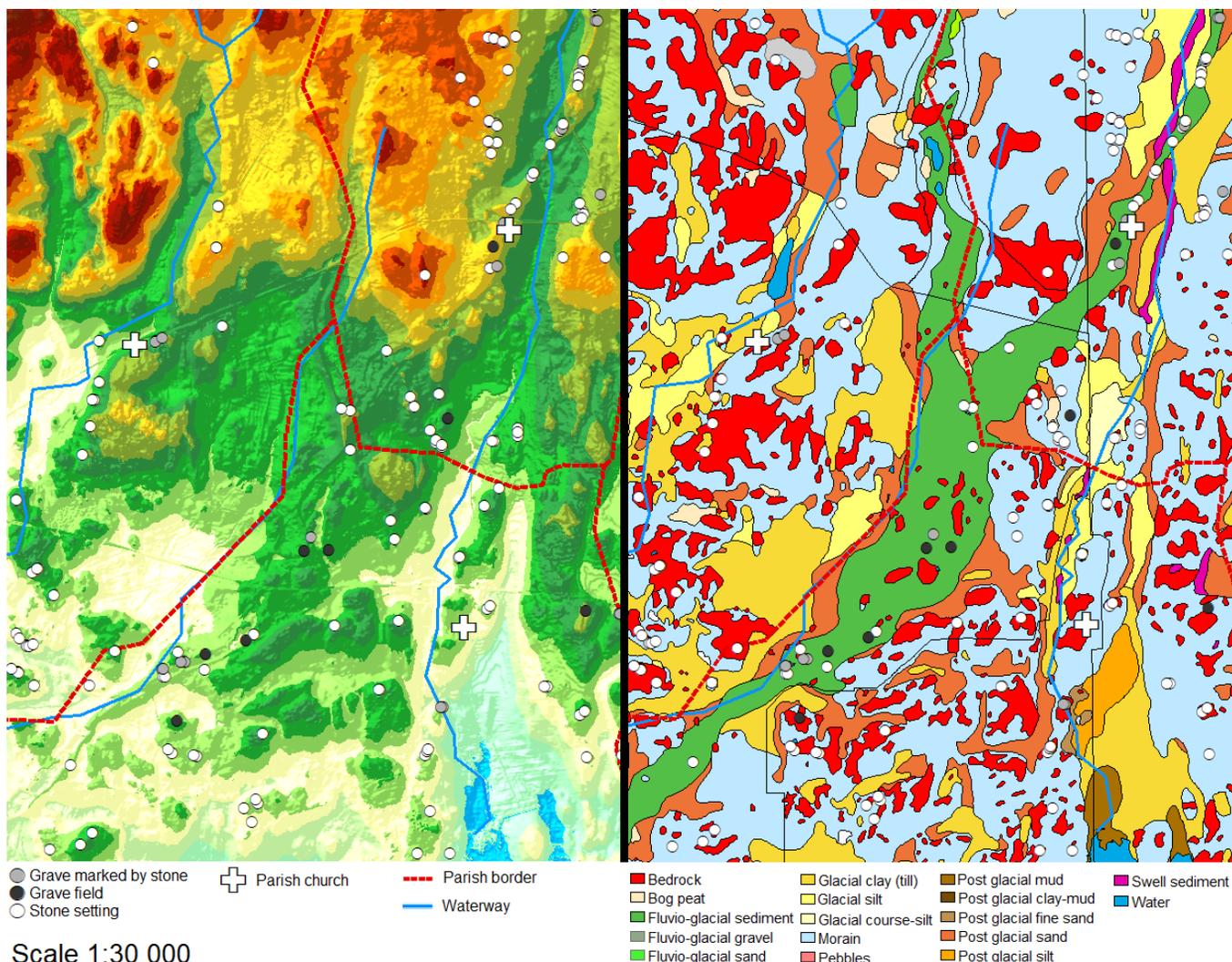


Fig. 7: DEM and soil type map compared with the distribution of Iron Age monuments and Medieval Churches. A tendency to avoid lowlands and arable soil types can be observed. Displayed with ArcGIS. Henrik Bernro 2021.

Björketorp Runestone

One of Blekinge's most notable cultural heritages is the Björketorp runestone (RAÄ: Listerby 381). In contrast to the majority of Scandinavian runestones, which are early Medieval in origin, the Björketorp runestone was raised sometime in the 6th-7th century during the Late Iron Age (Jansson 1963: 20; Hansson 2016). Vång's Gold foil figures are of a similar dating. Even more remarkable, however, is that no one ever moved the

runestone. It still stands at a historical crossroad in its original location on the road along a flattened part of the Johannishus esker. The monument consists of three raised stones in a triangle, all over three meters tall. Only the northernmost bears a runic inscription, described as a transitional form between the elder and younger futhark (Hansson 2016). The inscription is contemporary with the Vendel age Vång and its golden foil finds. The runes themselves bear a curse, a warning to anyone passing through not to break or otherwise defile the monument. A translation follows:

“The mighty runes secrets I hid here, powerful runes. Those who break this monument shall suffer maleficence. Treacherous death awaits him. I foresee perdition.” (Jansson 1963).

That this monument relates to Vång is evident both in time and space. The nearby roads connect the two valley landscapes of Edestad and Listerby in the east-west direction. The north-south road spans from the king’s road further south and leads all the way to Vång. The Björketorp runestone has had a prominent position in the landscape, letting its warning be read to all those traversing from the communication landscape in the south to the cult place in the north (Anglert 2016; Hansson 2016). It relates to the Johannishus esker as well, being located on the same vein of fluvio-glacial sediment which extends through the landscape to Vång.

Churches

The 11th century saw Christianity establish itself throughout most of Scandinavia. Blekinge, perhaps due to its peripheral role, shows little evidence of wider Christianization until the 12th and 13th century in conjunction with the Danish crown establishing its authority in the region (Stenholm 1986: 118). It is during this time that stone churches were built throughout Blekinge, many of which still stand. The churches of Edestad, Listerby, Hjortsberga and Förkärla all still stand on their original Medieval locations, retaining their original shapes to various degrees (Stenholm 1986: 118;

Franzén 2002). They are all located inland away from the sea, by routes of communication. The churches represent an important change in ideology to the Christianized Medieval era, as do they represent an increase in societal capability. The construction of a stone church is a cumbersome undertaking which requires both economic and organizational ability (Björkqvist & Persson 1990).

Wooden buildings tend to either decay or burn, but the stone churches have a permanence that only disaster or deliberation can tarnish. Thus, the Medieval stone churches of Blekinge signal a space continuity which gives the archaeologist an excellent point of departure to study the landscape. There are no recorded predecessor churches in central Blekinge. There have been speculations of an early Medieval church in Förkärle parish, where the Danish king kept an estate, but no evidence to substantiate this hypothesis exist (Stenholm 1986: 118) It should however be noted that the church of Hjortsberga possesses inventories older than the building itself (Anglert 2014: 55). This opens up the possibility for a still undiscovered older church somewhere in the region, to which the earlier inventories would have first belonged.

The rural churches of Medelstads hundred which retain their Medieval shape can with a broad-brush generalization be characterized as single-ship Romanesque stone churches without stone bell towers. The lack of inward vaults indicates that these churches never underwent a gothicization process. Edestad and Hjortsberga churches still share these characteristics (Andersson 1997).

Hjortsberga church is built on the northernmost crossroad of the landscape, where the roads from Edestad, Björketorp and Listerby converge into a single road towards Vång. The church consists of a single-ship longhouse with an extended choir, northeastern sacristy, and a porch in the westernmost part of the southern wall. Hjortsberga church possesses a rounded apse that is only visible from the inside due to its unusually thick wall. This has been interpreted as the stone foundation for an eastern tower, which was

never built (Andersson 1997). The church is built adjacent to the aforementioned Hjortsberga grave field. The deliberate placement of the church so close to a Late Iron Age grave field has been interpreted as an effort for continuity (Andrén 2002). Anna Lihammer (2007: 135) emphasizes that if the church is approached from the south, it is the grave field and not the church to which the eye is drawn. The church is situated on the slope of the Johannishus esker, while the grave field is situated dominantly on top of the esker. Hjortberga is the smallest parish church in Blekinge, implying it was built for a smaller group of people, a possible elite (Lihammer 2007: 135). Putting it into a landscape context, Hjortsberga is the church closest to the temple site in Västra Vång, and Vång belongs to the parish of Hjortsberga. The church in Hjortsberga may be built with continuity in mind, but interestingly this continuity is tied to the grave field rather than the sacred temple site just three kilometers north. The reason for Västra Vång's discontinuation may be related to the small church in Hjortsberga being built, perhaps by a small local elite who wished to reap the rewards of being ever slightly closer to the main routes of communication. Then the original purpose of Vång's remote placement would have lost its importance in favor of a church placed along the routes of communications closer to the heartland of central Blekinge. This narrative would fit in with the increase in interregional contact which the Medieval age brought as Blekinge was incorporated into a realm and a network that became increasingly interregional as the Middle Ages progressed.

Contributing further to Hjortsberga's importance is the fact that it was the site for Blekinge's Medieval thing, the regional gathering where decisions were made regarding disputes and communal questions (Persson 2012). It is said to have taken place annually atop the esker. An interregional meeting for the border peace was held in Hjortsberga year 1505, which gathered men from both Småland on the Swedish side and Blekinge on the Danish (Larsson 1997: 407). The meeting decided that even in times of war the farmers on either side of the Blekinge-Småland border would have free passage to conduct their peaceful and lawful business (Larsson 1997: 407; Persson

2012). The decision to host the meeting in Hjortsberga is partially geographical but raises further implications to the place's importance in the local, and even regional mindset of Blekinges inhabitants. The thing as a social phenomenon dates at least back to the Late Iron Age. It is possible that Hjortsberga served this function even before the Christianization, and that the church was built close to the place of assembly. If the thing was held on top of the esker, among the dead in Hjortsberga grave field, then the placement of Hjortsberga church as a Christian monument could not be placed atop the esker as it would conflict with the traditional gathering place, which function was still very much practiced.

The Church in Edestad shares similarities to the Hjortsberga church. Edestad is a Medieval stone church with an uncertain construction date between the late 12th to the early 15th century (Andersson 1997). It consists of an east-west facing longhouse church with an extended choir and no apse. The church has a southern porch and a free-standing wooden bell tower. Edestad church is situated on a slope rather than the elevated hill on the other side of the passing road. Like Hjortsberga the belltower is dated to the 16th century and stands atop the nearby hill (Anderson 1932: 279f). Like Hjortsberga Edestad appears to be built with continuation in mind, as it was located near a holy well. Blekinge has about ten holy wells with recognized Iron Age origins, but the majority of which were forgotten through history (Stenholm 2009: 97). The well in Edestad was not forgotten, its importance appears to have crossed ideological boundaries as the church became an attractive pilgrimage site thanks to the well (Anderson 1932: 278; Franzén 2002). Like Hjortsberga, the church in Edestad is located in a place with Iron Age significance. The continued use of these places of importance is striking, even beyond ideological shifts. Both churches appear as destinations, where people travel for matters beyond the daily religious activity.

Listerby church and Förkärle church have undergone extensive renovations during the 19th century (Anderson 1932: 228ff). Today they have both largely lost their original appearance, consisting of a longhouse with western towers constructed during the renovations. Förkärle church has an extended choir with apse while Listerby only has an eastward apse. While no longer in their Medieval shapes, they retain some importance in that they retain their original locations. Förkärle church is dated to the 13th century (Björkqvist & Persson 1990). Listerby, due to its renovations is of an unknown age, but there have been speculations that it dates back as far as the early 13th century (Stenholm 1986: 121) Listerby and Förkärle churches are closely situated only two kilometers apart. Though connected by the king's road, they are separated by an inhospitable drumline that divides the landscape into two.

Administrative divisions

The Medieval age is signified by an increase of centralization along with institutional growth, consolidation, and preservation. The hundred was the primary civil jurisdictional division. Medelstads is one of four such hundreds in Blekinge. It is the middlemost and the largest by area. The hundreds of Blekinge are first mentioned in King Valdemar's Cadastre in 1231 (Weibull 1916). Medelstads hundred consisted of seven Medieval parishes. In the 19th century, the number of parishes increased to twelve as the result of settlement expansion and population increase.

The Medieval landscape is signified by an agricultural society, with a few permanent structures, some of which are still present today. The parishes of Denmark have a Medieval origin as an administrative and religious division, spanning back to the start of the 12th century (Dam & Jakobsen 2008: 60). Each parish was supposed to be large enough that the households' combined tithe could support a church and the parish priest tied to it. Areas of smaller parishes then were richer in produce and/or population (Dam & Jakobsen 2008: 60) The system of parishes was created with the intent that every person should belong to the church closest to their home (Anglert 2016).

The parishes of central Blekinge are interesting in that their division deviates from a wider pattern. When mapped out the parishes of Blekinge tend to be formed as strips running from the coast, into the valley and beyond into the forests, only ending where the province of Småland starts. In central Blekinge the parishes are far smaller in size, more clustered and with border divisions which seem more complicated than the general parish pattern. The parish borders which are marked both on the 1870 general staff map and the 1915 economical map have been shaped as early as the 14th century (Stenholm 1986: 122ff). This is further corroborated by comparing the maps with the position of places mentioned in the cadastral register of 1651. The way the parish has been divided indicates visual affordance for the people who walked the landscape and defined it in a clear and tangible way.

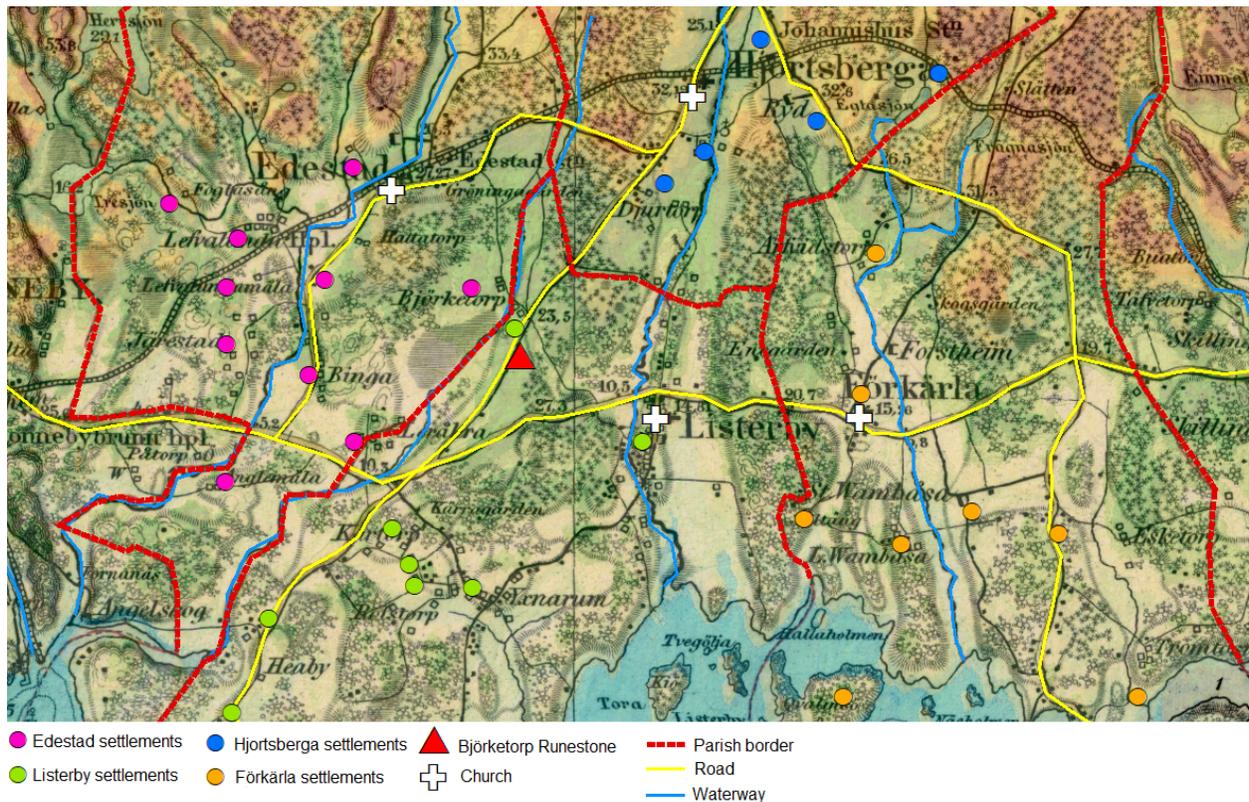


Fig. 8: DEM combined with the 1870 general staff map. The settlements described in the cadastral register are marked, as well as the parish churches and the Björketorp runestone. The parish borders marked in red correlate with barriers in the landscape, such as elevated terrain and waterways. Displayed with ArcGIS. Henrik Bernro 2021.

In historical times, the Björketorp runestone's original purpose may have been forgotten. It has been argued that the monument gained a new purpose as the Medieval parishes were established and geographically defined. On historical maps the border between Edestad, Listerby and Hjortsberga parishes converge in a tripoint less than a kilometer away from the runestones (Hansson 2016; Fig. 8). The economical map of 1915 shows the runestone was used to mark a sharp angle in the border between Edestad and Listerby parish. A few earlier maps also display this feature (Hansson 1916). It is not the only instance of ancient monuments being utilized as markers for parish borders. Just 900 meters uproad is the stone setting Listerby 99:1. Just like the Björketorp runestone, it marks a sudden turn in the parish border when combined with the 1915 economical map. A third example is found on the parish border between Förkärla and Nättraby parishes where two similar stone circles (RAÄ: Förkärla 61:1; Nättraby 61:1) are 35 meters apart, but on each side of the parish border. They are situated on the same hill.

According to the 1651 cadastral register, three households of Björketorp belonged to Edestads parish, while one household belonged to Listerby (Skansjö & Tuvestrand 2007: 439, 441). Björketorp itself is divided by a stream. When compared to the 1870 general staff map the parish border separating Listerby from Edestad follows the stream almost uninterruptedly from the sea to the woodlands in the north. The general staff map shows two houses on each side of the stream, between the Björketorp runestone and the parish tripoint. It is likely that the waterway, as a natural border in the landscape, has been a convenient parish separating marker. In fact, most parishes seem to be defined by environmental features (Fig. 8; Fig. 9).

Listerby is separated from Förkärla by the same drumline which separates their landscape rooms. Edestads border with Ronneby parish consists mostly of wetlands and irregular terrain. The borders in the general staff map indicate a pattern in 1870. The placement of recorded settlements in the cadastral register further indicates that these borders are historical and stretch back to at least 1651.

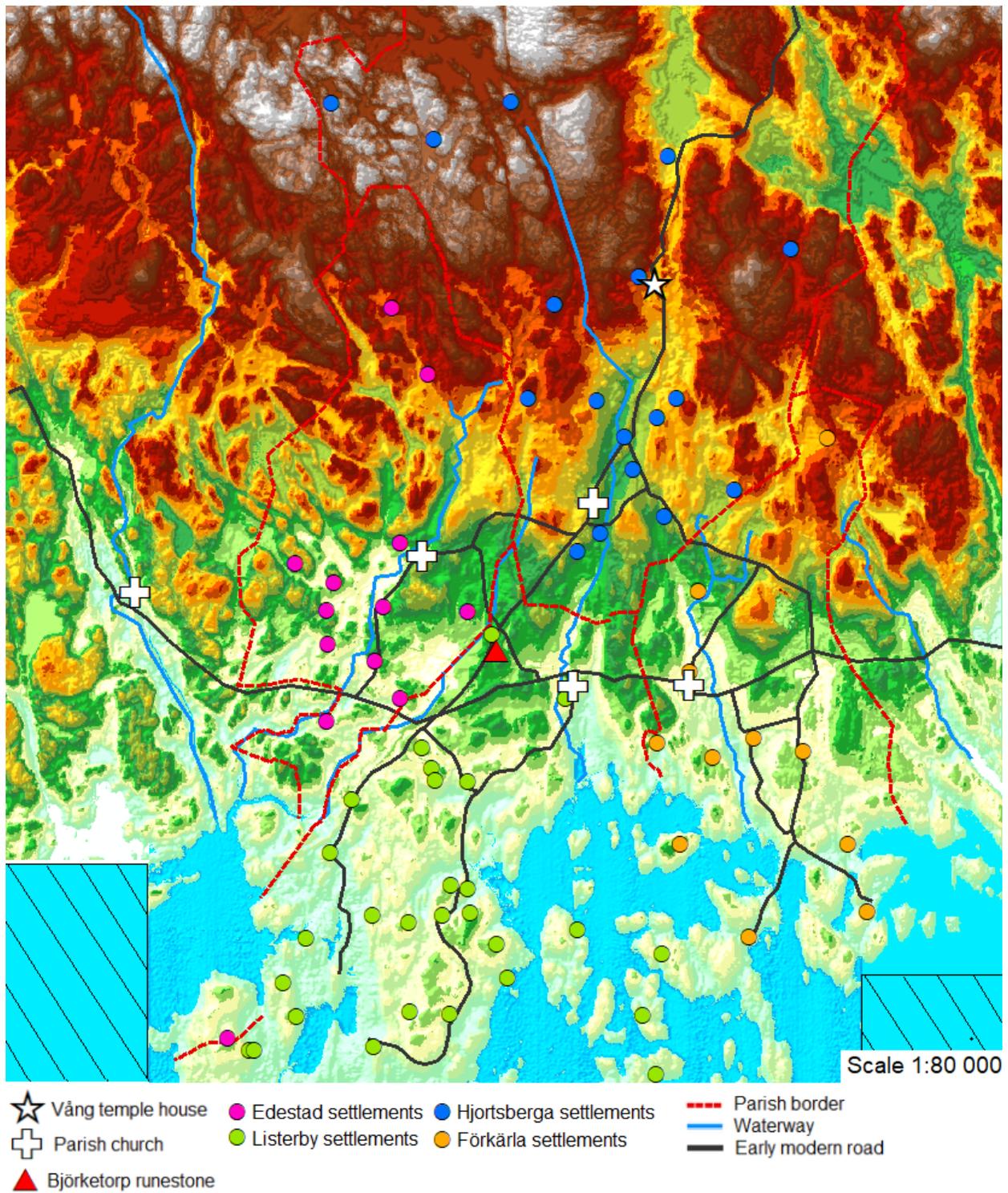


Fig. 9: DEM displaying the relation between Medieval borders, churches and early modern settlements with Vång for reference. Parish borders follow environmental features in the form of waterways and elevated terrain, which would have been clearly visible when treading the landscape. Displayed with ArcGIS. Henrik Bernro 2021.

Settlements

The settlements of Blekinge were historically grouped in villages and hamlets, along with independent farms whose people sustained themselves by farming, fishing, and trading material produce (Björnsson 1946: 16ff; Skansjö & Tuvestrand 2007: 430ff). Throughout the Iron Age, these settlements would be mobile, relocating within the landscape rooms to ease the exploitation of resources (Björkqvist & Persson 1990).

With the Medieval period this system changed, as settlements became permanent fixtures with a surrounding agricultural core and a periphery for exploitation of resources. The landscape was economically organized in a system of infield and outland (Fig. 10). Infield was the property of the village which was fenced, divided, and actively utilized as farmlands, meadows and living space while outland was common land, beyond the borders of the infield (Anglert 2008; Eriksson et al. 2021). The outland was generally used as grazing lands and for resource exploitation.



Fig. 10: Section of Peter Geddas 1688 geometrical map of Vång. Different areas are clearly marked in different colours signifying land use. Gray is farmland. Yellow is grazing lands and meadows. White is outland. Displayed with ArcGIS. © Lantmäteriet.

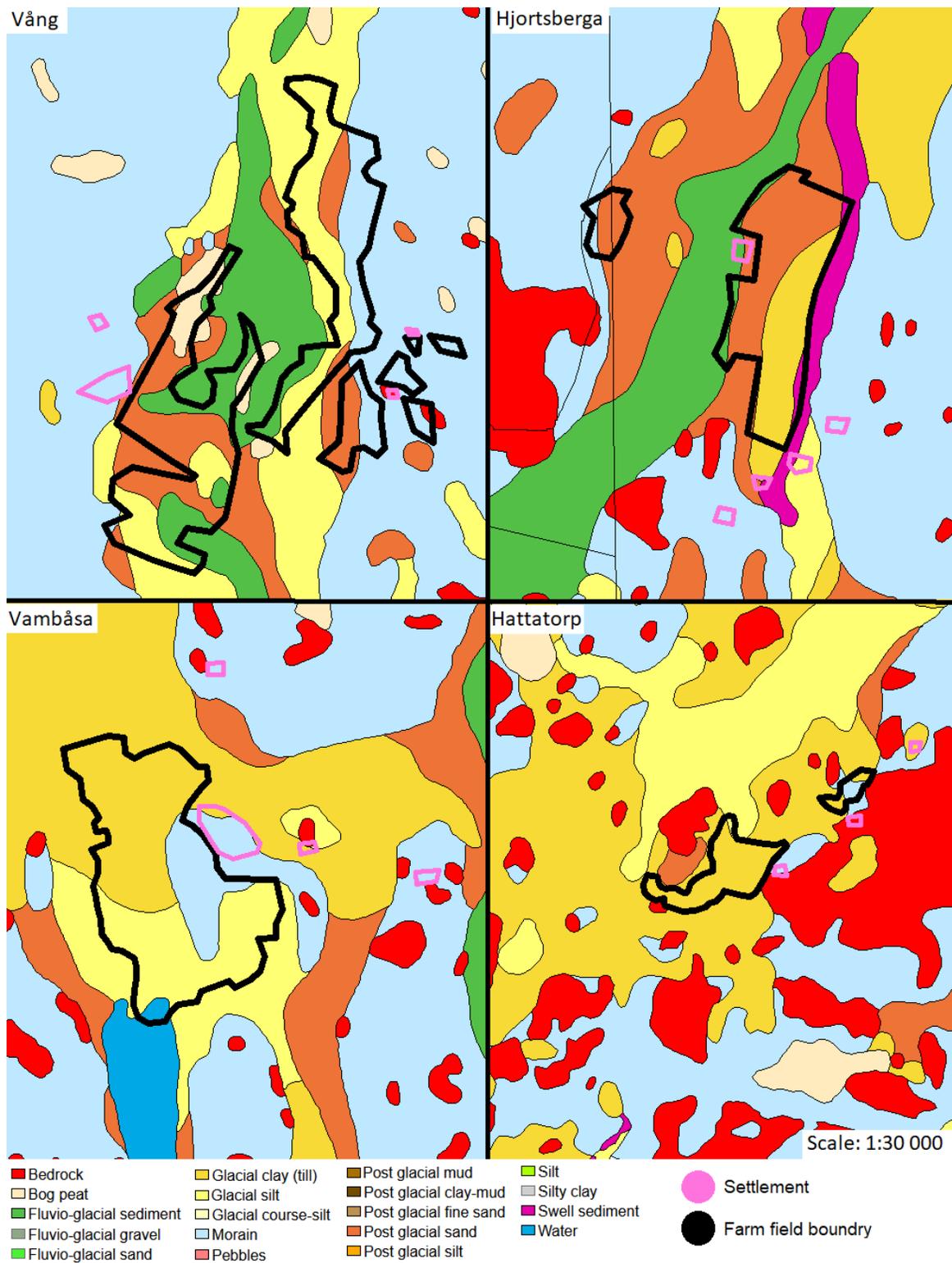


Fig. 11: A selection of settlement and agricultural zones after georeferencing Peter Geddas 1688 geometrical map. Note that these maps do not contain precise measurements and cannot be considered exact. Displayed with ArcGIS. Henrik Bernro 2021.

When investigating the relationship between land use and soil types, a clear intent can be observed. In comparing the soil type map with Peter Geddas geometrical maps, the measured lands which are designated for agricultural use correlate with post-glacial sediments and the veins of fine glacial sediments, primarily silt and clay (Fig. 11). The marked settlements, however, tend to be situated on soil consisting either of fluvio-glacial sediment moraine, often close to patches of bedrock. There is a clear intent behind the usage of soil types. The sterile moraine has been sought out to settle, but only if it is close to glacial soils which lend themselves to agricultural practises. Within the parishes Edestad, Listerby, Hjortsberga, and Förkärla there are a total of thirteen settlements with five or more tithe paying households according to the cadastral register. All of these settlements share the aforementioned pattern where settlements are situated on soil types not used for agriculture such as moraine, bedrock, and fluvio-glacial sediments. All of these larger settlements are situated adjacent to soil types that are associated with agriculture.

The settlement distribution appears to generally correlate with separate stone-construct areas, as do the settlements named in the cadastral register of tithes (Fig. 12). This implies that there was no major shift in the population centers from the Iron Age and into the early modern period. In this regard, the affordances of the environment have been constant. There have been zones where human activity is more concentrated. When compared to the topographical map, the settlements are often located at the base of drumlin slopes and on small hills in the more open southern landscape. Hypothetically this pattern is to avoid settling on the arable land within the valleys, maximizing crop yield.

Furthermore, there may be variables in the hydrological conditions of the valleys. When highlighting the water streams found in the 1870 general staff map, they correlate well with the various valleys seen in the digital elevation model. It is easy to imagine the valleys acting as giant rain catchers, with water streaming toward the lowest point.

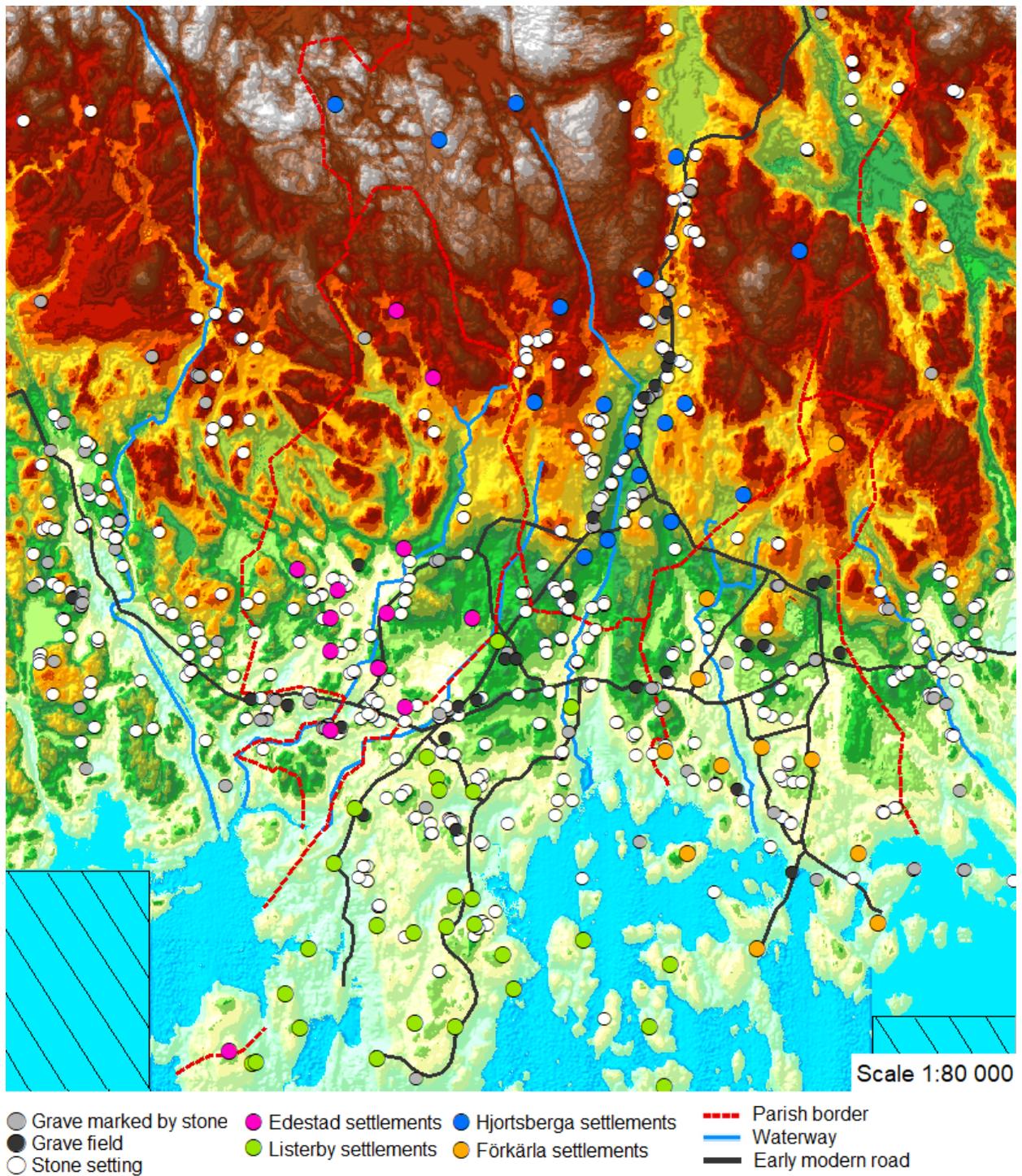


Fig. 12: Correlation between early modern settlements and Iron Age monuments, displaying the differences the Medieval Age made, as well as the close correlation between inhabited areas through the different time period. Displayed with ArcGIS. Henrik Bernro 2021.

Thus, the valleys may act not just by directing water but accumulating it into boglands. Seasonal variations in weather could greatly impact hydrology, potentially making it unpredictable. The 19th century saw systematic draining of bogs to transform the land for agricultural use throughout Sweden. The historical hydrology may be a determining factor in placing settlements on elevated positions in the landscape, in order to protect them from water levels which are no longer visible. The soil type pattern shows that the settlements were further situated on sterile ground, at the edges of fertile soils. The general pattern suggests a deliberate negotiation between the inhabitants and the conditions of the landscape they settled. The settlements are strategically placed for longevity and economy. The economical benefits are twofold, in the economy of traversing the landscape close to major roads and placed slightly elevated, but not at any pinnacle, and in the economy of produce, often avoiding to settle on land not suitable for agriculture, but just close to the soils which are suitable for it.

Listerby church is nowhere near the geographical centre of its parish. The church is situated close to the parish's north-eastern corner by the king's road. Most of the villages and farms within the parish are situated on the Gö peninsula and in the archipelago (Fig. 12). When Iron Age stone monuments are compared to the known settlements of 1651, there is a clear difference in the Gö peninsula. The cadastral register notes the southern settlements as having far fewer tithe payers than the two villages Listerby and Yxnarum, which are located closest to the church (Skansjö & Tuvestrand 2007: 440f).

In Vambåsa a royal estate was prominent until the 13th century, monitoring the road between the inland road network and the harbor in Hjortahammar. Vambåsa, which apart from Ronneby was the only royal estate in central Blekinge. Vambåsa is situated in a plain between the harbor of Hjortahammar and the king's road, a place that needs to be passed by anyone who wishes to travel from the sea to Blekinge's interior. It is a place that allows for strategic control over anyone who wishes to enter Blekinge from

the sea (Lihammer 2007: 109ff). The surrounding topography supports this idea. A drumline makes any other potential path to Hjortahammar's harbor cumbersome to traverse.

In the case of Vång, the houses today follow a similar pattern as they did in Peter Geddas geometrical map, as well as the 1870 General staff map. This contrasts with the excavated Iron Age settlements which have been found at the base of the hill. But systematizing the previous observations in this thesis leads to a conclusion of why the settlement moved the short distance from the valley to the hillside. Settlements and churches tend to be placed on hill slopes where the soil is not fertile. This settlement pattern conserves the land resources in a landscape signified by poor agricultural conditions. It also prevents flooding, something which may be relevant for Vång, as there are wetlands just a few hundred meters northeast of the temple house hill. What is remarkable is its size in the early modern period. It was the largest settlement in Hjortsberga parish by 1688 with nine tithe paying households (Skansjö & Tuvestrand 2007: 437f). Anything could have happened between the Iron Age and the early modern period in terms of population change within Vång, but the fact that the settlement retains this size is noteworthy.

Discussion

Results

There is a clear correlation between topography, soil types, and settlements both in the Iron Age and Medieval landscape. The landscape did not transform for the simple reason that an outside authority was established along with a new ideology, but rather followed a system of practicalities taking communications, resources and practical placement into account. The landscape did not cease to afford the people anything they did not have before, nor were new affordances discovered. Instead, with the transition from Iron Age to the Middle Ages, the affordances of the landscape seem to be further realized.

The Medieval settlements of Blekinge follow a pattern of landscape awareness. The inhabitants of central Blekinge were strategic in determining their settlements in relation to what the place afforded them. This is evident in the slope-sided placement in the central valley zone, to avoid hydrological variations, as well as the ability to fully utilize the most desirable agricultural soils. The most striking difference in landscape use is the Medieval expansions, into the northern woodlands, and south into Gö peninsula and the archipelago. These are the only places where medieval settlements do not correlate with Iron Age monuments.

The grave fields of the Johannishus esker Hjortsberga and Kasakulle bear clear parallels with Hjortahammars grave field in their deliberate placements. Both places constitute some of the most monumental Iron Age sites in Blekinge, and both places are situated on eskers in an important place of communication. It brings to mind questions of the ideological significance of various geological landscape features in Blekinge. These eskers do not fit into the Christian ideology; instead the churches and settlements responding with control were strategically located as Lihammer suggests. Hjortsberga church is situated where it is because there is no ideological point in placing

it in Vång. Hjortahammar instead provides closeness to communications, to both the small local world of a christian community, as well as the wider world beyond the sea. A further shrewdness can be interpreted into this placement, as it may be located by the Hjortsberga grave field to promote a continuation of Iron Age places, just not the temple of Västra Vång.

That Vång was a special place is a foregone conclusion, but the degree to which the valley landscape seems to funnel north is astonishing. Anyone traversing the landscape could simply follow a path north and find themselves in Vång. It is located by the end of the Johannishus esker, a place which has evidently been important due to the enormous efforts of constructing stone settings along it, and the burial of the dead. Anyone traveling along the corridor north would experience it before finding themselves at the temple site.

The trend in central Blekinge is continuity between the Iron Age and the Medieval period. The vast difference is the permanent settlements and the willingness to clear ancient monuments to expand agricultural land. The shift in ideology means a shift in how the physical environment is valued. Previously sacred sites gain new affordances, while some are not touched for sheer practicality. Monuments do not appear to have been removed for the sake of ideological resentment, but rather as practical solutions for resource exploitation. The Medieval period saw a new way of rationalizing the landscape in a new more economic way. Settlements are rationally placed based on landscape affordances, as are borders. The Iron Age monuments can be given new practical meanings as markers in the landscape, much like the natural features.

Evaluating Affordance

The affordance perspective does indeed possess the potential to bridge a gap between experiential theory and 'processualist methods' which caused such concern in the 1990s. Its potential for simple analytical application has been demonstrated above.

However, like all perspectives, affordance has its drawbacks. I have identified two. First is the problem of implementing the affordance perspective in a meaningful way. While it provides a theory for existing methods, it risks being little more than a supplement with little to add to knowledge that is already established and/or intuitive. The fact that the Iron Age lithic monuments are missing on modern-day agricultural land is one such intuition, which anyone who observed the landscape could claim without the use of theory. In this sense, affordance theory risks being rudimentary, taking a detour to conclusions that appear obvious. The archaeologist who wishes to apply the perspective should be aware of the necessity to adopt suitable methods to support it, such as the viewshed as discussed by Marcos Llobera (1996) and Mark Gillings (2009; 2015).

Another issue with affordance is its deterministic tendencies. Explaining why some places, such as Edestad retained importance through the Medieval period can be hard to explain through a perspective with tendencies to label experiences as something deterministic. If Edestad's Holy well can be explained through environmental features, I have not found how. It could be the closeness to Vång and Hjortsberga which has played a part, and the fact that the well was within walking distance to these places that this well became sacred. It is more likely that the affordance perspective is simply not enough in this instance, as I can only hypothesise what made Edestad so special.

Further Research

An additional dimension of time could relatively easily be added to the comparison. Such research already exists in the form of place-name studies where a relative chronology already exists with multiple studies (Björkqvist & Persson 1979; Stenholm 1986) examining the phenomenon. Combining that with the datasets composed in this study could further untangle the chronology of the landscape's development.

One possibility is that Vång is not as far north in the Iron Age world as indicated by its context in Blekinge. Today the road to Vång continues beyond into Småland which is not without its own Iron Age culture. There is a potential northern connection to be explored. The fact that there are known connections, thinking back to the border peace in Hjortsberga, indicates that there is some sort of established, and at least semi-frequent communication in Christian time. This contact must by necessity have been cordial due to the peace decided there. The question is, how long does this relationship go back? And how did the people of these regions interact? If there was frequent travel between Småland and Blekinge it is likely that Vång played a part in it due to its position on the northern road of communication. It may be that Vång is not the northernmost outpost of the Iron Age Blekinge, but a central place in geographical terms as well. Expanding on this study by applying a similar method of analysis on landscapes with different topographical and geological conditions could yield interesting results. A comparison between people in different types of landscape rooms could potentially help the archaeologist understand when and why people took certain actions in the landscape, and what sort of strategies for landscape use and monumental communication they adopted because of it.

Finally, a more detailed study may be conducted using affordance theory together with more in-depth methods on a single parish within central Blekinge. An idea is to generate multiple viewsheds based on the Iron Age lithic monuments throughout the landscape. This could generate an interesting viewscape which may contribute to a more complex understanding of how, and where these monuments interact with the natural environment.

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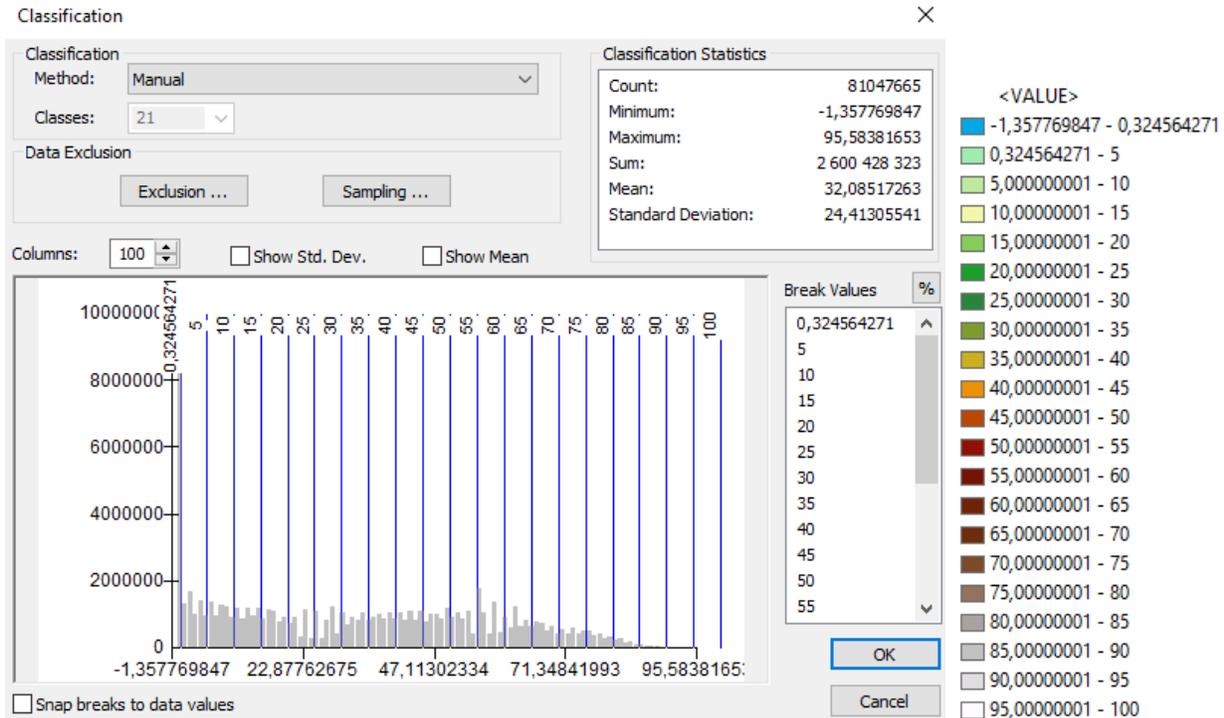
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Appendix

Appendix 1:

Digital Elevation Model Metadata:

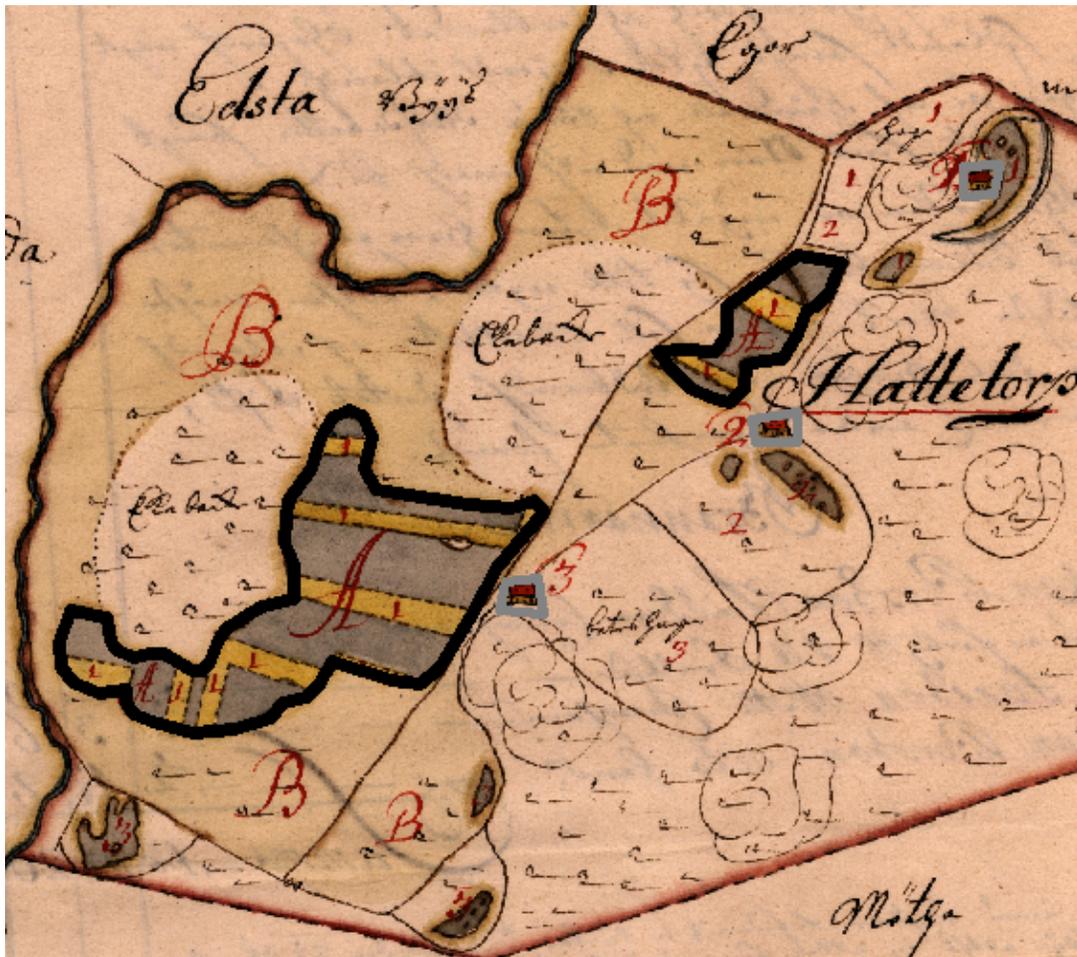


Property	Value
Raster Information	
Columns and Rows	8750, 10000
Number of Bands	1
Cell Size (X, Y)	2, 2
Uncompressed Size	333,79 MB
Format	TIFF
Source Type	Generic
Pixel Type	floating point
Pixel Depth	32 Bit
NoData Value	0
Colormap	absent
Pyramids	level: 6, resampling: Nearest Neighbor
Compression	LZW
Mensuration Capabilities	Basic
Status	Permanent

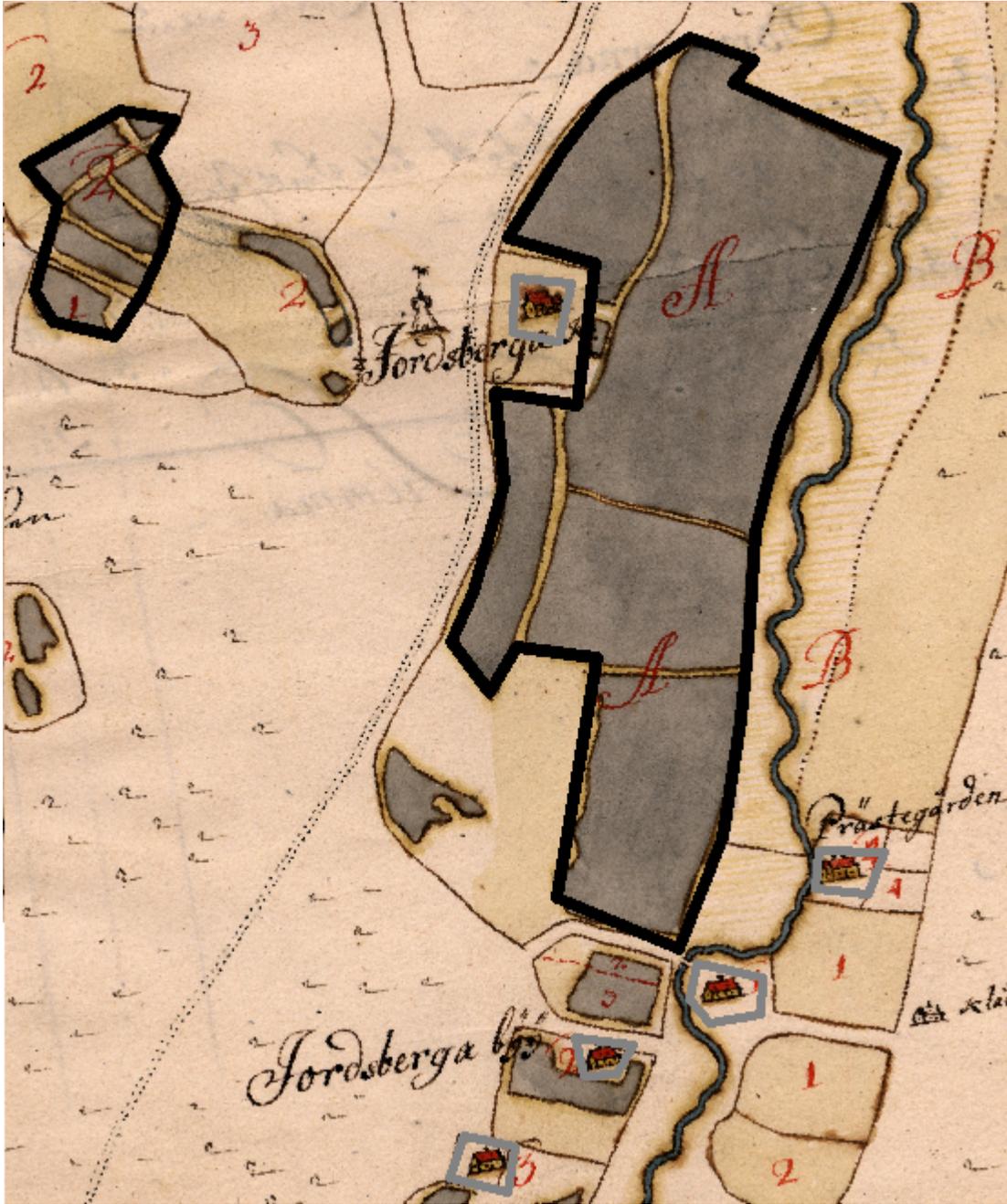
Property	Value
Extent	
Top	6240000
Left	515000
Right	532500
Bottom	6220000
XY Coordinate System	
Linear Unit	Meter (1,000000)
Angular Unit	Degree (0,0174532925199433)
False_Easting	500000
False_Northing	0
Central_Meridian	15
Scale_Factor	0,9996
Latitude_Of_Origin	0
Datum	D_SWEREF99

Appendix 2:

Contours of farmlands and settlement areas on Peter Geddas geometrical maps:



Hattetorp - Edestad parish.



Hjortsberga - Hjortsberga parish.



Vambåsa - Förfärla parish.



Vång - Hjortsberga parish.