A landscape biography of the 'Land of Drumlins': Vooremaa, East Estonia

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1 Introduction

1.1 Problem definition and aim of the research

Although the term *landscape biography* was introduced by the geographer Marwyn Samuels already at the end of the 1970s (Samuels 1979), the concept of combining long-term life stories of landscapes, monuments, and people did not particularly allure archaeologists before the 1990s. Thea idea of applying landscape as the main motivator behind human actions in the past became especially focal for Dutch archaeologists, e. g. Jan Kolen (Kolen 1993; Kolen 2005), Nico Roymans (Roymans 1995; Roymans et al. 2009), Theo Spek (Spek 1996), Fokke Gerritsen (Gerritsen 2003), and David Fontijn (Fontijn 2002), who all pursued to explain and narrate the archaeological past of the local people through features in the landscape. By linking human and cultural remains with landscape features they started writing landscape biographies.

Since the 1990s, landscape biography as a research method has elaborated diversely. The biographical method of landscape study incorporates an extremely wide spectrum of research fields, which span far beyond just geography or archaeology. The biographical approach as a research method expects a thorough study of a certain region in various aspects of landscape including natural sciences, archaeology, geography, history, folklore, ethnography, but also historical cartography and heritage management. In a perfect world, the long-time perspective would start with the appearance of the first hunter-gatherers in the region, and end with yesterday's events. Of course, in real life to construct such a complex and complete landscape biography would be impossible. Unfortunately, it is bound to that some topics can be covered with more detail than the others, some topics are left out completely, and some at first sight seem less relevant.

In the contemporary myriad of definitions and approaches of landscape, the limits of the concept of *landscape biography* are being explored, but also tested. What exactly is a landscape biography? What does it constitute of? Is landscape biography just a narration of a specific defined place on the face of the Earth in a defined period of time or does it have a practical output? Is it possible to help design the future of landscapes by narrating the past?

The main research aims of this study are:

1. to write a detailed landscape biography for a region in Estonia: Vooremaa
2. to test and further elaborate the biographical approach in the process

3. to test landscape biography as a tool for heritage management in order to find applications for bridging theory and practise

In addition, the scope of the study concentrates on historic land use around archaeological sites and aims to create a system for assessing the archaeological heritage value of certain micro-regions. One of the goals of the thesis is therefore to develop a practical methodology for detecting the elements of archaeological heritage in the landscape. This could contribute to sustainable development through create effective concepts of landscape preservation.

1.2 Archaeological heritage designation in Estonia

During the different political and ideological regimes of Estonia since the late 19th century land ownership has also varied quite considerably. Hence, the approaches to heritage protection and management have also been different. The first Heritage Conservation Act in the republic of Estonia was passed in 1925, at the time when the Land Reform initiated in 1919 was still being implemented, and new landowners were very protective of their new ownership. This is also reflected in the Conservation Act, which decided that the state would compensate the owner of an archaeological site for all the possible expenditure that might rise from any excavations or earthworks. The state also had to cover all the expenses of salvage excavations that might obstruct road or construction works (Tvauri 2005a). Today, the system is completely the other way around, and the expenses have to be covered by the owner or by the contractor.

Between 1925 and 1936 altogether 1327 archaeological sites were designated as national heritage (Tvauri 2005a, 4). When looking at the numbers of designated sites after World War II, it can be said that during the Soviet period of collective farming, the designation of sites seemed to be much easier than at the time of private landownership. For example, by the end of the 1960s the number had risen to 1976, then in 1985 the count was already 5477, and 20 years later in 2005 the number of protected monuments was 6559 (Tvauri 2005a). In 2000 – 2010 only 83 new archaeological sites, including 33 underwater sites, were added to the list of officially protected monuments (Veldi et al. 2012, 218). This clearly indicates that the collective farming of the kolkhoz/sovkhoz system, but also the need to preserve archaeological sites as part of Estonian identity, were two main reasons for searching and proposing new sites as protected heritage.

1.3 Land and ownership relations in Estonia

Landscape development in Estonia has been very strongly influenced by the relations between landowners and dwellers. It has been argued that each socio-economic formation creates its own landscape with its own symbols and value systems (Cosgrove 1984; Palang et al. 2004a: 159). Hence, changes in society also bring along alterations in function, meaning and perceptions of land and landscape. In a study presented at a conference in 2000 the Estonian landscape researchers Hannes Palang and Ülo Mander defined five stages of landscape development in Estonia (Palang & Mander 2000), which was later elaborated as follows (Palang et al. 2004a):

1) Ancient landscapes, which are perceived as romantic co-existence of people and nature (prehistory till the beginning of the 13th century). This is the time of primal freedom and heroic past before the German Conquest at the beginning of the 13th century.

2) Feudal estate landscapes, which were owned by the Germans and Baltic-Germans, manor complexes surrounded by fields and villages with peasants living in servitude (13th – 19th centuries). The Estonians were not allowed to own any land.

3) Private farmsteads, which were established after the Land Reform in 1919. During the reform 1065 manor complexes, which covered 58% of the land, were expropriated and turned into 56 000 private farms.

4) After World War II the land was nationalised and formed into collective and state farms. During the Soviet (1944 – 1991) occupation the land was owned by the state, and it could neither be sold nor bought. Hence the land was owned by everybody and by nobody at the same time.

5) After the collapse of the Soviet Union and regaining the independence in 1991 a new land reform was initiated and in the course of the last 20 years, more than 90% of the land has been returned to its rightful owners or has found new ones. At present, the Estonian landscapes are characterised by a multitude of landowners with very diverse land use practises.

1.4 Study region

The thesis focuses on a unique landscape region in Eastern Estonia called Vooremaa (in translation: the land of drumlins). Vooremaa is considered to be one of the best preserved post-glacial drumlin formations of the East European Plain (Arold 2005, 205). The research area covers approximately 980 km^2, with the maximum span from south to north of around 55 km, and from east to west around 25 km (Figure 1). The region includes six local municipalities, which used to belong to 6 historical church parishes (Figure 2; Tartu-Maarja, Äksi, Maarja-Magdaleena, Palamuse, Laiuse, Torma). In Estonian archaeological research, it is common to use historical church parishes as fixed administrative units as constants, which will not change in the near future, as the modern local municipalities would. The archival data is also organised according to the spatial division of the study region in church parishes.

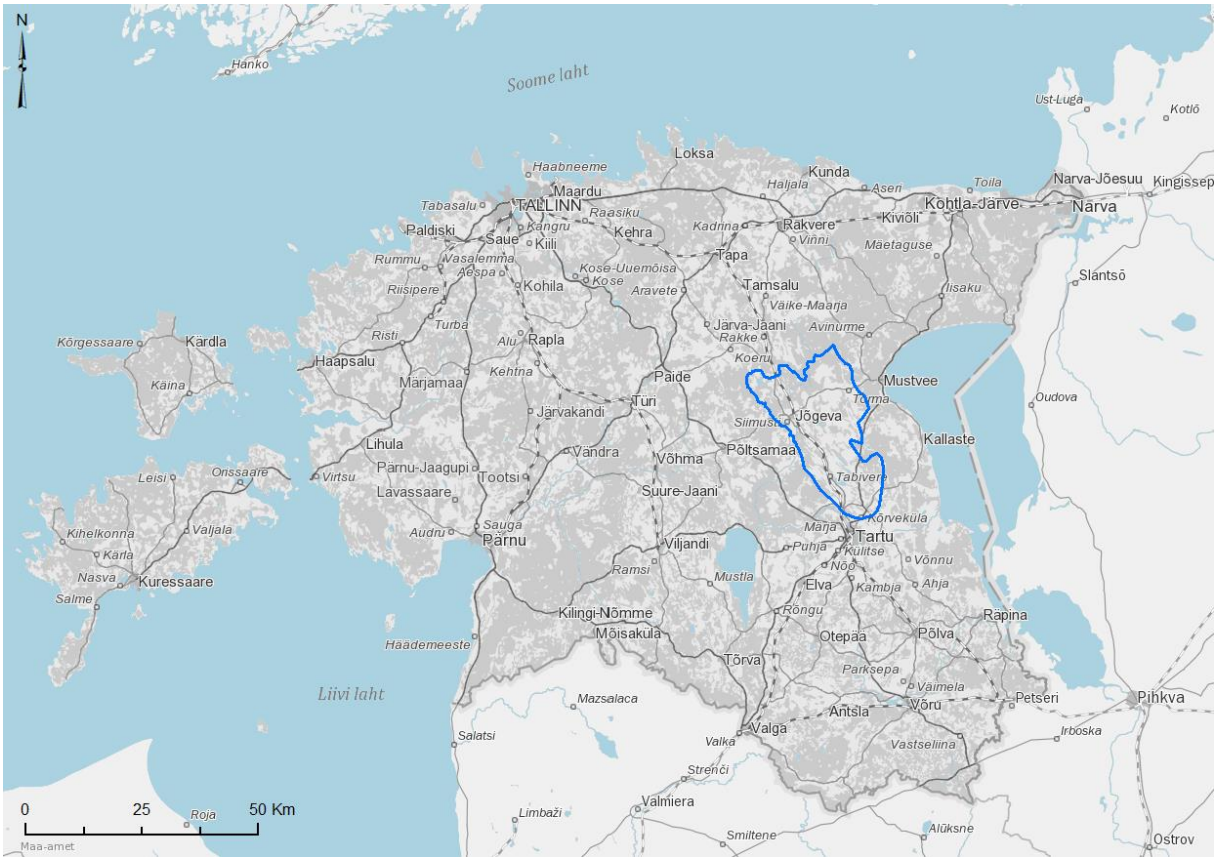

Figure 1. Vooremaa landscape region in Eastern Estonia. Base map: Estonian Land Board.

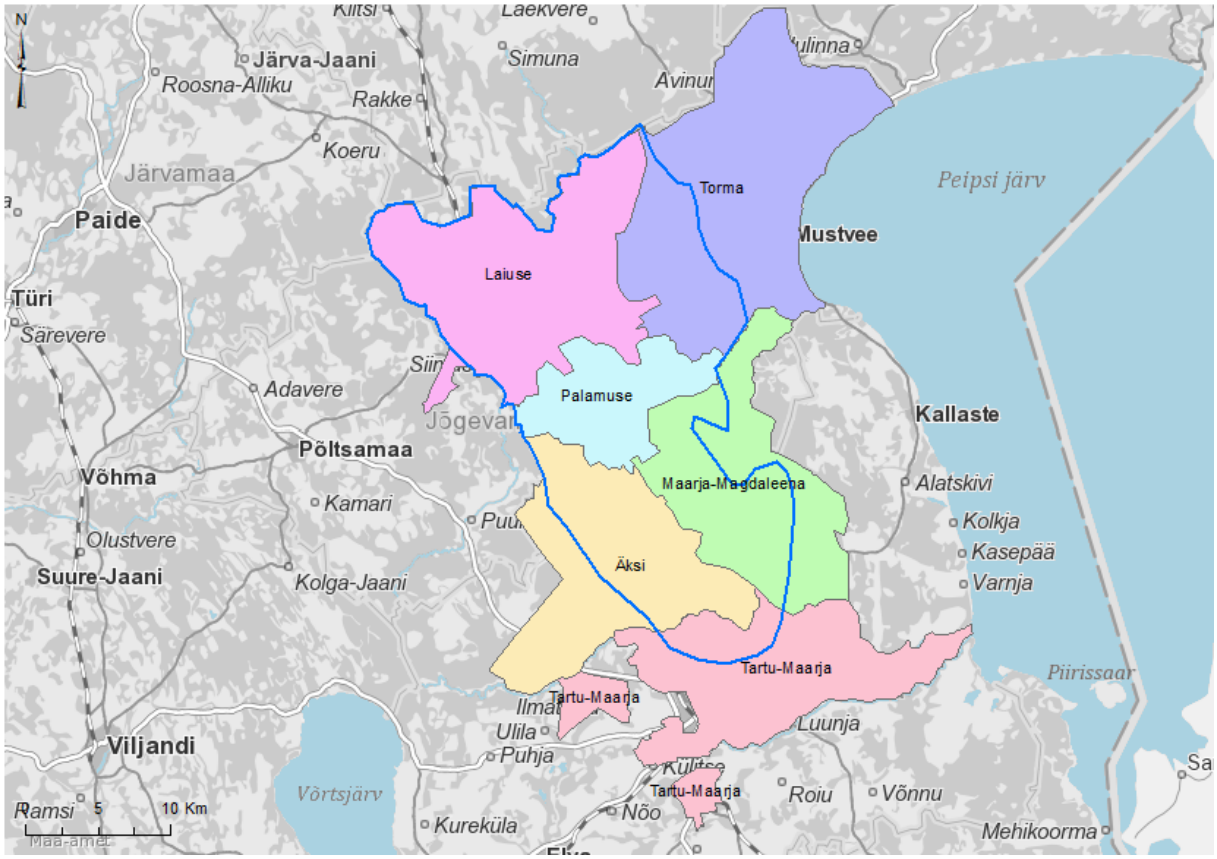

Figure 2. Historical church parishes in Vooremaa landscape region. Base map: Estonian Land Board.

The Vooremaa landscape region is rich in archaeological sites – at least 500 different locations of archaeological interest can be found in the region (Figure 3).

Altogether 198 different sites have been listed here as archaeological monuments. Most of these sites (Table 1) include archaeological settlement sites from the Stone Age to the Modern Era[1] (119), stone graves (62), hillforts (11), but also medieval rural cemeteries (75) and natural sacred places (38). In addition to settlement related archaeological sites, there is archival data about at least 28[2] metal hoards containing weapons, ornaments, and coins. Also 89 single stray finds could be located in the region. Vooremaa region is rich in local folklore, and at least 157 different archaeological locations could be pinpointed as focal places for creation of folk stories.

[1] Chronology of prehistoric periods in Estonia is presente in chapter 1.6.
[2] In recent years this number has dramatically grown due to intensive metal detecting, and not all the latest findings could be incorporated in the study.

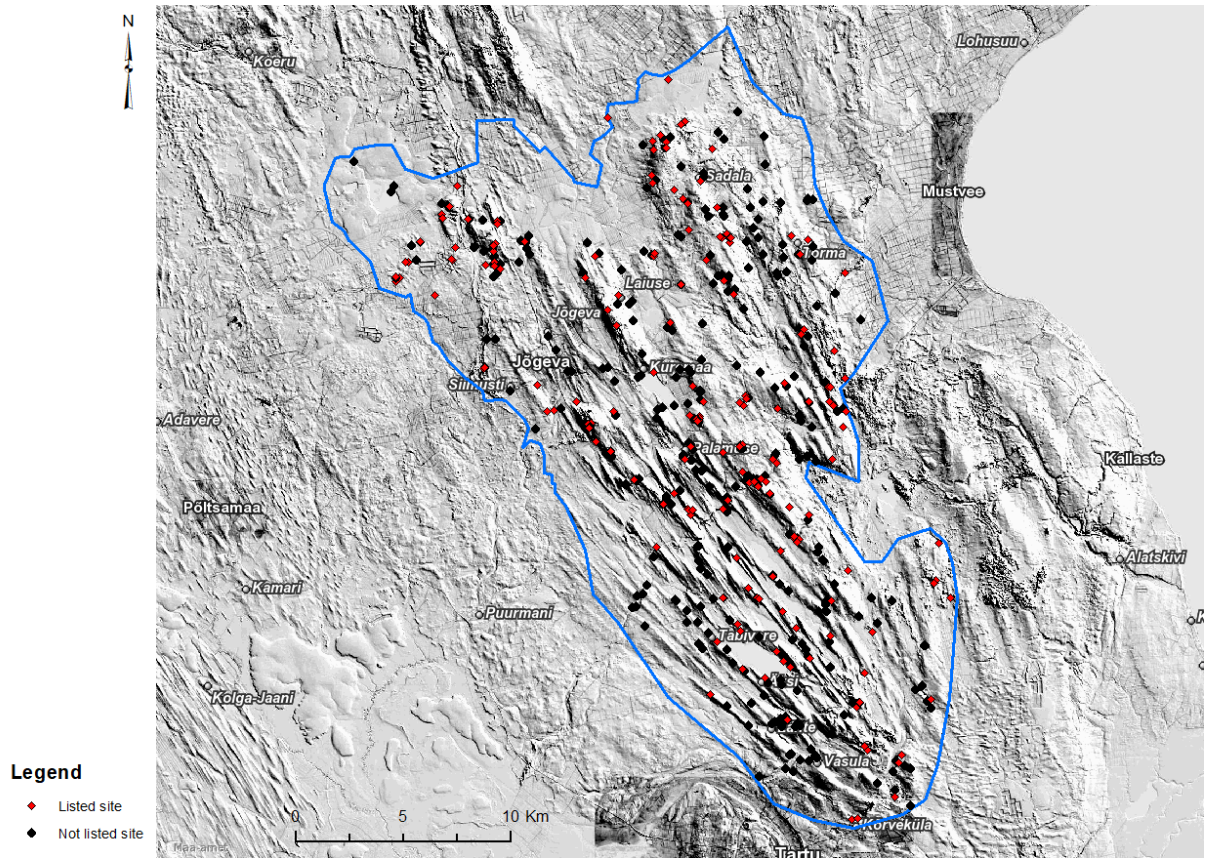

Figure 3. Distribution of archaeological sites in Vooremaa on the elevation map. Base map: Estonian Land Board.

Vooremaa is an interesting and excellent study area from the perspective of heritage management, for the most distinctive part of the landscape region (10%, 98 km^2) is a landscape conservation area, but not a heritage protection area. For example, working as a heritage official I have encountered more than several times that prospective surveys concerning nature protection (e. g. looking for endangered or rare species) in the context of large-scale landscape developments are considered much more important than prospective archaeological field work, which is often neglected. Estonian legislation does not obligate to carry out archaeological prospection before large-scale construction works if the works do not directly interfere with previously known archaeological sites or their official buffer zones

Type	No	Listed
Settlement sites	119	81
Hill forts	11	11
Stone graves	62	46
Rural cemeteries	75	19
Natural Sacred places	38	19
Cup-marked stones	15	15
Iron Smelting places	5	5
Refuge sites	9	2
Oral places with no archaeology	37	0
Hoards	28	0
Stray finds	89	0
Ceramic find places	12	0
	500	**198**
Places with oral folklore	**157**	

Table 1. Types of archaeological sites in Vooremaa.

(generally 50 m). Still, if something of cultural value is encountered, archaeological excavations must be carried out and financed by the contractor. Thus, for the contractor it is often sensible to pay for prospection prior to the building works to save money and time. In recent years, the situation has improved, and preliminary prospection has become more common than it was ten years ago, especially in cases of large-scale road constructions and sub-urban developments.

1.5 Sources and data

The source base for the thesis compiles of different archaeological, cartographical, environmental, and folkloristic data:

1. **Archaeological data** includes differentiated information (excavation and fieldwork reports, historical records, heritage listings etc.) gathered about archaeological sites in the area. This information is generally kept in the archives and databases of the University of Tartu and the Estonian National Heritage Board. A large part of the data is electronically accessible through the databases collected and organised by the archaeology department of the University of Tartu and the Estonian National Heritage Board. For the current study this digital database of archaeology and local lore was most excessively applied. The registry of cultural monuments (register.muinas.ee) administrated by the Estonian National Heritage Board was also a very useful tool.
2. **Cartographical sources** consist of historical maps, which are archived in the Historical Archives of Estonia. Most of the historical maps can be electronically downloaded from the archive's historical maps registry (www.ra.ee/kaardid). All the contemporary maps are accessible through the X-GIS web-based portal provided by the Estonian Land Board (www.maaamet.ee). The Estonian Land Board also offers WMS-service, which can very effectively be integrated into GIS software for more detailed analyses.
3. **Environmental data** includes various pollen, ^{14}C, and soil data. During the study no new samples were gathered, only published data was used. While the Vooremaa region is geologically very interesting, it has been studied and published quite thoroughly. The soil map and the elevation data (DEM) applied in the research was also provided by the Estonian Land Board.
4. **Folkloristic sources** are stored in the folklore archives of the Estonian Literary Museum. A large amount of archaeology-related local folklore is already integrated with the above-mentioned archaeology database developed by the archaeology department of the University of Tartu.

1.6 Timeframe of the study

The timeframe of the study encompasses the long period from the Stone Age until the 20th century, but with the special emphasis on the developments until the 17th century as it is this period that specifically requires the combined application of archaeological and historical-geographical data and insights.

Estonia has always remained in the periphery of larger cultural centres. Therefore, compared to Western and Central Europe, archaeological chronology in Estonia is somewhat different.

For example, Estonia has never been part of the Roman Empire, but (in)direct influences can still be encountered in the material culture (e.g. locally produced Roman style brooches). The Estonian prehistory (archaeological periods) defined by material culture according to the archaeologists Valter Lang, Aivar Kriiska, and Andres Tvauri (Lang et al. 2001; Lang 2007a; Tvauri 2012b) are as follows:

1. Stone Age (9000 – 1800 BC)
   1.1 Mesolithic (9000 – 4900 BC)[3]
   1.2 Neolithic (4900 – 1800 BC)
2. Bronze Age (1800 – 500 BC)
   2.1 Early Bronze Age (1800 – 1100 BC)
   2.2 Late Bronze Age (1100 – 500 BC)
3. Iron Age (500 BC – 1225 AD)
   3.1 Earlier Iron Age (500 BC – 450 AD)
   3.1.1 Pre-Roman Iron Age (500 BC – 50 AD)
   3.1.2 Roman Iron Age (50 – 450 AD)
   3.2 Middle Iron Age (450 AD – 800 AD)
      3.2.1 Migration Period (450 – 600 AD)
      3.2.2 Pre-Viking Age (600 – 800 AD)
   3.3 Later Iron Age (1050 – 1225 AD)
      3.2.3 Viking Age (800 – 1050 AD)
      3.2.4 Final Iron Age (1050 – 1225 AD)

In his study on the impact of the climate catastrophe of 536 – 537 AD, Andres Tvauri proposes moving the start of the Pre-Viking Age instead of 600 to 550 AD (Tvauri 2014).

In a long-term landscape study based on pollen data and material culture, the changes cannot be pinpointed in such precision, and processes must be monitored over longer periods of time. For this reason, I have analysed together several transitional periods, which share quite similar conditions. In this sense, Early Bronze Age has more common traits with the Neolithic than the Bronze Age, and Pre-Roman Iron Age is more similar to the Bronze Age than to the Iron Age. As the proper Iron Age in Estonia starts with local iron smelting, which is introduced some time around the 1st century AD (Peets 2003), the chronology of the Iron Age in fact starts with the Roman Iron Age.

[3] The end of Mesolithic and start of Neolithic is currently under debate.

The historical periods under consideration include:

1. Middle Ages (1225 – 1550)
2. Early Modern Period (1550 – 1800)
3. Modern Period (1800 – 1918)
4. 20th century

1.7 Research questions

The landscape biography project for Vooremaa focuses on four main research questions:

1. What is "landscape" and what are the main concepts involved in landscape biography?

   Even tough, each landscape can be treated as unique and each landscape biography different, landscapes share common characteristics. Hand in hand with the development of the theoretical discussion about the concept of landscape, the empirical understanding of our living environment has evolved as well. To understand the ideas behind landscape biography as a new approach, it is essential to critically evaluate the theoretical frameworks of current interdisciplinary landscape research.

2. How to construct a landscape biography for Vooremaa?
   Constructing a landscape biography is a question of combining new theories and methods for the analysis and interpretation of landscape data. In this study, the theory of landscape biography will be combined with the concept of historical GIS.

3. What constitutes a landscape biography for Vooremaa? What are its key elements?

   For the protection of landscapes of archaeological significance, it is essential to determine and understand the landscape elements that are of archaeological value. However, landscape biography explicitly aims at putting archaeological values in context, which means relating them to other (historical, ecological, cultural, geomorphological) landscape characteristics. In this context, it must be kept in mind that archaeologists do not simply study (pre)historic landscapes but landscapes of today, which convey traces of sites and monuments from different previous periods. Actually, it is impossible to read the landscape in terms of different separate layers, but rather it should be approached as a mixture or collage of layers, in which some elements are still in use, others have been left aside or have changed or lost their function or meaning completely. From this point of view, to understand the value of

different elements of a specific landscape region, every object of interest must be thoroughly studied, considering various archaeological, cartographic, environmental, but also folkloristic data.

4. What is the practical output and value of the landscape biography of Vooremaa and how to integrate it with heritage management goals?

   The practical output of landscape biographies has always been a sore spot. Narratives about landscape change are nice to read, but how to apply these narratives in practical heritage management? Why and how are different landscape characteristics valued by heritage officials? In nature conservation we have fairly elaborated value scales, but archaeological heritage is predominantly valued impressionistically, without using specifically measured categories or numerical values. This research aims to test a system of assessment for landscapes and their archaeological dimension, which is based on an understanding of historic landscape change and on the relative value of archaeological sites.

1.8 Structure of the thesis

Including introduction and summary, the thesis is divided between 12 chapters:

- Chapter 2 presents an overview of the study region, with specific emphasis on the drumlins.
- Chapter 3 provides a brief historic overview of landscape studies in Estonia, focusing on geography, archaeology, and place related folklore. The overview is not comprehensive, but the main points relevant to the thesis are covered. This chapter also provides a brief history of archaeological research in the study area.
- Chapter 4 is dedicated to the evolution of the theoretical framework of landscape biography and the key concepts essential for applying the biographical approach to the practicalities of landscape and heritage management. This part of the thesis also discusses principal concepts like *land, landscape, biography, palimpsest, heritage, identity, values,* and *stakeholders*.
- Chapter 5 introduces methods and data sources for the current study, focusing on historical GIS. Besides historical GIS, the chapter also introduces a method for analysing historic landscape change based on cartographic data.

- Chapter 6 focuses on the long-term history of settlement and land use in the Vooremaa study region. This history is a narrative of human-environment relationships combined with an analysis of land use change.
- Chapters 7 and 8 present biographical case studies on burial sites, places of collective memory, and hillforts of Vooremaa.
- Chapter 9 is an example of combining historical GIS, archaeological data, and a 13th century chronicle in a study of roads, movement and communication in a comparative region of South Estonia (Veldi 2014). The previously published article does not concentrate specifically on the Vooremaa region, but presents an addition demonstrating a GIS based study on Early Medieval communication in a neighbouring South Estonian region.
- Chapter 10 is an example of a comparative approach of Vooremaa in Estonia and Drenthe in the Netherlands as elaborated in a joint research article by Veldi, Kolen, Karro & Palang (in press). The article demonstrates the potential of comparative landscape biography applied in completely two different regions of Europe, and therefore is relevant addition to the current study.
- Chapter 11 presents a new perspective on heritage and landscape management, based on Vooremaa's landscape biography. Also, in this chapter, an assessment system for (historic) landscape change will be linked to the value assessment of archaeological sites in micro regions.
- Chapter 12 summarizes the main conclusions of the study.