Rethinking secondary state formation in medieval Iceland: trade and social connectivity in the Norse economic territory

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Rethinking Secondary State Formation in Medieval Iceland: 
Trade and Social Connectivity in the Norse Economic Territory

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor 
of Philosophy

in

Anthropology

by

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# TABLE OF CONTENTS

Signature Page ................................................................................................................... iii  
Table of Contents ............................................................................................................... iv  
List of Figures .................................................................................................................... viii  
List of Tables ..................................................................................................................... x  
Acknowledgments ............................................................................................................. xii  
Vita ..................................................................................................................................... xvi  
Abstract of the Dissertation ............................................................................................. xxi  
Chapter 1 Examining the Process of Secondary State Development in Iceland ............ 1  
1.1 Defining a Secondary State ..................................................................................... 1  
1.2 Only By Looking Far Will Things Become Clear: Situating the Icelandic Case  
within a Broader Viking Age Perspective ................................................................. 12  
1.3 The Norse in Iceland ............................................................................................. 19  
  1.3.1 From Turf Houses to Texts: Sources of Evidence ........................................... 20  
  1.3.2 The Landnám Age: 870-1050 CE ................................................................. 24  
  1.3.3 The Sturlunga Age: ca. 1050-1264 CE ....................................................... 31  
Chapter 2 Environmental Constraints and the Development of an Autonomous Secondary  
State ................................................................................................................................... 39  
2.1 Insular Communities and Island Environments: Autonomous Secondary State  
Formation ....................................................................................................................... 42  
  2.1.1 Chiefdoms On the Road to States: Competition, Environment, and  
  Political Economy ................................................................................................. 44  
  2.1.2 Polynesia and Iceland ............................................................................... 51  
2.2 The Physical Landscape ....................................................................................... 53  
2.3 Land Degradation and the Norse Colonization of Iceland ....................................... 55  
  2.3.1 Decrease in Temperature ............................................................................ 60  
  2.3.2 Pre-Landnám Erosional Patterns ................................................................. 65  
  2.3.3 Exceeding Carrying Capacity ..................................................................... 66  
  2.3.4 Landnám Soil Erosion .................................................................................. 67  
2.4 Land Productivity in Skagafjörður ........................................................................ 70  
  2.4.1 Measuring Soil Deposition through Tephrochronology ............................ 72  
  2.4.2 Soil Deposition in Skagafjörður ................................................................. 73  
  2.4.3 Soil Organic Content in Skagafjörður ......................................................... 75  
2.5 Discussion .............................................................................................................. 79  
2.6 Conclusions on Iceland as an Autonomous Secondary State .............................. 81  
Chapter 3 The Norwegian World System: Hegemonic Colonial Secondary State  
Formation ...................................................................................................................... 97
3.1 Out on the Frontier: Models of Secondary State Formation in Colonial Settings
................................................................................................................................. 101
3.2 The Icelandic Sagas, Sources of Evidence, Sources of Contention............. 107
3.3 Is the Spade Mightier than the Pen? ................................................................. 115
3.4 The Ability of Text to Reflect Reality ............................................................... 118
3.5 The Power of the Oral Tradition ...................................................................... 123
3.6 The Social Reality of Medieval Iceland Represented in Text and Archaeological
Remains ................................................................................................................... 127
  3.6.1 Passions of the Free State: Marriage, Love, and Economics in
  Medieval Iceland................................................................................................. 128
  3.6.2 Marriage and Women in the Early Social Order of Iceland, ca.
  872-1050 CE .................................................................................................... 129
  3.6.3 Marriage and Women in the Sturlunga Period, ca. 1050-1270 CE
  .......................................................................................................................... 137
  3.6.4 Legitimacy and Inheritance in the Sturlunga Period......................... 141
3.7 Conclusions on Iceland as a Hegemonic Colonial Secondary State........... 144
Chapter 4 Examining the Economic Nature of Early Icelandic Society: A Proposed
Methodology for Multiregional Settlement Pattern Analysis .................................. 147
  4.1 Settlement Pattern Research in Iceland and Regional Network Analysis ...... 151
  4.2 Environmental Setting of Skagafjórður ..................................................... 157
  4.3 Research Methodology ................................................................................. 159
    4.3.1 Compiling the Multiregional Site Registry ........................................ 159
    4.3.2 Site Types .............................................................................................. 161
    4.3.3 Site Location ......................................................................................... 165
    4.3.4 Time Periods and Dating .................................................................... 165
    4.3.5 Tax Value and Farmstead Size ............................................................. 167
  4.4 Intensive Survey of Hjaltadalur and Viðvikursveit ................................. 171
    4.4.1 Sampling Strategy ................................................................................ 174
  4.5 Conclusion ................................................................................................... 177
Chapter 5 The Archaeological Survey of Hjaltadalur and Viðvikursveit ............. 185
  5.1 Environmental Setting of the Research Area: Hjaltadalur and Viðvikursveit .. 187
  5.2 Research Design of the Hjaltadalur and Viðvikursveit Survey ................. 188
  5.3 The Ás Territory .......................................................................................... 193
    5.3.1 Efri-Ás .................................................................................................. 195
    5.3.2 The Organization of the Ás Territory .................................................. 198
  5.4 The Hof Territory ......................................................................................... 200
    5.4.1 Hof ....................................................................................................... 202
    5.4.3 Nautabú ............................................................................................... 208
    5.4.4 Kálfsstaðir ......................................................................................... 212
5.4.5 Hvammur ................................................................. 217
5.4.6 Geitagerði .................................................................. 222
5.4.7 Kollugerði ................................................................. 226
5.4.8 The Organization of the Hof Territory ..................... 229

5.5 The Viðvík Territory ........................................................ 232
5.5.1 Hólakot ..................................................................... 235
5.5.2 Fornistekkur ............................................................ 245
5.5.3 Langhúus ................................................................. 250
5.5.4 Miklihóll ................................................................. 257
5.5.5 Bakki ........................................................................ 261
5.5.6 Hofstaðir ................................................................. 263
5.5.7 The Organization of the Viðvík Territory ................. 269

5.7 General Settlement Trends for Hjaltadalur and Viðvíkursveit ........................................ 272

Chapter 6 From Independent Traders to Dependent Tenants: Reflections of an Economic Landscape in Skagafjörður ................................................................. 342

6.1 Models for Understanding the Medieval Economy in Iceland ........................................ 344
6.1.1 Autarkic Model: Autonomous Secondary State ................................................................. 345
6.1.2 Imperial Economy Model: Hegemonic Colonial Secondary State ........................................ 347
6.1.3 Norse Economic Territory Model: Synergistic Secondary State................................. 350

6.2 Results of the Skagafjörður Landscape Project ................................................................. 352
6.2.1 Farmstead Sites ........................................................... 354
6.2.2 Non-Residential Sites .................................................. 360

6.3 Organizing the Landscape: Evaluation of the Three Proposed Economic Models ....... 365

6.4 Phase I: A Viking Age Economy, 870-1000/50 CE ......................................................... 367
6.4.1 Textual and Archaeological Evidence for Trading Activities in Iceland ......................... 368
6.4.2 Regional Analysis of Skagafjörður ................................................................. 373

6.5 Phase II: A Medieval Economy, 1050/1100-1300 CE ....................................................... 379
6.5.1 Textual Support for the Importance of Trade ................................................................. 380
6.5.2 Zooarchaeological Evidence and Economic Production ................................................ 388
6.5.3 Church Organization as a Tool for Restructuring the Economy .................................... 393
6.5.4 Settlement Patterns: Staðir, Small Farms, and a New Economy in Skagafjörður .......... 397
6.5.5 Path Towards State-Level Organization in Skagafjörður ........... 406
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6 Phases III and IV: A Secondary State Operating under an Ecclesiastical Economy</td>
<td>407</td>
</tr>
<tr>
<td>6.7 Conclusion</td>
<td>413</td>
</tr>
<tr>
<td>Chapter 7 The Formation of a Synergistic Secondary State in The Norse Economic Territory</td>
<td>437</td>
</tr>
<tr>
<td>7.1 Synergistic Secondary State Formation</td>
<td>439</td>
</tr>
<tr>
<td>7.2 Archaeological Correlates and Application of the Synergistic Secondary State Model</td>
<td>447</td>
</tr>
<tr>
<td>7.3 The Social Structure of Scandinavia</td>
<td>452</td>
</tr>
<tr>
<td>7.4 Social Structure and Ecology of Pre-State Iceland</td>
<td>458</td>
</tr>
<tr>
<td>7.5 Social Structure and Ecology of Sturlunga Age Iceland and the Emergence of a State Society</td>
<td>462</td>
</tr>
<tr>
<td>7.6 Rethinking State Formation in Iceland</td>
<td>467</td>
</tr>
<tr>
<td>Bibliography</td>
<td>476</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1.1: Map of the North Atlantic and Iceland........................................................... 36
Figure 1.2: Map of the Norse Economic Territory (NET)................................................ 37
Figure 2.1: Map Showing the Extent of Soil Erosion in Modern Iceland (after Arnalds 2004) ................................................................................................................................. 86
Figure 2.2: Iceland’s Volcanic Rift System (after Guðmundsson 2007: 84)....................... 87
Figure 2.3: Map Showing the Soil Type Complexes found in Modern Iceland (after Arnalds 2004) ............................................................................................................................................. 88
Figure 2.4: Map Showing the Research Areas .................................................................. 89
Figure 2.5: Overall (a) Deposition and (b) Deposition Rates by Farm Across Time ...... 90
Figure 2.6: Average Silt Percentage by Farm Across Time .............................................. 91
Figure 2.7: The Relative Position of the Five Farms with Respect to the Average Depth of Hekla 2900 and the Tax Value from the Jarðabók ......................................................................................................................... 92
Figure 4.1: Graph of Nodes and Hubs Comparing the Structural Difference of a Clustered System and a Scale-Free System ......................................................................................................................... 179
Figure 4.2: Map of the Research Area Showing the Geographic Extent (in yellow) of Skagafjörður ............................................................................................................................................. 180
Figure 4.3: Turf ............................................................................................................... 181
Figure 4.4: Profile of a Core ........................................................................................... 182
Figure 5.1: Map of Hjaltadalur and Viðvíkursveit and the Sites Archaeologically Surveyed ............................................................................................................................................. 275
Figure 5.2: Map Showing the Initial Land Claims of Hjaltadalur and Viðvíkursveit Documented in Landnámabók ............................................................................................................................................. 276
Figure 5.3: Profile of Efri-Ás Core 12 ............................................................................. 277
Figure 5.4: Profile of Efri-Ás Core 27 ............................................................................. 278
Figure 5.5: Profile Drawing Hof Test Trench .................................................................... 279
Figure 5.6: Profile of Nautabú Core 1 ............................................................................ 280
Figure 5.7: Profile of Kálfsstaðir Core 17 ....................................................................... 281
Figure 5.8: Profile of Kálfsstaðir Core 18 ....................................................................... 282
Figure 5.9: Profile of Kálfsstaðir Core 20 ....................................................................... 283
Figure 5.10: Profile of Kálfsstaðir Core 27 .................................................................... 284
Figure 5.11: Profile of Kálfsstaðir Core 39 .................................................................... 285
Figure 5.12: Profile of Hvammur Core 6 ....................................................................... 286
Figure 5.13: Profile of Hvammur Core 3 ....................................................................... 287
Figure 5.14: Profile of Hvammur Core 29 ..................................................................... 288
Figure 5.15: Profile of Geitagerði Core 13 ...................................................................... 289
Figure 5.16: Profile of Geitagerði Core 23 ...................................................................... 290
Figure 5.17: Profile of Geitagerði Core 6 ....................................................................... 291
Figure 5.18: Map Showing the Distribution of Sites During the Settlement Period (870-1000 CE) ............................................................................................................................................. 292
Figure 5.19: Map Showing the Distribution of Sites During the Early Medieval Period (1000-1104 CE) ................................................................................................................................. 293
Figure 5.20: Map Showing the Distribution of Sites During the Sturlunga Period (1104-1300 CE) ................................................................. 294
Figure 5.21: Map Showing the Distribution of Sites During the Late Medieval Period (1300-1600 CE) ................................................................. 295
Figure 5.22: Map of Hölakot Showing Surface Feature and Coring Survey .......... 296
Figure 5.23: Profile of Hölakot Core 17 ............................................................. 297
Figure 5.24: Profile of Hölakot Core 13 ............................................................. 298
Figure 5.25: Profile of Hölakot Core 14 ............................................................. 299
Figure 5.26: Profile of Hölakot Core 1 ............................................................... 300
Figure 5.27: Profile of Hölakot Core 18 ............................................................. 301
Figure 5.28: Profile of Hölakot Core 32 ............................................................. 302
Figure 5.29: Profile of Hölakot Core 35 ............................................................. 303
Figure 5.30: Profile of Fornistekkur Core 31 .................................................... 304
Figure 5.31: Profile of Langhús Core 18 ............................................................ 305
Figure 5.32: Profile of Langhús Core 22 ............................................................ 306
Figure 5.33: Profile of Langhús Core 24 ............................................................ 307
Figure 5.34: Profile of Miklihóll Core 4 ............................................................. 308
Figure 5.35: Profile of Miklihóll Core 5 ............................................................. 309
Figure 5.36: Profile of Miklihóll Core 18 ........................................................... 310
Figure 5.37: Profile of Miklihóll Core 20 ........................................................... 311
Figure 5.38: Profile of Miklihóll Core 21 ........................................................... 312
Figure 5.39: Profile of Bakki Core 5 ................................................................. 313
Figure 5.40: Profile of Bakki Core 6 ................................................................. 314
Figure 5.41: Profile of Hofstaðir Core 17 .......................................................... 315
Figure 6.1: Map of Skagafjörður by Elevation .................................................. 418
Figure 6.2: Sites (n= 61) in the Settlement Period (870-1000 CE) ....................... 419
Figure 6.3: Sites (n= 95) in the Early Medieval Period (1000-1104 CE) .............. 420
Figure 6.4: Church Sites during the Sturlunga Period (1104-1300 CE) ............... 421
Figure 6.5: Sites (n= 140) in the Sturlunga Period (1104-1300 CE) .................... 422
Figure 6.6: Farms owned by the Hölar Bishopric as Recorded in Church and Census Records ................................................................. 423
Figure 6.7: Sites (n= 415) in the Late Medieval Period (1300-1600 CE) .......... 424
Figure 6.8: Sites (n= 539) in the Early Historic Period (1600-1800 CE) .......... 425
Figure 6.9: Sites (n= 428) in the Historic Period (1800-1900 CE) .................... 426
Figure 7.1: Rank Size Plot for Farmstead Sites for the Settlement Period ........ 470
Figure 7.2: Rank Size Plot for Farmstead Sites for the Early Medieval Period .... 471
Figure 7.3: Rank Size Plot for Farmstead Sites for the Sturlunga Period .......... 472
Figure 7.4: Rank Size Plot for Farmstead Sites for the Late Medieval Period .... 473
Figure 7.5: Rank Size Plot for Farmstead Sites for the Early Historic Period .... 474
Figure 7.6: Rank Size Plot for Farmstead Sites for the Historic Period ............ 475
# LIST OF TABLES

Table 1.1: Timeline of Icelandic History

Table 2.1: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Prehistoric Period

Table 2.2: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Settlement Period

Table 2.3: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Historic Period

Table 2.4: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Modern Period

Table 4.1: Geo-Cultural Regions by Environmental Type Considered in the Skagafjörður Landscape Project

Table 4.2: Tephra Sequence in Skagafjörður

Table 5.1: Farmstead Sites Archaeologically Surveyed in the Skagafjörður Landscape Project

Table 5.2: Non-farmstead Sites Archaeologically Surveyed in the Skagafjörður Landscape Project

Table 5.3: Coring Data from Efri-Ás

Table 5.4: Coring Data from Hof

Table 5.5: Coring Data from Nautabú

Table 5.6: Coring Data from Kálfastraðir

Table 5.7: Coring Data from Hvammur

Table 5.8: Coring Data from Geitargíði

Table 5.9: Coring Data from Kollugéir

Table 5.10: Farmstead Sites in Hjaltadalur over Time

Table 5.11: Activity Area Sites in Hjaltadalur over Time

Table 5.12: Coring Data from Hólakot

Table 5.13: Coring Data from Fornistekkur

Table 5.14: Coring Data from Langhús

Table 5.15: Coring Data from Miklihóll

Table 5.16: Coring Data from Bakki

Table 5.17: Coring Data from Hofstaðir

Table 5.18: Farmstead Sites in Viðvíkursveit over Time

Table 5.19: Activity Area Sites in Viðvíkursveit over Time

Table 5.20: Sites in Hjaltadalur and Viðvíkursveit by Elevation over Time (n= 79)

Table 5.21: Sites by Region and Time Period Identified in the 2008 Archaeological Coring Survey

Table 6.1: The Number of Sites by Elevation within the Geographic Areas of Skagafjörður
Table 6.2: All Site Types by Location and Time Period Considered in the SLP (n= 610) .................................................................................................................................. 428
Table 6.3: Farmstead Site Types by Location Considered in the SLP (n= 492) ........... 429
Table 6.4: Type 5 Sel Sites by Elevation over Time (n= 46) ............................................... 430
Table 6.5: Type 6 Activity Area Sites by Elevation over Time (n= 61)............................. 431
Table 6.6: Type 7 (Trading Sites), 8 (Pagan Graves), and Type 9 (Assembly Sites) by
Elevation over Time (n= 11) .............................................................................................. 432
Table 6.7: Phase I Farmstead Sites (n= 71) ........................................................................ 433
Table 6.8: Phase II Farmstead Sites (n= 115) ...................................................................... 434
Table 6.9: Phase III Farmstead Sites (n= 353) ................................................................. 435
Table 6.10: Phase IV Farmstead Sites (n=320) ................................................................. 436
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ABSTRACT OF THE DISSERTATION

Rethinking Secondary State Formation in Medieval Iceland: Trade and Social Connectivity in the Norse Economic Territory

Doctor of Philosophy in Anthropology

by

Tara D. Carter

University of California, San Diego 2010

Professor Paul S. Goldstein, Chair

Viking Age Europe was a well-connected world. Wherever we look in the archaeological record from this period we find evidence of communication and exchange across vast distances, connecting Europe with North Africa, the Middle East, and beyond. Taking this evidence into consideration, I ask if the same sort of connectedness applied to medieval Iceland and, if so, what role might it have played in its development of
secondary state institutions. Previous models have vacillated between those that emphasize indigenous, autonomous state development and those that emphasize the purely secondary, derivative nature of the Icelandic state and its relationship to existing complex societies. I argue that these perceptions are the result of methodological and analytical limitations to research on the process of secondary state formation in general, and in particular to the history of research on the development of political and economic complexity in the North Atlantic.

My primary goal in this dissertation is to reconsider the concept of secondary state formation in light of the new evidence from my archaeological study on the economic organization of Skagafjörður, northern Iceland. For my research I have designed the Skagafjörður Landscape Project (SLP), a regional archaeological survey that covers an area a little more 5,500 km² and spans nearly a thousand years. The data from the SLP suggests that it is misleading to examine the process of state formation at the hands of either local or external factors, but should instead be viewed along several different structural, spatial, and temporal scales of analysis. This kind social dynamism is what I term here a “synergistic secondary state,” where state level institutions are the result of cultural practices that are situated at the intersection of independent but highly connected endogenous and exogenous processes. Unlike existing approaches to the study of secondary state formation, the synergistic secondary state model makes use of a social network methodology, capable of examining the relationship between variables rather than generating a series of trait lists. While this model has been developed to understand social developments in medieval Iceland, this approach has applications that can be used for investigations of other known case studies of state formation.

xxii
Chapter 1

Examining the Process of Secondary State Development in Iceland

1.1 Defining a Secondary State

Economic complexity was once considered alien to early medieval European communities. These so-called “dark age” societies were thought to have existed as insular, rural populations that had divorced themselves entirely from any of the commercial enterprises that the Roman Empire had once implemented (Grierson 1959). More recent historical and archaeological studies have begun to illuminate the fallacy of this opinion, highlighting vigorous interaction between populations through both trading activities as well as political alliances (Hodges 1982, 2000; Metcalf 1984). These activities ignited the Viking Age (790-1050 CE), a period characterized by long-distance travel, economic exchange, and political expansion. It was within this climate of social connectivity that new second generation state-level societies such as Iceland, the focus of this dissertation, emerged. The process behind this development, however, has long remained an elusive study. This research quandary is best characterized by the observation that while state-level complexity shares many characteristics found in societies structured around other types of social organization, at some point, for unknown reasons, a transition occurs from the ephemeral sort of access to wealth and power that characterize small-scale societies to the development of an institutionalized elite faction
that surpasses kin relationships and is sustained by an administrative and bureaucratic apparatus that manages the economy, plans the cities, marshals the armies, and promotes a shared sense of cosmology.¹ Researchers can easily recognize state-level organization once it is fully formed, but under what kinds of conditions these developments are likely to occur has remained an ongoing and open debate within the fields of Anthropology, History, Economics and Political Science.

Anthropological discussions on these issues have found it useful to frame debates of this sort in terms of what Morton Fried called primary and secondary state formation (Fried 1967; Price 1978). Primary state formation is a rare cultural phenomenon where first generation state-level organization is the result of an entirely endogenous, cultural evolutionary development (Cohen and Service 1978). Secondary state formation, on the other hand, is a far more widespread cultural occurrence that “can be attributed to pressure from an already existing state and often [will make use of] parts or all the organization of some prior state as the model for emulation or improvement” (Fried 1967: 37). Despite their widespread occurrence, the study of secondary states has long remained on the sidelines to archaeological research on primary states. In fact, very little research has been carried out to evaluate Fried’s assertion for what processes underwrite the development of secondary states. According to Fried’s model, all secondary state formation is the byproduct of external stimuli rather than by indigenous forces (Fried 1976: 179; Rhee 1992: 191). The secondary nature of these complex polities, argued

¹ V. Gordon Childe suggested that a society can be classified as a State if the following traits are present: urbanism; full-time labor specialization; the organization of communities based on territorial residence rather than kin connections; class stratification; the ability to amass a surplus of subsistence and luxury goods; monumental architecture; long-distance trade/exchange networks; standardized systems of writing; arithmetic, geometry, astronomy; and representational/standardized artwork (Childe 1936, 1942).
Fried, explains their development and therefore needs no further investigation. Barbara Price later (1978) revised Fried’s model with an additional category of secondary states that develop as a result of historical succession from an already existing mature state, but complexity in these budding state polities is still ultimately seen as the product of the expansionary activities of an established state whose offshoot polities simply emulate the social organization of the parent society. This focus on the entirely derivative aspect of secondary states has resulted in very few examinations on the structural organization of second generation states, suggesting that most researchers have been content to conceded to Fried’s conclusion that secondary states develop only out of situations where existing states pressure or push societies to the brink of social change (Parkinson and Galaty 2007). Additionally, the current models available for examining secondary state development are hampered by the tacit implication that smaller-scale societies are passive recipients of social complexity and that their history and prior cultural achievements are muted by the voluble influences of their stately, more complex neighbors. These two assumptions have rarely been challenged or adequately supported through historical or archaeological evidence, and should, therefore, be critically reexamined. The few investigations that have evaded seeing state formation in a secondary situation as the product of pressure or force from an existing state, have instead considered the development of second or third generation states as an echo of the same types of localized processes recorded for primary state formation. However, secondary states are not primary states; we must acknowledge that second or third generation states have consistently been documented as decisively different in their early governmental structure from those witnessed in primary states likely because the developmental history of a
secondary state is inherently different from their primary state cousins simply because they do in fact exist in a world of already established mature state societies that they can consult as models. To ignore this fact is an equally erroneous approach. This divide in research approaches has resulted in a stalemate over what a secondary state polity should look like. Do secondary states need to possess all of the classic traits found in a primary state in order to be granted the designation of a having a state-level organization or should we anticipate stark differences between the two? An even thornier question is whether all secondary states should look the same. Even just a cursory review of past and present states makes it clear that there are potentially many different types of secondary states and that the path to state-level institutions varies tremendously between case studies (Rhee 1992: 191). Does this observation leave us at an impasse?

One area of the world that may help us to resolve this deadlock is medieval Scandinavia. Medieval Europe was home to wide range contemporary secondary states, from the Frankish Kingdoms to the Viking Age polities of Scandinavia, making this area an ideal place to study the dynamics and variability of secondary state development. The processes behind the development of social complexity that characterized the Viking Age has received very little attention, a bias that reflects this prejudice in the study of secondary states in general, and a specific tendency to view medieval European communities through a decisively localized lens. The inclination to examine only local-level dynamics is the acknowledgement of clear evidence of internal social developments within Europe but is also symptomatic of the inadequacy of the models used to reconstruct the medieval social landscape. For example, archaeologists have avoided the pitfalls of the derivative bias of secondary state models by looking to the potential social
consequences of population growth or environmental change as prime movers in the development of state-level institutions rather than viewing the role of large-scale, pan-regional systems of economic interaction as a possible influence on state formation. These studies treat emergent complexity in Europe as a primary development, but it is impossible to ignore the now overwhelming evidence that these societies operated within the scope of a larger world system that included interaction with already existing mature states (Forte et al. 2005; Metcalf 1984; Pirenne 1954). Since both endogenous and exogenous variables help shape the social organization of any society, what is needed is a model that can examine the dynamics of both local and global factors, viewing each of these components as part of a larger system, with all variables operating in tandem rather than in isolation.

This dissertation begins and ends by addressing this crucial question of how best to study secondary state development as the interplay between both indigenous and external events. My research examines secondary state formation in medieval Iceland, arguing that this development must be seen as a relationship between both local environmental and social stimuli as well as the product of pan-regional economic and political interaction. How and why state-level institutions developed in Iceland is not only an excellent case study of secondary state formation but likewise highlights the divide in research approaches between models framed around local variables and those structured around external variables. Iceland, however, is clearly a second generation state as the small North Atlantic island was settled by Norse colonists at the height of Viking Age expansion in the late ninth century CE and was initially organized around a political system of chieftains (Durrenberger 1988, 1992: 41-50). By the start of the
twelfth century CE, however, this system was weakened by extreme competition between rivalrying elite factions that sparked civil warfare and the consolidation of political power that ultimately paved the way for the rise of the Icelandic state (Sigurðsson 1989: 45-70, 1995). State formation, however, was hardly an event but was the outcome of the enduring constraints of multiple social and environmental processes. In fact, by the time this social conflict had reached its boiling point a number of incipient state-level institutions were already in place, including: the formalization of a codified legal system; the formation of tax collection procedures backed by the development of a standardized system of writing; the formation of private property; the formation of a single monotheistic ideology; the formation of geopolitical systems of consolidated power that supplanted the limited authority of the office of chieftaincy; and the formation of strict economic control over both local and international trade (see timeline in Table 1.1). Scholars, while in agreement on the presence of these state-like traits, are divided on the cause of their development, paralleling the larger anthropological debate on the processes behind secondary state formation. Iceland’s proximity to multiple state-level societies has cast a long shadow over its history, but there is no clear consensus among archaeologists and historians on how much these monarchical neighbors influenced the accelerated pace of political and economic complexity documented for twelfth century Iceland. The fields of archaeology and history moreover are deeply divided between those scholars who see the development of state-level complexity as a result of external factors, especially foreign hegemonic control (traditional secondary state formation), and those who suggest these developments are first and foremost internally driven along evolutionary lines, with population pressure and environmental change as the primary
instigators of social transformation (primary state formation). Archaeologists have favored internal models of social evolution, illustrating how anthropomorphic degradation of the landscape coupled by an average increase in the population over time lead to a scarcity of resources, principally agricultural land, sparking the ability for elites to control and command who had access to vital subsistence goods and those who did not (see especially McGovern et al. 2007). In contrast, social and literary historians have looked beyond the horizon and have suggested that Iceland was above all else a Norse colony whose political and economic infrastructure reflect the needs and demands of their Scandinavian homeland (see in particular Hastrup 2004). State institutions developed out in the periphery, they argue, because they were necessary to facilitate the economic demands of the core and were not a result of any localized politicking. Both models have their merits, with each incorporating a large corpus of evidence; however, by privileging one set of data above all others, each model considers only half of the “North Atlantic Saga” (Jones 1986), creating a partial look at the complex suite of factors that made Iceland poised for social change.

The debate over how and why the Icelandic state developed not only reflects anthropological concerns over how states are formed but is also underwritten by a much older divide between what C.P. Snow (1959) identified as the “Two Cultures” combatants, with archaeology’s more science-based approach on the one side of the divide and history’s textual-base approach on the other. Many scholars have viewed the datasets of these two “cultures” as irreconcilable, an outlook that has resulted in unnecessary cross talk and isolated research. Armed with separate datasets, archaeological and historical research projects have come to very different conclusions.
about the nature of the social structure of medieval Iceland prompting concern over the usability of the material record on the one hand, and the documentary evidence on the other. The archaeological record in Iceland is challenged by a lack of clustered settlements, the use of ephemeral\(^2\) building material, and an overall poor artifactual\(^3\) visibility on the kinds of economic and political practices that would have been typical for the society. The documentary record is complicated by texts that began as an oral tradition, with the penning of these narratives sometimes more than two hundred years after their inception. This lag time has generated concern over the reliability of these texts, signaling a call for caution when using them as a source of historical evidence. These methodological limitations have become the battle cry against relying on archaeological and historical data alike, widening the gap in our ability to reconstruct the social organization of early Icelandic society. I will suggest here that this separation of datasets is a false division, as each source of evidence provides different views on the same social processes that were underway throughout Iceland’s medieval period. My methodological approach is therefore aimed at examining the dialectic between “the word” and the “material culture” of medieval Iceland. Framing my research within this holistic methodology reveals that the perceived dissonance between the fields of Archaeology and History on Icelandic research is in fact more indicative of the limitations of the models anthropologists use for understanding the nature of state

\(^2\) Wood suitable for building timber is almost entirely absent in Iceland and while stone is readily available in many areas, the colder climate make this material likewise unsuitable. The solution to these building predicaments was turf (sod), which was widely available, easy to work with, and provided excellent insulation. The downside, at least for archaeologists, is that since turf is organic very little of it preserves in the material record (see chapter 4 more further discussion on turf construction).

\(^3\) This low visibility is caused by preservation conditions as only few types of artifacts commonly found in all households are routinely uncovered, but is also the product of a research agenda that targets excavations within domestic structures only (see chapters 4-6 for a further discussion on this research bias).
formation, be this in a primary or a secondary context. The Icelandic state, like many other known cases of second generation complex polities, differs dramatically from the handful of documented primary states. There is no urbanism, no monumental architecture, and no single centralized seat of power such as a king. In place of these classic state characteristics is a feudal based structure, with power vested in multiple hands, an economy heavily grounded in agrarianism but rigidly controlled by a landed elite and managed through a complex tax system aided by the structural arrangements of the Catholic Church and its accompanying ideological authority. Underlying all of these interconnected debates, then, is a larger anthropological concern over what constitutes a state and under what set of circumstances are they more likely to develop? Should we expect all states, primary and secondary alike, to have a shared set of specific traits and if so, which traits must be present for us to call a society a state? Is there a way to avoid the pitfall of privileging internal or external factors by creating a more inclusive, middle ground model? In this dissertation I will propose a new research paradigm: the

**Synergistic Secondary State Model.** The Synergistic Secondary State Model follows the lines of discussion generated by landscape and social connectivity models (Castells 1996; Hornborg and Crumely 2007), which view the physical and cultural landscapes as recursive systems. This approach draws upon a social network methodology and is designed to incorporate both micro and macro-level dynamics. Rather than searching for causal variables and generating a series of trait lists, the synergistic secondary state model seeks to examine the relationship between variables arguing against the notion of prime movers for the development of state institutions.
While variables can appear static, relationships are dynamic and reflect the social conditions of a society. Relationships mediated in the past, however, are difficult to examine in the material, archaeological record. The organization of this dissertation is guided then by the challenge of how best to examine secondary state formation, as well as how to do so in within a research setting that faces serious methodological limitations that include a fragmentary archaeological record and documentary evidence that has been under severe scrutiny for its usability. Archaeology has a long history of developing methods for examining ancient behavior from equally challenging situations; in this dissertation, I will in addition to presenting a new anthropological approach for understanding secondary state formation offer a new methodological approach for understanding the processes behind these developments that addresses these evidential concerns.

The data presented here is the outcome of a historical archaeological project carried out in Skagafjörður, Northern Iceland (see Figure 1.1), that seeks to examine state formation in Iceland as the nexus of local politics and entrepreneurial interests connected to international markets in Scandinavian and beyond. To achieve this goal I have designed the Skagafjörður Landscape Project (SLP), a regional archaeological and historical survey that covers an area a little more 5,500 km² and spans nearly a thousand years. The SLP was likewise designed to demonstrate how the best approach for addressing a large but crucial question of how secondary states develop is through the creation of a research methodology than can simultaneously integrate several lines of evidence. Unlike previous approaches, my research relies on a number of separate but not mutually exclusive datasets, including archaeological material (see chapters 5 and 6),
geomorphological data (see chapter 2) and primary texts (see chapter 3). Archaeological data from the SLP study was collected to determine when domestic farmsteads were established and what range of economic activities were conducted at these sites from the late ninth century CE settlement period, to the beginnings of state formation in the late eleventh century, and finally to the political takeover by Norway and the rise of the Church as a political superpower in 1262 CE. The goal of the SLP was to document the evolution of the social and physical landscape throughout these time periods as an insight into the potential processes of secondary state formation. This research approach will consider social change in Iceland at the hands of both human and environmental agents, with the acknowledgment that global changes, be it climatic or economic, can make a difference at the local scale.

By investigating the social dynamics of medieval Iceland through a framework based on interaction networks, I will explore in the subsequent chapters how local and external factors can be examined in the archaeological record and how this interplay created a situation for social change in not only Iceland, but in other similar case studies of secondary states. The following chapters explore the question of how secondary state formation occurred by testing three distinct economic models that correspond to three separate models that have been applied to the development of the Icelandic state: the Autarkic Model (Autonomous Secondary State) that suggest that state formation was the result of autonomous, local processes similar to those documented in primary state formation (chapter 2); the Imperial Economy Model (Hegemonic Colonial Secondary State), that suggest that direct imperial control of the Norwegian state supplanted chiefdoms with state institutions in Iceland (chapter 3); and my own model, the Norse
Economic Territory (NET) Model (The Synergetic Secondary State), which suggests that control over the local political economy, fuelled by global interaction in a world market alongside local landscape transformation resulted in the formation of an Icelandic state (chapters 4-7). Chapters 2 and 3 will explore the existing theories used to explain state formation in Iceland by first presenting the theoretical underpinnings of each model followed by a critical look at the data used to support these theories. These chapters will conclude by examining the limitations of these models as well what we can learn from these approaches. In the remaining chapters, I will develop my own model by first presenting new data collected in the Skagafjörður Landscape Project (chapters 2-6) and will then discuss how these data suggest a new approach to the study of secondary state formation (chapter 7).

1.2 Only By Looking Far Will Things Become Clear: Situating the Icelandic Case within a Broader Viking Age Perspective

Historians, medieval and modern alike, have been debating the cause of the Viking Age since it began. The one fact everyone can agree on is that “the Vikings did not spring fully formed on to the international stage [in the eighth century CE]; they were the inheritors of a long tradition” of sea travel, trade, and sometimes warfare with their neighbors (Clements 2005: 2). Centuries before the Viking Age, evidence of waves of migration in and out of Scandinavia have been documented, some from as early as the second century BCE, when Roman writers began to describe the sometimes peaceful, sometimes violent interaction between themselves and the Teutons (Hedeager 2008: 11).
The Teutons were one of many Germanic tribes in what is today Denmark and were praised by Roman writers for their military heroism and ethic of honor. As the Roman world expanded further north, pushing out various local Germanic groups, greater conflict ensued, sparking numerous infamous battles. While the Romans may have had larger armies and more technologically advanced weaponry, Germanic groups like the Teutons proved to be a formidable match. Roman Emperors found that the only practical way to stop these groups was to hire them as mercenaries. This began a long and complicated relationship between Rome and the ancestors of future Viking groups, a relationship that culminated with the sacking of the city of Rome in 410 and 476 CE by a group known as the Goths. The Goths, Norse speakers from Sweden, brought organized Roman dominance to an end, paving the way for the start of a new era in northern Europe, an era marked by the development of kingdoms, first in continental Europe and later in Scandinavia, as well as the global mercantilism that culminated with the Viking Age and the vast movement of Norse peoples (Hedeager 1993: 121; Haywood 1995).

The Viking Age is a period of marked transition for Scandinavia. Once societies on the outer margins of the decadent Roman Empire, they were now in a position to seek new opportunities in Europe and beyond. Viking raids, trade, and expansion throughout Northern Europe have, however, traditionally been viewed as a solution to an internal problem within Scandinavia, from population pressure to limited land inheritance as possible agitators (Rosedahl 1998; Sawyer 1988) rather than being seen through this more global perspective. This localizing tendency is all the more surprising since the

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4 Germanic refers to the language group commonly spoken by at least 40 separate tribal groups throughout northern Europe by the second century BCE. The term Norse is commonly used to describe the Germanic-based languages spoken throughout medieval Scandinavia.
process of increased social complexity that characterizes this period fits squarely within
the paradigm of a secondary state development. Contrary to these opinions is a growing
body of evidence that suggests that Scandinavia was every bit as plugged into a medieval
world system as those societies within the realm of northern Europe’s imperial neighbors.

This approach takes its cues from the earlier work of Belgian historian Henri Pirenne
(1954) who argued that the rise of European kingdoms was intimately related to the rise
of Muslim expansion in the late seventh century CE and the shift in trade routes away
from the Mediterranean to northern and western Europe (Hodges and Whitehouse 1983).

The “Pirenne Thesis” suggests that the Islamic conquests of North Africa, the eastern
Mediterranean, and Spain in the seventh and eighth centuries CE effectively overthrew
Roman mastery of the sea lanes connecting what remained of the Western Roman Empire
with the Eastern Byzantine Empire (Hodges and Whitehouse 1983:4). This takeover
resulted in the growth of the Frankish Kingdom and the eventual rise of the Carolingian
Empire and the Western Catholic Church under the direction of Charlemagne. There
could not have been a Charlemagne, however, without a Mohammed. Pirenne concluded
that instead of viewing the fourth through tenth centuries CE as a period of decay in
European history, it should be seen as a watershed era that saw the development of new
political systems. While Scandinavian social development was not Pirenne’s focus, he
did acknowledge in his work that Islamic dominance over the Mediterranean may have
encouraged the rise of the Viking Age, positing that Scandinavian societies seized the
opportunity to become the middlemen between the east and west. The one drawback in
his model is that he did not suggest a possible motivation for Scandinavian societies to
enter into this global arena, assuming that societies would have found the allure of
foreign markets irresistible. Limited to only textual data and a few numismatological studies Pirenne could not address how both local and external factors operated together to produce the Viking Age. Swedish historian Sture Bolin responded to the Pirenne Thesis by arguing that the data seemed to clearly indicate that just as there could not have been a Charlemagne without a Mohammed, there could be no Charlemagne without the Viking warlord Godfred as well (Bolin 1952). That is to say, Charlemagne could not have existed without the strategic positioning of the Norse in Eastern Europe. Bolin examined the existing collections of coins discovered in Viking hoards and made a somewhat startling discovery. The design and weight of the Frankish denier was determined by contemporary Islamic silver coinage, illustrating he believed a close connection between the Islamic and Carolingian world. Bolin even went as far to suggest that the numerous monetary reforms of Emperor Charlemagne directly corresponded to periods of change in Islamic coinage and even more surprising Bolin suggested that the Danish “Woden Monster Sceatta” minted at the trading site of Ribe in turn paralleled the economic trends of the Carolingian Empire (Coupland 2007; Madsen 1999: 197-202). Charlemagne, it seems, either relied on or was in direct competition with his Norse neighbors, but the extent of this relationship remained unknown to Bolin. With an increasing amount of archaeological data, however, new life has been breathed into Pirenne’s and Bolin’s ideas (Forte et al. 2005; Hodges and Whitehouse 1983), suggesting that the Viking Age was born out of economic interests more than anything else. Even before, but especially after the fall of Rome in the west in the fifth century, Scandinavians were becoming active merchants on a very broad scale. Aided by new advances in ship technology in the six and seventh centuries CE, Norse merchants were able to travel faster and farther than
ever before. Likewise, the design of the Viking longship permitted heavy cargo, giving
Norse merchants a leg up on their competitors. More than anything else, however, by the
time of the first Viking raid at the end of the eighth century, the Norse held no permanent
allegiances to any society other than their own. That is to say, they were willing to trade
with anyone regardless of religion or ethnicity. Geographically positioned between the
empires of the West and those of the East, the Vikings were able to act like middlemen
between Europe, the Muslim Empire, the Byzantine Empire, and the Persian Empire.
Access to foreign luxury goods abroad could be translated into a kind of social currency
back home in Scandinavia. One traditional method for maintaining your social
relationships was through gift giving and sponsoring feasting parties, making the
availability of luxury goods from abroad a strong motivation for individuals to become
active merchants. For the merchant, these voyages were a way to gain wealth, honor, and
fame. Travel abroad was dangerous—to make it back alive and with a ship loaded down
with luxury goods was a highly impressive and memorable achievement. Archaeological
evidence supports this view (Ashby 2006; Crumlin-Pedersen 1999: 11; Jansson 1996) for
wherever the Vikings went, trade seems to have been an important enterprise. While
trade is often viewed as an outcome or byproduct of the Viking Age, I would argue that
in fact trade may have been responsible for the political, social, and economic changes
that characterize this period, rather than merely resulting from these organizational
changes.

Nothing documents this reality more than the unlikely connection between the
Godfred, Charlemagne, and the Abbasid caliph Harun al’Rashid. As the expansive
Muslim Empire was extending its borders deeper and deeper into Charlemagne’s Europe,
these two imperial juggernauts had reason to view the other as a serious threat creating a
situation that could have potentially become hostile had Rashid not cleverly defused this
tension by sending Charlemagne a small gift: a white Indian elephant. Charlemagne
responded to this gesture with an equal air of conspicuous consumption, sending back to
the caliph extravagant gifts, forging between the two leaders a well-mitigated truce.
More was at play here of course than the simple act of giving gifts or even the flaunting
of power, for it was through these exchanges that the equivalent of social alchemy was
achieved, turning the distance of geography, the rift of differing religions and cultural
values, and the fierce competition over land and economic markets into a connected,
shared cultural universe. But for all the glitter of gold and silver, the Carolingian-
Abbasid alliance was always at best a compromise, as each emperor continued to make
“great use of their respective religions as ideological apparatus for the underpinnings of
their ambitions and political policies” (Hodges 1989:156). Scandinavian elites, by
contrast, could easily side-step this ideological divide, as they were neither Muslim nor
Christian. They were pagan, and while the Franks and Muslims may have seen Norse
religion as inferior, it was by no means a threat. This view made it rather easy for
Scandinavian chieftains, especially the Danes who had a long history of economic and
cultural influence from the Frankish Court, to make a ploy at moving in on the trade
networks between the west and the east. This ploy is seen in the historical figure of the
Danish warlord Godfred, and archaeologically with the establishment of the site of
Heðeby, a large and well-organized trading center located in a navigable inlet in Jutland
(Christiansen 2002). The geographic position of Heðeby was capable of connecting
Western Europe with the Baltic Sea, acting as a gateway to the eastern trade routes that
lead to both the Byzantine and Muslim Empires. Godfred escalated this economic challenge by sending his navy to the Baltic theatre, successfully sacking the site of Ruric, a trading port on what is today the northeastern German side of the Baltic coast. Godfred did not stop there. According the Frankish Annals, Godfred seized the town’s craft specialists and reportedly moved them to Heðeby (Sawyer 2001). This was a strong blow to Charlemagne for two reasons: first, Ruric was a strategic stop on along a far-reaching trade route connecting the east with the west, while avoiding areas of Saxon and Danish control; and secondly, and perhaps more importantly, Godfred, a petty king in the marginal periphery, was boldly challenging Charlemagne’s economic enterprises by physically threatening his access to silver and other prized goods from the Baltic. Heðeby itself threatened to jeopardize the Carolingian markets with the Frisian Kingdoms and perhaps even within the Muslim and Byzantine sphere of influence. Charlemagne responded with full force, sending in, symbolically, his prized white Indian elephant, a symbol of Charlemagne’s far reaching connections the world over. In the end, Charlemagne was able to slow Godfred’s economic ambitions, but the groundwork for the Viking Age and Scandinavian sea dominance had been launched.

This vignette clearly illuminates the power, commercial enterprise, and continued connectivity between cultures even after the fall of the Roman Empire in the West, and has recently been viewed as an important element in state formation in Western Europe (Abu-Lughod 1991; Hansen and Wickham 2000). It was within this dynamic cultural universe that new state societies likewise sprang up in Scandinavia, dramatically ushered in with the adventurous Viking Age. These data suggest that an alternate method to examining the Viking Age as an insular development is to consider these advances
through a broader spatial and temporal scale (Forte et al. 2005). In this dissertation, I have termed this high degree of economic and social connectivity as the NET: the Norse Economic Territory (see Figure 1.2). The Norse Economic Territory spatially refers to the network of Norse trading outposts throughout Western and Eastern Europe, the North Atlantic, and even briefly along the outer edges of the Canadian eastern frontier. Trade, travel, and colonization actively occurred throughout the NET, as individuals pursued access into this global market as a means to acquire goods to fuel local exchanges back home (see also Ólason 1998). It is within this dynamic world system that Iceland should be viewed.

1.3 The Norse in Iceland

There was a man named Bjarni, who dwelt at a farm called Langarhúð, in Hrafnkelsdalr. He was married, and had two sons with his wife, one of whom was called Sámr, the other Eyvindr, both goodly men and promising. Sámr became a farmer while Eyvindr became a traveler, and went to Norway, where he dwelt for the first winter; from there he went abroad into foreign lands, coming at last to a stay in Constantinople, where he was right honorably received by the Greek king, and where, for a while, he spent his time—Hrafnkell’s saga (chapter 3).

Less than sixty years after Charlemagne launched his war elephant to thwart the ambitions of Godfred, Norse Vikings sailed west into the North Atlantic and established permanent colonies on the islands of Iceland, the Shetlands, and the Faeroes. As one of the last places on earth to be colonized, Iceland represents the only historic example of the settlement and formation of a new society in an entirely empty landscape. Norwegian Vikings settled Iceland in the late ninth century CE, but the reason for this colonization and the rapid process of social transformation that occurs within this island society are
hotly contested among social scientists. These different perspectives, as we shall see throughout this dissertation, colors the overall impression of Icelandic history and the processes behind the development of state institutions in the twelfth and thirteenth centuries. Archaeological and historical documentary evidence provides no fewer than three possible explanations behind the colonization of Iceland: (1) displaced chieftains from Norway fled to Iceland to distance themselves from the king and to revive the glory of their former political authority (see chapter 2) in a far away but independent land; (2) Iceland was settled at the behest of King Harold Finehair of Norway through formal annexation and planned colonization (see chapter 3); and (3) Norse merchants and their families, living formerly in Scandinavia and Ireland, settled in Iceland to gain access to goods that could be brought to an international market (see chapters 4-7). As the passage from Hrafnkell’s saga indicates, all three of these motivations can be used to elucidate why Iceland was settled, suggesting that these explanations may not be mutually exclusive. These separate explanations, however, affects how scholars have come to understand the development of social complexity in Iceland and, therefore, must be considered when evaluating the models for state formation presented in this dissertation. To knowledgably assess each of these models then requires an informed historical foundation. In the following discussion, I will provide a brief description of the sources of evidence available as well as a concise overview of the history of medieval Iceland.

1.3.1 From Turf Houses to Texts: Sources of Evidence

The study of early Icelandic society is aided by both an archaeological and a documentary record. Most archaeological sites for the medieval period are farmsteads
making the excavation of domestic structures the foci of the majority of research agendas (see also chapter 4). In addition to these sites, however, are a number of excavated churches a small but growing number of trading harbor sites. The corpus of these data provide a wide range of information on the daily behavior of householders as well as on the more exclusive elite social practices such as feasting and the exchange of local and foreign commodities. The textual evidence available for the earliest periods of Icelandic society includes the Sagas (Clover and Lindow 1985; Hreinsson 1997), an all encompassing term used to include at least thirty-nine individual full-length narratives and forty þættir (short stories) that are often broadly organized into seven types: the historical sagas describing the settlement and early medieval period found in the Landnámabók (Book of Settlements) and Íslendingabók (Book of the Icelanders); sagas that take place outside of Iceland, most notably in Greenland and Vinland; the biographical depictions of Scandinavian kings found in the Kings’ Sagas such as Heimskringla; the history of the Church contained in the Bishop’s Sagas\(^5\); sagas of chivalry; the biographical sagas of outlaws; the legendary or heroic sagas; the Íslendingasögur or the Family Sagas; and for the later twelfth century society the Samtíðarsögur or the Contemporary Sagas (Kellogg 2001:liii-lxvi). The Family Sagas were edited and compiled from an oral tradition portraying over a hundred family histories, poems, songs, and short stories in the late thirteenth-early fourteenth century CE and describe Icelandic society during the initial colonial period, the so-called Viking Age of Iceland, ca. 870-1050 CE (see also Clover 1982, 1985; Kristjánsson 1988). Therefore, these sagas are not based on direct eyewitness accounts, but instead relied

\(^5\) The earliest date for the Bishop’s sagas (Biskupa sögur) is roughly 1200 CE.
either on the imagination of the author, or through social memory kept alive through an active oral tradition. Medieval Icelanders are depicted in the Family Sagas as fiercely independent people, who somehow managed to overcome the rough ocean currents of the Atlantic in open ships rather than remain embedded in the social turbulence of Norway; who staked their claim in an empty and arduous landscape; who created the Alþingi, a democratic assembly; and who peaceful coexisted with one another without the interference of a king for some three hundred years.

In contrast, the Contemporary Sagas were written as eyewitness accounts of the events of the twelfth and thirteenth century CE. These metahistories are commonly known as the Sturlunga sagas, named after the Sturlung family, who were the main players in most of the events described and were likely responsible for subsidizing the writing of these texts. This overall collection of biographies and stories, notably the Ísendinga saga (Saga of the Icelanders) focus extensively on the turmoil of the Sturlungaöld period (early twelfth century) when the chiefly system of social order in Iceland was polarized between two powerful chiefs, and the resulting civil war that paved the way for Norwegian intervention.

In addition to the Family and Contemporary Sagas, there are economic and legal documents from the Medieval Period, most notably the Landnámabók (“Book of Settlements”) — a descriptive land registry; the Íslendingabók —a genealogy and history of the settlement of Iceland up to the early twelfth century; and the Grágás (“grey goose”) or law books. There are several extant versions of Landnámabók that were more than likely penned by several different authors, but the original manuscript is thought by many scholars to have been at least partially written in the early half of the twelfth
century CE by Ari Þorgilsson (also known as “Ari the Wise”). *Landnámabók* is a registry of the original land claims in Iceland, starting with the initial ninth century CE colonization, as well as the transfer of lands through inheritance and purchase dating from the tenth through the twelfth century CE. *Íslendingabók*, also believed to have been written by Ari the Wise around 1130 CE, likewise contains a sort of registry of who settled when and where, but additionally presents a detailed genealogy of the first settlers of Iceland, providing us with some insights into who these settlers were as well as what their economic status and social reputation was (Pálsson and Edwards 1972: 8-13). For example, Ari reports that at least twenty-three godar (chieftains) were part of the original 874 CE settlement and that these godar brought with them their kinfolk, their slaves, and several hundred sheep and cattle (Pálsson and Edwards 1972: 2) potentially revealing to us something of the initial social structure of Iceland.

Finally, one additional category of primary text are the *Grágás* (Grey Goose Laws), a multivolume collection of at least 130 codices that contains both the civil law codes and later Christian laws of medieval Iceland (Dennis et al. 1980:5-6). The *Grágás* were first recorded as part of an oral tradition, recited by the Law Speaker (Lögsögumaður) at the annual National Assembly (*Alþing*). Around 1117 CE it was decided that the laws should be written down, with chieftain Haflidi Másson agreeing to commission the work.\(^6\) They were first complied by an unknown author shortly thereafter, but were revised numerous times over the following centuries and are preserved in a few extant copies. Written into the civil codes is a documentation of the

\(^6\) Ari’s *Íslendingabók* (chapter 10) stipulates that Haflidi was empowered by the legislative council at the *Alþingi* to take on this reasonability, which must have in returned given him some degree of social power (Byock 2001: 310).
precedence for these laws, mentioning numerous resolutions and rulings of what must have been well-known legal cases, no doubt providing some legitimacy for a legal system that operated without an executive authority (Anderson and Miller 1989). This concern over legitimacy reflects how, unlike other legal codes penned in medieval Europe, the Icelandic law codes were crafted without “concern for royal justice of prerogatives” and instead highlight a form of customary law (Byock 2001: 308). Immersed in these seemingly dry regulations over property rights are the social and economic transactions of medieval Iceland, providing us with evidence of production, exchange, consumption, social inequality, economic specialization, and subsistence strategies, providing us with a second line of evidence for corroborating the political economy described in the sagas.

Taken together, the variety of past behavior captured in the archaeological and documentary records make the study of medieval Iceland exceptional. The research presented in this dissertation will make active use of both datasets, presenting a more complete and faithful rendering of the social dynamics of early Icelandic society.

1.3.2 The Landnám Age: 870-1050 CE

According to documentary sources, especially Landnámabók, the first settlers in Iceland consisted of three types of individuals: wealthy Norwegian elites (bændr), including no fewer than twenty-three chieftains (gōðar), supporters of chiefs (þingmen) who possessed no property in Norway and bought fares on cattle ships; and lastly, Celtic

In the absence of a full-time police force it is of course difficult to gauge just how well these laws were actually enforced. The detailed discussion of past court rulings may have been an attempt to persuade individuals to follow the laws (Durrenberger 1992; Miller 1990).
slaves and women\textsuperscript{8} who were taken from raids in Ireland (Bagge 1992: 70-75; Durrenberger 1992: 25-27). These texts indicate that many of the first settlers had already lived in or had relatives already living in other Viking North Atlantic colonies, such as Ireland, the Hebrides, the Shetlands, and Orkney (Byock 1988: 2-4; Guthmundsson 1967). At the same time that Iceland was settled, the Norse stronghold in Ireland was weakening as local populations waged war against their Viking conquerors. It is likely that a fair number of settlers in Iceland had been displaced from Ireland. Iceland’s age of settlement (ca. 870-930), known in Icelandic as the \textit{Landnáam} or “land taking,” is characterized by medieval texts as a time of prosperity. The temperature was considerably warmer\textsuperscript{9} than what it would be by the sixteenth century, providing the first settlers of Iceland with a moderate environment. Today, Iceland strikes many visitors as a bleak landscape, made up of both fire and ice, for much of the topography is shaped by active volcanism and glaciations that make only one fourth of the island habitable. To a Norse immigrant at the time of the Landnáam, however, the land was seemed both bountiful and plentiful, a sentiment captured in sagas where Iceland is described a land that was untouched and teeming with natural resources (Buckland 2000: 146-147). The settlers of Iceland formed a society of farmers with grass agriculture and pastoralism as their principal means of subsistence (Durrenberger 1990a; Jóhannesson 1974: 288). As ships of settlers arrived, chiefs busied themselves with claiming land for themselves and

\textsuperscript{8} The documentary evidence suggests that families from Norway were the first settlers, and that some families had brought with them slaves purchased in Ireland (Karlsson 2000: 11-15). Genetic research on the modern population, however, has shown striking genetic differences that conform to sex categories. Females have more genetic markers found in Ireland than in Scandinavia, while males show the opposite with more markers from Norway (Pállsson and Hardardóttir 2002). These data can be interpreted either as an indication that slaves were predominately women, or that enough men had Irish wives to permanently shape the genetic makeup of the society.

\textsuperscript{9} A warmer annual average temperature in Iceland was the result of a warming trend known as the Little Climatic Optimum that began in the North Atlantic by 900 and ended by 1350 CE.
their followers, spreading themselves broadly over the entire island within a generation (Durrenberger 1998; Vésteinsson 1998). When these settlers arrived they brought with them what we might refer to as a transported landscape, one derived from their Norwegian homelands that centered on animal husbandry. Cattle, sheep, horses, goats, and pigs were all introduced in the island, which previously had had only one indigenous mammal, the arctic fox (Jóhannesson 1974: 288). These domestic animals taken together form a kind of “Landnám package,” and it required substantial acres of pastures to feed and house all these livestock (McGovern et al. 1988).

In addition to livestock rearing, Icelanders relied on a flexible economy of both wild and domesticated resources. Unlike their Scandinavian homeland, Iceland had fewer wild resources. For example, there were no wild caribou or reindeer, but there were seal and walrus populations and large colonies of birds, especially puffins, in the island’s coastal waters and its rivers teemed with a variety of fish. Edible plant species were equally limited, consisting of a few varieties of berries and leafy plants, making the bulk of one’s diet was based on animal products. As in other Norse North Atlantic colonies, diet was closely correlated with social status, as more wealthy individuals relied less on wild resources for everyday subsistence. Therefore, the crucial component for all households was grass, which was cut and dried to make hay. Stores of hay were critical for feeding livestock in the long Icelandic winters, which began as early as November and did not end until late April. This meant that animals could rarely just be sent out into

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10 See also chapter 3 for a more in-depth discussion on the anthropomorphic changes made by the initial settlers and the long-term effects of these changes in Iceland.
pastures to graze—they had to be fed. So while it sounds odd, we can refer to Icelanders as grass farmers and animal herders.

Household data from the archaeological record indicates that during the settlement period, there was little variation in size and plan (Pálsson 1932; Steindórsson et al. 1987), indicative of a low level degree of ranking (Randsborg 1982). Although a chieftain’s domestic longhouse could be much larger than most, the layout of the structure was not different from other homesteads (Vésteinsson 2000a: 171). Some bændr, too, had households as large as a goði. Characteristic of early Icelandic sites is the presence of more than one longhouse at each farmstead (Vésteinsson 2000a: 168). At the sites of Bessastaðir, Reykjavík, and Herjólfsdalur two contemporaneous longhouses have been discovered; at Hvitarholt, three longhouses have been detected (Vésteinsson 2000a: 168). The contemporaneity of these longhouses suggests that more than one family or group established a farmstead, inferring communal ownership of land. The challenge of costly labor investments necessary for creating a pastoral landscape were perhaps met by these shared, multihousehold farms (Herlihy 1983; Sawyer 1988).

The Family Sagas hint at the social structure of the early society, describing this period as a time of heroism, honor, and friendship, where a system checks and balances ensured that greed was quickly stamped out and no single individual could gain too much power. By the mid-tenth century, Iceland was divided into four þing (assembly) districts or administrative quarters: north, south, east, and west. There were multiple chiefs within each quarter and all landowning men (bændr)\textsuperscript{11} were required to give their allegiance to

\textsuperscript{11} Bondi is the singular, bændr is the plural and can be translated as a “free farmer” who owns the land he or she labors on. In other words, an aristocratic.
one chief from the quarter where they owned land. As a chief’s þingmaðr (follower), an individual was required to pay a small tax, to attend local þing (assembly) meetings as well as the annual Alþing (national assembly meeting), and to give labor and military service when called upon by a chief (Herschend 1994).

Chiefs, in return had to provide a number of services to maintain the loyalty of their followers in what can be described as a competitive political system. As in other chiefly societies, Icelandic chiefs needed a steady income to front the costs of maintaining the support of their followers (Sigurðsson 1999). A chief was required to pay compensation awards; to exchange gifts with current and potential followers; to make loans; and to provide feasts and hospitality. While it has been often assumed by modern historians that in the early medieval period chiefs were not any more wealthy than other landowners, the Sagas and Grágás suggest differently. Chiefs had access to a few sources of income that no one else did, including but not limited to, collecting taxes, receiving remuneration for officiating over legal disputes, and setting the prices for imported goods. Two kinds of taxes were collected before the eleventh century were the þingkfararkaup (assembly travel tax) and the hoftollr (temple tax). Only a chief could collect these, but in return for these payments a chief was required to front substantial costs. In exchange for the travel tax, the chief had to subsidize the total cost of travel and housing for their landowning followers to attend þing events and in return for the temple tax a chief had to personally oversee the maintenance costs of the temple and provide the materials for religious rituals. Arguably, the chief did not even break even, and must have incurred additional costs. However, the chief likewise received social capital for these enterprises. The second source of wealth, serving as arbitrators, may have been
particularly lucrative, and in fact the sagas make frequent mention of chiefs “buying out” so to speak the claims of disgruntled parties. The risk of buying a claim was high, but so, too, was the reward, which could result in taking over landownership rights. Land was an all-powerful commodity that no elite could manage without, but getting rights over land became increasingly difficult after the initial land rush in the settlement period. For a few generations, families of settlers could divide up the huge land claims into smaller units for sell or as grants, but the ability to do so was clearly finite. Likewise, as more farms were established, the potential for conflict with neighboring farmsteads increased. In such disputes, having the support of a chief was crucial since without it the potential for blood feud and violence was greatly increased (Lacy 1998; Miller 1983, 1986). Under these circumstances, a chief could stand to gain profitably by lending their support to the claimant in a dispute. A chief could decide on the payment, and could hold out on offering support until they were promised a reward that would subsidize their own aggrandizement. The third source of wealth, price setting, is likewise a mixed enterprise. The *Grágás* state that, “men shall not buy expensive Norwegian goods from merchants at their ships until three men who set the rate within each district boundary have done so” (*Grágás* K § 167). However, since ultimately the decision to bring goods to Iceland was made by foreign merchants, chiefs would not have been advised to set the prices too high or to develop a bad reputation among merchants. In the early medieval period, there were at least twenty-three ports. If a merchant did not agree with a chief in one district, there was strong motivation to simply move on to the next port to sell their goods. Since the elite depended on these goods to finance their power brokerage, through feasting for example, arguably merchants held the upper hand. However, the laws did stipulate that
no exchange could occur before chiefs had bought wares, ensuring elites always had the first choice of goods (Byock 2001: 256), and had the opportunity to buy large sums of valuable commodities that could later be redistributed.

While some scholars suggest that subsistence production was the only true form of economy present, most researchers will acknowledge that networks of local exchange and more commercial long-distance trade with Europe likewise played a role in the Icelandic economy. But how influential or crucial these economic enterprises were to the social structure of the settlement period society and to the later development of state institutions is steeped in terse debate. Arguably trade could generate a tidy profit for chiefs, but many scholars have argued that the chieftain’s income from trade should not be overemphasized. Byock, for example, argues that, “although better able to compete than their fellow Icelanders for modest gains of trade, the chieftains played only a passive part in controlling the flow of goods or in regulating prices when compared with the role played by foreign merchants” (Byock 2001: 266). Statements of this kind, however, fail to consider the entire social framework of the society. Iceland could not have operated in isolation, but instead maintained and brokered relationships with individuals back in Scandinavia and beyond throughout the medieval period. This need not suggest any lack of independence on part of medieval Iceland prior to the late thirteenth century, but it does suggest that when examining the dynamics of medieval society one needs to consider the entire social arrangements under which the society operated.

I will argue in the subsequent chapters that what we are witnessing in the medieval texts is this interplay between two interrelated social dimensions: the localized chiefly arrangements situated within the larger international economic and political
scene. The localized politicking of chiefs, therefore, can only be fully appreciated if we incorporate all of the variables acting on these individuals. International trade, therefore, cannot be downplayed, since through it, the Icelandic elite franchised their power and wealth on the local scale. Land ownership and trade are related variables in a cyclical feedback system: landownership is necessary for keeping livestock, especially sheep, whose wool could be sold abroad in exchange for goods that can be redistributed locally to help finance the power of elites to maintain their authority and control over the landscape. Having ample land is useless unless it can be converted into social capital as having ample imports is every bit as useless unless it, too, can be used to further local politics.

1.3.3 The Sturlunga Age: ca.1050-1264 CE

The beginning of social change in Iceland coincides with the end of Viking expansion between 1000 and 1050 CE. Attempts to colonize Greenland and Vinland were only mildly successful. Vinland saw only one colony, while Greenland’s export based economy of ivory and exotic animals garnered only a marginal position in eleventh century European trade. Norse populations throughout Scandinavia and in the colonies they had established across continental Europe, the British Isles, and the islands in the North Atlantic, turned their attention away from conquest and expansion and towards a phase of political and economic consolidation. Iceland, too, moved into a period of consolidation and away from a frontier mentality, making alienable property an ever-
greater concern\textsuperscript{12} (Vésteinsson 2000a: 169). Aims for consolidation are demonstrated by the creation of the Alþing or general assembly founded by 930 (Durrenberger 1989); the transformation of oral record keeping to a permanent system of writing by 1130 (Sigurðsson 2004); extensive laws regarding marriage and land inheritance (Jochens 1995); the adoption of a singular, monotheistic religion (Aðalsteinsson 1999); and the consolidation of multiple chiefs to one earl (Sigurðsson 1999).

The Alþing, a variant of a traditional Scandinavian local judicial system (Bachrach and Nicholas 1989), established laws, tried cases, and was the first institutional structure aimed at unifying Iceland (Anderson and Miller 1989). The overwhelming majority of the laws, contained in the law books known as the Grágás, reflect a concern over property inheritance (Dennis et al. 1980). This concern may further explain the motivation behind the near unanimous decision of the Alþing to establish Christianity as the religion of Iceland (Aðalsteinsson 1999; Durrenberger 1988: 239). With Christianity came customs derived from Roman law overseeing issues of primogeniture, and likely dovetailed well with a new emphasis on landownership once the prospect of colonizing unsettled areas in Iceland ceased to be a feasible social and economic vehicle for establishing greater wealth. Confounding the problem of a filled landscape within Iceland, was the end of the Viking Age around 1050 and along with it, the prospect for adventure and wealth abroad. As younger sons could no longer be appeased with the temptations of ship and sail, increased in fraternal disputes ensued, conflicts poignantly depicted in Sturlunga saga as a society constantly at the edge of a

\textsuperscript{12} For an interesting comparison and similar case study from the Valley of Mexico, see Harvey (1991). The similarities between the frontiers of Mexico and Iceland suggest that the processes at work transcend historically specific events.
sword. Documented in this contemporary text is the civil war between the families of the Sturla Sighvatsson his rival, Gissur Þorvaldsson, a wealthy chieftain in Skagafjörður: “In those days, Sturla Sighvatsson was so overbearing that almost no man here in this country could hold his own against him. Some men have since reported his saying that he thought he could have controlled the whole country if he had managed to overcome Gissur” (Saga of the Icelanders). The Sturlunga saga is a vivid tale of two chiefs vying for power and control over Iceland, with accounts of violent feuds, murder plots, and the burning of farmsteads found on nearly every page. Archaeologically, there is indirect and direct evidence of increased hostility and endemic warfare (Friðriksson 1994: 74). Weapons, such as daggers, axes, and swords, which had been scarcely found in sites dating to the settlement period, become frequently discovered artifacts in both household contexts as well as in graves (Friðriksson 1994: 74-100).

The violence of the Sturlunga period was no doubt a mechanism used by chiefs to eliminate competition over land, prestige goods, and even more crucially, alliances (Durrenberger 1992:2). Beginning by the late eleventh century, a process of consolidation in the number of chieftaincy positions sets in motion the emergence of a new class of elites: the storgődar (“big chiefs”). These big chiefs were not from existing elite families, but were upstarts seeking wealth and power, and were willing to use unconventional means to achieve these ends. No farmer was safe from their predation, as these big chiefs rapidly gobbled up the landscape, turning landowners into tenants and demanding tax payments (Vésteinsson 1998). Whereas such behavior would not have been tolerated in during the settlement period, there is little evidence to suggest that any successful attempts were made to thwart the ambitions of these chiefs. These aggressive
activities lead to the formation of political territories called *ríki* in Icelandic (Sigurðsson 1999). Replacing a system of multiple chiefs that each controlled a small territory, the *ríki* system allowed a handful of big chiefs to control all of Iceland. As big chiefs were consolidating the political power, a new religion, Christianity, was achieving the goal of ideological consolidation. Under the older pagan ideological structure, chiefs served as priests in addition to their secular political and economic duties. With the advent of Christianity, chiefs as well as wealthy independent landowners became the benefactors of the Church, creating competition over the mundane political power that came from having a scared source of legitimization. Archaeologically we see this contestation played out with the sudden appearance of small churches located within the property of domestic farmsteads. The nexus of religion and consolidated political offices paved the way for elite control over the economy, a task carried out by developing a system of private property (Durrenberger 1998: 175-181). Land and wealth were united through the tithe, a new system of taxation implemented by the Church and backed by the development of writing. Since the amount of tithe was determined by a fixed percentage of a farmstead’s agro-pastoral production, over time, some farmers could not keep up with the payments and were resigned to give the title of their land over to a landlord. Within the span of a few hundred years, independent frontier farmers had become dependent tenants and the Icelandic landscape was one sharply characterized by feudalism.

The adoption of a monotheistic religion, of a standardized system of writing, of a land tenure system, and of formal systems of taxation are all traits that most anthropologists would categorize as the telltale signs of state-level administration. The
driving question of this dissertation is how and why these institutions developed. Over the following chapters I will examine the existing theories on the processes behind the evolution from chiefdoms to secondary state. From these discussions I will highlight the limitations of each approach and will conclude that a new model is necessary to fully examine the complex processes at work in the formation of state-level complexity. From my primary research in northern Iceland, I will develop in this dissertation a new model for examining secondary state formation that views the process of social change as the synergy between both local and external stimuli. While this model has been developed to understand social developments in medieval Iceland, this approach is broad enough to be applied to other case studies of state formation as well.
Figure 1.1: Map of the North Atlantic and Iceland
Figure 1.2: Map of the Norse Economic Territory (NET)
### Table 1.1: Timeline of Icelandic History

<table>
<thead>
<tr>
<th>DATE (CE)</th>
<th>EVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>793</td>
<td>Viking raid at Lindisfarne ushers in the era of Viking expansion throughout Europe.</td>
</tr>
<tr>
<td>ca. 860s</td>
<td>Viking discovery of islands in the North Atlantic including the Shetland Islands, the Orkneys the Hebrides, the Faeroe Islands, and Iceland.</td>
</tr>
<tr>
<td>885-900</td>
<td>Norway becomes a state after Harold Finehair wins the battle at Hafrsfjord uniting most of Norway under his rule. Harold consolidates his power by forcing chieftains to support his rule, leave Norway, or perish at the hands of his army.</td>
</tr>
<tr>
<td>870-930</td>
<td>Norwegian Vikings settle Iceland.</td>
</tr>
<tr>
<td>ca.930</td>
<td>The Althing, Iceland's first democratic assembly, is founded.</td>
</tr>
<tr>
<td>986</td>
<td>Erik the Red settles Greenland with a fleet of 25 ships, transporting from Iceland and Norway hundreds of people, sheep, cattle, pigs, and horses. The Eastern Settlement is established, centered around Erik’s farm, Brattahlíð.</td>
</tr>
<tr>
<td>ca. late 980s</td>
<td>The Western Settlement in Greenland is established.</td>
</tr>
<tr>
<td>1000</td>
<td>Iceland peacefully votes at the Althing to convert to Christianity. Leif Erikson converts Greenland to Christianity on behalf of Norwegian King Olaf Tryggyason. Icelanders Guðríður Pórbjarnardóttir, and Porfinnur Karlsefni Pórdarson join Leif Erikson and travel to Vinland and help establish a short lived colony.</td>
</tr>
<tr>
<td>ca. 1050</td>
<td>End of the Frontier Society and start of a manorial system under the rise of the stórgoðar</td>
</tr>
<tr>
<td>1056</td>
<td>The bishopric at Skálholt is established (Episcopal See)</td>
</tr>
<tr>
<td>1096</td>
<td>Tithe tax is introduced.</td>
</tr>
<tr>
<td>1100-1264</td>
<td>The Sturlunga Period and the creation of ríki</td>
</tr>
<tr>
<td>1106</td>
<td>The bishopric at Hólar is established (Episcopal See)</td>
</tr>
<tr>
<td>1122-1132</td>
<td>Ari Porgilsson the Learned writes Landnámabók (The Book of Settlements) and Íslendingabók (The Book of the Icelanders),</td>
</tr>
<tr>
<td>1220-1260</td>
<td>Usurpation by the stórgoðar (super or big chiefs).</td>
</tr>
<tr>
<td>1258</td>
<td>King Halkon of Norway appoints Gizur Porvaldsson Jarl of Iceland.</td>
</tr>
<tr>
<td>1261</td>
<td>King Halkon sends his own representatives to Iceland to ensure his supremacy and the right to claim taxes.</td>
</tr>
<tr>
<td>1262-1264</td>
<td>End of the Free State: Iceland officially loses its independence and become a colony to the Norwegian Crown.</td>
</tr>
<tr>
<td>1268</td>
<td>Gizur Porvaldsson dies, his position as Jarl is never filled and is later abolished</td>
</tr>
<tr>
<td>1271-1284</td>
<td>Sturla Thordarson writes the Saga of the Icelanders</td>
</tr>
<tr>
<td>1300</td>
<td>The Sturlunga Saga is complied.</td>
</tr>
<tr>
<td>1380</td>
<td>The kingdoms of Norway and Denmark are united through marriage; Iceland becomes a colony to Denmark.</td>
</tr>
<tr>
<td>1387</td>
<td>The Greenlander's Saga is written.</td>
</tr>
<tr>
<td>1702-1714</td>
<td>Information for the Jarðabók is collected by Árni Magnússon and Páll Vidalín.</td>
</tr>
</tbody>
</table>
Chapter 2

Environmental Constraints and the Development of an Autonomous Secondary State

The settlement of Iceland during the ninth century has long been seen by archaeologists as the result of displaced Nordic elites searching for a new homeland and the chance to rebuild the glories of their former chiefly social world that had been lost forever in Scandinavia to the autocratic policies of kings and bureaucrats (Karlsson 2000: 15). For nearly two hundred years these Norse colonists, stationed in the distant expanses of a western frontier, marveled in a society organized around an ethic of cooperation and justice. Then, without warning, this society collapsed, as systems of inequality and marginalization sprang up in its place, a process otherwise known as the birth of the Icelandic state. The fact that Iceland represents a case study in secondary state formation, so follows the argument, is only a matter of the semantics of heuristic categorization, for while the colonizers of this island nation had seceded from a pre-existing Norwegian state, Iceland’s state formation had little to do with Norway and represents a primary state development within a secondary context. The transition from chiefdom to state in medieval Iceland, therefore, is viewed through a localized lens focused sharply on the mounting social tensions of the thirteenth century CE that culminated in a civil war between two powerful families. These tensions stem from several sources, but a change in climate, coupled with the mismanagement of farming
practices and the subsequent dire and irreversible anthropogenic alterations to the landscape, are often presented as the primary agitators (Edwards et al. 2004; Mairs et al. 2006). The end result is a harsh and depleted ecosystem and a scarcity for land and resources so fierce that slowly the once stable network of chiefdom polities sparked the innovation of single centralized authority who united all of Iceland under a shared set of laws, a shared ideology, and shared economic enterprise focused on livestock agriculture.

The primary issues that emerge from the discussion of environmental degradation and social change in medieval Iceland are land productivity and the ability to sustain an agro-pastoral economy. Byock (2001: 43-62) has suggested that the productivity of land decreased within a few hundred years after the initial settlement, as overgrazing generated the onset of severe soil erosion in the highlands. Friðriksson (1972) and Thorsteinsson et al. (1970) have concluded that erosion and a decline in soil productivity stemming from overgrazing and a decrease in the annual temperature resulted in a potential decline in grass yields. And Dugmore and Buckland (1991: 147-159), Smith (1995: 331-339) and Sveinbjarnardóttir (1992: 1; 4) have maintained that a decrease in productive grass pasture for the highland areas equated an overall decrease in land productivity, and a sharp decline in the overall pastoral economy throughout the island. As with other island environments, these effects were all more dire and rapid, as the prospects for moving into new areas to help alleviate the strain on the ecosystem were extremely limited.

Evidence for environmental change is unquestionable, what is unclear, however, is whether Iceland’s “islandness” produced the elements of social change like those often cited for Polynesia, where embryonic state institutions were set in motion through
localized processes, or whether Iceland’s social developments were framed by the global politicking of economically motivated actors both within the island and between it and numerous other island societies found throughout the North Atlantic and Scandinavia. I will argue here that we must revisit the question if it is truly possible to divorce Icelandic state formation from global political and economic activities that Icelanders potentially played a role in while not losing sight of the opportunities and constraints set in place by environmental conditions. This approach speaks to not only the Icelandic case study, but also to the local processes at play secondary state formation, processes that are frequently overlooked in most traditional models.

Using a threefold methodological approach that incorporates archaeological, textual, and geomorphological evidence (French 2003; Garrison 2003), in this chapter I will present data from two regions in northern Iceland: Mývatn and Skagafjörður. The data from Skagafjörður are part of my primary fieldwork, while those from Mývatn are from the ongoing NABO¹ project. From this comparison, I will argue that lowland and midland sites in Skagafjörður demonstrate a general increase in land productivity over time, as an augmentation in soil deposition created a situation for a potential for enrichment in grass yields. These data, I will demonstrate, should urge archaeologists to reconsider the social implications of environmental change, as alteration does not necessitate disaster. For Iceland, an increase in land productivity during the twelfth century challenges environmental scarcity models used to understand the transition from

¹ North Atlantic Biocultural Organisation (NABO), lead by an international team of scholars and students, was founded in 1992 and has carried out research projects through the North Atlantic (McGovern 2004). The NABO project in northern Iceland began in 1996 and includes the work, first foremost of Thomas McGovern (CUNY), Andrew Dugmore (CUNY), Ian Simpson (University of Stirling), Sophia Perdikaris (CUNY), Gavin Lucas (University of Iceland), and Karen Milek (Aberdeen) to name just a few.
chiefdom to state, and suggests that at least in some regions, state formation was shaped by alternative factors, such as trade and surplus production, two variables often overlooked in current research.

2.1 Insular Communities and Island Environments: Autonomous Secondary State Formation

Theories on autonomous secondary state formation follow along the same lines as those proposed for primary state evolution, often treating the fact that these societies existed in a world of neighboring states as inconsequential. When these models are used to examine the transition from chiefdom to state, be it in a primary or a secondary context, they frequently stress that the origin of the state is a solution to inherent structural instabilities observed in chiefdoms (Flannery 1998). The source of this instability is its political economy,\(^2\) which is overwhelmingly defined by the practice of redistribution, a system where food and/or goods from separate households of the community are brought together and then redistributed by chiefs, or other elites, according to fixed social rules. In a redistributive economy, the goal of a chief is to amass a surplus, but once amassed a chief is pressed upon to give it all away or, at the very least, to appear as a kind of “tribal banker,” funneling some of these resources back into community programs (Earle 1991: 2). This apparent contradiction in the political economy ultimately restrains a chief’s ability to further the campaign for territorial expansion and economic growth, resulting in a social process that Flannery (1999: 4-5)

\(^2\) I use the term political economy to describe modes of “production, circulation, accumulation and consumption of goods, services, and values” (Preucel and Hodder 1996: 99).
and Spencer (1998: 10) refer to as chiefly cycling: interludes of instability between periods of greater social complexity. All of these constraints place a ceiling on the degree of social complexity found among chiefdom organizations, pushing societies to either develop state level authority or to dismantle their systems of intensified power and social inequality. This ceiling is delineated by the presence of three interrelated variables: a social structure that fosters a healthy competition between elites; the availability of profitable and, preferably, restricted access to resources that elites can use to fuel their campaign for power and high status; and lastly, the ability to diffuse tension and promote order in a society that lacks formal legal institutions. These variables are all the more pronounced within island environments, as thresholds are reached at an expedient rate. Case studies from islands are a favored research subject used by evolutionary studies, with a close look at environmental conditions at the forefront of the list of possible candidates driving social change (Redman 1999). This focus stems from the very real observation that on an island there is only so much available land and resources; even a small fluctuation in the ecology could spell large-scale social consequences (Rappaport 1978).

A classic example of how this intersection between and island ecology and a redistributive economy can evolve into state-level institutions is pre-contact Polynesia.3 While over a thousand small and large islands make up Polynesia, there was a high degree of cultural continuity between these island communities since these lands were colonized by settlers from Melanesia, bringing with them a shared cultural repertoire.

3 Contact between Polynesian and western society began as early as the sixteenth century with a number of Spanish voyages, but the bulk of contact was carried out in the late eighteenth century with heightened exploration on behalf of the French and British navies.
Part of this transported social landscape included a subsistence strategy designed to feed large populations through agricultural intensification, a task achieved through a healthy atmosphere of competition between established and aspiring elites. However, since ecological conditions varied between islands, this strategy was met with success in some cases, and complete failure in others. This differential success makes the Polynesian islands a rare and insightful opportunity to construct models on under what circumstances ecological conditions can spark evolutionary change. When examining Iceland, I will consider data from the Polynesian study as a model for examining the development of island complexity within a set of environmental constraints.

2.1.1 Chiefdoms On the Road to States: Competition, Environment, and Political Economy

Unlike their Melanesian predecessors, the one aspect all Polynesian societies share in common is their innovation of a centralized political agent: the chief. In contrast to Melanesian Big Men, whose only power came from their ability to persuade individuals to do as they asked, chiefs held power and authority that was backed by the formal political office of the chieftaincy. Part of a chief’s authority placed him in charge of the political economy, which was fueled by numerous avenues of acceptable competition. Competition was crucial to this system, for it ensured that in exchange for their support, the followers of a chief could rest assure that their leader would be mindful

4 A “big man” refers to a highly influential individual who can be called upon to temporally assume political leadership when it is needed by their community (Sahlins 1963). Since there is no formal political office associated with these positions, big men have no political authority, and therefore, no guaranteed rights and privileges, but can acquire respect and status from this position.
of their interests lest they take back their support and give it to a rivaling leader.

Throughout Polynesia, competition among elites, especially chiefs, stemmed from the ultimate source of chief’s authority: his social relationships. Social relationships, brokered through “gifts” of land, luxury goods, and other valued resources, are the material manifestations of a chief’s authority and expressed power. In return for these gifts came a social debt that a chief’s supporters paid off by providing additional goods and services that can then be filtered back into the redistributive economy to maintain and create new social networks (Godelier 1999; Mauss 1925). Since social relationships are fluid and prone to change, chiefs must rely heavily on the loyalty and support of their retinue to ensure their continued success. This limitation creates an ephemeral power base that must be constantly reinforced through elaborate ceremonies and the appeasement of up and coming elites who may try to force a chief out of power (Earle 1997: 13). If a chief fails to maintain the political economy, that chief can be quickly replaced by another chief or aspiring elite who can. In the end, chiefs often fall prey to their own successes, and must invest heavily in their supporters in order to ward off any rivals.

All of this brokerage can translate into very little personal wealth for a chief, thwarting any attempts at aggrandizement. On the other hand, competition could also create a setting for developing systems of stringent control over resources that are managed by elites, paving the way for the telltale signs of budding state-level institutions (Dietler 1996; Hayden 1995, 1996). For example, competition and the fear of usurpation in Hawaii were met with tactics for gaining control over not only access to luxury goods but also staple products by regulating and encouraging surplus production through a
complex system of land tenure (Earle 1978: 139). To pull off this task, a chief had to control the labor and production of households within his domain, which he did by convincing people that it was necessary for him to collect and store a surplus of goods that could then be used to stave off any potentially bad times. As Malo (cited in Sahlins 1963: 296) writes:

Store-houses were designed by the [chief’s executive] as a means of keeping people contented, so they would not desert the [chief]. They were like the baskets that were used to entrap the hinalea fish. The hinalea thought there was something good within the basket… In the same way people thought there was food in the store-houses, and they kept their eyes on the [chief].

Just as a fisherman lures in his prey by tempting him with irresistible bait, so, too, do chiefs, with their lavish displays of wealth and power attract the attention and veneration of followers with little more than the promise of reward. Chiefs, therefore, occupy their time by looking out for their best interests, occasionally providing staple and prestige goods to their followers, but with the scales of wealth and power always heavily tipped in favor of the chief. Therefore, the reorganization of land and labor in Hawaii lead to greater wealth and power for elites and in some of the islands, the marginalization of commoners.

All of a chief’s or aspiring elite’s ambition, however, can be severely curbed by a scarcity of resources (Cohen 1981: 87-89; 94-97; Johnson and Earle 1987: 246-248). A shortage of resources can be the result of a number of variables, including warfare or a loss of trade connections but more often than not, traditional evolutionary models stress environmental factors, be these natural or human induced. While ecologically driven scarcity can be combated in foraging and horticultural societies through fissioning, as
was the case in Melanesia, this is hardly a viable option for Polynesian societies that practice intensified agriculture. Intensified agriculture requires individuals to invest heavily in land enrichment projects, making it harder for them to simply walk away even when environmental or social conditions have diminished the returns on the productivity of the land (Gilman 1981: 6). This inability to alleviate pressure on the environment can become a bifurcation point in the authority and power of a chief: either they will be able to convince their followers that they can guide the society out of a crisis by opening up their storehouses and dispensing crucial resources, or the system will collapse altogether (cf. Tainter 1988). When environmental conditions set limits to social control, or to the continued ability of the “economic system to yield sufficient surplus, chiefly power will be undermined” (Kirch 2000: 323).

These possible paths can be seen in the ecological differences between the Marquesas and Hawaiian islands. The Marquesas are a prime example of how the authority of chiefs could be destabilized as a result of environmental degradation. As with other Polynesian societies, the arrival of human settlers into the Marquesas ushered in a transformation of the landscape, making it suitable for intensified agriculture. Specific to Marquesasan society was a heavy reliance on arboriculture, principally the cultivation of breadfruits trees (Kirch 1991: 128). Breadfruit yields seasonally, making storage and the development of a storable breadfruit paste or ma to supplement leaner agricultural periods a necessity. Initially, chiefs in the Marquesas held a high level of power in the society, and arguably as long as breadfruit trees could be harvested and ma produced, the power of the Marquesasan chief went unchallenged. Part of the logic behind the initial success of Marquesasan chiefs rests on the notion of capital investments
(Earle 1978: 182-185). First, as the amount of cultivable land in these island geographies was limited (Kirch 2000: 255); and second, households who have made intensive labor investments, which may have long-lasting assets, were not easily relinquished (Gilman 1981: 7). Households may find paying tribute to a chief in exchange for continued access to these lands a viable and profitable arrangement. Further, this situation may have been even more salient in the Marquesas where breadfruit was the dominant subsistence produce. Breadfruit trees on average take five to seven years to start producing fruit; however, once they do the benefits are substantial with one breadfruit tree able to produce a 170 fruit crop a year for over fifty years (Wilder 1971: 11). Competition over rights to these trees has the potential to be intense; if a chief is unable to ensure rights to access to these trees among his followers, his authority would be rightly challenged. If a tree is destroyed in a raid for example, the recovery and investment time for a household is not one growing season, but five or seven, making the relationship between chief and follower all the more intense. Ultimately, this delicate balance became un leveled as repetitive episodes of drought destroyed breadfruit crops; since chiefs were unable to end these droughts, their authority was undermined paving the way for usurpers to seize an opportunity for power (Kirch 1991: 142). As the authority of chiefs diminished, the power void was filled by new class of ambitious priests and warriors, creating a fluid system of competition between rivaling factions and an inability to form stable complexes of either chiefly or state institutions. In the end, Marquesasan societies vacillated between periods of greater social complexity that closely reached the level of a state, and periods of decline and chaos with each wave of new classes of elites—a prime example of chiefly cycling sharply defined by ecological limitations.
Hawaii, however, followed a different trajectory. Hawaiian chiefs were less limited by a fragile and precarious ecosystem (Kirch 2000: 324) making the authority of Hawaiian chiefs less subject to frequent challenges by up and coming elites. When ecological shortages did occur, chiefs were typically able to convince their followers that they could help them weather the storm by providing goods from their personal storehouses and could even appear to end these episodic crises by performing rituals to appease the wrath of the gods. All a chief asked for in return was support. Support, in the form of agricultural goods, and services such as labor and military assistance ultimately set a chief socially apart from everyone else, creating systems of inequality and marginalization. As with the Marquesas, one of the economic motivations for commoners to comply with this asymmetrical social structure was the capital investments they had made in the transformation of the landscape. The subsistence of households depended largely on taro, which required labor intensive irrigation projects; and sweet potatoes, which were grown through methods of dry agriculture but the fields still needed to be cleared and mounded on a regular basis; and lastly on fish which required the building of labor intensive ponds (Earle 1978: 184-185). However, unlike the Marquesasan chiefs, pre-contact Hawaiian chiefs were more likely to be able to ensure the continuation of the subsistence and political economy, in part because ecological conditions were more favorable. Hawaiian chiefdoms were, therefore, far more stable than those found in the Marquesas, allowing for Hawaiian chiefdoms to outlast those in the Marquesas. Yet Hawaii ultimately became a secondary state under the leadership of its first king, Kamehameha in 1810. Few would have predicted Kamehameha’s rise to power, for while he came from an elite background, his family had been far from
influential on the Hawaiian mainland (Flannery 1995: 5-14). Prior to Kamehameha’s startling rise to power, a number of prominent families had already reached tremendous wealth and power, establishing themselves up as “paramount chiefs,” who governed over large regional territories. Paramount chiefs had pushed Hawaiian society closer and closer to a centralized political structure, but even still it was an outsider who united all of the Hawaiian islands into one kingdom. There were no ecological disasters that marked Kamehameha’s ascendancy; but by all accounts Kamehameha’s success came with his ability to align himself with Pacific colonial powers, using western trade goods to broker local alliances and western military technology to conquer those who refused his political friendship (Friedman 1985). Is it merely a coincidence that within thirty years of western contact Hawaii became a secondary state (Sahlins 1985)? Or was it elite control over the agricultural rich lands that allowed the limitations of chiefdoms to be breached, igniting the development of state-level dynamics? Polynesia demonstrates that the path to state-level complexity is one with many twists and turns, as no single avenue can ever guarantee greater social complexity. I would argue as well that while ecological variables were crucial to the development of Polynesian social complexity, we cannot rule out the role of trade and contact with other societies as sources of influence (see also Friedman 1985). If scarcity is a concern within an island society, it stands to reason that one solution not considered in the previous examination is how trade can help alleviate shortages. Local as well as long-distance trade are well documented in ethno-

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5 Captain James Cook of the British Royal Navy first made contact with Hawaii in 1778 CE. Sahlins (1985) credits Hawaii’s westernization and state formation to the fact that the islanders came to see Cook as a god, but Friedman (1985), rightly in my opinion, points out the dominant role that a new trade network played in not only the centralization of power in Hawaii, but also the rise of a new class of elites and ultimately to structural change.
historical case studies of chiefdoms as these activities easily play into a redistributive economy and the need for elites to broker social relationships. Trading activities as well as local surplus production must therefore be considered in the context of both primary and secondary state development.

2.1.2 Polynesia and Iceland

The Marquesas and Hawaiian islands provide two distinct models for examining secondary state formation within island environments prompting us to ask, did Iceland follow a path similar to the Marquesas or to Hawaiian islands? Iceland shares several similar traits with Polynesia: colonization and the transportation of a physical and social landscape; continual push for the colonization of other islands; phases where the ceiling for fissioning and island colonization was reached; circumscribed and controllable resources; differences in ecological zones that relegate agricultural intensification to a few specific geographic areas; social systems that rests on the ability of individuals to make and maintain social alliances, grounded in the ability to intensify an agricultural resource base; continual competition between chiefs and other elites, with the periodic development of new classes of elites (storgodar in Icelandic); and the consolidation of political power and the development of regional or paramount chiefs (ríki in Icelandic).

One factor not often considered for Iceland, however is, as we saw with Hawaii, a complex system of trade for prestige goods developed during the early phases of settlement and was later replaced by the commercialization of subsistence goods sold at

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*The Norse in Iceland began to establish additional colonies in Greenland by 950 CE and Vinland by 1000 CE.*
both local and global markets. As with the Marquesas, anthropogenic degradation instead has been presented as the driving factor in the collapse of chiefdoms and the development of a single central authority figure in Iceland. A steady and profound decrease in land productivity and ensuing land scarcity has been seen as driving the precarious, marginal medieval Icelandic landscape into a bleak island. Resource scarcity, it has been argued, galvanized into violent tensions between elites, with some elites able to outcompete their rivals by attracting more followers by lending subsistence support to those households in need. Ultimately, one family will gain control and unite the entire island; unfortunately, this family is not able to hold onto this position for long and must seek help from its allies in Norway. Norway offers its support but only once Iceland agrees to give up its political sovereignty. However, state institutions are seen under autonomous models as entirely a local, Icelandic innovation; Iceland’s political connection to Norway came after, not before suggesting that Iceland’s social complexity was the result of autonomous processes only.

While we must question just how insular Iceland was throughout the medieval period (see chapters 6 and 7), we must first seriously consider the claims of degradation and resource scarcity as the driver of social complexity, however, needs to be brought into question. This question can be resolved by investigations on soil accumulation rates, pollen distribution analysis, and a reexamination of carrying capacity levels. In what follows, I will present new soil morphological data that suggest that Iceland did not outreach a critical threshold of resource availability, suggesting that as with Hawaii, we must look beyond the environment for the agents of state development in the twelfth and thirteenth century.
2.2 The Physical Landscape

Iceland is a volcanic island of about 103,000 km (40,000 square miles) on the Mid Atlantic Ridge. Despite its name and location, temperature in Iceland is kept fairly moderate by the North Atlantic Drift of the Gulf Stream (Guðmundsson and Kjartansson 1984: 6-7; Hjálmarsson 1993: 6). The climate of Iceland can be characterized as oceanic and moist with mild winters (mean temperature in the lowlands is between -2 to 2°C and -8 to -2°C in the highlands) but cool summers (mean temperature for the lowlands is 9 to 12°C and 6 to 9°C in the highlands). The physiography of Iceland is often described as a contrasted landscape made up of both fire and ice, as much of the topography of the island is shaped by active volcanism and glaciation making only one fourth of the island habitable (Guðmundsson 2007). Volcanic eruptions on average have occurred every four to five years throughout the Holocene, producing volcanic soils basaltic in origin (Arnalds 2004: 4-5). Icelandic soils are classified as Andosols, with perhaps the largest area of Andosols in Europe and possibly greater than five percent of all the Andosols in the world (Arnalds 2004: 1-5). Today, Icelandic Andosols can be classified into seven soil types, Histosol, Histic, Gleyic, Brown, Vitrisol, Cryosol, and Leptosol:

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Symbol</th>
<th>Icelandic Term</th>
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<tbody>
<tr>
<td>Histosol</td>
<td>H</td>
<td>Mójörð</td>
<td>&gt;20% C</td>
<td>Histosol</td>
<td>(Andic) (Cryic) (Histosol) (Gleyic and Histic)</td>
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<td>Histic</td>
<td>HA</td>
<td>Svartjörð</td>
<td>12-20% C</td>
<td>Aquand</td>
<td>Gleyic and Histic</td>
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<td>Gleyic</td>
<td>WA</td>
<td>Blautjörð</td>
<td>1-12% C, redox features</td>
<td>Aquand</td>
<td>Gleyic</td>
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<tr>
<td>Brown</td>
<td>BA</td>
<td>Brúnjörð</td>
<td>1-12% C; &gt; 1% Si</td>
<td>Cryand</td>
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<td>Soil Type</td>
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* World Reference Base for Soil Resources

Histosol, Histic, Gleyic, Brown, and Vitrisol Andosols make up most the soil in Iceland, and most regions in Iceland are characterized by a combination of these Andic soil types (Arnalds 1999). Histosol and Histic soils are characterized by their high organic content, are usually black to dark brown in color, have a relatively high sand fraction (>40%), and are often in areas with poor drainage, most commonly peat bogs (Arnalds et al. 1995: 164). Gleyic soils have less organic content, are usually gray-brown in color, and are characterized as having high water retention correlated with a relatively high clay fraction (>10%), and are often found near wetland areas (Arnalds et al. 1995: 162; Arnalds 2004: 9). Brown Andic soils are typified by similar percentages of organic material as Gleyic soils, but with a high silt fraction (>40%) and lower water retention capacity (Arnalds 2004: 12). Brown Andic soils are commonly found in well-drained rangelands and are often thought to be highly productive by modern Icelandic farmers (Ólafsdóttir and Júlíusson 2000: 454-457), but are also prone to erosion since they have a lower density than Gleyic soils (Arnalds 2000: 18-22). Vitrisol Andic soils are distinguished by their lack of organic material, are usually yellow-brown (more rhyolitic composition) to black (more basaltic in composition) in color, have a high sand fraction (>60%), low water retention, are highly prone to erosion and are hence found at shallow depths, and are located near active volcanic regions. Regional soil classifications are not static; soil types...
can be augmented and transformed. For example, the addition of vegetation coverage can transform Vitrisols into Brown Andosols, while the addition of silt to Histosols and Histic soils can create Brown and Gleyic soils (Arnalds 2004: 10-11). Agriculturally, a soil complex of Brown and Gleyic Andosols (BA/WA complex soils) are considered highly fertile, since these soils typically have substantial organic carbon contents, adequate drainage, and are less friable and therefore more resistant to erosion (Óskarsson et al. 2004: 226; Waateringe and Robinson 1988).

2.3 Land Degradation and the Norse Colonization of Iceland

When the settlers arrived in Iceland in the late ninth century they brought with them a transported landscape, one derived from their Norwegian homelands that centered on animal husbandry. Cattle, sheep, horses, goats, and pigs were immediately introduced into an environment with no native predators (Jóhannesson 1974: 288). These animals taken together form a “Landnám package” that required substantial acres of rangelands (Amorosi et al. 1997: 501). In addition to livestock rearing, Icelanders relied on a flexible economy of both wild and domesticated resources. Unlike other North Atlantic colonies, however, Iceland had fewer wild resources. There were no caribou, or polar bears and only minimal seal and walrus populations. The small arctic fox is the only native mammal native and while it was hunted, it was probably never an essential resource. Iceland, however, did have large colonies of birds, especially puffins, and its rivers teemed with fish. Edible plant species were equally limited, consisting of a few varieties of berries and a few leafy plants. As in other Norse North Atlantic colonies, diet was closely correlated with social status, as more wealthy individuals relied less on wild
resources for subsistence (Amundsen 2004). Therefore, the crucial component for all farms was grass.

Prior to Norse settlement, the landscape of Iceland consisted of a network of dense scrub birch and dwarf willow forests intersected with grassy meadows in the highlands, which were thought to have been settled first, and a patchwork of wetlands and forests in the lowlands (Caseldine et al. 2004; Smith 1995: 319; cf. Vésteinsson 2001). To meet the needs of their agro-pastoral economy, the Icelanders burned down large tracks of forests and began to drained the extensive networks of bogs that covered most of the lowlands. While grain could be grown in some areas in the south (Simpson et al. 2002: 423-443), Iceland quickly rallied its economy around cattle and sheep production. Therefore, the crucial component for all farms was grass. The ability to produce enough grass that could be made into hay for winter fodder determined the number of livestock a farm could sustain. In the winter months, livestock mostly had to be fed stored hay, but farmers could supplement their diet through “winter grazing” (Simpson et al. 2004; Smith 1995: 329). Grass continues to grow during the winter at a reduced rate; however, some grazing can still be accomplished. The strategy for livestock subsistence during the winter months was to combine both grazing and foddering. For the summer, livestock subsistence was accomplished almost entirely through grazing. During the Settlement period, the Medieval Warming Trend allowed for high grass yields, resulting in a steady increase in both livestock and human populations (Byock 2001: 46-55).

7 The survey data collected for my research, however, suggest that the lowlands and highlands were settled at roughly the same time (see chapters 5-7).
This bountiful environment, however, was not durable. Many scholars would suggest that climatically and human induced deterioration in land productivity account for the growing tensions and factionalism of the thirteenth century alongside greater power and control by a select group of elites who could stave off resource shortages, especially hay shortages, by opening up their storehouses of reserves. The logic of the argument suggests that, as land became scarce, population pressure created severe tensions and competition for resources, and a greater dependency on chiefs for additional hay reserves. Since the population steadily grew throughout the medieval period, these hypotheses follow, more grass pasture was needed, resulting in more forest clearing projects and thus “after a few generations of rapid deforestation [scrub bushes] and extensive livestock raising the productivity of the land began to decline” (Byock 1988: 55).

The first series of degradation began in the highlands. Pollen analysis illustrates a sharp decline in birch trees and an increase in grass and heath within a hundred of settlement (Amorosi 1992; Buckland et al. 1990; Caseldine et al. 2004). “On the European continent grazing often created permanent grasslands, but in Iceland it was mostly devastating to the environment” (Byock 2001: 84). With the forests cleared and a high degree of overgrazing, there was little organic material left on the surface to hold onto the soil. This “ovigenic landscape” initiated an erosional regime that removed highland topsoil, which could then be transported by wind action down slope and dumped unevenly onto the lowlands (Dugmore and Buckland 1991: 499). The highlands now denuded and suffering from severe erosion, became unproductive grazing land. Smith has argued that erosional patterns in the highlands also resulted in a decrease in land
productivity in the lowlands, by precipitating an increase in water-logging and poor drainage (1995: 338).

To make matters worse, in addition to these negative anthropogenic alterations, a change in the climate also precipitated a decline in land productivity. Throughout the eleventh and twelfth centuries CE, the temperature began to drop, as the onset of the Little Ice Age (LIA) took affect (Buckland 2000: 146-147; Sveinbjarnardóttir 1991: 161; Vésteinsson 2000a: 166). As the climate grew colder, the amount of drift ice from Greenland steadily increased, creating immensely colder conditions for the inhabitants of Iceland. The onset of the LIA in Iceland precipitated a decrease in the overall temperature resulting in the inability for grass crops to complete their growing cycle as the critical level of accumulated temperature needed for a season was not met (McGovern et al. 1988: 234; Ogilvie 1984a, 2000). Bergthórsson argues that the growth of grass depends heavily on temperature, and for Iceland, winter temperatures are especially important (1985: 113-119, 2000: 264-269). Although one may assume that summer temperatures are the pivotal factor for hay making since this is when grass is harvested, Bergthórsson posits that the overall average temperature from September to October is the most crucial period, for it is the most fragile time in the life cycle of grass seeds.

From data collected from modern farms, Bergthórsson suggests that a decrease in the temperature by one-degree Celsius will result in a fifteen percent decrease in hay yield. A fifteen percent decrease in hay yield will result in a fifteen percent decrease in the number of livestock. The decrease in livestock will in turn lead to a ten percent decrease in the human population. A decrease in the ability to grow enough grass to be made into hay is only half of the havoc wreaked by a drop in the temperature. In addition to not
being able to produce enough storable fodder, the colder temperatures also reduce winter grazing, thus creating the need for even more amounts of hay. A decrease of one-degree Celsius will increase the amount of hay needed for the winter months by fifteen percent. When we factor in the decrease in the winter grazing, the estimated loss of livestock is thirty percent, subsequently leading to a twenty percent decrease in the human population (Bergthórsson 1988a: 389-392). The overall drop in temperature during the LIA in Iceland was two to three degrees Celsius, thereby sharply reducing the productivity of pastures by as much as 50 to 60 percent in the course of a few bad summers (McGovern 1991: 86).

If we follow a strict environmental determinist scenario, irreversible anthropogenic changes to the landscape and a rotten change in the climate destroyed the fragile yet flexible economy of the Norse and it was only a matter of time before the Norse would no longer be able to meet their subsistence needs. A drop in overall temperature made it impossible to produce enough grass to fodder livestock through the winter. As grass production decreased, so too, did the number of livestock. Left merciless to whims of the climate and a denuded landscape, the Icelanders were sent down a path of starvation and social upheaval as commoners became entirely dependent on elites for access to vital resources. Ultimately, the strain of this dependency lead to escalated forms of competition, which could not be supported by the already dire condition of the environment. In the end, Icelandic chiefdoms could no longer maintain their social system, and were left prey to the ambitions of a new class of elites, the so-called storgöðar or big chiefs who consolidated their power through the development of regional or paramount chieftaincies called riki (see also chapter 1). In the end, one
family from this new class of elites would unite all of Iceland, transforming the Icelandic political landscape from a chiefdom to a state.

Several assumptions are made in the preceding hypotheses on environmental change in Iceland that need to be further addressed: first, it is posited that social collapse is positively correlated with a decrease in temperature and the onset of the LIA; second, it is suggested that prior to human occupation the ecology of Iceland was unaffected by erosion; third, it is assumed that farmers exceeded the land’s carrying capacity and attempted to graze too many cattle and sheep; and fourth, it is assumed that alterations made to the landscape affected all of Iceland equally.

2.3.1 Decrease in Temperature

Bergthórsson asserts that a reoccurring topic in Icelandic history is “the constant struggle between man and nature—a history in which the impact of climate on society is an unbroken theme” (Bergthórsson 1988a: 389). As Bergthórsson demonstrates, there is a correlation between temperature and grass growth; from this correlation one can then calculate the potential loss in livestock and human populations (Bergthórsson 1988b, 2000). However, Bergthórsson’s calculations are an estimation of the potential impact a colder climate will have on a population and do not demand that these percentages can therefore explain rising social tensions in the thirteenth century. The primary concern in using Bergthórsson’s study for examining medieval Iceland is that climatic data has not sufficiently demonstrated that the temperature had decreased during the Commonwealth period. There are, in fact, conflicting opinions as to when and where the LIA occurred (Ogilvie and Jónsson 2001: 10). The primary data set for the examination of climatic
variation during the LIA are GISP ice-core records; however, one can analyze several different aspects of an ice-core, including stable isotopes, dust content and chemical composition. While Ogilvie and Jónsson view these different lines of evidence as a means to contrast and complement one another, they observe that these independent data sets often produce different chronologies for the LIA, leading to debate and concern over just when exactly the LIA began and ended (Ogilvie and Jónsson 2001: 13-15). For example, Dansgaard (1964) posits the onset of the LIA occurred in the late thirteenth century while Dahl-Jensen et al. (1998) suggest the LIA did not occur until the mid sixteenth century CE (cf. Ogilvie and Jónsson 2001: 15). Although a difference of a few hundred years matters little in terms of the broad time depth analyzed in global climatic research, it matters tremendously when one attempts to apply this data to the archaeological record. More recent ice-core analysis suggests that the onset of the LIA, at the earliest, occurred in the mid fourteenth century (Ogilvie and Jónsson 2001: 16; Slötter et al. 1999). Therefore, climatic change in Iceland came about a hundred years after social collapse, and therefore cannot be said to be the cause of collapse.

Equally faulty is the juxtaposition between the temperature bliss of the Little Climatic Optimum and the temperature fluctuation thought to have occurred by the time of social upheaval. While the Little Climatic Optimum can be characterized as a period of mild weather, temperatures during this period were not static (Grove 1988; Lamb 1984). Throughout the medieval period, temperatures in Iceland fluctuated. This fluctuation would not have been startling even to the original settlers, since coming from Norway and the British Isles they would have learned how to cope with the possibility of a harsh winter or colder than average summer (Ogilvie 1990: 234). If a correlation exists
between a decrease in temperature and an increase in social friction, one should be able to
document a decline in temperature in the late twelfth-early thirteenth century. However,
Ogilvie (1990: 247) suggests that the early twelfth century saw more cold seasons (39%)
than the late twelfth-thirteenth century (10%).

One way out of the dilemma of not being able to document a precise date for the
onset of the LIA, nor the ability to determine the severity of a colder climate in the
thirteenth century, has been to use historical texts and to suggest that variability, not
overall temperature was the cause of social collapse (Byock 2001: 57; Grove 2001). The
severity of the proposed cold period in the thirteenth century is sometimes reconstructed
using historical accounts in Iceland of cold periods and the presence of drift ice from the
sixteenth through the nineteenth centuries CE. These detailed accounts document the
duration of winter, the duration of cold spells and the devastating effects the cold had on
grass growth and livestock and human mortality:

At this same time many severe winters came at once and following them people
died of hunger (cited in Ogilvie 1984b: 141 from an unknown source).

These accounts also suggest that the presence of drift ice was highly variable:

The ice is always to be found between Iceland and Greenland although
sometimes it is absent from the shores of Iceland for many years at a time…
Sometimes it is scarcely to be seen for whole decades or longer (cited in Ogilvie
1984b: 143 from Qualiscunque 1580s).

Historical accounts, when used properly, can be used to complement climatic and
archaeological data. These accounts demonstrate variability in the climate and the dire
outcome cold winters could have on Icelandic society. However, while it would be
foolish to doubt that climate plays a role in any society, and perhaps naïve to assume that
cold temperatures did not influence Icelandic sustainability and economy, we cannot assume that the events described in the historical records, such as those presented above, are a fair representation of the thirteenth century. We must also not assume that climatic variations impacted all of Iceland equally. Iceland consists of two ecological regions: the north and the east as one zone, and the south and the west as the other (Gunnarsson 1980). The northeast tends to have lower temperatures than does the southwest. At a more microlevel, variation has been found even between farms within the same district:

Snow, for instance, collects more easily and stays longer in certain localities and on the fields of certain farms than elsewhere. Similarly, alternative thawing and freezing in the spring (winter kill) can affect seriously the productivity of hay fields, and such very short-term fluctuations need not occur simultaneously throughout the country but vary even within districts (Eggertsson 1998:7).

Variation in temperature exists not only through time, but also within and between regions (for a more specific example, see discussion on Hjaltadalur in chapter 5).

Not present in these discussions on the influence climate had on society is a discussion on risk abatement and the possible steps individuals may have taken to cope with an increasingly colder climate. Deterministic theories often assume that human societies are inflexible, and are therefore left merciless the destruction any external change, such as climate, will have on the social structure. There are, however, several strategies societies can use to combat fluctuations in agricultural productivity. The Grágás, a book of laws written in eleventh or twelfth century suggests that medieval Icelandic society had devised a series of mechanisms for creating buffers against poor grass yields. The Grágás state that when a farm is unable to support its members, other kin members should be looked to for aid. If, however, family support failed, the community or hreppur was to provide the safety net. Everyone had to be a member of a
hreppur and the law imposed a fine on people who did not pay their share of taxes to the hreppur (Eggertsson 1998:8). According to the Grágás, poor families were assigned to neighboring farms for specific periods of time, or until their situation improved. The community, therefore, were required to aid unfortunate members. The Grágás also made provisions for when farmsteads were accidentally burned down, stating that the community should pay for half of the damages incurred to the homestead, but stipulates that the same person can only claim compensation three times. The Grágás also stipulated that farms that suffered losses in livestock were to have half the livestock replaced by the community (Eggertsson 1998: 9; Grágás 2000). However, the law states that at least one-fourth of the livestock must perish before the community can step in. The Grágás illustrate that medieval Iceland had developed an insurance policy against risk: the hreppur. The sagas also stress a concern for balancing the number of livestock with the amount of fodder available for the winter (Eggertsson 1992, 1998: 18). Numerous sagas relate stories of farmers being too greedy and attempting to keep too many cows alive through the winter, only to have their ambitions met with hunger and death. The sagas demonstrate that medieval farmers were not unaware of the possible fluctuation in grass yield and as the Grágás demonstrate, measures were taken to buffer the sometimes poor decisions made by farmers.

2.3.2 Pre-Landnám Erosional Patterns

Through geomorphic and remote sensing analysis, Ólafsdóttir et al. have identified three significant periods of land degradation in Iceland caused by erosion (Ólafsdóttir et al 2002). Two of the three phases occurred prior to human settlement.
They conclude that land degradation is possible without anthropogenic influence and suggest that Iceland has always been geologically dynamic and active. Land degradation did occur shortly after human settlement, but they do not identify it as a significant, or catastrophic (Ólafsdóttir et al 2002: 164). They argue that land degradation caused by livestock rearing reached a catastrophic level in the sixteenth century, when some areas in Eastern Iceland were forced beyond the threshold of recovery (Ólafsdóttir et al 2002: 166; Zutter 1991). Guðbergsson has also found evidence for soil erosion prior to human settlement (Guðbergsson 1975, 1996) and argues that soil accumulation rates in Northern Iceland were very slow prior to human occupation, indicating that there was very little soil growth in prehistory (Guðbergsson 1975: 41). Guðbergsson concludes that in terms of soil productivity, land becomes more productive agriculturally only after anthropogenic changes to the landscape are made (Guðbergsson 1996: 31-32). These studies have shown that the notion that the ecology of Iceland in prehistory as pristine, and therefore in harmony, is fallacious. The environment in Iceland, like all landscapes, has continuously undergone alterations.

2.3.3 Exceeding Carrying Capacity

Studies examining the carrying capacity of the land allow us to assess the hypothesis that farmers in the settlement period over-exploited the landscape (Butzer 1990; Fletcher 1995; Netting 1982, 1990, 1993; Stone and Downum 1999). “It seems that most estimates of Iceland’s carrying capacity are based on what we know about the actual population of the country [which until the twentieth century never exceeded 50,000 people] and then assuming in a thoroughly Malthusian way that this number was
close to the maximum that could be supported” (Kristinsson 2000: 271). Kristinsson argues that the estimates about carrying capacity should be based on the physical properties of the landscape and the traditional farming methods used to make that landscape productive (Kristinsson 2000: 271; Sigurbjörnsson 2000). He concludes that the population size of Iceland was not fixed at 50,000 because the carrying capacity of the land had been reached, and that the land can actually easily accommodate 375,000 cows or 1.5 million tons of hay a year. These figures have never been reached in Iceland, allowing us to conclude that medieval farmers did not exceed the carrying capacity by over-exploiting the landscape. Kristinsson argues that it was a labor scarcity that constrained medieval farming, not a land scarcity, suggesting that degradation models need to be reexamined (Kristinsson 2000: 276-278). Likewise, it has been argued that ambition outweighed conservationist concerns, as intensive farming gradually destroyed the vegetation cover and forests throughout the settlement period. Pollen analysis demonstrates a decline in birch trees; however, Hallsdóttir suggests that this decrease was only true for the first hundred years of settlement; and that by the tenth century, birch rates stabilize (Hallsdóttir 1987). These data indicate conservationist efforts, and the realization that if forests continued to be destroyed at the rate exhibited during the initial settlement of the island, there would be no forests left (Hallsdóttir 1987: 33-35). Historical documents from the twelfth to eighteenth centuries CE describe forest coverage that roughly correspond to the forest coverage seen today (Júlísson 2000: 279-280). For example, according to medieval texts, the churches in South Iceland “used three forests as a wood resource in the Middle Ages… all of which are in existence to this day… Had there been considerable forests in the immediate vicinity there is no doubt
that those powerful institutions would have secured rights to them” (Júlísson 2000: 280).

Forest clearing, therefore, appears to be an early phenomenon, “concentrated in time, and was not gradual” (Júlísson 2000: 280).

### 2.3.4 Landnám Soil Erosion

Dugmore and Buckland’s soil accumulation survey suggests that erosion in the highlands produced an increase in soil deposition in the lowlands (Dugmore and Buckland 1991). As a result, they argue that both the highlands and the lowlands undergo a decline in land productivity. However, these studies fail to consider two pivotal factors: first, that their region of study, Mývatn, may not be geologically characteristic of Iceland as a whole; and second, degradation of the landscape in one area could possibly benefit and enhance productivity in neighboring areas, as the erosion of the highlands resulted in massive amounts of fertile soil trickling down into the lowlands.

A number of well preserved, medieval longhouse sites have been discovered around Mývatn, making the area a logical choice for archaeological investigations (Friðriksson et al. 2004; Lucas 2009). These investigations aptly demonstrate a pattern of anthropogenic landscape alterations. Pollen analysis indicates that shortly after the beginning of the Landnám or Settlement period (ca. end of the 9th century CE), a decline

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8 Buckland and Dugmore (1991), Amorosi et al. (1997), McGovern (1990), McGovern et al. (1988), Simpson et al. (2002) and Smith (1995) are all archaeological-geomorphological-faunal studies carried out under the auspices of the North Atlantic Bicultural Organization (NABO) centered at Hunter College (McGovern 2004). NABO research has argued for a similar trajectory for the Norse colony in Greenland (McGovern 1994, 2000)

9 These trends are not Iceland-specific; for comparison, see Joyce and Mueller (1997) who have suggested a similar scenario for the social development of prehistoric Oaxaca.
in birch and willow trees is evident. By about 1000 CE, highland areas witness soil attrition, while lowland areas begin to rapidly accumulate soil. By 1300 CE, lowland areas are thought to suffering from erosion as well, exposing unproductive Vitrisols (Dugmore and Buckland 1991: 499-502). Around this time, sites begin to exhibit a steady decrease in cattle and sheep faunal assemblages, suggesting that farms are unable to rear as many livestock as they once could at the beginning of the Settlement period (McGovern 1990; McGovern et al. 1988). Today, many of these Mývatn medieval farmsteads are located in highly denuded areas (see Figure 2.1), prompting researchers to suggest that a mismanagement of agro-pastoral practices, perhaps coupled with an increasingly colder climate, acted as the executions of modern land degradation. It is not the intent of my research to suggest that areas of northeastern Iceland have not been the target of devastating erosional regimes (Arnalds 2000; Arnalds et al. 1987); however, is it appropriate to apply this sequence of events to explanations of social change and the loss of political autonomy by 1262 CE? That is, can the events that unfolded in Mývatn be used as a microcosm for the trajectory of farms throughout Iceland and the eventual instigator of social pandemonium? To address this question, we must further explore the geological setting of Mývatn, and examine how this setting compares with other areas in Iceland.

Iceland is thought to be a hot spot on the North Atlantic Ridge, suggesting that under the island is a stationary hot mantle plume. Through continued tectonics, Iceland’s location over this mantle plume has shifted eastward, creating a series of fracture zones that have now diverted northeastwardly and southwestwardly (Guðmundsson and Kjartansson 1984: 31). Therefore, seven million years ago, Snæfellsnes was thought to
be directly over the mantle plume, but for the last two million years, the island has rotated such that Myvatn is currently believed to be near the center of the mantle plume (see Figure 2.2). The close proximity to the center of the mantle plume situates Myvatn along an axial rift zone, with active volcanism and frequent earthquakes (Guðmundsson and Kjartansson 1984: 28-34). Arguably, a significant portion of the erosional patterns identified in Myvatn stem not solely from farming practices, but from rifting events.

Throughout human occupation, Myvatn, given its position in the volcanic system, has been distinctive from many other regions, suggesting that the geological history of Myvatn precludes its use as an indicator of island-wide developments.

Another consideration for using evidence from Myvatn as a proxy for island-wide agricultural development is its parent soil classification (see Figure 2.3). The parent soils of Myvatn have been identified as Vitrisols and Leptosols, or Vitrisol-Leptosol (SW-L) complexes (Arnalds 2004: 7). SW-L complex soils consist primarily of volcanic glass, with little to no organic content. SW-L complex Andosols thus have a low soil organic carbon (SOC) content, making them virtually unsuitable for agriculture (Óskarsson 2004: 226, 228-230). However, these soils can become amendable for agriculture with the introduction of organic material. Organic-rich aeolian soil from highland areas transformed SW-L soils typical of lowland Myvatn sites into Brown Andosols, with a high SOC content, creating potentially productive agricultural fields. However, as Buckland and Dugmore rightly point out, these Brown Andosols have a low density, making them friable and prone to erosion (Buckland and Dugmore 1991: 500).

We must, however, once again address the issue of Myvatn’s concordance with the rest of the island. Of particular interest is how the soils of Myvatn compare to those
of Snæfellsnes and Skagafjörður, the two most powerful and wealthy regions at the end of the medieval period. Unlike Mývatn, the parent soils of both Snæfellsnes and Skagafjörður are Histosols and Histic Andosols, soils high in SOC and consist with wetland areas (see Figure 2.3). The addition of topsoil from highland areas created Brown and Gleyic Andosols (BA-WA complexes). Like the Brown Andosols found in Mývatn, BA-WA complexes are high in SOC, but unlike Brown Andosols, BA-WA soils have a high density, making them more resilient to erosion.

2.4 Land Productivity in Skagafjörður

The degradation of the highlands in Mývatn may have agitated erosion in the lowlands, but for Snæfellsnes and Skagafjörður, the transport of highland topsoil stimulated the productivity of lowland soils by maintaining a high SOC content and in some areas facilitating better drainage. These anthropogenic soils are potentially more agriculturally productive than they had been prior to Norse settlement. To support this argument, however, one would need to demonstrate two things: first, as the highlands are subjected to erosion and a loss of soil, the lowlands witness an increase in soil deposition; and second, that an increase in soil deposition can be correlated to an increase in soil productivity (cf. Smith 1995) and the potential for larger grass yields. The remainder of this chapter will attempt to address these issues by introducing geomorphological data from five lowland farms in Skagafjörður. From the Langholt area, the sites Geitagerði, Glaumbær, and Reynistaður are considered; from Hjaltadalur the site Hof is examined; and from Tungusveit Steinsstaðir is investigated (see Figure 2.4). These five farms have been selected for analysis here since they represent a range of farm sizes: Reynistaður
and Hof are large chieftain farms; Glaumbær and Steinsstaðir can be ranked as medium-sized, wealthy farms; and lastly Geitagerði is representative of later, smaller farms. These farms were also selected because they cover a fairly sizable and diverse area of Skagafjörður. Soil deposition was examined by measuring the amount of soil deposited between tephra layers; and soil productivity was assessed through texture analysis that should enable us to assign samples to a specific Andosol types and therefore its potential productivity (Brown 1997; Buol et al. 1980; Hunt 1972; Stein and Farrand 2001).¹⁰

2.4.1 Measuring Soil Deposition through Tephrochronology

Measuring the rate of the soil deposition in Skagafjörður has become relatively straightforward with Sigurður Þórarinsson and Guðrún Larsen’s development of tephrochronological frameworks (Larsen and Þórarinsson 1978; Þórarinsson 1980).¹¹ Tephrochronology is based on the radiocarbon dating of volcanic ash (tephra) layers that were deposited on the surface following an eruption. In Skagafjörður we are primarily concerned with tephra from the volcano Hekla that produces rhyolitic ash eruptions. The relevant tephra layers found in Skagafjörður are:

1104 CE: Often referred to as H1, or Hekla 1, is identified as a light gray-yellow-white tephra layer. The thickness of this layer varies, but in Skagafjörður it averages to between 0.5 to 1 centimeter.

2900 BP: This Hekla tephra is referred to as H3 or Hekla 3. It is characterized by a yellow-orange band on top of a white-green band below, and is often mixed with organic material. The average thickness is 4 to 6 centimeters.

4500 BP: Often referred to as H4 or Hekla 4. This Hekla tephra is a dark yellow-orange in color, and is often mixed with dark organic material. The average thickness is 2 to 3 centimeters.

¹⁰ The raw data for this analysis are taken from research conducted for my MA (Carter 2003). Soil organic content (SOC) was not considered in my MA work, so I offer a new interpretation of these data here.

¹¹ See also chapters 4 and 5 for a more detailed explanation of tephrochronology.
These tephra layers, along with the topsoil horizon, can be used as a marker of time, which allows us to then measure the amount of soil in between strata. Since we know the date of each tephra layer, and the deposition of soil between tephra layers, we can then calculate the deposition rate per year (cm/yr). From these horizons I have distinguished four time periods: Modern, Historic, Settlement, and Prehistoric. The horizon correlating to the Modern period is the topsoil horizon. Topsoil is easily classified in a soil profile, and for northern Iceland represents the last two hundred years of soil accumulation (ca. 1800 to 2000 CE). The Historic period (1104 to 1800 CE) includes the soil between the end of the topsoil horizon to the top of H1. The Settlement period (2900 BP [900 BC] to 1104 CE) consists of the soil between the H1 and H3 tephra layers and marks the onset of human occupation in Iceland. Lastly, the Prehistoric period (2900 BP to 4500 BP [2500 BC]) includes the soil between the H3 and H4 tephra layers and is representative of the soil composition before human populations settled in Iceland.

2.4.2 Soil Deposition in Skagafjörður

During the latter half of the tenth century CE, rapid forces of erosion are thought to be underway in the highlands, causing a subsequent downward movement of soil (Dugmore and Buckland 1991: 154-157). The first task in examining the productivity of lowland farms in Skagafjörður, therefore, is to determine if there is evidence of highland erosion occurring simultaneously with an increase in soil deposition rates in the lowlands.

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12 In chapters 4-6 I will present regional settlement pattern data that uses a finer resolution time scale with different names for each of these categories. I have maintained two systems of time-scales to differentiate between the two datasets and to make cross-referencing with my earlier MA research possible.

13 There are several low relief mountain chains that run throughout Skagafjörður and it is typical to find sites located at the foothills of these ranges. Highland sites are defined as those located above 250 masl. For Iceland, this is actually quite high. Few sites are located above 350 masl (see chapter 6).
If highland erosion is correlated with an increase in soil deposition in the lowlands, we would expect to see this increase during the Settlement period (ca. 874 to 1104 CE) and to continue into the Historic period (ca. 1104 to 1800 CE). Overall, the data indicate a significant increase in soil deposition in the Settlement period for all five farms surveyed (see Figure 2.5). The data collected indicate that during the Prehistoric period (4500 BP [2500 BC] to 2900 BP [900 BC]) the average rate of soil deposition was 0.007 centimeters per year, over 1600 years (see Table 2.1). For the Settlement period, the average deposition rate was 0.018 centimeters per year, over 2004 years (see Table 2.2). These data indicate that soil deposition on average more than doubled in the lowlands during the onset of highland erosion. Soil deposition patterns at Glaumbær, Geitagerði, Hof, and Steinsstaðir, for which we have data from both the Prehistoric and Settlement periods, all indicate a dramatic increase in soil aggregation. An increasing soil deposition trend continues into the Historic period, with an average rate of 0.019 centimeters per year, over 696 years (see Table 2.3). These farms document nearly the same rate of deposition in the Historic period as they had in the Settlement period, only in half the amount of time. In the Modern period (1800 to 2000 CE), the deposition rates appear to be even greater, with an average deposition rate of 0.072 centimeters per year, over only 200 years (see Table 2.4). While the initial increase in deposition during the Settlement period can best be attributed to the erosion patterns found in the highlands, the same may not be true for the Historic and Modern periods. The soil composition for the Historic and Modern periods are, as we will see when the texture data are discussed, consistent with local rather than external topsoil germination. For the Settlement period the soil is characterized by a high percentage of aeolian silt, that is, windborne silt making these
horizons secondary depositions. While highland soils can be classified as Brown Andosols with a high silt fraction, lowland soils, prior to human settlement, are identified as Histosols and Histic Andosols (H-HA) with a moderate silt fraction and a high sand and clay fraction. We can therefore posit that this windborne sediment was transported from outside areas, making the highlands a likely candidate. Deposition rates decrease somewhat in comparison to the Settlement period, perhaps indicating a decrease in the rate of erosion in the highlands, either through conservationist efforts, or complete degradation; either way, the amount of soil transport from the highlands is beginning to wane.

2.4.3 Soil Organic Content in Skagafjörður

Soil depositions rates are clearly accelerated during the Settlement period, but does that increase in soil deposition indicate an increase or decrease in overall soil productivity? Specifically, could topsoil derived from an exotic source retain any of its organic carbon content, or would it in transport be more likely to lose all vegetative content and become predominately a silt deposit? Amorosi et al. (1997), Dugmore and Buckland (1991) McGovern (1990) and Smith (1995) posit that the movement of topsoil down slope from the highlands to the lowlands would result the deposition of a silt lens with little to no organic content. However, a similar study in southwest Niger documented that aeolian materials of considerable deposition, half a meter or more over a relatively rapid period of time, “contained thirty-two times more organic carbon relative to the local topsoil… [suggesting] that wind eroded organic matter has the potential of being transferred over great distances and deposited far away from its source” (Sterk et
al. 1996 cited in Arnalds 2004: 231). As we saw in the previous section, all of the lowland farms sampled in this survey more than doubled in their amount of soil during the settlement period, suggesting that deposition was both significant and rapid, and therefore, like potentially retained a high organic carbon content. Likewise, the farms examined show a dramatic increase in silt beginning in the Settlement period (see Figure 2.6); however, silt fraction remains fairly constant thereafter and, as will be addressed below, is characteristic of Brown and Gleyic Andosols.

If land productivity changes once erosion begins in the highlands, we would expect the soil texture of the Prehistoric period to be distinct from the soil texture of the Settlement period. The soil texture of the Prehistoric period is characterized by a high sand fraction, with a moderate to low silt fraction (see Table 2.1). Sand ranges between 78 and 33 percent across Skagafjörður, while silt ranges between 60 and 19 percent, with an average range between 30 and 40 percent. The clay component of prehistoric soils also has a wide variation, with a fluctuating range between 29 and 0 percent. The texture compositions found in the prehistoric soils of Skagafjörður are consistent with those found in a bog horizon. The physical properties of Skagafjörður’s prehistoric soil can be classified as Histosol-Histosol Andic (H-HA) soil or bog soil, with a high ratio of peat to dark brown or black humic soil. H-HA bog soils, while maintaining a high nutrient holding capacity, also have a high water retention rate that allows for little to no drainage. The high organic component is represented by the high sand fraction, while poor drainage is represented by the lower silt and fluctuating clay fractions (see also Wada et al. 1997).

Soils from the Settlement period in Skagafjörður have a different texture composition than those from the Prehistoric period (see Table 2.2). The Settlement
period is characterized by a higher silt fraction, ranging from 77 to 17 percent, with an average range between 40 and 50 percent. The sand fraction decreases slightly with an average range between 50 and 60 percent. The clay fraction stabilizes somewhat, although still has a wide average range between 6 and 20 percent. The physical properties of the soil from the Settlement period are distinct from those of the Prehistoric. While there is variation between the farms examined, overall the soil can be classified as having a lower organic component, and is red to gray-brown in color, enabling one to identify these soils as Brown and Gleyic Andosols (BA-WA); most of the farms surveyed here illustrate these classic characteristics of BA-WA complexes.

The overall texture data suggest that increased soil deposition during the Settlement period is correlated to an increase in silt fraction (transformation of H-HA soils to BA-WA complexes) with an increase in the drainage ability of the soil. Smith (1995) has suggested that an increase in silt deposition can cause increased waterlogging. This can occur in areas where soil deposition raises the level of the water table, creating pockets of blanket bogs. This phenomenon is readily seen in Skagafjörður today, and likely began in earnest in the sixteenth century. However, the creation of blanket bogs can only occur in areas that are dry to begin with. That is, bogs do not become blanket bogs. Overall, the data here suggests that lowlands became drier, not wetter, in the medieval period.

Drainage alone can “increase the yield of marshy areas considerably by replacing peat and sedges with grasses, giving a better yield and quality of fodder… thus the output of fodder may be augmented by improving the productivity of the vegetated areas” (Friðriksson 1972: 795). However, that increased drainage creates predominately silty
loams that are “friable and erode easily, and their water-holding capacity and fertility can [therefore] become low” (Thorsteinsson et al. 1970: 87). Erosion does not seem to be an issue, however, with many of the farms surveyed in Skagafjörður. During the Settlement period farms like Glaumbær and Reynistaður had gray-brown Gleyic soils with an average clay fraction between 10 and 15 percent, suggesting that these soils had a reasonable water and nutrient holding capacity for grass growth. The incremental increase in soil deposition at Glaumbær and Reynistaður also indicate that erosion was not challenging the potential productivity of these farms during the late Settlement and Historic periods. These data suggest that overall, lowland farms in Skagafjörður become more productive in the late Settlement and Historic periods than they had been in the Prehistoric period. Erosion in the highlands initiated better drainage in the lowlands that stimulated soil and grass growth. A decline in land productivity cannot be demonstrated for the lowlands. The data suggest that following the erosion of the highlands, land in the lowlands become more productive, permitting farmers to increase their number of sheep folds. However, the tax records14 indicate that some farms fared better than others in the lowlands. In terms of wealth assessed by the tax records, Reynistaður is the wealthiest, followed by Hof, Glaumbær, Steinsstaðir, and lastly Geitagerði (see Figure 2.7). The data presented here suggest that regionally land productivity increased in the Skagafjörður; what remains to be examined is whether or not productivity is related to the wealth of individual farms. To assess if there is a correlation between potential land productivity and actual wealth of a farm, a survey of land use is needed. I carried out a

14 For a discussion on tax value, please see chapter 4; and for a discussion on tax and farm productivity please see chapters 5 and 6.
survey of this kind in Hjaltadalur, the valley where Hof is located. The results of this survey are discussed in chapters 5 and 6, but it is important to mention now that none of the farms surveyed indicate a decrease in agricultural productivity, instead all show an increase in economic production after 1000 CE.

2.5 Discussion

The ecology of Iceland before human occupation is characterized by dense brush and dwarf birch forests with shallow, but fertile grass covered soil in the highlands, and heavily birch forested areas intersected with boggy wetlands in the lowlands. During the Prehistoric period Skagafjörður, soil deposition rates were subtle in the lowland areas, measuring only 0.007 centimeters per year. The highlands, too, had shallow soil deposition rates throughout the Prehistoric period, as soil profiles document only a thin horizon of soil above a larger bedrock horizon (Byock 2001: 58-59). When Norse Vikings arrived in Iceland during the latter half of the ninth century CE, the highlands were perhaps a more attractive settlement option than the lowlands, with its already existing meadows and woodland areas. Archaeological data\textsuperscript{15} suggests that the highlands were settled earlier than some of the lowland areas, perhaps due to the ecological differences between the two regions (Sveinbjarnardóttir 1992: 4-6). As land claims intensified, and more cattle and sheep were introduced, a growing need for more grass pasture developed. The need for pasture was alleviated with the burning of forests in both the highlands and the lowlands. The shallow soils of the highlands, now lacking its dense brush and forest vegetation, began to erode away. Overgrazing the newly created

\textsuperscript{15} I will challenge this assumption in chapters 5 and 6.
grass and heath meadows exacerbated the forces of erosion and by the twelfth century CE, the highlands were heavily denuded.

The data presented here argues that for Skagafjörður, the highlands may experience a decline in productivity, but the lowlands experience an increase in agricultural potential. Deposition rates increased dramatically at every farm surveyed, with an average deposition rate of 0.018 centimeters per year, once erosion in the highlands begins. I have argued that increased productivity resulted from the transformation of Histosol-Histic Andosols to Brown-Gleyic Andosols that maintained a high SOC content while simultaneously promoting better drainage in the wetlands through an increase in silt fraction. Overall, every farm examined in Skagafjörður sees an increase in potential soil productivity throughout the Historic period.

We have seen that soil deposition is correlated with tax value, and that tax value is correlated with potential agricultural productivity, illustrating that there is tremendous variation between farms in Skagafjörður. In the Prehistoric period, there is almost no variation between farms. Beginning at the end of the Settlement period (ca. 1050-1104), however, a shift occurs. Farms like Glaumbær and Reynistaður become markedly different from farms like Geitagerði. The precise relationship between each farm and differences in texture composition cannot yet be established, but is perhaps indicative of different agricultural practices. The data can, however, clearly suggest that potential productivity and land value are highly related. In fact, the emergence of small farms in the twelfth century CE may reflect the development of specialized farms (see chapters 5 and 6). The geomorphological data presented here argue that the destruction of the highlands leads to an increase in the potential agricultural productivity of the lowlands.
The historical records presented here indicate that lowland farmers seized this opportunity. In short, geography matters (Krugman 1995).

The data demonstrated here argue, that like the Hawaiian case study, the ecology of Iceland was stable enough to ensure surplus production. The labor needed to generate surplus production in return could be managed by systems of land tenure, attaching small tenant farmsteads to larger farmsteads. These conditions certainly would make Iceland ripe for social change and the development of greater social complexity, but as with Hawaii, we are left to question what elites were doing with all these surpluses. Should we ignore the fact that Iceland never gave up its contacts with Scandinavian kingdoms, but instead always maintained both social and economic ties to their homeland?

### 2.6 Conclusions on Iceland as an Autonomous Secondary State

An examination of degradation models demonstrates that the relationship between nature and culture is complex and must be understood as a dialogue, with both sides contributing to overall appearance of the physical and cultural landscapes. Anthropogenic degradation has been presented as the driving factor in the collapse of chiefdoms in Iceland. As with climate change models, a decrease in land productivity and ensuing land scarcity have been seen as driving the precarious, marginal medieval Icelandic landscape into a state of crisis. Resource scarcity, it has been argued, galvanized into violent tensions between elites, and between elites and commoners. As seen in evolutionary models of primary state development, these social crises were solved with the innovation of a single centralized political figure. However, the extent of degradation and resource scarcity itself has been brought into question through
investigations on soil accumulation rates, pollen distribution analysis, and a reexamination of carrying capacity levels. These studies suggest that Iceland did not outreach a critical threshold of resource availability demonstrating that the tensions observed in the twelfth and thirteenth centuries may have little to do with environmentally driven shortages.

Previous environmental reconstructions have suggested that the destruction of the highlands, coupled with the onset of the Little Ice Age, is correlated to an overall decrease in productivity for the entire island. However, total productivity does not equate an equal decline in productivity throughout Iceland. There can be little doubt that a decline in potential grass yields in the highland areas was not only possible, but was in fact a reality; however, a decrease in land productivity has not been adequately demonstrated for lowland areas. Further, a decrease in land productivity for the highlands does not adequately explain why these alterations precipitated a reorganization of the social structure of medieval Iceland by 1262 CE. The data presented here has suggested that there is a correlation between the loss of soil in the highlands and a shift in the balance of power in medieval Iceland; however, erosion in the highlands did not instigate social change, nor did it destroy the ecology of the lowlands. Anthropogenic erosion in the highlands, did however, initiate a series of geomorphic changes in the lowlands that resulted in the rising agricultural potential of former wetland areas.

The increase in agricultural potential allowed lowland farmers the ability to intensify grass production. With more grass came the capability of rearing more livestock and the ability to produce a greater quantity of secondary products, such as wool, the currency of wealth in medieval Iceland. The ability to intensify grass
production promoted additional labor investments in the land, thereby increasing its value. An increase in land value is seen through a strengthening of property regulations and mounting tensions in the social relationship between independent landowners and chieftains. During the Settlement period, farmsteads were maintained through numerous, independent, households. In Skagafjörður before the erosion of the highlands, little could be done to increase the productivity of the land in the lowlands. It was, therefore, impossible to intensify household production, since production centered on livestock and “the amount of grass, especially grass that one could save as hay to bring livestock through the winters, put an absolute limit on the number of stock a household could maintain” (Durrenberger 1988: 250). Initially, the only means of raising more livestock was to work more land; working more land would have meant recruiting more labor from outside one’s household. However, there was no incentive for working someone else’s land when one could farm one’s own, even if that only meant sharing rights to land use with other households. The inability to recruit outside labor made slave labor a viable alternative; however, the costs in additional consumption to the household created by slave laborers limited the designs for power for even the most ambitious chieftain or independent farmer.

Agricultural productivity in Skagafjörður, however, increased once topsoil from the highlands was deposited onto the lowlands, by increasing the fertility of the existing soil and by promoting better drainage. Production in Iceland could now be increased, but it could only do so through a reorganization of the social structure. Durrenberger has suggested that in non-state state societies, “changes in political and social organization bring with them increases in productivity… household units may well bear the costs of
taxes and administration in return for more favorable production situations” (Durrenberger 1988: 244). For Iceland, the cost to household units was labor, as seasonal hired laborers replaced slave labor. Chieftains and wealthy independent farmers provided a small landholder with protection and an ensured right to landed property from the devouring ambitions of rival farms and storgóðar or big chiefs. In return, a small landholder provided goods and labor services to their protector. However, medieval Iceland lacked institutional structures to translate these social arrangements into practice. Although laws were written to ensure the system, there were no means of enforcing these laws. Without an institutional structure, Icelanders depended on force and the blood feud to ensure their rights to land. Violence placed a heavy strain on the chiefly system, and by the thirteenth century, a civil war between two dominant, wealthy families of Iceland ensued. In the end, structural change came in the form of replacing chiefs with one centralized political figure supported by a system of regional sheriffs (see also chapter 1), legitimized by the support of the Norwegian State. The Norwegian Crown could provide something chieftains could not: a state institutional structure that could both make and enforce laws. The shift from chiefdom to state is perhaps the unintended consequences of the decisions made by farmers who sought to increase their wealth by seizing the opportunity to increase their grass yields. The ability to increase production elicited an incentive for social change, not environmental duress.

The data presented here demonstrate that surplus production was possible, but what remains to be examined, however, is how was this surplus used and what role, if any, might it have played in Iceland’s path towards state complexity? As we saw with the Polynesian case studies at the start of this chapter, we are left to question if contact
with existing state societies, through both peaceful commerce and more violent conquest, played a part in the development of secondary state institutions in Iceland. In the following chapter, I will consider a second model that is the antithesis of autonomous social complexity: hegemonic secondary state formation and the examination of Iceland as a possible planned and controlled Norwegian colony.
Figure 2.1: Map Showing the Extent of Soil Erosion in Modern Iceland (after Arnalds 2004)
Figure 2.2: Iceland’s Volcanic Rift System (after Guðmundsson 2007: 84)
Figure 2.3: Map Showing the Soil Type Complexes found in Modern Iceland (after Arnalds 2004)
Figure 2.4: Map Showing the Research Areas
(a). Deposition

(b). Rate

Figure 2.5: Overall (a) Deposition and (b) Deposition Rates by Farm Across Time
Figure 2.6: Average Silt Percentage by Farm Across Time
Figure 2.7: The Relative Position of the Five Farms with Respect to the Average Depth of Hekla 2900 and the Tax Value from the *Jarðabók*
Table 2.1: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Prehistoric Period

(a). Deposition

<table>
<thead>
<tr>
<th>Farm</th>
<th>Deposition (cm)</th>
<th>Rate of Deposition (cm/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaumbær</td>
<td>12.2</td>
<td>0.008</td>
</tr>
<tr>
<td>Reynistaður</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Geitagerði (Langholt)</td>
<td>7</td>
<td>0.004</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>10.5</td>
<td>0.007</td>
</tr>
<tr>
<td>Hof</td>
<td>10.8</td>
<td>0.007</td>
</tr>
</tbody>
</table>

(b). Texture

<table>
<thead>
<tr>
<th>Farm</th>
<th>Texture Averages</th>
<th>Variation in Sand %</th>
<th>Variation in Silt %</th>
<th>Variation in Clay %</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Sand</td>
<td>Silt</td>
<td>Clay</td>
<td></td>
</tr>
<tr>
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<td>12</td>
<td>42</td>
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<tr>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
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<td>34.6</td>
<td>9.1</td>
<td>40</td>
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<tr>
<td>Steinsstaðir</td>
<td>51.8</td>
<td>38.3</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Hof</td>
<td>59</td>
<td>31.2</td>
<td>10.9</td>
<td>37</td>
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</table>
Table 2.2: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Settlement Period

(a). Deposition

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<th>Rate of Deposition (cm/yr)</th>
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</thead>
<tbody>
<tr>
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<td>0.014</td>
</tr>
<tr>
<td>Reynistaður</td>
<td>65.0+</td>
<td>0.032+</td>
</tr>
<tr>
<td>Geitagerði (Langholt)</td>
<td>28</td>
<td>0.014</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>38.4</td>
<td>0.019</td>
</tr>
<tr>
<td>Hof</td>
<td>25.5</td>
<td>0.013</td>
</tr>
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</table>

(b). Texture

<table>
<thead>
<tr>
<th>Farm</th>
<th>Texture Averages</th>
<th>Variation in Sand %</th>
<th>Variation in Silt %</th>
<th>Variation in Clay%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sand</td>
<td>Silt</td>
<td>Clay</td>
<td></td>
</tr>
<tr>
<td>Glaumbær</td>
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<td>46.5</td>
<td>9.2</td>
<td>59</td>
</tr>
<tr>
<td>Reynistaður</td>
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<td>37.3</td>
<td>15.8</td>
<td>53</td>
</tr>
<tr>
<td>Geitagerði (Langholt)</td>
<td>47.3</td>
<td>41.9</td>
<td>11.1</td>
<td>54</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>44.5</td>
<td>49</td>
<td>7.4</td>
<td>50</td>
</tr>
<tr>
<td>Hof</td>
<td>55.6</td>
<td>34.2</td>
<td>10.3</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 2.3: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Historic Period

(a). Deposition

<table>
<thead>
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<th>Farm</th>
<th>Deposition (cm)</th>
<th>Rate of Deposition (cm/yr)</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Reynistaður</td>
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<td>0.026</td>
</tr>
<tr>
<td>Geitagerði (Langholt)</td>
<td>16.3</td>
<td>0.023</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>8.1</td>
<td>0.012</td>
</tr>
<tr>
<td>Hof</td>
<td>10.3</td>
<td>0.015</td>
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(b). Texture

<table>
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<tr>
<th>Farm</th>
<th>Texture Averages</th>
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<th>Variation in Silt %</th>
<th>Variation in Clay %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sand Silt Clay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glaumbær</td>
<td>53.4 35.7 8.4</td>
<td>52</td>
<td>39</td>
<td>19</td>
</tr>
<tr>
<td>Reynistaður</td>
<td>50.8 36.2 12.7</td>
<td>45</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Geitagerði (Langholt)</td>
<td>44.9 45.7 9.5</td>
<td>40</td>
<td>47</td>
<td>21</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>43.5 47.1 10.1</td>
<td>45</td>
<td>40</td>
<td>17</td>
</tr>
<tr>
<td>Hof</td>
<td>62.2 29.2 8.5</td>
<td>23</td>
<td>30</td>
<td>7</td>
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Table 2.4: Average Rate of (a) Soil Deposition and (b) Texture Percentages in the Modern Period

(a). Deposition

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<th>Farm</th>
<th>Deposition (cm)</th>
<th>Rate of Deposition (cm/yr)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0.068</td>
</tr>
<tr>
<td>Reynistaður</td>
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<td>0.077</td>
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<tr>
<td>Geitagerði</td>
<td>15.2</td>
<td>0.076</td>
</tr>
<tr>
<td>Steinsstaðir</td>
<td>12.7</td>
<td>0.064</td>
</tr>
<tr>
<td>Hof</td>
<td>14.2</td>
<td>0.071</td>
</tr>
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</table>

(b). Texture

<table>
<thead>
<tr>
<th>Farm</th>
<th>Texture Averages</th>
<th>Variation in Sand %</th>
<th>Variation in Silt %</th>
<th>Variation in Clay %</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Sand</td>
<td>Silt</td>
<td>Clay</td>
<td></td>
</tr>
<tr>
<td>Glaumbær</td>
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<td>27</td>
<td>4.1</td>
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<td>Reynistaður</td>
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<td>29</td>
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<tr>
<td>Hof</td>
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<td>19.8</td>
<td>6.7</td>
<td>38</td>
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</table>
Chapter 3

The Norwegian World System: Hegemonic Colonial Secondary State Formation

Iceland was decisively a Norse colony. The material culture as well as the documentary record all point to a Scandinavian homeland for the majority of the settlers; this much all scholars of medieval Iceland are in agreement, but this is where the consensus ends. No two areas have generated more debate than discussions on the conditions under which Iceland was first colonized, followed closely by the terse disputes over how and why of secondary state institutions developed. Archaeologists have tended to view Iceland as an independent colony that maintained at most only a minimal relationship with its Scandinavian homeland (see also chapter 2). Once in Iceland, these settlers busied themselves creating a new society of their own, and somewhere along the way these activities forged a distinctively Icelandic identity (Ólafsson 2000) and a new sociopolitical system structured around state institutions. Literary historians, in contrast, are a divided group: some scholars echo the history told by archaeologists (Byock 2001) while others argue that the documentary record, namely the sagas, are proof that Iceland was always a planned and controlled colony to the Norwegian crown (Hastrup 1992, 2004). This latter faction of historians in the “dependent Iceland” camp argue that Iceland was one colony in a larger Norse Empire, governed through a kind of ancient predecessor to the world systems organization envisioned by Immanuel Wallerstein (1974). Under these parameters, Norway maintained a hegemonic hold over Iceland right from the beginning, dictating its economy as well as its sociopolitical structure. The
development of more pronounced state institutions in the thirteenth century are seen as the natural outcome of an imperial desire to consolidate its holdings once the initial rush to populate the frontier had subsided. Historians in the “independent Iceland” camp on the other hand frequently point out that the family sagas describe a society governed by chieftains, not a king, and that a loss of independence occurred in the mid-thirteenth century as a consequence of a civil war between rivaling aristocratic families as documented in the contemporary Sturlunga sagas. “Dependent Iceland” historians, however, are quick to rejoin that the family sagas, written at least two hundreds after the events they are described, are likely not historically trustworthy and that the fantasy world contained within those pages demonstrate all the trademarks of what anthropologists have termed a “cultural cringe” (Anderson 1991; Hume 1993), a phenomenon where a dominated population can, through boastful storytelling, transform their own subjection and sense of inferiority into a kind of collective power capable of motivating people to overthrow their dominators. Likewise, the well-documented civil war captured in the thirteenth century Sturlunga saga should be interpreted as ongoing contestation between aristocrats for local power, who must rely on their Norwegian king for arbitration, just as they had always done.

Debates of this kind are difficult to ever resolve unless we acknowledge that the point of contention lies less with vying interpretations of an agreed upon dataset, as it does over the dataset itself: are the texts, the sagas in particular, usable as viable sources of information on early Icelandic society? If they are not, and must be removed from historical consideration, it will be difficult to either support or refute the proposition that Iceland existed solely as a peripheral territory to a Norwegian Empire. For archeologists,
the removal of these texts has further implications. The inferences archaeologists make from the material record are framed by the ethnographic snapshots of early nineteenth century Icelandic society, but by and large these images take clearer focus though the telling of the medieval sagas, a collection of no fewer than eighty metahistorical accounts of the settlement and development of early Icelandic society. The sagas represent the “most comprehensive extant portrayal of a Western medieval society” (Byock 2001: 22), and yet a growing number of scholars have raised alarm over the historicity of these texts, suggesting that at best they represent an older Germanic tradition, but do not reflect the reality of early Icelandic society. At the core of these perceptions is a methodological dilemma: how can a researcher untangle fact from fiction in a body of texts that were written nearly a thousand years ago about a time period that is three to four hundred years older still?

A careful reading of these texts demonstrates a number of contradictions, especially between the family sagas, which describe the earliest phases of colonization (874-1050 CE), and the Sturlunga sagas, which describe the late eleventh through thirteenth centuries. I will argue differently, suggesting that the so-called “contradictions” found in these texts reflect a society in transition and the rise of a growing aristocratic class alongside the development of a secondary state. Ultimately, this debate speaks to larger anthropological issues over how relationships between colonies, locate at the edges of a define world system, and more mature state societies are negotiated, and why under some circumstances do these relationships transform frontiers into independent nations, and other times create systems of imperialism? My objective here, then, is not to distinguish fact from fiction within the sagas, but to identify traces of
social processes embedded in the text that can help us to untangle the conditions which prompted the development and nature of the Icelandic secondary state. To do so, I have chosen to examine legal descriptions of marriage and inheritance arrangements in these texts, topics typically used to further a plot rather than at the forefront of the saga. Nonetheless, embedded within the banality of these depictions of who married who, and who inherited what, are broader patterns of social behavior. These patterns, once identified, can be used alongside the archaeological record, serving as a tool for understanding more extensive processes of state development in medieval Iceland.

The goal of this chapter is to suggest a methodology for examining the sagas and how to best integrate these texts with archeological research (see also Carr 1991; Levy and Higham 2005). Once we acknowledge that the sagas can be used as a kind of ethnographical source, the arguments for hegemonic Norwegian control in the ninth through twelfth centuries is far more difficult to support. Instead, the data presented here suggest that while Iceland remained an active player in a Scandinavian world, social change in the late twelfth-early thirteenth century must be viewed as a confluence between both local and global politics. The sagas suggest a reorganization of the economy by the twelfth century, a trend echoed in shifting social positions determined by gender and class. These changes, I will argue in chapters 6 and 7, are the result of European-wide economic trends played out locally by rivaling aristocratic families in Iceland.

3.1 Out on the Frontier: Models of Secondary State Formation in Colonial Settings

Anthropological archaeologists have long since advocated against studies of the past that select to examine only local-level cultural phenomena divorced from their
broader social and spatial frames of reference. Armed with Wallerstein’s model of world systems (Hopkins and Wallerstein 1982; Wallerstein 1974) and a diachronic dataset, archaeologists have argued that the dynamics of core-periphery relationships existed well before the rise of capitalism and that these relationships often spurred social complexity in peripheral areas, but exactly how this spark of social complexity is ignited remains a topic of infinite discussion (Chase-Dunn and Hall 1997; Peregrine 2000; Rowlands et al. 1987; Schortman and Urban 1992). Wallerstein’s original model was intended to examine social change at the hands of nineteenth and twentieth century imperialism, a system of empires headed by a centralized, elite-based polity or core, operating through the exploitation of subordinate polities or peripheries (D’Altroy 1992:15; Hastorf and D’Altroy 2001:18-19; Rowlands et al. 1987:4-5). While Wallerstein did not have ancient empires in mind when he formulated this model, in fact he has stringently suggested that his model was decisively historical and applied to industrial, capitalists societies only, anthropologists like Ekholm and Friedman have argued that Wallerstein’s conceptual framework of core and periphery interaction has broader applications that allow archaeologists to examine data at the intersection of economic and political lines (Ekholm and Friedman 1979:45). Ekholm and Friedman have likewise suggested that core polities are inherently hegemonic and greedily gobble up their surrounding neighbors in order to fulfill the demands of a growing elite class. Early use of core-periphery models tacitly imply however that power in an empire is always derived from the core, inferring that empires are in a sense monolithic in their strategies of conquest and consolidation (Ekholm and Friedman 1979:47-52). The peripheries, on the other hand, are often hapless pawns to the whims of the core and do not dictate the terms of their interaction
with the commanding core polity. More recent research in both the ethnography and archaeology have, however, called for using caution when applying world systems theory to ancient societies and have suggested that the notion of unidirectional power flows stemming entirely from the core, washing over like waves on a passive and inactive periphery is misguided (Hall 2000; Kohl 1987; Stein 1999, 2002a, 2002b). Taking their cues from models focused on agency, gender, social practice, and identity, the axioms of “core dominance” and “asymmetric exchange systems” are being replaced with multiscalar models (Lightfoot 1995; Lighfoot et al. 1998) that examine these interactions as reciprocal relationships. Scholars have begun to ask if contact through economic relationships must equate to a need for hegemony and acknowledge that so-called peripheral societies do influence the social dynamics of core societies.

Kohl has suggested that peripheral communities are more active and influential than the previous models suggested, arguing that these polities will control the right to continue or cease exchange with a core, depending on their own localized needs. There may in fact be consequences for a peripheral polity that opts to discontinue trade with a core polity, but typically, suggests Kohl, a core polity will seek to renegotiate the terms of their exchange, rather than use force or threaten a periphery into some sort of submission (1987:20). Under these revised, multidirectional models the relationship between a core and the periphery are constantly negotiated, but even still it is likely that “the core powers had by far the upper hand, because of their coercive capacities, but the were not the only players in the game” (D’Altroy 1992:15). Another major limitation of the core-periphery model is the assumption that there exists a single core with multiple peripheries, and that these two classifications are somehow rigidly enforced. The
historical reality of documented empires, however, paints a landscape with multiple core sites or centers of power, despite the fact that all empires also contain a primary capital. Further, the designation of polities as either a core or a periphery are, however, not so clearly delineated. A polity may in fact be simultaneously both a core and a periphery. Administrative centers, such as the Inca site of Huánuco Pampa, for example, would have been a core polity to its surrounding neighboring towns and villages, yet at the same time, Huánuco Pampa owed certain obligations to its core polity, the Inca capital of Cuzco (Morris and Thompson 1985: 118-138). Since these relationships are constantly maintained and negotiated, the nature of the union between core and peripheral sites is likewise fluid and subject to change (Grosboll 1993: 47-53). For example, a former cooperative polity may be rewarded for its loyalty by being built up as an administrative center for the empire, donning the rank and authority of a core (Stanish 1997: 196).

These new approaches to the core-periphery model have overcome some of its limitations but what these studies do not include are situations where relationships, be they economic or political, are brokered between two polities without any formal bonds of subjection. Instead, these models are based on the assumption that whenever there exists a “homeland” and a network of “colonies” that interact with one another, there must be an authoritative system in place, with the core polity typically maintaining the upper hand. This supposition is problematic, especially when trying to understand the early dynamics of secondary state formation. These models do not provide a means for uncovering the motivation for either colonists or host communities to enter into this enterprise, assuming each has no choice in the matter, either because a king forces them to, or because the opportunity is one that no one would dare turn down. However, there
is nothing easy about colonization. For the colonist and host alike, overcoming the challenges of living in a new social and physical landscape is daunting. Likewise, previous models are based on the assumption that cores send out colonists only when they are able to oversee, directly or indirectly, the politics and economies of the colony. But this hardly seems reasonable for an early state, which lacks the template for managing and controlling territories, sometimes as far as an ocean away.

What is needed, then, is model to understand the precursors to full-blown imperialism. One solution is to apply models used to understand the dynamics of trade diasporas to the task of understanding the early configurations of colonization, outlining the potential paths towards increased social complexity that a society might encounter. Trade diasporas, originally examined by Abner Cohen (1971) in his analysis of ethnically distinct Hausa traders in West Africa, can be defined situations in which communities were transported to distant lands with the goal of enlarging the scope of commerce within their natal homelands. Cohen concluded that the ability of states to commission and deploy trading colonies need not entail the same brand of hegemonic eighteenth and nineteenth century European colonialism (Curtain 1984; Orser 1998), but in fact be characterized as “colonies without colonialism” (Stein 2002a), suggesting that colonies could be created at a low cost and managed though indirect means.¹ This conceptual shift has encouraged scholars of the ancient world to likewise reevaluate the presence of

¹ Algaze (1989, 1993, 2005) and Stein (1999, 2005) have developed economic models that echo this view through research on Uruk period Mesopotamia, arguing that it grew in size and wealth by establishing trade diasporas throughout Anatolia, Iran, and Syria, but these colonies did not dominate their local, host populations. A similar trajectory of non-dominance over local populations can likewise be found in the Middle Horizon period in South America with the widespread dispatch of colonies found within the realm of the Tiwanaku Empire (Goldstein 2005) suggesting that this pattern is far from a single, historically specific event.
trading colonies as a sign of an asymmetrical, economic world system. For example, historians have long noted the connection between the development of secondary state institutions in Bronze Age Crete and Mycenae with their economic contact with neighboring state societies in the Near East, Egypt, and in the Eastern Mediterranean (Parkinson and Galaty 2007; Randsborg 2000). Traditionally, archaeologists and historians argued that Minoan Crete was nothing more than an Egyptian or Syrian colony, concluding that the sudden appearance of states in the Aegean needed no further explanation (Childe 1951) as these developments were simply transported and crafted by already existing states. In the 1970s and 1980s, however, these views were called into doubt as a growing body of evidence revealed a much slower and gradual local development of secondary state institutions in Crete and throughout the Greek Peloponnesus. Armed with new environmental research, Renfrew (1972) and others began to see the Minoan state as an indigenous development that formed more or less independently of their exposure to neighboring state societies. This perspective encouraged researchers to explore the process of state formation in the Aegean rather than to simply see these developments as a byproduct of Egyptian or Syrian economic activity. Investigations into the dynamics of Bronze Age Aegean societies, however, continued to demonstrate that state formation in this region was markedly different from the kinds of processes noted in primary state formation (Small 1999). If the states of the Aegean do not meet our expectations of primary states it is in fact because they were not primary states but were instead the first generation of secondary states that sprung up in the periphery of more mature state societies (Parkinson and Galaty 2007: 118). Long-distance economic contact and the constant spread and increase in the number of trading
colonies is now viewed to have played a heavy role in the development of social complexity in the Aegean (Renfrew 1986), but unlike early theories, newer models now acknowledge that the local conditions, be these environmental or social, of the trading colony itself matters every bit as much as their stately contacts. Nothing speaks to this view more concisely than the later development of the Greek polis, with its own network of colonies throughout the Mediterranean and the Near East. The Greek polis, similar in organization as a trade diaspora, maintained an independent, but dependent, relationship with the homeland, while the homeland did not in any significant way control these poleis (Parkinson and Galaty 2007: 118; Randsborg 2000: 171). Over time, the some of the poleis themselves became states arguably in part through the synergy of local variables and to their exposure to foreign goods and traditions, all of which created a fertile environment for social change. What we can conclude from the Greek example is that world systems and earth systems (Hornborg and Crumley 2007; Shelley and Flint 2000) both played a role in the processes of social change that lead to development of secondary state institutions, reminding us that we cannot ignore ecology any more than we can social agency.

Iceland, a known Norse colony, makes for an excellent case study on processes of secondary state formation in a colonial-frontier setting, prompting us to ask: How heavy was the hand of Iceland’s monarchal neighbors in the development of increased social complexity in the thirteenth century? As with the Aegean case study, scholars are divided along lines of indigenous vs. external social processes. As we saw in chapter 2, archaeologists have tended to favor indigenous development, often citing environmental degradation as a driving force. Other scholars, citing medieval texts, have argued that the
Icelandic colony, born out of the economic and political aims of the Viking Age, was a Norwegian colony and therefore its development of state institutions does not need to be questioned or investigated further—complexity was simply derivative. These views are the result of a dual methodological quagmire: a lack of scholarship on the nature of Norse trading colonies and a terse debate over the usability of Icelandic texts from the medieval period. In what follows, I outline how one can methodologically approach the complications of the Icelandic documentary record and how using anthropological models on diasporic communities, one can begin to use these documents to examine how local and external forces conspired to create an atmosphere ripe for social change.

3.2 The Icelandic Sagas, Sources of Evidence, Sources of Contention

Early scholarship of medieval Icelandic archaeology and history was firmly rooted in the belief that the family sagas, which originated through a rich oral tradition, were every bit as historical as any history written today. This conclusion resounded in the belief that the sagas were entirely reliable and accurate despite the deep passage of time between when the events occurred and when they were consigned to the page. In the wake of the nineteenth century, however, with advances in literary scholarship, philologists began to question the ability of oral narratives to preserve the intricacies of historical detail, as well as to question their transference from spoken performance to written text (Sigurðsson 2004: 285-286). Text, such as The Iliad, not least the Icelandic sagas, once resoundingly applauded for their historicity, began to be scrutinized resulting in the formation of two literary camps: the Freiprosa (“free-prose”) camp who emphasized traditional oral narratives as likely sources for the origin of the stories
captured in the sagas; and the *Buchprosa* ("book-prose") camp who stressed the role of the individual writer\(^2\) (Sigurðsson 2004: 285). Scholars of the free-prose school suggested that while the sagas contained elements of the fantastical, they were grounded in the social memory of societies preserved through a rich storytelling tradition, and as such, can be used by modern historians to help recreate the life-ways of medieval Icelanders. This approach was strongly contrasted by the book-prose school, which suggested that the sagas were the work of individual authors, and relied only marginally on an older, oral tradition. Therefore, the sagas, and the family sagas in particular, were works of literary grandeur that invented a past through the genius of the author, and cannot be seen as containing any useful historical significance for understanding the settlement period of Iceland (Nordal 1940, 1953; Steblinkamenskij 1973). At best, they reflect how authors in the twelfth and thirteenth centuries would have liked their own contemporary society to have been, and were thus, a kind of wish fulfillment rather than an accurate depiction of the past (Tomasson 1980: 148-157). While the thirteenth century was plagued with violence, corruption, and some argue Norwegian domination, local audiences could take refuge in the world of heroism and honor depicted in sagas about the settlement of Iceland. The intention of the author(s) was to create a world contrasted from his or her own troubling times, perhaps to inspire change, or perhaps merely to entertain. At worst, however, these texts were deliberate lies, used as a kind of propagandistic social capital by rivaling families, each using these texts to validate the claims of their families’ superiority and right to be the local rulers whose loyalty

\(^2\) Andreas Heusler, a German literary historian in Norse traditions defined the schools Freiprosa and Buchprosa at the turn of the twentieth century.
ultimately belonged to the Norwegian king. Through writing, a few specific families employed the efficacy of history, albeit a fictionalized invention, as a kind of state-building tool:

[T]his representation of the past, initiated by Ari and elaborated to baroque proportions by the subsequent two centuries of scholarship, had little to do with any ‘genuine’ traditions about the landnám that may have existed at that time. Instead, it was probably generated by the social and cultural needs of the Icelandic intelligentsia in the High Middle Ages (Friðriksson and Vésteinsson 2003).

Writing, according to book-prose theory, was ultimately controlled by elites who possessed the finance and skill to commission the production of texts, and was by in large a reflection of elite interests and had little concern for maintaining a sense of historical accuracy. Further, scholars in the book-prose camp have raised the issue of the timing of when we first see texts being written in the twelfth century when it is possible that Icelanders saw themselves as marginalized citizens under the Norwegian Crown (Glazyrina 1997), representing all the tall-tale signs of the cultural cringe phenomenon found among subjugated populations3 (Hastrup: 1990: 280-295, 2004; Hume 1993; Whaley 1997, 2000). The first texts date to the twelfth century (Ólason 2005; Quinn 2000) with a subsequent flourish of saga writing in the thirteenth century. Why then and not before? The family sagas depict, what has been referred to as a “golden age,” perhaps in an attempt to create a sense of Icelandic independence at a time when they in actuality had very little. The introduction to Landnámabók, believed to have been written by medieval historian Ari Þorgilsson, for example, combats the assertion that writing about

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3 Several literary studies, for example, have noted a common theme in the sagas of Icelanders traveling abroad and becoming the favored guests of their hosts, able to impress and outdo anyone they meet (Ashurt 1997; Bagge 1992; Finlay 1997; Gaskins 1998).
the settlement is a waste of time, by suggesting that “we can better meet the criticism of foreigners when they accuse us of being descended from slaves or scoundrels, if we know for certain the truth about our ancestry” (Landnámabók 972: 6). Hastrup goes so far to suggest that the “golden age” depicted in the family sagas reflects a society that never was, but is instead a idealized, invented society to be used as a model of what life could be, if Icelanders could only throw off the shackles of foreign domination:

What we are witnessing is a paradoxical development of a dual history—one that was native and exclusively Icelandic, and another that was foreign and inclusive. The symbolic stress on distinction as traditionally conceived in both the literary and the oral tradition, gave rise to a particular view of Icelandiness that we term Uchronic. If Utopia is place out of the world, Uchronic is a time out of history. In many ways, I would argue, the Icelanders entertained an Uchronic vision of their history, symbolically reproducing the myth of distinction and autonomy, and of a society of free farmers (2004: 279).

Further compounding this debate is the existence of two treaties between Norway and Iceland, Gissurarsáttmáli (“Gissur’s Covenant”) and the Gamli Sáttmáli (“The Old Covenant”). These texts specifically declare Iceland’s loyalty to the Norwegian State, first in Gissurarsáttmáli, believed to have been drafted around 1262 CE between the chieftain Gissur Þorvaldsson of Skagaþörður and King Hákon IV, and later renewed in the Gamli Sáttmáli treaty drafted by King Mágnus VI in 1302 CE. Both of these treaties carefully layout the rights and privileges Icelanders were to received in exchange for supporting the sovereignty of the Norwegian king and are mentioned in a few later sagas. Hákonar saga Hákonarsonar (13th century) for example, describes how Icelanders lost their political independence to Norway in the events that lead up to a formal declaration of loyalty and sovereignty to King Hákon in 1263. The text, penned by Sturla Þóðarson, an Icelandic chieftain and writer, suggests that Hákon conquered Iceland not with a
military, but by cleverly pitting rivals against one another. All Hákon had to do was to be patient, and wait for one of these factions to come to him seeking help, which they did. However, some scholars have questioned the date of the *Gamli Sáttmáli*, suggesting that it was in fact much earlier (Boulhosa 2005). If this is true, then it is possible that the events described in *Hákonar saga Hákonarsonar* are merely fiction, and that Icelanders had long ago lost any sort of independence they may have, if ever, had.

If we are to take up the challenge of free-prosists and book-prosists alike, one must be able to methodologically examine each of these claims. These two theories share an inherent flaw: they have not put forth a means to critically evaluate their central tenets. Free-prose relies on the assumption that the thematically older family sagas are based on oral narratives, with book-prosists quick to retort that we have no recordings, no direct evidence of any oral narratives making it impossible to ever know with any certainty that such a tradition in fact actually existed. Book-prose theories, on the other hand, advocate that the sagas reflect an imaginary world, and are the creation of their authors, but these theories likewise offer no means of methodically “proving” that the sagas writers wrote independently of a prescribed social memory of a past that actually existed. Nor, have book-prosists aptly demonstrated that the sagas were used as a kind of propaganda employed at the behest of a calculating chief. This kind of circular reasoning has forced the free-prose vs. book-prose debate to a standstill, and has unfortunately produced a fair amount of mud slinging along the way.

These sorts of arguments are not useful, and do little to help us understand the lifeways of medieval Icelanders. Further, neither literary school has adequately grappled with the issue of defining what it meant by history and historicity. It is easy for modern
researchers to fall into the trap of assuming that what we define as history today can be amendable to ancient and medieval texts. However, throughout the Middle Ages, historical treatises or historia were “chronologically oriented narrative… history was [therefore] the literary product of scholarly activity and was placed within the field of grammar and rhetoric” (Würth 2005: 155). Medieval writers did not make the kinds of distinctions between the corporal and mystical in the same way that a modern historian might. The division between an experienced reality and a legendary world where men could come face to face with supernatural beings in the form of gods, beasts, and ghosts, was not firmly implanted in the medieval psyche. For example, it is unlikely that a man could live among the trolls, or battle a revenant as we are told in Grettir’s saga, but it is likely that some individuals were legally declared outlaws and sentenced to live for a period of time in exile as is also described in this text. Likewise, some events may seem fantastical, such as Leifr Eiríksson sailing to Vinland, but have since been shown to based on fact, confirmed through archaeological investigations at L’Anse aux Meadows (Ingstad 1985; Sigurðsson 2004: 272; Wallace 2000).

These examples illustrate two crucial avenues for future saga research: first, scholars need to explicitly define the term history; and secondly, that saga research can benefit from interdisciplinary studies. Acknowledging that the very definition of history is culturally and temporally specific brings to the fore the need to critically examine the historical standard modern researchers have placed upon medieval texts.

Entering into this fray is a growing body of archaeological data and a terse divide between those scholars who advocate the use of medieval texts in their analyses of the material record, and those who suggest these texts are better left to literature departments.
While archaeology in Iceland, like many places in the world, was born out of an early
nineteenth century nationalist movement inexorably linked to saga studies, more recent
inquiry into these texts has highlighted countless contradictions in the portrayal of
everyday life in Icelandic medieval society, producing an all too recognizable
incompatibility between text and artifacts (Friðriksson 1994). On the surface the
documentary record itself seems to be juxtaposed by the portrayal of two distinct
Icelandic societies: one of a ninth and tenth century communal frontier society busy at
work constructing a new social landscape centered on an agro-pastoral economy, as
depicted in the family sagas; the other of a proto-aristocratic manorial society teetering
on the edge of social attenuation, as described in the contemporary sagas of the twelfth
and thirteenth centuries. This discrepancy in social portraits has been a point of
contention among saga historians and archaeologists: on the one hand, these differences
may reflect two different social realities separated by time even though both sets of texts
were written roughly around the same time (Durrenberger 1990b; W.I. Miller 1986); or
these divergences may represent the use of allegorical devices in the family sagas to
promote the propaganda of ambitious chiefs and elites in thirteenth century (Friðriksson
and Vésteinsson 2003); or these differences may reflect a fictional golden age created as
part of a push for a “national” identity and drive for political independence from foreign
domination (Hastrup 2004). These kinds of doubts over the source value of the sagas has
been “music to the ears of the archaeological community, [concluding] the patent
unreliability of [these texts] makes them worthless as historical sources and that they
should therefore be rejected en masse” (Sigurðsson 2004: 254). Archaeological studies
are frequently situated on the side of caution and leave out analyses of textual
information, choosing instead to concentrate on issues of environmental change in Iceland (see chapter 2) as a dominant force in social change (McGovern 1990; McGovern et al. 1988; Sveinbjarnardóttir 1992). Models centered on environmental change leave little room for alternative views, forcing one to examine the different cosmologies described in the family and Sturlunga sagas as a kind of temporal bias on part of the saga writers. The conclusion from these approaches is that the data gleamed from close reading of the texts and that from the material records are entirely incompatible, begging the question then, of which data are more accurate? Who is better equipped to reveal past lifeways in Iceland: the historian or the archaeologist?

3.3 Is the Spade Mightier than the Pen?

Archaeology and history have had a kind of anxious relationship. On the one hand, archaeologists and historians can unite together under the a common desire to understand the past, but at the same time, they are wary of each others datasets based on the perceived reliability of one being able to glean more ‘truth’ about the past than the other. Historians can boast that while they work with texts that convey messages revealing past events, archaeologists are left to manage mute artifacts that illustrate less specific situations (Paynter 2000; Vansina 1995: 370). Archaeologists, on the other hand, are quick to rejoin that while historians can only hope to examine the elite, an indiscriminating material record has granted them with admission into the daily life of all members of society (Brumfield 2003: 208-209; Kehoe and Emmerichs 1999).
Representing one of the most negative views of archaeology is Philip Grierson who wrote that:

the archaeological evidence… in its very nature substitutes inference for explanation. It has been said that the spade cannot lie, but it owes this merit to the fact that it cannot even speak (1959: 129).

On the more positive side is John Moreland (2001), who argues that archaeologists and historians have now gone beyond a ‘servant and master’ relationship where the word always took precedence over artifacts. Middle range theories and more rigorous hypothesis testing models have served as a kind of methodological revolution within the discipline of archaeology in the last fifty years, effectively edging the profession above the rank as a ‘handmaiden’ to historical projects, where texts provided the social framework and artifacts simply the matter to illustrate or defend the word. While this partnership can be seen by a frequent use of radiocarbon dates obtained from excavations in historical projects, “most historians are simply not interested in the results of archaeology” (Vansina 1995: 369). This in part stems from a lack of understanding about archaeological methodology, but also from the dominant view that the reconstructions of the past generated by history and those by archaeology produce profound dissonances that are impossible to reconcile. This mutual incompatibility prohibits the two from neatly dovetailing into a coherent whole, and as such, has created a terse divide between what should be partnered enterprises (Robertshaw 2000).

The further one goes back in time, the more fractured these camps become. Early histories often read more like myth and general story-telling to the discerning modern eye, which has rattled the battle cry of some scholars to consign these categories of text to the realm of fiction and, therefore, squarely out of the range of viable data for both the
historian and archaeologist alike. To complicate the matter even further, many early
texts, such as *Beowulf*, the *Iliad*, and the Hebrew Bible, originated from an oral tradition,
creating alarm over the *accuracy* and *faithfulness* of these texts (Levy and Higham 2005).
Should we think of the writers of these texts as recorders who did little more than set
down on vellum or parchment the histories preserved through an oral story-telling
tradition, or were these writers innovators, who used the names, places, and even themes
from traditional stories as a mechanism of creating a kind of symbiosis between the word
and the reader? This subject has been the flagship of literary critics who have phrased the
debate between issues of *historicity*, where scholars agree that oral narratives can be
preserved over multiple generations and later transferred to text, but that these texts must
be evaluated for accuracy, and issues of *intertextuality*, where texts are seen as original
creations that may resonate some elements of an older oral tradition, and must therefore
be evaluated as a literary production rather than an historical one (Hanks 1989; Pálsson
1992, 1995). Both of these positions have a seemingly unsolvable pitfall: without digital
recorders, how can we ever know the historical content of oral narratives several
centuries after the last storyteller had fallen silent?

At the root of all these debates is a methodological seed: how can text and the
material record, dissimilar in nature and context, ever be integrated, and even more
puzzling, how can texts that seem devoid of proper historical reporting be used as a
viable pool of information for those aiming to reconstruct the past? These concerns can
be addressed by renegotiating the relationship between history and archaeology, re-
centering our focus on how both artifacts and ancient texts play active roles in the
production, negotiation and transformation of social relations in past and present societies
I argue that the same critical methodologies can be applied to both archaeological and textual data to objectively understand the social context of ancient societies.

I propose here a methodology for incorporating ancient textual data with archaeological material by taking a different approach, and asking what types of information contained in the sagas can be used to uncover evidence of past lifeways rather than scrutinizing potential anachronisms and identifying only the fictionalized elements of these texts. An anthropological methodology that incorporates both text and material culture is one way to address this task but it will first need to address three primary challenges: first, the methodology must be able to assess the ability of ancient texts to project a fair image of not only its contemporary period, but those of the past it describes as well; second, the methodology must address the limitations of memory and the methods by which oral traditions seek to maintain a consistent depiction of the past; and lastly, the methodology must be able to show that through an anthropological approach, one can broaden our definition of history as a record of past lifeways, rather than confined to the traditional meaning of history as solely the chronological events and deeds of “great men” and “great battles.” This chapter will address each of these challenges by examining how the historicity of the sagas has been disputed, and how a methodology grounded in anthropology, can ably combine text and archaeological remains, imparting a panoramic vision, rather than a synoptic view of the past. With this methodology in place, we can then revisit the medieval texts to examine the processes of
secondary state formation, specifically addressing the role Norway played in Iceland’s path to statehood.

3.4 The Ability of Text to Reflect Reality

Supporters and denouncers of the book-prose theory alike acknowledge the call for critically evaluating texts. These debates have born fruitful theories and methodical strategies for analyzing ancient and modern texts alike, highlighting the necessity of understanding the personal and social context under which the author wrote. If we are to use ancient texts to get at a sense of a past reality, one must grapple with the distinction Halldór Laxness (1968) observes in his novel *Christianity at Glacier*: “the difference between a novelist and a historian is this, that the former tells lies deliberately and for the fun of it; the historian tells lies in his simplicity and imagines he is telling the truth.” As Laxness suggests, when examining any text, medieval or otherwise, one must devise a strategy for establishing the intention of the document, as either a reflection of an invented or lived event. In doing so, we bring to the fore concern for the intentionality of the author; that is, the purpose for committing the telling of these events and ideas to a written format, and lastly, in making these ideas more permanent, who may have been the intended audience of that text. Laxness also keenly observes that no text can ever reflect an entire universe of ideas and experiences of a society, and must choose to record only a glimpse of that universe, only a narrow portion of a historical reality. However, psychology and cognitive psychology has demonstrated that this is not simply a question of honesty, but is an issue of how the human mind operates. Despite the once common belief among anthropologists and sociologists that identity and reality are the constructs
of the collective, the development of cognitive psychology has revealed a startling revelation: in neurological terms, each individual mind processes and creates a distinct and unique reality, confirmed physiologically by distinct neurological thumbprints or signatures, leading many scholars to suggest that there can in fact be no single or collective version of a “true” reality (Halbwachs1992; Roediger and Goff 1998; Schacter 1996). To complicate the matter even further, not only can there be in a sense multiple realities, but even at an individual level, reality is not static. Under different stimuli or contexts, the brain can process information differently, creating thousands of realities for every individual. Swiss linguist Ferdinand de Saussure had already noted this phenomenon in the mid-nineteenth century when he observed that language events behaved like an open electrical circuit, arguing that all communication required at least two nodes to complete the circuit and successfully convey a message. Saussure (1959:9) concluded that words, both verbal and written, are not defined by what they referred to, but by their relation to each other since all successful communicative transmissions can only make sense in relation to the nodes or speakers. This means that even speakers of a shared language independently make words meaningful. While speakers of a shared language use a similar structure or hardware—grammar, syntax and the like—the web of associated significance and comprehension are in fact unique to the individual. Through language, individuals made sense of their surroundings and their interaction within this environment. However, individuals themselves did not possess a monolithic understanding of reality. Derrida (1973), building on Saussure’s model, argued that speech events were not only determined by the relationships between nodes or participants, but these relationships were also not fixed, and therefore changed depending
on all the different contexts in which they were used. Individual comprehension is not fixed, but instead each individual has a multi-vocal repertoire of knowledge of their world which is in turn dependent on context (Clark 1996; Green 1996; Hymes 1972). Building on all of these ideas are the fields of postmodernism (Foucault 1977, 1978; Rabinow 1983; Roslado 1989) and literary critique (Ankersmit 1989), which posit that the meaning of texts is likewise dependent on an individual's reading or interpretation of the relationship of the words, which is in turn dependant on how their mind builds relationships of understanding, which is in turn shaped by both context and past experience (Johnstone 1996; Newmeyer 1986). This presents a particular problem for truly understanding ancient texts, whose authors are long gone and are in many instances anonymous, leaving behind no clues of the experiences that shaped the words they wrote. We as a modern audience run the risk of not understanding the intended goal of the author, which is at best, always elusive since any text, modern or ancient alike, can be interpreted in multiple ways depending on who the reader is. Can historians and anthropologists then ever become literate readers of the clues left behind by ancient societies? 

*Intersubjectivity, discourse, epistemology, textualism, multivocality, multiplicity of readings,* and *relative truths* have become the watchwords of the new literary critique vanguard, often relegating the quest of historical reconstructions to the confines of impossibility.

One means out of this morass is to acknowledge that while most modern historians would argue that *accuracy* is the single most important factor when evaluating any text claiming to be historical, accuracy is by far not the only goal in mind when transforming actions and events into words; *usability* of that past is also firmly
considered when histories are written (Wertsch 2002:35). This distinction made between accuracy and usability in fact reflects a basic distinction the human mind makes in order to store and recall different kinds of memories: individual or personal memories tend to focus on the accuracy of the detail, while collective or shared memories (i.e. public or cultural) operate on the usability of that memory (Wertsch 2002:40-51). Usable histories are not static, but change given the demands of the society that uses them. The past is remembered and re-remembered because that remembrance can serve the present needs or concerns of a society. Recently, a number of archaeological and historical examinations have keenly demonstrated that ancient states, likewise, used writing technologies to shape and govern their polities: Egyptian pharaohs more than once attempted to erase unpopular predecessors from monuments and king’s lists (Meskell 2003); Virgil’s *Aeneid* utilized Homer’s meta-history of the Trojan War at the expense of their Latin and Etruscan roots to create a new political and social identity that justified the Augustan program of a single ruler for the Roman world (Ando 2000); and the Vijayanagara Empire created an ancestral connection to the previous and once powerful Chola Empire to demonstrate its imperial status in India (Sinopoli 2003), to name just a few.

The sagas likewise contain a mixture of individual memories, shown by an emphasis on precise detail, as well as elements of a shared history that were malleable to the demands of society, simultaneously reflecting both the views of a ninth century ethos, as well as a thirteenth century one. While some societies erect monuments to remember

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4 See Alcock (2002) and Van Dyke and Alcock (2003) for a survey of archaeological and historical examinations of how ancient societies utilized the past for political, ideological, and economic endeavors.
the past and create a sense of social solidarity, the Icelanders had the sagas. The telling of the sagas is the telling of the history of Iceland, and as such, served as a malleable form of social memory, “the construction of the collective notion about the way things were in the past” (Van Dyke and Alcock 2003:2). More was at play here than just remembering the deeds of individuals, the oral, and later written, narratives of the sagas were a transformative force, turning a blank landscape into one filled with meaning. The sagas are a material representation of the processes used to convert space to place, the backdrop to the actions of individuals throughout time. Examining the historicity of the sagas requires the look through the lens of both accuracy and usability is to develop an interdisciplinary methodology that incorporates both text and material culture in order to produce a social backdrop of not only the time in which these texts were written, but also of the period these texts wish to reflect. We are fortunate that there are several instances where the texts itself explicitly address these issues. For example, in the introduction of *Heimskringla*, Snorri Sturlusson remarks on the value of accuracy in skaldic poetry written to commemorate the deeds of foreign princes and kings:

> We regard all that to be true which is found in those poems about their expeditions and battles. It is to be sure the habit of poets to give the highest praise to those princes in whose presence they are: but no one would have dared to tell them to their faces about deeds which all who listened, as well as the prince himself, knew were only falsehoods and fabrications. That would have been mockery, not praise (cited in Karlsson 2000: 68).

In a similar vein, Ari declares in his introduction of *Íslendingabók*: “And whatever is missaid in this history, one is duty-bound to prefer what proves to be most true.” These statements directly reflect the author’s concern for faithfully retelling the past, as well as the acknowledgment that the intended audience would not tolerate a deliberate distortion of history.
3.5 The Power of the Oral Tradition

The previous discussion has illustrated the potential for modern researchers to evaluate how histories are shaped and documented. One such contested method was the ability of oral traditions to act as social memories of the past. While the compliers of the sagas could look to a limited number of other textual resources, such as a few land registries and law books, the greater part of what makes up the sagas as we now know them today derived from a collective social memory in the form of an oral tradition (Byock 2001; Sørensen 1992). The profession of bards spinning tales of obstacles and glorious triumph in Nordic and Germanic society has a long history, captured most infamously in the eighth century text *Beowulf*. Just as *Beowulf* contains elements of its earlier oral form, the sagas are also the palimpsestic recording of mnemonic devices; for example the sagas contain a number of standardized kennings, a common feature found in memorized speech events. Likewise, popular individuals make frequent appearances in several of the sagas, but often under different names or variations on a name, precisely the kind of detail that research into oral tradition has shown are the more liable to undergo alterations; however, when writers use other texts as a source, names are likely to be transferred unchanged between works (Sigurðsson 2004: 27).

Critics, however, are often skeptical about the ability of oral transmission to accurately record and manage information (Hatim and Mason 1990). This view no doubt reflects our own logocentric world (Moreland 2001: 12, 33). Jack Goody (2000: 143) posits that writing has the ability to “make the implicit explicit” and must be viewed as a technology of the intellect or “codified ways of deliberately manipulating the
environment to achieve some material objective” (citing Adams 1996 [2000: 132]).

Goody (2000: 133-135; 1986: 171) suggests that communication is one such technology and has lead to changes in how individuals think and see the world, as well as inducing changes in social organization. Likewise Manuel Castells (1996, 1997, 1998) has argued that the power of information technology (IT) is its ability to make communication reliable and fluid, allowing the users of the technology to make more informed and efficient decisions. La Bianca and Scham (2006) have shown how this same principal works in antiquity through the development of transportation and communicative technologies. However, Goody and Castells are describing a text based form of communication, can the same be said of verbal communication? Goody (1986: 20) saw a sharp divide between literate and oral societies, suggesting that only in literate societies can one find documented histories. He (Goody 1986: 37) suggests that histories can only be produced when one can trace the past through organized thought made possible through the ability to make and compare lists. Lacking the ability to compile lists and the limitations of memory, oral societies can only preserve the events of a single generation (Goody 1986: 54-56). Goody is certainly correct when he asserts that literacy almost certainly develops because of the limitations and ambiguity of memory; however, he makes an unnecessary polarization of the “great divide” between literate and non-literate societies without considering that even highly literate societies can still maintain an active oral tradition.

Further, the polarization that Goody depicts is a rather new phenomenon (Moreland 2001: 35). Moreland (2001: 36) suggests that in medieval Europe, texts were structured for recitation; they were meant to be heard, not seen, and as such, “scribes
were mediators between the spoken and written worlds; through their practice, they embedded the voices of the former in the latter.” It is not until after the Protestant Reformation, which devalued the importance of objects, and the invention of the printing press, which allowed for a rapid dissemination of the printed word, did the hazy view of our now logocentric world come into focus (Moreland 2001: 57). Prior to the sixteenth and seventeenth century, however, the oral and written narratives were not so sharply delineated. In medieval Iceland, for example, one of the earliest written texts were the Grágás, the Icelandic law codes. The Grágás stipulate that the laws must be maintained and enforced by law-speakers, who were chosen by chiefs to serve as arbitrators in the legal proceedings held at the national assembly or Alþing (Byock 2001: 308-319). Once a year, law-speakers would be tested on their ability to recite portions of the law codes. What gave these law-speakers their authority was not their ability to consult the Grágás, but to know from memory and to possess the ability to recite the laws. As Niditch (1996) contends for most ancient societies, the majority of medieval Icelanders were probably not literate and therefore, valued and assessed information through an individual’s ability to verbally communicate ideas. Oral narratives taken from the ethnographic record tend to follow a specific organizational form that act as memory prompts and also create a known structure that audiences can follow and could then know if the orator was telling the story correctly (Niditch 1996: 20). This would perhaps explain some of the uniformity to how events are told in the sagas, which follow a standard format that frequently begins with a genealogical overview and description of the landscape, followed by elements of foreshadowing to the buildup of tension and ultimately to the resolution of this tension. This loose standardization would have facilitated not only making the story lively and
entertaining, but also the remembering of the story, and may serve, as Ong suggests, as a
cognitive tool for recalling memory, making it possible for us to suggest that historical
events preserved in oral storytelling may have had the ability to last numerous

3.6 The Social Reality of Medieval Iceland Represented in Text and Archaeological
Remains

Following the approaches of Byock (2001: 212-214), Durrenberger (1990b, 1992) and Miller (1990) one way to avoid the pitfalls of incorporating medieval Icelandic texts into academic, historical analyses, is to try and place both the family and contemporary sagas within a broader social and historical context by reading the sagas as a kind of ethnography, allowing us to uncover patterns of social behavior that can then be compared with the material, archaeological record. Therefore, the question of whether there was ever a period in Icelandic history with greater cultural fluidity than that seen in the proto aristocratic manorial society of the thirteenth century is aptly addressed by examining social relationships within the synergetic union of text and archaeology. To demonstrate the potential of this model, I have chosen to examine marriage and inheritance rights described in the family and contemporary sagas. This selection was not made arbitrarily, but was chosen to avoid the contested issue over the power of chiefs, creating an alternative tool for examining potential changes in social mobility and status over time. The goal here is to use the family sagas, which demonstrate marriage and inheritance practices for the early medieval period, and the contemporary Sturlunga sagas, which illustrate the late eleventh through thirteenth centuries, to see if there are
any discernable patterns of behavior that can then be compared to the patterns emerging from archaeological data. My hope here is that by using an interdisciplinary methodology we can begin to move our debates past the impossible task of proving, or disproving the historicity of the sagas. I will argue that the sagas document a transformation of marriage practices, providing us with a vivid representation of the rise of an aristocratic class alongside shifting social identities for women, intimately tied, I posit, to changes in economy and household production seen in the archeological record (see also chapters 4-7).

3.6.1 Passions of the Free State: Marriage, Love, and Economics in Medieval Iceland

As a prime agent in forging social alliances, marriage practices are a keen insight into the degree of social mobility within the society as well as garnering a glimpse into gender and class status. Cross-culturally, social mobility tends to decrease proportionately with the establishment of ascribed social status, limiting the viable number of potential marriage partners per class since alliances tend to only be created between members sharing similar social positions only. Likewise, an increased control over matrimony corresponds with the higher tiers of social rank, with arguably more fluidity within marriage selection among the non-aristocratic members of society. The sagas focus heavily on the conflicts and concords that only love and a desire for power can bring out in people, providing the modern reader with an ethnographic window into the developing social arrangements of a medieval society. A cursory examination of the sagas reveals two distinct images of marriage and the status of women in Icelandic
society, with a shrinking degree of freedom and influence in society over time. The impetus for this transition in the status and role of women commenced around 1000 CE, corresponding to changes in the political and economic configurations of the society (see also chapter 1), namely the end of colonial land taking and a shift in the economy away from the enterprise of men as warriors, and towards the enterprise of women as weavers.

3.6.2 Marriage and Women in the Early Social Order of Iceland, ca. 872-1050 CE

Marriage in Iceland parallels practices found throughout Scandinavia and shows many similarities with the mixture of Roman and Germanic customs found in continental Germanic Kingdoms throughout the fifth through eighth centuries CE. Like the Merovingians, the Icelandic practice of Kaufehe, or marriage by purchase, was an economic transaction that allied two families (Wemple 1981: 52). Unlike marriage practices in Norway and in the Germanic states of Northwestern Europe, however, Iceland also briefly during the initial colonization revitalized an older Germanic custom, Raubehe, or marriage by capture. “During periods of wandering and endemic warfare men undoubtedly committed rape and other physical violence to obtain women and establish exogamous unions” (Jochens 1995: 17). From the Landnámabók, we know that men “acquired wives” from abroad while in route to Iceland. The family sagas, likewise, tacitly imply that men sometimes forcibly took women from abroad to be used as domestic slaves, who then once settled in Iceland may have become wives to other colonists (Hastrup 1985: 93-96; Jochens 1991: 361; Karras 1988: 73-77, 1992). However, once settled in Iceland, Raubehe would have been a dysfunctional and risky practice, since a woman’s kinfolk could swiftly deliver retaliation and vengeance. It is
likewise possible that no Norwegian women were married through Raubehe, since to do so would have been socially frowned upon within Norse society. By contrast, Kaufehe would have been a viable and powerful means of brokering alliances, mending hostilities, and offering a keen economic incentive (Damsholt 1984: 79). Through an analysis of several of the family sagas, Frank posits that the negotiation of marriage was always between men: the guardian of the woman usually her father, but in some cases a brother or even a son if she was a widow seeking a subsequent marriage, and the suitor or his male guardian (Frank 1973: 472-473). Usually after several meetings, if an alliance seemed promising, the suitor would make a proposal to the woman’s legal guardian rather than to the woman directly.

It is important to notice that a woman’s guardian, typically her father, could not initiate the marriage of his daughter but had to wait for a suitable candidate to appear, but ultimately it was up to him to decide if his daughter was marriageable. The one exception to this rule was when a father had reason to believe that his unmarried daughter had been intimate with a man and was or could become pregnant; only then could a father intervene actively on behalf of his compromised daughter. If the potential groom and the kinsmen of the would-be bride favored the informal proposal, two ceremonies, always in the presence of witnesses, were performed. The publicity of these ceremonies insured the legality of the marriage and the legitimacy of any children that might result from the union (Jochens 1995: 83). The first ceremony was the formal betrothal statement, which was a declaration of the proposed union and sealed by a handshake between the guardian and the suitor or in some cases his representative, which may imply that sometimes the male suitor may have little involvement in the proposal; the woman’s presence, on the
other hand, was never required, but by law her audible consent or “with her own yes-word” (með jákvæði hennar sjálfrar) in the presence of witnesses was required (Diplomatarium Islandicum 1: 287). On this occasion, the amount of the bride-price and dowry were fixed; the amount for each was dependent on the status of the families involved, but typically, if a woman’s family was of a higher status than the man’s family, a large bride-price was required. There is one instance, in Njal’s saga of a dowry of eighty cows, a very high “monetary” amount, but frequently the dowry seems to be the offering of a land grant that was to be shared and worked equally by the couple (Byock 2001: 17-21). In the event of a divorce or death of the husband, a woman was entitled to keep the bride-price. The second ceremony was the wedding itself, which required at least six witnesses, but as many witnesses as possible was preferable since the wedding would only be valid as long as the witnesses were alive and could remember the wedding. The wedding took place within a set time after the betrothal and according to Grágás K § 144, had to be within one year after the bride-price was paid. Lastly, for the marriage to be legal, “bride-ale had to be drunk, and the groom led with lights to his wife’s bed” (Frank 1973: 475).

The most striking feature of marriages depicted in the family sagas is the frequent mention of fathers asking their daughters’ consent to a marriage, even though by law, as described above, he was under no obligation to do so. In chapter 23 of Laxdæla saga Egil assured his daughter Thorgerd that he would not answer the spokesman of her potential suitor until he was certain how she stood on the match. After the meeting, Egil concludes that the match seemed promising, but tells Thorgerd that he “have left the matter for you to decide… however, I think it is easy to answer such a proposal for the
match is a very credible one.” Thorgerd retorts: “I have heard you say that you love me best of all your children, but now it seems you don’t really mean it if you want to marry me off to a bondwoman’s son, no matter how handsome and well decked out he is!” Egil continues to try to persuade her, informing her that the young man’s mother is actually the daughter of an Irish king, making him a good match. Thorgerd would not be persuaded; but Egil does not force her to marry, instead he rejects the proposal. The same sentiment is echoed later in chapter 70 when Snorri declares to a suitor that his daughter “shall only marry the man who pleases her.” Even once a proposal had been accepted by a male guardian, a woman still seemed able to persuade him to call off the wedding, as for example, in chapter 97 of Njal’s saga when Flosi’s niece Hildigunnr does not wish to marry. Flosi assures Hildigunnr that “it is sufficient for me to call off the negotiations if you do not want to get married.”

From these examples one can suggest that fathers often conferred with their daughters, a suggestion strengthened by the anger and frustration of some women when they are not asked (Jochens 1986b: 37). Two key examples of this are Hallgerd in Njal’s saga and Guðrún in Laxdœla saga. In both cases, these women are persuaded by their fathers to marry, and in both cases, the marriage does not end well for the husband. In chapters 9 and 11 of Njal’s Saga, Hallgerd is told that her father has, without conferring with her, accepted and performed a betrothal ceremony with Þorvald, a well respected and good natured man, and that she is to wed to Þorvald in a month’s time. Hallgerd was not pleased with the match or her father’s actions and comments to him: “now I am certain of what I have been suspecting for a long time, namely, that you do not love me as much as you have always said you did, since you do not think it necessary to discuss this
proposal with me; besides, I do not find this marriage as prestigious as you had promised me.” Soon after the marriage, Hallgerd despises Þorvald’s attempts to save money and concocts a scheme to have Þorvald murdered. Hallgerd purposefully squanders away Þorvald’s provisions of flour and dried fish, and then accuses of him of being lazy and an unable to aptly provide for his household. She continues to badger Þorvald until he becomes so enraged that he slaps her. In guilt, Þorvald concedes, and immediately assembles a crew of men and sets out to replenish their supply of fish. Hallgerd seizes the opportunity and runs to Thjostolf, her foster father who had supported Hallgerd’s stance against marrying Þorvald. In a dramatic scene, Hallgerd tells Thjostolf how her husband has dishonored her, and to ensure a heated response from her foster father adds an angry jab his way by declaring that, “if you cared for me you would not have been so far away.” To make amends, Thjostolf promises to avenge her mistreatment. He sets sail to find Þorvald, which he does, and the two men engage in a brutal fight until Thjostolf has killed Þorvald, thereby restoring Hallgerd’s honor, as well as his own. Thjostolf returns to Hallgerd and declares that he has done something that “will permit you to marry a second time.” Hallgerd returns to her father with the news, and he can only concede that the failure of her marriage was his fault since he had not consulted with her nor listened to Thjostolf’s advice against forcing a daughter to marry. In the end, it is Hallgerd who has the upper hand, not her male kinsmen who she is easily able to guilt and comply to her demands. A similar situation occurs in Laxdæla saga (chapter 34) where Guðrún is betrothed by her father without her consent, and “she openly showed her displeasure over it, but there the matter stood.” For her family, the marriage was prestigious, since Guðrún’s family was of higher social status than the future groom,
Þorvald, allowing her father to broker a marriage contract that stated that Guðrún alone would have control over the couple’s joint property. Guðrún showed no love for Þorvald, and constantly demanded he buy her expensive gifts, until he finally became fed up with her and slaps her after Guðrún insists on a particularly extravagant gift. Guðrún now felt she was in the right to leave Þorvald, but needed to ensure that a divorce would be lawful, allowing her to keep the dowry (i.e. her father’s land). She consulted a friend who suggested: “make him a shirt with a wide neck opening and then declare yourself divorced from him.” This shirt with a wide neck opening is literally called a shirt with “a divorce head hole” in the sagas. It was cut so low that the nipples showed; his wife could legally divorce a husband who wore such a shirt. This custom is later echoed in Grágás K § 155 which ruled that: “If women become so deviant that they wear men’s clothing, or whatever male fashion they adopt in order to be different, and likewise if men adopt women’s fashion, whatever form it takes, then the penalty is lesser outlawry.”

Lastly, there a number of instances that, while briefly touch upon romantic love and marriage, are nonetheless included by the sagas authors. One example is from The sagas of Hallfred Troublesome-Poet: “Hallfred set his heart on Ingibjörg and asked her to marry her. She said, ‘Not everything would be taken care of then, for you are a Christian and a foreigner here. But you should go see my father if this is what you want.’ He did so, and put the suit before Thorir and they easily settled the matter. And so it came about that Hallfred married Ingibjörg, and he loved her deeply” (1997: 94).

While it is tempting to suggest that all women shared in Thorgerd’s and Hildigunnr’s advantage of having male guardians who conferred with them on marriage opportunities, or Hallfred’s and Ingibjörg’s ability to marry for love, or even with
Hallegerd’s and Guðrún’s ability to end marriages they deemed undesirable, a far greater number of marriages described in the family sagas seem to suggest that women frequently married at the behest of their guardians. In most cases the acceptance of a marriage is tacit and passive: “the girl did not refuse” or “did not say no on her behalf and asked her father to decide” or “it was not against her will” (Jochens 1986b: 38). Although unlike the contemporary sagas, as we shall see, the family sagas at least play lip service to the emotions of the couple and the legal requirement of consent. It is equally necessary to stress that the women described in the examples above all came from wealthy families, so it is likely that these fathers had a vested interest in being certain that a marriage alliance would be profitable and not end negatively, which would make marrying off his other children all the more difficult. Further, the family sagas made implicit implications that girls of less wealthy families were often the prey of men seeking sexual gratification, not wives (Jochens 1991: 365-376). These “illicit love visits” often involved physical force and manipulation, and if pregnancies resulted there was often little a woman could do if the man did not admit to the encounter. However, social mobility was a feasible reality for some women of non-prestigious families, even for slaves. In Laxdæla saga, Hóskuldr on a trip to Norway buys a beautiful slave, Melkorka, who becomes a member of Hóskuldr’s household and later the mother of his favorite son Óláfr, who inherits a considerable share in his father’s land holdings. The saga suggests that Melkorka and Hóskuldr’s wife get along well together, but this may not have been the norm. In Njal’s saga, Njal’s takes a concubine, who is constantly at odds with his wife Bergthora. Njal has sons with both women who both stand to inherit
adequately after his death; but unlike the case seen with Melkorka, Berghora’s sons challenge the right of Njal’s illegitimate son to claim inheritance.

What emerges from the preceding discussion on marriage and divorce is a reality in which some women could stand to gain considerable wealth through marriage. Women born into high status families, likewise could have a say in who she would marry, basing this choice on either affection, or the perceived prestige the union might bring to her family. A certain degree of social rigidity and fluidity is also present, where some women seem able to work the social system to their advantage and increase their status through marriage and alliances with wealthy men, while still others were the victims of rape and deception. The image of women in the initial social order is therefore multifaceted, with both the chance for positive opportunities and the malady of social restrictions.

Aud, one of the prominent land-takers, perhaps shows the maximum of what a woman could achieve in early medieval society. Without a husband or sons she had to take initiatives and take on a male role if she and her family were to succeed in Iceland (Jesch 1991: 83). In the more settled societies of the Norway from which these settlers came from, women probably had fewer opportunities to play any role other than those of wife, mother and housekeeper. “[But] in the brief interval between leaving Norway and arriving in Iceland, some women clearly had to be more” (Jesch 1991:83). There is no doubt that Aud took advantage of the greater opportunities and fewer social constraints in the Norse colonies of the North Atlantic and no matter how romanticized some of the images of her are, she embodied a true picture of the possibilities that opened up for women in the frenzied push of the Viking colonization. Aud, and her contemporaries,
entered both a vacant and unwritten physical and social landscape, providing women with new innovative opportunities. From the sagas, we see women as actively involved in the shaping of a new country, as women were energetic participants in the establishing of farmsteads. Through their labor, women, alongside of men, created a new society, that was cemented through marriage. In this society, it would seem that women and men could act on their affections for one another; however, these acts, if deemed socially reckless, would not be tolerated. As will see, in comparison to the Sturlunga Period, however, couples seem to have greater flexibility in entering into and dissolving marriages.

3.6.3 Marriage and Women in the Sturlunga Period, ca. 1050-1270 CE

Textual and archaeological data indicate that by the mid-eleventh century social transformations are underway in Icelandic society. These changes include an increase in economic activity and the solidification of property rights (see also chapter 1). These modifications in economy and land ownership can also be viewed through correlating changes in marriage alliances, which overall illustrate a greater concern for parents to broker more socially meaningful marriages, that will either keep the family fortune in the hands of its kinfolk or will garner greater wealth through the union of two equally powerful families. At the same time, however, the strategy of “marrying up” ceases to be a viable option for most families, as the pool of possible marriage partners shrinks and is consigned to class. Overall, both men and women have less flexibility in choosing their spouse, as marriage becomes big business and a bargaining chip in the game for aristocratic control.
The procedure of a marriage, with three public ceremonies, does not seem to change; however, according to *Grágás* K § 144 states, “a woman is betrothed when the man taking her has witnesses to witness that the other then gives him that woman in legal betrothal as a match sound and warrantable.” It is worth noting that if the woman is found not to be a sound match due to some “defect” then “the penalty is lesser outlawry for the man who wittingly gave her in betrothal.” Unlike the settlement period, greater emphasis is placed on the concept of *jafnrað*, an “equal match,” which refers to both social prestige and to wealth. In fact, *Grágás* K § 148 states that “if people join in marriage who own less property than 120 ounce-units in legal tender [silver], six ell ounce units [cloth], besides their everyday clothing and are without dependents [if they had dependents additional means were required] then their penalty is lesser outlawry, unless the woman is past childbearing.” If the couple did not agree to dissolve the union, they were forced to leave the country until they owned 120-ounce units or more or when the woman was past childbearing. While the family sagas describe the desire for prestigious marriage matches, the idea of a suitable match probably had more to do with wishing to ensure a marriage of equal social standing (free versus slave) was met. There is little indication to suggest that marriage alliances were confined by matters of wealth, as Guðrún’s marriage to Þorvald in *Laxdæla saga* suggests. *Grágás*, however, demonstrate that wealth is a clear requirement in marriage. This pattern is understandable given the social context where land is limited and competition is intense. The end result of this marriage regulation was to stymie social mobility since it prohibited marriage across wealth positions. Further, the proviso that a couple needed to have a certain basic level of wealth to even consider marriage would have further
thwarted the creation of alliances and the making of economic networks, since marriage was, in both cases, the key means for fostering these kinds of relationships.

The contemporary sagas are in agreement that the less a man saw of a girl before he proposed to her father or guardian, the better chance he had of winning her and staying alive. “The sagas all agree in representing courtship as the single most deadly pastime for the young Icelandic male;” in fact most of the eighteen courtship stories found in the contemporary sagas end with the death of the suitor (Frank 1973: 476). The belief that courtship could have serious and dire consequences no doubt highlights parental control over marriages. A young man who courts a girl is probably not considering her family’s financial assets; such a marriage would be to the determent of his family. It is, perhaps, not surprising then that in the contemporary sagas we lack even a single case of a father asking for his daughter’s consent or opinion on a marriage match (Jochens 1986a: 145; Jochens 1986b: 42-47). This, too, demonstrates the heightened need for parents to carefully and deliberately select *jafnræði* for their children, since marriage had in a sense become big business for a family. In the settlement period, marriage was a crucial means for a woman to increase her wealth and social standing in a society, and no doubt also affected the affluence of her family; but in a society were was property was fixed and set at high price, marriage became something of far greater economic clout as it was a means for land to change hands.

However, Jochens interprets the frequency of fathers asking their daughters’ approval to a marriage as tales promoting Christian laws of consent rather than a reflection of a social reality of the early medieval period (Jochens 1980, 1986b: 47). In the family sagas, marriages acquired against the will of daughters, such as Hallgerd and
Guðrún, often result in turbulence and death, suggesting that the writers were demonstrating the social consequences of disobeying church doctrine (Jochens 1991: 363). This conclusion, I would argue, is deeply entrenched in a Humanist view (Elias 1978; Jaeger 1985) of the sagas and does not adequately evaluate changes in the social structure beyond the changes in religion. In fact, Jochens herself admits that while there were laws governing consent as early as 1189, even by the fifteenth century women were still married through forced consent. Why then would the sagas writers have been so keen on the issue of consent or on the rights of women in general? Likewise Icelandic bishops writing at the time the sagas were composed seemed almost disinterested in the issue of marriage and consent, writing first and foremost on the need to reform clerical celibacy, followed only marginally on attempting to restrict the parameters and legality of divorce. It is unclear then, why so many saga writers would have opted to fabricate a collection of stories to promote those issues of Christianity, principally the issue of consent, that were not at the fore of church reforms in Iceland, rather than tackling issues of divorce and extra-marital affairs, two events that occur frequently but are at times treated rather lightly in the family sagas. The Grágás, too, seem to collaborate with the societal negation of consent in marriage and the ease of acquiring divorce. As mentioned earlier, Grágás does include a small section on Christian Law, which does address consent: “a priest must also hear the woman say, without being forced, that she agrees to marry the man” (K § 18). However, elsewhere in the betrothal section, the rules stipulating the necessary procedures for a marriage do not mention consent of the bride;

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5 The Humanist view tends to view marriage as a communicator of a Christian, moral message, designed to teach medieval society the proper rules of ethical conduct by emphasizing marriage from the vantage point of communal needs, rather than the emotional needs of individuals.
in fact a woman could be charged with outlawry if she tried to prevent a marriage that her father had arranged (Frank 1973: 475-478). It is not until 1429 that we find a case of a woman who was granted a divorce from a bishop on the grounds that she had been forced by her father to consent to the marriage (Jochens 1986a: 144). On matters of divorce, both the family and contemporary sagas seem to demonstrate that either a man or a woman could legally instigate a divorce by publicly announcing their intent to separate from a spouse. If the witnesses present found the separation just, the couple was considered immediately divorced, each free to pursue a new marriage. The Christian Law section of Grágás state that a couple seeking a divorce must seek the approval of a bishop, but this does not seem difficult to obtain. Grágás K § 204 even urges a couple to appeal to the bishop on grounds of personal incompatibility. Further, while divorce was a common theme in the family sagas, it occurs only four times in the contemporary sagas, suggesting that the documentation of divorce in the latter may have more to do with reflecting the image of abiding Christians than the former.

3.6.4 Legitimacy and Inheritance in the Sturlunga Period

As with marriage, the social developments of the eleventh and twelfth centuries CE mirrored changes in laws regulating inheritance and attitudes toward the legitimacy of children. In the settlement period, there were few class restrictions on matrimony (Jochens 1995: 21). There was no restriction, for example, for freemen and freewomen marrying slaves; however, the child born to a free mother and a slave father, even if the woman had freed him before marrying him, would not be allowed to inherit land. A child born to a free father and slave mother, as we saw in Laxdæla saga, by contrast could
inherit land as long as a man admitted parentage (Karras 1988: 113). In the Sturlunga period this flexibility vanishes and is replaced by a highly rigid system of inheritance that scrutinizes all potential legal claims. An insightful example of these changes can be seen in Hervarar saga that relates three chronicles that each, in different ways, show trepidation over attitudes of legitimacy and inheritance. Hervarar saga first relates the life of Hervör, who is told, contrary to what she grew up believing, that she is the daughter of a slave. This news brings her great sorrow. Later in the sagas her life is turned upside down once again when she learns that her father was not a slave, but was in fact a wealthy warrior who had been killed in battle on the island of Sámsey. Hervör goes to Sámsey to claim her rightful inheritance, and there meets and marries a wealthy chief. They have two sons, Angantyr, who is well liked like his father, and Heiðrek, who is unruly and loved only by his mother (Tulinius 1992:151). The saga escalates when Heiðrek is not invited to an elaborate feast his father is holding in Angantyr’s honor. Heiðrek decides to show up unannounced a make as much trouble as he can, throwing stones at the guests, when inadvertently hits his brother in the head with a large stone. Angantyr dies, much to the outraged of his father, who generously spares Heiðrek’s life, but banishes him from his household and deprives him of his inheritance. Later in the sagas, we learn that Heiðrek has managed to become a chief after his father’s death, and that he himself has had two sons, Angantyr named after his brother, who was born in wedlock, and Hlöðr, who the was born out of wedlock to a slave mother. After Heiðrek’s death, both brothers try to claim an inheritance. Angantyr charges that Hlöðr is entitled to nothing since he was Heiðrek’s illegitimate son, but offers to give him a third of his inheritance; however, Hlöðr demands that he is entitled to half, since he
is no less of a son. The brothers are unable to arbitrate their dispute and take to a violent
feud that ends with Hlöðr being killed at the hands of his brother.

The three disputes unveiled in Hervarar saga are united in that all disgruntled
individuals “had been denied their birthright because their social status had diminished”
(Tulinius 1992: 152). First, the sagas begins with Hervör initially being told she is slave,
which may be taken as an accusation of her claiming to have a higher social position than
she in fact had. To be the child of slave carried with it not only social repercussions, but
economic ones as well since the child of slave was always deprived of an inheritance
(Grágás K § 118). Hervör’s race to Sámsey; however, is more than simply the desire to
gain a share of her father’s wealth; it is also to publicly demonstrate her social position in
society. Second, the tension between Heiðrekr and his older brother Angantýr reflects
concerns over birth order and rights to inheritance. The mention of Angantýr’s father
including him in a feast, at the exclusion of Heiðrekr, is suggestive that Angantýr was
being groomed by his father to have a more prominent social position than his brother.
Killing his brother allows Heiðrekr to later become a goði, an all too common ploy in
aristocratic society. Third, the dispute between Hlöðr and his half-brother Angantýr is a
key example what is to become of illegitimate sons if they don’t accept the established
inheritance laws found in the Grágás, and try to claim more than they are entitled to: they
will bring death to themselves (Tulinius 1992: 160). Tulinius posits that these tensions
are the stirrings of the development of an aristocratic class in Iceland that sought to
imitate royal behavior as a means of fulfilling the “needs of those who controlled large
regions to ensure that the political unit they ruled over would not be divided into ever
smaller parts with each new generation” (Tulinius 1992: 159). These concerns are
equally reflected in the staunch control over marriage, as well as over women’s economic production of cloth. Taken in concert, the image of medieval Iceland after the tenth century CE is one of a society that has become increasingly hierarchical; this change in social structure is matched by changing attitudes towards women and marriage, as their roles became more consigned to the private world of the household.

3.7 Conclusions on Iceland as a Hegemonic Colonial Secondary State

This study argues for a reexamination of the relationship between historians and anthropologists dealing with ancient texts and material culture who aim to identify moments of history and culture process. My aim has been to show that by framing the debate as a methodological issue, and by addressing the challenges raised, one can begin to grasp a meaningful glimpse of ancient societies which have left both an archaeological footprint and fragments of textual evidence behind. The reticence among some saga historians to treat the family and contemporary sagas as distinct representations of historical periods within Iceland need not lead to a consensus that since the family sagas were written concurrently with the contemporary sagas both must solely reflect the psyche of thirteenth and fourteenth century saga writers; nor must we deduce that the presumed contractions found between these two categories sagas represent the wish fulfillment of dominated society. By using an anthropological methodology we can begin to move our debates past the fixation of attempting to demonstrate that the culture and society described in the family sagas are either entirely accurate or are fictionalized accounts, which are only peppered with some historical elements, that depict a social structure that in fact never existed. A discussion on some of the events described in the
sagas clearly reveals that these texts can at times both contradict and collaborate with the archaeological record, but we should not conclude from this disparity that the best course of action is simply to treat these data sets separately. The contradictions between text and material culture often provide new research avenues of investigation. The utility of an anthropological approach is that texts and the material record is that we need not nor should not expect these data sets to intersect perfectly but should instead focus on the points of interplay between the two. The space where text and the archaeological record intersect can be an insightful way to situate the past by allowing us to move our research and debates into new and more fertile directions.

This brief survey into the world of the sagas suggests that changes in social status are intimately linked to changes in the economy; however, the sagas are regrettably silent on the specific nature and structure of the political economy of the earliest phases of settlement as well as those in the thirteenth century. I will argue in the following chapter that one approach to understanding the economic structure of the society and its potential role in the development of secondary state institutions is to examine land use trends over time, trends that no doubt reflect the same sorts of patterns we have observed with marriage practices and the organization of households. I propose that the patterns discerned from this discussion suggest a new avenue of research: trade and household production. In the following chapters I will examine the hypothesis that correlated with the restructuring of households documented in these texts, is an intensification of livestock farming in a concerted effort to increase the production of woolen cloth to meet the demands of an international market.
Chapter 4

Examining the Economic Nature of Early Icelandic Society:

A Proposed Methodology for Multiregional Settlement Pattern Analysis

Exchange has always been viewed as an important social phenomenon in medieval Iceland. The act of goods exchanging hands was as much social as it was economic, with the giving and receiving of politically charged items both cementing and reifying personal alliances (Miller 1990). In Iceland these exchanges were likely carried out in highly public arenas, as crucial goods, such livestock and grain, had to be imported from abroad. To trade these items was an advertisement of one’s social connections and economic wealth, both of which were necessary to fuel these long-distance exchanges. There is, however, no consensus on how essential exchange was, how frequently exchanges were made, and even how exchanges were carried out. At the root of these debates lie conflicting perspectives over how the economy and social structure of medieval Iceland were organized. While active debates are still waged over the use of slavery and how chiefly redistribution played out in the economy of early Icelandic society, one consensus that has been reached is that landscape use was a highly durable component of the Icelandic economy, remaining relatively unchanged until the industrial era of the twentieth century. The well-documented farmstead economy of the eighteenth century (Gunnlaugsson 1988), characterized by predominately small, self-sufficient subsistence farmers, is therefore seen as an applicable economic model for Iceland throughout its history. I argue this view needs to be critically reexamined.
Assumptions of a homogenous and static economy stem from a larger research lacunae in Icelandic archaeology. The locus of archaeological research has tended to focus on the cultural history of settlement, with the perception that once the landscape was populated, the organization of farmstead placement more or less conformed to the way it looked in the eighteenth century. The logic behind this historical analogy no doubt rests on the perceived notion that Iceland, with its isolated geographic location and marginal environment, could not have been structured any differently. However, as we have seen in chapters 2 and 3, these views do not hold up against the data from current research, which suggest that the environmental and social marginality of Iceland is a much later historical phenomenon and does not aptly describe pre-eighteenth century society. In light of these data, new questions must be asked. As long as new avenues of research remain unexplored, our knowledge of early Icelandic society will continue to be incomplete.

For my dissertation research, I created the Skagafjörður Landscape Project (SLP), which proposes a new focus on multiregional settlement pattern research for Iceland, examining not only site location but also the economic development of landscape use over time. This focus requires a comprehensive dataset, one that cannot be fulfilled by examining only archaeological data or only documentary records. What is needed to achieve this goal is a multi-component database that incorporates all available archaeological and documentary evidence. I have designed and complied a database of this kind for Skagafjörður, which I call the Multiregional Site Registry (MSR). The

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1 A phenomenon that includes social processes that led to the marginalization of laborers to the lands they worked, several outbreaks of the plague, and the environmental catastrophes of the Little Ice Age and the eruption of numerous volcanoes—all of which conspired in an overall decline in agricultural productivity.
MSR is the first of its kind for Iceland, and will hopefully generate new perspectives on the early economy of Iceland.

The objective of my fieldwork was to amass and systematize settlement data for Skagafjörður, an environmentally diverse region of northern Iceland and an area that figured largely in the history of early Icelandic society. It was in Skagafjörður where some of the most noble settlers took root; where a vital and active trading harbor (Kolkuós) was established; where the second bishopry (Hólar) was founded; and where the last of the chieftains took a final stand against one another in a civil war that ultimately lead to the creation of an Icelandic state. My fieldwork consisted of two main phases of research. In the first phase of my research, I conducted an intensive pedestrian survey of one valley system in Skagafjörður, the Hjaltadalur and Viðvíkursveit area. Traditional pedestrian survey methods, such as systematic surface collections of artifacts and the identification of features, cannot be used in Skagafjörður because little archaeological remains from the medieval period are visible on the surface. To overcome these limitations, I designed a systematic surveying methodology that used soil coring techniques borrowed from geological research. In the second phase of my research, I used the data from the archaeological coring survey as a working model to interpret existing settlement data, taken from both archaeological and documentary sources. I synthesized all of this data into a single extensive, fjord-wide catalog, the Multiregional Site Registry, for most of Skagafjörður over a thousand year period of occupation. To explore multi-regional settlement pattern and landscape development, evidence from the

\[2\text{ The results of this survey are discussed in chapter 5.}\]
MSR was examined and interpreted using a social network systems approach. Social network analysis and settlement pattern data are suitably matched, as each aims to examine the possible relationships between any two or more variables within a larger holistic system. Social network methodologies, grounded in landscape theory (Bender 2006; Massey 2005, 2006; Tilley 1994, 1998), goes beyond the traditional aims of regional analysis, one focused on identifying borders and territories, and instead examines the social processes behind the act of negotiating real political and economic behavior within the natural and built environment. The notion of a system or a landscape provides a method for examining the totality of social action within a fluid, rather than a static space, viewing the natural and the social environments not as contradictory or combative, but as complementary (Bender 2002; Ingold 1993).

The purpose of this chapter is to describe these methods, laying the foundation for generating new avenues of research and to provide a working model for making interpretations of the data examined in my study, which will be discussed in chapters 5 and 6. It is my hope that these methods can be applied to not only other regions of Iceland, but also to other areas around the world that are up against similar methodological concerns.

4.1 Settlement Pattern Research in Iceland and Regional Network Analysis

Ever since Gordon Willey’s regional analysis survey of the Virú Valley in Peru (Willey 1953), settlement pattern research has become an essential archaeological methodology, often resulting in new and unexpected data. Rather than looking at

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3 The results of the second phase of my research are discussed in chapter 6.
individual settlement sites in isolation, a regional analysis examines how multiple sites within an extensive geographical area interact with one another, revealing a holistic system that takes into account the economic, political, environmental, and social factors that acted on past societies (Kowalewski 2008). Despite its potential, settlement pattern analysis has, with notable exception, rarely been attempted in Iceland (cf. Bolender et al. 2008; Smith and Parsons 1989; Vésteinsson 2001). The reticence to apply a regional approach stems from a lack of extensive archaeological data, problems of site visibility, and a general mistrust of the reliability of the documentary record for pre-fourteenth century Icelandic society (see chapters 2 and 3). This predicament is not likely to significantly improve any time in the near future. Rather than delay a settlement survey until more extensive archaeological work can be completed, an attempt can now be made; an attempt that can at the very least begin to point to new questions and new directions of research.

Medieval Iceland was, by and large, an agrarian society, but we should, however, question if farmstead organization was always geared towards smallholders and sustainability or if an agrarian economy could have held commercial pursuits. That is, we should consider if the economy of medieval Iceland differed in the ninth century from what it would become in the fourteenth century once state institutions are firmly in place. Regional settlement pattern analysis is up to this challenge, and can, with its emphasis on examining how site systems interacted with their environment over broad geographic and temporal scales, begin to identify patterns of land use over time. For my research, I have used both traditional regional analysis methods, which examines settlement trends in distinct environmental and resource zones, and a nontraditional approach of examining
settlement trends and land use patterns from a social network or landscape approach that incorporates both the archaeological and documentary record. These two complementary methods represent the dialogue between the constraints imposed by the environment as well as the social restraints that shaped the overall use of the landscape and the nature of the economic structure. This consideration is crucial if we are to understand how the economy played a role in the development of state institutions in Iceland.

The standard goal of regional analysis is to categorize and examine site location, documenting the borders between sites and cultural territories. Embedded in this approach is the understanding that differences in ecology will be reflected in economic practices. As discussed in chapter 2, the environment of Iceland is richly diverse, so we should anticipate regional economic differences that conform to resources catchment trends. Resource differentiation in Skagafjörður is shaped by elevation, so for example, lowland areas experience warmer temperatures and are more amendable to large-scale agrarian pursuits, while the colder temperature highland areas are made-up of drier soils that support uncultivated rangelands suitable for animal grazing. These differences suggest that a diversified economy was possible. Likewise, the environment in Iceland is a highly dynamic agent, continuously changing and redefining the parameters of interaction between the landscape and those who lived within it, making the potential for economic change over time possible even within regions.

More innovative aspects of the regional analysis undertaken in this study looks to the documentary record for clues to address the social issue of economic organization and integrates this information with archaeological settlement data. Frands Herschend (1994) has suggested that saga depictions of the early settlement period hint at least two possible
economic models in place during the initial development of the farmstead system in Iceland: The “Skalagrim Approach” of establishing economically specialized farms that feed into the larger, chiefly centers; and the “Aud the Deep-Minded⁴ Approach” of establishing generalized, self-sufficient farms through initial land claims and later through chiefly land grants given or sold to followers and former slaves. These two different approaches recorded in the sagas reflect three economic models⁵ that correspond well to three types of secondary state formation models. Examining the economy of Iceland will serve as a proxy for uncovering the broader developments of institutional change in Iceland specifically, and the processes behind secondary state formation not only in the Icelandic case study, but potentially in other cultural situations as well. The three models that will be used against the data presented in chapters 5 and 6 are as follows: the Autarkic Model (Autonomous Secondary State), grounded in historical accounts of landscape organization, environmental constraints, and the concept of a gift economy, argues that state formation is the evolution of autonomous, local complexity; the Imperial Economy Model (Hegemonic Colonial Secondary State), which like the Autarkic Model is shaped by the perception that the economy of Iceland changed very little over time, but is different in that it views the Icelandic economy as driven by the external, imperial market demands of Norway to acquire raw materials, with Norway supplanting state institutions in Iceland; and what I call, the Norse Economic Territory (NET) Model (Synergistic Secondary State) that argues that the economy of Iceland

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⁴ Auðr Djupuðga
⁵ See chapter 6 for a full treatment of these models
was capable of diversification and that the confluence of local and international socioeconomic changes over time lead to the development of an Icelandic state.

Framing the data within a social network analysis bridges environmental and social approaches and allows us to examine the interplay between local and external variables by treating a society as an open feedback system. A social network is a social structure made of nodes, which can be individuals or whole communities, that are tied by one or more specific types of interdependency such as cultural values, friendship, conflict or trade (Freeman 2004: 3). Social network analysis conceptualizes these social relationships in terms of “nodes” and “ties” (Granovetter 1973: 1361). Nodes are the individual actors within the networks, and ties are the relationships between the actors. The resulting graph-based structures or architectures are often very complex (Buchanan 2002), but social network analysis, has defined two common network architectures: one built by clustered nodes with occasional random links, the other a scale-free structure built by hierarchical nodes (see Figure 4.1). Both types of network structures are made up of nodes that are linked to one another, but the difference between the two types is the scale of these nodes as well as the strength of the ties or links that connect these nodes. Clustered structures are made up of nodes that are fairly similar in size and scale, while scale-free structures consist of large-scale hubs linked to smaller nodes (Sindbæk 2007: 62). The end result are two highly connected systems, but with different forms of interaction and different degrees of vulnerability.

Clustered networks are susceptible to random failure since all the nodes in the system are equally important. Scale-free networks, on the other hand, are more resilient to random failure since the nodes are hierarchical. If small nodes collapse, the system
will likely continue, but if the hubs or larger nodes collapse or change, the system itself will likely crumble or transform itself into a new system. Hubs themselves can likewise be variable, with some hubs directing more traffic in the overall system. These busier hubs, referred to as nodal points, are a kind of traffic junction, a place where multiple nodes within a network intersect and convene. This distinction between types of hubs can be practically useful when analyzing different types of exchange systems in a society as it provides us with a three tier hierarchy of sites: first tier nodal points, second tier hubs or centers, and smaller third tier nodes. These different site types within a network are likely to express their relationships with one another differently in settlement pattern trends. In Scandinavia, nodal points are often defined by activities focused around long-distance trade, as opposed to smaller hubs or central places that served as marketplaces where more localized goods were exchanged. These two types of exchange centers were entirely connected, with goods from each flowing through both locales; the difference, however, was the degree of regulation and control over each. Control over nodal points could translate into immense social capital and political clout in a society, and as such were acutely managed by elites. This task achieved in part by geography, as all nodal points in Scandinavia were topographically positioned in areas that could guide traffic into restricted natural corridors, in contrast to more open-access central places that served the local traffic of communication and exchange (Sindbæk 2006: 128). The presence or absence of nodal points, therefore, can be determined through settlement pattern data by examining both the size of sites as well as their position in the landscape.

The configuration of the network system, and hence of the social organization of the society in question, has crucial implications for the kinds of dynamics that the system
can support (Barabási 2003; Buchanan 2002). Understanding the architecture of the social system allows us to then understand how changes, such as the development of state institutions, can occur. Under a clustered network architecture, an economy can be dismantled if enough of the nodes collapse or change. In this kind of situation, state institutions are the result of random changes to any of the nodes within the system. Changes of this sort are likely to be ones that could affect all nodes fairly evenly, such as changes in the environment or social changes such as conquest. Under a scale-free network architecture, with heterogeneous nodes, changes in the economy are only likely to result if changes occur within the hub sites. Smaller nodes, while vital to the overall system, are not likely to greatly impact the architecture of the system. In this kind of situation, state institutions are the result of targeted changes to the hubs. These kinds of changes include any variable that can impact the nature of exchanges orchestrated by hub sites, including, but not limited to, changes to the political economy of the society.

Within a hub system, it matters which nodes are altered.

Autonomous and Hegemonic Secondary State formation models correspond to societies organized by a clustered network structure, characterized by sites operating within a homogenous economy. This type of structure can be readily observable in the archaeological record by the presence of fairly homogenous sites of similar size and performing similar activities. The Synergistic Secondary State formation model, which examines the confluence of local and global variables, corresponds to a scale-free network structure. Scale-free network organization is identifiable by the presence of heterogeneous sites of varying sizes, hierarchical arrangement, specialization, and a diversity of site activities. Settlement pattern trends can readily identify possible hubs
and nodes, allowing us to then make inferences about the social organization of Iceland throughout time. Encoded within these settlement trends is evidence of a developing economic landscape, evidence that will allow us to address the issue of how and why secondary state institutions appear in the twelfth century.

4.2 Environmental Setting of Skagafjörður

Skagafjörður is located in northern Iceland and roughly covers an area a little more 5,500 km². Today the area is well known for its rich environment, distinguished by its fertile soils and an abundance of wild game. The landscape of this fjord system is both dramatic and dynamic, characterized by landscapes shaped by the sea, by rivers, by glaciers, and by active volcanoes. The fjord system starts in the north with the sea, and as you move south, the sea is paired on either side between the long and narrow Tröllaskagi and Skagi peninsulas before it joins several rivers that take one into the fjord valley itself. The immediate valley is defined by the coastline, as well as by the marshy but habitable lowland, and midland landscapes. As you move further south, the elevation range increases dramatically into the highland areas, characterized by a mountainous, semi-wooded terrain and peaks that reach 1,000 masl. The fjord system finally culminates at the glacier Hofsjökull, an active central volcano with an ice-filled caldera and a summit reaching over 1,800 masl (Björnsson 1988; Hjartarson and Hafstað 1999).

Skagafjörður is further defined both geographically and culturally by a number of small valleys and surrounding areas (see Figure 4.2). The survey presented here will

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6 It is estimated that arable lands make up about 1,200 km² of Skagafjörður, which is a high ratio of arable to non-arable lands in Iceland. This figure does not include uncultivated grazing areas.
include twenty-nine of these regions\(^7\) that can be characterized overall as conforming to either predominately coastal, lowland, midland, or highland areas, or as diversified regions with a combination of ecological areas. While most regions in this survey can be classified as strictly highland, midland, or lowland, there are some regions in Skagafjörður can be classified as having a mosaic of elevation zones. All of these regions can typically conform to one of four possible environmental types: Types A-D. Type A regions are made-up of a combination of highland, midland, and lowland locales. Type B regions consist of coastal and lowland locales. Type C regions contain lowland and midland locations. Lastly, Type D regions are comprised of highland and midland settings. Since Skagafjörður\(^8\) has a wide range of environmental categories, it is an ideal location to examine the possible interplay between the environment, the economy, and the development of state institutions. One of the research goals of my project was to see if there are any observable differences in site formation, site type and site size between and within these environmental classes.

### 4.3 Research Methodology

My research methodology was designed to test if the economy of Iceland during the pre-state period reflects a clustered or scale-free network system and to examine if there were any regional differences to the system that were correlated to environmental conditions. My hypothesis is that settlement distribution in pre-state Iceland was highly

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\(^7\) The northern half of the Tröllaskagi and Skagi peninsulas are not included in this study. Little archaeological work has been done in these areas. While there is documentary evidence for these areas, this bias in dataset merits its exclusion.

\(^8\) The regions in Skagafjörður surveyed here are well represented with one coastal region, seven highland areas, five lowland regions, five midland areas, two Type A areas, three Type B regions, three Type C regions, and three Type D locales.
fluid and dynamic, reflecting a hub system that changed over time alongside a developing local and global economy. These changes to the economic system resulted in changes in the sociopolitical structure of the society, and ultimately the creation of an Icelandic state.

To test this hypothesis, I have designed a project that applies regional analysis methodologies, conducting a multiregional examination of site development through both primary archaeological fieldwork and with the compilation of a site database for all of Skagafjörður. The Multiregional Site Registry (MSR) is the product of this research, with all sites systematically cataloged by shared, explicitly defined attribute categories.

4.3.1 Compiling the Multiregional Site Registry

The MSR was designed to systematize and interpolate new and existing data to trace broad interregional patterns of land use over time in the coastal, lowland, midland, and highland areas of Skagafjörður. This project requires a multidisciplinary approach, drawing data from archaeological, geological, and documentary research. This compilation has depended on the collaboration of numerous research studies currently underway in Skgafjörður, including a number of archaeological projects and site
surveying programs\textsuperscript{9} that have made my research feasible. The archaeological data presented here is my synthesis of years of research undertaken by these projects, my primary archaeological and survey investigations, and the compilation of all available primary documents that span predominately from the eleventh century through the nineteenth century. My methodological aim was to apply this synthesis of data into a single working GIS database, with all sites arranged by a type category (activity area, assembly sites, farmstead, harbor and trading centers, pagan graves, and sel sites); by geographical location (highland, midland, lowland, or coastal); by time period (Settlement, Early Medieval, Sturlunga, Late Medieval, Early Historic, and Historic); and by their tax value which is used here as a proxy for size (site type categories 1-4). The result is a fairly conservative but comprehensive regional database of 610 sites that span over a thousand year period of time. The data presented here must still be used with some caution, but do, however, provide new insights and new patterns of land use that can be further investigated.

\textsuperscript{9} These projects include: Byggðasafn Skagfirðinga (Guðný Zöega 2003, 2004, 2005 [Zöega and Zöega 2004, 2007]), which completed extensive surveys, test excavations, full site excavations, and bioarchaeological research with the goal of both documenting the history of Skagafjörður and understanding the lifeways of medieval Icelanders; the Skagafjörður Archaeological Settlement Survey (John Steinberg 2002, 2003, 2004a, 2004b, 2005 [Steinberg and Bolender 2004, 2005; Bolender et al. 2008]), which has focused its attention in Langholt, applying innovative remote sensing techniques coupled with small and large-scale excavations to address the issue of state formation and the development of private property in Iceland; the Hólar Project (Ragnheiður Traustadóttir 2002, 2003, 2004, 2005), which has focused mostly in Hjaltadalur and Viðvökurveseyð with the large-scale excavations at the bishopry at Hólar and the trading harbor at Kolkúós to address questions concerning how the church came to be the largest landholder and economic powerhouse in Iceland; and lastly the massive amount of work done by Hjalti Pálsson, a local historian and archaeology enthusiast. Pálsson has published four large volumes (Pálsson 1999, 2001, 2004, 2007) to date on farmsteads throughout Skagafjörður, often working very closely with Byggðasafn Skagfirðinga and consulting available documentary records.
4.3.2 Site Types

A regional analysis program in Iceland is mostly one of identifying farmstead sites. The key features of an Icelandic farmstead include: a domesticate residence, a number of small out buildings (such as barns, stables, and workshops), homefields (land surrounding the homestead which were intensively cultivated) for growing grass to made into hay fodder, and unintensified surrounding hills and fields for grazing livestock. In addition to these features, midden deposits and mounds are frequently observable. All sites analyzed were therefore indexed by one of nine site types: activity area, assembly site, four classes of farmsteads defined by their size, harbor and trading centers, pagan graves, and sel sites. Site types can be defined and identified archaeologically as follows:

**Farmstead (Site Types 1-4):** While farmsteads vary in size, location, and even in the layout and construction of the site, they share in common domestic residence. Farmstead sites are characterized as places of permanent households and demonstrate typical household activities, such as cooking, dairy production, smokehouses, sewing, iron-working, and sleeping and storage areas. These sites typically have associated middens, a feature entirely absent from activities areas.

Households, outbuildings (barns, pens, and workshops), cultivated fields for grass production are all common constituents of Icelandic farmsteads and all leave behind a material signature that can be identified through coring and targeted test trench excavations. The longhouse, a narrow, oval-shaped, single-roomed structure built with turf and stone, was the typical domestic residence in the earliest periods. The size of the longhouse often corresponds to the overall wealth of the farmstead, as it is an indication of how many individuals the farmstead was able to support. Longhouses therefore vary
in size, measuring as little as ten meters in length to as much as thirty meters in length. Household plans evolve over time to include multiple rooms, eventually giving way to rectangular and square-shaped structures rather than oval-shaped. Outbuildings were likewise built with a combination of turf and stone and have distinctive plans, features, and sizes. Lastly, cultivated fields have a discernable soil morphology that differs markedly in its composition and sequence from natural soil horizons, making these areas identifiable in a coring survey.

I have identified four different sizes of farmstead sites: very large (type 1), large (type 2), mid-size (type 3) and small to very small (type 4).

**Activity Area (Site Type 5):** A land use site, but not a place of permanent domestic occupation. The types of activities conducted at the site range from craft specialization, especially iron-working, to places of seasonal or year round animal boarding. These sites often yield little to no domestic materials associated with households, but are frequently characterized by specialized structures, be it a workshop or a feature for boarding or penning animals. These sites are associated with farmsteads sometimes located within a kilometer of the site, other times located several kilometers away. Also included in the category of activity are pagan graves. While a number of farmstead sites contain pagan graves, there are a handful of isolated burial sites that appear to be located some distance away from known farmsteads. It is difficult to declare with any certainty which households these individuals contained in these interments belonged to, but it is important to note their presence as they represent a kind of pre-Christian land use.

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10 It has been estimated that Stöng, a 28 meter (92 feet) long, well-preserved longhouse in the south, could have support as many as twenty people (Dugmore et al. 2007; Magnusson 2005: 146).

11 Please see the discussion below on tax value and farm size.
**Sel (Site Type 6):** Sel is the Icelandic word for *shieling* or *sheal*, derived from the word “shelter” and used to describe a temporary shepherd’s hut or small cottage. A sel is typically used only in the summer and commonly designed to house a shepherd and his sheep, and sometimes cattle. Ethnographic evidence from Icelandic farmsteads in the nineteenth century report that it was common for farmers to herd their livestock into common lands outside of the immediate farmstead where animals could graze in wild rangelands. These rangelands may be located within fairly close proximity to the farmstead but are sometimes located tens of kilometers away in the highland reaches. Documentary evidence dating as far back as the fifteenth century suggests that a sel had to be located within the boundary of an individual’s land claim, but these boundaries could lie well beyond the farmstead. The practice is definitively in use by the time of the thirteenth century as sel are mentioned in the *Grágás*, but is believed to be a much older practice as there is now growing evidence that including sel sites as part of a farmstead economy was a widely used strategy in the Norwegian homeland well before the time of Icelandic settlement (Sveinbjarnardóttir 1991). Unlike activity areas, sel may contain a low level of domestic debris, as it was common for herdsmen to stay with their flocks for at least part of the summer months. Milking was also typically done within the sel and was processed into butter and yogurt on site. These activities could require several people, both men and women, stay at the sel for part of the summer. Typically sel sites contain two to four structures, not very large in size, commonly as small as two meters in length but sometimes measuring over ten meters in length. The identification of sel sites is, therefore, not always clear, and have been frequently mistaken for small farmsteads given
the presence of domestic materials, especially fireplaces, and therefore the number of sel presented here are conservatively low in number.

**Harbor and Trading Place (Site Type 7):** These are sites are characterized by the presence of seasonally used booths. The term booth is used to imply that these structures were served as both a temporary shelter as well as “stores” in the marketplace where a merchant might prepare or house some of the goods that were intended to be sold. The booths can be either circular or oblong in shape with low walls made of turf, and were roofed by tents. These sites contain domestic debris, including the refuse from cooking and from iron-working, presumably used to make small ship repairs. Rarer finds include silver coins and scales, the telltale symbols of mercantilism, along with foreign ceramics, combs, and goods made of non-local iron.

**Pagan Graves (Site Type 8):** Pre-Christian (before 1000 CE), usual single interment burials associated with a range of Viking Age artifacts, such as beads, blades, trading scales, and whetstones. Pagan burial features are typically located some distance away from domestic farmstead sites and are often positioned overlooking the sea or a river. These type of burial features terminate shortly after 1000 CE and are replaced by family church cemeteries. Pagan graves are therefore a good indication of early land use.

**Assembly Sites (Site Type 9):** Meeting place of the local Quarter Assemblies established soon after 930 CE with the creation of the annual Alping Court (see chapter1). These local assembly or court sites were devoted to the legal affairs of each quarter and met whenever a case needed to be heard. These sites likely also served as local meeting places in the community, and were most likely regulated by the authority of the office of the chieftaincy.
4.3.3 Site Location

In addition to site location referenced by geographical ISNET (Icelandic grid system) coordinates, all sites were further coded by their elevation. As discussed above, ecological zones in Iceland are defined by elevation: highland, midland, lowland, and coastal. The highlands are culturally defined in this survey as those areas 200 or more masl; the midlands are between 100 and 200 masl; the lowlands are located between 0 and 99 masl; while the coasts are located along the shoreline. These elevation categories have been delineated by the limits of agricultural production that makes sites above 200 masl a rarity. All sites registered were assigned a location category based on their elevation. It is therefore possible to have sites with different location categories all within the same culturally defined valley. This differentiation permitted a settlement pattern analysis that considered both social and environmental geographic references.

4.3.4 Time Periods and Dating

All sites were cataloged by their initial period of occupation, by an intermediate periods of abandonment, and by the final period of their occupation. Since sites frequently change their function overtime, for example a farmstead might later become a sel, a site might have multiple types corresponding to different time periods. For the purposes of this study I have divided early Icelandic history that culminated in state formation into three phases: the Settlement period (874 to 1000), the Early Medieval (1000 to 1104), and the Sturlunga period (1104 to 1300). Although my research concerns are focused on the pre-state period, it is useful to compare the
economic and sociopolitical structure of later time periods once state institutions are in full bloom. I have subdivided the time between 1300 and 1900 into an additional three periods, each defined by key cultural events: the **Late Medieval period** (1300-1600) when Iceland’s two bishoprics were the wealthiest landowners; the **Early Historic** (1600-1800), a period defined by the decline in ecclesiastical power and devastating climatic catastrophes; and the **Historic period** (1800-1900) when the northern bishopry had been dissolved and land was once again alienable to a larger majority of the population. After 1900, Skagafjörður is no longer a rural landscape, as fishing towns and summer homes were introduced, changing the economic make-up of the region. For this reason, my analysis does not consider the last hundred or so years of land use in Iceland.

Since my research was depended on my ability to track changes over time, having a reliable means of dating sites was essential. Dating of sites was done through both documentary sources and, for the intensive primary survey, relative dating using tephrochronology (Þórarinsson 1980). Tephrochronology is the dating of tephra (volcanic ash) layers that were deposited on the surface following an eruption that can now be found as distinct strata in archaeological contexts. There are numerous volcanoes in Iceland, each with its a unique chemical signature, making it easy to distinguish different source volcanoes as well as different eruptions by the same volcano. Tephra layers have been dated by means of correlating references to eruptions found in the written sources, with spectrum and chemical analyses. Spectrum and chemical analyses can determine the source of the various tephras, allowing us to “confirm that a layer from a particular volcano was firmly connected to the written record of its eruption in a particular year” (Vilhjálmssson 1991: 98). In Skagafjörður we are primarily concerned
with tephra from the volcano Veíðivötn-Dyngjuháls for the earliest periods of human settlement (the Settlement period corresponds to the 874 and 1000 eruptions) and the Hekla Volcano for the medieval periods (the Early Medieval period corresponds to the Helka 1104 eruption, and the Sturlunga period corresponds to the Hekla 1300 eruption). For the post-1300 time periods, we can use a combination of tephra and textual dating, using the Hekla 1766 eruption as an upper boundary strata in archaeological profiles.

4.3.5 Tax Value and Farmstead Size

In this study, all farms were assigned one of four size categories: very large (type 1), large to medium (type 2), medium to small (type 3), and very small (type 4). The size of the farm was not determined by a standard measurement of geographic space, say in hectares as is normally done in most regional analyses, but was instead determined by its overall economic productivity, a measure revealed by its tax value. Data are available for the boundary dimensions, measured in hectares, for some farmstead sites, but in many cases this number tells us little of the actual size of the household or wealth of the site, often proving that in Iceland bigger is not necessarily better. Knowing the borders between sites does little to reveal the economic and social dynamics of the society. Taking cues from landscape theory, what is needed to examine these dynamics is a method for measuring determinate variables for landscape productivity. For Iceland, these variables would include the availability of resources within a land claim and the agricultural productivity of the soil, neither of which are necessarily correlated by hectare size. The size of the domestic residence is a good candidate as a proxy for the overall wealth and productivity of the farm, but unfortunately only a handful of sites of been
excavated in Skagafjörður. In the future, geomorphologic studies and more household excavations will better enable us to assign productivity values. For the purposes of this study, land registries, beginning in the thirteenth century and culminating in the nineteenth century, have been used as an indication of the wealth of a household as they document the amount each farmer could afford to pay in taxes and, therefore, the overall productivity and size of the farmstead. Where household data are available, the size of the domestic structure and the tax value of the farm are evenly matched, indicating that the tax value is an indication of the potential size of the farmstead. This system is by no means without flaw, but can at least be tested and replicated and can begin to provide a means for assigning size distinctions between site types.

The tax value of a site can be found in a number of documentary sources, including census records, land and tax registries commissioned by the Danish king and by the Hólar Bishopry, and property claims documented in legal records. In compiling the MSR, I relied heavily on the most complete land census and tax registry, the *Jarðatal Johnsen*. This registry was undertaken at the request of the Danish King between 1847 and 1849 who sent Jón Johnsen to Iceland to conduct an extensive household census. Johnsen frequently included in his census the history of a farmstead, including the presence of older ruins still visible on the farm and the social memory of the families that once occupied those lost structures. In addition, Johnsen made frequent reference to older documents that mentioned the farmstead, allowing to us to make comparisons of the

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12 For example, the longhouse at Glaumbær is valued at 40 hundredth (a high tax value) and its early medieval longhouse is quite large, measuring 29 meters in length (Steinberg 2003).
past and present value of the land. Johnsen gave each working farm a number\textsuperscript{13} and a tax value measured in “long hundreds,” a Danish monetary system based on pieces of silver. Many farms have no value given at all, but in his notes Johnsen attributes this as an indication that the value of the farm is less than one hundredth. Farm values range from 0 to 100 hundredths. \textbf{Small farms (type 4)} are defined as those whose value is between 0 and 19 hundredths; \textbf{midsized farms (type 3)} are defined as those valued between 20 and 39 hundredths; \textbf{large farms (type 2)} are valued at 40 to 59 hundredth; and \textbf{very large farms (type 1)} at 60 or more hundredths.

Older registries were also included in the MRS, such as the \textit{Jarðabók} and several census registries from the Hólar Bishopry. The \textit{Jarðabók}, like the Johnsen census, was carried out under the direction of the Danish Crown in the early eighteenth century at the request of the Icelanders who felt they paid too much in taxes and did not receive enough financial assistance in return. The king decided to assess the situation by sending out two commissioners, Árni Magnússon, and Icelander educated in Denmark, and his friend Páll Vídalín, to carry out a full investigation on the standard of living found in his Icelandic colony. This investigation, twelve years in the making, resulted in the \textit{Jarðabók}, a land registry that documented the names of landowners, how many farms they owned, how much they owed and how they paid for their land taxes,\textsuperscript{14} and sometimes the entries even included a list every possession a family owned. Like the \textit{Jarðatal Johnsen}, the

\textsuperscript{13} It is not uncommon for one area to have sites with the same name, making it difficult to distinguish them in the documents. The Johnsen number has eased much of this confusion, giving us an alternate means of identifying a farmstead in the documentary records.

\textsuperscript{14} While taxes were determined by a monetary value, they were frequently paid in goods, such as butter, hay, or livestock.
Jarðabók measured the value of the farm in long hundreds, making the two sources easily comparable.

The church records are more difficult to reconcile, but they too, were included in the MSR. Churches and the Hólar Bishopry made attempts to assign a value on farmsteads they did not own outright, with the expressed purpose of consigning appropriate tithing taxes. Included in the MSR are four principal documents: 1318 Málagninn, 1388 Málagninn, 1449 Hólastóll, and the 1550 Sigurðarregestr, which can be found in the Diplomatarium Islandicum.\(^{15}\) The Diplomatarium Islandicum contains a collection of economic documents, legal judgments, contracts, and church inventories from the earliest periods of writing up to about 1570 CE (Byock 1988: 19). These documents were compiled by separate bishops at Hólar, so each document has its own style but all typically indicate the value of the farm by the number of cows they farm could accommodate. After careful calculations and cross-referencing, Björn Teitsson has suggested that one cow is roughly equivalent to one hundredth allowing us to convert

\(^{15}\) The organization and compilation of the Diplomatarium Islandicum is credited to Árni Magnússon (1663-1730), who was born in Iceland but educated in Denmark. In 1701 he became a professor of Danish antiquities in Copenhagen, where he made it his life’s task to “save what was still extant of the literary treasures of his country” (Nordal 1975: 369). Magnússon is said to have traveled around Iceland for ten years, collecting and buying manuscripts. When he couldn’t convince someone to give him a text, or allow him to purchase it, Magnússon would copy the document by hand. While most collectors were only interested in handsome, beautifully bound and illustrated books, Magnússon collected everything, from whole books to scraps and fragments. There is some suggestion that Magnússon would even interview farmers about the history of their land, which he then recorded in his extensive notes. By 1720, Magnússon had shipped back to Copenhagen fifty-five large crates of manuscripts from Iceland. Amazingly, this was probably not to have been all he had collected, as some of the material is believed to have been lost at sea in a shipwreck (Nordal 1975: 368). Even after he returned to Denmark, Magnússon continued to collect Icelandic texts and had amassed an enormous and priceless collection. However, Magnússon seems to have never been able to put together these texts, and therefore, he published very little of what he found. To make matters worse, in 1728, a fire leveled most of Copenhagen and in its path, destroyed a great deal of Magnússon’s collection. Popular stories tell of Magnússon hopelessly carrying out of the city as many boxes as he could, only to witness the destruction of his collection stating with great sadness, “here go writings nowhere to be found in the whole wide world” (Karlsson 2000: 159). While Árni Magnússon published very little of his work, his major contribution to the field of Norse history was amassing hundreds of thousands of different documents that have been the basis of textual research in Iceland ever since.
cow values into long hundred values (Teitsson 2006: 463) assigning early farms to a size category that is comparable to the tax system used to assign the size for later farms.

The value and size of the farms recorded here are a conservative evaluation and are based on all available sources of data, including both text and archaeology. I stress here that this is a working model, one that can be further tested and replicated by future research. Having assigned these categories here, however, allows us to begin to unravel the history and use of the landscape.

Four additional categories were included in the MSR: sel sites (type 5), activity area sites (type 6), harbor sites (type 7), pagan grave sites (type 8), and assembly sites (type 9). These are sites that have no tax value and are treated as separate categories from the settlement placement analysis for households. They are included in this study because these sites are part of the overall economic system of Iceland, and were sites that households interacted with. Unlike the assignment of the number 1-4 for farmsteads, the assignment of the numbers 5-9 to specific site types was arbitrary. Size 7 sites are not necessarily smaller or larger than size 5 sites, but the same categorization was used for consistency within the registry. This consistency makes searching the registry more efficient and mapping the site types by number easier to trace.

4.4 Intensive Survey of Hjaltadalur and Viðvikursveit

As a source for analogy and extrapolation of the pan-regional dataset, I conducted a systematic intensive archaeological survey of the Hjaltadalur-Viðvikursveit valley system. The goal of the Hjaltadalur and Viðvikursveit survey was to date already known medieval farmstead sites and to possibly locate unknown structures and activity areas that
have not been documented. The same suite of categories found in the MSR (site type, location, time period, and size), were used to cataloged sites identified in the intensive survey.

These objectives, however, were met with a methodological challenge. Unlike many other regions of the world, traditional pedestrian surveying alone cannot be applied in Iceland when attempting to locate the earliest occupations of a farmstead. Conventional surveying typically entails identifying the remains of visible structures and artifacts on the surface, but in Iceland neither of these datasets are consistently available. There are rarely artifact scatters and the deep grassy landscape make seeing surface features, even if they are present, nearly impossible. Likewise, because structures are built out of organic turf (sod), which decay and breakdown within a hundred years after construction (Sigurðardóttir 2008), there are few standing structures exposed on the surface that date before the nineteenth century (see Figure 4.3). Lastly, medieval farmsteads in lower elevations are today deeply buried beneath one to two meters of aeolian silt. Surveying in Iceland, therefore, must be done beneath the surface.

There are a few methodologies that can meet these requirements, with Ground Penetrating Radar (GPR) and soil coring proven to be the most successful (French 2003; Garrison 2003). The Skaga fjörður Archaeological Settlement Survey (SASS) has created a highly sophisticated suite of GPR techniques that are aptly up to the challenges of Icelandic archaeology. By applying a mixture of broad resolution conductivity and

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16 Ceramic scatters are a common feature in most regional analysis projects, but ceramics are a rare find in Iceland. Icelandic clays are resistant to firing, so most households used other materials for making storage containers and tableware. The most common material was wood, a nondurable item in most archaeological contexts. When ceramics are found, they are always imported and are typically a good indication that the household was wealthy enough to purchase these foreign items.

17 SASS is directed by John Steinberg (UMASS Boston).
high resolution GPR Slice imaging, the SASS Project has since 2001 uncovered at least two, previously unknown, major settlement age farmsteads, along with a number of other early medieval structures at multiple locations (Steinberg 2005). The drawbacks to this approach are that the equipment is expensive and to make proper interpretations of the data requires extensive knowledge in geophysics.\textsuperscript{18} For my research purposes, GPR was not the solution. I instead chose to use soil coring, which could be applied to gather an extensive, rather than intensive, dataset covering multiple farmsteads in a few field seasons rather than examining one or two sites per season.

Coring is a technique developed by geologists to collect soil samples for analysis (Buol et al. 1980) but can be applied by archaeologists to collect profile data across a site (French 2003), with each core exposing a 3 x 40-116 cm area.\textsuperscript{19} Coring is similar to test excavations, but is far less intrusive since each core exposes an area small enough to be fairly non-destructive to archaeological material (Goldberg et al. 1999; Holliday 1992), but large enough to clearly document in-tact evidence of cultural material such as charcoal, turf, or bone, as well as tephra (volcanic ash) layers for dating cultural occupations (see Figure 4.4). Likewise, data from coring also serves as a tool for assessing the overall preservation of sites since natural processes like erosion and landslides, as well as human activities such as plowing, produce distinct and identifiable markers (Keeley 1981). Lastly, coring data can also be applied for generating

\textsuperscript{18} While the results are of GPR are phenomenal, the process is painstakingly time-consuming. To map each farmstead can take, at the very least, a month, but frequently can take multiple field seasons since once the data are interpreted, the site must still be ground-truthed through either test excavations, or as the SASS Project has advocated, through large surface excavations that expose the uppermost levels of the site.

\textsuperscript{19} The size of the core depends on the size of the sampling tube and the length of the extension rod. My survey was conducted with a JMC Sampling core, with an extension rod that reached 116 cm below the surface with a large sampling tube 3cm in diameter and 40 cm in length.
environmental reconstructions of the landscape, documenting broad processes of erosion, soil deposition, deforestation, and the draining or reclaiming of wetland areas.

4.4.1 Sampling Strategy

The first phase of the coring project was to conduct a broad survey of farms, through 10-meter spaced walkovers and interviews with farmers. At this point, some areas can be omitted from the survey if, for example, tracts of land have been heavily bulldozed or plowed. This still, however, leaves very large areas to cover. While modern farms range in size, an average farm is roughly two to three hectares, with a number of farms larger than three hectares once their meadows are included. Coring grids were mapped using ISNET\textsuperscript{20} datum points, the geographic grid system used by other archaeological surveys in Iceland so that future comparisons across sites can be made. ISNET points were taken in the field using a handheld GPS.

The second phase of the project was to then systematically core areas defined as suitable for investigation in phase one. All surveys began by taking soilcores every 20 meters across a site. The soil cores were categorized as either natural features or as cultural material, with each category leading to two distinct sampling strategies. The most crucial element of a natural feature is the moisture of the soil. Extensive wetland areas are common in Hjaltadalur, but in many cases these wetland areas have been drained using heavy machinery throughout the agricultural technological revolution in Iceland in the last fifty years. Former wetland areas are not always easy to

\textsuperscript{20} ISNET coordinates can be easily converted to UTM points when comparing data with older exiting maps.
detect on the surface, but they have distinct signatures in a core profile. If former wetland areas are detected, then the sampling strategy was to take a core every 50 or 100 meters, depending on the size of the farm, to map out the extent of these once marshy areas. It is likely that these areas were not desirable locations for households in the medieval period, but could have served as areas for turf collection and sometimes even as grazing areas. While even today it is not uncommon to graze cattle in marshy areas, deep bogs would have been avoided. If the core profile uncovered dry soils for the medieval period, coring every 20 meters continued since these areas would have been the most likely occupied.

If cultural material was detected, the grid was tightened first to every 5 meters to map out the extent of the feature, and was then refined to a one-meter grid to uncover information on the specific characteristics of the feature. When possible, interpretations were made of these features, placing the finds within one of two categories: structural features that include households as well as secondary outhouses or animal structures; or activity areas such as iron-working or charcoal making locations. The goal was to then date these materials with the aid of situating the material within tephra horizons (see below) and when necessary estimating the time of deposition by calculating rates of soil accumulation. Samples for radiocarbon dating were likewise taken in a few sites. The benefit of this approach was that it permitted a full diachronic vertical sample of the site’s household activities in a reasonable amount of research time.

Tephrochronology was used to data sites identified in the intensive survey. Skagafjörður is an ideal location in Iceland to use tephrochronology as a relative dating tool not only because tephra layers are easily distinguishable and have been thoroughly
calibrated with radiocarbon dates, but because the relevant historical tephra layers found in Skagafjörður also coincide with important social events (see Table 4.2). These volcanic lenses are easily identifiable since each has tephra deposit has discernable physical properties, such as color and texture, permitting a robust control over the chronology of stratigraphic layers found in both core and excavation profiles (Víhjálmsson 1991). Since we know the date of each tephra layer, one can the date the deposition of cultural material between tephra layers allowing one to track changes in economic activities documented across sites.

The third phase of my research was to conduct limited test excavations to better identify the nature of complex structures and to reveal more information on the types of activities carried out in medieval household production. My strategy was to target areas of dense well-stratified middens or structures, as indicated from the coring survey. Test soundings all began as one-meter units with the possibility of expansion if architectural features were encountered. Test trenches in structural features were excavated in single context units, while midden features were excavated following either the cultural stratigraphy if tephra layers were present, or in arbitrary ten-centimeter intervals to control for temporal changes.21

4.5 Conclusion

Limited archaeological data, concerns over the historicity of the early documentary record, and a perceived lasting marginality of the society and the landscape have all contributed to a reticence to examine broad-scale economic trends for early

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21 The results of this survey are discussed chapter 5.
medieval Iceland. I have proposed three economic models (The Autarkic Model, the Imperial Economy Model, and the NET Model), that can be examined through a social network approach by identifying the structure of the economy as conforming to either a clustered network (homogenous economy) or a scale-free network (diversified economy). To collect data for this research, I have proposed an interdisciplinary, pan-regional methodology to identify trends in landscape organization through settlement pattern analysis. A settlement pattern approach can examine the possible relationship between environmental constraints and site location and the potential exchanges between sites within a larger regional system, allowing me to address questions on the economic nature of early Icelandic society. I argue that understanding the nature of these relationships will not only broaden our understanding of how and why Iceland was settled, but also how and why state institutions developed there on the heels of a society organized by chiefly arrangements for the subsequent two hundred years after the initial colonization. In the following two chapters, I will examine the data collected from my intensive survey of Hjaltadalur and Viðvikursviet and multiregional settlement patterns in Skagafjörður using evidence from the MSR. I propose that examining land use trends over time through settlement pattern research and a social network systems approach reveals new insights on the social organization of early medieval Iceland, and suggests a more heterogeneous and diversified economy than had previously been considered. Changes in the economic configurations of the society, I will posit, factored prominently in the development of secondary state institutions, a trend that can likely be seen in the development of other secondary states in both the ancient and modern world.
Figure 4.1: Graph of Nodes and Hubs Comparing the Structural Difference of a Clustered System and a Scale-Free System
Figure 4.2: Map of the Research Area Showing the GeographicExtent (in yellow) of Skagafjörður
Figure 4.3: Turf “Brick” or “Block” Construction
Figure 4.4: Profile of a Core
Table 4.1: Geo-Cultural Regions by Environmental Type Considered in the Skagafjörður Landscape Project

<table>
<thead>
<tr>
<th>Region</th>
<th>Environmental Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austurdalur</td>
<td>Highland</td>
</tr>
<tr>
<td>Blönduhlíð</td>
<td>Midland</td>
</tr>
<tr>
<td>Borgarsveit</td>
<td>Lowland</td>
</tr>
<tr>
<td>Dalsplássi</td>
<td>Midland</td>
</tr>
<tr>
<td>Efri byggð</td>
<td>Type D</td>
</tr>
<tr>
<td>Fremri byggð</td>
<td>Type A</td>
</tr>
<tr>
<td>Gönguskörð</td>
<td>Type D</td>
</tr>
<tr>
<td>Hegranes</td>
<td>Lowland</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Midland</td>
</tr>
<tr>
<td>Höfðaströnd</td>
<td>Type B</td>
</tr>
<tr>
<td>Kjálka</td>
<td>Highland</td>
</tr>
<tr>
<td>Kolbeinsdalur</td>
<td>Midland</td>
</tr>
<tr>
<td>Kvarningsdal</td>
<td>Highland</td>
</tr>
<tr>
<td>Langholt</td>
<td>Lowland</td>
</tr>
<tr>
<td>Neðri byggð</td>
<td>Type C</td>
</tr>
<tr>
<td>Norðurárdal</td>
<td>Highland</td>
</tr>
<tr>
<td>Óslandshlíð</td>
<td>Type B</td>
</tr>
<tr>
<td>Reykjaströnd</td>
<td>Coastal</td>
</tr>
<tr>
<td>Sæmundarhlíð</td>
<td>Type A</td>
</tr>
<tr>
<td>Skaga</td>
<td>Type B</td>
</tr>
<tr>
<td>Skörð</td>
<td>Type D</td>
</tr>
<tr>
<td>Staðarfjöll</td>
<td>Highland</td>
</tr>
<tr>
<td>Svatárdalur</td>
<td>Highland</td>
</tr>
<tr>
<td>Tungusveit</td>
<td>Midland</td>
</tr>
<tr>
<td>Valhólmí</td>
<td>Lowland</td>
</tr>
<tr>
<td>Vesturdalur</td>
<td>Highland</td>
</tr>
<tr>
<td>Viðmýrarplássí</td>
<td>Type C</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Type C</td>
</tr>
<tr>
<td>Vikutorfa</td>
<td>Lowland</td>
</tr>
</tbody>
</table>
Table 4.2: Tephra Sequence in Skagafjörður

<table>
<thead>
<tr>
<th>Date (CE)</th>
<th>Tephra/Volcanic Source</th>
<th>Thickness</th>
<th>Color</th>
<th>Social Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>871 ±2</td>
<td>Landnám</td>
<td>&gt;0.5 cm</td>
<td>Green</td>
<td>Early Settlement</td>
</tr>
<tr>
<td>1000</td>
<td>Veidivötn-Dyngjuháls</td>
<td>0.5 cm</td>
<td>Blue</td>
<td>Conversion; changes to the political economy</td>
</tr>
<tr>
<td>1104</td>
<td>Hekla 1</td>
<td>1 cm</td>
<td>Yellow-White</td>
<td>Tithe; start of the Sturlunga Period</td>
</tr>
<tr>
<td>1300</td>
<td>Hekla</td>
<td>&gt;1 cm</td>
<td>Red-Black</td>
<td>State Institutions</td>
</tr>
<tr>
<td>1766</td>
<td>Hekla</td>
<td>&gt;0.5 cm</td>
<td>Black</td>
<td>Decline in farming</td>
</tr>
</tbody>
</table>
Chapter 5
The Archaeological Survey of Hjaltadalur and Viðvíkursveit

As there is nothing else to suggest otherwise, it is taken for granted that the distribution of settlement had by the eleventh century reached a stage as we know it from later centuries and that subsistence patterns were not radically different from what is observable in later times—Vésteinsson (2000a: 12).

Previous models used to examine the transition from chiefdom to state in medieval Iceland share in common the view that the economic structure of the society underwent few changes from the time of settlement to when urbanism developed in the twentieth century. This view, highlighted by Vésteinsson, has been reinforced by extrapolations from tax and census records from the fourteenth through the nineteenth century, which clearly document a system of landscape organization centered on pastoral-agrarian pursuits that were managed by small households. This assumption has rarely been challenged, curbing our debates on state formation to discussions that privilege the idea that that Iceland was always organized around a restricted farmstead economy leaving little room for the discussion of any other potential economic configurations. Most scholars suggest that if non-agrarian pursuits, such as craft production, did play a role in Icelandic society it was either at best minimal, or at worst important but entirely unknowable to archaeologists since the likely candidates for economic activity were nondurable, leaving behind only faint traces of the acts of production, exchange, and consumption in the material record. This narrow focus should raise the scientific alarm, especially when we consider that Iceland was settled during the Viking Age, an era
characterized by trade and travel, but is perhaps understandable given the constraints of the available archaeological dataset. What we lack, however, is not a more straightforward material signature of economic activity, but an understanding of how the landscape was organized at the time of settlement through the thirteenth century when state-level institutions take root. I will argue here that examining the structure of an economic system through social network analysis and using data from settlement pattern trends, can be used as a means of examining potential economic activities that range from household sustainability to interregional exchange networks.

To test this hypothesis, I designed the Skagafjörður Landscape Project (SLP) with the aim of mapping the evolution of landscape use in northern Iceland from the ninth through the early nineteenth century (see also chapter 4). In this chapter I will examine settlement pattern data from my primary archaeological survey of one valley system in Skagafjörður, Hjaltadalur and the surrounding area of Viðvíkursveit, to determine if the economy of the sites in this valley were structured around a clustered or a scale-free network. By tracking the development of landscape organization over a long period of time across a broad region we can begin to decipher the configuration of the political economy in northern Iceland during the pre-state period, a time with limited archaeological and textual evidence. Knowledge about how the economy was structured and how relationships were defined between sites will provide us with clues about the process of secondary state formation in Iceland.
5.1 Environmental Setting of the Research Area: Hjaltadalur and Viðvíkursveit

Hjaltadalur and Viðvíkursveit make-up roughly a 100 km² valley system¹ located on the eastern side of Skagafjörður, within a fertile, erosion resistant zone protected by several large mountain ranges. Together these two areas form one complete fjord valley system that begins at the seacoast and ends in the highlands. The designation of two names for this valley conforms more to culturally defined boundaries than to geological ones, with Viðvíkursveit beginning at the coast and ending inland at the boundary between the farms Viðvík and Nautabú, where Hjaltadalur then picks up and continues on, passing deep in the fjord valley and culminating in the highland elevations of the valley around the farm Reykir (see Figure 5.1). From a geological perspective, Hjaltadalur is a glacial valley defined by a series of distinct ecological zones, with traits largely conforming to highland (200+ masl) and midland (100-200 masl) elevations. The inland area of Hjaltadalur is a dale or open valley that narrows as it gets deeper into the fjord. The valley is bisected by the west-east directional glacial rivers of Kolká in the eastern opening of the fjord system within Viðvíkurviet and the Hjaltadalsá in the western end where Hjaltadalur begins. Flanked on either side of these rivers are the Óslandshlidarfjoll and Ás Mountains to the north and the Viðvíkurfjall and Tröllaskagi Mountains to the south. Viðvíkursveit in contrast is a broad, open and flat plain with coastal, lowland (below 100 masl), and midland locales. Each area offers a different suite of natural resources, with the highland areas offering drier soils and dwarf birch

¹ This figure represents an estimate of the total area of the Hjaltadalur-Viðvíkursveit valley. The total area of arable land is roughly 55 km².
forests, the midlands with organic rich soils and iron, the lowlands with turf and iron, and the coasts with driftwood and marine resources.

5.2 Research Design of the Hjaltadalur and Viðvíkurvíkursveit Survey

Several related factors influenced my decision to select the Hjaltadalur-Viðvíkurvíkursveit valley system as the location for my primary fieldwork. First, Hjaltadalur and Viðvíkurvíkursveit are an ideal environmental microcosm of Skagafjörður. From marine resources found at the coast to the woodlands of the highlands, as valley system this area represents the full range of possible environmental conditions. Secondly, I had previously surveyed two sites in Hjaltadalur, Hof and Hólar, in 2001 as part of my MA project that examined environmental change during the medieval period. This survey led to the discovery that the erosional regime in Hjaltadalur, a naturally sheltered valley, was extremely slow. A lack of soil erosion meant that the entire area was covered by stratified aeolian deposits, which suggested to me the potential for well preserved, albeit buried, sites. In the course of collecting soil samples for my MA work, however, I found out that coring was an exceptionally effective means for subsurface surveys and the mapping of buried archaeological sites (see chapter 4 for a full discussion of this methodology). The combination of excellent preservation and a well-developed methodology for examining deeply buried sites made Hjaltadalur and Viðvíkurvíkursveit an ideal location for an intensive survey.

Most importantly, however, excellent site preservation within a diverse environment made this valley ideal for examining my hypothesis that motivated by economic pursuits, specific ecological niches were settled in Iceland right from
beginning. As I discussed in chapter 4, one method for examining economic enterprises of this sort is to map out settlement pattern trends and to then analyze these findings through the possible categories of sites defined by a social network approach. Crucial to social network analysis is the identification of the architecture of a system, in this case, the organization of the economy. The architecture of the system can conform to either one made-up of similar sized nodes, which is called a clustered network, or one made-up of hierarchical nodes, which is a called a scale-free network. Clues about the range of possible nodes and the organization of the landscape in Hjaltadalur and Viðvikursveit are hinted at in medieval texts, such as Landnámabók, which contains a description of the initial ninth century settlement. In the description of the settlers in Skagafjörður, the Landnámabók notes that Hjaltadalur and Viðvikursveit were originally part of one land claim made by a wealthy Swedish chieftain named Sleitu-Björn. The territory Sleitu-Björn declared rights over was, as was common with most of the original land claims, incredibly large, spanning from north of Óslandshlið to south of Hrísháls including the two valley systems of Hjaltadalur-Viðvikursveit and Kolbeinsdalur (see Figure 5.2). Sleitu-Björn made his home at Sleitustaðir in Kolbeinsdalur and soon after began selling off portions of his claim. Öndóttur bought the land from Kolkuós down to Hrísháls and most of the land to the south of Kolkuósdsals River, making his home at Viðvik, a farm that lends its name to the area around it, Viðvikursveit (“the area around Viðvik”). Lastly the well-respected Norwegian chieftain Hjalti Skálplsson bought the land in Hjaltadalur (“Hjalti’s Dale”) southwest of Öndóttur’s purchase, and established his household at Hof. These land claims, while smaller than the original land-taking of Sleitu-Björn, cover expansive areas, which I have divided into three potential political units that could
represent three separate but likely not mutually exclusive social networks: the Ás, Hof, and Viðvík Territories.

My research presented in this chapter will examine how landscape organization, documented in settlement pattern trends, structured the economy of sites located in Hjaladalur and Viðvíkursveit. In chapter 6, I will use these data further to address the question if the economy of pre-state Iceland was structured predominately around self-sufficiency or a diverse range of activities and how this structure helped to shape the path towards secondary state-level institutions. The data presented here from the coring survey, however, will focus only on identifying if the economy of pre-state Iceland in Hjaltadalur and Viðvíkursveit represent either a homogenous organization (clustered network) or a diversified economy (scale-free network).

To examine these hypotheses intensively requires an immense amount of fine resolution data. The enormity of this task is lessened in Hjaltadalur and Viðvíkursveit because of the availability of comparable excavation data from large sites. The sites mentioned in the Landnámabók and the sagas have been archaeologically identified, including the harbor and trading center at Kolkuós (Traustadóttir 2004, 2005; Traustadóttir and Hellqvist 2003; Traustadóttir et. al 2004), the chiefly estate at Viðvík (B. Zoëga 2005), the chiefly estate at Hof (Steinberg 2001), the northern bishopry at Hólar (Traustadóttir 2002, 2003, 2004), and the estate farm and tenth century church at Ás (Vésteinsson 1998; Zoëga and Zoëga 2004). What was not known, however, was if smaller sites were also present in the area during the first generations of colonization and

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2 The intensity of archaeological research at these sites varies, with large-scale excavations currently underway at Hólar and Kolkuós, intensive target excavations at Ás, test trench excavations at Hof, and mostly surface survey at Viðvík.
the subsequent phase of consolidation in landownership during the thirteenth century. Likewise, the range of possible socioeconomic activities and interactions between sites in the area was entirely unknown.

In 2008, I surveyed fifteen sites within the Hjaltadalur-Viðvíkursviet valley system (see Tables 5.1 and 5.2). The designation of a “site” here conforms to modern farmstead boundaries. In most cases, I conducted a subsurface coring survey of all the arable land owned by these sixteen farmsteads, covering about 4 km² (400 ha). I will discuss the phases of landscape use within each of these sites, making not of both environmental and cultural changes over time. Today there are about forty active farms or summerhouses in the area, but not all of these sites were suitable for this study. Sites were excluded from the study if they were clearly established only within the last hundred years, as most of the summerhouses were, or if site preservation was questionable because of modern construction. Additionally, there were three sites that were good candidates for the study, Reykir, Svaðastaðir, and Viðvík, but permission to conduct subsurface surveys could not be acquired at the time of my 2008 research. However, the sixteen sites surveyed are a fair representative sample from the valley.

While most farmsteads in Hjaltadalur and Viðvíkuresveit have been field surveyed (B. Zoëga 2005), twelve had never been archaeologically researched using subsurface methodologies. The coring survey of these twelve sites led to the discovery of previously unknown pre-state phases of landscape use at all but two sites. The range of activities discovered included evidence of household occupation (midden deposits, turf

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3 The names of these farmsteads have been in place, in some cases from the period of Settlement, with very few instances of change over time, making it relatively easy to use medieval texts as a source of information about each of these sites.
walls from potential structures) and what I have called “activity area” features, which are located some distance away from households (see also chapter 4). These features include activities associated with livestock rearing (animal structures and pens, dense deposits of dung), charcoal making (pits filled with wood ash and charcoal) and ironworking (slag, scorched earth, burnt peat). Phases of occupation were dated using tephrachronology (see chapter 4). The most crucial tephra layers found Hjaltadalur and Viðvíkursviet used in my research were: Hekla 2900 BP (H3), the 872 CE Landnám tephra, Veiðivötn-Dyngjuháls 1000 CE, Hekla 1104 CE (H1), Hekla 1300, and Hekla 1766. Each of these well-dated volcanic strata served as easily identifiable time markers, allowing me to date material found in layers between these time markers.

Research at each site always began with a pedestrian field survey conducted, whenever possible, with the current owner of the land who could report the history of the activities and alterations made to the landscape. Of these sixteen sites, eight were active livestock farms in 2008, and all eight farmers indicated that they had within the last fifty years dramatically altered the geomorphology of the landscape with the construction of drainage ditches. Modern tractors and bulldozers have aided attempts to extend the size of usable pastures by draining wetland areas with ditches that transect and run the length of farmstead boundaries, often a depth between one and two meters. The outcome of these intensive agricultural projects is that farmsteads today have more acreage for grass production in areas that would have been partially submerged during the medieval period.

Knowledge of this shaped the next phase of my fieldwork: the subsurface coring survey. Since the likelihood of finding evidence of human activity in the pre-state period was low in areas where modern ditches are located, a generalized coring strategy was
used, taking cores every fifty meters. In areas of the farmstead that were more likely to contain evidence of activity that date to the pre-state period, cores were taken every twenty-five meters. If cultural material was discovered in either of these areas, regardless of the date of the material, a targeted program of ten meter spaced cores were taken. Typically, anywhere between 150 and 200 cores were taken at a site, but only a portion of these were detailed coring profiles recorded as representatives for the overall area. On average, only 10% of the 150 cores taken at each site contained cultural material, but evidence of human activity were nonetheless discovered for all sites surveyed.

The last phase of fieldwork done in 2008 was to collaborate some of the coring data with sample test trench excavations. While more work of this kind still need to be completed, I was able to conduct target excavations at two of the most complex sites (Hof and Hólakot) documented first through the coring survey. Likewise, I am currently working with the Hólar Project, which oversees the intensive, large-scale archaeological excavations at two sites surveyed here, Hólar and Kolkuós. Data from these excavations have been incorporated with the results from the coring survey, providing new insights into the landscape evolution at each of these sites.

5.3 The Ás Territory

The Ás territory is located between the Hjaltadalsá River to the south, and the Ás Mountain range to the north, a series of foothills that separates Hjaltadalur from the neighboring valley, Kolbeinsdalur, with arable lands making up about 4 km² (400 ha). The elevation range spans from 100 to 160 masl, with lower elevations located along the Hjaltadalsá riverbanks. This elevation range places the territory within a midland
environmental zone, characterized by a mixed geomorphology of wet, organic and clay-rich soils juxtaposed by hillocks with drier silty soils. The vegetation is mix of peat found in the clayey soils and scrub birch and heaths in the drier areas.

From the description in the *Landnámabók*, the area where the medieval farmstead Ás is located appears to be at the intersection of three land claims: that of Öndóttur at Viðvík, Hjalti at Hof, and Sleitu-Björn at Sleitustaðir (see Figure 5.2). It is not clear from the text who in fact owned the rights to Ás, but from later texts and archaeological excavations (Vésteinsson 1998; B. Zoëga 2005; Zoëga and Zoëga 2004) it is clear that Ás became a farmstead of an influential elite family in Skagafjörður. The original settlement farm at Ás is known today as Neðri-Ás. Previous archaeological research at Neðri-Ás (Vésteinsson 1998; Zoëga and Zoëga 2004) has documented several phases of land use for Ás, including the discovery of at least two church structures from different time periods, providing us with some insights into the political and economic dynamics of the valley. Likewise, medieval texts point out that at some point before 1250 CE, the large Ás farmstead was divided into two farms, Neðri (lower) and Efri (upper), however, this date had not been confirmed archaeologically before my research. Little else was known about the organization of the landscape or the types of economic activities that were carried out here during the pre-state period. I conducted a subsurface coring survey at Efri-Ás to complement the excavation data from Neðri-Ás, and to test whether sites

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4 For example, the sagas and *Landnámabók* mention that the family at Ás was related either through kinship or friendship to the kinsmen of the chieftain Sleitu-Björn and that the earliest Christian church in Skagafjörður was constructed at Ás around 984 CE (*Kristni Saga*), indicating a fair amount of wealth on part of the benefactor.

5 The name Efri-Ás appears in a thirteenth century text (*Laurentius Saga*), and Neðri-Ás is mentioned in the fourteenth century text, but it is unclear when exactly these separate farms were created and when Ás, as a name, stopped being used.
within the Ás territory, an area smaller in size than the Hof and Viðvík territories, contained sites of varying size, complexity, and economic activity.

### 5.3.1 Efri-Ás

Efri-Ás is located on the northeastern bank of the Hjaltadalsá River, situated on the foothills (130 masl) of the Hjaltadalur side Ás Mountain range. Located squarely within a midland ecology, the area is rich in rangelands for sheep and cattle, juxtaposed by wetter, dense organic bog soils that can produce high yields of grass if the water content of the soils is managed with a system of drainage ditches. Today, Efri-Ás is an active farm, but its modern landscape is decisively different than would it would have been in the medieval period. In recent years, an intensive program of cutting drainage ditches⁶ at the site has dramatically altered the size of pasturage at the site. In the medieval period, the boundary of the farm fields was demarcated by wetlands formed by the nearby river that parallels the site. Today, intensive agricultural program has stretched this boundary, using ditches to convert former wetlands into drier soils capable of sustaining grass production.

Before my research, little was known about the earliest phases of landscape use at Efri-Ás. A field survey had been conducted, which identified a number of small architectural ruins visible on the surface that were interpreted as modern animal structures (B. Zoëga 2005). No subsurface surveys had been previously done to date these structures or to identify any older now buried features. Census records indicate that

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⁶ In the summer of 2008, the farmer was in the process of extending his drainage ditches as well as building new a fence around one meadow at the site. The fence cut through the edge of a ruin (probably late in date), but otherwise the site seemed to be in no danger of damage.
with its rich soils and diversity of resources, Efri-Ás became a large, size 1 farmstead valued at 60 hundredths by 1250 CE\textsuperscript{7}, but this date had not been confirmed by archaeological research. The aim of the subsurface coring survey at Efri-Ás was to determine the nature and date of the earliest phases of landscape use at the site.

The pedestrian field survey confirmed an already known and still visible enclosure wall, of an unknown date, along with a number of structures on the southern end of the farm that date to an eighteenth through late nineteenth century occupation (B. Zoëga 2005). In addition to these features, a possible structure, of unknown date, was identified on top of a small knoll located at the northern end of the site (E490985/N584365). No other features were identifiable on the surface.

Coring was conducted in two phases at the site: a broad survey to distinguish dry from wet areas, followed by an intensive target survey of the possible knoll structure and its surrounding area, spanning about 3900 m\textsuperscript{2} (0.39 ha). H1, H3, the 1300, and 1766 tephra layers were all well preserved at the site, making dating relatively easy. Targeted coring was conducted in drier areas of the site, discovering a number of new features previously unknown at Efri-Ás. One of the most surprising features at the site were dense charcoal and ash layers dating to before 1104 (see cores 1, 11-12 in Table 5.3), over a 25 meter area (E490965-990/N584370). No midden deposits were found in association, making it unlikely that this activity represents a full-time farmstead site, but instead this evidence is suggestive of specialized charcoal making activities at the site. Cultural material is consistently 15cm below the H1 (1104) tephra layer, with an aeolian

\textsuperscript{7} Efri-Ás and Neðr-Ás are listed as of the properties of the Hólar Bishopry in the Hólastóll 1388 land registry.
silt deposit separating the two horizons (see Figure 5.3). Since the soil deposition rate is only 0.01 cm/year during the settlement period, it is likely this cultural layer buried under 15cm of silt was deposited well before the 12\textsuperscript{th} century. Likewise, the charcoal deposits are mixed with the prehistoric H3 layer, a characteristic often associated with the earliest phase of occupation of sites in Skagafjörður (for a comparison, see the discussion on Hólakot below). Associated with these charcoal deposits is a possible small structure (E490990/N584340). The coring profiles document the presence of turf and charcoal well below H1 (see cores 27-28 in Table 5.3 and Figure 5.4). The turf itself contains the prehistoric H3 tephra, again a common feature of the turf used in the earliest phases of occupation (see discussion on Hof). The structure itself is approximately 10 x 5 meters, but the shape of the structure is unknown. As with the charcoal cluster, no cultural material is found in this area after 1104.

The first indication of full-time domestic use at Efri-Ás dates to the Sturlunga period (1104-1300), as documented by the coring survey that shows that after 1104, activity at the site resumes with the building of at least one previously unknown structure (see cores 9-10 in Table 5.3). Well-preserved turf was discovered between in-situ 1766 and H1 tephra layers. A more precise date for the structure is challenging as it appears that at least two building phases have occurred, one of which was likely not long before the eighteenth century with the partial remains of the structure still visible on the surface. However, turf was discovered in some parts of the feature below 5cm of aeolian silt suggesting at least two phases of construction. These structures are clearly associated with some of the earliest domestic use at the site. In association with the structure, is a
widespread radius cultural material, ranging from animal bone refuse to peatash and charcoal, presumably the byproduct of cooking and heating.

From these data is likely that Efri-Ás was used early on, perhaps as a small-scale specialized economic unit, but does not appear to have been a farmstead until centuries later. The fact that Efri-Ás was the location of any activity before the Sturlunga period, however, is new information, and changes our understanding of the evolution of the landscape at this site.

5.3.2 The Organization of the Ás Territory

Overall, Ás can be characterized during the early pre-state period as a territory with one large farm, a church site, and previously unknown evidence for early activity at the site of Efri-Ás. It was commonly believed that only Neðri-Ás had cultural activity dating back to the Settlement period, but the data from the coring survey illustrates a much earlier phase of occupation. The earliest phase of landscape organization at Efri-Ás does not conform to the characteristics of a full-time domestic farmstead, but instead illustrates specialized production, namely charcoal making. All households require charcoal for ironworking, making the production at Efri-Ás at the very least a necessary activity carried out by a nearby household, such as Neðri-Ás, but could also represent a potential item for trade within the valley. Further archaeological research is needed to test these two possible scenarios, but the presence of any activity at the site is surprising. Traditional wisdom on the settlement process in Iceland has commonly suggested that highlands sites were ideal locations for early settlers, not the midlands. The highlands, likewise, have plentiful resources of birch for making charcoal, so this cannot be the sole
reason behind the utilization of lands in midland ecologies. These data suggest so far that
the midlands were occupied simultaneously with the highlands during the Settlement
period.

A second discovery is that while the earliest mention of Efri-Ás as a farm in the
documentary record dates to the late thirteenth century, the archaeological coring survey
revealed the site was a farmstead a century earlier. While excavations are necessary to
confirm the function of the structures identified, the associated household midden debris
argues for a domestic residence. Efri-Ás will become a large, size 1 farmstead by the end
of the Sturlunga period, a status that no doubt reflects the potential productivity of the
soils found at the site. When managed with proper draining, the organic rich, wet, clayey
soils can become highly productive (see chapter 2). The establishment of a large
farmstead at Efri-Ás during the Sturlunga period may reflect economic shifts towards
intensified agrarian production.

Collectively, the archaeological data from Efri-Ás and Neðri-Ás suggest that the
Ás territory was concerned with predominately agrarian pursuits, but its central location
in the valley, the early establishment of a church at Neðri-Ás, and the early production of
large quantities of charcoal at Efri-Ás and later the development of a large farmstead all
suggest that sites like Neðri-Ás could have acted as a kind of central place, perhaps even
coordinating the early production seen at Efri-Ás.

5.4 The Hof Territory

The Hof territory, located direct southeast of the Ás territory, spans a 20 km²
(2,000 ha) area covering the most inland reaches of the Hjaltadalur-Viðvíkursveit valley
system. The territory has the shape of a long ribbon of land with a natural east-west division formed by the Hjaltadalsá River and bounded by the Ás Mountain to the northeast, and the Viðvikurfjall and Tröllaskagi Mountains to the southeast. This geography makes the lands within the Hof territory sheltered from wind and erosional regimes that all too often plague many areas of modern Iceland. The elevation range of the Hof territory spans from 100 masl as you enter the midland portion of the area to 300 masl far back into the only highland reaches of the valley.

Historically, the Hof territory carries tremendous cultural importance. It was here that the northern bishopry was established at Hólar in 1106 CE, which would later in the fourteenth century become the wealthiest landowner in Iceland. At its height, Hólar was home to more than a hundred residents, a marvel in a rural landscape, many of which were craft specialists employed by the church. Ongoing archaeological research under the auspices of the Hólar Project\(^8\) has documented the tremendous material wealth of the site, ranging from luxury import goods to the local financing of Iceland’s first printing house (Traustadóttir 2009; Traustadóttir and Zoëga 2006). Taking their cues from the evidence found in the medieval documents, most historians have long assumed that Hólar became a farmstead sometime in the eleventh century after the farmstead at Hof was temporarily abandoned. New archaeological data, however, demonstrates that the site of Hólar was used prior to the eleventh century, with at least one structure dating to the settlement period (Bauer and Traustadóttir 2008; Sigurgeirsson 2009). The structure sits

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\(^8\) The Hólar Project directed by Ragnheiður Traustadóttir, began in 2001 and is still currently being excavated. The excavation is one of the largest ever undertaken in Iceland, over 40,000 artifacts and at least twenty structures all with multiple phases of occupation. The bulk of the work has documented the activities of the bishopry post-1400. It is likely that more evidence from the earlier periods, including the settlement, will likely come to light in future excavations.
below a thirteenth century feasting hall and has therefore only been partially excavated. What has been excavated of this older structure is a wall constructed with turf containing prehistoric (H3) and “Landnám tephra,” that is situated just above the Landnám layer and is associated with a Viking Age bead (Traustadóttir 2009). It is not yet clear what the structure was used for, but the evidence suggests at least some occupational use of Hólar during the initial settlement period.

New archaeological data from Hólar indicate that the picture painted of landscape organization and use by the documentary record for the pre-state period is only a partially rendering of the society as a whole. What was not known before my research was when smaller sites were established and how they were organized. The economy of the territory, while better understood for the Late Medieval period, was entirely unknown for the pre-state period. I conducted a subsurface coring survey in both the midland and highland areas of the territory at the smaller sites of Nautabú, Kálfsstaðir, Hvammur, Geitagerði, and Kollugerði to complement the existing archaeological data from Hólar and to examine when these sites were established and how they were economically organized. As part of my MA research (Carter 2003) I had previously surveyed Hólar and part of the large farmstead site at Hof. I revisited Hof in 2008 to complete the coring survey, which has provided me with environmental and archaeological data for the entire site. New test trench excavations were also opened at Hof to clarify the dating of the earliest phase of domestic occupation at the site. Taken together these data provide a complete picture of landscape organization in the valley, with both large and small sites, located in both midland and highland environments.
5.4.1 Hof

Hof is located at the boundary between the end of the midland section of the Hjaltadalur valley and the start of the highland passes that lead up into the Tröllaskagi mountain range. At 180 masl, Hof is at a slightly higher elevation than its neighbors, but its ecology still conforms to a midland environment with both wetland and dwarf birch vegetation. Situated deep in the fjord valley, Hof is surrounded by mountains that could lend shelter from the wind and rangelands for sheep and goats. The river Hjaltadalsá is likewise within easy reach of the farm, and at this point the river is gentle and fordable providing reliable transport. As a glacial valley with exposed moraines, stones are also readily available in the area, an essential raw material for building construction. Lastly, the area overall is characterized by drier soils than in other parts of the valley, but still contains a patchwork of nearby wetlands for the procurement of bog iron ore and turf (Carter 2003). The environment surrounding Hof therefore provides all of the essential raw materials needed by medieval farmsteads: turf, stones, iron ore, water, soils suitable for making pastures, and grazing lands. Hof’s position deep in the valley could have also served well as a defensive feature, allowing its inhabitants a full view of the rivers connecting to the sea, giving individuals enough time to flee or prepare for battle if needed. Today, Hof is an active farmstead that specializes in horses and continues to cultivate grass. As we saw at Efri-Ás, the farmers at Hof have likewise constructed drainage ditches that transect the wetter areas of the site, extending the amount of arable land significantly in the modern era.
The site of Hof makes frequent appearances in a number of sagas and according to *Landnámabók*, is the first farm established in the area by a chieftain named Hjalti, who is said to have been so influential and wealthy that at the time of his death, “the most magnificent funeral feast ever held in Iceland was the one [Hjalti’s sons] celebrated in honor of their father; there were about 1440 guests, and all important people were presented with gifts when they left” (*Landnámabók* 1973: 93). Census records collaborate the wealth of the farmstead, appraising the farm at sixty hundredths in the medieval period and fifty hundredths in the nineteenth century. The tax value for the farmstead would indicate that Hof fluctuated between a site size type 1 and 2, capable of supporting a large household. Lastly there is the issue of its name, Hof, which in Old Norse means a kind of pagan temple or sacred space. The landscape, marked by numerous high relief areas—hills, mountains, glacial moraines, and plateaus, is an ideal location for hof sites in Scandinavia. All of these factors add to the perceived importance of the site.

Previous archaeological work was carried out at the site in the late 1990s after the installation of a telephone line unearthed skeletal remains from fourteenth century Christian burials (Gunnarsdóttir 2000). Archaeological reconnaissance continued in 2001 by the SASS project (Steinberg 2002) with the goal of determining the oldest occupational date of the site. The area was first subsurface surveyed with cores (see Carter 2003) followed by remote sensing. Soil profiles recorded from the coring survey

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9 One moraine hill in particular, Skiphóll (“Ship Hill”) would have been a desirable location for a hof. As the name implies, the hill is shaped like a Viking Age ship. My field survey noted what appeared to be culturally placed stones added to either end of the hill to accentuate the shape. The top of the moraine is fairly flat with a possible outline of a ship made of stones. However, these are only observations and need to be further examined.
were used to reconstruct the medieval environment at Hof, concluding two separate
geological areas to the site: a natural raised plateau made-up of dry rocky soils (180 masl)
on the northern half of the site and beneath this plateau to the south, flat wetlands made-
up of bog soils that extend out towards the river. To the west lies a field that contains a
number of small mounds that are thought to be potentially cultural features, but as of
2001 these features had not been archaeologically surveyed.

Pre-modern cultural material was discovered on the plateau in 2001, including the
ruins of a still partially observable structure. No cultural material was found in the
wetland areas, which is consistent with the geomorphology observable in the coring
profiles that indicate that the area had only recently, within the last fifty years, become
drier through the construction of drainage ditches. These areas would have likely been
partially submerged in the medieval period. Lastly, coring profiles taken in 2001 suggest
that Hof was abandoned sometime before 1104 and then reoccupied just after 1300. One
possible explanation is that the soil profiles document multiple episodes of landslides
from the rocky slopes of the mountains that surround Hof. While the mountain slopes
may have given Hof a good visual vantage point and sheltered the farmstead from winds,
it also deposited large quantities of stones and boulders onto the site.

The remote sensing survey was targeted on the structure found on the plateau.
Conductivity measurements indicated at least two oval-shaped feature
(E495580/N579630). Two subsequent test trenches were placed, cutting across the entire
width of the structure. The trenches were positioned with the goal of hitting outer walls,
an area inside the structure, and area outside the walls of the structure. These trenches
confirmed the conductivity results and suggested two building episodes of perhaps a
single structure with two separate phases. “Trench 2” clearly revealed late medieval turf (post 1300) as well a number of loom-weights. This portion of the structure has an estimated interior measurement of five meters in diameter, and a length of perhaps fifteen to twenty meters. “Trench 1” revealed some cultural material below an in-situ H1 (1104) tephra layer, and several rows of large stones, but the issue of whether any turf was preserved remained inconclusive (Steinberg 2002). The shape, size, and use large stones suggested that the structure was a domestic longhouse. The overall conclusion was this structure, given its size and shape, likely dated to sometime before 1104, but there was no definitive evidence to support this conclusion. What was clear, however, was the existence of a late medieval structure. These data suggested that either the original settlement farmstead was no longer preserved, or that possibly it was not located at on the modern day farm known as Hof.

In 2008, three meters of Trench 1 (E495580-83/ N579629) were reopened and extended from 90 cm to a 1.5 meters in depth with the goal of dating the structure, and therefore the earliest landscape use at the site. The original trench stopped when the prehistoric H3 was reached, but I wanted to examine if the H3 that was encountered in 2001 was actually part of a turf wall (see Figure 5.5). Excavations since 2001 from the nearby sites at Keldudalur (G. Zoëga 2009a), Kolkuós (Traustadóttir 2005), and Stóra-Seyla (Steinberg 2005) have all determined that the oldest structures constructed were made from turf containing a lot of H3. A practical explanation for this pattern is that when turf is cut, it usually takes at least two weeks to dry out before it can be used as building material. Turf containing a high percentage of tephra is, on average, drier than those without it. While tephra in turf can reduce the drying time, it can make the turf too
dry making it difficult to shape and work with (Sigurðardóttir 2008: 9). Misshapen turf blocks do not sit well in a wall, which can cause cracks and breakage not long after construction. One can imagine that the first settlers would have found the drier turf with H3 appealing, but these structures did not last long and needed to be either mended or replaced within a few years. This pattern is seen at Kolkuós, Keldudalur and Stóra-Seyla where at each site the oldest structures made from yellowish turf were ephemeral and were replaced not long after the sites were established.

The 2008 excavations determined that the turf wall at Hof contained two different kinds of turf: a yellowish turf with a high percentage of H3 and some Landnám tephra found in the lower layers of the wall; and a second red-purplish turf also with some Landnám tephra located in the upper layers of the structure. The wall itself sits below in-situ 1300 and H1 (1104 CE) tephra layers, dating the structure to before 1104. It is difficult to know if the two turf types represent a repair in the wall or if the wall had originally been built with both. What can be said is that the structure represents the oldest occupation of Hof and likely dates to the ninth century, and was abandoned sometime before 1104. The preservation of the turf is moderate, with some areas well preserved on the sloping sides of the hill and very little preserved on the top of the hill as a result of normal erosional patterns. It is likely that some of the well-preserved areas represent turf blocks that have collapsed away from the standing wall.

In addition to turf, stone was also used as a building material in the structure. Inside the structure, on either side of the turf walls are parallel rows of stones. Medieval longhouses often contain wooden sleeping benches built up from a stone platform. The overall design of the structure, oval shape complete with stone platforms for benches,
indicate that the structure was likely a longhouse dating to the earliest phase of occupation in the valley.

Additional subsurface coring was likewise done in 2008, covering an area of 20,875 m² (2.9 ha). The goal of the 2008 survey was to examine the fields to the west of the plateau that contain no fewer than six mound-like features. The largest of these mounds measured 30 meters in length (E495554/N579748), while the smallest mound measured just 15 meters in length (E495516/N579741). All six mound features cored and revealed similar results: the mounds are not cultural, but are glacial moraines created by receding glaciers that move with it large amounts of stone and sand debris. The area itself, however, has cultural significance for the soils are characteristic of dry conditions, which would have made this area good for grass production and grazing during the pre-state period. Small traces of cultural material, such as charcoal and peatash, were found in this field (see core 13 in Table 5.4). These cultural layers lie beneath an in-situ 1300 tephra lens and above a H1 tephra layer, dating the material to between 1104 and 1300.

The coring survey and subsequent test excavations at Hof have begun to further our discussions on how Hjaltadalur was transformed into a political and economic landscape during the pre-state period. Hof represents a classic chieftain farmstead: large land claim within a resource rich environment capable of supporting a large household through agrarian pursuits. Farming and household activities are the dominant features of the site. If we treat Hof as an isolated farmstead, then these data strongly suggest that the economy of Hof was centered on self-sufficiency. However, if we begin to examine these data within the larger social setting, and start to view Hof in relation to other sites, a different pattern of landscape use may appear. The recent excavations at Hólar, for
example, have begun to suggest that the reach of Hof extended beyond the boundaries of its farmstead, with individuals, likely connected to Hof\textsuperscript{10} engaged in separate enterprises throughout the valley. The question remains, however, if a new pattern can be documented through a survey of smaller sites within the Hof territory.

5.4.3 Nautabú

Nautabú is located within the Hof land claim on the southwestern side of the Hjaltadalsá River, directly opposite of Ás. The site is nestled at the base of the Viðvíkurfjall Mountain at 180 masl, placing it at the upper end of a midland ecology. In a broad, open dale with few trees there are hardly any places invisible in the valley, but Nautabú is positioned at a natural bend in the landscape, out of view from both Viðvík and Hof but within sight of Ás. From Nautabú one not only has an unobstructed view of Ás, but also of the sea and of the Kólká and Hjatladalsá Rivers. Geographically, Nautabú could be in a strategic location in the valley, positioned at the intersection of the Ás, Hof and Viðvík territories and with a clear view of the all of the water routes in the valley. Today Nautabú is an active farm that cultivates grass and barley and raises mostly horses and sheep with some cattle.

Little was previously known about the landscape history of Nautabú. The site is one of the few places in Hjaltadalur mentioned in Landnámabók, with its name indicating a place were cattle are kept.\textsuperscript{11} However, Landnámabók does not state whether Nautabú is a farmstead at the time of settlement or who, if anyone, had settled there. The name

\textsuperscript{10} The medieval texts trace family ancestry between those who lived at Hof and those who established the farmstead at Hólar. Likewise, the two sites are within 3km of one another; typically farmsteads are placed far apart unless they are from members of the same family.

\textsuperscript{11} \textit{naut}: bull; \textit{bú}: storing place
seems to imply the land was used by another farm, but this interpretation had not been archaeologically tested before my 2008 survey. Census records indicate that Nautabú was a farmstead by the fourteen century\(^\text{12}\) and was assessed at thirty hundredths, making it of average size (site type 3).

The field and coring survey was aimed at determining the earliest period of landscape use at Nautabú and to clarify the nature of any economic activity present at the site. The field survey noted the presence of a number of modern era ruins, including an old farm mound that been bulldozed in 2000. Extensive coring was done at the site, covering an area of 154,800 m\(^2\) (15.48 ha) with targeted five meter spaced coring done around the ruins of the old farm mound.

Soil profiles documented in the general coring program carried out at the site conclude that the environmental landscape at Nautabú is overwhelmingly wet, both presently and throughout the medieval period. The soils are highly organic, consisting primarily of peat in most areas of the modern farm despite the presence of deep drainage ditches crosscutting the landscape. One exception is the drier soils at the low reaches of the farm’s mountainous backdrop, an area ideal for grazing, but also an area where multiple landslides have occurred\(^\text{13}\) (E90630/N582438). The second exception is the eroded, rocky landscape southeast of the modern farmhouse. The erosional regime currently at work is the result of recent cultural efforts to divert the Nautabúsá River, leaving behind a dry riverbed of large boulders and cobbles. The change in the river system is a likely contributor to the saturation of some of the modern fields, but it is clear

\(^{12}\) Nautabú is listed as a property of the Hólar Bishopry in the Hólastóll 1388, 1449 and 1550 land registries.

\(^{13}\) One of these landslides, documented in recent history, was so intense it demolished an animal structure, carrying is several hundred meters down slope.
that Nautabú has been a wetland environment since far back in prehistory. However, it should be acknowledged that the present landscape is radically different from the one that existed in the medieval period and it is possible that some areas of the site have disappeared at the hands of these anthropomorphic forces.

The largest agent of landscape change at the site, however, is the recent bulldozing of a number of ruins\textsuperscript{14} and the partial flattening of the lower fields using heavy machinery. The most striking cultural feature of the site is the remnants of a farm mound (E490550/N582500). Turf and household debris are visibly eroding out at what remains of the mound. A series of cores were taken to determine if any cultural material was still in situ (see cores 1-3, and 5 in Table 5.5). Two areas were immediately ruled out as potential survey areas: the top of the mound since a modern cement silo now covers the area, and the vicinity north of the mound, which after considering the topography and shape of the remaining ruins was determined to be the down hill path of the dumped bulldozed debris. The southern end of the mound appeared to be the least disturbed, so coring was concentrated in that area. The coring profiles revealed 40-50 cm of mixed, disturbed cultural material. The material consisted primarily of turf and ash, with some modern ceramics. Beneath this heavily mixed horizon, around 40-55 cm, however, was a less disturbed area mixed mostly with soil that ended in a thin lens of aeolian silt (see Figure 5.6). At 56 cm, was a distinct H1 (1104) layer in silt; since this layer was not mixed with turf, it is possible that the layer is in situ. Below the H1 layer was 20 cm of turf, followed by an additional 12 cm of ash and charcoal. Unlike the upper layers, there was no modern material, suggesting a primary deposition for these

\textsuperscript{14} Some of these ruins, including a smokehouse and storage unit, were still standing as late as 2000.
cultural horizons. From 95 cm to 1.10 meters are natural deposits including an iron pan, an in-situ prehistoric H3 tephra layer, and sterile soil. Further excavations are necessary but the data here is suggestive of cultural material well before 1104 and may therefore be the oldest occupied area of the site. Coring around the perimeter of the southern end (E490560/N582520) identified dense concentrations of charcoal below an in-situ 1300 tephra layer suggesting the area was certainly in use before 1300.

The wet environment at Nautabú has some advantages. First and foremost, wet and even partially submerged soils are prime areas for growing sedges and barely. Even today barley still grows in several of the farm’s soggy fields. If we consider the name Nautabú as an indication of the economic focus of the farm, then the ability to grow both sedges and barley would serve a cattle farmer well. Both barley and sedges pack more caloric nutrition compared to other grasses, aiding to the high bulk of fodder needed to feed herds of cattle. While perhaps not the most pleasant of places to live, Nautabú is an ideal place to raise livestock, with the mountainous rangelands available for sheep and sedges and barley for foddering both cattle and sheep. The most important discovery made by the coring survey is the presence of cultural activity in the pre-state period for this midland site. The level of activity at the site suggest that Nautabú was not a domestic farmstead, but was instead a specialized activity area, much like Efri-Ás was in the Ás terriory.

5.4.4 Kálfsstaðir

Kálfsstaðir is located on the east side of the Hjaltadalsá River, directly opposite Hof and Hólar. Like most farms in Hjaltadalur, the physical landscape at Kálfsstaðir is
complex and can be accurately described as a microcosm of the valley system, comprised of fields at upper and lower elevations that range from its hay fields at 130 masl to 180 masl in the higher reaches of its rangelands. The higher elevations of the farm have visible dry silty soils, now partially eroded, exposing a rocky subsurface. At the lower elevations of the site, the land is a patchwork of visible wetlands juxtaposed by numerous mound features. Today, Kálfsstaðir is one of the most active farmsteads in Hjaltadalur, with extensive grass fields and livestock. Like most active farms in the valley, the boundaries of arable land have been extended in recent years through the construction of extensive drainage ditches that follow the outer perimeter of the fields, but also transecting some fields across the middle. For example, today the grass fields located at the lowest elevations at the site extend all the way down to the river, with three parallel rows of drainage ditches cutting across each field. This extensive drainage system has no doubt altered the use of the landscape at Kálfsstaðir by increasing its overall level of agricultural productivity.

Kálfsstaðir is first mentioned in a 1203 CE document from the bishopry that states that a man who worked at Hólar kept a bú there. Clues about the original use of the farm have been derived from the name of the site, Kálfs-staðir, which can be interpreted in at least two different ways. The name could be an economic reference, meaning a place where calves were kept (kálfur: cow; staðir: place), but Kálfur is also a man’s name, and could be referring to Kálfur’s farm. In Landnámabók, 75% of all the place names mentioned use the component staðir, a tradition that has antecedents found in Norway. Historians often derive from this evidence that farmsteads with the staðir component are

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15 This is not to be confused with church staðir (singular stadir) established after 1100 CE (see chapter 6).
an indication of an early Settlement period site. This view has been applied to Kálfsstaðir, but was not before my survey confirmed or denied by archaeological research. Census records indicate that Kálfsstaðir was an active domestic farm by the fourteenth\textsuperscript{16} century, with an assessed value at 50 hundredths, and later in the eighteenth century at 60 hundredths. The tax appraisal of the site indicates that when Kálfsstaðir did become an active farm, it was highly productive, ranging in site size types 1 and 2. Little else was known about the site, especially if the area had been used prior to the thirteenth century. The coring survey was aimed at identifying the earliest occupational history of landscape use at the site and to determine what the environmental conditions were like before modern drainage ditches were constructed.

Since no previous archaeological work of any kind had been done at the site, the survey of Kálfsstaðir began with a twenty-five meter spaced pedestrian field survey of the entire area. The survey uncovered few visible features, so it was decided that a broad generalized coring survey of the site and surrounding region was necessary, covering an area of 284,704 m\textsuperscript{2} (28.5 ha). The survey was organized by dividing the site into three potential research areas that conform to elevation: the visibly wetter lower fields closest to the river (130 masl), where it was hypothesized that little or no pre-state activity took place, the somewhat drier fields above the river (155-170 masl) where it was hypothesized be area with pre-state activity, and the more mountainous drier upper fields (175-180 masl) where the modern farmhouse and barn are located, and where it was hypothesized that if there was any pre-state activity, this might be the location.

\textsuperscript{16} Kálfsstaðir is listed as one of the properties owned by the Hólar Bishopry in the Hólastóll 1388, 1449, and 1550 land registries.
The pedestrian field survey of the upper field discovered adjacent to the modern house a stone foundation of an eighteenth or early nineteenth century barn (E492405/N582235), with three of the four wall foundations still clearly visible. Southeast of the modern house, heading towards the foot of the mountains (E492645/N582175), the remains of a stone boundary wall can be seen, but its date of construction and use are unknown. While a number of areas on the upper field document continued occupation of the site from the eighteenth century through the present, there are additional late medieval cultural deposits (see cores 15, 17-20 in Table 5.6). Directly south of the modern house and old barn (now a storage shed) is a mound built up of dung sometime before 1766, but also of midden material (charcoal, ash, small pieces of turf) before 1104 (see cores 15 and 17 in Table 5.6 and Figure 5.7). The material is denser above the H1 (1104) tephra layer, but a fair amount of charcoal can be found below it. The area does not appear disturbed, suggesting the presence of early medieval activity at the upper fields of the site. However, the small amount of material suggests an inconsistent activity pattern, either as a seasonal or one time use of the area.

In a nearby modern animal enclosure the coring survey discovered additional early cultural material, dating to between 1104 and 1300, with a continued use of the area through the present (see cores 18-20 in Table 5.6 and Figures 5.8 and 5.9). A lens of charcoal and a small amount of turf were seen in the profiles, situated between an in-situ H1 (1104) and 1300 tephra layers (see Figure 5.9) and covered a sizable area (roughly 30 x 30 meters). These data suggest a greater intensity of activity at the site after 1104.

The field survey of the lower, predominately flat fields near river identified no visible surface features. The subsurface coring was done at fifty and twenty-five meter
spaced intervals. The geomorphology of these fields indicates that even though these lands have recently been extensively drained, the physical properties of the soil can still be classified as highly organic, with peat making up the largest percentage of plant material. The soil horizons below the topsoil lens are characteristic of bog soils, indicating that in the medieval period this area would have been partially submerged under stagnant water. No cultural material of any kind was identified in this area.

The pedestrian survey of the fields above the river identified a number of small mounds that could have potentially been cultural. These areas were the focus of targeted, tightly spaced five meter coring, while the surrounding fields were cored at twenty-five meter spaced intervals. As with the fields by the river, the soil morphology of this area is characteristic of a wetland ecology, with water saturated, organic and iron rich soils. These conditions extend back to prehistory. The mound areas, in contrast, are comprised of silts, with these horizons extending to the H3 tephra layer, indicating that these mound areas would have been as dry even in the medieval period.

The targeted coring of the mound featured revealed no cultural material. It is likely that these mounds, as we have seen at other sites in the valley, are the product of glacial movement, leaving behind mounds of earth and stone. The one exception was one large knoll roughly twenty-five square meters in length and width, and a ten meter higher relief than the surrounding fields. The soil on the knoll is consistent with other mound features, made-up of dry silt dating from the prehistoric through the modern period. However, an older, but still modern horse barn and pen are located at the top of the knoll (E492587/N582390). Coring was systematically conducted across and around the knoll to document the extent of dry soil horizons and to locate any evidence of occupation. In
what we will see as common pattern\textsuperscript{17} at other small farms in Hjaltadalur and Viðvíkursveit, the earliest evidence of human occupation at Kálfstaðir was documented on the site’s high knoll. The upper layers of profiles taken consist of at least 200 hundred years of dung deposits. Below these horizons, is a well-preserved in-situ H1 (1104) tephra layer, with charcoal and dark decomposed organic material, likely hay, below it (see cores 23-25, 27-28, 30, 35-36, and 38-39 in Table 5.6 and Figures 5.10 and 5.11). Unlike the earliest known sites in the valley, such as Hof, there is an aeolian deposition (average of 10 cm) between the prehistoric H3 tephra layer and the start of cultural material at Kálfstaðir, perhaps indicating that use of the land was before 1104, but not actively used in the tenth century. The material is consistent with those found in and around animal structures. With the surrounding partial wetlands, it is likely that the area was using for housing and grazing animals in the early medieval period, an activity that carries through the modern day.

Lastly, the pedestrian and coring survey identified a small ruin (E492630/N582690), measuring about five by ten meters, still partially visible on the surface (see cores 4 and 5 in Table 5.6). Cores taken from turf walls of the structure contain multiple H1 (1104) layers, dating the feature to after 1104 CE, and likely well before the eighteenth century considering the ten centimeters of aeolian deposits on top of the existing turf.\textsuperscript{18} However, little else could be determined about the structure, but

\textsuperscript{17}See the discussion on Hólakot, Fornistekkur, Miklíhóll and Langhús
\textsuperscript{18}The 1766 tephra layer is consistently found within the topsoil horizon making it highly probable that the age of the deposits below the topsoil or “A horizon” are older than 200 years. This observation is consistent with the average rate of topsoil growth. In the lowland areas of Skagafjörður, the average topsoil accumulation rate is 0.04cm/yr. Ten centimeters of topsoil, therefore, takes about 240 years to accumulate it is no wonder the 1766 layer is frequently found at the base of the topsoil horizon.
given its small size and no associated cultural material, it was likely used for housing or milking animals.

Taken together these data suggest a long history of agro-pastoral activity at the site, with archaeological material predating the earliest textual reference of the farm by at least a hundred years. What is lacking at the site, however, is unambiguous evidence for an early medieval farmstead. The data here suggest that the land was used in raising livestock from a very early date, but it is highly probable that the land did not become a residence until at least the late thirteenth century, and likely not until the fourteenth century, but still earlier than the census records indicate. When we consider the archaeological data with the textual sources and place name analysis, it is likely that Kálfsstaðir was in some way connected to the activities coordinated at larger sites of Hof and later Hólar.

### 5.4.5 Hvammur

Hvammur (“grassy hollow”) is located far back in the fjord valley system of Hjaltadalur, south of Kálfsstaðir and Hof, and within a few kilometers north of the site Reykir, where the slopes of the Tröllaskagi Mountain begin. At 230 masl, Hvammur is a highland site, with a characteristic highland ecology of moderate relief grass covered hills and dry silty, rocky soils. The farm is abandoned today, but the lands are still used for grazing horses and sheep owned by the agricultural department at Hólar University, and by the neighboring active farm at Reykir.
There are no early textual references to Hvammur, but the site is listed as land owned by the Reynistaðir cloister by 1295 CE, and later as a farmstead owned by Hólar in the fourteenth century, and is mentioned as a farmstead in the fifteenth century when it was assessed at a tax value of forty hundredths. This fairly high tax value suggests the site was moderately productive, making it a site size type 2. The name of the site would suggest that the area was good for growing grass and for grazing animals, two features that would have increased the property value of Hvammur. However, no previous archaeological research had been conducted at the site prior to my 2008 survey, to confirm or reject these observations gleamed from the textural record.

The field and subsurface coring survey was conducted at Hvammur to determine the earliest date of occupation and to examine what the economy of a highland site looked like alongside midland and lowlands sites in the valley. The coring survey covered the entire farmstead and surrounding region, making up an area of 124,740 m² (12.5 ha).

A pedestrian field survey was conducted at the site, noting the presence of numerous late nineteenth and early twentieth century structures. The abandoned farmstead mound (E494927/N575711) barn (E494910/N575500), and cement silo (E494898/N575686) sit on a broad knoll, with old enclosure walls (E495815/N575385) scaling up towards the reaches of the farm’s mountainous backdrop. A number of small animal structures and pens likewise dot both the higher and lower elevations of the site, notably a ten-meter long u-shaped turf structure (E494810/N575707) and stonewall

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19 Hólastóll 1388, 1449, and 1550 land registries
20 Likely a rétt or kvíar (animal pens) dating to the early twentieth century.
(E494810/N575724) located behind the farmstead and a series of stone foundations (E495110/N575700) in front of the farmstead at the lowest elevations of the site. In addition to these structures, two grass fields, located north and east of the farm mound\textsuperscript{21} were noted as possible areas of past activity though no features were visible on the surface.

The most striking feature of Hvammur noted in this survey is its contrasted landscape, broken up into areas with thin soils and an almost continuous carpet of rocks that stretch across the uppermost areas of the site juxtaposed by a network of streams and pockets of deep organic bogs and partial wetlands at the lower reaches of the site. These two environmental extremes, however, are connected through an overarching erosional regime of the Tröllaskagi Mountain that has altered the underlying water table at the site. As the sediments from the mountain are deposit at lower elevations, the soils act as a kind of sponge bringing water up closer to the surface. The end result is a higher water table and the formation of blanket bogs. Soil profiles from the coring survey indicate that this process has a long history at the site, and probably began in the Early Medieval period. While erosion has intensified in the modern ear, the medieval landscape was likewise a mixture of rocky and boggy areas, reducing the total area of arable land. The coring survey was therefore concentrated in the grassy fields in front of the modern farm mound, around the modern house and barn, in the surrounding rangelands, and in and around the area where the stone foundations were located. Areas badly eroded or near existing bogs were sampled, but ruled out as potential intensive survey areas.

\textsuperscript{21} Although there is no current residence at Hvammur, these grass fields are still in use today by Hólar.
Coring in the surrounding rangelands did not reveal any cultural material. These soils are highly organic, and moderately water-logged. These environmental conditions would have been similar in the prehistoric and early settlement period, as these organic soils can be found immediately above and below the prehistoric H3 tephra layer. As discussed earlier for Nautabú, semi-wet soils are able to grow rich grasses and sedges, making for excellent pastures. However, the high frequency of stones at Hvammur significantly reduces the total area of available rangeland.

Coring profiles taken in the area surrounding the farmhouse and barn revealed only modern cultural material (for example, see core 27 in Table 5.7). The area is rocky and therefore difficult to core though so it is possible that older material lies beneath this stony horizon. However, in areas with moderately deep soils, only cultural material post 1300 could be found. Likewise, coring in and around the series of stone foundations revealed a very shallow, rocky subsurface, making it difficult to date these features (see cores 18 and 19 in Table 5.7). The surface is littered with modern objects suggesting that these structures were used reused as middens within the last 50 years.

The grass field east of the farm mound (E494950/N575580, southwest corner) has been lightly plowed (roughly 5cm) and flattened, but some cultural material remains (see cores 2-7, 17 in Table 5.7). Ash, charcoal, and small pieces of bone were found throughout the field (E494950-495020/N575600-670) directly below an in-situ 1766 tephra layer (see core 6 in Figure 5.12). The cultural layer averaged from 8-16 cm below ground surface, with highest concentration of material located in the northernmost end of the field (see core 17 in Table 5.7). In addition to these cultural deposits, two cores (3 and 17 in Table 5.7) revealed small pieces of turf with H1 in it (see core 3 in Figure
5.13). This suggests the material found is post 1104, but before 1766. I would argue the material was deposited just before 1766 given its close proximity to the tephra layer. One possible interpretation of this widespread cultural material is that they are a secondary deposition, spread on the field as a fertilizer. Mixing midden materials with dung is documented as a common practice in eighteenth-early centuries and likely explains the data presented here.

The field just north of the farm mound (E494950/N575720) has not been plowed or flattened, and documents very little erosion as the H1 (1104) tephra layer is preserved. The properties of the soil conform largely to dry silts, containing a small percentage of organic material. The coring survey revealed a small amount of cultural material below the H1 layer, with a high concentration of charcoal between the H1 and 1300 tephra layers as well as between the 11766 and 1300 tephra layers (see core 29 in Table 5.7 and Figure 5.14).

These data suggest some activity at Hvammur before 1104, but the degree of occupation increases proportionately over time, with the highest concentration of material deposited between 1300 and 1766. However, the fact that any activity can be seen at Hvammur before 1104 is striking. This new evidence suggests that early landscape use in the valley included the creation of both farmsteads and activity areas, within the highlands and within the midlands as we have seen at Hof and Kálfstaðir.

5.4.6 Geitagerði

The site Geitagerði (“goat area”) is located in between Hólar and Hof on a high plateau (190 masl) overlooking the lower fields of Hólar and the Hjaltadalsá River.
landscape of Geitagerði is comprised of a small plateau, which situated in the foothills of the Ás mountain range to the northwest, and is surrounded by woodlands extending out from the birch forests around the site Hólar. As we have seen with its neighboring midland, the landscape ecology of Geitagerði is a mixture of a few higher relief knolls with drier soils, surrounded by a sea of lower relief wetlands. Unlike other sites in the area, however, Geitagerði has never been plowed with heavy machinery nor have drainage ditches been constructed, but some site disturbance has occurred in recent years through the nearby construction of dormitories and a parking lot for the Hólar University. Today the site is used to graze animals, mostly horses, which are owned by the agricultural department at the college.

Geitagerði is a small site, only about a fourth of the size of Kálfsstaðir and Nautabú, and was likely never a permanent residence as census records indicate that the lands were never used for full-time farming. Since Geitagerði was not considered a farm, its value was never assessed. Textual records indicate that the site was a gerði, an area of land enclosed by a permanent wall or movable fence for the explicit use of an owner or renter who lives elsewhere (Tetzschner 2006: 95). According to the texts, Geitagerði was owned and used exclusively by the Hólar bishopry as early as 1550 and was later in the nineteenth century included as part of the Hólar land purchase when the bishopry was sold and made into a private farm. Little else was known about the site and no subsurface archaeological research had been done before my 2008 survey.

22 The Annals (recorded in Diplomatarium Islandicum) mention that Bishop Guðbrandur kept his goats there, which may explain where its name comes from.
The goal of the coring survey at Geitagerði was to date the earliest occupation of the site, testing the hypothesis that the land was not used until it became a gerði to Hólar. The pedestrian survey noted a large knoll (E495130/N581425, southwest edge) at the site, and the visible remains of possibly two structures on top of the knoll. Just northwest of the knoll are the partially remains of the foundation of a small square feature. Lastly, west of the knoll are the visible remains of an enclosure wall, following the topographical circumference of the natural plateau. Near the southern edge of the enclosure wall are a series of three or four large rectangular features. Since Geitagerði is a small farm, systematic coring was conducted every twenty meters across the entire site, covering an area of 1,800 m² (0.18 ha) to assess the environmental conditions of the site for all time periods. In addition, target five meter spaced coring investigations were done at all of the noted features and the immediate areas surrounding them.

The geomorphology at the Geitagerði site is similar to other midland sites in valley, with erosion and water-logging events characterizing modern environmental forces currently shaping the landscape. The rate of erosion, however, is fairly moderate when compared to sites like Hvammur, with the 1300, H1 (1104), and the prehistoric H3/H4 tephra layers larger preserved at the site, indicating that erosion was not a serious threat to the landscape before 1300. The 1766 tephra layer is, however, absent and the average topsoil deposition is roughly six centimeters, or four centimeters less than the average for Hjaltadalur. Since no plowing has occurred at the site, the absence of the 1766 tephra layer and sluggish topsoil growth may be the result of erosional patterns that have occurred within the last 200 years.
The coring survey confirmed that some of the features noted in the field survey are cultural. The area with the most significant activity is on top of a large natural knoll (70 by 30 meters), where two structures made from stone and turf are preserved (see cores 1, 13-14, 18 and 23 in Table 5.8 and core 13 in Figure 5.15). Structure 1 is situated on the eastern side of the knoll (E495170/N581460) is approximately twenty meters long, with at least three separate areas walled off by five to ten centimeters of remaining in-situ turf. The floor of the structure is shallow, and is mostly stone. The layout of the structure and accompanying stone floor are typical nineteenth century barns. Further clues about its date come from the cores taken around the structure, which indicate that the structure itself sits on top of an in-situ 1300 tephra horizon. Likewise, the turf blocks that make-up the walls contains layers of the 1300 tephra layer, but surprisingly the ubiquitous H1 tephra is absent. A tentative date for this “barn feature” is post 1300, as determined by the tephra in soil profiles and in the turf, but given its design is likely to be far more recent than 1300. There is almost no topsoil deposition on top of the ruin (less than 3 cm), and while erosion is an agent of site destruction, the presence of ten centimeters of preserved turf suggests that this structure is fairly modern, perhaps not older than 1800.

Structure 2 on the knoll, just west of the “barn feature” is, however, significantly older. There are no clear walls visible on the surface, only a slight raise suggestive of a turf ruin. The coring profiles document clear turf in this feature that likewise contains the 1300 tephra layer in it. Unlike the previous feature, however, this wall is twenty-two centimeters below ground surface, buried below a twelve centimeter topsoil horizon and a ten centimeter aeolian horizon (see core 23 in Table 5.8 and Figure 5.16). The average
rate of deposition at Geitagerði is 0.04 cm/yr, so it would have taken roughly 550 years for twenty-two centimeter horizon to accumulate (without factoring in erosion), dating the structure to ca. 1450. It is fair to suggest that this feature dates to between 1300 and 1500, as the presence of the 1300 tephra in the turf indicate that the feature could not be any younger. The extent of this structure is only ten meters, indicating that the turf is not part of a household, but is likely an animal enclosure.

Northwest of the knoll (E495155/N581490) are the visible remains of the foundation of a twelve meter long square feature. The coring survey confirmed that the remains are cultural, documenting about seven centimeters of preserved turf, three centimeters below ground surface (see core 6 in Table 5.8 and Figure 5.17). The turf, was with the features on the knoll, contained the 1300 tephra layer, dating the structure to after 1300. The shallow deposition of the turf matches that of the large feature on the knoll, suggesting that the two structures were contemporaries. The shape and size of the structure is common of eighteenth century kvíar or animal pens.

Coring done around the enclosure wall discovered some anomalies that might be cultural. A small mound (E495170/N581425), approximately twenty meters east of the knoll is made-up of fairly dry soils and an in-situ H1 (1104) tephra layer. Along with the knoll, this is the only area at the site with dry silts; the surrounding area is a partial wetland with highly organic soils. The coring survey uncovered one area (E95165/N581420) with potential turf deposited well below the H1 layer; however this was only seen in one core (see core 17 in Table 5.8) and could not be confirmed by further coring in the immediate area. Likewise, no other cultural material could be found in the area. What was found, however, was a series rectangular depressions located
within 5 meters of the enclosure wall. No cultural material was found in or around these depressions, but the right angles of the features are not likely natural. I suggest these depressions are the result of cutting turf for the nearby enclosure wall. Unfortunately, there were no indications of the possible date of either the enclosure wall or turf cutting areas.

The survey from Geitagerði suggests that the land was not actively used until after 1300, and was likely only used for animal husbandry rather than as a residence. The archaeological data support the “gerði hypothesis” with a late medieval date of occupation and a specialized economic use of the land.

5.4.7 Kollugerði

Kollugerði is located northwest of the site Hólar, and is situated within a low relief basin (158 masl) in the valley that was craved out by two now extinct upland streams. The site is bordered by wooded hills on three sides and faces a modern paved road along its east-west axis. The site today has been disturbed by the construction of a modern road, and an outdoor soccer field, used by a nearby elementary school, along its eastern edge. While site has not been plowed, two drainage ditches made with modern heavy machinery were dug within the last ten years. The rest of the site, however, appears to be unharmed by modern construction. The fields at the site are used today as grazing land by the department of agriculture at Hólar University.

Like Geitagerði, Kollugerði is a small site that not mentioned in any early medieval texts but is mentioned in a seventeenth century church diary that describes the area as a gerði owned by the bishopry at Hólar. The name “kollu” suggests the area was
used to house nursing calves or lambs, but no archaeological research had been conducted at the site prior to my 2008 survey to test this assumption. Kollugerði does not appear in any census records since its tax value was never assessed indicating that the site was not likely to have ever been a full-time domestic farmstead, but this interpreted had not been tested.

The field and coring survey were done at Kollugerði to determine the environmental condition of the site before the modern era, to determine the earliest occupation and use of the site, and to document the full range of activities done at small midland sites like Kollugerði. The entire site was examined in the coring survey, covering an area of 12,800 m² (1.3 ha). Cores were systematically taken at twenty meter spacing, with targeted coring at two to five meter spacing in areas where cultural features were present.

The field and coring survey noted that the physical landscape of the site is predominately wet, made-up of dense organic bog soils. Several streams and old river channels crosscut the site juxtaposed by a few small hillocks. The landscape demonstrates a similar erosional pattern as the one documented at Geitagerði, with the presence of H1, but the absence of the 1766 tephra layer and sluggish topsoil accumulation, which on average of less than five centimeters. These data suggest that the landscape would have been significantly different during the pre-state period, with more soil deposition but would have still been a wet area.

Culturally, the pedestrian survey noted the ruins of one u-shaped structure with an accompanying outer wall feature that enclosed a space roughly 15 m² by 20 m² in total area. Southwest of these ruins is a linear feature running east-west that has been
truncated and flattened, possibly by heavy machinery, such as the kind used in the
construction of the nearby road. The subsurface coring survey revealed no cultural
material apart from these three visible ruins. Target coring across the visible structure,
which measured about twenty-five meters in length, documented the presence of turf, five
to eight centimeters below the ground surface, but no other traces of cultural material
were found in association (see cores 2-8 in Table 5.9). The turf is badly preserved and
contains no traces of tephra making the dating of the structure uncertain. No discernable
floor layer could be distinguished, but a high number of large, uneven stones were
detected. Structure of similar shape and with similar floors can be found in the
eighteenth century animal structures. The accompanying outer wall is frequently also
associated with structures of this kind, used as a fence to keep animals within the
enclosed area. These architectural features as well as the shallow deposition of the ruins
suggest, as it did with the ruins at Geitagerði, of post 1700 date. The absence of any
cultural material, such as ash or charcoal, along with the presence of a stone floor
suggests the structure was intended for animals and that the structure was either used for
a short period of time or was used seasonally.

Coring was also completed in and around the noted linear feature. The feature is
likely a wall, that runs mostly northeast-west for twenty meters (E494130-150/N582215-
230) but the area has been heavily disturbed leaving few clues about the use of the wall
(see cores 6-10 in Table 5.9). The area around the wall is water-logged and covered by
thick deposits of gravel and stone. It is unclear if the wall belonged to a structure or a
boundary wall, but the curvature of the wall seems to follow the topography, perhaps
suggesting a fence or boundary wall.
Data from the field and coring survey suggest that Kollugerði was likely never a farmstead, but was always used for housing animals. Likewise, there is no evidence to suggest that the site was used an earlier than the textual accounts suggest. It is possible that the erosional and water-loging events since the medieval period have erased traces of older structures and/or activities areas, but the evidence that remains today suggest that the site was only used during the Early Historic period (1600-1800 CE).

5.4.8 The Organization of the Hof Territory

The data from the coring survey indicate that during the initial phases of settlement (see Figure 5.18), the Hof Territory was organized around an agrarian-based economy as seen with the establishment of at least one large midland farmstead at the site Hof (site type 1) and one smaller highland farmstead at Reykir\(^{23}\) (site type 3). These data reflect of regional settlement strategy of establishing both large and smaller farmsteads in both highland and midland environments. New data presented here has shown that in addition to these two farmsteads, a number of specialized activity areas were also created as seen with the evidence from the midland sites at Hólar, Natuabú and Kálfsstaðir, which all demonstrate cultural, but not habitational, activity before 1104 CE (see Figure 5.19). Evidence from the subsurface coring survey suggest that nature of activity at Natuabú and Kálfsstaðir were defined by agrarian, livestock rearing pursuits carried out with the building of animal structures and likely using the land for both grazing and for cultivating grass for hay making. Further clues about the nature of these activities can be

\(^{23}\) Reykir, as mentioned at the start of this chapter, was not included in the survey study, but is described as a farmstead in early medieval texts. Future archaeological work is necessary to confirm these descriptions, but is treated here based on our present understanding of the site.
gleamed from the names of these sites, which include the components “bú” and “staðir.” Bú indicates an area of land used for storage, while staðir, which is the plural form of the noun staður, indicates that a site with staðir in its name implies that is it one component of a larger land unit (Sigmundsson 1979; Tetzschner 2006). Viewing the archaeological and textual analyses in concert suggests that sites like Nautabú and Kálfsstaðir were linked to other sites.

All of these data suggest that the two domestic farmsteads in the territory were raising a surplus of livestock, well beyond the needs of their households. In a society dependent on livestock that had to be imported from abroad, commercial livestock production would have been a lucrative industry for local trade networks. Hof, the larger farmstead in the territory, is a good candidate as a kind of central place, or what social network analysis might describe as a large hub connected to smaller nodes within a single landscape system. If trade was an important part of the early Icelandic economy, it is likely that Hof played a role in forming and managing the requisite social networks. Reykir, on the other hand, represents a small highland farmstead that may have had some strategic value because of its location. Reykir is the last unit of arable land before passing into the steep, rocky slopes of the Tröllaskagi Mountain, with navigable routes leading into the next fjord valley, Eyjafjörður. The establishment of Reykir at this potentially crucial junction may suggest that the dynamic social network seen in Hjaltadalur may have had links to sites in other parts of Iceland as well.

By start of the Sturlunga period in 1104 CE, both small and large sites had been established in the highland and midland regions of Hjaltadalur, indicating a hierarchical site organization (see Figure 5.20). As seen from the evidence from the coring survey,
these trends continue with the transformation of the midland Kálfsstaðir site from an activity area into a domestic farmstead. Hólar, likewise first becomes a large farmstead (site type 1), and shortly after the location of Iceland’s northern bishopry. In addition to these new farmsteads, the activity area site at Hvammur was established. The evidence from Hvammur indicates that the site was being used for housing and grazing livestock. The creation of a new grazing site at Hvammur, and the intensification of farming practices seen at Kálfsstaðir and Hólar points to a heightened commercialized livestock economy that was contemporaneous with the first appearance of incipient state-level institutions in the twelfth century (see chapter 6).

After 1300 when Iceland is organized around state institutions, the organization of the Hof territory dramatically changes (see Figure 5.21). According to historical census records, no fewer than nineteen new farmsteads, including Nautabú and Hvammur, are established (see Table 5.10). Of these nineteen new farmsteads, all but two are located in the midlands and sixteen of these sites fall into a site type category of 3 or 4. These data indicate that small midland farmsteads make up the majority of site types in Hjaltadalur after 1300 CE. In addition to small farmsteads, eight gerði sites, such as Geitagerði and Kollugerði, are established for the use of the bishopry at Hólar, as well two sel sites (see Table 5.11). Evidence from the coring survey indicates that while sharing some similar characteristics, the Geitagerði and Kollugerði sites are strikingly different from the Nautabú and Kálfsstaðir sites. Although Nautabú and Kálfsstaðir show little evidence of permanent farmsteads before the twelfth century, these sites are much larger than Geitagerði and Kollugerði, and document a wider range of economic activities. These data suggest that the organization of the economy, while always agrarian-based, is clearly
different in the twelfth century than it is by the fifteenth century (for a discussion of these economic shifts, see chapter 6).

5.5 The Viðvík Territory

The Viðvík territory makes up an area of roughly 30 km² (3,000 ha), that begins at the coast, unfolding into a lowland (0-99 masl), broad open plateau to the east and culminating with a midland (100-160 masl) landscape at the start of the more mountainous Hjaltadalur valley (see Figure 5.1). Running east-west throughout the entire length of the territory is the Kolká, a glacial river that is fed by the Hjaltadalsá River.

The Viðvík territory is an area steeped in cultural significance as one of the first areas colonized in northern Iceland. The settlement farmstead at Viðvík is mentioned not only in the *Landnámabók*, but the families that lived there are described in numerous sagas as holding tremendous wealth and political power. The source of this power and influence was mediated by the flow of goods in and out of Iceland through the trading site at Kolkuós, where extensive archaeological research has provided new insights on the role of trade in the political economy of northern Iceland.

Kolkuós is the site of a natural harbor that was intermittently in use from the time of settlement up through the nineteenth century and was likely the point of entry for many of the first settlers colonizing the northern reaches of Iceland. In the medieval period, Kolkuós was an active market site, with the height of activity occurring between 1100 and 1400, but the discovery of pagan grave at the site, radiocarbon dated to just before 1000 clearly indicates that the site was use much earlier (Traustadóttir et al. 2004).

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24 Kolkuós later became a small farmstead but is today abandoned.
25 Test trenches indicate at least 80cm of cultural material. To date, the oldest layers of the site have only been excavated in a few areas.
The site contains multiple features situated along a beach berm at the opening of the fjord valley where the Kolka River empties into the sea. This rich estuarine environment with several species of birds and fish no doubt was an added attraction to the seasonal merchants that set up camp here.

*Landnámabók* describes ships filled only with livestock coming to Iceland via the harbor at Kolkuós. This reference uncovers the potential market use of the site, as animals had to be imported to Iceland and were no doubt in high demand by settling households. The documentary evidence provides little else about Kolkuós until the fourteenth century when the harbor comes under the exclusive use of the bishopry at Hólar, supplying the church with luxury and ecclesiastical goods from abroad. By the fifteenth century, there is little mention of Kolkuós as a marketplace, but was at the very least used by the bishopry to dock their boats. In the nineteenth century, the harbor at Kolkuós was briefly revived, but has since gone out of use.

Archaeological investigations are our best source of information about the site. Kolkuós today is a high-risk site, as sea levels continue to rise, eroding away what is left of the archaeological remains from one of the main areas of the former harbor and trading place. Archaeological research began in 2002\(^{26}\) and has since focused predominately on the at risk sector of the site, a natural beach berm area roughly 360 m\(^2\), but this area was not the full extent of the site in medieval period. The excavations along the berm has uncovered ten to twelve small booths, all with the same orientation, and bounded by a wall facing the sea running the length of the site. The floor layers inside the booths are

\(^{26}\) Ragnheiður Traustadóttir directs the Kolkuós excavation in conjunction with the Hólar Project. My involvement as a researcher and excavator for the project began in 2007.
well stratified, with multiple layers of sterile soil between cultural materials. These sterile layers are thin, and were likely deposited over brief intervals of time. There presence, however, points to the conclusions that these booths, and therefore likely the site itself, was seasonally used. The booths, however, are not identical, with cultural material indicating that different types of activities were carried out at the site. For example, the floors of booths vary, with some made up of a stone paving, others with just soil. Likewise, the finds within the floor layers vary, from dense concentrations of slag to whale bones to ceramics. These data suggest that a number of different activities were performed at the site, including production, exchange, as well as consumption.

Finds from Kolkuós consist of a combination of local and non-local commodities, but the majority of the finds at Kolkuós are items from abroad and include several categories of luxury goods. These categories include, but are not limited to: a variety of imported fruits and grains; ceramics from Scandinavia (11\textsuperscript{th} century), Germany (12\textsuperscript{th} century), and England (12-13\textsuperscript{th} century); silver coins from Germany (1080 CE) and England (1180 CE); several varieties of high-valued hunting and lap dogs; and two ivory combs from Norway (12-14\textsuperscript{th} century).

Taken together, these data clearly indicate that trade was an active pursuit in medieval Iceland. The data from Kolkuós demonstrates foreign goods entering the country, but what was not known, however, is whether goods were acquired from Iceland for commercial activities at both the local and global scale. The goal of the subsurface coring survey in the surrounding territory of Viðvík was to see if these pursuits were reflected in the overall landscape organization, ascertaining if trade played a minor role in day to day household activities or if it was an influential factor in the shaping of the
structure of the society. I conducted a subsurface coring survey in both the lowland and midland areas of the territory at the smaller sites of Hólakot, Fornistekkur, Langhús, and Miklihóll as well as at the potentially larger farmstead sites at Bakki and Hofstaðir to complement the existing archaeological data from Kolkuós and to examine when these sites were established and how they were economically organized. New test trench excavations were also opened at Hólakot to clarify the dating of the earliest phase and type of occupation at the site. These new data provide a complete picture of landscape organization in the valley, with both large and small sites, located in both lowland and midland environments.

5.5.1 Hólakot

The small site of Hólakot is located at the eastern end of the Viðvík territory, within two kilometers of the site Viðvík and within four kilometers of the site Nautabú. At 110 masl, Hólakot is at the lower end of a midland site, but represents well a midland ecology with its rolling hills and a mixed vegetation of heath and scrub birch. The area today is used for grazing by neighboring farms, but since the Hólakot farmstead was abandoned by the early twentieth century, no drainage ditches or heavy plowing have been done at the site, making the potential preservation of archaeological features high. The south end of the site exhibits minor surface damage from where heavy machinery ran over the site during the modern construction of a paved road (route 767).

No fewer than twenty-two ruins dot the surface of Hólakot (see Figure 5.22), all of which have been recorded in a surface field survey (B. Zoëga 2005), but before my 2008 coring survey no previous subsurface investigations had been done to date any of
these features. The history of the site, then, had been mostly pieced together using textual accounts. The first mention of the site is in the Hólar land inventory\textsuperscript{27} of 1388, which has Hólakot listed as one of the properties owned by the bishopry. The name “Hólakot” can be interpreted as “a tenant (kot) farm to Hólar (Hóla),” which has lead most researchers to assume that the site cannot predate the bishopry (1106 CE). The land was assessed at less than one hundredth, making Hólakot a very small, site type 4 farmstead. According to the Járðabók census, Hólakot was an active farmstead from 1388 until 1702, when it was abandoned. In the early twentieth century, Hólakot was briefly a húsmannsbýli, a small land grant sponsored through community aid, given to a family who could not support itself. Lands grants of this kind were usually only large enough to support a very small household, and two or three sheep or one cow.

The consensus prior to my coring survey was that Hólakot was established by the bishopry sometime between 1106 and 1388 when it was first recorded a tenant farm, and was abandoned by eighteenth century with a modest revival in the early twentieth century. Surface ruins were seen as a reflection of this history, with features 1-6 (see Figure 5.22) unmistakably from the húsmannsbýli phase of the site. Covering an area of 2,000 m\(^2\) (0.2 ha), the goal of the subsurface coring survey was to date the remaining surface features and to map any other traces of early landscape use at the site. Coring was done in two phases: a general twenty-five meter spaced survey to gather geomorphological information for clues on the environmental history of the site, and a series of target coring investigations, with one to five meter spacing, at all of the surface

\textsuperscript{27} Hólakot is listed as one of the properties owned by the Hólar Bishopry in the Hólastóll 1388, 1449, and 1550 land registries.
ruins to determine if any part of the site predates the twelfth century and if so, to
document the range of activities that had been done there.

Geomorphological data collected through the general coring survey documented
an environmental landscape marked by a series of low relief hills comprised of dry but
organic rich soils surrounded by a matrix of semi-saturated wetlands to deep water filled
bogs. Buried soil horizons below an in-situ 1300 tephra layer indicate that these
conditions would have been similar in the medieval period, but it is clear that Hólakot as
a whole is far wetter today than it has been in the past. The change in soil porosity is
linked to changes in the underlying water table that no doubt have been altered by the
series of deep drainage ditches cut in neighboring fields on the Viðvík farmstead. These
changes to the water table are also likely the result of widespread erosion in the nearby
Ás mountain slopes and the subsequent creation of blanket bogs. The coring profiles
suggest these processes occurred in multiple distinct geologic episodes, with the most
recent event occurring within the last two hundred years as documented in the thin, water
saturated topsoil horizon. Archaeologically this change is aptly seen illustrated by the
sinking of parts of the enclosure wall that runs on the north side of the farm. Hólakot was
an active farmstead until 1702, and since it is highly unlikely that anyone would chose to
build an enclosure wall through a bog, we can safely deduce that the wall was built
sometime before the eighteenth century. It is possible that the farm was abandoned
because of the encroaching wetlands, but the coring profiles also demonstrate a long
history of water logging.

Target coring was done at each feature as well as the areas surrounding the
feature. Of the twenty-two documented features at Hólakot, those on the north end of the
farm, with rectangular plans and curved corners, are the most suggestive of an older, medieval style of architecture (Features XIV-XXII in Figure 5.22). At this section of the site, cores were taken in on a tight one-meter grid (cores 1-11 shown in Figure 5.22). The coring survey discovered that some of these features were actually natural not cultural. The most surprising was feature 18, a large mound that was believed to be the midden at the farmstead turned out to be glacial moraine. The subsurface coring survey also discovered that some features were younger than had been previously understood. Feature 16, a round walled structure was once believed to be part of the oldest phase of the farmstead were determined to be a modern animal pen (see cores 36-40 in Table 5.12).

Still others, namely Features 14, 15, 20, 21, and 22, which have suffered the most damage from the raising water table, remain inconclusive (see cores 21-29 in Table 5.12) but the profiles recorded from the coring survey all indicate that these features are cultural and represent the oldest occupational phases at the site. Starting at the northernmost end of the site, feature 21 is a set of two adjoined rectangular walled “rooms,” running parallel to one other along a east-west axis. Features 20 and 22 are likewise rectangular and are adjoined to feature 20 perpendicularly on the west and east end respectively (see Features XX-XXII in Figure 5.22). The conjoined rectangular outline of Features 20, 21, and 22 present the possibility that these three features were part of one architectural complex. There are five other sites in Iceland that exhibit similar structural plan, all of which have been interpreted as barns with storage rooms (Keller personal communication, July 2009). Cores were taken inside all three features on a one meter grid. The core profiles consistently documented shallow, rocky horizons, devoid
of the prevalent prehistoric H3 layer found in nearly all other soil profiles recorded at the site. Interestingly, the H1 tephra layer is preserved, suggesting that the absence of H3 is not the result of erosion. Below the H1 layer are stratigraphic bands of organic material in between layers of sandy-silt typical of those deposited through water suspension.

My first interpretation of these data was that these areas represented places where turf had been cut in multiple episodes, allowing time in between cutting for the deposition of sand and the regeneration of turf. I had attributed the pronounced clarity of the rectangular shapes from the process of water saturation that is currently underway at the site. To test this hypothesis, test trench 1 (1 x 2 meters) was placed perpendicularly through the east end feature 22 (northwest corner: E487576/N584580), capturing the raised section of the feature as well as a sample of the areas outside and inside the feature. Excavations from the raised area discovered below an in-situ H1 horizon the outline of turf blocks fitted together. The patterned arrangement of the blocks of turf suggests that this feature is a wall rather than a cut made from turf extraction. The turf itself had no tephra preserved in it, making the dating of these walls inconclusive, but before 1104 CE. Excavations from outside the feature discovered in-situ aeolian silt deposits with no cultural material present. In contrast, the excavation unit inside the feature uncovered a surface horizon made entirely of stones. Since the outside area had no stones present, those inside the feature likely make-up a floor. Rocky floors of this kind are well documented in medieval and modern animal structures. No other cultural material of any kind was found in features 20-22. Further excavations are necessary to test both the coring and test excavation data, but I can conclude that these features represent human activity that dates to before 1104.
From the walkover field survey, feature 14 garnered the most potential for an early structure. Its oval-shaped, single open room architectural layout resembles those of known medieval longhouses (Sveinbjarnardóttir 1992: 23). While it is not typical for structures dating to the medieval period to be clearly visible on the surface, feature 14 unquestionably predates the twelfth century. Coring profiles from feature 14 indicate a thin floor layer mixed with dense charcoal below an in-situ H1 (1104 CE) tephra layer (see core 17 in Figure 5.23 and in Table 5.12). Further excavation\(^{28}\) is necessary to determine if the structure is a household longhouse, but it is clear from the coring that the structure was used not intended to house animals. The high frequency of charcoal and lack of soil accumulation layers in between cultural material suggests a fairly long permanent occupation rather than seasonal use. There is no cultural material above the H1 tephra layer suggesting the structure ceased being used after 1104 CE.

Feature 19, a square sunken structure is located nearby and is contemporaneous with feature 14. Like feature 14, feature 19 contains dense concentrations of charcoal (see cores 13-14 in Table 5.12 and Figures 5.24 and 5.25) below the H1 tephra layer and floor layer containing numerous stones. In addition, feature 19 contains charcoal above the H1 layer as well as mixed with the in-situ prehistoric H3 layer. One core (see core 14 in Table 5.12 and Figure 5.25) was taken through the wall of the structure giving some insight into the construction of the building. The wall is made up most of large blocks of turf, with midden debris, such as ash and small chips of bone, and sand filling in the void spaces. The turf itself sits on top of a layer of stones. This construction is fairly common

\(^{28}\) Conservative coring was done in feature 14 in a conscious attempt to preserve the structure for future excavation.
in Skagafjörður (Sigurðardóttir 2008); the techniques seen at Hólakot are found in over a hundred sites in the area and span at least thousand years. The turf itself may not give us specific clues of its age, but the forty-two centimeters of topsoil and aeolian silt indicate the turf has been buried for quite some time. This indicates that the structure itself may have gone out of use around the same time as that of feature 14 and that the presence of charcoal mixed in with aeolian silt is a secondary deposition or as midden debris (see Figure 5.25). The area between the two features is consistent with the findings from each, characterized by dense concentrations of pure charcoal (see cores 1-12 and 18 in Table 5.12 and Figures 5.26 and 5.27). The charcoal appears to contain only burnt wood; there are no burnt bones or slag associated with the charcoal making it likely that the intended activity was for the purpose was for either heating the structure or for making charcoal rather than for iron-smelting or cooking. It is, however, possible that this iron-working was done near Hólakot.

These data suggest that feature 19 is likely a pithouse, perhaps predating, but certainly contemporaneous with feature 14. The fact that charcoal is mixed with a prehistoric tephra layer suggests that the floor of the structure was dug down, using the tephra as a surface. This characteristic is common, as tephra makes for a dry, easy to clean surface. Pithouses have been found at a number of sites, including the nearby site of Glaumbær, and have been interpreted as temporary structures used while larger longhouses are being constructed. Pithouses, because they are dug into the earth, and are often small in size (typically 2-3 x 3-5 meters) require less turf overall. When one considers that it can take up to two weeks for turf blocks to dry out before they can be used, the need for temporary structures is crucial. However, the data here suggest that the
structure continued to be used alongside that of feature 14 and did not, as the “drying
turf” theory would suggest, ceased to be used once the larger structure was completed. It
is possible that the function of the pithouse transformed over time, from temporary
structure to activity area, but Ólfasson (2006) argues that while pithouses are always
early, they were intended to be temporary structures.29 Ólfasson has suggested that
pithouses, which could be easily heated, were used as areas for spinning flax.30 Working
flax into thread and fabric requires warm conditions to keep the flax strands moist and
flexible.31 Once wool becomes the main cloth used and traded in Iceland and standing
looms become more available, the necessity of pithouses diminished since wool does not
require a warm environment it is woven into cloth. Many of these structures are reused
as storage rooms or even middens. This model applies well to the data at Hólakot,
perhaps explaining the concentrations of charcoal and multiple stones on the floor
surface. It may also explain why the structure appears to cease activity after 1104, since
by 1050 homespun made of wool had become the main cloth of the country.

Associated with features 14 and 19 is feature 17, a round structure that is barely
visible on the surface (see cores 31-35 in Table 5.12 and Figure 5.22). Coring profiles
from feature 17 document a scant but tantalizing evidence of charcoal below what

29 At the site of Hjálmtstaðir, radiocarbon dates suggest that the multiple pithouses on the farmstead were
contemporaneous with the site’s longhouse.
30 The sagas contain further support for this argument. In the sagas, pithouses were referred to as dyngjur,
which is derived from the word for dung, perhaps because the structures with only a roof popping out of the
ground resembles a dung pile. In Gísla saga Súrssonar there is a scene where Gissli stops to rest and lies up
against a dyngjur and can hear the voices of women inside, and continues to eavesdrop on their
conversation while they continue to work.
31 Excavations of the pithouses consistently uncovered one or two ovens, numerous “pin marks” in the
floor, loom weights, spindle whorls, and lots of small stones. The holes could be from a weaving stick that
weavers placed in the ground as they turned the stick and spun the flax. The stones, Ólfasson (2006) posits,
were heated on the oven and used to heat the structure much in the same way saunas are heated today.
appeared to be an in-situ V~1000 tephra layer (see core 32 in Table 5.12 and Figure 5.28). The preservation of the area, however, is poor and has been truncated by later, eighteenth and twentieth constructions (see Feature VI in Figure 5.22). The uppermost layers of the core profiles from the feature are consistent with the faint but visible surface traces of animal pen, with large amounts of dung as well as worm eaten soils consistent with highly fertilized soils. Below these deposits, however, are layers of charcoal and peatash below an in-situ H1 layer, which would date the cultural material to before 1104 (see Figures 5.28 and 5.29).

Since the area is truncated, it was difficult to assess through coring profiles if there was an older occupational phase predating the modern animal structure. Secondly, the V~1000 and H1 tephra horizons were faint, making it difficult to date the cultural material to before 1104 or 1000 CE or if the cultural material was a secondary deposition, truncated by the later animal strictures in the area. To examine if an older feature was present, test trench 2 (1 x 1 meter) was placed perpendicular to the north end of feature 17 (northwest corner: E487540/N 584535). Throughout trench 2, charcoal was present below an in-situ V~1000 tephra layer. One small block of turf (8 centimeters in length) was also uncovered in the north end of the excavation unit below an in-situ H1 tephra layer. However, the area overall was poorly preserved, leaving only faint traces of structural material behind. The evidence, however faint, are intriguing and point to early Settlement period occupational phase of the site, predating the textual record by at least two hundred years.

The defining characteristic of features 14 and 19, as well as the area surrounding them, is a high frequency of charcoal. If Hólakot was an early farmstead, it is likely that
the charcoal was used as part of everyday household routines, from cooking to spinning flax. Further excavations of feature 14 are needed to accurately address if this structure was used as a domestic longhouse. If this feature was a domestic structure it was fairly small in size, which could indicate that it was used in relation to some sort of specialized economic activity area, connected to a larger farmstead. While charcoal often indicates iron-working, there is no other evidence, such as peatash or slag, to support this interpretation; but this does not preclude the possibility of Hólakot representing earlier iron-working techniques. It might be that charcoal was being produced for iron-working in a separate location. Likewise features 20-22 seem to indicate the housing of potentially a large number of animals. If Hólakot was home to a small or seasonal household, it is unlikely that such a household could maintain large numbers of animals without some kind of assistance.

The new archaeological data from Hólakot indicate that the site was used during the Settlement period, well before the twelfth century establishment of the Hólar bishopry. The name Hólakot could be a later name for the site, or it could also be reference to the multiple low hills (hólar) located on the small farm (kot). The pre-state activities seen at Hólakot include the possibility of craft production (weaving flax) as well as storing large numbers of animals at a small site with little evidence of full-time domestic occupation. For example, there is no midden present at the site, only dense clusters of peatash and charcoal. These archaeological data seem to point to Hólakot’s association, and perhaps even dependence on, a larger presumably neighboring farm, providing us with some clues to how the landscape was organized in the pre-state period.
5.5.2 Fornistekkur

Fornistekkur is located northwest of Hólakot and due west of Neðri-Ás close to the Hjaltadalsá River. At 83 masl, Fornistekkur is a lowland site posited within the broad geographic plain that extends out towards the coast. Like other lowland sites, the vegetation coverage at the site is consistent with a wetland ecology made-up of sedges, patches of berry plants, and large amounts of naturally occurring peat within shallow, gravel bog soils. Today, the land is used for grazing animals by neighboring farmsteads.

The site at Fornistekkur does not appear in the documentary record until the late eighteenth century when it was recorded that a very small tenant (hjáleiga) farmstead, assessed at less than one hundredth (site type 4) was in operation there. Census records indicate that the family who lived at the Sleitustaðir farmstead, located in the neighboring valley of Kolbeinsdalur, owned the land at Fornistekkur. The name of the site, “old (forn) sheep milking house (stekkur)” suggests the practice of raising sheep or other small domestic livestock at the site. While it is assumed that the land must have been used before the eighteenth century in some fashion, there were no indications of any early occupation in the texts and no previous archaeological research had been done at the site prior to my 2008 coring survey. The goal of my survey was to determine if the land was being used prior to the eighteenth century, and if so, what types of activities were being carried out there. Research at Fornistekkur began with a general field survey, followed by subsurface coring investigations, covering the entire extent of the site, with an area measuring 3,945 m² (0.4 ha).

The field survey noted the surface ruins of a modern, but now in disuse, animal structure (stekkur), that has a north-south orientation (E486565/N586760), as well as the
remains of an enclosure or boundary wall with a east-west orientation (E486585/N586815), located on top of a mound feature. Below the mound feature, the surface is wet, suggestive of water saturated, organic rich soils. From the field survey, it was unclear if the mound was naturally or culturally formed, or if any other phases of use were present at the site. The coring survey was therefore organized by two separate strategies: a general survey on a twenty-five meter spaced grid aimed to collect data on the environmental conditions at the site and to prospect for any other locations of cultural activity, and target coring on a two to five meter spaced grid at areas that documented cultural material, including the area around the visible surface ruins.

Data from the general coring survey provided information on the evolution of environmental conditions at the site. Coring below the mound indicated that the area has been wet since well before the time of settlement, but there is also evidence of erosion at the site that are the result of a more recent activity, such as the construction of drainage ditches in neighboring fields that has altered the water table levels. Nonetheless, the medieval environment of Fornistekkur would have been mostly wet, aside from the oasis found on the large mound feature (E486600/N586760). The mound feature is natural, not cultural, and is made-up of drier silty but still organic rich soils. The high organic content indicates that at some point in its history, the mound area was submerged under water typical of a wetland environment. Drier soil horizons are found below above an in-situ H1 (1104 CE) tephra layer indicating that by 1104 CE, the mound area was substantially drier than its surrounding area. This may explain why no culture material was found away from the mound.
Target coring was done at the two primary visible features of the site: the stekkur and the enclosure or boundary wall. The stekkur (E486560/N586740), measuring 15 x 8 meters, is built from stone and turf, with a rectangular structural plan subdivided into two parts with one large area for housing the animals and a separated, walled smaller area in the back used for storing hay. This architectural design was commonly used in the seventeenth through the early twentieth centuries, and is frequently found among the ruins of old turf structures throughout Skagafjörður today. It is likely that the turf used in its construction was taken from the surrounding wetland, since the turf is similar in both locations. However, what remains of the ruin itself is mostly stone, but what little turf there is contains three distinct tephra horizons: Landnám tephra in one profile, and more widely represented layers of the 1104 and 1300 tephra layers. The shape of the structure along with the presence of 1300 tephra suggests the structure was likely built in the seventeenth or eighteenth century, and perhaps continued to be used with the aid of repairs throughout the nineteenth and early twentieth century. Inside the structure some charcoal was discovered, but the dominant feature found was a stone floor and traces of both hay and dung. The charcoal may be related to a later use of the site, when Fornistekkur was a small farmstead in the nineteenth century.

The coring survey uncovered an older structure not visible on the surface located within five meters north of the visible ruins (see cores 28-31 in Table 5.13). The uppermost horizons of the profile appear to be disturbed, and may in fact be the result of the construction of the still partially standing stekkur at the site, indicating that these two structures were not used contemporaneously. Below these disturbed horizons are in-situ layers of turf containing multiple H1 (1104) tephra layers. An in-situ 1300 tephra layer,
dating the structure to sometime after 1104 but before 1300, caps the turf itself (see core 31 in Figure 5.30). In addition to turf, a small amount of charcoal was found in association with the structure along with dung and hay. The exact nature of the structure remains to be determined through broader excavations, but the dominant presence of hay and dung make it likely that this structure was intended to house animals. However, traditional wisdom suggests that the presence of an enclosure wall indicates the boundary of a household occupation. The logic behind this assertion is that there is no need to invest materials, time, and labor into constructing an enclosure wall around anything but a household. However, this logic does not seem to hold up against archaeological scrutiny. Aside from a small amount of charcoal, there is no further evidence of household activity. In fact, the target coring survey determined that aside from these two non-contemporaneous animal structures, no other cultural material can be found within the enclosure wall.

Target coring was also done along the partially visible enclosure wall, built along the circumference of the mound. The enclosure walls off a space of about 200 m² by 100 m² in area. The primary building material is stone, mixed with some turf and debris, but there were no associated tephras with the feature so the exact date of the wall remains somewhat elusive. It is likely, however, that parts of this wall date to the construction of the older animal structure. Clues for this date can be traced back to the partially standing strekkur, which is aligned both within the enclosure wall as well as the older structure. It can be interpreted that the positioning of the recent stekkur was done with an existing enclosure wall in mind.
The potential use of the wall is all the more telling. The presence of an enclosure wall is often interpreted that a site was domestic farmstead, but this logic cannot be applied to Fornistekkur. Regardless of when it was erected, the wall unquestionably was used in association not with a household, but with an animal structure, changing the way we view the presence or absence of enclosure walls at a site. This discovery begs the question of what motivations could have been behind fronting the costs of building such a large enclosure wall around an animal structure. One possible motivation is that if the structure was used to house nursing animals, the wall could have been built to keep these fledging out of the wetter and potentially dangerous areas of the site. A similar type of wall was found at Kollugerði, but there the walled area was only 15 m² by 20 m² making the Fornistekkur wall unusually large. A second, but not contradictory explanation for constructing a wall of this size is to advertise ownership over the area of land it encloses.

Data from the subsurface coring survey reveal two surprising results: first, the land at the lowland site Fornistekkur was in use by the Early Medieval period (1000 CE), well before it is mentioned in the documentary record; and secondly, the presence of an enclosure wall at a non-domestic site provides us with new insights into how the pre-state landscape was organized. In a property system governed heavily by usufruct, the necessity to claim rights over lands the presence of a wall serves the same purpose as the presence of a domestic structure: this land is mine. It is interesting that a lowland, wetland, area would have been so coveted as early as 1000 CE and that the area seems to have been used for specialized agrarian activities only.
5.5.3 Langhús

Langhús (76 masl) is located in a broad, open plateau at the mouth of the Hjaltadalur sector of the valley to the south, and within a few kilometers east of the coastal harbor at Kolkuós. Like Fornistekkur, the landscape is consistent with a lowland ecology, comprised of a vegetation of heath and scrub birch and bog soils visible on the surface. While much of the area is wet there are multiple dry oases on top of at least nine mound features at the site. Today Langhús has been renamed Ásgarður, and is an active horse farm. At the time of the 2008 survey, construction of a new house was coming to an end. The new house was deliberately placed away from the ruins of an older farm mound, but it is possible that the construction did disturb other subsurface archaeological features. However, site preservation overall is excellent as very little plowing and only minimal drainage ditch digging have been done at the site.

Langhús is not mentioned in the documentary record until the eighteenth century when it appears in census accounts as a small to average size farmstead (site type 3) assessed at twenty hundredths. Langhús was an active farm until a brief hiatus in the mid-twentieth century, documented in the visible ruins of turf structures that date from the eighteenth through the early twentieth century. A history of the Historic period use of the farm is still maintained the social memory of living individuals in the area who remember the family and the farmstead from when they were children. The name of the site, “Langhús” or “longhouse,” has long tantalized and puzzled local cultural historians, however, as the construction of longhouses was a practice of the settlers not of eighteenth century farmers. From its name, it has been assumed that the site must have been in use earlier than the eighteenth century, but prior to my 2008 coring survey, no subsurface
archaeological research had been conducted at the site. The goals of my survey were to
gather information on the evolution of environmental conditions at the site; to date the
visible surface features at the site; and to locate any material traces of an older phase of
occupation and the potential range of economic activities carried out at Langhús. My
research began a complete field survey of the site, followed by a program of general and
targeted coring investigations that covered an area of 16,000 m² (1.6 ha).

The field survey identified nine mound features, four of which had visible turf
ruins on the surface. The current owner of the land informed me that these ruins were
from the early twentieth century farmstead. The turf feature on mound 1
(E486073/N587741) was a stable; on mound 4 (E438055/N587643) was a barn; on
mound 5 (E486076/N587597) was a storage room that had burnt down; and mound 9
(E485993/N587617) was the last household farm mound before the current owners
bought the land. There were no visible ruins on mounds 2, 3, 6, 7, and 8. The field
survey identified no other visible surface features away from the mounds.

A general twenty-five meter spaced coring program was conducted with the goals
of identified any subsurface features and to reconstruct past and present environmental
conditions at the site. Geomorphological data collected through the general survey
revealed that environmental setting at the Langhús site conforms to an average lowland
ecology, with a mix of both drier silty soils alongside areas with dense, clayey organic
rich bog soils. Buried paleosols below the 1300 and H1 (1104 CE) tephra layers indicate
that these conditions were present during the medieval period as well the modern era.
The general coring survey also determined that all nine mound features are natural,
glacial moraines made-up of silts and glacial gravel. Lastly, the general coring survey
identified one potential area of cultural activity, not visible on the surface, located in the lower relief area between mounds 5-7.

Target coring on a two meter spaced grid was conducted on all nine mounds to date the visible ruins and to investigate if any older ruins were present. Target coring on a one meter spaced grid was also done within the area between mound features identified in general coring survey. Target coring in mounds 1, 4, 5, and 9 determined that the visible ruins date to no earlier than the Historic period. The dating of these structures was calculated through both tephrachronology and soil accumulation rates. For example, the remains of a horse barn (E486080/N587740) in mound 4 was made from turf containing multiple 1300 tephra layers, making the date of turf cutting after 1300. A stone floor with dense concentrations of both dung and hay (see cores 2 and 3 in Table 5.14) was found in association with the turf walls, buried directly under a topsoil horizon. The average rate of topsoil deposition is 8cm or 0.033 cm/yr and the average depth of cultural deposition for these areas is between 10 and 15cm, dating the majority of these ruins to the seventeenth century at the earliest.

Target coring on mounds 2 ((E486078/N587709) and 3 (E486052/N587686) uncovered disturbed soil horizons with faint traces of charcoal. Deep tire tracks were found in some areas of these mounds, indicating that the disturbance was likely the result of heavy machinery running over the site during the construction of the modern household. Coring profiles taken from mounds 6 ((E486006/N587587), 7 (E486030/N587536), and 8 (E486001/N587540) found glacial soils with no traces of cultural material of any kind.

The general coring survey revealed a previously unknown activity area at the site (E486055/N587600), roughly seven meters long by two meters in width, characterized by
a dense concentration of peatash, charcoal, and burnt turf all sitting on top a small platform of stones (see cores 17-28 in Table 5.14 and core 18 in Figure 5.31). Coring profiles were taken on a tight one meter grid to determine the overall extent of the material as well as the function of the activities present there. It is unclear the exact nature of this activity, but comparisons made with other sites make iron-working a good possibility. For example, the site of Ormsstaðir in northeast Iceland has a similar feature that measures roughly seven and half meters by two meters, and likewise consists of a burnt turf, peatash and charcoal, in association with numerous stones (Friðriksson and Hermanns-Auðardóttir 1992: 8, 14). One crucial find at Ormsstaðir was the presence of a dark humic layer associated with dense charcoal and ash. The humic layer has been interpreted as floor material used in the construction of a furnace (Smith 2005:199). The area at Langhús likewise is made-up of these characteristics. At the base of core 22 (Figure 5.32) is a dark humic floor layer packed around burnt peat and charcoal and is in association with turf blocks discovered about a meter away seen in cores 23 and 24 (Figures 5.32 and 5.33), making a furnace as part of an iron-working area a likely interpretation for this feature. The turf itself gives us some clues to the date of the iron-working area. Almost all of the turf uncovered contained numerous H1 (1104) tephra layers, giving us a post-1104 date. However, unlike other cultural material discovered at the site, the iron-working deposits were not close to the surface. The horse barn materials seen in cores 2 and 3, for example, are located about fifteen centimeters below ground surface. For the iron-working area, the cultural layers average about twenty-three centimeters below ground surface. With an estimated 0.033 cm/yr of soil deposition, it is likely that these materials date to before 1400 with a high probability of dating between
The timing of these activities, as discussed below, is crucial to our overall understanding of the political and socioeconomic development of Hjalatadalur.

The geological make-up of Langhúsi is ideal for iron-working. The upside to a wet area is the availability of bog iron ore. Likewise, the openness of the area may have provided strong winds to aid in iron production. The discovery of a potential medieval iron-producing workshop in Iceland is rare. While iron-working debris, such as peatash, is not uncommon, only a handful of workshop sites have been uncovered and of those few sites no intact furnace has been found (Smith 2005: 187-189). There is no clear understanding of the iron smelting techniques in medieval Iceland or even to what scale was iron-working carried out. The number of potential sites may in fact be low since by 1550, iron production ceased in Iceland and was replaced by iron traded through Hansa merchants (Friðriksson and Hermanns-Audardóttir 1992:9-10). The customary view of historians is that iron-working was rarely done in Iceland even before the sixteenth century owing to the poor quality of the local bog ore and the lack of available wood necessary for making charcoal. The saga writers themselves, who occasionally made reference to the inferior quality of iron Iceland, sharpen this view. For example, a battle mentioned in Eyrbyggja Saga is interrupted when a one of the men has to stop to bend his sword back in place using his foot.³³ Contrary to these opinions, however, conditions for iron-making were extremely favorable on the island (Friðriksson and Hermanns-Audardóttir 1992). Iron sources are plentiful, since the bedrock is almost entirely basalt, a rock high in hematite content that can be extracted in the form of bog iron (Espelund

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³² A sample was taken for radiocarbon dating but has not yet been analyzed.
³³ “So then befell a great battle, and Steinthor was at the head of his own folk, and smote on either hand of him; but the fair-wrought sword bit not when as it smote armour, and oft he must straighten it under his foot” (Eyrbyggja saga: chapter 44).
The cost of iron-making therefore, was not from mining the ore, but from producing large quantities of fuel necessary to reach the high temperatures required in the smelting process (Vésteinsson and Simpson 2004). Vésteinsson and Simpson have argued that instead of using wood charcoal for fuel, medieval Icelanders routinely used peat and turf as sources of fuel for industrial ironworking (2004: 181-184), an interpretation collaborated by the data from Hofstaðir in northeast Iceland, and now from Langhús. At the elite farmstead of Hofstaðir, Vésteinsson and Simpson discovered that massive quantities of peat ash had been burned at high temperatures (above 800 °C) suggesting that peat was used in industrial iron smelting. In contrast, smaller quantities of wood ash had been burned at low temperatures (below 400°C) suggesting that wood was used a domestic fuel for cooking and heating the longhouse. In fact, a stratigraphic profile from the site reveals the earliest levels of the site, dating to Landnám, show a preference for peat over wood and that it is not until the eighteenth century that wood becomes the preferred source of fuel. This discovery contradicts the assumptions of many scholars who believed that wood had always been the preferred fuel, and I would suggest opens the door for investigations of intensified iron production. Peat, unlike wood, was not a scare resource; however, it was a resource not found locally throughout the island, suggesting that it could have been controlled. This may explain why Langhús was occupied, but does not explain why the land remained unused until after 1104.

The answer to this question can be explained by the location of the workshop. Throughout the settlement period the sagas make reference to itinerant metal workers who could be employed to work at a household’s open-air smithy (smidja) for short

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34 See Dobres (2000) on the role changes in technology play in society.
periods of time during the summer months. By the eleventh century, however, open-air smelting areas are replaced by permanent, closed, indoor smithies (*raudasmidjas*), allowing for metal-working to be carried out in the winter as well as the summer months (Friðriksson and Hermanns-Audardóttir 1992). This shift in setting may suggest an increased need to control and manage iron-making, and dovetails well with the changes we see in property rights, farmstead organization, and the increase of competition and violence in the Sturlunga period.

The subsurface survey at Langhús found no evidence that Langhús was a farmstead until the Early Historic period, but also revealed previously unknown cultural activity at the site during the Sturlunga period. Unlike activity area sites in the Hof territory that focused on agrarian production, the evidence from Langhús demonstrate that the land was a site of specialized craft production (iron-working), suggesting different economic strategies throughout the Hjaltadalur-Viðvikursveit valley.

### 5.5.4 Miklihóll

Miklihóll (105 masl) is located at the entrance to the protected valley system of Hjaltadalur, about 4.5 kilometers due south of the Langhús site. The physical landscape is dominated by two natural plateaus (117 masl), both with a east-west orientation and each roughly 150 meters in length and fifty meters in width. These features may explain the name Miklihóll (“big hill”), and as with other sites at this elevation, the midland ecology is marked by higher relief hills, like those seen at this site, within a low-relief wetland landscape. A small stream with red colored water from its high concentration of bog iron ore and peat marks the eastern boundary of the site. To the west, the site faces a
modern paved highway (route 76). Miklihóll was an active farm 1960s, documented by the still standing ruins of turf structures and cement foundations. Likewise, drainage ditches have been dug at the site, but plowing activities were minimal. Today the lands at the Miklihóll site are used as grazing fields for the equestrian department at Hólar University.

Miklihóll first appears in the documentary record in the Hólastóll 1388 land registry, listed as one of the properties of the bishopry. The land at Miklihóll was assessed at forty hundredths, making it a fairly large (site type 2) farmstead until the site was abandoned in the 1960s. It has been assumed that the land was not actively used before the fourteenth century, but no previous archaeological research had been done at Miklihóll prior to my 2008 survey to confirm or reject this opinion. The goals of the subsurface coring survey were to reconstruction both modern and medieval environmental conditions, to date all visible features, and to identify any previously unknown features at the site in order to reconstruction the history of land use at Miklihóll.

The field survey identified the farm mound from the 1960s on the southern plateau (E485600/N585625) of the site, with modern cultural material, such as a ceramic bathtub and sink, littering the surface. Dense mounds of household garbage and the remains of domestic structures cover the entire area, ruling out the possibility of further subsurface coring. The northern plateau (E485700/585650) in contrast, contained the visible remains of only three small structural ruins, all made of turf and stone, and all likely to be animal structures associated with the 1960s farmstead. The surrounding

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35 Miklihóll is likewise mentioned as a one of the Hólar Bishopry properties in the later Hólastóll 1449 and 1550 land registries.
lower relief areas of the site have no visible archaeological features aside from a modern
drainage ditch. Even with this deep ditch, the lands in the lower relief areas are heavily
water-logged, with extensive sedge vegetation. From these findings, the coring survey
was organized into two strategies: a general twenty-five meter spaced survey covering
16,500 m² (1.7 ha) to gather environmental information and to identify any possible
subterranean archaeological features; and a program of target coring to date the
occupational use of the three turf structures on the northern plateau and to investigate any
additional features identified during the general coring survey.

The general coring survey identified a predominately wetland environment in the
lower relief areas of the site, comprised of bog soils with high concentrations of iron ore
and peat. Clayey textured soils mixed with black sand typify the geomorphology of the
area, with slow soil accumulation and erosion rates. The 1300, H1, and H3/H4 tephra
horizons are well preserved across the site, allowing for the relative dating of these
environmental conditions. As wet as the area is today, buried paleosols indicate that the
entire lower relief stretches of the site would have been partially submerged,
characteristic of a bog environment, throughout the medieval period. In contrast, dry silts
and large stones dominate the geomorphology of the plateaus. As with other hill features
throughout the valley, the Miklihóll hills are likewise the product of glaciation. These
dry conditions seen today would have also been present in the medieval period. Overall,
the Miklihóll environment, like so many other sites in the valley, is a land of contrasts
with dry hills transecting extensive bog lands.

Archaeologically, in addition to the three known ruin structures, the general
coring survey on the northern plateau identified two older features not visible on the
surface (see Table 5.15). Target coring on a five to ten meter spaced grid was undertaken at each of these features. As suspected, the surface ruins are modern animal structures that sit on top of an in-situ 1766 tephra layer, dating these structures to some time after the eighteenth century. The architectural plan of these features collaborates the relative dating, with distinctive eighteenth-twentieth century styles of construction.

On the east side of the northern mound (E485710/N585510) feature 1, an area with preserved turf blocks below an in-situ H1 tephra layer, was discovered during the general coring survey (see cores 4 and 5 in Figures 5.34 and 5.35 and in Table 5.15). Target coring on a five meter spaced grid determined that the turf contained the prehistoric H3 layer, a common characteristic of the turf used in the construction of early medieval structures. Associated with the turf was a small amount of charcoal along with a dense concentration of dark organic material, likely decomposed hay, and dung. No other cultural material was uncovered, indicating the structure was not a household. The overall preservation of the area is poor, however, prohibiting any further research on the shape and function of the possible structure.

In contrast, feature 2, located on the western side of the northern plateau (E485700/N585620), is situated in an area with little erosion and excellent preservation. Target coring was done on a ten meter spaced grid and consistently documented profiles with in-situ 1300 and H1 tephra layers (see cores 18-21 in Figures 5.36, 5.37, and 5.38 and in Table 5.15). Charcoal, peatash and dung were discovered below both the 1300 and H1 tephra layers, indicating the continual use of the area, with an increased intensity of use after 1104. The high frequency of dung and hay likewise indicate the area was used for housing and grazing animals, with occasional or seasonal caretakers at the site as
indicated by the charcoal and peatash, but no traces of structural material, such as turf, were found.

The coring survey pushes back the earliest known occupational date at Miklihóll by more than two hundred years. The landscape organization and economic practices seen at Miklihóll documents the same pattern as that of the Langhús and Fornistekkur sites: little to no human occupation before 1104 followed by substantial non-domestic use between 1104 and 1300.

5.5.5 Bakki

Bakki is a coastal settlement located on an open bluff 39 masl, roughly 6.5 km south of the medieval harbor at Kolkuós. The vegetation is sparse consisting predominately of heath and some scrub brush. The surface is somewhat rocky indicating an aggressive erosional regime at the site. Today the farm is called Gröf, and is one of the most active and large farmsteads in the valley. A lot of modern construction has been done at the site, including the digging of extensive ditches.

Bakki is mentioned in a few medieval texts, including the Reynistaður land inventory from 1295 CE, where the land at Bakki is listed as a one of the properties owned by the Reynistaður cloister. The farmstead at Bakki appears again in the Hólastóll 1449 CE inventory\textsuperscript{36} as one of the properties belonging to the bishopry. In the eighteenth century, the \textit{Jarðabók} mentions that the farmstead at Bakki was once also the site of a \textit{bænhús} (“prayer house”) but the structure was no longer in use. The lands at Bakki were assessed at fifty hundredths, making Bakki a large, site type 2 farmstead. From these

\textsuperscript{36}Bakki is listed as a property owned by the bishopry in the Hólastóll 1550 CE land registry as well.
registries, Bakki was clearly an active farmstead from the twelfth century to the present day.

A field survey was done at the site in 2005 (B. Zoëga 2005) revealing that modern construction projects have likely obliterated earlier phases of occupation, except in one area (E482530/N585710) where the ruins of two structural features and a possible enclosure wall were still visible on the surface. No subsurface archaeological research had been done at the site prior to my 2008 coring survey to examine these features. The goal of my subsurface coring survey\(^{37}\) was to date the visible ruins at Bakki and to examine the immediate area around the enclosure wall. Since the total research area at Bakki is small in comparison to other sites, covering a space of just 2 m\(^2\) (0.002 ha), only target coring at one meter spacing was used.

The ruins were located down slope from a small ridge, an area somewhat protected from the wind. The target coring survey revealed a surrounding environmental landscape composed of dense organic soils crosscutting areas of drier silts. The erosion rate at Bakki is higher than in other areas of the region, documented by slow topsoil accumulation, averaging less than five centimeters\(^{38}\) across the site. Overall, the landscape here would have been dry, but with available turf resources, throughout the medieval period.

Feature 1 (E482514/N585680) resembles an enclosure and runs the entire length of the 2 m\(^2\) area. Dating the wall, however, remains elusive since there is little turf preserved and no cultural material associated with the wall. Likewise, the soils

\(^{37}\) Coring was done with the assistance of Bryndís Zoëga in 2008, who pointed out the location of the ruins and walked me through the history of the site and of her findings from her 2005 field survey.

\(^{38}\) In comparison, the mean rate of topsoil deposition for Skagafjörður is 10 cm.
surrounding the wall are shallow and eroded, leaving us no clues about the duration of habitation.

Feature 2 (E482532/N585705) is an oval-shaped depression. Profiles from the target coring survey discovered faint traces of charcoal and turf within the depression, resting on top of a bed of stones and gravel, both of which appear natural. No tephra horizons were found in association with this thin cultural layer, making relative dating of the feature impossible. The data here are scant but a tantalizing indication of human occupation. The precise nature and use of the feature is not clear. It is unclear if this depression is the ruins of a former structure since while turf is present, there is no architectural integrity to the turf, making it possible that the depression could have been from midden debris.

Feature 3 (482525/N585700) is rectangular shape and is located west of feature 2 and close to the enclosure wall (feature 1). Profiles from the target coring survey in and around the possible structure document dense layers of cultural material, including turf and charcoal below an in-situ H1 (1104) tephra layer (see cores 5-6 in Table 5.16 and Figures 5.39 and 5.40). Interestingly, there two distinct turf horizons, separated by a lens of charcoal and peatash (see Figure 5.40). This suggests that the span of occupation was ephemeral, perhaps even seasonal. The structure itself is fairly small, roughly eight to ten meters in length and five meters in width.

Dating from the coring survey push back the occupational history of Bakki by more than hundred years, but the data cannot conclusively state that Bakki was a farmstead by the start of the twelfth century. The pre-1104 structure is small in size and there are no other associated features that one would expect to find with a permanent
household. Bakki is, however, in close proximity to Kolkuós, suggesting that the pre-1104 habitation of the site might be connected to trading activities at the harbor, potentially as a workshop or shelter for a traveling merchant or farmer.

5.5.6 Hofstaðir

Hofstaðir is located at the southern boundary between Viðvíkursveit and the Blönduhlið valley, and is situated on top of a low natural plateau directly above the estuary at the mouth of the Skagajörður fjord system, where the sea and the Héraðsvatn River meet. At 120 masl, the physical setting at Hofstaðir is consistent with a mixed midland ecology, and can be organized into two spheres: west and east. The western sphere (103 masl), located close to the Héraðsvatn River, is a large grassy field, while the eastern sphere (120 masl) consists of gentle rising, partially wooded hillocks that make their way up to the base of the Blönduhlið foothills. Hofstaðir today is divided into several cultivated grass fields, domestic structures, and a few summer houses for travelers. The field and coring survey did not cover the entirety of the site, but instead was focused on the 3 ha area thought to contain the earliest occupation of the site.

Census records indicate that Hofstaðir was a farmstead site with a fluctuating value, between sixty hundredths in the fourteenth century and fifty hundredths in the nineteenth century. These figures indicate that the Hofstaðir farmstead was always large, ranging from a size 1 to a size 2 category throughout its history. The earliest date for the establishment of the farmstead at Hofstaðir is, however, questionable. On the one hand, the name Hofstaðir appears in Landnámabók where it is mentioned that farmers attended

39 A number of the Hofstaðir grass fields were being fertilized and plowed at the time of this survey, restricting access to the northern fields.
hof or pagan ceremonies\textsuperscript{40} at the site, but the text says nothing of those who settled there or if the site was a farmstead or a ceremonial place during the early phases of colonization. The name, comprised of the words “hof” (temple) and “staðir” (denotes a place of importance) carries a folk cultural interpretation of the site as an original settlement farm of some social standing (Pálsson 2004). Part of this understanding is connected to the fact that today Hofstaðir is an active farmstead with a public church on its grounds. The first mention of a Christian church at the site dates to the fourteenth\textsuperscript{41} century, but again the cultural historical understanding within the community today is that Hofstaðir was always a place of ideological significance, first as a pagan temple, and then as a church. The pagan hof is believed to be located on top of a low rising hillock (115 masl) located within the western field at the site. No previous archaeological work has been done at Hofstaðir to confirm or reject these views.

The field and coring survey at Hofstaðir aimed to determine the age of the farmstead, to detect any possible ideological structures, and to examine the nature of any early economic activity at the site. As a midland site located at a central junction between the sea and the Héraðsvatn River, Hofstaðir is an insightful case study to examine the degree of possible interaction, if any, between sites within the valley. The field survey began at the upper eastern portion of the site where a modern church now stands. The area around the church has been extensively disturbed by the construction of a parking lot and the laying of subsurface electrical lines and surface telephone poles. The area was considered too badly disturbed to be included in the coring survey. Behind

\textsuperscript{40} In section 203, \textit{Landnámabók} describes how Kollsvein the Strong, owner of Kollsveinsstaðir, “used to hold his sacrifices at Hofstaðir” (1972: 92).
\textsuperscript{41} Bishop’s Jón saga in \textit{Bisupa saga} (2003)
the church, the foothills start to steadily increase in steepness and are covered with dense
dwarf birch trees. The soils are shallow with only a modest layer of topsoil followed by a
lens of glacial gravel and small stones. If there was any early human occupation in this
area the evidence no longer exists. The field survey on the lower western portion of the
site noted the presence of deep drainage ditches that follow the entire parameter of the
field. Profiles from these drainage ditches suggest that the area is a former wetland with
excellent preservation of the H1 and H3 tephras. The field survey also noted two small
hillocks (E482840/N577867 and E482861/N577907) and one rather large mound
(E482895/N577835) located within close proximity of one another within the western
field. The mound measures about sixty meters in length and about twenty-five meters in
width at its widest middle section. This is the mound believed to be the spot were the
Viking hof once stood. Today, the ruin of a modern rectangular animal structure sits on
top of the mound. The mound and the field that surrounds it are used for grazing sheep
and growing grass.

The coring survey concentrated on the lower western field with an extensive
twenty-five meter spaced coring program across the entire field, area covering about 21,
275 m² (2.13 ha). Targeted coring was carried out across the mound feature with two
meter spacing intervals. Coring profiles confirmed that the characteristic wetland soils
observed in the drainage ditches was true for the entire western field. The soils are dense,
highly water saturated, iron-rich clayey silts characteristic of bog soil. Prehistoric
horizons (below the H3 tephra layer) consist almost entirely of peat and only a thin layer
of dark humic soils, characteristic of a bog environment. The horizon between H3 and
H1, the period when human occupation occurs in Skagafjörður, there is less peat and
more soil, but the high bog iron ore content suggests that the area was submerged in stagnant water up until the H1 (1104 CE) tephra layer was deposited. After 1104 CE, the soils become somewhat siltier, but by and large the field remained heavily water-logged well into the modern era. The topsoil horizon across the field is thin (± 5cm) indicating that water-logging lessened only after the construction of extensive modern drainage ditches. The environment of the area in the pre-state period would have been consistent with a wetland area, capable of supporting grass growth but perhaps not an ideal location for a domestic residence.

Despite the dampness of the environment, cultural material, mostly charcoal and animal bone fragments, is present in the western field. Most of this material dates to well after 1104 CE and in some places where the 1300 tephra is preserved we can say the material is post-1300 as well (see cores 21-32 in Table 5.17). The concentration of cultural material, an area of about 250 m² (E483130-5/N577795-845) is located in close proximity to the standing church. The spread of cultural material appears to be random, with no single concentrated area to suggest in-situ activity. One hypothesis to explain this patterning is that since charcoal and bone are common items found in a midden, and midden material is often reused as fertilizer, these findings are indicative of enrichment practices at the site. However, the spread of materials is sparse. It is more likely that the charcoal and small bits of bone are a secondary deposition, transported by either wind or rainfall, from the upper eastern field onto the lower western field.

Target coring was done at each of the three mound features at the site. Feature 1 (E482892/N577894) is the largest of the three features (see cores 11-20 in Table 5.17). Coring profiles illustrate that the mound itself is natural, not manmade. The mound
consists of gray sands, gravel, and stones below an in-situ H3 tephra layer. The geomorphology is consistent with a glacial moraine. Soil horizons above the H3 stratum are, uncharacteristic for Hofstaðir, dry red-brown silts. The mound would have been one of the few dry areas of the site during the pre-state period. Culturally, the remains of a modern animal structure can still be seen on the surface. Occasional iron nails are likewise found on the surface, but no other cultural materials are present for the modern era. The subsurface coring survey, however, discovered the presence of both turf and charcoal between the 1300 and H1 tephra horizons (see core 16 in Table 5.17) and below an in-situ H1 layer (see core 17 in Figure 5.41 and cores 17-19 in Table 5.17). Cores were placed every two meters around a ten meter radius. Cultural material below the H1 horizon consists mostly of well-preserved red turf with lenses of H3 in it. From these data it is difficult to determine the exact nature of the activity. The turf is suggestive of a structural feature, but it is not clear what kind of feature, domestic residence or animal, it is. Further excavation is necessary to determine the size, shape, and use of this feature. What can be said with certainty is that it dates to at the very least the Early Medieval period (1000-1104 CE).

Feature 2 (E482861/N577907) is located within twenty meters northeast of feature 1 and is much smaller in size (roughly 25 meters in length and width) and relief (110 masl). Coring profiles document that like feature 1, feature 2 is part of a glacial moraine. Aside from deposits of animal dung immediately below the topsoil horizon, no other cultural material was found. The dung deposits are likely connected to the modern era animal structure ruin in feature 1. Feature 3 (482895/N577835) is located within thirty meters southeast of feature 1, and like feature 2 is significantly smaller in size
(roughly 30 meters in length, 15 meters in diameter) and relief (109 masl). The subsurface coring survey showed that as with features 1 and 2, feature 3 is a glacial moraine. Like feature 2, feature 3 contained a thin lens of dung below the topsoil horizon, but no other cultural material could be found.

It is clear from these tantalizing data that more archaeological work is necessary to determine the exact nature of pre-state period activity at the Hofstaðir site. Data from the subsurface coring survey cannot confirm or reject the popular traditional belief that Hofstaðir was a place of ideological significance during the Settlement period, but we can say without hesitation that this midland site was in use early on as demonstrated by the presence of turf and charcoal below an in-situ H1 layer in feature 1. If there was a Settlement farmstead at Hofstaðir that predates the feature 1 findings it is likely to be found in the unsurveyed areas of the site, potentially changing our understanding of the history of landscape evolution here.

5.5.7 The Organization of the Viðvík Territory

The data from the coring survey indicate that during the initial phases of settlement, the Viðvík Territory was organized around a diverse agrarian-based economy alongside possible specialized craft production sites (see Figure 5.18). This organization is reflected in the settlement patterns of the valley with the establishment of at least one large midland farmstead at the site Viðvík (site type 1) and two large, but somewhat smaller, midland farmstead at sites at Hofstaðir (site type 1-2) and Svaðastaðir

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42 Svaðastaðir, as mentioned at the start of this chapter, was not included in the survey study, but is described as a farmstead in early medieval texts. The site is located 4 km south of Hofstaðir, at the
2). In addition to these farmsteads, the Viðvík territory was also the location of one of the few trading harbors in the north at the site of Kolkuós. The families connected to the farmstead site at Viðvík likely managed activities at Kolkuós. New data presented here has shown that in addition to these three previously known farmsteads and one trading center, a number of specialized activity areas were also created as seen with the evidence from the coastal site at Bakki, the midland sites at Miklihóll and Hólakot, and at the lowland sites at Fornistekkur and Langhús. Similar to the Hof territory, the activity area sites at Miklihóll and Fornistekkur reflect agrarian interests, aimed at possible livestock surplus production; but unlike the Hof territory, the Viðvík territory also had two sites devoted to possible specialized craft production with intensive iron-working seen at Langhús and possible flax weaving at Hólakot. Lastly, the small activity area at Bakki may reflect interests connected to the Kolkuós trading harbor.

The organization of the Viðvík territory prior to the twelfth century reflects both of these economic aims as seen by the evidence from the agrarian site at Miklihóll and the mixed agrarian and craft production site at Hólakot (see Figure 5.19). At both of the midland sites, there is no evidence of full-time domestic occupation, but instead, both of these sites demonstrate specialized and intensified economic practices. During this period, the trading harbor at Kolkuós was in full operation, coordinating both local and global market exchanges. The presence of a marketplace is suggestive of the possibility that the economies documented at both Miklihóll and Hólakot might be connected to the commodity exchanges negotiated at Kolkuós. This hypothesis is all more tantalizing boundary between the Viðvikursveit and Blönduhlíð areas. Future archaeological work is necessary to confirm these descriptions, but is treated here based on our present understanding of the site.
when we consider the small structure discovered at the coastal site of Bakki associated with small amounts of domestic material separated by strata of vegetation growth that are suggestive of seasonal use and reuse over a hundred year period of time. The close proximity of Bakki to Kólkua make it possible that the site was established as a temporary shelter for a traveler connected to the summer trading activities at Kólkua.

By start of the Sturlunga period in 1104 CE, the economy of the Viðvík territory was intensified as demonstrated by Miklihóll becoming a full-time farmstead, the creation of a full-time farmstead at the site of Brimnes,\(^{43}\) which may be connected to earlier activity at Bakki, and two new activity areas established at the sites of Fornistekkur and Langhúð (see Figure 5.20). The activities at Fornistekkur are dedicated to livestock housing, while the activities at Langhúð are dominated by intensive iron production, with no evidence of a domestic occupation at either of these sites until well after 1300 CE. The environmental conditions\(^{44}\) at both Langhúð and Fornistekkur are less than ideal for a full-time farmstead, but these areas were utilized for the resources they did have: bog iron ore at Langhúð and a high relief mound and ample sedge vegetation at Fornistekkur. The occupational use of these sites highlights the organization of the Viðvík landscape around specialized economic areas with a growing interest in agrarian surplus by the start of the Sturlunga period. As with the evidence from the Hof territory, the data from the coring survey at sites in the Viðvík territory points to a heightened commercialized livestock economy that was contemporaneous with the first appearance

\(^{43}\) Brimnes is a lowland site just 3km south of the ruins discovered at Bakki
\(^{44}\) The landscape of these sites, as discussed earlier in this chapter, is prone to both water-logging and erosion.
of incipient state-level institutions in the twelfth century and heightened activity at the trading harbor at Kolkuós.

After 1300 when Iceland is organized around state institutions, the organization of the Viðvík territory undergoes the same processes of restructuring that we saw in the Hof territory (see Figure 5.21). According to historical census records, no fewer than twenty-two new farmsteads, including Hólakot, Langhús, and Fornistekkur are established (see Table 5.18). These farmsteads are located in both the lowlands and midlands, with twenty-one of these sites falling into category of a small farmstead (site types 3 and 4). As with the farmsteads documented in Hjaltadalur, the majority of these farmsteads are owned by the Hólar bishopry, including even Viðvík by the fifteenth century. Unlike the Hof territory, however, activity areas are almost entirely replaced by small farmsteads rather than with a combination of gerði and farmstead sites (see Table 5.19). These data suggest that the organization of the economy, always included agrarian pursuits at the Viðvík territory sites, the economy of the twelfth century is clearly different than it is by the fifteenth century (for a discussion of these economic shifts, see chapter 6).

5.7 General Settlement Trends for Hjaltadalur and Viðvíkursveit

The above discussion of individual sites has shown a fair degree of variation between sites, but if we examine the landscape organization of all the sites within all three territories together, a number of commonalities likewise surfaces. Most importantly, the data presented here documents the reorganization of the entire landscape

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45 Viðvík is listed as a one of the Hólar properties in the Hólastóll 1449 registry.
over time, suggesting that the social structure behind this organization was fluid and malleable to change.

Data from the coring survey conducted in the Hjaltadalur-Viðvíkursveit valley system has provided four new critical insights on the evolution of the Icelandic economy and landscape development. First, all environmental zones, coastal, lowland, midland, and highland were occupied from the time of settlement to the present (see Table 5.20). Second, the survey also revealed a variety of site types and sizes, suggestive of a more diversified, rather than a homogenous, economic landscape during the pre-state period (see Figures 5.18-5.20 and Table 5.21). The most surprising feature of this early landscape organization is the near absence of small farmsteads and the dominant presence of large (types 1 and 2) farmsteads alongside small but specialized activity areas\textsuperscript{46} that have very little evidence of any domestic material (see Figures 5.18-5.20). Activities at these sites range from agrarian surplus to craft production, with differing organizational strategies documented for the Hof and Viðvík territories. These kinds of activities suggest that the economic system of the pre-state society living in Hjaltadalur and Viðvíkursveit was organized by a scale-free network, with a hierarchy of sites and corresponding hierarchy of relationships between sites. I will discuss the possible implications this organization had on the process of secondary state formation in chapter 7, but for now it is important to keep in mind that the socially defined landscape of the valley would have facilitated both household sustainability and surplus production. A third observation made from the coring survey is that economic activity intensified at all

\textsuperscript{46} Evidence from later time periods have shown how communal activities, such as sheep roundups (réttir) acted as points for interaction within a landscape (Aldred 2006). It is possible the same was true for these early activity areas (see chapters 6 and 7).
sites during the Sturlunga period as seen by the initial move towards a propertied landscape typified by small farmsteads (see Figure 5.20). Lastly, data from the coring survey documented that the post-1300 state-level economy is engendered by the development of a new landscape organization, characterized with a higher ratio of small to large farmsteads and activity areas present only near the Hólar bishopry (see Figure 5.21).

From these data we can begin to not only examine the possible relationships between sites, but additionally this well documented study of landscape evolution in Hjaltadalur and Viðvíkursveit will help us to better recognize authentic material indicators for systems of production, consumption and distribution for other regions in Iceland as well. Settlement pattern data from Hjaltadalur and Viðvíkursveit prompt to ask one crucial question: Why reorganize the landscape? In the next chapter, I will examine settlement patterns from multiple regions of Skagafjörður using data from the Multiregional Site Registry (MSR). I will analyze settlement trends from a social network perspective, examining how changes in the economy may explain why the landscape is reorganized and how these structural shifts may have helped to shape the development of secondary state institutions in northern Iceland.
Figure 5.1: Map of Hjaltadalur and Viðvikursveit and the Sites Archaeologically Surveyed
Figure 5.2: Map Showing the Initial Land Claims of Hjaltadalur and Viðvíkursveit Documented in Landnamabók
Figure 5.3: Profile of Efri-Ás Core 12
Figure 5.4: Profile of Efri-Ås Core 27
Figure 5.5: Profile Drawing Hof Test Trench
Figure 5.6: Profile of Nautabú Core 1
Figure 5.7: Profile of Kálfstaðir Core 17
Figure 5.8: Profile of Kálfsstaðir Core 18
Figure 5.9: Profile of Kálfsstaðir Core 20
Figure 5.10: Profile of Kálfsstaðir Core 27
Figure 5.11: Profile of Kálfstaðir Core 39
Figure 5.12: Profile of Hvammur Core 6
Figure 5.13: Profile of Hvammur Core 3
Figure 5.14: Profile of Hvammur Core 29
Figure 5.15: Profile of Geitagerði Core 13
Figure 5.16: Profile of Geitagerði Core 23
Figure 5.17: Profile of Geitagerði Core 6
Figure 5.18: Map Showing the Distribution of Sites During the Settlement Period (870-1000 CE)
Figure 5.19: Map Showing the Distribution of Sites During the Early Medieval Period (1000-1104 CE)
Figure 5.20: Map Showing the Distribution of Sites During the Sturlunga Period (1104-1300 CE)
Figure 5.21: Map Showing the Distribution of Sites During the Late Medieval Period (1300-1600 CE)
Figure 5.22: Map of Hólakot Showing Surface Feature and Coring Survey
Figure 5.23: Profile of Hólakot Core 17
Figure 5.24: Profile of Hólakot Core 13
Figure 5.25: Profile of Hólakot Core 14

Hólakot
E487565
N584563
Wall of Feature 19
Figure 5.26: Profile of Hólakot Core 1
Figure 5.27: Profile of Hólakot Core 18
Figure 5.28: Profile of Hólakot Core 32
Figure 5.29: Profile of Hólakot Core 35
Figure 5.30: Profile of Fornistekkur Core 31
Figure 5.31: Profile of Langhús Core 18
Figure 5.32: Profile of Langhús Core 22
Figure 5.33: Profile of Langhús Core 24
Figure 5.34: Profile of Miklihóll Core 4
Figure 5.35: Profile of Miklihóll Core 5
Figure 5.36: Profile of Miklihóll Core 18
Figure 5.37: Profile of Miklihóll Core 20
Figure 5.38: Profile of Miklihóll Core 21
Figure 5.39: Profile of Bakki Core 5
Figure 5.40: Profile of Bakki Core 6
Figure 5.41: Profile of Hofstaðir Core 17
Table 5.1: Farmstead Sites Archaeologically Surveyed in the Skagafjörður Landscape Project

<table>
<thead>
<tr>
<th>Valley</th>
<th>Site</th>
<th>Elevation (masl)</th>
<th>Elevation Category</th>
<th>Tax Value (hundredths)</th>
<th>Site Type</th>
<th>Time Period in Use</th>
<th>2008 Survey</th>
</tr>
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<tbody>
<tr>
<td>Viðvíkursveit</td>
<td>Bakki</td>
<td>34</td>
<td>Coast</td>
<td>50</td>
<td>2</td>
<td>Early Medieval-Historic</td>
<td>Coring</td>
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<tr>
<td>Hjaltadalur</td>
<td>Efri-Ás</td>
<td>130</td>
<td>Midland</td>
<td>60</td>
<td>1</td>
<td>Sturlunga-Historic</td>
<td>Coring</td>
</tr>
<tr>
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<td>Fornistekkur</td>
<td>83</td>
<td>Lowland</td>
<td>less than 1</td>
<td>4</td>
<td>Early Historic</td>
<td>Coring</td>
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<td>Hof</td>
<td>180</td>
<td>Midland</td>
<td>60</td>
<td>1</td>
<td>Settlement- Early Medieval</td>
<td>Coring; test trenches</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Hof</td>
<td>180</td>
<td>Midland</td>
<td>50</td>
<td>2</td>
<td>Sturlunga-Historic</td>
<td>Coring; test trenches</td>
</tr>
<tr>
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<td>Hólakot</td>
<td>110</td>
<td>Midland</td>
<td>less than 1</td>
<td>4</td>
<td>Late Medieval-Historic</td>
<td>Coring; test trenches</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Hólar</td>
<td>150</td>
<td>Midland</td>
<td>over 100</td>
<td>1</td>
<td>Early Medieval-Historic</td>
<td>Coring; site excavations</td>
</tr>
<tr>
<td>Viðvíkursveit</td>
<td>Hofstaðir</td>
<td>110</td>
<td>Midland</td>
<td>60</td>
<td>1</td>
<td>Settlement-Historic</td>
<td>Coring</td>
</tr>
<tr>
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<td>Hvammur</td>
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<td>Highland</td>
<td>40</td>
<td>2</td>
<td>Late Medieval-Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Kálfsstaðir</td>
<td>152</td>
<td>Midland</td>
<td>60</td>
<td>1</td>
<td>Late Medieval-Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvíkursveit</td>
<td>Langhúss</td>
<td>76</td>
<td>Lowland</td>
<td>20</td>
<td>4</td>
<td>Late Medieval-Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvíkursveit</td>
<td>Miklihóll</td>
<td>105</td>
<td>Midland</td>
<td>40</td>
<td>2</td>
<td>Sturlunga-Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Nautabú</td>
<td>180</td>
<td>Midland</td>
<td>30</td>
<td>3</td>
<td>Late Medieval-Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Neðri-Ás</td>
<td>130</td>
<td>Midland</td>
<td>80</td>
<td>1</td>
<td>Settlement-Historic</td>
<td>surface survey</td>
</tr>
</tbody>
</table>
Table 5.2: Non-farmstead Sites Archaeologically Surveyed in the Skagafjörður Landscape Project

<table>
<thead>
<tr>
<th>Valley</th>
<th>Site</th>
<th>Elevation (masl)</th>
<th>Elevation Category</th>
<th>Site Type</th>
<th>Time Period</th>
<th>2008 Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hjaltadalur</td>
<td>Efri-Ás</td>
<td>130</td>
<td>Midland</td>
<td>6</td>
<td>Early Medieval</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Fornistekkur</td>
<td>83</td>
<td>Lowland</td>
<td>6</td>
<td>Early Medieval--Late Medieval</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Geitagerði</td>
<td>190</td>
<td>Midland</td>
<td>6</td>
<td>Late Medieval--Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Hólakot</td>
<td>110</td>
<td>Midland</td>
<td>6</td>
<td>Settlement--Sturlunga</td>
<td>Coring; test trenches</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Hólar</td>
<td>150</td>
<td>Midland</td>
<td>6</td>
<td>Settlement</td>
<td>Coring; site excavations</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Hvammur</td>
<td>230</td>
<td>Highland</td>
<td>6</td>
<td>Sturlunga</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Kálfstaðir</td>
<td>152</td>
<td>Midland</td>
<td>6</td>
<td>Sturlunga</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Kollugerði</td>
<td>158</td>
<td>Midland</td>
<td>6</td>
<td>Late Medieval--Historic</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Kolkuós</td>
<td>5</td>
<td>Coast</td>
<td>7</td>
<td>Settlement--Early Historic</td>
<td>Coring; site excavations</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Langhús</td>
<td>76</td>
<td>Lowland</td>
<td>6</td>
<td>Sturlunga</td>
<td>Coring</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>Miklihóll</td>
<td>105</td>
<td>Midland</td>
<td>6</td>
<td>Early Medieval</td>
<td>Coring</td>
</tr>
<tr>
<td>Hjaltadalur</td>
<td>Nautabú</td>
<td>180</td>
<td>Midland</td>
<td>6</td>
<td>Settlement--Sturlunga</td>
<td>Coring</td>
</tr>
</tbody>
</table>
Table 5.3: Coring Data from Efri-Ás

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>490965</td>
<td>584370</td>
<td>H3 (16)</td>
<td>charcoal</td>
<td>before 1104</td>
<td>charcoal is mixed with H3; likely to be medieval deposit</td>
</tr>
<tr>
<td>9</td>
<td>490989</td>
<td>584372</td>
<td>H1 (38)</td>
<td>turf</td>
<td>after 1104</td>
<td>ruins still visible on the surface are lying on top of H1; likely a more modern structure</td>
</tr>
<tr>
<td>10</td>
<td>490985</td>
<td>584365</td>
<td>1766 (6)</td>
<td>turf, charcoal</td>
<td>before 1776</td>
<td>material is well below 1766 tephra, making it likely to date to the medieval period</td>
</tr>
<tr>
<td>11</td>
<td>490990</td>
<td>584370</td>
<td>H3 (38)</td>
<td>ash</td>
<td>before 1104</td>
<td>charcoal is mixed with H3; likely to be medieval deposit</td>
</tr>
<tr>
<td>12</td>
<td>490990</td>
<td>584365</td>
<td>H1 (19); H3 (40)</td>
<td>charcoal, ash</td>
<td>before 1104</td>
<td>material below H1 and likely associated with cores 10 and 11; the area is not a household but is likely an activity area</td>
</tr>
<tr>
<td>17</td>
<td>490970</td>
<td>584360</td>
<td>H3 (34)</td>
<td>charcoal</td>
<td>after 1104</td>
<td>material is mixed with an aelioan deposit just below the topsoil; likely dates to before 1766 but after 1104</td>
</tr>
<tr>
<td>27</td>
<td>490990</td>
<td>584340</td>
<td>1766 (9); H1 (31); H3 (70)</td>
<td>turf, charcoal, floor</td>
<td>before 1104</td>
<td>material below H1; possible small structure (ca. 10 meters long) either a temporary household or more likely a workshop</td>
</tr>
<tr>
<td>28</td>
<td>490980</td>
<td>584340</td>
<td>1300 (29); H1 (33); H3 (48)</td>
<td>charcoal, peatash, turf</td>
<td>before 1104</td>
<td>associated with core 27</td>
</tr>
</tbody>
</table>
Table 5.4: Coring Data from Hof

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>495586</td>
<td>579635</td>
<td>H1 (32)</td>
<td>charcoal, ash</td>
<td>before 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>2</td>
<td>495587</td>
<td>579629</td>
<td>H1 (55)</td>
<td>turf (with H3), charcoal</td>
<td>before and after 1104</td>
<td>possible structure</td>
</tr>
<tr>
<td>3</td>
<td>495540</td>
<td>579650</td>
<td>H1 (14); H3 (30)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>495530</td>
<td>579650</td>
<td></td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>495520</td>
<td>579650</td>
<td>H3 (12)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>495485</td>
<td>579655</td>
<td>H3 (40)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>495450</td>
<td>579530</td>
<td>1300 (10)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>495420</td>
<td>579540</td>
<td>H1 (15)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>495580</td>
<td>579630</td>
<td>H3 (28)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>495580</td>
<td>579635</td>
<td>H1 (18); H3 (20)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>495580</td>
<td>579640</td>
<td>H3 (18)</td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>495580</td>
<td>579645</td>
<td></td>
<td></td>
<td>Natural</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>495585</td>
<td>579645</td>
<td>1300 (22); H1 (29)</td>
<td>charcoal, peatash, turf</td>
<td>before 1300, after 1104</td>
<td>possible structure</td>
</tr>
</tbody>
</table>
Table 5.5: Coring Data from Nautabú

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>490560</td>
<td>582500</td>
<td>H1 (58); H3 (103)</td>
<td>dense cultural material</td>
<td>mostly disturbed, but some material seems in-situ (before 1104)</td>
<td>bulldozed area, but a pre-1104 structure lies beneath it</td>
</tr>
<tr>
<td>2</td>
<td>490560</td>
<td>582510</td>
<td>H1 (49); H3 (72)</td>
<td>dense cultural material</td>
<td>mostly disturbed, but some material seems in-situ (before 1104)</td>
<td>bulldozed area, but a pre-1104 structure lies beneath it</td>
</tr>
<tr>
<td>3</td>
<td>490560</td>
<td>582520</td>
<td>1300 (13)</td>
<td>charcoal</td>
<td>before 1300</td>
<td>activity area</td>
</tr>
<tr>
<td>5</td>
<td>490580</td>
<td>582500</td>
<td>NA</td>
<td>dense cultural material</td>
<td>probably before 1300</td>
<td>activity area</td>
</tr>
<tr>
<td>9</td>
<td>490555</td>
<td>582570</td>
<td>H3 (31)</td>
<td>charcoal; plowed</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>12</td>
<td>490500</td>
<td>582820</td>
<td>NA</td>
<td>charcoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
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Table 5.6: Coring Data from Kálfstaðir

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>492630</td>
<td>582687</td>
<td>H1 in turf</td>
<td>turf w/H1</td>
<td>after 1104</td>
<td>possible wall</td>
</tr>
<tr>
<td>5</td>
<td>492630</td>
<td>582688</td>
<td>H3 (23)</td>
<td>ash</td>
<td>after 1104</td>
<td>activity area associated with structure seen in core 4</td>
</tr>
<tr>
<td>15</td>
<td>492365</td>
<td>582210</td>
<td>H1 (29)</td>
<td>charcoal</td>
<td>before 1104</td>
<td>midden</td>
</tr>
<tr>
<td>17</td>
<td>492376</td>
<td>582210</td>
<td>H1 (29); H3 (35)</td>
<td>charcoal, turf</td>
<td>around 1104</td>
<td>midden</td>
</tr>
<tr>
<td>18</td>
<td>492390</td>
<td>582200</td>
<td>1300 (27)</td>
<td>charcoal</td>
<td>before 1300</td>
<td>activity area near modern animal enclosure</td>
</tr>
<tr>
<td>19</td>
<td>492385</td>
<td>582220</td>
<td>NA</td>
<td>charcoal</td>
<td>before 1300</td>
<td>activity area near modern animal enclosure</td>
</tr>
<tr>
<td>20</td>
<td>492397</td>
<td>582245</td>
<td>H1 (39); H3 (50)</td>
<td>ash, charcoal, turf</td>
<td>after 1104</td>
<td>disturbed area; material is likely modern</td>
</tr>
<tr>
<td>23</td>
<td>492405</td>
<td>582225</td>
<td>H1 (20); H3 (33)</td>
<td>dung</td>
<td>before 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>24</td>
<td>492410</td>
<td>582250</td>
<td>H3 (35)</td>
<td>dung, turf w/H3</td>
<td>before 1104</td>
<td>animal structure</td>
</tr>
<tr>
<td>25</td>
<td>492580</td>
<td>582410</td>
<td>H1 (29); H3 (32)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>27</td>
<td>492550</td>
<td>582420</td>
<td>H1 (13); H3 (28)</td>
<td>dung, charcoal, peatash</td>
<td>dung-modern; charcoal-before 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>28</td>
<td>492500</td>
<td>582440</td>
<td>NA</td>
<td>charcoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>29</td>
<td>492550</td>
<td>582460</td>
<td>H3 (40)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>30</td>
<td>492575</td>
<td>582460</td>
<td>H3 (30)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>35</td>
<td>492540</td>
<td>582500</td>
<td>NA</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>36</td>
<td>492425</td>
<td>582425</td>
<td>H3 (40)</td>
<td>charcoal, dung</td>
<td>before 1766</td>
<td>activity area; mixed in an aelioan deposit below the topsoil horizon--likely before 1766</td>
</tr>
<tr>
<td>38</td>
<td>492545</td>
<td>582370</td>
<td>H1 (19); H3 (40)</td>
<td>charcoal</td>
<td>before 1104 and modern</td>
<td>activity area</td>
</tr>
<tr>
<td>39</td>
<td>492540</td>
<td>582430</td>
<td>H1 (18)</td>
<td>charcoal</td>
<td>before 1104</td>
<td>activity area</td>
</tr>
</tbody>
</table>
Table 5.7: Coring Data from Hvammur

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>494950</td>
<td>575610</td>
<td>1766 (10)</td>
<td>bone, peatash</td>
<td>before 1766</td>
<td>activity area</td>
</tr>
<tr>
<td>3</td>
<td>494945</td>
<td>575610</td>
<td>H1 in turf</td>
<td>turf, charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>4</td>
<td>494960</td>
<td>575630</td>
<td>1766 (7)</td>
<td>bone, charcoal</td>
<td>before 1766</td>
<td>activity area</td>
</tr>
<tr>
<td>5</td>
<td>494960</td>
<td>575650</td>
<td>NA</td>
<td>charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>6</td>
<td>494960</td>
<td>575670</td>
<td>1766 (10)</td>
<td>ash, bone, charcoal</td>
<td>before 1766</td>
<td>activity area</td>
</tr>
<tr>
<td>7</td>
<td>494980</td>
<td>575670</td>
<td>NA</td>
<td>charcoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>17</td>
<td>495020</td>
<td>575620</td>
<td>H1 in turf; H3 (40)</td>
<td>charcoal, peatash, turf</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>18</td>
<td>495110</td>
<td>575700</td>
<td>NA</td>
<td>peatash, charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>19</td>
<td>494813</td>
<td>575370</td>
<td>NA</td>
<td>turf</td>
<td>modern</td>
<td>structure</td>
</tr>
<tr>
<td>27</td>
<td>494940</td>
<td>575500</td>
<td>NA</td>
<td>dung</td>
<td>modern</td>
<td>near modern barn</td>
</tr>
<tr>
<td>29</td>
<td>494950</td>
<td>575740</td>
<td>1766 (5); 1300 (16); H1 (22); H3 (32)</td>
<td>ash, charcoal</td>
<td>mostly after 1300, with some before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>Core</td>
<td>ISNET E</td>
<td>ISNET N</td>
<td>Tephra (cm below ground surface)</td>
<td>Cultural Inclusion</td>
<td>Date of Cultural Material</td>
<td>Interpretations</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>----------------------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>495170</td>
<td>581460</td>
<td>NA</td>
<td>possible turf</td>
<td>after 1700</td>
<td>topsoil is shallow and 1766 tephra is missing—either erosion or the structure dates to after 1766</td>
</tr>
<tr>
<td>5</td>
<td>495150</td>
<td>581435</td>
<td>NA</td>
<td>dung</td>
<td>modern</td>
<td>mixed in the topsoil</td>
</tr>
<tr>
<td>6</td>
<td>495155</td>
<td>581490</td>
<td>1300 in turf</td>
<td>turf w/ 1300</td>
<td>after 1300</td>
<td>square structure still partially visible on the surface</td>
</tr>
<tr>
<td>13</td>
<td>495200</td>
<td>581480</td>
<td>1300 in turf</td>
<td>turf w/ 1300</td>
<td>after 1700</td>
<td>associated with structure seen in core 1</td>
</tr>
<tr>
<td>14</td>
<td>945190</td>
<td>581480</td>
<td>H3 in turf</td>
<td>turf</td>
<td>after 1700</td>
<td>associated with structure seen in core 1</td>
</tr>
<tr>
<td>17</td>
<td>495165</td>
<td>581420</td>
<td>H1 (16); H3 (35)</td>
<td>possible turf</td>
<td>before 1104</td>
<td>inconclusive, but if turf it is likely part of an enclosure wall well below H1</td>
</tr>
<tr>
<td>18</td>
<td>495190</td>
<td>581490</td>
<td>NA</td>
<td>turf</td>
<td>after 1700</td>
<td>associated with structure seen in core 1</td>
</tr>
<tr>
<td>23</td>
<td>495130</td>
<td>581450</td>
<td>NA</td>
<td>possible turf</td>
<td>ca. 1300?</td>
<td>below an aeolian deposit; if turf it is likely between 1300-1500</td>
</tr>
</tbody>
</table>
Table 5.9: Coring Data from Kollugeròi

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td>492165</td>
<td>582280</td>
<td>NA</td>
<td>possible turf</td>
<td>unknown</td>
<td>animal structure, likely after 1766</td>
</tr>
<tr>
<td>3</td>
<td>494140</td>
<td>582285</td>
<td>H1 (16); H3 (38)</td>
<td>possible turf</td>
<td>unknown</td>
<td>animal structure, likely after 1766</td>
</tr>
<tr>
<td>4</td>
<td>494150</td>
<td>582290</td>
<td>H1 (13); H3 (28)</td>
<td>possible turf</td>
<td>unknown</td>
<td>animal structure, likely after 1766</td>
</tr>
<tr>
<td>5</td>
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<td>582290</td>
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<td>possible turf</td>
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<td>possible enclosure wall</td>
</tr>
<tr>
<td>6</td>
<td>494150</td>
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<td>possible turf</td>
<td>unknown</td>
<td>animal structure, likely after 1766</td>
</tr>
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<td>unknown</td>
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<td>582220</td>
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<td>possible turf</td>
<td>unknown</td>
<td>area has been flattened</td>
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<td>582215</td>
<td>NA</td>
<td>possible turf</td>
<td>unknown</td>
<td>area has been flattened</td>
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Table 5.10: Farmstead Sites in Hjaltadalur over Time

<table>
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<tr>
<th>Farmstead</th>
<th>Tax Value*</th>
<th>Size</th>
<th>Settlement (874-1000)</th>
<th>Early Medieval (1000-1104)</th>
<th>Sturlunga (1104-1300)</th>
<th>Late Medieval (1300-1600)</th>
<th>Early Historic (1600-1800)</th>
<th>Historic (1800-1900)</th>
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<tbody>
<tr>
<td>Áskot (M**)</td>
<td>&lt; 1</td>
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<tr>
<td>Efi-Ás (M)</td>
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<td>1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>Garðakot (M)</td>
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<td>3</td>
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</tr>
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<td>Grafskot (M)</td>
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<td>4</td>
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<td>X</td>
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</tr>
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<td>Hagakot (M)</td>
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<td>X</td>
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<td>Hof (M)</td>
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<td>1/2</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>Hrappstaðir (M)</td>
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<td>Huðarbak (M)</td>
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<tr>
<td>Hvammsgerði (H)</td>
<td>&lt; 1</td>
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<td>Kálfstaðir (M)</td>
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<td>Kjarvalstaðir (M)</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>Nautabú (M)</td>
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<td>X</td>
<td>X</td>
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<td>Ás/ Neðri-Ás (M)</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>Reykir (H)</td>
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<td>X?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Rófa (M)</td>
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<tr>
<td>Settutófur (M)</td>
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<td>Signýjarfjarð (M)</td>
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<td>Viðines (M)</td>
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<td>X</td>
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<tr>
<td>Völkuðar (M)</td>
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<td>X</td>
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*Tax Value is estimated in Danish Long Hundredths
**M= Midland; H= Highland
Table 5.11: Activity Area Sites in Hjaltadalur over Time

<table>
<thead>
<tr>
<th>Activity Area</th>
<th>Type</th>
<th>Settlement (874-1000)</th>
<th>Early Medieval (1000-1104)</th>
<th>Sturlunga (1104-1300)</th>
<th>Late Medieval (1300-1600)</th>
<th>Early Historic (1600-1800)</th>
<th>Historic (1800-1900)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efri-Ás (M)</td>
<td>Charcoal Making</td>
<td>X</td>
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<tr>
<td>Fjárhúsgerdí (M)</td>
<td>Animal Husbandry</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fornasel (M)</td>
<td>Sel</td>
<td>X</td>
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<tr>
<td>Geitagerði (M)</td>
<td>Animal Husbandry</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>Gerðihús (M)</td>
<td>Animal Husbandry</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Grænagerði (M)</td>
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<td>X</td>
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<td>Gjótgerði (M)</td>
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<tr>
<td>Herpisgerði (M)</td>
<td>Animal Husbandry</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Hvammur (H)</td>
<td>Animal Husbandry</td>
<td>X</td>
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<td></td>
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<td></td>
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<tr>
<td>Kjálfsstaðir (M)</td>
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<td>X</td>
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</tr>
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<td>Kollugerði (M)</td>
<td>Animal Husbandry</td>
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<td>X</td>
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<td>Nautabú (M)</td>
<td>Animal Husbandry</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Reykjagerði (H)</td>
<td>Animal Husbandry</td>
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<td>Sauðasel (M)</td>
<td>Sel</td>
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</tbody>
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*M= Midland; H= Highland
Table 5.12: Coring Data from Hólakot

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>487570</td>
<td>S84510</td>
<td>H1 (23); H3 (36)</td>
<td>charcoal, peatash</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>2</td>
<td>487570</td>
<td>S84515</td>
<td>H1 (23); H3 (30)</td>
<td>charcoal, peatash</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>3</td>
<td>487575</td>
<td>S84515</td>
<td>H1 (23); H3 (30)</td>
<td>charcoal, peatash</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>4</td>
<td>487565</td>
<td>S84510</td>
<td>H1 (32)</td>
<td>charcoal, peatash, wood ash</td>
<td>after 1104</td>
<td>more recent activity area</td>
</tr>
<tr>
<td>5</td>
<td>487570</td>
<td>S85505</td>
<td>H1 (19); H3 (40)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>6</td>
<td>487570</td>
<td>S84520</td>
<td>H1 (23)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>7</td>
<td>487570</td>
<td>S84525</td>
<td>H1 (22); H3 (48)</td>
<td>charcoal, turf</td>
<td>before 1104</td>
<td>structure/activity area</td>
</tr>
<tr>
<td>8</td>
<td>487570</td>
<td>S84530</td>
<td>H1 (24); H3 (40)</td>
<td>burnt bone, charcoal</td>
<td>before and after 1104</td>
<td>midden</td>
</tr>
<tr>
<td>9</td>
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<td>S84540</td>
<td>H1 (24); H3 (45)</td>
<td>bone, charcoal, floor layer</td>
<td>before 1104</td>
<td>structure/activity area</td>
</tr>
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<td>487570</td>
<td>S84545</td>
<td>H3 (23)</td>
<td>charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>11</td>
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<td>S84550</td>
<td>H1 (23); H3 (38)</td>
<td>dense charcoal</td>
<td>before 1104</td>
<td>activity area well before 1104</td>
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<tr>
<td>12</td>
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<td>S84560</td>
<td>H1 (23); H3 (38)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>floor of structure 19</td>
</tr>
<tr>
<td>13</td>
<td>487565</td>
<td>S84568</td>
<td>H3 in turf</td>
<td>charcoal, turf</td>
<td>before 1104</td>
<td>structure 19</td>
</tr>
<tr>
<td>14</td>
<td>487587</td>
<td>S84536</td>
<td>H1 (25); H3 (35)</td>
<td>charcoal</td>
<td>before 1104</td>
<td>little material--wind blown deposition</td>
</tr>
<tr>
<td>15</td>
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<td>S84540</td>
<td>H1 (21)</td>
<td>charcoal, floor layer</td>
<td>before 1104</td>
<td>structure 14</td>
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<td>16</td>
<td>48763</td>
<td>S84550</td>
<td>H1 (23); H3 (40)</td>
<td>dense charcoal</td>
<td>before 1104</td>
<td>midden between structures 14 and 19</td>
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<tr>
<td>17</td>
<td>48762</td>
<td>S84555</td>
<td>H1 (26); H3 (42)</td>
<td>charcoal, peatash, turf</td>
<td>before and after 1104</td>
<td>associated with structures 14 and 19</td>
</tr>
<tr>
<td>18</td>
<td>48765</td>
<td>S84565</td>
<td>H1 (28); H3 (50)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>little material--wind blown deposition</td>
</tr>
<tr>
<td>19</td>
<td>48760</td>
<td>S84570</td>
<td>H1 (20)</td>
<td>light charcoal, turf</td>
<td>around or just after 1104</td>
<td>unclear, could be a structure or turf-cutting area</td>
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</table>
Table 5.12: Data from Hólakot (continued)

<table>
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<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
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<td>turf?</td>
<td>after 1104</td>
<td>unclear, could be a structure or turf-cutting area</td>
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<td>H1 (24); H3 (40)</td>
<td>charcoal, whetstone</td>
<td>before and after 1104</td>
<td>between structures 19 and 20; refuse from structure 19?</td>
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<td>584570</td>
<td>H1 (24); H3 (40)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>between structures 20 and 21</td>
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<td>584575</td>
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<td>charcoal</td>
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<td>structure or turf cutting</td>
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<td>&quot;wall&quot; of structure 22</td>
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<td>H3 (29)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
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<tr>
<td>32</td>
<td>487540</td>
<td>584535</td>
<td>1300 (20); H1 (32); 1000 (37); H3 (42)</td>
<td>charcoal</td>
<td>charcoal before 1000</td>
<td>oldest known area of the site; feature 17</td>
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<td>584530</td>
<td>NA</td>
<td>stonecoal, dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
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<td>487545</td>
<td>584530</td>
<td>NA</td>
<td>stonecoal, dung</td>
<td>modern</td>
<td>activity area</td>
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<td>584530</td>
<td>H3 (35)</td>
<td>charcoal, peatash</td>
<td>possibly before 1104</td>
<td>material sits on top of H3: early activity area</td>
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<tr>
<td>36</td>
<td>487550</td>
<td>584560</td>
<td>NA</td>
<td>stonecoal, dung</td>
<td>modern</td>
<td>structure 16</td>
</tr>
<tr>
<td>37</td>
<td>487550</td>
<td>584565</td>
<td>H3 (50)</td>
<td>turf (feature 16), stonecoal</td>
<td>modern</td>
<td>structure 16</td>
</tr>
<tr>
<td>38</td>
<td>487555</td>
<td>584560</td>
<td>NA</td>
<td>dung</td>
<td>modern</td>
<td>structure 16</td>
</tr>
<tr>
<td>39</td>
<td>487552</td>
<td>584562</td>
<td>H3 (13)</td>
<td>dung, charcoal</td>
<td>dung is modern; charcoal could be older</td>
<td>structure 16</td>
</tr>
<tr>
<td>40</td>
<td>487551</td>
<td>584561</td>
<td>H3 (20)</td>
<td>dung</td>
<td>modern</td>
<td>structure 16</td>
</tr>
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</table>
Table 5.13: Coring Data from Fornistekkur

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>486560</td>
<td>586740</td>
<td>Landnám and H1 in turf</td>
<td>turf</td>
<td>after 1104</td>
<td>animal structure</td>
</tr>
<tr>
<td>4</td>
<td>486565</td>
<td>586740</td>
<td>1300 in turf</td>
<td>turf</td>
<td>after 1300</td>
<td>associated with core 3, making the structure after 1300</td>
</tr>
<tr>
<td>5</td>
<td>486570</td>
<td>586745</td>
<td>1300 in turf; H3 (31)</td>
<td>charcoal, turf, floor layer</td>
<td>after 1300</td>
<td>animal structure</td>
</tr>
<tr>
<td>6</td>
<td>486580</td>
<td>586740</td>
<td>H1 (19)</td>
<td>possible turf cutting</td>
<td>before 1104?</td>
<td>evidence of cutting with an in-situ H1 above the cut</td>
</tr>
<tr>
<td>7</td>
<td>486580</td>
<td>586750</td>
<td>H1 in turf</td>
<td>turf</td>
<td>after 1104</td>
<td>animal structure</td>
</tr>
<tr>
<td>8</td>
<td>486580</td>
<td>586760</td>
<td>1766 (6); H1 (27); H3 (39)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>14</td>
<td>486585</td>
<td>586815</td>
<td>NA</td>
<td>enclosure wall</td>
<td>unknown</td>
<td>likely dates to the medieval period</td>
</tr>
<tr>
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<td>486590</td>
<td>586810</td>
<td>NA</td>
<td>enclosure wall</td>
<td>unknown</td>
<td>likely dates to the medieval period</td>
</tr>
<tr>
<td>19</td>
<td>486590</td>
<td>586770</td>
<td>1766 (6)</td>
<td>turf?</td>
<td>before 1766</td>
<td>more recent structure</td>
</tr>
<tr>
<td>20</td>
<td>486590</td>
<td>586760</td>
<td>1766 (6); 1300 (14); H1 (23); H3 (35)</td>
<td>turf?</td>
<td>before 1104</td>
<td>more recent structure</td>
</tr>
<tr>
<td>28</td>
<td>486575</td>
<td>586755</td>
<td>1300 (32); H1 (57); H3 (72)</td>
<td>turf w/H1</td>
<td>before 1300, after 1104</td>
<td>older animal structure north of existing ruins</td>
</tr>
<tr>
<td>29</td>
<td>486570</td>
<td>586755</td>
<td>1300 (40); H1 in turf; H3 (72)</td>
<td>turf w/H1</td>
<td>before 1300, after 1104</td>
<td>older animal structure north of existing ruins</td>
</tr>
<tr>
<td>30</td>
<td>486565</td>
<td>886755</td>
<td>H3 (75)</td>
<td>turf</td>
<td>before 1300, after 1104</td>
<td>older animal structure north of existing ruins</td>
</tr>
<tr>
<td>31</td>
<td>486565</td>
<td>586760</td>
<td>1300 (22); H1 (34); H3 (55)</td>
<td>charcoal, turf w/H1</td>
<td>before 1300, after 1104</td>
<td>older animal structure north of existing ruins</td>
</tr>
<tr>
<td>32</td>
<td>486570</td>
<td>576760</td>
<td>1300 (19); H1 in turf; H3 (60)</td>
<td>charcoal, turf w/H1</td>
<td>before 1300, after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>33</td>
<td>486575</td>
<td>586760</td>
<td>1300 (17); H1 (32); H3 (40)</td>
<td>charcoal</td>
<td>before 1300, after 1104</td>
<td>activity area</td>
</tr>
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</table>
Table 5.14: Coring Data from Langhús

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>486080</td>
<td>587740</td>
<td>1300 in turf</td>
<td>ash, charcoal, hay, turf w/1300 and H1 in it</td>
<td>after 1300- modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>3</td>
<td>486080</td>
<td>587742</td>
<td>H3 in turf</td>
<td>hay, turf w/H3 in it, wood</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>10</td>
<td>486055</td>
<td>587682</td>
<td>NA</td>
<td>turf</td>
<td>modern</td>
<td>structure</td>
</tr>
<tr>
<td>13</td>
<td>486055</td>
<td>587645</td>
<td>1766 (8); 1300 in turf</td>
<td>turf w/ 1300</td>
<td>between 1766 and 1300</td>
<td>structure</td>
</tr>
<tr>
<td>14</td>
<td>486055</td>
<td>587635</td>
<td>NA</td>
<td>charcoal, hay, turf</td>
<td>between 1766 and 1300</td>
<td>animal structure</td>
</tr>
<tr>
<td>16</td>
<td>486055</td>
<td>587595</td>
<td>H1 (21); H3 (30)</td>
<td>charcoal, peatash, peat</td>
<td>around 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>17</td>
<td>486055</td>
<td>587600</td>
<td>H1 in turf</td>
<td>burnt turf w/H1 in it</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>18</td>
<td>486056</td>
<td>587600</td>
<td>H1 in turf; H3 (41)</td>
<td>burnt turf w/H1 in it, charcoal, peat</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>19</td>
<td>486057</td>
<td>587600</td>
<td>NA</td>
<td>burnt turf, charcoal, peatash, peat</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>20</td>
<td>486058</td>
<td>587600</td>
<td>NA</td>
<td>charcoal, turf</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>21</td>
<td>486055</td>
<td>587599</td>
<td>H3 (37)</td>
<td>burnt turf, charcoal, peatash, peat</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>22</td>
<td>486055</td>
<td>587598</td>
<td>Landnám and H3 in turf</td>
<td>burnt turf w/ Landnám and H3 in it; dark floor layer</td>
<td>probably after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>23</td>
<td>486055</td>
<td>587597</td>
<td>NA</td>
<td>dark floor layer</td>
<td>probably after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>24</td>
<td>486055</td>
<td>587601</td>
<td>H1 in turf</td>
<td>burnt turf w/H1 in it, charcoal, peatash</td>
<td>after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>25</td>
<td>486055</td>
<td>587602</td>
<td>H1 in turf</td>
<td>burnt turf w/H1 in it, charcoal, peatash</td>
<td>after 1104</td>
<td>Iron-making area</td>
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Table 5.14: Coring Data from Langhús (continued)

<table>
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<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>486054</td>
<td>587600</td>
<td>H3 (36)</td>
<td>burnt turf w/ H3 in it, charcoal</td>
<td>probably after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>27</td>
<td>486053</td>
<td>587600</td>
<td>NA</td>
<td>dark floor layer, peatash, turf</td>
<td>probably after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>28</td>
<td>486052</td>
<td>587600</td>
<td>NA</td>
<td>burnt turf, dark floor layer</td>
<td>probably after 1104</td>
<td>Iron-making area</td>
</tr>
<tr>
<td>30</td>
<td>486030</td>
<td>587600</td>
<td>H3 (40)</td>
<td>charcoal</td>
<td>probably before 1300</td>
<td>Activity area</td>
</tr>
<tr>
<td>31</td>
<td>486065</td>
<td>587620</td>
<td>H1 (32); H3 (41)</td>
<td>charcoal</td>
<td>before and after 1104</td>
<td>Activity area</td>
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## Table 5.15: Coring Data from Miklihóll

<table>
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<th>Core</th>
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<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>485725</td>
<td>585510</td>
<td>H3 (37)</td>
<td>charcoal, dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>3</td>
<td>485705</td>
<td>585515</td>
<td>H1 (21); H3 (30)</td>
<td>charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>4</td>
<td>485710</td>
<td>585510</td>
<td>H1 (21); H3 in turf; H3 (37)</td>
<td>possible turf w/H3 in it</td>
<td>before 1104</td>
<td>animal structure</td>
</tr>
<tr>
<td>5</td>
<td>485700</td>
<td>585500</td>
<td>H1 (21); H3 (38)</td>
<td>charcoal</td>
<td>before 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>9</td>
<td>485700</td>
<td>585525</td>
<td>H3 (38)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>10</td>
<td>485690</td>
<td>585520</td>
<td>H3 (40)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>11</td>
<td>485680</td>
<td>585515</td>
<td>H1 (19); H3 (40)</td>
<td>charcoal</td>
<td>after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>12</td>
<td>485695</td>
<td>585535</td>
<td>NA</td>
<td>stonecoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>13</td>
<td>485690</td>
<td>585540</td>
<td>H3 (23)</td>
<td>charcoal, dung, stonecoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>15</td>
<td>485690</td>
<td>585585</td>
<td>H1 (19); H3 (33)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>18</td>
<td>485700</td>
<td>585620</td>
<td>1300 (13); H1 (21); H3 (37)</td>
<td>dung, peatash, charcoal</td>
<td>dung--before 1300, charcoal and peatash before 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>19</td>
<td>485705</td>
<td>585600</td>
<td>H1 (20); H3 (30)</td>
<td>charcoal, dung</td>
<td>before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>20</td>
<td>485710</td>
<td>585575</td>
<td>1300 (14); H1 in turf; H3 (35)</td>
<td>dung, turf, peatash, charcoal</td>
<td>dung--after 1300; turf--before 1300, before 1104; charcoal and peatash before 1104</td>
<td>animal structure</td>
</tr>
<tr>
<td>21</td>
<td>485700</td>
<td>585570</td>
<td>1300 (15); H1 (21); H3 (38)</td>
<td>charcoal, dung, peatash</td>
<td>dung--after 1300; charcoal before and after 1104</td>
<td>activity area</td>
</tr>
<tr>
<td>22</td>
<td>485710</td>
<td>585560</td>
<td>H3 (35)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>23</td>
<td>485690</td>
<td>585565</td>
<td>H1 (21); H3 (37)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>24</td>
<td>485650</td>
<td>585615</td>
<td>H1 (21); H3 (33)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>25</td>
<td>485615</td>
<td>585530</td>
<td>H3 (38)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
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Table 5.16: Coring Data from Bakki

<table>
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<th>Core</th>
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<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>482525</td>
<td>585700</td>
<td>H1 (14)</td>
<td>charcoal, peatash, turf</td>
<td>before 1104</td>
<td>small structure with H1 directly on top, so it is likely the structure is fairly contemporary with H1</td>
</tr>
<tr>
<td>6</td>
<td>482524</td>
<td>585702</td>
<td>H1 (15)</td>
<td>charcoal, turf</td>
<td>before 1104</td>
<td>better preserved area of the small structure; likely not a household, but could be a workshop or a temporary dwelling</td>
</tr>
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</table>
Table 5.17: Coring Data from Hofstaðir

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
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<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>482880</td>
<td>577890</td>
<td>NA</td>
<td>dung, animal bone</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>2</td>
<td>482875</td>
<td>577890</td>
<td>H3 (33)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>3</td>
<td>482870</td>
<td>577900</td>
<td>H3 (27)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>4</td>
<td>482870</td>
<td>577905</td>
<td>H3 (32)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>5</td>
<td>482870</td>
<td>577910</td>
<td>H3 (30)</td>
<td>dung, animal bone</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>6</td>
<td>482880</td>
<td>577900</td>
<td>H3 (37)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>7</td>
<td>482885</td>
<td>577900</td>
<td>H3 (40)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>8</td>
<td>482870</td>
<td>577870</td>
<td>H1 (22); H3 (38)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>9</td>
<td>482840</td>
<td>577870</td>
<td>H3 (40)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>10</td>
<td>NA</td>
<td>577887</td>
<td>NA</td>
<td>dung, part of a stekkur</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>11</td>
<td>482890</td>
<td>577895</td>
<td>NA</td>
<td>dung, part of a stekkur</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>12</td>
<td>482885</td>
<td>577883</td>
<td>NA</td>
<td>dung, part of a stekkur</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>13</td>
<td>482887</td>
<td>577865</td>
<td>NA</td>
<td>turf (top of mound), iron nail, greasy soil (floor)</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>14</td>
<td>482887</td>
<td>577865</td>
<td>NA</td>
<td>turf (top of mound), iron nail, greasy soil (floor)</td>
<td>modern</td>
<td>animal structure, still partially visible on the surface</td>
</tr>
<tr>
<td>15</td>
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<td>577860</td>
<td>H1 (14)</td>
<td>turf w/H1, ash</td>
<td>after 1104</td>
<td>second structure not visible on the surface</td>
</tr>
<tr>
<td>16</td>
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<td>577865</td>
<td>1300 in turf; H1 (35); H3 (40)</td>
<td>turf, charcoal, iron</td>
<td>between 1300 and 1104</td>
<td>second structure not visible on the surface</td>
</tr>
<tr>
<td>17</td>
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<td>577855</td>
<td>H1 (13); H3 (40)</td>
<td>charcoal, turf</td>
<td>before 1104</td>
<td>oldest material on the site; structure</td>
</tr>
<tr>
<td>18</td>
<td>482898</td>
<td>577585</td>
<td>H1 (13); H3 in turf</td>
<td>charcoal, turf w/H3</td>
<td>before 1104</td>
<td>oldest material on the site; structure</td>
</tr>
<tr>
<td>19</td>
<td>482898</td>
<td>577848</td>
<td>H3 in turf</td>
<td>charcoal, turf w/H3</td>
<td>before 1104</td>
<td>oldest material on the site; structure</td>
</tr>
<tr>
<td>20</td>
<td>482885</td>
<td>577843</td>
<td>H3 (28)</td>
<td>dung</td>
<td>modern</td>
<td>activity area</td>
</tr>
</tbody>
</table>
Table 5.17: Coring Data from Hofstaðir (continued)

<table>
<thead>
<tr>
<th>Core</th>
<th>ISNET E</th>
<th>ISNET N</th>
<th>Tephra (cm below ground surface)</th>
<th>Cultural Inclusion</th>
<th>Date of Cultural Material</th>
<th>Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>483135</td>
<td>577870</td>
<td>1300 (29); H3 (40)</td>
<td>charcoal</td>
<td>before 1300?</td>
<td>midden from church area</td>
</tr>
<tr>
<td>22</td>
<td>483135</td>
<td>577845</td>
<td>NA</td>
<td>stonecoal, charcoal, peatash, burnt bone</td>
<td>stonecoal-modern; charcoal is likely older</td>
<td>midden from church area</td>
</tr>
<tr>
<td>23</td>
<td>483135</td>
<td>577820</td>
<td>H3 (60)</td>
<td>burnt bone, charcoal, turf</td>
<td>turf is likely pre-modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>24</td>
<td>483130</td>
<td>577795</td>
<td>H3 (42)</td>
<td>bone, charcoal, stonecoal</td>
<td>charcoal is likely pre-modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>25</td>
<td>483110</td>
<td>577790</td>
<td>H3 (30)</td>
<td>dung</td>
<td>modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>26</td>
<td>483110</td>
<td>577815</td>
<td>H3 (38)</td>
<td>charcoal</td>
<td>charcoal is likely pre-modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>27</td>
<td>483110</td>
<td>577840</td>
<td>H3 (34)</td>
<td>charcoal</td>
<td>modern and pre-modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>29</td>
<td>483110</td>
<td>577890</td>
<td>H3 (35)</td>
<td>charcoal</td>
<td>modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>30</td>
<td>483085</td>
<td>577900</td>
<td>H1 (32); H3 (40)</td>
<td>charcoal</td>
<td>modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>31</td>
<td>483085</td>
<td>577875</td>
<td>H3 (30)</td>
<td>charcoal</td>
<td>modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>32</td>
<td>483085</td>
<td>577835</td>
<td>H3 (40)</td>
<td>bone, charcoal</td>
<td>modern and pre-modern</td>
<td>midden from church area</td>
</tr>
<tr>
<td>33</td>
<td>483085</td>
<td>577810</td>
<td>H3 (45)</td>
<td>charcoal, turf</td>
<td>pre-modern</td>
<td>activity area</td>
</tr>
<tr>
<td>34</td>
<td>483085</td>
<td>577785</td>
<td>H3 (31)</td>
<td>charcoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>40</td>
<td>483065</td>
<td>577900</td>
<td>H1 in turf; H3 (40)</td>
<td>charcoal; turf?</td>
<td>modern</td>
<td>activity area</td>
</tr>
<tr>
<td>41</td>
<td>482940</td>
<td>577935</td>
<td>H1 (9); H3 (40)</td>
<td>charcoal</td>
<td>modern</td>
<td>activity area</td>
</tr>
</tbody>
</table>
Table 5.18: Farmstead Sites in Viðvíkursveit over Time

<table>
<thead>
<tr>
<th>Farmstead</th>
<th>Tax Value*</th>
<th>Size</th>
<th>Settlement (874-1000)</th>
<th>Early Medieval (1000-1104)</th>
<th>Sturlunga (1104-1300)</th>
<th>Late Medieval (1300-1600)</th>
<th>Early Historic (1600-1800)</th>
<th>Historic (1800-1900)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Álgerðastaðir (L**)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ásgeirsbrekka (M)</td>
<td>50</td>
<td>2</td>
<td></td>
<td>X</td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bakki (C)</td>
<td>50</td>
<td>2</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brimnes (L)</td>
<td>50</td>
<td>2</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enni (M)</td>
<td>20</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fornistekkur (L)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frossabrekkja (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geitagerðir (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gljúfrá (L)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grænagerðir (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofdalir (L)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofstaðir (M)</td>
<td>60/50</td>
<td>1/2</td>
<td>X</td>
<td>X X X</td>
<td>X X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hólakot (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
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<tr>
<td>Hringver (M)</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kvíndishóll (L)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
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<td>X</td>
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</tr>
<tr>
<td>Kýrholt (L)</td>
<td>50</td>
<td>2</td>
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<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lækur (L)</td>
<td>20</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Langhús (L)</td>
<td>20</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litlilhóll (L)</td>
<td>10</td>
<td>4</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lón (L)</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miklihóll (M)</td>
<td>40</td>
<td>2</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Narfastaðir (L)</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pálsgerði (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranveigarstaðir (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Svaðastaðir (M)</td>
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<td>2</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valhóll (M)</td>
<td>&lt; 1</td>
<td>4</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vatnsleysa (L)</td>
<td>30</td>
<td>3</td>
<td></td>
<td></td>
<td>X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viðvík (M)</td>
<td>100/80</td>
<td>1</td>
<td>X</td>
<td>X X X</td>
<td>X X X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Tax Value is estimated in Danish Long Hundredths
**L=Lowland; M= Midland
Table 5.19: Activity Area Sites in Viðvikursveit over Time

<table>
<thead>
<tr>
<th>Activity Area</th>
<th>Type of Activity</th>
<th>Settlement (874-1000)</th>
<th>Early Medieval (1000-1104)</th>
<th>Sturlunga (1104-1300)</th>
<th>Late Medieval (1300-1600)</th>
<th>Early Historic (1600-1800)</th>
<th>Historic (1800-1900)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakki (C)</td>
<td>Activity/Shelter Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brimnes (L)</td>
<td>Pagan Graves</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enni (M)</td>
<td>Pagan Graves</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fornistekkur (L)</td>
<td>Animal Husbandry</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hofstaðasel (M)</td>
<td>Animal Husbandry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hólakot (M)</td>
<td>Charcoal Making; Flax Weaving (?); Animal Husbandry</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kolkuós (C*)</td>
<td>Harbor and Trading Center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Langhús (L)</td>
<td>Iron-Working</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miklihóll (M)</td>
<td>Animal Husbandry</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*C=Coast; L=Lowland; M=Midland
Table 5.20: Sites in Hjaltadalur and Viðvíkvursveit by Elevation over Time (n= 79)

<table>
<thead>
<tr>
<th>Region</th>
<th>Settlement</th>
<th>Early Medieval</th>
<th>Sturlunga</th>
<th>Late Medieval</th>
<th>Early Historic</th>
<th>Historic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coast</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Lowland</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>15</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Midland</td>
<td>8</td>
<td>14</td>
<td>10</td>
<td>38</td>
<td>43</td>
<td>28</td>
</tr>
<tr>
<td>Highland</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
<td>20</td>
<td>17</td>
<td>59</td>
<td>61</td>
<td>43</td>
</tr>
</tbody>
</table>
Table 5.21: Sites by Region and Time Period (non-domestic sites in parenthesis)
Identified in the 2008 Archaeological Coring Survey

<table>
<thead>
<tr>
<th>Region</th>
<th>Settlement</th>
<th>Early Medieval</th>
<th>Sturlunga</th>
<th>Late Medieval</th>
<th>Early Historic</th>
<th>Historic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hjaltadalur</td>
<td>3 (2)</td>
<td>6 (4)</td>
<td>5 (2)</td>
<td>18 (13)</td>
<td>24 (12)</td>
<td>17 (5)</td>
</tr>
<tr>
<td>Viðvikursveit</td>
<td>3 (4)</td>
<td>3 (7)</td>
<td>6 (5)</td>
<td>27 (5)</td>
<td>25 (3)</td>
<td>19 (1)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6 (6)</td>
<td>9 (11)</td>
<td>11 (7)</td>
<td>45 (18)</td>
<td>49 (15)</td>
<td>36 (6)</td>
</tr>
</tbody>
</table>
Chapter 6

From Independent Traders to Dependent Tenants: Reflections of an Economic Landscape in Skagafjörður

The distribution of farmstead and activity area sites in the Hjaltadalur-Viðvikursveit valley system confirm that that economy of medieval Iceland in the north centered on pastoral-agrarian pursuits, but these data also warn against the view of a farmstead system geared only towards smallholders and sustainability and hint that this rural economy could have held additional commercial pursuits. The colonization process described in medieval texts, however, makes no mention of the establishment of cities or villages, and instead emphasizes the ability of chieftains to provide agricultural lands for their retinue (Hines 1997: 264). This settlement strategy would seem to support the primacy of agricultural production for an economy of sustainable subsistence rather than one engaged in the kinds of commercialism and overseas trade that were so widespread throughout Norse society during the Viking Age. Are these differences between the settlement trends documented in the archaeological and the written record contradictory or are they are implicitly describing two sides of the same economic system? This presumed tension between text and archaeology speaks to a thornier concern over our ability to gauge the actual extent and importance of both local and long-distance trade in medieval Iceland, a concern that is underscored by methodological challenges and analytical assumptions about what a commercial economy should look like.
One important outcome of my own research and development of the Skagafjörður Landscape Project (SLP) is an innovative methodological approach towards incorporating existing datasets with new regional settlement pattern analysis. My research approach, grounded in landscape and social network theory, focuses on how site distribution is a reflection of the kinds of activities a society’s political economy could have supported, enabling researchers to examine the degree of influence specific economic enterprises had in the creation, maintenance, or collapse of a cultural system. With its focus on the structure of a network rather than on a list of traits, social network theory avoids the pitfalls of narrow categorization and permits researchers to consider social action with fewer preconceptions.

This chapter seeks to provide an interdisciplinary perspective on the nature of the medieval Icelandic economy, testing the hypothesis that despite the absence of urbanism, the endeavors of trade, exchange, and surplus production were more important to the society than has previously been assumed. The results from the archaeological survey of Hjaltadalur and Viðvíkursveit are suggestive of a diversified economy, with a well-developed household provisioning system alongside a potential surplus industry capable of managing both agrarian and non-agrarian goods. To further test and better understand these results, I have designed the Multiregional Site Registry (MSR) for Skagafjörður, a comprehensive database covering an area roughly 5,500 km² that includes 610 sites spanning the ninth through the twentieth century (see Figure 6.1 and Table 6.1). The MSR database makes highly integrated forms of analysis possible as it facilitates researchers to consider multiple lines of evidence, from environmental conditions to textual descriptions, concurrently.
6.1 Models for Understanding the Medieval Economy in Iceland

Data from the archaeological coring survey discussed in chapter 5 demonstrate that site distribution in the Hjaltadalur-Viðvíkursveit valley system conforms to a scale-free network rather than a clustered network. Scale-free networks are characterized by a site distribution that is hierarchical but also scalar, permitting several possible avenues of interaction between sites (see also chapter 4). Contrary to the commonly held opinion that the highlands were the preferred location for the first wave of settlement (Byock 2000), domestic sites of varying size were established in all ecological zones located along a continuum of geographic elevations that range from sea level to nearly 300 masl. Since each ecological zone provides certain crucial resources necessary for the survival of any farmstead, these settlement trends suggest a landscape organization capable of facilitating a network of cooperation, or at the very least an effort of suppressed hostility, that would ensure the exchange of goods between households. While some degree of local trade and exchange was necessary and may have even included occasional negotiations for acquiring luxury goods from abroad, the data from one valley alone cannot adequately assert that production for non-local markets was ever a vital component of the totality of the Icelandic enterprise. Research of this kind requires both micro (site specific) and macro (regional) levels of analysis, which are best accommodated by the integration of all available datasets into a single working database, such as the Multiregional Site Registry (MSR) that I have compiled for Skagafjörður.

Settlement data from the MSR will be used to examine two related questions: is Skagafjörður as a whole organized under a scale-free or clustered network; and was the
social landscape structure of the Skagafjörður capable of facilitating both local and international trade? I will address these questions through three possible economic models: the autarkic model, the imperial economy model, and the Norse Economic Territory (NET) model. Each model, shaped by differing perceptions on the circumstances under which Iceland was colonized, represents a distinct economic perspective on the nature of early Icelandic society and the subsequent development of secondary state institutions. These economic features are discernable in site distribution trends that can be identified through an explicit suite of archaeological correlates.

6.1.1 Autarkic Model: Autonomous Secondary State

As we saw in chapter 2, the Autonomous Secondary State Model is based on the premise that Iceland was settled by displaced Norwegian elites, who saw Iceland as an opportunity to revitalize the glories of their fading world of chieftains back home in Europe. The goal of these agricultural settlers was to replicate the social structure of Norway before the introduction of kings, and to remain predominately outside of the political sphere of medieval Europe. The Autarkic Model proposes that under these conditions the economy of medieval Iceland was centered on local subsistence production carried out by all households, representing a clustered network organization. Trade is viewed in this model as a necessary activity since crucial goods, such as grain and timber, could only be acquired through importation, and equally vital local goods such as iron ore and fish were conscripted resources. However, this model suggests that trade was limited by strong social and environmental proscriptions, with only elites engaged in a gift economy that obtained overseas goods that could be redistributed. The
elite gift economy would have used local goods for acquiring foreign luxury goods and additionally to orchestrate a local-based exchange network between elites and followers. The goal of the economy for most households, however, was a sustainable provisioning system, not commercialism.

These economic goals are echoed in the proposed settlement distribution trends put forward by the Autarkic Model: if self-sufficiency was the driving force behind the economy, then we can anticipate an early emphasis on the highland regions. The environment of the highlands, with their drier soils and groves of forests, were easily converted into grass pastures for livestock farming, making these areas ideal locations for the initial colonization efforts in Iceland. Midland areas, with their water saturated, dense soils would have been less desirable, especially at the start of settlement when highland areas were still available. It is only after the highland areas became overpopulated and the ill-effects of erosion from overgrazing begin to surface would midland property rise in value. Lastly, the Autarkic Model would predict that coastal and lowland sites would be the least attractive to the initial settlers as these areas are not ideal farming locations; however, control over some of the resources found in these regions, such as iron ore, would have been both exploited and controlled. We would expect then to find few permanent domestic occupations in these areas until the midland areas became overcrowded with farmsteads. Lastly, there is little reason to assume a hierarchy in site size under these conditions, as the initial colonization would have required a strong ethic of cooperation to transform this distant frontier into a proper Norse world.

1 Vésteinsson (2001), however, argues lowland areas would have been desirable lands during the initial settlement because they did not need to be cleared of scrub brush. However, the lowlands were likely not any more “ready made” for settlement than the highlands and would have required a fair amount of labor to transform these water saturated areas into suitable pastures and homesteads.
Applying typical population growth trajectories as the basis of our calculations, the Autarkic Model predicts significant shifts in settlement trends to occur by the thirteenth century. As the dual vices of population growth and environmental degradation set into motion patterns of resource scarcity, this model anticipates a shift in not only site distribution but also the development of site size hierarchies, with the establishment of a landscape system defined by a large number of small farms attached to a few large “estate” farms. This landscape organization parallels the development of greater social inequality and a heightened attempt by elites to regulate and control land and resources.

Archaeological correlates for Autarkic Model over time are as follows:

| **Settlement** | site distribution clustered in the highland areas, with little differentiation in site size, with an economy geared towards self-sufficiency |
| **Early Medieval** | decline in highland sites (environmental degradation) and the start of settling midland areas, and the start of site size differentiation |
| **Sturlunga** | continued decrease in highland sites, a steady increase in midland sites and the start of lowland cultivation alongside an increase in the number of smaller domestic sites |

### 6.1.2 Imperial Economy Model: Hegemonic Colonial Secondary State

The Hegemonic Colonial Secondary State Model, as described in chapter 3, is shaped by the hypothesis that that the settlement of Iceland was part of the expansionary aims of the Norwegian monarchy. Grounded in historical discussions on the aims of a Viking Age world system, the Imperial Economy Model suggests that Iceland was one part of a larger political network of planned colonies throughout the North Atlantic that
were formally controlled by Scandinavian monarchies. Under the administration of kings, permanent colonists were deployed to these island peripheries in search of raw materials that could be sent back to Europe and converted into commodities for an international market. The economy included subsistence activities aimed at sustaining long-term colonists, but was driven by the mercantile aims of non-local elites back in Scandinavia.

These economic goals allow the Imperial Economy Model to make several predictions about the distribution of sites over time. If the economy of Iceland was driven by the aims of imperialism, then the distribution of sites should echo a planned settlement pattern, rather than the more sporadic colonization trend typical of an open frontier setting, but likewise representing a clustered network organization. The Imperial Economy Model, building on the well-documented social organization of the fourteenth century, suggests that elite leaders, who remained loyal to their kings back in the homeland, were necessary to coordinate the channels of communication between sites in order to facilitate a system of procurement, transportation, and exchange of commodities. The majority of sites, however, are predicted to be fairly homogenous, with each site working towards household sustainability, but with an emphasis on producing materials for a market economy coordinated by the Norwegian core. Under these configurations, there would be little competition between sites since all sites shared the same goal of carrying out the orders of the king. Using the landscape organization of the fourteenth century as a model, we can predict that these enterprises were achieved with the establishment of small tenant farmsteads that remained dependent on larger elite households for protection and for meeting some of their basic subsistence needs.
The basic settlement trends, according to the Imperial Economy Model, would exhibit few changes over time, experiencing some degree of alterations as the monarchy strove for greater consolidation throughout its empire. The one exception to this rule would be the preference for establishing sites in specific environmental regions. As the economic and political ambitions of Scandinavia changed over time, we can anticipate seeing these goals reflected in shifts in site distribution. During the Settlement period, the economy of medieval Scandinavia was formed around trade in limited, but highly priced, luxury items and hard to procure raw materials. Under these economic parameters, it would be logical to predict that sites were established in all environmental zones in Iceland since different resources could be found in different ecological niches. By the twelfth century, however, markets in Europe focused on the retail of staple goods, set at low prices but sold in bulk. Iceland could offer dried fish, wool, and smoked meat as potential staple goods. Under these conditions, it is likely that agrarian lands, especially the highlands, and the areas near rivers and the sea would have been preferable settlement options.

Archaeological correlates for the Imperial Economy Model over time are as follows:
I will present here a third, new model, that I have named the Synergistic Secondary State and its corresponding economic model, the Norse Economic Territory (NET) Model, which suggests that the settlement of Iceland was motivated by entrepreneurial merchant-farmers looking for new opportunities during the commercial era of the Viking Age. Contrary to the view presented in the Imperial Economy Model, I hypothesize that the initial settlers were only loosely governed by the royal administration of Norway, and instead remained more or less politically independent, but economically connected to Scandinavia until the late thirteenth century when the society formally came under the rule of the Norwegian State. Unlike the Autarkic Model, I hypothesize that Iceland was not an insular community on the edge of a Norse world, but was in fact well connected to the rest of Europe through its market participation in the Norse Economic Territory (NET).

2 For a full discussion on the Synergistic Secondary State Model, please see chapter 7.
These economic goals, according to the NET model, would include an effective and sustainable household provisioning system alongside the surplus production of mostly agrarian-based goods that could be exchanged either locally or internationally. This economic system, I will suggest, operated without urbanism and, for over two hundred years, without the backing of state-level administration and represents a scale-free network organization. If this hypothesis is correct, we should expect to see these economic aims reflected in the distribution of sites over time. If the economic aims exceeded sustainability and included some degree of commercialism then we should expect to see all ecological regions, highland, midland, lowland, and coastal areas, utilized right from the beginning of settlement. Additionally, if Icelandic society remained politically independent, we should expect a settlement pattern engendered by a frontier ethos, with less coordination and more opportunistic settlement planning. These economic parameters likewise suggest the possibility for political and economic competition. If this hypothesis is true, then we can anticipate a hierarchical settlement trend even during the initial phase of open colonization.

If the hypotheses predicted by the NET Model are correction, we should anticipate these settlement trends to span the duration of the Viking Age, with a transformation in landscape organization once the medieval economy, with its focus on bulk staple goods, supplants the luxury-based Viking Age economy in the mid-eleventh century. Within the parameters of a medieval economy, I hypothesize that the settlement patterns in Iceland will reflect a surplus agrarian production for goods for export, such as sheep farming for wool. Projected settlement patterns for this hypothesis would necessitate greater control over land use, perhaps best facilitated by the development of
smaller tenant farms, utilizing all potential agricultural opportunities in the highlands, midlands, and lowlands. If these hypotheses are supported by the data from the MSR analysis, then I would suggest that the NET model should be used for examining the development of secondary state institutions in Iceland.

Archaeological correlates for the NET Model over time are as follows:

**Settlement**: sites in all environments with little evidence of a planned settlement, and with a hierarchy of farmstead sizes alongside specialized activity areas aimed at acquiring luxury goods as well as agricultural provisioning systems to support households

**Early Medieval**: continuation of the patterns developed during the settlement period, but with some projected changes as the economy changed, such as shifting to environments that could sustain intensification of goods for a staple goods surplus economy

**Sturlunga**: a steady increase in sites in all regions, and a growing number of smaller households reflecting a shift towards a staple goods economy and the development of incipient state institutions and a feudal landscape

With these models on mind, we can now turn to the settlement data complied in the Multiregional Settlement Registry (MSR) for Skagafjörður and the results of the Skagafjörður Landscape Project SLP.

**6.2 Results of the Skagafjörður Landscape Project**

610 sites, with nine site type categories, four elevation groups, and spanning a thousand year period of time (see Tables 6.1 and 6.2), were compiled for the MSR and

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3 See also chapter 4 for a full discussion on how the MSR was complied and how each category was defined. The MSR catalog is divided by eight different site types, with site types 1-4 corresponding to domestic sites and 5-9 corresponding to non-residential sites. Geographic groups, defined by elevation, include: highland, midland, lowland, and coast.
considered for the Skagafjörður Landscape Project (SLP). Knowledge of these sites came from an interdisciplinary synthesis of my primary fieldwork, preexisting archaeological reports (published and unpublished), and a wide range of documentary sources that includes both economic records (census reports) and metahistorical literary records (sagas).

Of these 610, a total of sixty-one domestic and non-residential sites were established in Skagafjörður during the Settlement period (870-1000 CE), with a nearly even distribution of sites between the lowlands (21), midlands (18) and highlands (19). The coasts were not intensively settled, representing only three of the sixty known sites. This distribution pattern suggests that the initial settlers exploited all resources zones, presumably with different objectives in mind. By the Early Medieval period (1000-1104 CE), there were a total ninety-five sites, with a continued even distribution between the lowlands (35) and the highlands (31) and slightly fewer sites in the midlands (24). In the Sturlunga period (1104-1300 CE) this trend continues, with the total number of sites increasing to 140, and with an emphasis on lowland (46) areas, an increase in midland areas (36), and for the first time a slight majority of sites were to be found in the highlands (52).

State institutions are fully developed by the Late Medieval period (1300-1600 CE), and not surprisingly, this social transformation is reflected in a new landscape organization. By 1300 CE, the number of overall sites dramatically increases, from 140 sites during the Sturlunga period to 415 sites. All environmental locales witness a dramatic increase in the number of sites, but the midlands (146) become the favored region for farmstead sites, followed closely by the lowlands (136), and lastly the
highlands (115). The coast likewise experiences a modest growth in the number of sites, increasing from six to eighteen sites. By the Early Historic period (1600-1800 CE) the growth rate of new sites slowed considerably, with a total of 539 sites overall. In this period, the highlands (183), for the first time, represent the only region of considerable growth, followed by a nearly even distribution once again between the lowlands (169) and the midlands (164). By 1700 CE, the number of sites began to shrink dramatically, as seen in the Historic period with a total of 428 sites, and a return to a more even distribution of sites between the lowlands (136), midlands (127) and the highlands (143).

6.2.1 Farmstead Sites

492 domestic farmstead sites were considered for this study (see Table 6.3). Farmstead sites are categorized\(^4\) by their size, their location and elevation, and the time period(s) in which they were in use. Overall, the data from the MSR indicate that the organization of the landscape has changed considerably over time, and that the farmstead system of pre-state Iceland is decisively different from the state system documented in fourteenth century.

There are only thirty-four type 1 (very large) farmstead sites for the entire thousand year period of time considered in this study. Examining the distribution of these sites by elevation (coast, lowland, midland and highland) in the Settlement period, there were a total of thirteen type 1 farmsteads. Surprisingly, the area with the highest number of type 1 large farmsteads was the lowlands (6) followed closely by the midlands (4) and lastly the highlands (2). The coast has only one farmstead site in the Settlement

\(^4\) See chapter 4 for more discussion on how these categories are defined.
period, a trend that will continue for the coast throughout the time periods surveyed here. These trends documented for the Settlement period continued into the Early Medieval period, but by the Sturlunga period, the midlands (11) became the region with the most type 1 sites followed closely by the lowlands (8). The highlands would be home to only two type 1 sites throughout time. By the Late Medieval period, the midlands continued to have the highest number of large farmsteads (16) followed once again by the lowlands (12). The Late Medieval period was the last time new large. Type 1 farmsteads would be established. At the same time, however, very few type 1 farmsteads were ever abandoned, making these sites highly durable.

These same trends are seen if we examine type 1 farmsteads by geographic area, rather than simply by elevation (Table 6.1). From the Settlement to the Historic period, the location of type 1 farmsteads can be found in fourteen of the twenty-nine geographic areas surveyed here. No single region, however, is home to a majority of sites in the pre-state period; instead the distribution of sites seems to conform more to elevation, indicating that the availability of certain resources is a likely consideration for the differential placement of type 1 sites. While no single region can be seen as the nexus of expansion and power in Skagafjörður in the pre-state period, a clear trajectory of development can be seen across the twenty-nine regions, indicating that different regions were developed within distinct occupational phases. Farmsteads located along or near

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5 Seven in Blönduhlíð (Flugumyri, Frostaðaðir, Hjaltastaðir-Syðstuhvamurr, Miðgrund, Stóru-Akrar, Syðri Brekkur, Viðfellir, and Þorleifstaðir); five in Hjaltdalur (Efri-Ás, Hölar, Kálfstaðir, Neðri-Ás, and Skúfsstaðir); two in Hóðaströnd (Hof and Höði—the only large coastal site); one in Kjálka (Flatlaunga); one in Kolbeinsdalur (Skríðuland); two in Langholt (Geldingaholt and Stóra Seyla); one in Neðri byggð (Skililstaðir); two in Ösundshlíð (Gróð and Ósland); one in Samundarhlíð (Sölheimar); three in Tungusveit (Hafgrímsstaðir, Héradsdalur, and Lytingstaðir); one in Vesturdalur (Goðdalir); one in Viðmyrarpláss (Viðmyri); three in Viðvikursveit (Hofdalir, Hofstaðir, and Viðvík); and two in Vikurtorfa (Reynistaður and Við).
water routes were the clear preference of site location in the Settlement period. These include coastal sites like Höði in Höðaströnd as well as sites like Stóra Seyla in Langholt located in close proximity of the Héraðsvötn River, a river with channels that ended their course at the sea. The Viking Age longship, (knarr) with its low keel would have been able to sail along rivers like the Héraðsvötn, making the transition from sea to river and the exploration of inland areas by boat possible. The question then remains, were these sites established because they were the first areas that the settlers came into contact with, or were they established because these areas were located along watery highways? I will discuss this question further later in this chapter, but it is important to suggest here that if ease and convenience was the motivation for farmstead establishment in these areas, we might expect to see more temporary, smaller sites to develop here followed by the development of large sites in more agrarian suitable areas a few years after the initial settlement; however, all of these sites develop into very large farmsteads very early into their occupation and remain in use for well over a thousand years. In addition to these sites, two type 1 highland sites were established in the Settlement period: Flatatúnga in Kjálka and Goðdalir in Vesturdalur. These farmsteads can be seen as gateway sites into the highlands, positioned right at the transition zone between the midlands and the highlands. It is likely that as with Hjaltadalur and Viðvíkursveit, many of these farmsteads acted like hubs, as centers of political, social, and economic interaction, that connected the highland and lowland areas, allowing for the possible communication between farmsteads as well as for the possible exchange of regional goods. These trends

6 It is not uncommon to find at the oldest occupational levels of these sites more temporary structures, often a pithouse, that may have served as shelters while longhouses were in the process of construction. Often, in fact, these pithouse features are incorporated into the layout of the longhouse or are located in close proximity, and are reused as workshops or storage facilities.
continued into the Early Medieval period, with additional type 1 sites in Hjaltadalur (Neðri-Ás) and in Langholt (Geldingholt). Also established at the same time were the farmsteads Stóru-Akrar and Þorleifstaðir, both located within close proximity to one another at the southern end of Blönduhíð, where the Héraðsvötn River ends and the elevation begins to steadily increase just before crossing over into the landlocked highland reaches of the Kjálka valley. Looking at the placement of these sites it is clear that they are strategically positioned within the landscape, controlling access to crucial resources areas, serving as points of contact between the coasts, the lowlands, the midlands, and the highlands within Skagafjörður, but also connecting Skagafjörður to its neighboring fjord valleys, linking all of Iceland together and ultimately linking Iceland with the greater world beyond the Atlantic. During the last pre-state phase, the Sturlunga period, type 1, large farmsteads were established in the Tungusveit, a corridor between the midlands and the highland valleys of the Vesturdalur and Austurdalur. The development of the southern end of Blönduhíð in the Early Medieval continues here with the establishment of one type 1 Sturlunga age farmstead, Skíðastaðir, located the nearby region of Neðri-byggð. As with the Stóru-Akrar and Þorleifstaðir, Skíðstaðir is located in a transition zone, between the riverine highway and the landlocked inland interior. Overall these trends indicate that inland areas were growing in importance by the Sturlunga period, a trend that is intensified in the Late Medieval period when state institutions are fully developed.

A similar pattern can be discerned with type 2 (large) farmsteads, with a total of fifty-six sites over the time period considered here. Site distribution is clustered in the lowlands and midland areas of Skagafjörður. Twelve type 2 farmsteads were established
during the Settlement period, with the highest number of sites positioned within the midlands (6), followed by the lowlands (4), and the fewest number of sites in the highlands (2) and no sites on the coast. After the Settlement period, the lowlands will continuously have the highest number of type 2 farmsteads. Since the lowlands consist predominately of marshes and bogs, which are not easily converted into pastures, these trends suggest that the early development of this region could indicate that interests other than livestock farming motivated the settlement of these areas during most of the pre-state period. In fact, the lowlands do provide a number of resources that could have attracted settlers. For example, most lowland areas are located alongside river valleys with diverse riverine ecosystems that could supplement a household’s diet with wild foodstuffs, most importantly a variety of birds and fish, and other necessary household products, such as turf for building material, peat for fuel, and bog iron ore for metal-working. The lowlands could also provide settlers with more exotic, luxury items, including a wide variety of falcons, foxes, and sulfur. The lowlands were likewise located near the coastline making access to additional resources, such as driftwood, marine fish, dolphin, shark, whale, and walrus, another possible motivation for establish a residence in the lowlands. Type 2 farmsteads dominated the lowlands throughout the entire pre-state period. It is not until the Late Medieval period that this pattern changes, when type 3 (medium to small) farmsteads become the norm for the lowlands. This shift indicates a possible change in landscape use. Environmental reconstructions taken from the archaeo-logical coring survey in Langholt (Carter 2003), Hjaltadalur and
Viðvikursveit suggest that after 1300, the lowlands are drier,\(^7\) indicating that these areas had been drained and were likely being used for agrarian pursuits.

Type 3 farmsteads (mid-size) make-up 118 sites for the time period considered here. There are twelve identified sites during the Settlement period, with five sites in the lowlands, five in the highlands, and one site in both the midlands and on the coast. During the Early Medieval period (18 sites), new sites are established only in the lowlands and in the highlands and during the Sturlunga period (29 sites), new sites are only established in the lowlands. Throughout the pre-state period, the type 3 farmsteads are supported by lowland and highland locales, with a clear preference for the lowlands by the Sturlunga period (see Table 6.3). This distribution changes during the Late Medieval period (109 sites) when the midlands dramatically surge from just six sites in the Sturlunga period, to forty sites by 1300 CE. Type 3 sites continue to increase in number throughout the lowlands (46) and less dramatically in the highlands (20) and on the coast (3). These data suggest different economic aims in lowland regions before and after state development.

Lastly, type 4 farmsteads (small to very small) farmsteads represent the vast majority of sites, numbering 284 for the time period under consideration. However, type 4 sites were not common in the lowland and midland locales of Skagafjörður until the Late Medieval period, but they were by far the most common type of farmsteads found in the highland areas from the time of settlement through the Historic period. During the Settlement period, eight type 4 farmsteads were established, with six located in the

\(^7\) Drier soils were likely achieved from the combined efforts an increase in soil deposition in the lowlands as a result of erosion in the highlands that dumped aeolian silts onto lower elevation areas (Carter 2003) and the intensification of field production through the draining of wetlands with the construction of ditches.
highlands. By the Early Medieval period, this number had climbed in the highlands to fifteen sites out of nineteen of the total type 4 sites in Skagafjörður. The Sturlunga period, however, can be seen as a transitional period, with an increase in type 4 farmsteads beginning to appear in the lowlands (up to 7 from 3) and the midlands (up to 4 from 1), and with a steadied increase of sites in highlands (26). The Late Medieval period, by contrast, had a total of 155 type 4 farmsteads, becoming the most common type of farmstead in Skagafjörður. In comparison, there were a mere thirty-three type 1 farmsteads, fifty-six type 2 farms, and a healthy 109 type 3 farmsteads by the end of the Late Medieval period. These data suggest that by the Late Medieval period, medium and small farmsteads were favored, and arguably, so too, was an agrarian economy. While type 4 farmsteads well represented in the lowlands (33%) and the midlands (39%), type 4 farmsteads make up an overwhelming 69% of the total domestic sites in the highlands.

The site distribution documented in the MSR indicate that landscape use in the highlands differed from the midlands and the lowlands throughout the pre-state period, but after 1300 CE, landscape organization became more uniform, analogous to the trends that are documented for the highlands.

6.2.2 Non-Residential Sites

In addition to domestic farmsteads, non-residential economic sites, such as sel (sheiling or shepherd’s huts) and activity areas (open air iron-working areas, charcoal making areas, weaving huts, etc.) can be found in Iceland from the time of Settlement through the Historic period, with a total of 107 sites (46 sel sites and 61 activity area
sites) considered for this study. Since sel (site type 5) and activity areas (site type 6) are often located some distance away from household architecture, these sites are unfortunately systematically understudied and poorly understood. This is especially true of sel sites (Table 6.4), which are only well-documented for the Early Historic period, but because the practice is thought to have originated in Scandinavia before the Viking Age they are assumed to have been used even as early as the time of settlement. However, sel sites have not been adequately identified in Iceland for the Settlement period (Sveinbjarnardóttir 1991; Sveinbjarnardóttir et al. 2006); in fact the survey here revealed only two sites for the Early Medieval period (1000-1104). Both of these sel sites are located in the highlands, as was the common placement for sel sites in the Early Historic period. By the Sturlunga period, there are six confirmed sel sites, all located in the highlands. The presence of sel sites is a good indication of an economy grounded in livestock rearing, making it tempting to see this increase in sel sites as an indication of greater use and hence greater emphasis on livestock during the Sturlunga period. We must, however, look at these trends with some caution until more archaeological data are available. The archaeological coring survey in Hjaltadalur, for example, revealed only two sel sites, both dating to the Late Medieval period; but once again, we must await further research to either confirm or reject these trends as typical.

Data from the archaeological coring survey also suggests that specialized activity areas (site type 6) were a vital component in the pre-state economy, a trend that is likewise observed in other areas of Skagafjörður where we have detailed archaeological

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5 Site type 7 (harbors) and 8 (pagan graves) are discussed throughout the results presented here. See chapter 4 for more discussion on how the MSR catalog is arranged and how these categories are defined.
information.\textsuperscript{9} Overall, there are only six activity area sites documented in the Settlement period, but it is difficult to assess if this is a real trend or if the low number of sites reflects the paucity of archaeological data (Table 6.5). Activity area sites established during the Settlement period were durable, extending well into the Early Medieval period, but converted into farmstead sites or abandoned entirely by the Sturlunga period. New activity area sites replace these during the Sturlunga period, suggesting that landscape organization and economy were in constant flux throughout the pre-state period. Activity area sites were revived in the Late Medieval period, with a total of twenty-seven sites, up from ten in the previous Sturlunga period. These activity area sites in the Late Medieval period are overwhelmingly connected to the bishopry at Hólar, with eleven sites alone located on the immediate grounds at Hólar. Of the remaining eighteen sites, the majority were storage areas (\textit{bú}) for either the bishopry or for the growing number of nunneries and monasteries. Our knowledge of these Late Medieval sites comes primarily from documentary records, which we mostly lack for the pre-state period; however, we have more archaeological information for pre-state activity area sites than we do for those in the Late Medieval period. While the source of our datasets differ for each period reminding us that caution must be used in our overall interpretations, we can nevertheless suggest that the trends documented here indicate perhaps a surprisingly similar purpose for activity area sites over time. The church may have used Late Medieval activity area sites, but this should not pronounce these locales as sacred; these sites no doubt served a very similar economic function to the secular activity area sites of

\textsuperscript{9} Austurdalur (Sveinbjarnardóttir 1992), Langholt (Bolender 2006; Steinberg and Bolender 2004, 2005), and Norðurárdal (Eldjár and Friðriksson 2000).
the pre-state period. Archaeological and documentary evidence alike suggest these sites were rarely multifunctional, and shared in common the purpose of operating as spaces to carry out specialized tasks to support the agrarian and non-agrarian needs of its owner. The range of tasks varied, from places to keep cattle to places where iron was manufactured, but these tasks always extended well above the immediate subsistence needs of a household, indicating a degree of intensified specialization. These data suggest even in the earliest phases of the pre-state period, social groups conformed along hierarchical lines. Just as Late Medieval bishops could count on the labor of bondsmen, chieftains could likely do the same. This conclusion provides us with an innovative perspective on the Settlement period, since previous traditional models suggest that the initial social order of the society was more or less egalitarian.

Also included in the SLP study was mapping the development of potential non-domestic central places (Table 6.6). These sites include trading harbors (site type 7), pagan graves (site type 8), and assembly sites (site type 9). Churches (a total of 54 sites) and prayer houses (a total 26 sites) are also likely candidates for central places, but since they are located within the property of active farmsteads these sites are categorized in the MSR principally as domestic areas, with reference to their additional ideological function.\(^\text{10}\)

There are only two trading harbors in Skagafjörður known for the period covered in this study: Kolkuós (Viðvikursveit), established at the time of settlement, and Hæringsbúðar (Borgarsveit) established during the Early Medieval period (1000-1104

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\(^{10}\) For more information on the role of household, parish churches please see the discussion later in this chapter on Phase II landscape organization.
Located between these two harbors is the one known assembly site at Hegranesþing (Hegranes), established shortly after 930 CE. Hegranesþing, located on a low bluff that overlooks the sea, is in direct view of both Kolkuós and Hæringsbúðar, with all three sites located along the coastal entrance into the mouth of Skagafjörður. Trading harbors and assembly sites are places that facilitated interaction and exchange, both economically as well as politically. In the absence of formal marketplaces, harbor sites were where local and foreign merchants set up shop for a few months every year, buying and selling goods, as well as brokering networks of partners, allies, friendships, and even marriages. Likewise, the open meetings held at the Quarter Assembly site at Hegranesþing would have not only served as an impartial courtroom, but symbolically through the act of a plaintiff and a defendant publicly airing out and resolving their conflict performed as a kind of social valve, where the pressure and stress between individuals could be mitigated in a structured and socially acceptable format. Taken together, these three sites would have welcomed travelers arriving by way of the sea, making them crucial gateways into the fjord throughout the pre-state period.

Pagan burial sites (8) could have potentially served a similar purpose for terrestrial travel, with sites occurring in lowland (3), midland (3), and highland areas (2). Pagan burial sites, easily recognizable by their artificial mound features, could have not only served as markers on the landscape but possibly as meeting places for travelers coming in and out of the area as well.
6.3 Organizing the Landscape: Evaluation of the Three Proposed Economic Models

Trends from the SLP reveal a number of surprising results. Contrary to the predictions made by previous models, the economic structure of the society was far more diverse and fluid throughout the landscape history of Skagafjörður. These data indicate that pre-state economic structure of Skagafjörður conforms more closely to a scale-free network rather than a clustered network, which provides us with several testable implications when examining the process of secondary state formation in Iceland.

While small self-sufficient pastoral-agrarian farmsteads aptly describe the economy of the seventeenth century, this model cannot be applied to earlier periods. Instead, the data presented here suggest four distinctive occupational phases that correspond well, I intend to argue, to local and global historical developments. The first phase of occupation occurs during the Settlement and Early Medieval periods (872-1104 CE) and is characterized by site selection in all environmental areas, dominated by the establishment of large (site types 1 and 2) and medium sized (type 3) farmsteads, with only the highlands documenting a significant number of small farmsteads (type 4). Throughout most of Skagafjörður, activity area (type 6) sites seem to be used in lieu of small farmsteads during the first phase of landscape use. The second phase of occupation occurs during the Sturlunga period (1104 to 1300 CE) the time when state institutions develop, and is defined by the intensification of specialized economic units in all environmental areas, as made evident through the construction permanent animal structures and enclosure walls, as well as the steady increase in the number of small
farmsteads. The intensification of these sites\textsuperscript{11} coincides, I hypothesize, with economic changes found throughout eleventh/twelfth century Europe: the shift from an economy fueled by a limited and restricted supply of luxury goods, typical of a “Viking Age economy” to one centered on the exchange of bulk staple goods a low cost that characterized a “medieval economy” (Lopez 1976:115-118). The third phase of occupation occurs between the Late Medieval and the start of the Early Historic period (1300 and 1600 CE) and is delineated by the development of a full-fledged feudal system with tenant farmsteads under an ecclesiastical organization. Former activity areas\textsuperscript{12} were transformed into permanent small farms (type 4), alongside the development of newly established specialized activity areas,\textsuperscript{13} a complete reversal from the trends seen in the settlement period. As with phase II, these trends follow those seen in Europe, especially in Scandinavia, where state institutions centered on a landlord-tenant arrangement, reaching their full maturity in the thirteenth century (Andrén 1989: 591-598). The fourth phase (1600-1900) represents a steady decline in the number of overall sites, and is typified by small householders. This finding is crucial since it is this phase of landscape use that has been used as a model for overall economic structure in Iceland throughout time, but the data presented here clearly dispute the utility of such models.

\textsuperscript{11} For example, these developments are seen at Bakki, Miklihóll, Langhús, Hólakot, Fornistekkur, Efri-Ás, Kálfstadaðir and Hvammur.
\textsuperscript{12} For example, Hólakot, Hvammur, Kálfstadaðir, and Miklihóll
\textsuperscript{13} We see this development unquestionably in Hjaltadalur with the establishment of sites such as Geitagerði and Kollugerði, which are located in close proximity to the bishopry at Hólar, and were used for the expressed purpose of supporting the agrarian demands of Hólar’s large residence of craft specialists and members of the clergy.
6.4 Phase I: A Viking Age Economy, 870-1000/50 CE

Iceland was settled by Norse colonists around 870 CE, less than a hundred years after Scandinavian warriors stunned northern Europe with a series of raids in England that inaugurated the start of the Viking Age. The sudden and swift brutality of these raids has received the most attention from ancient and modern historians alike, but the Viking Age overall was a period of intense interaction between the incipient kingdoms in northern Europe and the mighty imperial powers of the Muslim and Byzantine Empires (Crumlin-Pedersen 1999; Hodges 1982; Hodges and Whitehouse 1983). Violence was not unknown among these groups, but for the most part, the interaction between these societies was centered on trade. Staple goods no doubt exchanged hands, but the trade of luxury goods is what defined these economic and social relationships. Gift giving, the crucial power base and life force of chiefly societies, remained an important element in northern Europe even as the hallmarks of a more market economy, such as coinage, urbanism, and regulated craft production, took a firmer hold. It was in this environment of travel, trade, and social connectivity that Iceland was settled and while this migration is typically portrayed as separate from the ambitions of the Viking world, I will examine here the potential role that trading activities played in the motivation for colonization and the initial social organization of the society.

6.4.1 Textual and Archaeological Evidence for Trading Activities in Iceland

While the Icelandic environment is often characterized as bleak and barren, there are a surprising number of potential export items that could have been utilized during the
earliest phases of occupation. Available resources include, but were not limited to, were: falcons, sulfur, hides from sea mammals and foxes, and ivory from walrus tusks. The two commodities that would have garnered the highest price on the market were falcons and walrus ivory (Batey 2005). Both of these items are described in medieval texts as being valuable commodities for export abroad. In medieval times, the gerfalcon (gyrfalcon) was considered the king’s bird, and was highly prized as far away as the Egyptian Sultan's court. The geographer and historian Ibn Said al-Maghribi (d. 1286) describes certain northern Atlantic islands west of Ireland (Iceland) where these falcons could be purchased for 1,000 dinars for each living gyrfalcon, and if it arrived to Egypt dead, 500 dinars would still be paid for the bird (Montgomery 2008). Closer to home, Giraldus Cambrensis,14 archdeacon of Brecon and a chronicler, states that (ca. 1185), “this land [Iceland] produces and sends large and noble gerfalcons;” and later, the Holy Roman Emperor Fredrick II (ca. 1248) mentioned in this book De Arte Venandi cum Avibus (The Art of Hunting with Birds) that Iceland was the place where one finds gerfalcons, which “are the best birds for hunting” (cited in Gelsinger 1981: 13-14). Likewise, objects made of elephant and walrus ivory were known in Europe as long ago as the Roman Imperial period, and were, according to British medieval texts, a highly sought after commodity in western Europe during the Carolingian Dynasty in the eighth and ninth century (Gaborit-Chopin 1992; Rosedhal 2003, 2005, 2007). Elephant tusk, because it is almost entirely solid ivory, was more preferable to craftsmen than walrus tusk but was unavailable in Europe after the collapse of the Roman Empire and continuing until the mid-thirteenth century (Pierce 2009: 60). The lack of elephant tusk

14 Gerald of Wales; thought to have lived between 1146-1223 CE
made walrus tusk all the more prized, creating a thriving market for lands in the Atlantic and Norwegian Sea where walrus populations could be found. Archaeological excavations in northern Norway and Greenland, for example, have uncovered evidence of processing sites, where large numbers of walruses were hunted at an industrial scale, presumably for their tusks and hides for export as these faunal elements are typically lacking in the overall assemblage (Þorláksson 2007). The availability of a lucrative commodity in a period of widespread trade in the Norse world could have been a strong pull towards establishing small colonies in the North Atlantic throughout the late eighth and ninth century, but it has traditionally been viewed that walrus populations were never abundant in Iceland (Sawyer 1984: 44), certainly not enough to have drawn in settlers. However, ongoing research on the migratory patterns of sea mammals in the North Atlantic has shown that the northern and southern shores of Iceland today are home to seasonal walrus breeding sites, a stopping point along their migratory route from Greenland to Norway (Reijinders et al. 1993). These data suggest that walrus populations might have been exploited in the past. In fact, recent archaeological excavations have begun to reveal evidence of small, seasonally occupied camp sites in Iceland located near these known walrus breeding areas, perhaps as early as the start of the ninth century, a good seventy years before the widespread colonization began (Perdikaris and McGovern 2007, 2008). For example, at the site Tjarnargata 4, a dense concentration of adult and baby walrus fauna have been recovered, indicating that there were breeding grounds within the Reykjavík area (Pierce 2009: 59; Vésteinsson et al. 2002: 111). These resources were clearly exploited in the Settlement period as demonstrated at the ninth century site of Aðalstræti (Roberts 2001), located within a few
miles of Tjarnargata 4,\textsuperscript{15} where three large mature walrus tusks, expertly extracted, were discovered (McGovern 2001). These tusks would have yielded a high market value, so it is surprising that they were not exported or used locally (Pierce 2009: 58-59). Their presence may in fact demonstrate greater availability of walrus resources than previously believed, enough availability that three large tusks could be discarded, unused, or saved for a later date presumably without much concern. Sites dedicated to the procurement of raw materials for long-distance trade are growing in number. These data combined with settlement pattern analysis all indicate that trade was an important activity early on in Iceland. These data suggest that economic interests motivated the colonization of Iceland; these interests must then be considered when examining the formation of state institutions during the subsequent phase in the Sturlunga period.

In addition to luxury goods like falcons and ivory, hard to procure items like sulfur may have also contributed to the Icelandic export enterprise. Iceland is the only location in northern Europe where sulfur is available, which made it a highly valuable mineral commodity in Iceland once gunpowder was used in the West, but it is also possible that sulfur was in demand much earlier during the Viking Age by the Islamic scientists with interests in alchemy. Little research has been done on this topic, but interestingly sulfur deposits have been found at Kolkuós in some of the earliest phases of the site (Baldursdóttir 2009; Traustadóttir 2004). Sulfur mines are located quite some distance away from Kolkuós, making its presence there likely to be for trading purposes.

\textsuperscript{15} Some of the earliest known sites are located in the Reykjavík area (Nordahl 1988). It is difficult to assess if the trends and frequency of finds documented in Reykjavík are indicative for other areas of Iceland since Reykjavík overall has been more intensively excavation than any other region in Iceland.
Supplementing foreign textual accounts that describe commodities available in Iceland and archaeological evidence of processing raw materials for trade are a number of economic documents between Iceland and its trading partners, especially Norway. The first known commercial agreement made in Iceland dates to 1022 and concerns fixed numbers of ships coming into Iceland from Norway (Gelsinger 1981: 69-72). The agreement provided a guarantee exchange between the two partners, with woolen goods leaving Iceland and grain and sumptuary goods coming in. Along with this agreement, Icelanders were granted special privileges while aboard. According to the terms of the treaty, Icelanders traveling to Norway were to be granted the same legal standing as that of Norwegian citizens, implying that Icelanders were Icelanders and not legal members of the Norwegian state. This included access to water and forest resources while Icelandic merchants were staying in Norway. Interestingly, if an Icelander remained in Norway for three consecutive years, than that individual’s social rank and right to certain privileges were to be returned to that individual’s actual social standing, that of an outsider who likely owned no land. This suggests that the Norwegian Crown was eager to see Iceland populated, rather than to have the descendants of once Norwegian citizens permanently return to Scandinavia. One could interpret this clause of the treaty as an indication that the Icelandic economy was seen as valuable to Scandinavian markets. Likewise, under this treaty Icelanders were also allowed to travel to any country under the protection of the Norwegian king, once again indicating that trade and travel were deemed of high importance. It also indicates, that Icelanders, while viewed as separate from Norway, were still intimately connected to the king. However, there is no indication that these individuals were in direct service to the king in a kind of hegemonic,
imperial relationship. Instead, the terms of this treaty suggest that merchants from Iceland were more or less independent agents, who frequently sought political and economic backing from Norway. In exchange for these privileges abroad, Icelanders were required to pay a landing fee (landaurar) when they arrived and they had to commit to helping defend Norway in times of war. The landaurar did not have to be paid if one had already paid a fee for landing in the Shetlands or on any island near them. Likewise, one was exempt from paying the fee if most of the ship’s cargo had been lost at sea or if a ship had been run off course and had to land in Norway. In actuality, the fee had little to do with harboring a ship and everything to do with buying and selling goods. It is possible that this same fee was applied to Norwegians who entered Iceland. Medieval historian Ári Þorgilsson states that the fee originated under King Harald in the ninth century:

\[ E \text{very man who traveled here [Iceland] from there [Norway], unless exempt, should pay the king five aurar}^{16} \text{… This was the origin of that tax which is now called the landaurar; and sometimes more and sometimes less was paid until Óláf the Fat [the Saint] commanded that every man should pay the king half a mörk [four aurar] who traveled between Norway and Iceland except those women and men whom he exempted from it (Íslendingabók, chapter 1).} \]

Additional exemptions were made, however, if Icelandic merchants were first “going to Greenland or were looking for new land, or if their ships drifted off-course”\(^ {17} \) (Þorláksson 2001). This exemption clearly illustrates the continued lure and push of the Viking Age

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\(^{16}\) Aurar is the plural of eyrir, an ounce of silver.

\(^{17}\) “Ef þeir menn verða sêhafa í noreg er vart hafa til græn landz eða fara í landa leitan eða slîtr þa út fra islandi þa er þeir vilde fara scip sin mille hafna.” This text is from an 11th century source in the court of Norwegian King Ólafr Haraldsson (killed AD 1030) and was recorded in a version that Helgi Þorláksson suggests might be from the 1080s (Þorláksson 2001).
economy, one defined by the constant search for new lands, new markets, new wealth, and new fame.

Archaeological sites in Norway, especially those located in Trondheim, likewise indicate that trade between Iceland and Norway occurred within the early phases of economic development in Iceland. *Merkelapper* or “mercantile labels,” with runic writing styles typical of those used in Viking Age Iceland (Christophersen and Nordeide 1994: 248), have been found in association with small ivory carvings that were made from walrus species found in the waters around either Iceland or Greenland. Additionally, a few extant price lists likewise indicate that Icelandic luxury goods, such as falcons, were brought to Scandinavian markets (Gelsinger 1981). While mercantile labels and price lists are a rare discovery, their age and association with well sought after luxury products all indicate that trade between the North Atlantic and Scandinavia was an active engagement throughout the ninth and tenth centuries.

### 6.4.2 Regional Analysis of Skagafjörður

The existing textual and archaeological data from the period of settlement hint at the possible importance of trading activities among the first few generations of settlers, but what remains to be seen is if a social structure was in place to facilitate these activities in any sort of meaningful way. The data presented above cannot refute the claim that trade was anything more than a limited enterprise, with expressed sumptuary laws relegating the exchange of luxury goods to an elite only activity. If commercial pursuits were either a prominent or minor social force in the organization of the society,
then we should expect these activities to be documented in the pattern of landscape organization.

Phase I data from both the MSR and the coring survey from Hjaltadalur and Viðvikursveit illustrate a diversified economy with the occupation of all environmental regions right from the beginning of settlement, a similar pattern of landscape use documented in Iron Age Norway\(^{18}\) that led to the development of extensive local and external trade systems (see Figure 6.2 and Table 6.7). Previous models that focus either on isolation and self-sufficiency or hegemonic regimes fall short of explaining these settlement trends. The Autarkic Model suggests that the highlands, an area amendable to the development of pastures, would have been the preferable locale for the first wave of colonization and that the initial social order would, by necessity, have been more egalitarian than the homeland that these settlers left behind. However, settlement pattern data document that the highlands, if anything, were slow to develop. Instead, the lowlands and midlands were the preferred locations for the majority (63\%) of the earliest farmstead sites. Likewise, the social organization during Phase I exhibits a hierarchical structure, with the establishment of very large, type 1 farmsteads, alongside smaller households (see Figure 6.2). However, the settlement data also illustrate several possible elite centers of power, suggestive of a more heterarchical political economy throughout Phase I. Under these configurations, the structure of power was likely exercised within a pyramidal series of segmented elites tied together alliances, shared interests, and perhaps dependency. This structure is far from egalitarian, but is likewise a far cry from intense hierarchy. Therefore, the Imperial Economy Model, likewise, falls short of elucidating

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\(^{18}\) See chapters 1 and 7 for a discussion on site distribution in Iron Age Norway.
the settlement pattern trends documented in Skagafjörður. Since the Imperial Economy Model suggests that Iceland was a strategically deployed colony by order of the Norwegian crown, the settlement pattern data should demonstrate an orderly and planned colonization, with even spacing between sites. However, aside from the strategic positioning of a few crucial hub or central place sites, there appears to be only a minimal degree of structured organization to the placement of farmsteads, representing more of a frontier setting than a planned colony.

We can conclude, however, from these data are that household economies were more heterogeneous than what has been previously suspected and that there were striking differences in economic strategies that seem to correspond well to environmental parameters. For example, data from the intensive survey suggest that the initial Settlement and Early Medieval periods are defined by at least two separate, but perhaps interconnected economic strategies between highland and midland/lowland sites. Highland farmstead sites on average are smaller than those found in lowland and midland environments, with type 3 and 4 farmsteads making up 73% of highland sites established in the Settlement period and 85% by the Early Medieval period. By comparison, type 3 and 4 farmsteads make up only 38% and 15% of sites in the lowland and midland regions respectively during the Settlement period, rising to 46% in the lowlands and decreasing to just 13% in the midlands during the Early Medieval period. These settlement pattern trends indicate that the socio-economic organization of highland farmsteads during Phase I was decisively different from sites in the lowland and midland regions. On the whole, the data suggest that highland sites were organized around small-scale agrarian pursuits, a hypothesis further supported by archaeological evidence documenting the
presence of small households and outhouses for animals, suggestive of a rural economy centered on livestock rearing (Sveinbjarnardóttir 1992). The midlands and lowlands are, on the other hand, dominated by larger households and a mixed economy of subsistence farming alongside non-agrarian, specialized sites, such as those documented in Viðvíkursveit, where the placement of farmsteads corresponds well to available resources that were likely exchanged at the Kolkuós trading center. The differences in economy and household organization between regions is likely the result of a number of factors, but one prominent variable that must be considered are the environment constraints of each region. The shallower, silty soils and lower temperatures typical of the highlands likely contribute to the preference for smaller households, while silty clayey soils and warmer temperatures likely contribute to the preference for larger households in the lowland and midland regions of Skagafjörður. We must, however, also consider that these environmental zones offered an array of different resources that transcend the immediate needs of a household, and that the desire to acquire these resources for the possibility of trade, both local and global, was a factor in where farmsteads were established during Phase I. Lastly, the data here imply that sites did not exist in isolation from one another, but instead, were connected and linked together as a cohesive networked system.

One means for keeping the society connected was informal exchange and more formal trade between farmsteads and between regions. One surprising trend discovered in the MSR is that overwhelmingly the majority of farmsteads were located along or near sea and river routes, suggesting that staying mobile and possibly connected to a larger world remained a priority throughout the first phase of occupation. Dotted along these
watery highways were a number of nodal and hub sites that could have facilitated social and economic exchanges. The most important nodal sites were the harbors at Kolkuós and Hæringsbúðar, and the assembly site at Hegranes located between these harbors, which likewise also served as a location for exchange. In addition to these nodal sites were a number of potential hubs, such as large farmsteads sites like Viðmýri and Stóra Seyla located along the Héraðsvötn River, could have likewise served as centers of interaction. In addition to hubs along water routes, were hub sites positioned at key terrestrial junctions, such as those marking the boundary between the midland and highland expanses of Skagafjörður, such as the large type 1 farmsteads of Goðadalir and Flatatúnga (see also chapters 5 and 7). Lastly, there is one known major assembly site\(^{19}\) in Skagafjörður at Hegranes, a spot chosen no doubt for its close proximity to Kolkuós. The end result was a highly connected network of farmsteads in diverse eco-zones, poised for exchange for vital household resources as well as supplying possible goods of high social capital through the redistribution of luxury items acquired both locally and abroad.\(^{20}\)

Examining multiple lines of evidence, from settlement pattern trends, to archaeological excavations, to textual accounts all within a network model suggest that the first phase of landscape use in Iceland was committed to supporting long-term colonists as well as acquiring materials that could be exchanged in both local and global trade networks. Within Iceland, goods acquired were likely used as part of a chief’s

\(^{19}\) Assembly sites were central places were legal disputes could brought before lawmen at specific times of the year (see also chapter 1).

\(^{20}\) Zooarchaeological data from Mývatnssveit (north-east Iceland), for example, has discovered the presence of “substantial amounts of marine fish bone on sites up to 70 km from the coast” (McGovern 2009: 226). These data aptly suggest the presence of local trade networks.
arsenal for maintaining power, wealth, and prestige. Redistribution likely played a prominent role among Iceland’s first political leaders, an activity that depended heavily on a chief’s ability to grant gifts of land, luxury goods, and to put on feasting parties. By the end of Phase I, however, clear changes to the political economy are clearly underway. During the Early Medieval period, the number of type 1, 2, and 3 farmsteads increases only marginally in all environmental regions (see Figure 6.3 and Table 6.7), but the number of type 4 farmsteads in the highlands more than doubles. This shift in settlement trends reflects possible economic changes within Iceland, with a push towards increased agricultural production. While environmental degradation models (see also chapter 2) would likely interpret these trends as support for the hypothesis that a deterioration of the landscape prompted the development of smaller farmsteads and ultimately a system of land tenure, I will examine in the following section if these trends document the start a shift away from a Viking Age economy to a medieval economy that centered on the surplus production of staple goods.

6.5 Phase II: A Medieval Economy, 1050/1100-1300 CE

By the start of the twelfth century, Icelandic society was caught up in a whirlwind of social change that would forever shape the structure and character of what would become the Icelandic State. Historians, drawing upon the society described in the Sturlunga saga, have characterized this period of Icelandic history as one of social chaos and violence, as rivaling elite families battled for supreme authority and consolidation of power over all corners of Iceland. By the thirteenth century CE, the number of godar (chieftains) in Skagafjörður was rapidly dwindling, as members of the powerful
Ásbirningar family from the west systematically killed off or bought out rivaling godørð (chieftain positions), setting into motion the emergence of the storgóðar, the so-called “big chiefs” who consolidated their holdings within well defined domains of political authority known in Icelandic as riki (Sigurðsson 1989). Storgóðar, however, are thought to be “new elites,” not the descendants of elite settlers, suggesting that a new avenue for power had opened up by the Sturlunga period. It was, in fact, within this environment that Iceland adopted a monotheistic religion, adopted a standardized system of writing, adopted a land tenure system, and adopted formal systems of taxation—traits that most anthropologists would categorize as the telltale signs of state-level administration. What is unclear, however, is how and why these institutions developed by the twelfth century (see also chapter 1). This question has been addressed by a number of theoretical models, including those centered on the co-evolution of environmental degradation and social hierarchy (see chapter 2) and those focused on the hegemonic power of a distant Norwegian king (see chapter 3). The one area of agreement between these models is that the events of the Sturlunga Age, however startling, were the culmination of social processes that began centuries before. In the following discussion, I will address this question from an economic perspective, examining the potential role new long-distance trading opportunities may have had in the local development of new social configurations.

6.5.1 Textual Support for the Importance of Trade

In many ways, stórgóðar resemble paramount chieftains, such as those documented in eighteenth century Hawaii (see chapter 2).
Historical accounts document broad patterns of economic change in Europe coinciding with the last of the Viking raids around 1050 CE (Graham-Campbell 2001: 194). Economies of loot and plunder were replaced with intensified agricultural production and a greater focus on craft specialization in Scandinavia, both of which were used to generate surpluses that could be brought to local and external markets (Hjálmarsson 1993: 50). Icelandic farms, however, were likely unable to produce surpluses of storable agricultural produce, such as grain, to entice trade partners the way that Norway and the British Isles had been able to (Byock 2001: 82). Icelanders, in looking for a storable commodity, that could be produce above a household’s needs and put to market found the solution in its traditional pastoral economy: through sheep. While lamb, mutton and secondary dairy goods never found an international market, lambskins and fleec, spun and woven into cloth, did.

Under the parameters of a Viking Age economy, Iceland was likely a small player on the global scale. Walrus ivory and falcons were not limitless, nor were they easy to acquire or control access to these items. By the eleventh century, however, the Viking Age economy collapsed and was replaced by a “medieval economy,” an economy based on the bulk distribution of everyday subsistence goods (Lopez 1976: 115-118). In a medieval economy, Iceland, with its potentially productive wool and fish industries, could compete. Throughout the eleventh and twelfth centuries, medieval texts, especially those from Scandinavian, hint at the Iceland’s potential to become one of the leading producers of wool for European markets (Gelsinger 1981). Back home in Iceland, the

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22 See Costin (2001) for a discussion on the role craft production plays in creating social inequality.
ability to acquire goods from abroad could be used to fuel a chiefly economy of reciprocal gift exchange and redistribution at local levels of political administration.

Of all the possible sheep-based staple goods that Iceland could export, vaðmál (homespun cloth) was the most likely candidate for commercialization in the mid-eleventh century (Þorláksson 1992, 2000). As a commodity for long-distance exchange, Icelandic vaðmál has a long history and was a well-known item even in Viking Age luxury markets throughout northern Europe, often praised as a superior waterproof cloth. Mórent (brown-striped cloth) and hafnarvaðmál (finer cloth used for making clothing) were particularly popular abroad, but röggvarfeldir and vararfeldir, the so-called “shaggy coats” that were made by braiding shaggy tufts of wool to imitate as much as possible the pelts of squirrels or other wild animals, were by far the favored form of vaðmál (Gelsinger 1981: 12). Icelandic vaðmál was also favored source for making strong, water resistant sails. The popularity of Icelandic vaðmál perhaps helps to explain how, even as early as the reign of King Ólafr the Saint (1015-1030 CE) cloth could be used to pay the landing toll fee in Norway. By the start of the twelfth century, vaðmál was produced in surplus and was quickly standardized and used to replace silver as a medium of exchange (Jochens 1995: 141-160). By the end of the eleventh century, therefore, the manufacture of vaðmál, produced by households, became the principal overseas export (Gelsinger 1981: 61-89; Miller 1990: 328-331). Economic texts suggest that Norway was Iceland’s primary consumer of woolen goods (Gelsinger 1981: 159-180), with Norwegian luxury imports, such as flour for making bread, grain for making

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23 The waterproof capability of Icelandic wool is likely the result of its high lanolin (wool wax or wool fat) content, an extremely successful adaptive trait for sheep living in Arctic environments.
beer, timber for house construction, wax, tar, and embroidered clothing and tapestries, flowing into the country and likely becoming part of chiefly systems of redistribution, but also were used to further articulate the power of a growing aristocratic class within all areas of Iceland (Harte and Ponting 1983). Vaðmál served as a means to acquiring socially charged and coveted goods that could not be found directly within the ecology of the island; therefore, vaðmál itself became a valuable currency, transforming the mundane world of wool into the power symbols of elites. This system of exchange was intensified by both local and global factors. Locally, once all the land was in Iceland was claimed, chiefs were forced to rely more seriously on imported luxury goods to sustain and maintain their alliances, which ultimately lead to more intense and more frequent competition and perhaps even a greater desire for intensified long-distance trade within the NET. These demands were met by an increased market demand for cloth abroad. It is this confluence of local and global variables that powered social change in Iceland. These changes are captured in the physical transformation of the landscape with a shift towards smaller farmsteads alongside large manorial estates.

Not only is the social importance of vaðmál is reflected in the law codes, but so, too are the political actions taken to standardize the economy by regulating the production of cloth during this second phase of landscape evolution. In order for vaðmál to serve as a monetary currency with reasonable efficiency, standards of weight and measurement of vaðmál had to be observed. The basic unit of measurement was the long öln or ell (from the Latin for ulna), roughly the length of a grown man’s forearm from elbow to fingertips, and the short öln which was the length measured from the elbow to

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the thumb (Gelsinger 1981: 35). As cloth became the primary medium of exchange, even more precise means of measurement were necessary. The Grágás report attempts throughout the island to standardize measurements (K 245[K stands for one version of the Grágás, which is organized by entry numbers, not page numbers]). By 1100, the long öln measured about twenty-two inches, but was not as widely used at the shorter eighteen inch öln, which became known as the “legal öln” (K 245). To achieve greater consistency and standardization for the measurement of a single öln, it was reasoned that, “the longer the measurement, the more exact each smaller unit within it would be, and so the stika (stick) of two short ells was commonly used” (Gelsinger 1981: 35). Likewise, Grágás state that, “in accordance with the General Assembly regulation it is standard value that in one ounce-unit there shall be six ells of valid homespun, new and unused” (K 246). These laws clearly demonstrate market concerns and the attempt to regulate the tempo of an export economy.

Further evidence of economic commercial standardization and the development of a centralized bureaucracy can be found in the Diplomatarium Islandicum, a collection of Icelandic and foreign documents up to 1570 CE, that includes commercial agreements, deeds, church inventories, and separate laws and proclamations concerning economy (see also chapter 4). These texts indicate that all goods exchanged within Iceland had a standardized an ell value (Gelsinger 1981: 41). For example, a steel-edge scythe-blade was equal to two-ounce units, or twelve ells of homespun; further, the length of the scythe-blade was also standardized by ell measurements, stating here that the blade must be one long ell in length (K 246). Vaðmál, therefore, not only served as legal tender, it also served as a system of weight and length measurements so that anything, from a cow
to a coat, could be appraised by its weight in ell unit-ounces and its long or short ell length.

The *Grágás* also describe how vaðmál was to enter into an international exchange system: vaðmál could be bought and sold at the local assembly meetings. All heads of households were required by law to attend their local assembly meetings twice a year and pay a tax to their chief while attending these meetings (Byock 2001: 54). Chiefs, therefore, were able to ensure the presence of households at the assembly meetings, and if these households were able to make a profit from their vaðmál, chiefs were there to collect a share of it (Byock 2001: 54-56, 171-178). Making assembly meetings mandatory suggests that elites were directly involved in the exportation of vaðmál, not only from their own households, but also from all households within their jurisdiction. Regulation over the buying and selling of vaðmál is likewise demonstrated by tighter control over harbor sites. An examination of medieval documents from Iceland and Norway suggests that there were at least forty-one trading harbors before 1100 CE; however, in the period between 1100 and 1225, trade vessels were sailing to fewer and fewer ports, controlled by fewer and fewer chieftains (Þorláksson 1979: 127-128; 1992). Archaeological and documentary evidence confirm that the number of operating trading ports sharply declined during the twelfth century, alongside the expansion of a few key sites, such as Kolkuós and Gásir in the north. In fact, after 1100 CE, documentary sources only mention eleven ports in use; by 1200 CE there were only four and by 1225, only two (Byock 2001; Ingimundarson 1995: 54). Localized models have tended to view this steady decrease in the number of commercial harbors as an indication of a break in
the market economy, however, when the data are examined within a broader social framework, this trend signals a tightening of control over trade, presumably by elites.

Not only was the buying and selling of vaðmál controlled, but so, too, was its production. While there are a few references to professional weavers (búalög), it is likely that the bulk of cloth production was done by householders, whose labor could in fact be controlled. For example, Grágás clearly stipulates laws aimed at controlling the economic activities of the producers of vaðmál, specifically to the daughters and wives living in a man’s household. As discussed in chapter 3, the rights of women were severely curtailed in the twelfth century as documented in proscriptive marriage and inheritance laws. These changes likely reflect an economic concern over the production and distribution of woolen goods. While women may have been important producers of cloth, they were not the primary merchants and traders of their products; men became the brokers and the public persona of the cloth industry. The Grágás (K 152) collaborate an image of women as being consigned to the household: “When a man and a wife are in wedlock, he shall have charge of their property and all buying and selling. It is not required of a wife that she should own a share in the household, but if she has a share in the household with him, then she is to run the indoor household as she wishes and the dairying.” The Grágás (K153) also state that: “A woman is not permitted to sell goods at the assembly (marketplace), unless it involves joint money matters and her husband is unable to attend the assembly and has given her his permission to stand in his place. A woman can only buy household necessities if her husband is at the assembly.” Further, the Grágás (K248) restrict a woman’s ability to go on merchant voyages to Norway by enforcing: “A woman can travel to Norway only if she is accompanied by her husband,
father, brother, or son and if she pays three marks (Norwegian currency).” Lastly, *Grágás* (K153) also suggest that the spending ability of women was closely regulated: “A woman is only allowed to spend an ounce-unit of six ells in a year. If she spends more, her husband can revoke that right and a fine can be placed on a man who sells her goods a sum bigger than prescribed.” From *Grágás* we get the perception that the economic labor of women was highly prescriptive by her male guardian; legal measures were thus issued to grant a man economic control over women in his household, and therefore by extension, control over homespun production. Within a household, however, we might expect that woman held considerable sway over the ambitions of her husband since it was she who provided him with the social and economic currency of cloth that would dictate his ability to participate in the political economy. The contemporary sagas are woefully silent on the attitude toward women as weavers; however, Sturlunga saga does report some fifty cases of marriage, with wives often praised for their ability to suitably run the household and for ability to weave fine vaðmál (Damsholt 1984: 76; Jochens 1995: 153; Þorláksson 1992). Through cloth, a woman could not only set the pace and tempo of the household economy, her labor and skill as a weaver were also an integral component of the public world of commensality and politics, since it was her labors that provide men with the ability to finance the necessary feats to broker alliances.

Lastly, the importance of wool is expressed through a new form of taxation: the *sauðakvöð*25 (“sheep tax”). The suaðakvöð was a percentage of the revenue grossed from selling wool, and was typically paid by tenant farmers to the elites who owned their land.

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25 All documentary references to the sauðakvöð appear towards the middle of the thirteenth century (Byock 1988: 78). Sauðakvöð is mentioned most frequently in the *Sturlunga saga* (ca. 1230-1245).
The suaðakvöð was the first\textsuperscript{26} secular remunerative source of income in Iceland since all of the revenue stayed in the hands of a landowner who could chose how best to reinvest the income. Byock has argued that the suaðakvöð was either collected by chiefs who were in “dire need of funds” (Byock 1988: 78) or was crafted to suppress the activity of foreign merchants while in Iceland (Byock 2001); but it is possible that this tax was designed to control trade, serving as a tool to prevent farmers from doing business with merchants on their own, and ensuring that elites always received a share in the profits. If chiefs could not prevent this trade, they could at least indirectly tax it. The fact that these taxes do not appear until the mid-thirteenth century and are aimed at wool is telling and is suggestive of the changing international medieval economy. Revenue from the suaðakvöð and the tithe would have generated a tidy sum of extra income for a growing aristocratic class within Iceland, all of which was potentially fuelled through a rural economy played out through local and global market demands.

The totality of these textual lines of evidence express the importance of wool production for an international market, but critics are quick to rejoin that the documentary record, while tantalizing, is scant and cannot conclusively indicate the medieval Icelandic economy was ever fully committed to commercial pursuits. From these data it is not unreasonable to conclude that trade was only a minor economic occurrence that happened to be mentioned in a few texts, but by and large did not shape the rhythm and flow of everyday household activities. What is needed are additional lines of evidence can be

\textsuperscript{26}There were two kinds of “taxes” or fines collected during Phase I: the pingkararkaup (ping travel tax) and the hofstollr (temple tax). Only a chief could collect these, but in return for these payments a chiefs was required to front substantial costs (see chapter 1). Arguably, the chief did not even break even, and must have incurred additional costs. However, the chief likely received a kind of social capital for these enterprises, ensuring the good relationship between himself and his followers.
used to gauge the degree and intensity of surplus production during the Sturlunga period. I suggest that archaeological research on economic production, documented in the material evidence for herding strategies and landscape organization, can be a fertile avenue for examining the possible importance of trade in the medieval Icelandic economy.

### 6.5.2 Zooarchaeological Evidence and Economic Production

Faunal material found in archaeological contexts are an insightful tool for examining past social behavior, as the kinds of animals present at a site provide information about the diet, social status, and economic activities of the people who once occupied the area. Zooarchaeological research has been particularly well define and utilized in Iceland for uncovering developments in livestock farming. Rich zooarchaeological datasets from eleventh through thirteenth century sites all over Iceland unambiguously demonstrate a shift in herding strategies, from one focused on cattle to one focused on sheep (Amorosi 1989, 1990; Amorosi and McGovern 1989; McGovern et al. 2007; Ogilvie and McGovern 2000). These data, when interpreted by the Autarkic Model, demonstrate that the environment could no longer support cattle, since farmers would never willingly invest less in cattle in exchange for a less prestigious sheep-based subsistence economy. As if these trends were not grim enough, mortality rates indicate that it was common for lambs to be culled at very young age, with even neonatal age lambs identified at some sites. For example, zooarchaeological assemblages from the farmstead site at Granastaðir in northeast Iceland (Einarsson 1994) discovered three articulated neonate lambs that likely date to after 1050 but before 1300 CE. These data
suggest that households, like those at Granastaðir, must have been on the brink of starvation since only in desperation would a farmer opt to kill off the vital constituents of their subsistence base. The ultimate conclusion reached from zooarchaeological research is that a “high percentage of young lambs can be seen as an indicator of stress on a portion of the herding economy” and the presence of even a few neonates must represent some kind of “stock raising disaster” (Amorosi and McGovern 1994:186).

While these data can be seen as a signal of distress, other interpretation can be made. These data can also demonstrate the actions of rational economic actors who saw sheep as a valuable commodity, capable of producing a number of marketable goods, including: wool, meat, milk, horn, and fleeces. Since sheep farming for meat and wool is still practiced in many rural areas of Iceland today, we can use ethnographic data to construct potential archaeological correlates for identifying past herding strategies, testing whether sheep farming in the Sturlunga period was focused on general subsistence or on commercialization. Ethnographic data from Svalbarðshreppur have indicated that farmers tend not to extract all of the possible resources from the same sheep, “but instead maintain a dual flock system which separated the milking ewes (who were close herded around sel fairly close to the home farm during the summer) and infertile ewes, lambs, and castrated wethers who were driven into the highlands in the spring and left to graze in common fields until the autumn without any human supervision” (McGovern 2009: 196). Infertile sheep were managed for wool production rather than diary and meat production and in practice often depended upon the few older experienced bellwethers to survive on

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27 Statistically, of course we should question if three neonate remains, out of an NISP of 614 sheep bones, can truly constitute a disaster.

28 The most extensive ethnographic data come from Jón Haukur Ingimundarson’s ongoing fieldwork in Svalbarðshreppur, northeast Iceland (Ingimundarson 1989, 1992, 1995).
their own in the highlands (Aðalsteinsson 1991: 285-291). These observations suggest two crucial material correlates for uncovering past herding strategies: culling rates documented in age and sex profiles observable in faunal assemblages, and the location where sheep are kept. Sheep flocks that are managed for their wool will have a different age/sex profile than those flocks dedicated to diary and meat production. For wool management then we should expected to see a age/sex profile with a high percentage of older individuals, a preference for wethers (castrated rams) over ewes, and a high percentage of culled nursing-age lambs since the “the production and processing of commercial wool correlates with a direct reduction in milk yield and meat production efficiency” (Ingimundarson 1989: 24). Ewes overall, are not preferable for wool production. First, given their smaller size, they tend yield significantly less wool than wethers and barren female sheep29 (Ingimundarson1992: 221), and secondly, ewes, they not be good at fending for themselves through grazing, but must, especially while nursing be fed high quality fodder to sustain the necessary caloric intake that milk producing demands. Since pregnancy and milking are impediments to wool growth, farmers must strategize how many new lambs are necessary each year, which frequently leads to the culling and or castrating of most of a farm’s spring lambs at about four to six months in age if a farm wishes to extract meat or lambskins, but some lambs will be culled immediately after birth if there is a high birth rate in a single year (Ingimundarson 1989: 26, 1992: 221). The most cost effective strategy for wool farming would be to have a large number of wethers up in the highlands where they can graze in common fields with

29 Fertile ewes are smaller on average to not only rams and wethers, but also to barren females who have been known to reach nearly the same size as rams.
little human intervention. These fields are likely not to be intensified through manuring or field clearing practices, as wethers will eat small wild shrubs and weeds\textsuperscript{30} as well as grass. Herding strategies dedicated to milking and meat production, in contrast, will be reflected in age/sex profiles dominated by a high percentage of ewes (milking) and younger males that have reached full maturity (meat). These animals are likely to be kept within the boundaries of a farmstead, being fed high quality stored hay supplies supplemented through some opportunistic grazing.

Available faunal analysis from a number of archaeological sites supports the possibility that the economy during Phase II included a fair number of wool producers. The most comprehensive faunal analysis comes from the site Hofstaðir\textsuperscript{31} in Mývatnsveit (McGovern 2009). As in other areas of Iceland, the faunal assemblages from Hofstaðir demonstrate a clear shift towards greater sheep intensification after 1000 CE. Tooth eruption and mandibular wear data indicate a high culling percentage of two to three year old sheep for Phase I (indicative of meat production); but by in Phase II there is a high culling rate for lambs less than a year old alongside a large proportion of older sheep (seven years or older) which is, as model from ethnographic analysis, indicative of wool production (McGovern 2009: 197-200). Likewise, long bone fusion reconstructions, a proxy for overall size, indicate an average weight of 35-40 kg, and an average height of 55-70 cm tall for male sheep, well within the range for wethers rather than rams, which once again suggests an economy of wool production over meat production (McGovern 2009: 200-202). The reconstructions of age, sex, and size profiles of sheep from

\footnote{\textsuperscript{30} Wethers have a ravenous reputation and will even eat small birch trees and seaweed given the opportunity.}

\footnote{\textsuperscript{31} 109,373 bone fragments have been analyzed from Hofstaðir since 1991 easily making it the most thoroughly examined faunal collection in Iceland (Friðriksson et al. 2004; McGovern 2009).}
Hofstaðir “suggest a ‘dual flock’ herding strategy, with some ewes being managed for milk, but with a substantial portion of the flocks being managed for wool, and probably moved to highland grazing during the summer months” (McGovern 2009: 202).

Zooarchaeological and reflect a growing class of “merchant-farmers,” who aimed to produce wool well above the subsistence needs of any single household. These data alone, however, cannot shed insights on the intensity of commercialized wool production and the extent of power these economic enterprises held in the formation of incipient secondary state institutions. Landscape organization, as reflected in regional settlement pattern trends, can provide the data necessary to address this crucial component in the economic evolution of medieval Iceland and the development of state-level administration. I will examine two crucial landscape developments of the Sturlunga period: the construction of churches and the escalation in the establishment rate of small farmsteads as documented in the MSR for Skagafjörður.

6.5.3 Church Organization as a Tool for Restructuring the Economy

In 1000 CE, one of the first major intuitional changes on the path towards state-level administration was set in motion with the national conversion to Christianity. Should we, however, view this conversion as a kind of Weberian “Protestant ethic” (Weber 1930), where ideology shapes self-interest, or as a kind of Marxian case where economic forces shape ideology (Marx 1981)? The relationship between an ideological shift and a concentration of power, first in the hands of secular chiefs and later the church, is fertile ground for understanding the relationship between individual self-interest and institutional change. I examine here the Marxian position that the adoption
of a new religion and subsequent development of a new aristocratic class was shaped largely by the dynamics of a changing political economy and the development of trading enterprises focused on rural production that had already begun to take shape before this ideological shift.\textsuperscript{32} A new religion, tied to the wealth and authority of foreign kingdoms, and therefore a network of potential international consumers of Icelandic produce, served as a new source and expression of power for local, often rivaling, elite chieftains and families (Aðalsteinsson 1999; Strömback 1975).

By the twelfth century, a widespread system of rural churches across the landscape (Figure 6.4) provided the necessary structural framework for the maturity of secondary state institutions (Sigurðsson 2006, 2007). Archaeologically, small churches appear around 1000 CE, all located within the property of domestic farmsteads, and are often associated with a shift away from pagan burial treatment to the use of cemeteries (Vésteinsson 2005b: 74). These churches are most often tied to pre-existing large (type 1) farmsteads and reflect an elite use, perhaps overseen by chieftains who may have taken on both a secular and spiritual authority (\textit{kirkjugoðar} or “church chiefs”). Establishing churches on their property gave chieftains an opportunity to strengthen their own social position, transferring the potency and authority of the Catholic Church to themselves. A church, however small, was a symbol of ties to not only a spiritual authority, but also to corporeal political and economic allies abroad. In a chiefly society where alliances can make or break a chieftain’s career, this was no small feat. Farms with churches could easily become centers of political and economic exchange in Iceland, just as they did in

\textsuperscript{32} This is not to say that all converts, elite or commoner, lacked any sort of sacred motivation for becoming Christian; to be sure some individuals converted for very personal, spiritual reasons, but the conversion of an entire group \textit{en masse} was likely grounded more in profane motivations.
other parts of Europe. However, it would be difficult to see these early manifestations as institutional. There is no clear evidence, for example, of any sort of consistent structure or organization to the construction and use\textsuperscript{33} of churches throughout the eleventh century. By 1100 CE, however, church leaders in Iceland had begun the task of establishing a firm institutional administration, similar to those seen throughout northern Europe. These developments include: two episcopal sees (bishoprics), one in the south (Skálholt in 1056 by the archdiocese of Hamburg-Bremen, Germany) and one in the north (Hólar in 1106 by the archdiocese in Lund, Sweden); the tithe (\textit{tiund}) tax (1096/7); and the formal inclusion of Christian laws into the \textit{Grágás} (1122-33). These developments reflect the emergence of state-level administrative institutions with a formalized religion governed by the authority of two elected bishops, formal taxation, and a formalized legal code all maintained and operated through the auspices of the church. Drawing on parallels from Medieval European Kingdoms (Moore 2000), these institutional changes likewise signal potential economic changes. In the absence of urbanism, the episcopal sees at Skálholt\textsuperscript{34} and Hólar would have been likely substitutes for cities, facilitating as not just ideological centers, but also places where craft production, mercantilism, and other forms of social exchange could be held. The standardized\textsuperscript{35} collection of the tithe, likewise would have

\textsuperscript{33} The use of early churches is poorly understood given the paucity of available textual and archaeological information. Our notions on the significance of early churches is likely to change as more archaeological data bring to light the kinds of activities that took place in these locations.

\textsuperscript{34} \textit{Hungryvaka} (The Appetizer or “hunger walker”) an account of the lives of the first five bishops of Skálholt (written in the first half of the 13\textsuperscript{th} century) recounts chronicler Adam of Bremen’s (d.1081) impression of Skálholt as the “largest city” in Iceland, complete with a cathedral, extensive farming, craft specialists, merchants, and a school.

\textsuperscript{35} By 1200 CE, all farmsteads were assigned to a specific “tithe area” that dictated which church they should be paying taxes to. Some historians have suggested that tithing areas were operation as early as 1100 CE (for a discussion on this, see Vésteinsson 2000b: 69-92).
provided revenue that could be invested in various enterprises, not least of which a trade economy as seen throughout northern Europe.

In addition to these administrative changes were new forms of elite centers that would have made the necessary market demands of an intensified economy plausible. Church annals from Iceland describe a new kind of farmstead in the twelfth century, the *stadr* (plural *staðir*) or benefice farm, “where the property and farm operations were in full service of the church and financed its operations in full” (Eyþórsson 2005: 38). Because staðir were self-governing units under church authority, they were exempt from paying the tithe, a motivation that has often been cited for why landlords would relinquish their property to the church (Stefánsson 2000: 76). This view has been challenged by recent scholarship, which suggests that there was far more to be gained by a landowner for converting their property into a staðr than simply the avoidance of paying the tithe (Þorláksson 2005: 128). The motivation for creating a staðr reflects real world political and economic interests, especially for the elite sectors of the society as the vast majority of staðir were created on wealthy, type 1 farmsteads. Converting a farmstead into a staðr may have given some elites a leg-up on the competition by attracting visitors to their land, acting as central places of communication and exchange (Vésteinsson 2006). As locations connected to the church, these farmsteads may have also been seen as safe havens, as sacred places where violence was not permitted.36 Regardless to why staðir attracted visitors, once these individuals were drawn in they could become potential allies and perhaps even potential market customers. The location

36 In practice, this is somewhat debatable, however, as there is not shortage of violent episodes in or near churches described in the sagas. The presence of a church may have been enough to curb some acts of violence though, making these sites, at least in theory, a little safer than other areas in the landscape.
of staðir sites lends further support for this hypothesis since all staðir are situated along crucial travel routes, crossroads, or near harbors (Þorláksson 2005: 130-138). The combination of geographic position and sacred social status would have made staðir sites leading agents of economic and political authority.

From a network analysis point of view, staðir sites are likewise significant because they represent potential first tier nodal sites for Phase II. If Phase II represents a period of social change and transition, then one would expect the relationship between these new nodal sites, second tier hub sites, and smaller third tier nodes to be expressed differently in the settlement patterns for Phase II than they had been expressed in Phase I.

From this discussion on the development of church administration and the formation of possible new centers of power we are left with one vital question: why did these developments occur in the twelfth and thirteenth century and not sooner? Under the parameters of a Viking Age economy these structural changes on their own would have offered little benefit to elites attempting to manipulate political power within the society; but once the society shifted its focus to an agrarian, land-based medieval economy in the twelfth century these institutional developments would have been both necessary and favorable for economic intensification. These economic shifts are reflected not only in the administrative developments of the church, but also in the restructuring of the landscape, creating a propertied system capable of supporting greater rural production.
6.5.4 Settlement Patterns: Staðir, Small Farms, and a New Economy in Skagafjörður

Overall, the settlement pattern data from Phase II suggests a mosaic of chiefly and embryonic state characteristics, making Phase II a time of transition that will, by the fourteenth century, culminate in a full fledged feudal landscape. Settlement trends documented in the MSR for Skagafjörður suggest that Phase II begins with the escalation of economic developments that had already begun to surface by the end of Phase I, namely the intensification of smaller farmsteads presumably devoted to livestock rearing (see Figure 6.5 and Table 6.8). Under the Autarkic Model, one might have predicted this development to have occurred soon after the initial settlement phase, as population growth and subsequent land shortages following the end of an enthusiastic settling of a frontier would have forced a new generation of farmers to claim less desirable but unused lands. The settlement pattern data does not support a land shortage scenario, since even right from the beginning the supposed marginal lands, the midlands and lowlands, were used, while the highlands were systematically unoccupied until after the first generation of settlers, with sites instead established during in the Early Medieval period (between 1000 and 1100 CE). Likewise, Phase I settlement patterns indicate large, type 1 farms occupying large tracts of land; population growth could be accommodated through the subdivision of the landscape into smaller properties within initial land claims, but this development does not occur in earnest until after 1300.

37 It is only after 1300, for example, that smaller farmsteads (site types 3 and 4) characterize landscape organization in the lowlands and the midlands. Throughout Phase II, large farmsteads continue to dominate both the lowland and midland regions.
On the other hand, the Imperial Economy Model would predict that Phase II would be a period characterized by the consolidation of economic and political control, especially once Iceland adopts Christianity, a foreign ideology with state-level implications. The settlement pattern data presented here for Skagafjörður do not refute a trend towards greater economic intensification, on the contrary they support it, but there is little evidence to defend the hypothesis that Norway was orchestrating these developments. As discussed above, state-level institutions do not appear the moment Iceland converts to Christianity. Textual accounts, however, do suggest that Norwegian kings held a newfound interest in Iceland by mid-eleventh century, with several kings offering to become the sole sovereign over the island. While the texts imply that Icelandic elites valued their social connection to kings living abroad, they held no desire to have one rule over them. In Heimskringla, for example, King Ólafr (ca. 1025 CE) asks if he might be granted the very small and insignificant gift of Grímsey Island, which he describes as nothing but a “useless rock” where his men might from time to time be able to dock their boats and set up camps for a few weeks during the summer. Chieftain Guðmundr, an ally of the king, was willing to grant the king this small favor but he first calls a meeting with the community to ask permission. Guðmundr’s brother, Einar, strongly suggests that granting Ólafr’s request is not wise and would surely mean permanent slavery for Icelanders:

If the people of this country will preserve the freedom they have enjoyed since the land was first inhabited, it is not advisable to give the king the smallest spot to fasten himself upon the country by, and not to give him any kind of scat or service that can have the appearance of a duty. On the other hand, I think it very proper that the people send the king such friendly presents of hawks or horses, tents or sails, or such things, which are suitable gifts; and these are well applied if

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38 Grímsey is located northeast (the Arctic circle runs through the island) of Skagafjörður.
they are repaid with friendship. But as to Grimsey Isle, I have to say, that although nothing is drawn from it that can serve for food, yet it could support a great war-force cruising from thence in long-ships; and then, I doubt not, there would be distress enough at every poor peasant's door (chapter 134).

By the end of Phase II, there is no question that Norway politically controlled Iceland, so we might suspect that the settlement patterns seen after 1300 should be nearly identical to those seen in Phase II if Norway was already controlling Iceland; but they are decisively different. In Skagafjörður, the Phase II site distribution is typified by a high number of type 1 and 2 farmsteads (45% of the total site assemblage\textsuperscript{39}) located within fairly close proximity to one another, which suggests a healthy elite faction within Iceland capable of carrying out the tasks of overseeing the economy. In contrast, type 1 sites represent just 9% of the total assemblage in Phase III, and type 2 sites represent just 16%, indicating depreciation in the ratio of elite to smallholder sites by nearly 50%. The social structure of Phase II, then, is separate and distinct from Phase III when Iceland is unquestionably under the rule of a foreign king and power vested in fewer hands.

A good indication of how the society was organized in Skagafjörður during Phase II can be seen through the location of active centers of communication and exchange at crucial nodal and hub points in the landscape. Nodal points and hubs were already established by Phase I, but there is a potential shift in which of these first and second tier sites saw the most traffic. This is difficult to address with the present data, but it is clear that two prominent staðir sites, and therefore possible nodal points, are formed during Phase II: Hólar and Goðdalir. During Phase I, Hólar was likely part of the larger Hof land claim, but archaeological and textual sources indicate that Hólar was its own

\textsuperscript{39} Phase I, by comparison, was likewise high representing 46% of the total site assemblage.
farmstead by 1050. *Hungryaka* and *Jon’s saga* report that that the farmer at Hólar, Oxa Hjaltasaon, built a church there and that later his grandson Illugi Bjarnason, at the request of his own son Hilarius who was a priest, donated his land to the church so that a bishopry could be established in the north, complementing Skálholt, the bishopry in the south. By 1106, the bishopry at Hólar was established. The selection of Hólar as the site for one of only two bishopries in Iceland no doubt reflects the prominent social position of the family who owned the land, but it also reflects the importance of geography and travel. As discussed in chapter 5, the geographic position of Hólar makes it a strong candidate for a possible nodal point. Hólar is positioned at the end of the Hjaltadalur valley, and right at the entrance to the narrowing passage over the mountains to Eyjafjörður where the next trading center, Gasir, can be found. This prime location made Hólar the social bridge connecting the ports of Kolkuós and Gasir. Archaeological evidence confirms that like Adam of Bremen’s observation of the “city” of Skálholt, the size and complexity of Hólar was unmatched by any other site in Skagafjörður and served as a center for craft production, exchange, and the consumption of luxury goods (Traustadóttir 2005). Goðdalir, while smaller in size than Hólar, was likewise positioned at a key location in the landscape, situated along the route that took travelers up into the highlands. Later sources indicate that Goðdalir maintained a bridge over the Laxá River, which would have regulated access in and out of the area (Þorláksson 2005: 131).

As I will discuss below, the heightened activity at Goðdalir reflects the economic

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40 Hof, on the other hand, had been abandoned but would later be reoccupied. The reason for abandonment is unclear, but while conducting the coring survey I discovered geomorphological evidence of a possible landslide occurring before 1104 CE (see also chapter 5). In the twentieth century, several people were trapped and killed by a landslide at Hof suggesting that these geologic events were unfortunately common.

41 Oxa was a direct descendant of Hjalti, the first settler in Hjaltadalur who built his farm at Hof.

42 Found in the *Diplomatarium Islandicum*, a collection of documents that predate 1570 CE (1853: 431).
developments of Phase II, with a greater emphasis placed on a rural economy, which would have made the highlands a valuable asset.

In addition to these staðir sites (nodal points) is the continuation of type 1 sites (hubs) established in Phase I, but now characterized by the addition of small parish churches\(^{43}\) associated with them. Of the twenty-three known type 1 farmsteads in Skagafjörður, only three will never establish a church on their property: Héradalur in Tungusveit, Frostastaðir in Blönduhlíð, and Höfði in Höfðaströnd but both Frostastaðir and Höfði will become the properties of Hólar by the start of the fourteenth century. These data suggest that economic production and exchange could be carried out at church centers, making cities unnecessary for commercial enterprises. It is far from coincidental that the owners of large farmsteads, which likely already held substantial influence during Phase I, opted to construct churches on their property. This action can be seen as a necessary endeavor in the quest to stay ahead of the competition; if one wanted to partake in the political economy one needed an ideological backing (Zoëga and Traustadóttir 2007; Zoëga 2009b). Managing the economy through the infrastructure of the church may have also served as a guarantee on the quality and price of goods, operating much in the same way the markets do today. Churches are clearly becoming central places but this is not merely a shuffling of power, but is a structural change, moving social relationships away from the personal power of an individual (chieftain or an elite) to the power of an institution (church). This transition paved the way for the

\(^{43}\) These are not staðir sites, but are privately owned churches (*bændakirkja*), that were likely consecrated by the Catholic Church. In exchange, the landowner had to pay the costs of keeping up the church and paying a priest to serve the congregation. In some cases a portion of the produce of the land was designated as revenue for the Church (Eyþórsson 2005: 37; Þorláksson 2005: 129).
marginalization of small householders that would reach its full maturity with the creation of the feudal state seen in Phase III.

The divide between landowners and smallholders is likewise seen in the distribution and frequency of farmstead size in Skagafjörður during Phase II. While the overall number of farmsteads increased during Phase II, the growth of type 4 farmsteads (smallest household site category) was the most dramatic, increasing from just eight sites in the Settlement period, to nineteen in the Late Medieval, and to an astonishing thirty-seven sites in the Sturlunga period. By contrast, type 1, 2, and 3 farmsteads demonstrate a more conservative growth rate, but an increase nonetheless. There were thirteen type 1 farmsteads in the Settlement period, seventeen in the Early Medieval, and twenty-three in the Sturlunga period. Showing a similar growth rate were type 2 farmsteads, with thirteen in the Settlement period, seventeen in the Early Medieval, and twenty-nine in the Sturlunga period. Type 3 farmsteads (medium sized household site) paralleled the growth of type 1 and 2 farmsteads, with twelve sites in the Settlement period, eighteen in the Early Medieval, and twenty-six in the Sturlunga period. Only ten additional type 1 farmsteads (mostly in the midlands) were established after the Settlement period, sixteen type 2 (almost all in the lowlands and midlands), fourteen type 3 (mostly in the lowlands and the midlands), but there are twenty-nine additional type 4 farmsteads established, with twenty of these sites located in the highlands. Overall, type 4 farmsteads are the majority of sites found in the highlands (67%). In contrast, type 2 and 3 farmsteads become the most common site in the lowlands (63%) and in the midlands type 1 and 2

\[44\] 115 farmsteads are in place by Phase II.
farmsteads dominate (68%). These differences in farmstead size\textsuperscript{45} represent clear distinctions in landscape use, as well as a clear division in social hierarchy. The source of these differences, I argue, is the product of both economic and environmental changes clearly occurring throughout Phase II. I illustrated in chapter 2 that significant changes in soil morphology were underway by the twelfth century, with the lowland and the midland areas experiencing a dramatic increase in silty soil accumulation. This increase in soil accumulation transformed the soil morphology from Histosol-Histosol Andic (H-HA) soil or bog soil to Brown and Gleyic Andosols (BA-WA) complexes. This made the lowland and midland areas highly productive and set into place what would become a permanent physical and social divide between the wealthy landlords with large farmsteads in the lowlands and the midlands, and poorer smaller tenant householders in the highlands. Likewise, the highlands, even during the initial settlement phase, were areas with good rangelands for smaller livestock, such as sheep and goats, rather than as areas for intensified hay production. As the economy moved towards greater wool production, controlling access to rangelands in the highlands became crucial and explains why small farmsteads in the highlands become more prevalent in late eleventh-early twelfth century and not sooner.\textsuperscript{46}

Reviewing both the zooarchaeological evidence and settlement pattern data within a model reflexive of these ethnographic data suggest that Phase II sites, with a high

\textsuperscript{45} Coasts: type 1 and 2 farmsteads makeup 80%; type 3 and 4 farmsteads makeup 20%
Lowlands: type 1 and 2 farmsteads makeup 53%; type 3 and 4 farmsteads makeup 48%
Midlands: type 1 and 2 farmsteads makeup 68%; type 3 and 4 farmsteads makeup 32%
Highlands: type 1 and 2 farmsteads makeup 15%; type 3 and 4 farmsteads makeup 85%
\textsuperscript{46} This pattern dovetails well with what Krugman (1995) termed an “economic geography” and is an important explanation for why lowland farmers become wealthy landlords and highland farmers become marginalized tenants.
percentage of sheep in their overall faunal assemblages, were flocking their herds for wool management more than for milk and meat production. Settlement pattern data from Skagafjörður are, likewise, suggestive of a shift towards greater reliance on sheep rearing. We know from eighteenth century diaries and travelers reports that sheep farming was the dominant enterprise in Iceland’s rural economy. This kind of farming was carried out not only within the homestead, but also at remote satellite, sel (shieling) sites throughout the highlands. Interestingly, Phases I and II document very few sel (site type 5) sites, totally to just eight\(^{47}\) known locations for all of Skagafjörður. This low number may reflect an archaeological bias, as sel sites are notoriously difficult to identify, but it may also reflect a herding strategy that emphasized wool production rather than milk production. Sel sites served as temporary housing for herders who had taken their flocks up to the highlands to graze in the summer as well as places where milking and the making of diary products was carried out. If the goal of a farmer was to extract wool rather than milk, then it is likely that sel sites were simply not needed. Likewise, the shift towards small farms, especially in the highlands, is a good indication of a rural economy centered on the interests of wool production. From an environmental perspective, the constraints of a highland landscape made the management of meadows at best a challenge in some areas and at worst impossible in the harsher interior reaches of the island. From a sheep rearing strategy, however, these challenges were not a detriment to wool production since wethers can graze independent of human intervention even in less than ideal rangelands. The larger question we should ask is why establish farmsteads

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\(^{47}\) By comparison, there are 39 known sel sites by 1700. The number dropped to 22 sites in the nineteenth century, a period when, interestingly enough, intensive wool production was revived.
in the highlands at all if your economic goal is to manage sheep for wool? Why not instead, simply keep a farmstead in lower elevations and seasonally drive your sheep into the highlands? I would suggest that one possibility for the placement of these farmsteads were territorial claims over highland grazing areas, and may reflect a full-time specialization of wool producers. The establishment of farmsteads in less than ideal agricultural lands could have acted as physical marker of rights to land use. These farmers may not have been in the highlands to oversee their sheep, but to oversee the grazing land. It is probable that these small farms were attached to larger farms located in the nearby lowlands and midlands, but more evidence is needed to support these hypotheses.

### 6.5.5 Path Towards State-Level Organization in Skagafjörður

The picture that comes into focus from the data presented here is highly complex, with multiple variables operating in tandem. Applying a network based approach, however, allows us to examine the relationship between these variables, providing us with a fuller account of how both external and internal variables conspired in the development of a secondary state in Iceland. The development of state-level institutions is well illustrated in Iceland, seen unmistakably by changes in landscape use during Phase II; however, one should be cautious in viewing these changes as the consequence of a new religion or a new economy. Instead, I argue that the transformation of landscape use co-evolved with ideological and economic modifications that paralleled localized changes in the environment and sources of power and authority for political leaders that had been set in motion by the end of Phase I. It is the coalescence of all of these factors
that conspired within one linked social network to create secondary state institutions in Iceland. I have illustrated how an economic shift towards greater wool production, documented in zooarchaeological and settlement pattern data, was carried out through the reorganization\(^{48}\) of the landscape. Overall, the landscape organization of Phase II represents the ideology of an incipient state, with features of a chiefdom existing alongside elements of a state. These data for Skagafjörður, and their implications for a larger Norse Economic Territory (NET) provides us with an innovative and acute insight into the process of secondary state formation as a complex interplay of local and external variables (see chapter 7).

### 6.6 Phases III and IV: A Secondary State Operating under an Ecclesiastical Economy

In 1262, Iceland was annexed into the Norwegian state on the condition\(^{49}\) that six Norwegian merchant ships per year were to come to Iceland, resuming the active trading relationship between the two polities. This stipulation clearly demonstrates the importance of trade for Icelanders, and their willingness to lose some of their political autonomy in exchange in for economic insurance (see chapter 7 for further discussion). While Iceland comes under the political control of Norway, there was never a king in residence in Iceland; in fact Norwegian and later Danish kings rarely if ever traveled to their island principality. Instead, Iceland was ruled through a governor elected by the

\(^{48}\) This reorganization paralleled the developments seen in Scandinavia, with a rural economy operating through the structure of a church-based administration that could regulate the tempo of production and exchange (see chapter 7).

\(^{49}\) This condition is stipulated in the *Gamli Sáttmáli* (“Old Covenant”), a legal document that acknowledged Iceland’s loyalty and service to the Norwegian Crown.
king and through a system of regional sheriffs (sýslumenn) who were typically Icelanders (Hasturp 1991). Although positions of authority originated from the king, his power was indirect and nearly unenforceable. Direct power in Iceland was restricted since there was no effective secular centralized bureaucracy until the late seventeenth century. Local power, therefore, remained in the hands of bishops with an ecclesiastical bureaucracy who operated with the power of a king, maintaining greater autonomy than they had previously held when authority was derived from the support of local farmers and chieftains (Sigurðsson 1995). By 1450, the Catholic Church was the largest landholder in Iceland (Magnusson 2005: 207-221), echoing similar developments in the feudal system found throughout Western Europe (Figure 6.6). Four hundred years earlier however, the church could accurately be described as nothing more than an extension of power of the strengthening legion of chieftains. How then, does a chiefly political structure lose ground to its own creation? At the root of this question is the larger issue of how embryonic state institutions are able to oust chiefly sources of power, taking over both the political and economic stage. In Iceland, the stage was cloaked in the religiosity of the Catholic Church, a play perhaps more entrenched in property than in piety, but one of social power nonetheless. The battleground between Iceland’s secular and sacred elite reached its zenith in the thirteenth century, as the aristocracy fought for the right to remain in control of lands that had formerly been bequeathed to the church in an attempt to broadening their economic and political base by creating centers of attraction and transaction. Textual accounts depict a close working relationship between chieftains and bishops; in fact, most bishops were from prominent elite families in Iceland (Sigurðsson 2007, 2008). It is likely that chieftains in the beginning firmly believed they were in
control of priests and bishops; however, the relationship between chieftains and
clergymen in Iceland was punctuated by conflict, and ultimately an attrition of chiefly
power.\footnote{These same sorts of conflicts are documented throughout Europe (the sagas read with eerie similarity to
the conflicts between Henry II and Thomas Beckett for example). These conflicts are not restricted to
Christianity but seem to be a common problem with the political and economic use of institutionalized
religions.}

One of the most revealing examples of this terse relationship can be found in the
Bishop’s saga, which recounts the miscalculations of two brothers, Kolbeinn (d.1208)
and Arnór (d.1227), members of the powerful Ásbirningar family, who attempted to gain
control over their rivals in Skagafjörður by lobbying to have Guðmundr góða (“the
Good”) installed as the bishop at Hólar. Guðmundr started his career as a priest in
Kolbeinn’s household, so when the seat of the bishopry opened up, Kolbeinn campaigned
Guðmundr to the post. Kolbeinn undoubtedly believed setting Guðmundr up as the
bishop was his chance to thwart the power of the chieftains in Skagafjörður, assuming
that Guðmundr would remain under the sway of the Ásbirningar family, but that did not
happen. Instead, Guðmundr wrapped himself up in the power of Hólar and refused to
grant any of Kolbeinn or Arnór’s demands for favoritism. Their conflict eventually
became violent, as Arnór and a group of followers attempted to force Guðmundr out of
office. In the midst of this armed conflict, Guðmundr was forced to flee from home at
Hólar, and take refuge in the south, while Arnór took over the lands at Hólar. The
following spring reconciliation was attempted between the two men, but Arnór refused to
let Guðmundr return to Hólar “where he might control more than his clerics and the
church services” (chapter 25). Upon hearing this, the archbishop in Rome wrote a letter
to Arnór, commanding him to let Guðmundr come back to Hólar, and to give back all the
property Arnór had taken from him. The letter goes on to state, that despite the crimes Arnór may think Guðmundr has committed, he has no right to judge the bishop, for only “God and the Pope hold that right” (chapter 26). “After his letter, Arnór and his men were quiet” (chapter 27). These passages suggest that the bishop stood outside of the chiefly social arrangements that centered on a system of checks and balances. A chief had limits, for if a chief fell out of favor with the community he could be removed from office or even killed. The bishop, however, could be judged only by God and the Pope, making him essentially untouchable and his power unchecked. This power extended to economic interests as well, for not only was the church generating a sizable income from the tithe and from benefices, but when disputes over land or access to natural resources did occur the church often came out as the victor. For example, the Bishop’s saga describes a dispute between a chieftain and the farmer at the staðr at Reykholt. The chieftain would like to graze his horses in a nearby open field, but the farmer rejects his request with the justification that the grass belongs to St. Peter. This was a valid enough reason, and chief moved on. It is easy to see the potential economic clout the Church could therefore acquire. In fact, the number of new staðir churches rapidly declined by the end of the thirteenth century (börnláksson 2005), as elites likely no longer saw ideology as pathway to acquiring their own power; that power was now reserved for the clergy only. The power of the Church was officially legitimated by the Norwegian Crown in 1297 CE when the king stepped in and decreed that the Church only, not lay individuals, could control the lands where a staðr was located (“the staðarmál ruling”).

By 1550, the bishopry at Hólar alone owned more than three hundred farms or 75% of all the land in northern Iceland (Figure 6.6); and by the end of the seventeenth
century 95% of all farms in Iceland were occupied by tenants replacing the previous system of independent smallholders (Lárusson 1967). In Skagafjörður, the number of farmsteads increased from 115 sites in Phase II, to an astounding 353 sites in Phase III (see Figure 6.7 and Table 6.9), declining slightly in Phase IV to 320 sites (see Figures 6.8 and 6.9 and Table 6.10). While type 4 farmsteads were consistently underrepresented in Phase I, small farms become the norm after 1300 CE, with type 3 and 4 farmsteads comprising 75% of the total sites in Phase III and 73% in Phase IV. The crucial difference between Phase II small farmsteads and those in Phases III and IV is that while small farmsteads clustered in the highlands in Phase II, they are located in every region, aside from the coasts, by Phase III. During Phase IV, the lowlands even surpass the highlands in the number of type 4 farms. This shift in landscape use signals a systems change in Iceland, from one organized by a scale-free network with indirect economic control to one with direct economic control. The shift in the architecture of the system is reflected in the shift in the social structure of Iceland, from one made-up of independent traders to one of dependent tenants.\(^{51}\) As the wealth of the church increased, so, too, did the alienation between the landowner and the tenant farmer as the former system of reciprocal relationships was replaced with marginality, divorcing workers from ownership over the fruits of their labor. The church and the new aristocracy became the labor brokers of the society, coordinating the labor of others in order to promote their own advancement (Arnold 1995: 88). The church and aristocracy were able to keep their power and wealth by forcing previously independent smallholders to become dependent

\(^{51}\) By 1700, it is has been estimated from census records that 95% of all Icelandic households lived on tenant farms (Lárusson 1967).
on the economic and political infrastructures operated by the elite through their control over the single most important component of production in Iceland: land use. By law, all individuals were required to be affiliated with a specific farmstead, a law that persisted even after commercial fishing became the dominant economic enterprise (Karlsson 2000: 224). This persistence is surprising since commercial fishing off the shores of Iceland was clearly important to, first the Norwegian and later the Danish economy, as royal authorities actively tried to block foreign fishing vessels from entering Icelandic waters. These measures reached a boiling point by the early fifteenth century as the growing power of Hanseatic merchants threatened to usurp the Scandinavian cod and stockfish monopoly (Gelsinger 1981: 193; Wubs-Mrozewicz 2008: 184). Even still, back on mainland Iceland, an agrarian-based economy, organized along feudal lines, persisted. Tying individuals to the land effectively prevented the development of urban areas around ports until the modern era, allowing the Church to continue its revenue flow from agrarian production. This system simultaneously permitted the power of both church and state as each was able to maintain its own economic foundation at the cost of creating a rigid social system of elites and commoners.

By the eighteenth century, the marginalization of small farmers reached a threshold, as laborers were now entirely excluded from the strategies and decisions made about production, detaching them from the immediate returns on their own work investment. In the end, this detachment would quicken the decline of the power of the elite landlord since tenant farmers, lacking motivation, evaded performing any extra labor, resulting in poor land maintenance and a subsequent decrease in the net returns of production (Bolender et al. 2008; Hastrup 1998). These developments reflect a societal
transformation from collectivism to individualism, from redistribution to market economies, and from chiefly to state sponsored political institutions.

These data indicate that the incipient state-level institutions of the thirteenth century are separate from those of the fifteenth century. We can conclude from the evidence presented here, that the Imperial Economy Model is not supported by the data, but instead suggest that the Icelandic enterprise remained more or less politically independent prior to the fourteenth century, with a full-fledged state sponsored feudal landscape developed by the fifteenth century. Likewise, the Autarkic Model does not account for three distinct phases of landscape use that suggests that local and long-distance trade played a crucial role in defining the Icelandic economy. As the world market shifted its interests away from Europe to new markets in the western colonies throughout the New World, Africa, and Southeast Asia in the sixteenth century, Iceland became less economically crucial to Scandinavian kings. It was not until the late nineteenth century, when new deck vessels and later new motorized trawling ships were invented that Iceland, with its cod-rich oceans, once again captured the attention of foreign investors. It was only during this intermediary period, however, that Iceland became more insular from global economic trends. The history of Iceland is one defined by its connections to a larger world as much as it is by its local experiences.

6.7 Conclusion

Three economic paradigms, the Autarkic, the Imperial Economy, and the Norse Economic Territory (NET) model were examined in the Skagafjörður Landscape Project to determine how the political economy of medieval Iceland was structured, and to
examine how this organization could potentially stimulate the process of secondary state formation. Each of these economic models were examined against settlement pattern data contained in the Multiregional Site Registry for Skagafjörður, covering a thousand year period of time and 610 sites located within an environmentally diverse area larger than 5,500 km². The results of this broad survey have been evaluated through a social network approach, which demonstrate that the organization of landscape use in Skagafjörður conforms closely to a scale-free network, rather than a clustered network, indicated by a hierarchy of site sizes and a wide distribution of domestic and non-residential areas within every type of environmental region. This type of landscape organization suggests that the data presented here cannot support the settlement predictions made by either the Autarkic or the Imperial Economy model, but instead are suggestive of an economy capable of maintaining an autonomous household provisioning system alongside a program of surplus production that could be used to fuel both local and international markets. These developments coincide with the creation of exclusive nodal points in the landscape, beginning with the trading harbor site at Kolkuós and the assembly site at Hegranes during the initial Settlement period, with additional nodal points created in the Sturlunga period the with the development of the bishopry at Hólar and the creation of church staðir sites, all of which were strategically located at crucial travel junctions. These nodal points linked together numerous hubs, such as large size 1 farmsteads, throughout the landscape, which in turn connected several small nodes, such as activity sites and farmsteads. The end result was a highly connected landscape, capable of facilitating the exchange of goods, services, and innovations consistently and effectively all without the aid of dense urban centers.
The organization and hierarchy of sites indicates that the economy of medieval Iceland in Skagafjörður was both diverse and potentially managed for facilitating exchange networks. Understanding the development of state institutions in Iceland, therefore, must be seen at the hands of localized chiefs acting within a global arena, rather than as a society striving solely for local economic sustainability. Iceland was one of many North Atlantic nodes in what I have called the NET, and while it has always been assumed that trade was relatively unimportant, I have argued that my research shows the opposite. From the onset of colonization, to the collapse of its chiefly political structure, Icelandic farmers and merchants actively pursued access into the NET, using the goods acquired from other NET members to fuel chiefly domestic exchanges. From these observations I have proposed a new model, the “NET model,” that suggests that the parameters of the economy were defined by local factors, including the environment, as well as the demands from a global economy. Historically, the focus of the global economy shifted away from luxury goods characteristic of the Viking Age, to staple goods typified by the medieval economy of the twelfth century. We see this economic shift clearly in the settlement pattern data, as different ecological areas are intensified during different phases of the evolution of the landscape. Each phase of landscape development is likewise echoed in changes seen in the organization of the household economy, with large farmsteads documented for the Viking Age followed by the a steady increase in small farmsteads beginning in the eleventh century. Traditionally, archaeological models have tended to center on the notion of autarkic economies, with settlers occupying only areas where an intensive animal rearing strategy is possible. These areas could be found in the drier highland areas, where grass pastures could be
easily created, making the highlands the most coveted of all ecological areas. However, the data presented here shows that all ecological areas, highlands, lowlands and the coasts of Skagafjörður were settled right from the beginning of colonization in the late ninth century, with a higher ratio of large to small farmsteads established in lowlands and midlands, but a higher ratio of small to large farmsteads in the highlands. This settlement pattern implies a diverse economy, with different economic enterprises carried out in, and no doubt shaped by, distinct ecological regions. Likewise, a number of historical approaches to the colonization and later state development have tended to favor the Imperial Economy model, with a distant Norwegian king deploying bands of settlers throughout his North Atlantic holdings. The data presented here, however, does not hold up to the settlement pattern predictions made by this model, as the initial settlement represents a kind of frontier setting, rather than a planned imperial colony. This is not to suggest that the settlers of Iceland saw themselves as divorced from Scandinavia; on the contrary, these settlers remained active in a global economy, with Norway as one of its principle commercial partners. These data suggest that trade was a vital motivation for colonization in Iceland, and continued to shape the society and the eventual development of secondary state institutions. But rather seeing secondary state development as being driven or forced by either local or external factors, the NET model suggests that state formation in Iceland would not have been possible without both kinds of stimuli.

Settlement pattern trends suggest demonstrate that the economy of Iceland consisted of the associated enterprises of local production, exchange, and consumption alongside foreign trade.\textsuperscript{52}

\textsuperscript{52} The potential importance of local and long distance trade has also been documented at the site of Gásir in
International trade must have been more difficult in the beginning, since the demand for Icelandic goods abroad would have been limited to luxury items like ivory, hides, furs and falcons, all of which were in limited supply and difficult to control. The shift to economies fueled by the exchange of bulk staple goods by phase II in the mid-eleventh/twelfth century, however, allowed Iceland, with its ready supply of wool, greater prominence in the NET and as a result, I argue, transformed the social structure of the society. These changes are readily seen in the restructuring of the household economy, as farmsteads were relocated and concentrated in ecological zones that could support pastoral farming and were converted from seasonal activity areas to permanent small tenant farms attached to large aristocratic estates. It was this synergy of local and global demands that prompted the development of secondary state formation in Iceland by the thirteenth century.

What remains to be examined is how an economy centered on both household autonomy and surplus production for a commercial economy could have resulted in the development of a secondary state. In the next chapter, I will expand on Morton Fried’s (1976) and Barbara Price’s (1978) original models of secondary state formation, adding a new type of state, the synergistic state, a polity defined by the confluence of local and global contacts through the medium of economic and political exchange.

northeast Iceland. Archaeological research (2001-2006) has shown that the seasonal fourteenth century trading center at Gásir specialized in the export exchange of high status commodities that ranged from rare raw materials, such as walrus ivory and sulfur, to agrarian production, especially high quality meat (Harrison et al. 2008). Further investigations of the surrounding hinterlands have demonstrated that the activities at Gásir held profound influence over the nature of the rural economy of medieval Iceland (Harrison 2009). Zooarchaeological evidence has demonstrated a rural economy devoted to the dual enterprises of both household sustainability and surplus production of livestock commodities that could be sold at the Gásir market. The growing evidence from Gásir suggests that trade, both local and international, was a vital component of the Icelandic economy and a key element in the socio-political structure of the society.
Figure 6.1: Map of Skagafjörður by Elevation
Figure 6.2: Sites (n= 61) in the Settlement Period (870-1000 CE)
Figure 6.3: Sites (n= 95) in the Early Medieval Period (1000-1104 CE)
Figure 6.4: Church Sites during the Sturlunga Period (1104-1300 CE)
Figure 6.5: Sites (n= 140) in the Sturlunga Period (1104-1300 CE)
Figure 6.6: Farms owned by the Hólar Bishopric as Recorded in Church and Census Records
Figure 6.7: Sites (n= 415) in the Late Medieval Period (1300-1600 CE)
Figure 6.8: Sites (n= 539) in the Early Historic Period (1600-1800 CE)
Figure 6.9: Sites (n= 428) in the Historic Period (1800-1900 CE)
Table 6.1: The Number of Sites by Elevation within the Geographic Areas of Skagafjörður

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<th>No. of Midland Sites</th>
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*See Chapter 4 for a description of the ecological categories.
Table 6.2: All Site Types by Location and Time Period Considered in the SLP (n= 610)

<table>
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<tr>
<th>Elevation Area</th>
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<th>Sturlunga</th>
<th>Late Medieval</th>
<th>Early Historic</th>
<th>Historic</th>
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Table 6.3: Farmstead Site Types by Location Considered in the SLP (n= 492)

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<td>Type 2 (n= 56)</td>
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</tr>
<tr>
<td>Midland</td>
<td>19</td>
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</tr>
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<td>Highland</td>
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<td></td>
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<td></td>
<td>Type 3 (n= 118)</td>
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Table 6.4: Type 5 Sel Sites by Elevation over Time (n= 46)

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<th>Late Medieval</th>
<th>Early Historic</th>
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<td>Highland</td>
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<td>8</td>
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<td>20</td>
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Table 6.5: Type 6 Activity Area Sites by Elevation over Time (n= 61)

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Table 6.6: Type 7 (Trading Sites), 8 (Pagan Graves), and Type 9 (Assembly Sites) by Elevation over Time (n= 11)

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<th>Sturlunga</th>
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Table 6.7: Phase I Farmstead Sites (n= 71)

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Table 6.10: Phase IV Farmstead Sites (n=320)

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<td>42</td>
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<td>15</td>
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<td>131</td>
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Chapter 7

The Formation of a Synergistic Secondary State in The Norse Economic Territory

Viking Age Europe was a well-connected world. Wherever we look in the archaeological record from this period we find evidence of communication and exchange across vast distances, connecting Europe with North Africa, the Middle East, and beyond. Taking this evidence into consideration, I have asked if the same sort of connectedness applied to medieval Iceland and, if so, what role might it have played in its development of secondary state institutions. Previous models have vacillated between those that emphasize indigenous, autonomous state development (Durrenberger 1998; Karlsson 2000) and those that emphasize the purely secondary, derivative nature of the Icelandic state and its relationship to existing complex societies (Hastrup 2004). I have argued in the preceding chapters that these perceptions are the result of methodological and analytical limitations to research on the process of secondary state formation in general, and in particular to the history of research on the development of political and economic complexity in the North Atlantic. My primary goal in this chapter is to reconsider the concept of secondary state formation in light of the new evidence that I have presented from my archaeological study on the economic organization of Skagafjörður. These data suggest that it is misleading to examine the process of state formation at the hands of either local or external factors, but should instead be viewed along several different structural, spatial, and temporal scales.
The model I will outline here integrates both traditional neo-evolutionary (Fried 1978; Flannery 1998; Johnson and Earle 1987; Service 1975) and post-processual (Blanton et al. 1996; Crumley 1995; Feinman 2000) approaches to the study of state formation as well as the application of Manuel Castells’ (1996) theory on “network societies,” which conceptualizes social behavior as mediated through institutional structures that are themselves defined as the physical manifestation of the dynamic intersection between time and space. This cultural dynamism is what I term here a “synergistic secondary state,” where state level institutions are the result of cultural practices that are situated at the intersection of independent but highly connected local and external processes. Unlike existing approaches to the study of second generation state formation, the synergistic secondary state model makes use of a social network methodology, examining the relationship between temporal, spatial, and structural components through both micro and macro scales of analysis. It is my hope that this new model will encourage researchers to view the development of social complexity as the product of long-term cultural processes that transcend local and global boundaries, resulting in a high degree of variability in the number and type of possible secondary states.

Following these approaches, I argue that the physical space where trade took place can become a kind of shared interaction zone, a fertile ground for the exchange of not only goods, but also of ideas and social capital that can connect individuals from both near and distant locales. The end result of this shared and dynamic interaction was the formation of the Icelandic state. Using evidence from the Multiregional Settlement
Registry (MSR) for Skagafjörður (see also chapter 6), the aim of this final chapter is to examine how these three evolving factors can result in the formation of a secondary state.

### 7.1 Synergistic Secondary State Formation

When analyzing the development of social complexity, political anthropologists have found it useful to use Morton Fried’s (1960, 1967) distinction between what he termed pristine and secondary state formation. While only a handful societies fall under the category of a pristine state, they have overwhelmingly been the foci of research on the origin and development of social complexity. The argument follows that while pristine state development is an entirely endogenous process and deserves investigation to uncover its evolutionary path, secondary state formation is the byproduct of “pressure from already existing states” (Fried 1978: 37), and therefore, needs no further analytical discussion. Barbara Price (1978) broadened Fried’s classificatory scheme in her explanatory model of secondary states, distinguishing between those that developed through succession from a preexisting state and those that developed via interaction between less and more politically and economically complex societies. While the path to statehood is historically different in each of Price’s categories, they share in common the guiding hand of a full-fledged complex state. Tacitly, Price is advancing Fried’s notion that secondary states are driven solely by external stimuli, leaving little room in her model for localized variables, such as ecology or pre-existing social structures. We can sum up these views as the assertion that secondary states develop simply because it is difficult for less complex societies to survive in a world of encroaching states. By setting up our discussions in this light, however, we tend to bias our scope of investigation and
emphasize, or perhaps in some cases over-emphasize, the *active* role played out by state actors over the *inactive* role performed by less politically complex populations in the course of their own development of secondary or second generation state structures. At the same time, we tend to privilege strictly localized factors for primary state formation, a trend that is likewise seen in studies on the much less frequently research situation of secondary states formed via succession from existing states. In both types of situations the development of state-level social organization is viewed simply as the “course of normal cultural evolution” (Rhee 1992: 192). Most examinations of second generation states have centered on colonial takeovers, and have therefore, looked exclusively to external factors for the process of state formation out in the periphery. What has not been developed is a model that goes beyond these classificatory schemes and examines state formation, be it first, second, or even third generation, as the confluence of both internal and external processes. This may help to explain why the Icelandic case study has been explained under separate models as a situation of internalized developments and as a colonial takeover (see chapters 2 and 3), with neither model capable of fully incorporating all existing data from the medieval period.

An alternative to models that emphasize state formation from either endogenous or exogenous factors is what I am calling here the synergistic secondary state model, which incorporates traditional evolutionary models described above\(^1\) with Castells’ notion of a networked society. The advantage of traditional evolutionary models are their focus on change over time, often emphasizing how changes in power dynamics can result in major structural shifts within a society. As I have shown in the preceding chapters, we

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\(^1\) See also chapters 1 and 2.
can add to these models theories that combine world systems and earth systems (Bergesen and Bartley 2000; Hornborg and Crumley 2007), to examine how the introduction of new stimuli from natural and geopolitical ecologies can likewise over time result in social change. What is left out of these approaches is a way to examine why, even when the variables are the same, social change will occur in some cultural situations and not in others. I argue what is needed for any model that proposes to examine cultural transformations and the development of increased social complexity is a method for investigating the processes behind social change rather than only identifying the variables that often correspond to structural shifts.

One useful approach can be found in the work of Manuel Castells. Through his analysis of the Internet Age, Castells unlocked clues on a widespread cross-cultural phenomenon: communities rarely exist in isolation, but are instead, intricately linked to one another by both time and space. The reason for this connectivity is that while we often rightly perceive time as an active agent constantly marching ahead, we have incorrectly identified physical space as a static, passive entity. But space, on the contrary, is a highly dynamic agent capable of constant and pervasive change since it is the physical support of the way people live in real time (Castells 1996). Although cultures achieve an insular sensation by delineating artificial boundaries around space, creating geopolitical landscapes for example, we must consider that people in reality actually operate and are shaped by forces both within and beyond these imaginary divisions. To study any society one must be willing to view space, time, and human action within broader frames of reference, which Castells terms “space of flows” (Castells 1996: 412). A space of flows is a physical setting for social interaction where
multiple variables can come together in an obvious material way, allowing a researcher to examine the processes behind individual and institutionally situated behavior. Unlike an isolated or restricted place, a space of flows area is defined as having the following characteristics: (1) a medium through which information or goods can flow or transmit; (2) items to flow through the medium; and (3) nodes through which these ideas or things can circulate and connect to other points within the dimension of a space of flows locale. Part of what defines this space is human interaction, as the movement or flow of goods and information brings people together into a continuous and real time arena. This is why even a high degree of connectivity between hundreds, thousands, or even millions of actors is not overwhelming for us to fully conceptualize, as the medium of a space of flows reduces any sense of vast distances or long time spans. The end result is a phenomenon that mathematicians have termed “the small world effect” or by its more popular moniker, the “six degrees of separation,” the idea that every individual is connected to everyone else in the world by six or fewer acquaintances\(^2\) (Buchanan 2002: 38). These connections make the world appear small and navigable, a sensation made possible only through interaction areas or spaces of flows locations. The dynamism that defines a space of flows area, where space and time are connected, is also what makes for an environment prime for social innovation.

For Castells, the medium of the space of flows is information technology (IT) such as the internet, but arguably there are other types of mediums that can serve the

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\(^2\) Mathematicians have demonstrated the key to unlocking the mystery behind the small world phenomenon is simple: the multiplication of numbers grows quickly. For example, if every individual has 50 acquaintances and those 50 acquaintances have their own 50 acquaintances, and so forth, by six degrees the number of individuals connected to our first individual is greater than 15 billion—a number far larger than the size of the world’s population (Buchanan 2002: 38).
same purpose. While Castells intended his theory to be extremely historical and applied specifically to the “Internet Age,” archaeologists have long noted a similar trend seen in the evidence for cultural contact through international trade networks. Trade networks arguably were one avenue for creating a highly connected ancient world (LaBianca and Scham 2006; Oates 1993; Renfrew 1986), where the global and the local converged, reducing the physical and social distances that separated communities. Individuals became linked through the exchange of goods and ideas as well as through the reification of social relationships that came along with these exchanges (Godelier 1999). These relationships had to be continually defined and redefined, calling to our attention the element of time. Archaeological and historical studies have at their disposal diachronic datasets, adding to Castells’ theory the element of change over both short and long periods of time. To conceptualize this view, archaeologists have increasingly turned to the *Annales*\textsuperscript{3} historical school’s approach (Braudel 1995) to studying the past, which advocates that modern events can be examined within three time-sensitive categories: as *événements* (events in the moment of the present time), as events connected to a suite of past actions *moyenne durée* (medium duration), or as the product of the *longue durée* (long duration) of historical actions. Braudel argued that traditional approaches to history have focused on timescales within the *événements* and *moyenne durée*, rarely considering how the historical present was shaped by events within the *longue durée* of time (Braudel 1995). Analyzing the past within a deep time approach dramatically changes how we

\[3 \text{ The } \textit{Annales} \text{ historical school is structured around the concept of metalités—the suggestion that cultures and societies can only be understood within the context of their contemporaries rather than in relation to their modern counterparts (LaBianca and Scham 2006: 2).} \]
view the present, as variables take on a sharper and more complex shape once the entirety of their history is uncovered.

When we apply Castells’ notion of dynamic physical space with Braudel’s theory of time we get a new and innovative synergistic model that conceptualizes cultural change as the product of complex interactions over multiple geographies and deep periods of time. This approach is especially useful when examining the transition from chiefdom to state-level social organization since long-distance trade networks are an integral component of the political economy of most chiefdom-level societies. The political and economic system of any chiefdom is dependent on its connection to the outside world and its ability to use these networks to acquire goods, services, and other forms of social capital that can then be translated into mechanisms to fuel local political and economic enterprises. It stands to reason then that trade, on both a local and global scale, can materially represent a space of flows situation and can permit researchers with the rare opportunity of uncovering the suite of processes that encouraged the formation of state-level dynamics. The merit of approaches of this kind is that it goes beyond the teleological limitations of traditional evolutionary and world systems theory approaches, but this new paradigm has one remaining problem: the model itself has a high degree of abstraction as it presents a situation where all variables are meaningful and crucial, prompting us to ask how one can ever hope to take an accurate inventory and manage of all of the variables that must be considered? I propose that this task is made possible and manageable through social network analysis (Barabási 2003). In chapters 5 and 6, I demonstrated how network analysis could be used with regional settlement data for

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4 See also chapters 2 and 3.
uncovering past economic behavior by identifying different types of system structures (clustered or scale-free), but this is only one small application of a network methodology.

Social network approaches can in fact be applied to any form of social behavior, including secondary state formation. The benefit of social network models are that these frameworks avoid the pitfalls of anticipating specific causal factors associated with social change and instead seek to simultaneously examine multiple variables (termed as hubs and nodes in social network diction), focusing not just on the presence of these variables, but the relationship between them within a dynamic and open system (Barabási 2003; Strussfogel 2000: 169). The result of this type of analysis is often surprising and frequently suggests that prime movers are rarely the sole spark of social change. Instead, social change is the product of the types of relationships and the interaction between numerous local and external stimuli acting within an open system (Adams 1988).

However, we should not conclude that all variables impact the system evenly; it is far more likely that the relationship between some variables weigh heavier than others. The strength of network analysis is that it allows a researcher to gauge the degree of impact a variable or node might have on the overall system, by making predictions on how its introduction into the network will affect the relationships between pre-existing variables. This is achieved by the examination of the type of relationship that exists between any two variables. Relationships between nodes or variables are defined by social network analysts as “social ties” that can be identified as either weak or strong (see also chapter 4), but preference is never given to any single suite of relationships. In fact, network analysis demands the examination of the relationships not just between strong-strong or weak-weak dyads, but also between strong and weak relationships, arguing that both
types of ties are necessary in any social network. The most striking feature of network analysis is the observation that while one may assume that strong ties are more vital than weak ties, quite the opposite is true when examining social change (Granovetter 1973). Strong ties promote equilibrium, but weak ties enable networks to branch out, expanding the overall system, a process that can ultimately result in changes to the structure of that system or network (Adams 1988; Buchanan 2002: 34-47; Strussfogel 2000). If we view a society as one kind of networked system, we can then examine social action as the dialogue between both hubs and nodes, identifying the nature of this discourse as either a weak and strong relationship, allowing us to then make predictions on how these fluid connections between variables can result in societal change. Social network models suggest that weak ties offer new opportunities in a society by establishing contacts beyond localized networks, which will have consequences for the society as a whole and can result in new structural arrangements (Granovetter 1973: 1363). Strong ties, in contrast, help to maintain structural stability and equilibrium. While social network analysis owes much of its heuristic value to existing models, the true innovation is its applied methodology. Rather than focusing on types of variables, social network approaches instead focus on the type of ties that connect any two or more variables together. It is this new perspective that can help researchers to better understand why social change occurs in some cases and not in others. It may also hold the clues as to why there can exist many different types of both primary and secondary states.

5 For example, social network approaches owes much to anthropological and sociological theories on structural-functionalism and the work of Durkheim, Tönnies, Simmel and Gluckman (Freeman 2004).
Summing up these concepts, I define the synergistic secondary state model as an approach that borrows from evolutionary and world systems theory the idea that social change is constantly occurring over both short and long periods of time and that the outcome of the introduction of new variables can result in somewhat predictable results. However, rather than focusing on the variables themselves, the synergistic model, borrowing from Castells, Braudel, and social network theory, examines the relationships between variables over long periods of time and across both local and international geographic settings. Time and distance are reduced by space of flows mediums, such as trade and technology, creating environments fertile for social change. The application of a social network methodology allows a researcher to manage and consider multiple lines of evidence, incorporating data from external and local variables. The result is a fuller examination of how and why state institutions develop in a secondary context.

7.2 Archaeological Correlates and Application of the Synergistic Secondary State Model

In the last chapter, I suggested a new economic model, the Norse Economic Territory (NET) model, which makes use of the social network approach described above. Defined within a social network paradigm, the NET model avoids the pitfalls of examining either internal or external variables, but instead seeks to see the interplay between these dynamic and connected constituents. Until now, methodological limitations have consigned the potential influence of trade and communication between Iceland and other nations abroad simply to the category of the unknowable. While this verdict may ring true within the traditional study of the archaeology of trade during the
Viking Age, an approach that tends to focus on the distribution of broaches and pins, worked ivory, beads and silver, I have suggested a different approach. For places like Iceland, where the most widely distributed exported commercial goods are nondurable items, namely woolen products (Ingimundarson 1992), and dried fish (Edvardsson 2005; Perdikaris and McGovern 2007), and imported goods like grain and clothing (Þórðarson 1992) that stand little chance of appearing in the material record, we need to find an alternate means of examining production, distribution, and consumption. My own research on trade began by participating in the excavations at the medieval harbor site of Kolkuós in the Skagafjörður, which has provided an insightful look at the kinds of goods that were entering into the country, but it became clear that a trading center alone could not adequately address the entire scale of exchange since it lacked information on the types of goods that were flowing out the country. What was needed then, was a way to additionally uncover evidence about local economic production. One alternative to an artifactual-based approach is to trace the development of landscape organization over time as a proxy for the practice of the political and economic transactions embedded within these physical, palimpsestic landscapes. I hypothesized in chapter 4 that settlement patterns could be used as an indicator of economic activity in rural Iceland and that if Iceland held international economic pursuits, then we should expect see this reflected in settlement strategies. Likewise, I also predicted that if Iceland suffered severe environmental degradation (see chapter 2) or was under the direct control of the Norwegian crown throughout its medieval history (see chapter 3), then we should also anticipate seeing these actions reflected in where and how people established their households. What my research uncovered, however, was a mixed economic strategy that
incorporated both household self-sufficiency as well as the potential for surplus production of woolen goods. This evidence indicates that models centered on resource scarcity or foreign domination as the driving forces behind state formation in Iceland need to be reconsidered.

Under the synergistic secondary state model, the economy and subsequent socio-political structure of Iceland are seen as defined by localized events, including factors such as the environment and chiefly leadership, acting within the parameters of a more global political economy that in turn helped to fuel local systems of exchange and politics. In the discussion that follows, I will argue that examining the data through a social network approach demonstrates that state development in Iceland followed a similar trajectory to state formation in Scandinavia, with an emphasis on devising strategies to regulate the production of an agrarian landscape, a production that was vital to the management of local and long-distance economies and systems of political power. The North Atlantic did not exist in isolation, but remained connected to a global system; it was this pervasive connectivity that defines the processes of secondary state formation in Iceland. The same, I argue, is likely true of many other cases of second or third state formation, making the Icelandic case study one first step in developing the synergistic secondary state model.

While social network analysis argues that there is no definitive means to predict what kinds of changes will occur within an open system, researchers can deduce a range of possible outcomes that the introduction of specific variables will have on the overall architecture of the social system. My research on medieval Iceland suggests that the
relationship between three crucial variables\(^6\) must be considered for how different types of secondary states can form: (1) the degree of local political and economic integration before state systems developed; (2) the ecology of the landscape and its ability support economic surplus production before and after the development of state institutions; and (3) the extent and nature of interaction between incipient states and their full-fledged stately neighbors over both short and long periods of time. From these three variables, a number of predictions can be made about conditions under which state-level organizations are likely to develop.

We can anticipate that when a pre-state society is already socially, economically or politically integrated prior to developing a relationship with a state society, it will likely develop some state-level organization fairly quickly as some of the necessary infrastructure is already present. However, this trait, which commonly found among chiefdoms, is not enough to ensure the emergence of state-level complexity. After all, not all chiefdoms become states. It is the combination of the existing social infrastructure with other variables that can predictably result in the formation of a new second generation state. In an agrarian based society ne such variable is the environment and a society’s ability to harness enough agricultural production to ensure not only the survival of a household, but to guarantee a surplus of goods as well. If the environment cannot accommodate these aims, it is unlikely that state-level organization will ensue, unless the society can supplement its resource base through trade networks. This is perhaps why interaction with mature state-level societies is so crucial in the formation of secondary

\(^6\) My approach builds on the work of Parkinson and Galaty (2007) who presented a similar model for state development in the Aegean (see also chapter 3).
states: under specific conditions, access to consistent and reliable trade networks can buffer the subsistence economy enough to promote new economic avenues. Participation in these new enterprises can result in social change.

One can likewise reliably predict that if a society’s relationship with a mature state is characterized by conquest and domination then the society will likely emulate the state organization of the imposing state. However, not all relationships between mature and less complex societies are defined by degrees of dominance. Conquest is an expensive strategy, making it far more likely that in a large number of historical situations, the relationships between state and non-state polities is structured around receiving and ensuring mutual benefits (Stein 2005). Trade is a likely incentive to forge relationships between polities. We can hypothesize that when the nature of interaction between a non-state society and a mature state lacks outright domination, if secondary state-level organization does develop it is likely not to be a direct emulation of its more socially complex partner, but can in fact result in an entirely new social structure. The logic behind this prediction is the lesson learned from the “strength of weak ties” (Granovetter 1973). In a situation of a colonial takeover, the social system of the peripheral society is characterized predominately by strong ties (what social network analysis calls a clustered system), as the imperial polity aims to consolidate and manage all of the nodes and hubs within that system or society. In a situation without direct imperial rule, the system is defined by a combination of strong and weak ties (what social network analysis calls a scale-free system), with local leaders often being the only real connection to foreign polities. These local leaders are the weak ties, and it is their relationships with individuals in state polities abroad that can produce a “branching out”
phenomenon, resulting in new social arrangements as long as the pre-existing 
infrastructure and local environment and economy of their society can support these 
relationships. The distinction between systems structures indicates that there are different 
types of connectivity, with each type able to respond differently to both local and external 
variables, resulting in distinct social outcomes. The type of connectivity, therefore, 
provides us with an important predictive model for when and how secondary state 
organization may develop.

Each of these conditions can be investigated through a number of potential 
arrestological correlates, but the evidence under consideration must be able to detect 
both short and long term change as well as both local and external variables. I will 
demonstrate the utility of this approach by examining the processes of secondary state 
formation in medieval Iceland. To do so, I will turn again to regional settlement pattern 
data from Skagafjörður as well as and rank size statistics as a proxy for political and 
economic integration, alongside soil morphological data as proxy for environmental 
conditions. Lastly, to examine the interaction between Iceland and its stately neighbors, I 
will build on my discussion of landscape organization presented in the last chapter, 
examining evidence for greater or lesser social integration over time. Using evidence 
from multiple datasets not only encourages the holistic outlook requisite of the 
synergistic model, but also provides a more robust and diverse view of past behavior.

7.3 The Social Structure of Scandinavia

Following this methodology, our analysis begins with determining the nature of 
the pre-state political economy of Iceland. To do so, requires not only a look at evidence
from Iceland, but also from Scandinavia since the settlers in Iceland did not appear *ex nihilo* (Clifford 1997), but have a shared cultural heritage with other Scandinavian and North Atlantic societies.

By the time Iceland was settled in the ninth century, the political structure of Norway was that of a first generation, secondary state located at the northernmost border of a world system that connected European Kingdoms with the Byzantine and Muslim Empires. The process of state development in Norway was centuries in the making, as local chieftains, through economic and political contact with more mature European states entered into a “negotiated-peripheral” (Kardulias 1999) relationship with a much larger world system. This relationship was created by local chieftains setting themselves up as “cores” in a network of rural trade throughout Scandinavia. As a negotiated periphery, Norwegian elites determined the conditions under which they engaged in trade and the adoption of foreign cultural ideologies, remaining politically independent but highly connected to prevailing pan-regional affairs. By the eighth century, the sociopolitical structure of Norway had developed into a federation of a handful of small political units, known in Norwegian as the *smarike*, which were each governed by a nascent aristocratic class and a shrinking number of regional chieftains. Archaeological data suggest that these new elites were actively pursuing trade within a rural economy to acquire high-value items associated with social prestige that could be brought to both local and international markets. An analysis of settlement pattern data for this period illustrates the intensification, for example, of extracting non-agrarian resources in areas that had been previously unoccupied (Andrén 1989; Crumlin-Pedersen 1991; Myhre 2000). Archaeological excavations in these more “marginal” regions, such as the
coastline, dense woodlands, and high mountainous stretches of Norway, has shown that fishing, hunting, iron extraction, and animal grazing activities all expanded during the seventh and eighth centuries (Myhre 2000: 35). Viewed within a kind of localized isolation, these settlement patterns could suggest that more desirable lands had either become unavailable or undesirable because of environmental duress. However, within a systems approach, which considers local as well as more global influences, these data suggest a complex system of multi-regional exchange that coincides with the development of small towns and royal courts in Norway (Andrén 1989). It is hypothesized that Norwegian aristocrats facilitated these regional enterprises through the development of areas not likely deemed desirable for farmsteads, but attractive as areas for resource extraction. Elites encouraged chiefs to organize and send in seasonal laborers into these areas, creating an active system of exchange between chiefs and the burgeoning system of Norwegian bureaucrats and kings. These new landscape developments allowed this new class of elites to bring more goods to an international market and in the process introduce new luxury goods from abroad to the already existing exchange systems organized by local chiefs. Norwegian chiefs, in return, provided the labor and raw materials necessary to finance state economies, either through staple goods, like wool, or through harder to procure materials, like iron, that could be readily found in the marginal hinterlands of Norway. For several generations this system operated in the best interest of both parties; however, by the end of the ninth century, Norwegian kings,

7 Traditionally, the seventh and early eighth centuries were viewed as a kind of “dark ages” in Scandinavia characterized by economic stagnation and political upheaval. This view made the onset of the Viking Age in the late eighth century all the more startling, as the sudden burst of Nordic warriors and merchants descended upon Europe (see also chapter 1). Recent archaeological research, however, demonstrates an increase in economic activity, rather than stagnation, and a system of complex exchange, which may indicate moves towards political centralization rather than fragmentation.
following the heels of Danish monarchs, had commenced in an active competition over
trade routes and commercial centers in the global economy, echoing the economic
organization of their Frankish and Saxon neighbors. Coinciding with these new
economic enterprises then, were changes to the sociopolitical structure in Scandinavian
kingdoms, changes that ultimately brought about more centralized and unified
Scandinavian states. Kings and courtly aristocrats co-opted chiefly exchange systems by
imposing taxes on luxury goods and aimed to regulate the flow of domestic production by
centralizing farmstead settlements, which allowed for better control over agrarian and
non-agrarian resources alike (Myrhe 2000). These reforms lead to a decline in the power
and profit for the now disenfranchised chiefs who continued to seek new avenues of
distant trade contacts as a means to help legitimate and finance their own political
authority at home. These events ultimately sparked the Viking Age, as competition
between a powerful class of landed elites and petty chiefs made new trading ventures
abroad all the more desirable.

This new economic system was a synthesis of traditional chiefly redistribution
and a more commercial, market system that was facilitated at central places. These
central places began at chiefly estates and were later moved to churches and royal centers
where the traffic of exchange became less personalized and more strictly regulated
through a formal system of taxation (Andrén 1989: 588; Sindbæk 2006). The revenue
generated from taxation provided new investment opportunities, which in Scandinavia
led to greater mercantile activity abroad, which in turn resulted in greater control over
local labor and the intensification of the production of commodities that could elicit the
attention of consumers abroad. These developments not only helped spark the Viking
Age, and era of travel, trade, and raids, but they also provided Scandinavian settlers with a model for coordinating exchange systems, at the hands of chieftains, between regional and global networks throughout the North Atlantic and beyond.

Contrary to how social scientists perceive how state-level economies should look like, the Scandinavian state economy operated without extensive urbanism, demonstrating that cities are not necessary to facilitate local and long-distance trade. One outcome of applying insufficient models to the study of state formation in a secondary developmental context has been a reticence to accept economic systems that diverge from the hallmark characteristics found in primary state economies as equally complex state-level structures (Gregory 1997: 119-162; Halperin 1988, 1994; Smith 1987: 297-301).

Primary state economies are often equipped with urbanism to house full-time craft specialists capable of carrying out mass commercialism. Secondary states can likewise possess these traits but they can differ significantly. In medieval Scandinavia, while urbanism was slow to develop, its economy was clearly both commercial and grounded in agrarian pursuits rather than in the production of specialized crafts (Rosedahl 1998; Sawyer 2001). The agrarian nature of the medieval Scandinavian economy has lead to its classification as a small-scale “gift/natural economy” (Grierson 1959) despite evidence for a more “market/money economy,” such as monetary systems of minting coins (Coupland 2007; Metcalf 1984: 15) and the development of marketplaces located near sea ports (Christophersen 1999: 161-165; Gläser 1999). Economic activities of this kind are more typically found in state societies than in chiefdoms. The reality is that the economy of medieval Scandinavia, like the rest of the Germanic Europe, contained elements of both a gift and a market economy. This style of exchange is perhaps true of
nearly all economies (Godelier 1999; Moreland 2000a: 2-17) making the distinction between these categories not only artificial but also unnecessary. What is significant about these categories, however, are the implied relationships behind these socioeconomic transactions. Research throughout Scandinavia and the British Isles has shown that long-distance trade potentially played a crucial role in the development of their social complexity, with social interactions carried out not in cities but in what Andrén has termed a “congested countryside” (Andrén 1989: 588). Within a landscape where the line between town and country was blurred, trade was organized first under the direction of local chieftains, and later by kings and church leaders (Júlíusdóttir 2005). Surprisingly, only a few hubs or nodal points connected to smaller, more local central places were necessary to connect Scandinavia with the outside world (Carlie 2008; Sindbæk 2006, 2007). Nodal points, such as trading center at the site of Kaupang in Norway, never rivaled in size or activity with contemporary cities like York or Lübeck, but they shared in common their ability to regulate and monopolize long-distance traffic. These data challenge our traditional list of necessary traits used to classify a society as a state, suggesting that large-scale urbanism may not in fact be necessary. By the eleventh century, centralized kingdoms made-up the Scandinavian political landscape with the formation of a feudal state, structured by an ecclesiastical organization (Andrén 1989; Moreland 2000b; Näsman 2000; Vésteinsson 2000b).

Keeping these patterns of behavior in mind, we can now employ a broader Scandinavian perspective to the development of state formation in Iceland. It is likely

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8 Similar arguments have been made for Old and New Kingdom Egypt (Baines and Yoffee 1998; Cashman 2006) suggesting that this phenomenon of states without extensive urbanism is not restricted to early medieval Scandinavia (see also chapter 1).
that the settlement pattern data from late Iron Age Norway, the period of time from which state institutions first developed in Scandinavia and the world from which the Icelandic settlers emerged, will have parallels in Iceland. My goal now is to see how these patterns of behavior conspired in creating new social arrangements within Iceland.

7.4 Social Structure and Ecology of Pre-State Iceland

As discussed in chapter 1, the initial social structure of the Norse colony in Iceland centered politically on a network of chieftains and landed elites, supported by an agro-pastoral subsistence base. Building on the primary fieldwork data presented chapter 5 and the expansive pan-regional overview presented in chapter 6, I have likewise concluded that the economy of pre-state Iceland, echoing the broader patterns observed for Viking Age Europe, was not based solely on self-sufficient agrarian pursuits (clustered structured system), but was instead characterized by a diversified economy (scale-free structured system) that conformed to both local environmental parameters and global market demands from its participants in the Norse Economic Territory (NET). The settlement pattern data presented here has demonstrated that the settlement of Iceland was motivated by economic interests similar to those documented in the Norwegian frontier, with site establishment occurring in multiple resource zones, not just in areas where a self-sufficient rural economy could be maintained. Likewise there was significant variation between sites, such as the existence of multiple types of sites, rather than a system of unified, homogenous farmsteads. Equally important, but contrary to popularly held theories on landscape degradation, the environment of tenth century Iceland provided a number of resources, such as walrus ivory and sulfur, which would have
drawn the interest of foreign markets. I hypothesized in chapter 6 that access to these goods explains why the initial landscape organization of Iceland included settlements in all ecosystems (coastal, lowland, midland, and highland), allowing settlers to maintain both self-sufficiency as well as keeping a hand in the international Viking Age market. This pattern reflects similar developments seen in Iron Age Norway as well as in other Norse colonies throughout the North Atlantic, with outposts positioned within areas where access to raw materials or hard to acquire resources could be extracted.

We can also see this dual-interested organization reflected in the level of political integration between sites in pre-twelfth century Iceland. Political integration can be discerned archaeologically from rank size statistics: logarithmic plots that rank or order sites by their size. According to Zipf’s Law, sites within state-level political organizations will be ordered in a rank size plot with sites plotted close to a log-normal line, demonstrating a high level of integration (Johnson 1980). Autonomy, on the other hand, is reflected with sites ordered away from log-normal, falling along a convex curved line. Throughout the Settlement (870-1000 CE) and Early Medieval (1000-1104 CE) periods, the rank size of sites in Skagafjörður fall along convex curves, indicating a level of political autonomy between sites (see Figures 7.1 and 7.2). The moderate level of integration between sites shown in the rank size plots corresponds well to a non-state, chiefdom society where sites are linked together through the activities of redistribution and exchange. Interestingly, there is more integration between large and mid-sized sites (types 1-3) than there is with small sites (type 4). In fact, the lowest level of integration is between very large farmsteads (type 1) and small farmsteads (type 4) and may indicate the presence of sumptuary laws regulating social relationships between elites and
commoners. The distance between site types 1 and 2 likewise suggests a healthy degree of competition between elite households, fitting well within our model of landscape organization. These data support the hypothesis that farmsteads during the earliest phases of occupation were politically united by the efforts of chieftains, while still maintaining a fair degree of autonomy and competition within a frontier setting structured around both self-sufficient agrarian pursuits and the acquisition or production of goods for local and international markets. The autonomy of small farmsteads, however, may suggest that these households participated very little in trading activities. In an effort to acquire goods for market trade and social redistribution this finding is somewhat surprising, but is less perplexing when we consider the existence of specialized activity areas (see chapters 5 and 6). It is likely that specialized activity areas were used to produce goods for trade and local exchange rather than integrating the labor and resources of small farmsteads into an elite economy.

Interaction between sites was made possible through key nodal points and hubs positioned at strategic locations throughout the landscape, representing a clear example of a scale-free structured system. The most important site of interaction and exchange in Skagafjörður was Kolkuós, the site of a natural harbor and seasonally used trading center (Traustadóttir et al. 2004). Kolkuós possesses all of the characteristics of Castells’ space of flows or what social network analysts term a nodal point: (1) a location and a medium (merchants) through which goods can flow; (2) local and foreign items to flow through the medium of exchange; and (3) nodes (consumers) through which these goods could circulate and connect to other points (households) within the landscape as a whole system. Connected to Kolkuós is a larger network of hubs or large type 1 sites, including
two very large\textsuperscript{9} sites at Viðvík and Flugumýri. The chieftain at Viðvík owned the land at Kolkuóss (as indicated in \textit{Landnámabók}) and likely acted as the hub between the harbor and the rest of the valley. Flugumýri, on the other hand, is situated at the intersection between the lowlands and highlands, making it a potentially powerful hub capable connecting farmsteads from all eco-regions of Skagafjörður together. By the end of the Early Medieval period, the site at Stóra Akra was established, and like Flugumýri it, too, is positioned at a juncture between the lowlands and the highlands, indicating that access to the highlands was perhaps becoming more important. Linked to these three large sites, are an additional seven sites\textsuperscript{10} that are likewise strategically positioned within the landscape. All of these sites are located along either water or land routes, making these sites accessible to travelers, producing a network of smaller-scale space of flows points within the landscape. The end result is a highly connected landscape that maintained a balance between complete autonomy and the kind of political integration found among state-level societies.

The social structure of pre-state Iceland was, therefore, highly conditioned for economic and political integration, resembling the patterns documented for other parts of Scandinavia. Equally important was Iceland’s continual connection to the outside world through its economy, but as the degree of political integration suggests, not everyone held access to these markets (Cook 1997). The connection between local Icelanders with foreign individuals affiliated with the larger world can, therefore, aptly be defined as a

\textsuperscript{9} Viðvík and Flugumýri are each valued around 100 hundredths (see chapter 6).
\textsuperscript{10} These sites, all of which have a value between 80 and 61 hundredths include: Viðk (close to the fjord entrance), Viðmýri (at a crossroad), Frostastaðir (river route), Hólar (pass between Skagafjörður and Eyjafjörður), Ás (pass between the valleys Hjaltadalur and Kolbeinsdalur), Goðdalir (intersection between the midlands and the highlands), and Reynistaður (river route). There are an additional six sites valued around 60 hundredths that were also potential hubs, such as Stóra Seyla (river route).
weak tie relationship under a scale-free structured social system. Operating through a space of flows medium, these exchanges became the epicenter of social dynamism. Since these exchanges were backed and valued by a local social system, namely chiefly redistribution supported well by an environment capable of surplus production, contact with markets and individuals abroad would have been highly coveted, making their influence on the society significant and able to achieve what social network analysts term a “branching out effect” or a transformation of the system. Under the synergistic secondary state model, we can predict that a change in access to goods and/or a change in the relationship between local and international polities could result in the formation of new social arrangements that incorporate elements of the pre-existing structure along with elements borrowed from existing mature states.

7.5 Social Structure and Ecology of Sturlunga Age Iceland and the Emergence of a State Society

By the start of the Sturlunga (1104-1300 CE) period a number of changes were well underway in Iceland. These transformations include both local environmental shifts as well as changes in international economic trends throughout Europe. The coalescence of these localized and globalized events each played a decisive role in the development of secondary state-level dynamics in Iceland. From a localized perspective, soil erosion regimes have been documented in some highland areas of Iceland (especially those within the volcanic rift zone [Dugmore et al. 2009]), but by and large, the soil morphological data from Skagafjörður demonstrates healthy soil accumulation rates in the midland and lowland areas (see chapter 2). I have further argued that a
morphological change from Histosol-Histic Andosols to Brown-Gleyic Andosols equaled higher soil organic content (SOC) levels that could promote better drainage in the wetlands, resulting overall, in an increase in the potential soil productivity and surplus production for lowland and midland farms throughout the Sturlunga period. This environmental development alone, however, does little to explain why major social shifts simultaneously occurred throughout Iceland. There is no one to one correlation between soil morphology and the sudden appearance of a new class of elites (the storageðar) or the adoption of a new ideology (Christianity) or the heightened focus on sheep rearing practices (Dugmore et al. 2006). On the contrary, I have argued these developments paralleled an economic shift from a Viking Age luxury based market to a Medieval Age bulk subsistence goods market (see also chapter 6). For Iceland, this economic swing allowed it to become a bigger player in the NET, made possible only through environmental changes that increased soil productivity, which meant larger grass harvests that could be converted in hay fodder, which in turn could be converted to larger flocks of sheep for wool production. Wool, in turn, became a prime Icelandic commodity in the global market.

These developments would not have resulted in secondary state formation, however, without the support of changes to the social infrastructure of the society. In chapters 5 and 6, I identified changes in the landscape organization of Skagafjörður, characterized by a profound increase in the number of smaller, full-time farmsteads that appeared in all environmental zones throughout the Sturlunga period. Paralleling this development was a crucial transformation in the political integration of Skagafjörður. The rank size plot of farmstead sites (see Figure 7.3) shows a less convex curve that is
approaching log-normal; in other words, farmstead sites in the Sturlunga period were far more politically integrated than they had been in the preceding periods. This rank size plot also indicates a new addition to the political make-up of Skagafjörður: a clear primate center. A “primate center” is a point on the plot that is ranked higher than any other point by an extreme or exaggerated degree, and indicates the beginning of greater political integration administered by a governmental center (Johnson 1980). In early state societies, primate centers typically correspond to a capital or a palace center; in Skagafjörður, the primate center was the Hólar Bishopry (established in 1106 CE). Following other Scandinavian societies, Catholicism was adopted in Iceland by the start of the eleventh century. Along with this new ideology came a new approach on how to facilitate the political economy through implementing an ecclesiastical-based organization onto the profane social landscape. Through this organization, the land attached to households were tied to the church, making it easy for elites to not only collect taxes but to also use churches as central places or hubs for the collection and exchange of goods. This structure, similar to what has been documented not only in Scandinavia but to the rest of Western Europe as well (Andrén 1989, Moore 2000), provided safe havens for exchange and the legitimization for elite power. In Iceland, this focus on elite power and ideology is reflected in the development of parish churches on all but three type 1 or large farmsteads (see also chapter 6). It likewise resulted in new space of flows medium for Iceland: staðir and bændakirkja. Staðir, or benefice farms, were owned outright by the Church, while bændakirkja, or parish churches, were privately owned by aristocrats but were still fully recognized as legitimate sacred places by the Catholic Church (Eyþórsson 2005: 37; Þorláksson 2005: 129). These sacred
places became centers of common ground, acting as points along the landscape where interaction and exchange could be safely facilitated—in other words, an ideal space of flows medium. It was through these new space of flows mediums that greater economic exchange, both local and international, could be carried out. If, however, the economy had never shifted its focus to wool production, it is unlikely that these structural shifts would have been implemented and/or successful.

The demands of local and foreign markets were met through a reorganization of the landscape (see chapters 5 and 6) that were regulated by ecclesiastical laws. The culmination of this reorganization is documented by the increase in the number of mid-sized (type 3) and small (type 4) farmsteads. Interestingly, unlike the pervious periods, smaller sites are not only greater in number but are also well integrated with larger sites (see Figure 7.3) indicating greater control and political integration. Unlike pervious periods shaped by a Viking Age economy, control over the labor of small households would have been crucial to the economic success of elites whose power base was defined by agrarian production (Durrenberger 1989, 1990a; Vésteinsson 2005a). An emphasis on land and sheep perhaps explains why urbanism did not develop in Iceland; but as with Scandinavia, the fact that cities did not develop in medieval Iceland should not dissuade us from suggesting that both local and long-distance communication and exchange played a role in the development of state institutions. On the contrary, the data presented here demonstrate how a network of a few hubs can connect whole regions, easily carrying out the economic demands of a true state-level society.

Trading activities in Iceland not only connected local farmsteads, but also kept Iceland linked to the world beyond its horizon. The synergy of local and global factors is
what ultimately created a landscape poised for state-level organization by the end of the thirteenth century. Ultimately, Iceland relinquished its political autonomy in 1262 CE, and would remain a colony to various Scandinavian kingdoms until the twentieth century. While the characteristics of its state formation share several commonalities with other societies throughout Scandinavia and Western Europe, the Icelandic state represents a distinctive form of secondary state that combines centuries of local development with centuries of interaction with neighboring mature states. Rather than reflecting the political structures of Europe, Iceland maintained its agro-pastoral economy governed through the offices of the Church rather than through a king or a governor. Even once Iceland is annexed as a colony to the Norwegian Crown, the society can at best be described as a reluctant subject. Iceland continued to be ruled by local aristocrats backed through the power of the Church rather than through the authority of a Norwegian-based administrator. The political integration of the society after 1300 CE is punctuated by the tension between achieving complete integration and preserving its local autonomy (see Figures 7.4 and 7.5). Hólar remained a “primate center” long after allegiance was sworn to a distant king, with the local, Icelandic-born bishops preserving their authority and wealth. It is not until the early nineteenth century, when Icelanders are rallying for their political independence, that sites in Skagafjörður achieve complete political integration (see figure 7.6).

The Icelandic case study aptly demonstrates that there are multiple paths to statehood and that there can exist many different types of secondary states. Trait lists, while helpful, should not keep us from considering the possibility that states can exist without extensive urbanism or without monumental architecture. The key to
understanding social change is to understand the relationships between variables and within different scales of analysis.

7.6 Rethinking State Formation in Iceland

The aim of my archaeological research in Skagafjörður, Iceland has been to address the processes of secondary state formation. I have argued that the evolution of secondary states, while a far more common phenomenon, has frequently been overlooked by historians and archaeologists who tend prefer the study of primary state development to their derivative cousins. Researchers have likewise viewed the process of secondary states as either entirely the same as primary states or as a byproduct of existing states encroaching on their less politically complex neighbors. For Iceland, this debate has been played out between archaeologists, who have turned to environmental models to explain state development as an insular process, and historians, who have turned to the sagas as proof of Norway’s colonial dominance over its peripheral outpost in the North Atlantic. At the start of this dissertation I suggested that these two diametrically opposed views represented a kind of “Two Cultures” debate (Snow 1959) between the fields of archaeology and history, each armed with their own distinct dataset. I have argued throughout my research that this division should be eliminated, as each dataset represents two unique perspectives on the past that can in fact be integrated. I have also shown that these two views on Iceland’s path to statehood represent methodological limitations on the study of secondary state formation in general and on the perceived limitations to archaeological and textual evidence from Iceland specifically. However, the case study from Skagafjörður demonstrates new theoretical and methodological avenues of research
for projects that aim to integrate textual and archaeological datasets by positioning the evidence within a broader social and geographical perspective. This perspective is made possible through an analysis of landscape evolution as a product of both local and external forces. Most studies on social complexity in Iceland have tended to view farmstead sites mentioned in texts or documented in the material record in isolation rather than as part of a larger inter-regional system, noting the methodological difficulties of situating highly localized data into a broader social world. Social network models, however, make it possible to examine the complex interaction between farmsteads and between regions in locations like Skagafjörður, by identifying what type of system structure organizes the landscape. This identification reveals new trends and new variables that researchers can then further examine. In my own research, these new variables indicated a landscape organization that was highly connected through a network of well-positioned hubs. As a connected system, a single farmstead was able to produce goods well above its own subsistence needs, suggesting that Iceland played a role in a larger, more global commercial economy.

From these new data I have argued that local and international trade, supported by a social structure and consistently productive environment, led to the formation of secondary state-level institutions in Iceland. Under the parameters defined in the synergistic secondary state model I have shown how social change must be viewed within both micro and macro-level scales of analysis. I have also shown how activities, such as trade, can conflate local and external stimuli, producing a high level of connectivity that can ignite social change. These social changes, however, must be supported by an infrastructure able to manage these new social arrangements as well as
be supported by an environment that is able to keep up with new economic and political demands. My analysis of landscape organization and economic change over time in Iceland likewise demonstrates that the quest to find one primary factor in the development of social complexity is misleading. Instead, there are no isolated prime movers of societal change since social structures are positioned within a continual feedback system that is modified not only as new factors are introduced, but also as the relationships between existing variables change. This observation suggests that researchers must reconsider traditional models of secondary state formation as being driven by natural crises or as being imposed upon by dominant groups, as even in island or frontier situations the relationship between and within societies is highly dynamic.
Figure 7.1: Rank Size Plot for Farmstead Sites for the Settlement Period
Figure 7.2: Rank Size Plot for Farmstead Sites for the Early Medieval Period
Figure 7.3: Rank Size Plot for Farmstead Sites for the Sturlunga Period
Figure 7.4: Rank Size Plot for Farmstead Sites for the Late Medieval Period
Figure 7.5: Rank Size Plot for Farmstead Sites for the Early Historic Period
Figure 7.6: Rank Size Plot for Farmstead Sites for the Historic Period
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