



Geospatial Analysis of Medieval Churches in Iceland

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Theoretical Framework

Influenced by the work of Peter Brown (culminating in *The Cult of the Saints: Its Rise and Function in Latin Christianity* [1981]) scholars for the past twenty-five years have explored evidence, both literary and physical, that ecclesiastical records and sites can provide for the fields of social, economic, political, legal, literary, as well as religious history. Information about the physical aspects of these ecclesiastical sites is essential to all such fields. This information can contribute an understanding of socio-environmental interaction in a given region.

Hypothesis

Data from Medieval Iceland relating to the locations, property, and place-names of ecclesiastical institutions can be recovered. These data will provide us with an understanding of the environments of the ecclesiastical sites. Its interpretation can be enhanced with the aid of a Geographic Information System (GIS: a combination of computer programs that allows graphic representation of the contents of one or more databases.)

Prior Work

Grants in the years 2002 to 2006 enabled Dr. Cormack to hire research assistants to create a database, in the form of an Excel spreadsheet, containing the contents of church inventories for all Icelandic churches that existed in 1400 A.D. A draft of this database can be viewed at www.tasc.mpg.de/iceland_new. Further research was conducted during the summer of 2009 during which she visited the Westfjords of Iceland and took Geographic Positioning System (GPS) readings for churches, which she also photographed. Similar fieldwork will be repeated this summer.

Methods

Place-names

Place-names contained in ecclesiastical records can be used to understand the environment of an area in the past, and to shed some light on how these environments were used. Place-names containing words like *kirkja* (church), *biskups* (bishop's), or the name of a saint can provide information about church property not otherwise attested. For example, *Petr's skogr* [(Saint) Peter's woods] tells us that the church dedicated to St. Peter owned a wooded area. Other place-names record features that no longer exist. For example, *holt* once meant "woods", but later came to designate a rocky hilltop. The *holts* were originally wooded islands in marshy areas. As the land rose, the marshes became fertile farmland, and the woods vanished. The fact that they are often the location of the medieval (and modern) farms is probably not coincidence: high ground with timber for building would provide an ideal location to settle. Further evidence for human activity comes from names with the element *svin* (pig) or *kalf* (calf) which may indicate the presence of these animals in the past. They may also indicate landscape features that look like a pig or a calf: only by going to the spot can the most likely reason for the name be determined. While calves remained an essential to Icelandic farming, pigs (which were extremely detrimental to woodlands) vanished after a century or two. Place-names thus preserve valuable information about the landscape, and its use, during the first centuries after settlement (c. 900-1100 A.D.).

Digitization and Synthesis

We are currently working on the digitization of our data. Field data (the GPS points which were recorded by Dr. Cormack this past summer) have been placed in a database which is graphically represented with the use of GIS (Fig. 1). This process has involved the use of ArcGIS and ArcCatalog. Scans were made of the Westfjords from an Icelandic atlas which has a scale of 1:100,000. These scanned images were Georeferenced in ArcGIS to satellite data. Georeferenced images were then rectified and converted from JPEGs to TIFF files. Once all the images were rectified and converted the images were outlined, clipped, and stitched into one large image. (Fig. 2)

The Georeferenced map will be used to place points which cannot be recorded via GPS for one reason or another (i.e. a church which would need to be excavated to verify its location, or a place-name that is too remote to visit). Once these points have been placed onto our map we can then view them in GIS on satellite imagery. Once these processes are complete we will have an interactive map of the Westfjords of Iceland. We will then work on making this information available online.



Figure 1. Map with GPS Points

GPS points were collected by Dr. Cormack during the 2009 field season

Expected Outcome

The final result will be an interactive map, accessible to the public via the internet, of Medieval Icelandic church sites, property, and place-names recorded before 1400 A.D. We are the first to collect and make this data available in this manner. The format in which the data will be presented will make it available, free of charge, to anyone interested in socio-environmental interactions in Iceland.

Implications

The data set that is being made available by this project is unique in creating a database of GPS points, photos, and church property. This data is being made available to both academic and other communities, which means that the data set can then be interpreted by other investigators or added to other data sets to increase the scope and/or the complexity of research. Since the data is being digitized it will be available to a much larger audience than if it was only published in "hardcopy" format.

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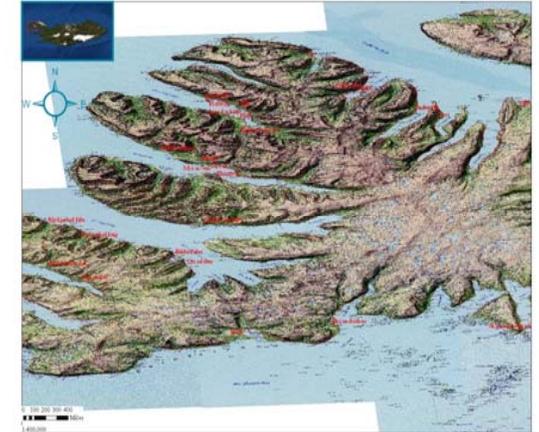


Figure 2. Georectified Map with GPS Points

Icelandic maps scanned and rectified by John Wall

Examples of Ecclesiastical Sites



Brjánslækur



Hagi



Bildudalur



Flateyri



Ögur



Skálarnesmúli