THE TRANSITION TO A COMMERCIAL ECONOMY: LOFOTEN FISHING IN THE MIDDLE AGES, A PRELIMINARY REPORT

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Summary

Archaeological investigations in Arctic Norway for the past 40 years have provided an excellent foundation for our understanding of the interaction of humans with this rich environment over several thousands of years and offer important insights into the complex inter-cultural relationships between the Norse and Sami populations. Research directed by Prof. Reidar Bertelsen of the University of Tromsø (1975-present) has documented the evolution of a proto-urban center ca. AD 1200 at the site of Vågan near the center of the modern fishing industry in the Lofoten. The center developed into an important node in the growing cod fish trade of the Middle Ages, acting to funnel resources south to Bergen and ultimately to the Hanseatic trade network. The site is a key to understanding the transformation of a self-sufficient northern maritime society into a periphery of the evolving European core. Extensive studies of stratigraphy, structures, and artifacts have been carried out but no systematic analysis of the zooarchaeological evidence for investigating this economic transition has yet been completed. Large (approx. 60,000 identifiable fragments) archaeofauna collected from 1985-1992 are now under analysis and the preliminary results are compared with material available from the Helgøy region.

Résumé

Vers une économie de commerce : rapport préliminaire sur la pêche au Moyen Âge dans les îles Lofoten.

Les fouilles archéologiques menées en Norvège arctique au cours des quarante dernières années ont fourni une excellente base à notre compréhension de l'interaction des hommes avec ce riche environnement pendant plusieurs milliers d'années, ainsi qu'un aperçu important des relations inter-culturelles complexes entre les populations norvégiennes et Sami. Les recherches dirigées par le Pr. Reidar Bertelsen, de l'Université de Tromsø, de 1975 à nos jours, ont permis de documenter l'évolution d'un centre proto-urbain daté d'environ 1200 après J.-C., le site de Vågan, près du centre de pêche industrielle moderne des îles Lofoten. Le centre a évolué en un carrefour important dans le commerce grandissant de la morue au Moyen Âge, canalisant les ressources vers le sud de Bergen et vers le réseau commercial hanséatique. Ce site est capital pour comprendre la transformation d'une société septentrionale maritime autonome en une zone périphérique du cœur de l'Europe en évolution. La stratigraphie, les structures et l'outillage ont été largement étudiés, mais aucune analyse archéozoologique systématique n'avait été faite jusqu'à présent. Les quelque 60 000 fragments identifiables de restes osseux animaux collectés entre 1985 et 1992 sont en cours d'étude, et les résultats préliminaires sont comparés avec du matériel venant de la région de Helgøy.

Zusammenfassung

Der Übergang zur kommerziellen Wirtschaft: Ein Vorbericht zur Fischerei auf den mittelalterlichen Lofoten.

Archäologische Untersuchungen im arktischen Norwegen haben in den letzten 40 Jahren eine hervorragende Grundlage zum Verständnis der Auseinandersetzung des Menschen mit seiner reichhaltigen Umwelt erbracht. Außerdem bieten sich Erkenntnisse zu den interkulturellen Beziehungen zwischen norwegischen und samischen Bevölkerungen. Die von Prof. Dr. Reidar Bertelsen geleiteten Untersuchungen der Universität von Tromsø (1975 bis heute) haben die Entwicklung einer vorstädtischen Metropole (um 1200 n. Chr.) bei Vågan (Lofoten) nachvollziehbar gemacht. Die Siedlung entwickelte sich zu einem wichtigen Zentrum des mittelalterlichen Kabeljauhandels mit den Hansestädten. Die Siedlung ist der Schlüssel zum Verständnis der Umstrukturierung einer maritimen, auf Selbstversorgung basierenden Gesellschaft des Nordens an der Peripherie des europäischen Kernlandes. Bisher sind insgesamt nur wenige Studien zu Stratigraphien, Strukturen und Artefakten durchgeführt worden. Zu den zooarchäologischen Überresten liegen bisher keine systematischen Untersuchungsergebnisse vor, die zum Verständnis des Wirtschaftswandels beitragen könnten. Zur Zeit werden umfangreiche Knochenensembles (ca. 60.000 bestimmbare Knochen) untersucht. Die vorläufigen Ergebnisse werden mit anderen Materialien der Helgøy-Region verglichen.

Key Words

Northern Norway, Medieval period, Trade, Codfish fishery.

Mots clés

Norvège septentrionale, Moyen Âge, Commerce, Pêche à la morue.

Schlüsselworte

Nordnorwegen, Mittelalter, Handel, Kabeljau-Fischerei.

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Major research topics pursued by Norwegian Scholars have included studies of farm mounds (Bertelsen, 1977, 1979, 1984, 1985a, 1985b, 1985c; Holm-Olsen, 1981, 1986; Bertelsen *et al.*, 1987; Bertelsen and Urbanczyk, 1988), Sami and Norse settlement patterns (Bratrein 1984; Broadbent, 1989), agriculture and lifeways (Johansen, 1979, 1982; Jorgensen, 1983; Hultgreen *et al.*, 1985) but up until now the information from zooarchaeological analysis has been underutilized. How did people's decisions affect their diet and economy and what was the impact of those decisions on their natural world? How and when did fishing villages form? Were they seasonal or year round? What can we say about food refuse patterns and social hierarchy? These are some important issues which require utilization of zooarchaeological data. This research attempts to investigate the animal bone remains from selected sites in northern Norway and produce a statistically meaningful study of changing human use of maritime and terrestrial resources in this historically and environmentally significant region. This paper discusses general patterns and trends as seen in the data thus far and attention is drawn to some of the implications.

The Lofoten and Vesterålen islands are a rugged archipelago extending seawards from northern Norway's arctic coast. Archaeological evidence shows that the islands have been occupied since at least 5000 years BP (Jorgensen, 1983) by hunter-fishers exploiting the rich resources of the comparatively warm waters of the North Atlantic drift. Despite their location 160 km above the arctic circle, the islands enjoy a north-temperate to boreal climate, allowing a range of possible economic strategies. In the Iron Age (Johansen, 1979), we have evidence of settlements combining farming with marine hunting and fishing. Culture contact with the resident Sami population stemmed from this fishing activity. By the Viking Age (Johansen, 1979, 1982) rich and politically influential chieftains dominated a mixed population, established massive manor farms (Johansen, 1982), organized trading ventures into the Barents sea, visited the distant courts of King Alfred's Wessex (Jones, 1987: 156), and played a major role in the power struggles associated with state formation in early medieval Norway (Bertelsen, 1985a). While cereal agriculture played a secondary role in the region, these local elites were able to mobilize the surplus generated by a mixed herding and maritime hunting/fishing economy. By ca. 1200's AD the characteristic "one blue foot-one green foot" (Bertelsen, 1991) mixed maritime-terrestrial subsistence adaptation seems to have been established. Sometime in the late Viking period-early Middle Ages, this rich and largely self-sufficient community became integrated into a wider European market, and commercial exploitation of the rich Lofoten cod spawning grounds began to transform this subsistence economy. Sometime before ca. 1100 AD Vågan developed into a major entrepot for winter fishing and large scale fish processing for market. By the 14th century, royal and church patronage of the developing cod fisheries and the influence of the growing Hanseatic outpost in Bergen played a major role in this transformation. By late medieval times, the Lofoten fisheries provided a significant portion of the fish catch of Western Europe, and a comparative organizational model for commercialization of subsistence fishing in the Shetland, North Britain and (after 1500) the New World. By 1500, the once independent fisher-farmers of the Lofoten and Vesterålen were caught up in debt-driven intensive winter fisheries and tied to economic fluctuations in markets thousands of miles away. This local transformation of marine exploitation from subsistence to market production thus was to have profound implications for the development of modern commercial fishing both in Norway and in the whole North Atlantic.

The sites discussed in this paper are Storvågan and the sites of the Helgøy region: Torsvåg, Helgøy, Vannareid, Rodgammen, Nordskar and Grunnfjord. All sites are comparable in age and cover a wide time span from the 13th to the 18th century.

The ordinal bone element count for the above sites varies from 5000 to 75,000 bones with the majority of sites averaging 25,000 bones. Only the identified to species level (NISP) bone data have been used for comparisons. All the archaeofauna reported today probably come from after the commercialization of the fisheries.

The sites of the Helgøy region are all deeply stratified farm mounds. Farm mounds seem to appear where there has been continuous settlement for a minimum of 400-500 years. All the excavations have been on a relatively small scale, nowhere exceeding 1% of the farm mounds surface area (Holm-Olsen, 1986). The data from the Helgøy region used in this paper was collected from test trenches measuring 3 by 3 meters and 1.5 by 5 meters in depth and excavated by teams lead by Inger Marie Holm-Olsen. While the area opened in each mound was relatively small, the bone count per layer is high. Spatial variability may be a patterning factor in these data and will be investigated in future work. The farm mounds closest to Storvågan are comparatively small by North Norwegian standards and measure only 500 square meters. That could be a result of the different economic activities that took place in Storvågan and will be investigated further at a later date.

Domestic mammals compose a variable proportion of the Lofoten archaeofauna (fig. 1). The remains after

slaughter and meals are predominant in the domestic mammal bone finds. Caprines were the most common domesticates followed by pigs and cattle (fig. 2). Pig bones consistently composed approximately 25% of each sites' domestic faunal remains. These proportions are stable from the 13th to the 18th century. Unlike the results from Greenland and Iceland, where pigs appear in small numbers in early "colonial" deposits and then disappear from the record, in northern Norwegian sites they remain a stable and strong presence (fig. 3).

Fish comprise the majority of the most of the sites' archaeofauna (fig. 4). Fish was used both as food as well as

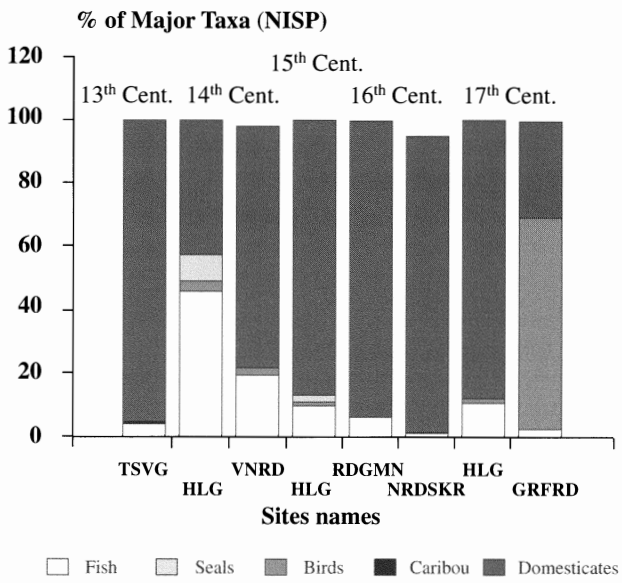


Fig. 1: A comparison of the major taxa in13th, 14th, 15th, 16th and 17th century sites from Northern Norway. The site names are Torsvåg (TSVG), Helgøy (HLG), Rodgammen (RDGMN), Nordskar (NRDSKR) and Grunnfjord (GRFRD).

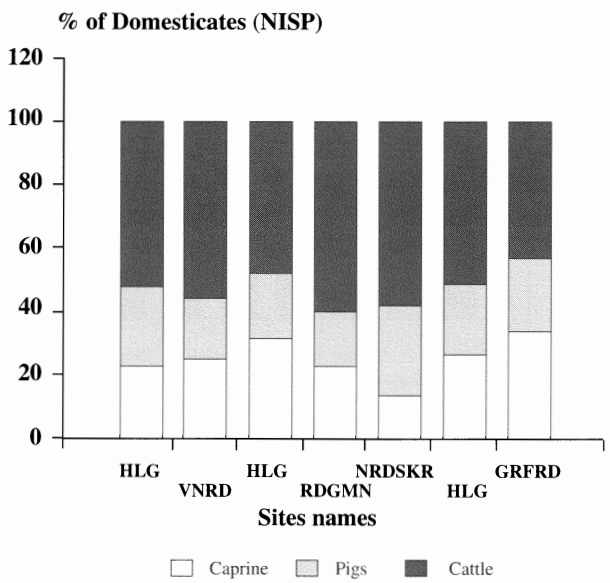


Fig. 2: A comparison of the domesticates from the 13th to the 17th century from Northern Norway. For site names, see figure 1.

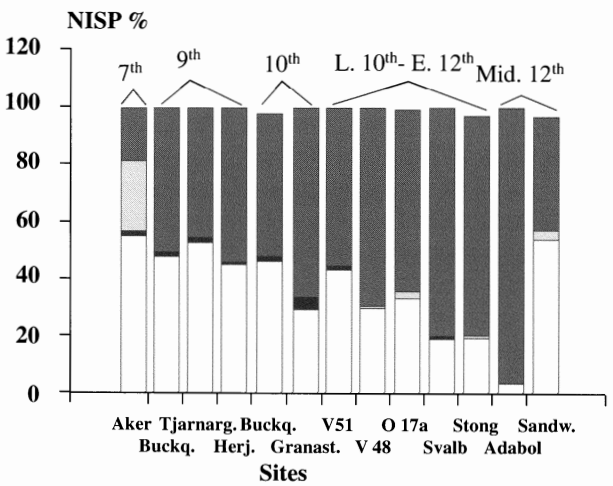
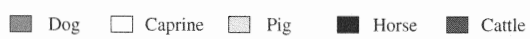


Fig. 3: An inter-site comparison of domestic mammal evidence from North Atlantic sites from the mid 7th to the mid 12th century. Åker (SE Norway), Buckquoy (Orkneys), Tjarnargata (Iceland), Herjosdalur (Iceland), Granastadir (Iceland), V51 (Greenland), V48 (Greenland), Ø17a (Greenland), Svalbard (Iceland), Stong (Iceland), Adalbol (Iceland) and Sandwick (Shetland).



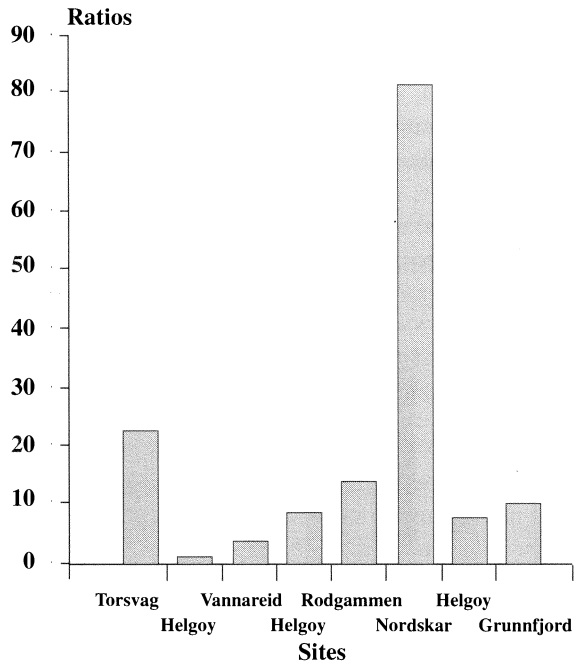


Fig. 4: A comparison of fish bone to domesticate bone ratios from Northern Norwegian sites from the 13th to the17th century. For site names, see figure 1.

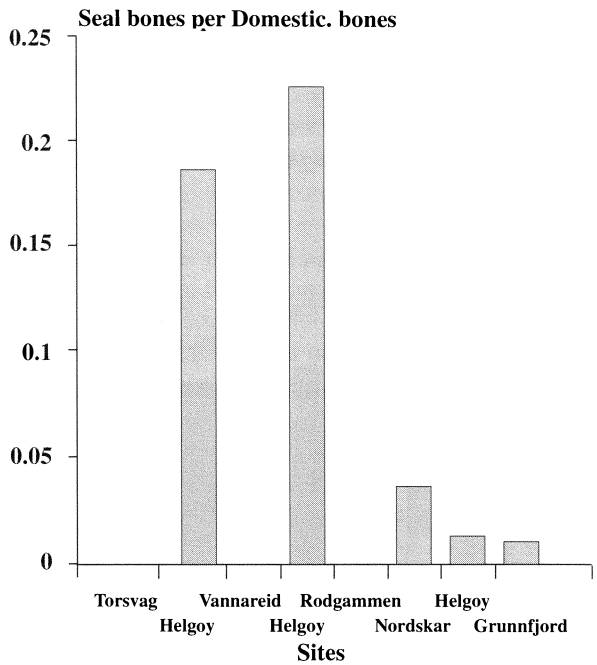


Fig. 5: An inter-site comparison of evidence for seal hunting in Northern Norwegian sites, from the 13th to the 17th century.

a trading commodity. The dominant fish species is cod (*Gadus morhua*) followed by halibut (*Hippoglossus hippoglossus*), ling (*Molva molva)* and saith (*Pollachius virens*). Figure 4 takes this comparative perspective further in that it underlines in particular the changing relationship between fish bones and domesticate mammal bones and by inference the changing balance of fishing versus domestic herding. These Norwegian sites produce far more fish than contemporary sites in north-eastern Iceland (Amorosi, 1991) and Greenland (McGovern, 1985) but less than the small coastal croft of Sandwick (Bigelow, 1991). Bird remains were predominantly puffins and evidence so far reflect to local resource exploitation.

Even though seal exploitation is apparent, it was a small supplement to the diet, since seal abundance is rather limited in this region (fig. 5). Historical and zooarchaeological data approximately match, at least in these samples. There is a peak of fish bones associated with the beginning of the Lofoten fisheries during the 13th century and early 14th century followed by a decline and instability during the 14th century and eventually a steady rise during the 15th and 16th centuries and continuing strong till the 1800's. While many factors may limit the full comparability of different sites collections, zooarchaeologists are now in a position to go beyond simply listing the contents of a collection and attempt to relate the observed trends within a site to a larger picture provided by many sites in different social and ecological settings. A number of research questions will be addressed by continued analysis of these collections. How do local elites manage a mixed "green foot-blue foot" economy to produce extractable surpluses? What are the relations between local elites and southern forces, conflict or cooperation? How is and ethnically diverse local population, Sami and Norse, mobilized for commercialization? What constraints are operating to keep a population out in cold dangerous winter fishing? These questions require an immense amount of diverse data and it would be at best optimistic to attempt to solve them during the constraints of this paper. However, it would be negligent to not attempt to use all the available data in addressing as many of these issues as possible. Even if the results in some areas prove inconclusive, our understanding, and potential needs will be better defined so that new goals can be

set for future research. In addressing any of the above issues, zooarchaeological data cannot do it alone. Integration and data sharing among the various specialists in the social and biological sciences is a key issue. The developing NABO (North Atlantic Bioarchaeology Organization) database project will make such comparisons and access to data easier and probably far more rigorous in the future, but is already possible to place bone collections in some regional context and to begin the long task of separating out the patterns caused by temporal trends, status, local site environment, and relative impact of the growing market economy. The incorporation of well supported economic models grounded in the proxy data of zooarchaeology is essential in any discussion of social developments in Arctic Norway as everywhere. The preliminary data that I have put forth so far present a first step towards this goal.

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