

Environmental History of the Middle Ages at the Kalamazoo Congress, May 2010

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Environmental History I: Exploiting Wild Nature

The Emergence of Early Fishing Communities in Pre-modern Iceland

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Recent research had identified sites developed for the specialist production of fish in northwest Iceland emerging from the eleventh century onwards. Observed in the geoarchaeological record at these sites are changes in the intensity and use of the site, particularly around the twelfth century. The changes observed suggest a growing seasonal presence with prolonged periods away from the site. The numerous changes and transitions observed were integrated into the

existing historiographic and environmental record, which suggests a growing foreign demand for *skreið*, air dried cod, combined with a deteriorating climate and terrestrial landscape pressures from the twelfth century onwards made Icelanders use their seascapes in a more systematic and industrious manner. Site occupation reaches a peak during the fourteenth century with numerous fishing stations emerging at this time. Around the fifteenth century, there is a phase of prolonged absence observed at many of the fishing stations. Suggested reasons behind this are contemporary famines and epidemics, and a movement of the population to inhabit abandoned farms. Inclement environmental conditions during the middle ages increased the volume of sea ice in fjords and along coasts which made navigation to fishing grounds particularly difficult. Stations were found to be re-occupied from the sixteenth century onwards, with the characteristics associated with the fishing industry reducing over time not through a reduction in site intensity, but a result of *skreið* falling out of favour as Iceland's main export product. The arrival of decked vessels meant that the processing of fish was mainly done at sea.

Tails and Tales: Fish in Old English Literature and Anglo-Saxon Culture

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A detailed look at the fish-species lists in Ælfric of Eynsham's *Colloquy*, written in the late 10th century, shows a representation of the practical appreciation of fish as a resource for the Anglo-Saxons. Yet viewing Ælfric's work in the context of not only the archaeological record, but also in the light of Old English laws, charters, and historical texts illuminates where Ælfric

accurately represents the Anglo-Saxon fishery, and where he wanders into uncertain waters. In the *Colloquy*, Ælfric gives a specific roster of fish species caught, and presumably consumed, in the Anglo-Saxon period. This roster occurs in two iterations: a freshwater-fish list and a marine-fish list. The relative accuracy of Ælfric's freshwater list, as opposed to his more problematic marine list, supports the theory of the local nature of early medieval fisheries. Ælfric was more familiar with his local, inland fishery, and as such, his description of it is closer to reality than that of the marine fishery, with which he may have had very little contact. More generally, Ælfric's species lists, on the one hand, shows that vernacular literature can and sometimes does accurately represent ecological realities. On the other hand, Ælfric's aquatic catalogue also underscores the care that must be taken before applying documentary representation as environmental reality. Although Ælfric's *Colloquy* is certainly a fictional, didactic work, the text is rooted in everyday realities, and examining the extent to which it cleaves to the documentary and physical evidence of its day serves to illuminate the close relationship between the *Colloquy*'s textual and environmental contexts.

Hunting around the Padule: Socio-economic, Environmental, and Legislative Considerations on an Italian Wetland Area from ca. 1300 to 1600

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Between about 1300 and 1500 the game animal pool of the village of Fucecchio, in Tuscany, was subject to the interest of various groups with different motivations and different channels through which to articulate them. Fucecchio's environment of wetlands and wooded hills had the potential to favorably support game animals such as waterfowl, boar, roe deer, red

deer, pheasant, quail and partridge. However, on the basis of available sources it is impossible to assess the pre-Black Death animal populations: hunting is virtually invisible in Fucecchio because it had not been organized. Post-Black Death the game animal populations seemed to be able to sustain exploitation by two different kinds of organized, commercial enterprises, one sponsored by the town itself and intended for the urban market, and the other in the form of elitist requisitioning on the part of Florentine authorities.

The paper explores the way the different hunts were organized and the ways in which different hunting pressures were perceived, managed, and strategized by the practitioners. For example, while the town of Fucecchio was becoming increasingly protective of its resources with a corollary increase in the professionalism of its hunters, the Florentine authorities provisioned on the basis of the non-subsistence *ad hoc* needs of rich households. The contrast between attempts at town-managed long-term feasibility versus elitist short-term satisfaction was based on the existence of vastly different power bases.

The paper suggests that a viable and species rich hunting environment existed around Fucecchio for about 50 to 70 years after the Black Death. Statutory material indicates that the reduced demographic pressures following the Black Death permitted an increase in the wolf population. This “return” of a keystone species was in turn indicative of a general species well-being down all the trophic levels of the ecosystem. Thus peaceful coexistence, or collision, between different resource uses and their management depended primarily on the ability of both parties to remain within the biological limits of the game-animal populations.

Environmental History II: Medieval Ecological Thinking? Ideas, Actions, Impacts

Landscape and Imagination in Egil’s Saga

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Written in the first half of the 13th century, *Egil's Saga* mostly takes place between the years 850 and 1000; it begins in Norway, tracks its characters to the new land, and ends in a widely settled and Christianized Iceland. In Iceland, as the history of human presence grows, a remarkably rapid and clear shift occurs in the saga's references to landscape, moving from attention to natural features and resources to the people and stories associated with particular places or landscape features. The transition in the narrative presence of the land occurs simultaneously with radical and destructive changes to the Icelandic environment; the significance of stories in defining the landscape rises as the ability of the land to support its inhabitants falls. By the great age of saga writing, the *landnám* landscape would have been largely a cultural memory, so that even if, as is the case with *Egil's Saga*, the narrative carries historically accurate information about land and land use, the initial landscape and its abundance would have become accessible only at a remove, carrying perhaps greatest importance in the narratives of Icelanders' ancestors. By the end of *Egil's Saga*, Egil has himself become an enduring part of the landscape, looming large in the landscape that a 13th century Icelander (and subsequent Icelanders) might see in western Iceland around Borgarfjord, and the land is precious not so much for what 13th century Icelanders can get out of it, but for what they put into it—literally, in the case of Egil's money as well as the bodies of their ancestors. If the land is valued not for its own health but for its role in understanding or defining self (“us-ness” for lack of a better term), then any resource impoverishment becomes somewhat irrelevant. With Egil defining the land, his story functions as a barrier to re-imagining human interactions with the land.

Ecology, Crisis and Religious Violence: The Case of the Crusading Movement, c. 1095-1320

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The crusading movement of the High- and Late Middle Ages has caught a considerable scholarly attention. The movement has been studied from various perspectives and it has been linked to different factors and contexts, including the rise and consolidation of chivalric values, growing animosity between Christendom and Islam, frequent pilgrimage to the Holy Land, etc. At the same time, however, scholars tend to overlook yet another important aspect, which sheds much light on our understanding of the origins of the crusading movement in particular, and the nature of late-medieval religious violence and fanaticism in general. The aspect in question is ecological crisis. At least three ‘popular’ crusades of the High- and Late Middle Ages have emerged out of pronounced environmental and, consequently, socio-economic crises. The People’s Crusade of 1095-6 was preceded by two crises: human pandemic of an unknown nature, which stroke parts of Germany and the Low Countries, and a severe drought, which ruined crops and created widespread famine all over Northern France and parts of the Low Countries. The popular movement during the ‘official’ Second Crusade (1146-7) was preceded by the abnormally freezing winter of 1142-3, coastal inundations in spring 1143, gale and floods in spring 1144 and disastrous grain failures in 1145, all over Northern Europe. In particular, at Fleury Abbey there were as many as seven back-to-back grape harvests between 1141 and 1147. Finally, the ill-famed Shepherds’ Crusade of 1320 should be seen in the context of the Great

European Famine and the Great Cattle Plague, both ravaging Northern Europe between 1314/5 and 1322.

The three disasters had common contours. While it is now established that the Great European Famine was the single worst subsistence crisis in the last two millennia, the famines of 1095-6 and 1144-6, too, seem to have been of unusual proportions, as they lasted for *more* than one year and bore most devastating consequences. Crop failures, and, consequently, high prices and grain scarcity led to widespread starvation, chiefly among rustics and poor townsmen. This, in turn, seems to have created a peculiar and complex social situation. The victims of the crises were caught between the practical will to migrate and seek a better life and the religious zeal to fight the Infidel. In other words, earthly and heavenly motifs became interwoven into each other. The case of the popular crusades reveals that ecological and economic crises must have played a significant impact on religious fever and formation of the ‘persecuting society’ in the later Middle Ages. In other words, environment affected mentality. The connection between ecology and religiosity should be pursued and studied further.

Looking for Medieval Environmental Consciousness: Popular Protest and Peasant Moral Ecology in Late Medieval Britain

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Karl Jacoby’s *Crimes Against Nature* reconstructed Progressive-era American moral ecologies, manifested when rural people protested their alienation from natural resources during the establishment of America’s National Parks. Jacoby uncovered acts of resistance and crimes

of principle that articulated the objections and ideologies of politically and economically powerless people in the face of dramatic ecological changes. My paper explored whether medieval peasants, when faced with loss of traditional subsistence rights, thought or acted in similar terms as these dispossessed Americans. Should medieval historians rethink the relationship between peasant protests and environmental perception, particularly in the case of encroachment upon traditional resources by foreign or colonial powers? Theft, poaching and destructive acts in royal forests or newly-privatized lands might be portrayed by historians as straightforward political and economic resistance against foreign rule or noble usurpation of traditional rights. Many cases, though, could suggest a deeper resentment and more complex motivations, perhaps an early moral ecology against misuse or abuse of natural resources.

The paper asked whether late medieval court cases, particularly from late fifteenth and sixteenth-century post-impignoration Orkney and Shetland, reveal perceptions of ecological stewardship veiled within so-called criminal acts committed by local northern islanders against Scottish incomers. My research revealed complaints regarding the loss of traditional rights by Orcadians and especially Shetlanders, as Norse udal law was replaced by Scottish feudal tradition, but few genuine cases of 'protest' akin to those seen in Jacoby. Shetlanders, more than Orcadians, protested to representatives of the Crown against the loss of local fishing and scavenging of drift resources. Shetlanders also committed the only act of clear protest against Stewart overlordship in the late sixteenth century, when several groups of islanders slaughtered all of their swine to avoid unfair fines imposed by the Stewart's men.

While Orkney and Shetland offer glimpses of protest, none of the northern cases studied revealed the sort of ecological awareness demonstrated by Jacoby's case studies of the Adirondacks and elsewhere. This research on the ecological awareness of medieval peasants will

continue with consideration of eleventh through fourteenth century forest and scavenging cases and peasant revolts from England. Cases such as the fight over a stranded whale at Dunge Marsh, Kent, reveal local protest over noble encroachment upon traditional coastal resources, an anger which more closely mirrors the thoughts and actions of Jacoby's indignant Adirondackers.

Environmental History III: Hopes and Hazards of Agropastoralism

The Contours of an Early Medieval Livestock Pestilence

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This paper surveys the written evidence for the cattle panzootic of *c.*809/10, the most thoroughly documented outbreak of livestock disease in the early Middle Ages (400-1000 CE). The paper has three primary objectives: to demonstrate how an assessment of this pestilence speaks to both the historical and natural sciences; to illuminate the origins, geographical and spatial extent, and likely duration of the outbreak; and to assign a retrospective differential diagnosis. How we may begin to assess the impact of the pestilence is considered in closing, but the issue is not discussed at much length. Ultimately we must attempt to situate the panzootic in its agrarian and economic context and draw on histories of better-documented pre-industrial European cattle pestilences in order to establish a rough idea of what the *c.*809/10 panzootic meant for contemporaries. How the pestilence 'fits' in the greater history of pre-industrial livestock disease is also addressed in closing and emphasis is put on the need for greater

interdisciplinarity. We stand to gain tremendously once palaeomicrobiologists begin to devote more attention to the past disease experience of non-human animals.

Since our understanding of Carolingian economy and demography is heavily conditioned by our interpretation of mid eighth- through ninth-century environmental and biological ‘shocks’ – such as outbreaks of disease and subsistence crises – it is suggested that thorough study of the extent and impact of these shocks, the *c.*809/10 pestilence included, modifies the widely held view that the Carolingian period was one of growth. This assessment of this cattle pestilence is one small step in this direction. Though the early ninth-century cattle panzootic may have burnt out in two years, its consequences may have lingered for a decade or longer. And though the contours of the pestilence are vague, it is clear that it was a major event. Bovines as far apart as Lorsch (Germany) and Ripoll (Spain), Lyon (France) and St. David’s (Wales), were affected, and there is reason to believe that much of trans-alpine Europe was hit. The disease responsible may have been the rinderpest virus, contagious bovine pleuropneumonia, or a disease not known (or recognizable) to modern science. Nevertheless, contemporaries would not have emerged unscathed: though more research is required, it is certain that a large die-off of the primary traction and manure-supplying animal would have had profound repercussions for human health and economy.

Soil Concepts and Soil Amendments in Late Medieval Agricultural Literature

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Soils are a main resource for agriculture, and knowledge about them was already very elaborate in the agricultural manuals of Classical Antiquity, such as Cato, Varro, Columella or Palladius. While these sources continued to be available mainly through monastic libraries, new works were also compiled. Among them, the 12th century *Kitab al Fillaha* by Ibn Al Awwam, written in Seville and the *Ruralia Commoda* by Petrus de Crescentiis (ca. 1300) stand out. Using these books in combination with other sources of more encyclopaedic character, this paper discusses how soils were conceptualized, what the manuals suggest in terms of tests for quality and which measures for amending poor soils were recommended. The background of the two books in terms of agricultural systems and pedological features are taken into account in the discussion.

Both books offer several systems of soil classifications to integrate knowledge derived from the practice of agriculture with the systematic given by humoral theory. The diversity of soils was a prime concern of all the manuals, though it has hitherto found little scholarly attention. To give but one example, in a chapter on the suitability of places for habitation, we read about three different soil characteristics: '[...] et causa dispositionis terrae ipsius, si est lutosa aut humefacta aut cenosa' (PdC, R.Comm. I,4,1). Testing soils encompassed indicator species, physical and chemical testing and bio-indicators such as bugs living in the soil. Amendments were numerous, and great diligence was used in describing practices of manuring both in terms of the manuring agents and their preparation as well as manure storage and application. While much of the knowledge can be traced to earlier writings, both books should be understood as original contributions to the stockpile of medieval soil knowledge. With the use of a pedological model of plant nutrient behaviour in soils, the different soil amendment practices of the medieval authors can be investigated systematically.

In light of the practices documented in the agricultural manuals, archaeologists are asked to consider whether some features identified as rural garbage pits or middens may not actually have been sites for preparing and mixing manure.

Environmental History IV: Practical Aspects of Resource Use and Management

Looking for Watermills, Finding Windmills as Well

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Documents published for the first house of Dominican nuns in 1907 by Jean Guiraud as the *Cartulaire de Prouille* contain not only rights to a water mill at la Roqueta not far from Prouille, but in no. 278 from November 1212 a copy from the BnF, Doat Collection's volume 98, folio 13 the donation, described by the editor as "Enguerrand de Boves donne un moulin à vent à S. Dominique et au monastère de Prouille." "The charter is clear and here's the Latin text, "Notum sit omnibus hominibus haec audientibus, quod ego, Ingelranus de Bova, motus amore Dei et Beatae Mariae, bono animo ac spontanea voluntate et sine omni dolo, in perpetuum dono et trado, sine omni meo meorumque retentu, Domino Deo et Sanctae Mariae de Prolano et loco ipsius et abbatiae de novo factae et Dominico, Oxomensis canonico, et cunctis fratribus et sororibus praesentibus et futuris ibi Deo et Sanctae Mariae et monasterio de Prolano servientibus, pro redemptione animae meae et parentum meorum, molendinum venti, quod fuit Raymundi de Gramazia et Pictavini Arvei in warentena, quae fuit de illis de Villario, scilicet totum meum jus

quod habeo in isto molendino praedicto, quod eo reaedificavi, et emi medietatem quam Raymundus de Gramazia ibi habebat, ut habeant et teneant et semper possideant, ad suam voluntatem semper faciendam, sicut ego melius facere debebam. Testes hujus rei sunt: Guillelmus, capellanus anglicus, magister Bernerius, Arnaldus Ortiguerius. Facta carta ista nonis decembris, feria quarta, anno ab incarnatione Christi millesimo ducentesimo decimo secundo, regnante Philippo, rege Francorum. Arnaldus Sancii de Lauriaco scripsit.” The donor appears to be a northern French knight among the Albigensian Crusaders. This is the earliest reference that has been identified to a wind-mill in southern France, located in the Carcassonne pass, a site apt for the use of wind power.

Top Down or Bottom Up? Waste Disposal Concerns in Sixteenth-Century Nottingham

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Scholars have generally assumed that premodern urban elites had to “push” proper waste disposal practices from the top down if the town was to be anything but a stinking mound of muck. Alain Corbin, for example, argues that the elite ideas about smell and deodorization faced an uphill battle against the will of the masses: the populace was indifferent to smells and only in the late eighteenth century do we finally notice a “reduced threshold of tolerance” among the populace for smells from decomposing corpses and cesspools. These arguments are based on a

common record type which has survived to the present: local government proceedings in which commands to clean up the town were issued by urban leaders.

The records of the town of Nottingham provide an opportunity to reassess this assumption. Through an analysis of Quarterly Sessions and Mickeltorn Jury records from the sixteenth century, this paper examines the types of sanitation concerns brought forward by the jury, the presence of elite citizens among those in violation of sanitation rules, and jury recommendations for urban betterment. From these records, this paper argues that while sanitary indifference existed among both the upper and lower classes, the pressure to change unclean practices also came from both above and below.

Six Broadleaves and a Chimney: Vernacular Structures and Managing Timber Resources in Medieval Scotland

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The woodland resource of Scotland, 500-1600AD, has been described as moving from “sufficiency to scarcity”. Before 1350 it is thought that Scots possessed sufficient woodland resources to be self-sufficient in fulfilling their urban and rural building requirements. Thereafter, towns supposedly became reliant upon imported wood whereas in the country “local

supplies probably still sufficed.” This summation, however, cannot conceal the stark reality that until recently nobody either had the slightest idea about the quantity of timber required by medieval vernacular buildings in Scotland or how long such buildings lasted.

One favourite excuse peddled by both historians and scientists for this knowledge gap is that such buildings have left little imprint in the archaeological record. This may be true but some structures are steadily attracting more attention. For example, the Pitcarmick-type buildings, thought to date 500-1200AD, seem to have consisted of wooden frames built upon turf foundations measuring up to 23m x 15m. Unfortunately, the amounts of timber and turf required to build and maintain such buildings cannot be estimated and so their environmental impact cannot yet be quantified.

Two recently discovered late-medieval documents may illuminate some of these problematic issues. They survey fifteen upland rural townships and their associated structures in the lordship of Strathavon (Banffshire), describing the types and exact quantities of timber required to maintain a complete agricultural infrastructure in 1586. All 369 buildings in this survey, like Pitcarmick-type structures, were composed of wooden frames upon turf foundations. Detailed information is also provided about the different species of trees needed for the different structures and how often these needed to be renewed.

The documents demonstrate that these demands upon the woodland resource were managed on a cyclical basis. Agricultural implements, household items, ladders, fencing, and all small structural timber were renewed on an annual, or at worst a biennial, basis. In this first cycle the quantities of wood required by each different township varied to between 3,000 and 12,000 trees (with their branches). At this time the turf that was used to form the walls and roofs was also renewed and the small timbers and turf were composted down. The second cycle occurred

every seven years and involved the complete replacement of every structure, including the renewal of the main structural timbers. Essentially, every seven years these fifteen townships required 774,864 trees to maintain and renew every structure and anything else made from wood.

Such information provides new insights into the environmental impact of medieval vernacular buildings in one part of Scotland and the management techniques that must have been employed there to maintain sufficient timber and turf resources through time. It also raises questions about why everything was renewed so quickly when reconstruction archaeology has demonstrated that structures built to the same specifications should last at least twenty years if properly maintained. The suggestion made in this paper was that the structures themselves formed an integral part of a soil enrichment process (the creation of anthrosoils) in an area where over 95% of the land surface is currently classed as ‘wholly unsuitable for agriculture’.

Environmental History V: Understanding Landscapes on Medieval Frontiers

Wise or Foolish Virgins? Monastic Estates and Environmental Change in Northern Europe ca.1100-1250

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The environmental impact of monastic colonisation in 12th- and 13th-century Europe has been the subject of great debate since Fossier’s and Berman’s substantial critiques of the Cistercian self-image of pioneering agriculturalists toiling to make the wilderness blossom. Their largely French-based studies have since been used by others as the basis for a new model of monastic

inheritance of already developed landscapes throughout Western Europe, despite its inapplicability to many regions. This paper offers a reassessment and overview of monastic estate development practices along the northern European periphery from SE Ireland, through Scotland and NW England, southern Scandinavia, to Poland, focussing on Augustinian, Cistercian and Premonstratensian examples. It examines evidence for land clearance and drainage, introduction of new crop types, intensification of grassland and woodland management, and exploitation of fuel reserves for industrial activities. The paper concludes with a re-evaluation of environmental impact models for monastic exploitation regimes along this geographical arc and an assessment of the effects of late 13th-century climatic deterioration on these properties.

From *Desertum* to *Silva*: Perceptions of the Woodland in Thirteenth-Century Silesian Charters

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As we all know, monasticism is born in the desert. As the first monasteries were established in Europe, where no desert was available, monk communities chose nonetheless primarily places remote from human settlements. In the regions of northern Europe, these places were usually located in areas of woodland. The thirteenth century is in East Central Europe an era of dramatic and rapid changes in all spheres of society, which is particularly true in the Polish province of Silesia. Peasant settlers were attracted from abroad in an effort to intensify agricultural exploitation in regions that still had a relatively low density of population.

Cistercian monasteries played an important role in this process. It may seem a bit contradictory that Cistercian monks, who wanted to return to the roots of monasticism, were supposed to live isolated from human settlements, and that they were pursuing an intensification of settlement by attracting new settlers. How could they be supposed to live far from human

agglomerations and put such efforts in attracting settlers to create new and bigger towns and villages?

This paper explored these apparent contradictions and how the monks dealt with them in their charters and narratives. It drew on documents from two Silesian monasteries, Lubiąż (founded in 1175) and its daughter-monastery of Henryków (founded in 1227).

The monks of the late twelfth and early thirteenth century lived in a period of intensive changes. For them, like for everyone else, the motto of the day was *melioratio terrae*, and their main concern, like for everyone else, was to attract settlers. According to such a worldview, there was hardly a place for a lonely monastery in the wilderness. Actually monastic *topoi* concerning the wilderness appeared long after the period of intensive changes, as an anonymous author looked back on the early history of his monastery.

A close look at contemporary documents shows no indication whatsoever of a direct influence of the phrasing of the *Charta caritatis*, according to which monasteries should be located *in locis a conversatione hominum remotis*. In the earlier phases of Lubiąż and Henryków, it seems nobody really cared about this kind of monastic traditions. And when people began caring about them, they referred to more traditional patterns of monastic narratives, although their accounts had very little in common with historical reality.

Black Sea Coastal Environments according to Medieval Navigational Tools

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Although designed to facilitate and safeguard sailing, especially in far away and unfamiliar basins like the Black Sea for Italian and other Mediterranean seamen, navigational manuals often include such natural features of coastal areas as forested hills or common human practices in and around this body of water. Thus the spread of sheep skins in the vicinity of

Pezunda testifies to the massive herding of the local population. But most importantly, medieval nautical charts and sailing directions provide information about ports and mooring places used by the most widespread means of transportation during that time, the sailing vessels, which provide indirect evidence about the economic potential of the regional products which have been exported through exchange or trade.

Combined with transactions testimony, navigational tools contribute to the picture of medieval maritime activity in Black Sea area that in recent years has been expanded by surface and underwater surveys. The latter offer great promise due to the anoxic waters of the sea where almost intact ships and cargoes have been detected and some already excavated; that contributes substantially to what we know about production, exports and transportation of the Pontic hinterland during the Middle Ages.