

COASTAL LANDSCAPE DEVELOPMENT IN SOUTH AND CENTRAL DENMARK, C. 800–1600

Johnny Grandjean Gøgsig Jakobsen

Department of Scandinavian Research, University of Copenhagen
Njalsgade 136, DK-2300 Copenhagen S, Denmark
jpgj@hum.ku.dk

Key words: *historical geography, coastal landscape, Middle Ages, Denmark, Wends*

A historical-geographical analysis shows that the most coast-near areas of the Danish isles went through a different landscape and settlement history than the rest of the islands during the period c. 800–1600. To judge from archaeology, place-names, administrative structures and church buildings, a belt of 1–3 km along the coasts were left almost uninhabited from the beginning of the Viking Age until around 1200. This residential and agricultural dislike of the coastland cannot be explained by physical geography, as most of the coastal areas on the islands are quite suitable for residence and arable agriculture all the way out to 50–100 metres from the beach. But then why did the Danes leave a coastal forest belt around the islands and on the east coast of Jutland? The reason can probably be read out of three chronicles from the period 1170–1210, describing how Wendic pirates from the Baltic shores of northern Germany ravaged the Danish coasts, causing the people there to move further inland. When the tide of military power turned around 1200, the Danes soon began to clear the coastal forests, settle there and cultivate the land for the rest of the Middle Ages.

In a country as small as Denmark, landscape history traditionally has found little need to distinguish between inland- and coastal regions. With a total area of c. 43 000 km² and a coastline of more than 7000 km, and no location in the whole country with more than 52 km to the nearest coast, you may indeed claim that all of Denmark is coastal! However, recent studies do actually point to a distinctive development of land use and settlement structure along the Danish coastline in the Middle Ages, especially in south and central Denmark.

Presentation of the study approach and the case study area

This paper is based on a study using an interdisciplinary set of sources and methods from the tool box of historical geography.¹ The sources used include physical geography, historical land-use mapping, place-names, administrative structures (village lands and parishes), and parish churches, combined with written records from the Middle Ages. With this combination of different source types and related methods to study them, the paper will try to identify any common trends in the analyses in regard of coastal landscape



Fig. 1. Map of medieval Denmark with the major landscape names, pointing out the case study-area in north-western Sjælland

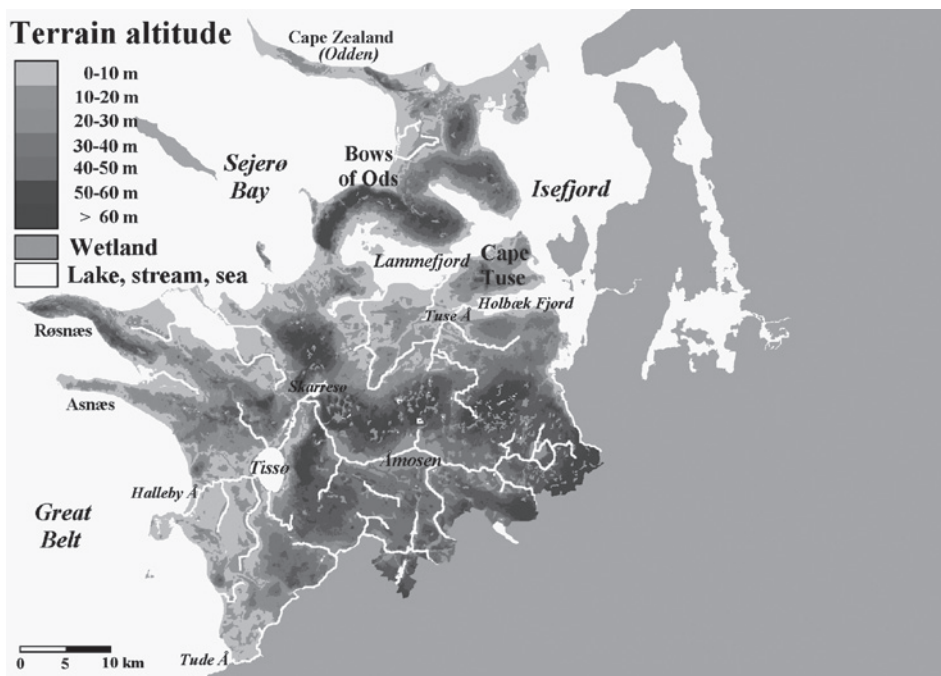


Fig. 2. Physical-geographical map of north-western Sjælland (before the nineteenth-century draining projects) with lakes, streams and wetland areas, as well as the most important landscape names



Fig. 3. Chronology of medieval settlement distribution in north-western Sjælland based on place-name types. Top: Settlements with names from before AD 800. Middle: Settlements with names from before AD 1000. Bottom: Settlements with names from before 1350

development during the period c. 800–1600, with special focus on the High Middle Ages (c. 1000–1300).

Medieval Denmark was a bit bigger than what it is today. Besides the present-day state, it included the archdiocese of Lund (Skåne, Halland and Blekinge, from 1658 part of Sweden) and the diocese of Slesvig (from 1864 part of Germany). In this concept, the Danish isles between Jylland and Skåne — of which Sjælland, Fyn, Lolland and Falster are the biggest — for long constituted the central part of the kingdom (Fig. 1).

As case study area I have chosen the north-western part of Sjælland, which is an area quite representative for central Denmark in terms of coastal landscape geography (Fig. 2). For the physical geography, three major types of coastal landscapes can be identified. 1. *Cliff coast* can be found on Cape Røsnæs and the narrow land belt between Sejerø Bay and Lammefjord. The cliffs are not made of rock, but of moraine soils in a hilly terrain with steep slopes towards a narrow beach zone. 2. *Meadow coast* is found in two districts of the Sejerø Bay, with a very broad beach zone of wet or dry meadows, almost like marshland. 3. *Plain coast* is here a term used on all the remaining coastline of the case study-area and far the most widespread type of coastal landscape in central Denmark. A hinterland of plain or slightly hilly terrain open for potential arable use stretches right out to a narrow beach zone of about 20–100 metres width.

Place-names

The study of place-names, especially on settlements, is quite an established school in Scandinavia. A large part of Scandinavian settlement names are constituted of two parts, a prefix and a suffix, each with different etymologies. A place-name like *Bregninge*, for instance, contains the prefix *Bregne-* (“fern”) and the suffix *-inge* (“place” or “people”), giving a combined meaning as “the place,

where there are ferns (or people known for living in the fern area)”. In Denmark, the suffixes tend to group around a limited number of types, such as *-inge*, *-lev*, *-løse*, *-by*, *-torp*, *-tved* and *-rød*. From linguistic as well as settlement-historical considerations, many of these suffix types can be dated to different periods, where the settlement — or at least its name — seems to have come into existence. The suffix types *-inge*, *-lev* and *-løse* all appear to be from the period 0–800; *-by* is mainly from 800–1000; and *-torp*, *-tved* and *-rød* are primarily from 900 to 1350, although the extremely widespread suffix type *-torp* has been active from 800 to 1500 and beyond.² Based on these dating intervals, the majority of settlements known from medieval north-western Sjælland can be placed in the chronology series shown in Figure 3.

The top map in Figure 3 represents the situation at the beginning of the Viking Age, i.e. around AD 800. Iron Age-settlements, at least those that had survived into the Middle Ages, mainly seem to be an inland phenomenon, whereas settlements with names from this period generally appear but sparse in the coastal area; the ones that can be found are especially of the *inge*-type and usually situated about 3–4 km inland or on the south side of the fiord capes. This distribution corresponds well with archaeological observations from Fyn and Skåne, where the coasts of Fyn generally seem to have constituted an uninhabited wasteland and wilderness throughout most of the first millennium, whereas several Iron Age-settlements in Skåne out by the very coast appear to have been abandoned around 700–900 (Henriksen, 2009, 349 (Fyn); Anglert, 1995, 50 (Skåne)). On the Danish isles and on the east coast of Jylland, a preceding retreat from the most coast-near zone may have set in as early as the fourth and fifth centuries (Crumlin-Pedersen *et al.*, 1996, 156–158). During the Viking Age (c. 800–1000), represented on the middle map, a number of *by*-settlements were founded in north-western

Sjælland along the west coast, the north coast and the fiords. These were anything but inferior fishing communities, as most of them soon grew to become large villages, often housing both a parish church and a magnate’s farm in the High Middle Ages. By the middle of the fourteenth century, settlements were densely spread over almost all the region, in the coastal zone especially with *torp*-settlements. These were established adjacent to older settlements as well as in hitherto uninhabited areas, the latter not least in the hilly terrain and on the capes. This chronological place-name analysis would indicate that the coastal zone was left quite free of settlements during the Viking Age, no matter what kind of physical landscape, first to be inhabited and cultivated from a few *by*-settlements, especially in the more protected fiord areas, to be followed by a more intensive colonization by *torp*-settlers in the period c. 1000–1350. A spatial analysis of the internal distribution of place-name types on the Isefjord capes would furthermore suggest a “colonization movement” from the innermost part of the capes to the outermost.

Administrative units (village land and parish)

Spatial analyses of the settlement structure can also be performed in combination with the related administrative units. Until the turn of the nineteenth century, each Danish village had an area of adjacent land — arable, meadows, pasture and wood — held by the village peasants in some sort of collective administration; each “village land” bordered on the neighbouring village lands, leaving practically no land outside this land administrative structure.³ The actual settlement was situated somewhere within its village land, sometimes in the centre of it and sometimes peripheral. But in the case of village lands bordering on the sea, there is a very systematic tendency that the settlement can be found as far inland in the village land as possible. In north-western Sjælland, this is

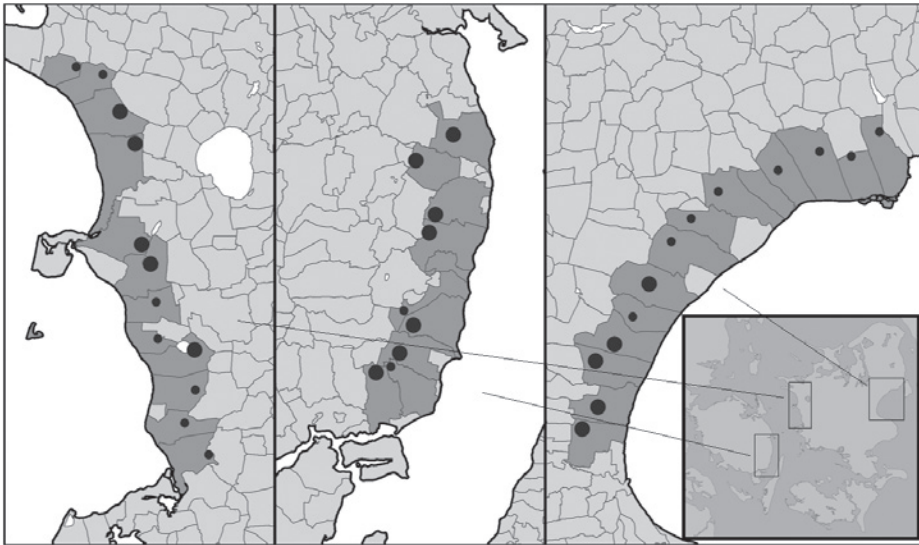


Fig. 4. Village land structure in three coastal areas of Fyn and Sjælland, the areas being pointed out on the small map. In the highlighted village lands, the inland orientation of the actual settlement is shown. Maps by Peder Dam in Jakobsen & Dam, 2010, 23

especially evident along the west coast, and similar evident observations can be made on other coastlines on the Danish isles (Fig. 4). There seems to be no physical-geographical explanation for this distinct tendency, since the historical coastline has not moved in the intervening period⁴, and both the soil and terrain is quite suitable for arable; in today's landscape, the land is cultivated or inhabited all the way out to the beach zone.

A similar phenomenon is found when moving up one level in the medieval administrative structures, that is, from village lands to parishes. Once again there is a clear tendency that the "centre" of the parish, i.e. the parish church, was not situated very central at all when looking at the coastal parishes. In practically all the parishes of north-western Sjælland, the parish church was located in a settlement as far inland as possible within the parish borders. For those parishes, which due to the region's geography bordered on open sea as well as on fiords, a location was chosen on the fiord side (Fig. 5).⁵

Analyzing the spatial distribution of known medieval settlements within the parishes also shows that far the majority of all villages actually belonged to the parish in which the villagers had the shortest way to the church. Only in 12 per cent of the villages in north-western Sjælland, the inhabitants had a shorter distance to a neighbouring parish church than to their own, without the physical geography being an explaining factor (e.g. by intervening streams or bogs). For 10.5 per cent, the settlements with "unfair parish affiliation" had place-name types belonging to younger categories (such as *-torp*), indicating that the settlement may very well have come into existence *after* the parish structure was implemented and settled, which in Denmark seems to be the case by the end of the twelfth century. This could also suggest that perhaps the de-central, inland orientation of churches in coastal parishes was not as unfair or de-central to the parishioners at the time when the parishes were established, in the sense that the areas closest to the beach by that

time still were only very sparsely populated — if indeed inhabited at all.

Parish churches

A third source that I have included in my historical-geographical analysis of the coastal landscape development in medieval Denmark is the parish churches themselves. On the Danish isles, parish churches of stone were built in almost all rural parishes during the twelfth and the thirteenth centuries. For the period 1050–1350, construction of the buildings can be dated quite accurately into sub-periods (1050–1100, 1100–1200, 1200–1250, and 1250–1350) due to type of stone material and architectural style.⁶ The main regional variation within this distribution is that whereas twelfth-century churches are dominating on Sjælland and Fyn, the

southern-most islands of Lolland and Falster appear to have had most of their churches built in the thirteenth century. For our case-study region of north-western Sjælland, a geographical variation also seems to occur on this smaller regional scale: quite a lot of the parish churches along the coastline appear to be younger than their inland neighbours (Fig. 6). This is especially evident on the west coast (1200–1250) and on the most exposed open-sea capes (1250–1350). This does not necessarily mean that the coastal areas had no parish churches (or even parishes) until that time, as several of them may have been preceded by wooden churches, but it then at least does suggest an inferior economical situation along the coast, not making it possible to fund a stone-church construction until 50 or 100 years later than further inland.

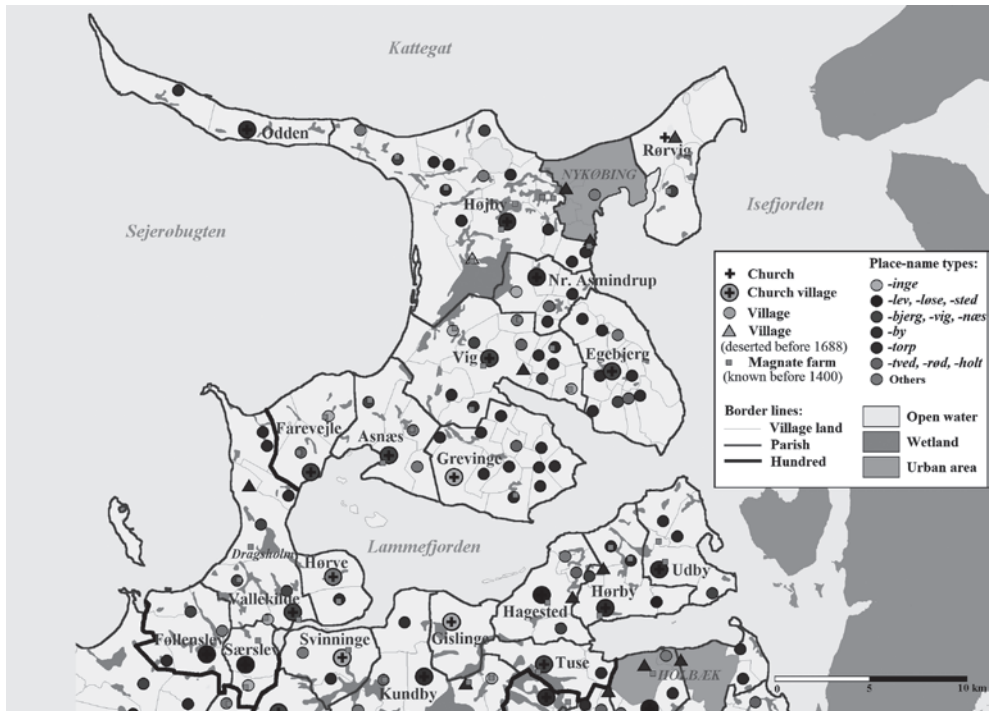


Fig. 5. Medieval parish and settlement structures in the northernmost part of north-western Sjælland, showing the location of church village and other settlements within the parish boundaries

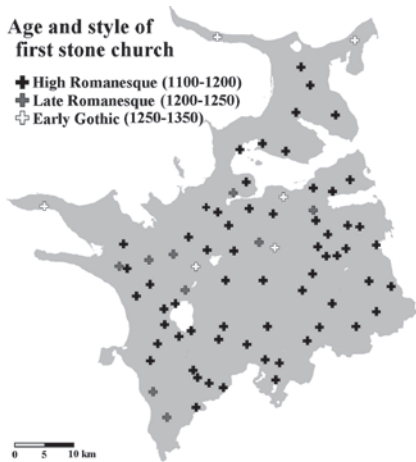


Fig. 6. Geographical distribution of rural parish churches in medieval NW-Zealand with indication of age and architectural style of oldest stone church

Once built, some stone churches stayed the same in matters of size and shape throughout the Middle Ages, but far the majority had an architectural change from Romanesque to Gothic style during the Late Middle Ages, usually including vaulting and the erection of a tower. Some of the churches also had an extension of the nave, which was the part of the church building especially meant for the parishioners. Some scholars have therefore suggested that such church-nave extensions may reflect a contemporary (or rather preceding) growth in the number of parishioners (Mackeprang, 1927; Nyborg, 1986; and Anglert, 1995). With this in mind it is interesting to note that church-nave extensions in north-western Sjælland is almost exclusively a phenomenon to be found in inland parts of the region known for late place-name types only and considerable deforestation, *and* in the coastal districts of the region. Since these extensions can be architecturally dated — although with more uncertainty than the primary buildings — to three high and late medieval sub-periods

(1200–1350, 1350–1500 and 1500–1550), we are even given an indication of when the coastal parishes had their main demographical growth (Fig. 7). For the parishes along the west coast it seems to have been in the periods 1200–1350 and 1500–1550, and for the parishes on the fiord capes starting in 1200–1350 on the innermost cape, then in 1350–1500 on the two central capes, and finally in 1500–1550 on the most exposed cape.

When taking the observations and interpretations of all the combined analyses into consideration, a general picture emerge of only very limited settlement — if indeed any — along the coasts of north-western Sjælland during the Viking Age (c. 800–1000). About a dozen *inge*-settlements around the region represents the oldest surviving villages, but rarely to be found less than 3–4 km from the actual coastline. During the Viking Age, another dozen of *by*-settlements doubled the number of coastal settlements, especially along the fiords and the northern coast, several of these located quite close to the water (0–1 km). They usually became large villages with lots of farm, one of them often a high medieval magnate demesne, which may point to an origin as some sort of fortified colonization centre. By the time of the formation of the parish structure (i.e. 1100–1200), an extreme inland orientation of parish churches in the coastal parishes indicates that at this time a belt of 1–2 km along the coastline was still quite uninhabited. When this coast-near belt was finally settled, not least with *torp*-settlements, the village was still situated as far inland as the village-land structure allowed for. Since marshlands, meadows or dunes do not seem to offer an explanation for this sparsely populated or even uninhabited zone along the coast, we must expect a widespread belt of coastal forest in the region, generally stretching 2–3 km inland right into the thirteenth century. To judge from place-name types, parish formation and church-

Parishes with church-nave extensions

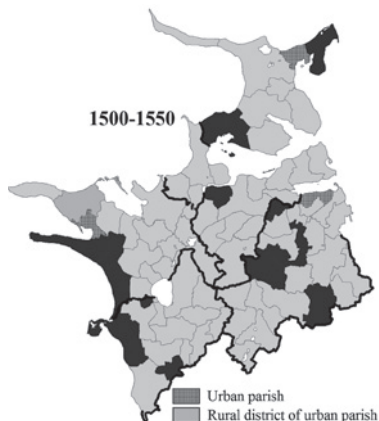
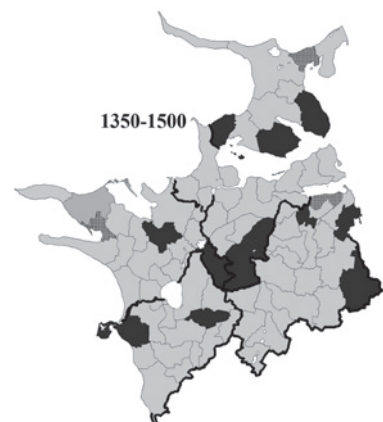
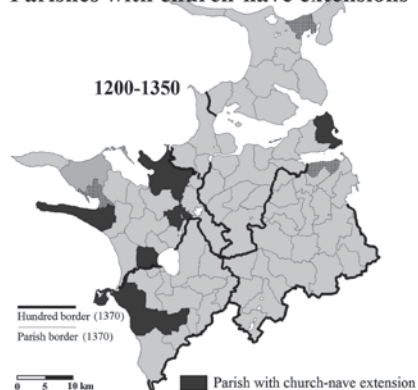


Fig. 7. Medieval parish map of north-western Sjælland showing parishes with church-nave extensions dated to three different periods

architectural considerations, a demographic growth began to occur in the coastal parishes from the beginning of the thirteenth century, with foundation of new *torp*-settlements both adjacent to existing villages (such as *-inge* and *-by*) and out in hitherto uninhabited areas; the most exposed capes appearing to be the scene for the last stage of the colonization. The period 1200–1350 seems to be a generally active period of coastal forest reclamation all around, on the west coast with a continuation in the sixteenth century, but even during the period 1350–1500, two of the fiord capes appear to have seen a significant demographic and economic growth.

Historical written sources and maps

But what could possibly be the reason to leave a belt of 2–3 km forest along the coast of north-western Sjælland and the Danish isles in general, in quite plain terrain with good soils suitable for arable, while the rest of the islands were intensively settled and cultivated during the period 900–1200? Neither sand- nor rain storms appear to be a reasonable explanation for such a coastal protection zone, as the period in question appears to have been one of a relatively mild and warm climate — at least for Danish conditions. A more plausible explanation seems to be that the coastal forest was left in order to provide a physical and visual protection for the inhabitants further inland — protection from unwanted visitors from the seaside.

Such uninvited visitors may have been the Wends. ‘Wends’ is a term used by medieval Scandinavians and Germans for their Slavic neighbours, and thus not referring to just one people or tribe. For the Danes, the Wendic name was applied to Slavs living along the south coast of the Baltic Sea, such as Polabians, Obotrites, Rugians and Pomeranians. Since the Viking Age, there was frequent contact across the south-western Baltic Sea of both military and peaceful nature. As German

eastward pressure on the Slavs increased during the eleventh and twelfth centuries, some Wends took it out on their northern, overseas neighbours in southern Denmark. Wendic piracy especially seems to have increased during the second quarter of the twelfth century, when the Danish kingdom was cursed by a long-lasting war between a number of royal pretenders to the throne for two generations. In this period, coastal defence against the Wends was completely left to local lords and the peasants themselves. When the civil war in Denmark finally ended, and King Valdemar the Great and Archbishop Absalon of Lund in 1168 defeated the Wends in Rügen and destroyed their pagan temple in Arkona, it marked the beginning of the end for the Baltic Wends, who subsequently were subdued by continuous German, Danish and Polish crusades, and eventually were being assimilated in the German 'Ostsiedlung'.

A connection between Danish coastal forests and the Wends finds support in historical documentation from the period. According to the Danish historian Saxo Grammaticus, who wrote his *Gesta Danorum* around 1200, continuous plundering and killing caused by Wendic pirates had forced inhabitants of the southernmost coasts of the Danish isles to give up their farms and villages, and to move further inland. Something similar is indicated by a comment in a contemporary chronicle of Øm Abbey, *Exordium Carae Insulae*, telling that the Cistercian monks had been donated some land on Djursland, the big peninsula on the east coast of Jylland, but that this was worthless due to its closeness to the coast, which made it vulnerable to pagan (i.e. Wendic) searaid. That the Wends did indeed ravage the shores of Denmark far beyond the southern isles in the eleventh and especially the twelfth century is documented in numerous accounts.⁷ This is also confirmed by the Wendic chronicler Helmold von Bosau, writing his *Slawenchronik* around 1170, where he explained the situation like this:

Denmark mainly consists of scattered islands surrounded by sea. They are difficult to defend against pirates, because there are many tongues of land, which are excellently suited as hiding-places for the Slavs. Unnoticed, they sail out from there and attack the unsuspecting with plundering, and for such sudden raids are the Slavs exceptionally strong. In later years, this brigandage has been so frequent that they [i.e. the Wends] have given up their useful farming altogether and in stead put their confidence in armed navigation, pinning all their hope and wealth on their ships. (Helmold von Bosau, ch. 109 (Translated from Stooß, 2002, 378))

In additional support of this, marine archaeologists have found numerous coastal defence systems with various kinds of blockages along the central Danish coasts dating from the Viking Age and up until 1170, just as an earlier defence system has been detected from the centuries around 400 (Crumlin-Pedersen *et al.*, 1996, 19).

Fragments of a coastal forest belt were still extant on the first accurate mapping of Denmark from the late eighteenth century, especially on the coasts bordering on the open Baltic Sea; in several places, remnants of these old coastal forests are still present even today (Fig. 8).⁸ Danish historians have, of course, been well aware of this reference by Saxo on how the southern coasts were abandoned due to Wendic terror, but like most other information delivered by Saxo it has been largely dismissed as pure propaganda. The present historical-geographical analysis does, however, show that several mutual independent sources actually support the claims by Saxo and the chronicler from Øm Abbey that land close to the coast was for long not considered suitable for settlement and arable farming due to seaborne piracy. But the analyses also suggest that the phenomenon existed at a much larger scale than

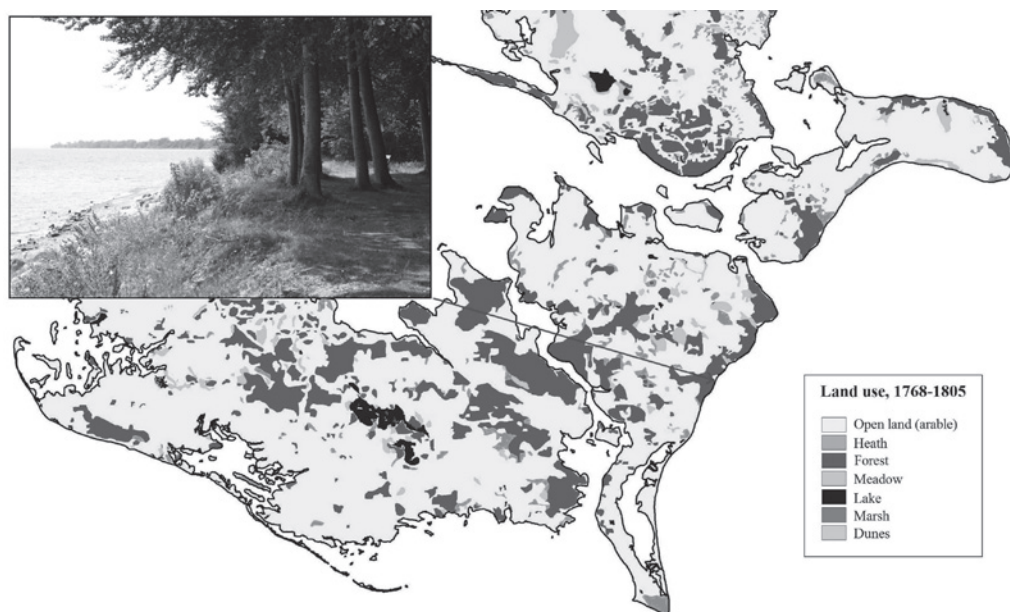


Fig. 8. Land use on Lolland, Falster, Møn and southern Sjælland around 1770 according to “Videnskabernes Selskabs Kort”. The inserted photo shows the coastal forest of Korselitse on Falster as it looks today. Photo: Sascha Helsingren Hansen 2010

stated by Saxo, both in terms of geography and time. Even if the southern islands of Langeland, Lolland and Falster suffered more than their share of Wendic attacks, the coastal forest belt seems to have stretched all around Sjælland and Fyn as well, and probably even far up the eastern coast of Jylland.⁹ Furthermore, historical-geographical attempts to date the phenomenon do not support Saxo in blaming it all on the Wends. Apparently, the Danish coasts were abandoned long before the Wends, probably being depopulated throughout most of the Viking Age, strongly indicating that Wendic sea-raiders were only continuing what their Viking predecessors had been doing for centuries before them.

Concluding epilogue

The Wendic terror on the Danish coasts ended in 1170–1185, when the tide of military power turned around, and now the Danes began to systematically ravage the

Wendic coasts by bringing the crusade to the Baltic peoples. This historical fact correlates profoundly well with the picture given by the landscape analyses of a coastal colonization beginning around 1200. When the fear of Wends had ceased, landowners in the coastal regions of central Denmark gradually decided to expand the open arable landscape with new settlements into the old coastal forest belt preserved by their ancestors. Surely, new seaborne attacks of Norwegian, Swedish and German origin ravaged the Danish coasts every now and then throughout the rest of the Middle Ages, but never again on such a consistent, systematic and long-lasting scale as with the Vikings and the Wends. In the thirteenth century, it was rather the Wends and their neighbours along the south and east Baltic coast that were in need of a protecting forest shield against Danish seaborne crusaders, but that is a story for another historical-geographical analysis.

References

- Anglert, M. (1995). *Kyrkor och herravälde — Från kristnande till sockenbildning i Skåne* [Churches and lordship — From Christianization to parish formation in Scania]. Lund Studies in Medieval Archaeology 16. Lund: Almqvist & Wiksell International.
- Crumlin-Pedersen, O. et al. (Eds.) (1996). *Atlas over Fyns kyst i jernalder, vikingetid og middelalder* [Atlas of the coasts of Funen in Iron Age, Viking Age and Middle Age]. Odense: Odense Universitetsforlag.
- Dam, P., Jakobsen, J.G.G. (2008). *Historisk-geografisk atlas* [Historical-geographical atlas]. Copenhagen: Det Kongelige Danske Geografiske Selskab & Geografforlaget.
- Danmarks Kirker* [Churches of Denmark]. Various editors. Copenhagen 1933- (still in progress): Nationalmuseet.
- Danmarks Stednavne* [Place-names of Denmark]. Various editors. Copenhagen 1922- (still in progress): C.A. Reitzels Forlag.
- Exordium Carae Insulae* [Chronicle of Æm Abbey]. Published by M.C. Gertz in *Scriptores minores historiae Danicae medii aevi* II (pp. 153–264). Copenhagen 1918–20: Selskabet for Udgivelse af Kilder til Dansk Historie.
- Fellows-Jensen, G. (1987). To divide the Danes from the Norwegians: On Scandinavian settlement in the British Isles. *Nomina — A Journal of Name Studies Relating to Great Britain and Ireland* XI, 35–60.
- Frandsen, K.-F. (1984). *Atlas over Danmarks administrative inddeling efter 1660* [Atlas of the administrative structure of Denmark since 1660]. Copenhagen: Dansk Historisk Fællesforening.
- Hald, K. (1965). *Vore Stednavne* [Our place-names]. 2nd edn. Copenhagen: Gad. 1st edn.; Copenhagen 1950: Gad.
- Helmold von Bosau: Slawenchronik*. Published by H. Stoob, Darmstadt 1963: Wissenschaftliche Buchgesellschaft.
- Henriksen, M.B. (2009). *Brudager Mark — en romertidsgravplads nær Gudme på Sydøstfyn* [Brudager Fields — a Roman burial site near Gudme on south-eastern Funen]. Fynske Studier 22. Odense: Odense Bys Museer.
- Jakobsen, J.G.G., Dam, P. (2010). Nordvestsjællands kystbebyggelse fra vikingetid til ca. 1700 [Coastal settlement in north-western Sjælland from Viking Age to c. 1700]. *Kystkultur* ('Fra Nordvestsjælland' 2009), 11–45.
- Jensen, C.S. et al. (eds.) (2000). *Venderne og Danmark — Et tværfagligt seminar* [The Wends and Denmark — An interdisciplinary seminar]. Odense: Center for Middelalderstudier, Syddansk Universitet.
- Jørgensen, B. (2008). *Danske stednavne* [Danish place-names]. Copenhagen: Gyldendal.
- Mackeprang, M. (1927). Middelalderlige Kirkeudvidelser [Medieval church extensions]. *Festskrift til Kristian Erslev*. Copenhagen: H. Hagerup. 187–210.
- Nyborg, E. (1986). Kirke — sognedannelse — bebyggelse. Nogle overvejelser med udgangspunkt i et bebyggelsesprojekt for Ribeområdet [Church — parish formation — settlement. Some considerations based on a settlement project in the Ribe area]. *Hikuin*, 12, 17–44.
- Porsmose, E. (1981). *Den regulerede landsby — Studier over bebyggelsesudviklingen på Fyn i tiden fra ca. 1700 til ca. 1000 e.Kr. fødsel* [The regulated village — Studies on settlement development on Funen in the period c. 1700 to c. 1000]. Odense: Odense Universitetsforlag.
- Porsmose, E. (1987). *De fynske landsbyers historie — i dyrkningsfællesskabets tid* [History of the villages on Funen — in the time of the agricultural community]. Odense: Odense Universitetsforlag.
- Ringtved, J. (1999). Settlement organisation in a time of war and conflict. In: Fabech, C., Ringtved, J. (eds.). *Settlement and Landscape — Proceedings of a conference*

in Århus, Denmark, May 4–7 1998 (pp. 361–381). Højbjerg: Århus University Press.

Saxo Grammaticus: Gesta Danorum. (1931). Numerous editions, e.g. *Saxonis Gesta Danorum*. Olrik, J., Ræder, H. (eds.). Copenhagen: Levin & Munksgaard.

Ulriksen, J. (1998). *Anløbspladser. Besejling og bebyggelse i Danmark mellem 200 og 1100 e.Kr. En studie af søfartens pladser på baggrund af undersøgelser i Roskilde Fjord* [Places of call. Navigation and settlement in Denmark between AD 200 and 1100. A study of maritime locations based on surveys from Roskilde Fjord]. Roskilde: Vikingskibshallen i Roskilde.

Notes

- ¹ The initial part of the study was made together with Peder Dam, results from this are published in Jakobsen & Dam, 2010.
- ² The major text book on Danish place-names and dating of suffix types is Hald, 1965. A catalogue of Danish place-names is being published in the series *Danmarks Stednavne*, with an introduction of each region's place-name types and the most recent studies on them. A short and updated hand book-version of this catalogue is available in Jørgensen, 2008. The best general introduction to Danish place-name types written in English is Fellows-Jensen, 1987.
- ³ This “village land” (Da.: *ejerlav*) is somewhat equivalent to the English *vill* and the Irish *townland*. Danish village lands and their boundaries are known from cadastral maps from the decades around 1800. A retrogressive attempt to reconstruct their structure back to the 1680s was made by Frandsen, 1984, later digitized by Peder Dam for use in G.I.S. To a large extent, these village lands are believed also to be valid for at least the Late Middle Ages (Porsmose, 1987, 45). Spatial studies of the village land structures, including the settlements' location within the village land, have in Denmark mainly been carried out by Porsmose, 1981.
- ⁴ Combined geological and archaeological surveys have showed that sea level in Isefjord during the Viking Age was about 0.5–1.0 meter above today's level, and something similar must be expected for the northern and western coasts of the region (Ulriksen, 1998, 22–23).
- ⁵ Historical Danish parish structures are known from the same post-medieval sources and reconstructions as for the village lands. Written sources of the Middle Ages do, however, offer a better basis for medieval retrospection of the parishes than in the case of the village lands. Spatial studies of parish structures, including the location of the parish settlements, have in Denmark mainly been carried out by Porsmose, 1981, 173–175.
- ⁶ A catalogue of Danish church buildings is being published in the series *Danmarks Kirker*, with an introduction in each regional volume of the dating criteria (also in German or English).
- ⁷ Wendic relations to high medieval Denmark, including the military campaigns, are most recently described in the proceedings of an interdisciplinary conference “Venderne og Danmark”, eds. C.S. Jensen *et al.*, 2000.
- ⁸ *Videnskabernes Selskabs Kort* was the first scientific mapping of the entire Danish kingdom, commenced in 1761 and finished in 1805. The initial mapping was made in 1:20 000, the final published maps in 1:200 000. The maps have later been digitized for use in G.I.S. by Peder Dam *et al.* An introduction to the maps is given by Peder Dam in Dam and Jakobsen, 2008, 76–83.
- ⁹ Recent historical-geographical surveys have found similar signs of a Viking Age- and high medieval forest belt along the coasts of Jylland (Ringtved, 1999, 367), Fyn (Crumlin-Pedersen *et al.*, 1996, 46–47 and 158) and Skåne (Anglert, 1995, 50).