



Introduction

State Forestry in Northern Europe

Richard Hölzl and K. Jan Oosthoek

Modern forestry is mostly centred upon national territories and this is reflected in existing forest histories. There are national forest histories of the lands of European colonial settlement – the United States, Canada, South Africa and New Zealand – but also of former European dependencies such as India and Zimbabwe. The latter are often framed in the colonial experience of forestry. It is in this context of European colonial empires that transnational forest histories developed over the past few decades. Many of these histories focus upon the dissemination of forestry practice amongst forest specialists and forestry agencies in the different colonial empires.¹ Comparative studies in forest history such as these are almost non-existent in the European context.² National forest histories of different European countries are often difficult to access or even inaccessible to some specialists due to language ‘barriers’.³ This book attempts to overcome these barriers by bringing together the histories of state forestry of several countries of Northern Europe that border the North Sea and Baltic Sea. The choice of this geographical region is based on the strong cultural, economic and political ties that have bound these countries together for centuries. What makes the North Sea and Baltic regions unique are the complexity of relationships and the diversity of nation states within them. At the same time, many economic historians see the North Sea and Baltic regions as a well-integrated and functioning economic area, with a long history of commodity flows.⁴

By the Middle Ages, an intensive maritime trade network existed that linked the North Sea and Baltic coasts of Scandinavia, the German territories, the Low Countries and the British Isles. Timber was one of

the most important commodities shipped along these maritime trade routes. The trade of timber expanded from the thirteenth century due to a growing demand in the southern part of the North Sea region. In these lands timber resources had become exhausted due to demographic pressures resulting in clearance of forests for agriculture and a rising need for construction timber. In the sixteenth and seventeenth centuries, demand for large good quality timber increased further with the development of the seaborne empires of the Dutch Republic and England, and the related construction of fleets. These developments forced merchants to look for new sources of timber and these were found in Northern Europe, in particular the Baltic Sea region, but also in the German territories along the River Rhine. This set up a pattern in the flow of timber, as the northern part of the North Sea region became a wood producing and exporting area while the southern lands became wood importers.⁵ This flow of the timber trade was not only the result of demographic, economic and political developments, but was also influenced by the topography, climate and vegetation history of the region.

Topography, Climate and Forest Biomes

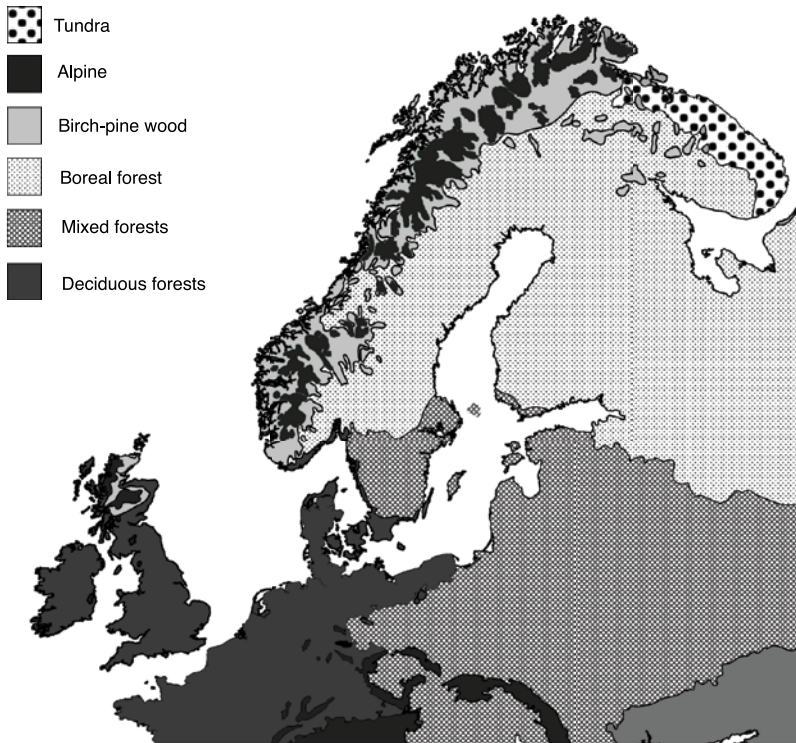
Geologically speaking, the North Sea is a relatively young sea. It came into existence near the end of the last glaciation (ice age), about ten thousand years ago, when sea levels began to rise. At that time most of the North Sea was dry land, connecting Britain with the rest of Europe. This once extensive land has recently been dubbed ‘Doggerland’.⁶ The entire process of inundation of this enormous area took thousands of years, until the last remains of Doggerland disappeared under the waves around 6,000 BC.⁷

The end of the last glaciation also signalled the emergence of Europe’s modern forests. Recent surveys suggested that forest vegetation existed in Doggerland as long ago as the Allerød interstadial (10,400 BC), a warmer period during the final stages of the last glaciation.⁸ The forest vegetation was probably open woodland dominated by a mix of birch (*Betula*) and Scots pine (*Pinus sylvestris*). North of that limit extended tundra and periglacial forest steppe with dwarf birch (*Betula nana*) and other shrub vegetation.⁹ The development of European forests during the early Holocene is complex and far from linear, and was heavily influenced by climatic fluctuations. But once temperatures increased and ice age conditions disappeared, there were few restraints on the

rapid spread of tree species in Europe through the North Sea and Baltic regions between 9,500 and 7,000 BC, changing the distribution and structure of the European forests dramatically.¹⁰ After two millennia of climate and vegetation change the boreal forests were pushed into northern Scandinavia, mostly consisting of Scots pine, Norway spruce (*Picea abies*) and a few cold-tolerant broadleaf species. Tundra almost disappeared from the picture, and south of the boreal zone the dominant vegetation was mixed deciduous forest. The flooding of the North Sea basin, which was complete by about 6,000 BC, isolated Britain from mainland Europe, resulting in a few tree species not reaching Britain, most notably the Norway spruce. By 5,000 BC the forests around the North Sea basin had reached their maximum extent and the distribution had become similar to present-day forests.¹¹

The topography and climate of the North Sea and Baltic Sea basins are important to understanding the distribution of the different forest biomes in the region. Much of the region is low-lying land that allows free passage of westerly winds from the Atlantic Ocean. There are no major north–south-running mountain ranges in the North Sea basin; and the Scottish Highlands, the Pennines in England and the Scandinavian mountain range are not high enough to block the prevailing airflow. As a result, the climate in the entire North Sea basin is strongly influenced by Atlantic weather patterns. The relatively warm waters of the North Atlantic Drift moderate the climate of Western Europe, and as a result the winters are less cold than would otherwise be expected at this latitude. The proximity of the North Atlantic Drift and the prevailing westerly winds forces the temperature gradient to run approximately east to west. During the winter, temperatures in the coastal west are generally mild but there are progressively lower temperatures on the continent in the east. Summer temperatures follow a reverse pattern, with lower temperatures along the Atlantic coasts and higher temperatures in the east. The annual rainfall follows a similar pattern and is highest along the west coasts of Scandinavia and Britain, and declines towards the east.¹²

These characteristics of the climate in the North Sea and Baltic Sea regions are reflected in the distribution of forest biomes. We can distinguish five forest biomes in northern Europe: the Arctic and Alpine zones, the birch–pine woodland zone, the boreal forest zone, the mixed deciduous–conifer forest zone and the deciduous forests (Map 0.1). In the far north where the growing season is too short to support forests, there is a small band of tundra vegetation with dwarf birch, shrubs and



Map 0.1 Forest biomes of north-west Europe. Map by K. Jan Oosthoek modified from *Global Ecological Zones*, FAO, 2000.

grass. South of this and in the Scandinavian mountain chain, as well as in the Highlands of Scotland, the pine–birch woodlands are located. East of the Scandinavian mountain chain we find the boreal forests, which are part of the taiga belt, the largest uniform biome on earth, stretching across northern Eurasia. The cold winters and short growing seasons favour hardy evergreen conifers such as Scots pine and Norway spruce. Mixed forests of beech (*Fagus sylvatica*) and oak (*Quercus*), together with spruce and pine forests, are common in the transition zone of southern Sweden, eastern Denmark, on the coasts of the western Baltic region and throughout eastern and central Europe. The zone of summer-green temperate deciduous forests covers western Europe and parts of central Europe. Mixed oak and beech forests are prevalent at the lower altitudes of the Atlantic and sub-Atlantic British Isles.¹³

The distribution of forest biomes in Europe correlates with the length of the growing season and fertility of the land. The temperate deciduous

zone, which correlates with mild winters and long growing seasons, has largely been cleared of forest vegetation for agriculture to support large populations. In contrast, most of Scandinavia and the eastern parts of the Baltic region, with their shorter growing seasons and colder, more continental winters, are less productive and therefore support smaller populations. As a result, large areas of forest survived in Scandinavia and the Baltic region, while the lands in the southern part of the North Sea basin were mostly cleared of trees. Thus, the division of the greater North Sea region between wood producers and exporters in the north and wood consumers and importers in the south reflects the spatial distribution of temperature, precipitation and the different forest biomes.

Forest Histories, Forest Historiographies

As much as biogeographical environments shaped the forest histories of those northern European countries that feature in this volume, they were also formed by political, economic and cultural trends. Some decades ago the Polish scientist Ludvik Fleck argued that the process of finding scientific facts is embedded in social formations. Science is communicating with wider society on the one hand and within the narrower circle of expert scientists who tend to develop quite characteristic thought collectives and thought styles on the other.¹⁴ Fleck's view on science as a social event is certainly apt for forest history, which integrates approaches from the humanities, and the social and natural sciences.

Forest history, however, is not always a purely and ideal-typical interdisciplinary endeavour – blending the best of all worlds into a 'third/fourth culture'. For the sake of clarity one may distinguish three types, or styles, in forest history that often depend on the composition of the 'thought collective', to use Fleck's term, it is originating from. The oldest type is 'classical forest history'. This developed in the nineteenth century as an integral part of scientific forestry, and provided the latter with a sense of tradition as well as a powerful, popular argument at a time when historiography was still leading the field of political expertise (*Leitwissenschaft*). Classical forest history generally tended to follow the development of (scientific) forestry back through the centuries. It identified major thinkers, or practitioners, and their discoveries, the stepping stones and barriers in the institution building of the field, and concentrated in particular on periods and places of formation

and breakthrough, such as nineteenth century Germany. A frequent trope of this type of history is the argument that scientific forestry was the necessary outcome of over-exploitation, and that sustainability can only be secured by strong institutions and guided by the expertise of forest scientists.

Just like other histories of science, the turn towards the social in the 1970s and to epistemology in the 1990s in the manner of Michel Foucault, Bruno Latour,¹⁵ or Fleck for that matter, have brought forest history closer to a second type: social and cultural histories have tended to study forests as an arena of social conflict, of building the institutions of modern statehood, and most recently of an increasing rule of experts, of transnational exchange of biota, goods and knowledge.¹⁶ As a third type, environmental histories of the forest have emerged since the 1990s. Generally speaking, environmental histories tend to integrate forests into the larger frame of the natural environment rather than viewing forests as closed units of study. Some environmental histories of forests emphasize that social conflicts are often environmental ones, since they are concerned with the wise use and just distribution of natural resources.¹⁷ Following the lead of historical geography, others aim at reconstructing the historical changes in the landscape, such as forest cover, species composition and biological diversity.¹⁸ A bulk of these studies were inspired by social and biological ecology. Starting from the vantage point of the interdependencies of socio-natural ecosystems, these histories tend to underline the agency of nature – and its individual components – in their own right.¹⁹

The authors of this volume, who come from a range of disciplines, strived to include as many aspects of the aforementioned in the individual chapters as possible – not setting aside, however, their respective ‘thought styles’ and ‘thought collectives’ as social or environmental historians, historical geographers, ecologists and botanists. The diversity of the backgrounds and nationalities of the authors and their thought styles and perspectives has resulted in some variation of approaches to forest history. While historians stress the political and organizational aspects, ecologists and geographers include the changes to the composition of forests and to forest cover. Each chapter provides a brief explanation of the history of the territory it covers as well as the changing political framework, and gives a brief overview of forest history before the commencement of formal state forestry.

The geographical organization of each chapter centres on the present-day boundaries of the countries discussed. Since the boundaries

of many European countries have shifted over the past few centuries, some chapters discuss regions that are now outside the boundaries of the modern states. The most extreme example is the chapter on Poland, which covers the radically changing geographical territory of the Polish state, and includes the period between 1795 and 1918 when Poland was partitioned between Austria, Prussia/Germany and the Russian Empire. Other cases of changing national boundaries are Schleswig-Holstein,²⁰ which was part of Denmark until it 1865, when most of it became part of Prussia, and later Germany. Another instance is Belgium, which was part of the Kingdom of the Netherlands between 1815 and 1839, and prior to that was under Austrian Habsburg rule. Other modern nation states were part of larger empires far into the modern period. Germany as nation state did not exist until 1871, and with the exception of the Nazi period between 1933 and 1945 and in Communist East Germany between 1949 and 1990, forests were never subject to central administration. The authors of the respective chapters have accounted for historical changes in territory and their choice of the area of study. As a result of the territorial ‘overlapping’²¹ that is characteristic for European history, some historical developments affecting these regions are sometimes interpreted from different national perspectives in different chapters of this book.

All chapters give precedence to state-organized forestry as opposed to privately organized forestry. State forestry in this sense includes not only actual woodland managed and exploited by state agencies, but also legislative efforts (including those regulating non-state actors), public education initiatives (forest academies), the emergence of state-funded forest science, and the integration of forestry into the symbolic metabolism of many European nations during the nineteenth and twentieth centuries. However, private or non-governmental initiatives are discussed in individual chapters if they influenced state policies or were heavily influenced by them. This book corroborates the argument that the development of modern forestry was not only deeply entangled with state building in Europe, but was also incremental to this process. The chapters do not employ a detailed common time frame, which can partly be explained by the wide range of starting dates of the so-called forestry transition.

The forestry transition describes a reversal of forest cover decline in Europe in a sequence where forest cover first declines due to human impact, and reaches a low point before it increases following the introduction of modern forestry.²² At a certain level of

technological development – generally coinciding with industrialization and urbanization – most countries experience this forest transition. The forest transition occurred at different times in different countries, and often coincided with the emergence of state forestry policy and the creation of state forestry agencies. Countries like Denmark and the German states experienced an early forest transition, but in the Netherlands and Britain formal state forestry arrived late, which partly explains the late forestry transition.²³

After briefly laying out the uses of forests in pre- and early modern times, before formal state forestry developed, each chapter follows a chronological approach covering the nineteenth century up to the outbreak of the First World War in 1914, followed by the interwar period (1918–39). Most chapters include a section on the period of the Second World War (1939–45), but there are a few exceptions (UK is one), followed by the post-war period that is characterized by rebuilding forest resources and a focus on production. This period ends around 1970, and then we enter the final period, extending into the twenty-first century, which is characterized by a beginning transition from production forestry to multipurpose or even post-production forestry.

The book traces a pan-European development in forestry as an enlightenment project, both to gain control over land and people, and to harness resources. It examines the pan-European trail of forestry as an economic activity, a source of government revenue and an environmental management tool. The methodology of this hinged around the analysis of the administrative and institutional history of state forestry, and this played out differently in the different national environments, both natural as well as sociopolitical. Through a brief examination of education and training, each chapter also exposes intellectual and scientific networks that were European and sometimes transcontinental. It also highlights that the forest histories of each individual country cannot be understood without placing them in the wider European context.

Finally, we need to point out what is *not* in this book. This includes the Baltic states of Estonia, Latvia and Lithuania, because we were not able to identify suitable authors, but this gap could be filled in due course with a revised edition of the book. France has been left out because it straddles the boundary between northern and southern Europe and it does not fringe the North Sea basin. Of course we are aware of the important influence of France on the development of forestry in Europe, and important connections are pointed out in

some of the individual chapters. Russia has been left out because it is so large and diverse that it deserves a forest history all of its own, but individual chapters do discuss the cross-border influence of the Russian Empire and the Soviet Union respectively where possible. Furthermore, the impact of modern forestry on landscape, environment and ecosystems is not explicitly present in this book but is treated where needed in the context of the histories of state forestry. The same applies to the social and cultural history of European forests. Where needed the authors refer to the national symbolism of forests and their importance for recreation, and the conclusion takes up these aspects for comparison.²⁴

Our intention has been to bring together narratives and developments from a number of European countries to facilitate historical comparison and provide stepping stones for future transnational histories of forestry and the environment. At best this book creates inroads for cross-border discussions on the future of European forests on the basis of historical study that is sensitive to national, regional and trans-boundary traditions of human–nature relations.

Richard Hölzl is a researcher for the German Science Foundation at Georg August University Göttingen, Germany. His research interests include the history of forests, of the environment and of environmentalism in Central Europe, as well as the history of colonialism and Christian missions in East Africa. He has authored a book on the social impact of scientific forestry in Germany (*Umkämpfte Wälder*, Campus Verlag, 2010) and co-edited a collection on the global history of missions (*Mission Global*, Böhlau, 2013).

K. Jan Oosthoek is an environmental historian based in Brisbane, Australia. For many years he lectured and researched at the universities of Newcastle and Edinburgh, UK. He has published on a wide range of topics including forest history, the history of industrial water pollution and the history of the ozone problem. He is author of a book entitled *Conquering the Highlands: A History of the Afforestation of the Scottish Uplands* (Australian National University Press, 2013). He has also served as vice-president of the European Society for Environmental History (2005–2007) and is author of the leading environmental history website *Environmental History Resources* (www.eh-resources.org).

Notes

1. Examples of these studies include: G.A. Barton, *Empire Forestry and the Origins of Environmentalism* (Cambridge: Cambridge UP, 2002); S. Ravi Rajan, *Modernizing Nature: Forestry and Imperial Eco-Development 1800–1950* (Oxford: Oxford UP, 2006); P. Vandergeest and N.L. Peluso, 'Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 2', *Environment and History* 12 (2006), 359–93; P. Boomgaard, 'Forest Management and Exploitation in Colonial Java, 1677–1897', *Forest & Conservation History* 36(1) (1992), 4–14.
2. A recently published introduction by Kirby and Watkins provides a valuable starting point. See K.J. Kirby and C. Watkins (eds), *Europe's Changing Woods and Forests: From Wilderness to Managed Landscapes* (Wallingford, UK and Boston, MA: CABI, 2015), ch. 21. In-depth and comparative studies on European forestry institutions and policies, and their embeddedness in a diverse social, cultural and political context are still lacking.
3. Examples of national forest histories: J. Buis, *Holland Houtland: Een Geschiedenis van het Nederlandsbos* (Amsterdam: Prometheus, 1993); S. Nail, *Forest Policies and Social Change in England* (Dordrecht and London: Springer, 2008).
4. H. Brand and L. Müller, 'Introduction', in H. Brand and L. Müller (eds), *The Dynamics of Economic Culture in the North Sea and Baltic Region in the Late Middle Ages and Early Modern Period* (Hilversum: Uitgeverij Verloren, 2007), 7.
5. T. Wazny, 'Historical Timber Trade and its Implications on Dendrochronological Dating', *Lundqua Report* 34 (1992), 331–33; K. Haneca et al., 'Provenancing Baltic Timber from Art Historical Objects: Success and Limitations', *Journal of Archaeological Science* 32(2) (2005), 261–71; T. Wazny, 'The Origin, Assortments and Transport of Baltic Timber', in C. Van De Velde, H. Beeckman, J. van Acker and F. Verhaeghe (eds), *Constructing Wooden Images* (Brussels: VUB, 2005), 115–26.
6. V.L. Gaffney, S. Fitch and D.N. Smith, *Europe's Lost World: The Rediscovery of Doggerland* (York: Council for British Archaeology, 2009) (CBA Research Report 160).
7. Throughout this section we use the Before Christ (BC) dating convention used by many historians. This does not refer to radiocarbon years but to calibrated calendar years.
8. B.J. Coles, 'Doggerland: The Cultural Dynamics of a Shifting Coastline', *Geological Society, London, Special Publications* 175 (2000), 395.
9. D. Anderson, A. Goudie and A. Parker, *Global Environments through the Quaternary: Exploring Environmental Change* (Oxford: Oxford UP, 2013), 163–64.
10. N. Roberts, *The Holocene: An Environmental History* (Oxford: Blackwell Publishers, 1998), 99–100.

11. Roberts, *The Holocene*, 100; H.E. Wright et al., *Global Climates since the Last Glacial Maximum* (Minneapolis, MI: University of Minnesota Press, 1993), 139–40.
12. Wright et al., *Global Climates*, 137–39.
13. F.J. Schmithüsen, 'European Forests: Heritage of the Past and Options for the Future', in V.A. Sample and S. Anderson (eds), *Common Goals for Sustainable Forest Management: Divergence and Reconvergence of American and European Forestry* (Durham, NC: Forest History Society, 2008), 3–4; Wright et al., *Global Climates*, 140.
14. L. Fleck, *The Genesis and Development of a Scientific Fact* (Chicago, IL: Chicago UP, [1935] 1979).
15. M. Foucault, *The Archaeology of Knowledge* (new edn) (London: Routledge, 2002); B. Latour, *Pandora's Hope: Essays on the Realities of Science Studies* (Cambridge: Harvard UP, 1999).
16. J. Oosthoek, 'Worlds Apart? The Scottish Forestry Tradition and the Development of Forestry in India', *Journal of Irish and Scottish Studies* 3(1) (2010), 69–82; A. Corvol, *Les arbres voyageurs* (Paris: Julliard, 2005); R. Hölzl, 'Der "deutsche Wald" als Produkt eines transnationalen Wissenstransfers? Forstreform in Deutschland im 18. und 19. Jahrhundert', in R. Dauser and L. Schilling (eds), *Grenzen und Kontaktzonen: Rekonfigurationen von Wissensräumen zwischen Frankreich und den deutschen Ländern 1700–1850* (URL: http://www.perspectivia.net/content/publikationen/discussions/7-2012/hoelzl_wald, last accessed 2 September 2017); Ravi Rajan, *Modernizing Nature*.
17. See M. González de Molina, A. Herrera, A. Ortega Santos and D. Soto, 'Peasant Protest as Environmental Protest: Some Cases from the Eighteenth to the Twentieth Century', *Global Environment* 4 (2009), 48–77.
18. See M. Bürgi and U. Gimmi, 'Three Objectives of Historical Ecology: The Case of Litter Collecting in Central European Forests', *Landscape Ecology* 22, suppl. 1 (2007), 77–87; M. Bürgi, U. Gimmi and M. Stuber, 'Assessing Traditional Knowledge on Forest Uses to Understand Forest Ecosystem Dynamics', *Forest Ecology and Management* 289 (2013), 115–22.
19. F. Krausmann, M. Fischer-Kowalski and H. Schandl, 'Out of the Frying Pan into the Fire: Industrialization as a Socio-ecological Transition Process', in J.R. McNeill, J.A. Padua and M. Rangarajan (eds), *Environmental History: As if Nature Existed* (Oxford and Delhi: Oxford UP, 2010), 26–47.
20. In 1920 Schleswig was partitioned after a referendum, with the northern part ending up in Denmark and the southern and central part remaining part of Germany.
21. T. Frank and F. Hadler (eds), *Disputed Territories and Shared Pasts: Overlapping National Histories in Modern Europe* (New York: Palgrave Macmillan, 2011).
22. A.S. Mather, 'The Forest Transition', *Area* 24(4) (1992), 367–79.
23. See Oosthoek on Britain and the Netherlands in this volume (chapters 2 and 4).

24. Others, such as Oliver Rackham and Charles Watkins, have explored these aspects in more depth, although these studies concentrate mostly on Britain and the Mediterranean. See O. Rackham, *The History of the Countryside: The Classic History of Britain's Landscape, Flora and Fauna* (London: Phoenix Press, 2000); C. Watkins, *Trees, Woods and Forests: A Social and Cultural History* (Chicago, IL: University of Chicago Press, 2014).

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