Introduction

In July 1800 John Leyden (1775 - 1811), the well known Scottish linguist and poet, travelled trough Glen Croe in present day Argyll Forest Park, next to Loch Long, in the west of Scotland. In his travel journal he described the glen as ‘the most desolate place under heaven’, and he added: ‘[i]t is completely covered with stones of different descriptions, which leave no room for vegetation’.1

Figure 1: Glen Croe with forest plantations ca. 2005.

Source: Gerald England, www.geraldengland.co.uk with permission.

The attitude of John Leyden was typical throughout the 19th century: the uplands of Scotland were regarded as unproductive, apart from sheep grazing, and certainly not suitable for any serious forestry. In the intervening two centuries Glen Croe has become less desolate and devoid of vegetation and today large blocks of conifer plantations grow in the glen. This indicates an historical shift in attitudes towards the Scottish uplands as well as some technical and scientific developments that made afforestation of the Scottish uplands possible. By the early 20th century, the perception of forestry in the Highlands moved

---

in a direction in which forests, and the land on which these were planted, were perceived as spaces of production, through the introduction of conifers and the practice of ‘scientific forestry’. By the second half of the 20th century, the Highlands of Scotland had become an ecotechnical environment, with the main aim to produce timber as efficiently as possible. Production forestry created a hybrid or composite landscape that at the same time is natural and man made.²

By the late 20th century the ‘machine model’ of forestry in Scotland was very much under pressure as a result of conflicts between forestry interests and conservationists. Consequently the remit of the Forestry Commission widened to formally include socio-cultural as well as environmental values, shifting Scottish forestry away from a machine model towards an organic model.³ This transformation has drawn the attention of environmental historians and geographers and has led to a plethora of studies in the social cultural relations of wider society in relation to the work of the Forestry Commission and its past focussing on politics, aesthetics, cultural meaning, recreation and economic value.⁴ However, more often than not it has been forgotten that forestry is not just a human story made out of the issues mentioned above, but also includes the environmental and ecological context in which forest policy and practice develops.

Similarly, foresters are often made out as technocrats who implemented forestry policy without much consideration for landscape and environment. It is often believed that during the 20th century foresters could not see the wood for the trees and regarded such values as nature conservation and landscape aesthetics or anything else that could undermine the smooth management of forest plantations as a threat to the efficient production of timber. Morton Boyd (1925 - 1998), a conservationist and former Scottish Director of the Nature Conservancy, expressed this perception about foresters eloquently:

...there is often an unwillingness [amongst foresters] to express [environmental values], since to do so, may smack of unprofessional practice or may put at risk the orthodoxy of tidy, economic forestry, trained into the forester from youth and consolidated by years of standard practice.⁵

---

In reality the outlook of foresters from the early days of the Forestry Commission was much more nuanced than is suggested by Boyd. Many of them were interested in wildlife, landscape aesthetics and the natural functions of forests and many disliked the conifer monocultures they created. There was a realisation that the harsh environmental conditions of the Scottish Highlands made it difficult to initially do anything else than planting dense conifer forests and that this would be a necessary evil that was needed to create for a more diverse forest ecosystem some time in the future. These convictions and attitudes amongst many foresters within the Forestry Commission would prove vital in shifting from a machine model to an organic model of forestry in Scotland.

**Purpose and focus of the book**

The purpose of this book is to place 20th century Scottish forestry in its wider physical, ecological and historical context. British forestry history has in recent decades been dominated by the writings of Oliver Rackham in England and the work of Christopher Smout in Scotland. Both authors have taken the long view and consequently twentieth-century forestry is often an afterthought. This book turns this view upside down and provides in the first two chapters an overview of the long history of the Scottish woodlands by summarising the work of these authors and others to provide a background for developments of the 20th century. The history of the native woodlands since the end of the last ice age is covered in more detail in: T.C. Smout, Alan R. MacDonald and Fiona Watson, *A History of the Native Woodlands of Scotland, 1500-1920*. This book does not place the 19th century developments in the wider context of the British Empire and, as the title suggests, focuses on the native woodlands and not the introduced species.

The 20th century work of the Forestry Commission has been the subject of other studies, in particular the work by David Foot and George Ryle, which focus mainly on the institutional and social history of forestry. This book covers some of the same ground but from a different perspective. It tells the story of how 20th century foresters devised ways to plant the poor Scottish uplands, land that was regarded as unplantable, and to fulfil the mandate they had received from the Government and wider society to create a timber reserve, provide jobs in the highlands and to make marginal (waste) land productive. In addition

---


the book will raise the question whether the adopted forestry practice was the only practical means to create forests in the Scottish Highlands by considering the discussions within the forestry community about the appearance of the forests and their long-term ecological prospects. Finally, the book will argue that the long held ecological convictions among foresters and modern ideas of environmentalists came together in the last decades of the 20th century in parallel with the still existing forces that called for an expansion of commercial forestry in Scotland.

Although the Forestry Commission is a United Kingdom wide body, the focus of this book is the work of Commission in Scotland. This geographically restrictive approach makes sense since more than half of all planting activity in the United Kingdom during the 20th century has taken place in the Scottish Highlands. From the inception of the Forestry Commission in 1919 it was believed that forestry would bring social benefits and be an engine of socio-economic development in rural upland areas: “The districts which would benefit most are those which are now poorest and most backward, such as the hilly regions of northern England, Wales and Ireland, the Border Country and, most of all, the Highlands of Scotland”. Furthermore, as the Forestry Commission began to acquire land, it could only afford to purchase cheap, marginal, upland areas that were dedicated mainly to grazing. In order to reduce the costs of forestry, the Commission also had to carry out land acquisition at a large-scale to reduce unit costs, and the only place where inexpensive large units of land was available was in the uplands. Because Scotland had the greatest extent of such marginal but plantable land available, 34 per cent of the land area of the United Kingdom (Table 1), it became the obvious focus of the afforestation effort. This raised many technical difficulties because there was not much experience in the early 1920s with cultivating these lands for forestry on a large scale. As a result the Forestry Commission were concerned with problems arising from large-scale afforestation of upland peat and heath land during the inter-war period. As a secondary consequence the Forestry Commission focused much of its early planting activities on the more fertile and easily accessible lands available in England and Wales and to a lesser extent in Scotland.

<table>
<thead>
<tr>
<th>Percentage of plantable upland areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
</tr>
<tr>
<td>Scotland</td>
</tr>
<tr>
<td>Wales</td>
</tr>
</tbody>
</table>

Table 1: Plantable areas in the UK’s uplands.

Source: Tsouvalis.

9 Judith, Tsouvalis, A Critical Geography, pp. 70-91.
During the interwar period rates of land acquisition and afforestation in England and Wales was higher than in Scotland, peaking in the early 1950s, but soon began to decline (Figure 2). By that time the Commission was running out of land for acquisition in England and Wales because of its diminishing availability. In the meantime the forestry Commission had developed and perfected techniques for mass cultivation of upland areas for forestry, which opened up the large land reserves for afforestation in Scotland. The result was that by the late 1970s afforestation and acquisition rates in England and Wales had plunged to less than 2000 hectares per year while from the 1960s through to the 1990s the overwhelming majority of the afforestation being done in Britain was taking place in Scotland.

![Figure 2: Acquisition of plantable land by the Forestry Commission in Scotland, England and Wales, 1920–1980.]

Source: Forestry Commission Annual Reports.

Additional reasons for the focus on the Forestry Commission is the fact that it is the single largest landowner in Scotland and it acts as the Forest Authority, giving out advise and subsidies to private land owners by which it can influence the forestry industry. In many respects, the Forestry Commission is the spider in the web of the forestry industry, and defines its direction and development.  

And because of the fact that the Forestry Commission is the largest landowner in the scenic parts of Scotland and in ecological sensitive areas it is also a major

---

player in the nature conservation scene in Scotland. Furthermore, Scotland is both in terms of environment and landscape, as well as culturally, quite distinct from England and Wales. For this reason the wider UK aspects are discussed in this book where appropriate.\textsuperscript{12}

This also applies to the international context of Scottish forestry and developments in the global forestry community and issues such as climate change will be discussed whenever relevant. In addition, Scottish foresters were part of and heavily influenced by the informal international network of foresters and the flow of forestry ideas within this network, that has existed since at least the early 19th century. Although some aspects of these forestry networks have been explored in the past they are far from all-encompassing and there are many overlapping stories that are not being told in these histories.\textsuperscript{13} In order to tell these cross-border stories, it is necessary to produce national forest history that provides both hooks to wider international histories by embedding them in an international historical context and at the same time stress the unique properties of national forestry practice, policy and environmental conditions.

This is also important in order to produce internationally comparative histories based on common themes. In the case of the Scottish uplands such an overarching theme is the attempt to plant trees in locations not immediately conducive to afforestation, which could form the basis for comparative studies with locations around the globe where forestry has been developed in places hostile to tree growth. Examples of such studies are the work of David Moon on forestry on the Russian steppes and by Vimbai Kwasirai on afforestation attempts in the arid region of Matabeleland in Zimbabwe.\textsuperscript{14} These studies could pave the way for international histories analyzing and comparing the reasons why, in quite different societies and in different social, economic, political and environmental contexts, people have tried to plant trees in locations that were not obviously conducive to afforestation. In addition such studies could analyse and compare the methods and tree species that were used, why these methods and species were adopted, and the success or otherwise of the attempts.

\textsuperscript{12} For the historical background of the Forestry Commission in England and in a UK-wide context see the following two publications: Sylvie Nail, \textit{Forest Policies and Social Change in England} (Dordrecht: Springer Science, 2008); E.G. Richards, \textit{British Forestry in the 20th Century: Policy and Achievements} (Leiden: Brill, 2003).


Another area of comparison study is in the context of the British Empire, which the second chapter of this book provides in relation to British India. However, the context in which the Forestry Commission came into being is not unique and the experiences leading up to its creation were also felt in other parts of the Empire. From an early date, afforestation with exotic species was a distinctive response to forest scarcity not only in Scotland and the United Kingdom as a whole but also in New Zealand and Australia. In all three countries afforestation became a major preoccupation after the trade dislocation of the First World War and reinforced the need for timber self-sufficiency. The transformation of unproductive landscapes into plantations of fast-growing exotic softwood trees was largely the domain of the newly created State forest services created in response of the First World War. So far no comparative studies exploring these similar developments and the dynamics within the forestry networks between the above-mentioned parts of the world have been attempted and this book could provide one of the building blocks for such a project.

**Book structure**

The structure of the book is largely chronological and focussed on the 20th century but the first two chapters deal with the long history of the Scottish forests preceding the implementation of forestry policy in Britain. Modern forests are the product of a very long history that, in the case of Northern Europe, stretches all the way back to the last ice age. In order to understand 20th century anxieties about low forest cover we must understand the natural and cultural dynamics that have led to such a situation and the response to any ecological changes that are caused by them. The chapter sets out with a description of the main physical factors that affects the extent and limits of tree growth in Scotland such as aspect and altitude, climate, and in particular wind exposure, as well as soil quality and the water balance. These environmental factors are important in understanding the difficulties that foresters faced in the 20th century when they had to afforest large upland areas that had not see a forest cover for at least hundreds of years. After a description of the physical environment, the chapter continues with a resume of the trends and events during the Holocene, until the 19th century. It discusses the development of the natural forests, the mix of native species and maximum extent and how over time it was decimated by a combination of human action and climate fluctuations. It will be pointed out that by the early modern period the forest cover of Scotland had stabilised at a very low level but was at the same time sustainably exploited by local users as well as the charcoal and tanning industries.

The second chapter argues that two developments came together during the 19th century that led to increasingly vocal calls from landowners and foresters for the creation of national forestry policy in Scotland. The first development was the introduction of non-native conifers in Scotland and the planting experiments carried out by landowners all around Scotland. These experiments created a body of knowledge that formed the basis for the success of forestry plantations in the 20th century.

The second development was the influence on forestry in Scotland of empire forestry, and in particular the creation of an Indian forestry service. Scottish-trained foresters aided the adaptation of continental forestry models, mainly German and French, to the Indian conditions, drawing on their experience which they had gained in Scotland. Returning from their service in India they went on to advocate the creation of a forestry service in Scotland, which resonated with landowners who believed that forestry would make the Highlands more productive. The chapter ends with a discussion of a series of committees that advised the creation of a formal forestry policy and that laid down the main features on which Britain’s forest policy would be based for most of the 20th century.

Chapter three is an overview of the development of forest policy in the interwar period, including the creation and role of the Forestry Commission, its influence on the shift in the composition and location of the Scottish plantations, the emergence of the widespread (and decried) Sitka spruce plantations, and the developments in ground preparation and forest management that accompanied these trends. The main argument of the chapter is that foresters were left with land that was hardly useful for large-scale forestry and how they devised methods to plant these areas successfully on a large scale.

Chapters five and six are an account of the post-war forest policy and the forces and considerations that shaped it, and how it adapted in the face of changing public attitudes, global strategic considerations, and UK micro- and macro-economic policy. It documents the shift toward multiple-use amenity forestry and open forests, as well as rising concern for wildlife and environmental considerations and the resulting internal conflicts. It shows the links between these developments and the development of large-scale afforestation in Scotland, with its contingent effects on the landscape, and on flora and fauna.

Chapter seven examines the interaction between culture and forestry with relation to Scotland. It addresses 19th and 20th century resistance to afforestation, its origins in the English Lake District, the clash between Wordsworthian romantic perceptions of nature and Scott’s more utilitarian representation of a ‘lived’ landscape, in which afforestation is an improvement, albeit with native Scots pine. Scott foreshadows landscape forestry, while paradoxically influencing
public attitudes sympathetic towards plantations. These attitudes meant that public resistance in Scotland was delayed and emerged only in the second half of the 20th century. The second half of the chapter addresses the feedbacks between public access to the forest estate, forestry policy, the involvement with the national parks movement, and the creation of a valuable public amenity asset in the setting aside of National Forest Parks. Finally the chapter discusses the formation of the Scottish conservation bodies in the interwar period, how these governed the direction of landscape forestry, and how their influence was moderated, or diluted, by the cross-over membership of elite groups, who had one foot in forestry, and another in conservation.

Chapter eight continues the story of the relationship between forestry, conservation bodies and the general public after the Second World War. It examines the institution of the Scottish Committee of the UK Nature Conservancy, and how the elites that served on it began to adopt policy positions in tension with the Forestry Commission, leading to a moderation of the Commission’s planting programme in Scotland in the face of muted public concerns. But democratisation of conservation bodies as well as increased mobility from the 1970s onward accelerated the development of landscape forestry.

Chapter nine takes a step back in time and returns to the 1920s from where it sets out the evolution of ‘ecological forestry’ and amenity forestry in Scotland. It highlights the fact that many foresters and botanists disliked the geometric monoculture plantations from the early days of the forestry commission. The first part of the chapter focuses on the influential Scottish forester Mark Anderson and his ideas for a more natural treatment of the forests and a policy of sustainable forestry, as opposed to treating the forest as a crop. The second half of the chapter includes case studies that illustrate the uptake of these attitudes amongst Forestry Commission staff, and serves as a valuable history of such policy evolution driven by ‘foresters on the ground’ rather than from the top. It also highlights the discussion between proponents of ecological forestry and the more economical oriented foresters that accompanied it.

Chapter ten is a case history of the late 20th century evolution of forest policy toward formal sustainable forest management. It addresses multiple strands of policy development in the United Kingdom and Scotland and policy responses to domestic demands as well as international agreements, beginning with the United Nations Conference on Environment and Development (UNCED) Statement of Forest Principles. This agreement culminated in the UK Sustainable Forestry Programme and its expression in such instruments as the Forests and People in Rural Areas (FAPIRA) initiative, and the accompanying devolution to local community forestry, and the protection of native woodlands. This chapter also reveals the perverse consequences of policy instruments such as the system of tax concessions and grants of the 1980s, and how these outlived their
relevance through opposition from conservationists in Scotland, and how it shocked forest policy to effect the shift to the broadleaf and sustainable forestry policies of the 1990s.

The final chapter is a brief contemporary history of the outcomes of 20th century forestry policy in Scotland interpretable against the background of the previous chapters. It accounts of the recent transfer of control of the publicly owned forests of Scotland to the Scottish Executive, and the subsequent evolution of a Scottish Forestry strategy. This involved the shift towards a broader, more inclusive multi-purpose forestry on the one hand and sustainable conservation on the other, dramatically reshaping Scottish forestry. Forestry in the 21st century is linked to the environment, preservation of biodiversity and above all climate change. The chapter illuminates that these developments depended on a younger generation of more conservation-minded foresters who had been educated during the 1980s and 1990s and who stood on the shoulders of previous generations of foresters who had advocated ‘forestry on natural lines’.