

# Building Resilience and Sustainability in Lowland Scottish ‘Treescape’ Management Regimes: ‘Voices of the Future’/Re-imagining the Commons

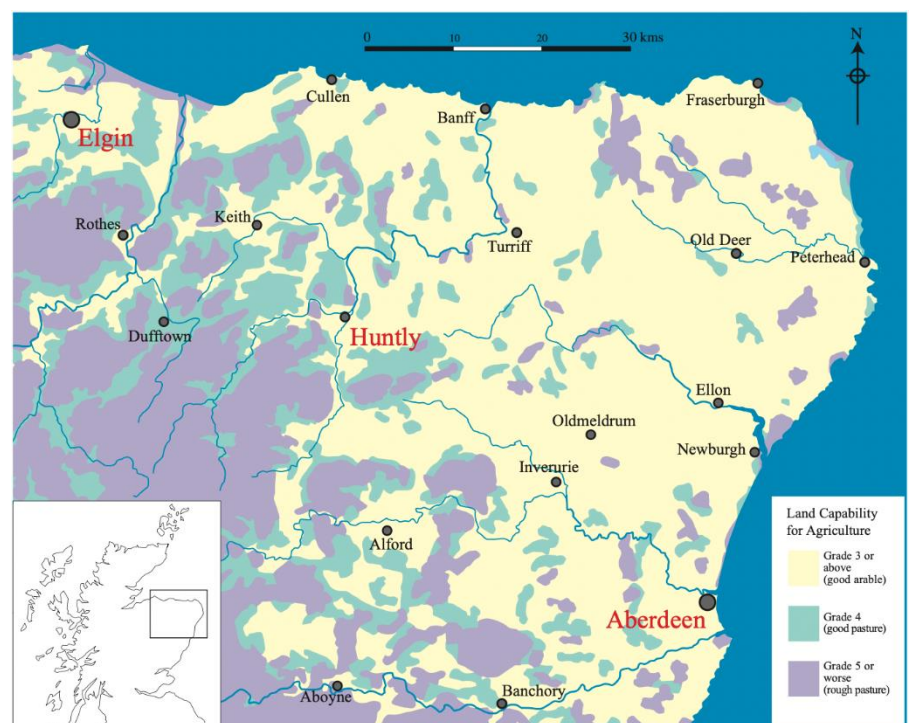
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**Key Theme:** Theme 1 | Culture – the missing link  
Theme 2 | Climate change as a risk driver for culture and people

## Summary

Historic landscape study in the north of Scotland suggests a sustainable agricultural regime, extant over many centuries, was replaced with an unsustainable structure during the eighteenth century. Increasingly intensive landscape management approaches have reduced the rural population to a point where sustainable and resilient modes of forestry production are untenable. Without an increase in rural labour, healthy, resilient ‘treescapes’ appear to be unachievable, rendering attempts to utilise that approach to biodiverse carbon sequestration impossible.



(Photo 1) Location map showing present simplified land capability for agriculture indicating extensive land carrying capacity for native tree species.

## Geographical Context

The northeast of Scotland consists of upland and lowland areas with a range of ecological zones appropriate to the growth of a wide range of tree species. Opportunities exist for small social enterprises engaged in low-intensity agro-forestry and horticultural enterprises to sustainably manage biodiverse sustainable woodlands and maximise Scotland’s carbon sequestration aims. Presently, single species, non-native, intensively managed woodlands predominate, limiting rural employment opportunities. The growth of local ‘amenity’ and ‘recreational’ woodlands exacerbates the problem by increasing housing costs in those areas and further limiting the potential for small, low-paid agro-forest and horticultural businesses to be developed by local populations.



(Photo 2) Multi-aged, multi-species, ‘hand’-managed native woodland harvested for a wide range of products and helping to conserve historic settlement remains. Photographed after recent storm, 12 December 2021, Source: Colin Shepherd

## Description

Present forestry management practices in Scotland utilise intensive approaches to manage same-age, single-species, non-native trees. Recent work demonstrates that this approach is unsustainable owing to the ever-increasing ill health of the resource caused by those strategies. At present, large swathes of forest are becoming disease-ridden and less able to harness greenhouse gases (GHGs) successfully. Globally, increased community co-operation is seen as a panacea for the better management of woodland resources. This model would be appropriate in Scotland but for the historic pattern of land ownership, rooted in enclosure and exclusion, that militates against such change, coupled with a mindset that can only envisage large-scale, intensive enterprises. Increased support for small- and medium-sized forest (and horticultural) enterprises (SMFEs) would solve the problem of the under-management of woodlands that leads to its unsustainability and lack of biodiversity. The present 'Voices of the Future' project (UKRI/NERC, Ref: NE/V021370/1) hopes to enlist the help of local youngsters in re-imagining and planning the creation of such SMFEs. Recourse to the historic record of community use of 'treescapes' and associated hedgerows will advise the development of these plans, though it must be stressed that this three-year project is still in its early stages of data gathering and network building.

Landownership in Scotland is polarised in few hands, with 608 owners controlling half of the country. The Land Reform (Scotland) Act 2003 paved the way for the community purchase of land and the National Forest Land Scheme (2005) gives communities rights to buy or lease government land for the public good. However, although the door is now open to community management of land in Scotland, little support or vision is available to encourage entrepreneurial activity within those communities to develop imaginative agro-forest/horticultural enterprises that are ecologically and economically sustainable. It is hoped that, by working with youngsters of school-leaving and college age, the present agro-forest mindset of intensive, unsustainable management regimes can be mitigated by new approaches mindful of and incorporating traditional, pre-industrial local land management techniques and skills. While commonly-perceived as fundamentally 'rural' in character, sustainably productive 'treescapes' can take many forms, including hedgerows and woodlands within semi-urban and urban environments, such as Aberdeen City.

The two photos show adjacent woodland areas after recent storms – the pictures being taken within five minutes of each other. One is a mixed-age, multi-species native broadleaf wood; the other is a single-age, single-species, under-managed non-native sitka woodland. The former has been planted over the last 30 years while the latter was planted in one go, just over 30 years ago. The native woodland is regularly pollarded and the wood used for wood-turning, 'rustic' fencing, garden stakes and poles, firewood and mulching. Some standards are interspersed to provide larger timber if required. Pollarding is chosen over coppicing in order to protect the new growth from browsing animals. All of the wood is used and the area kept tidy to prevent nitrogen build-up and risk of disease. The intensive non-native woodland is machine-harvested for the trunks, with the branches left to decay, resulting in nitrogen build-up, suppression of important mycorrhizal fungi, and risk of pathogens. The pollarded woodland is planted amongst the remains of a pre-'improvement' deserted hamlet and helps with its preservation. Heavy machinery in intensively managed woodland cannot avoid destroying delicate heritage features such as these.

Many small, local enterprises across Britain are already attempting to utilise woodland for social benefits, including carbon sequestration, increasing local biodiversity, health, enskillment and education. Although community woodlands can be exemplified widely from around Scotland, most of these are reliant upon grant aid, volunteers and donations. However, in 2010 Hill Holt social enterprise made a surplus of around £31,500 per hectare on land that had made a loss under England's Forestry Commission management. Evidence, therefore, exists that small- and medium-sized enterprises can succeed where large, intensive industries cannot. Furthermore, the outcomes of carefully managed, multi-aged, multi-species native woodlands massively outcompete intensively managed, non-native, single-aged, single species woodlands with respect to health, harnessing greenhouse gas emissions (GHGs) and increasing local biodiversity. From Forestry and Land Scotland's own figures, broadleaved woodlands in England sequester more CO<sub>2</sub> equivalent per hectare than Scottish non-native conifer woodlands. A lack of 'joined-up government', institutional lethargy and protectionism have all been suggested to be adversely affecting the generation of SMFEs rather than, as is the government's stated desire, to advance such development. A lack of appropriate governance has also been suggested as a possible barrier to extending some of the successful 'west coast' community land accessions to other parts of Scotland. This stasis is further strengthened by a lack of public awareness concerning the ecological possibilities that do exist locally for the engendering of such agro-forest and horticultural enterprises. This is coupled with a history of land management in which, for the last 200 years, intensive production has been privileged over small-scale enterprises. 'Voices of the Future', undertaken through the University of Aberdeen, hopes to enlighten a younger generation to the possibilities that exist for such business opportunities in the northeast of Scotland, given an increase in governmental will and support. The first stage is to provide historic and contemporary evidence for a wide range of possibilities available in the broader agro-forestry/horticultural environments that can be used to improve biodiversity and harness GHGs in a healthy, sustainable 'treescape', producing a wide range of public benefits and protecting the built heritage by extensive rather than intensive practices.



*(Photo 3) Single-species, single-aged non-native under-managed conifer woodland showing resultant wind-blow after recent storm. This woodland borders that shown in Photo 1, 12 December 2021, Source: Colin Shepherd*

## Key Outcomes

This brief study hopes to help raise awareness that ecologically-critical issues caused by unsound agroforestry methods are a serious problem, even in a relatively rich country like Scotland, close to the so-called 'energy capital of Europe', Aberdeen. The Scottish government rightly prides itself on its inclusive and green policies, yet historically informed ideologies of modes of production result in a stasis militating against the development of ecologically and socially beneficial agroforest and horticultural enterprises. The 'Voices for the Future' research project hopes to promote a new way of imagining a resilient and varied multi-use 'treescape' across the region among a new generation of community members. Such 'treescapes' may take many forms within urban as well as rural environments and can help to reforge cultural linkages between these increasingly estranged communities.

