SCOTTISH WOODLAND HISTORY CONFERENCE

NOTES XXIV

One hundred years of state forestry in Scotland

TWENTY FOURTH MEETING

THURSDAY 24TH OCTOBER 2019

SCOTTISH NATURAL HERITAGE CENTRE
BATTLEBY, PERTH

A C K N O W L E D G E M E N T S

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Scottish Forestry
Coilltearachd na h-Alba

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In 2019, the NWDG Scottish Woodland History Conference (*formerly the Scottish Woodland History Discussion Group Conference*) was organised by Mairi Stewart and Noel Fojut with the administrative support of Alison Averis. We are grateful to all those who helped to make the conference a success including our sponsors, chairpersons, speakers, helpers and delegates.

Front cover: (L) Pitmiddle sawmill, Abernyte, 1915 (©Forestry Memories); (R) Harvester at work, Balmacara, 2007 (©M Stewart)

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The twenty fourth annual meeting of the NWDG Scottish Woodland History Conference was held at Battleby on Wednesday 24th October 2019. The following papers were presented

CONFERENCE SUMMARY

Keith Kirby

From its formation in 1919 the Forestry Commission contributed to the transformation of many landscapes through its own plantings and its encouragement and regulation of the private forestry sector. In 1900 GB woodland cover was about 5% with a high concentration in south-east England. Broadleaved trees predominated. By 2019 the balance had shifted to conifers, mainly in the north and west, particularly in Scotland. It was therefore highly appropriate that the Scottish Woodland History Conference chose to review the Forestry Commission's achievements and shortfalls at this time.

Syd House opened the proceedings by pointing out that the Forestry Commission has always been something of a strange beast. Formed in response to war-time timber shortages in 1919 it long retained a quasi-military hierarchy in its structure. It was a Civil Service Department that also became one of the country's biggest landowners with all the practical responsibilities that go with such an estate. It was nearly 'killed-off' several times by government cuts and policy swings but somehow managed to survive these. Eventually though, devolution meant that a GB-wide forestry department could no longer be justified.

James Ogilvie took up the story from the rivalry between Lords Clinton and Lovat as to who could plant the first tree for the Commission (for a few months actually a UK body), through its early expansion, providing alternative rural employment and making considerable progressive towards its strategic timber reserve objective. However, most of the new forests were still too young to be useful when the Second World War came and afterwards the strategic reserve idea faded. The economic and, to a lesser degree, social and environmental roles of forestry continued to provide a justification for further expansion (despite misgivings in the 1972 Treasure Review and increasingly from the conservation sector). From the 1980s onward changes of policy, grants, strategies and reorganisations came at an increasing rate not just to the Commission, but to other bodies as well. Threats to sell-off large areas came and went. In Wales the Commission was merged with Countryside Council for Wales and Environment Agency (Wales); in Scotland it has become two agencies of the Scottish Government; for now, England retains a separate forestry body. However, who knows where the next decade will take us?

Jim Millar took us back to the Commission's early days, pointing out that much of the early success depended on a close network of people, mainly from land-owning families who used their experiences of estate forestry to shape the new organisation. The bringing over of foresters from Canada and Newfoundland (the 'sawdust fusiliers') introduced new ways of working. The limitations were not (as is usually seen now) acquiring the land, but in other aspects such as getting enough nursery stock of the right species for the plantings. Though there was often a vision of developing mixed farming and forestry landscapes, concerns over the impact on farming patterns were common as they still can be today.

Charles Warren risked deep waters (or rather deep peat) by reminding us of the Flow Country controversies of the late 1970s and 1980s – there were those in the audience who still bore the scars! New techniques made areas of Caithness and Sutherland potentially plantable; forestry's final frontier. Large new plantations started to be created, but with them came increasing opposition because of the impacts on the environment, although some forestry voices also questioned the viability of these schemes. There was a highly publicised media campaign which focussed amongst other things on the way that some high-earning celebrities were able to use tax off-sets to fund their plantings. In the end the 1988 Budget changed this pattern of incentives and effectively put a brake on new large-scale schemes. Forestry's image suffered but so did that of the conservation agency – the Nature Conservancy Council was split up shortly thereafter. Proposals to create new forests as part of climate change mitigation measures are still viewed with suspicion in some conservation quarters, as an attempt by foresters to go back to mass afforestation with Sitka. All sides need to avoid future debates becoming so polarised.

Neil MacKenzie shifted the focus to native woods and the pressures that they have faced over the last century using results from various types of surveys. In general, there has been a decline in their economic value.

Their structure has been affected by fires, overgrazing and browsing by sheep and deer, and invasion by rhododendron. There have however been some notable improvements including large-scale landscape restoration projects such as that at Creag Meagaidh and the conifer removal from former oakwoods as at Dalavich. Reducing herbivore impact was however still the biggest single issue that needs addressing.

From the outset the Forestry Commission recognised the need for research because of the nature of the forestry challenges under GB conditions. Andy Neustein explained the early emphasis on finding what would grow (or could be made to grow) where, but then particular problems of keeping the stems upright in our windy climate. Often there was a lot of knowledge among the people on the ground of what would work that was not recognised higher up the chain.

Mairi Stewart brought to life some of this local knowledge from interviews with people at Glenmore Forest who reflected on its changing fortunes: sporting estate, military training ground in the war, forest park, Caledonian Forest reserve. Trappers were once paid for the wildlife they shot (including capercaillie). Recreation in many areas has gone from being for the exclusive few to be a major activity in forests across Scotland. Forest history is people history. Norman Davidson described the *Forestry Memories* project and stressed that they were still collecting images.

Gordon Gray Stephens rounded off the day, by emphasising that forestry has changed not only the landscape, but the way that land is used both inside and outside the forest. Looking forward we need to encourage diversity in scale, patterns and forest ownership. We should be looking to grow higher value crops, but there may be places where 'fibre factories' may be appropriate. The new forestry organisations need to move from a 'centralised, remote-seeming organisation' to a 'locally responsive' body.

In the final discussion it was agreed we should aim for a more complex set of forestry systems. The private sector is likely to have to take the lead because government agencies are increasingly limited by resources. And as might be expected at a history conference, there was a plea to keep old records and learn from the past!

One Hundred Years of State Forestry in Scotland: Opening Remarks

Syd House

What an honour and privilege to stand before you prior to our day's conference and introduce what is coming. Our grateful thanks to the Native Woodlands Discussion Group for facilitating today's conference. Despite the centenary year, foresters appear to have reinforced the old stereotype of being too quiet about telling others about their business. We should not be so silent.

Like many 'weel-kent' faces here today, I was the future of the FC once. In fact, I spent almost all of my professional working life with the Commission and was proud to do so; just like many of those here today. Now that the FC is no more (though the spirit clearly lives on in the new successor bodies) I am starting to find myself, along with former colleagues, as one of the alleged 'custodians' of the Commission's legacy. By the end of today we will hopefully better understand what that legacy actually is.

If you had said to me one month after I joined the FC in 1978 that, in my dotage, I would be giving the introduction to a gathering considering the centenary of the FC, I would have been very surprised indeed.

My initial introduction to the organisation was rather inauspicious. It started in the first week with being told to get my hair cut and to smarten up my attire at work. In the second week, I got an FC van stuck half-way up a ridiculous track in Glenurquhart announcing the fact to all and sundry over the radio network. Not a clever move.

So, I have had my ups and downs with the organisation and indeed with some of the policies that were applied from time to time. And that continued throughout my career. As one of my erstwhile colleagues said in the 1980s at the height of the Flow Country controversy: I didn't join the Commission to be considered as an environmental vandal. And yes, there were plenty of things we now might look back on with 20:20 hindsight and think that could have been done better. We will hear plenty about that later today.

Yet, when I cast back over my time, I was never discouraged from being critical. Quite the opposite. A robust approach to issues, topics and debate was encouraged as well as a positive encouragement to engage with the private sector and others with an interest in forestry even when that interest might be harshly critical. From the generations before me, I grew to become immensely proud of the organisation that was the FC; its culture; its achievements; its willingness to listen and to change; and, now, the legacy being handed on to those generations coming next.

So, most of all, it has been the people who have made the biggest impression and who made the organisation and its strange combination of Government body with Civil Service codes, its pragmatic approach to land management and its role as a kind of social enterprise operating often in remote and uneconomic areas.

'Bumbling but kindly' was how one former colleague described the FC at the time. I have always rather liked that description.

And I would take issue with those who say we don't have a forestry culture - we do, as I think Mairi Stewart's excellent book '*Voices of the Forest*' amply demonstrates, albeit one that continues to develop, change and evolve.

In 1978, the generation that had fought in WWII was in senior positions throughout the FC and what lessons in life and learning they taught me! From Fred McAllan, Chief Forester at Glengarry, and a tail gunner in a Lancaster bomber; to David Woodburn, District Officer in the Inverness Forest District in the late 1970s to whom I was to become an assistant. He had been a prisoner of the Japanese in Changi Prison after the fall of Singapore and had suffered greatly at their hands. You would never know it from his demeanour.

These remarkable men (and they were mainly, but not exclusively, men though everyone knew that the chief clerkess really ran most forest and district offices) had faced death and came back to live a life in forestry and were generous with their time and advice to young upstarts like me.

I like to think it was the spirit of these individuals, and the many others, which made the Commission the body for which I have such fond memories. How fortunate we are to still have one of their number still with us today, former Forestry Commissioner, George Stewart, who will be 100 years old in December. It's been a long rotation, George! That's 2.5 generations of our faster grown Sitka spruce!

To paraphrase a well-used saying, forestry was never just about trees. It was always about the people. And so, the FC inevitably reflected the population, the fashions, and the culture of any particular period of time right down to today, with all their foibles, good and bad.

I remember the huge changes in approach after David Bills became Director General in 1995 encouraging an opening up and engagement with all sorts of stakeholders and critics. Isn't it interesting how two Australians book-ended the 20th century for the FC? Firstly, came Lord Robinson, who had drafted the original Acland Report in 1917 setting up the FC, and who was the architect of the early planting programmes and was to go on to become Chairman; and then David Bills, DG from 1995 to 2003. In greatly contrasting ways, each had a huge influence on the work and culture of the organisation.

We have a fine programme today with speakers who will take us through the legacy of the Commission from its foundations, its technical and silvicultural challenges, the challenges to its approach and its policies, and the things that might have been done better. As an agent of change – certainly one of, if not the, single most important change in the Scottish countryside in the last 100 years - it was always inevitable that there would be those who liked neither the change nor the way it in which it was conducted.

But when all has been considered, there was much that was extremely positive too. Will we come to a consensus that, on balance, the FC did much that was good for Scotland? Has it passed on a legacy which allows the foresters of today and tomorrow a range of options and choices to cope with the challenges, seen and unforeseen, still to come? Well, we'll see how our discussion turns out. Good foresters generally only seek one legacy – to leave the forest and the forestry they practice in a better place that when they found it.

But I would ask you to imagine if, instead of 2019, we were gathered here in October 1919. What might we have said to a gathering of then forestry enthusiasts (and there were many of them after the trials of WWI, including many who had agitated for state intervention in forestry for many years)? They were on the threshold of the work of the FC that was about to begin in Scotland.

If we had told them that 100 years later in Scotland we had quadrupled the forest area; established a billion pound forestry industry, exporting timber to all over the British Isles and beyond; created forest parks and a myriad of places to walk and actively enjoy the countryside; put in place a considered approach to nature conservation, helped support many people earning their living from the forest and its produce, and collaborated with those other stakeholders who live, work and enjoy the countryside; - would they have believed us?

If they had seen put in place a diverse range of forest owners and managers including the traditional lairds and their estates; a vibrant and thriving private forestry management and investment sector; NGOs; local communities; and even, believe it or not, farmers, would they have been surprised?

Would they have been astonished; would they have castigated us for not doing things better, or would they just have smiled, knowingly, and say 'We could have told you that would happen.'

Ladies & Gentlemen, I commend today's proceedings to you and look forward to hearing the speakers and the subsequent discussion.

A Brief History of the Forestry Commission

James Ogilvie

Introduction

When you hear the words 'Forestry Commission' what do you think of? Non-ministerial government department? – probably not; Environmental haven? – perhaps; guardian of the nation's forests? – probably; recreational provider? – almost certainly. Of course, the truth is that 'the Commission', '*the f-Forestry*' (as it was sometimes called) or simply 'the FC', was all these things – and more. As the country's largest land manager for many decades, it was Britain's chief provider of timber, outdoor recreation, environmental art, forestry research: you name it, the list goes on and on. During its 100-year history it built up a reputation as a doing organisation, literally changing the face of Britain, afforesting and grant aiding woodland cover from 5% in 1919 to 13% in 2019. Sometimes maligned by environmentalists, often misunderstood by politicians, generally loved *[for the most part]*[1] by the public, the Commission remains - quite simply - a cherished National Treasure. This is a brief history of the Forestry Commission: its waxing and waning, its successes and failures, its inception, development and - a century later - eventual devolutionary demise.

In the beginning

Every forester knows that the Commission came into being as a strategic reserve imperative. British industry had been beguiled by a seemingly limitless supply of timber from The Empire *[as it was then called]* and by the early 20th century its tree cover had fallen to a derisory 5%. Beset by U-boat depredations during the First World War, the country became highly vulnerable to timber shortages (indeed, the then Prime Minister - Lloyd George - famously remarked that Britain came closer to losing the war through lack of timber than want of food). The political agenda recognised that 'something had to be done' and that something turned out to be Acland's eponymous 1916 Committee. Its remit was *"To consider and report upon the best means of conserving and developing the woodland and forestry resources of the United Kingdom, having regard to experience gained during the war".* Its Secretary was the influential 'father of British forestry' Mr. (later Lord) R L Robinson of His Majesty's Office of Woods, who would come to make a significant - and unique - contribution to forestry in Britain.

The Acland Committee concluded that which many foresters had suggested hitherto: that what Britain needed was a massive afforestation programme - over 1.7 million acres (717,000 hectares) of conifers over a period of 80 years to be precise - to be established mainly by the State but with help from private landowners. It also recognised that a government body was needed to lead this programme and thus, in the autumn of 1919, the Forestry Commission was established by an Act of Parliament. Supporting the decision-making process would be eight arms-length Commissioners, with executive staff comprising Assistant Commissioners, Forest Officers, Foresters and Foremen.

> Early FC corporate culture was formal - almost militaristic: office-based staff were obliged to wear black or pinstripe suits for example. A Divisional Officer was allowed to use his (always a 'his' then!) car for shorter work journeys, but for more distant visits the practice was to take a train to the nearest station and then hire a bicycle.

From the start, the FC's mission was all about afforestation as the means to a future supply of timber: its environmental and social agendas would have to wait for a considerable time. This was illustrated clearly in a set of guiding principles issued by the Commissioners in their first year. The final principle stated, *'Generally the elimination of all activities, however attractive, which do not conduce directly or in the long run to an increase of timber-production'.*

A competitive spirit emerged at the Commissioners' first meeting in London on 7th December when Lords Lovat and Clinton decided to see who could reach home soonest and plant the Commission's very first trees

[1] Comments in [square parentheses] are the author's.

[history does not relate if - or indeed how much - money changed hands on the back of this bet…]. Lord Clinton travelled to Devon whilst Lord Lovat had the longer journey to northern Scotland. When Lord Clinton arrived at the railway station, local foresters escorted him to a nearby location (Eggesford Forest) where he planted some beech and larch trees. Lord Lovat received the disappointing news as he disembarked from the train at Elgin.

Some critics at the time argued for forestry and agriculture coming together under the same political roof. To the undoubted detriment of forestry, its jurisdiction had come under the three separate UK Agriculture Departments in the past and it had always had to play second fiddle. Part of the FC's recipe for success was its creation as a single entity, not beholden to larger departments with wider interests *[although one might also speculate about the downside of this arrangement: a generally siloed approach to agriculture and forestry teaching, policy, strategy and implementation that has prevailed to this day].* The Acland Committee was unequivocal however: *"There must be a central authority steadily working out a consistent and uniform policy, not representing any one part of the United Kingdom more than another, but having the duty of seeing that a great national task is initiated and developed in whatever part of England, Wales, Scotland and Ireland the conditions are found to be most suitable."*[2]

The roaring twenties.

Tasked with promoting forestry and the production of timber for trade, the Commission was given a good deal of freedom during its early years. In rebutting concerns that private landowners were better placed to take on this gargantuan task, the Acland Committee retorted *"We do not believe that State afforestation means expensive and inefficient action."* Little could they have guessed that a hundred years later their investment would, arguably, turn out to be one of the best ever made by a British government. But it was very nearly strangled at birth. Only two years after its formation the FC narrowly escaped being sacrificed on the altar of financial austerity as the country slid into an economic crisis. A Committee on National Expenditure - the Geddes Committee - recommended scrapping State afforestation and so in 1921 - under the infamous 'Geddes axe' - Treasury withdrew the Commission's authority to acquire land. Forestry Schools were cut, and staff dismissed. But just when it seemed that 'the game was a bogey' another Government policy came to the rescue - this time the need to reduce rural unemployment. The moratorium on land acquisition was lifted and suddenly it was full steam ahead again.

> Initially the FC organised itself into ten Divisions with 29 Divisional and District Officers and 110 Foresters and Foremen. Finance and administration were concentrated in London and Edinburgh, with 59 staff.

With its top priority being to acquire plantable land, the Commission expanded its estate from a standing start to a staggering 243,000 hectares ten years later on. Woodland grants for private owners were also having some effect in stimulating the private sector. In 1923 a Forestry (Transfer of Woods) Act gave the FC responsibility for most Crown Woods, including the Forest of Dean and the New Forest, adding nearly 50,000 hectares to the Commission's land holding. Progress was not always smooth however: a programme of conifer planting in the New Forest enclosures led to widespread objections for example. But with property prices at rock bottom, progress was substantial, and land additions became readily available during the Great Depression (1929 until the late-1930s). Thus, only fifteen years after its formation, the Commission owned or managed around 40% of the area currently owned or managed today by the FC (in England and Scotland) and Natural Resources Wales. By 1939 the FC was the largest landowner in Britain.

In 1927 the revolution in social forestry was still a long way off, but in that year a Forestry Act introduced ground-breaking regulations to enable public access to forests. The following year saw the first systematic census of British Woodlands, a stocktake that has - with increasing technological sophistication and accuracy - continued ever since.

An advisory committee on Forest Research was formed in 1929 to guide the Commission's research efforts, although it was not until much later (1946) that the first Forest Research Station was established, at Alice

[2] From 1922, Northern Ireland state forestry came under the control of a government department of Northern Ireland.

Holt Lodge in Surrey. *[Although the history of Forest Research deserves a brief history of its own, it is important to recognise here the particular influence of such luminaries as H M Steven and Mark Anderson.]*

The depressing thirties.
Although the 1930s started promisingly for the Commission, with diligent and vigorous forest expansion, 1931 proved to be another 'annus horribilis'. Britain became gripped in a financial crisis so severe that a state of national emergency was declared. Private forestry entered the doldrums and many traditional estates were parcelled up for sale. It would be several years before non-State forestry would pick up again and thus responsibility to continue the afforestation effort remained firmly with the Commission. However, during the 1931 economic slump Government brakes were applied, land acquisitions were put on hold, and once again the FC narrowly escaped being placed on a 'care and maintenance' basis.

The first FC chairman, Lord Lovat held a 'long cherished dream' of repopulating the uplands. Along with other Highland landowners such as Sir John Stirling-Maxwell of Corrour (an FC Commissioner) he devised a scheme linking land settlement with forestry. Within the newly-established Commission forests, four-hectare smallholdings were created, rent was paid by the tenants and a minimum number of days' employment guaranteed in the forest. The scheme succeeded in attracting forest workers to remote areas, but the number of smallholdings reduced after the Great Depression and some years later was overtaken by the construction of several bespoke forestry villages.

Today, Forest Parks are perhaps not as well recognised as their more formal cousins, the National Parks, but in fact the Forest Park concept came first, with Argyll in 1936, Galloway in 1947 and Glenmore in 1948 (National Parks came later in the 1950s). At this time the Commission was slowly waking up to a view amongst the public that unbridled afforestation was not always welcome. CPRE and CPRW were flexing their muscles and the Commission was reluctantly made to appreciate the landscape sensitivities of the Lake District and Snowdonia for example, where there was considerable resistance to unsympathetic forest expansion.

As the 1930s progressed and it looked as if Britain might be heading towards another war, the Commission and the Board of Trade drew up plans for the supply of home-grown timber. In 1939 the Home Grown Timber Advisory Committee was established: it was to play a major role for several decades following the end of the conflict. At the outbreak of WWII, the Commission was split into the Forest Management Department (maintaining normal duties) and the Timber Supply Department (charged with producing timber for the war effort - mainly pit props). This division lasted until 1941, when the Timber Supply Department was absorbed by the Ministry of Supply. As the Commission's early commercial plantings were under 20 years old - clearly too young to produce a meaningful timber supply - much of its timber came from long-established New Forest and the Forest of Dean. But some 90% of the timber used in the war effort came from private estates, authorised by the recently introduced system of FC felling licences.

The warring forties.
By the outbreak of World War II, the Commission was the largest landowner in Britain. Large numbers of forest workers were needed to keep the war effort going: the total more than trebled from 14,000 to 44,300. These workers included the Newfoundland Overseas Forestry Unit, the Canadian Forestry Corps and British Honduran Forestry Unit; military foresters from Britain, Australia and New Zealand, and of course the Women's Timber Corps or 'Lumber Jills' as they became fondly known. The war did not stop afforestation efforts either: over 40,000 hectares were planted and there was a marked increase in the acquisition of felled and undermanaged woodlands.

> It defies our imagination today, but by the end of the war almost all conifer plantations between 20 and 30 years of age had been felled and utilised: approximately a third of the country's available timber resource.

After hostilities ceased, the Government recognised the continued strategic importance of domestic timber to future wartime success, introducing a Forestry Act in 1945 that placed the FC under direct Ministerial control. New posts were created, including Directors of Forestry, a Director of Research, Education &

Publications, and a Director General. The first DG to be appointed was Sir Roy Robinson of Kielder Forest and Adelaide. The Forties saw the Commission's research work expand and eventually grow out of all recognition. An Engineering Branch was founded virtually from scratch with the twin functions of building forest roads and maintaining machinery.

Government wartime White Papers had proposed that the State devote five million acres (c2Mha) to timber production, with three million acres (c1.2Mha) of afforestation over 50 years - mostly by the Commission (in fact the 2Mha figure was achieved in 1983, ten years ahead of target). But the private sector needed a stimulus too, so in 1947 the Commissioners introduced what would turn out to be the hugely influential Dedication Scheme, requiring private landowners to dedicate their land to forestry in perpetuity… *"if we are to achieve our objectives it will be very desirable that the owners of private woodlands should play a full part and so relieve the Forestry Commissioners of some of what will anyhow be a heavy strain on their organisation."*

Originally it was envisaged that Forest Worker's Holdings would provide much of the labour requirement, but this proved inadequate in practice and so a major housing programme was launched, establishing dedicated forestry villages, mainly in remote rural areas. Universities offering forestry studies were flooded with de-mob applicants and additional Forester Training Schools were established at Lynford Hall (Thetford Forest) and Glentress (near Peebles, which later transferred to Faskally), supplementing the existing Schools at Parkend (England), Gwydr (Wales) and Benmore (Scotland).

In three decades, the Commission had transformed itself from a small band of enthusiasts into a sophisticated Government Department managing an estate of more than 600,000 hectares. Research knowledge was increasing; forest management was vibrant, and expansion was impressive: 43,000 hectares planted in just three years for example (1947-1949). But the real boom times were just around the corner.

The expanding fifties.

By 1950, the Commission employed 13,220 people. Annual removal reached 325,000 cubic metres *[somewhat less than the output of Kielder today, but significant for its time].* A 1951 Forestry Act gave the Commissioners some powers that have stood the test of time (e.g. felling licence replanting conditions); and some that haven't (a requirement to consult with the HGTAC and the establishment of Regional Advisory Committees). During the 50s, planting averaged 10,000 hectares per year and private landowners had pledged 243,000 hectares under the Dedication Scheme. With better quality agricultural land becoming too expensive, the focus of new planting shifted to marginal, mainly upland sites, including crofting areas. A significant and controversial power - rarely exercised by the Commission during its history - was that of compulsory purchase. The last attempted use of this power was in the 1950s when attempts to purchase 20,000 hectares in the Towy Valley were eventually abandoned, due to public opposition.

The 'father of British forestry' Lord Robinson - so instrumental in establishing Kielder and other large-scale upland spruce forests - died in 1952, whilst in 1953 Scotland named its latest Forest Park near Aberfoyle after the newly crowned Queen Elizabeth II. A devastating storm in the same year caused significant fatalities, as well as the windthrow of over 1.2 million cubic metres in forests in the north-east of Scotland, mainly conifers.

Already, one third of the Government's postwar afforestation target had been achieved. But the world was changing. The concept of a strategic timber reserve became less compelling. Following the influential 1957 Zuckerman Report (which highlighted the need to restore a balance between too much agriculture and not enough forestry in the uplands) the Government tacitly acknowledged that - given the changing nature of warfare in general, and nuclear war in particular - a strategic timber reserve was no longer a priority for the country. But the Commission was far from seen as being redundant: new priorities were gaining ascendency in the form of economic and social benefits. An expanding programme of establishment and utilisation required the construction of groups of new houses such that by 1958 - the peak year for all tenancies – the FC owned a total of 4627 properties.

During the 1950s many private owners employed forestry management companies to handle their Dedication schemes and make use of the beneficial income tax arrangements for forestry. These companies would come to play an increasingly important role in the British forestry scene, acting as advisors, agents, and managers during the post-war decades and beyond, to this day. New markets for thinnings such as chipwood and pulp opened up, supplementing the traditional pit props market, such that by the end of the 1950s, FC timber income had quadrupled.

The boomtime sixties.

The '60s continued the previous decade's zeal, with continued expansion by both FC and the private sector. By 1969 private forests accounted for 40% of the total planting, with the Dedication Scheme and Approved Woodlands Scheme totalling almost one million hectares. Timber production nearly doubled from 726,000 cubic metres in 1960 to 1,318,000 cubic metres by the end of the decade. Hand in hand with this unprecedented supply of timber came a boom in the establishment of timber-processing facilities. Softwood pulp mills were constructed at Fort William, Ellesmere Port and Workington; hardwood pulp mills were built at Sudbrook and Sittingbourne; and chipboard mills were constructed at Inverness, Annan, Wallsend, Hexham, Thetford, Monmouth, Coleford and Cowie, creating thousands of jobs. Other significant industry investments were made in wood wool (used in packaging and building panels) and sawmills. These key investments were only made possible by the Forestry Commission providing guarantees of supply.

Although it wasn't all plain sailing (global oversupply and teething problems were two major headaches for example) a modern British timber industry was now firmly establishing itself on the back of the Commission's early endeavors. The other key factor enabling this economic prosperity was increasing mechanisation, as crosscut saws, axes and horses gave way to chainsaws and tractors. Timber extraction trials took place with cable cranes and even helicopters. Not surprisingly the latter proved too expensive, but helicopters were used locally for aerial spraying of insecticide and, more generally, for applying fertiliser to young plantations.

But pushback was growing in public sentiment towards large-scale uniform industrial softwood plantations. Advances in the media together with increasing car ownership were leading to a greater public awareness of Britain's countryside in general and conifer forests in particular. It was estimated that by the end of the decade fifteen million visits by the public were being made each year to FC forests. And the public didn't always like what they saw. The Commission's reputational USP had always been as a 'doing organisation', and nobody could deny the extraordinary afforestation programme and growing timber production that it had achieved over four decades. But with its almost fanatical fervor for economic forestry, fuelled by the introduction of the first Yield Tables and the influential book *Forest Planning* authored by Johnston, Grayson & Bradley, the Commission had become increasingly out of step with public opinion, despite the public being given a 'right to roam' in Commission forests. In 1963 a Government review of forestry policy stated: *"The Commission, in preparing its future programmes, will bear in mind the need, wherever possible, to provide public access and recreation, and will devote more attention to increasing the beauty of the landscape."* The Review also gave the FC a planting target of 100,000 hectares over the next decade, *"concentrating on acquiring land in the upland areas, particularly in Scotland and Wales, where population is declining and where the expansion of forestry can bring considerable social and employment benefits".*

The 1963 44th Annual Report of the Forestry Commissioners summed up British forestry policy in economic, employment and industrial terms, with only a nod to recreation and aesthetics - but even then, there was no mention of an environmental agenda. One word that was used however, was beauty: the Commission is clearly directed to *"give more attention to the beauty that well-planned forestry can bring to the countryside."* However, despite public criticism of geometric shapes and monoculture plantations, more than a decade would pass before the Commission appointed its first Landscape Architect, Duncan Campbell.[3]

[3] The Commission engaged, Sylvia Crowe, as landscape consultant in 1963 and she continued in this role until 1976.

> *"There has been a marked shift away from the use of the word beauty in policy and legislation, towards a new language that may please the bureaucrats but leaves the human spirit cold. These new words have a technical meaning – for example biodiversity, sustainable development, ecosystem services and natural capital – but we have lost the simple, unaffected power of beauty that was capable of inspiring millions, including (in their day) politicians."*
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> The Fight for Beauty – Fiona Reynolds, former DG of The National Trust

In 1966, the terms 'Forestry Authority' and 'Forest Enterprise' were used for the first time to distinguish between the Commission's functions as a Government Department and as a trading body managing publicly owned forests. In that same year new forester grades were introduced: Chief Forester, Head Forester, Forester and Trainee Forester. The Forestry Act 1967 consolidated all acts from 1919 onwards, restating the Commissioners' duties of *"promoting the interests of forestry, the development of afforestation and the production & supply of timber & other forests in Great Britain"* whilst maintaining the general duty of *"promoting the establishment & maintenance in Great Britain of adequate reserves of growing trees."*

However, things started to change following the 1968 Countryside Act.[4] Until then the Commission's main purpose had been an economic one, but the Act gave the general public the right to use much of the forest estate for recreation. New visitor centres, campsites, trails and picnic areas were added to the Commission's recreational portfolio, eventually enabling them to claim its place as the largest provider of outdoor recreation in Britain.

> In 1970, the year after its golden anniversary, the Commission opened its Northern Research Station at Bush Estate. An impressionable fresh-faced schoolboy from Edinburgh went along to see what the fuss was all about – and decided that forestry was what he wanted to be involved in. Fifty years later, after four decades working with the Commission, James Ogilvie has never once regretted his decision.

The role-changing seventies.

The main bombshell for both FC and private sector activity was a 1972 Treasury cost-benefit analysis. *[The Commissioners must have regretted their anticipatory words… "The policy review is therefore of paramount importance to the future of the Commission"!]* The analysis concluded that State forests were uneconomic when compared with other public sector investments and called for a reduction in FC new planting and for a financial target rate of return for afforestation of 3% (it did however recognise the value of new planting in providing jobs and stemming depopulation in socially fragile parts of Britain). There was considerable expert debate over the validity of using financial discount rates to evaluate afforestation, with critics suggesting that this had led in the past to unpopular decisions such as poisoning oak crops in order to plant more profitable conifers. One consequence of the Treasury Analysis was to concentrate afforestation in Scotland - although it subsequently transpired that overall activity did not diminish significantly (the Commissioners reported a total of 217,000 hectares planted between 1969 and 1979). Another consequence was the disposal of Commission properties deemed to be 'surplus', a gradual sale of houses becoming a flood in 1978/79, further fuelled by discount incentives to tenants under the Thatcher administration. Although the Commission's rural employment policy objective has long since diminished in importance, its legacy is a scattering of distinctive forestry houses (often cedar shingle or pebbledash) in communities and villages throughout rural Britain.

Although the Forestry Review recognised that private forestry should continue to play an effective role in the national economy, it made it clear that grant aid should be conditional either upon providing employment or delivering environmental gain. Entry to the existing schemes (Dedication, Approved Woodlands and Small Woodlands) closed overnight, but the new scheme took the bureaucrats a long time to develop; in consequence, planting dropped from 24,000 hectares in 1972, to only 9,000 hectares in 1977.

[4] In Scotland, the Countryside Act 1967.

Forester training facilities were rationalised in the early 70s. Faskally and Parkend schools and Northerwood House closed, whilst a new Management Training Centre opened in the Forest of Dean and a New Entrant Training Scheme was launched, with training at Newton Rigg and Inverness.

As the decade developed, conservation and amenity issues became much more central to FC planning and policy agendas, with woodland character and the importance of broadleaves receiving increasing emphases. In 1974 the Commissioners set out their policies on landscape and conservation in some prescient and visionary words: *"No one sector of the community nor single generation has a monopoly interest in the forest and its management. As a trustee for the community at large and for future generations the foresters' duty is to pass on our own inheritance from the past, avoiding change for its own sake – which is rightly resented – and shaping the inevitable cycle of growth, maturity, and replacement in a manner which blends the best of tradition, currently accepted standards and options for the future."*

Following Dame Sylvia Crowe's influential proselytising, 'landscaping' (or what we now call forest design) began to be considered more routinely, resulting in new woods that would be both productive and aesthetically sympathetic. Forests were identified as important wildlife reserves, and conservation became a special responsibility of Commission staff.

In 1975, the Commission's three offices (in London, Basingstoke and Edinburgh) were amalgamated into a new building in Edinburgh. Originally termed 'Headquarters', the name became less formal in time, to 'Head Office', finally becoming 'Silvan House' in the 1990s following a staff poll (somehow alternative contenders such as 'The Treehouse' 'The Nuthouse' and 'FCUK' failed to gain approval!)

During the 1970s, FC recreational facilities continued to be added to, especially after a consultants' report highlighted the suitability of many sites for holiday accommodation. A Forest Cabins Branch was established, and new cabins built. The Commission could now boast seven Forest Parks, nine managed camping/caravanning sites and a plethora of trails, picnic sites and carparks.

Apart from the 1976 drought, which caused the worst fire losses since the war, the big disaster of the decade - with echoes continuing to this day - was the introduction of a more virulent strain of Dutch Elm Disease, believed to have arrived on Rock Elm logs from Canada. Despite movement restriction orders, by 1975 a third of the elm trees in central and southern England had been affected. Strenuous research efforts failed to find a cure and the disease was left to run its course.

In 1977 an FC Review *'Wood Production Outlook in Britain'* identified 4 million hectares of technically afforestable land, commending the benefit of such expansion in terms of import substitution. However, this was not formally accepted as Government policy partly due to strong objections on environmental grounds.

Sixty years after its formation the Commission had come a very long way - as had the private sector. And yet Britain still had almost the lowest proportion of woodland cover in Europe as well as an import bill, in 1979, of £2.8 billion. The case for continuing to expand the country's forest estate was as strong as ever.

The changing/challenging eighties.

The 1980s were years of change and challenge for the Commission and indeed the forest sector as a whole. In 1980, a Reading University influential Paper *'Strategy for the UK Forest Industry'* called for a more positive attitude to forestry in general and a wider recognition of forestry's importance in the national economy in particular. It proposed a major increase in forest area by 2030 of between 0.6 million and 2.0 million hectares. However, pressure group opposition was substantial, in particular a publication by The Ramblers *'Afforestation: the case against expansion'* that refuted many of the Paper's arguments. That same year, in a statement of Government policy, the Secretary of State for Scotland said *"A continued expansion of forestry is in the national interest, both to reduce our dependence upon imported wood in the long-term and to provide continued employment in forestry and associated industries."* and *"We see a greater place for participation by the private sector in new planting, but the Forestry Commission will also continue to have a programme…".*

Prior to the Thatcherism of the 80s, very few sales of FC land and forests took place. However, in 1981 a change in the Forestry Act permitted the FC to sell its woodlands. Between 1981 and 1997 (when this disposals policy was rescinded by the incoming Labour government) some 73,000 hectares of land and forests were sold in Scotland alone; by 1989, property sales had totalled more than £123 million.

Designed in 1980 by Bob Jones (Head of Design & Interpretative Services Unit) the Commission's friendly tree logo broke the traditional FC mould of crown and heraldic crests. *[The welcoming two trees, distinctive green colour and font must surely be one of the best recognised and well-known of any British brands. For any private sector company today such brand awareness would be of incalculable value.]*

Economic times were hard during the early 80s, with a recession leading to pulp mill closures at Fort William, Ellesmere Port and Bristol. Cuts in Government expenditure led to reductions in both acquisition funding and recreational investment. As domestic markets waned, the Commission began to develop export markets: soon half a million tonnes of timber a year were being shipped - much of it to Scandinavia. In Scotland, the search for new investment began with the formation of the Scottish Forest Products Development Group in 1983 and within five years new investments worth over £600 million had been found, including particleboard plants at Irvine and Dalcross and an integrated pulp and paper mill at Irvine, much of this underpinned by FC timber contracts.

The private sector played a key role in 1980s forest expansion, incentivised by the tax advantages of forestry and the Forestry Grant Scheme (which replaced the more complex Dedication arrangements in 1981). Over the decade, private planting exceeded 182,000 hectares, but by no means did it always comprise the 'right tree in the right place'. The debates surrounding the 1981 Wildlife and Countryside Act had a significant effect in stimulating environmental awareness, criticism and expectations: FC management policies and lack of environmental awareness received particular opprobrium. The Nature Conservancy Council's 1985 publication *'Nature Conservation in Great Britain'* revealed a 46% loss of Ancient Semi-Natural woodland in 23 counties from 1933 to 1983. This loss surprised and alarmed many, but forest sector attitudes were finally catching up: a seminal ICF/FC Symposium in 1982 '*Broadleaves in Britain'* was probably the first gathering of all stakeholder interests concerned with broadleaved woodland and it led to an FC review of broadleaved policy in 1985, with accompanying incentives to protect and enhance Britain's broadleaves. European Union legislation also helped redress the environmental imbalance, with for example an EC Directive in 1985 requiring Environmental Assessment of large-scale afforestation, and later, the Birds and the Habitats Directives.

The Forestry Act 1967 was amended by the Wildlife & Countryside (amendment) Act 1985 to include a duty on the Commission to balance *'the development of afforestation, the management of forests and the production and supply of timber'* with *'the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physio-graphical features of special interest.'*

In 1986 a National Audit Office Report *'Forestry in Great Britain'* strongly criticised the FC's economic performance *[like its predecessor 1972 Treasury cost/benefit analysis]*. The future looked bleak but - in the event - help came from an unexpected quarter as the Forest Industry vigorously defended the Commission, rounding on the Report as *'ill-informed criticism'*. The threat passed and 'the FC show did go on'.

As private sector forestry expansion continued at unprecedented levels, the Flow Country in Caithness and Sutherland emerged as a pivotal campaigning battle ground (see Warren below). The use of forestry tax

concessions for private forestry by celebrity investors was roundly condemned by both the public and the media. The climax of this campaign came in 1988 when forestry was summarily removed from the scope of Income Tax and Corporation Tax, and the Woodland Grant Scheme was introduced. This put an end to tax-led investment in forestry and led to a dramatic reduction in planting rates: the nursery trade suffered and there was a loss of confidence amongst private investors.

A 1987 Countryside Commission publication *'Forestry in the Countryside'* supported multi-purpose forestry and proposed a number of ideas including County forestry strategies, new urban fringe Community Woodlands and a National Forest in the Midlands, as well as planning permission for major new planting proposals. Realising that it was in danger of losing its forestry imprimatur, the Forestry Commission - after some initial scepticism - backed all the proposals except for afforestation coming under planning control (forest expansion remains outwith the planning system to this day). However, 1987 was mainly remembered for the devastating autumn gale that flooded two million cubic metres of blown timber onto the market requiring a mammoth clean-up operation in the south of England. Some 50 million trees blew down, with more timber destroyed than in any other single storm in the 20th century. Weald and Suffolk Forest Districts both lost the equivalent of a ten-year felling programme, whilst Bedgebury lost three times its annual cut. Thanks to responsive planning and innovative water storage techniques introduced by the FC, the vast majority of windblown timber was salvaged and marketed successfully.

The multi-purpose nineties.

By the start of the 1990s, the Commission was firmly committed to multi-purpose forestry. Gone were the days of a single-minded drive for strategic reserves and an economic imperative. Instead, the various demands of commercial production, recreation and conservation were incorporated into policy and enacted on the ground by such means as Forest District Environmental Panels and consultative Forest Plans. This embracing of multi-purpose, multi-benefit forestry was boosted by a 1991 House of Commons Agriculture Committee Enquiry Report on Land Use and Forestry which led to a statement describing the main policy aims as: '*sustainable management of our existing woods and forests; and steady expansion of tree cover to increase the many, diverse benefits that forests provide'.*

Outwith the FC estate, steps to encourage multi-purpose forestry included Regional Council Indicative Forestry Strategies in Scotland (identifying areas for new planting as either 'preferred', 'potential' or 'sensitive'- with Strathclyde Regional Council leading the charge); Woodland Grant Scheme incentives for encouraging public access; and Centre of Excellence awards for celebrating multi-purpose management in private woodlands.

Recognition of the importance of Britain's native woods was boosted during the 90s, with the formation of BIHIP (British & Irish Hardwoods Investment Programme) as well as the introduction of FC advisory guides for native woodland and - in Scotland - bespoke incentives for conserving the Caledonian pinewoods. Social benefits were becoming more widely recognised too, particularly for those people living in or near urban environments. This helped underpin the development of initiatives such as the National Forest in England, the Central Scotland Forest and the twelve Community Forests in England, the latter comprising partnerships between the FC, the Countryside Agency and local authorities. With average forest cover in these twelve areas at less than 7%, the target was to increase this to 30% over about 30 years.

Production from FC forests rose from four million cubic metres in 1993 to over five million by the end of the decade. This afforded an opportunity to improve the first rotation plantations and evolve them into multi-purpose forests by a process of *restructuring [or more colloquially 'turning the carpet of Sitka into a patchwork quilt of different ages, species and open ground'].* It was recognised that the 'wall of Sitka' planted from the 1950s to '80s would produce a peak supply in the early 21st century but lead to a drop for some years thereafter, before picking up again. So, whilst restructuring helped to break up the monoculture plantations into a mosaic of species with open deer glades and broadleaved watercourses for example, it also enabled the flow of timber to be smoothed and - thanks to improved timber prices - some clear-felling brought forward. It also made the forest estate more resilient by spreading the risks of windthrow and fire.

As well as articulating the policy aim of sustainable forest management, the 1991 House of Commons Committee Enquiry Report suggested sweeping organisational and political change, with formal separation of the Commission's twin functions (Authority and Enterprise) into distinct bodies: the former a Government Department; the latter a trading body managing the nation's forests (although still remaining under a Board of Commissioners and a Director General).

In 1993/4, the government considered the possibility of privatisation, but in the end concluded that FC woodlands should remain in the public sector and that Forest Enterprise and Forest Research should become Agencies. Factors in maintaining the status quo were a significant protest reaction from conservation groups, and from the timber processing sector (concerned about continuity of timber supplies).

In 1998, the suite of FC Guidelines that had gradually been developed over the previous decade were incorporated into the UK Forestry Standard, thus providing a reference standard for sustainable forest management and a basis for regulation and monitoring. At this time there was increased demand from retailers for "timber certification" and in 1999 the UK Woodland Assurance Standard was introduced as an independent certification standard for verifying sustainable woodland management. The Public Forest Estate was subsequently granted Forest Stewardship Council certification and became the largest supplier of certificated timber in the UK.

The boom and bust noughties.

Thanks to 20th century planting programmes, in both FC and private forests, by the start of the new millennium, Britain's forest cover was calculated at 12% (9% England, 16% Scotland and 12% Wales). This was later refined in a high-tech FC National Forest Inventory which showed that by 2011 there were 2,982,000 ha of woodland across England, Scotland and Wales, representing 13% of Britain's land area - a massive increase on the 5% tree cover that existed when the Commission started life nine decades earlier.

> In 2016, the FC National Forest Inventory calculated that - in addition to the 2,982,000 hectares of woodland - there was an area equivalent to 742,000 hectares of tree cover *outside* woodland in Britain: 565,000 hectares in England; 84,000 hectares in Scotland and 93,000 hectares in Wales.

At the start of the noughties, Britain's forests were producing more than eight million tonnes of wood per year: by the end of the decade this had risen to nearly ten million tonnes, mainly softwood. The timber industry's £2 billion investment between 1985 and 2000 ensured that Britain had world-class processing facilities, with forestry accounting for around 35,000 jobs. Demand for wood products continued to grow at the same time however, with imports still accounting for more than 80% of domestic demand.

But the social agenda was gaining momentum too. For example, in England there were major investments in recreational facilities and many of the Community Forests were now flourishing. Meanwhile, in Scotland the seminal WIAT (Woods in and around Towns) programme was launched in 2005 and the concept of community ownership gained momentum with the establishment of the National Forest Land Scheme, giving local communities the opportunity to buy areas of FC land (by now referred to as the National Forest Estate). The Scottish Government later used experience from this Scheme to develop its broader Community Asset Transfer Scheme. As devolution continued to exert its inexorable influence, the three countries - England, Scotland and Wales - developed different Forestry Strategies, with differing emphases of policy.

In 2006, Forest Research (which had become an Agency of the Forestry Commission in 1997) designated Alice Holt forest as the first research forest in Britain, in recognition of its rich heritage as the Commission's first research base in 1946, and with a continuous experimental record since then. This was followed by the Dyfi Catchment being designated a research forest in 2012, and Scotland's Queen Elizabeth Forest Park in 2014. In 2009 a smaller research unit was established at Aberystwyth.

Despite buoyant timber production, recreation usage and revenue, in the wake of the 2008 Financial Crash and government austerity, the various parts of FC suffered considerable budget cuts and staff salaries were effectively frozen for several years.

The devolutionary finale

In 2010, the Government introduced a Public Bodies Bill in the House of Lords. This Bill included clauses aimed at giving the Secretary of State much stronger powers to privatise public forests in England, through either sales or leases. A wide variety of groups were vocal in their disapproval, including Caroline Lucas (leader of the Green Party of England and Wales) who stated that it would be *'an unforgivable act of environmental vandalism'.* An online petition opposing sales of FC forests received more than 500,000 signatories and in February 2011 - after a sustained campaign of protest by groups such as the Ramblers, Save Our Woods and Hands off our Forest - the Government abandoned these plans and removed the forestry clauses from the Public Bodies Bill. Environment Secretary Caroline Spelman told MPs the government had "got this one wrong", as she announced the current consultation was being halted.

An Independent Panel was established to advise on FC's role and future direction of forestry/woodland policy in England. The Panel recommended that England's forests should be increased in area from 9% to 15% by 2060 and that the FC Public Forest Estate should be defined in law as land held in trust for the nation as a national asset. Whilst this had obvious disadvantages, it included the advantage of not being able to rationalise FC woodlands/land in England. By contrast Scottish Ministers agreed FCS could proceed with 'repositioning': selling areas with low public benefits to invest in programmes (including land/woodland acquisition) which would make a significant contribution to delivery of the Scottish Forestry Strategy.

The main organisational driver for the Commission in the 21st century was undoubtedly devolution. In 2003, forestry policy, grants and the ownership of the state forests were devolved to each of the three Administrations, requiring the FC to report to the Scottish Parliament and Welsh Assembly as well as Westminster. The National Committees for the three countries were resurrected and Forestry Commission England, FC Scotland (Coimisian na Coilltearachd)) and FC Wales (Comisiwn Coedwigeath Cymru) became in effect sub-departments of the GB Forestry Commission, each with their different Forestry Strategies. In Wales this process was completed ten years later, by the merger of FC Wales with Environment Agency Wales and the Countryside Council for Wales, as Natural Resources Wales: a single body delivering the environmental priorities of the Welsh Government. This move was controversial among forestry stakeholders who worried *[with some justification as it turned out]* that the industry's voice would not be adequately heard in the new organisation.

In Scotland, the process of full devolution took a little longer, and with some bumps along the road. In 2018, proposals for merger into the Scottish Government were defeated by MSPs on the grounds that this would lead to a loss of professional focus. Instead, in April 2019 - a century after the Commission was established - Forest Enterprise Scotland became Forestry & Land Scotland, an Agency of Scottish Government, whilst FC Scotland became a separate Scottish Government Agency entitled Scottish Forestry. One hundred years after its ignition, the FC torch is kept alight only in England.

Afterword

The Forestry Commission started life as a response to wartime shortages. For several decades it was fixated upon afforestation, timber production and economic return. It arrested and reversed the wholesale decline of Britain's woodland, transforming forestry into a vibrant, modern and forward-looking sector. But as time advanced and with external pressures, its agenda developed into today's mantra of sustainable forest management, encompassing the whole range of economic, social and environmental priorities. As well as becoming the largest land manager in Britain, the Commission became the largest provider of outdoor recreation and the largest provider of outdoor art. Although it almost 'hit the buffers' several times and narrowly avoided privatisation on more than one occasion, the Commission survived, improbably, for a hundred years. Not many other Government organisations can boast such longevity. Against a shifting social and political background, it showed itself to be a flexible and adaptable organisation. The woodlands it plants and manages today will be its legacy well into the 21st century – and indeed beyond.

Side-by-side with the extraordinary achievements of state forestry has been its partnership with private forestry, encouraging good practice and facilitating an equally extraordinary expansion of plantations through grant aid. The year 2011 was particularly significant in this relationship, marking the crossover point

when softwood production from the private sector overtook that of the combined FC in England and Scotland, plus Natural Resources Wales.

The Commission's 100-year history has been - in the main - a golden journey, but not without its political and financial perils. Today in a post-devolved world, the greatest risks to UK forests are not so much political as existential: climate change and in particular the associated threats from introduced pests and diseases. The sector has taken a huge - and so far, successful - bet on Sitka spruce, and to date it has avoided the depredations that have affected other countries' forests. But there is a lot of 'skin in the game' when it comes to Sitka and we have seen what devastation can be caused by destructive agencies imported to these shores (Dutch Elm disease; *Phytophthora* disease of larch; and *Chalara* dieback of ash are but three examples).

FC forests have been an extraordinary investment of taxpayers' money. A 2010 study by the Economics for the Environment Consultancy concluded that the value of England's Public Forest Estate was in the following order: people; carbon; timber; biodiversity. North of the Border, a 2015 report showed that Scottish forestry in general contributed nearly £1 billion *GVA* to Scotland's economy every year, with £771 million from forestry and timber processing and £183 million from forest recreation and tourism. More than 70 per cent of all British adults have visited a forest and more than 350 million day-trips are made to forests every year. The Brits love their forests and the FC has undoubtedly become a National Treasure during its century-long journey. Whichever way you look at it, the connection with people and the benefits to people remain central to the Commission's continued existence. As Rod Leslie put it, *Forestry Commission forests seem to have evolved from the rather forbidding face of a government department to something people really do genuinely feel they own and feel hugely important to them. It is an emotional connection as much as a rational one, and it is justified.*

Key ('to the freedom of Kielder Forest') presented to the 'Father of British forestry' and 1st DG, Mr. R L Robinson of His Majesty's Office of Woods, later Lord Robinson of Adelaide and Kielder.

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The Early Years of the Forestry Commission

James Miller

The Forestry Commission came into official existence on 1 September 1919 when the Parliamentary Act creating it became law. The new body was given a grant of £3.5 million to see it through its first ten years. First in line to be Chairman was Sir Francis Acland. He was a Liberal MP and had held several seats since his election first in 1906. From 1915 he had been parliamentary secretary to the Board of Agriculture and Fisheries. Sir Francis declined the chairmanship and recommended that the post should go to Lord Lovat. This duly happened – Lovat was appointed the chairman, but Sir Francis stayed on as one of the seven commissioners. The others were Charles Forbes-Trefusis (Lord Clinton) who united in his name and his person a Scottish-Devon ancestry; Sir John Stirling-Maxwell; L. Forestier-Walker, a Welsh landowner from Monmouth; Thomas Brabazon Ponsonby, an Irish ex-soldier and high sheriff with experience of agriculture; Walter Thomas James Scrymsoure-Steuart-Fothringham, heir to Grandtully and Murthly in Perthshire; and Roy Lister Robinson. (Miller, 2009; Stewart, 2016)

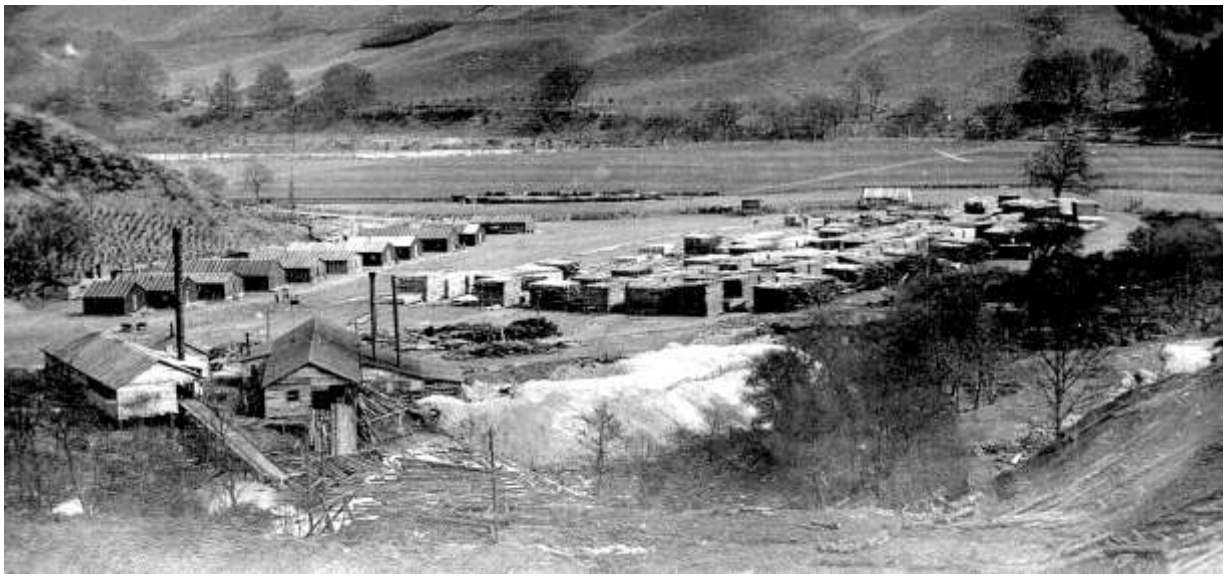
Most of them shared the background common to holders of high office at the time – country estate, public school, Oxbridge - but Robinson was the odd man out: he had been born in Australia in 1883 and had come to Oxford as a Rhodes scholar, before entering the civil service as secretary to Acland's 1916 committee. Sir William Schlich, professor of forestry at Oxford and one of the foremost teachers of the subject in England at the time, thought Robinson his most brilliant student and, with Lovat or possibly more than him, he was to be the directing influence on the early decades of the Commission. After his death in 1952, he was to have his ashes scattered in the forest from which he had taken his title when he was ennobled in 1947 – Baron Robinson of Kielder Forest and Adelaide.

Assistant commissioners were placed in charge of the home nations. John Donald Sutherland was appointed as the first assistant commissioner with Scotland as his remit. Sutherland, who was to be knighted in 1935, had been born in Inverness in 1865; before the war, in which he served with distinction and reached the rank of colonel in the Royal Engineers, acting as assistant director of forestry in France under Lovat, he had shown a keen interest in rural development.

The birth of the Forestry Commission owed its timing in large measure to the impact of the First World War. The need for a strategic timber reserve and the importance of state forestry were driven home during the conflict. The stalemate of trench warfare on the Western Front in the First World War stimulated a tremendous demand for timber. Someone reckoned that every soldier needed five trees to provide him with the timber needed for his military task. For decades Britain had been relying on imported wood from the Baltic, Scandinavia, Canada, Newfoundland, and other countries, and only around four per cent of the national demand was met from home sources. In 1913 about half of the country's need for timber was met by imports from Russia. The attacks on merchant shipping naturally made the situation critical. Domestic forests were incapable of providing enough timber.

To solve the problem the government set up a committee under the chairmanship of Sir Francis Acland, parliamentary secretary to the Board of Agriculture. Among its members, inevitably in view of their previous interest and experience, were Sir John Stirling-Maxwell and Lovat. The latter was a professional soldier and commanded the Lovat Scouts, the unit he had raised as mounted reconnaissance troops for service in the Boer War. He was with the Scouts in the Middle East when he was asked to take over in February 1917 as director of the forestry department formed to deal with military timber supplies.

After a hasty episode of re-organisation and travel, he established his headquarters at Le Touquet near Paris in April 1917 and took command of all forestry operations on the Western Front. Forests had been acquired in the Jura mountains and throughout France, and contingents of Canadian lumbermen shipped in to work in them. As Lovat took up his new post, the French forests were turning out 50,000 tons a month for the war effort, and under his command the foresters took this total to 300,000 tons a month by July 1918.



The WW1 Newfoundland Forestry Corps camp at Craigvinean. (©Grandfalls Windsor Heritage Society)

During the War, the extraction of timber from home forests was put in the hands of contingents of Canadian and Newfoundland forestry workers. Most of the timber cut down in Britain during the war came necessarily from private plantations and to get it out the British government asked in early 1916 for experienced foresters from Canada. The first draft of the 224th Forestry Battalion landed on these shores in the following April; the 238th Battalion followed in September, and the two units were soon combined into the Canadian Forestry Corps (CFC), under the command of Brigadier General Alexander MacDougal. By the end of the war, their strength climbed to almost 31,500 men and they met 70 per cent of the Allied need for timber. The Canadians were deployed mostly throughout western Europe from Belgium down to the Pyrenees, but they also moved into two districts in Scotland – in Stirling and in Inverness. The men of the Newfoundland Forestry Corps, almost five hundred strong, came over in the spring and summer of 1917.

Affectionately nicknamed the 'sawdust fusiliers', they were generally popular in Scotland. 'Tales of the backwoods have achieved tremendous popularity and the life of the lumberman has been surrounded with a halo of romance,' noted an anonymous contributor to the *People's Journal*. Of course, many of them were Scots emigrants or the descendants of emigrants and they brought into the conservative country byways of the motherland a breath of the new world which only added to their allure.

They also brought new techniques. Near Craigvinean in Perthshire, the Newfoundlanders erected a 3,000-foot-long chute to flush logs from the felling sites to the sawmill. They also cut a trunk to leave a high stump, something Highland foresters definitely found odd and wasteful. In Morayshire, the Canadians set up a camp at Broadshaw on the boundary between the Cawdor and Moray estates, where the government had bought large stands of mature forest. The journalist who observed the newcomers in action clearly knew something of forestry but was a little sniffy about Canadian practice 'As to the superiority of their methods I am not convinced,' he said at one point (*People's Journal,* 19 Sept 1916).

Simon Joseph Fraser, 14th Lord Lovat, was a highly appropriate choice as first chairman of the FC. He had long been an advocate of state forestry and his own practical knowledge of the subject had been honed on his family estates in Inverness-shire. There he had inherited large plantations of Scots pine and larch from his father and grandfather and he had learned much from John Dewar, the head forester at Beaufort. Sir John Stirling Maxwell, whose brother, Captain Archibald Stirling of Keir, was married to Lovat's sister, became chairman of the Commission in 1929. He shared this interest in forestry, having experimented since the early 1890s with the cultivation of trees on his high-lying Corrour estate in the Central Highlands.

Forestry was thus the business of close-knit communities and families at several levels. Lieutenant Colonel Walter Steuart-Fothringham, whose family held the estates of Grandtully and Murthly in the well-forested valley of the Tay, had long been keen on planting and the area still boasts some of Scotland's outstanding

champion trees. During the First World War he had been in charge of government acquisition of timber in Scotland. According to his obituary in the *Scottish Forestry Journal*, he 'had great affection for his old forester, Mr Alexander Murray, and it was pleasant to see them together' (SFJ, 1936). Men such as John Dewar and Murray were the bridge between forestry as practised on the private estates and the practices of the new Commission.

Because forestry had been largely confined to large rural estates before the War, the practices of the estates carried over into the FC. Another influence on the early Commission was Lovat's military connection. His staff back in 1920 comprised forest officers, foresters and other personnel ranked in a graded structure reminiscent of the military with its officers, NCOs and other ranks; forest officers were university graduates, with the others coming from forestry schools. John McEwen, a forester who was also politically a radical, described how at a conference in the mid-1920s in Fort Augustus the three attending Commissioners stayed in one hotel while everyone else was placed in another where the divisional and district officers were assigned single rooms whereas the foresters had to share: 'Officers and foresters were kept away from each other at meals and had no contact whatever in the hotel. That was Lovat's army procedure' (McEwen, 1998). The military aspect of the grading was reinforced by the issuing of uniforms, a practice that was to persist into the early 1980s.

Scotland was divided into four areas each with its own divisional officer. The Glasgow division had only a brief life, leaving three regional headquarters in Aberdeen, Inverness and Edinburgh. John F. Annand, whose background included wide experience in the north of England and a period in Eberswalde (in Germany, where in the pre-War years many UK foresters had travelled to study), was appointed as divisional officer in Aberdeen. South-west Scotland came under the supervision of divisional officer John Murray, whose father had been head forester at Murthly. Frank Scott was placed in charge in the Inverness office with the north-west as his remit.

Heldon Hill was an early forest under Annand. In the autumn of 1920, John McEwen was appointed the forester in charge and told to plant 500 acres in his first year. 'There was not a man nor a tool in the place, and others, e.g. in Inverness, had never been asked to plant more than 100 acres,' recalled McEwen, 'I told Annand I thought it was impossible but the figure had been settled in headquarters in Edinburgh.' McEwen set to, organising work squads to clear the ground of branches left from wartime felling, engaging the 'the most noted poacher in Morayshire' to keep down the rabbits, and organising draining and planting. Unemployment meant easy recruitment of over forty men, most of whom were assigned to planting once the preliminaries had been done to prepare the ground. He set a target of 650 trees per man per day 'and I had no difficulty in attaining that figure'. The saplings came from all over the country – nursery work was in its infancy – but the bulk was Norway spruce from southern England, barely acceptable, thought McEwen, for the task to be performed.

The Commission published its first Annual Report in the late spring of 1921, describing what it had achieved by the end of May that year. It had acquired 103,100 acres of land throughout Britain and Ireland, and had planted around 8,000 (FC Annual Report, 1920). The first Commission forests in Scotland were listed as: Borgie in the far north; Portclair, Inchnacardoch (previously part of Lovat's estate) and South Laggan in the Great Glen; Craigmyle in Aberdeenshire; and Gagie in Forfar. In all, a modest 543 acres of woodland were planted by September 1920, comprising some 323,600 Scots and Corsican pine, 217,200 European and Japanese larch, 5,000 Douglas fir, and 686,200 Norway and Sitka spruce. The acquisition of Monaughty in Moray, Glenduror in Argyll, Glentress and Newcastleton in the Borders, Slattadale, Achnashellach and Ratagan in Wester Ross, Kirkhill in Aberdeenshire and Montreathmont in New Galloway soon followed.

In view of the importance forestry was to attain in rural Scotland, the reactions in the press to the 1919 Act were somewhat low-key. Forestry engaged only a relatively small number of people in the countryside. Land raids by ex-servicemen broke out in several places in the Highlands and Islands after the war, including on Lovat's own estate of Stratherrick in June 1922, but these were aimed at acquiring crofts for traditional agriculture. It was recognised, however, that forestry offered opportunities for employment. Sir William Sutherland, MP for Argyllshire, called for more to be done to develop forestry in the West Highlands (*People's Journal*, 6 Sept 1919). In his review of the future, delivered in a speech in Dingwall in January

1920, the Rt Hon Iain Macpherson MP foresaw forestry as work 'placed upon a national scale at the very doors of the crofters, the smallholders and the villagers . . . there will be abundant work and the days when . . . the crofter or smallholder or the villager has to be idle he can employ himself or his family on the afforestation scheme' (*Highland Leader and Northern Gazette*, 10 Jan 1920). The *People's Journal* on 17 February 1920 said that forestry was destined to have a promising part to play in the future of the Highlands, with a possible two million acres to be planted, and asked, tongue in cheek, what would happen to the sheep – would there be a mutton shortage?

Amid the general optimism, an anonymous contributor to the *Highland Times* on 10 June 1920 raised a cautioning voice: 'Some people are very sanguine regarding the potentialities of this practically dormant profession. They theorize the project and picture forestry "the king" of the future. I beg to differ.' The wages on offer were a 'primary subject of discontent', thought the writer. The basic rate of £1 10s to £2 a week for fifty hours' work (when men were provided with hut accommodation, the top rate fell to £1 18s a week) was not 'very compatible' with the cost of living and prevented the establishment of a permanent, strong workforce. Outdoor work in the 'inclemency' of the winter deserved 'a comfortable livelihood'. In conclusion, the writer declared that the government and the estate owners 'will soon learn that the workman of today whose aim is Labour will go only where Labour gives her just reward'.

The First World War had drawn into military service a quarter of the country's able-bodied men. Around 10 per cent of those between the ages of 16 and 50 had been killed and many more had been wounded. Such a scale of loss had a profound effect, not least in social attitudes over the following decades. The much-remembered slogan 'homes fit for heroes', based on words spoken by Lloyd George in the post-war election campaign, became a manifesto for post-war society. In the event, change often came about slowly and the slogan, transmuted to 'a land fit for heroes', was soon recalled more in irony than in celebration. But there was change and it was in this context that the Commission passed its early years.

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The Significance of the Flow Country Controversy for Scottish Forestry

Charles Warren
School of Geography & Sustainable Development,
University of St Andrews

1988 was a watershed year for UK forestry. The sudden removal of the fiscal incentives which had been driving afforestation sent shockwaves through the sector. A key contributory factor to that dramatic policy change was the high-profile controversy over afforestation in the Flow Country during the 1980s. This article addresses two questions:

- What was the controversy about?
- What was the significance of the controversy, both in the immediate and longer term?

It concludes with some brief reflections on the current state of play, raising some contemporary questions concerning forestry, peat and carbon management. The article draws on research into the Flow Country controversy undertaken in the late 1990s which led to a paper in the *Scottish Geographical Journal* (Warren, 2000). The issues are discussed in detail in that paper, and only summarised very briefly here, so those interested in a more substantive analysis of the arguments are referred there.

THE FLOW COUNTRY CONTROVERSY

Arguments in favour of forestry

'The Flow Country' refers specifically to an area of about 400,000 ha of deep blanket peat and wetlands in the eastern part of northern Scotland, but it is often used to refer to the entire peatland area of Caithness and Sutherland. This area had long been regarded as 'useless bog' and as wholly unsuitable for commercial forestry. But from the 1970s, improved ploughing technology and silvicultural techniques made it possible for the first time to establish commercial plantations on the deeper peat areas. Northern Scotland came to be seen as forestry's final frontier - an unproductive area with the potential for 100,000 ha of new forestry, bringing jobs to an economically challenged area. There was even talk at the time of a pulp mill in Wick. Despite the remoteness and poor infrastructure, forestry was regarded as potentially viable due to the economies of scale that would flow from extensive regional afforestation. At the time, government policy strongly encouraged commercial afforestation *via* a range of tax breaks and grants, and the UK's annual planting target was 33,000 ha. In essence, therefore, a coherent argument could be made for forestry in terms of its potential to contribute to economic development, to provide rural employment and to help deliver government policy objectives. The availability of cheap land was another conducive factor. Highland Regional Council was strongly supportive, especially because of the potential for forestry jobs. All these factors came together to trigger rapid, large-scale afforestation. Extensive monocultural plantations of exotic conifers (notably Sitka spruce and lodgepole pine) were established in many parts of Caithness and Sutherland. By 1986, 67,000 ha had been planted, and the notional target of 100,000 ha was looking eminently feasible.

Arguments in favour of conservation

Conservationists reacted with horror to what they saw as damaging, geometric blots on the landscape, and worked hard to halt afforestation. In simple terms, their campaign comprised a mix of anti-forestry and pro-conservation arguments. They opposed forestry primarily on economic, silvicultural and hydrological grounds. Economically, the area was far from markets, putting it at a severe disadvantage. Silviculturally, it was argued that tree growth would be poor, and that the maturing plantations would be subject to a high risk of windthrow and infestation. The damaging impacts of forest ploughing on the hydrology of the wetlands was also a prominent plank of the anti-forestry case. Essentially, the argument was that forestry here would never be successful, even in its own terms, and moreover that it was entirely inappropriate given the conservation significance of the Flow Country. What, then, were the arguments in favour of conservation? These can also be summarised under three headings: landscape, biodiversity and scientific

value. Firstly, the Flow Country was championed as a wetland habitat of international significance. Its great landscape value was captured in the suggestion that this was 'Scotland's Serengeti', a special, natural landscape which should be left undisturbed. Secondly, the conservation value of the area's rich and remarkable biodiversity, with its specialised floral and faunal communities and concentrations of rare bird species, was held up as worthy of protection. Thirdly, the value of the peatlands as a scientific resource was highlighted, noting the importance of the peat archive for both archaeology and palaeo-ecology.

These and other conservation arguments were marshalled in two major publications by the then Nature Conservancy Council (NCC, 1987, 1988). The first, *Birds, Bogs and Forestry,* was published in 1987 and was a campaigning document designed to stop afforestation in its tracks. The second, *The Flow Country: the peatlands of Caithness and Sutherland,* came out the following year and presented the detail of the underpinning science. Highland Regional Council's reaction to the publication of *Birds, Bogs and Forestry* was violently hostile, and the conservation arguments were attacked from many angles. Undaunted, the RSPB, SWT and other conservation organisations continued to mount a sophisticated campaign against the ongoing afforestation, and succeeded in giving the issue a high media profile in the late 1980s. In this, they were helped by a David Bellamy documentary entitled 'Paradise Ploughed', and the involvement of various wealthy investors from the world of show business and entertainment (such as Terry Wogan) who had been drawn to invest in forestry by the government's generous grants and tax breaks. It became a polarised, bitter and high-profile battle.

The sudden end of Flow Country afforestation

In the 1988 budget, the Chancellor, Nigel Lawson, suddenly removed the fiscal incentives driving forestry investment. This dramatic policy change came out of the blue, with no warning, and caused widespread shock and anger across the forest sector. Almost overnight, large-scale planting ceased and a huge programme of SSSI notification commenced. Blanket afforestation was replaced with blanket conservation, representing a major victory for the conservation lobby. The conservationist case that the area should be regarded as special and sacrosanct came to be widely shared, and the 'useless bogs' were transformed in the public's perception into 'precious wetlands'. In some areas, peatland restoration began. Increasingly, as the importance of climate change has risen up the political and public agenda, the Flow Country peatlands have been recognised as vital carbon sinks of international significance and as providers of important ecosystem services (Byg *et al.*, 2017). The episode therefore had a transformative impact on the Flow Country itself. But the ramifications reached far beyond northern Scotland.

THE SIGNIFICANCE OF THE CONTROVERSY

Significance for forestry

The overnight abolition of the fiscal incentives for afforestation affected not just the Flow Country but forestry throughout the UK, removing at a stroke the main engine of afforestation. This dramatic policy change was a direct result of the controversy as the government attempted to limit the political damage of being seen to be 'subsidising the rich'. Planting rates crashed in subsequent years, and have never again approached the rates of 20-30,000 ha/yr seen in the 1970s and 1980s. With hindsight, that era can be seen as the high-water mark of commercial forestry. Thereafter, there were rapid shifts in policy designed to make forestry more environmentally friendly and landscape-sensitive. These shifts were already underway (notably the broadleaved woodlands policy of 1985), but the acrimonious showdown over the Flow Country considerably accelerated them. There was a decisive shift away from monocultural exotic plantations towards native broadleaves & pinewoods, and away from ploughing towards natural regeneration. Single-purpose forestry gave way to multi-purpose, multi-benefit forestry. Another significant consequence of the furore was the rapid adoption thereafter of improved procedures for planning and consulting on proposals for new forestry. The controversy highlighted the deficiencies of the existing case-by-case approach which could not address the *cumulative*, regional impact of afforestation. This recognition led rapidly to the trialling and adoption of *Indicative Forest Strategies*. A final, major legacy of the Flow Country episode was deep and lasting damage to forestry's public image. The anti-forestry media campaign focused on the worst excesses of single-purpose, commercially-driven afforestation, using powerful imagery to portray forestry in a wholly negative light. It fostered a perception that the Scottish forest industry was, in the words of Chris Smout, 'a great juggernaut rolling on oblivious to shrieks of public pain, fuelled by tax breaks and

other forms of government assistance, hell-bent on softwood production at any cost, blanketing some of the best conservation areas in Western Europe' (Smout, 1999). This perception has proved hard to shift, notwithstanding the subsequent transformations of forest practice.

Significance for conservation

Forestry was not the only sector to suffer severe damage to its public image. Conservation, too, came out of it badly, despite winning the argument. The one-track, campaigning style of the NCC and the voluntary conservation organisations alienated local people who objected to being told what to do by urban-based 'outsiders'. The fact that *Birds, Bogs and Forestry* was launched in London rather than in Edinburgh or Inverness was seen as symbolising the detached, alien character of conservation, exacerbated by the fact that the official voice of conservation often spoke with an English accent. Because conservation was seen to be giving greater priority to wildlife than people, it was labelled in some quarters as 'scientific colonialism' and 'ecological imperialism'. For example, a news headline at the time read: 'Farmers fuming over NCC "green fascists"'. Like forestry, conservation has struggled to recover from this blow to its reputation. A second outcome of the controversy was the government's decision in 1990 to initiate 'conservation devolution' by breaking up the UK-wide NCC. Thereafter, conservation was devolved to national agencies within the UK, with the newly-created Scottish Natural Heritage, English Nature and the Countryside Council for Wales taking on the responsibilities. Finally, in another example of the Flow Country fracas hastening an existing trend, subsequent years saw a considerable acceleration of land purchases by the voluntary conservation sector. The RSPB, for example, now owns and manages tens of thousands of hectares in Caithness, and conservation ownership has become a significant piece of the land management jigsaw across Scotland (Warren, 2009).

CONTEMPORARY CARBON CONUNDRUMS

Today's context is very different from the world of the late 1980s. Climate change mitigation is now an urgent, over-riding priority, and much is seen through the lens of carbon management. No one is arguing for a return to 1980s-style forestry, but we are again in an era with ambitious forest planting targets. These jostle with other policy priorities for peatland conservation, biodiversity conservation and expanding renewables, all of which have important contributions to make. Forests are good at sequestering carbon, peat is good at storing carbon, blanket bogs are rich in biodiversity and peatlands provide exposed sites for windfarms. All contribute to good environmental goals but conflict with each other. Today, therefore, policymakers are faced with a set of new and difficult questions about the best uses of Scotland's extensive peatlands, including the following:

- What are the appropriate carbon trade-offs in the medium/long term?
- Is peatland forestry a carbon sink or a carbon source? Should all peatlands be left unplanted or is forestry a good option in some areas?
- Specifically, what should the future hold for the 20th century Flow Country plantations which are now approaching maturity? Should they be replanted (and if so, with what?), or should the pre-existing peatland ecosystems be restored?

There are no straightforward or universally applicable answers to these questions, not least because so much depends on the specificities of each individual site and on the timeframe under consideration. Public preferences are also a complex factor to take into account because although perceptions of peatlands are generally much more positive than of old, public attitudes are still somewhat ambivalent; Byg *et al.* (2017) suggest that they are variously seen as 'the good, the bad and the ugly'. Helpful and nuanced discussions of the issues are provided by Payne *et al.* (2018), in a Practice Guide on options for afforested deep peat (FCS, 2015) and, more generally, in the SNH National Peatland Plan for Scotland (SNH, 2015).

CONCLUSION

At the time of the Flow Country debate, it was seen as a fight to the death between blanket afforestation and blanket conservation. With hindsight, it can be seen that the episode sowed the seeds of many positive new directions, and accelerated various pre-existing trends, as outlined above. Notably, in a number of spheres,

single-issue approaches have been replaced by more inclusive, integrated management philosophies. Key examples include the rise of multi-purpose forestry, so-called sustainable conservation (involving participatory democracy) and the development of the Scottish Land Use Strategy. It can be argued that few UK land use battles have had more far-reaching ramifications.

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Native Woodlands in Scotland: The Last 100 Years

Neil MacKenzie

One hundred years ago Scotland had the lowest forest cover in Europe. Only 6% of the land area was under forest and, of that, about one half was semi-natural and the other half was planted woods (Smout, 2005; Worrell & MacKenzie, 2003). The ancient semi-natural woods are the direct descendants of the original natural forests that colonized the land after the end of the last ice age. In Scotland there are no truly natural forests left as all have been impacted on by humans to some extent but many remote woods, for example those on the north shores of Loch Maree, are probably very similar to what was present one hundred years ago (Fig. 1).

Fig. 1. The Letterewe woods, Loch Maree, Wester Ross

Although the early statistical data did not always distinguish between semi-natural and plantation woods the main tree species were documented. These show that at the beginning of the 20th century Scots pine was the most common conifer and birch and oak were the most common broadleaf trees (Smout, 2005). There were also accounts, which indicated that the condition of many of the semi-natural woods was poor and that most were overgrazed and suffered from a lack of regeneration (Anderson, 1967). Various reports have established, based on the age of remnant trees of recent times, that some ancient woods of pine and oak had not achieved any successful regeneration for over 120 and, in some cases, over 250 years (Watson, 1983; MacKenzie, 1990).

The value of the semi-natural woods, particularly the broadleaves, had also plummeted by the early 1900s. Scots pine was the only species that retained an economic value. The oak coppice market for tan bark and iron smelting had ended and only a few cotton mills continued to use local birch in the manufacture of bobbins. Alder and birch charcoal for gunpowder had been superseded by nitroglycerine. The use of native broadleaved timber was declining rapidly during the early part of the 20th century as imported wood and

cheaper alternatives took over. A few companies soldiered on using local timber, for example, the pyroligneous acid works at Balmaha (Bruce & Brown, 1988), various watermills making small wood products, some boat building enterprises, and firewood etc. Many estates and other landholders preferred to use woodland for sport or as shelter for livestock and the native woods were no longer afforded any protection or management.

Over the next few decades there was a steady decline in the extent and condition of the native woodlands. During the first half of the 20th century there were expressions of concern from a number of sources about the state of Scotland's once widespread natural forests. Mark Anderson in *A History of Scottish Forestry* (1967) reflected on the native woodlands during the period with this quote – "The natural forests … are, with few exceptions, the merest skeletons of what the original forests represented". Their economic value was very low and values other than timber production were never considered.

Concerned at the lack of a home-grown timber industry the Royal Scottish Arboricultural Society had commissioned a survey of the woodlands along the Great Glen in Inverness-shire and in 1911 a report was produced by Lord Lovat and Captain Stirling of Keir. The report concluded that, although birch and oak still had some small value, the native broadleaved woods should be replaced with conifers, which had a greater market value. This early forecast for an afforestation programme for Scotland was to become the theme for the next seven decades. Indeed, following the Forestry Commission's formation in 1919 there were ongoing discussions on how best to kill the broadleaves – either by felling, uprooting, ring barking or simply under-planting.

Nevertheless, the Highlands still retained concentrations of native woodland, such as those in Strathspey, Deeside and parts of Argyll, but many were overgrazed and without regeneration. Remoteness and occasional pulses of recovery helped the survival of some while numerous remnants were restricted to cliffs, gorges and other areas inaccessible to browsing animals. Both world wars also had an impact on the native woodlands although not as much as on the plantations. We do not have accurate data on how much timber was extracted from the oak woods, but the native pinewoods experienced significant felling in Strathspey, Deeside and Strathglass. Even worse though were the extensive and devastating fires that affected many pinewoods during the first half of the 20th century. Seventeen of the thirty-five Steven & Carlisle pinewood sites suffered extensive fires that destroyed mature trees and regeneration.

The Worst of Times

Scotland's afforestation programme greatly accelerated after the Second World War and the conversion of native woodland to coniferous high forest became common practice. From 1947 many broadleaved woods were replaced with commercial conifer crops and there were very significant losses, particularly in the Highlands which possessed 90% of Scotland's remaining native woodland resource. For example, between 1947 and 1985, Inverness-shire had lost about 40% of its native woods, Argyll and Lochaber woods had declined by 25% while in Deeside, although there was no change in overall area since 1947, 50% of the birchwoods had disappeared (this was mainly due to clearance of the ancient sites and new birch colonization of felled conifer plantations and moorland areas such as the Muir of Dinnet) (Brown & Wightman, 1987; MacKenzie, 1988). The native pinewoods did not fare well either – the Steven and Carlisle sites were largely left intact, but many were either under-planted or encircled by planted non-native conifers or non-local origin Scots pine. Such action prevented expansion and regeneration or threatened the gene pool of the native pine. (Mason, *et al*, 2004). While the FC's land purchase and afforestation was progressing rapidly, the private sector afforestation, aided by government grants, was also in full swing. The post war period was a high point for forestry in Scotland. However, it was a low point all over Scotland for native woodlands.

There were two principle factors behind the losses of native woodland during the 20th century. The first of course was the post war afforestation programme which resulted in the loss of many native woods of high conservation value, for example the oakwoods felled along Loch Awe and elsewhere in south-west Argyll. Birch was often regarded as a weed to be rooted out at every opportunity even though it was known to have soil improving properties and, as mentioned in Lovat and Stirling's 1911 report, was a very useful nurse crop with conifers. The second factor was, and still is, over-browsing by deer and livestock, an activity that had been going on for centuries in some cases. It is the reason why there are so many impoverished woods and

why natural treelines and montane scrub communities are so rare. Other causes that contributed to the decline of native woodlands included; muirburn, as practised by estates for grouse moor and deer management or by farms for livestock management, which eliminated tree regeneration and prevented any chance of expansion or rejuvenation of the native woodlands; clearance of woods for agriculture; and invasive non-native plants such as rhododendron.

One valuable indicator, which can illustrate how quickly native woodland can vanish from a landscape, is the comparison of mid-20th century maps with contemporary ones. For example, a wood present on Ordnance Survey maps that were surveyed in the early 1960s might be absent from current maps because the wood has disappeared or exists simply as scattered trees that can no longer be classified as woodland. Such woods had been neglected over many decades of over-browsing and lack of regeneration, the old trees then die, the open canopy suffers from windblow and the wood disappears – all in less than 50 years (Fig. 2). This is a good example of the Shifting Baseline Syndrome (Pauly, 1995) since no one will remember there was a wood there and it will then be gone from our collective memories.

Fig. 2 The Vanishing Wood

In addition to the loss in the area of native woodland throughout the 20th century there were wide ranging ecological impacts that affected the remaining woods. The main factors behind the losses of woodland have also caused - reductions in woodland biodiversity evidenced by reduced tree species composition, limited ground flora, lack of understory shrubs and absence of young trees; the loss of the treeline ecotone and montane scrub community; the fragmentation of woodlands with consequent island affects due to reduced size and lack of habitat corridors; an impoverished riparian and aquatic ecosystem due to the removal of broadleaves; and reduced soil fertility, soil structure and nutrient recycling as a result of tree removal.

Early concerns and a change in momentum

There were some early concerns at the perilous state of the country's native woodland remnants. Seton Gordon wrote in 1925 that the native pines would become extinct unless the deer were fenced out; Fraser Darling's writings had described the tragic history of the woodlands and the urgent need for restoration of the land (Darling, 1947); Anderson had highlighted the issues in *A History of Scottish Forestry*; the mountaineer Bill Murray and the National Trust for Scotland voiced their concerns; Steven and Carlisle's 1959 book on the native pinewoods helped to safeguard the core areas and McVean and Ratcliffe, alarmed

at the oakwood losses, did their best, when working on the Highland Vegetation Survey in the 1950s, to identify the richest of the oakwoods as candidate SSSIs. All of these concerns were, however, ignored.

Only after the Nature Conservancy was established in 1949 and when the first National Nature Reserve at Beinn Eighe was designated in 1951 was some protection offered to native woodlands. Other woodland NNRs were to follow. However, these were small in scale and in number and did not offset any of the overall losses of native woodland. It was not until the early 1970s and the formation of the Native Pinewood Discussion Group (later becoming the Native Woodlands Discussion Group) followed by a 1975 conference organised by the Institute of Terrestrial Ecology (ITE) on the native pinewoods that concerns over Scotland's native woodlands began to be taken seriously (Bunce & Jeffers, 1977). ITE also undertook the first nation-wide survey of deciduous woodlands publishing a report that clearly showed huge losses throughout Scotland (Parr, 1981). By the early 1980s, the Nature Conservancy Council were carrying out regional surveys of native woodland with a view to creating new SSSIs that represented the best types of native woodland. The NCC later began its work on the Ancient Woodland Inventory, mapping all of the country's ancient sites. Non-government organisations such as the RSPB and Friends of the Earth Scotland were also publishing reports on the state of the native woodland resource (Bain, 1987; MacKenzie, 1987). The momentum for taking action was building among the NGOs, NCC and new campaigning organisations such as Scottish Native Woods and, for the first time, stories were regularly appearing in the media.

Better times ahead

The government's Broadleaves Policy of 1985 was a game changer for native woodlands in Scotland. Almost overnight the destruction and felling of native woodlands was halted. The Forestry Commission, to their great credit, fully supported the new policy and, having seen the change in mood early on, had already begun restorative work on their own land. Foresters who once upon a time rooted out the nuisance natives now encouraged them with revitalised enthusiasm. The new grant schemes funded natural regeneration and new planting and Forestry Practice guides were published to help with the restoration of native woodland (Forestry Authority, 1994). There were more conferences and seminars, a native woodland advisory panel was established and new organisations such as Highland Birchwoods were created specifically to promote the values of a native tree species. More national surveys were completed, including an expanded Caledonian Pinewood Inventory and the Scottish Semi-natural Woodland Inventory.

By the time of the first Scottish Forestry Strategy in 2000 native woods were mainstream and a central part of forestry in Scotland. After a gap of about 100 years native woodlands had value again and restoration work became widespread.

Major landscape scale native woodland restoration projects, often without fencing, began to take shape. One of the earliest, at Creag Meagaidh, became a classic of what could be achieved without planting and without fencing. Other restoration projects were to follow, on the National Forest Estate and on private land, for example at Abernethy, Glen Feshie, Glen Affric, Glen Garry and at Sunart. On a smaller scale ancient sites, known as PAWS (plantations on ancient woodland sites), that had been cleared or under-planted were also being restored. One of the earliest was the under-planted oakwoods at Dalavich on the north side of Loch Awe. Here the conifers were removed in the 1980s, deer control was instigated and today the oakwood exhibits such diversity in structure and species composition that it could hardly be known that there was once a dense canopy of conifers (Fig. 3).

Fig. 3. The Restored Oakwood at Dalavich, Argyll.

The most common form of native woodland restoration involved deer fencing to exclude browsing animals and allow tree regeneration. This generally worked well and helped the wood to develop its ground flora and understory as well as replacement trees. However, there are negative aspects and it is not a permanent solution if the browsing level outside the fenced area remains high and any woodland outside the enclosure continues to deteriorate Figs. 4 & 5). And what happens once the fences reach the end of their life?

Fig. 4. Regeneration of Native Trees and Habitat Inside the Fence

Fig. 5. Deteriorating Native Woodland Habitat Outside the Fence

Scotland in 2019

The state of Scotland's forests in 2019 is considerably different to what it was at the start of the 20th century. Today 19% of the land area is under forest – over three times what it was in 1900, although still less than the European average. However, only 2.5% of the land area is native semi-natural woodland, less than the area in 1900, and a much smaller proportion of the total forest resource. In 1900, half of Scotland's forest was native semi-natural woodland but today it is only 13%.

Native woodlands certainly have better protection than they did thirty-five years ago and there is now greater public appreciation not just for their biodiversity but also their landscape, shelter and timber values. In the last two decades there have been numerous restoration projects, including landscape-scale ones, and this work looks set to continue. However, the condition of the majority of native woodlands is not as good as it should be. Many upland, unenclosed woods are in poor condition with low biodiversity and a distinct lack of flowering herbs and understory shrubs while the transition zones to natural treelines and montane scrub are largely non-existent. The Native Woodland Survey of Scotland, the most comprehensive woodland dataset ever to be compiled in the UK, informs us that – 33% of native woods are in high or very high herbivore impact categories and that a further 53% are in the medium impact category (Forestry Commission Scotland, 2014). As only a quarter of the native woods possess established regeneration greater than 20% of the overall stocking density the conclusion of the NWSS is that "natural regeneration is well below the level required to sustain native woodlands in the long term". The principal cause is still over-browsing by deer and livestock and, although many woods will undoubtedly persist with reduced diversity, it is unlikely that treelines or montane scrub will be returning without a change in land-use management. As the NWSS states "Reducing herbivore impact is the biggest single issue to be addressed to improve native woodland health and survival". The recently published report by the Deer Working Group has considered this in detail in its recommendations to the Scottish Government (Pepper *et al*, 2019).

In conclusion, it is important to state that as there are so few semi-natural woods left in the country we have a duty to safeguard the remaining ones mainly for nature conservation - 2.5% of the land or 193,000 ha is not a lot of woodland in a country the size of Scotland. In almost every corner of the world, and including Scotland, there have been huge losses in biodiversity and an enlightened nation should be able to manage their natural resources far better than they do now.

CASE STUDY: CHANGES IN GLEN GARRY, LOCHABER: THE LAST 100 YEARS

Glen Garry in Lochaber was part of the 1911 survey by Lovat and Stirling and makes a useful study of local historic woodland change as about half the glen is part of the National Forest Estate and the remainder is largely private estates.

Glen Garry in 1900.

One hundred years ago the glen contained 2,097 ha of natural Scots pine, birch and oakwoods plus three conifer plantations. In 1927 the Forestry Commission purchased land on the south side of Loch Garry (FC purchased the rest of the south side in the 1970s). During World War One some felling of pine took place and in the 1930s the estate, which had retained felling rights, extracted considerable quantities of pine before FC took over the management. There was no felling in World War Two because a fire destroyed many of the older trees as well as extensive areas of regeneration. A high deer population prevented recovery.

Glen Garry in 1947.

The glen contained 1,500 ha of native woodland. Native tree species still dominated the glen but had reduced in area since 1900 by about 35% and there was very little pine left. Former pine areas had been recolonized by birch and there were only scattered old pine or small stands along the steeper burnsides. The FC had begun planting at the east end with non-native conifers and non-local origin pine. Birchwoods were being felled in preparation for planting.

Glen Garry in 1987.

This was a low point for native woodlands in the glen – only 496 ha remained. Glen Garry had lost 62% of the area of its native woodland since 1947 and 76% since 1900. Many of the birchwoods had been felled

and almost the whole of the south side of the glen had been planted with conifers. The remaining woods were severely fragmented and their condition impoverished.

Glen Garry in 2019. (Fig. 6)
A considerable change in fortune has occurred, particularly on the National Forest Estate where native woods are being restored at a landscape scale. The NWSS data give a total of 1441 ha of native woodland in the whole glen, although part of that (587 ha), is established regeneration – not fully developed woodland as yet but well on the way. This area thus matches the 1947 total though still well short of the area present in 1900. Unfortunately, native woods on private land on the north side of glen have not increased much nor has their condition changed.

Fig. 6. Landscape Scale Restoration of the Native Pinewood in Glen Garry

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Machines and Men: Post-war Research and Development

Andy Neustein

PART ONE

Introduction

S A (Andy) Neustein, whose FC career spanned five decades, was twice deeply involved in Forest Research. *viz.* firstly as Silviculturist (North) and later as Chief Research Officer, both at the Roslin Research Station. The rest of his 38 years in the Forestry Commission were spent in forest management as District Officer, Work Study Liaison Officer, Harvesting and Marketing, Head of Forest Management and Director for North England. Such a diverse career was common, officially known as career development and unofficially intended to reduce the likelihood of becoming too cosy with the private sector or the timber trade.

Research Organisation

Nationally, the Research Division was divided into Lowland (Alice Holt) and Upland (Roslin). Forestry graduates with management experience based at each station were responsible for the investigation of specific topics. For example, species choice, cultivation, fertilisation, protection (`vermin`), maintenance. Graduate specialists dealt with insect protection, pathology/fungi, economics, statistics and cooperation among this staff was vital and achieved with total goodwill.

Research Field Staff were stationed at forests typical of key site types (peat, heathlands, sandy coastal regions) where their responsibility was to establish the experiments designed at the research station using the local labour force and then carrying out the periodic assessments.

Upland Research Subjects

As food and wool were as strategically important as timber, upland afforestation was confined to land capable of carrying no more than two ewes per acre. The limiting factors for tree growth were exposure and soils (fertility and structure) and vegetation (heather and bracken). Productive woodland had virtually never been planted there in Britain or on the continent. Hence a vast number of experiments combining species choice, cultivation, and fertilisation (NPK[1]) were established and maintained for more than twenty years.

The earliest peat planting method consisted of inverting a turf with hand tools as horse ploughing was impossible and farm ploughs were not strong enough. Steam engines pulling a cable-towed plough were unsuccessfully attempted. Eventually, strong enough tracked tractors became available, which produced vertical ploughing with contoured cross drains as a means of avoiding soil erosion. On heathland so-called tine ploughing aerated podsols with previously impenetrable iron pans.

The only productive native conifer (Scots pine) did not withstand exposure and did not flourish on deep peat.

Many exotic species and provenances were compared in complex statistically designed experiments. (European and Japanese larch, Douglas fir, Corsican, mountain and lodgepole pines and Norway and Sitka spruce. Sitka spruce eventually proved outstanding, if appropriately fertilised and if mixed with Japanese larch or lodgepole pine on heather-covered sites. A coastal provenance of lodgepole pine gave outstanding early growth on deep peat, but sadly its trunk form in later life, when extensive areas had been planted, rendered it virtually useless

[1] NPK stands for nitrogen, phosphorus and potassium.

Exposure to wind was a common threat for young plantations before they grew tall enough to provide mutual shelter. This was almost impossible to foretell sufficiently accurately to be certain of the appropriate contour limit relative to elevation, compass direction and topographic shelter. Fortunately, a totally novel practical assessment method of exposure risk was developed. *viz*. tatter flags. They originated from a house owner on Orkney whose relatively sheltered home had been constructed on the site of the largest of many flags which had been set over the estate. The silvicultural efficiency of standard flags, after trials in a wind tunnel were then proven on trial plantations and reached standard use in demarcating plantation boundaries and even before land purchase.

As upland plantations grew, wind throw became a level of threat beyond that experienced at lower levels with better, deep-rooting soils. This was accentuated by spaced furrow ploughing, which restricted wide rooting platforms. Complete ploughing was attempted as was helicopter fertilisation, but the cost-benefit was unconvincing.

Various approaches to minimizing extension of windthrow were explored. Would small felling coups, catching less gale-force wind, reduce damage though offering longer crop edges? Could the stability of exposed crop boundaries be improved by reducing their sail area by severe pruning or even killing them?

The ability of *Pinus contorta* (lodgepole pine) to root deeply in anaerobic deep peat was unfortunately another incentive for extensive planting.

The degree of tree stability could not be assessed after natural climatic events because of the gustiness and irregularity of gales. Hence so-called tree-pulling (with a winch) became common; but did not simulate the wind`s rocking effect.

The overall success of the practical research owed much to original thinking and cooperation among staff. Several initiatives come to mind. e.g. a manual imitation of spaced furrow ploughing at least a decade before the latter was possible, and it also foretold the fertilise-spreading plough. Years later this was assessed by tree-pulling and root-baiting experiments and led to the reduction of spaced furrow ploughing of peatland.

At a Common Market Research Conference in Brussels financial aid was granted solely to the UK as it was agreed that it`s windthrow research was well ahead of other countries. Such a unique allocation had never before occurred.

PART TWO

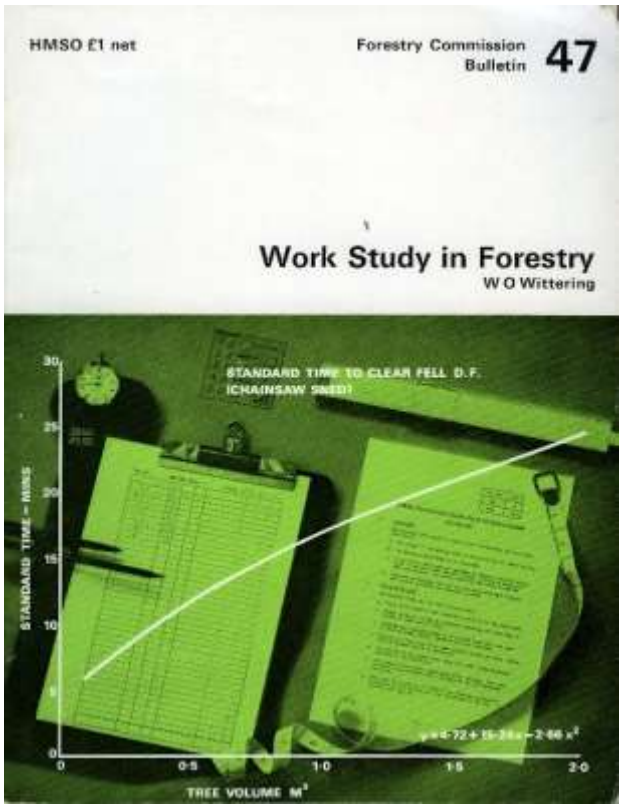
Mechanisation

In the 1950s, extensive first thinning became necessary. This was done by unskilled recruits who learnt their skills from earlier employees. Few foresters from technical schools had felling skills. 7½lb. axes were used for " laying in" and snedding (branch removal) after felling with a two-man cross-cut saw.

Following industrial factory precedent, in 1956, the first forestry Work Study Organisation was founded at the Forest of Ae, near Dumfries, under the guidance of an expert from Glasgow. Its two main aims were Method Study and Work Measurement. The earliest resulting changes were lighter axes (2½lbs) and introduction of Scandinavian (Sandvik) Bow Saws, thus enabling tree felling to be carried out by one man instead of two. Timber extraction had previously been done by simple horse dragging and later with a U-shaped wheeled horse-drawn `sulky`. Both required the heavy end of logs to be lifted, - not an easy task. The Work Study expert designed a much-improved inverted U-shape with an attached hand-winch, thus trees no longer had to be hand lifted.

Such changes were rapidly taken up by all FC forests and the increasing contracting firms and buyers of standing timber.

The dogma of the Work Study Branch was "*Can the task be carried out in a different way, by another worker at a different time?*" This encouraged all involved to look critically at their own housework, gardening etc. Wives were given a second hoover for upstairs; kitchen utensils were re-located, - not always welcomed by the worker!



Never had manual labour been so carefully studied, i.e. for several continuous hours, for each element of the operation (sawing, sharpening, short pauses for a rest and a fag etc). No ganger or superior had ever done this, being too embarrassed to be such a long-term spectator. The observed worker, being on piece-work, would then have a series of work rates. Firstly, showing off his capability; then realising that this would reduce his piece-work rate, and finally he would revert to his normal speed. The work-study observer would have to wait for this.

Scope for similar examination of office procedure and the over-weighted supervisory staffing took years to be applied. When it was suggested that I should be transferred for some months to Marks and Spencer, this was refused by FC HQ. The motive for this was that it took the FC three months to establish cost and income of a District, whereas it had been noted that M & S changed its retail layout weekly as their manager knew on Monday which goods were selling best the previous week.

(L) Bulletin 47 (1973), Standard Time Tables (© FM)

Later changes with ever more sophisticated machinery was led by its manufacturers and the major contractors who were expanding to a much larger proportion of FC operations.

Further Reading

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Part 1: Introduction and Early Developments;
Part 2: Historical Review of Ploughing on Wet Soils
Part 3: Historical Review of ploughing on Dry Soils
Part 4: Mounted Ploughs (and Other Regeneration Equipment)

Glenmore Reflections: an Oral History

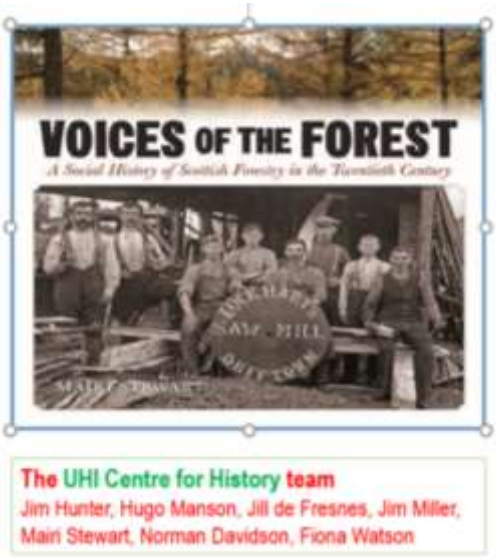
Mairi Stewart

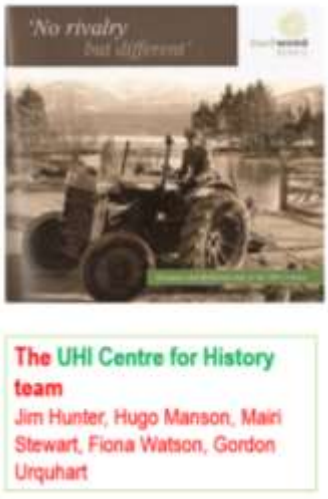
INTRODUCTION

The idea for this talk came to me, a couple of years ago, in 2018, while walking to *An Lochan Uaine* – the Green Lochan in Glenmore. The forest, a Caledonian pinewood remnant, lying on the flanks of the Cairngorms in Strathspey, was acquired by the fledgling Forestry Commission (FC) in 1923. Formerly, Glenmore was held for centuries by the dukes of Richmond and Gordon, and largely used for hunting, although its timber resource had been exploited for centuries.

Each state-owned Scottish forest has its own history – prior ownership, land use, cultural connections – but for most, particularly the early acquisitions made by the Commission, following its creation in 1919, there were many shared experiences for those who worked in them over the course of the 20th century. Glenmore may not be one of the 'new' forests, created as part of the extensive post-war afforestation programme, but it shares in common the activities taking place in the forest, of growing and harvesting timber. The Glenmore story therefore reflects much of 20th century Scottish forestry history.

This is an account of Glenmore forest in the twentieth century, woven together from the personal recollections of those who lived and worked in and around this magnificent expanse of woodland, as foresters, farmers, gamekeepers, and reindeer herders.





A SOCIAL HISTORY OF SCOTTISH FORESTRY IN THE 20TH CENTURY

The oral history project from which this talk is drawn was undertaken by a team at the UHI Centre for History. It all started in 2007, with the Forestry Commission-sponsored project – *Touchwood History* – led by Centre director, Jim Hunter, whose father and grandfather both worked for the Commission in Argyll. He assembled a small team: Hugo Manson, an experienced oral historian; the late Gordon Urquhart who created the Forestry Memories website (see Norman Davidson in this issue); and myself; and supported by Fiona Watson and Malcolm Wield.[1] *Touchwood* was a great success and spawned four locality-based publications covering mid-Argyll, the Great Glen, Strathspey and Ayrshire (Stewart, Tittensor, 2011).

Eventually, Jim Hunter persuaded the Commission and others to fund what we called the 'big' project, which allowed us to widen our scope to the whole of Scotland. Nine years after my involvement began and after

[1] The project team expanded to include Jill de Fresnes and James Miller following the *Touchwood* phase.

recordings made with 161 individuals (300 hours) – stretching back to the 1930s – and a considerable amount of research, we have the book '*Voices of the Forest*' (Stewart, 2016).

A *TOUCHWOOD* HISTORY OF GLENMORE

With the Glenmore project, we were directed to cover the wider area in and around Aviemore, in particular Glenmore and Rothiemurchus. Hugo and I recorded 21 interviews (27 individuals). These included people who grew up in Glenmore, worked there, and also from across the locality – farmers, gamekeepers, foresters, wood contractors, a reindeer herder, a Newfoundlander and two women who were in the Women's Timber Corps (WTC) during the war.

On my winter walk the Green lochan in 2018, I was thinking about some of those whom we had interviewed back in 2008 and 2009 and what they might think about Glenmore today. The 20th century was a century of profound change in many aspects of everyday life and people had to live with the changes imposed on them, but history is also about continuity and how things can endure, not least the trees.

THE ARRIVAL OF THE FORESTRY COMMISSION IN GLENMORE

At the outbreak of the Great War, Glenmore was owned by the duke of Richmond, who ran it mainly as a sporting estate, albeit its timber resource also provided an income.

In 1914, it is recorded that part of the forest was sold to a timber merchant for £10,000 (Alexander, 1920). To facilitate timber removal, it was proposed to build a light railway to carry the timber from the forest to the railway station at nearby Aviemore. By 1916, felling operations had not begun, supposedly because of the scarcity of labour.

However, in 1916, lumbermen from Canada and Newfoundland were recruited to fell timber from Glenmore. In November of that year, No. 110 Company of the Canadian Forestry Corps set up operations in Glenmore, at the south end of the Sluggan Pass. This camp housed 200 lumberjacks, a sawmill and a light railway. It was in full operation by May 1917 and, by the autumn of that same year, with 50,000 trees felled and sent down to Aviemore, the Canadians moved on to Nethybridge.

A second camp – No. 121 Company – was established in July 1917 on the shores of Loch Morlich, just across from the shooting lodge. A similar number of men were involved, including Russians, Turks, Norwegians and others, stranded by the war and collectively known as 'the Finns'. This camp also included a YMCA facility to provide entertainment and a steam-driven generator producing electricity – something the Glen as a whole would not have until the 1960s.

Old postcard showing Sluggan Pass in 1884. The message on the back is probably written by a Canadian during WW1, describing his camp location and how they had cut all the timber shown on the postcard.

In 1923, the Commission stepped in to buy and replenish Glenmore, as it did in the case of many other cleared forests. In the early days, several of its first acquisitions in the Highlands were deer forests, which included large tracks of unplantable hill, where deer might continue to be managed on a more traditional hunting system. At Glenmore, three quarters of its 12,474 acres were over 1,500 feet and therefore considered not fit for forestry.

My first interview was with **Johnnie MacDonald**. His father, John, had come to Glenmore as head gamekeeper in 1928. Johnnie was then two years old. His memory of the 1930s and wartime was fantastic. In those days, Glenmore was run just as much as a sporting estate as it was for forestry. Johnnie's young world during the 1930s was filled with the excitement of the annual shooting season. It was a hard and isolated life for the eight MacDonald children. They were educated in a room in their own home, but Johnnie and his younger brother, Duncan, spent much of their young lives helping their father. They grew their own crops, raised their own livestock on a Commission croft and their mother, Dolina, made cheese and butter.


Johnnie MacDonald (L) in 2008 (©M Stewart) & father, John, 1940s. (courtesy the MacDonald family).

John MacDonald was a veteran of the Great War, tall and, like most stalkers, wirily strong. However, he was plagued by ill-health, which meant that he relied on his children, particularly Johnnie and Duncan, to help.

Johnnie recalled his youth:

'I would go out to the hill with them [the shooting tenants]. We didn't do beating in them days like they do now. [The ground] It was all shot over. I used to carry the guns and then there was the horses. I used to take them out to the hill … If they were shooting on the face, where the ski-lift is now, there was a stable on the burn just at the bottom of the hill. You would leave the horse and go to the viewpoint and when they shot a stag they would light a fire and you would go down to the stable to get the horse, and by the time you got home it was dark some nights. . I didn't like that job very much.'

'*People will laugh at me,*' said Johnnie. '*We used to shoot deer from when we were about 10 or 11 because father never kept well, and some days he wasn't fit to go out to the hill, and he used to give us five bullets so we weren't shooting at nothing, and he wanted to see how many beasts we shot when we got back.*'

Such a life can scarcely be imagined today. This interview was a great influence on me, conjuring up a glimpse of the past. Those days are so far from what we are used to today and Glenmore has changed enormously. Sadly, Johnnie Macdonald, died a few months after this interview took place.

Ian Fraser was 12 in 1937, when his father, Jakey, another ex-serviceman, became Glenmore head forester. Jakey had started with the Commission as a forest worker at Teinland near Elgin, on land purchased in 1924 from the duke of Richmond. Jakey remained in the job for over 15 years and, on retirement in 1954, stayed on to manage the Glenmore campsite.

While Johnnie MacDonald and his younger brother Duncan had been out learning their fieldcraft with their father, Ian Fraser, of a similar age to Johnnie, had been honing his hunting skills, unofficially, under the tutelage of forest worker and bothy resident Hamish Reid, whom Ian described as '*the biggest poacher'*. Ian proudly admits that, by fifteen, he was the '*finest stalker you'd ever seen in your life*.' Ian's illicit activities were known about, but never disapproved of, by his father.

Both Johnnie and Ian describe lives set apart, though within one estate. One senses that there was, at least during the 1930s and up until the end of the Second World War, two rival camps in Glenmore. One was centred at Badaguish, where the forester and under-forester stayed, as did their workers in a dilapidated bothy. The second group was based at Glenmore and consisted of the head keeper, John MacDonald, and his family. The gardener and the gillies resided in a rather more commodious bothy, where the mod cons included running water. Two competing forces – forestry and hunting, gamekeeper and poacher – with their rivalries spilling over at the annual Gillies' Ball, held in the garage at the Lodge and funded by the shooting tenant. Ian recalled these great evenings of entertainment, which inevitably ended in a fight between the forestry lads and the gillies. '*There was all free booze and barrels of beer. Everybody used to get drunk as anything. And the fellow playing the pipes, Big Angus he was called, from Skye … they had to hold him up against the wall. The forest boys thought they were good. The gillies thought they were better*.'

This was an age-old conflict - deer versus trees – and one which, to this day, causes heated debate in the Scottish countryside.

GLENMORE DURING WORLD WAR TWO

The war was important for the locality and brought in a huge number of people – Norwegian commandos, all manner of soldiers, Canadian and Newfoundland foresters, lumberjills and even Indian Muleteers – making it a very exciting place. Glenmore was largely closed during the war to allow use as a military training ground, most notably associated with '*the Norwegians*', who were billeted there and practised for their daring raids behind enemy lines in occupied Norway.[2]

Most of the able-bodied Glenmore forest workforce left for the war, leaving behind the Great War veterans, Jakey Fraser and John MacDonald, who continued to try and do their jobs as forester and game keeper. Two of the Glenmore forest workers who left for war service were Louie Robertson, who joined the Seaforth Highlanders and Eenie Cameron, who was a Lovat Scout.

Ian Fraser was just a lad in 1939, but the departure of Eenie from Glenmore to join the Scouts at Aviemore railway station, shortly after war was declared, would be etched forever on Ian's memory. He recalled the day Eenie '*went to war*.' Men of the Lovat Scouts, still thought of as a mounted regiment in 1939, were asked to bring a pony. Dutifully, Eenie left Glenmore, and took his horse. Ian continued the story, '*So he [Eenie] was in his uniform and he was drunk as anything. We were all helping him on this horse. And me mam was saying, "Oh he's away to the war, he's away to the war." He was away on his bloody horse from Glenmore to Aviemore. We were all saying, "Go on Eenie, go on Eenie, you're doing well", and he's nearly falling off the bloody horse. I never laughed so much in my life. … "Come on now Eenie, you've got get away to the war, you've got to get away to the war now. You've got to behave." So that's the last I saw of Eenie, until he came back from the war.'*

In time, both Ian and Johnnie, in their teens, also went to war and both returned to Glenmore after hostilities ended, as did Louie and Eenie, although none of them came home unscathed.

Timber was a critical resource for warfare and a replacement workforce was required to work in the forests. Britain mustered forestry labour from across the world, including from Canada, Newfoundland, Belize, New Zealand and Australia, but it also mobilised a women's army, the so-called *lumberjills* - more properly known as the Women's Timber Corps (WTC).

[2] These were the men of Norway's Independent Company No.1, better known as Kompani Linge (after their Captain, Martin Linge, who was killed in action in 1941).

The timber corps was a section of the Women's Land Army, set up in 1942. The women – many still teenagers or in their early 20s and often from the city and unused to manual labour – were involved in every aspect of timber production, including felling, snedding, dragging logs with horses, and working in sawmills. Most received a basic training in forestry skills at Shandford Lodge near Brechin or Park House near Banchory.

Until recently the story of their important contribution to the wartime home front was little known. Overall, we interviewed nine women who were either in the timber corps or worked in Scottish woods during the war. We are indebted to them and although time can fade the memory of just how hard the work was, their vivid and dearly-held memories of their wartime work is testament to how happy that period was for many of these '*girls*'.

Ina Brash in 2009, (R), and working in the forest during the war. (courtesy Ina Brash)

Glaswegian **Ina Brash**, was 19 when she was called up in 1942. Faced with going into a munitions factory, she chose instead the WTC. In 1943, after two months training, she was sent to Pityoulish, near Aviemore. It was an army camp, recently vacated - three huts and an ablution. The toilet was a hole in the ground with a box over it. Ina stayed there until 1944, when she was moved to Muckrach, at nearby Dulnain Bridge, working there until November 1946. She had the chance to go to Germany but decided instead to return home to Glasgow.

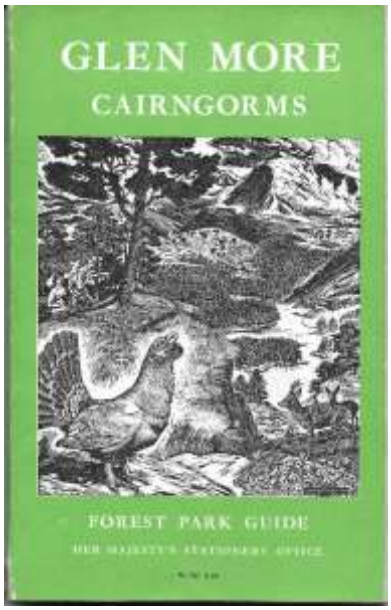
Ina laughed when she recalled the sleeping conditions in her Pityoulish hut:
'*My bed was the first one as you went in on the left. … But of course, we had to tuck it well in for the cold, because you wakened up in the morning with the frost in your nose. I mean the frost was lying in the bed when you got up in the morning, so it had to be tucked well in. And you went into your bed from your pillow. You know, you sat on the pillow and slid down into the bed because I mean it was so cold. It really was. … Some of the girls got extra coats and you went to your bed with as many clothes on as you had taken off. It was only your nose out of the blanket. We couldn't keep the fire going all night. Nobody would be daft enough to get up and fill it!*'

POST-WAR GLENMORE – CHANGING TIMES

Glenmore did not escape wartime felling. Between 1945 and 1947, once military training had come to an end, some 200 acres were cleared near the west end of Loch Morlich. By then, both Louie Robertson and Eenie Cameron had returned to Glenmore, working shoulder to shoulder with German prisoners of war, without any ill-feeling. This felling almost certainly included some of the old pinewood. In 1942, a fire had also ripped through the old wood on the south side of the loch, which alongside the later felling must have left Glenmore heavily depleted.

War changes everything and so it was for those who lived and worked in Glenmore. By the time Johnnie returned after 13 months recovering from war injuries, his father, head keeper, John MacDonald, had retired.

After the war, it became increasingly difficult to resolve the inevitable conflict between deer and plantation forestry, which required dense stands of timber undamaged by foraging deer. Perhaps unsurprisingly, in Glenmore, forestry won through and head keeper John MacDonald was not replaced when he left in 1947, though he tried to persuade the Commission, unsuccessfully, to let him stay on in the croft.



A further change came when, in 1948, Glenmore was designated a Forest Park, in recognition of the increasing importance of recreation and the lodge was turned in to a youth hostel. Public access was henceforth welcomed, in contrast to pre-war years when road access was strictly controlled.

Despite this early focus on recreation, extensive planting of non-native trees continued in Glenmore during the 40s, 50s and 60s. Ian Fraser came back from the war and got the job of trapper (a post later designated forest ranger). As such, his job was to do whatever was thought necessary to protect the Glen's thousands of young trees. This essentially involved killing so-called 'vermin', which in those days included not only deer, but also red squirrel, fox, wildcat, otter, capercailzie.

Glenmore forest park guidebook, 1966.

Ian Fraser outside his Badaguish 'steel' home, late 40s and with wife, Elsie, 2009 (courtesy I & E Fraser)

Ian explained what was expected of him:

'*In those years forestry gamekeepers shot everything all the year round. They just slaughtered everything. We used to get paid 6 pence for shooting a red squirrel, 10 shillings for shooting a fox, 5 shillings for shooting a wild cat, 6 pence for shooting a hoody crow, 6 pence for shooting a black backed gull, I think it was 10 shillings for shooting an otter, all them things we shot in them days. I don't know if it was* [for] *the Forestry Commission or the agricultural people, but the Forestry Commission used to pay me. They shot caper all the year round, they shot deer. All the forest was fenced, the planted area, with 6 feet fences, all round. And everything inside that fence had to be shot all the year round whether they were carrying calves, or with a calf by the side, hens sitting in nests had to be shot. And I know because I did it.*'

Ian left in 1950 after he developed peritonitis from a burst appendix. Several years later Charlie Ferguson took over the baton.

AN ABSENT PRESENCE

Charlie Ferguson, on patrol, date unknown and as a teenage reindeer herder with Mikel Utsi, mid 50s. (courtesy Mary Ferguson)

Glenmore is rich with memories of the many folk who are no longer with us but whose lives were interwoven with the place. One such was **Charlie Ferguson**. Born and raised in nearby Aviemore, Charlie spent his life in the locality, employed first as gardener at Rothiemurchus, then as reindeer herder, before spending the rest of his working life as the Commission trapper and forest ranger, until his untimely death in 1997. Charlie married **Mary** in 1968, and they brought up their two sons **Duncan and Peter** in Glenmore. It is thanks to Mary, Duncan and Peter, as well as friends whose memories were recorded during the project, that we know about Charlie.

By all accounts he was a most memorable, disciplined and spirited man. Although deer stalking continued to be central to Charlie's job, his role gradually expanded, especially with the increasing number of visitors, partly precipitated by improved access to Glenmore – the new road into the Cairngorms in 1960. Charlie was also charged with policing visitors and dealing with prohibited activities such as wild camping, which was thought to increase the risk of forest fires.

Alasdair McLeod, head forester at Glenmore in the 1970s and 80s explained Charlie's approach to wild camping.

'Wild camping was frowned upon and discouraged, and Charlie had a very good way of dealing with it. Charlie would get out of the Land Rover and he would break the gun so that it was over his arm, and the two dogs straining to go and encourage these people to move on. There was no humming and haa-ing and people writing to the papers or anything like that. He was over there. Get the fire out … get down to the campsite, otherwise out of Glenmore. He was dressed in tweeds. He was hefty, a big fellow. He dressed in boots, plus-fours, looked the part, collar and tie. Perjink! Hauling in deer that you had shot, the rest of us would be coming in bedraggled. Charlie would have the collar and tie on, the hat on.'

Charlie was first and foremost a deer stalker, although his job title and his Commission role changed over his 40-odd years living and working in Glenmore. I never knew Charlie Ferguson, but his story, told through the words of others, has enriched my experience of Glenmore.

PLANTATION TO FOREST: THE CLOSING YEARS OF THE 20TH CENTURY

Jim Gillies came to Glenmore in 1992 to take up a job as recreation ranger – the first to be employed as such by the Commission in the north. He, like Charlie, Ian and Johnnie, had a stalking background, In 1988, he left his job as head stalker with Seafield estate to become a countryside ranger on neighbouring Rothiemurchus, before moving to Glenmore.

Jim was a no-nonsense character, someone who could be trusted to get the job done and done well. He developed a deep affection for Glenmore, its forest and wildlife, in the course of nearly 20 years working there, during which time he helped develop its recreation and visitor facilities, including the excellent footpath and cycling network.

Jim came to Glenmore a couple of months after the so-called Rio Earth Summit.[3] This global event was notable for addressing concerns about carbon emissions and the impact of this on our climate. However, it also highlighted threats to the world's forests, including our own native woodlands. The conference established a set of principles for sustainable forest management. It was another turning point for forestry in Scotland.

As we walked to the Green Lochan in 2008, Jim delighted in pointing out the abundant regeneration of young pine and birch on a cleared hillside, where Sitka spruce had been removed, revealing scattered ghosts of old pine that had been surrounded by plantation. To Jim, it was firm evidence of the success of the Caledonian pinewood restoration project that had been ongoing at Glenmore since 1992.

Pinewood restoration on the trail to the Green Lochan (©M Stewart) and Jim Gillies in his Seafield tweeds (courtesy the Gillies family)

The seat at the Green Lochan is dedicated to the memory of Jim Gillies, who died suddenly in January 2011, not long after he retired. It was a project he was heavily involved with and a small dedication plaque was later attached to the seat: '*To a good man who loved the forest*.'

REFLECTIONS ON SCOTTISH FORESTRY IN THE 20TH CENTURY

Johnnie MacDonald, Ian Fraser, Charlie Ferguson and Jim Gillies each played their part in the story of Glenmore from the 1920s through wartime and into the new millennium. None of them were foresters, or had much to do with planting, tending or harvesting trees. Yet they all (or in Johnnie's case, his father) had a critical role to play in the functioning of Glenmore as an estate where forestry was the focus of activity. The involvement of these four men and their families spanned nearly 100 years, a long time for us, though not compared with the lifetime of a Scots pine.

Jim Gillies was employed by an organisation, which, in 1992, bore little resemblance to the one that John MacDonald began working for in 1928, other than it was the state body charged with responsibility for British forestry. Glenmore retains a scattering of gnarled old granny pines, which John MacDonald would have known in his time, but in the intervening period, the forest has been considerably altered. It was converted into a plantation, growing the kind of trees – primarily Sitka spruce – that Scottish forestry came

[3] The United Nations Conference on Environment and Development was held in Rio de Janeiro in 1992.

to rely on during the course of the twentieth century. Glenmore, like all other forests, witnessed people coming and going, planting programmes that altered the lie of the land, new roads, new homes and new facilities to attract visitors. At one time or another, there were dozens of men, women and youngsters toiling in some form in the forest.

Over the course of the last century, forestry evolved from an embryonic industry, constantly experimenting to find the right trees for Scottish conditions, to a multi-million-pound high-tech land-based sector delivering a multitude of objectives for the Scottish economy. The timber trade has been a part of that transformation, responding to the developing resource and market forces, not always easily, but certainly successfully by the end of the twentieth century. And those involved in forestry – from forest worker to forest manager and machine operator to administrator – have all responded and adapted as the industry has had to meet new objectives, locally and globally derived.

But of still more importance, to my mind, are the people whose stories are touched – and no more than touched on – in *Voices of the Forest.* Many of the folk who loom large in the book are no longer with us. But their presence, by those who remember them, continues to be keenly felt.

There won't be a time when I walk to the Green Lochan that I don't think of these people, and I can easily believe that each of them is sitting in their favourite spot, watching over me, as I walk. Glenmore history is their history. Trees and the forest are what bind their history to the place. The trees are important, but so too are the people. If I take anything from my brush with Glenmore, its forest and its people, then it is that throughout the century, and earlier, while those in a position of power, stamped their mark onto what they may have regarded as a blank canvas, according to the policies and preferences of the day, those who lived and worked in forests, like Glenmore, followed their instructions – at least for the most part – but more importantly lived their lives, raised their children and left their mark, perhaps even more indelibly than we realise. To me, Glenmore, and all the forests that came under state control during the 20th century, is as much about the people as it is about the forest – they are inextricably linked and to know the forest, you must also know the people.

An Lochan Uaine, better known as the Green Lochan, in winter (©M Stewart)

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Forestry Memories: 100 years of Scottish Forestry in Pictures

Norman Davidson

Touchwood History was an oral history project funded by FC, Scottish Forestry Trust, EU and undertaken by UHI, to record the social forestry history of several geographical areas of Scotland, which resulted in four booklets about the localities of Mid-Argyll, the Great Glen, Glenmore and Whitelee Forest. *Forestry Memories* originated in 2006 as part of Touchwood.

Touchwood extended into a major undertaking to carry out oral recording from forestry people around Scotland. Around 160 recordings are housed in the Highland Council Archive, Inverness. A major book, *Voices of the Forest,* was also completed in 2016.

Forestry Memories at https://www.forestry-memories.org.uk. Hosted by University of Highlands and Islands. By October 2019 there were over 4300 individual records and over 20,000 images, maps and pages.

Workers at Pitmiddle sawmill, Abernyte, 1915 (Forestry Memories Image No. 1105)

The following are a selection of links to images from the website, reflecting the various aspects of the history of Scottish forestry, in chronological order.

FM No	Year	Details
FM782	1895	George Riddoch's bridge built in the Dramlachs area, east of Fochabers. Three horses and carts on the bridge plus nine people https://www.forestry-memories.org.uk/picture/number782
FM2734	1909	Culbin sand dunes. Haunting image of large mass of sand dunes which were moving ever eastwards, generally very slowly, but in storms could make dramatic progress engulfing agricultural land and blocking the Findhorn river. Afforestation had begun in the 1880s to stabilise the movement and again around 1918. https://www.forestry-memories.org.uk/picture/number2734
FM4183 FM3425	1917	Inverliever Forest vegetation types and plantability John Boyd published paper. Roy Robinson comment 'The real difficulty was to find a safe basis for classifying the poor land. It was clear that two factors, viz. soil and exposure, played a leading part in limiting tree growth, while in all probability the existing vegetation was important first in its effect on the establishment of young trees and second as an indicator of the character and condition of the soil itself and therefore (in conjunction with exposure) of the probable productivity of the locality. The ecological side of this matter was gradually developed by Messrs. Crosfield (who took over the direct management in 1914) and Boyd, and though neither was an expert

		botanist the method undoubtedly proved very useful. Mr. Boyd summarised his experiences in the attached statement (Appendix III) shortly before his death in 1920. This statement was not to be regarded as the ultimate criterion in the classification of land but was to be used in conjunction with other environment factors such as exposure. John Boyd previously worked for Sir John Stirling Maxwell at Pollock and Corrour before moving to Inverliever in 1907. https://www.forestry-memories.org.uk/picture/number4183 https://www.forestry-memories.org.uk/picture/number3425
FM4422	1918	Surprise find in an old ex-army map case, located in the loft of the Fort Augustus office. Three maps covering part of north Lochaber near Corrour, showing 1918 woodland survey results carried out by Board of Trade Timber Office. The symbols and codes seem to refer to conifers, broadleaves or a combination with woodland areas in acres with one map signed by Lieut D R Thomson in June 1918 https://www.forestry-memories.org.uk/picture/number4422
FM3512	1926	Inchnacardoch Forest workers The caption reads: 'Seventy employees on Estate on 1st May 1926. The number includes the five original employees.' Actually 72 in the image. At the time senior FC staff were very conscious of the loss of agricultural employment as a result of taking over large upland farms and were continuously emphasising the comparative numbers employed on afforestation. https://www.forestry-memories.org.uk/picture/number3512
FM2050	1927	Lon Mor research area experimental ploughing. A wonderful action image of a team trying to plough furrows on the Forestry Commission experimental site on the Lon Mor near Fort Augustus. Little information has come the way of the writer to determine exactly what was happening but the Forestry Commission's head of Research (North?), Mark L Anderson is the one standing on the plough back to camera. Two men appear to be fighting extremely hard to keep a relatively light agricultural type plough (going by the shafts) on a level and sufficiently deep furrow aided by Mark Anderson's weight, while a third man handles the reins and a fourth man looks on in some doubt! https://www.forestry-memories.org.uk/picture/number2050
FM3517	1929	Society of Foresters meeting Detail photograph of the Society of Foresters of Great Britain meeting at Glenfinnart in 1929. As mentioned previously this body was formed in 1925 and later renamed the Institute of Charted Foresters (ICF). 1. Frank Scott Divisional Officer North Scotland 7. John Sutherland – Assist Commissioner Scotland 9. Henry G Younger – Benmore Estate 17. Roy Robinson – Vice Chairman of FC 19. J M Murray – Divisional Officer SE Scotland 21. John Fraser – Instructor Beaufort Training School https://www.forestry-memories.org.uk/picture/number3517
FM3979	1920	George Robertson back from war, 1920. George's war as a young newly enlisted 18-year-old (Royal Scot regiment) has been forgotten by many today. It was, in terms of lives, a costly one that mainly took place in the Archangel area and in locations up the Dvina River beyond the formal end on Armistice Day of WWI. More details can be found in the link http://scottishmilitarydisasters.com/index.php/titles-sp-26803/26-smd/53-archangel This describes some of the heroic fighting by allied forces in which the Royal Scots suffered severe casualties and some, as in George's case, were taken prisoner of war. George's small collection of photographs and documents from this period (in an attached PDF) are a privileged and remarkable insight into what is to many of us are just words in a history book and brings home the personal traumas of the family and the experiences of a young man as a prisoner of war in a Russia after the Bolshevik revolution. As a result of the Land Settlement Act 1919, he was awarded a house and some land at Eshiels by the Dept Of Agriculture. This was next to Glentress Forest where he was a worker of a number of years, before turning to sawmilling. https://www.forestry-memories.org.uk/picture/number3979

FM3830	1931	Borgie Forest wire bridge. The land around Borgie was gifted by the Duke of Sutherland for returning service personnel following the Land Settlement Act and administered by the Dept of Agric in partnership with FC. About ten holdings were created and a large area of land set aside for forestry planting – hence Borgie Forest. First planting almost certainly took place in spring of 1920. https://www.forestry-memories.org.uk/picture/number3830
FM3485	1925	Swedish Timber House Ardgartan Forest. Information from the 1925 Annual Report is as follows: "Some experiments have been made in substituted types of construction; at Ardgartan and Glenmore, where conditions are particularly difficult, five steel houses (see p.40 for image) have been erected; these are of the Weir type and have cost £575 each, inclusive of all expenditure connected with the site, drainage and water supply. In all these structures water is conveyed into the houses. The contract price for each of the houses delivered on the ground was £480. These houses have taken from two to three months to erect, and have been found quite satisfactory. The tenants who have been in occupation during the winter, state that they are highly pleased with the dwellings. At Ardgartan one Swedish wooden house was erected for the forester, and while this may be regarded as a quite suitable type of construction, the cost (£800) prohibits the use of the type for holdings' purposes." https://www.forestry-memories.org.uk/picture/number3485
FM3535	1930	Edinburgh FC Office staff on a visit to Benmore, 1930. One of the earliest photographs of women FC office staff https://www.forestry-memories.org.uk/picture/number3535
FM180 FM3356	1932 1929	Corrour Lodge visit and also John Stirling Maxwell book. Back row (l to r) J Maxwell Macdonald (then District Officer in south-west Scotland); A M Mackenzie (Mensuration Officer); J F Macintyre (retired Head Forester, Newcastleton District); A M Fraser (then at Forest of Ae, now District Officer Culloden); A G Morris (at the time Forester at Ayr County Council Waterworks, Glen Afton. Seated: The late Simon Cameron (Head Forester, Corrour, father of Alistair Cameron - Head Forester Strathyre, West Scotland); The late Sir John Stirling Maxwell of Corrour (Forestry Commissioner); J A B Macdonald (Conservator South Scotland). This little booklet written by Stirling Maxwell is unassuming in proportions and tone but vividly describes in detail some of the most far reaching and important early forestry plantation work and trials in Scotland. The plantations around Loch Ossian, sited on poor and very poor soils at an elevation of between 1200 and 1680 feet, were initiated in the 1890s and progressed steadily up to the time of the book publication in 1929. In those early days they must have been a treasure trove for the early forestry pioneers evaluating the prospects of establishing large scale forests on the higher elevation and low nutrient soils and peats of Scotland. It can now be easily envisaged how the experimental work at the Lon Mor (Fort Augustus) was initially guided by the work previously carried out at Corrour. https://www.forestry-memories.org.uk/picture/number180 https://www.forestry-memories.org.uk/picture/number3356
FM148	1935	Tractor ploughing in Clashindarroch Forest. Thought to be one of the earliest tractor ploughing trials in Scotland. The driver is said to be Cruickshank, the helper with the torn jacket MacConnachie or Connachie and the forester bent down sorting the furrow is Johnston Edwards. Aberdeen registration RG. https://www.forestry-memories.org.uk/picture/number148
FM3537	1930	National Forest Park Committee This is the second of two photographs headed National Park Committee and here features four people who are from the left: Mr F Scott (back), Mr H L French, Dr Addison, Dr Gibbon, Sir John Stirling Maxwell. Mr F Scott had moved from being Divisional Officer in North Scotland to that of Division 3 based in Bristol. Sir John Stirling Maxwell was at this period Chairman of the Forestry Commission. 1935 FC Annual Report: 'Reference was made in the Commissioners' last Annual Report (1934) to the possibilities of providing recreational facilities on the Commission's unplantable land and to the formation of a Committee, under the Chairmanship of Sir John Stirling-Maxwell, to consider a specific example. The Committee were appointed in March 1935, "to advise how the surplus and

		unplantable land in the Forests of Ardgartan, Glenfinart, Benmore and Glenbranter in the County of Argyll may be put to a use of a public character".' https://www.forestry-memories.org.uk/picture/number3537
FM4507 FM4508	1943	Canadian Forestry Corps at Mar Lodge Camp Canadian Forestry Corps (CFC) Company No 25 was one of eight companies based in the Deeside area as part of CFC District No 2. Records indicate the Mar Lodge camp construction began in December 1941 aided by men from Companies 2, 3, 4, 13 and 16. The team of men that formed Company No 25 arrived in Deeside at the end of March, early April 1942 and no doubt began timber production shortly after. And, CFC Mar Lodge, working in the logging pond. https://www.forestry-memories.org.uk/picture/number4507 https://www.forestry-memories.org.uk/picture/number4508
FM290	1945	Children working in Uig Nursery, Benmore Forest - Lumberkids Worked in the summer holidays for several seasons – mainly weeding. https://www.forestry-memories.org.uk/picture/number290
FM282	1945	Women's Timber Corps delivering timber to railway station. Margaret Angus (extreme left) is sitting on the 3-ton Bedford lorry that she drove to take the cut logs and pit props to Riddochs Sawmill, Alford or railway station. Loading was by hand off skids. Note the vehicle headlamp covers to reduce light visibility to passing enemy aircraft. https://www.forestry-memories.org.uk/picture/number282
FM2544	1944	RAF aerial photograph composite of Culbin Forest. Close study of the sand shows a movement easterly with large dunes spaced out like waves and in the troughs some of the original ground surface emerging from the wind-blown sand as the 'wave' moves slowly eastward. The little patterns of lines and tufts on the sand could well be an attempt to stabilise the sand dunes with planted marram grass which was the technique commonly used by the FC before the 1939-45 war. The marram grass work appears very patchy and may have suffered during the war period as Culbin Forest was commandeered by the military for war exercises and training and no remedial work would have been carried out. Almost certainly instead there would have been quite a number of dune-damaging activities! https://www.forestry-memories.org.uk/picture/number2544
FM2100	c1947	Begg Plough production team? Southwest Scotland was the techno hub of plough development with several blacksmiths, engineers and foresters all working to perfect a robust, manoeuvrable plough that would plough deep enough to produce a suitable turf to control the vegetation. https://www.forestry-memories.org.uk/picture/number2100
FM1293	1952	Forest Worker houses at Glenisla Forest. British Timber Houses in process of construction (and occupation) at the forest. The 1950s saw a major push by the Forestry Commission to build houses for its increasing workforce. Many were built of timber from kits supplied from Scandinavia but with brick and block built dividing walls and chimneys. By 1955, almost 1700 forest worker and foresters' houses had been built in Scotland. https://www.forestry-memories.org.uk/picture/number1293
FM2186	1952	Mounted plough at Strathdearn Forest. A step change in ploughing mechanics as hydraulic engineering is adapted to the task. Note the ram and wire rope combination to lift the plough. This was a combination cultivation tractor assembly as it had a disc plough on its front again activated by hydraulics. https://www.forestry-memories.org.uk/picture/number2186
FM788	1953	Constructing a Dutch Oven to heat the front and bottom of the engine. The demand after the 1953 windblow for all sawmilling equipment brought out machines that were almost retired. This was almost the last of steam driven mills and also the last of double bench mobile mills which had been the set up for the previous 100 years. https://www.forestry-memories.org.uk/picture/number788
FM2535	1953	The 'Jonesville' camp – Deeside. The last mobile camp that was the traditional accommodation for the sawmilling workers and many of their families. Once the job was finished in one area the mill and the huts were dismantled and transported to the next felling location often miles away. Some children attended 6-7 schools before leaving at age 13. https://www.forestry-memories.org.uk/picture/number2535

FM3919	1954	Spraying Pine Looper caterpillars Culbin. Aerial spraying of Culbin Forest by Pest Control Ltd, of Scots pine plantations against pine looper moth (*Bupalus piniarius*) in August 1954. The aircraft registrations are G-AMPB and G-AMOY which apparently were two Auster J5G Autocars. https://www.forestry-memories.org.uk/picture/number3919
FM1000	1954	Ian and Elsie Bremner at Bin Forest Holding No3 This holding was formed around 1930. By 1955 almost 450 holding were created in Scotland. Early ambitions were to have a worker holding for every 1000 acres of forest but as acquisitions moved into poorer and higher ground this was not a practical aim. https://www.forestry-memories.org.uk/picture/number1000.
FM650	1955	Hand weeding seed beds Fort Augustus nursery. Lest we forget the real and time-consuming problem of weeds in nurseries other than heathland nurseries pre the advances in chemical weed control. https://www.forestry-memories.org.uk/picture/number650
FM3076	1956	Shuttering a head wall on large culvert, Mull. Much manual work in the shuttering but also pre shuttering as the vertical walls would have to be cleaned and scaled by hand to ensure a secure hold for the poured concrete. https://www.forestry-memories.org.uk/picture/number3076
FM2949	1957	Workers travel by boat across Loch Sunart. Sunart Forest workers crossing to work in Glencripesdale forest in the 'Gannet'. Boat transport was used in a few parts of the west coast to cross the sea or freshwater lochs where roads were either very long and of poor quality or non-existent. In this area a boat was also used on Loch Shiel to supply Achanellan forest area. https://www.forestry-memories.org.uk/picture/number2949
FM1072	1958	Cross pollinating larch at Newton. Mike Phillips and Alan Mitchell working on larch to improve supply of hybrid larch seed to the nursery trade. https://www.forestry-memories.org.uk/picture/number1072
FM1333	1962	Early double drum Isachsen winch at Inverliever Forest. Horse extraction was proving to be unsustainable and expensive on the steeper slopes and on the flat softer ground. First trials of Isachsen MkIII tractor mounted double drum winch started in 1959 and following a visit by Prof Ivar Samset in 1961 the impetus increased with modifications such as raising the tower height and eventually an additional skyline resulting in an increased working range of up to 300m by the late 1960s. This was a game changer for the very expensive operation of road making resulting in a required density reduction of up to 50%. https://www.forestry-memories.org.uk/picture/number1333
FM1869	1964	Ploughing at height, Inverinan Forest. A rather poignant image shows the early days of the spread of afforestation up the hill and into the domain of the peat lands. Initially crop stability problems heralded the demise of the single furrow plough and eventually ploughing itself. The presence of peat swung the tree species choice heavily towards Lodgepole pine in which there were ultimately severe problems in the very large areas planted with South Coastal and also Southern interior provenances. The final irony was the successful afforestation of the deep peat in a complete ignorance of the value in later years of the undisturbed deep peat as a highly effective and critical carbon store in the fight to reduce the increase in worldwide carbon dioxide levels. https://www.forestry-memories.org.uk/picture/number1869
FM4127	1966	Drilling rock in Balblair Forest road making. Large teams of men were involved in the early days of road making, many living in camps and caravans on site and travelling home at weekends. Forest after forest was opened up and made accessible to harvesting teams and lorries as the forest crops matured into their harvesting phases. By 1980 over 8300km of roads had been constructed in Scotland's Forestry Commission forests. https://www.forestry-memories.org.uk/picture/number4127
FM1887	1969	Aerial fertilising by Autair Helicopter Company. The era of mass forest fertilising was about to begin as the costs of application fell to very reasonable levels and benefits looked obvious. Unground rock phosphate initially but in some locations phosphate and potash was simultaneously applied over many 1000s of hectares. https://www.forestry-memories.org.uk/picture/number1887

FM2164	1974	North Scotland Conservancy office cartographer team. The women are from left Andrea Borsden (Selbie), Joyce Scouller (Livingston), Dina Mackay (Macleod) and Linda Swanson (Cummings). They were part of the team that produced and updated all (000s!) forestry maps that were used in forests and for publications. https://www.forestry-memories.org.uk/picture/number2164
FM1242	1974	Timber lorry drivers at pulp mill. The corps of skilled drivers and operators carried out a very difficult task in often very marginal conditions and delivered timber from all corners of Scotland to mills and customers. They literally kept the wheels of the forest industry turning. https://www.forestry-memories.org.uk/picture/number1242
FM1431	1976	Signs unit at Mosstodloch. The origin of most of the Forestry Commission signs and also picnic tables in Scotland. Well executed work greeted the public to each of our forests. https://www.forestry-memories.org.uk/picture/number1431
FM3354	1979	Riddoch's sawmill at Corpach. A very technologically advanced mill planned in 1973 and operational a few years later. The early technology drifted a bit off the required mark, and this coupled with the death of the Riddoch family managers (no heirs) seems to have caused a downward spiral of the old established firm and eventual takeover by two other well established timber companies. https://www.forestry-memories.org.uk/picture/number3354
FM1527	1979	Bruunet Forwarder. Among the first of the site friendly lighter footprint timber extraction machines to be used in Scottish forests and forerunner of future extensive use of eight wheeled forwarders. https://www.forestry-memories.org.uk/picture/number1527
FM2897	1985	Organised Felling – Huntly Hinge. A time when large teams of manual fellers used chainsaws to fell almost all of the timber harvesting programmes. Work methods were devised by Work Study to improve efficiency and ease the strains on the human body, one such method being bench felling – felling trees onto a bench tree which positioned the tree at a more convenient working height. The Huntly hinge devised by Roy Neish in Buchan Forest District held the bench tree at planned height in a firmer position that withstood the shock loads of the felled trees landing on it. https://www.forestry-memories.org.uk/picture/number2897
FM4315	1985	Meeting of all Forestry Commission senior staff. A time of change – Forest Districts had just been formed, the organisation was working through digital link ups and computerisation and decision was taken to reform the Divisions at HQ and reduce the number of Conservancies. https://www.forestry-memories.org.uk/picture/number4315
FM3377	1988	The Glasgow Garden Festival. A major public event with very significant public attendance particularly from the citizens of the central belt. Forestry companies and FC had major displays and reached out to very wide cross section of the public. 'The Ancient Forester' created by David Kemp from a commission for the Festival by Bob Jones of Forest Design. The 'Forester' retired to Grizedale Park. https://www.forestry-memories.org.uk/picture/number3377
FM151 - 161	1987	The record of a Ploughing tractor recovery from deep peat. A partial sequence of views over five days of the successful recovery of two D4 Caterpillar tractors from a bogging in five-meter-deep peat near Lairg. The hard graft, ingenuity and perseverance of the Lairg FC workshop team along with drivers and foresters resulted in the eventual recovery and the machines all working again in a couple of weeks. https://www.forestry-memories.org.uk/picture/number151 - 161
FM1763	1988	Forestry Societies' visit to the Flow Country. https://www.forestry-memories.org.uk/picture/number1763
FM4181	1989	Alan Dickie's Valmet 901 Harvester. Possibly first single grip thinning harvester is Scotland. A very successful format and design and the forerunner of the harvesters of today. https://www.forestry-memories.org.uk/picture/number4181
FM3005	1993	Forest Design plans. A major innovation which placed forest planning in a very easily understood format. The plans very ably presented the multi-use objectives within a forest enabling foresters and

		consultees to understand how they were applied and how they impacted and modified operations on any particular work site or coupe. https://www.forestry-memories.org.uk/picture/number3005
FM3304	1993	Transport of timber by sea from Raasay. A very significant game changing concept in timber haulage from the more remote and road fragile areas of the western Scotland. https://www.forestry-memories.org.uk/picture/number3304
FM3293	1994	Clearing non-natives trees from native pine wood remnant. Native pine wood restoration at Coire Dubh, Achnashellach. c1993 Alan Stevenson initiated a major programme in restoration of all the areas of what was classed as Native Caledonian Pine on the FC estate by clearing back of all non-native species and encouraging natural regeneration of the native species only. https://www.forestry-memories.org.uk/picture/number3293
FM3614	1994	75th Celebration of FC formation held in Edinburgh Castle. https://www.forestry-memories.org.uk/picture/number3614
FM988	2007	*Touchwood* Booklet: A project funded by FC, Scottish Forestry Trust, EU, undertaken by UHI Centre for History, to record the social forestry history of some geographical areas of Scotland resulted in 4 booklets about the West Argyll area, The Fort Augustus area, Glenmore area and Whitelee Forest. Forestry Memories was also conceived at this time. The project extended into a major undertaking to carry out oral recording from forestry people around Scotland. Around 150 recordings are housed in the Inverness Archive. A major book *Voices of the Forest* was also completed in 2016. https://www.forestry-memories.org.uk/picture/number988
FM4283	2018	Final Forest District Managers' meeting. https://www.forestry-memories.org.uk/picture/number4283
FM 4540	2019	Centenary Celebration event at Daviot, Inverness. https://www.forestry-memories.org.uk/picture/number4540

Reflections and Looking Forward

Gordon Gray Stephens

As Andy Neustein put it "Where I stand depends on where I sit": my personal perceptions weigh on what I say, so before I start I should reveal that I grew up on a west coast farm, a hill farm with trees, and in a family with a long standing interest in woods. However, this was at a time when "the forestry" was irrevocably changing both agricultural communities and familiar rural landscapes.

As an older person, I have become increasingly interested in integrated, conservation-based land management, and to achieve this I prefer and promote locally appropriate diversity. Diversity of ownership, with a bias for local and community-based ownership, structural diversity, and diversities that reflect the local landscape, all types of diversity that are difficult to achieve when we're stuck in silos.

The first (and last) 100 years of the Forestry Commission of Great Britain provides us with a notable history, a history that has seen many pendulum policy swings, a history that we should learn lessons from. We have heard many stories and powerful illustrations of this from this conference's speakers, and summarising this wealth of information is not easy. I will try to do this by looking at two themes. Firstly, the role of forestry as a significant land use change, and secondly the people and ethos involved in that process.

One hundred years of the Forestry Commission has resulted in substantial land use change. This has been delivered partly "in house" by what is now *Forestry and Land Scotland* with large scale state acquisition of land and subsequent afforestation, and partly by what is now *Scottish Forestry* supporting private land managers and investment bodies. These land use changes were among the most significant in 20th century Scotland, and the forest villages that FC created might be seen as the equivalent of 19th century estate villages. These settlements of wooden houses now fit well into the Scottish landscape, even if they no longer house the forestry workers they were built for.

Much effort was focussed on one of the initial aims of FC, building a strategic reserve of timber. The result of this focus has been that the main emphasis was on creating plantations rather than forests, and a main driver for the next 100 years must surely be to continue the development of these plantations into fully fledged forests.

There will be challenges in delivering these mature forests, and one major challenge is an historic land use hierarchy that still seems to apply in upland Scotland. At the top of the tree we find grouse shooting, followed by the fishing of salmon and the stalking of deer. Thereafter we go down to arable and stock farming before finally arriving at forestry. Forestry always seems to play a weak fiddle to these other sectors, and the apparently unassailable grip of deer upon our country severely limits our ability to bridge the gap between plantations and forests.

Climate and disease are also an increasingly important challenge for forestry to deal with. Already in this century we have witnessed the arrival of two unpleasant newbies. *Phytophthora ramorum* arrived in Britain as "Sudden Oak Disease", but quickly mutated into a threat to larch, while *Chalara* is having a big impact on ash. Other diseases and changes in weather patterns will no doubt arrive to present forestry in Scotland with further challenges.

I'll leave land use with a dichotomy, a question to be considered. Will we develop a clear and sustained vision to bridge the gap between plantation and forest, thus ensuring that integrated and inclusive management allows a future Scotland to reap the multiple benefits that can be created by a forested landscape? Or, will we accept an alternative future where plantations have a far narrower function, being seen primarily as fibre providers for "new green" industrial mills and power plants?

The Forestry Commission's people, and their ethos, remain key to understanding the history of the organisation, and as we have been reminded today, some really great people have been involved!

The Commission might be perceived as being rather colonial or military in its ethos for much of its history. The uniform reflected this and there was a definite divide between staff depending on whether they were "officer" or "other ranks". Forest officers were rotated on a regular basis as in the colonial services, and one has to wonder how much of this rotation was to prevent the officers "going native".

In recent decades, this approach to life has mellowed and largely disappeared, however there remains the smallest touch of deference to the 'lairdly' classes. It's unclear the extent to which this is just a part of the make-up of civil servants, or a consequence of that land use hierarchy.

As the hundred years rolled forward FC became as much, or more of, an enabler as a woodland creator. The period when woodland creation was driven by tax breaks on marginal tax rates of 98% drove forestry with a different ethos, one where financial imperative had primacy, with social and environmental impacts largely ignored. Tax rates have declined since the 1980s, and the income tax relief has been removed, however forestry remains a useful vehicle for wealthy individuals with a tax aversion. In the last decade generous grants, particularly for conifer plantations, also make tree planting an attractive option for canny investors.

So that brings me to my final dichotomy and second question. Will FC's successors become ever more centralised, with staff dependent on remote sensing for information on the forests they manage or regulate in the serve of a growing bio economy? Or will the organisations become more locally responsive steward of Scotland's largest landholding, and an enabling regulator?