NATIVE WOODLAND DISCUSSION GROUP

Newsletter

Spring 2020

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North Cascades, Washington State, USA, in September 2018 (photo: Mick Drury)

Conifer forest in the Pyrenees (drawn by Ben Averis in 2019; based on a photo by Laurent Nedelec and Gregory Orret)

Cover photo: Mick Drury standing by the world's largest Sitka spruce Picea sitchensis (18 m circumference, 58 m tall) in the Quinault Valley, Washington State, USA, in October 2018

CONTENTS

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EDITORIAL

Ben Averis

Welcome to the Spring 2020 NWDG Newsletter, and thanks to all who have contributed to it. This issue is in electronic format only, because current Covid-19 restrictions are affecting the company who normally print it. However, this also means that it's in colour throughout – not just on the front and back covers as in printed copies. This issue includes three pieces on the subject of new woodland on open ground, all from different perspectives. Perhaps this will stimulate further discussion among NWDG members; your thoughts on these and any other woodland-related matters will happily be accepted for inclusion in the next issue of the newsletter. We also have a summary of the 2019 NWDG Woodland History Conference, Mick Drury's account of his explorations of woodland in North America for seven months in 2018, a piece about a planned yew tree heritage initiative for Scotland, an update on the proposed NWDG excursion in SW Ireland, and two book reviews. I hope you all like this issue of the newsletter and that you stay well through this year. I'll be back again with the next issue in the autumn. Best wishes, Ben.

Deadline for next newsletter contributions: 15th October 2020. We welcome any woodland-related material (ideally <1500 words): group or organisation reports, news items, letters, book reviews, illustrations, etc. Please email it to me, with your contact details. **To get a book reviewed**, send a copy to the editor. **If you want to review a book**, please tell me; we can usually get a free review copy from the publisher, and if you review it the book is yours to keep. If you want future newsletters electronically as **PDF files** (which have all photos in colour!) and not in printed form, please email me (**ben.averis@gmail.com**) specifying the email address to receive the file. Thanks.

Woodland just down the road from our house – drawn while preparing this newsletter (Ben Averis)

NOTES FROM THE CHAIR

Alan Crawford


Photo: Donald McPhillimy

A functional, business-related 'Notes from the Chair' this time, I'm afraid, with two main issues to highlight.

1. I'd like to bring to your attention a 'Financial review' that our treasurer Alison Averis has carried out on our behalf (see next page). It shows that we are solvent, with no immediate need to panic, but that our annual core costs are not covered by our annual core income, and that over the past few years our events have also not covered their costs. Our contingency fund is slowly but steadily reducing. As a result of this the committee will be proposing some minor changes to the membership fees, to the fees to attend events, and to the way in which we receive the newsletter. These changes were to be proposed at the Annual General Meeting at the May 2020 excursion to south Cumbria, but now that it has been postponed until May 2021 (see point 2 below) we will look to carry out 'An Extraordinary AGM' this year, probably via mailshot about one month after this newsletter is sent out, with updates and a few questions for you to consider.

2. As a result of the scientific and government advice on the rapidly-evolving coronavirus Covid-19 situation, the committee decided in mid-March to postpone our excursion to south Cumbria, originally planned for early May 2020, until May 2021. As I write, the expected peak of the virus in the UK is to be sometime later in the summer, but of course the situation is changing rapidly and feels somewhat unpredictable. It is therefore difficult/impossible to say when we might be able to meet again as a group. Our expectation, given the lead-in time necessary for events, is that other events planned for later in the year will also now not take place. We will keep members up to date as best we can.

For me it is at our events, and at the excursion in particular, where NWDG comes most alive; I will very much miss seeing many of my 'woodland friends' this year, and will miss the warmth and camaraderie that grows out of our time together.

To help keep connections live, perhaps as a group, we could be more vibrant in our use of the newsletter and the NWDG social media accounts on Facebook and Twitter. Whether your contributions are ecological, historical/cultural, or connected to woodland management, whether they are perspectives on past, present or future; and whether those contributions are scientific, artistic or both, please share your thoughts with others in the group, with whom, after all, you share a profoundly important interest.

This lull in the activities of the group will also allow some time for reflection on many levels, including ideas about purpose and meaning. Again, please share thoughts on this that are relevant to native woodlands and to NWDG as a group.

Stay safe good people, look after those that need it, and hope to catch up soon.

All the best, Alan

NWDG ADMIN REPORT

Alison Averis

As I mentioned in the recent mailshot in January 2020 I carried out a financial review of NWDG income and expenditure from 2014 to 2018 inclusive, based on our audited accounts to date. To cut a long and fairly depressing story very short, this confirmed that the fees for attending our two main annual events, the Excursion and the Woodland History Conference, have not covered the costs of providing those events for some years, and that the annual subscription now barely covers the cost of printing and posting the Newsletter and administering the group.

This table shows the annual income minus expenditure from NWDG activities between 2014 and 2018, and the effect on our bank balance:

Year	2014	2015	2016	2017	2018
Subscription income minus core expenses	£549	£2337	£1090	£747	£1230
Excursion fee income minus expenses	£3780	- £2104	- £2114	- £1229	- £2008
History Conference fee income minus expenses*	£318	£1,023	-£217	-£983	-£906
Workshop fee income minus expenses**	- £193	- £193	- £193	- £193	- £193
End December bank balance	£11,498	£13,439***	£11,386	£10,128	£9,587

* Excludes grant aid, to show potential scenario from 2020 onwards when grant aid is unlikely to materialise.
** Averaged over the period as income/expenditure impossible to relate to individual calendar years.
*** The figure for 2015 would have been £12,689 if I'd remembered to claim my honorarium.

We have got into this predicament because:

- The actual cost of running the Excursion has been about £90 a head – participants paid £75 until 2019 (now £80).
- The actual cost of running the History Conference has been about £35 a head – 70% of attendees pay £28.
- Almost all workshops make a loss – there are generally too few participants at each event to cover the costs at the current fee of £40/day.

From 2020, core services will cost just over £17 for each member; the standard subscription is £20 (£18 by standing order). 52% of members pay £18. This will leave only around £100 surplus a year assuming membership stays around 190. If membership drops to 180 we will not have enough income to cover core expenditure (which covers Committee expenses and the fixed costs of running the group as well as printing and posting the Newsletters) at the current subscription rates.

On 1 April 2020 we had 192 members – exactly the same as this time last year although a few have left and a few have joined. The bank balance is around £8,000: it is impossible to be totally accurate without doing a lot of arithmetic, as many of the payments for the next Excursion are still lodged with us.

As always, please can you let me know if your contact details have changed in the last few months. Thanks very much.

ON TREE-PLANTING IN SCOTLAND: AN OUTSIDER ASKS 'WHY?'

William Bond

Why, I wondered, are they planting rows and rows of trees in the Scottish Highlands? Surely the plantations will exclude the light-loving plants and animals of the moorlands? What will be left of the magnificent views of the Scottish hills? Just glimpses through the trees? These became burning questions on a recent visit to the Highlands in April last year, along with three British colleagues. I was to give a plenary talk on the non-forested ecosystems of the world at a meeting of the British Ecological Society. My home in Cape Town is not unlike Scotland in the scarcity of closed forests and the landscape dominance of shrublands. Our mountains in the north of South Africa also have sparse forests in a matrix of grasslands, 'more beautiful than the singing of it' as Alan Paton wrote in 'Cry, the Beloved Country'. We have spent years removing invasive trees, conifers and eucalypts, from our mountains because they use far more water than the open ecosystems and because they destroy our rich diversity of sun-loving plants and animals. So, as a rank outsider, I have to ask, why are people planting up all these trees in Scotland?

Why plant trees in open heathlands and moorlands?

Afforestation is heavily promoted by government, the public, and some scientists, such as those sitting on the UK's Committee on Climate Change. Why? There seem to be four major motivations: 1) combating climate change by soaking up (sequestering) atmospheric carbon, 2) 'reforesting' Scotland to its pristine conditions after centuries of deforestation, 3) restoring biodiversity and 4) commercial gain from selling forest products. Each of these motivations is worth delving into.

1. Climate change

Planting trees to store carbon is a very popular idea. However, there is growing scientific scepticism on its effectiveness and concern about whether tree planting is just a distraction from the urgent problem of reducing emissions of greenhouse gases. Most CO_2 emissions are from fossil fuel use, about 85%, with the remainder from land use change. Tree planting will have minor effects on CO_2. You can try the sums yourself – it's not rocket science. Over a 50 year conifer forest rotation, UK forestry estimates about 1-2 tons of carbon sequestered per hectare per year. Carbon storage declines as trees age, so the plantations should be felled and replanted every few decades and the wood stored so the carbon does not go back into the atmosphere. Atmospheric carbon is increasing globally by about 4.7 billion (4,700,000,000) metric tons of carbon per year (= 17.2 billion tons CO_2). In the unlikely scenario of all Scotland being planted up to conifer plantations, you could sequester about 8 million tons of carbon which would reduce the annual global carbon increase by 0.17 %. For comparison, the UK reported a reduction of emissions between 2016 and 2017 equivalent to 12 million tons of carbon. That's 1.5 times more than what you'll get after 50 years from planting trees over the whole of Scotland. Changing landcover by tree-planting is a slow, uncertain, and paltry contribution to reducing atmospheric carbon. The overwhelming need is for urgent and drastic reduction in emissions from

fossil fuel use. Protecting primary forest is a far better strategy than afforesting non-forested areas according to Simon Lewis and colleagues (Lewis *et al.* 2019). Tree planting will often release carbon from the soil, especially when peaty soils are drained, or pits are dug with mechanical diggers. Ironically, planting trees in some regions can promote global warming. Imagine a snow-covered hill in winter reflecting the sunlight back into space. Now imagine it covered with dark evergreen conifer canopies which absorb the sunlight instead. Evergreen trees absorb solar radiation, heating the earth; snow reflects it, keeping things cooler. These additional effects of planting trees on large scales are too often ignored when promoting afforestation for combating global warming.

What surprises me in reading about methods to soak up carbon is how little emphasis has been placed on conserving peatlands, restoring them, or creating them as a long-term store of carbon. Peatlands are early precursors of coal. Conserving and restoring peat seems, to me, the major contribution that the cooler northern parts of the world should be supporting. Efforts to do so in Scotland deserve wide recognition.

2. Reforesting Scotland: but was Scotland forested?

The word 'forest' is tricky. We all have our own internal vision of what it means. The Food and Agriculture Organization of the United Nations (FAO) notoriously uses the word for any vegetation type with more than 10% tree cover, thus including most of Africa's savannas, entirely different ecosystems from closed forest. In Scotland, the magnificent Scots pines scattered in the moorlands are much like savanna trees. Rowan and birch, my personal favourites before seeing the pines on my Easter trip, are light-loving trees of open habitats. They coexist with shade-hating understorey shrubs and mosses and are part of an open landscape. Whether Scotland is naturally open or was once forested is contentious. Fenton (2008) has argued that Scotland is the last great naturally open area of Europe – a landscape to be prized, not destroyed.

Figure 1. World with a view: Scottish moorland and heathland. Is this representative of Europe's largest natural open ecosystem or a degraded, deforested landscape? Photo: William Bond.

Smout's (2007) detailed historical studies also seem to find little support for a primeval forest blanketing the region. Recent studies by paleoecologists suggest that Scotland had open vegetation for thousands of years before the present. Tree presence in the uplands waxed and waned, peaking during warm periods around 5,000 years ago. I can see no precedent, in this literature, for vast primeval forests necessitating 'reforestation' by the serried ranks of Scots pines that I saw mimicking the forests of Scandinavia. In contrast to the open moorlands of the Scottish hills are the broad-leaved forests of its valleys and loch margins. The mosaic of forest and heathland is much like my home country where our forests are also in sheltered valleys, and next to rivers. The ecology restricting the forests is likely different, however – fire is a regular and important feature of Cape heathlands and the forests are fire-sensitive.

3. Restoring biodiversity: are forests best for biodiversity?

I was surprised to read that the red deer has a Scottish genotype, is smaller than its European counterpart and, apparently, prefers more open habitat. Well, well. The deer are widely seen as the major enemy of trees and responsible for overgrazing. Words like 'overgrazing or 'overabundant' reflect value judgements by people with particular objectives in mind. Different people may have different objectives and different views of what is 'overgrazing'. Elephants were shot by the thousands in our national parks to prevent 'overgrazing', motivated, in part, by a vision of an idealised landscape, a Garden of Eden, where elephants and trees happily coexisted in savanna parklands. Today the shooting has stopped and elephants are considered endangered. What shocks me is that an estimated 100,000 deer are slaughtered every year in Scotland. In one estate we visited, 600 deer were shot in a year, mostly to protect trees from browse damage. Strange to call this 'protecting biodiversity'.

How important are open habitats for biodiversity? One indicator is the presence of endemic species, restricted to a geographic region and habitats within it. In the Cape, there are literally thousands of shade-hating endemic plant species in the flora, providing clear evidence that the open heathy landscape has been there for millions of years, allowing all these species to evolve. What about Scotland's endemics? From my limited reading, the few endemic vascular plants of Scotland and its islands are all open habitat species, not forest dwellers. The bryophyte endemics include species of both western broad-leaved forest habitat and open heathlands and moorlands. Scotland's endemic birds seem to be mostly open habitat species or, like the Scottish crossbill, open woodland species. What landscape would you need for biodiversity conservation? Mosaics of broad-leaved forests in the valleys, heathlands and moorlands on the slopes and high mountains, with patches of pine, birch and rowan would seem to serve the purpose. Such a mosaic would also create a wonderful scene to my biased eye.

Figure 2. Scots Pine, like savanna trees, has an open canopy so that low density stands support light-loving plant species in the understorey. Photo: William Bond.

4. Forestry is necessary for the rural economy?

Forestry is an important industry, and growing trees for diverse purposes will always be an important land use. But an urgent demand for wood, requiring the planting of thousands of hectares of plantations, not only in Britain but all over the world, surely needs some questions to be asked. The government is paying subsidies for planting trees. They must know what they are doing. Really? Is this just a political sop to an electorate that loves trees? But do you really love those regimented pines in their plantations? And have you calculated their real contribution to reducing carbon? And is tree-planting not just a bit too convenient a diversion for the fossil fuel companies? Am I missing something here?

The Future

Afforestation on a massive scale, as promoted by the World Bank, the UN billion trees programme, the Bonn challenge and others could do more to destroy the world's light-loving open habitat plants and animals, in the next decade or two, than all other indirect human-caused threats to the environment. It is a horribly naïve belief that if it's not forest, it should be. We now know that many open ecosystems are ancient – millions of years old – and much older than humans and their tree-felling tools. The best response to global warming remains urgent and rapid reduction of emissions, primarily by reducing fossil fuel use. Exporting the problem of sorting out greenhouse gases, an industrial by-product, to Africa, Scotland and other naturally open habitats of the world, not only directly affects these regions but also carries the risk of lulling people into the false belief that they can carry on burning up fossil fuel. Don't worry –

planting a tree will soak it all up again. I hope that, while clearing ancient forests of rhododendron, and protecting the mossy banks of ancient western woodlands, readers give thought to the future of the wonderful, rare, wide open spaces of Scotland – they are increasingly under threat.

Figure 3. The future of Scotland's open country? Dense tree planting is standard practice for forestry. The plantations block the view of Scotland's landscapes and shade out its light-loving biota. Photo: William Bond.

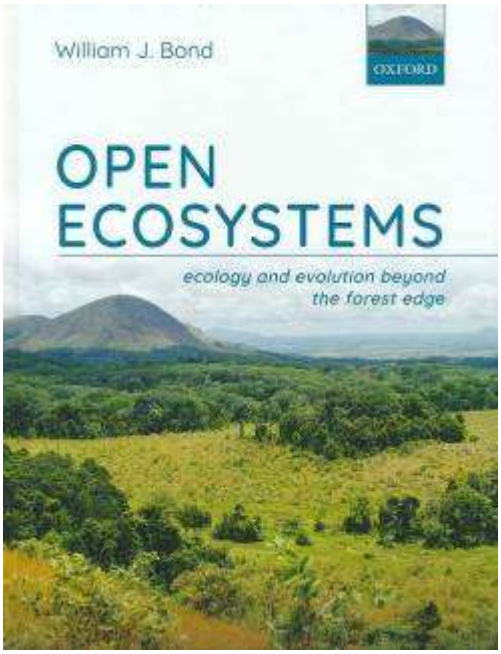
Further reading

Fenton, J. H. (2008). A postulated natural origin for the open landscape of upland Scotland. Plant Ecology & Diversity, 1(1), 115-127.

Fyfe, R. M. et al. (2013). The Holocene vegetation cover of Britain and Ireland: overcoming problems of scale and discerning patterns of openness. Quaternary Science Reviews, 73, 132-148.

Lewis, S.L. et al. (2019). Regenerate natural forests to store carbon. Nature 568, 25–28.

Smout, T. C. et al. (2007). A History of the Native Woodlands of Scotland 1500–1920. Edinburgh University Press.



William Bond *is Emeritus Professor of Biological Sciences at the University of Cape Town, South Africa. Check out his recent book: Open Ecosystems.*

CARBON CAPTURE

Basil Dunlop

With many campaigns to plant many more trees for carbon capture and rainwater retention, there is a need to ensure that the right trees are established in the right place and by the right means.

The planting of fast-growing exotic species is necessary in developed areas for timber production, but elsewhere, especially on wild land, indigenous species are the most suitable and should be a condition of a planting grant. In and around designated ancient woodlands and nature reserves, where possible natural regeneration should be stipulated, as it is recommended in all government practice guides as more beneficial regarding conservation, education, and scientific values. Planting in such areas is gross intervention, downgrades woodland status and is detrimental in many ways:

- It breaks the long chain of natural forest evolution since the post-glacial era, and no longer meets the key qualification "descended from one generation to another by natural means".
- The trees will have been produced and established by artificial means such as very limited cone/seed selection, nursery practices, and the physical act of planting, which cannot replicate the natural selection processes operating above and below ground.
- It risks the introduction of harmful pathogens that are now causing widespread tree loss throughout the country.

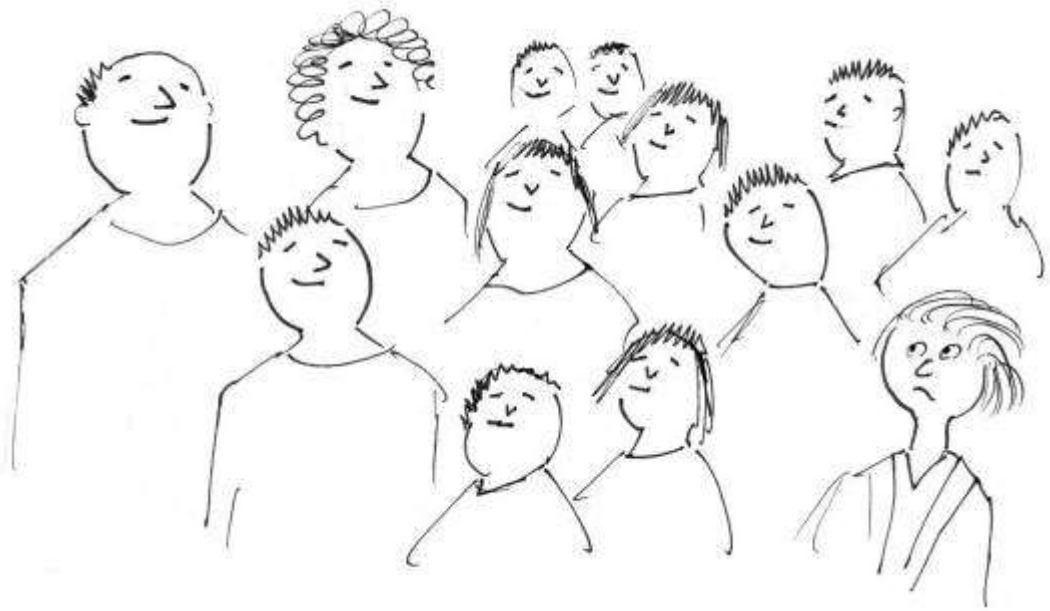
The Scottish Government wishes to greatly increase the area of land afforested each year, and the Highlands have many thousands of hectares of land that is suitable and was forest in the past. Much of this is managed for sport – grouse shooting and deer stalking – and is regularly burnt and over-grazed by red deer, increasing carbon dioxide air pollution and preventing tree expansion.

Owners will have to be offered attractive grants to encourage them to afforest suitable land by reducing deer levels, avoiding expensive and intrusive deer fencing. Grant aid for deer control is possible now that we have exited from the European Union which disallowed it in the past. At present, the most available land is owned by estates, groups (such as Cairngorms Connect), non-government organizations and government agencies such as Forestry and Land Scotland and Scottish Natural Heritage, with conservation as a management objective. They appear to be keen to plant up their land, but in sensitive designated areas they should use natural regeneration wherever possible to maintain their rare status.

Highland tourist surveys have shown that views of mountains and lochs are a prime attraction, so planting that blocks outstanding views from public roads should be avoided.

Owners of nationally important designated land should accept that they are custodians for future generations. My generation resisted the temptation of 'quick fix' expansion planting in our rare Caledonian pinewoods, and by the 1990s enhanced their protection by the introduction of policies that promoted natural regeneration as the best method for restocking and expansion. Since 2010 this policy has been breached, resulting in an alarming reduction of natural or semi-natural forest heritage.

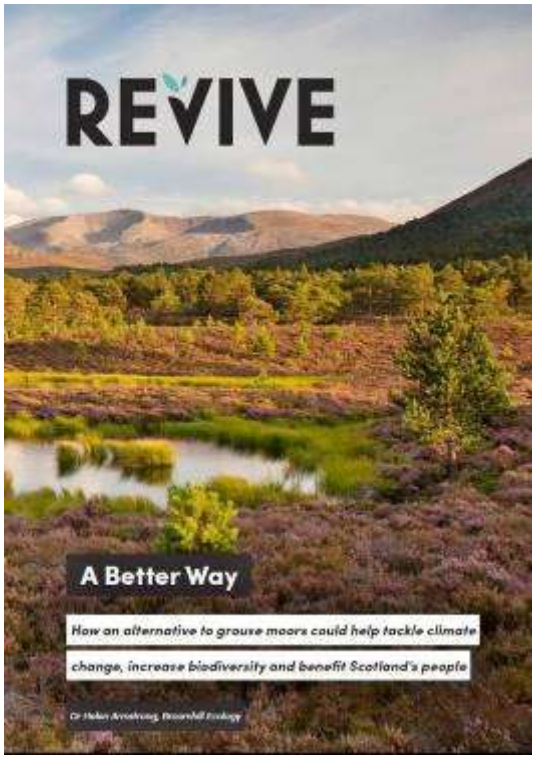
Basil Dunlop *is a retired forester living in Speyside.*



… the key qualification "descended from one generation to another by natural means"

A BETTER WAY – HOW AN ALTERNATIVE TO GROUSE MOORS COULD HELP TACKLE CLIMATE CHANGE, INCREASE BIODIVERSITY AND BENEFIT SCOTLAND'S PEOPLE

Dr Helen Armstrong



This article is a brief summary of a report (*A Better Way: how an alternative to grouse moors could help tackle climate change, increase biodiversity and benefit Scotland's people*) written by the author for Revive: the coalition for grouse moor reform in December 2019 (see Further Reading below).

Impacts and extent of grouse shooting in Scotland

There are two types of grouse shooting. 'Walked up' grouse shooting simply involves walking through the landscape shooting grouse that have been disturbed by the shooter or by an accompanying dog. Land management for walked up grouse shooting is not usually intensive, although predator control and /or muirburn may be practiced. 'Driven' grouse shooting is the practice of using a line of people ('beaters') to drive red grouse over the heads of shooters waiting behind grouse 'butts' (shooting stances). To maximize the financial return from driven grouse shooting, a range of management operations are carried out to produce favourable conditions for red grouse, thereby allowing high grouse numbers to be supported. These management operations include:

- heather burning to create a mosaic of patches of different ages of heather that provides ideal habitat for red grouse to both breed and feed in.
- heavy grazing by sheep that have been treated with acaricide. These act as 'mops', attracting and killing off ticks that can spread the grouse disease louping ill.
- construction of deer fences to keep deer out, thereby reducing tick densities. Adult ticks need to feed off a large predator to breed, hence tick densities are positively related to deer densities.
- mountain hare control to help reduce tick numbers.
- provision of medicated grit on open trays, to control nematode worm burdens in grouse.
- legal predator control of foxes, crows, stoats and weasels.
- Illegal predator control of golden eagles, hen harriers and peregrine falcons.

- the use of gas guns to scare predators.
- construction of hill tracks to facilitate access to the hill by game keepers and clients.

A 2018 report by Ruth Tingay and Andy Wightman (see Further Reading below) has documented the deleterious impact of these management activities on the environment. Heather burning, in particular, has a damaging impact on the productive capacity of the land through its impact on soils. Burning increases the runoff of soil and nutrients from the land, leading to a decrease in soil productivity and increased siltation of streams. Furthermore, when muirburn takes place on soils with a peat depth of more than 50 cm it releases carbon dioxide and prevents the bog from functioning as a carbon sink year on year. When burns are too hot, too frequent or on inappropriate soil types, they can also damage the nature conservation value of these habitats. The likely scale of such inappropriate burning is evidenced by the fact that burning is cited as a damaging pressure on 32% of the 76 dwarf shrub heath features and 24% of the 71 upland bog features present within Scotland's Special Areas of Conservation. Lastly, as with heavy grazing, burning prevents the colonisation of heather moorland by trees and scrub.

Burned grouse moor in the east Highlands (photo: Ben Averis)

There are no Government statistics on the area of land used, or managed, for grouse shooting in Scotland; nor are there official maps of where grouse shooting, or muirburn for grouse management, takes place. Fortunately, however, recent work by researchers from various organizations provides an approximate picture. Their results show that:

- In Scotland, most driven grouse shooting takes place in the Monadhliaths, Deeside, the Cairngorms, the Angus glens, Highland Perthshire, and the eastern and central Southern Uplands.
- Driven grouse shooting takes place, or has recently taken place, on land holdings covering around 13% of Scotland's land area.
- Of this, 820,000 ha (10% of Scotland's land area) consists of rough grazing (heath, rough grassland and bog) and so is potentially used directly for driven grouse shooting.
- Around 4% of Scotland's land area is regularly burned for grouse management.

- 40% of the area that is regularly burned for grouse is on peat with a depth of >50 cm.
- The area of land used for grouse shooting appears to have declined in the last several decades, but
- The intensity of management in areas where it takes place has increased in the last two decades, probably driven by a desire to increase grouse populations and so increase the financial return.
- Many areas of grouse moor are designated as Sites of Special Interest or as Special Areas of Conservation for their open moorland (dry heath and /or blanket bog) and /or for the bird species associated with open moorland.
- The Gross Value Added to the Scottish economy from grouse shooting has been estimated to be less than 0.04%.

Given the large area of Scotland's land that is managed as grouse moor, its damaging environmental impacts and its limited economic benefit, is there a better way of managing the land?

A wooded alternative

Most areas of open moorland in Scotland, including those heathlands that are currently burned for grouse, if left unburned, would be colonised by trees and/or shrubby species if grazing levels were sufficiently low and if there were an appropriate seed supply (Armstrong 2019; Figure 2). Drier, more acidic, moorlands would become dominated by Scots pine and /or deciduous tree species such as birch, rowan and hazel, with willow and alder dominating in the wetter areas. In more fertile areas at lower altitudes, hawthorn scrub followed by oak and ash may come to dominate. Above the treeline, montane scrub, dominated by species such as dwarf willows, birch and juniper, would develop. Boggy areas may turn into a habitat type that is now extremely rare in Scotland: bog woodland. Bog woodlands are functioning bogs with a scattering of stunted, slow growing trees. On fertile ground, where woodland had not yet taken over, or in woodland glades, tall herb communities may develop. Such communities are currently largely confined to ledges and gorges that are unburned and are inaccessible to deer and sheep. Where there is no tree or scrub seed source, or where grazing levels are too high, unburned heathland will remain as open heathland although its character is likely to change, with an increase in vegetation height and, in some places, also in heather dominance. The Scottish uplands, including grouse moors, has the potential then to have a much higher cover of woodland, but what would be the benefits of encouraging such a change to take place?

The benefits of woodland

Increasing the cover of woodland and scrub would provide many actual, and potential, benefits. These include:

- Improved soil productivity.
- Reduced soil erosion.
- Reduced landslips.
- Reduced siltation in streams and rivers.

- Reduced flooding.
- Carbon sequestration.
- Increased biodiversity.
- Increased resilience to climate change.
- Increased resilience to pests and diseases.
- Improved shelter and forage for domestic stock and deer.
- Improved fisheries.
- Fuelwood and timber.
- Non-timber forest products, e.g. nuts, berries, fungi and craft resources.
- Increased deer and other game species.

See the first three references listed under Further Reading below for an explanation of each of these benefits. Given all the benefits of having a more wooded landscape and the disbenefits of 'business as usual' there is a good case to be made for increasing the cover of woodland and scrub in the Scottish uplands, including on grouse moors.

Achieving woodland expansion

Where moorland, including that managed for grouse, is close to a seed source, trees and scrubby species will establish themselves if there is no burning and if grazing levels are low. To allow natural expansion of woodland, sheep need to be taken off the moorland and deer excluded, or numbers brought down to very low levels at least until the trees have established. Due to changes in the subsidy system, and poor returns from hill sheep, sheep numbers in the Scottish uplands have declined in recent decades. Wild deer are now likely to be a more important factor limiting woodland expansion than are sheep, partly because deer numbers tend to increase in areas where sheep have been removed. Currently, large amounts of money, both public and private, are spent on deer fencing, with an estimated £100 million of public money having been spent on this in Scotland between 1992 and 2016 (2016 prices). In many cases, deer gain entry to deer-fenced areas through un-noticed damage to fences, well before young trees are tall enough to escape from browsing by deer. This results in a reduction in the number, or complete elimination, of young trees of all species, or in the survival of young trees of only the most unpalatable species. Reducing deer numbers through culling, although also expensive, does yield a return from venison and can be more effective in achieving successful woodland expansion, especially when carried out over large areas. Achieving this is, however, made more difficult by current deer legislation, much of which was put in place to protect populations of wild deer rather than to facilitate a reduction in numbers.

Where there is no seed source nearby, it could be many decades, or even centuries, before woody species become established on moorland, even if there is no burning and if grazing levels are low. Where this is the case, planting should be considered. There is a wealth of information available on appropriate species to plant in different

locations and on planting methods to use. To minimize carbon loss when planting, it is important, however, that the soil is disturbed as little as possible.

Natural regeneration of young trees on moorland in the Southern Uplands (photo: Ben Averis)

An alternative vision

The ideal end-point of a move towards a more wooded Scottish upland environment would be a landscape where areas of open habitat, including heather moorland, exist within a matrix of woodland and scrubby habitats. The woodlands would be made up of a range of tree species with a high broadleaved component. Montane scrub species would cover the upper slopes. Soils and waterways would be restored to ecological health, carbon would no longer be lost from the system but, instead, would be actively sequestered by both woodlands and bogs. A wide range of wildlife species would flourish. The system would be resilient to both environmental change and to pests and diseases. A range of integrated and sustainable land uses would take place that would provide varied local jobs, support communities and bolster local, regional and national economies. To achieve this vision we need to take a number of actions.

Recommended actions

1. There should be a presumption against the use of muirburn in the Scottish uplands unless there is an exceptional biodiversity case for continuing. There will rarely, if ever, be a biodiversity case for burning on upland bogs.
2. Deer and sheep numbers across much of the Scottish uplands should be brought down to levels where naturally regenerated, and planted, tree and scrub species can successfully establish without protection.
3. The water table should be restored on drained peatlands with a peat depth of more than 50 cm. Such areas should not be planted with trees.
4. The widespread expansion of woodland and scrub through natural regeneration and planting, using minimal soil disturbance methods, should be encouraged across much of the Scottish uplands to create a mosaic of woodland/scrub and open habitats.
5. New woodlands should contain a wide mix of species, have a high broadleaf component and be managed with minimal soil disturbance.

6. As woodlands establish, a range of sustainable, local, integrated land uses should be encouraged.
7. The societal barriers to achieving these changes in land use and management should be investigated to allow the development of viable methods of addressing these barriers.

Further reading

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Dr Helen Armstrong *is a freelance ecologist (Broomhill Ecology) based near Edinburgh.*

AMERICAN NATIVE WOODLAND ODYSSEY

Mick Drury

In 2018 I took a seven month sabbatical from Trees for Life to spend some time in the USA and Canada. It was in large part a personal odyssey – to connect with Irish relatives on the east coast, to explore the Rockies, Yellowstone, Glacier, and the Pacific NW, and to do that road trip that I never did back in the day! – and partly work related, meeting up with folk working in land management over there, seventeen in total. This is a short overview of some of those meetings, and native forest highlights of the trip.

In New Hampshire, late April, I arranged to visit the Harvard Forest, the University's 1618 hectare long-term ecological research site, and met up there with Bill Labich. Harvard has led on the development of the Wildlands and Woodlands (W&W) vision for New England (see www.wildlandsandwoodlands.org), proposing community-based regional revitalization with wise harvesting of food and fibre, growth of the conservation economy, and support for the voluntary protection of land. Given current pressures for development and a growing fragmentation of ownership, it calls for 70% of New England to be permanently protected as forest by 2060, and 7% as farmland; 10% of the forest would be set aside as wildland reserves, left to natural processes.

After lunch I had a wander around the forest trails, in driving rain now, to look at some of the ongoing research plots. A section of the site has been left unmanaged since the late 1800s, with white pine *Pinus strobus,* the early colonist, now self thinning and allowing the hardwoods to get established. Retreating from the deluge I browsed their Fisher Museum, the highlight a series of 1930s dioramas showcasing the landscape history of New England following European settlement. Few areas of old growth forest remain, most having been cleared by early settlers; then in the mid-1800s, with cheaper grain coming from the mid-west, many folk moved west to new opportunities, or to the cities, and the forest has returned. New England is now around 80% forested – and I was reminded of the similar landscape history in SW Norway. A couple of days later I took my first real hike, climbing Mt Kearsarge, at the Winslow State Park. It's forested all the way, the trail icy and hazardous higher up, before emerging amongst a krummholz of twisted spruce,

Diorama showing New England landscape around 1740 (photo supplied by Mick Drury)

probably *Picea rubens*, with dwarf birch and willows yet to come into leaf. The panoramic view gave me my first appreciation of just how forested New England is.

Out west, fire and its effects are constant themes, more so in recent years, and 2018 was to become one of the most severe. In Yellowstone I connected with Roy Renkin who's worked for the National Park for 30 years and has been involved with some of that famed research into the recovery of riparian woodlands following the return of the wolves. Roy spoke of the effects of the huge 1988 fire, which burned around 30% of the Park, and how many colleagues believed that recovery would be a long way off. However, I saw for myself the widespread regeneration of the familiar lodgepole pine *Pinus contorta* from this and other fires. Interesting to hear that aspen *Populus tremuloides* also spread widely by seed after the fire, the trees, as here, seemingly not flowering that often. Roy believes largely in non-intervention, apart from the control of larger fires and halting the spread of invasive non-natives.

Lodgepole pine in Yellowstone National Park, USA, in July 2018 (photo: Mick Drury)

Further north I spent a day volunteering at the Glacier Park nursery, very similar to our own set-up at Dundreggan, except that they focus more on plants for re-vegetation of honeypot and fire sites, rather than trees. They do grow aspen, and also disease-resistant genotypes of the endangered whitebark pine *Pinus albicaulis*, a high elevation keystone species whose nuts are important for fattening grizzlies before hibernation.

One of the discoveries of the trip, don't tell everyone, was the stunning Kootenays region in British Columbia – lakes, forest, mountains, glaciers, funky towns – and I ended up staying there for about three weeks. The epically named Valhalla Wilderness Society are based there, principally concerned with the inland old growth cedar-hemlock forest, a rarer version of the temperate rainforest of the coast. Craig Pettitt

from the society took me on a day trip, around 60 km up a forest road to visit one of the remaining old stands. It was a hot, humid day, with a few troublesome mozzies about. Nevertheless, Craig suggested long sleeves and gave me gloves – the shrub layer here is dominated by devil's club *Oplopanax horridus*, a formidable plant up to 3 m high with large palmate leaves, all leaf veins and stems covered in detachable spines, the club itself a spike of reddening berries much liked by the bears. Wow, some awesome trees, western red cedars *Thuja plicata*; those we measured that day were 2.5, 2.7 and 3.2 m in diameter (dbh) and up to 1500 years old. Usually these old cedars have rotted out in the centre and often have cavities at the base, much liked by hibernating bears; we found some recent bear tracks in the mud along the creek. Watch the wonderful video 'Primeval' at www.vws.org/action.

Red cedar at Valhalla, British Columbia, Canada, in July 2018 (photo; Mick Drury)

At the Pacific coast it was time to take in some of the awesome Douglas fir *Pseudotsuga menziesii*, including around Stanley Park in Vancouver, and I spent a few days with some anti-logging activists camped beneath the Doug firs in the forest on the Sunshine Coast. Where would we be without non-violent direct action? See Elphinstone Logging Focus (https://loggingfocus.org). However, it was again the red cedars that I found most impressive, the real 'tree of life' of the coastal peoples, providing everything from clothing to canoes, baskets to buildings. On Haida Gwaii, now with my partner Pam for a few weeks, we met up with Todd White, from a long line of master carvers, and were shown around his family's workshop: a huge cedar log outside, being levelled off with a chainsaw mill by his brothers and nephews, is the first step in a two year project to carve a 16.5 metre canoe.

Back to the Rockies, in Banff National Park, I met the aptly named Jane Park, who leads the Fire and Vegetation team. They have been using prescribed burns now for

thirty years, on a landscape scale. It's an accepted part of management, not only to reduce the impact of wildfires by reducing fuel load, but also to re-start the fire cycles used by the indigenous people for perhaps thousands of years. I asked if they considered the anthropogenic landscape of grasslands and open forest types as 'natural', and she was in no doubt about that. Heading out of town later that day we passed an area that had been burned in 1993, now an open grassy Douglas fir forest with regeneration of a range of trees, good wildlife habitat; on the opposite roadside was a typically denser Douglas stand, valuable in its own right but quite a contrast. Later I mused on how far back in Britain we need to go to consider human intervention as 'natural'? When does 'tradition' (150 years of stalking in the Highlands) become 'culture' (1000+ years of agro-pastoralism in Cumbria) and then 'nature'? A good cartoon there Ben?

Returning to the USA I had two spectacular hikes in the North Cascades, now late September and stunning in fall colours, with flaming orange rowans, and the dusty pink through red, then crimson, of carpets of bilberries and huckleberries, spread across the open slopes up to and above the treeline. Here the sub-alpine larch *Larix lyallii* was now in autumnal gold. It's hard to imagine a more lovely mountain setting, one of those days in sun and perfect stillness. And in the Olympics, another amazing treeline at around 2000 m on Mt Angeles, a mix of juniper, white spruce *Picea engelmannii*, and yellow cedar *Cupressus nootkatensis.* Then lower down in the Quinault Valley I went on a pilgrimage to see the world's largest Sitka spruce *Picea sitchensis*, 18 m circumference and 58 m tall, and had to re-assess my feelings about that particular species.

Larix lyallii (larch) in the North Cascades, Washington State, USA, Sept. 2018 (photo: Mick Drury)

Finally I have to mention the Wildlands Network (https://wildlandsnetwork.org) and the Yellowstone to Yukon initiative (https://y2y.net), both organisations providing inspiration for the trip – and interesting discussions en route. I'm still finishing off writing up the meetings I had, and hope to provide a link to the final report, and my personal blog, in the next edition. Meanwhile do get in touch if you've got any burning (sic) questions.

Mick Drury *works as Field Projects Co-ordinator for Trees for Life.*

WAIT! HANG ON...

... continued from two pages back...

Looking into this a bit more, let's try it another way:

$$N^{\chi} = N + (C \rightleftarrows T) \; ?$$

(with χ and $\rightleftarrows$ probably not quantifiable)

What do you think? Your thoughts on the inter-relationships among N, C and T can be in the next newsletter. Maybe together we can work this out!

SCOTLAND'S YEW TREE HERITAGE INITIATIVE (SYTHI)

Paul Greenwood

In 1994 a Gazetteer of Ancient Yews in the UK was published in the book *The Sacred Yew* (Chetan and Brueton). Scotland had three entries out of 404: Dundonnell, Wester Ross; Fortingall, Perthshire and Robert the Bruce's Yew at Stuc an t-Iobhairt, Loch Lomond.

Today that Gazetteer is available online at the website of the Ancient Yew Group (AYG). At present, England has 1999 entries, Wales 432 and Scotland 100. What the original Gazetteer unwittingly did was create an impression in the public and media that ancient yews were only prevalent in southern England and Wales, especially in churchyards. Also, they needed a large trunk circumference (girth) of over 6 metres, or be hollow, to be classed as ancient, as the Gazetteer's benchmark for an ancient yew being 1,000 years or more in age. However, research had been confined to those regions of the UK because it was voluntary, and very limited resources for field research had limited its geographical scope.

Age categories for yews were redefined by the AYG and, for simplification's sake, yews under 500 years were notable, 500-800 years veteran, 800-1200 ancient and 1200 plus, exceptional. This has since been further refined by the AYG to synthesise with data held by affiliated organisations, such as the Woodland Trust and Ancient Tree Forum, so that ancient is now 400 plus; ancient 800 plus and 1200 plus remain exceptional. However, there is a conundrum here – a yew tree between 300 and 500 years old is actually in a stage of passing from a juvenile to a mature tree. In our terms of measuring time, what we label as ancient is a young yew passing into adulthood. In many yews at this stage of development, deep in the heartwood the process of fungal induced hollowing (cubic rot) may have begun and takes many centuries to complete as a stage in the yew's trunk regeneration. But not by any means are all ancient or exceptional yews necessarily hollow yews: the Great Yew of Ormiston and the Craigends Yew, Houston are two prime examples.

Of the 100 Scottish sites on the current AYG database, inevitably most were not recorded to site protocols later established by the AYG. Some data is 20 years old or more and also included sites mentioned over a century ago but not verified since. The gaps in the data are obvious and need updating. Furthermore the data included many notable yews, as previously classified in the 300-500 year age range, and was not a list of only veteran or ancient yews. In other words the extent of Scotland's yew tree heritage is not known. Nor is the fact that Scottish history, culture, myth and mystery finds the yew deeply rooted in them all and in the most fascinating and compelling of ways. It finds the yew in meaningful ways to be present in the lives of St Columba, William Wallace, Robert the Bruce, Mary Queen of Scots and Lord Darnley, John Knox, Robert Louis Stevenson; in the royal, noble and aristocratic families who have woven the tapestry of Scottish history and in organisations such as the Knights Templars, Cistercians and Scottish Rite Freemasonry, which have also played a part. The yews of Scotland today have an untold chapter to tell in the story of Scotland itself. These

factors were the main inspiration for the idea and creation of SYTHI – Scotland's Yew Tree Heritage Initiative – during 2018 and 2019.

The primary aim of SYTHI is to conduct field research to establish the extent of Scotland's yew heritage by re-investigating sites on the AYG database, updating the data to the standard of the AYG protocols, and recording previously unrecorded sites. Since the beginning of 2018 SYTHI has developed a database of 404 sites in Scotland. It includes the sites needing to be updated and some new discoveries, but the majority are newly noted sites of potential requiring first time investigation and their potential confirmed as far as possible by online resources such as Google Maps and reports from a network of yew enthusiasts already supporting SYTHI's efforts. SYTHI's so far self-funded development of the database has investigated only 10% of the current total. These investigations have also demonstrated why SYTHI's aims and objectives are clearly needed to inform, educate and raise awareness and appreciation of Scotland's yew heritage.

A fine yew avenue at Ross Priory, Loch Lomond recorded in 1999 by a co-founder member of the AYG, and featured in the current AYG database, was found by SYTHI to be all but gone in May 2019. Avenues of yews leading to grand historic houses are just as much part of the intrinsic history of the location as any buildings are and surely worthy of similar legal protection. An example at Murthly Castle in Perthshire, the Dead Man's Walk, was made famous by Thomas Pakenham in his bestselling book *Meetings with Remarkable Trees*. Yet no similar conception and appreciation of the yew avenue at Ross Priory has occurred and for whatever reason most of it is lost. It is also an irreplaceable loss and might have been preventable if the landowners were more aware of the part yews play at individual locations and their greater extent in Scottish culture. Similarly at Saltoun Hall, East Lothian (see below) in 2018 a yew of 353 cm girth and part of the original landscape design of the estate in the 17th century was 'accidentally' felled during restoration works rectifying many decades of neglect.

Stump of 'accidentally' felled yew at Saltoun Hall, East Lothian (photo: Paul Greenwood, 2018)

The potential extent of Scotland's as yet unrecorded yew heritage, however, is not confined to typical yew locations such as churchyards or castles, grand houses and landscaped estates. There are other places at risk.

Research on the North East American Escarpment and in the UK by Dr Doug Larsen of the Cliff Ecology Research Group (CERG) University of Guelph, Canada discovered small yews can be amongst the slowest growing woody plants in the world. Steep cliff, scarp and other extreme environments may possess small, stunted looking yews which may be very old trees. At Whitbarrow Scar in Cumbria a branch of a very small yew yielded 220 growth rings in 1.9 cm of radial growth. Microscopy revealed some increments were only a single cell in thickness. In North Wales a small yew on a cliff was found to be over 1,000 years old.

In upland Scotland small isolated yews may be of ancient age (400 years plus) but overlooked because they are not large. One potential candidate is illustrated here, discovered on Ardoch Moor, north of Comrie, Perthshire. Probably an avian seed deposition, this isolated, exposed yew survives in a slow-growth-inducing environment due for example to poor nutrient availability, wind exposure and long winters of hard frosts, ice and snowfall. How a yew grows here in Scotland could not be farther removed from how one grows in a churchyard in Somerset or southern Wales, and yet it is these small, wild yews that might be the oldest of all. Unless they are standalone yews, drawing attention as this one does, how many more similar-sized yews that are inconspicuous compared to this one could be growing wild upon the Scottish landscape in remote locations? There has been no particular reason to consider their potential to be of compelling and exciting botanical and environmental significance and, at this point, we have no idea how many there are in Scotland. It is not just the obvious locations where Scotland's yew heritage has been mostly recorded that point to similar locations of potential. Landscapes such as Ardoch moor show that another potential exists.

Yew on cliff on Ardoch Moor, north of Comrie, Perthshire (photo: Paul Greenwood)

All trees are of importance and significance in the environment, but the yew surely is a special case deserving of protection improved to levels that reflect its astonishing presence in the history, culture, myth and mystery of Scotland. If we consider the losses of the natural post-glacial yew population due to deforestation, internecine warfare, invasion and conquest, abbeys, churches, churchyards, castles, villages and towns being obliterated, and the medieval demand for yew timber for longbows, then Scotland's yew heritage today includes yews that are the *very last of their kind*. They genuinely are the surviving remnants of the ancient and exceptional yew population of Scotland.

Considering whether the yew is native to Scotland is also perhaps a fairly moot point. 10,000 years ago yew had colonised limestone cliffs in modern Yorkshire and County Durham before the British Isles were created. Over 5,000 years ago yew longbows were being used in the modern Moffat area of Dumfries and Galloway. The post-glacial recolonization by yew trees of what were to become the British Isles was already well under way millennia before Scotland the nation was born and its southern border eventually established.

Although a fledging project at present, it is hoped that SYTHI will develop into a vital and necessary resource contribution of great potential to the immense collective efforts already working to cherish, preserve, protect and increase the overall tree heritage of Scotland.

Paul Greenwood *is a co-founder member of the Ancient Yew Group (www.ancient-yew.org), has managed the page www.facebook.com/yew-trees since 2012 and has been running an independent research project called Yew-Trees since 1991.*

NWDG WOODLAND HISTORY CONFERENCE: 100 YEARS OF SCOTTISH FORESTRY (24th October 2019,at Battleby, Perth)

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 Great Britain's 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 NWDG Woodland History Conference chose to review its 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 progress 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 that focused amongst other things on the way 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 is, however, still the biggest single issue that needs addressing.

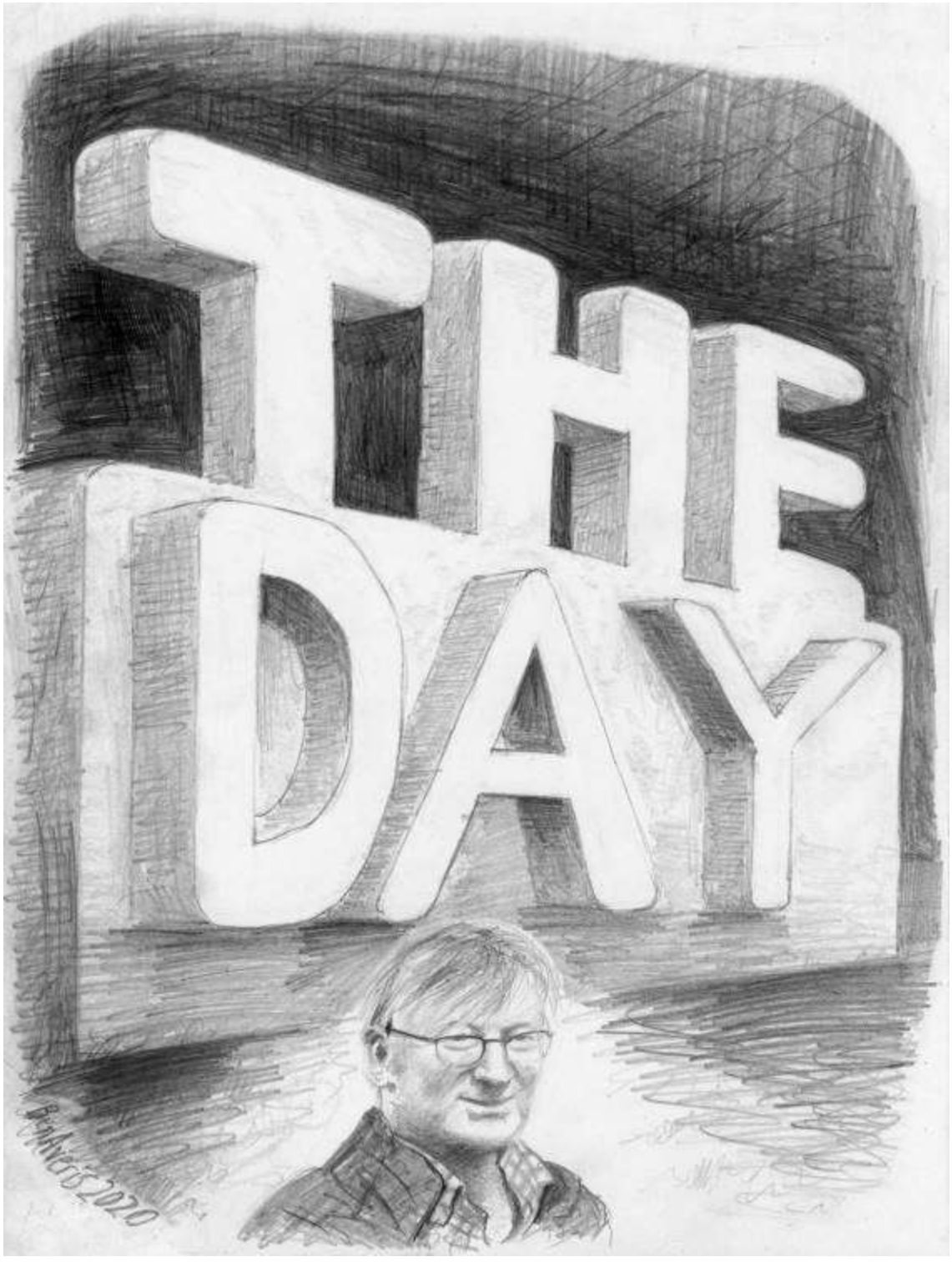
From the outset the Forestry Commission recognised the need for research because of the nature of the forestry challenges under GB conditions. Andy Neustein explained the early emphasis on finding what would grow (or could be made to grow) where, but then encountering particular problems of keeping the stems upright in our windy climate. Often, people on the ground had good knowledge of what would work, but their knowledge 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 Forest 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!

Dr Keith Kirby *is a woodland ecologist who has been a woodland specialist for the Nature Conservancy Council / Natural England*



Gordon Gray-Stephens rounded off the day…

SW IRELAND EXCURSION UPDATE

James Rainey

NWDG members were asked to vote on future excursion destinations at the last AGM, with south-western Ireland coming out as the most popular. Here's a reminder of why you were seduced:

- Killarney National Park is home to extensive temperate rainforests, including the largest yew wood in NW Europe.
- NW Europe's largest and most intact alluvial wood – the Gearagh – is also nearby.
- SW Ireland is home to a suite of 'Lusitanian' species. These are plants and animals found only or mainly in western Ireland, France and Iberia; they include the strawberry tree, St. Patrick's cabbage, Irish spurge and Kerry slug.
- Herbivore impacts range across the landscape, from "*Eekkkkk! Too many deer!*" in Killarney National Park to *"Wowow! There's almost no deer here at all!"* in Glengarriff Nature Reserve.
- The weird Father Ted karstic landscape of the Burren is just a few hours up the road, featuring Ireland's only known surviving natural pinewood – on the limestone karst!!

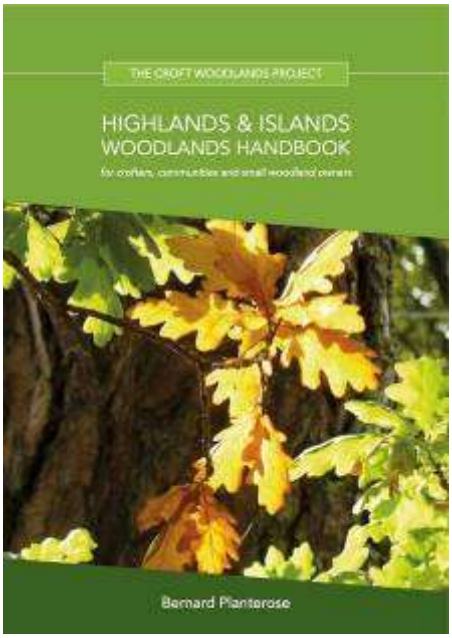
Since then, we've progressed the future SW Ireland excursion through a subgroup of the committee, made up of Coralie Mills, Fiona Chalmers, Gordon Patterson and I. Pre-Covid-19, the plan was to hold the excursion in 2022, but now it looks like 2023 is likely. We'll be based out of Killarney town (reachable by train from Dublin), with participants making their own way there from Scotland (we'll be able to provide advice on various transport routes). The excursion will last for five days, sticking to counties Kerry and Cork, although there'll be another self-organised mini excursion to the Burren for anyone who wants to stick around for longer. We've already got some activities and guides lined up.

Watch this space, and get in touch (james@treesforlife.org.uk) if you have any ideas or Irish woodland enthusiast contacts! Really looking forward to seeing everyone again once this pandemic is over. Stay safe.

James Rainey *is Caledonian Pinewood Recovery Officer for Trees for Life. See pages 39-41 for some of James's photographs of western Irish woodland.*

Tomies Wood, SW Ireland (from a drawing by Ben Averis, 2014) >

BOOK REVIEWS



Highlands & Islands Woodlands Handbook (for crofters, communities and small woodland owners) by Bernard Planterose. Croft Woodlands Project 2019. ISBN : 978-1-5272-4061-2. £15 + p&p from: https://www.crofting.org/publications/66 or PDF version available as a free download (link at end of this review).

Review by Neil MacKenzie

This is a substantial and thought-provoking piece of work, and much more than just a guidance manual for woodland creation or management. Its 267 pages are packed with information on all manner of subjects from rural development, croft diversification, the fundamentals of ecology, and the woodland bits, to land management and the current state of our uplands. Threaded throughout are two themes – how best to reduce greenhouse gases and how trees can help with this and how to achieve integrated, sustainable (the true meaning) land-use systems for the uplands of Scotland. The handbook is extremely well endowed with photographs and case studies that illustrate topics within each section, and there is a very useful glossary for those big words and acronyms that we all struggle with.

It was produced as part of the Croft Woodlands Project, a partnership of organisations led by The Woodland Trust aiming to promote new woodlands on crofts. There have been previous versions of such woodland handbooks, the last one produced about ten years ago. However, the first, and by far the best before this version, was the 1993 Crofting Forestry Handbook, which was also written by Bernard.

This handbook starts with a visionary approach, taking in rural development and the start of woodlands on crofts following the Crofter Forestry Act of 1991. It also charts the beginnings of the wider woodland movement in Scotland that emerged some 35 years ago. A further element is a vision of the future where crofts exist in a mosaic of woodland, open ground with grazing, and other activities that contribute to the rural economy and that benefit from the shelter afforded by trees and hedgerows.

Sections 2, 3 and 4 cover the practical stuff of woodland establishment, management and harvesting, and coppice. All the usual topics are here, from site selection to planting to the standard forestry techniques of thinning and harvesting, but with an emphasis on low-impact practices such as the use of small machinery or horses for extraction. The drawbacks of mechanical mounding are pointed out and, if one feels compelled to mound, the technique of inverted mounds is recommended as a good compromise. It's a shame nearly all the photographs of newly-planted trees are on mounds. Contentious issues such as the planting of beech in existing native woods is covered; there is up-to-date information on the planting of ash and elm, and there is advice on the perils of moving local-origin stock to a different locality. Although there is a very good table of site requirements for a range of tree and shrub species and the

text includes numerous options of what to plant and where, there is no straightforward and simple guide that tells the crofter what to do. The reader is referred to, for example, Forestry Commission Bulletin 112, which is the most helpful guide, but this too fails to give precise tree and shrub species numbers or ratios for any given National Vegetation Classification (NVC) type. Such is the complexity of planning and grant applications and the need to provide NVC, Ecological Site Classification (ESC) and other data, that professional help is often required (Section 11 covers this). For small schemes it seems a bit excessive when all that is required, as Bernard states, is a common sense approach.

Other sections include an excellent one on shelterbelts and hedgerow construction, which contains detailed guidance on design and what to plant. There is an inspiring case study about a 20 year old shelterbelt scheme on a croft on Lewis, which includes an aerial photograph showing the wooded croft with its sheltered fields amongst a sea of adjacent treeless crofts. Despite the obvious benefits to the wooded croft, persuading one's neighbours is clearly a long-term process. Curious inclusions in the various species recommendations listed in the text and in tables were exotic shrubs such as *Fuschia* and *Gaultheria*, which are invasive in the west. There is a caveat about this, but why include them at all? I certainly did not understand why Icelandic-origin downy birch could possibly be better than our own local downy birch for west coast planting on exposed sites. There is also a section on riparian woodlands, covering all the many benefits to aquatic ecosystems and flood control, a section on energy and the use of wood as a fuel, and a section on the potential for home-grown timber, including adding value by processing on the croft.

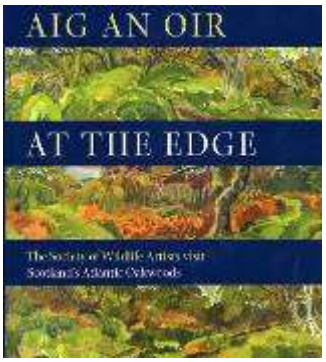
There are two quite detailed sections on Agroforestry and on Grazing Animals and Woodlands, which sort of overlap but yet are separated by the section on Woodlands and Freshwater, which seems strange but a minor quibble on my part. Both sections contain a wealth of interesting facts on integrating woodland with livestock, horticulture or other added-value produce, but not denying the great challenges in achieving this. Various options are discussed and all are found to be better than grazing alone when ecosystem management, soil improvement, flood control and a reduction in carbon emissions are also taken into account.

The penultimate sections are on ecology, going into the history of native woodland, nutrient cycling, how peat is formed following deforestation and how calcium has been lost in the soils, plus bits on rewilding, trophic cascades, nitrogen fixation and mycorrhiza. I was pleased to see support for the retention of gorse and broom in planting schemes because of their value to biodiversity, nitrogen fixation and soil improvement. Too often foresters recommend that gorse be rooted out. The final chapter, written by Duncan Halley, is about the regeneration of native woodland in SW Norway. Most native woodlanders will already be aware of this inspiring story and the comparison with Scotland.

Overall this handbook is a worthy addition to everyone's bookshelf and there is much to learn from its content for the aspiring crofter, land-holder or community group wishing to diversify and improve their land. Many of the arguments for diversification illustrate so many benefits that it makes the author "wonder why some form of sylvo-pastoralism isn't the predominant land-use type throughout the whole region, but it isn't". Clearly there are many barriers to the diversification of land use and a better integration of grazing in woodland, but the biggest barrier is certainly deer. Due to the high levels of browsing and grazing, the model of "fence, plant, overgraze, destroy and re-fence" is expensive, wasteful and unsustainable. Sadly, the restoration of fertility, productivity and biodiversity in the Scottish Highlands is a challenge that few deer-stalking estates consider a priority.

The PDF version of this book is available as a free download from:
https://www.woodlandtrust.org.uk/media/44068/highlands-and-islands-woodlands-handbook.pdf

Aig An Oir – At The Edge ISBN: 9781904078180; hardback; published by Langford Press in 2005. *[After 15 years still not reviewed in our newsletter until now, thanks to Gavin – Ed.]*



Review by Gavin Johnston

Many of you, like myself, may have missed this 2005 beautifully colour-illustrated publication about Scotland's Atlantic oakwoods. Aig An Oir was a project sponsored by the former Forest Enterprise Scotland and Highlands and Islands Arts along with The Society of Wildlife Artists. The six chapters are written by Robert Burton, a Cambridge University natural science graduate who once lived in Argyll. More than 40 artists contributed to the project, each having spent a week in one of the three study areas: (1) Kinloch and Kyleakin on Skye, (2) Sunart, including Ardnamurchan and Morven, and (3) Knapdale (including Taynish) in Argyll.

This review is timely since a significant number of our readers visited the woods depicted in Knapdale and Taynish in early summer 2019 during the annual excursion. During chapter one, titled "At the edge", the writer urges readers to take advantage of any guided tours to the Atlantic oakwoods. Their biodiversity is described in chapter two and the human life that subsisted in these woods from the Neolithic peoples follows in the next chapter. In chapter four, "Using woods", Robert Burton relates Peter Quelch providing him with information on the age of veteran trees in an old wood pasture at Ardery. Woodland refuges is the subject of chapter five, and the final chapter focuses on the change of policy to restructuring and managing these precious areas for conserving and enhancing their natural history. In the appendix there is a full page allocated to information about each of the three study areas.

As one might expect from such a large number of artists contributing to the project there is an enormous variety of styles and media shown. Several images are by the late John Busby, who was a founder member of The Society of Wildlife Artists. John, who lived at Ormiston Hall in East Lothian, had been a teacher at Edinburgh College of Art and was an Associate of The Royal Scottish Academy. He was well known for his paintings of birds. Another artist who may be known to readers is Keith Brockie, who has a studio and gallery on the north shore of Loch Tay. There are photo-realist images such as the hazel coppice at Barnluasgan by Chris Rose and "Duel at dawn" of black grouse lekking by the same artist. "Path through the silver birch", Taynish (42 x 59 cm) by Nik Pollard is in impressionist style using acrylic on paper. There are monotype prints by Jane Smith, with one depicting a toad while the other shows dragonflies. A fascinating woodcut print is "Bearded" by Andrea Rich. It is of a moss- and lichen-covered old birch on The Faery Isles in Knapdale and as a printmaker myself it is probably my favourite.

The wildlife artists have a sound knowledge of nature, as shown by the comments beside their images. The pictures are quarter page or smaller, half page or full page and larger. This informative hardback "coffee table size" book (Langford Press) is full of impressive illustrations that will delight the art lover who also has an enthusiasm for the wildlife of the Atlantic oakwoods. At a cost of £35 it will make an attractive gift for such a person.

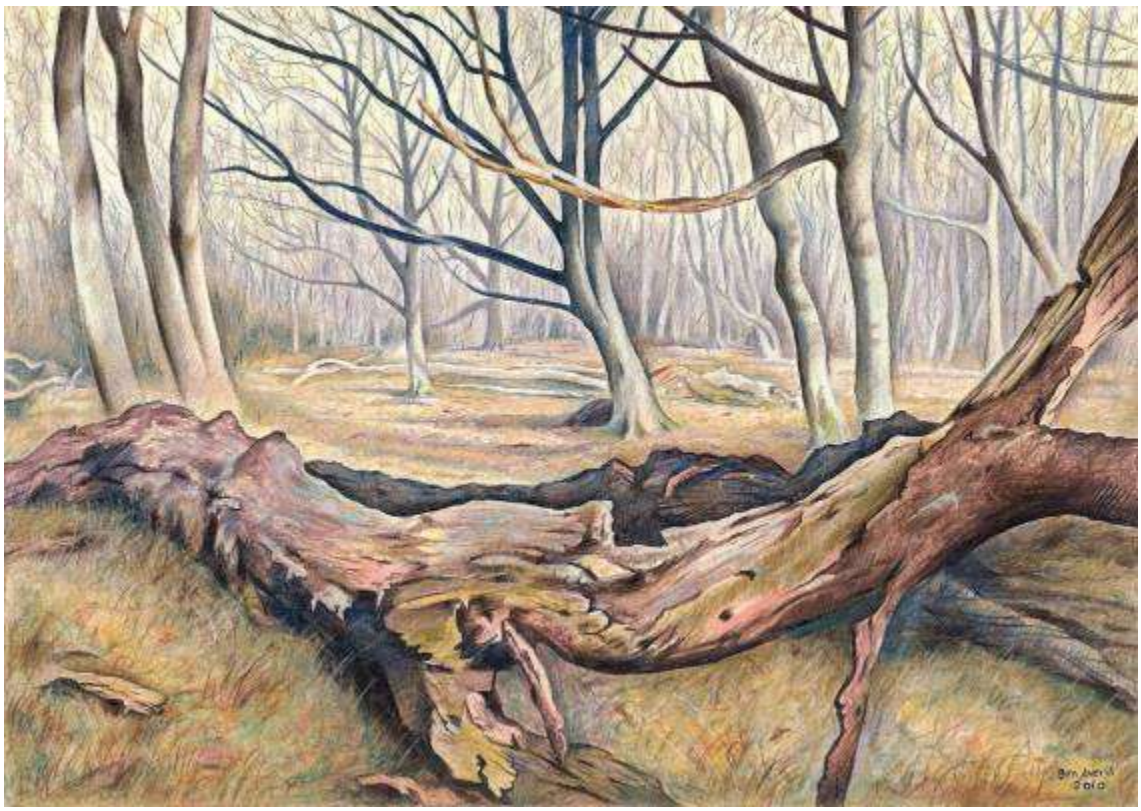
Two pictures photographed from Aig An Oir by Gavin Johnston. Top = Bullfinches by Michael Warren; graphite and watercolour; 35 x 47.5 cm. Bottom = Bearded by Andrea Rich; woodcut on Hosho paper; 40 x 51 cm.

DEADWOOD IN URBAN WOODLAND – A REQUEST FOR INFORMATION VIA AN ONLINE QUESTIONNAIRE

As part of his degree course at Scotland's Rural College (SRUC) Aidan Cashin is researching the role of deadwood in urban woodland settings. You might like to help him by answering the questions on his online survey of people's awareness of deadwood and its role in urban woodland ecosystems. The online link is:

https://kwiksurveys.com/s/fOQh462T#/0

… or you can go via https://en-gb.facebook.com/pg/TCVScotland/posts/ and scroll down to a post on 31 January 2020 with a link to his survey.



Top: deadwood well colonised by mosses and liverworts, in an urban park in Glasgow (photo; Ben Averis). Bottom: fallen deadwood in a country park in East Lothian (drawing by Ben Averis, 2010).

SOME WOODLAND PHOTOGRAPHS

As part of my ‘mission’ to have plenty of colour in this newsletter, and especially in this issue, here are a few pages of colour photographs of woodland and woodland-related things.

In Castle Wood, by Caerlaverock Castle, near Dumfries – photo taken by Coralie Mills in October 2019, while doing research into the history of this wood for Historic Environment Scotland

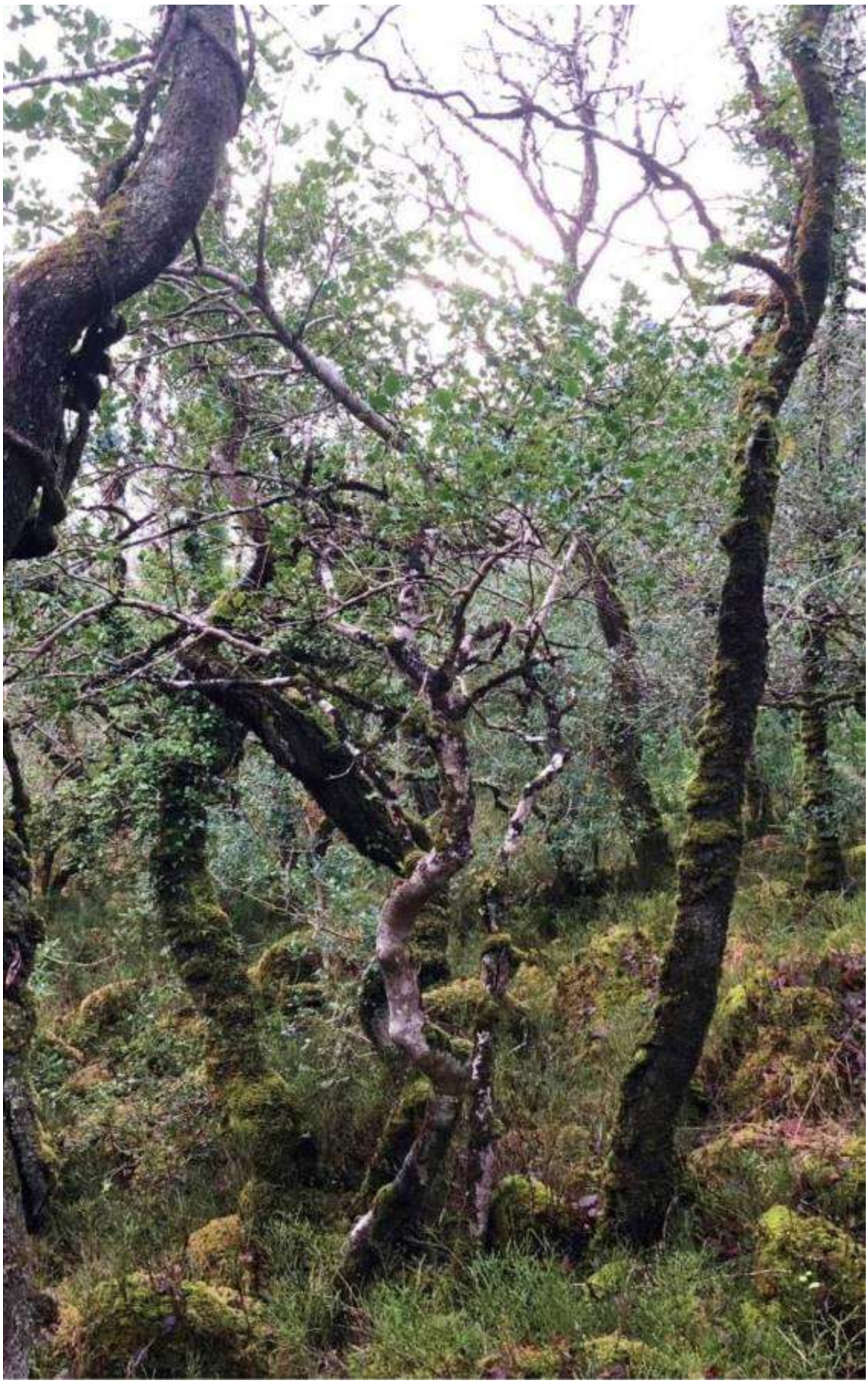
Three pages of photos of woods in western Ireland, by James Rainey (and there's another of James's Irish woodland photos on the inside back cover)

Reenadinna yew wood, SW Ireland (photo: James Rainey)

Pine on limestone pavement at Rockforest, The Burren, W Ireland (photo: James Rainey)

Eocghan's Wood, SW Ireland (photo: James Rainey)

Killarney fern Trichomanes speciosum (photo: James Rainey)



Woodland at Glencar, SW Ireland (photo: James Rainey)

Wet and dry

Top: wet woodland with common reed Phragmites australis and grey willow Salix cinerea; Loch Macanrie, near Aberfoyle (August 2009). Bottom: Stone pine Pinus pinea forest with Mediterranean dwarf palm Chamaerops humilis in Spain (December 2019). Photos: Ben Averis

Indoors – but still woodland-related in some way…

The committee at the NWDG Annual General Meeting in Argyll in 2019 (photo Donald McPhillimy)

Some 'sort-of-woodland-related-house-things'. L: *a basket made a few days ago by our daughter Elen, from willow found on a local walk while 'stuck' at home because of Covid-19 restrictions.* ***R:*** *Our friend Jilly's bookshelf on which she once saw, to her great surprise, two treecreepers who had flown in through the open window – they were climbing up it as though it were a woodland tree (which, of course, it probably would have been at one time).*

NATIVE WOODLAND DISCUSSION GROUP CONSTITUTION

Name: The organisation shall be the Native Woodlands Discussion Group.

Aims and objectives: To encourage interest in native woods, their ecology, management and history.

Activities:

- Organise at least one Field Meeting with related discussion each year.
- Organise Workshops on subjects suggested by members.
- Organise Conferences, Seminars or other Events as approved by the membership.
- Issue Newsletters with an emphasis on members' contributions.
- Maintain contact with like-minded organisations through the membership.
- Undertake any other activities deemed appropriate by the membership.

Membership: Open to any interested individual. No corporate membership. Subscriptions shall be set by the committee, with approval of the membership, according to the following categories: (a) Individual, (b) Family (1.5 x full rate) or (c) Concessionary (0.6 x full rate). Membership will cease 18 months after payment of an annual subscription. The committee will advise the Field Meetings organiser for the year of the fee for attendance of non-members at the Field Meeting.

Officers/committee: a. The group elects a committee. The committee shall co-opt or appoint such officers as are considered necessary. Officers will be eligible to vote at committee meetings.
b Committee members shall serve for three years, but shall be eligible for re-election.
c. Chairperson nominated by the committee and endorsed by the Annual General Meeting.
d. All members are free to attend committee meetings.

Accounts: a. The financial year shall be the calendar year.
b. The treasurer will keep accounts and present a financial report by 15th March each year. The accounts shall be independently audited by a competent person before presentation.

Annual General Meeting: To be held on a date determined by the committee. Notification of that meeting shall appear in the newsletter at least one month prior to the AGM. Business at the AGM shall be determined by a simple majority (except changes to constitution which shall require a two-thirds majority of those members present). Family membership entitles up to two votes if both are present. The chairperson and the treasurer will each submit a report at the AGM.

Meetings: The committee shall organise or authorise any member to organise such meetings as considered desirable.

Publications: The committee shall approve such publications as are considered desirable, and which carry the group's endorsement.

Current subscription rates: Ordinary individual: £20 per year (£18 if paid by Standing Order). **Family:** £30 per year (£28 if paid by Standing Order). **Under-25s:** £12 per year (£10 if paid by Standing Order). **Subscriptions should be sent to:** the Membership Secretary (Alison Averis, 6A Castle Moffat Cottages, Garvald, Haddington, East Lothian, EH41 4LW; tel: 01620 830 670 / 07387 970 667; email: alisonaveris@gmail.com). There is a £2 annual discount for those paying by Standing Order (shown in the above figures): please ask for a form.

CURRENT NWDG COMMITTEE CONTACT DETAILS

Chair: Alan Crawford. Email: alancrawford07@hotmail.co.uk

Minutes Secretary: Noel Fojut. Email: noelfojut@msn.com

Admin (Treasurer + Membership Secretary + Website Editor): Alison Averis. Email: alisonaveris@gmail.com; tel: 01620 830 670 / 07387 970 667.

Newsletter Editor: Ben Averis. Email: ben.averis@gmail.com; tel: 01620 830 670 / 07767 058 322.

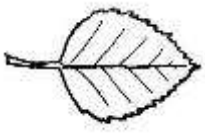
Woodland History: Mairi Stewart. Email: mairi_skye@hotmail.com

Social Media: Coralie Mills. Email: coralie.mills@dendrochronicle.co.uk

Member: Gordon Patterson. Email: gordonpatterson@blueyonder.co.uk

Member: Fiona Chalmers: fi@fionachalmers.co.uk

Member: Alan McDonnell: alanm@treesforlife.org.uk

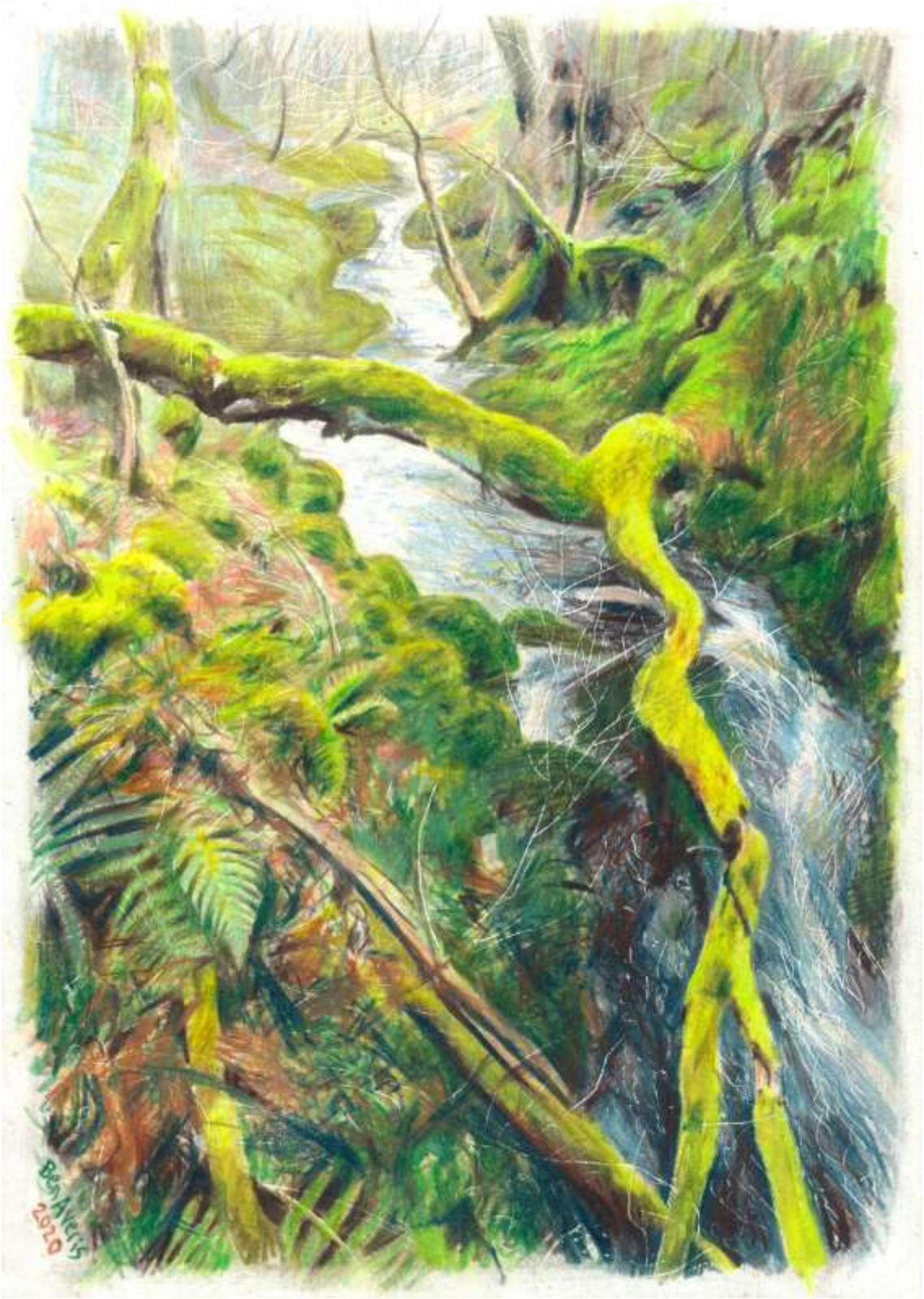


NWDG WEBSITE: www.nwdg.org.uk

Facebook: **https://www.facebook.com/groups/NativeWoodlandsDiscussionGroup/**
or search on 'Native Woodlands Discussion Group'

Twitter: NWDG **@TheNWDG**

Some woodland fungi drawn by Elen Averis (2020)



www.nwdg.org.uk

Picture: woodland stream in the Lammermuirs, East Lothian (drawing by Ben Averis, March 2020)