NEWSLETTER

Autumn 2022 Vol. 47 (2)

NATIVE WOODLANDS DISCUSSION GROUP

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Front cover photo: Gifford Community Wood, East Lothian, in November (photo: Ben Averis)

EDITORIAL *Ben Averis*

It is now winter, so this 'autumn' issue is a bit late! Sorry for the delay. Most of this newsletter consists of reports of the one-day events held this year. It's great that they were so well-attended and successful. Also here are Malcolm's Notes from the Chair, Alison's Administrator's Report, a piece about Holly, an obituary of Ernest Emmett and a review of Guy Shrubsole's recently-published book *The Lost Rainforests of Britain*. Thanks to all those who have contributed, and thanks in advance for any contributions to the next issue (Spring 2023 issue; contributions deadline 31st March 2023) for which any of you are very welcome to email me any woodland-related material. Do get in touch if you want to have a book of yours reviewed, or if you want to review someone else's book (we can often get a free review copy, which is yours to keep if you review it).

Thanks and best wishes

Ben (ben.averis@gmail.com)

NOTES FROM THE CHAIR *Malcolm Wield*

I can't actually remember when we began to refer to the United Nations earth summit conferences as COPs. I would have sworn that until a few years ago, I had never heard of a COP in this context. To the best of my knowledge, neither had anyone else. Compound that puzzlement with loose references to COP 27, followed by COP 28, then by COP 15 and then almost incredibly by COP 19, and I begin to get profoundly confused. I was never very good at doing sums, but always thought I could make a decent stab at counting. 27, 28, 15, then 19? On the face of it, this sequence doesn't work. A lot of media watchers and listeners must be similarly fazed, which is my worry. It is vitally important that they are not.

OK – once I started start thinking about COPs more simply as world summits, I came back on to firmer ground and things became much more familiar. Rio, the first COP in 1995, Followed by Helsinki, then Kyoto and the Aichi principles… and so on until COP number 27 in Sharm el-Sheikh last November. Suddenly the new headlines slot into place, but what then of the simultaneously mentioned COP 15 and COP 19? The

explanation lies in different conferences for climate change, biodiversity and wildlife trade respectively, all referred to with the same acronym of COP.

I just wonder whether badging something as fundamentally important as a conference of the major parties (COP) on the planet like this is very helpful. My concern is that once we depart from a rational explanation of something and embark on a more tabloid headline approach, to most people such things will appear on News at Ten a couple of times before disappearing forever, seemingly with the problem solved. Then surely out of sight, out of mind?

Is this not all getting needlessly and perhaps dangerously complicated?

We've been working on the issues raised by these parties for years, and some of us for a lifetime. And how successful have we been? Earlier this year the most recent WWF Living Planet Report told us that over the last 50 years we have experienced a 69% decline in relative abundance of wildlife globally. Statistics at home are just as scary, sometimes even more so.

This result, not surprisingly, reflects the fact that most targets set by all the previous COP summits have not been met. So, what have we been doing since 1995?

We know what the issues are and what we need to do to resolve them. And I mean 'need to do'. We don't actually have a choice any more. In this, the United Nations' Decade for Ecosystem Restoration, and based on today's nature crisis, the UN says "there has never been a more urgent need to revive damaged ecosystems". Time to walk the walk.

And where is the 50-year review of native woodland restoration? Surely an abdication of responsibility not to have such a thing firmly proposed and to help address still further decline.

So, it has been incredibly heartening to have heard and taken part in the discussion and debate stimulated by the NWDG's first season of one-day events this year. To see so much happening on the ground, covering virtually the whole spectrum of issues highlighted by the COPs, has to be cause for optimism.

Still with a precautionary approach because of Covid, something that we must now learn to manage with, we enjoyed some superb days. Reports contributed to this Newsletter show the breadth of what is being undertaken, and gratitude must go to our faithful scribes for providing such an excellent record.

It has been a programme of extremes in lots of ways. From nurturing new woods at Carrifran and nearby glens, managing older woods at Logie, Edderton and Gifford, transforming estate woods at Bunloit, through to removal of large dimension conifers for restoration of an ancient oakwood site at Ruiskich, there has been a wide spectrum to reflect on and such a scale to be pleased about.

It has been so pleasing for the NWDG committee to see how the programme has resulted in so many new members. It is a pleasure to welcome them on board and look forward to their contributions on future events.

Credit to the committee too, for putting all the arrangements together with our respected hosts. Nothing would happen without this enormous slice of goodwill, and we remain indebted for that.

On a rather sombre note, in this issue Valerie Emmet has written a tribute to her well-kent husband, our eminent mycologist and friend Ernest. A long standing NWDG member of course, many of us will recall Ernest with fondness, through his enormous contributions to the conservation of fungi within our woods.

We were treated to a couple of cracking presentations at our Annual General Meeting by Annabel Everard and Sarah Watts. You can see these in full on the NWDG YouTube channel at https://youtube.com/@nwdg2014, where they join another by James Rainey, plus a recording of the NWDG 'Rainforests in Britain' workshop and the NWDG visit to Carrifran. Establishing the YouTube channel, principally led by committee member Sam Guthrie, has been another great success for NWDG and which promises to grow into a fascinating resource.

Keith Kirby has sent us a very interesting thought piece about holly, and Simon Stuart has reviewed Guy Shrubsole's *Lost Rainforests* book. Our grateful thanks are due to them.

This issue is again ably assembled by Ben Averis. Thank you so much to Ben and all the contributors, it is always good to hear what you think and how things have been received. So please feel very welcome to let Ben have your thoughts on anything to do with native woods. Be assured, we will all enjoy the read.

NWDG ADMINISTRATOR'S REPORT

Alison Averis

Welcome to everyone who has joined the NWDG in the last few months. We are delighted to have you in the group, and hope that we will see you at an event soon.

We've currently got **197** paid-up members, compared with 183 this time last year.

The group is in possession of **£16,348.91**. It's a decent amount of money, largely amassed as a result of not being able to hold our normal programme of events during the pandemic. The Committee would like to invest some of it in putting on a celebratory event in 2024, when the NWDG will be 50 years old. If anyone has any ideas or suggestions for such an event, please pass them on to any Committee member.

We are delighted to report the great success of this year's One-Day Event programme. Originally conceived to enable members to participate in group events while the Covid restrictions made residential or indoor activities impossible or inadvisable, your response has encouraged us to continue with these one-day visits in future. This table shows that they proved more popular and more inclusive than the three-day excursions:

Year	Type of event(s)	No. of paying attendees	% of membership
2016	3-day excursion (Isle of Mull)	48	26
2017	3-day excursion (Killin)	56	31
2018	3-day excursion (Drumnadrochit)	53	28
2019	3-day excursion (Argyll)	43	22
2022	**Six one-day events**	**92**	**47**

They also make more financial sense, with every one-day event covering its costs and making in total a nice change from the last few years of three-day excursions:

Year	Event(s)	Balance
2015	Excursion (Kinlochewe, Wester Ross)	£ -2104.00
2016	Excursion (Craignure, Isle of Mull)	£ -2114.00
2017	Excursion (Killin, Perthshire)	£ -1229.00
2018	Excursion (Drumnadrochit, Inverness-shire)	£ -1102.00
2019	Excursion (Kilmartin, Argyll)	£ -291.50
2022	**One-Day Event Programme (six events)**	**£ 787.24**

Seventeen people joined the NWDG in order to attend at least one of the events, and we were delighted to see you taking part.

Finally, we seem to have an up-to-date email address now for everyone in the group. Please help to keep things this way by **letting me know if you change your email address**. Ideally, please give us an email address that won't change if you get a new job or if your organisation decides to rename itself. Email addresses are never divulged to third parties, even other NWDG members, without your permission. Thanks very much.

Here is the NWDG Profit and Loss Account table for the year ended 5th April 2022, from our accountant Kirsty Macintyre:

NATIVE WOODLANDS DISCUSSION GROUP
PROFIT AND LOSS ACCOUNT
For Year Ended 05 April 2022

	2022		2021	
	£	£	£	£
Income				
Memberships	3630		3873	
Field Events	875		0	
Zoom event	0		426	
Refunds	1400		0	
GROSS PROFIT		5905		4299
Expenditure				
Excursion	0		7100	
Field Events	80		0	
History Conference	1190		983	
Postage	0		0	
Newsletter	273		875	
Workshops	0		0	
Accountancy	175		175	
Honoraria	0		800	
Other Expenses	221		136	
		1938		10070
NET (LOSS)/PROFIT		3967		-5770

NWDG VISIT TO LOWER FINDHORN WOODS ON 13TH MAY 2022: MANAGING FOREST FOR BIODIVERSITY

George Paul

Lower Findhorn woods (photo: Heather Paul)

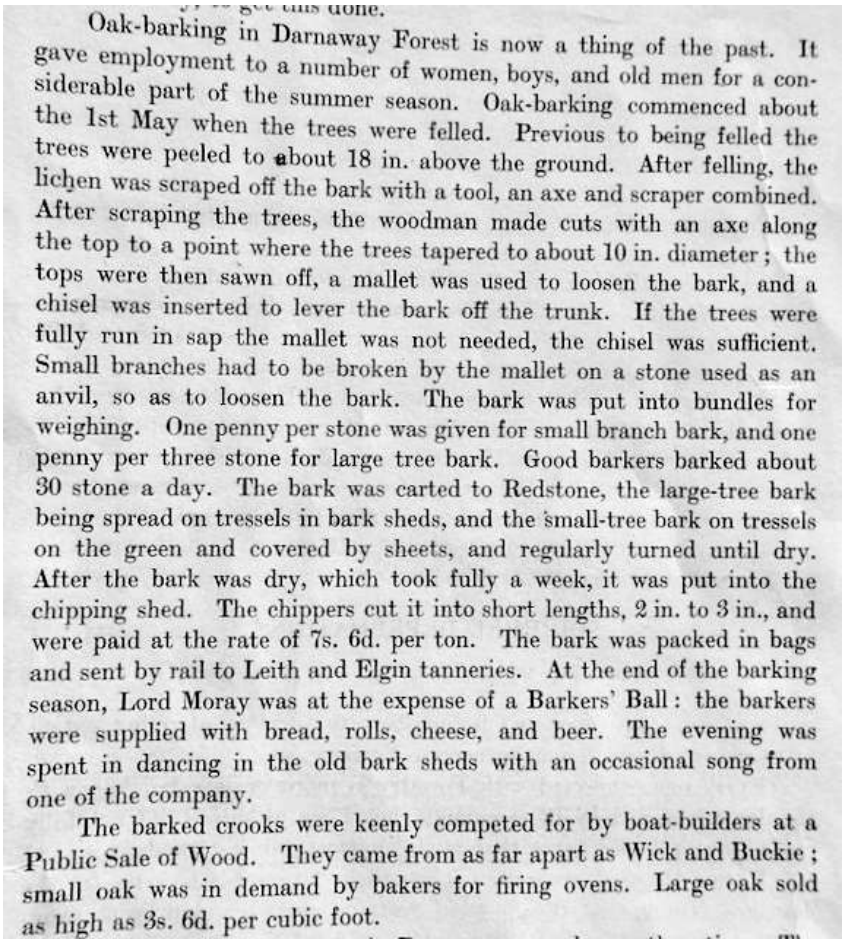
The group was met at the Sluie car park by Moray Estates woodlands manager Ben Clinch and his assistant Connor Tarran.

Ben gave us a fascinating account of the history of the woodland adjacent to the area upstream of Sluie. At one time much of the area was a royal hunting forest, and people had no access to the woodland. However, by the 18th century very little of the mixed native woodland was left. Fine stands of oak had been felled to supply timber for ships and roofs for castles and cathedrals as well as for more mundane uses. Mary Queen of Scots is recorded as expressing her displeasure at the loss of the woods.

We walked down towards the river, along a very quiet track which is bordered by a stone dyke and is now used to access a few houses and by walkers and others accessing the river. It is also used now to extract timber. In the past, this was a busy road with a salmon fishing station, more houses and fishermen's bothies, and was in constant use with horse and cart traffic carrying fish that may well have been sent away from the village of Findhorn at the mouth of the river. In one year 21,000 salmon were caught.

Ben Clinch addressing the NWDG group in the lower Findhorn woods (photo: Heather Paul)

Replanting of the area started during the Scottish Enlightenment in the mid-18th to early 19th century, and has continued since. Oak, ash, elm, beech and Scots pine were favoured and there is a non-native plantation on one side of the track. Ben gave us information from "The History of Darnaway Forest" about the importance to the local economy of oak barking in the 19th century.

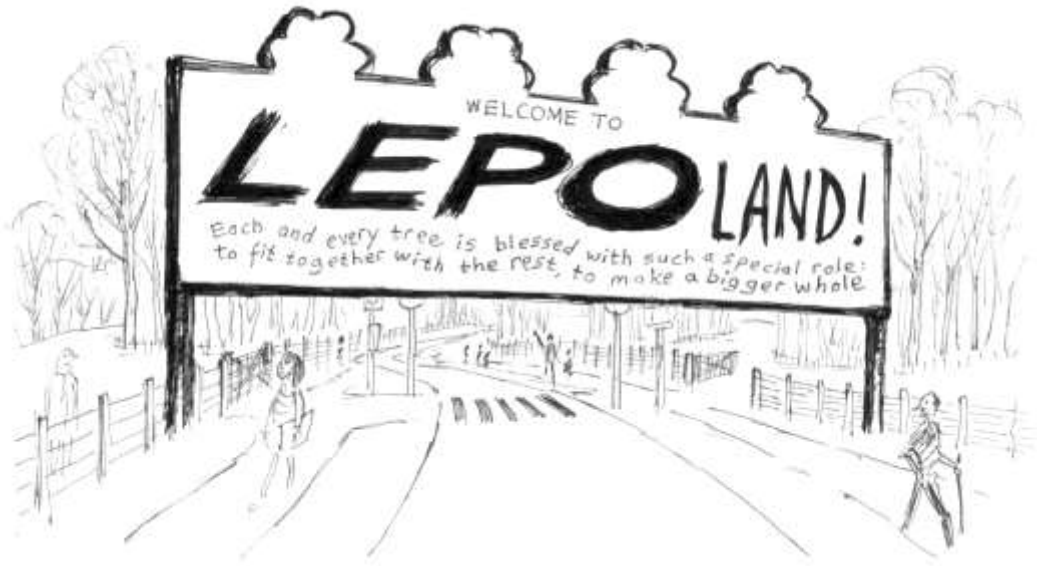


Oak-barking in Darnaway Forest is now a thing of the past. It gave employment to a number of women, boys, and old men for a considerable part of the summer season. Oak-barking commenced about the 1st May when the trees were felled. Previous to being felled the trees were peeled to about 18 in. above the ground. After felling, the lichen was scraped off the bark with a tool, an axe and scraper combined. After scraping the trees, the woodman made cuts with an axe along the top to a point where the trees tapered to about 10 in. diameter; the tops were then sawn off, a mallet was used to loosen the bark, and a chisel was inserted to lever the bark off the trunk. If the trees were fully run in sap the mallet was not needed, the chisel was sufficient. Small branches had to be broken by the mallet on a stone used as an anvil, so as to loosen the bark. The bark was put into bundles for weighing. One penny per stone was given for small branch bark, and one penny per three stone for large tree bark. Good barkers barked about 30 stone a day. The bark was carted to Redstone, the large-tree bark being spread on tressels in bark sheds, and the small-tree bark on tressels on the green and covered by sheets, and regularly turned until dry. After the bark was dry, which took fully a week, it was put into the chipping shed. The chippers cut it into short lengths, 2 in. to 3 in., and were paid at the rate of 7s. 6d. per ton. The bark was packed in bags and sent by rail to Leith and Elgin tanneries. At the end of the barking season, Lord Moray was at the expense of a Barkers' Ball: the barkers were supplied with bread, rolls, cheese, and beer. The evening was spent in dancing in the old bark sheds with an occasional song from one of the company.

The barked crooks were keenly competed for by boat-builders at a Public Sale of Wood. They came from as far apart as Wick and Buckie; small oak was in demand by bakers for firing ovens. Large oak sold as high as 3s. 6d. per cubic foot.

Findhorn gorge woodland (photo: Heather Paul)

Much of the woodland has grown into LEPO (woodland of Long Established Plantation Origin) which is being actively managed for continuous cover. We could also see how beech, Sitka spruce, Douglas fir and western hemlock have thrived amongst the oak on the sides of the gorge.



In 1986 the Lower Findhorn Woods was designated as a Site of Special Scientific Interest (SSSI). It is a Special Area of Conservation (SAC), particularly for its different woodland types, its bryophytes and lichens (including rare river lichens) and its oligotrophic (low nutrient) river. This area is the best example of the lichen community characterised by lungwort (*Lobaria pulmonaria) i*n the north-east. It has since been found to be in unfavourable condition for some of the woodland species and the lichens. The regeneration of beech has been found to be concerning; in areas with a lot of beech, oak regeneration was almost non-existent (Scottish National Heritage, Site Management Assessment 16/06/2011).

Our tour took us upstream along the precipitous sides of the Findhorn gorge. Away from the river we could see fine stands of Scots pine but our focus was on the problems of management for biodiversity in the mixed woodland along its sides. The proliferation of beech in particular is a major issue. The dense shade beneath beech inhibits growth and regeneration of oak, rowan, alder and hazel, bryophytes and lichens , although the beech itself also supports lichens which, in some parts of the Findhorn gorge, include *Lobaria pulmonaria*.

However, removal of beech is problematic for a number of reasons. The beech has been there for a long time, and although it now has little commercial value because of its difficult location it is much loved and has high amenity value. The ‘public’ have to be kept on board. There has been a reluctance to fell the beech, but the decision has been made to do so and a grant from NatureScot has allowed the estate to experiment with the most effective method. For amenity reasons, clearance has been done in patches rather than continuously. Regeneration will require frequent attention.

The dilemma is how this clearance should continue to be done. On the steep slopes felling is difficult and dangerous. There is also the problem of felled trees ending up in the river, where they could be a danger to canoeists and a hazard to fishermen and wild swimmers. Creating standing deadwood could also be a problem if it falls in an area used for amenity. On the other hand, the river has naturally changed its course many times, and trees falling into the river is a natural way of creating habitat. The area is difficult to access with heavy machinery, which in any case would be damaging in itself. Spraying would risk the pollution of climbing equipment and of the river. Unlike elm and oak, beech goes soft quickly after treatment with Roundup; such treatment could pose an additional danger. Eco-plugs, which have been used to some extent, create plastic pollution that would eventually reach the sea. Ring-barking can be tried but it doesn't always work well and the trees sometimes continue to grow. Felled beech may also regenerate from the stump.

Among pines in the lower Findhorn woods (photo: Heather Paul)

Added to these problems is the difficulty of finding qualified climbers and arborists who have a knowledge of lichens and bryophytes. Specialist rope access training (IRATA) and a pesticide-use ticket is needed for work within the Findhorn gorge, and this all has to be costed in before applying for a further grant.

There is a further dilemma regarding what to do with the felled beech. It is not economic to extract it from these locations. There are also stabilisation issues after felling on the steep sides of the gorge. Greater woodrush (*Luzula sylvatica*) takes about two years to come in and begin to stabilise the slopes.

In areas where beech has been removed the lighter conditions are leading to the regeneration of holly, rowan, Douglas fir, oak, hazel, and of course, beech. One method that is being tried is to 'hopscotch' the clearance so that some stands of beech are left, which people can still enjoy. The downside is that this leaves a seed source that will recolonise the cleared areas nearby. The photo below shows an area cleared of beech eight years ago, next to an area of uncleared beech. This cleared area has been left alone since then to see what happens. It is clear that without further intervention beech will again come in.

There is no perfect solution, but Moray Estates is currently costing a new programme for possible grant aid from Forestry and Land Scotland (FLS).

An area cleared of beech eight years ago, in the lower Findhorn woods (photo: Heather Paul)

Ben was asked if roe deer were a problem. It seems not. The river itself prevents many deer coming from other parts of the estate. A few are shot, but amenity use (walkers with or without dogs) are a deterrent. In any case the diversity within the woodland is such that deer have more choice of food, and damage is limited.

There are plenty of management challenges but the consensus is that to do nothing is not acceptable. Too much would be lost. Thinking about the experience over the last eight years is vital in planning further intervention.

A big "thanks" to Ben and Connor, and Moray Estates.

NWDG VISIT TO LOGIE SAWMILL ON 13TH MAY 2020

David Shepherd

After an excellent lunch stop at Logie Steadings, which included splendid cakes (a benchmark for future trips), we went on to Logie Sawmill.

Mark Council, an arborist in partnership with Logie Estates, set up the mill in 2017.
Helped by a substantial grant from the Forestry Commission, a large shed framed with roundwood, sourced nearby, was constructed, with Henry Fosbrooke building the frame. A Trak Met bandsaw with a capacity for 1.2 metre diameter logs of 7 metre length was installed, followed by machinery for thicknessing, planing and profiling.

Extensive yard space is available for storage of logs that are shifted around with a tele-loader. There is a large 'tent' for stacking hardwoods '*en boule*' to air-dry prior to final drying in a kiln that is partly powered by solar panels.

Logie Sawmill (photo: David Shepherd)

It was instructive to hear about the economic and technical forces which influence the viability of the enterprise:

The mill handles hardwoods plus larch and Douglas fir.

Hardwoods are best felled and sawn in winter while the sap is down and the new boards start drying in cool conditions, as the shock of rapid drying in summer tends to cause cracking and splitting.

The stickered boards are stacked under cover with good ventilation for one year for 25 mm thickness and two years for 50 mm thickness. This leads to a moisture content (mc) of about 20%, which is suitable for the final stage of about six weeks in the kiln, to bring the mc down to the <10% that is required for indoor use.

Clearly this prolonged process raises cash flow problems for the start-up milling business. The solution has been to process larch and Douglas fir, both of which are high-value timbers that can be cut all year round. Cladding and posts and beams are sold 'green', and Douglas Fir for internal finishing work can be kiln-dried in a few weeks without the need for air drying first.

These factors have led the mill to currently process about 85% softwood and 15% hardwoods.

Because of the strong demand for Douglas Fir and larch by house builders like Makar, the mill is about to expand its capacity for these very substantially. Another large shed is to be built by Makar, which will house a Slovenian-made production line. This will process Douglas Fir and larch from log to planed, thicknessed and profiled timber at the rate of 25 cubic metres a day. This new process will free up the existing bandsaw for hardwood work and contribute to solving the cash flow problem.

We visited an enormous oak log that had been felled because of safety concerns. Apparently, the c. 400 year-old tree had a healthy crown, despite some heart rot. We discussed whether felling this tree was an over-cautious approach. Don't all old oaks have heart rot whilst living for a few hundred more years? It was intriguing to hear that this massive trunk will be reduced to manageable sizes by cutting with a chainsaw mill with a 98-inch guide bar.

Large oak log at Logie Sawmill (photo: David Shepherd)

Timber supply constraints have raised some interesting problems. Larch logs in longer lengths of good quality are becoming difficult to find because of the impact of *Phytopthora ramorum*, and 6 metre lengths of good straight oak is now rare in Scotland. As Douglas Fir is almost as durable as Larch, and in good supply, it will probably be increasingly used for cladding. However, it seems Scotland will have to import most of the oak required for processing.

Scotland is largely self-sufficient in soft wood, but currently we import around 95% of hardwood.

In the view of this writer, the lack of hardwood is the result of a serious failure by the forestry industry. Hardwood development is almost wholly ignored. Current policy documents by Scottish Forestry and Confor both talk about commercial conifers but relegate broadleaves to only biodiversity and amenity. Commercial broadleaf timber can be produced in Scotland just as well as by our European neighbours, but this needs recognition and encouragement from government and a culture change in the industry. There is also a need for training in broadleaf silviculture.

If mainstream forestry will not reform, perhaps conservation organisations that currently promote broadleaf establishment might consider developing commercial hardwood silviculture on suitable ground. They might even push the boat out and develop commercial native broadleaf timber within biologically and structurally diverse native woodland, to deliver multiple objectives.

We were very grateful for all the time Mark gave us to discuss his work at Logie, and to answer all our questions. His energy and enthusiasm for the business shone through. His attention to detail should ensure a good future for LogieTimber (www.logietimber.co.uk).

Group discussion at Logie Sawmill (photo: David Shepherd)

NWDG VISIT TO CARRIFRAN ON 10TH JUNE 2022

John Fletcher

It would be difficult to exaggerate the importance of what has been happening in the Borders at Carrifran, north-east of Moffat. An area of 665 hectares, rising from about 150 m above sea level to 800 m, it is the ideal valley for this project. Just twenty-two years ago the glen was much like many other upland areas of Scotland: virtually treeless and with its vegetation degraded and its soil eroded by perhaps five centuries of extensive sheep grazing. '*A wet desert*' to Fraser Darling or, as George Monbiot would have it, *'sheepwrecked'*. But then an extraordinary combination of highly-motivated individuals changed everything. They have been a beacon demonstrating what can be done.

Carrifran (photo: Ben Averis)

I was privileged to have been a friend of the late Tim Stead, sculptor and woodworker, and in his last years he often talked about the Borders Forest Trust, Community Woodlands and Carrifran, but I had always thought myself too busy to go and see for myself. So when Gordon Patterson of the Native Woodlands Discussion Group organised a visit on June 10th I had to go.

The weather forecast had told us to expect the remnants of a tropical storm, so the strong winds were no surprise, but it remained pleasantly warm and, surprisingly, dry. As directed we assembled at the National Trust's car park for the Grey Mare's Tail, squeezed into as few vehicles as possible and drove the short distance down to the Carrifran entrance. The small car park there has been applauded as discouraging too great an influx of visitors up the glen. We were the privileged few and were welcomed and escorted throughout by a keen team of knowledgeable volunteers including Fi Martynoga, John Thomas, and others all led by the remarkable Philip Ashmole.

The remarkable Philip Ashmole

Philip supervised the car parking, welcomed us and gave a short talk illustrated by a map. The project, he explained, had its roots in informal discussions amongst a group of interested individuals as far back as 1993. They organised a conference: *'Restoring Borders Woodland'* and their vision was to recreate the kind of forest that might have been here 6000 years ago. Significant deforestation in the Borders accelerated from about 500 years ago with the growth of sheep farming. While sheep are unlikely to kill established trees they prevent regeneration, resulting in the bare hills we have today. There was a realisation that the Borders was the most deforested region of Scotland, yet all the emphasis at that time was being placed on the depletion of woodlands in the Highlands.

Encouraged by the Millennium Forest for Scotland initiative, a plethora of woodland projects were discussed, leading to the creation of the Borders Forest Trust in 1996. Among those projects was that of the Wildwood Group, whose mission statement Philip read to us:

> *The Wildwood project aims to re-create, in the Southern Uplands of Scotland, an extensive tract of mainly forested wilderness with most of the rich diversity of native species present in the area before human activities became dominant. The woodland will not be exploited commercially and the impact of humans will be carefully managed. Access will be open to all, and it is hoped that the Wildwood will be used throughout the next millennium as an inspiration and an educational resource.*

Philip described the search for a site on which to launch the Wildwood project and then, having identified Carrifran, the campaign to raise funds with which to purchase and plant it. Fundraising was based on the creation of Founders who each contributed either £250 or £500; today there are around 1,000 Founders. Once the land had been purchased, a target of propagating and planting 700,000 trees was set and has been achieved over twenty-two years. What next? Philip talked of aspirations to roll out the success of Carrifran to other neighbouring degraded hill land properties.

From the beginning, the policy at Carrifran was to put nature first, as had originally been the strategy for the National Nature Reserves. Therefore, while interested visitors are always welcome, no big efforts are made to encourage them. A short half-hour walk has been laid out with well-maintained paths and signage to explain points of particular interest and the labelling of a few key tree species. A book, *The Carrifran Wildwood Story,* written by Myrtle and Philip Ashmole and members of the Wildwood Group was published by the Borders Forest Trust in 2009, and another, edited by Philip and Myrtle, *A Journey in Landscape Restoration*, was published in 2020. This most recent publication describes Carrifran and draws on many contributors discussing the background to the project, the status of different classes of plants and animals in the glen, and so on. This book must be required reading for anyone interested in what has been achieved, and especially for those wanting to plant trees back into degraded habitats.

After this introductory talk we moved off along the carefully-maintained short walkway to the ruined sheep stell, where we could see the length of the glen and get a

good grasp of the extraordinary success of the tree planting. To the untrained eye those trees seemed to have arrived by natural means over millennia, although on close examination we could see that they were all of similar age and their distribution, although meticulously planned, was not just the result of nature. Inevitably, over the future decades, the pattern will adapt as species settle into their preferred niches and as some trees survive to maturity and others decay.

A steady flow of questions and comments from the party kept us all interested. How was browsing controlled? There are no red deer present at the moment, and the roe are controlled by a very competent stalker employed by the Wildwood Group, who kills about 25 per annum. Ultimately it is hoped that it may become possible to introduce lynx. The glen is not fenced against deer, although recently the neighbouring commercial forestry block has been deer-fenced and planted. When the Carrifran project began there were a number of wild goats here. The removal of these was clearly essential but potentially unpopular with the local community, so they were caught up live and distributed to goat-keepers around Britain. Only about three eluded capture and had to be shot. The glen is now surrounded by a stock fence which is monitored and maintained on a very regular basis by volunteers.

We continued up the glen, with frequent stops to discuss particular points of interest. The rosebay willowherb had thrived on the low ground, but the decision was made not to try to control it but rather to let the shade cast by the trees limit its spread. In that context hazel had proved to be very effective, casting dense shade. Inevitably we saw the effects of ash dieback, and a dead juniper had succumbed to a strain of *Phytophthora*. There was a lot of discussion as to the provenance of the trees: great care had been taken to try to source native and, if possible, local, strains, and propagation had been done both by volunteers and through commercial nurseries. Aspen and juniper had been favoured species.

Walking up the glen at Carrifran (photo: Ben Averis)

We walked on up the glen, with conversation never flagging and energetic networking always stimulating us as we climbed. It was clear from the outset that the growth and establishment of the trees, and the effect they have had on the flora, the bryophytes, the lichens and the entire ecosystem in only twenty years, was truly amazing. Philip and Fi had so many interesting stories to tell: for example, wood anemones and bluebells that had survived the centuries of treelessness.

Some of the difficulties in breaking down prejudices amongst the more conservative conservationist organisations were touched upon. There had been some suggestion that holly was inappropriate, so it was satisfying that the narrow gorge at Holly Gill had yielded up an aged holly tree. In fact, Holly Gill marked our turning point and we retraced our steps, some of us rather wearily, to enjoy a fabulous spread of baking provided by Alison Averis.

Carrifran deserves to be much better known, but those who have done the work are not looking for public recognition or visitors. They measure their success in the explosion of biodiversity. This was a daring experiment in rewilding, before that rather horrid word gained currency. And the experiment has been a huge success. Thanks to the NWDG and all the participants for a great day, and especially to the Wildwood Group for what they have done.

Three photos by Gavin Johnston: Holly Gill (top and lower left) and main Carrifran valley (lower right)

A MIRACLE AT CARRIFRAN

Carol Crawford

Of all the wonders unfolded to us at Carrifran on 10th June 2022, perhaps the most astonishing was the colourful array of plants by a meandering section of burn: Borders Forest Trust's miracle, as these plants were not there 20 years ago. Woodland species such as greater woodrush, bitter vetch, wood cranesbill and herb Robert, species of wet habitats such as globe flower, water avens, marsh hawksbeard and common valerian, and closer to the rocks, seaside species: common scurvy grass and sea campion. They had formerly been recorded by higher upland springs/tributaries, but since grazing pressure from sheep (and goats) was removed they flourish much lower down.

Streamside habitat at Carrifran on 10th June 2022 (Photo: Carol Crawford)

Tall herbs including valerian, meadowsweet and wood crane's-bill at Carrifran on 10th June 2022 (Photo: Carol Crawford)

NWDG VISIT TO EDDERTON WOODS ON 19TH AUGUST 2022

David Shepherd and Amy Mitchell

The NWDG group were welcomed at Edderton by Hugh Clarke. Hugh represented the family who are the landowners. Hugh outlined the history of the site which was, until 1946, a 1618- hectare sporting estate comprising twelve crofts extending to around 2.0-2.4 hectares each, and a livestock farm.

Edderton Estate Croft House (photo: Clarke family archive)

Edderton Estate Croft House 2022 (photo: Amy Mitchell)

As a returning tenant farmer after the war, Reay Clarke, father of the present owners, had the opportunity to purchase about 1,618 hectares during 1946. He thereafter sold about 1,012 hectares to the Forestry Commission in 1947. Mr Clarke had an early interest in forestry and began to establish conifer woodlands of about 28 hectares in 1958/59 under a Dedication Scheme. Subsequently, from around 1985 until 1991, he was a pioneer in

developing a Forestry Commission Farm Woodland Scheme of about 32 hectares, comprising mixed broadleaves with some Scots pine and larch. Ground was prepared with a single furrow plough, with planting at 2.5 metre spacing. Unfortunately, the first planting was significantly damaged by field voles, which resulted in the need for an extensive beating-up (counting the dead and replanting) programme.

The farm woodland scheme included a substantial amount of birch of improved stock: this did well for a few years, but then deteriorated and now exhibits disappointing quality. Some vintage NWDG members recalled this 'tree improvement' failure, and there was a frisson of schadenfreude at the thought of the failed attempt by nurseries at improving on native stock.

Mr Clarke had undertaken management of his woodlands until the arrival of the Scottish Rural Development Programme (SRDP). As a man in his 80s he found the bureaucratic nightmare together with the need for electronic format beyond the pale; probably many of us a few decades younger fully sympathise. Cameron Ross was therefore appointed as forestry consultant during 2011, and has managed the woods since.

Mr Clarke's legacy has been the successful establishment of a substantial area of mixed broadleaf woodland with good prospects for timber production. In line with his strong social ethic there has been a significant focus of management to ensure that the woodland is attractive and welcoming to the public for recreational purposes, in addition to the productive objective. Cameron has wholeheartedly supported the Clarke family in embracing and taking forward this philosophy.

We visited three areas of the woodland where timber production has and continues to be the main focus, in addition to the resident woodcutters' woodland hideaway! Invigorating discussion ensued as to the silviculture methods implemented and the additional aim of maintaining and enhancing the overall biological and structural diversity. It became apparent that an overriding influencing factor has been the challenge in covering costs during this early period of broadleaf management - an important constraint on productive broadleaf management in Scotland.

During 2014 Cameron started thinning with the help of Ian Collier, and later Cameron's sons Connor and Robbie. The team work on a voluntary basis most Saturdays, and are rewarded with copious amounts of firewood.

Woodsmen's Howff (photo: Amy Mitchell)

The first stand we viewed comprised about 80% ash and 20% sycamore with some aspen. Form was observed as being generally good, but the prospect of tree loss via the effects of ash dieback *(Chalara)* has made for difficult decision-making and resultant changes in silvicultural direction. As an alternative, therefore, the focus of management is now towards promoting sycamore. The silvicultural approach is developing towards Crop Tree Management (Free Growth). Final crop (FC) trees of good form and vigour are being identified at about 10 metre spacing. These FC trees are pruned and relieved of competition by 'halo thinning'.

It is envisaged that gaps are likely to appear if serious ash death occurs; the approach to replacement led to wide discussion. New planting of timber trees should work, perhaps with the addition of woody shrubs to enhance diversity and functional resilience. When sycamores develop vigorous crowns following halo thinning, they will probably start early seed production, which might lead to self-seeded trees to replace dead ash. A thick grassy sward is likely to threaten natural regeneration and also prove a barrier to the desired development of a woodland flora. Various solutions were considered, including scarification by boar or cattle, and grass suppression by yellow rattle.

Group discussion at Edderton (photo: Malcolm Wield)

We now retired for lunch. Cakes made by Michelle Collier and Eileen Wield were simply sublime: we all enjoyed the strawberry and cream sponge, and the courgette cakes. James Clarke also supplied delicious soft fruit from his horticultural business.
During lunch we also had the opportunity to look at a range of historical records, old maps and information which provided insight into the woodland area prior to trees.

And there was more!

We were introduced to Aaron Sterritt who runs a green woodworking business at Logie Steading near Forres. Here he sells furniture and artefacts made from green wood, as well as running training courses. A further sales outlet is Alchemists Gallery in Dingwall. Aaron instructed us in the craft of green woodworking and demonstrated how to make a circular shrink pot using simple hand tools. Aaron regularly uses timber sourced from Edderton.

Aaron Sterritt at work (photo: Malcolm Wield)

We moved on to see one of the remaining croft houses, surrounded by its long-time unworked in-bye. The house and steading were originally built by refugees from the Sutherland clearances, and after a gradual and continued de-population the last inhabitant left in the 1950s.

The derelict croft house is now of archaeological importance and the retained Scots pine crucks excited interest. Hugh Clarke was keen to proceed when asked if he would like Coralie Mills to consider undertaking a dendrochronology assessment. This could possibly date and identify the origin of the timbers. (Subsequent to the meeting we have heard that Coralie has now assessed the site with permission of the family. She considers the timbers as being too narrow to have sufficient rings to date. She believes the building to be late 18th to early 19th century, based on comparison with similar structures. The reference below refers to a paper describing this work.)

Pine cruck (photo: Amy Mitchell)

Thereafter we proceeded to the next broadleaf site, planted in 1997 and comprising predominantly sycamore which appeared to be of generally poor form. Close inspection demonstrated that there were adequate trees of good form to make sufficient final crop trees at 10 metre spacing. These had been pruned, and halo thinning commenced. Racks at 20 metre spacing have been prepared to facilitate harvesting of thinnings. The hands-on team use a quad bike with a simple trailer to carry out 2.4 metre lengths, and this is loaded with tongs and significant amounts of elbow grease.

It was interesting to see that cut stumps were coppicing well, with almost no browsing damage. This suggested that all but the FC trees could be removed soon in the expectation that a coppice cycle under the required standards might be achievable.

The last stop of the day was at a stand comprising oak, ash, sycamore, gean (heavily laden with ripe fruit) and birch. The managers were keen to identify the presence of the vigorous oaks located at 12 to 18 metre spacing, which will be pruned and halo-thinned to facilitate an early crop (c. 100 years) of 6 metre-long sawlogs.

All-in-all, the whole day, which was enveloped in late summer sunshine, was extremely enjoyable and energising. Edderton Woods is an example of a highly attractive woodland that has been established and managed in a way that evidently encompasses a wide range of aims and objectives. This includes the wider public benefit in addition to the anticipation of income from timber.

The Clarke family and the openly-welcomed public users have attractive woodlands to enjoy, biodiversity is improving and the harvesting team (the 'Edderton Woodsmen'), are being rewarded by a job well done with the added health and well-being benefits of useful physical outdoor work.

Many thanks to Hugh Clarke, Cameron and Robbie Ross, Ian Collier, Aaron Sterritt and the above-mentioned provisioners.

Mixed broadleaf stand at Edderton (photo: Amy Mitchell)

Reference: Dendrochronologically Dated Pine Buildings from Scotland: the SCOT2K Native Pine Dendrochronology Project – Coralie Mills, Anne Crone, Cheryl Wood and Rob Wilson. *Vernacular Architecture* Vol.48 (2017), 23-43.

NWDG VISIT TO GIFFORD COMMUNITY WOOD, EAST LOTHIAN, ON 11TH SEPTEMBER 2022 (REPORT 1)

Amos Higgins

Our visit to Gifford Community Woodland was hosted by Nev Kilkenny, the community woodland manager. Nev has been in post since the woodland was purchased by the Gifford Community Land Company, five years ago, with money from the Scottish Land Fund. Originally part of Yester Estate, the woodland has changed hands a couple of times in the past, and management has been lacking in recent decades. The current management objectives described by Nev are to increase the structural complexity of the woodland, to create resilience of the woodland to environmental change and pests/diseases, and to provide an educational and recreational resource for the community. Very wholesome in intent, the management work over the past few years has been relatively light-touch but has included clearing of invasive rhododendron and thinning of mature Scots pine; in addition there will soon be a round of *Chalara*-infected ash felling. A prevailing focus is on the generation of some revenue by non-timber forest products, rather than focusing on timber. This is partially to do with the ecological merit of a sensitive touch, but mostly due to the aversion of the community and public to tree felling. Managing for timber, as we know, can be of huge ecological benefit to a wood, but it was refreshing to see the creativity involved in appreciating the many other gifts that woodland can bring.

Nev Kilkenny

Setting off into the wood, Nev explained that an all-abilities path was installed with funding from Paths for All and support from NatureScot. The idea of the path was to create as little intrusion as possible, and it did indeed look well-bedded and quite in-

keeping. The graded path is maintained with a combination of herbicide and leaf-blowing as well as drainage upkeep, and so was entirely fit for purpose while appearing natural enough. It wasn't too long before conversation turned to fungi (Nev's speciality!) and the differences between endomycorrhiza (also called arbuscular) and ectomycorrhiza were explained – the latter being of far more interest to the mushroom forager! There are, on average, 6 km of fungal hyphae in one teaspoon of soil – a mind boggling level of fungal activity that goes largely unnoticed to the uninitiated. Mycorrhizal fruiting bodies dominate the early part of the autumn and the saprotrophs comes later – usually. However, this year Nev observed the reverse. It was explained that white-rot fungi digest lignin but not cellulose, and the opposite is true for brown-rot fungi. An example of the former was found in the beautiful 'cogwheel parachute' happily digesting on the forest floor. Standing among the towering mature Douglas firs, the full sensory experience was provided when we were each sprayed by a home-made tincture of Douglas needles. Heavenly!

Walking on past some less-than-healthy ash, the subject of tree safety surfaced and it was revealed that assistance on this ongoing job was provided by a retired council tree officer who is a local regular in the woodland. Community woodlands are, at their best, a real team effort, although the ongoing dumping of garden waste is somewhat counter-productive. The substantial footbridge proved to be a profit-making grant endeavour, and on the other side of the river we were greeted by the evidence of the ongoing rhododendron control work. The 4.5 hectare infestation upon Nev's arrival has been beaten back to about 2 hectares, thanks to hand tools, volunteers and glyphosate (one of the few wholly justified uses of this potent chemical). Cut brash has been left in heaps to rot down, bringing some habitat value as it does so. As I recall vividly from my time as a Community Forest Manager, these brash heaps have been criticised and demonised for being 'messy'. This is a truly interesting aspect of public perception that has been best described in the literature as 'ecological tidiness disorder', whereby people desire order and openness despite the biodiversity that seems to thrive in natural scruffiness. In his role, Nev is constantly managing expectations of the community for the woodland and it is a delicate balance between asserting one's own vision for a healthy woodland while appeasing the wishes of the people. The charcoal kiln has been a fantastic feature of this community woodland and the product has proven to be extremely popular.

At the charcoal kiln (photo: Ben Averis)

The wildlife pond was a fine feature and should provide a wonderful biodiversity hotspot in the wood. A new pond, it will hopefully be the subject of repeated surveys to document its growing biota. Children love pond-dipping, and so do I! I don't, however, love memorial benches, and was thrilled to hear that they would not be a focus of efforts in the woodland, despite multiple requests. Pet burials and tree planting dedications were on the cards, however, as a way of receiving donations and fostering another aspect of connection between people and the woods. Nev drew our attention to the humble but fascinating birch polypore, a saprotroph that has strong anti-bacterial properties. As well as being used historically to strop blades, this fungus was carried by the famous Otzi the Ice Man on his prehistoric travels across the Alps. A talisman, perhaps? There is certainly much that is mythical and magical about fungi, and we can only guess at the cultural associations our ancestors had for these natural wonders.

At the pond (photo: Ben Averis)

The 'laughing fungus', growing at the base of a willow stump, sparked a discussion on psilocybin and the role of psychoactive fungi in therapy and healing, as well as the dangers posed by its variable concentration in mushrooms. Rounding the corner, the stand was dominated by ash that was in a rather bad way due to another fungus, *Hymenoscyphus fraxineaus*, or ash die-back. Options were discussed for managing this to ensure an acceptable level of tree safety and woodland regeneration. Nev favoured felling the vast majority in this particular area and being more selective in the less dense and less peopled part of the wood. Enrichment planting of various natives may follow to increase species diversity. The relative merits of allowing purely unassisted regeneration was discussed but was not favoured by Nev due to the dominance of sycamore (an endomycorrhizal species). Personally, I think sycamore is a fine tree and

can be coppiced beautifully to provide a sustainable firewood resource and a healthy ground flora. However, it's not exactly in short supply and I can completely appreciate the desire to diversify, especially in these changing times. Ben Averis drew our attention to the solitary population of the moss *Thamnobryum alopecurum* growing on an ash butt. This moss is usually associated with stone so its growth here is quite novel, and may have been facilitated by the high humidity of the rhododendron infestation. It highlighted to me that there are always winners and losers to every management decision.

Moving on to the oak-dominated part of the wood, a spell was cast by the presence of these mighty trees. These oak, *Quercus petraea*, were planted in Napoleonic times, with dreams of future warships. Some sorry-looking underplanting was the result of a donation of nursery trees and not many options for where to put them. Hopefully many will thrive despite the shade.

We were greeted by Hamish, an archaeologist and dendrochronologist, axe in hand standing by an oak log propped up on bearers. He proceeded to demonstrate historical methods of converting the log to a box heart with chalk line and hand tools. His selection of axes was beautiful to behold and he wielded them with skill. 'Joggling' was the name given to the technique of cutting scores and splitting away chunks of timber to create a nice straight edge. Fine tuning was done with a slim, single-bevelled axe. It struck me that the ringing and chipping of the axe striking the log would once have been the typical sound of many woods up and down the British Isles, and my imagination took me to a place long past where teams of woodmen lived and worked in forests. A real contrast to modern forestry where, aside from the flurry of activity in the early stages of a plantation, a tiny number workers travel long distances to work in lonely places with machines. Splitting vs sawing was discussed in the context of historical tools and their efficiency.

Hamish Darrah

Alison on the finished bench in September 2022 (photo: Ben Averis)

*** LUNCH ***

Delicious!!!

The exquisite porcelain fungus was noted before visiting the site of some recent thinning. The mature Scots pines that dominated the stand were truly beautiful to behold. Straight and massive, they were a forester's dream. Aside from a very young emerging shrub layer, however, the stand lacked age structure. To help with this, the pine has been thinned. Cut by hand and extracted by horse, the hostility of the community to the operation was softened at the sight of the old ways. The disturbance in the carpet of broad buckler-fern caused by the skidding of the logs will hopefully facilitate further regeneration, and the newly-opened canopy should allow those trees waiting in the wings to boost upwards. Sadly, those prime-quality logs came at just the wrong time, when the market for pine logs was flooded and Nev couldn't get a price that they deserved. Standing among the timber stacks, we discussed public perceptions and opposition to any change. These are the challenges of community woodland management. But the opportunities are many – stone was donated for free by Tillicoultry Quarries for the drain along the old railway track. A win-win PR stunt.

It was a real treat to see the quite uncommon earth stars sporulating on the ground by the edge of the woodland. I have never seen these beautiful fungi but long have I desired to.

Earth stars at Gifford Community Wood (photo: Ben Averis)

We returned to see Hamish's progress on the oak beam. Disaster was revealed when a rotten knot-hole was found half-way up the log. The trials and tribulations of working with a natural product. An interesting discussion on historical augers, and an aromatic blast from Nev's birch tincture concluded the session and we all left feeling inspired and enthralled by this wonderful community woodland and the enthusiasm and expertise of its manager.

Editor's note:

Amos told me that he put asterisks in (see top of previous page) because there was a gap in his notes. An understandable gap: there was great food to be eaten! The food was made for us by Nev and his wife Helle. Here is the menu:

- Chicken of the Woods goujons with pepper bolete mayonnaise dip
- Crostini with St George's Mushrooms and fermented Wild Garlic
- Wild Garlic pesto on mushroom and seaweed oatcakes
- Nettle dip on oatcakes
- Hogweed and Wild Garlic sushi
- Mushroom fondant goujères
- Chocolate Jelly Ears marinated in spiced rum
- Brownies dusted with Hogweed seed powder and a Sea Buckthorn coulis
- Sweet Cecily cordial, Rowan shoot cordial and Flowering Currant cordial

Here are a few photos of some of that fantastic food:

NWDG VISIT TO GIFFORD COMMUNITY WOOD, EAST LOTHIAN, ON 11TH SEPTEMBER 2022 (REPORT 2)

Kate Holl

Gifford Community Woodland extends to 22 hectares (55 acres) and is made up of Speedy and Fawn Woods at the end of Station Road in Gifford, East Lothian. The woods were purchased by Gifford Community Land Company (GCLC) in 2017 on behalf of the local community, assisted by the Scottish Land Fund.

On our visit to this wood, Nev Kilkenny began by talking about the issue of fund-raising and some of the cash and non-cash benefits of the woodland.

The community have been working for the past three years to get on top of some of the management issues. One of the biggest challenges was the rhododendron problem. The woodland is partly ancient semi-natural with some pine and oak plantation. There is ongoing discussion around management objectives. The community have lots of different objectives for the woodland, but have agreed to improve the age structure, build the resilience of the woodland and educate people about these objectives. Nev's post is funded for 60 hours per month. The community do not like to see trees cut down, so this is a challenge because from a forestry perspective the pine plantation needs to be felled. As the community donate in excess of £10,000 a year, a careful balance needs to be achieved.

The question of educating the community around the management of the woodland is very important. Volunteers come and get involved and act as spokespeople for the woodland. To help with the management and removal of trees brought down in Storm Arwen, they brought in a horse logger; this turned out to be a star event and very popular with the community! They use the woodland as an outdoor cinema, and the site is embedded in the local school's curriculum for excellence.

One of the key objectives for the woodland at the time it was purchased was to increase public access, and they planned to put in all-ability paths. The path network was designed by Paths for All, with benches every3200 metres. Leaves are blown off the paths every year, and they use glyphosate in the spring to keep the paths clear of weeds. The paths and drains need regular maintenance to keep them clear.

The first bit of the woodland we visited was dominated by sycamore, ash and holly. The fungal component of this kind of woodland is generally dominated by arbuscular mycorrhizal species, so it is not so good for foraging. Nev told us that there is over 6 kilometres of mycorrhizae in an average teaspoon of woodland topsoil!

It had been a very dry summer, but at the time of our visit the weather was changing a bit and so there had been a massive flush of fungi associated with the damper weather. In September the dominant fungi in the woodland are mycorrhizal, as they are responding to the sugars that the trees are producing and feeding to the fungi. Later in the year, the saprotrophs become more dominant: things like collared parachute; check for the spore colour and the presence of a veil. Look at how the gills

are attached to the stipe (stem). The gills of the collared parachute don't touch the stipe at all, which is very unusual. This fungus is one of the wood-rotters, which recycle nutrients back into the soil. We saw some white rot fungi which feed on the lignin.

The community have been tackling the 4.5 hectares of rhododendron that needed to be removed. They have been very busy and there are now only 2 hectares left! They are working at about 0.5 hectares per year. All the work is done by hand, and then the rhoddie stumps are sprayed. Piles of brash are left in the woodland, which some of the community don't like, but it is good for ground nesting birds. Some has been chipped, and they are discussing whether to leave it in a pile or spread it around the woodland. Quite a bit of the rhoddie waste is burned.

The community have a great little rocket stove, which they use to make charcoal that they sell through their website. It is small-scale production because it is done by the volunteers, so they go for short burns. The aim is not to be commercially active with the charcoal but more to demonstrate the potential and to get people to support the woodland through buying the product. They also sell biochar. It's all about getting the right balance: they don't want to overexploit the woodland, and it is important to keep deadwood in the ecosystem for biodiversity.

There are currently 60 regular volunteers working here.

There is ash dieback in the woodland, sadly, so the community have decided to fell the ash and replant with aspen, alder and black poplar. The community are concerned that if they did not replant they would end up with a sycamore woodland and a bramble/raspberry understorey. Donald McPhillimy suggested that they might consider leaving some of the ash to see if they might survive, and also underplanting, and felling only the ash trees that are a risk for public access.

Nev showed us some birch polypore fungus. The layers that you can peel off this fungus are antibacterial: this is to protect the fungus until it sporulates. It is also called razor strop fungus – it has in the past been used for sharpening knives. The phytochemical psilocybin occurs in many fungi and is known to make you laugh uncontrollably! We saw hairy curtain crust fungus (*Stereum hirsutum*) on sycamore – it is known to be high in protein that mice like to gnaw at. Honey fungus, with its strong black rhizomorphs or root-like structures that spread through the soil, damages and kills the roots of many trees and plants. Hoof fungus can also be used for tinder: peel off the outer layer, make a felt out of the brown stuff and mix it with ash as tinder.

The wood has had high numbers of deer. With increasing public access the herbivore impacts have gone down, but the deer are now very tame. It is difficult to shoot them in the wood; for shooting the deer would need to be pushed out onto neighbouring fields. Grey squirrels are also a pest in the woodland, but Nev said there is no point in controlling them as the wood would just act as a vacuum pulling more in from surrounding woods.

NWDG VISIT TO BUNLOIT, LOCH NESS, ON 22ND OCTOBER 2022 (REPORT 1)

Mick Drury

We were met at Bunloit by Kirsty Mackay of Highlands Rewilding, aka Bunloit (and Beldorney). The estate covers 511 hectares: a mosaic of habitats, with birch and oak woodlands, grassland and peatland. Plantations have recently been felled and will be replanted. Highland cattle graze on grassland areas, managed mob style with electric fencing, moved regularly, via Grampian Graziers. See https://www.highlandsrewilding.co.uk/bunloit-estate

Kirsty Mackay

Rewilding here is not about 'hands-off', rather some interventions are seen as necessary: plantations, grazing and peatland restoration. And definitely about people too, including jobs, enterprise opportunities, local community input and schools involvement.

Income is partly through natural capital (NC) credits, showing that carbon sequestration and biodiversity enhancement can be both profitable and ethical. Results are evidence-based. Research is ongoing. A baseline survey focusing on carbon and biodiversity in 2021 led to their NC Report. The estate is currently a net source of carbon.

Oak woodland at Bunloit (photo: Ben Averis)

Other potential income streams include tourism, eco-building, sustainable forestry, possible corporate nature retreats and offering NC services to other landowners via data collection and navigating the market. A deer management plan is in preparation, with potential for branding of venison sales.

With a great view over the glen and Loch Ness, Malcolm Wield reiterated the theme of the day, enhancing connectivity of the broad-leaved semi-natural woodland. We stood in fact on the historic route above the loch, and looked across towards Inverfarigaig, established as an early forestry village, and SSW towards the Easter Ness Forest Site of Special Scientific Interest (SSSI).

Moving on we crossed grassland, well ploughed by the local boar population, and headed uphill past an impressive veteran goat willow. Climbing through birch woodland, with good lichens and apparently a diverse bird assemblage, we viewed an area of former Sitka spruce/lodgepole pine plantation on peat. Now being restored, stumps have been flipped into the furrows. Terra Motion have been using their novel satellite-assisted patent-pending land motion technology to monitor what's happening here regarding carbon.

Alongside the clearfell area is the 'Juniper Ridge' on shallow peat, with a good density of mature bushes. However, a recent Plantlife survey found no young juniper, although there is some oak regeneration; they recommended reducing herbivore pressure here, although keeping some light grazing to prevent too much shading.

Junipers at Bunloit (photo: Ben Averis)

At the southern end of the estate, bordering the Forestry and Land Scotland (FLS) land to be visited in the afternoon, we visited the edge of an oakwood lying in a deep ravine. The microclimate here supports rainforest species and lichens including *Lobaria pulmonaria.* However, the stand is even-aged and without regeneration. The estate are considering some selective felling, again recommended by Plantlife, with hazel coppicing. Discussion turned to former uses of the woodland, especially oak bark for the Inverness tanning industry, Malcolm saying that the remains of 17 piers can be found along the lochside.

LIDAR is being used to provide the carbon baseline of the estate's woodlands. Terrestrial laser scanning measurements include the biomass of the branches, which should result in greater sequestration than required by the Woodland Carbon Code.

The owner Jeremy Leggett joined us briefly over lunch and explained how the estate are mobilising private finance through investment. The 50 current co-owners are preparing to add what they hope will be hundreds of retail investors in a crowdfunding campaign which will launch in December 2022.

The group by a large goat willow at Bunloit (photo: Mick Drury)

NWDG VISIT TO BUNLOIT, LOCH NESS, ON 22ND OCTOBER 2022 (REPORT 2)

Graeme Hill

Our visit was led by Kirsty McKay (Highlands Rewilding). This 511 hectare site is owned by Jeremy Leggett who also owns Beldorney Estate (349 ha) – another rewilding project in Aberdeenshire.

Bunloit is a mosaic of habitats. The approach to rewilding here includes intervention where appropriate. There were five areas of plantation forest, which have been felled and are to be replanted with mixed broadleaves or restored to peatland (forest to bog restoration). There are also Highland cattle, controlled with electric fencing by a group called Grampian Graziers, who use controlled cattle grazing to build soil fertility. Bunloit are learning from them.

Bunloit is about nature recovery through community. It involves people by engaging in high school education, creating rewilding jobs and generating enterprising opportunities. The aim is to increase carbon sequestration and be economically viable. Natural capital and biodiversity credits are incorporated into the project. The Bunloit rewilding project is now two years old. Last year Highlands Rewilding started measuring baseline biodiversity.

Someone asked “what does economically viable mean?”. The answer given was that it is to show other landowners that this is a worthwhile business/venture and to demonstrate potential income streams from ecotourism, sustainable forestry (Continuous Cover Forestry), sustainable building (Makar) and corporate nature recovery retreats. Bunloit would like to provide a service to other landowners, helping them navigate the natural capital market (i.e. agri-carbon, peatland carbon and woodland carbon codes).

Malcolm Wield talked about how Bunloit sits in the landscape around Loch Ness, on a historic travel/droving route to Inverness. Foyers power station is just across the loch. Farigaig was one of the first Forestry Commission (FC) villages; conventional forestry was practised there, though much of the woodland surrounding Loch Ness is broadleaved and semi natural, including Easter Ness SSSI; the challenge is to maintain connectedness of semi-natural woodland despite the plantations that intrude into it.

Another question was “what about deer?”. We were told that Bunloit has a stalker. Initial surveys showed a high deer impact. Bunloit are currently working on a deer management plan, with links to the local community such as provision of locally sourced venison.

Planted Douglas fir (DF) and Sitka spruce (SS) have been felled. An area of Lodgepole pine/SS plantation has been felled for forest to bog conversion. The stumps have been flipped into the furrows and the ditches dammed. Satellite imagery shows the bog ‘breathing’. Bunloit’s peatlands have been found to be degraded and currently

emitting carbon; Highlands Rewilding are looking at the peatland carbon code for carbon credits.

We visited an area referred to as 'juniper ridge', with ancient junipers up to 10 metres across. Plantlife have recommended light grazing here, to encourage regeneration.

Surveys have shown that the birch woods at Bunloit are good for wildlife, with the highest bird counts on the estate. There are signs of oak regeneration; jays are evidently dispersing acorns from far away. Squirrels have been radio-collared to monitor dispersal following felling of pines. Pine martens are present here too.

Malcolm asked "is there a model for semi natural woodland recovery?" The answer given was that they do not [yet] have any specific targets, because of uncertainties of climate change.

For the oak woodland areas there is an overall plan to remove fencing. Climatically, Bunloit is at the oceanic-continental transition zone. The broadleaf woodland is at the edge of the rainforest zone. The lichen *Lobaria pulmonaria*, more typical of wetter climates and older woodlands, occurs here. Management recommendations from Plantlife here include selective felling to open up the woodland canopy.

The lichen Lobaria pulmonaria on goat willow in woodland at Bunloit (photo: Ben Averis)

There is evidence of past hazel coppicing and charcoal smelting not far away, in Glen Moriston. Bark was a major product used for tanning in the leather industry. Transportation was by water; there is evidence of piers made of alder in Loch Ness.

Biodiversity and carbon baselines have been estimated from drone-operated LiDAR surveys.

Jeremy Leggett gave a brief talk at lunchtime. Originally an earth scientist, he set up a solar company (Solarsanctuary Ltd) to reduce dependence on oil and gas (carbon emissions). He sees rewilding as achieving a similar goal, albeit from the back end of the carbon cycle. He described three routes to achieve enlightened capitalism:

- Retail crowdfunding
- High net worth financial institutions
- Banks

He estimates that £20 billion is needed to meet Scotland's carbon targets.

James Rainey (Trees for Life Senior Ecologist) then gave an illustrated talk, showing that Loch Ness has had quite well-connected native woodlands for hundreds of years, including Stratherrick on the SE side of the loch – the location of The Fraser Yew – and the topographic refuge of Alltsigh on the southern boundary of Ruiskich Wood; other woods include the alluvial woodland at Urquhart Bay. There are some threats to woodland connectivity here:

- Plantations – work on Plantations on Ancient Woodland Sites (PAWS) necessary, including some restructuring
- Prolonged heavy browsing – to be addressed by deer management and controlled grazing
- Disease

Estates and land managers focus on areas for planting rather than protecting refuges. Trees for Life have created a framework for the management of these sites, including the following components:

- Identify old growth areas
- Analyse
- Prioritise
- Target interventions
- Monitoring and reactive management

Next, Alan McDonell (Trees for Life Programme Development Manager) gave a talk about what is possible ecologically and what is possible politically. Trees for Life consulted a psychologist to come up with the strapline "Rewilding the Scottish Highlands", to convince traditional land managers to get on board with the Affric Highlands initiative. Aiming to end the imbalance of power, people are part of the vision. The timescales are long but not too distant. The project aims to bridge the gap

between restoration and investment. A very brief summary of its work over the last four years is as follows:

- 2019 – conversations and presentations
- 2020 – nature-based business scoping study
- 2021 – community engagement and applying for funding
- 2022 – from idea to implementation

The project takes a regeneration approach to nature restoration.

Carbon credits started at about £10/tonne, then increased to £24/tonne and are now £50/per tonne. One third of carbon credit revenue at Dundreggan (£38,000 so far) has gone to local community developments.

A question about Scottish Government attention was answered, mentioning the Scottish Land Commission, Highlands & Islands Enterprise (HIE) events, and how the Affric Highlands project aims to be in some way like Cairngorms Connect.

In answer to a question about carbon credits, Alan said that Trees for Life vets buyers and asks them if they understand their emissions and if they have a credible pathway to reduce those emissions.

A further question was asked about how carbon credits are linked with biodiversity credits. The answer mentioned a natural capital bundle (instead of a stack), and a social benefit metric. Because the carbon credits/natural capital are from Trees for Life/Affric Highlands, are Scottish (local) and generated through rewilding projects (not commercial), they can be sold at a higher price: “charismatic carbon”.

The group at Bunloit (photo: Ben Averis)

NWDG VISIT TO RUISKICH WOOD, LOCH NESS, ON 28TH SEPTEMBER 2022 (REPORT 1)

Andy Dorin and Janet Hooper

The restoration of brownfield sites such as bings and wetlands, being an activity requiring heavy plant, is familiar. More recently the increasing amount of bog restoration has necessitated specialist machinery, but we tend to think of woodland regeneration as something that is more a matter of controlling grazing and perhaps some planting, before allowing nature to reassert itself at its own leisurely pace. A recent visit to Ruiskich Woods on the steep slopes above Loch Ness, north of Fort Augustus, was therefore an interesting lesson in how serious engineering can be needed to achieve ecological restoration.

At Ruiskich on the afternoon of 28th September 2022 we met Ian Allsopp, Assistant Delivery Manager with Forestry and Land Scotland. Ian described how the forest, which had been an early planting of Douglas Fir by the Forestry Commission, had been left beyond commercial maturity as a result of the challenges of extraction. When the trees were planted in the 1920s, little thought was given to their removal, and, although there had been some thinning in the 1940s on the lower, easier slopes, this had soon become uneconomic. 60 years or more on and the trees, because of their age and size, are increasingly unstable and vulnerable to windblow. Their location, immediately above the A82, a now far more important road than when the trees were first planted, makes their felling imperative but conventional techniques impossible.

Ian Allsopp

Douglas Fir had proved a good species choice, growing well on the fairly dry slopes and producing some magnificent specimens. Indeed, some of the trees are so large they are not only challenging to fell and transport, but at the very limit that mills will take. The firs had been planted in ancient woodland consisting predominantly of oak; a few oaks still remain, with further native oak abutting the plantation further up the hill. The hope is that over time natural regeneration will result in a more mixed age structure, and smaller trees overall, ensuring a stable hillside covered in more natural oak woodland.

The group at Ruiskich (photo: Janet Hooper)

However, to initiate this process is a monumental task. The key challenge is to remove the existing trees safely. Ian described how the specialist contractor was using a "skyline" – effectively a hoist that operates on a suspended wire – to remove the felled trees. The wire is attached to one or more trees at the bottom of the slope and to a large excavator with a specialist jib at the top. Each tree is then supported by the rig before being felled and craned uphill to the forest road above. The system uses a 20 mm thick cable, and trees are winched up by a remote-controlled unit suspended from the wire. The A82 itself is protected by heavy mesh fencing, designed to collect debris, but that is no barrier to a newly-felled tree sliding down the slope out of control.

Even though the equipment is some of the most advanced in Europe, the challenges of the terrain and the need to maintain traffic flow on the A82 test the capacity of the system. Great care is required to ensure the safety of the crew and to protect the traffic below. The A82 can be closed for only 10 minutes at a time, and in the three months of summer operations cease to avoid traffic delays. This means that the crew have to deal with the short days of winter and a greater chance of adverse weather. Strong winds will halt all work. The sheer size of some of the trees is also a factor. Some trees are over 50 m tall, with a girth of over 1 m and weighing in at 10-12 tonnes. They pose particular problems, as they are also brittle and can crack. The larger trees must be cut into 10-12 m lengths, weighing a maximum of three tonnes each; it can therefore take an hour to clear one tree.

All this comes at a cost: around £3,000 a day! And progress is slow. On a good day, felling 30 trees is possible, representing 60-100 tonnes of timber, but it may take a day to fell and clear six large trees. While felled Douglas Fir might yield £100 a tonne, the operation is far from economic and is only justified on safety grounds: funds secured from The Scottish Government of £750,000 annually support the operation. It is estimated it will take at least 15 years to complete the project with this level of resource, and it is a race against time. The forest is more unstable now that a face has been opened up by extraction (the team are working from NE to SW into the prevailing wind) and the possibility of more powerful storms has increased with climate change. Ian speculated that if Storm Arwen struck the Great Glen with the ferocity it had further south and east, there would probably have been a road closure for weeks, maybe months.

For the NWDG, a key interest is the restoration of the woodland. This is critical for slope stability, as well as biodiversity and landscape value. Once felled, the Douglas stumps, which help bind the soil, will last for only five or six years before rotting, so early regeneration of native trees is highly desirable. Ian is expecting it to take 20 years before natural vegetation will play a significant role in ground consolidation. This means the heavy fencing protecting the A82 may need replacement once its 15 year life is exceeded. Elsewhere on Loch Ness-side, oak regeneration has been successful without active intervention, but, at Ruiskich, while some very spindly oaks do remain, most will have to be felled because there is too much risk of them falling onto the road once the surrounding timber is removed. While felling is proceeding NE to SW, so that it does not expose a front to the prevailing winds, this is a compromise, as seed dispersal would be promoted by progressing in the opposite direction. If regeneration doesn't happen within three to five years, active intervention through planting may be needed. An exception to the removal of all existing timber will be the retention of remnant pines along the Allt Sigh in the south of the site. All brash is being left on site, and we discussed whether this might impede regeneration.

Machinery at Ruiskich (photo: Andy Dorin)

We were impressed by the scale of this project and the immense size of some of the

trees being removed. This was only matched by the enthusiasm and commitment of Ian and his team. There are a few general observations that are worth sharing. Firstly, with the benefit of hindsight, it is clear this was an ill-advised planting site – though one the Douglas Firs have appreciated! However, it is also unreasonable to expect the foresters of a hundred years ago to have anticipated the changes in society that have now required this operation. Climate change is clearly increasing the vulnerability of the forest to a catastrophic storm, as well as probably increasing instability of the trees through increased rainfall. It is also interesting to hear how natural regeneration is being seen as a nature-based solution, but also how challenging and costly this is proving to bring about. We are grateful to Ian Allsopp and his team for hosting such an interesting afternoon.

NWDG VISIT TO RUISKICH WOOD, LOCH NESS, ON 28TH SEPTEMBER 2022 (REPORT 2)

Graeme Hill

Ruiskich Wood, aka Barksheds or Grotaig is just south-west of, and of similar size to, Bunloit Estate. We were met there by Ian Allsopp, Assistant Delivery Manager for Forestry & Land Scotland (FLS) North Region.

Douglas fir (DF) was planted here by the Forestry Commission (FC) in the 1920s/1930s, to help meet UK's strategic need for a timber supply. Barksheds and Fort Augustus are some of the FC's oldest purchases. The A82, designed by civil engineer Thomas Telford, never used to come past Urquhart Castle. The DF crop had its first thinning, but then operations became more dangerous with increased use of the road below, markets changed and today's technology didn't exist, so the thinning/harvesting window was missed and it's now 50 years later. Strategic plans have changed, and the plan now is to remove the DF and restore the oakwood over the next 15-20 years.

Reasons for undertaking this work are:

- Plantations on Ancient Woodland Sites (PAWS) restoration
- Protection for the A82 road – the second-most important route to Inverness after the A9.
- Biodiversity
- Landscape aesthetics

The contractor Callum Duffy is a second generation skyliner. His father did a lot of this kind of work on Mull.

Ruiskich is being almost exclusively skylined because of the steepness of the slope, and also because of the size of the timber (e.g. a typical Douglas fir of 100 cm dbh and 50 m height produces 10-12 tonnes of timber).

This work is limited to nine months of the year at Ruiskich, because of environmental constraints; similar work is done on Arran during the other three months.

This skyline system uses a 20 mm steel cable. The carriage has its own engine and costs £50,000. New battery-powered carriages are now on the market. The skyline can pull up to 500 m (beyond that, up to 1 km, it becomes very slow) and 40 m either side. Chokers are radio-controlled from the cab. An old 30-tonne excavator is used as an artificial spar; as it is a known entity it is better for this purpose than a tree.

The timber market has taken a dip recently. For best quality green logs the price was £100/tonne but is now £60-70/tonne. Douglas fir is not as popular as Sitka spruce, even though it is good construction timber. The Douglas fir here is also oversize; Tullochs sawmill at Nairn takes timber only up to 70cm dbh. Timber from Ruiskich supplies three local log builders (at Nairn, Cannich and Inverfarigaig) and some goes to England.

Skyline felling is currently in its second year here. The A82 project team has been running since 2012. Operations are being funded by the Scottish Government, costing £750,000 each year. The works here cost £3,000 per day. Geotechnical fencing costs at least £100,000 per year. There are six staff to work on the skyline, traffic control, harvester and forwarder. They fell and extract between 5 and 30 trees in a day. They aim for 60-100 tonnes of timber felled per day, but 50-60 tonnes per day is more realistic. 3-4 tonnes are on the skyline at a time.

The felled area is extending from north east to south west: working into the prevailing wind, because of the effect of wind on tree stability. FLS do not want to leave a 'brown edge' of laterally-exposed trunks that is vulnerable to windthrow.

James Rainey mentioned the Caledonian Pines at Alltsigh at the south-west end of Ruiskich. From an ecological perspective, it would be best to start felling from that end. Halo thinning was also suggested. Both scenarios are problematic; health and safety is the priority. The possibility of a second winch crew to speed up the operation has been considered, but the operations are limited by a shortage of skilled contractors and funding from Scottish government.

Ruiskich (photo: Mick Drury)

OBITUARY FOR ERNEST EMMETT 5TH SEPTEMBER 1934 – SATURDAY 7TH MAY 2022: MY LIFE WITH HIM AND MEMORIES OF HIM

Valerie E. Emmett

Ernest died peacefully at home early on Saturday morning 7th May after a long illness bravely borne. His immunity to infections was compromised and this meant he was house-bound for the last year at least.

He has donated his body to medical science in the Anatomy Department of Dundee University, and so there is no immediate funeral or memorial event. He was keen about science education to the end, having taught chemistry to many an aspiring young medic over the years, and he felt he could make a last contribution to their training in this way.

Ernest was born on the 5th September 1934 and he died on the 7th May 2022, aged 87. He was the youngest of six. His father was a chauffeur, who was working for a property developer just before the outbreak of the Second World War, and they lived in a house in Acton, west London. Ernest recalled riding his small tricycle around the garden with a Rolls Royce parked in the drive.

His interest in many aspects of natural history began when he was very young. During the Second World War, along with some of his brothers and sisters, he was evacuated for a time from west London to a small village, Chudleigh Knighton in south Devon, near to Bovey Tracey and Newton Abbot. The younger children went to school in the church hall in the mornings, and in the afternoons they played on the nearby lowland heath – Heathfield. He often recalled the fresh smells of the damp vegetation; he thought he saw his first adder there. He would have been pleased that the heath is now a Site of Scientific Interest, home to the rare ant *Formica exsecta*.

Back in London after the war, he attended Chiswick Grammar School for Boys from the age of 12, and was keen on athletics. He used to go training after school at Chiswick Polytechnic Stadium and met several of the elite athletes of the time there.

When he left school, he went to work in the laboratory of a fire protection company developing new or more effective fire extinguishants. He did his National Service from 1952 to 1954, joining the RAF and spending most of the time in the Canal Zone in Egypt and Aden on duty in the control towers at the airfields there. He returned to his old job on completion of his service.

Like many young people at the time, going to university was never considered and he studied chemistry at Acton Technical College part time, getting day-release from his job. He met Valerie there in November 1954. She was also studying chemistry, pioneering day release for young women at EMI in Hayes while working in the laboratory.

They married in March 1959, and Ernest often reckoned they would not have passed their major exams that year if they hadn't married then. Both continued to study part time.

His working life was divided into two parts, as a research chemist in industry and then teaching chemistry in secondary schools. During his time in industrial research he worked for various companies and he often had to handle toxic materials, some of which might well have contributed to his final illness.

In January 1967, while he was doing a PhD and Val an MSc at UMIST (University of Manchester Institute of Science and Technology), tragedy struck and the course of their lives changed.

One of his brothers was killed in a motor accident in south Wales, leaving his wife with five small children. Having no children, Ernest and Val were the only members of the family who could help. Ern gave up his PhD research and they moved house to be nearer to the bereaved family. They bought a house on the limestone cliffs 400 feet (122 m) above the river Wye near Chepstow, with two acres of garden; the little family came to stay at weekends and during holidays. Ernest went back into industry and Val, who had started teaching chemistry in secondary schools before doing an MSc, went back into teaching. After a few years Ernest decided to teach too, joined Val and they were the chemistry department at a Bristol comprehensive school. Val changed jobs in 1978 when she became one of HM Inspectors of Schools in England, knowing this might entail moving house from time to time.

His natural history interests

Ernest's natural history interests were broad, ranging from birdwatching, Lepidoptera and various other aspects of entomology, and arachnids, as well as mycology. Val remembers their first date was spent birdwatching at Barn Elms reservoir near Hammersmith.

While living in the Wye Valley Ernest often ran a light trap in the garden in the hope it might attract some interesting moths, including a couple of rarities.

When Val was posted they moved and lived in north Lancashire for some years. When he wasn't busy teaching Ernest did surveys for the Nature Conservancy Council (NCC) at various sites around Morecambe Bay. Amongst others, he ran a light trap at Gait Barrows National Nature Reserve (NNR) and pitfall traps, mainly for spiders, on the damp mires. He gave his Lepidoptera collections to Liverpool Museum when Val was moved again. He'd joined the British Mycological Society by this time and was an active member. He also ran annual day fungus forays at Gait Barrows nature reserve, and he was active with the local wildlife trust group.

In the late 1980s Val was posted south to the HQ in London, and they lived in Haslemere in Surrey. This was a very rich and rewarding area too for many aspects of natural history, with nightjars and woodlarks on the heath at the end of the lane,

dragonflies at Frensham Ponds as well various Lepidoptera at the Punch Bowl and other sites. Ernest was in his element!

He occasionally continued to run his light trap. Some of the moths he caught were not easy to identify from their wing patterns, so he used to visit the Natural History Museum in London to look at their collections. One of museum staff taught him special techniques for identification, and he was able to compare his findings with their specimens.

He became a Fellow of the Linnean Society (FLS) in January 1989, nominated by the curator of Haslemere Educational Museum, Arthur Jewell, author of the little book on Lichens in the Observer series. Ernest used to go into the museum regularly, and curated their insect collections. (The museum has a long history of involvement with the British Mycological Society (BMS). Several notables used to foray around the Haslemere area in the early years of the 20th century.)

Mycology

His interests in mycology gradually took over. Ernest joined the BMS in the early 1970s, when he was intrigued by the fungi appearing in their woodland garden along the Wye Valley in Gloucestershire. There weren't many identification guides at the time, and so he found out about the BMS and Ernest and Val went on some of the day forays with a local group across the Severn. They discovered the forayers had the same book in their baskets that they were trying to use – Lange and Hora! Later, when time allowed, he went to the BMS main forays and Val joined him if she wasn't away inspecting schools.

Ernest got very serious about fungi, and he bought his first microscope then, together with a copy of a recommended identification book, in French – a French/English dictionary was much consulted.

He was the BMS Foray Secretary in the 1990s and together with other members of the Foray Committee they organised the main forays and annual taxonomy meeting at the Royal Botanic Gardens (RBG) Kew for several years. He also ran workshops and encouraged others to do likewise to help members with techniques for identification of fungi they collected. He also set up a local Fungus Recording Group; they chose four different types of habitat to visit and record the fungi they found, and they often ran their own workshops. He was keen on techniques in using a microscope to help with identification and persuaded the BMS Council to buy two microscopes with video projection equipment for use in workshops and on forays.

By this time, he'd become very interested in a specific group of fungi (*Mycena*), and he decided to specialise in this group.

In between teaching in schools, he used to go into RBG Kew once a week and, with the Chief Mycologist's encouragement, he "curated" all their *Mycena* collections, learning a good deal in the process.

At that time the Mycology section was still entering accessions in a book. Ern devised an IT database for accessions and fungal records. This was used for some years, but has no doubt been superseded with more modern systems now.

The BMS awarded him the Founders Medal in 2003 for his services to mycology, at a meeting in the Linnean Society HQ.

When they retired, they moved to Kingussie in the Cairngorms National Park – new foraying territory. They also went to Scandinavia a good deal, attending the regular Nordic Congresses, and they became friends with many of the mycologists there. They travelled a lot in Finland, for example collecting in the tundra in northern Lapland, etc, and Ernest occasionally helped on their workshop courses for university students.

Latterly he was extracting the DNA from material he collected, which he sent to a colleague in Göteborg University, Sweden to do the sequencing. He was the principal author for the Mycena section in Funga Nordica, devising the identification keys, making all the sections and the microscope drawings.

In between times he occasionally found time to play his guitar or listen to folk music. He was a keen photographer, first black and white, then colour and now digital. They both enjoyed going to watch the local teams play shinty.

Aspens

In 2000, shortly after moving to Scotland, he found several fruit bodies of a bracket fungus (*Phellinus tremulae*) growing on the trunk of an Aspen tree on a knoll at Insh Marshes National Nature Reserve. At that time, it was thought not to occur in Britain because there not enough old mature trees. He knew it from Norway.

There is much interest in Aspens, because this species has its stronghold in our area and is host to several rare species of moth, hoverfly and lichen, and some rare mosses. At a conference locally in 2001, Ernest was asked to do an input on the fungi associated with Aspen trees. A study group formed afterwards, and it was agreed there was a need to propagate more trees to increase the connectivity between stands, to support the special organisms. As a result, the Highland Aspen Group formed to establish a nursery to grow more trees. The Royal Zoological Society of Scotland was interested in the project and the group used a site at Kincraig Wildlife Park for the nursery. Ernest became the chairman, and together with a couple of enthusiasts he ran the project for 13 years. During that time the group raised at least 13,000 young trees that are planted back in the landscape across many parts of Scotland.

Final Years

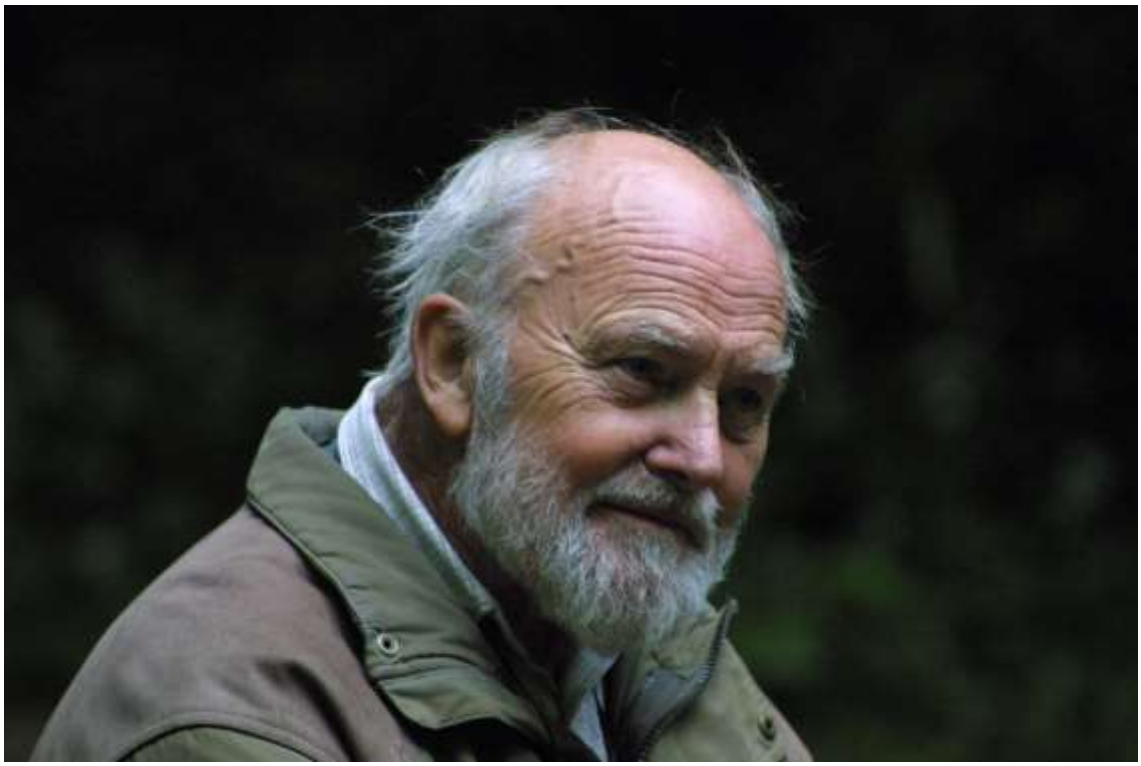
He retained his sense of humour right through to the end.

As his health declined, he was no longer able to go foraying, or use his microscopes. He felt sad that he had not sorted out one particular species in his specialist fungus group:

Mycena algeriensis. The original collections were made in the 1900s by a well-known French mycologist, René Maire, in the Atlas Mountains in Algeria and Morocco. He named it *M. cystidiophora* on account of some of its microscopic features. Robert Kühner, another famous French mycologist, visited later and named it *M. algeriensis* in honour of Maire. Recently, specimens have been collected in Scandinavia, Ernest collected some at the Arctic Circle, and Swedish and Finnish mycologists have made other collections too.

His final trip with Val was to Montpelier University in 2015 to see Maire's original collections, but sadly they had been ruined by treatment against insect attack, using arsenious oxide and mercuric chloride in the 1920s and 1930s. The specimens all looked as though they'd been toasted, and the microscopic features were destroyed! They were able, however, to look at Maire's notes and original drawings of key microscopic features. The Scandinavian collections look very similar. He decided that perhaps the only secure solution was for a mycologist to visit some of Maire's original sites and to collect fresh specimens. A problem left to others to solve now.

He has given his microscopes and other equipment to the James Hutton Research Institute near Aberdeen, for use on research projects. Val has yet to sort out a destination for his herbarium, his photographic slides and his books. He was anxious that his extensive collection of *Mycena* species should be available for reference by future mycologists.



Ernest Emmett (photo: Professor Seppo Huhtinen, University of Turku, Finland)

WE NEED TO TALK ABOUT HOLLY

Keith Kirby

Holly is native to western and southern Europe, north-west Africa and parts of south-west Asia. It is now more or less everywhere in Britain except for the central Highlands and far north of Scotland. Planting may have obscured a somewhat more limited distribution in the more continental climate of eastern Britain. Yet it is in Suffolk that some of the tallest hollies in Britain grow, jostling among the oak canopies at Staverton Park.

Peterken and Lloyd (1967) commented that holly was formerly more abundant in Britain than it is now, citing as examples an 1834 reference to a great collection of very large natural hollies (which was cut down) by the river Dee in Scotland. At that time holly grew in great abundance on the banks of the river Findhorn, where the trees grew to "a very great size". Johnston's Botany of the Eastern Borders, 1853, records the cutting for timber of many trees of very large size from natural woods in Northumberland. As well as being valued for timber, holly leaves were an important winter fodder, particularly in the north and west of Britain, although Spray (1981) considered that the memory of its widespread use for fodder for livestock was virtually non-existent amongst the farmers who he was in touch with.

A greater abundance of holly in the past is pertinent to how we react to its current resurgence in woods across Britain. Its distribution in Europe seems to be linked to climate, particularly the severity of winter and frequency of frosts (Iversen, 1944). Walther et al. (2005) found recent spread of holly in eastern Denmark consistent with the patterns of climate warming, so this might be part of reason for its current increase.

Holly is also often associated with acid woods that were formerly managed as wood pastures but where the grazing pressure has now been reduced. The reduction in grazing allows 'bonsai-ed' hollies, that have survived heavy grazing for some years, a chance to develop and form dense thickets. This presents conservationists with a challenge: very little ground flora occurs below a holly thicket; the holly shades the lower trunks of oak and beech with which it is growing, eliminating most of the epiphytic lichens and bryophytes that are an important feature of many of these sites. Holly does have its own associated species, but these are associated more with old trees than with young thicket growth.

We can try to stop thickets developing, through maintaining or re-introducing grazing. However, the levels of grazing we want for other reasons may not be sufficient to control holly spread, once it is has a well-established foothold and is perhaps no longer so limited by climate. We can open up some thickets by pollarding holly. This should definitely be considered where there are old hollies that have been pollarded in the past. However, where new thickets have formed with potentially hundreds of holly trees in a single wood, this is committing future managers to considerable and ongoing expense.

On many sites the default option may have to be to allow the thickets to develop: to accept that at least in some places dense holly thickets are part of 'future (semi-natural)' woodland communities. In Mediterranean regions – and this is in many respects a Mediterranean plant – evergreen understories are a common feature of woodland: holly could thus become the British analogue of the dense laurel stands found in parts of the Mediterranean region.

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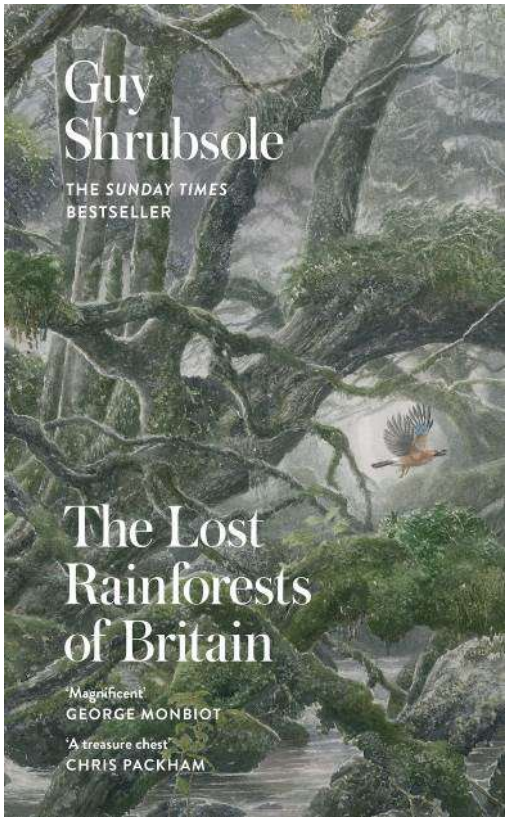
A large old holly near Loch Lomond (photo: Ben Averis)

BOOK REVIEW



The Lost Rainforests of Britain by Guy Shrubsole (William Collins; 2022; ISBN 978-0-00-852795-2; hardback, 336 pp, £20.00; Kindle £11.99)

Review by Simon Stuart

In this eagerly-anticipated book, the author gives an often very personal but informative overview of the current state of Britain's temperate rainforests, discusses their historical (and current) decline and the main factors affecting their survival and expansion.

If the content seems a little Southwest English and sheep-centric it is only to be expected as the author and his partner moved to Devon in 2020 and only then became aware of the existence of Britain's temperate rainforests. However, the international importance and vulnerability of temperate rainforests is covered in the first chapter and returned to when discussing bringing back the rainforests.

The British-wide aspect of rainforests is brought in by trips around the country to Wales, the Lake District and Scotland, meeting with local experts and/or enthusiasts in each area while visiting rainforests sites.

The two chapters focusing on Scotland contain some weel-kent faces, with Ben and Alison Averis featuring in both, Gordon Gray Stephens (along with badger sporran) and Ian Dow making appearances in the second and Brian and Sandy Coppins also getting a name check.

Other things appearing more prominently in the second Scottish chapter roughly two thirds into the book are deer and rhododendron, which may have made brief appearances up until then but take centre stage here. The author's take on both problems I feel is also a little simplistic: it is true that certain sporting estates could do more about control of red deer perhaps, but numbers of roe deer are also very high across the country and are probably more difficult to control. I also suspect that if sheep are eventually excluded from the woodland remnants around his home, the author might find deer being a more difficult problem to solve there as well.

Rhododendron has now expanded beyond the bounds of the original shooting estates that used it for cover and the gardens it was also introduced into. Estates being sold and broken up make the 'polluters pay' model a little more problematic to implement.

Landowners do indeed have a very important part to play in dealing with both of these issues, but perhaps we should be looking at it in a more targeted and collaborative way?

One of most interesting features of the book is the interplay between people and the rainforest, whether this is in myths and legends, literature, placenames, crazes such as 'fernmania' or changes in land use patterns; these can affect how people view the rainforest. A Gordon Gray Stephens quote at the end of the Forest People chapter sums it up, *"You can't restore a rainforest without people"*.

There are some memorable lines within this book. I'm not sure if Oliver Rackham, George Peterken and John Rodwell have ever been described as druids before, but it did fit within the context of the narrative. My mind then started to think about possible Scottish examples: Chris Smout, Fiona Watson, tree hugging champion Alistair Firth?

Some readers may find references to issues such as sheep farming, plantation forestry and large landowners a little confrontational, but this does open opportunities for discussions. I for one would like to explore the statement about serried ranks of conifers with bark too acidic for rainforest plants to thrive. Both of Plantlife's guides to Lichens of Scotland's Rainforest* are for species growing on mildly acidic (Lobarion group) and very acidic (Parmelion group) tree bark. The fact is that given another couple of hundred years these conifers may well develop a similar epiphytic fauna to the native woodlands, like they do in the temperate rainforest in Northwest America.

A piece on Britain's rainforests in BBC Wildlife magazine recently described Ben Averis as being bemused but excited about the interest in his field and requests for interviews. If this interest can be harnessed to make a difference to the fate of these important habitats, that is all to the good.

I believe the main benefit of this book is to bring the plight of Britain's wet woodlands to a wider audience. If this means taking about temperate rainforest rather than Atlantic woodlands then so be it. However, there are already issues being raised about the 'rainforest' branding, as technically a lot of these areas would be classified as oceanic woodlands not rainforest, and perhaps this is a discussion to be had once you have convinced people about these habitats' existence and importance; further education becomes appropriate once interest has been piqued. The plethora of media articles claiming lost rainforests in areas as diverse as the Cairngorms and the South Downs also allows educational opportunities about the specific needs of temperate rainforests (or indeed oceanic woodlands) and why.

Personally, I would like to see more emphasis on collaborative working, rather than the confrontational either-or arguments we often fall into with land use issues; the author's (and partner's) campaigning background perhaps does show here.

There is a balance that should be reached, which may shift depending on political will. Rainforests/oceanic woodlands cover such a small fraction of their potential area in

Britain that even quadrupling their area would still leave space for other land uses such as forestry plantations and sheep farming.

The fact is that we should be working in cooperation with each other and working out solutions together, hence the Alliance for Scotland's Rainforest (ASR). Perhaps this title is less inclusive than Atlantic Woodland Alliance (AWA) but it does include the rainforest 'buzzword' and perhaps a bottom-up approach for each region of rainforest in Britain may work best, with communication and idea-sharing on a national and international level being established to protect and enhance our temperate rainforest environments.

The main emphasis should be identifying the best places for restoration and expansion efforts to be concentrated. The idea of mapping existing fragments is very important as a starting point; there is no point in trying to enhance and expand if you don't know what you have already. The lostrainforestsofbritain.org website and the work of ASR should help in this regard.

Hopefully, increased awareness through this book, and the work already being done by organisations such as ASR, can help raise the resources required to restore and expand this important habitat.

*** Links to Plantlife's online downloadable guides to Lichens of Scotland's Rainforest:**

Lobarion: file:///C:/Users/benav/Downloads/Lobarion-Lichen-Guide-1-2021-UPDATE-WEB-version%20(1).pdf

Parmelion: file:///C:/Users/benav/Downloads/Parmelion-LICHEN-Guide-2-2021-UPDATED-WEB-VERSION.pdf

Temperate rainforest in Sutherland (photo: Ben Averis)

NATIVE WOODLANDS 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). There is a £2 annual discount for those paying by Standing Order (shown in the above figures). **Subscriptions should be sent to:** the Membership Secretary (Alison Averis, 6A Castle Moffat Cottages, Garvald, Haddington, East Lothian, EH41 4LW; tel. 07387 970 667; email alisonaveris@gmail.com). **Subscription forms** downloadable from http://www.nwdg.org.uk/join-us/

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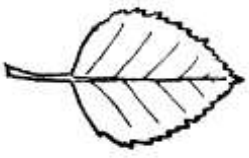

** Admin = Treasurer + Membership Secretary + Website Editor*

NWDG website: www.nwdg.org.uk

Twitter: @TheNWDG

YouTube: https://youtube.com/@nwdg2014

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

www.nwdg.org.uk

Photo: oak at Edderton, Easter Ross (photo by Amy Mitchell)