FUTURE FOREST
The **BLACK WOOD**
## RANNOCH, SCOTLAND

Tim Collins and Reiko Goto
Collins & Goto Studio, Glasgow, Scotland
Art, Design, Ecology and Planning in the Public Interest

with **David Edwards**
Forest Research, Roslin, Scotland
The Research Agency of the Forestry Commission

landscape
research
group

Forest Research

Gunnar's Tree with the community, Nov. 23, 2013 (Collins & Goto Studio, 2013).

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Future Forest: The Black Wood, Rannoch, Scotland

Tim Collins, Reiko Goto and David Edwards
Foreword by Chris Quine

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Front cover: A granny pine in the Black Wood of Rannoch (Collins & Goto Studio, 2013).
Back cover: A public walk during the Future Forest Workshop on November 23, 2013 (Collins & Goto Studio, 2013).

Acknowledgements

Foreword

Chris Quine, Head of Centre for Ecosystems, Society and Biosecurity, Forest Research

The Black Wood of Rannoch is a name that resonates with a sense of place, even to those who may never have visited it. The unique nature of such woods was identified over 50 years ago by Steven and Carlisle in their classic monograph 'Native Pinewoods of Scotland', who stated with elegant brevity, 'These woodlands are of great interest, and not only to the specialist'. Over the intervening years much attention has been given to ensuring the survival of these fragmented pinewoods, and at Rannoch, as elsewhere, much of the motivation and interest has been focused on preserving the unique ecology of the woodlands within a framework of nature conservation. However, recently the cultural benefits of woodlands in the UK have once again been recognised – with the development of multi-purpose and sustainable forestry frameworks, the preliminary assessments of cultural ecosystem services, and even the identification in the past 12 months of a national tree for Scotland – perhaps unsurprisingly the Scots pine! Historians such as Christopher Smout have suggested that we may be a nation rediscovering a woodland culture, and woodlands which survive over the years are often those which are valued and used. Such re-awakening of cultural values prompts new questions on the appropriateness of preservationist attitudes to native woodlands, and how best to provide healthy trees and woods for future generations. This refreshing publication takes a new look at the Black Wood, undoubtedly a special place, representative and yet different from many native pinewoods – and importantly, and as highlighted in the title, asks questions about the future rather than dwelling only on the past.

I have been delighted to see the collaboration develop behind this endeavour. The project has benefited from funding by the 'Imagining Natural Scotland' programme of Creative Scotland and the Landscape Research Group, and was conducted in partnership between the artists, Tim and Reiko Collins, Forestry Commission Scotland, Forest Research and Perth and Kinross Countryside Trust. It was stimulated, amongst other things, by a period in which Tim and Reiko were artists in residence at Forest Research's Northern Research Station – and the products of the work include both the physical outputs (such as this report, videos, blogs, maps, 2 book chapters, conference presentations, a case study in the NEA follow on) but also the exchange of views, the testing of concepts and the seeding of new ideas amongst many who participated.

The report summarises and synthesises the outcome of the project and of the deliberations amongst many people. The key focus of the project was a two-day workshop in Kinloch Rannoch, with an unusually wide range of participants from the arts and humanities, ecologists and forest managers, local communities, and public agencies. This was supplemented by the period of artists in residence, permitting ideas to be tested with applied researchers from a wide range of disciplines. The unexpected finding from the project was the realisation by the artists of the limited awareness of the Black Wood, and the Caledonian forests in general, in the public consciousness and museums, galleries, media, botanic gardens of Scotland, despite its potential significance to the nation.

There are undoubted challenges in thinking through the appropriate futures and, in particular, balancing the potential benefits of increased engagement and use by people with protection and rejuvenation of the special features of the native pinewood. The report provides a revealing synthesis of the deliberations and discussions, and one with which not everyone will agree. However, open discussion of this kind should be encouraged, because it overcomes misunderstandings, tests established positions and creates new understanding which will have greater tractions than a simple shopping list of recommended actions. Indeed, in this case, after an initial period of tension, the work actually revealed that all parties had much in common, and are now beginning to work together to think through the cultural values of the Black Wood (and the Caledonian forest more generally) and how they might be incorporated better in forest decision making (whether planning, management, or policy). It is to be hoped that some of these insights can be followed through in initiatives and projects over the coming years by the partners in this exercise and others. In the meantime, I commend this report to all those with an interest in native pinewoods, such as the Black Wood, as a stimulating and at times provocative challenge to think into the future for these special places.

From the introduction to the 1975 Scottish Native Pinewood Symposium

Jean Balfour, Chair of the Countryside Commission for Scotland and Chair of the Forestry Commission's East Scotland Advisory Committee at the time, argued that the Caledonian pinewood is the 'largest component of continuous woodland' in the whole UK. She described pine forests as spectacular: 'In these places, there is still the knowledge and awareness of being within a forest with its lively silence.' She reminded the reader that pinewoods support a wider range of wildlife and vegetation than other assemblies and can also produce saleable timber (both the cause of decimation and a condition of its recovery). Outlining a strategy for the future she argued for dynamic forests and strategic expansion, noting that the only native pinewood with an augmentation plan at that time was the Black Wood of Rannoch.

She identified difficulties in assessing the total forest resource, but suggested that all indications showed a reduction of total forest area in Scotland. She also criticized the inter-planting of non-native species in what were formerly native pine forests. She argued for conservation and revenue, but identified essential scientific and aesthetic management values, demanding the use of local seed source where natural regeneration is deficient. She proposed tree growth throughout old age and the maintenance of diversified forests of different ages, shapes, and spatial relationships: an ecologically informed aesthetic form rather than efficient plantation wood structures. In her closing statement she asked the delegates to "…turn their thoughts to action related to the art of the possible."

<div align="right">Jean Balfour (1975, p. ix)</div>

Writing almost forty years ago Jean Balfour presents the Black Wood as an exemplar of thoughtful and innovative management. She described the Caledonian pinewoods as spectacular forests, 'the largest continuous woodland' in the entire UK. Her keynote integrated economic and cultural value throughout. She also reflected upon proper assessment, total forest area, and the value of integrated scientific and aesthetic ideas. In many ways this statement is the baseline upon which our work is constructed.

REPORT on THE BLACK WOOD FUTURE FOREST
July 2013 – July 2014

Four granny pines in the Black Wood of Rannoch (Collins & Goto Studio, 2013).

I. Introduction

This report brings together the findings and reflections from a year-long creative enquiry into the ecological and cultural meanings and values associated with the Black Wood of Rannoch in Highland Perthshire. It is a result of ongoing dialogue between its authors Tim Collins, Reiko Goto and David Edwards, and complemented by a series of residencies with a diverse range of project partners and colleagues, both locally in Kinloch Rannoch, and in government agencies, universities and NGOs who, in different ways, care about the Black Wood and its contribution to the community and society as a whole. Over time, the effort would focus upon the development of a 'Future Forest' workshop held over two days in Rannoch in November 2013. The event created a space for participants to reflect on their own current experiences of the forest and imagine alternative futures that protect the ecological value of the forest, while exploring a more robust cultural relationship. The artists produced various artworks around these themes, and worked with David Edwards to produce this report, as well as various chapters and journal entries that examine the principles in the work.[1]

The report reflects on a process of working with people who have a relationship with the trees and forest in the Black Wood of Rannoch, Perthshire. The artistic intent was to make a small contribution to the well-being and prosperity of the human and non-human forest communities of Rannoch, but also to think about what it means to make art with a forest, rather than in a forest or about a forest. In this report the authors will describe the evolution of the project and the ideals embedded in the original proposal[2] into an exploration of conditions that have shaped and constrained the social and cultural relationship to the Black Wood. As the project unfolded various issues became clear.

> 1. By all accounts the Black Wood is an exemplary Caledonian forest, with robust ecological health and biodiversity. However its social and cultural function – and its 'broad church congregation' – has dissipated. The problem is first one of awareness, a lack of a sense that access is invited. But it is also the lack of contemporary interpretation and a 'cultural infrastructure' either within or outside the Black Wood that would help establish historical appreciation at a local, regional or national level over generations. It was

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[1] The project team has had a case study published in the UK National Ecosystems Assessment Follow-on, Shared Plural and Cultural Values: A Handbook for Decision Makers (Kenter et al., 2014). A book is about to be published by Creative Scotland with a chapter on the project. In addition a chapter is being written for a book on biological and cultural diversity in Europe. There are also journal submissions underway, and a proposal for an exhibition.

[2] The project proposed residencies and partnerships that would result in sculpture, photography and sound-based artworks that promote public discourse about the cultural import of future forests in Perthshire.

acknowledged that the 'cultural problem' extends well beyond the Black Wood, and reflects broader historical changes in our connection to the rural landscape.

2. All of the participants in this project agreed with principles of 'do no harm to the Black Wood' - to respect its ecological integrity and make no physical changes within it. They acknowledged the invaluable role of the Forestry Commission and Scottish Natural Heritage in protecting the site from intrusive intervention over the last 40 years. Most recognised the need to expand the historic forest to help protect it from catastrophic loss; others learned of this at the workshop, and were in strong support.

3. Everyone involved was on a steep learning curve. The artists had to take in a lot of information about the history of Scottish forests and the social, hydrological, geological and botanical conditions that underpinned the complex aesthetic experience that is the Black Wood. Practical land managers and ecological scientists struggled with the idea that cultural relationships are weak, that over the centuries any record of natural or cultural history, any sense of creative or literary response to the Black Wood has been lost. Everyone struggled with preconceived notions and a lack of definition about what awareness and access might mean and what it meant to pursue the current 'do nothing' policy, and what kind of outcome that would produce in the future.

4. Finally, a wide range of interests had begun talking to each other and everyone agreed this was a very positive step forward. However, there were still unresolved issues around the claimed need for forest awareness and access. The argument was made that all land is accessible in Scotland. The counterpoint to this is that legal access does not guarantee invitation to either awareness or access. In turn there may be a limited understanding of the effort that would be needed to manage and sustain a historic ecosystem against constant human interest. There was also acknowledgement that, for the dialogue to be successful into the future, it needed to be inclusive.

The project was primarily funded by the 'Imagining Natural Scotland' programme of Creative Scotland. It was one of 14 nationally funded projects that sought to 'encourage cross-sectoral engagement and knowledge exchange amongst environmental historians, scientists, ecologists, artists, creative producers and curators.' It was intended to promote a critical interest and dialogue about the artistic and cultural representations of Natural Scotland, in academia, the cultural sector and amongst the wider community. The project proposal was to consider remnant pine forests that lie between the south shore of Loch Rannoch and the north shore of Loch Tay. The Caledonian pine forests have significant cultural and ecological value. As the research developed, the collaborators did some work in Glen Lyon; then, following the interests of the project partners, focused on specific issues and opportunities in the Black Wood of Rannoch. The research examined ideas about a 'cultural ecosystem' and the services and values lost as social and cultural relationships with the Black Wood waxed and waned over three centuries.

> *Cultural ecosystem services are understood as "the nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences".*
>
> Millennium Ecosystem Assessment (2005, p. 29)

Building on previous work on forests and ecosystems in Pennsylvania, in 2010 Tim Collins and Reiko Goto decided to explore various Caledonian forests in Scotland. In late 2012 they initiated a discussion with Mike Strachan of Forestry Commission Scotland regarding their interest in the social and cultural aspects of Caledonian pinewoods, in particular the Black Wood of Rannoch. In the ensuing discussion Mike talked about the import of the Breadalbane region from the north shore of Loch Tay to the hills just north of Loch Rannoch. (This is an area bound by the two

national parks of Scotland.) Mike suggested the artists should work with the Perth and Kinross Countryside Trust (PKCT) who provide and promote high quality opportunities for access and recreation throughout Perth & Kinross for the benefit of the community as a whole. There was interest in the trails that once facilitated the 'transhumance', the seasonal migration of people from the valley into the hills every summer. Proposals were then made to Creative Scotland, the Landscape Research Group and the Community Seedcorn Fund of Forestry Commission Scotland.

Tim Collins and Reiko Goto are environmental artists, researchers and authors working together since 1985. Over the last fifteen years they have developed a research approach to artistic inquiry that has focused on the cultural aspects and experiences of environmental change with specific attention to ecosystems such as forests, trees, rivers and landscapes. They have developed public artworks based on water systems and strategic habitat in cities. They spent ten years working at a planning scale on the problems of post-industrial landscape with a team of artists, designers and scientists in Pennsylvania. To develop this project in rural Perthshire they worked closely with Annie Benson, local artist and resident of Dall Mill, Peter Fullarton, the Beat Ranger with Tay Forest District and Bid Strachan of the Perth and Kinross Countryside Trust. They also worked with David Edwards, a social scientist at Forest Research on the strategic development of the workshop and the subsequent reflection upon this project, and writing of this report. David's work is interdisciplinary and international in scope with a primary focus on the incorporation of social and cultural values in forest landscape decision-making. The ecologist Richard Thompson made an important contribution to the final editing process, alerting the team to G.F Peterken's work in the Black Wood, while recommending specific changes to the text itself.

After this introduction, which provides some background on the project and the team, the second section below presents a brief historic overview of the Black Wood. Section Three describes the loss of social and cultural relationships with the forest. Section Four describes the 'Future Forest' workshop that took place in Rannoch in November 2013. Section Five looks at the Black Wood and its dominant culture of science. Section Six considers the Black Wood from an eco-cultural point of view. Section Seven reconsiders the cultural problem presented by the Black Wood and develops insights and conclusions. Section Eight re-imagines the future of the Black Wood, looking at methods discussed during the workshop to restore and reinvigorate the social and cultural aspects of the forest. In the appendices the reader will find an overview of funding options, a list of workshop participants, large format mapping, and translation of Scots Gaelic place names related to the project.

The intention has been to provide an overview of the steps taken to both experience and understand the visual/sensual and the social/cultural aspects of an ancient semi-natural forest.[3] What has emerged in the process is an understanding that land and political conflicts have produced a historical semi-natural condition internationally recognized for its complex biodiversity. Over time it has also become clear that scientific conservation and appreciation of cultural values are to some extent at cross-purposes in this historically and scientifically important Caledonian forest.

> *It is important that the Black Wood expands and that it remains in a wild/semi natural state that remains significant and inspiring when compared to other similar forests.*
>
> Dave Friskney, workshop participant

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[3] Caledonian pinewoods are considered to be genuinely native, semi-natural pinewoods when they are agreed to be naturally regenerated descendants of pine forests that developed after the last glaciation (Mason et al., 2004, p. 2).

Forest and understory conditions in Glen Lyon (Collins & Goto Studio, 2013).

II. Black Wood history

The Black Wood of Rannoch is an ancient semi-natural pinewood, the most significant Caledonian pinewood in the Southern Highlands; one of only six that cover more than 1000 hectares. In 2014, the Scots pine (*Pinus sylvestris*) was selected by the Scottish Government to be the national tree of Scotland, yet the social and cultural relationship to the Caledonian pinewood ecosystem is limited. It is neither an image nor a concept that has much traction in archives and museums or parks and botanic gardens in the cities of Scotland. This was something the artists wanted to get a better understanding of. The artists worked with partners to experience and understand the forest. They listened to concerns about access and awareness, including the desire to recognize ancient pathways through the Black Wood. The unexpected question that would ultimately define the research was whether the Black Wood could ever be branded as a unique forest in Scotland, and as a featured place within the community of Kinloch Rannoch.

> *What can the community give to the Black Wood?*
> *What can the community gain from the Black Wood?*
> Anonymous workshop participant

As the southern-most large Caledonian pine forest, the Black Wood survived (where others did not) due to isolation and lack of access. There is one road in and out of Rannoch. In modern times the Black Wood survived World War I without being harvested but there was a significant harvest in the final years of World War II. The Forestry Commission acquired the Black Wood in 1947. According to Peterken and Backmeroff, Lord Robinson, the FC Chairman, visited the wood that year and decided: "…this piece of old Caledonian Pine Forest should, if possible, be preserved." They go on to say that by preservation, it was meant that the Forestry Commission would take "immediate steps to foster natural regeneration and, where that proved insufficient - plant Scots pine of the same variety and keep out exotic conifers altogether" (Peterken and Backmeroff, 1987, p. 21). However as reported in the recently published Black Wood Management Plan 2009-2019, the actuality did not meet the ideal of either Lord Robinson or Peterken and Backmeroff. "Between 1947 and 1975, but mainly during l956 and l957, the Forestry Commission felled about 500 cubic metres (from 5000 trees) to promote regeneration and clear up dead, dying and windblown trees." The management plan describes planting between 1961 and 1972 using standard forestry techniques along the edges of the relict Black Wood. "The drier knolls were planted with Rannoch Scots pine, although at higher elevations lodgepole pine of coastal origin was used with spruces in the flushes and small areas of western hemlock." Conservation policies took precedence in 1986 when the smaller spruce and lodgepole pine were either injected with herbicide or cut down, much of it left in situ. The more mature stands were harvested or are yet to be harvested (FCS, 2009, p. 6).

Here it is clear that the initial interest in the Black Wood at the highest level of the Forestry Commission back in the late 1940s was not sufficient to stay the hand of production forestry in the 1950s and 1960s. By 1973, the Forestry Commission Conservator Gunnar Godwin was newly in charge of the Black Wood and with an awareness of this history and what he saw as potential threats from within his own organization he began working closely with the Nature Conservancy Council to establish an agreement for the long-term management and conservation of the Black Wood in 1975. This was followed by a series of conservation-based remedial actions in the 1980's. In the current plan, Appendix 1C identifies long-term management objectives to extend the Black Wood significantly further to the slopes of Meall an Fhuarain and Meall nam Maigheach establishing a stronger link to the western edges of the forest along Allt Camghouran, or Camghouran Burn. The Black Wood restoration is a success story that needs to be carefully described and widely communicated. Indeed it is through interventions like these over the last 50 years, by the Forestry Commission and Nature Conservancy Council (which later merged with Countryside Commission of Scotland to form Scottish Natural Heritage), that has resulted in the good condition of the Black Wood as we find it today.

With access to the Forestry Commission Library and key staff members, the artists (in conversation with scientists) began to understand the complications of management, and think in terms of the three-hundred year life cycle of a Scots pine tree and its relationship to the use of the land across that period of time. Over three centuries the forest would have been picked through consistently. But what was it that created the conditions on the ground in the first half of the eighteenth century that kept the forest open and producing the 'granny' form, rather than a tightly spaced forest where trees must grow straight and tall to reach the light? In a specific response to this question, Peterken and Stace (1986) conducted a resurvey of the Brown Plots (initially established and studied at the behest of Lord Robinson). They describe age classes "dated from 1780-1835, preceded by an older generation dating from 1650-1700. The old generation appears to have originated in an open condition whereas the 1800 generation has the predominately straight form of the close-grown trees. This difference would have been accentuated by felling of any well-formed old generation trees" (Peterken and Stace, 1986, p. 29). Speaking of Caledonian forests in general, Smout (2000, p. 51) has said that eighteenth century tenant agreements were by the 'soum'[4] or the number of goats, cattle, sheep and horses that would shelter and feed in a wood. This combination of grazing pressure and wood extraction would have an impact on regeneration and growth in the forest, shaping both biodiversity and the form and perception of the forest overstory, its understory and its related ground flora.

The eighteenth century would have been a difficult time to live in the largely Jacobite Rannoch Valley, where estate land was forfeited to the crown repeatedly and a barracks was built in the valley to suppress resistance by force. Factors brought in to manage the forfeited estate were particularly worried about keeping tenants' goats out of the Black Wood. Tenant livestock would not be excluded from the forest by fencing until the later part of that century when the property was still held by the Forfeited Estates Commission (Lindsay, 1974, p. 291-94). By the middle of the nineteenth century the Highland clearances were just about complete. With vast herds of sheep replacing people, the forest was again struggling to regenerate itself. Steven and Carlisle (1959, p. 140) tell us that at the end of the nineteenth century another fence was erected to create a deer forest for the hunting estate. Young trees that might have had a chance with free range sheep would have no chance with an enclosed population of red deer! In the twentieth century the fences were down again, deer were free to roam, but there were more sheep on the land than any time in the past. Thus generation after generation of creatures would have eaten most of the young trees; cattle, goats, sheep and deer would have changed the shape of saplings and older trees as well.

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[4] The area of pasture that will support one cow, or a fixed number of other livestock.

Forest and understory conditions in the Black Wood (Collins & Goto Studio, 2013).

In addition, there is evidence that capercaillie and black grouse can damage leading shoots (and have historically been controlled by some foresters for this reason). Strong winds, wet snow and ice storms will also have caused branch loss and catastrophic failure over the years. These are the conditions that shaped a semi-open canopy where the few trees that could get away were able to grow into the light both horizontally as well as vertically. Through the years, the straight trees would have been targeted for timber harvesting. Overall, the historical narrative could be seen as a fluctuation between periods of exploitation and protection, as outlined in the box on the following page. It is interesting to think that the aesthetic form, considered to be so attractive in the Black Wood today, actually embodies, at least in part, the conflicted land use history of this region of Scotland.

> *Can you imagine Rannoch in one hundred years...*
> *with both sides of the Loch covered in Caledonian Pine!*
>   Jeanne Grant, workshop participant

> *To walk through it, and walk its history at the same time.*
> *There is a wealth of local history that hasn't been developed for presentation.*
>   Pammie Steele, workshop participant
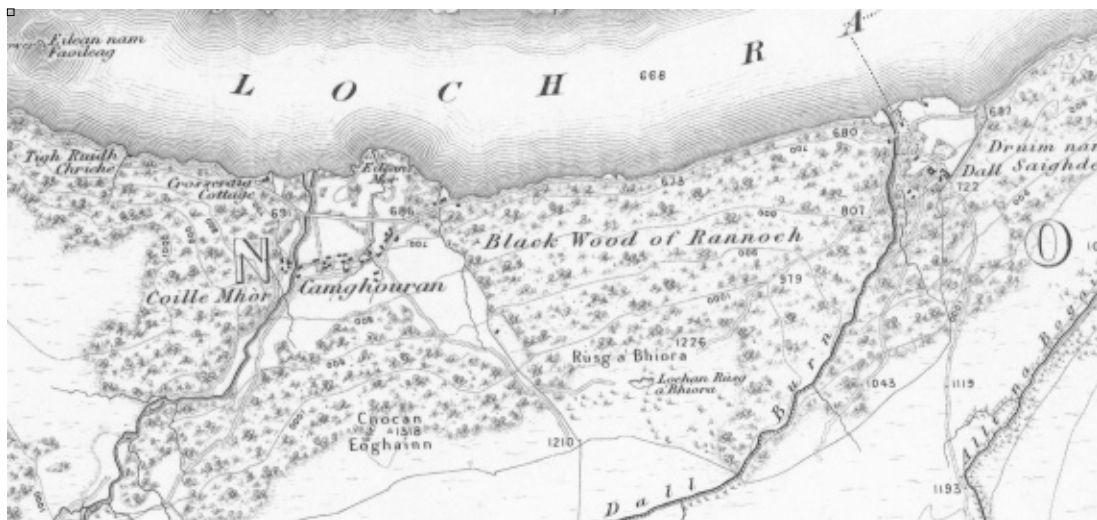
1873 South Rannoch Forest Map, the earliest 'modern' map (Courtesy of Scottish National Map Library).

The Black Wood of Rannoch – history shapes the forest form

1439	Rannoch estate given to Robertsons of Struan for apprehending the murderers of King James 1st
1689-1745	The estate is forfeited in 1689, 1715, and again in 1745, Heavy exploitation of 960 trees per year
1745	The forest was much feared by local people as a haunt for 'broken men', outlaws from the failed Jacobite rebellion. A garrison was established and Jacobite homes were burned
1750	The forest was judged to be in bad shape. Yet forfeited estates initiate felling at 1200 trees/year
1757	Sawmill burnt down by an evicted tenant. New sawmill built 1758
1781	The forest is completely enclosed to protect it from domestic animals
1784	The estate is returned to the Robertsons
Late C18[th]	Swine put in forest to break up soil for regeneration
1803-15	Napoleonic Wars and significant felling occurs. Canals are dug to float timber to market
Early C19[th]	Opened again to farm stock; sheep farming in full swing
Mid C19[th]	Highland clearances begin with radical increases of the number of sheep
	Human population of Rannoch is less than half the original number
1895	Enclosed as a deer forest. Roads constructed along canals
1889-94	1000 trees felled for West Highland Railway
1918	Opened for general grazing
1939-45	8,000 trees cut for the 2nd World War effort
1947	Protected again from deer
1957-67	5,000 trees cut by Forestry Commission
1974	Fully protected as Forest Nature Reserve, later becoming a SSSI
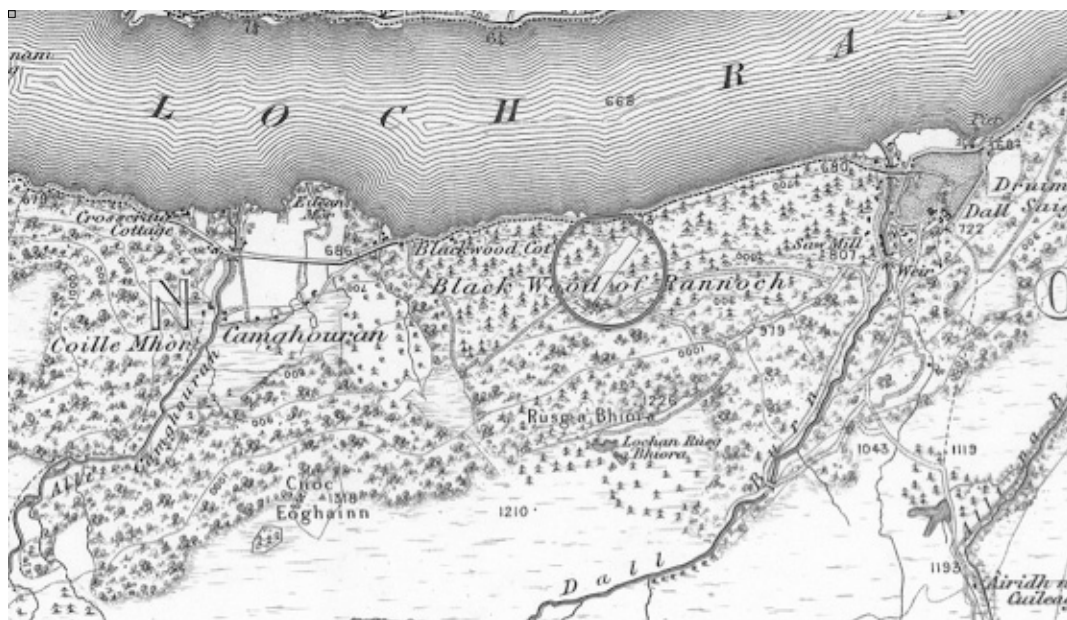
1906 South Rannoch Forest Map. The area circled was cleared at the turn of the century and not regenerated until the 1950s. It is known locally as the 'Potato Patch' (Courtesy of Scottish National Map Library).

III. The loss of social and cultural relationships

Native pinewoods are an emblem of the natural and cultural heritage of Scotland. However, discussions about their management have tended to take place within a relatively narrow community of landowners, foresters and conservationists.

Managers need to understand more about the spiritual values the forests provide and how these may be affected by management. They also need to be clearer how the pinewoods, with their environmental and recreational attractions, can contribute to the well-being of rural communities.

<div style="text-align: right">Mason, Hampson and Edwards (2004, p. 215)</div>

Here we will present the struggle to know the forest and to understand the opportunities and constraints that face the arts and humanities in a Caledonian forest reserve in the Southern Highlands of Scotland. The issue that emerged was not about art itself; it was about the potential of a creative social relationship to the forest. It was about a policy of open access in tension with a belief that changes to awareness of the forest, or footfall within the forest, could undermine or destroy the fragile biodiversity, the remnant ecology of the Black Wood.

Left: Initiating conversations in the studio with David Edwards and Mike Smith from Forest Research. Right: One of the meetings in Rannoch with the Rannoch Paths Group, with Annie Benson, Bid Strachan and Jeannie Grant at Treats Cafe in Kinloch Rannoch (Collins & Goto Studio, 2013).

The artists planned the project as a series of residencies and research efforts that would take place in the museum, then in the forest, then within Forest Research. Working within the Black Wood and Kinloch Rannoch they were supported by Anne Benson, an artist living across the road from the Black Wood, Jane Decker, who owns a teashop and art gallery, Jeannie Grant, an environmental educator, and Bid Strachan, a Project Officer with the Perth and Kinross Countryside Trust. Working within the Perth Museum they were supported by Mark Simmons. The artists were able to review existing materials in the botany and entomology collection that are relevant to the Black Wood and to talk to Paul Addair to get a preview of the 'Big Tree' Exhibition plans. They were asked by Richard Polley to develop a video for a large monitor in the lobby as part of that exhibition. They began to engage with Peter Fullarton who manages the Black Wood and provided access to a library of information and to Rob Coope, the Biodiversity Manager with Forestry Commission Scotland based at Tay Forest District office. Discussions were also underway with David Edwards and Mike Smith of Forest Research.

Images from the 'hard day' of walking. Embedded in that initial tension were the cues to build a project. Participants included Tim Collins and Reiko Goto with Anne Benson of Rannoch, Rob Coope of the Forestry Commission, David Edwards and Mike Smith of Forest Research, and Bid Strachan of the Perth and Kinross Countryside Trust (Collins & Goto Studio, 2013).

Practice and process

The practice and process involved archival research, on-site experience and walking and talking in the Black Wood. The artists found that the archives at the museum had few specific references to the Black Wood; the library at the Forestry Commission was more robust. It took weeks of work to get a handle on what the Black Wood is, what it was, and to understand the management struggles and conservation science that has defined it over the last fifty years. They began to get a sense of what it was becoming. They were carrying on separate conversations with the Rannoch Paths Group, the Forestry Commission and Forest Research. They decided to ask everyone to gather for a collective walk in the Black Wood on August 19th 2013. They had begun to understand that there were tensions between the local public interest and the Forestry Commission over the years, but no one was prepared for the outcome of that day. With the meeting delayed and time squeezed by complications of travel from Edinburgh, Glasgow, and Perth seven people gathered in the Black Wood an hour later than expected. Initially everyone embraced 'being in' the forest with the breathtaking scope of expertise, creativity and interest along for that meeting. But once in – there was a bit of push and pull. "What did you want to put 'in' this forest", the artists were asked? They explained that they were interested in working with the Perth and Kinross Countryside Trust on the cultural aspect of trail content development, mapping and marking. What followed was a discussion about how things are, and why they weren't likely to change. There was assurance of open access, but also suggestions that most visitors (who are not scientists) are ill equipped to appreciate the importance or embrace the ethical challenges of being in a bio-diverse, historic ecosystem. There was also a warning about being in the forest when the Forestry Commission stalker was active. It was a curious day with some simply leaving for other meetings, some deciding it was a 'normal' level of land use tension and some left standing in the forest, trying to figure out what was going on, and what could be done. From the artists' point of view there was more common ground amongst the various interests than difference. Nevertheless, a sleepless night ensued. Over coffee the next morning the artists listened carefully to a recording of the meeting; it wasn't as bad as it seemed after the fact. But they wondered why it appeared that the social and cultural aspects of the Black Wood were in competition with, or viewed as an antithesis to the precepts of scientific conservation? They needed to go back to the Black Wood Management Plan, talk to the participants separately and understand the potential role that art and humanities might play in a place that 'assures access' but constrains awareness. It was becoming clear that the artists' role here was to make an opening for a broader social and cultural relationship with a scientifically managed ecosystem. Could there be a wider range of people caring about and interacting with this forest, advocating for the expansion of this forest, while renewing dormant cultural values and establishing new narratives, artifacts and practices.

IV. The Future Forest

In the Black Wood, Forestry Commission management practices meet the standards of the Land Reform (Scotland) Act of 2003, in that there are no fences or gates impeding movement. The policies and practices set out in the 2009-2019 Black Wood Management Plan limit changes and 'formal recreational development' within the forest (FCS, 2009, pp. 10 & 15). The plan affirms guided tours, a threshold reserve sign and interpretation of timber harvest canals from the 1800s. As understood through dialogue with the Forestry Commission and Scottish Natural Heritage, there would be little encouragement of or invitation to access, there would be no maps, or interpretative publications that might make way-finding easier, even where there were 'adopted core paths' or 'asserted rights of way' that were established over centuries during the transhumance. There would be no changes to public awareness that might increase public use of the Black Wood.

The Black Wood has extensive fencing of four scientific enclosures. Posts indicate the edges of five plots, and the line of 12 transects, and other research-related site markings. As discussed earlier there are two panels that reveal historic wood extraction canals. A plaque identifies 'Gunnar's Tree', named after the Forestry Commission Conservator, Gunnar Godwin, who established the forest reserve. It sits at the top of one trail. The existing research infrastructure and interpretation limits cultural appreciation to forestry and biodiversity interests. In turn, it is hard to see an argument against efforts to extend the scope of interpretation to cover a broader material history or the social and cultural conflicts that occurred in that area and shaped the form of the forest today. It is not clear why fifty years of scientific research, the success and challenges of management and the import of the biodiversity that occurs in that forest are not widely available. Real access requires an invitation to do so, a moment when the owner or manager encourages that first step over the threshold. One is left with the impression that the official invitation into the Black Wood, as it exists today, only addresses a limited group of utilitarian forest interests.

The restrictions on awareness and access are attributed (within the Forestry Commission) to the status of the site as a Special Area of Conservation regulated by Scottish Natural Heritage. In a meeting at SNH the artists were told that any proposed changes that might affect the public awareness of the Black Wood or increase the number of people accessing it would need to provide scientific evidence that no possible harm would come to that sensitive ecosystem, stating that: "Anything proposed must support the primary conservation goals set out in the Black Wood Management Plan." The claim was that there are restoration areas that are more amenable than the 'jewel-like' areas that come down through time. Ultimately there was some agreement that any changes to practical access and use, that anything done within the Black Wood, is ultimately a matter for the Forestry Commission to address (7 October 2013, Artists, Scottish Natural Heritage and Forestry Commission meeting). The discussion kept coming back to the negative impact of public access in the face of designated conservation interests. When the artists asked if a baseline of human use and impact had been established during (or after) the period from 1959 to 2002 when three hundred students and 20 to 24 families occupied the Rannoch School at the eastern border of the 'jewel-like' areas in the Black Wood, they were told no studies of human impact had ever been undertaken. If human impact is indeed deleterious to ecosystem function one might expect this condition to have been monitored and documented either at that time, or after the school closed.[5] The ecological importance of the Black Wood may be comparable to Glen Tanar and Glen Affric[6] where responsible public access is outlined in management plans and fully supported.

> **For clarity** – *physical access is not prohibited in the Black Wood. It is the social and cultural aspects that inform and enable public access that are constrained. The invitation to access is implied in the management plan but it is not made explicit for visitors.*

Slowly through experiences like these, the artists came to understand that the problems of 'public access' or 'public awareness' were couched in discomfort with access on that ecologically sensitive forest estate. The Rannoch School example may illustrate the real challenges of managing footfall in the Black Wood. The culture of scientific conservation strategically embraced by Gunnar Godwin to protect the Black Wood from more practical or economic interests within the Forestry Commission had over time (and without malice or intent) allowed conservation science to become a force that excludes nearly all other social and cultural interests. Working closely with partners, the artists needed to find a way to establish an artistic and cultural discourse that might complement the dominant ethos. A two-day workshop was planned to explore the critical-creative potential of a conversation between arts and humanities and the scientists and managers who had protected the Black Wood for the past 40 years. Going in, everyone agreed that the first rule of thumb was that no harm should come to the Black Wood.

> *The cultural, including the economic, recovery of the local dimension is an essential part of recovering the more rounded and integrated sense both of self and of place that must go into good ecological decision-making.*
>
> Philosopher, Val Plumwood (2002, p. 75)

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[5] The project team has a map marked 'Rannoch School Library', which includes a number of trails and tracks in the eastern Black Wood, just west of Dall Burn developed between 1959 and 2002. Some of these are not on existing maps, although most are visible and familiar to the authors. The map raises questions about the impact of Rannoch School upon the understory integrity of the Black Wood.

[6] The Black Wood is roughly 100 miles north of Scotland's central belt, and its largest population centres, while Glen Tannar is closer to 150 miles away and Glen Affric is over 200 miles north.

The 'Future Forest' Workshop

Key Questions: Do the Caledonian forests of Scotland provide a higher level of cultural value due to their biodiversity and iconic status? If so how important is it that the public has access to and/or awareness of this 'type' of forest?

The Goal: To use the Black Wood of Rannoch as a setting to examine the ideas, knowledge, values and experiences that enable and constrain public access to, and awareness of, forests with significant ecological and cultural import.

The 'Future Forest workshop, held in Kinloch Rannoch in November 2013, was developed in consultation with Anne and Bob Benson of Rannoch, Peter Fullarton and Rob Coope of the Forestry Commission, Bid Strachan and Paul McLennan of The Perth and Kinross Countryside Trust and David Edwards of Forest Research. Mark Lough of Aberdeen came onboard as facilitator through his relationship with Anne and Bob Benson. Our collective intention was to explore the social and cultural potential of the Black Wood and examine its present meaning and future value from a broader social and cultural perspective. Talking to Gareth Roberts of the Landscape Research Group the artists were able to propose and agree a plan for a workshop that would occur before winter set into the Southern Highlands.

The workshop was defined as a deliberative process of social learning intended to recover lost cultural values, create new meanings and imagine alternative futures for the Black Wood. Working with a wide range of partners representing diverse interests, including arts practitioners, humanities scholars, government agency scientists, NGO representatives, and a range of local residents, the physical and aesthetic condition of the forest and its historic management were critically reviewed.[7] The event helped establish current ideas about ecology, landscape and culture, while interrogating preconceived ideas about 'appropriate' human-forest inter-relationships. The social and cultural domain was understood as a safe place to reconsider meaning and value; to forge rural/urban relationships and reveal local/national value. Conflicting parties found common ground in the protection of the Black Wood. Outcomes of the deliberations included concept sketches that recognize a suite of shared values and a desire for future effort to resolve concerns about access and awareness. An outstanding question was whether the Black Wood could be branded as a unique Scottish forest, and a featured place within the community of Kinloch Rannoch.

Image top L-R: Pammie Steele, Emily Brady and Anne Benson walking the Black Wood (Collins & Goto Studio, 2013).
Images bottom: Roundtable discussion during the workshop (Collins & Goto Studio, 2013).

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[7] See Appendix B for an overview of participants and a list of those invited but unable to attend.

The work began with interviews and site visits with partners and stakeholders to understand the values and relationships that people considered important. As discussed earlier the first attempt at a collective 'walk and talk' in the forest revealed overt tensions, but also a sense of unacknowledged common ground. Plans for the 'Future Forest' workshop evolved from this initial encounter. The artists worked with existing and new partners to agree overarching questions about the relationship between Caledonian forests and cultural ecosystem services, and what it means when awareness and access of this 'type' of forest is constrained. This was followed by agreement on the breadth of interests that should be invited to the workshop, and a framework that included a walk in the forest accompanied by Forestry Commission staff, a public discussion, and the core workshop itself.

Participants and presentations
Thirty participants attended the workshop (see Appendix B). The presentations began with local stakeholder perspectives, then ecological perspectives, a broad set of cultural perspectives, followed by intensive 'Future Forest' break-out groups supported by maps and management plans of the Black Wood and wider region. Facilitator, Mark Lough, convened the event. The participants were introduced to a range of ideas, opinions and proposals many of which were stimulating or challenging:

- Reiko Goto welcomed the delegates and offered an inclusive view of the scope and purpose of the event by asking them to imagine a much larger Black Wood that many people all over Scotland care about.
- Anne Benson, Chair of the Rannoch and Tummel Tourist Association talked about the need for awareness and knowledge to support a wider and more meaningful experience of the iconic forest.
- Bob Benson of the Loch Rannoch Conservation Association called for an evolutionary dialogue that recognizes the importance of past actions and current conservation policies while exploring the value of a wider awareness and a broader community with an interest in the Black Wood.
- Peter Fullarton provided a history of the Forestry Commission's role in the Black Wood, and the pride they all take in caring for the largest Caledonian forest in the Southern Highlands.
- Landscape Research Group Chair Paul Tabbush proposed new concepts to support the discussion by suggesting that cultural values could be objectified (as artifacts within a landscape), but also institutionalized (through language, stories, art, music or literature) or they are understood as ephemeral values embodied in users or practices, memories that occur in a place or in some aesthetic relationship or condition within the forest itself.
- Forestry Commission ecologist Rob Coope described the complex ecological community that exists in the Black Wood, and why it is so important.
- Forest Research social scientist David Edwards provided a critical review of the ecosystems approach to decision-making, the tension between facts and values, and what is lost in the process. He also presented an overview of landscape ecology and examples of landscape scale restoration elsewhere in Scotland.
- Tim Collins launched the arts and humanities presentations restating the intention of the workshop and a series of issues that had emerged in the initial discussions.
- The philosopher Emily Brady of the University of Edinburgh presented an overview of environmental aesthetics, and how this discipline helps explain her own experience of the Black Wood, and conceptions of social value as understood within the National Ecosystem Assessment follow-on phase.
- The social anthropologist Jo Vergunst of the University of Aberdeen asked us to consider the politics of footsteps, and the aesthetic, ethical and political roles played by Scotland's walkers, an example of embodied values.

- Murdo MacDonald of the University of Dundee spoke about the Scottish Gaelic language, its descriptive qualities and ideas about colour, and its relationship to an 'ecology of mind' and contemporary Scottish art practice.
- Chris Fremantle, an arts producer and cultural historian, provided a review of related environmental artwork and an overview of ideas presented at the workshop suggesting that cultural values were an essential complement to the facts and data of science. In a follow-up exchange he argued that the open-ended nature of the cultural question made it more useful as a framing device that challenged the linearity of ecosystem services assessment.
- The independent forester Jamie MacIntyre reported on the Sunart Oakwood Initiative, helping everyone to think about what it means to develop and sustain a community of woodland users, harvesters and managers in a Special Area of Conservation (SAC) woodland not dissimilar to the Black Wood.

The breakout groups focused respectively on 'community' and 'planning and management', although each involved participants with a balance of interests and disciplines. Groups were asked to proceed from initial scoping of what mattered to them about the Black Wood, through more detailed consideration of problems and opportunities, and visions of the future forest, that could be shared by most participants. Each group was given maps of the management zones in the forest and surrounding catchment identifying the core Special Area of Conservation and restoration areas and experimental plots in the forest, and a mapped overview of strategic management objectives for 2009-19. These helped participants locate aesthetic and cultural interest (including a relatively undeveloped portfolio of cultural heritage sites) and access opportunities within the forest.

Left: Public programme poster, Nov. 22 and 23, 2013, Right: Black Wood walk and talk (Collins & Goto Studio, 2013).

Results
As the workshop and related events unfolded, participants considered the transcendent and social values associated with the Black Wood.[8] There was consensus on the transcendent import of aesthetic experience and scientific understanding of the forest itself. Everyone recognized the complexity and fragility of its ecosystem. The partners shared a sense of the forest as a cultural symbol: an idea and an image with great social value, although it was not agreed where that value to society was accrued. The workshop largely focused upon tensions between divergent communal values held by the stakeholders. Where there was some recognition of common ground on the ethical commitment to the forest itself, there was mutual

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[8] Transcendent values are overarching ideals or ethics that go beyond specific places and situations; cultural and social values are 'principles or virtues' at various scales of society that can be in conflict and in common, while communal values are specific to communities of place or interest, as defined in the UK National Ecosystem Assessment Follow-on Report on Shared Plural and Cultural Values (Kenter et al., 2014, p. 57).

distrust about the broader ethical intentions of the various interest groups. But this had largely dissipated by the end of the workshop. The cultural values that remained in tension focused on the practice of limiting human interest to support biodiversity, the renewed interest in confirming and identifying centuries old paths in the region, and the idea that the forest (as a place) has essential cultural import for all of Scotland. These conflicting ideas align with the Rannoch community's communal values associated with improvement to public awareness and access to the forest partly as an element of their tourist economy. But there is some opposition to the government's own set of communal values, which constrained access based on their ideas about future forest well-being grounded in conservation science.

Key outcomes included the following:
- There was recognition of the desire to promote a wider understanding of the Black Wood, and the efforts to restore the Caledonian forest.
- There was agreement that to change the character of the Black Wood would be wrong. There should be no new paths or car parks, for example, within the forest core or its restoration zones. The future forest should be managed for continuity of the ideal aesthetic form and meaningful eco-cultural experiences.
- Further planning exercises with the 'forest community' are needed and much desired, partly as a means to address the conflict around awareness, access and branding which is yet to be resolved.
- Consideration should be given to development of a Caledonian Forest Way Initiative (through the Greater Rannoch woodland complex). This would start locally, with core footpaths and cultural narratives linking local forest remnants, before encompassing a wider geographical area. It could be defined by arts/culture/Gaelic themes.
- There was also interest in the establishment of a combined ecological, arts and humanities residence programme to recover and reclaim forest culture.

These outcomes were primarily tied to the revelation of cultural values lost and their potential rediscovery, elaboration and refinement in the future. After the workshop, discussions around future options for the Black Wood continued with several of the partners and participants. Details were discussed and initially written up while in residence at Forest Research.

> *I want to see lynx and boar and wolves in my Scottish forest.*
> *It has got to be bigger and wilder and more magnificent than it is today.*
>
> Alex Maris, workshop participant

V. The Black Wood: a culture of science

HYPOTHESIS – The Black Wood is Scotland's largest semi-natural forest reserve; it is recognized and celebrated throughout Scotland.

Thesis – The Black Wood is a socially and culturally important forest because of its notable biodiversity and the fact that it is the largest semi-natural pinewood forest reserve in Scotland.

Antithesis – The Black Wood is a forest laboratory protected from public awareness and interest. It has scientific value, but limited social or cultural value for the people of Rannoch or the larger population of Scotland.

Synthesis – The Black Wood is venerated as wild[9] forest ecology within Scotland, with no significant changes to trails or signage. It is scientifically, socially and culturally important because of its ancient lineage, its substantial role in history and its impact on contemporary ecological research, cultural study and artistic inspiration.

In a paper on the appreciation of pinewoods presented during the 1974 Native Pinewoods of Scotland Conference, V.M. Thom of the Countryside Commission argued that the social and cultural appreciation of woodland was increasing. As a result she believed that it was time to develop the public interest in these important pinewoods.

> *I suggest therefore that it is an appropriate time to amend Steven and Carlisle's [often quoted] sentence so that it reads:* **One of the things** *needed to ensure the future of the native pinewoods is appreciation, by as many* **people** *as possible. They [the Caledonian pinewoods] are a unique cultural heritage.*
>
> V.M. Thom (1975, p. 100)

The current Black Wood Management Plan identifies one primary objective and three management objectives. The primary objective is "to maintain and enhance the historic, landscape and scientific interest of the Black Wood as a semi-natural Caledonian pinewood with its associated fauna and flora, while perpetuating the genetic purity of the local Rannoch pine" (FCS 2009, p. 10). There are three follow-on objectives: the first declares no interest in timber production and prescribes natural regeneration of the native forest; the second identifies the import of study and research to amend future management plans, and the third claims that the public is welcome as long as there is no conflict with any of the other objectives.
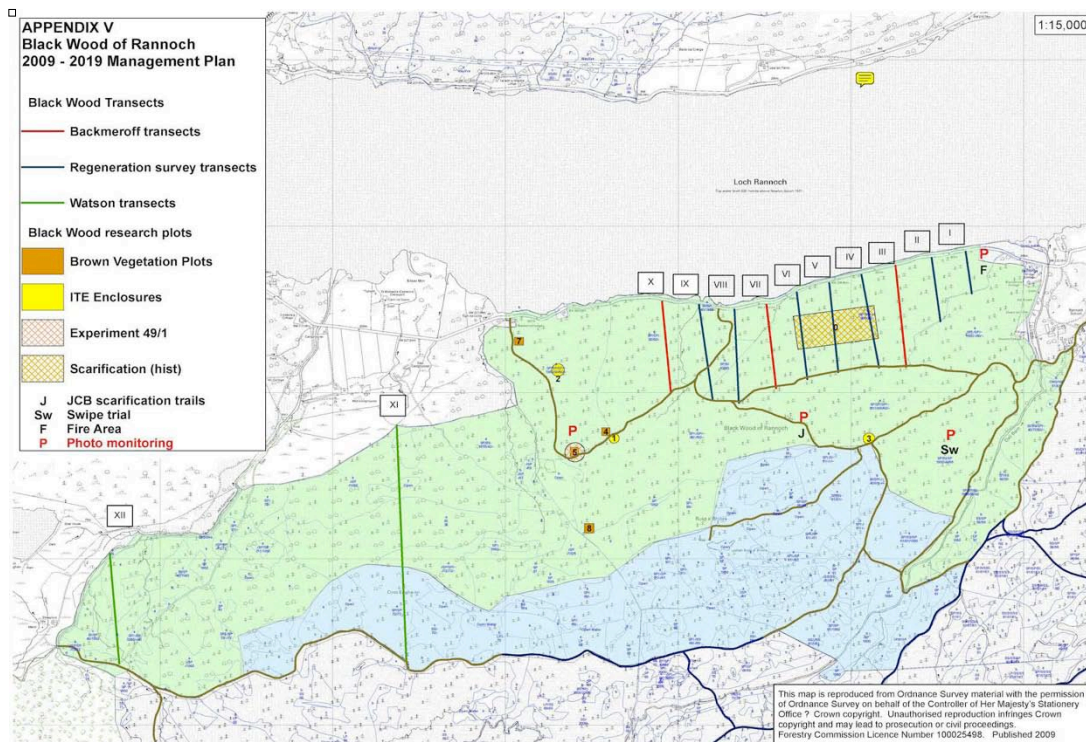
Research infrastructure map showing transects and plots. (FCS, 2009).

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[9] Wild is used here as a relative term understood in the Scottish context as being of ancient natural lineage with a history of sustained propagation; an ecology which has structural complexity, native biodiversity and a significant if not expanding footprint, an ecosystem that is understood to be autogenous, sustaining and regenerating with little or no human interference.

According to the ecologist Richard Thompson (pers. comm., 2014) the Black Wood is arguably the largest patch of functioning (generating and regenerating, biodiverse) semi-natural pine forest in Scotland. There are many documents that attest to the history of research conducted in the Black Wood within the library in the Tay Forest District at Inverpark in Dunkeld. On the previous page you will find a 'research infrastructure' map from the 2009-2019 Management Plan that helps us to appreciate the scope of scientific interest in this forest.

The map describes twelve transects, four vegetation plots and four fenced enclosures. According to the report, enclosure and research on some of the plots goes back to 1948. One enclosure (#6) was created in 1976 with regeneration transects established in 1985 and sites where removal of Sitka spruce from the south-eastern edge of the ancient Black Wood began in 1995. The area shown in green is the oldest section of the Black Wood with the area in blue a regenerating native forest inter-planted with Sitka spruce and lodgepole pine on an ancient native woodland site. But the fundamental question when one is trying to establish value is how does the Black Wood compare to other forests in Scotland? The Black Wood Management Plan states the total area of the forest reserve to be 918 ha, including a Conservation Zone[10] of 649 ha and a Restoration Zone of 269 ha which requires ongoing attention to "remove remaining stands of Sitka spruce and lodgepole pine and any subsequent non-native regeneration" (FCS, 2009, p. 11).

In the pinewood management publication written by Mason, Hampson and Edwards (2004), there are only six Caledonian pine forests in Scotland that have more than 1000 ha of core ancient, semi-natural woodland. These are Abernethy, Rothiemurchus, Glen Tanar, Kinveachy, Glen Affric and the Black Wood.[11] The area of Glen Feshie is just below 1000 ha, while Ballochbuie is 775 ha. Twenty are in the mid to very low triple digits and 54 are two digits or less in total hectares (Mason et al., 2004, inside cover). One might think it would be relatively easy to compare these essential Caledonian remnants held in the Scottish national estate, but to date the authors of this report have been unable to find comparable data on forest biodiversity, structure, or regeneration. It is clear that there have been decades of forest plans and Scottish Natural Heritage oversight. Yet the record of expansion and/or contraction of the ancient semi-natural forests of Scotland remains unclear. (The recent Native Woodland Survey of Scotland report by Patterson et al. is discussed in more detail below.)

Over the past 40 years there have been a number of important pinewood conferences that have established a record of ideas and needs vis-a-vis the native forests of Scotland. In the mid-1970s Jean Balfour identified difficulties in assessment and indications of a reduction in total pinewood coverage (Balfour, 1975, p. 8). Twenty years later, Robin Callander made note of problems with natural regeneration and age, species and structural diversity (Callander, 1994, p. 40). In 2000, George Peterken addressed the need for long-term forest research, describing attempts to date, including historic transects and enclosures already in place in specific forests in Scotland (Peterken, 2000, p. 11-18). He argued for proper funding, and clear, collectively-agreed research questions with simple methods for ultimate long-term benefit. His key idea was to keep the research simple and clear, for sustained value long after the primary team moves on.

Mason et al. endeavoured to describe what is known about the extent of the "genuinely native, or ancient semi-natural pinewoods of Scotland" (Mason et al., 2004, p. 3-5). Referencing two different data-sets the numbers are significant in their inconsistency. They identify studies with a total of 25, then 84 or 78 different Caledonian woodland sites across Scotland with a total area of 9,000 ha, 12,000 ha, 16,046 or 17,882 ha. More recently in January 2014 the Native Woodland Survey of Scotland was published and its data distributed after a rigorous six-year assessment of sites in Scotland. The Survey authors define and review historic data although

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[10] The total area comprises conservation, restoration and extension zones established in 1986.

[11] Mason et al. (2004) record the Black Wood as having 1011 hectares of 'core pinewood area'.

they don't reveal the name or number of sites studied, nor is there any place-based comparison of the data in the report at a finer grain than Scotland. The Survey authors confirm the confusion about previous attempts at a baseline assessment of the native forest estate and provide valuable insight on how each study differed in terms of on-the-ground assessment, protocol and analysis. Reviewing the historical records they find expert studies that estimate the area to be 161,000 ha, 181,000 ha, and 148,136 ha for all native woodland in Scotland. Of these studies one produced a figure of 30,000 ha of ancient pine forest. Based on their own rigorous on-the-ground study and geo-referenced database, the Native Woodland Survey team identifies a total of 311,153 ha of native forest across all of Scotland, with 87,599 ha of native pinewood, of which 22% or 19,266 ha are considered to be 'ancient woodlands'.[12] The definition of 'ancient' reflects the Scottish Ancient Woodland Inventory (1997) terminology rather than the one used by Mason et al. (2004). Without agreed common terms and descriptions of features to be assessed, comparable analysis is difficult.

Nonetheless the Native Woodland Survey of Scotland is a fitting response to the previously described problems. It is a high quality expert study that provides GPS/GIS ground-truthed forest assessment based upon rigorously defined metrics of naturalness, tree species composition, canopy cover, structural diversity, deadwood, proportion of native/invasive/non-native species, herbivore impact, and various methods of ascertaining composition and condition (Patterson et al., 2014, p. 6). The Forestry Commission initiated the project with a team comprising ecological consultants, Scottish Natural Heritage, Forest Research and a range of outside stakeholders (details on the outsiders are not available in the report). Forestry Commission Scotland and Scottish Natural Heritage provided funding. The report summary is eye-opening, if unclear on the areas of pinewood in Scotland that are exemplary or in need of attention. The report draws the following conclusions, which reflect similar (albeit less specific) findings in papers published at pinewood conferences and in Forestry Commission reports and publications in the past:

> 1. *Comparison with the existing provisional ancient woodland inventory suggests that significant losses [14%] of ancient woodland cover may have occurred over a 40 year period...*
>
> 2. *Native woodland condition is moderate overall with 46% of the total area in satisfactory condition...*
>
> 3*. The current amount and distribution of regeneration is not yet enough to sustain all of our current native woodland resource in the long term.*
>
> <div align="right">Patterson et al. (2014, p. 5)</div>

This summary provides very measured positions, suggesting that losses may have occurred, that there are less than satisfactory conditions and not enough regeneration. It does not clarify the location and cause of the losses nor the nature of the stated regeneration problem, although in the closing pages of the report the authors are clearer: "Reducing herbivore impact is the biggest single issue to be addressed to improve native woodland health and survival. A third of areas [studied] suffer from high or very high impact levels that would prevent future regeneration" (Patterson et al., 2014, p. 82). The authors do claim that deer are widespread and likely to be the major source of impacts. But what does this mean across the six Caledonian forests that are 1000 ha or more? Returning to our focus, is the Black Wood diminishing in size? Does it have a regeneration problem? Is its relative condition better than 'moderate'? As we have seen previously it appears that the Black Wood is expanding. According to the Black Wood

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[12] Ancient woodland is defined as "areas where woodland was originally self-sown as far as we can tell and woodland cover has been continuously present either since the first surviving modern maps of Scotland around 1750 or since the Ordnance Survey maps series was first published in 1860" (Patterson et al., 2014, p. 13).

Management Plan 2009-2019, and the South Rannoch Design Plan 2013-2023 the Black Wood is also a focus of further planned expansion, but there are no studies or analysis that define and describe relevant boundaries or confirm that there was no loss over the past forty years. The relative quality of the Black Wood can also be projected and assumed by its significant biodiversity species list and the references to ongoing transect and plot studies; but again it is not made explicit. According to the current Management Plan (2009-2019) in 1995 and 2005 the three Backmeroff transects were studied which indicated a slowing down in recruitment of live trees over the 20 year period (FCS, 2009, p. 13-14). This is considered usual as trees mature and the canopy closes. The management plan identifies planned review of the Brown plots, the Backmeroff (again) and Watson transects, all in 2015, the enclosures were to be studied in 2013.

Reviewing the bibliography in the appendix to the Management Plan, the close reader will find only one research publication between 1996 and 2009. That reference indicates that the Backmeroff transects were monitored and analyzed in 2006 but the findings were not published. To get a more complete idea about the ecological health and well-being of the Black Wood we spoke to Richard Thompson as the final step to the editing of this document. He brought our attention to the 1986 publication and 1988 report by the Nature Conservancy Council. In 1986 George Peterken and Helen Stace review all of the historic Brown plots and available records. They declare three eastern plots (and data) lost, while providing details on the "Five permanent plots [Brown 4, 5, 6, 7, 8], recorded in 1948, 1956 and 1984", which all "show substantial regeneration of pine and birch in open ground and slow thinning of densely stocked mature stands." They note that the five remaining plots are complicated by overlapping enclosures and are not evenly spaced, although they were set to represent… the main types of ground vegetation" (Peterken and Stace, 1986, p. 33). Notably they no longer include: "samples from the central and eastern parts where both regeneration of Scots pine and the stock of mature trees are sparse" (Peterken and Stace, 1986, p. 41). Looking at the map, one can see that the existing transects do not quite cover that area either.

How scientifically important is the Black Wood and its research? It is curious to consider that, as recently as fifty years ago, Scottish forestry scientists were scarifying plots in the Black Wood and adding nutrients in regeneration studies.[13] It wasn't until the Christa Backmeroff's thesis study was done that there was a better understanding of the natural processes. Peterken claimed in 1984 that, "At Rannoch, NCC had often come under pressure from FC to allow various kinds of active management, on the grounds that the old trees were dying rapidly and that regeneration was inadequate" (Peterken and Backmeroff, 1988, p. 38). Adequate regeneration seems to have been as difficult to come to grips with as the concept and form of a natural pinewood. It is notable that the natural form, the ecological composition and understory/overstory relationship that the Black Wood is being managed for remains neither clearly stated nor interrogated and settled. Peterken suggests that biodiversity will be lost, "…as the present wave of regeneration (far from being inadequate) could greatly reduce the open spaces and with it the diversity of wildlife, so there will be a temptation (which must also be resisted) to fell patches to maintain diversity" (Peterken and Stace, 1986, p. 43). Unless of course biodiversity and the history of social conflicts in the Rannoch Valley were considered notable enough to manage the Black Wood for its current form and scientific values. But, for the authors of this report, these findings prompt the question: what is best for the forest?

Much of the research done over the years reflects single species interest and assessment. The Black Wood is an obvious site of import to those that take an interest in taxonomy and systematic biology (the naming and description of organisms and their habitat) as there are over one hundred species-level studies of insects, fungi and understory botany. Of thirty ecosystem

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[13] The enclosure in plot five was scarified and fertilized in 1949. By 1984 it was a dense thicket of pine and rowan, and continues to have that profile today.

studies since 1891 only five were published; one in 1952, one in 1957 another in 1961 and the most recent in 1981 and 1986. Yet it is these studies with their attention to the forest ecology and relative changes over time that is used to shape management strategy. Without peer reviewed publication the research reports on the Black Wood function as internal sources of data that are not validated and rarely accessed by like minded scientists and conservation managers who might find the research useful.

We have seen that the historic data is not (or has not been) comparable across the national forest estate to date. This suggests that the relative success and failure of forest stewardship and management cannot be easily compared. The new Native Woodland Survey of Scotland (Patterson et al., 2014) promises a comparative analysis of the native woodland resource, but with respect to the remaining areas of Caledonian pine forest, has not done so to date. Given the fact of thirty or forty years of critical discourse about the lack of comparative data, this is a concern for anyone interested in Caledonian pine forests. When these authors contacted the Native Woodland Survey project team, they were offered the raw data and guidance on how to do the analysis. Unfortunately this work could not be done within our limited budget. Given the historic statements by government agencies and estimates with the Native Woodland Survey regarding failing regeneration and significant loss of native woodland, it would seem to be a priority to analyze and compare the forests that are greater than 1000 hectares.

VI. The Black Wood: an eco-cultural view

I would like to think we are one step closer to at least mapping the trails and preparing an information leaflet about the Black Wood.

Anne Benson, workshop participant

Is the idea of the Black Wood as a scientific resource really in conflict with the idea of it as a venerated natural system with social and cultural import? Should the social and cultural value be understood as a separate layer of interest and protection? Perhaps the problem is that forests have no voice, and therefore rely on private support, public interest, third sector interest and/or governmental advocacy to argue for forest as utility and resource, as well as to argue for the preservation of native forest due to biodiversity or heritage value. Professor Smout provides a robust history of changing ideas about landscape and forests in the final chapter of 'Nature Contested' (2000). He suggests that it all comes down to quarrels over "the limits and the rights of property, beginning in the nineteenth century about access and widening in the twentieth to encompass landscape protection and nature conservation". The questions he lists concern the relationship between ownership and use, those whom that land benefits and how that benefit is shared (2000, pp. 170-171). These are the same core questions that haunt the Black Wood today.

Despite the social, cultural and ecological import of the Black Wood, finding your way into that forest is not easy. The environmental NGO 'Trees for Life' hosts a website with directions to help access a number of Caledonian forests. The local Rannoch and Tummel Tourist Association have been constrained from identifying the location of the Black Wood and its trails on their website and literature for visitors due to the perceived risks associated with increasing footfall in the forest. Only recently has finding the Black Wood become a bit easier, with the publication of the 'Ancient pinewoods of Scotland: A traveller's guide' (Bain, 2013). But the description is keyed to the Carrie trail, with a fairly complicated description of a way into the Black Wood by walking the road through Rannoch forest plantation around the back of the Black Wood to Camghouran Burn. The Black Wood trail network is represented on the Ordnance Survey 1:50,000 map for Glen Garry and Loch Rannoch.

Whether one arrives by train, car, foot or bicycle, most will struggle to find the Black Wood.[14] There is one Forestry Commission sign easily missed as it is set back and parallel to the Loch road. Another can be found a half-mile down a dirt road at the western edge of the Dall Estate. The Black Wood borders the southern shore of Loch Rannoch; between Dall Burn to the east and Camghouran Burn three miles to the west. To get into the forest one follows any one of four trails that move in a southerly direction. One enters the Black Wood moving gently uphill: the forest is alternately open and closed with a mix of birch and pine, and some rowan and juniper, all growing across a range of age classes from saplings to mature trees. The most memorable trees of the Black Wood are the 200-300 year old 'granny pines' with their sprawling limbs. One is immediately struck by the forest and its relationship to a curious topography; a mix of small glacial 'moraine' deposits or hillocks with a never-ending repetition of smaller hummocks of thick blaeberry, cowberry, bracken and heather. The hummocks are vegetation formed over large rocks and tree stumps, creating an unusual 'lumpy' forest floor that adds texture to the rolling mound-and-hollow topography. But it is the granny pines that are worth talking about: why are they there and why so many of them? What is the relationship between these broad branched trees, and the traditional foresters' ideal of a tall straight trunk?

> *Some come out specifically to walk into the back country,*
> *to wander with the Black Wood rather than through it.*
> Alex Maris, workshop participant

Moving through the forest along the western-most trails (identified with red lines in the soil and history maps on the next page) the casual walker will notice changes to topography, the small hills and valleys of the moraine field. This can also be understood as wetter and drier areas as expressed in the simplified forest soil map. Walking in a southerly direction through the forest as one transits the southern-most curve, the forest opens up to the south, where the bog is clearly visible through the trees. Those that explore that area will discover the remnants of an old homestead site on higher, drier ground. Moving further east along the trail, the casual observer will realize that the understory changes significantly with wetland grasses replacing the robust blaeberry and cowberry understory, in reaction to the increasingly wet ground underfoot. Further along the (raised and dry) trail, there are two spots where small open streams are first heard, then seen. These wet/dry transitions do two things. They provide a gradation of microhabitats that support a range of species. But they also provide an aesthetic complexity, which rewards the eye and ear, the nose and the kinesthetic (bodily) senses of those that walk attentively through this amazing forest. The east-west route through the eastern edge of the forest reveals more wet-dry transitions that can be appreciated from the trail.

We want the reader to think again about the research programme that has taken place in the Black Wood since 1948. We also want to recognize the record of forest habitat, flora and fauna reports that were completed each year while Rannoch School, located on the edge of the forest, was in operation between 1959 and 2002. People look at forests in different ways; the appreciation of botany and birds or insects and fungi is just one framework for looking carefully, and considering the life of a place. In a tour on a Saturday in November 2013 with Black Wood ecologist Rob Coope, 30 people crowded into the open edge of an enclosure that was filled with regeneration, a closed canopy of birch and rowan with some older pine trees. Coope said: "This plot was fenced in 1948. There were some experiments to encourage regeneration… there were many trials… they were all a complete failure. You cannot measure regeneration by the square yard." Everyone laughed at that point. Coope continued: "Thankfully no one bothered to take the deer fence down. Now it has become a study site of what happens when we continue to affect the ecology. Here the fence is a variable that interrupts deer grazing, which produced a

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[14] Visiting Rannoch for the first time in 2010, Collins and Goto would drive around the loch before phoning the Forestry Commission for directions to the Black Wood. The receptionist replied that there were no native Caledonian pine forests in Perthshire.

corrupted ecology. Deer are part of the forest; they should be eating some of the trees, some of the time. Here, without deer a rowan forest has been produced." Coope's account provided an explanation for what the local people had seen before and were seeing that day. His presentation put a 'how' to the 'why' regarding a research initiative that was more than 50 years old. The record of research and management has essential social and political value as well as expert value if properly shared.[15]

As discussed earlier, to understand the Black Wood one has to grasp the past, present and future in terms of the 300 year life cycle of a Scots pine tree and its relationship to the use of the land across that period of time. In the historical map on this page we can see an overlay of edge-to-edge mixed ancient semi-natural forest cover in 1873, 1906, 1947 and 1956; represented through colour transparencies. The map tells us three important things.
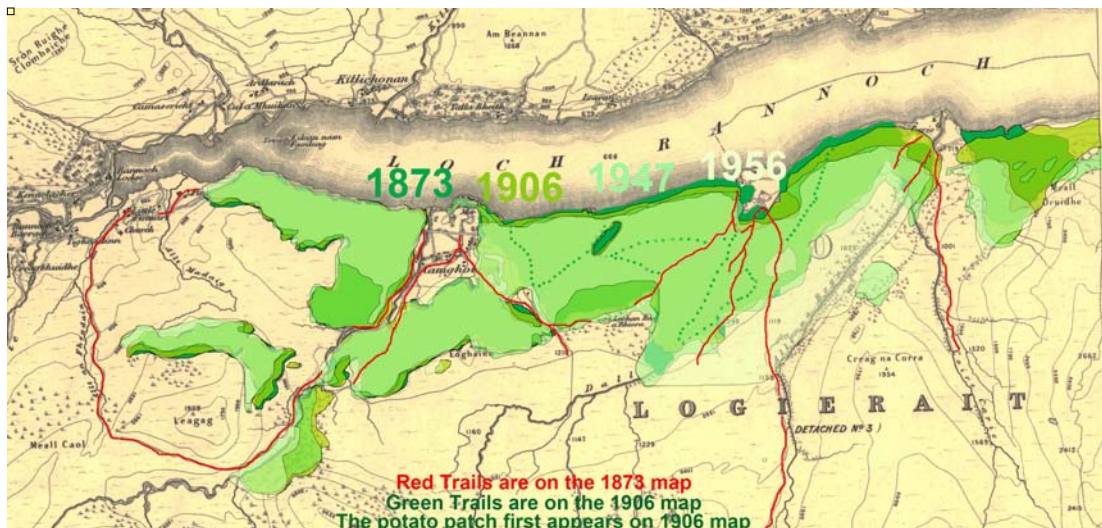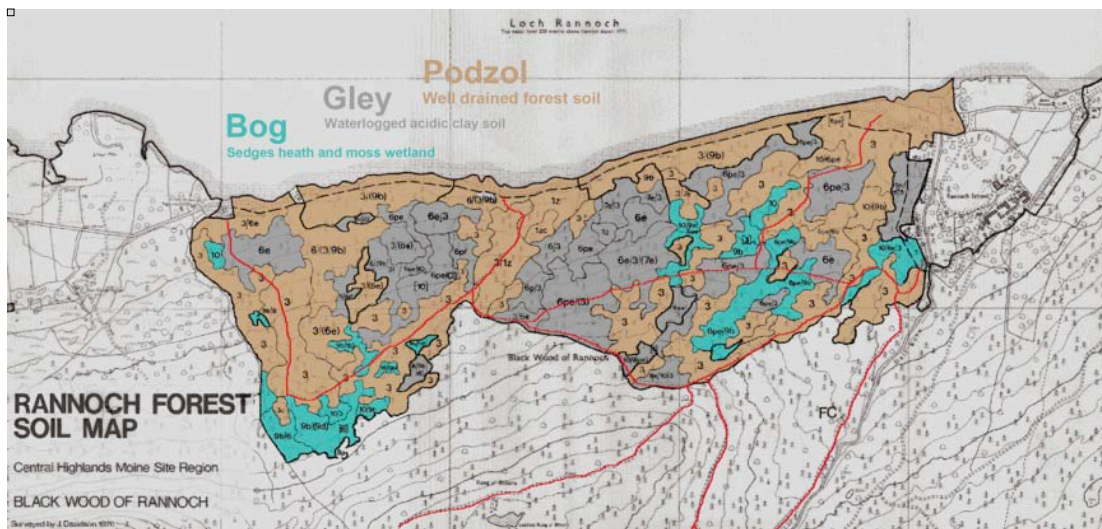
Top: A simplified soil map of the main ancient semi-natural pinewood (Surveyed by J. Davidson, 1976, for the Forestry Commission). Bottom: An overlay of four maps from the Scottish Natural Map Library revealing changing edge conditions and the cycle of harvest and regeneration. A large map is in Appendix C1 (Collins & Goto Studio, 2014).

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[15] Confirming Coope's position, Peterken and Stace declare that specific enclosure was scarified and nutrients were added. Enclosures north and east of that position show a more typical pine regeneration. Is it the deer or the management regime that produced the rowan forest, which was first identified in the 1980s? The scientists say that deer grazing selects for pine (Peterken and Stace, 1986, pp. 34-41).

First the Black Wood has been resilient over this period of time, and regenerates despite losses. It establishes that some trails existed prior to 1873, while others were not mapped until 1906. Finally the dark spot at the centre of the forest, an area known as the 'potato patch' (by locals and the Forestry Commission ecologist), and attributed to war-related food production in the first part of the twentieth century, was actually cleared by 1906, apparently for some other purpose. The potato patch is notable today for its broad stand of commonly aged trees that reads like a plantation, straight and tall with little understory diversity. It provides an aesthetic counterpoint to the rest of the forest.

What we are trying to establish here is that the Black Wood is a powerful aesthetic presence. We argue that it 'returns one's gaze', or that it is woodland of sufficient complexity that it can't be seen in a day, and indeed evolves in one's eye and mind as it is visited over seasons and years. The Black Wood contains nested layers of wildlife, plant and microbiological diversity, a wide age-range of trees, some more than 250 years old, while others are less than 100 years old. One argument worth considering is that, what science tells us through data and detail needs to be complemented through aesthetic attention. In the layers of organisms, divergent reproduction cycles and ever-changing seasonal conditions lies a complex aesthetic experience that repays attention over time.

That aesthetic sensibility, if developed more widely, would establish a demand for native forest culture and experience throughout Scotland. The issue is how to engage people with the need for specifically ethical and sensible behavior when moving through an ancient semi-natural forest. The question remains though, would greater public awareness and changes to the way that the Forestry Commission invites and enables access necessarily have an impact on the forest and its biodiversity? Or can the potential for impact be mitigated?

V.M. Thom (again) writing in 1975 reminds us that, "…anyone entering a pinewood finds that the trees, spacing and light in a pine forest is satisfying to the eye. Complementing this is a unique and striking combination of colours that are unlike other trees in the forest and a general perception of ruggedness and strength." She describes the Black Wood as having an 'unregimented appearance' and commented on the 'tremendous character' of the trees. The other aspect she recognized was the mixture of ages, from "the smallest seedling to old trees past their prime". She reflects on the idea that, in one form or another, there is a likelihood that these trees could be traced back 9,000 years to the last glaciation (1975, p. 101). But what of the present, what does it mean to have a cultural relationship to the Black Wood?

People have always been and will always be a part of the Black Wood.
Anonymous workshop participant

Left: A view to the east in the potato patch. Right: Across the trail a view west to a similarly aged area of pine forest with a bit more diversity in its age structure and a more intact understory condition (Collins & Goto Studio, 2013).

It is important to remember that the solitude and silence of today, is very recent. In history the Black Wood was full of humans as they were felling trees, grazing animals. It must have been a rather noisy place. We have to honour the past, but remember it honestly.

<div align="right">Pammie Steele, workshop participant</div>

As discussed previously in the section on the Future Forest workshop, Paul Tabbush presented cultural ecologies as material and performative things that are relevant to natural places. Things can be objectified (such as archaeological artifacts within a landscape), or institutionalized (through artifacts and specimens, recorded stories, paintings, music or literature) or as ephemeral values embodied in users, uses and practices, or even living memories. He also described the experience of aesthetic relationships and conditions within the forest itself. The Black Wood of Rannoch Management Plan (2009-2019) does not mention any archaeological sites (material culture) in the Black Wood. The South Rannoch Forest Design Plan (2013-2023) provides a bit more detail: "There are six unscheduled ancient monument sites in the forest. These include shielings, homesteads, a kiln and a relatively modern sheep fank [pen or enclosure]." Further recent evidence has come to light on a series of bloomeries within the forest (FCS, 2013, p. 16). However, searching the Royal Commission on the Ancient and Historical Monuments of Scotland database, we found 46 potential sites identified within the Canmore National Database and another 25 within the Historic Environment Record. In the Native Woodlands Survey map below, Collins has added some of the more interesting sites of historic import. This is a potentially significant 'on the ground' material history that would benefit from interrogation. It is complemented by what may be one of Scotland's more interesting living artifact collections, the ancient granny trees themselves which can be examined and considered for the forces and conditions over time that shaped their form today.

The next consideration would be historic artifacts and samples collected by museums, or published records and recordings of narratives that reflect upon the Black Wood. In the Perth Museum and Art Gallery there are a few entomological records and a few pressed botany specimens. There are no significant artworks, photographs or historic artifacts in the art and material history collections, although there may be additional materials held in the National Museum in Edinburgh. The Jacobite history and post Culloden conflict in Rannoch coupled with
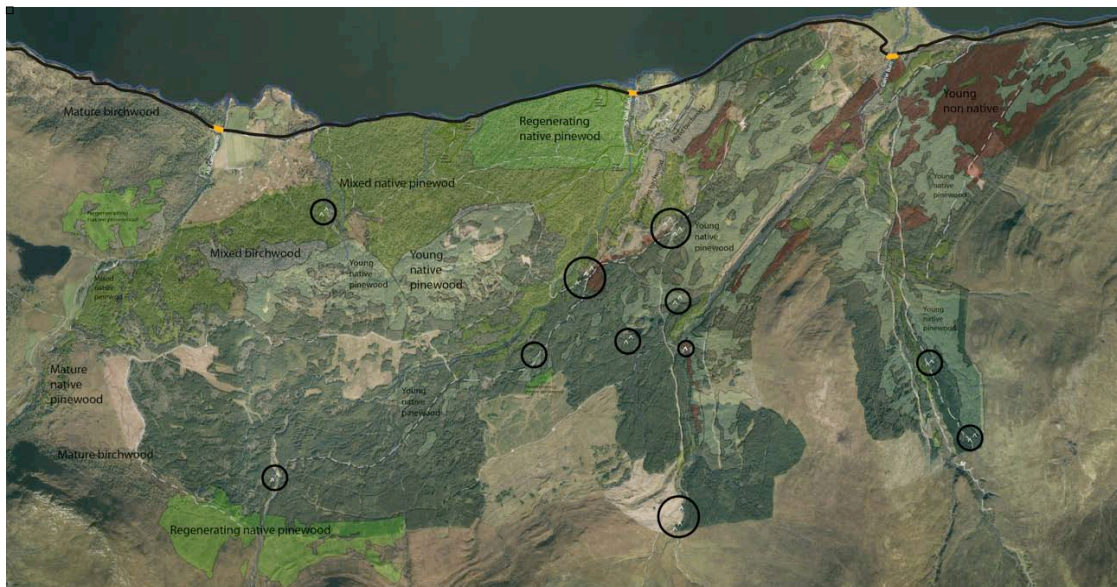
A simplified version of the Native Woodland Survey of Scotland data including some key archeological sites. A large map is in Appendix C2. © Ordnance Survey Licence number 100021242 (Collins & Goto Studio, 2014).

Perth Museum and Art Gallery Black Wood specimen collection: 1) Welsh Clearwing (*Synanthedon scoliaeformis*), 2) Coralroot orchid (*Corallorhiza trifida*), 3) Goat Willow (*Salix caprea*), 4) Downy birch (*Betula pubescens*), 5) Scots pine (*Pinus sylvestris*) (Collins & Goto Studio, 2013).

the histories of the clearances and the practical management of the forest and landscape as resource would have constrained 'cultural interests' at the time that these collections were being developed. That said there are some important histories of the Black Wood starting with the "Scottish Forfeited Estates" papers, which document the repeated forfeiture of the owners of the Black Wood, the Robertsons of Struan (Millar, 1909).[16] There are histories of the brutal clearances that took place in Breadalbane. There are also various Gaelic language translations of both histories and tales of the region found in the Inverness Gaelic Society archives as well as in the Scottish Studies Library at the University of Edinburgh.

Initial discussions with Murdo Macdonald and his presentation during the Future Forest event confirmed the poetic and lyrical import of the Gaelic language and its value to the writers, poets and artists in the past and present in Scotland. Prior to that meeting Collins and Goto had begun to consider translation of the Ordnance Survey maps of the area. In the following months the artists engaged the Gaelic language translator Beathag Mhoireasdan of Glasgow to consider 1300 place names across the historic Breadalbane area. Below you will find a map with the Gaelic terms, translated in relationship to Loch Rannoch.
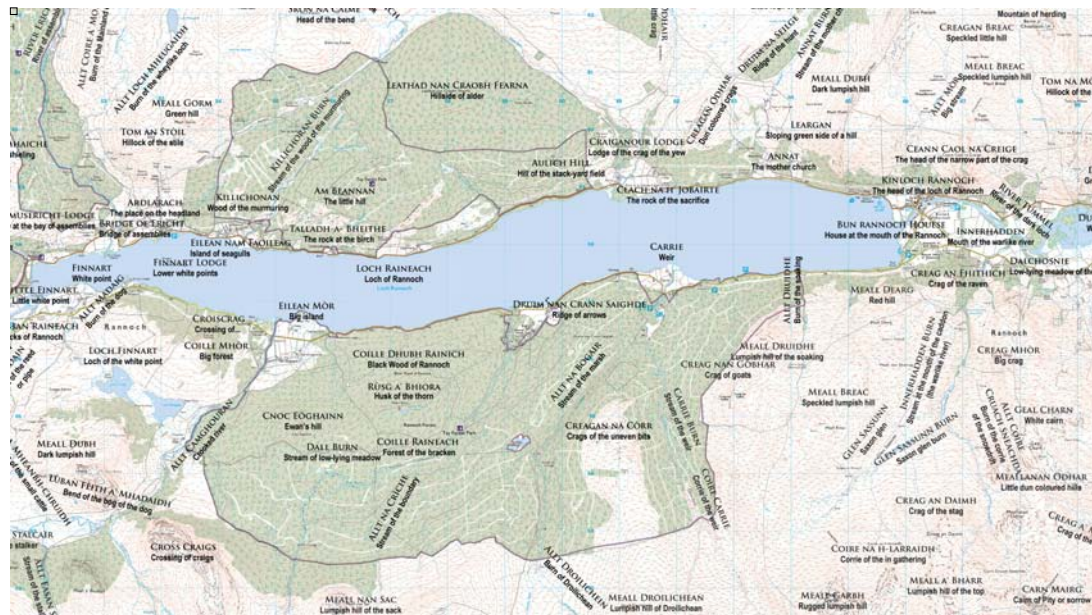
Initial mapping of translated Gaelic place names of Breadalbane (See Appendix C3: map and D: Translated Gaelic place names of Breadalbane) © Ordnance Survey Licence number 100021242. Translation by Beathag Mhoireasdan (Collins and Goto Studio, 2014).

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[16] This document is available online through the 'Internet Archive', a non-profit online library comprised of historical records located in San Francisco, California. The document was submitted to the library by the University of California. http://archive.org/stream/selectionofscott00millrich/selectionofscott00millrich_djvu.txt

The artists found this interesting for a range of reasons not the least of which is the fact that the naming emerged over time; it tells a story of a people's relationship to the land and the physical conditions and living organisms that make it notable. One could say that the old names are an aesthetic record, one defined by perception and material interest. But it is also a practical record in that it was defined by utility and day-to-day experience. Like the botanizing and bird-watching, the language stories and songs provide essential human interface to natural places that have great meaning and purpose in culture. Scottish Gaelic is a living language, which like the Black Wood itself has essential social and cultural value that should be recovered.

What about the ephemeral values embodied in the users, uses and practices within the Black Wood, or the living memories that might not as yet be recorded in Rannoch? Social and cultural relationships were upset during the eighteenth century years of forfeiture of the Struan Estate to the British crown; then again by the Highland clearances where half the population of Rannoch was lost. The Scots Gaelic language was still strong by the beginning of the twentieth century but lost, driven from the people by modern schools in the first half of the century. Fifty years of conservation management has taken its toll as well, although the most significant modern social/cultural loss may be the Rannoch School, which had a tradition of engagement with the Black Wood. The forest today is a place without a fence but it has a palpable aura of constraint for those of us who are not in the forestry community. This shapes the ephemeral social and cultural relationships. The people that primarily engage the forest today are locals that grew up with it, those that have discovered it as adults, some formerly with the Rannoch School, others simply in love with the place as both an idea and a complex inspiring aesthetic and for some a spiritual experience. Still others engage with it out of a passion for trees, botanizing and bird watching, or in pursuit of wild fungi and insects.

Is it fair to describe the Black Wood as a place with a lost or diminished history and culture? Furthermore does it even make sense to think that a forest, finally free of the constraint of human interest in it as a material resource, needs human interest beyond those that understand it and can support it through biology and ecosystem sciences? The Black Wood has a community of passionate locals, some who walk as a matter of daily practice, others who are passionate about introducing others to its wonders, including local foresters responsible for its management. Some claim a sense of familiarity with specific trees in the Black Wood; indeed the bark of one tree shows the constant attention and touch of a regular walker. During the workshop Jo Vergunst asked us to consider the culture of walking in Scotland and the way that aesthetics, ethics and politics are all shaped by physical experience in forests and landscapes.

Questions that remain include what drives change in landscape, and of course why should things change? The follow-on question would be: what would a social and cultural recovery look like and what might it mean in the face of the guidance and interpretation of the Black Wood Management Plan? In what ways might changes to public awareness, appreciation and interest spoil an aesthetic and scientific asset of international importance?

VII. Defining the 'cultural problem' with the Black Wood

We struggle in Rannoch to establish a responsible visitor economy. We don't have anything like a castle or distillery that attracts people. We have an amazing loch and an iconic natural forest, but we are not really free to talk about that forest. We need to celebrate and introduce people to things that are different and unique.

Jane Dekker, workshop participant

To recap, we have argued that the values used to justify decisions about the Black Wood are almost exclusively those associated with biodiversity conservation and ecological restoration. Over the last 40 years, this has proved very effective: the scientific discourse of conservation has successfully protected the forest from destructive economic interests, as well as helped to protect the Caledonian pine ecosystem as a whole from ecological decline. Meanwhile, the cultural values associated with the Black Wood (or the Caledonian forests of Scotland more broadly) are not sufficiently understood, appreciated or reflected in decisions about their management. This 'cultural problem' is not just restricted to those who make the decisions; it is reflected across society as a whole, which over centuries has gradually lost its former cultural and historical connections with the rural environment. Professionals from the arts and humanities also struggle with these questions, as was evident during the Future Forest workshop.

It may be tempting to go further and suggest that the dominance of a scientific discourse of conservation has blinded us to the appreciation of cultural values, by objectifying nature, and de-sensitising us from a holistic aesthetic engagement. But this is evidently not the case – at least not in such a simplistic way. An aesthetic and spiritual appreciation of nature is a fundamental part of the world-view of many foresters and ecologists and a prime motivation for doing the work they do. Those responsible for the Black Wood were among the most passionate advocates of the aesthetic and spiritual values associated with the experience of visiting the wood. They saw their role as (at times, misunderstood) guardians of the natural features that give the wood these values. Local managers indicated that they personally valued the wood as much (if not more) for its cultural importance as its environmental importance. Importantly however, the cultural value being referred to here is a particular interpretation of aesthetic experience that is seen to be compatible with, and realised through, the current policy of biodiversity conservation and ecological restoration.

Instead, we argue that the focus on biodiversity value in decision-making could have at least two negative effects. Firstly it could downplay the significance given to the full range of cultural values, and constrain their recognition and expression to those that are realised by a policy of conservation. Secondly, it could be used to justify exclusion of visitors as a means to protect the ecological integrity of the forest. As argued above, the risk that additional visitors, if properly managed, would pose to biodiversity value is unclear and open to interpretation.[17] Is there any reason why the biodiversity value and objectives of the Black Wood mean that levels of public access can't be similar to Glen Affric or Abernethy? Exclusion of visitors might also be seen incidentally by decision makers as a means to protect the 'wilderness' experience of the few people who already know and value the forest. But surely, to some extent, cultural value (unlike biodiversity value) is proportional to the number of people who are made aware of it, and can access it, appreciate it and respect it? An attitude towards the Black Wood as a potential cultural resource for the nation might prompt a more proactive approach to access, interpretation and engagement, while still successfully maintaining a protectionist function (the legitimacy of which in fact no one involved in the project has questioned).

If the management of Caledonian pine forests, and protection of the Black Wood, were explicitly seen to be justifiable through a more equal balance of both biodiversity and cultural values, then it would no longer be appropriate for their management objectives to be defined primarily by a narrow group of expert interests (ecologists or cultural heritage specialists). Indeed Mason et al. acknowledge that: "Native pinewoods are an emblem of the natural and cultural heritage of Scotland" and that "discussions about their management have tended to take place within a relatively narrow community of landowners, foresters and conservationists" (Mason et al., 2004, p. 215). To appreciate the full range of cultural values, and to incorporate them into decision making, a debate is needed that goes beyond those currently involved. This project has

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[17] See Marzano and Dandy (2012) for a literature review of available evidence for the disturbance caused to wildlife by recreational use of forests.

prompted such a debate in relation to the Black Wood. What might be the outcome of this into the future, both locally and nationally? Firstly it could explore further the multiple meanings of 'cultural value' and create a shared language for discussing it. Secondly it could explore potential future scenarios and their impacts on different types of values. Thirdly it could inform decisions about who should be involved and how the process should be governed. These points are outlined in turn below.

The meaning of 'cultural value'

Church et al. (2014) provide some of the latest thinking on how to define and assess cultural values associated with the environment in ways that are helpful to land managers. Drawing on Chan et al. (2011) they propose three kinds of cultural ecosystem benefits:
- Identities: e.g. belonging, sense of place, rootedness, spirituality
- Experiences: e.g. tranquillity, inspiration, escape, discovery
- Capabilities: e.g. knowledge, health, dexterity, judgement.

Such a typology might help understand cultural benefits associated with Caledonian forests like the Black Wood. For example, the benefits of 'experiences' and 'identities' are currently available to a certain limited range of people, while the benefits of 'capabilities' might be enhanced through improved interpretation, either on or off-site, or (in appropriate locations) a revival of traditional forms of woodland management. There is of course overlap between these categories, and, as Church et al. point out, one value can be understood differently through the lens of others.

The discussion around the meaning of cultural value would benefit from going beyond the separate 'silos' of ecology and culture, since in practice the two are inseparable. The aesthetic/spiritual value of the forest is partly a consequence of the way in which the biophysical resource was managed as well as the cultural values that underpinned and justified that management. Indeed the physical forms and ecological context that defines aesthetic value of the granny pines are the consequence of centuries of human intervention shaped by the wider social history of the region. Unfamiliar concepts might need to be introduced and defined that reflect this inter-dependence, such as 'bio-cultural diversity', 'living heritage', 'socio-ecological system' and 'cultural ecology'.

What might be done instead?

How might we manage the Black Wood, and other Caledonian forests, differently in ways that enhance cultural values while still meeting conservation objectives? Firstly, there are options that would not make direct changes to the physical structure of the forest (although there could be unintended impacts on forest structure of an increase in visit numbers): improvements to public access, interpretation and representations of the forest through the media and art practice. Secondly, there are interventions that would change the biophysical structure of the forest. There are also combinations of the two, such as a revival of historic management practices.

Regarding the first set of options, there is a case for active (re)interpretation of the Black Wood (and the Caledonian forest) possibly involving a rediscovery, or in some cases (re)invention, of historic, or new, meanings values and practices. We have seen how the Black Wood has witnessed successive periods of cultural loss: forfeitures, the Highland clearances and other causes of erosion of Gaelic culture and traditional management practices, as well as recent conservationist policies that replace or reshape cultural meanings with those of scientific conservation. As outlined in the report, there is a rich local history which, if uncovered further, would reveal layers of meaning associated with the Black Wood, which is of value for its own sake as well as helping us to understand the ecological, social, cultural and economic factors that conditioned the distinctive forms of the granny pines that are so highly valued for their aesthetic qualities.

All this would still leave management of the forest largely unaltered. A second set of potential interventions comprises alternative silvicultural practices that aim for an ecologically sound and culturally meaningful forest form. This requires attention to the science: what is known about Caledonian pine forests and aesthetics, and what can be experienced and imagined when we appreciate the Black Wood in a cultural context. Mason et al. make a related point: "Managers need to understand more about the spiritual values the forests provide and how these may be affected by management" (Mason et al. 2004: 215). They call for better understanding, but the implication is that such understandings could inform changes to silvicultural practice to enhance 'spiritual values'.

Bringing cultural and bio-physical interventions together into different combinations, a number of potential future scenarios for management of areas of Caledonian forest over the next 50 years can be outlined. A brainstorming exercise came up with five options:

- Untouched wilderness – often talked about amongst conservationists, it implies a management style where utility is bracketed and nature takes its own path. Human access is discouraged. Within the discourse of re-wilding it can involve robust natural expansion once human interest is retracted followed by a reintroduction of large mammals.
- Sacred and/or cultural ecology – a reconsideration of landscape, forest and its experience within specific Celtic traditions, spirituality, song and literary frameworks: an interpretative approach that is of the forest, but without material impact in the forest.[18]
- Native forest conservation – preservation of the core and ecological restoration to an expanding Black Wood perimeter. Following Peterken and Stace (1986) the forest evolves with no active attempt to maintain the current form of the granny pines, or the current levels of biodiversity, which could eventually be lost from the landscape as a result.
- Social and ecological restoration – an approach to native forest conservation that actively encourages interaction with relevant communities of place and interest in mutually beneficial ways, by engendering the development of cultural values, which in turn generates further support for biodiversity conservation.
- Revived cultural landscape – introduction of historic forms of management to revive a relict 'organically-evolved' cultural landscape (as defined by UNESCO, 2008: 96), possibly based on transhumance and/or silvi-pastoralism, creating living forms that reflect centuries of social and environmental history.
- Community forest economy – local community management and/or ownership for diverse social and economic objectives, including income generation from local visitor spending, timber production (where appropriate), and grants to deliver public goods (e.g. education), in ways that continue to protect the ecological integrity of the forest.

It is worth highlighting that there is no option that in any way resembles a 'theme park', or involves intrusive interpretation or recreational infrastructure, since this was not seen by any participant as a desirable outcome. Also of note, loss of the current form of the granny pines is a possibility under all of these scenarios, not just 'business as usual'. Rather than preserving their current form, the alternative scenarios might seek to produce a 'culturally meaningful' aesthetic form that also meets ecological (and in some cases economic) needs.

The way forward: an authentic process
If asked to make a choice, which of these would we select for the Black Wood? How would we get there? Through social media, Tim Collins recently outlined our project in the Black Wood,

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[18] Experimental approaches to ancient spiritual traditions are being developed on the Isle of Man. Avril Maddrell at the University of the West of England has contributed analysis and planning to 'Praying the Keeills', which provides a wider context to understand this approach (Maddrell, 2011 & 2015).

and unwittingly prompted a lively debate by posing the question: "What would an authentic cultural ecology look like?" One answer to this question is: "One that resulted from an authentic process". In other words, the journey is as important as the destination: the answer is not to pick an idealised option off the shelf and try to implement it in a top-down fashion. It is perhaps better described in terms of alternative visions inspiring and guiding a discursive and inclusive process, which may challenge established discourse and its effects on management decisions in positive ways that are hard to predict.

The workshop in Rannoch and its associated events and conversations could be seen as the first phase in such an 'authentic process', not least by helping to build social networks that link previously isolated groups and cut across perceived divisions of interest to create a 'safe' space to talk about the Black Wood. The next step might be the 'deep mapping' idea, developed during the breakout sessions, whereby cultural values are mapped qualitatively through a participatory process (see below). Ideally this exercise would be designed to complement existing planning procedures in the Black Wood to ensure it has purchase on decision-making on the ground.

The way in which the process unfolds would be shaped considerably by decisions to pursue particular funding opportunities. The most ambitious and exciting way forward could be to apply for Landscape Partnership funding through the Heritage Lottery Fund (HLF), which offer grants of up to £2m. The proposal could have, at its core, a programme of ecological restoration of the Caledonian forest that seeks to link fragments of ancient woodland habitat through Rannoch with neighbouring valleys, e.g. Glen Lyon. The geographical boundaries chosen for the initiative would have a fundamental impact on its character, objectives, and partners involved. If focused on Rannoch, it may make sense to consider the ecological (and cultural) interaction between the forest and moorland, and extend the scope to include Rannoch Moor, whose iconic status in the region could provide a focal point for the application. The proposal would then integrate cultural interests that ensure historical, cultural, aesthetic and spiritual values are represented, developed and expressed. The idea of a Forest Way Initiative, with its links to Duncan Ban MacIntyre, and the arts and humanities residencies, could all be included (see below). There could also be a strong focus on tourism, enterprise and the local economy. A culturally sensitive ecologist perspective and the conservationist attitude of many local participants would suggest that there is considerable potential overlap between the two to ensure integration is successful and leads to creative outputs. These outputs would be hard to predict, but would aim for a loosely held ideal of an 'authentic cultural ecology' that is unique to the Black Wood and the wider cultural landscape in which it is located.

> *The eco-cultural system seems to be generally understood by everyone who participated in the workshop. My hope is the Forestry Commission will consider working more closely with the community than it has in the past.*
> Anonymous workshop comment

VIII. The Black Wood: re-imagined

How might an appreciation of cultural value support this unique ecosystem? What lies between the 'do nothing' ideal that makes room for nature's generative and regenerative powers and doing something within the context of society and culture? Or is all human action destructive for nature? In a recent publication John Murray explores the contemporary value and import of the Gaelic language and its relationship to landscape; he talks about 'ground truthing' the biotic and the cultural. He says "…at a fundamental level, the landscape is composed of physical,

biological, and cultural elements." But he also argues that landscape is imaginary and "…shaped in part by our perception and the values prevailing in society and cultures at the time" (Murray 2014, p. 208). Considering Gaelic place names, Murray reveals the fundamental interdisciplinarity that is embedded in knowing a place on foot and in the refinement that emerges during the exchange of everyday life. This is the model of experience and knowing that we want to consider in this closing section.

With any talk of the future, it is essential to recognize the past. It has not always been clear that the ancient semi-natural forests of Scotland would survive the industrial age. It is only recently that conservation interests have been able to establish policies and regulations that protect these ancient forests from the mischief of owners, managers and developers. The questions we will try to answer below is: what can be done to kick start the social and cultural ecologies of the Black Wood? Can culture serve the long-term interests of the Black Wood?

Returning to the key outcomes from the 'Future Forest' workshop, we begin with a few precepts. First, nothing should be done to change the generative capacity and biodiversity, structure and character of the Black Wood. The second precept is the forest should become the focal point of meaningful social and cultural experience. The final is that ideas, practices and methods should emerge from within or in relationship to the communities of interest, not developed for them.

> *The Black Wood is equally significant for the Forestry Commission as it is to the Rannoch community. The Black Wood plays an important role as one of the largest most intact Caledonian forests of Scotland.*
> Anonymous workshop comment

1. Deep mapping
There was a clear desire to promote a wider set of experiences and understanding of the Black Wood, and of the effort to restore Caledonian forests. The practical outcome would be defined as a map with a series of texts and images that celebrates the Black Wood.

> To map the eco-cultural conditions of the Black Wood, workshops would explore what is known, what is suspected, what is invisible to the untrained eye and what isn't known but should be. This would be more than the standard environmental history of forest use and its archeology. Based in an arts and humanities approach, it would involve a series of Friday/Saturday events that begin and end by walking and talking in the Black Wood. The community would be asked to consider the option to work with forest memories in the community, material artifacts in the forest, history embedded in the trees and the Gaelic/English description of a place with few names. Individuals would be asked to map specific things using GPS receivers. Various anthropologists, archeologists, artists, musicians, ecologists, Gaelic historians, landscape experts, poets and writers would all be considered as supporting experts. This would be an inclusive process that develops across the various interest groups in the community; specifically the Forestry Commission, the group organized across the Rannoch and Tummel Tourist Association as well as former employees of the Rannoch School. Specific individuals with long familial relationship to the region would need to be specifically targeted. The result could be a multi-layered cultural map of the Black Wood.

2. Forest way initiative
There was a proposal to link specific areas, forests and communities through a cultural forests initiative that would be defined by arts and literature themes.

The Forest Way Initiative would be understood as an integrated arts and cultural ecology project that takes best advantage of existing pine forests and moorlands, streams, and trail infrastructure. As discussed during the workshop there would be two aspects of trail development. The first would be to map the paths that link the Black Wood and remnant and recovering Caledonian pine forests on the Meggernie and Glen Lyon estates and in the Blackmount Forest along the banks of Loch Tulla. The second idea embraces a cultural landscape trail, a linguistic and literary form.

During the workshop the art historian Murdo MacDonald outlined a Scottish literature trail that would take into account the life and poetry of Duncan Ban MacIntyre (1724-1812) who was born at Loch Tulla and is best known for his poem 'In praise of Beinn Dorain'. This would provide a rationale for a western approach into Glen Lyon from Loch Tulla before walking the historic trail that links Glen Lyon and Rannoch.

This would be a specific development project. The most straightforward approach would be to conceptualize the project, and clarify a series of questions that need answered to move forward into a clear concept plan. Then assemble a team to work on this over a period of months, with pre-meetings, concept presentations and final proposal stages shared with all relevant community and stakeholder groups. The output would need to embrace the partnerships necessary to move a project like this forward. The project would require strong community support across the potentially linked villages coupled with a depth of expertise from Scotland's academic and professional communities. It would be strategically important to bring in a range of disciplines that have thought about forests, nature, culture and communities. But more importantly this needs to be a group of people that want to walk, talk and think about what it means to develop artwork together with and for others.

3. Black Wood arts, humanities and ecology residencies
There was the idea that the Black Wood would be well served by an arts, humanities and ecology residency programme, which would create an expanding archive as a means of recovering and archiving historic knowledge and developing new aspects of an integrated forest culture.

An integrated forest residency with diverse input over a period of years could help establish new social and cultural relationships to the Black Wood. In this case a series of residencies are used to slowly recover what is lost while building a depth of new inquiry, content and practices that become deeply embedded in the community. To set this up properly an initial scoping study would be done, then a proposal made to consider the necessary funding and support mechanisms to develop an ongoing science and culture residency programme that contributes to the Black Wood. In this case the Black Wood would become the primary focal point, the Caledonian pinewoods and landscape of Breadalbane would become the expanded context for consideration over time. Where artists in residency programmes are primarily understood as time for artists to immerse themselves in their practice, in this case it would be a research and development grant where participants take on responsibility for delivering something of lasting value to a long-term eco-cultural condition of the Black Wood and how it is perceived, experienced and understood.

Some aspects of this project would be modeled on the existing residency programme at Sabhal Mòr Ostaig on the Isle of Skye. This would be an innovative approach that the Forestry Commission could use to consider new approaches to integrated social, ecological and cultural work in the Black Wood. Pammie Steele suggested a Black Wood journal that documents the evolution of culture within the forest. The idea of a residency was extended after the workshop to include ecological residencies alongside those from the arts and humanities. Having highlighted the need for good ecological studies, and

studies of the impact of visitors, such a suggestion could avoid a flip from a conservation focus to an arts focus, whereas arguably both are needed. Inclusion of an ecological approach could start to develop the evidence base that would allow forest managers to move beyond the 'precautionary principle' while ensuring the Black Wood continues to be recognised and celebrated for its ecological value. This proposal could refine what a 'research forest' means (a term used in other parts of Scotland) by ensuring the research is interdisciplinary and applied, and informed by dialogue between an unusually diverse range of voices, not least those of the local community.

4. Forest planning

The idea of practical planning with the Forestry Commission and Scottish Natural Heritage gained a lot of support at the workshop, participants were interested in issues of awareness, access and branding. It would involve a carefully organized programme of discussion with key points to be agreed and rigorously debated with various speakers brought in to provide critical and independent insight. The goal would be to establish initial social/cultural working agreements in relationship to the Black Wood.

It is always constructive to find an independent facilitator to help parties that can be, have been or could be at odds as they try to find some common ground. While a lot of common ground was revealed at the November workshop, nothing was agreed on paper. In this case it would make sense to commission an independent planning group to help the citizens of Rannoch find some productive working agreements in the Black Wood with the Forestry Commission.

Conclusions

In conclusion there is much to be done in Rannoch; these are just some of the ideas that could be developed further. The goal is to reveal and activate on-the-ground truths about science and culture, to take things from the realm of ideas and into the social discourse of place and everyday lives. It is about open discussions with Rannoch citizens about the form and function, the cultural history and opportunities that are embedded in the forest. But it is also about what people in cities understand about places like the Black Wood. The locals have stories untold and experiences that have not as yet been recorded. There are terrific researchers across Scotland who could work with the communities to breathe life into the public realm of the forest, in terms of archeology, anthropology, art, ecology, history, landscape, Scottish Gaelic language, poetry, philosophy and theology, and the Black Wood deserves this kind of attention. Over time the challenge is to find the right people willing to assemble, interrogate and work together and within the community to recapture the cultural aspects of the Black Wood of Rannoch. Wherever possible in this day of technologies, discussions and walk and talks could be taped and transcribed, and participants would be asked to contribute content to a Black Wood Journal preferably published each year as a record of the strategic development of a long-term cultural research initiative that builds on this newly-established baseline. The Black Wood is of Rannoch, but relevant to everyone in Scotland and beyond; it is much more than a purposively lost repository of biodiversity value and strategic conservation.

Tim Collins & Reiko Goto with David Edwards, July 2014

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APPENDIX A – Funding options

BIG LOTTERY SCOTLAND – Investing in Ideas
To provide groups with an opportunity to spend time and money developing ideas that will bring improvements to communities and the lives of people in need.
Funding range: £500 to £10,000.
http://www.biglotteryfund.org.uk/investinginideas

BIG LOTTERY SCOTLAND – Awards for all Scotland
Small towns (those with a population of 3,000 to 10,000) are a priority.
Funding range: £500 to £10,000
http://www.biglotteryfund.org.uk/global-content/programmes/scotland/awards-for-all-scotland

CREATIVE SCOTLAND
Creative Scotland supports a portfolio of organisations across Scotland, as well as supporting the development of individuals, funding ideas and projects, and specific activity with partners.
Funding range: £1,000 to £15,000 and £15,000 to £100,000, with prior written consent up to £150,000.
http://www.creativescotland.com/funding/funding-overview

LANDSCAPE PARTNERSHIPS – Heritage Lottery Fund
Funding schemes that make a lasting difference to heritage, people and communities in the UK. A Landscape Partnership scheme is made up of a number of individual projects within a defined landscape character area. These individual projects should be integrated in a way that achieves a long-term legacy for the area.
Funding range: £100,000 to £3,000,000
http://www.hlf.org.uk/looking-funding/our-grant-programmes/landscape-partnerships

NATIONAL FOREST LAND SCHEME
The National Forest Land Scheme supports Community Acquisition or the opportunity to buy or lease National Forest Land. It goes one step further than Community Right to Buy because it gives this opportunity even though the land has not come up for sale.
Funding range: Relative to land cost and community plan.
http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/communities/national-forest-land-scheme-nfls

APPENDIX B – Future Forest workshop - invited participants, Kinloch Rannoch, November 2013

Rannoch Hosts and Community Participants	Role	Position
Anne Benson	Presenter	Host - Chair, Rannoch and Tummel Tourist Association / Artist, Loch Rannoch Conservation Association
Jeannie Grant	Presenter	Host - Rannoch Path Network Coordinator, environmental educator
Jane Dekker	Participant	Host - Rannoch and Tummel Tourist Association / Rannoch business owner
Leo Barclay	Apologies	Rannoch estate owner, Chieftain of the Rannoch Highland Games
Bob Benson	Presenter	Chair, Loch Rannoch Conservation Association / Mobility and Access Committee for Scotland
Roy Cameron	Participant	Rannoch resident with a background in biology and land use
Chris Cowell	Participant	Principal in Treepartner, Kinloch Rannoch, forestry contractor/consultant
Dave Friskney	Participant	Board member of the Loch Rannoch Conservation Association
Mark Lough	Participant	Community Facilitator brought in from Aberdeen
Alex Maris	Participant	Rannoch artist, recognized for long-term work on Rannoch Moor and the Black Wood
Pammie Steele	Participant	Rannoch author of book on the Black Wood
Rod Taylor	Participant	Rannoch resident, Gaelic language and landscape interests
		An additional twenty local/regional interests joined for the Friday night panel and Saturday morning walk
Forestry Commission Hosts and Invited Participants		
Rob Coope	Presenter	Host - Forestry Commission Scotland, Tay Forest District, Black Wood Wildlife Ranger
Peter Fullarton	Presenter	Host - Forestry Commission Scotland, Tay Forest District, Beat Ranger
John Burrow	Apologies	Scottish Natural Heritage, Operations Officer Tayside and Grampian Area
David Edwards	Presenter	Senior Social Scientist, Social and Economic Research Group (SERG), Forest Research, Roslin
Hamish Murray	Apologies	Forestry Commission Scotland, Tayside District, Communities Recreation and Tourism Manager
Mike Smith	Apologies	Landscape Ecologist, Land Use and Ecosystem Services Group (LUES), Forest Research, Roslin
Mike Strachan	Apologies	Forestry Commission Scotland, Perth and Argyll Conservancy, Policy and Development Officer

NGO Hosts and Invited Participants		
Paul McLennan	Participant	Host - Perth and Kinross Countryside Trust, Manager
Bid Strachan	Participant	Host - Perth and Kinross Countryside Trust, Communities and Grants Officer
Graham Esson	Participant	Perth and Kinross Council, Team Leader - Sustainability, Policy & Research
Sandy Maxwell	Participant	The John Muir Trust, Conservation Activities Coordinator
Dave Stubbs	Apologies	Perth and Kinross Council, Green Space Coordinator for Communities
Artist Organizers and Invited Participants		
Tim Collins	Organiser	Artist, Author, Planner in the Collins & Goto Studio, Glasgow, Scotland
Reiko Goto Collins	Organiser	Artist, Author, Designer in the Collins & Goto Studio, Glasgow, Scotland
Emily Brady	Presenter	University of Edinburgh, Professor of Environment and Philosophy; Head, Human Geography Research
Scott Donaldson	Participant	Creative Scotland Portfolio Manager, responsible for Imagining Natural Scotland
David Griffin	Participant	Creative Scotland Project Manager, Imagining Natural Scotland
Chris Fremantle	Presenter	Independent producer, researcher, writer and cultural historian working in the visual arts
Murdo MacDonald	Presenter	University of Dundee, Professor of History of Scottish Art
Jamie McIntyre	Presenter	Independent forester with a long-term relationship with Sunart Oakwood Initiative, Lochaber District, Scotland
Paul Tabbush	Presenter	Landscape Research Group Chair, Consultant on forestry and land use matters
Jo Vergunst	Presenter	University of Aberdeen, Lecturer in Social Anthropology
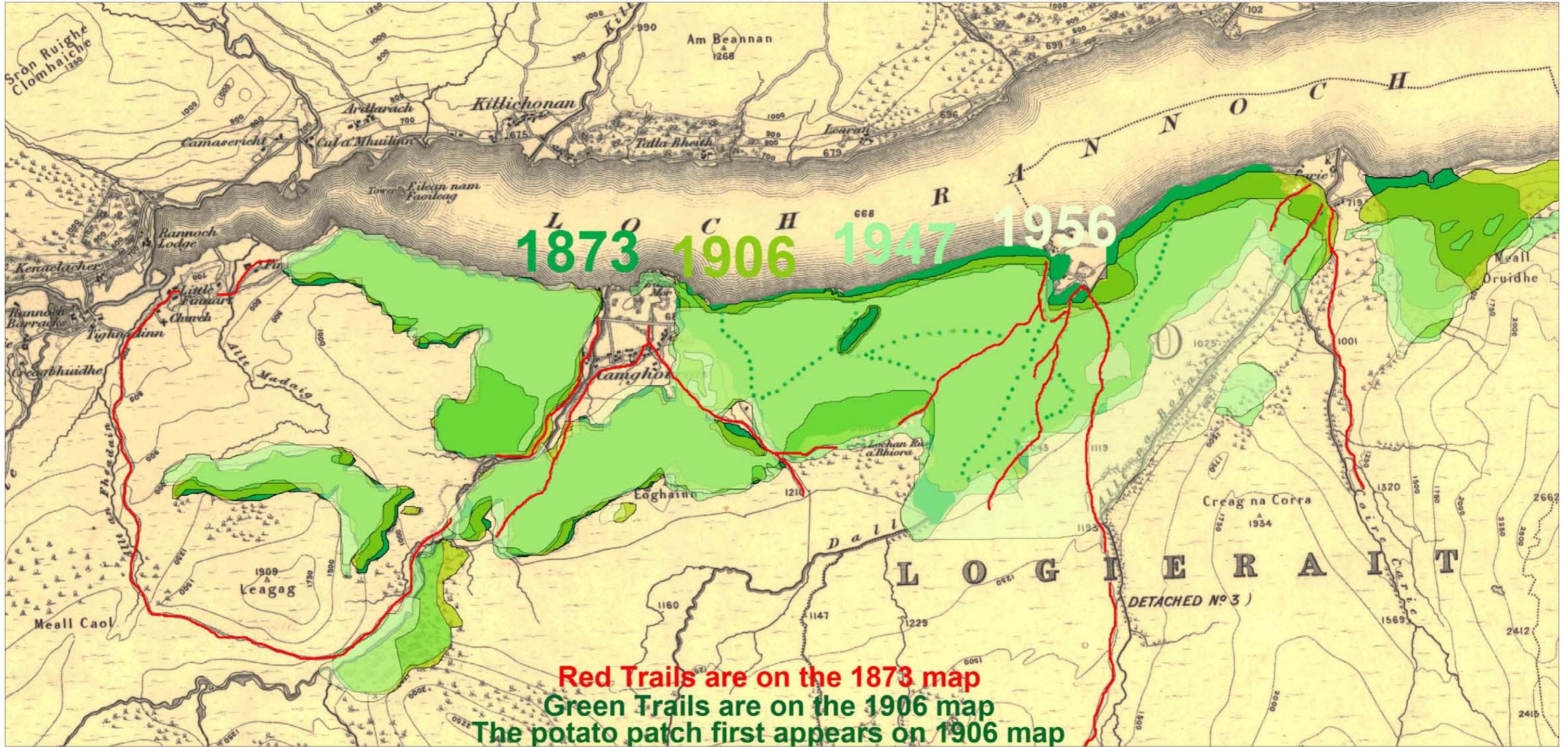
An overlay of four maps from the Scottish Natural Map Library. © Ordnance Survey License number 100021242. (Collins and Goto Studio, 2014)

A simplified version of the Native Woodland Survey of Scotland data including some key archeological sites. © Ordnance Survey License Number 100021242. (Collins and Goto Studio, 2014)

GRAMPIAN MOUNTAINS
Grey mountains

CAM CHRIOCHAN
Bent/twisted boundaries

ALLT NA UIDHE DUIDHE
Stream of the black flat stone

LEACHD DUBH
Black flat stone

BEALACH LEATHAN
Broad mountain pass

MEALL NA MEOIG
Lumpish hill of the whey

MEALL MEOIGEACH
Little loch of the whey

GARBH-MHEALL MÒR
Big rough lumpish hill

BEINN 'PHARLAGAIN
Parlgan's mountain

COIRE DUBH GARBH
Rugged dark corrie

CORRIE OF THE LOBSTERS

LEACANN NAN GIOMACH
Broad slope of the lobsters

LOCHAN LÒIN NAN DONNLAICH
Little loch of the meadow of the howling

LOCHAN SRÒN SMEUR
Little loch of the headland of the blackberries

SRÒN SMEUR
Headland of the blackberries

ALLT COIRE A' GHIUTHAIS
Stream of the corrie of the pine trees

MEALL AN UILLT RIABHAICH
Hill of the Brindled Burn

MEALL LIATH-NA-DOIR MÒIRE
Blue lochs of the big oak grove

LOCHAN RUIGHE NA DOIRE MACMHADAGAIN
Little loch of the slope of Macmhadagain's oak grove

CAOCHAN NAM MEANN
Brook of the kids (young goats)

ALLT CHALDAR
Stream of hard water

ALLT MHIUC THOMAIS
Thomson's stream

CREAG AN RIGHEANAIN
Crag at the base of the mountain

CAMUSERICHT LODGE
Lodge at the bay of assemblies

BRIDGE OE ERICHT
Bridge of assemblies

AN CLADHAN
Very shallow stream

DÙNAN
Little hill

COILLE BHIENIE
Forest in the centre

CEANN COILLE
Head of the forest

LOCH EIGHEACH
Icy loch

INVERCOMRIE
River mouth of the sanctuary

ATHAINN GHAMHAIR
The river sauir

GEABASAN RAINEACH
The barracks of Rannoch

LITTLE FINNART
Little white point

CEANN GARBH
Rugged head

LOCHAN ÈOIN
Little loch of the birds

GLEANN DUBH
Dark glen

LOCHAN SEILEACH
Little loch of the willows

MEALL CHOMRAIDH
Lumpish hill of sanctuary

LOCHAN DUBH GRUND NAN DARACHAN
The dark little loch of the base of the oaks

COILLE RAINEACH
Forest of the bracken

MEALL DOIRE MEALLAICH
Lumpish hill of the hilly oak grove

COCHAN DUBH
Dark streamlet

CÌRABAD

SRÒN AN OISINN
Nose of the edge

MEALL LEAGHDANN NAN EACH
Lumpish hill of the horses' broad slope

MEALL NAN RUAG
Lumpish hill of the chase(es)

MEALL BUIDHE
Yellow hill

COIRE DUBH
Dark corrie

MEALL CRUINN
Round lumpish hill

COIRE GORM
Green corrie

COIRE PHARLAIN
Parlane's corrie

MEALL A' PHUILL
Muddy hill

MEALL NAN-AIGHEAN
Hill of the hinds

COIRE UAIMH
Corrie of the cave

GLAS CHOIRE
Green corrie

COIRE ODHAR
Dun-coloured corrie

CARN NAM FIADH
Cairn of the deer

MEALL LAIRIG MEACHDAINN
Cairn at the pass of Meachdainn

COIRE NAM MISEACH
Corrie of the kids

COIRE BEITHE
Corrie of the birch

SRÒN A' CHLAONAIDH
Point of the incline

ALLT A' CHOIRE GHLAIS
Stream of the grey corrie

ALLT LUIB BHÀIN
Stream of the fair bend

ALLT GHLAS
Grey stream

RUIGHE GHLAS
Green Slope

DUN DAIMH
Fort of the stags

LOCHAN NA H-AON CHRAOIBH
Little loch of the one tree

LOCHAN LIATH DHÒIREACHAN
Blue lochs of the oak groves

ALLT A' CHOIRE ODHAR BHIG
Stream of the small dun-coloured corrie

SRÒN BHEAG
Little headland

LOCH MHEUGAIDH
Wheylike loch

CROIS CRAIG

MEALL AN UILLT RIABHAICH

SRÒN RUIGHE CLOMHAICHE
Headland of the wooly shieling

MEALL GORM
Green hill

TOM AN STOIL
Hillock of the stile

ARDLARACH
The place on the headland

KILLICHONAN
Wood of the murmuring

KILLICHORAN BURN
Stream of the wood of the murmuring

EILEAN NAM FAOILEAG
Island of seagulls

FINNART
White point

FINNART LODGE
Lower white points

TALLADH-A-BHEITHE
The rock at the birch

AM BEANNAN
The little hill

EILEAN MÒR
Big island

CROISCRAG
Crossing of...

COILLE MHÒR
Big forest

LOCH FINNART
Loch of the white point

MEALL DUBH
Dark lumpish hill

CNOC EÒGHAINN
Ewan's hill

DALL BURN
Stream of low-lying meadow

COILLE DHUBH RAINICH
Black Wood of Rannoch

RÙSG A' BHIORA
Husk of the thorn

COILLE RAINEACH
Forest of the bracken

LÙBAN FÈITH A' MHADAIDH
Bend of the bog of the dog

MEALL CAOI
Narrow lumpish hill

MEALL AN STALCAIR
Hill of the stalker

CROSS CRAIGS
Crossing of craigs

ALLT SLOC NA CRADHA
Burn of the clay pit

ALLT EASAN STALCAIR
Stream of the stalker's waterfall

GARBH MHEALL
Rugged lumpish hill

CÙL LÒCHAN
Bobtail of the little loch

CÙL LÒCHAN

ALLT RUIGHE A' MHADAIDH
Stream of the slope of the dog/wolf

COIRE NAN CNAMH
Corrie of the bones

CAM CHREAG
Twisted crag

MEALL NAN SAC
Lumpish hill of the sack

MEALL A MHUIC
Lumpish hill of the pig

MEALL NAM MAIGHEACH
Hill of the hares

LAIRIG A MHUIC
Pass of the pig

MEALL GLAS
Grassy hill

CARN GORM
Green cairn

MEALLAN FHUARAIN
Hill of the spring

BEINN DEARG
Little red mountain

CÙL LAIRIG
Rear of the pass

BEN MEGGERNIE
Mountain of the boggy place

CREAG AN FHGORAICH
Hill of waiting

BALLINLOAN
The farm by the pond

CREAG ARD
High cliff

CAMUSVRACHAN
Valley of the birds

GLEN LYON

SGURRAN DEARG
Red pointed hills

SIDHEAN BEAG
Little fairy hill

PLUCACH
Lumpy

LEATHAD NAN CRAOBH FEARNA
Hillside of alder

AULICH HILL
Hill of the stack-yard field

ANNAT
The mother church

CLACH-NA-T JOBAIRTE
The rock of the sacrifice

CARRIE
Weir

LOCH RAINEACH
Loch of Rannoch

DRUIM NAN CRANN SAIGHDE
Ridge of arrows

CREAGAN NA CORR
Crags of the uneven bits

ALLT DROILICHEAN
Burn of Droilichean

MEALL DROILICHEAN
Lumpish hill of Droilichean

AN SGORR
Sharp steep hill

COIRE ODHAR MÒR
Large dun coloured corrie

COIRE ODHAR BEAG
Little dun-coloured corrie

ALLT CAOCHAN AN T-SEILICH
Stream of the willow brook

MEALL GARBH
Rugged lumpish hill

MEALL BÀN
Fair lumpish hill

SRÒN NA CAIME
Head of the bend

ALLT CHAIME DHUIBH
Stream of the dark bend

ALLT DOMHAINN
Deep stream

BEINN BHOIDHEACH
Beautiful mountain

BEINN MHOLACH
Shaggy/bristly mountain

GUALANN SHEILEACH
Willow shoulder

CRAIGANOUR FOREST
Forest of the crag of the yew

CRAIGANOUR LODGE
Lodge of the crag of the yew

ANNAT
The mother church

BUN RANNOCH HOUSE
House at the mouth of the Rannoch

CARRIE
Weir

MEALL DRUIDHE
Lumpish hill of the soaking

CREAG NAN GOBHAR
Crag of goats

ALLT NA BOGAIR
Stream of the marsh

CARRIE BURN

CREAG AN DAIMH
Crag of the stag

COIRE-CARRIE
Corrie of the weir

COIRE NA H-IARRAIDH
Corrie of the in gathering

MEALL A' BHARR
Lumpish hill of the top

MEALL GARBH
Rugged lumpish hill

CARN MAIRG
Cairn of Pity or sorrow

MEALL LUAIDHE
Hill of praise

MEALL LIATH
Grey/blue hill

COIRE CHEARCAILL
Corrie of the circles

MEALL NAN EUN
Hill of the birds

CORRIE OF THE INIVARY
Mouth of the top river

COIRE A' CHEARCAILL
Corrie of the circular corrie

INVERVAR
Mouth of the top river

ROINN NA CREIGE
Schism of the cliff

CREAG DEARG
Red cliff

CREAG MHÒR
Big crag

COILLE DHUBH
Black forest

GLEANN MUILINN
Glen of the mill

ALLT ODHAR
Dun-coloured stream

RUSKICH
Marshy place

GLEN LYON

INVERINAIN
Mouth of the anvil stream

AN STUC
The peak

BALINTYRE
Farm of the land

CARNBANE CASTLE
Castle of the white cairn

WOODENDCEANN NA COILLE
End of the wood

CREAG MHADAIDH
Crag of the dog/wolf

COIRE AN T-SAIGHDEIR
Soldiers hollow

RUIGHE NAN SAORACH
Slope of work

ERROCHTY DAM
Dam at the assembly place

COIRE AN FHÈIDH
Corrie of the deer

LEATHAD BÀN
Fair slope/hillside

SAUNICH
Sandy bay

LARACH MÒR
Large site

POLL BATH
Drowning pool

COLRIG
Back of the field

TRINAFOUR
Third-land of the pasture

MEALL BÀN
Fair lumpish hill

MEALL 'NA MOINE
Hill of peat

LOCH NA CAILLICH
Loch of the old woman

CARN FIACLACH
Toothed cairn

BEINN A' CHUALLAICH
Mountain of herding

CREAGAN BREAC
Speckled little hill

MULLI NAVADIE
Mill of the dog

ALLT NA MOINE BUIDHE
Stream of the yellow mossy place

MEALL DUBH
Dark lumpish hill

MEALL BREAC
Speckled lumpish hill

TOM NA MÒINE
Hillock of the mill

CEANN NA MÒINE HOME FARM
The end of the peat moss

MARAGDUBH
Black pudding

BALMORE
The big farm

DRUMGLAS
Greenlgrey ridge

DUNALASTAIR
Alasdair's fort

McGREGOR'S CAVE
Cave of MacGregor

LEARGAN
Sloping green side of a hill

CEANN CAOL NA CREIGE
The head of the narrow part of the crag

KINLOCH RANNOCH
The head of the loch of Rannoch

RIVER TUMMEL
River of the dark loch

INNERHADDEN
Mouth of the warlike river

DUNALASTAIR WATER
Water at Alasdair's fort

LASSINTULLICH
Flame of the knoll

DALCHOSNIE
Low-lying meadow of the defending

LOCHAN AN DÙIN
Small loch of the fort

CNOC AN FHITHICH
Hill of the raven

MEALL LEATHAN
Broad hill

CNOC NA H-IOLAIRE
Hill of the eagle

SCHIEHALLION
Fairy Hill of the Caledonians

CARN DEARG
Red cairn

UAMH TOM A MHOR-FHIR
Cave of the hill of the nobleman

MEALLANAN ODHAR
Little dun coloured hills

CREAG A' MHADAIDH
Crag of the dog/wolf

GLENMORE BOTHY
Bothy of the great glen

CREAG A' CHEARCAILL
Crag of the circular corrie

LOCHAN NA MOINE
Little loch of the mill

CAOCHAN LEATHAID BHÀIN
Burn of the dun coloured little crag

ALLT RUIGHE NA SAOTHRACH
Burn of the slope of work

ALLT A' CHREAGINODHAIR

CREAGAN ODHAR
Dun coloured crags

DRUIM NA SELIGE
Ridge of the flint

ANNAT BURN
Stream of the mother church

MEALL MÒR
Big hill

GLEN SASSUNN
Saxon glen

GLEN SASSUNN BURN
Saxon glen burn

INNERHADDEN BURN
Stream at the mouth of the caddon

GEAL CHARN
White cairn

CARN DEARG
Red cairn

COIRE CHARCAILL
Corrie of the circles

MEALL NA AIGHEAN
Lumpish hill of the stags/heifers

LARIG A MHUIC

APPENDIX D – Translated Gaelic place names of Rannoch

translated by Beathag Mhoireasdan

A

Allt a' Chaime Dhuibh
Stream of the dark bend

Allt a' Choire Ghlais
Stream of the grey corrie

Allt a' Choire Odhair Bhig
Stream of the small dun-coloured corrie

Allt a' Chreagain Odhair
Burn of the dun coloured little crag

Allt a' Mheanbh-chruidh
Burn of the small cattle

Allt an Fhail
Stream of the animal pen

Allt an Fheadain
Burn of the reed or pipe

Allt Beithe Beag
Stream of the little birch

Allt Bhrachain
Stream of the fermenting

Allt Camghouran
Camgharan (from older Cam Dhobhran)
Crooked river

Allt Caochan an t-Seilich
Stream of the willow brook

Allt Chaldar
Allt Chaladair
Stream of hard water

Allt Chomraidh
Allt na Cuimrigh
Burn of sanctuary

Allt Coire a Chearcaill
Burn of the circular corrie

Allt Coire a' Ghiubhais
Allt Coire a' Ghiuthais
Stream of the corrie of the pine trees

Allt Coire a' Mor-fhir
Allt Coire na Mòr-thìr
Burn of the mainland corrie

Allt Coire Cruach Sneachda
Burn of the corrie of the snowdrift

Allt Coire Mhic Aonghais
Allt Coire MhicAonghais
Stream of MacInnes' corrie (Angus' son)

Allt Coire nan Giomach
Stream of the corrie of the lobster

Allt Domhain
Allt Domhainn
Deep stream

Allt Druidhe
Allt Drùidhe
Burn of the soaking

Allt Esan Stalcair
Stream of the stalkers waterfall

Allt Fearna
Allt Feàrna
Stream of the alder

Allt Ghlas
Allt Glas
Grey stream

Allt Kynachan
Allt Choinneachain
Stream of the meeting place

Allt Leathan
Broad stream

Allt Lice Duibhe
Allt na Lice Duibhe
Stream of the black flat stone

Allt Loch Mheugaidh
Burn of the wheylike loch

Allt Mòr
Big stream

Allt Mhic Thomais
Allt Mhic Thòmais
Thomson's stream

Allt na Bogair
Allt a' Bhogair
Stream of the marsh

Allt na Crìche
Stream of the boundary

Allt na Moine Buidhe
Allt na Mòine Buidhe
Stream of the yellow mossy place

Allt Odhar
Dun-coloured stream

Allt Ruighe a' Mhadaidh
Stream of the slope of the dog/wolf

Allt Ruighe nan Saorach
Allt Ruighe na Saothrach
Burn of the slope of work

Allt Sloc na Creadha
Allt Sloc na Crèadha
Burn of the clay pit

Am Beannan
The little hill

An Catachan
Rough one

An Cladhan
Very shallow stream

An Sgorr
Sharp steep hill

Annat
An Annaid
The mother church

Annat Burn
Allt na h-Annaid
Stream of the mother church

Ardlarach
Àrd Làrach
The place on the headland

Auchanruidh
Achadh an Ruighe
Field on the slope

Aulich
Achadh Loinne
Stack-yard field

Aulich Hill
Cnoc Achadh Loinne
Hill of the stack-yard field

B

Balintyre
Baile na Tire
Farm of the land

Ballinloan
Baile an Lòin
Farm by the pond

Balmore
Am Baile Mòr
The big farm

Beinn a' Chuallaich
Mountain of herding

Beinn Bhoidheach
Beinn Bhòidheach
Beautiful mountain

Beinn Dearg
Dearg-bheinn
Little red mountain

Beinn Mholach
Shaggy/bristly mountain

Beinn Pharlagain
Beinn Phàrlagain
Parlagan's mountain

Ben Lui
Beinn Laoigh
Calf mountain

Bothan a' Ghiuthsaich
Cottage of the Black Wood of Rannoch

Blairfettie
Blàr Pheitigh
The moor of the place of pits

Bochonie
Both Chòmhnaidh
St Comhghan's hut

Braes of Foss
Bràighean Fhasaidh
Slopes of the place / stance

Bridge of Ericht
Drochaid Eireachd
Bridge of assemblies

Bunrannoch House
Taigh Bun Raineach
House at the mouth of the Rannoch

C

Cam Chreag
Twisted crag

Cam Chriochan
Cama-chrìochan
Bent/twisted boundaries

Camusericht Lodge
Loidse Chamas Eireachd
Lodge at the bay of assemblies

Camusvrachan
Camas Bhreacain
Valley of the birds

Caochan an Leathaid Bhàin
Streamlet of the fair slope

Caochan Dubh
Dark streamlet

Caochan nam Meann
Brook of the kids (young goats)

Carabad
Hill shaped like a jawbone

Carrie
Càraidh
Weir

Carrie Burn
Allt Càraidh
Stream of the weir

Carn Dearg
Càrn Dearg
Red cairn

Carn Dhomhnaill Duibh
Càrn Dhòmhnaill Dhuibh
Dark Donald's cairn

Carn Fiaclach
Càrn Fiaclach
Toothed cairn

Carn Gorm
Càrn Gorm
Green cairn

Carn Lairig Meachdainn
Càrn Làirig Mheachdainn
Cairn at the pass of Meachdainn

Carn Mairg
Càrn Mairg
Cairn of pity or sorrow

Carn nam Fiadh
Càrn nam Fiadh
Cairn of the deer

Carnbahn
Càrn Bàn
White cairn

Carnbane Castle
Caisteal Càrn Bàn
Castle of the white cairn

Ceann Caol na Creige
The head of the narrow part of the crag

Ceann Garbh
Rugged head

Ceann na Mòine / Home Farm
Ceann na Mòine
The end of the peat moss

Clach an Tigh Bhuairidh
Stone of the house of temptation

Clach na Boile
The stone of madness

Clach na h' Jobairte
Clach na h-Ìobairte
The rock of the sacrifice

Cnoc an Fhithich
Hill of the raven

Cnoc Eòghainn
Ewan's hill

Cnoc nan Aighean
Hill of the stags

Coille Bhienie
Coille Mheadhainidh
Forest in the centre

Coille Kynachan
Coille Choinneachian
Wood of the meeting place

Coille Mhòr
Big forest

Coille Raineach / Black Wood of Rannoch
Forest of the bracken

Coire an Fheidh
Coire an Fhèidh
Corrie of the deer

Coire Beithe
Corrie of the birch

Coire Carie
Coire Càraidh
Corrie of the weir

Coire Chearcaill
Corrie of the circles

Coire Dubh
Dark corrie

Coire Dubh Garbh
Rugged dark corrie

Coire Gorm
Green corrie

Coire na h-Iarraidh
Corrie of the in gathering

Coire nam Fraochag
Corrie of the whortleberries

Coire nam Miseach
Corrie of the kids

Coire nan Cnàmh
Corrie of the bones

Coire nan Giomach
Corrie of the lobsters

Coire nan-Clach
Corrie of the stones

Coire Odhar
Dun-coloured corrie

Coire Odhar Beag
Little dun-coloured corrie

Coire Odhar Mor
Coire Odhar Mòr
Large dun-coloured corrie

Coire Pharlain
Coire Phàrlain
Pàrlane's corrie

Coire Uaimh
Corrie of the cave

Colrig
Cùl Righe
Back of the field

Craiganour Forest
Coille Creag an Iubhair
Forest of the crag of the yew

Craiganour Lodge
Loidse Creag an Iubhair
Lodge of the crag of the yew

Creag a' Mhadaidh
Crag of the dog/wolf

Creag an Daimh
Crag of the stag

Creag an Earra
(Not translated)

Creag an Fhgoraich
Hill of waiting

Creag an Fhithich
Crag of the raven

Creag an Righeanan
Crag at the base of the mountain

Creag Ard
Creag Àrd
High cliff

Creag Dhearg
Red crag

Creag Dhubh
Black crag

Creag Kynachan
Creag Choinneachain
Crag of the meeting place

Creag Mhòr
Big crag

Creag Mhadaidh
Creag a' Mhadaidh
Crag of the dog

Creag nan Gabhar
Crag of goats

Creagan Breac
Speckled little hill

Creagan Odhar
Dun-coloured crags

Cross Craigs
Troisearraig
(Not translated)

D

Dalchosnie
Dail Chosnaidh
Low-lying meadow of the defending

Dall Burn
Allt na Dalach
Stream of low-lying meadow

Dalno
Dail an Obha
The plain of the headland

Dalriach
Dail Riabhach
The brindled plain

Druim na Seilge
Ridge of the hunt

Druim nan Crann Saighde
Ridge of arrows

Drumcroy Hill
Cnoc Druim Chruaidh
Hill of the hard ridge

Dun Daimh
Dùn nan Damh
Fort of the stags

Dunalastair
Dùn Alasdair
Alasdair's fort

Dunalastair Water
Uisge Dhùin Alasdair
Water at Alasdair's fort

E

Eilean Mòr
Eilean Mòr
Big island

Eilean nam Faoileag
Island of seagulls

Errochty Water
Uisge Eaireachdaidh
Water of assembly

F

Fèith Bhuidhe
Yellow bog

Finnart
Fionnàird
White point

G

Garbh Mheall
Rugged lumpish hill

Geal Charn
Geal-chàrn
White cairn

Glas Choire
Green corrie

Gleann Chomraidh
Gleann na Cuimrigh
Glen of sanctuary

Gleann Dà-Eig
Gleann Dà Eag
Glen of the two gaps

Gleann Duibhe
Dark glen

Gleann Muilinn
Glen of the mill

Glen Sassunn
Gleann Shasainn
Saxon glen

Glen Sassunn Burn
Allt Gleann Shasainn
Saxon glen burn

Glenmore Bothy
Bothag Gleann Mòir
Bothy of the great glen

I

Innerhadden Burn
Inbhir Chadain
Stream at the mouth of the caddon (the warlike river)

Innerwick
Inbhir Ùig
Mouth of the bay

Inverar Burn
Allt Inbhir Bharra
Stream of the mouth of the top river

Invercomrie
Inbhir Cuimrigh
River mouth of the sanctuary

Inverinain
Inbhir Inneoin
Mouth of the anvil stream

Inverinain Burn
Allt Inbhir Inneoin
Burn of the mouth of the anvil stream

K

Killichonan
Coille Chrònain
Wood of the murmuring

Killichonan Burn
Allt Coille Chrònain
Stream of the wood of the murmuring

L

Lagganesgair Cotts
(Not translated)

48

Lairig a' Mhuic
Làirig na Muice
Pass of the pig

Larath Mor
Làrach Mhòr
Large site

Lassintullich
Las an Tulaich
Flame of the knoll

Leacann Innis a' Chladaich
Broad slope of the shore meadow

Leacann nan Giomach
Broad slope of the lobsters

Leachd Dubh
Black flat stone

Leargan
Sloping green side of a hill

Leathad Ban
Leathad Bàn
Fair slope/hillside

Leathad nan Craobh Fearna
Leathad nan Craobh Feàrna
Hillside of alder

Little Finnart
Fionnàird Beag
Little white point

Loch Eigheach
Icy loch

Loch Finnart
Loch Fionnàird
Loch of the white point

Loch Kinardochy
Loch Cheann Àrd Achaidh
Loch at the head of the high field

Loch na Caillich
Loch na Cailliche
Loch of the old woman

Loch Raineach
Loch of Rannoch

Lochan an Dùim
Lochan an Dùin
Small loch of the fort

Lochan Dubh Grundd nan Darachan
The dark little loch of the base of the oaks

Lochan Eòin
Loch Eòin
Little loch of the birds

Lochan Lòin nan Donnlaich
Lochan Lòin an Donnalaich
Little loch of the meadow of the howling

Lochan Liath Dhoireachan
Blue lochs of the oak groves

Lochan Meoigeach
Lochan Meòigeach
Little loch of the whey

Lochan na h-Aon Chraoibh
Little loch of the one tree

Lochan na Mòine
Lochan na Muilne
Little loch of the mill

Lochan Ruighe na Doire Macmhadagain
Little loch of the slope of Macmhadagain's oak grove.

Lochan Sròn Smeur
Lochan Sròn nan Smeur
Little loch of the headland of the blackberries

Lochgarry Ho
Taigh Loch Garadh
House of the copse loch

Loidse Raineach
Lodge of Rannoch

Lùban Fèith a' Mhadaidh
Bend of the bog of the dog

M

Maragdubh
Marag Dhubh
Black pudding

Maud Loch
Loch a' Mhòid
Loch of the meeting place

McGregor's Cave
Uaimh MhicGhriogair
Cave of MacGregor

Meall a' Bhàrr
Meall a' Bhorbair
Lumpish hill of the top

Meall a' Bhobuir
Lumpish hill of the barber

Meall a' Mhuic
Meal na Muice
Lumpish hill of the pig

Meall an Fhuarain
Hill of the spring

Meall an Stalcair
Hill of the stalker

Meall an Uillt Riabhaich
Hill of the brindled burn

Meall Bàn
Fair lumpish hill

Meall Breac
Speckled lumpish hill

Meall Caol
Narrow lumpish hill

Meall Chomraidh
Meall na Cuimrigh
Lumpish hill of sanctuary

Meall Cruinn
Round lumpish hill

Meall Crumach
(Not translated)

Meall Dearg
Red hill

Meall Doire Meallaich
Lumpish hill of the hilly oak grove

Meall Druidhe
Meall Drùidhe
Lumpish hill of the soaking

Meall Dubh
Dark lumpish hill

Meall Garbh
Rugged lumpish hill

Meall Glas
Grassy hill

Meall Gorm
Green hill

Meall Leachdann nan Each
Lumpish hill of the horses' broad slope

Meall Liath
Grey/blue hill

Meall Liath na Doire Mòire
Blue lumpish hill of the big oak grove

Meall Luaidhe
Lumpish hill of the lead

Meall Luaidhe
Hill of praise

Meall na Meoig
Meall na Meòig
Lumpish hill of the whey

Meall na Mòine
Hill of peat

Meall na Mucarach
Lumpish hill of the swine

Meall nam Maigheach
Hill of the hares

Meall nan Eun
Hill of the birds

Meall nan Ruag
Lumpish hill of the chase(es)

Meall nan Sac
Lumpish hill of the sack

Meallanan Odhar
Meallanan Odhair
Little dun-coloured hills

Mullinavadie
Muilinn a' Mhadaidh
Mill of the dog

P

Pheiginn Bothy
Bothan Pheighinn
Bothy of the pennyland

Plucach
Lumpy

Poll Baith
Poll Bàthaidh
Drowning pool

R

Rannoch Barracks
Gearastan Raineach
The barracks of Rannoch

River Ericht
Abhainn Eireachd
River of assemblies

Ruighe Ghlas
Green slope

Ruskich
Rùsgaich
Marshy place

S

Saunich
Sanndaig
Sandy bay

Schiehallion
Sìth Chailleann
Fairy hill of the Caledonians

Sgoil Raineach
School of Rannoch

Sgurran Dearg
Sgurran Dearga
Red pointed hills

Sidhean Beag
Sìthean Beag
Little fairy hill

Sròn a' Chlachain
Pointed headland of the hamlet/church

Sròn Smeur
Sròn nan Smeur
Headland of the blackberries

Sròn Bheag
Little headland

Sròn na Caime
Head of the bend

Sròn nam Forsair
Nose-shaped hill of the foresters

Sròn Ruighe Clomhaiche
Sròn Ruighe Clòimhe
Headland of the woolly shieling

T

Talla Bheith Forest
Tall a' Bheithe
Forest of the rock at the birch

Talladh-a-Bheithe
Tall a' Bheithe
The rock at the birch

Tom an Stòil
Tom an Staidhle
Hillock of the stile

Tom na Mòine
Tom na Muilne
Hillock of the mill

Tomcraggach
Tom Creagach
Craggy hillock

Torr Dubh
Tòrr Dubh
Black hill

Trinafour
Trian a' Phùir
Third-land of the pasture

Tummel Bridge
Drochaid Theimhil
Bridge of the dark river

U

Uamh Tom a' Mhor-fhir
Uamh Tom a' Mhorair
Cave of the hill of the nobleman

AUTHOR BIOGRAPHIES

Tim Collins is a principal in the Collins & Goto Studio, Glasgow. Tim is an artist, author and planner. He has worked across art, science and philosophy, developing artwork, pubic artwork, and research related to nature and public space for over twenty years. He has worked within a wide range of communities developing methods and practices that take best advantage of art and aesthetics in the public interest. Over the past decade working with his partner Reiko Goto, Tim has been developing sculptural and performative artwork, tools and technologies that attend to the physiological interface between people the atmosphere and forests and trees. They have also begun a new body of work focused upon the relationship between the internal ecology of the human body and the (chemical, material) conditions of the outside world. Tim has served as an associate professor and principal investigator at Carnegie Mellon University before moving to the UK in 2005 where he was appointed as a Professor of Art, Ecology and Planning, Associate Dean, research and development at University of Wolverhampton. Tim returned to the studio full time in 2012.

Reiko Goto Collins is a principal in the Collins and Goto Studio, Glasgow. Reiko has sustained a creative inquiry that is concerned with empathic relationships with living things for over twenty years. Recognized for her approach to environmental art and research, Reiko is an artist, a designer and author. Reiko Goto has extensive and diverse life experience, beginning with her role as an artist working with physicists at the School of the Exploratorium in San Francisco California. From there she went on to a role as associate professor of art, then a full time research fellow, within the STUDIO for Creative Inquiry, at Carnegie Mellon University, where she spent ten years thinking about art, aesthetics and planning, working with soil scientists and botanists. Having moved to the UK in 2008 Goto decided to return to university as doctoral candidate to consider the role of empathy in art making, particularly in relation to artists working with trees. She developed a sculptural approach to the physiological response of trees to changes in atmospheric composition, with a specific focus on photosynthesis. Reiko continues this line of work considering other life forms and ecological communities.

David Edwards is a Senior Social Scientist with the Social and Economic Research Group (SERG) at Forest Research, the research agency of the Forestry Commission. He has 20 years' experience of research into rural development, participatory forestry and biodiversity conservation in South Asia, Africa and Europe. He joined Forest Research in August 2004. David's current research focuses on evaluation and appraisal of forestry interventions, and on the interfaces between science, policy and practice. He contributes to the development of frameworks, methods and tools to support decision-making in the forestry and land use sectors in UK and Europe. A key objective is to ensure that social and cultural values are incorporated better into policy-making and planning, for example as part of an Ecosystems Approach. Previously he worked for the UK Overseas Development Administration (now DFID) in Nigeria and Nepal. Later he completed a PhD and postdoctoral research, based at the University of Edinburgh, on the environmental and social history of southern Tanzania.