

*Dr James Merryweather*

14-15th December, 2017

Donald Macleod  
Forestry Commission Scotland

Cc: John Risby, FCS  
Gail Rogerson, FCS  
Alison MacLennan, RSPB  
Chris Duncan, Bell Ingram  
Cllr Biz Campbell  
Kate Forbes, MSP

Dear Donald,

**Forestry Grant Scheme: Auchtertyre, Case Ref. 17FGS19497**

*I apologise for nature being more complicated than is convenient for land owners or FCS, to the extent that it can lead to the composition of long letters. However, there is nothing I can do about that; nature is as it is – complex – and a long letter is inevitable. I learn from what I observe and then pass on my knowledge and judgements to those who are not privy to that specialist knowledge (assuming, of course, that they are willing to listen).*

I find myself dissatisfied with the revised planting plan and frustrated by the situation we, as interested individuals and as a community, find ourselves in. We have done our best to keep up with progress ever since we first became aware of the project, but numerous questions to which we needed answers in order to make progress have been unanswered. The applicant wished to make swift progress, but without answers we have been unable to respond as quickly or effectively as otherwise we might. We find ourselves still well behind in the consultation process and now it seems that abruptly it is over.

We *still* do not know what are our rights, what are our duties and, particularly, to what extent the regulations allow us to participate in discussion of this application. We have asked, but have received no reply, so we never found out how we may or should proceed, and now your suddenly imposed deadline has passed. If the public has the right to participate, then that is unfair.

**COMMUNITY ENGAGEMENT** The applicant's agent has contacted us only in that he spoke to me on the phone once, when I rang him, and after that we exchanged a couple of brief e-mails, also just between him and me. There has been no communication, other than implied by your initial letter of 10 October, between the applicant or her agent and the Lochalsh community.

Because, until Tuesday this week, we have had no idea what we should tell them, we have been unable to communicate any information to the people of Lochalsh, other than during casual one-to-one encounters when we have sketched out some of the facts to individuals, much to their astonishment. Then we have promised we would, as soon as we were able, let them know, but because we have not known, that has been impossible.

It surprising that Bell Ingram has avoided community engagement, even after encouragement by FCS. In recent times Skye & Lochalsh has been invited to public consultations and explanatory exhibitions by Scottish & Southern Electricity, Scottish Natural Heritage, Marine Scotland and even all of the Norwegian corporations aggressively installing salmon farms in the region. Even 'Brexit' is being conducted with the community playing a role, informed and consulted. But Bell Ingram has deftly sidestepped its responsibility to consult the public.

You say you have repeatedly asked Chris Duncan to meet with us – presumably the Lochalsh community – and have mentioned that in no uncertain terms in your e-mail of 12/12/17 (copied to him), but we have heard nothing. If he contacted us now, we should still require reasonable time to plan, advertise and hold a meeting, not at all possible before your proposed deadline, which I ask you to postpone.

At a workshop meeting in Oban 1 November 2017 a powerful message was made public by SNH representative Owen McGrath, here quoted from his slides:

*Empowering communities to look after nature and landscapes and be involved in decisions around them.*

*Listen to communities*

*Encourage wider involvement*

*Learn from and share good practice*

*Communities more involved in shaping decisions in design and services*

*SNH Supporting Community Empowerment*

- *Community led monitoring*
- *Community marine planning*
- *Community volunteer signposting*
- *Community data infrastructure upgrade*

Do those aspirations hold no currency in forestry decision making? Like SNH, FCS is a public body, ostensibly responsible to the public. Do we not have similar rights of participation?

**APPLICATION DECISION** Earlier this week (Monday) you told me that you expected to make your decision – which you intimated would be approval – on or by Friday. Having received the revised planting plan as e-mail attachments on Tuesday we then had until now to examine the plans, discuss them and respond, essentially two to three days. That is entirely insufficient, but we worked on it. We had no choice in the matter. Now I have heard that you have completed your decision today, while I was in the middle of writing this letter expecting to deliver it before your decision. I feel that I/we have been deftly outflanked.

What is the reason for this unseemly haste that has been pressing throughout this process? Yes, we received your initial letter and enclosed documents with almost a month to respond, but community councils – who usually know little or nothing about forestry or ecology – should not be expected to understand proposals such as are in this application without a little time to digest and discover its implications. Indeed I doubt that most community councils or communities have anyone with suitable expertise to advise their response, except that in this case, they did.

**Codicil** At 15:32 today, a matter of a few minutes ago, I have now received a final draft of the applicant's planting scheme, *after* you have granted approval. If you are allowing me to see these documents, I presume you expect me to analyse and comment upon them. When, precisely?

**COMMUNITY BUY-OUT** When I spoke to Chris Duncan (the applicant's agent's representative) that once on the phone he asked if we would consider a buy-out. I had no idea, so I simply replied: "Make us an offer." To which he replied that that would be up to us. I quickly passed this idea to two colleagues and we began seriously to investigate our rights and community buy-out procedure, and to discuss the prospect with our local community trust.

A few days later he bluntly informed me in an e-mail: "I'm afraid that our clients are not in a position to offer the property for sale and are pressing ahead with the planting application."

What a disappointment, and one of several instances of the applicant not playing fair with the community.

**A CONSULTATION RESPONSEE'S COMPETENCE?** With all the alacrity I could muster, I have responded, in great detail, using my not inconsiderable ecological knowledge and experience. I trained with one of Britain's top ecologists (Prof. A.H. Fitter CBE FRS, York) and conducted twelve years of research in woodland ecosystems. I think I know what I am talking about, admittedly within the limits of my specialist knowledge. My advice to you has been based upon that research experience plus personal observations of the ecology of Auchtertyre Hill from 2005 to the present. I have a wealth of evidence in the form of photographs, a good memory and competent evaluation skills. My consultancy advice to you has been donated free of charge.

Do you disagree with my arguments? If so, I wish you would say so, put me right and help us all to construct sound, informed decisions, not blunder into ill-conceived pipe-dreams that have the potential to damage a perfectly functional landscape to no avail – again.

If I am right, I hope to have my advice treated with due respect. If I am wrong and can be shown to be wrong, I will change my mind.

**APPLICATION DEFICIENCIES** The application, even in its most recent form – which we have known about for just two and a half days – contains several major deficiencies which, in my opinion, should have precluded a decision, certainly at this stage.

**Mammals** The applicant has not delivered a mammal survey of an area that is home to European Protected Species and others that require consideration. That survey should have been submitted *before* public consultation, but has not yet even been commissioned, let alone conducted.

**Other Animals** No animal surveys, other than of birds, have been conducted. I expect that invertebrates do not count as important in your deliberations (many would disagree), but reptiles and amphibians surely must. It is well established that slow worms inhabit the site and I understand they should receive priority attention. SNH would advise.

**Existing Woodland** I have already drawn your attention to the fact that, while recording all others present, the applicant's National Vegetation Classification survey surprisingly omitted woodland habitats of which there are numerous scattered patches and three main areas. Did the woodland escape survey because of an oversight?

Previously, I have not spoken or even implied such a suspicion, but I really can't help wondering whether woodland data would contain inconvenient information and, therefore, the omission was deliberate?

**Buffer Zones** In your e-mail of 12 December you stated that: “Natural regeneration buffer zones will be left unplanted around main native broadleaved woodland areas. I accept that some native woodland areas and survivors from the original planting will be included in the planting area.”

Excellent, but who has any idea how and where regeneration – I prefer to use the Forestry Commission’s own term: Woodland Expansion – is occurring? I suggest that the best person to advise on this subject would be an ecologist who has been observing woodland expansion on the site since 2005 – *me*. If the woodland areas were not surveyed, how will you or the applicant’s agent instruct the tree planting contractor where the buffer zones should be? How wide will they be and how will that be determined in the absence of observational data? I have those data.

All of these considerations should be addressed and approved *before* any planting is allowed to proceed.

**PLANTING SCHEME** I do not have time to examine the latest draft that just arrived, so I will have to respond to the previous draft (delivered 12/12/17), which at a glance seems to be similar if not identical other than footpaths and additional gates.

I was (we were) so relieved that you refused permission to plant Sitka and Norway spruce on the two sites adjacent to Auchtertyre. The proposed plantations would have been disastrous for the landscape and ecology of the sites when the trees matured and then even worse when harvested. We have enough examples of what happens when ill-considered plantations replace fine Scottish landscapes – often it was, with a total disregard for its biological worth, replacing native woodland – and also nowadays of the devastation caused by clear felling with big machinery. It all ought to be unthinkable now, but the damage was set in train decades ago at ploughing and planting. We should learn from such mistakes, not excuse and repeat them.

In the absence of Sitka spruce there is less of a risk of its invading land beyond the confines of its plantation. It is not generally recognised or realised that Sitka spruce and lodgepole pine, both widely planted plantation conifers, are not only non-native, but also highly invasive. At present nobody is taking the invasion threat of these species seriously, though in places they are taking over whole landscapes. I mention this here as a lead-up to the next paragraph.

**SYCAMORE** Why sycamore, at one site, in place of the proposed conifers? Should it be considered a native broadleaf? Its status as a British tree is hotly discussed, though most sources suggest it is a medieval introduction. Its ‘native’ status in the Highlands is at best the equal of beech, planted only within the past 2-300 years but not a usual feature of the Highland landscape and, therefore, a frequent cause of controversy. But planted sycamores are rarer than beech and I can’t think of many significant specimens in Lochalsh. So why add sycamore now?

The site chosen for planting sycamores seems an unlikely place for sycamore to thrive, though ash already does there, if only as scattered fairly elderly individuals. If ash recruitment is occurring, it would need to be investigated because it is far from obvious.

If the sycamores do take, then when adult they will rain seed on their surroundings and, as at other sites mostly beyond the Highlands, will colonise sycamore-free land in the manner of an invasive non-native species. If a tree crop is at all desirable, sycamore is not the ideal species in this ecological context. Spend money controlling invasive species, not introducing them. But there you are: I predict they won’t grow very well, but we shall see. If proved wrong, I’ll be wrong, but that won’t cost the tax-payer a penny.

**PRODUCTIVE WOODLAND** This is but a euphemism for alternative plantations, planted not for the benefit of the landscape, but for the financial benefit of an absentee land owner. As an ecologist and resident here I am not in sympathy with this attitude, and foresee a landscape increasingly impoverished over the coming decades. Why should I not object to my home surroundings being used (or might I contend abused?) for profit.

As our highly experienced RSPB Senior Conservation Officer has pointed out: “The richness and biodiversity value of this site is unrivalled in Lochalsh. Given its ecological importance, it is crucial that due consideration is given to the above recommendations in order that the most appropriate management for this site prevails to maintain its special qualities.”

I agree, but from the equivalent point of view of a botanist who has an intimate understanding of both above-ground and below ground ecology, plus the interactions between them, so evident at this site.

**NPK** The applicant’s plan includes the application of NPK fertiliser if required, presumably when the trees show signs of being unwilling to thrive.

The site is not an agricultural field or large garden, it is a natural (OK, semi-natural) place and should be subject to natural ecological influences, not to be expected to function like an arable farm. Natural soils are – to human minds – nutrient deficient or ‘infertile’, but they have evolved to function efficiently on low nutrients, cycled by symbioses. Trees are *all* mycorrhizal (the few arguable exceptions include Proteaceae and the Australian Christmas Tree *Nuytsia floribunda*, which is and behaves like a mistletoe).

A mighty oak will have numerous fungal associates in the soil providing it with a perfectly adequate supply of phosphorus (the P in NPK) via its roots. The same applies to saplings, though the fungal community with which they associate will be different and less diverse. Many of these fungi will be obscure, unculturable or even undetectable species (other than as DNA sequences), not the ‘weed’ fungal species purveyed as ‘mycorrhizal inoculants’, which are mostly ecologically irrelevant. If you doubt me, ask Tony Kirkham, tree curator at Kew, about his experience with commercial ‘mycorrhizal inoculants’.

Trees do not forage for their own P. Adding P has been shown to inhibit mycorrhiza, therefore adding P to young trees in the hope of revitalising them is unrealistic. That works only with non-obligately mycorrhizal plants with wide-ranging, fibrous root systems, which include most agricultural crop plants. Adding P in impoverished agricultural soils works inasmuch as it increases crop yields, but in natural ecosystems, obligately mycorrhizal plants (e.g. trees, not to mention my research plant bluebell) are incapable of responding to added P and if already developing a mycorrhizal community its activity will be inhibited.

Nitrogen compounds (N), being highly soluble and, unlike P, mobile, if added in excess will – as we know so well from agricultural landscapes – become a significant pollutant.

Please tell me if I am wrong and if not, take note of these vital ecological considerations.

**DEER FENCES** I have already explained why I consider deer fencing to be not only a blot on the landscape, but also unnecessary and a waste of public funds.

The most probable cause for the failure of the original tree planting on Auchtertyre Hill (1996?) was not, as claimed by the applicant, fire and deer grazing. I previously asserted that the fire in question took place in 2013, long after I had already observed the failure of the little trees.

I recently learnt – by proactive enquiry – that there was a fire closer to the time of planting which I did not witness. I am led to understand that it began at the farm and climbed up the westernmost strip of the southern flank of Auchtertyre Hill, then turned left and entered the Sitka plantation where it died down, insufficiently intense to reach the canopy. If that had been responsible for death of little trees across the site then it should show, by trees to the centre and east of the hillside being well grown, which is not the case. Trees all over the planting area, bar a minority of birches, have grown badly or died.

So was the cause of failure deer grazing? We surely have roe and red deer on this hillside, but volunteer trees are not noticeably grazed by deer, indeed they thrive. The contrast with failed planted trees is palpable, if you look.

A more probable reason the planting failed is that the soil conditions are just not suitable for bunging trees in and expecting them to grow. The method takes no account of how, where and why trees actually grow. The reality is that trees do not grow on most of the hillside, I contend because *that is where trees do not grow*. Where conditions suit, sallow is successful and in other places birch, but not beyond their natural habitat conditions. Other tree species are rare or absent, other than in and around existing, expanding mixed woodland.

The mixed woodland patches, if they had been surveyed, would probably be represented by several NVC codes. That should be for NVC specialists to do, though I have the book and feel confident I could attempt it myself. In a mosaic of individually suitable habitats adjacent to this existing woodland, numerous saplings may be found thriving in low vegetation or within tall bracken. This all represents natural woodland expansion which should not be overlooked. See page 20 of the FCS Strategy document: *The Scottish Government's Rationale for Woodland Expansion*: “Where there is a genuine likelihood of success and it meets the objectives of management, natural regeneration is a favoured method of woodland creation.” This cannot be conducted casually or without field visits.<sup>1</sup>

There is another aspect to deer fences I wish to mention. No matter that some gates will be placed in them, they will constitute a serious impediment or deterrent to anyone wishing to walk on the land. I understand we have the right to roam. Whose right is it to prevent that with tall, impenetrable, unsightly fences?

In addition, the appearance of the place will be ghastly, completely surrounded with a fence that, from all viewpoints, will give fine countryside the appearance of a concentration camp. The fences will be unfair to badgers and other travelling animals, unfair to roaming locals and visitors and, since they will probably contribute little to tree success, unfair to the tax payer.

**GEOLOGY & ECOLOGY** I explained in a previous letter the unusual conditions prevailing at the eastern side of southern flank of Auchtertyre Hill (next section). The hillside is bisected by the Moine Thrust providing soil conditions so contrasting that one may stand in the burn in the gully and touch one habitat with one hand and another very different habitat with the other. These are both nutrient poor, mycorrhiza deficient habitats and their different plant communities illustrate those particular contrasting conditions.

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<sup>1</sup> <http://scotland.forestry.gov.uk/images/corporate/pdf/ForestExpansion.pdf>

The lower section of the gully is filled with glacial till, which creates a richer soil which in its turn supports a richer plant community: mixed oak dominated woodland. Instead of relative uniformity, here we have three markedly different habitats adjacent to one another. This is just one more reason to consider the value of and conditions at the place, and *learn* from that, rather than just plant trees.

**SOILS, LANDSCAPE AND ECOLOGY** I can find no assessment of soils in the application. Maybe this is not required by current FCS or wider EIA rules, but soil type and ecological condition surely should be a major consideration before planting trees. If a soil survey is required, like animal surveys it needs to be conducted *before* approval of the application.

However, considering soil as merely a layered mineral entity with humus or peat provides a grossly insufficient appraisal of below-ground ecological dynamics. Along with numerous other interactive biotic soil communities, the symbiosis mycorrhiza is a fundamental component of all natural and anthropogenic ecosystems on every continent. Mycorrhiza should always be at the back of a forester's mind when planting trees, though not in the simplistic way peddled by the manufacturers of 'mycorrhizal inoculants'. As implied in my opening paragraph: nobody said this was going to be easy.

It is not easy to understand or characterise mycorrhizal communities, a highly specialised scientific procedure, but with a modicum of understanding one can detect geological, landscape and botanical markers that tell us what sort of plant community supports and is supported by what sort of mycorrhizal fungal community.

The NVC report's Site 3 (Auchtertyre Hillside), for instance, can be seen from across the valley to have three distinct ecological zones, spectacularly divided by the wooded gully that follows the Moine Thrust and each with its own vegetation, soil type and underlying rock, and then make a good guess at its soil condition and mycorrhizal community:

1. The main flank of Auchtertyre Hill is the ecological combination of mixed grassland on shallow brown earth over Lewisian gneiss. Plant communities are likely to be arbuscular endomycorrhizal, most species not being highly dependent (as is e.g. bluebell *Hyacinthoides non-scripta* which is obligately mycorrhizal).

Importantly, there will be no ectomycorrhizal inoculum to support planted ectomycorrhizal trees and any endomycorrhizal inoculum present will be of fungi that have little or no relevance to endomycorrhizal trees, other than pioneers (e.g. downy birch *Betula pubescens*, grey willow *Salix cinerea*). That is one, possibly pivotal, reason why those species are pioneers.

2. The flank of Maol Mhor to the east of the gully is wet heather/bracken moor on peaty gleys and/or podzol over Moinian gneiss. Plant communities are likely to be predominantly ericoid mycorrhizal and low-dependence arbuscular endomycorrhizal.

Importantly, the dominant ericoid mycorrhizas are of no relevance to any tree species (unless *Rhododendron ponticum* invades). There will be no ectomycorrhizal inoculum to support planted ectomycorrhizal trees and any endomycorrhizal inoculum present will be of fungi that have little or no relevance to them, other than pioneers (e.g. downy birch *Betula pubescens*, Scots pine *Pinus sylvestris*).

3. The southern end of the gully is filled with fertile glacial till (drift) above the gneiss, with mesotrophic brown earth and gley soils supporting rich mixed woodland: possibly NVC W17.

A mycorrhizal community will have evolved as the woodland succession progressed (we do not know when that was initiated). This complex community will probably have taken centuries to evolve, perhaps ever since the end of the last ice age 10,000 years ago. Today the mycorrhizal community will consist of a wide diversity of arbuscular mycorrhizas and ectomycorrhizas, and where there are occasional ericaceous plants (e.g. *Calluna vulgaris*, *Vaccinium myrtillus*), ericoid mycorrhizas must also be present.

From these deductions, plus a wealth of detailed observations of ongoing woodland expansion, we can make reasonable predictions about what our woodland will do if left untouched. It is also possible to make informed predictions about how trees of different species will respond to being planted in these differing locations, adequately illustrated by the disastrous results of planting vast numbers of trees on the southern flank of Auchtertyre Hill in the past.

**BRACKEN CONTROL** My intellect trembles at the mention of bracken control, which is usually brutally indiscriminate, ignoring bracken's ecological potential. Should bracken be considered a problem pest or a habitat? We probably need to think of it as either or both, and treat different bracken communities in sensibly differentiated ways. Bracken can be a relatively small, well spread-out woodland fern. It can also be a vigorous, dense coloniser of over grazed, disturbed or burnt ground. Most importantly, it may grow adjacent to woodland where it can act conveniently as a nursery for tree seedlings. They grow slowly under the protective bracken canopy until strong enough to emerge, eventually overtopping the bracken and gradually reducing its vigour until eventually it is obliged, by biodiversity and competition, to adopt its woodland stature.

If we have a look, rather than assuming it is an invasive monoculture fit only for destruction, bracken by woodland on Auchtertyre Hill can be found to harbour numerous tree seedling below and the occasional emergent sapling. If woodland expansion is to be encouraged, then why interfere with this dynamic successional situation, by spraying or flailing and resetting the whole woodland sere back to square one. Why not investigate the prevailing ecological situation and, if it's a sensible strategy, leave the bracken patch to turn into a new area of woodland?

There are such areas, currently identified for bracken control. Such indiscriminate behaviour would contravene the Forestry Commission's own Rationale for Woodland Expansion, mentioned above. I could assist by identifying these areas, satisfied that bracken control, if it need be done, will be done only in places where it will cause least harm, yet still be of benefit.

Since the use of Asulox – if permitted – requires that areas where other ferns grow should not be sprayed, will the contractor have the specialist knowledge to make appropriate assessments? Does the author of this letter, who could be asked to advise, know anything about ferns?<sup>2</sup>

When is tree planting intended? We initially concluded that the aforementioned unseemly haste to complete was so that planting could be carried out next spring, but if bracken control is required, that will have to come first, well before planting and probably postponing planting until 2019. Is that true?

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<sup>2</sup> Merryweather J.W. (2007). *The Fern Guide*. 3rd. edition. Field Studies Council: Shrewsbury (ISBN 978 1 85153 228 5).

Merryweather J.W. (2005). *Key to Common Ferns*. Field Studies Council: Shrewsbury (ISBN 978 1 85153 290 2).

Merryweather J.W. (2011). *British Ferns, clubmosses, quillworts and horsetails*. DVD The Highland Council, Inverness.

Merryweather J.W. (2018). *Britain's Ferns, clubmosses, quillworts and horsetails*. Princeton Press. [in prep.]



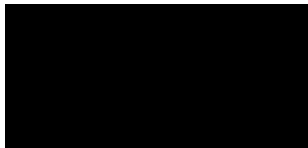
**CONCLUSIONS** I am persuaded that this planting scheme pays no attention to the integrity of this particularly fine parcel of land or the conditions that prevail there. I might not be here to witness whatever happens in decades to come, but there will still be people here and it is possible that if they know what used to be here and understand landscape and ecology, they will be very displeased; just as I am of what my predecessors have done to create the impoverished landscapes I see around me today, markedly changed and simplified since when I was a young biologist. Avernish Hill, currently being cleared of Sitka spruce is a case in point. I was not around when the Sitkas were planted, but I know that in 1885, and probably long before, the hill bore fine woodland, now represented by a few remnant trees almost smothered within the conifer stand: sorry specimens of oak, hazel and wych elm. To illustrate what might have been there: the adjacent extant remnant of that woodland is home to a remarkable fourteen tree and shrub species.

There is no question that, if/when this proposal goes ahead, I will be here to monitor what happens from its beginning until I can no longer climb the hills to make routine observations. I am a natural history writer, so this sorry experience will provide me with plenty of material with which to vent my well-founded frustration in print.

Not only am I persuaded of the considerations discussed above, but I am also anxious not to have my opinions, that I consider to be valid, overlooked or scorned. I can take well-argued contradiction, so once again: if I'm wrong please put me right.

The haste with which this application is being forced through the planning system, without due reference to competent and freely provided advice or community involvement, is most regrettable.

Yours sincerely,

A solid black rectangular box used to redact the signature of James Merryweather.

James Merryweather.