

PREVIOUS BLOGS

The State of Wild Land in the Scottish Highlands *May 2022*

Scotland's wild land is under continuing threat from inappropriate development according to a new report commissioned by the **Scottish Wild Land Group**, the **Scottish Mountaineering Trust** and **The Cairngorms Campaign**. The report concludes that, although there is strong support for wild land amongst the Scottish people, the remaining areas of wild, undeveloped hill and moorland in the Highlands continue their long-term decline.

Indeed, the overall rate of loss appears to be increasing as the scale of development has increased over the past 250 years. Current developments that pose the greatest threat are energy generation and associated infrastructure (hydro-electric schemes and wind farms), plantation forest expansion and hill track construction, the latter often associated with estate management. This long-term attrition of wild land is not helped by the fact that planning authorities have not been consistent in their approach to its protection.

Main findings

1. The wildest areas of Scotland have been mapped by NatureScot as 'Wild Land Areas', of which there are 42. There is no absolute protection for them under law, although they are referred to in Scotland's national planning policy where it states: "We also want to continue our strong protection for our wildest landscapes – wild land is a nationally important

landscape." (from the National Planning Framework 3). However this new report concludes that the Wild Land Areas are at risk from development pressures and that their wild status is under threat of long-term degradation.

2. Development within these areas over the last 250 years has significantly impacted on the remaining areas of wild land. Such impacts are principally from road and track construction which reduce remoteness by providing easier access to wild areas, and from new structures which stand out in the landscape with a corresponding reduction in wildness.

3. Forms of visual intrusion have changed over the period mapped and have tended to go in phases starting with road and rail and construction, and more recently seeing phases of development in renewable energy: first hydro power in the 50s and 60s, wind energy in the last 20+ years and now small-scale run-of-river schemes. Plantation forestry has also moved in phases but at different rates throughout the period. Associated with all of these, and also with estate management, has been continual expansion of the hill track network.

4. It is only eight years since the mapping and designation of Wild Land Areas in Scotland in 2014. This makes it too soon to say whether they have had an effect on slowing the rate of loss of wild land from reductions in remoteness and visual

impacts. Nonetheless, long-term and short-term rates of attrition, if extrapolated, would indicate continued threat to the remaining areas of unimpacted, remote wildland. Whether this means that there will be some future point at which all wild land ceases to exist is open to question.

5. Wind farms do not have to be inside the boundaries of a Wild Land Area to affect the experience of wildness because wind farms nearby are still highly visible. There are some Wild Land Areas, such as WLA 39 (East Halladale Flows, Caithness) and WLA 1 (Merrick, in Galloway) that are close to being surrounded by wind farms that have been built, consented or proposed. Additionally, Scottish Ministers gave permission for the Creag Riabhach wind farm which had turbines within a Wild Land Area (WLA 37 Foinaven-Ben Hee, in Sutherland).

6. The recent and current planning policy provisions at national and local level have not prevented the continuing attrition of wild land, whilst wind farm applications continue to be random, speculative proposals which are followed by often inconsistent decision-making. There is an absence of positive and consistent planning oversight.

Download the report from the Scottish Wild Land Group website:

<https://www.swlg.org.uk/news.php>

Peatland Restoration: Always the right thing to do? *December 2021*

You will have noticed that, all of a sudden, peat bog restoration has become all the rage, and the government is throwing money at it. Conservation organisations and landowners are leaping onto the bandwagon, and diggers can be seen high in the hills working away: filling in erosion gullies, building dams and reprofiling the edges of bogs from vertical with exposed peat to gently sloping and revegetated.

This is because everybody nowadays knows that bogs store a lot of carbon, more in fact than all the forests in Britain put together. And we know that there is at least some erosion on all peat bogs and we want eroding peats to start storing carbon again – achieved by making them wet again ('re-wetting' in the jargon); this can be achieved by filling in or damming drainage gullies to achieve a high water-table, so that Sphagnum moss can

recolonise and the once-eroding peat can start sequestering carbon again.

Very worthy and what could be wrong could be wrong with all this action? Actually doing something for a change, rather than just talking about climate change! Certainly restoring damage to bogs knowingly damaged by us is to be applauded, such as blocking drainage ditches (moor grips) or removing plantations of trees, which would otherwise dry out the peat.

But, in Scotland at least, there is very little evidence that peat erosion has largely been instigated by us humans. Upland bogs go through natural, millennial-scale cycles of growth and erosion, and erosion is a perfectly natural feature and many eroding bogs will, long-term, regrow again. Uplands are erosive environments and water the main cause of erosion and the

deeper the peat the greater the chance of erosion setting-in.

Additionally, it is possible that, once a certain depth is reached, blanket peats are no longer able to grow any thicker because they have reached the maximum depth at which a perched water table can form: it is this perched table which allows the peat (the catotelm) to remain saturated allowing peat to form in the first place. Hence deeper peats may no longer be able to sequester carbon, although it must be said this is still to be proved in practice. But, if true, it does mean that rewetting the surface may not result in any further carbon sequestration, and could even cause the release of more methane, itself a greenhouse gas. Also the damming of erosion gullies creates pools and, on natural bogs, pools are themselves erosive features which expand in size over time. Action should be based

on a full understanding of the characteristics of the peatland in question, not a standardised knee-jerk response.

Hence it is by no means certain that much of this action will actually make much difference to the climate, although revegetating areas of exposed peat is likely to slow the rate of carbon loss. It is also a nature conservation issue where Scotland is a world centre for temperate oligotrophic peatlands. Should we be interfering in natural ecological processes

Ronnie Rose Trophy October 2021

At this year's Scottish Game Fair I was pleased to be presented with the Ronnie Rose Trophy for Conservation & Education by the Scottish Gamekeepers Association. This was for my defence of the open moorland of Scotland. In 2015, on behalf of the Association, I produced *A Future for Moorland in Scotland: The need for a locational strategy*, a need which persists to this day.

At the awards ceremony I said the following:

"As someone who has been involved in nature conservation all my working life, I feel surprised nowadays to be associated with the gamekeeping profession. However keepers and myself share a love

in this internationally important habitat? After all, the pattern of erosion gullies, peat hags and pools makes peatlands fascinating places. There is nothing unnatural about erosion, although certainly humans can instigate in some locations. There needs to a lot more debate on this issue before rushing into the hills with our diggers, interfering with nature once again, and probably only for minimal climate gains.

for the traditional Highland landscape of open hill and moor. We know, in spite of all that is said, that moorland is the natural vegetation of these areas.

"If I may be a scientist for a while, I am always surprised about the lack of knowledge in conservation circles about postglacial vegetation succession: a period of woodland expansion to a maximum (the mesocratic phase) followed by woodland decline (the oligocratic phase). We are in this latter phase of declining soil fertility and woodland cover.

"This is why it is so hard to get trees back into the landscape, which must involve all or some of the following: reducing grazing to ridiculously low levels, industrial deer-

It would be much better for the climate if we stopped planting trees on organic-rich soils which have the potential to become peat bogs, and on shallow blanket peats: this seems to be where most of the trees are now going in The Highlands. Shallow peats have a much better long-term potential to sequester carbon than the deeper peats near the ends of their lives.

These issues are all discussed in my *Illustrated Book of Peat*. See: /Ecology/Peat bogs pages of my website

fencing, ploughing, mounding and the addition of fertilisers.

"I am seriously concerned about the way the relatively natural open Highland landscape is currently undervalued, and the determination of the woodland lobby to plaster it with trees depresses me. Open moorland receives a bad press from many quarters and if shooting becomes too hedged about with regulations, then many owners may give up and cover the hills with industrial Sitka spruce plantations. Traditional deer-stalking in particular is perhaps the most benign use of the declining Highland landscape.

"I am very pleased to receive this trophy, so thank you to the Scottish Gamekeepers Association."

Loss of wild integrity January 2021

I can remember a time when most of the Highland landscape still had what I call 'ecological integrity'. You could understand the pattern of vegetation because every habitat still had a visible continuity with the past: an unbroken ecological link as far back as the end of the last ice age. You could understand the vegetation pattern because you could visualise how the balance of natural factors had interacted over time, resulting in each plant community being where it was; such natural factors being micro-climate, geology, geomorphology, soil conditions, long-term soil leaching, grazing, dunging, competition, ability of individual species to distribute, and so on.

In other words the vegetation pattern of the landscape had coherence and was understandable. But over much of the Highlands this unbroken link back to the Ice Age has been cut: fencing forces animals

into or out of certain areas, resulting in an unnatural grazing pattern; grazing animals are culled to way below natural levels to force a particular vegetation pattern into the landscape (particularly woodland); trees are planted, often with no regard of what species would naturally be present in a given locality, again forcing the vegetation to a human-desired endpoint; forestry ploughing and mounding interferes with 10,000 years of soil development; construction activity and vehicle damage stirs up the soil, allowing species which otherwise might not be present in a locality to colonise; burning of moorland is often at a frequency way beyond that of natural fires...

The landscape becomes compartmentalised and its integrity lost. This has, of course, been the fate of lowland Britain for millennia, but it is really only over the past 100 years it has come to the fore in the Highlands.

There seems to be a general lack of concern about the issue, with a very simplistic notion of ecology being promulgated to the populace. Many actions are being promoted as 'good for biodiversity', such as creating wild flower meadows, digging ponds or planting trees. If you look closely, however, at the wildflower seed mixes you can buy, you will often find that many of the seeds are of species not native to the locality, or even Scotland. Similarly, ponds may be being dug in locations which have never had ponds, and tree species planted in places where that species has never been common, or even present. This all adds to the loss of ecological, or wild integrity across the wider countryside. Landscapes, instead of being a cohesive whole, become an ecological muddle. Does anyone care?

The wrong approach to nature conservation in the Highlands

October 2020

The following illustrates, in my view, all that is wrong with the current approach to nature conservation in the Highlands:

1) Focus on one habitat type (woodland) at the expense of all others, many of which are internationally important (on Annex 1 of the Habitats Directive, such as wet heath, dry heath, peat).

2) And this habitat type would naturally be rare/declining in the landscape (ca.5% of the area): management for this one rare habitat is skewing the management of the landscape as a whole: the tail is wagging the dog.

3) Arrogance in ignoring all other opinions, and other aspects of the land (e.g. landscape, wildness, the non-intervention approach).

4) No consideration of the natural role of deer in the landscape, reducing them to the scale of vermin (although such 'conservationists' dislike gamekeepers who similarly kill 'vermin' (stoats, &c)).

5) No consideration of the long-term ecological continuity of the vegetation, stretching back to the ice age: wanting to modify vegetation which has never been managed since the dawn of time (loss of naturalness, wildness, biodiversity).

6) No understanding of long-term post glacial succession (cryocratic, protocatic, mesocratic, oligo-(telo-)cratic, brought about by soil leaching, development of ironpans, &c.

7) The wildest parts of the Highlands, those least modified to date (the NW Highlands), now targeted for management, so losing their wildness and making them like everywhere else on the planet! Illustrates how compartmentalisation is destroying the ecological and landscape integrity of the Highlands.

Continuing loss of biodiversity in the Highlands September 2020

The loss of biodiversity at a global scale has recently been in the news: a worrying trend of the continuing loss of natural habitats, plants and animals.

Unfortunately nobody seems to be noticing what is going on at our own back door, in particular in the Highlands.

At the beginning of the nineteenth century the Highlands contained what was possibly the largest tract of natural, unimproved vegetation (natural habitats) in Europe, with an unbroken link back to the ice age: nobody had managed most of it, or decided what vegetation should be where.

Since then, with the end of the clan system, the history of the Highlands has been continual attrition of this vegetation. Agricultural improvement has encroached from the edges, tree planting has taken over large swathes, a process which, if anything, seems to be accelerating, and the creation of numerous tracks into the heart of the hills is providing corridors for invasive species, whether alien or native.

If biodiversity is defined as the presence of natural habitats, then every loss of the natural vegetation contributes to an

overall loss of biodiversity. Unfortunately, because 95% of the Highlands are comprised naturally of open ground habitats rather than woodland, nobody is noticing: everyone is focussed on woodland as the be-and-end-all of nature conservation. Open ground habitats are being sacrificed on the altar of woodland! This is in spite of many of the habitats being classified as being of international importance under the EU Habitats Directive, such as wet heath, dry heath and peatland.

Owing to their high carbon storage, the deeper peatlands are an exception to this lack of interest in open ground habitats. However, shallow peats and wet heath, which have the greatest long-term potential for carbon sequestration, are now being planted with trees on a large scale, both new commercial plantations and large-scale 'visionary' plantations of native woodland. Interestingly, many of the new native woodlands planted on these organic soils will end up being less flower-rich than the wet heath they have replaced, the understorey often becoming dominated by purple moor grass.

Additionally, the conservation of open ground habitats is now entangled with the political issues of deer stalking and grouse shooting.

A more insidious threat to biodiversity is the spread of invasive non-native plants. As you travel around the Highlands you can see so many places where removal of a few rhododendrons now will prevent long-term takeover by this species. But who is interested in doing this? Another threat is the widespread colonisation of native vegetation by Sitka spruce seeding out from forestry plantations, even onto blanket peat: this has the potential, very long-term, to dry out the peat – converting peatlands from carbon sinks to carbon sources. Long-term also, this takeover by Sitka will transform the Highland landscape unless the self-seeded trees are removed: controlling them is much easier than controlling rhododendron as cut trees die rather than re-sprout. But who is going to do it?

A continuing loss of biodiversity. But who is noticing?

Pollution in the sea from plastic ropes

In the sound below our house a very high tide a month or two back pushed the accumulated dead seaweed further up the shore. This revealed hundreds of thin strands of plastic, derived from multi-filament plastic ropes which had disaggregated.

The source of the washed-up rope fragments would have been varied: fish

farms, mussel farms, fishing boats, creel ropes, yachtsmen's ropes ... Every high tide washes up more fragments.

In my view, no marine activity, including creel fishing, can be truly sustainable until the use of non-biodegradable ropes has come to an end. But I cannot see this happening anytime soon. Is there any

business currently researching and developing such ropes?

In the pictures below, many of the white strands visible are plastic rope, not plant material. The lower picture shows roles of new polypropylene rope and new fishing nets outside a fisherman's shed: one of the sources of the problem. Lobster pots are just as bad.

Climate Change, Grazing & Land Use *March 2020*

There is a lot of talk in conservation circles and the media on the impact of land use on climate change. However it is a complex subject and it would appear that carbon flows are not understood by most; for example the difference between carbon emissions from the use of fossil carbon and carbon emissions which are merely recycling of atmospheric carbon.

When we burn fossil fuels we are adding new carbon to the atmosphere, the cause of global warming. However when animals belch methane this does not result in an increase on atmospheric carbon: they are merely recycling the carbon fixed by the plants they eat. Certainly the methane they belch is a strong greenhouse gas, but its time in the atmosphere is short compared to the main greenhouse gas, carbon dioxide.

Animal husbandry, particularly intensive farming, certainly does release new greenhouse gasses to the atmosphere but this is through the use of fossil carbon in transport, farm machinery, fertiliser & pesticide production, and the processing of animal feed. However most of these outputs will also apply to crop growing as

currently managed. The only way to reduce these carbon outputs is replacement of fossil fuels with renewable energy, with no input of fertilisers dependent on fossil fuels for their manufacture. Otherwise moving to a vegetarian diet will not make much difference to the climate! Certainly replacement of tropical rainforest to animal pasture in some parts of the world does add to the amount of carbon in the atmosphere, but this is not relevant to UK farming.

In the UK before the advent of the industrial manufacture of fertilisers, animals were an essential part of crop rotation, the dunging effect of animals being essential to maintain long-term soil fertility. If animals are no longer part of the farming scene, then soil fertility can only be maintained through the continual use of industrial-manufactured fertilisers (although the use of legumes such as clover can fulfil the nitrogen deficit). Can these be produced in a carbon-neutral way? The return to more environmentally extensive farming does rely on animals.

Additionally, a significant proportion of the UK's biodiversity is grazing-dependent, such as chalk grassland, limestone grassland and lowland heath: if animals are no longer part of the agricultural scene, then this biodiversity will be lost. And does wool not have a bright future as a non-fossil fuel, non-plastic textile?

Climate change mitigation & nature conservation not always on the same side

There appears also to be a strong belief amongst conservationists that conservation of habitats and climate mitigation are always on the same side, but there is no a priori reason why this should be the case! There are times when, if we want to conserve the landscapes and natural habitats of the UK, we will have to decide which is more important: climate mitigation or preventing the loss of habitats.

The papers in the new Climate change & land use section of my website address these issues, and also point out that tree planting in the UK does not necessarily mitigate climate change.

How do we know what we know? *November 2019*

Some things we just know!

For example, we know that woodland is the climax vegetation in our part of Europe; that tree regeneration without fencing is 'natural' regeneration; that the reason that there are so few trees in the UK uplands is because of our actions, now and in the past; that there is too much

grazing in the our uplands; that sheep grazing in the hills has reduced their biodiversity value; that peat erosion is caused by human action and is a sign of bad land management; that erosion generally is caused by poor land management; that trees prevent floods and landslides; that tree planting is good for climate change mitigation...

But how do we know all these 'facts'? Do we just know them because everyone else does, *i.e.* GroupThink? Or do they all have a sound evidence base? Are they facts or beliefs? Do we ever stop to analyse our own beliefs?

Nowadays, is ecology really science-based or belief-based?...

Current views *September 2019*

My recent letter in the *Glasgow Herald* (3 September 2019) summarises my current views on reforesting Scotland:

"The headline 'Greens want to reforest grouse moors' [29 August] concerns me. The word 'reforest' is misleading. Certainly at the beginning of the 20th century Scotland had less than five per cent tree cover, but this lack of trees goes back centuries: even a cursory look at the Roy maps of the 1750s shows that in the Highlands most woods disappeared before the advent of sheep farming, sporting estates and industrial exploitation, when roads were absent, when livestock was wintered indoors, large tracts of the mid and high-altitude

land was uninhabited and unused, and wolves were still present. All the evidence points to natural rather than anthropogenic decline of woodland in most places, and such decline also occurred in interglacial periods in the absence of humans: we are in what is termed the 'oligocratic phase', a natural phase of soil acidification and woodland loss.

"I would ask 'reforesters' just to stop for a moment and consider whether it is possible that our open upland landscapes are natural in origin, so that covering them with trees will in fact result in a loss of natural habitat, a loss of biodiversity; that 'five per cent woodland cover' in fact

should be something distinctly Scottish and something to celebrate in that it makes Scotland distinctive on a European scale. After all, it is not the moorland's fault that people shoot grouse over it!

"Additionally, one needs to be careful in assuming that tree planting in our uplands mitigates global warming: trees can dry out organic soils, releasing more carbon from the soil than what would be stored in trees and also preventing the moors to go on to become deep peat with a high carbon storage potential. Trees also significantly reduce albedo (reflectivity of the land) and so warm up the climate.

"Be careful what you wish for!"

The liberation of rewilding

In my *New Paradigm* publication of 2011, I said the following of 'rewilding':

"Rewilding is about letting natural processes determine the direction of ecological change and, before the evolution of humans, was the only option available to the planet! It is the antithesis of the prescriptive 'compartment approach' to landscape management. Ecological outcomes are left undefined (dependent on the whims of nature). What happens, happens!

"Owing to the perception that the Highlands are an anthropogenically damaged landscape, and 'should be wooded', it is also used in many quarters to mean 'putting back trees in the landscape'. However, if trees would not naturally be part of the landscape, then adding trees, together with associated woodland species, is not rewilding. If woodland declined naturally, then so would the associated obligate woodland species (e.g. red squirrels, capercaillie) – some to extinction – a natural process.

"Rewilding is about ensuring that all the naturally occurring species are present, so

reintroduction of species lost through human action is a key part of the concept. Without doubt wolves died out in Scotland through persecution, so reintroduction of these is a key part of rewilding (but only where they would naturally be present, which is not everywhere, e.g. islands)."

If the Scottish Highlands are mostly 'wild' already, they cannot be 'rewilded'. In some places, and some periods since 1750, introduced sheep have replaced the indigenous red deer: however this is unlikely to have made much difference to the overall vegetation pattern as the grazing impact of sheep and red deer are similar: in any case, the main pattern of vegetation was laid down pre-1750, in the era before sheep were introduced and before we started to manage the Highlands.

I find 'rewilding' a very liberating concept, if taken to mean the way the Scottish Highlands were managed pre-1750 (i.e. not managed!). Before 1750 no-one worried about whether the mountain landscape was 'overgrazed' or 'undergrazed', whether there were 'too few

trees' or 'too many', whether heather was common or rare in a given location, whether peat was eroding or not, whether a given species was declining or expanding. And look what we have inherited from this approach: one of the most natural areas remaining in Europe! Why does it suddenly now need managing, except to fulfill our own human wishes?

If we can let go of our desired outcomes, or to use modern parlance, the desire for a given habitat to be in a given condition, and not worry whether grazing is high or low – in other words just let it truly be wild, with nature deciding – then this is both relaxing and liberating! In the Highlands all we then have to concentrate on is the minimisation of the impact of introduced species (although this is not very relaxing!) and the ever-increasing encroachment of human infrastructure into our cherished hills.

If only all the current 'rewilding' effort in the Highlands were concentrated in the Lowlands, then wildlife might be better-off...

UPLAND GRAZING: Are we too hung up on outcomes? February 2019

When working as the National Trust for Scotland's Ecologist in the 1990s, the question often arose as to what was the optimum grazing level on the Trust's upland properties (Glencoe, Ben Lawers, Torridon, Goatfell, Kintail, etc.). To this end I coordinated a 2-yr EU LIFE project on upland grazing which resulted in the publication *Grazing Management Planning for Upland Natura Sites: a Practical Manual* (1998). However, deep down, I was never really happy with the conclusions of this project, viz. that it had to be based on the optimum grazing level to maintain the condition of those habitats deemed to be 'priority'.

The weakness of the 'favourable condition' approach has in fact been realised by SNH in their Commissioned Report No. 402 *Developing guidance for managing extensive upland grazing where habitats have differing requirements* (Holland et al 2010):

"A single upland management unit will often contain habitat types that require very different grazing levels. If there are habitats in the same land management unit that require very different grazing pressures and are accessible to grazing animals then a conflict might arise (p.69).

"Some habitat types require very low levels of grazing (e.g. montane willow scrub), or little or no grazing at all (e.g. tall herbs), to be in favourable condition whereas others require moderate to high levels of grazing (e.g. calcareous grassland). The requirements of the other feature types lie somewhere between these extremes (p.68).

"When developing management plans the most important thing is the setting of clear objectives for the site. It may be hard to devise a management regime that will maintain all the habitats in favourable condition. In these situations some compromise may be required with priority given to one or more features. This will have to be done on a site by site basis (p.78)."

But nature does not have any particular priorities! Instead the plant communities arrange themselves in accordance with the parameters affecting them, such as climate, soil type and grazing animals. It is us humans who have our own likes and dislikes and hence have a tendency to prioritise the habitats we like (and/or which are currently fashionable).

Hence I have had to come to the conclusion over the years that selecting

any particular grazing level is arbitrary: there is no answer to the question "What is the correct grazing level"? I have also concluded that, in the extensive, unenclosed Highlands which have been largely unmanaged over the millennia and which have always had their own indigenous herbivores (red deer), we are too hung up by outcomes: we want the hills to look a particular way and manage accordingly. However over the millennia they are likely to be periods when grazing was high, medium or low? Does it really matter which it is today? Does it really matter what plant communities we end up with? Why not let nature decide, let it be natural, let it be wild...

It was instilled in me at an early stage of my career by the respected Bill Heal that the word 'overgrazing' is meaningless in the absence of desired outcomes (e.g. woodland, scrub, heathland, species-rich grassland). So if we drop outcomes, we have also to drop concerns about grazing levels. Why not just leave it for the carrying capacity of the vegetation (food availability) and any other natural parameters to determine how much grazing there is?

Ecological impact of hill tracks *January 2019*

Meanwhile the degradation of our upland landscapes carries on unabated: most NGOs and agencies do not seem to be interested in landscape conservation. What is surprising is that WWF Scotland, an organisation which is always, rightly, bemoaning habitat loss in other parts of the world, has little apparent interest in pursuing this in Scotland. It is recognised, for example, that building a road network in tropical forest is the first stage in subsequent ecological degradation. It is the same in the Scottish uplands: the ever-increasing length of new tracks being bulldozed into our hills and mountains provide a route for invasive plants to enter into the core areas.

Consultation on Scottish Forestry Strategy *November 2018*

This is an important Scottish Government document out for consultation until 29 November. If implemented it will permanently change the face of the Scottish landscape, in the uplands changing it from a largely wild landscape to a largely designed landscape. Is this what we want? I personally think there should be a moratorium on all new forestry/woodland creation in the uplands while we sit back and take stock. The first half of my personal response to the consultation is given below.

1. Do you agree with our long-term vision for forestry in Scotland? **No!**

Scotland is NOT part of the northern boreal zone as stated: it is in the oceanic Atlantic zone. Hence our forests are ecologically different from boreal forests.

2. "Ever since the first foresters entered Scotland's ancient wildwood over 6,000 years ago, our trees and woodlands have been felled and harvested." Where is the evidence for this? Most modern research indicates natural woodland decline from a postglacial maximum – as would be expected in this, the oligocentric phase of an interglacial. Woodland loss directly attributable to humans has probably been relatively small scale.

3. Hence although the "chronic lack of trees" is a "strategic problem for the country" from a timber industry perspective (although it might make more economic sense to import timber from boreal forest zones), in this vision it is conflated with a perceived 'biodiversity problem'. If the open landscape of our hills is largely natural, then there is no biodiversity case for bringing trees back: such intervention will only reduce the naturalness and lower the existing biodiversity value.

An example of this is the way that disturbed ground along the full length of the public road from Drumrunie to Achiltibuie in Wester Ross has allowed gorse to colonise the whole stretch, introducing a new species into the landscape.

Certainly we need to tackle climate change, but it also has to be accepted that new tracks built for renewable energy schemes (or for any other reason) can, in the long run, damage the very ecosystems that climate change mitigation is aiming to protect. The soil disturbance associated with tracks, in effect taking soil conditions back to early post-glacial conditions (well-

drained, mixed soils with higher nutrient availability), provides ideal linear conduits for plants, alien and native, which would otherwise be unable to colonise the surrounding vegetation underlain, as they are, by podsoles and peats.

No one seems to be tackling this issue, in the same way that no-one is tackling the issue of the ever-increasing spread of Sitka spruce out from plantations. Hence our uplands are still continuing to go to hell on a handcart... Or is that putting it too strongly??

4. The fact that Scotland has a lower than average woodland cover compared to the rest of Europe is certainly relevant in creating a timber industry, but provides no justification for expanding woodland cover for the benefit of biodiversity. The 'lower than average' woodland cover is in fact a key biodiversity feature which distinguishes Scotland from Europe and ought to be retained.

5. It should be realised that there is an irreconcilable conflict between maintaining/expanding a forestry industry and the conservation of Scotland's biodiversity and natural landscapes.

6. The statement that 'forests and woodlands help mitigate climate change by absorbing carbon' needs much greater scientific scrutiny: tree planting on organic rich soils (as found in most of the uplands) can release more carbon through soil oxidation than is stored by the trees; can prevent shallow organic soils from going on to develop into peat bogs (which would store more carbon in the long run); and, importantly, by significantly reducing the albedo of the landscape, can contribute to a WARMING of the landscape. Additionally, the soil disturbance associated with modern mechanical harvesting can also liberate the stored soil carbon.

7. Creating new forests on open ground, much of which is recognised as being of international importance under the EU Habitats Directive, in fact, by reducing the naturalness of the landscape, contributes to global habitat loss – and so can be seen as being detrimental to biodiversity conservation. Certainly if trees are planted on moorland, the diversity of species can increase with both woodland and open ground species now being present; but biodiversity conservation is ultimately

about maintaining the natural habitats of the region, not adding species willy-nilly.

8. Evidence suggests a natural woodland decline over the past few millennia and reversing such a trend is more about zoo-keeping than nature conservation (*sensu* allowing natural processes to proceed at the landscape scale). The natural woodland cover of 4-5% cannot really be seen as 'a key part of Scotland's iconic landscapes', but more as adding local landscape interest in a few places. From a conservation perspective, the management of the whole upland landscape should not be predicated on the needs of a habitat types which naturally would play only a minor and declining role.

9. Some of the other benefits of forests are questionable: "purify the air and water" – conifers extract acidic aerosols, causing water acidification; forests will not reduce flood risks from extreme rainfall/snowfall events when most damage is done; landslides on Scottish hill slopes occur on both forested and unforested ones – is there any evidence trees will prevent them?

10. Forests in lowland and urban settings can improve the landscape setting and provide places for recreation. However commercial hill forests are the same across the country, and modern industrial-scale forest access tracks are not very inspiring places to walk along! Modern upland forests are currently in the extraction phase, and the resultant landscape can, for a few years, take on the appearance of a post-apocalyptic wasteland!

Hill tracks in Scotland *November 2018*

I personally think there should be a moratorium on all new hill tracks in Scotland: there comes a time when our upland landscape is just full-up with infrastructure and this time has been reached. Wild land is disappearing at an alarming rate, and new tracks, built for whatever reason, open up access to remote areas – as they do all over the world. Hence I support the sentiments of the Scottish Green Party as shown below, although perhaps more tracks are currently being bulldozed for hydro schemes, windfarms and forestry schemes than sporting estates (all are equally bad!).

Media Release, Scottish Green MSPs, 31 October 2018:

SNP And Tories Block Bid To Control Bulldozed Hill Tracks

SNP and Tories MSPs should “be ashamed”, after blocking a bid by Scottish Green MSP Andy Wightman to impose tougher controls on landowners who scar hillsides by bulldozing tracks for deer stalking and grouse shooting.

At today's meeting of Holyrood's Local Government and Communities Committee, SNP and Tory MSPs voted down Mr Wightman's amendment to the Planning Bill, which would have required landowners to seek planning permission for tracks on land used for stalking and shooting, and on land in National Parks, Sites of Special Scientific Interest and National Scenic Areas.

Andy Wightman, Land Reform spokesperson for the Scottish Greens and MSP for Lothian, said:

“The campaign against bulldozed hill tracks has been long-running, and I want to thank the numerous membership groups who helped build huge public support for my amendment, including Ramblers Scotland, RSPB, the National Trust and Mountaineering Scotland. It's disappointing that SNP and Tory MSPs have bowed to vested interests in blocking this move. They should be ashamed.

“The current system whereby landowners notify planners of a bulldozed track rather than seek detailed permission is clearly a sham. Hillsides both Highland and Lowland are visibly scarred, often ruining environmentally sensitive habitats, and usually in the interests of stalking and shooting, which the public have little sympathy for...”

Time to stand up for the EU *September 2018*

Note: this was written in February 2016, before the EU referendum

Everyone seems to be leaping onto the anti-EU bandwagon and even those who say they are in favour qualify their approval by saying it needs a major overhaul. However I fully support Judith Gillespie in her letter to The Herald of the 29th of January who argues strongly in favour of the EU.

Where has all this anti-European rancour come from? Oft-quoted problems with the EU are trotted-out, particularly migration, over-regulation, lack of democracy, and worst of all, the ‘unaccountable Brussels’ bureaucracy’. People speak in generalities about these and, in the current herd mentality of Britain, they are echoed by politicians of all hues, by the press, even the supposedly impartial BBC. ‘There is a need for reform’, is the cry! Facts, indeed any evidence-base, appear irrelevant.

I see this emotional, anti-EU rhetoric as a form of peer-group pressure: everyone is doing it, so there must be something in it. It is, if you like, the spirit of the age, not amenable to ratiocination; for at heart, we are not rational creatures but under the thrall of the emotional zeitgeist. In the past it might have witch-burning, anti-papist or reds-under-the-beds, today it is the EU.

There are so many positives about the EU that it is hard to know where to start, but history is as good a place as any. Europe over the centuries has not always been a very edifying spectacle, with wars looming prominent. The Hundred Years War, the Thirty Years War, the Seven Years War and two World Wars, to name but a few. In spite of all this aggression, culturally we in the UK have a lot more in common with our European neighbours than with the other countries of the world. In the past

we in Europe have all acted like children who are for ever squabbling and fighting each other. The wars have sapped all the energy, with little left for trying to create a better future for everyone. It was only after the Second World War that the realisation dawned upon nations that ‘togetherness is strength’, that continual squabbling and fighting led nowhere and it was best to work together to achieve common goals. Hence the birth of the European Union, the Council of Europe, the European Court of Justice and the United Nations.

But our memory is short and, unfortunately, human nature being what it is, it is harder to work together than fight each other, so we are descending once more down the path of least resistance: negative criticism rather than creative problem-solving. Working together means compromise, means giving up cherished positions, a lot of give-and-take, a willingness to see another country's point of view, and an understanding that your position might not be in the interests of the greater good. Much easier to be the spoilt brat demanding his or her way!

Thus the post-war optimism and unity has given way to the ‘each-man-for-himself’ mentality, with fragmentation back into nation states. And it is not only the UK which is pulling up the drawbridge. But surely the lesson of history is that fragmentation leads to eternal conflict? I find it appalling that we in the UK take pleasure in sitting on the sidelines watching the difficulties of other countries or institutions, such as the Eurozone or migration, instead of rolling up our sleeves and doing our best to help our neighbours. I get the impression that

those of a strong Eurosceptic persuasion would get great pleasure in seeing the whole EU collapse just so they could revel in saying ‘I told you so’. What petty-mindedness!

But the problems out there are difficult, with no simplistic answers. They can be social, such as the length of the working day or income inequality, financial such as tax havens or fiscal accountability, environmental such as pollution or wildlife loss, agricultural such as food security or disease control, energy such as efficiency or a pan-European grid, or global such as terrorism or migration. We in Scotland and the UK cannot solve these by ourselves, and neither can any individual country. They are trans-national problems which can only be solved by all countries getting round the table and thrashing out solutions.

But think what the EU has achieved to date on issues such as these. For the ‘Brussels bureaucrats’ have always been selected as the brightest and best, people with an international outlook and who can horizon-scan and prepare us for the future. For example the EU has led the way for setting the standards for low emission cars: if it were not for the lobbying by car manufacturers, today we would all have extremely fuel-efficient cars – to the benefit of the climate and us all. Rather than using the term ‘bureaucrat’, I think the term ‘back office support’ better represents what they do: no organisation can manage without such people. And they cannot impose regulation or uniformity: this can only be done with the agreement of the majority of the EU members: and does not the UK believe in democracy?

I think the EU has produced immense gains for Europe. Without the EU Directives, would transboundary issues such as water quality, habitat and species loss, air quality and eutrophication (nitrate and phosphate pollution) have been tackled? Surely an independent UK, in seeking to gain a competitive advantage, would be leading a race to the bottom in environmental quality, arguing against these and other 'regulations'? And what about the Common Agricultural Policy? Would we still have farmers in the less favoured areas of Britain, and food security, without the EU? What is going to happen without the CAP? And the grant schemes such as LEADER and LIFE have surely been beneficial? And whatever you

might think about the Common Fisheries Policy, it at least provides a forum for discussing how a global resource best be managed.

And the Euro? Any currency has its ups and downs: currently it is down, but has been very successful in the past. Has not the pound shown similar fluctuations? And what is so special about the pound? Certainly a common currency gets around one of the commonest scams in the world today: currency exchange and trading, a parasitic system and a licence to print money. And the idea of a European Defence Force is eminently sensible, defending our common European culture. And was it not the EU arguing for a cap on

bankers' bonuses and the UK government arguing against it? And similarly on working time?

And surely passport-free travel is the aim of any civilisation? The concept of border controls and passports is largely a 20th century phenomenon and a regressive step at that.

Certainly there are problems to be tackled in this world, indeed there will never come a Golden Age when all our problems are solved. But in these febrile times, a return to a world of fractious nation states would take us even further away from this platonic ideal.

Mountain hares August 2018

There's been a lot of press coverage recently on blue or mountain hares. This reminds me that I wrote a song 'Mountain Hare' in 1991, the words and music of which you can download from this music page of this website.

Mountain Hare

There's some would dig the hill for rock
Nae harm in that ye'd think
But it's our land, our only land
Our wild places shrink

Chorus

Mountain hare, white mountain hare
Wild symbol of Scotland's will
Free on the hill, running free on the hill
There's some wad shoot ye still.

There's some wad plant the muir with trees
Nae harm in that ye'd think
But these nae belong, they're dark and dreich
And wildlife haunts just shrink.

There's farmland now where nae bird cries
There's just nae song to hear
With dykes and bushes, hedges gone
The landscape's dull and drear.

The land around the toon's nae more
There's hooses, tips and sheds
The place we paddled in the burn
The fishes they're all deid.

There's some that would preserve the land
A place to look and play
But it's my home, my only home
It's here I'll always stay.

The desecration of Coull Links June 2018

Sometimes it feels as I live in a Third World county, but maybe this is doing such countries an injustice. In fact it looks as if most modern democracies are currently reverting to a 'Third World attitude' of "development at all costs" – although I am not sure the Highlands ever left it. It is as if all the grand words and feelings of the 1970s environmental movement, of sustainable development (*sensu* considering equally jobs, community and the environment) and grand concepts such as the Global Biodiversity Strategy and the Aitchi targets, are being thrown out of the window. Maybe it has been brought on by the current concept of 'austerity', although compared the past we are all rich.

The above diatribe has been brought on by the recent decision of Highland councillors to approve the construction of a new golf course within a Site of Special Scientific interest (SSSI) at the mouth of the Dornoch Firth, three miles north of the town of Dornoch. Councillors went against

the advice of their own planning officials who, presumably, were merely advising them to follow government policy. The 2014 Scottish Planning Policy states:

195. Planning authorities, and all public bodies, have a duty under the Nature Conservation (Scotland) Act 2004 to further the conservation of biodiversity.

212. Development that affects a National Park, National Scenic Area, Site of Special Scientific Interest or a National Nature Reserve should only be permitted where:

– the objectives of designation and the overall integrity of the area will not be compromised; or

– any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social, environmental or economic benefits of national importance.

It is an exact repeat of Donald Trump's Menie Links saga, where millionaire Americans believe they can get their own way, brushing aside any relevant policy. At

Menie, the golf course was eventually given the go-ahead by government on the basis, if I remember right, that the new golf course was of 'overriding national importance' and therefore it was appropriate to site it within Britain's last bastion of defence for wildlife – the SSSI system. However, if wildlife cannot be protected within an SSSI, then there is not much hope for wildlife (and here I mean both plants and animals) in the future.

The picture below, taken from Google Earth, shows the coastal peninsula where part of the course is to be sited: it can be seen that it is an area of unimproved vegetation (coastal heath and grassland), of a type that hosts reservoirs of native species which used to be common around much of the east coast. Obviously, because it retains its natural aspects, it will create a more interesting golf course than one sited totally on the improved fields in the south of the photo, so you can see why the developer's chose it for their own selfish interest.

It is not as if there are no golf courses nearby. The Royal Dornoch Golf Club hosts two 18-hole courses three miles to the south, one of which is rated one of the best in the world. And there are numerous other golf courses in the towns and

villages round about. Better surely to develop these, rather than risk saturating the market?

It is not too late to stop it. If the Scottish Government is to retain any of its green

credentials, then it must call in the development and turn it down. Habitat loss is the greatest threat to biodiversity on a global scale. The above decision by Highland Council illustrates how such loss occurs in practice.

The return of deep forestry ploughing April 2018

Can there be a more damaging activity than taking a double mould-board plough and ripping it through the whole landscape? A technique developed in the past to enable the establishment of commercial trees on infertile and damp soils. I thought we had seen the end of it. But recently I have noticed it coming back, both in Argyll and on Dava Moor where

these pictures were taken. Perhaps it is an inevitable consequence of the government policy of 25% of Scotland under trees.

But the plough rips indiscriminately through the archaeology, plant communities and soil, changing the drainage and releasing much of the carbon stored in the soil.

The pictures show a whole hillside being ploughed, mostly through habitats recognised as of international importance on the EU Habitats Directive (dry heath, wet heath & blanket peat). If it happened in other parts of the world, would there not be an outcry?

Who is right?

Welcome to 2018! The year when we finally become objective about the ecological history of upland Scotland?

I would argue that we would perceive our mountain landscape differently if Frank Fraser Darling had not come along. For he seeded the idea in people's minds that the Highlands were 'a devastated landscape'. Through him we know that our eyes are seeing a landscape where humans got rid of all the trees, and so giving us a moral imperative to 'restore it to its former glory.' This does make a satisfying story, in

keeping with the spirit of the age where most human action is seen as destructive to the environment.

But what if Fraser Darling had not come along: would we still see the same landscape? In 1866 the eminent geologist, James Geikie, having studied numerous remains of old forests in peat bogs throughout Scotland, read a paper to the Royal Society of Edinburgh in 1866 in which he concluded "It can be shown that the destruction of our ancient forests has not been primarily due to man...". This

opens our eyes to a different way of seeing the landscape. If we know that it is naturally open moorland rather than forest, we would become concerned if people wanted to start planting trees all over it.

So who is right? Who would you believe more? James Geikie or Fraser Darling? The answer to the question is of fundamental importance to those concerned with the conservation of the Highland landscape.

Wild land

There has been some interesting correspondence recently on wild land. Writing in *The Herald* about SNH's Wild Land Areas, David Johnstone of Scottish Land and Estates states: "There is almost nowhere in Scotland which has been shaped only by nature and therefore might be considered wild land or wilderness." He has a good point – but only if his statement is true.

I have been arguing that upland Scotland has one of the most natural vegetation patterns remaining in Europe, i.e. natural forces have been dominant in shaping its pattern. Hence I believe that there is a lot of ecologically wild land in Scotland. However, if you believe the upland landscape is largely man-made through deforestation, burning an 'overgrazing', then he has a point.

Additionally, the world is never black and white and there are degrees of naturalness: indeed, the recent IUCN report on wilderness states clearly that most wildernesses have been influenced to a greater or lesser extent by people, or at least have had a human population.

However I think we would all agree that there are locations on this planet where natural forces are still the main determinant of the vegetation pattern, i.e. there are in fact wilderness areas.

And David Cameron, currently chair of Community Land Scotland, said at the organisation's annual conference on Skye that "there are now a range of established views, policies and forms of designation on land use, that seek or have the effect of keeping our countryside devoid of people. Those policies value emptiness, what some perceive as wildness, and give scenic considerations a higher value, it can seem, than the value of having people in the landscape."

I am sad to read this, the standard "ochone, ochone, the empty glens" and it seems a hark back to the confrontational debates of the 1980s. It also annoys me, as someone who has spent much of his life living in the Highlands, because it implies that, as a supporter of wild land, I don't like people and want to thwart local communities' reasonable expectations!

In fact it does not reflect a true understanding of the history of the

Highlands: there always have been large, unpopulated areas. To quote Haldane in his book *The Drove Roads of Scotland*:

"When cross-country driving on a large in Scotland on an appreciable scale first began, and for many a year thereafter, a great part of the Highland and upland areas of the country was common land, or at the least land which, while nominally owned by the local chieftain, was in fact unused and uncared for.

"In the earliest rentals for Islay and Kintyre ... the figures representing the total of the 'merk lands' held by the tacksmen from the local chieftains do not amount to more than about one-third of the total extent of these areas as shown on modern maps. The rest was wasteland which was gradually merged into the tacksmen's holdings with the progress of agriculture.

"...not until sheep farming on a large scale became common in the Highlands were these upland areas put to fuller use than for the grazing of cattle from the shielings in summer and early autumn."

It would appear that those, like me, arguing the need to keep some areas wild, still have a long uphill struggle ...

An untidy country

I am recently back from a holiday in Tiree – a beautiful, windswept island and friendly people – but I was saddened to see the amount of plastic rubbish around: some certainly washed in by the sea and blown ashore, but some definitely farm waste, in particular fragments of silage bags caught in the barbed wire – at times colourful, including pink, green and red plastic. Many years ago I wrote a song called ‘Plastic in the Wire’ as I believe that such plastic, whether on farms, industrial estates or merely beside the road, is a symbol of our times.

We are an untidy nation, but I am sure we all condemn mindless littering, whether dropped when walking, thrown out the car window, or dumped over bridges: have you noticed how much litter is below bridges visible from the Glasgow suburban rail network? Also I well remember beside the traffic lights on the off-ramp of the

Favourable condition

The main tool for measuring the success of nature conservation management is ‘favourable condition’. This was developed in the 1990s on a UK-wide basis. However I remember being concerned at the time that the approach had its limitations when applied to vegetation. Classifying plant communities is an inherently difficult process and dependent on statistical analysis. A given plant community, as defined by the National Vegetation Classification, for example, is an abstract statistical entity: no two plant communities are ever identical in their exact species composition or distribution. However common standards have been developed (see ‘Common Standards Monitoring’ on JNCC website) with a given plant community having to have its parameters within a pre-defined range to be assessed to be in ‘favourable condition’. For example, the sward height has to be so-and-so and certain plants have to be present for a habitat to be judged to be in favourable condition – wherever the habitat occurs in the UK.

Common standards may be convenient for a box-ticking exercise, but the real world is complex and muddled. I do think the approach has its strengths when applied to remaining islands of habitats within largely man-made environments, but it does not really work when applied to the open landscapes of the Scottish uplands.

M74 to East Kilbride being a grand exemplar of litter accumulation: is this still the case?

But it is not just this easy-to-condemn mindless littering, but also the littering of our coasts and harbours from abandoned boats, ropes, lobster pots, even outboard engines: even well-to-do people seem to abandon boating paraphernalia on the free-for-all that is our sea-shore, not to mention pipes, ropes and buoys floating ashore from fish farms – organisations which make a lot of money. I hope fisherman no longer just fling things overboard, but the commonest item along our sea shores appears to be fragments of green propylene rope and string: why do we even along lobster pots and ropes to be made of such non-biodegradable material?

Another situation where the ‘out of sight is out of mind’ mentality is paramount is the

One problem, as recognised by SNH, is that it is often impossible to have all the habitats present in favourable condition at the same time:

“When developing management plans the most important thing is the setting of clear objectives for the site. It may be hard to devise a management regime that will maintain all the habitats in favourable condition. In these situations some compromise may be required with priority given to one or more features. This will have to be done on a site by site basis.” From *Developing guidance for managing extensive upland grazing where habitats have differing requirements*. SNH Commissioned Report No. 402 (2010).

In practice we have to make value judgements as to which habitat to manage for; and in the current times the condition of woodland is (arbitrarily) given greater weight than that of other plant communities.

Another significant problem with the favourable condition approach is that the condition of the chosen parameters can be arbitrary. Let us say that to be in favourable condition, the sward height of a given community has to be between 15 and 20 cm high. Where does this figure come from? Possibly because at this height there will be the maximum diversity of species, and/or this will indicate a medium level of grazing; or because

dumping of garden waste over the fence on neighbouring farmland, or onto the seashore: common throughout Scotland and one of the easiest ways for non-native invasive species to colonise the surrounding countryside. Opposite my house, for example, *Spiraea*, *Montbretia* and *Convolvulus* are making merry progress into the nearby woods.

I could go on about the mess left on the ground after mass events such as pop concerts or firework display, or the proliferation of urban graffiti, or litter abandoned by fishermen on the shores of our freshwater lochs, or the sheer ugliness of litter-strewn industrial estates and many supermarket carparks, or the abandoned cars, caravans and tractors on croft and farmland, or the sides of our trunk roads ...

Why are we so careless of our environment?

ecologists in the 1990s thought it ‘seemed right’.

However, over the years I have to the view that, for the unenclosed uplands, there is no answer to the questions “What is the optimum level of grazing for the landscape?”, or even “What is the optimum balance of habitats?” Choosing any particular grazing level or habitat composition will be arbitrary; and over the decades or centuries the grazing level and habitat balance may well have varied considerably through natural causes. Additionally, erosion is generally seen as a ‘bad thing’ so any peatland seen as eroding is seen as being in ‘unfavourable condition’, even though erosion is a natural process.

In practice there has been very little research on Scotland’s upland vegetation, and most of what there has been has been in eastern or southern Scotland where the research institutes are (or were) located. As it is, I believe the favourable condition approach is seriously flawed if used as a tool to assess the conservation status of our hills and moors. In practice it means managing the landscape to achieve a pre-defined vegetation pattern. It takes away any natural variability, any possibility of ‘nature being in charge’, and hence is the antithesis of rewilding.

See the ecology pages of my website for further discussion of this topic.

Website update

You will note that I have just updated this website because it was getting muddled and cluttered. Hopefully you will now find it a bit easier to navigate around.

You will also note that over the past few years I have been arguing for a more evidence-based approach to the conservation of our Scottish uplands. I was hoping that there would at least be a debate on the underlying nature conservation rationale, but this has not

Loss of wilderness

There is a paper in the current issue of *Current Biology* titled 'Catastrophic Declines in Wilderness Areas Undermine Global Environment Targets'. Although it is based on analysis of very large areas of wilderness, the declines could equally apply to Scotland.

Indeed, Scotland seems to be amongst the leaders of the field of wilderness loss, owing to the imposition of hundreds of tracks, hydro schemes, windfarms and woodland plantations in our wild areas. All

New Paradigm Reprint

I have now reprinted my New Paradigm for the Ecology of Northern and Western Scotland. This was first published in 2011 but remains largely topical. I have made a few minor revisions, including adding the impact of new woodland on surface albedo (page 38) and expanding the peat erosion pathways (page 21). See the 'New Paradigm' page of my website for further details.

The printed version is available for only £5 and please contact me at info@james-hc-fenton.eu if you would like one sent to you. I have also some copies to give away for free that contain a printing error (some pages printed too dark). Free .pdf copies can also be downloaded from my website.

It still seems to me that much of the conservation action being promulgated by the conservation NGOs remained divorced from ecological reality, something that this booklet is trying to address.

The issue of moorland management is currently much in the news. The section

come about. It continues to be business as usual in spite of the fact that, in my view, the emperor has no clothes: current action continues to be divorced from an understanding of Scotland's ecological history and the ecological processes that have underpinned it. Hence I have been singularly unsuccessful.

But I am not giving up! Next year I will be submitting papers to the online journal *Mires and Peat* on the growth and decay

of these need infrastructure, whether dams, roads, power-houses, turbines, deer fences or mounding. It would now appear that any glen with a decent sized burn contains a dam, a pipe and a track.

But nobody seems to notice: landowners want to maximise income from land (the Protestant work ethic applied to land!), the statutory agencies support government policy, and the conservation NGOs are too focussed on other issues, such as raptors,

on Moorland Management (page 36 written in 2011) states:

"Grouse moor management can be likened to intensive farming, with heather burning, dosing, killing of predators, application of grit, digging of scrapes, reduction of red deer, killing of tick hosts (mountain hares) and use of dosed sheep as tick sweepers. In spite of this, and of red grouse being one of the most studied birds in the world, grouse numbers still fluctuate considerably.

"It is likely that grouse moors in the north of Scotland have been *Calluna*-dominant heaths and bogs for hundreds, if not thousands, of years (see map on page 8) and represent a natural vegetation-type. Frequent burning affects the natural vegetation pattern, mainly through increasing vascular plant diversity. *Calluna* does not need burning to persist (see picture 2, page 9), and burning may open moorland up to subsequent tree colonisation.

of peat bogs in Scotland (and the Falkland Islands), and thereafter I hope to write an ecological monograph on the ecology of the Scottish uplands, perhaps published by Edinburgh University Press. This latter, though, is a few years away. Meanwhile we will continue to convert our wild Highlands into a designed landscape ...

I will, though, continue to debate these issues on my website.

deer or trees. They seem to be missing the bigger picture.

This is surprising when organisations such as WWF are always going on about loss of wilderness in other parts of the world. In Scotland, why is they are not noticing what is happening on their doorstep?

There is a huge gulf between the government saying how proud it is of the Scottish landscape and the actual situation of continuing attrition.

"Grouse shooting provides an economic incentive to maintain heather moors, but the intensity of management reduces much of their naturalness, and probably also contributes to global warming through preventing storage of carbon in the soils. Associated management reduces some wildlife, such as mountain hares, foxes and stoats, although it can increase the numbers of certain breeding waders through providing areas of shorter vegetation."

It concerns that, in this social media age, the debate on moorland management has become intensely polarised: no-one is encouraging bridge-building between the various factions. I am not an apologist for intensive moorland management, but I see a danger of throwing out the baby with the bathwater: if owners stop grouse shooting or stalking, then the likelihood is that we will lose our upland moorland to forestry – causing further disintegration of our unique Scottish landscapes.