Comments on deer reports from James Fenton, 5 February 2020

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Comments relating to red deer on:
– *Deer Working Group Final Report*, Report to Ministers, Dec 2019
– *Managing Deer for Climate, Communities & Conservation*, Scottish Environment Link, Jan 2020
– *Herbivore Impacts*, Report to Scottish Environment Link's Deer Task Force, Dec 2019
There is also a short note at the end on the Werrity *Grouse Moor Management Revew Group Report*, November 2019.

The three reports are all saying the same thing with respect to red deer. The underlying rationale of all three can be summarised thus:

> **Native woodland is rare in the Scottish Highlands, deer prevent woodland regeneration, therefore there are too many deer. Hence there has to be reduction in deer numbers across the whole landscape so that trees can colonise.**

This fits in with Government policy of 25% of Scotland under trees. Hence the conservation NGOS, SNH, Scottish Forestry, Forestry & Land Scotland, Scottish Government Environment & Forestry Directorate are all on message (and all might as well be amalgamated into Forestry Scotland!).

There are various statements in all the reports which are questionable (although generally accepted as gospel). Hence the comments below will apply equally to all three reports.

1. "Deer are naturally woodland species"

This ignores the evidence of our eyes; they are certainly not obligate woodland species!

2. "20 deer/sq km is a high deer density", with a call for 10/sq km in the government report and 5/sq km in the Link report

20/sq km is one deer/5 ha (12 acres). This is in fact a very low grazing level with minimal offtake. A grazing level of 5/sq km is one deer /20ha (50 acres), in effect making large herbivores functionally extinct at the ecosystem level. How can this be a balanced ecosystem? It is as if the whole environmental movement in Scotland seems to wish away the fact that animals play a dynamic role in ecosystem ecology. After all, it was grazing pressure from herbivores that caused the evolution of grasses.

Also, woodland is not a very resilient habitat in upland Scotland because it has to go through a sensitive phase when young trees are susceptible. Is it sensible to manage of the whole ecosystem on the least resilient habitat? Finally, herbivores play a major role in maintaining ecosystem fertility across the landscape (dung, urine).

3. There is much mention of the absence of natural predators

It is an ongoing debate whether predators control prey or prey control predators: examples can found across the world can be found illustrating both. However, deer have in effect been predated in Scotland for centuries through stalking (*ca.*13% cull), which has not kept numbers down! Hence wolves would to maintain the equivalent of >13% deer offtake to keep numbers down, which seems unlikely.

Trophic level modelling indicates that the low deer densities being suggested would not support a significant wolf population. Finally, deer and wolves coexisted for most of the postglacial period in upland Scotland – and the woodland still declined! Also large tracts of the Highlands no longer have

sheep, so an increase in deer is to be expected: although deer numbers might have gone up, the grazing level may not have changed that much in some places??

Research on Rum shows that in an unpredated environment deer numbers are determined by winter food supply: it is probable that this is the case generally across Scotland, food supply being a more important determinant of natural population levels than predation.

4. All three reports seem divorced from any understanding of the long-term ecological dynamics and cultural history of the Highlands

To me this is the most worrying aspect: the organisations involved have no desire to understand the ecological history of the Highlands. For example, postglacial succession with its phases of protocratic, mesocratic and oligocratic (the latter characterised by woodland regression) has been known about for over 50 years (but 'an inconvenient truth'?). The proposed action is based on only a very selective amount of evidence, *viz.* that deer eat trees. The more relevant question of 'How much woodland would you expect at this stage of the interglacial?' is not even considered; neither is the actual relevance of a climatically-determined tree line: why are we so sure there should be one?

It seems almost that the NGOs have a very narrow view of biodiversity, seeing it as synonymous with trees! There is no wider perspective, for example that heather is a much globally rare species than Scots pine (one of the commonest trees in Eurasia).

5. Concern about the welfare of wild animals is a slippery slope

Certainly there are valid issues such as roadkill, trapped by fences, *etc*. but humans are not responsible for the welfare of wild animals. Concern for this issue is in direct opposition to 'let natural processes dominate'. Heavily mortality does benefit some species (*e.g.* carrion eaters). It is strange that NGOs are complaining that red grouse are being managed along the lines of domestic animals, but are suggesting that is exactly what we do for red deer!

6. Methane output of deer is a slippery slope

The logical outcome of concern about the methane output of ruminants is to get rid of all of them across the planet! Deer are not releasing fossil carbon (the main cause of global warming), merely recycling the local photosynthetically-produced carbon. Ruminants have been giving out methane since they evolved, and surely we just have to accept this? Otherwise there will no natural ecosystems left on this planet: is that what we want? Across much of the planet indigenous large herbivores would naturally have been much more common than now (*e.g.* bison/buffalo).

In terms of carbon generally, in all these reports there is no real recognition that in upland Scotland it is in the soil that most carbon resides (podsols, gleys or peats), and tree planting/expansion can in fact liberate this; neither is the effect of trees on reducing albedo considered.

7. Peat and deer

> "4. Data for the whole of Scotland were used to examine the relationships between eroded peatland vegetation and various parameters of potential drivers, including climate, geography and the densities of sheep (Agricultural Parish returns, 1986-2006) and red deer (counts by Deer Commission Scotland, 1987-2002).
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> "6. After allowing for spatial autocorrelation, regression analyses indicate that mean monthly rainfall, altitude, latitude and exposure are the most important explanatory variables of eroded blanket bog vegetation (LCS88 class 'blanket bog and other peatland vegetation: eroded'.

"7. **No significant relationships were identified between the area of eroded peatland vegetation and the densities of large herbivores across Scotland as a whole** but this may be an artefact of the density data. Although the best available data were used, they may still be too coarse, in both space and time, relative to the extent of erosion."

Peat erosion and the management of peatland habitats. SNH Commissioned Report 410, 2011

The conclusion of this report that peat erosion was largely caused by climate was first recognised by James Geikie in 1866.

"The peat mosses of Scotland are thus only a wreck of what they have once been. The out-growth of peat has ceased to be general. Here and there mosses continue to increase in sufficient abundance to form that substance ; but this increase, such as it is, is far exceeded by the general rate of decay. The peaty covering is almost everywhere full of holes and winding channels, a sure sign that the bogs have ceased to combat against the denuding powers of rain and frost. Their upper surfaces are no longer overspread with Sphagnum — a hard crust of heath and grasses caps them instead. All this points to a decrease in the humidity of our climate."

On the Buried Forests and Peat Mosses of Scotland, and the Changes of Climate which they indicate. James Geikie, Transactions of the Royal Society of Edinburgh, 24, 1866.

An alternative explanation to Geikie's is this:

The probability of erosion increases the greater the depth of peat and, as the interglacial has progressed and peat got deeper, then it would be expected that eroded bogs would become more common. There have always been deer in the hills, and they must always have instigated some erosion.

NOTE ON THE WERRITY REPORT

Again in this report there is no consideration of the possibility that heather moorland might be a natural landscape (p.19). It is possibly is a cultural landscape in parts of the UK and Western Europe; but again, having made most of our indigenous large herbivores extinct across Europe, it cannot be certain that even in lowland Europe heath might not in fact be a natural habitat on poorer soils.

The statement that mountain hares prevent "natural succession to woodland" (p.40) illustrates the above mentioned obsession with trees: trees/scrub must everywhere in Scotland must be the natural habitat! Should mountain hares be culled to allow development of montane scrub (if it ever existed in Scotland), or is their presence one reason why it is not naturally present in Scotland?

Of most concern, though, is the observation in the report (p.17) that to landowners afforestation would be more financially advantageous to them than grouse shooting. I have a fear that if grouse shooting becomes too hedged about with regulation, then we will lose our nationally & internationally important heather moors to forestry, not to mention loss of eagle habitat. But the government, to meet its forestry targets, would probably encourage this. Be careful what you wish for!

I personally do not support intensive moorland management, with its muirburn, treating red grouse as in effect a domestic animal, *etc.* However, walked-up grouse shooting on unmanaged heather moors, like traditional deer stalking, is probably one of the most benign land uses from a conservation perspective: harvesting a natural surplus. Some pragmatism is needed.