

Regenerating forests means restoring ecosystems not just culling deer alone

The effects of large herbivores like red deer depend not only on densities but also environmental conditions, writes **Christopher J Sandom**



Some years ago I worked at the Alladale Wilderness Reserve in the Highlands and restoring the Caledonian Pine Forest was a key goal. But the red deer at a density of around 13/km² were a barrier, eating the saplings, and the simplest solutions were to reduce their numbers or to fence them out. We felt the deer population was too, even unnaturally, high and they were “overbrowsing”.

Much has been written about UK deer numbers, their threat to the countryside, reducing deer populations and more robust management. But, are their numbers that high when, for example, sites of similar productivity in Africa cope with far higher numbers of large herbivores?

Alladale’s head stalker/ranger pointed out the answer to me. The effects of large herbivores depend not only on their densities but on the condition of the environment.

And it wasn’t the deer that ate all the mature trees in the first place – these trees were felled to provide timber for buildings and ships.

People degraded the ecosystem, and this is why red deer are having a strong, limiting effect on natural tree regeneration.

Few old trees exist in the landscape today, they spread little seed, dense swaths of heather, bracken and grass offer little space for trees to germinate and very few seedlings get established so virtually any deer present will limit their success.

So, browsing by deer is reducing the number of trees regenerating, but are deer the villains of the piece? The problem was created by people and the solution needs to be focused on restoring nature as a system.

Restoration may involve reducing large herbivore numbers now, but this is an opportunity for restoration to allow richer, more diverse and abundant nature in the future, from plants to large predators. A

resultant more diverse community of large herbivores, including red deer, will be able to use and help create a diverse mix of habitats – open grassland, moorland, scrubland and woodland – by driving their critical ecological processes.

While we perceive herbivore numbers to be really high in many parts of the world, compared to the more intact ecosystems in Africa (or comparisons with the past) herbivore communities are actually severely degraded in their numbers of species and abundance.

Outside Africa degraded ecosystems will likely take longer to recover and may need recovery of vegetation and carnivores first.

But it may be possible to have our own spectacular recoveries of nature, including large numbers of magnificent large herbivores like red deer.

We need more research. We must examine the consequences for our deer populations as we promote the recovery of natural habitats to help combat the climate and biodiversity emergencies and, whilst early on this may require reductions in deer numbers, longer term we may see a more diverse ecosystem with a high abundance of red deer playing their important role as an ecosystem engineer.

For the science see <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2664.14047>; Exploring a natural baseline for large-herbivore biomass in ecological restoration (November 2021) with thanks to lead author Camilla Flojgaard and to my co-authors Jens-Christian Svenning, Pil Pedersen and Rasmus Ejrnæs.

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Farm success brings



We don’t want to improve farm operations at the expense of the wildlife that we are proud to have, says **Louise de Raad**

Since late 2014, the Game and Wildlife Conservation Trust has held the tenancy of the 480 hectare Auchnerran farm, close to Logie Coldstone on Deeside in Scotland. This is the Trust’s main base in the north east of Scotland which we run as a demonstration farm, allowing us to trial modern agricultural practices and demonstrate what works (and what doesn’t) directly to politicians, farmers, conservationists and the public in Scotland.

At Auchnerran we want to show how hill-edge, marginal farmland in Scotland can be managed to be profitable and benefit game, wildlife and other “natural capital”, and feed into land-use policy. As a part of this, we are constantly working to improve the farm to ensure it’s a fundamentally sound economic enterprise.

Our main commodity is the sheep flock which has now grown to around 1,400 ewes and which grazes the adjacent grouse moor in the summer. This helps to manage the moorland habitat, whilst the sheep act as “mops” to keep tick numbers down. We rely on good grass-growth on the farm to provide grazing, but we still require supplementary food for the flock through the winter in the form of silage and brassicas, and we over-winter away our hogs.

Whilst improving our farm operation we don’t want to do this at the expense of the wildlife that we, like so many farmers, are proud to have – indeed, we want to benefit our game and wildlife wherever possible.

We have just published our third annual report for the farm for the year to December 31, 2021.

This highlights the farming and research activities and financial posi-

tion and shows that 2021 was a tough year on several counts. Poor weather and access restrictions on visits due to Covid-19 were also major factors but even with those challenges significant progress was made in terms of the farm, wildlife and the environment, science and research, the farm shoot, and profitability.

Although visits to the farm were curtailed and, in particular, the opportunities for welcoming policy makers and others were much reduced, the year did see completion of our new visitor centre. Weather was unpredictable – there was a cold spring with significant snowfall in May 2021 and a dry summer that followed. Whilst early lamb losses were higher than normal, it was encouraging that farm output overall was maintained at a good level with a high lambing rate.

Monitoring the wildlife of the farm and maintaining our long-term data sets takes constant effort and thanks are due to the staff and students who contribute so much to this ongoing work.

One of our main findings for 2021 has been that our healthy visiting wader population was heavily predated by badgers. Our latest research shows that the predation occurred during a specific climactic window, of dry periods in conjunction with significantly colder days. This suggests that it is likely that the exceptionally high predation events were at least in part due to much lower food availability for the badgers during this window, as earthworm activity and availability would have been so much lower.

We also completed the farm’s natural capital assessment and carbon audit. The shoot also had a good year and gave much pleasure to those lucky



enough to have taken part.

The bottom line is that Auchnerran is coming out of the Covid-19 crisis stronger than ever. This year we have a new management structure in place, and our team includes some new staff. We are investigating the impact that our intensified farming operations over the past five years have had on breeding waders and are now shifting our focus onto trialling modern agricultural practices, with some exciting

benefits for wildlife

new projects on grassland management, mob grazing and direct drilling in the pipeline. For more information you can download the GWSDF Auchnerran annual report at www.gwct.org.uk/media/1350092/Auchnerran-Report-2021-LR-SP.pdf

Dr Louise de Raad, Game and Wildlife Conservation Trust Head of Research Scotland and Director of the Game and Wildlife Scottish Demonstration Farm

↑ Auchnerran’s sheep flock has grown to around 1,400 ewes and grazes an adjacent grouse moor in the summer



To ensure we can make our “just in case” purchases, the festive season for the rail freight community started back in mid-October with a steady stock building of retail goods. Domestic rail freight flows have been particularly strong, with now 33 high speed, mostly electrically hauled intermodal freight trains operating between the UK distribution “golden triangle” in the Midlands and central Scotland each week. Our terminal operators have also been collaborating with ports, shippers and major retailers to position stock in readiness for pushing into high street stores and the fulfilment operations of online sellers.

Balancing this, an important dynamic that drives good asset utilisation and two-way revenues critical for competitive and cost efficient rail opportunities, is Scottish goods being export-

ed. Whisky continues to sell strongly in key export markets, as do the wide range of other food and drink products supplied into retailers across the UK, underpinning healthy demand for rail freight services. And just in time perhaps to meet the needs of those new year resolutions, operational training is now completed at Highland Spring’s new Blackford rail freight terminal, officially opened on August 31, with services full of bottled water now up and running direct from production site. So, come the day and as wrapping paper is being torn open, indulgent snacks and tipples are being consumed and strategies are being formed to make the most of new year sales, have a think about how all these goods have come to be there and the role all the links in the rail freight supply chain played. **Martin Bignell, Scottish and Northern Representative, Rail Freight Group**



Pupils find winning formula with Royal Navy link up

Rarely have I seen a project to which pupils have so willingly given up their own time to undertake and which has benefited them to such an extent, says **Gordon Cooper**



In the autumn of 2021 Knightswood Secondary School became involved in something of an experiment with four major organisations; the Royal Navy, the RAF, Rolls Royce and Thales which were all keen to promote engineering and develop future skills.

Each bought a Greenpower F24 electric car and sought a school to mentor through the construction process. This would be part of the overarching STEM (science, technology, engineering, and maths) philosophy of embedding real-life context in education.

Knightswood Secondary was linked to the Royal Navy, and on week one I loaded ten senior pupils onto the school minibus and delivered them to the Strathclyde University Manufacturing site in Renfrew, not entirely sure what lay ahead. There we met Commander Dave Pinder and his STEM engagement team of engineers, seconded to work with schools around the country. Highly-trained specialists in their own fields, these young navy personnel proved to be outstanding role models for the students and their light supervision, advice and training enabled the pupils to take the lead and work as young apprentices in an adult environment.

Sixteen weeks later we had taken five large boxes full of parts and transformed them into a well-engineered electric car, and I had a group of super-enthusiased students. Rarely have I seen a project to which pupils have so willingly given up their own time to undertake and which has benefited them to such an extent. The pupils had of necessity become a well-organised team with a project manager and pairs focussed on the brake system, steering and electrical

specialists, or “Sparks” as they love to be known.

The Greenpower kits cost between £3500-£4000 and provide a scale of project well beyond the reach of our school budget. Once complete, our S6 project manager, Calvin Turner, liaised with local company, Aaron Wolf, which provided decals free of charge. These put the finishing touches on the car with gold decals against the black body à la Formula 1 1970s JPS!

With the car complete we needed a challenge. The Jackie Stewart Classic Festival of Motoring was held at Thirlestane Castle in June 2022 – a huge weekend event to raise money for Alzheimer’s and a true gathering of motoring history and now, with electric karts perhaps a harbinger of the future we entered the timed event for these, and Knightswood’s answer to the dominant Red Bull Team was now in competition with other schools and universities.

So what next? Fortunately a brand new organisation, the Jim Clark Trust Scottish Electric Chariot Championship is setting up a series of events. Competing will both focus and challenge the team; keeping track of finances, nurturing links with industry and seeking sponsorship to enable us to transport the car, purchase new tyres and buy materials which the school budget just couldn’t cover.

The key takeaway has been the learning experiences pupils packed in and the journey they’ve been on. The fantastic rapport between the pupils and their Navy mentors continues to this day. If any business or individual reading this can contribute towards a similar kart for their local school, you’re guaranteed to enjoy it as much as the students! **Gordon Cooper, Knightswood Secondary School**



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Rail freight playing major role in bringing Christmas down the line

Festive season for rail freight started with stock building in October, says **Martin Bignell**

For most of us the festive season reaches a crescendo in the week before the 25th. Despite the best of intentions to be organised early, as Christmas adverts roll, our town centres are lit and Noddy Holder tops up his ever-green pension fund, millions of us get swept up in all manner of “just in case” purchases, in addition to our more considered gift selections.

“Just in Case” is also starting to emerge as a logistical term, following years of the more familiar “Just in Time” (JIT). This mindset shift in larger manufacturers and organisations has been a reaction to the turbulent times since 2019, a period that has turned supply chains on their heads, a result of tremendous shocks to the previously smooth running and relative predictability of consumer demand.

Unpredictable manufacturing planning, factory shut-downs, disrupted supply of shipping capacity on a global basis, mass PPE purchasing and, in more recent times, the impact on our discretionary spending power due to energy price rises and inflation have manifested themselves in supply shortages and retailers re-evaluating how best to keep customers satisfied while managing their risks and costs.

This is a resiliency strategy where manufacturers and retailers hold higher inventories to anticipate demand and mitigate disruption rather than the JIT approach of only moving product as close to the point it’s needed as possible, thus reducing costly inventory levels. For rail freight companies, rail freight terminal operators, ports and distribution hubs, it means a lot more goods to hold, move and manage.

