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Dear Convenor and Members

Wildlife Management & Muirburn (Scotland) Bill: badgers on moorland

We are writing by way of follow up to BASC's letter of 30th September to the Committee. We hope the members find this information helpful and we thank you for your patience. To understand the presence and ecological roles of badgers on moorland we need to understand the following.

BASC stated badgers "are simply not there" on moorland but is this true?

Badger persecution offences come to court on a regular basis where the offences take place on moorland and the perpetrators are employees of sport shooting estates. Many more crimes take place that are not reported and only a tiny fraction of those that are reported reach prosecution. A general problem is that moorland used for producing grouse is generally remote and witnesses and evidence are not forthcoming. It is not a matter of opinion; the evidence shows that badgers live on moorland. Whether the offences are due to an unusually high number of individuals who make bad choices, or whether these offences are associated with systemic structural issues, is for yourselves to decide.

Badger population density in natural moorland ecology vs on moorland managed for sport shooting.

Not so long-ago badgers lived and roamed on our moorlands in healthy populations (Barkham 2013) and did so at the same time as flourishing populations of grouse and other ground-nesting birds (Macdonald 2019). Before the very particularly British love affair with sport shooting began in Victorian times and moors began to be altered, natural moorland allowed succession to trees in some places and understories of scrub in other places. Such natural processes create interfaces of different ecological processes and a patchwork of varied conditions, that support emergent communities of countless organisms (from bacteria to plants, invertebrates, amphibians, insects, birds and animals) and create niche habitats within moorlands that are self-sustaining and in balance – that we nowadays call 'biodiversity' or 'nature'.

However, to produce good grouse numbers for shooting intrusive methods are used repeatedly to alter natural moorland. As BASC pointed out in their letter on 30th September several grasses, dwarf shrubs and insects benefit from grouse production conditions and remain on managed grouse moors; however, the point is that these species are present purely by coincidence and are dependent on the artificially engineered conditions designed to maximise grouse production. Rather than grouse moors being "highly diverse" or "of benefit to biodiversity" on the contrary the managed grouse moor is a landscape largely depleted of the natural processes that previously supported emergent ecological

processes - a tiny bandwidth remains that bears no comparison to the broad bandwidth of rich resilient life forms that once characterised our moorlands and that was our heritage (Macdonald 2019).

Food for badgers. As adaptable omnivores badgers can often cling on whether other species cannot. As demonstrated by the landmark field studies of the Kruuk team of scientists working out of Aberdeen University four decades ago the badger diet in Scotland is adapted to the local food items available (Kruuk & Parish 1981). The second biggest food source for badgers today is insects and their larvae. Badgers can live on ground poor in earthworms by adapting to eat other food items and utilising a larger territory (Rainey et al 2009).

Suitable ground for setts. Similarly, badgers are gifted with an incredible ability (that scientists are still to working to understand) to find suitable substrate within swathes of ground that may appear to us to be unsuitable; badgers also have below surface precision tunnelling skills that the best of human engineering cannot yet fully emulate (Roper 2010).

Persecution of badgers on and around moorland managed for sport shooting. An ecologist's report describes an acclaimed sporting moorland in the Angus Glens managed for grouse shooting. It was produced for the court hearing the case of Rhys Davies a gamekeeper employed by that estate who baited and killed badgers and foxes with dogs over a two-year period to 2019.

> "Because much of the neighbouring land (including the Cairngorms National Park) is wildlife rich this estate acts as a 'wildlife sink'. Population pressure and natural inquisitiveness encourages wildlife to try to explore this area. Those that make it in will rarely leave alive. Land mammals are mostly either successfully excluded by fencing or killed by trapping or shooting."

This extract from a gamekeeper's story throws light on the systemic structural issues the employees are controlled by :

> "To produce good numbers of birds to shoot requires huge effort on the part of the keepers all year round. If numbers are poor jobs are at risk. A head keeper who doesn't make the numbers will lose his job and he won't put up with slacking by his under keepers when his job is at stake. To keep the numbers of birds high muirburn, drainage and regular predator control are essential. Tracks need to be cut to make easy access for keepers year-round and to get the shooters to the pegs" (anon 2022).

When foraging on managed sporting moors badgers must find an area with limited natural prey items but an excess of grouse chicks and dead and wounded grouse. There should therefore be plenty food to go round for all wildlife, but many believe badgers are a threat and make clear that badgers are not welcome.

It is stated in BASC's letter that there is no evidence that systemic structural issues are involved in the badger killings that come to light. But how do we explain that employees of the sport shooting industry

seem disproportionately represented in badger offences? Is there an absence of self-regulation in the industry? We are contacted by concerned individuals but they are too frightened to disclose their identity because their live on a sporting estate. The former head of Wildlife Crime investigation with Police Scotland notes that around the turn of the century some estate owner intensified the pressure on employees and in this same period there was an increase in incidents of wildlife persecution (Stewart 2017).

An illustration of poor self-regulation in the industry came with the case in 2019 when a Borders estate keeper was convicted of offences of possessing illegal pesticides and snares, and of large-scale killing of badgers, an otter, 42 foxes, 32 cats, 75 rats, 103 stoats, 37 weasels, 90 hedgehogs, five mink, 622 rooks and 81 jackdaws in one year on one estate – and had kept records of similar killing regimes when employed on previous estates.

If further evidence is needed the State of Nature Scotland Report (2019) concluded that "widespread sporting management since the 19th century had significant effects on upland wildlife" and "grouse moor management exerts a powerful influence over land in upland areas."

The Scottish Government has committed to protect at least 30% of Scotland's land and seas for nature by 2030 (Scottish Government, 2021, A Fairer, Greener Scotland: Programme for Government 2021-22; European Commission 2020 European Biodiversity Strategy for 2030). The owners of and employees on land used for sport shooting have the opportunity in this Bill to make the changes that will help achieve these goals.

If you require information on any of these issues, we are happy to provide it. Thank you.

Dr Elspeth Stirling, Trustee and Secretary, on behalf of Scottish Badgers
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Sources

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Badger sett on heather moorland Scotland