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Hopetoun, 26 January 2026

Dear Minister,

Re: Muirburn licensing and peatland management under the Natural Environment Bill

The Game & Wildlife Conservation Trust (GWCT) is an independent charity conducting research and providing science-based advice to land and wildlife managers on sustainable management practices. The Trust has published peer-reviewed studies on the effects of prescribed burning of moorland vegetation ('muirburn'). We also periodically review other relevant research. Given this expertise, we believe that it is our responsibility to raise certain concerns that we have regarding the provisions of the Wildlife Management and Muirburn (Scotland) Act 2024 and the upcoming Muirburn Licences.

The 2025 wildfires at Dava and Carrbridge demonstrate the devastating effects and risk Scotland faces from wildfire. Opinions differ, but it is likely the impact of these fires was exacerbated by the build-up of vegetation following decline or cessation of habitat management. Indeed, the science is clear; the extent of wildfire is less in areas managed by muirburn (Fielding et al., 2024), and illustrates one risk that Scotland would face should vegetation management in the uplands be neglected or abandoned due to legislation or licensing. In formulating the Natural Environment Bill it is critical to avoid unintended consequences that might impact the beneficial habitat management, such as the use of muirburn on "peatland".

Peatlands are the UK's largest carbon store. Blanket bogs, a type of peatland characterised by Sphagnum mosses and cottongrasses, are especially important because of their role in carbon sequestration and climate regulation. Given the Scottish Government's commitment to reducing net carbon emissions, it is of the utmost importance that these habitats are appropriately managed and maintained.

A key obstacle to achieving this is currently posed by the provision, set out in section 14 of the Act, that a licence to burn on 'peatland' may be granted if 'no other method of vegetation control is practicable.' The implication of this provision seems to be that a Muirburn Licence will not be granted on areas with peat depths exceeding 40cm if cutting is at all possible. The available evidence base does not provide a clear justification for this policy in relation to the preservation of blanket-bog habitats.

First, scientific evidence suggests that muirburn can maintain blanket-bog-vegetation as it suppresses succession to dwarf shrub, scrub, and woodland communities. Two GWCT studies found that the cover of Sphagnum and cottongrass was highest in areas recently burnt, compared to areas subject to longer burning rotations and unburnt areas. Notably, this was observed both experimentally on a local scale (Whitehead et al., 2021) and correlationally on a regional scale (Whitehead and Baines, 2018). These findings are supported by a number of other studies. Noteworthy among these are studies reporting results from the Hard Hill experiment in Moor House Natural Reserve in Upper Teesdale. Established in 1954/55, this is the longest-running study on the effects of rotational burning (and grazing) in the UK. Here, studies concluded that the highest abundance of Sphagnum and cottongrass was found on areas receiving the most frequent burning treatments, compared to both longer burning rotations and no-burn control areas (Ward

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et al., 2012; Milligan et al., 2018; Noble et al., 2018a; Marrs et al., 2019). Other studies have also reported similar results in different contexts (Worrall et al. 2013; Grau-Andrés et al., 2017; Grau-Andrés et al. 2019a; Grau-Andrés et al. 2019b; Heinemeyer et al. 2019).

Second, evidence of negative effects of muirburn on Sphagnum and/or cottongrass is limited. Only one study found a higher cover of Sphagnum and cottongrass in unburnt plots than in burnt plots (Noble et al., 2018a). However, in this correlational study, significant differences were only found in one of the two datasets used, and they were different for Sphagnum and cottongrass. Moreover, in the dataset showing significant differences for Sphagnum, burnt areas were identified from satellite imagery without any indication of time since burning. Confounding fire ages in this way is problematic, since many of the studies cited above found significant differences between short burning rotations (e.g., up to ten years) and longer ones.

Third, the overall evidence is not substantial enough to promote cutting as a preferred alternative to muirburn. There are only two studies investigating the effects of cutting on blanket-bog vegetation (Heinemeyer et al., 2019; Holmes and Whitehead, 2022). Both reported negative effects as cutting at standard heights cut into Sphagnum hummocks and removed growing tips. Cutting might, therefore, restrict the functioning of blanket-bog ecosystems. However, the long-term effects of cutting simply have not been studied. We also note that a review conducted by Natural England found limited and inconclusive evidence on the long-term effects of cutting, particularly in comparison to burning (Moody and Holden, 2023).

In summary, the best available evidence indicates that, in many places, blanket-bog ecosystems depend on effective management to prevent a succession into other vegetation with less potential for peat formation and carbon sequestration. The evidence also indicates that, in certain contexts, muirburn can assist in reversing degradation associated with tall, rank heather (*Calluna vulgaris*) and support the recovery of peat-forming vegetation and associated ecosystem functioning. No comparable scientific foundation exists for the effects of cutting.

The Wildlife Management and Muirburn (Scotland) Act 2024 has the potential to recognise the need to control heather and other vegetation on blanket bog through the licensable purpose, defined for burning on 'peatland', of 'restoring the natural environment'. However, the provision that a licence to burn on peatland will only be granted if 'no other method of vegetation control is practicable' introduces a presumption against muirburn and a preference for cutting that has no basis in available scientific evidence.

There now exists an opportunity to remove this presumption through secondary legislation. You recently confirmed that NatureScot is conducting a review of the scientific evidence relating to muirburn, and that this review would inform potential amendments to the Wildlife Management and Muirburn (Scotland) Act 2024 through amendments of the Natural Environment Bill. In light of these remarks, we would encourage that this work, alongside the wider body of evidence outlined here, is fully taken into account when the Bill is considered at Stage 3. Such amendments would provide an important opportunity to ensure that muirburn can continue to be used, where appropriate, as a tool to support the conservation and restoration of blanket bogs.

Appendix - References:

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