Photo: Laurie Campbell

Scotland's wild deer and venison production
Greenhouse gas emissions, carbon and the climate emergency

A STATEMENT OF INTENT
by the Scottish Venison Association

We want a sustainable wild deer presence across our countryside but accept that, as we respond to the climate emergency and aim to reach net zero, whilst deer bring positive benefits (economic, social, cultural) methane emissions from them as well as the potential for high densities to hamper biodiversity recovery are possible areas of concern. There have been widespread efforts made to reduce open range deer populations and these actions are expected to continue.

For reasons of conservation and welfare, and in the absence of a natural predator, deer numbers need to be managed.

In addition to grazing impacts, damage caused by trampling may be an issue, particularly in the upland range where peatland – one of our greatest carbon stores – suffers loss under high footfall. Where sheep are present they may also be a cause of damage.

Venison from wild deer is an increasingly popular, marketable natural protein and, for those choosing meat as part of their diet, it is the healthiest and most sustainable of all our red meats, sourced from our wild free ranging animals.

The report *The Life Cycle of Scottish Venison* (1) in 2009 found that the total average GHG footprint from all wild venison processed is estimated at 12,523 kgCO2e/tCW. For a table showing the carbon footprint of other elements of the red meat sector see note (2).

An overall summary of results for wild venison is captured below:

Summary of emissions at each stage of the life cycle

Life cycle stage	Carbon emissions (kgCO2e/tCW[1])	Proportion of footprint (%)
Estate level	11,716	93
Transport to processor	327	3
Processing	480	4
Total	12,523	100

It is emissions of methane from deer, produced as a by-product of digestion (enteric fermentation) and the decomposition of manure that were estimated then to make up the greatest contribution to the carbon footprint of venison, accounting for approx 76% of overall emissions. It should be noted that for the 2009 report figures for farmed deer were used as the most reliable estimate available. We do not know yet whether emissions from wild deer may be significantly different.

At the estate level, direct fuel use for vehicles and machinery was also found to account for some 15% of the total footprint.

At processing stage, it was the consumption of electricity that accounted for the majority of GHG emissions (approx 83%).

Natural gas used for heating was also found to be a significant contributor, making up around 9% of the footprint during processing, while the generation and disposal of waste is estimated to account for 7% of emissions at this stage.

The climate impacts of deer management

As with every sector, deer management practice incurs an environmental cost. We need to know more about this by quantifying figures for vehicle trips to the hill, for the recovery of carcasses, ammunition (including switching to non-lead), fencing, lardering, storage, packaging and transport to market.

Scotland's deer management and wild venison sector intends to:

- Commission research to quantify greenhouse gas emissions associated with deer populations and deer management practice, including primary processing, to include updating of the 2009 report.
- Commission the desk-top examination of existing material to assess the GHG emissions per animal from deer on the ground.
- Take steps to reduce these as close as possible to net zero or beyond.

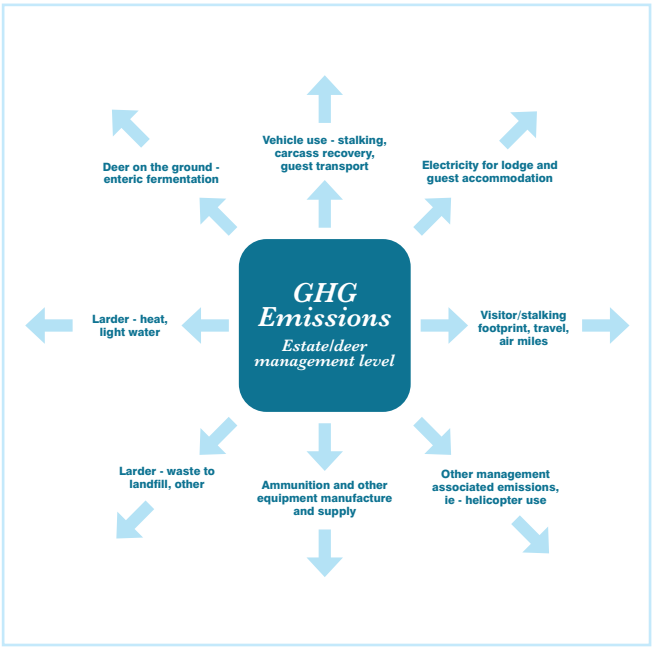
Venison processing

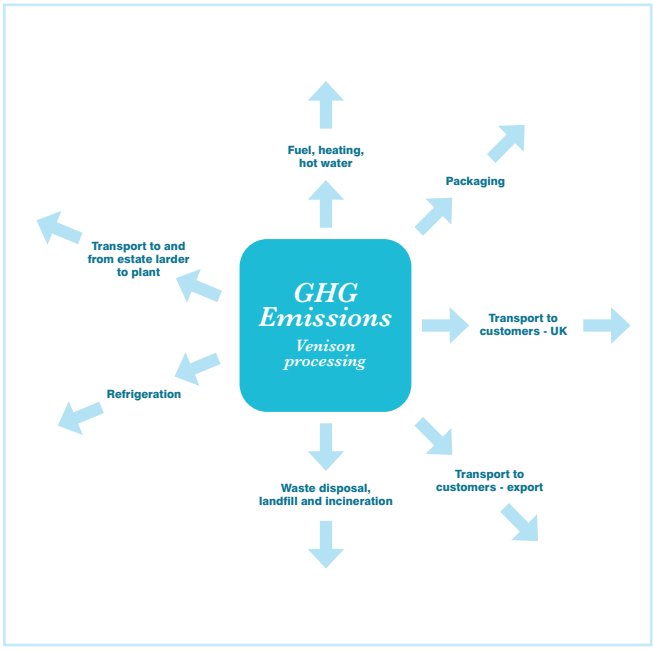
We need to know more about the carbon impacts of secondary processing. Also, we recognise the incurrence of food miles of varying distance, depending whether supply is to local markets or through a game dealer/processor and into the mass markets that they service.

Our work will look at transport from larder to plant, processing, and freight to customer or distributor. Data may already exist from other parts of the red meat sector that can provide sufficient information for an initial assessment.

We intend to:

- Commission the desk-top examination of existing material to establish the carbon footprint of high-volume aspects of the processor supply chain.
- Assess the carbon footprint for low-volume routes to market.
- Evaluate these and establish appropriate steps to be taken to limit carbon outputs including encouraging local processing and local sales.





Conclusion

It is the Scottish wild venison sector's intention to examine the main environmental costs of venison production so that recommendations for further improvements can be developed and implemented.

In addition to the validation and updating of the 2009 report we will produce a set of simple principles that can be undertaken by individuals, land management agencies and businesses to reduce the carbon footprint of venison production and processing including that:

- Processors should work with their suppliers to balance carbon outputs through mutual arrangement of what can be achieved in terms of carbon mitigation and by whom.
- New, appropriate guidance is added to both Deer Management Best Practice and the Scottish Quality Wild Venison standards, and where possible basic carbon accounting included within the SQWV scheme's assessment process.
- A programme of research and resulting action is developed to achieve carbon neutral status or better for the sector by 2035.

Wildlife managers and estate owners can help by changing their practices to reduce impacts, taking steps to ensure that their deer densities are sustainable, and implementing actions that deliver a beneficial response to the climate emergency.

Venison producers and processors can help by reducing food miles and examining systems to reduce other carbon positive factors such as packaging and waste.

Our customers can help by thinking about where their food comes from and by buying products that are produced sustainably and locally where possible.

Notes
(1) Life Cycle of Scottish Wild Venison: Deer Commission for Scotland/ Natural Capital 2009
(2) HIE Carbon footprint of agricultural produce 2008 (figures for packaging and distribution have been removed from dataset for easier comparison with venison)

Stage	Dairy kgCO2e/t milk solids	Beef kgCO2e/t carcass weight	Lamb kgCO2e/t carcass weight
Farm/estate	12,007	20,171	23,583
Transport to processor	57	7	6
Processing inc waste	979	204	1,093
Total	13,043	20,382	24,682

This **Statement of Intent** has been developed by the Scottish Venison Association, in conjunction with The Association of Deer Management Groups, BASC Scotland, Lowland Deer Network Scotland (LDNS), Scottish Environment LINK, Ardgay Game, Highland Game, Scottish Quality Wild Venison, and NatureScot.

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