

Output: A report on limitations of data currently collected
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1 Background:

As outlined in the Unified Data project rationale, DCS seeks to identify the most cost-effective method of providing data from culled deer in order to:

- Provide full traceability for disease monitoring and quality assurance purposes
- Assist in their sustainable management
- Explore whether data can assist in the monitoring of the competence of practitioners

In order to satisfy public / political expectations about the management of wild deer in Scotland

In essence, traceability means the ability to trace individual carcasses from 'hill to plate'. Sustainable management could be informed by data on age class, reproductive status or condition allowing questions about size, structure and 'health' of the population to be addressed. Bullet placement could provide an indication of stalker ability or competence.

Any deficiencies in existing data collection must be viewed in the context of the data that is required by DCS and stakeholders. Ideally data would be collected on individual carcasses and subsequently analysed at the population or deer management unit scale.

2 Method:

A review of current data collected by DCS is provided below:

Cull returns

If a cull return is requested of an individual, then that individual is required under statute (Section 40) to provide specified information on the deer culled. The cull return form identifies the owner or agent (if nominated by the owner) and the specific DCS property code. The statutory data requested are: numbers, sex and species of deer killed. Additional voluntary information on (very) broad land type, whether deer are culled in / out of season and whether deer culled are adult or juvenile is currently collected.

In 2005/06 2,549 returns were collected supplying information on 103,837 carcasses. This took an estimated 24 DCS staff days to collect.

A key limitation of the current approach is that DCS can only request cull returns from those stalkers they are aware are culling deer. Despite the legal requirement some requested cull returns are never submitted. There are also potentially stalkers culling deer whom DCS are not aware of and who are therefore not requested to return cull return forms (e.g. those not submitting venison to game dealers – see 'An estimate of numbers of deer shot that do not go through game dealers ('domestic consumption)').

Authorisation returns

In addition to cull returns, authorisation returns are completed by all owners/occupiers that cull deer under authorisation from DCS under the following sections of the Act:

- 5(6) – unenclosed woodlands, natural heritage and public safety
- 5(7) – scientific purposes
- 10(2) / 10(4) – emergency powers
- 18(2) authorisation – night shooting.

In the past DCS also sought cull returns under section 26(2)(d) – approvals for nominated controllers under owner occupier rights. These are no longer requested.

The data asked for under authorisation returns is not prescribed, and may be varied according to Section 37(4) of the Act. Currently the form asks for the date individual animals are culled as well as the location (ideally but infrequently by way of a six figure grid reference) and land type. Also recorded are the numbers, sex (including male and female calves) and species (red, roe sika, fallow) of deer killed.

In 2005/06 210 authorisations were issued (excluding 26(2)(d) approvals). Data from 8,648 carcasses culled under these authorisations was collected. This took an estimated 48 DCS staff days to collect.

Venison dealer records

Venison dealers are required, under the Sale of Venison (Scotland) Act 1968, to be registered with their local authorities to deal in venison. Venison dealers are also required under Section 2(1) of the above act to keep records, the detail of which is laid down in the Licensing of Venison Dealers (Prescribed Forms etc.) (Scotland) Order 1984. The data that is required to be kept are: the date of purchase or receipt, the species of deer, the place where the deer was killed, (i.e. estate, agricultural holding or forest), the name and address of the seller, the source from which the venison was received, registration number of the vehicle delivering the venison, the number of male, and female animals and weights of these, and also details of any part carcass traded.

It is only a statutory requirement for venison dealers to keep these records and under section 34(2) of the Deer (Scotland) Act 1996 for DCS to "inspect" them at the dealer's premises. In 2005/06 86 dealers voluntarily supplied annual records to DCS, 41 of these also supplying returns monthly. This provided data on 66,386 carcasses. This took an estimated 70 DCS staff days to collect.

Links between current data sets

Currently there is good linkage between Cull and Authorisation returns with both using the same DCS property code. However, there is duplication in that deer culled under Authorisation are effectively returned twice to DCS (under both the Cull and Authorisation returns). Whilst these can be separated this creates an unnecessary additional bureaucratic burden.

There is poor linkage between Venison records and either Cull or Authorisation returns. This is for a number of reasons:

- Venison records do not contain DCS property code (the prescribed form does not require it)
- The locations that are given are often not sufficient to pinpoint the carcass to a landholding (e.g. "Atholl" or "Perthshire")
- Venison records do not contain DCS authorisation numbers (the prescribed form does not require it), therefore no way of knowing whether animals was culled under authorisation.

The number of carcasses reported under Venison dealer records is significantly less than that reported under Cull returns. The reasons for this are:

- 'Domestic consumption' (see 'An estimate of numbers of deer shot that do not go through game dealers ('domestic consumption')
- Dealers opting not to voluntarily submit records to DCS – partly due to DCS not following up smaller (home / local sale) dealers and partly due to failure of dealers to submit records
- Complex chain between producers, collection centres, dealers
- Dealers based in England not complying with Deer (Scotland) Act 1996

Potentially information on the majority of carcasses killed under authorisation is currently submitted to DCS three times, under authorisation returns, cull returns and from venison dealer records.

Table 1 Extent of current data collected in relation to sixteen potential data variables required

Source (provision of Deer (Scotland) Act 1996)	Minimum data													Additional data		
	Stalker ID	Location	Species	Date	Deer act provision		Sex	Disease	Weight	Condition	Habitat	Bullet tracts	Age class	Parasite loads	Bacterial loads	pH
					Culled under authorisation?	Culled out of season?										
Section 40 (statutory cull returns)		landholding		1												
Section 37 (Conditions for authorisations (5(6); 5(7); 10/11; 18(2); 26))		landholding		2							agriculture woodland natural heritage		adult or juvenile			
Section 34 (inspection of venison dealer records ³)		often vague					male or female/c alf				woodland					

Table 2 Coverage of and effort for current data collected

Source (provision of Deer (Scotland) Act 1996)	Stalkers / dealers covered	Number of carcasses for which data collected	Cost (DCS days 2005/06)	Cost (Practitioner days 2005/06) ⁴
Section 40	Those known to DCS	103,837	24	361
Section 37	Those applying for authorisations	8,648	48 ⁵	31
Section 34	Larger game dealers, those supplying direct to England may not be covered	66,386	70	231

	not collected
	voluntary
	compulsory

¹Retrospective summary for whole year only

²Retrospective deer culled during period of authorisation

³Records currently supplied voluntarily to DCS

⁴Based on estimated 5 minutes per carcass and numbers submitted

⁵10% of 2721 staff hours spent on authorisations

Other existing (voluntary) data sets

The Scottish Quality Wild Venison Assurance Scheme launched in 2002 collects data on essentially the same variables outlined for venison dealer records in Table 1. The scheme is voluntary but once signed up to provision of the data variables is mandatory to the scheme.

Gaps between current data sets and needs

Table 1 illustrates the gaps between data potentially required by DCS (as identified by UD2.1.1) and that currently collected by DCS as outlined above. All current data combined contributes to nine of the eleven required variables and none of the additional four variables. Of these nine variables the contribution to some is only partial, or not at sufficient resolution (e.g. location data from venison dealer records).

Costs of current data collection systems

Table 2 illustrates the coverage and costs associated with data currently collected by or on behalf of DCS. An estimated 765 DCS and stakeholder days go into current data collection.

3 Implications and options:

The main implications from the above analysis are:

- Current data collected by DCS at best partially provides data on some of the potentially key variables at an estimated cost of 765 man days *per annum*
- There is poor linkage and duplication of effort both by practitioners and DCS staff in submitting and collating current records and returns

The main options in terms of minimising the gaps between data requirements and existing collection methods are:

- Changing legislation in terms of either / or section 37 / 40 Deer (Scotland) Act / sale of Venison (Scotland) Act 1968 to require submission or records containing the required data variables (identified in 'An estimate of numbers of deer shot that do not go through game dealers ('domestic consumption')
- Adapt existing voluntary schemes in terms of variables collected, numbers of carcasses handled to meet data requirements
- Adapt existing voluntary schemes and then give them a statutory basis
- Introduce a new voluntary system
- Introduce a new statutory system

These options will be explored further in subsequent outputs.