

Supplementary Table S1 Number of deer culled by FLS in 2016/2017 by month and species.

Month	Overall	Fallow Deer	Red Deer	Red/Sika Deer (Hybrid)*	Roe Deer	Sika Deer
April	567	1	194	0	333	39
May	1713	10	559	1	1051	92
June	1217	9	358	2	761	87
July	832	3	322	0	437	70
August	291	1	96	0	179	15
September	793	3	384	0	142	264
October	5403	72	2416	3	2432	480
November	4635	98	1883	1	2259	394
December	2965	57	925	1	1729	253
January	3476	64	1288	1	1873	250
February	3324	66	1248	0	1734	276
March	3634	77	1164	0	2043	350

*reported by the stalker based on deer appearance.

Supplementary Table S2 Comparison of deer species sampled in this study with proportion culled by FLS in 2016/2017

Species	Deer species culled by FLS [#] (2016/2017)		Deer species culled and sampled in this study (2017/2018)	
	N*	%	N*	%
Red	10,837	37.6	498	46.0
Roe	14,973	51.9	449	41.5
Fallow	461	1.6	115	1.9
Sika	2,570	8.9	21	10.6

*hybrid deer were reported in the historical data (n=9) but are not included in the table above.

[#]FLS = Forestry and Land Scotland

Supplementary Material S1: Sample size calculation

Sample size for the study was estimated using the following formula:

$$n = (z^2 \times p(1 - p))/d^2$$

where:

n = sample size

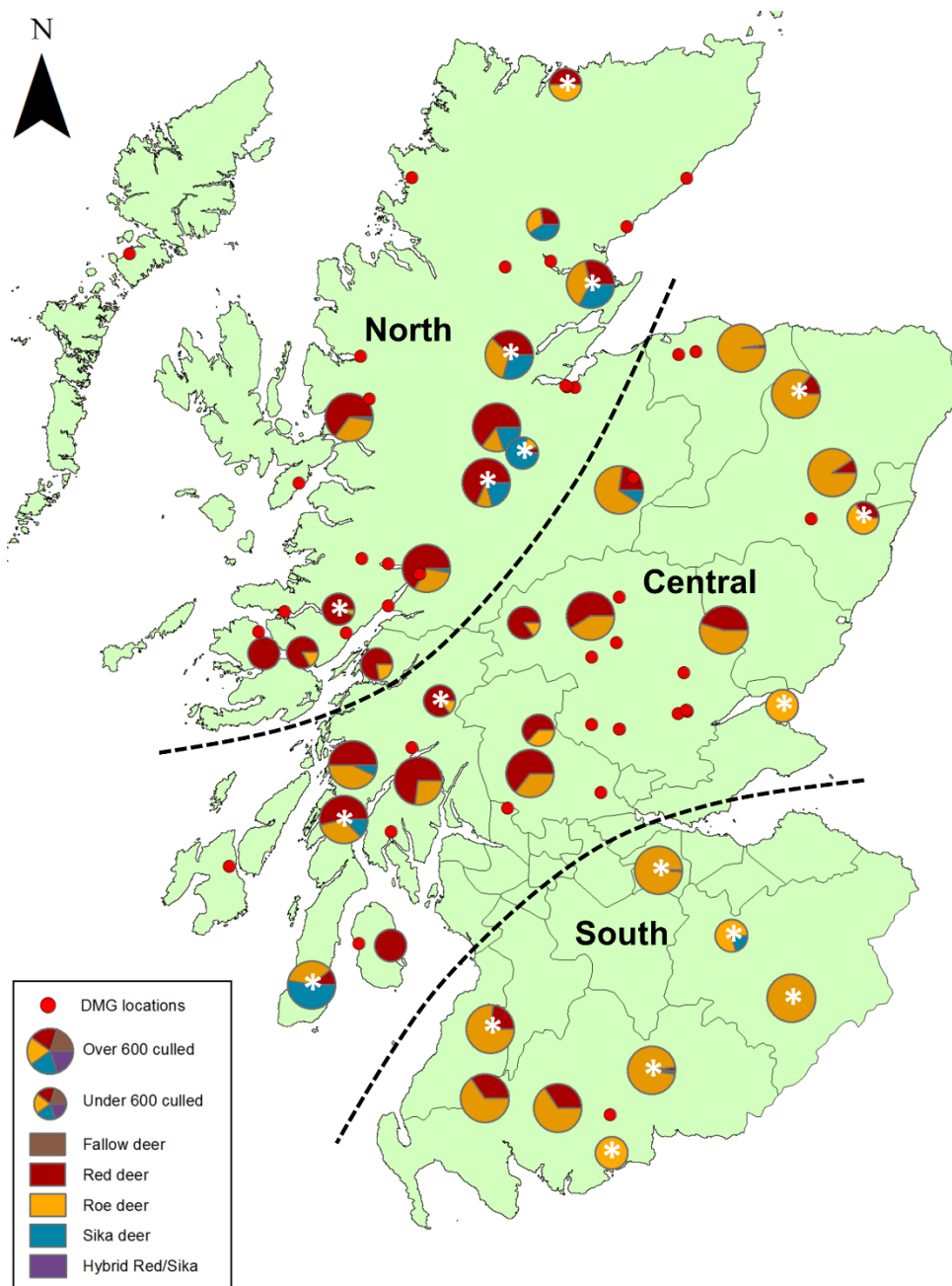
$z=1.96$ (z statistic for 95% level of Confidence)

p =prevalence estimate (here $p=0.01$)

d = precision, estimated as $p/2$ (here $d=0.005$)

Supplementary Material S2: Deer sampling strategy

In total, 800 sample packs were distributed to Scottish deer management groups (DMGs) and 1088 sample packs were distributed to 18 Forestry and Land Scotland (FLS) ladders. The distribution of DMGs (red dots) and FLS ladders (pie charts) are indicated in the figure below. FLS ladders chosen for this study are designated with a white asterisk. Sampling from FLS ladders was weighted for species, sex, month, and ladder size. Sampling targeted three large ladders (>600 carcasses/year) and three small ladders (<600 carcasses/year) from the north and central regions of Scotland, and four large ladders and two small ladders for the Southern region of Scotland.



Supplementary Material S3: Questionnaire completed by deer stalkers at time of sample collection.

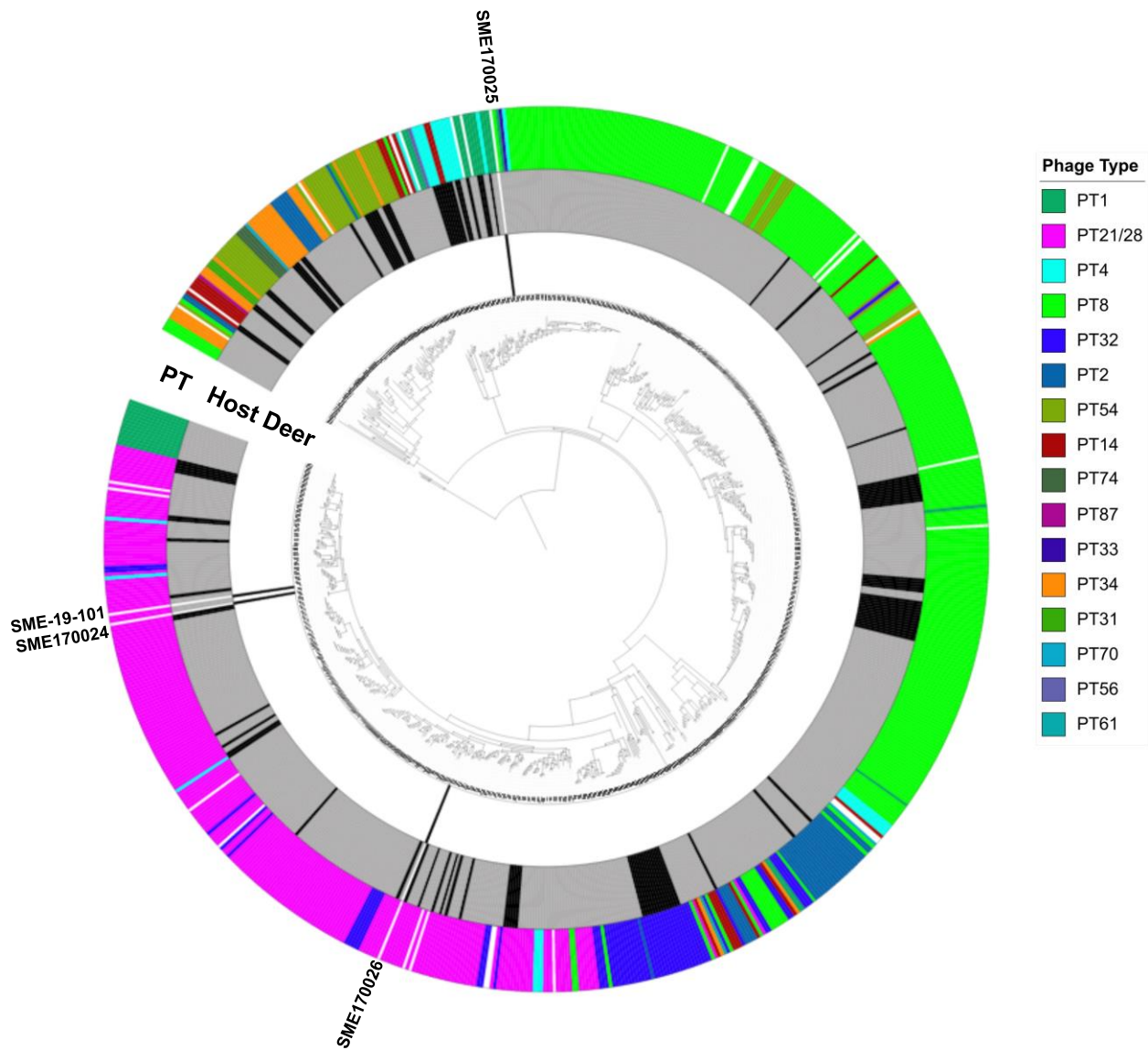
**Scottish Deer Health Survey
2017-2019**



QUESTIONNAIRE

Date	
Time	
Tag number (if available)	
OS Reference of cull site	OS Sheet: _____ 6-digit grid reference: _____
Larder Address	
Deer species	Red <input type="checkbox"/> Roe <input type="checkbox"/> Sika <input type="checkbox"/> Other <input type="checkbox"/> If other provide details: _____
Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>
Condition Score	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 1 = very poor condition; 5 = 'very good condition
Estimated age	_____ years
Shared range with other livestock/ wild herbivores	Cattle <input type="checkbox"/> Sheep <input type="checkbox"/> Wild herbivores <input type="checkbox"/> If wild herbivores provide details below: _____
Other comments	

THANK-YOU FOR PARTICIPATING IN THIS SURVEY



Supplementary Figure S1. Core genome phylogenetic analysis of STEC O157 strains from Scottish wild deer. Whole genome sequences of UK human, bovine and Scottish wild deer STEC O157 strains were used to generate the phylogeny. The phage type (PT) of each strain is shown in the outer ring. White bands indicate deer STEC O157 strains and strains that reacted with phage but did not conform (RDNC), were untypable or for which no PT information was available. Host species from which strains were isolated are shown in the middle ring (Cattle (black), Human (grey)) and inner rings deer (black). Strain identifiers for Scottish wild deer strains from this study and the 2015 venison outbreak are indicated.