

[REDACTED] (Defra)

From: [REDACTED]
Sent: 22 May 2012 10:01
To: [REDACTED]
Cc: [REDACTED]
Subject: snare paper review
Attachments: Snare paper review.docx

[REDACTED]
I attach my comments on the GWCT snare paper as requested. This is intended as a discussion document for our internal use, it needs clarification with the authors on issues such as design related injury rates before it would be in a form to use or refer to more widely. Happy to take the issues up with [REDACTED] if you want.
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Selectivity and Injury Risk in an Improved Neck Snare for Live-Capture of Foxes by [REDACTED] GWCT

I've reviewed the paper and found the presentation of the results difficult to untangle. Key data are not presented, for example on injury rates of different designs, and the results present the data in different forms for each comparison, for example, some exclude zeros, some present raw data, others give modelled outputs from statistical analyses. These differences make overall comparisons difficult. To try and overcome this I have tried three alternative approaches to the data.

Firstly I recalculated the data on capture and escape as rates per 1000 snare nights to allow easier comparisons between trials and snare designs, I have annotated these tables with the key statistical findings reported in the papers. This highlights the differences between the two trials and the inconsistency of results regarding the experimental snares. I don't think this approach supports different conclusions from those reported in the paper, but does more readily allow comparisons between the trials and designs.

Secondly I have tried to interpret the data on rates of death and injury in relation to the different trials and designs. The data needed to compare snare designs is simply not presented in the paper. What is presented lumps experimental snares with the non-experimental ones as overall rates of death and injury with separate data for the first and second trials. This needs to be queried with the authors, it seems surprising that there is no data presented on this. There is a lengthy discussion of entanglement and discussion of how this is closely associated with injury. This is particularly unclear but some statements suggest experimental designs are less likely to cause injury following entanglement, presumably because of the break-away element. However, this is inference and there are inconsistencies in the way this is presented.

Lastly I have re-examined the data on capture rates, injuries and escapes as rates per 100 fox captures. This allows much more direct comparisons between the methods by removing variation caused by snare days and success rates. This is quite striking and to me highlights how few real differences there are between the designs and trials. My main conclusion is that in most ways the different designs and trials capture, injure and release really quite similar numbers of animals. The second experimental snare design does let lots of hares escape, but still captures and kills as many as the other methods so its impact is probably unaffected. This analysis assumes no differences between injury rates for the experimental and non-experimental designs in each trial (none are reported) but this needs to be queried which could affect the conclusions.

Overall, I think it surprising that data on death and injury rates are not presented in a way that allows comparisons between the designs. The paper also over-plays the benefits produced by selective designs, although they do let more animals go this is not obviously linked to a reduction in the numbers killed or injured by their use.

[REDACTED] 18 May 2012

Snare success presented as captures per 1000 snare nights

Experiment 1 – Small Loop Experimental Snares

	Exp Snares Rates per 1000 snare days			Non-exp Snares Rates per 1000 snare days			Stats From paper	Welfare
	Capt	Esc	% Escape	Capt	Esc	% Escape		
Hare	7.66	4.49	36.9%	4.05	1.24	23.4%	Interaction of snare type and month, experimental snares had capture rate 40% higher	23% of captures found dead, 11% injured – no separation by snare type
Fox	4.68	0.75	13.8%	3.00	0.15	4.7%	No significant effect of snare type on capture rate or % escape	5% of captures found dead, 4% injured – no separation by snare type
Badger	1.29	1.07	45.3%	0.44	0.19	30.1%	Capture rate related to snare type	16% of captures found dead, 11% injured - no separation by snare type
Snare Days	31852			58946				

Experiment 2 – Large Loop Experimental Snares to reduce hare captures

	Exp Snares Rates per 1000 snare days			Non-exp Snares Rates per 1000 snare days			Stats From paper	Welfare
	Capt	Esc	% Escape	Capt	Esc	% Escape		
Hare	4.15	10.9	72.4%	8.07	2.58	24.2%	Escape rate related to snare type	13% of captures found dead, 12% injured - no separation by snare type
Fox	1.96	0.31	13.6%	2.46	0.12	4.6%	Numbers too small for stats	5% of captures found dead, 5% injured – data described as for experimental snares only, but numbers suggest both categories are included
Badger	0.16	0.16	50.0%	0.69	0.38	35.5%	Numbers too small for stats	No data presented
Snare Days	12771			15855				

Experiment 1 - Small noose snares had significantly higher capture rates of hares and badgers but not of foxes compared to non-experimental snares.

Experiment 2 – Rate at which hares escaped significantly higher for experimental than non-experimental snares

In Experiment 1 overall capture rates were higher for experimental than non-experimental designs, in experiment 2 the reverse was observed. Unable to determine whether the use of the different designs would lead to increased or decreased effectiveness of snare use.

Data on welfare implications of different designs

Experiment 1- Experimental snares caught 85% of animals around the neck, compared to 75% of non-experimental snares. If neck caught animals became entangled in vegetation, 84% of experimental snared foxes were alive and unharmed, compared to 60% of foxes caught in non-experimental snares. Rates of entanglement were 15% for foxes and badgers, 10% for hares. No differences in rates of entanglement between snare types. For 100 foxes caught this would imply 2.5 injuries linked to entanglement for experimental snares, 6 injuries in non-experimental snares. This does not tally with other information on injury rates presented elsewhere.

Data on rates of injury not separated by snare type, so unable to compare the welfare implications of using the different snare designs.

Snare results presented as captures, deaths and injuries per 100 foxes captured

This analysis assumes no differences in death or injury rates between experimental and non-experimental snares, none are presented, but includes different rates for each trial.

	Trial 1		Trial 2	
	Experimental Snare – small loop	Non-Experimental Snare	Experimental Snare – large loop	Non-Experimental Snare
Number of hares captured per 100 foxes captured	164	135	211	328
Number of hares killed or injured in snare per 100 foxes captured	55	46	52	81
Number of hares escaping per 100 foxes captured	95	41	556	104
Number of badgers captured per 100 foxes captured	27	15	8	28
Number of badgers killed or injured in snare per 100 foxes captured	7	4	No data	No data
Number of badgers escaping per 100 foxes captured	23	6	8	15
Number of foxes killed or injured in snare per 100 foxes captured	9	12	10	10
Number of foxes escaping per 100 foxes captured	16	5	16	5

Conclusions from this analysis include:

There were few substantial differences between the snare designs or trials.

The large loop snares (Exp 2) appeared to let large numbers of hares escape, but caught, killed or injured similar numbers to the non-experimental designs.

There is a suggestion that the large loop snares (Exp 2) caught fewer badgers, but sample sizes were small

The experimental snares appeared more likely to let foxes escape.