Defra study (contract WM0315)	GWCT breakaway snare study (*Wildlife Society Bulletin* paper)

This GWCT document is intended to serve as a comparative guide to the two significant pieces of research on fox snares published in 2012. Readers are encouraged to study the original peer-reviewed publications for detailed information. NB – the Defra study included rabbit snares, but only fox snares are considered in this comparison.]

Chronology

- Competitive tender 2007
  Awarded 2008
  Work 2009-2010

- Development 2005-2007
  Field trials 2007-2009

Aims

- Determine extent of use of snares in England and Wales, the circumstances in which the snares are used, and the extent of awareness of statutory requirements and of the Defra Code of Practice (CoP).
- Determine the extent of compliance with statutory requirements and voluntary uptake of the CoP.
- Determine humaneness of snare use in best practice conditions, especially by reference to the AIHTS (international standard).
- Make recommendations about CoP.

- Determine whether experimental snare had the intended improved selectivity compared with other kinds of fox snare typically in use.
- Determine the effect of capture circumstances (which are strongly influenced by operating practices) on external condition and mortality of animals held in the snare.
- Make recommendations about snare hardware and operating practices.

Approach

- Telephone survey of 2,908 randomly-selected landholdings (stratified by land-class) to estimate without bias the extent of use of snares in England and Wales; and to interview a representative sample of snare users about their snaring practices and knowledge of the CoP. Included a limited amount of ground-truthing as a check on telephone answers.

- Involved 34 gamekeepers from 34 different sites spread around England who agreed to incorporate the new snare among those they normally used in fox control, creating a randomised comparative trial. Participants were not a random or representative sample of all snare-users, but illustrated 34 sets of working practices and skills, a range of fox and non-target densities, and differences in land-use.

- Humaneness of fox snares assessed through field trials in which one skilled technician set snares following CoP recommendations, in one area of England. Captured animals were dispatched and examined post mortem, by veterinary pathologists, for snare-related injuries. The condition of captured animals was compared against an international standard for testing traps (AIHTS).
- Humaneness assessment based on 1 operator; 1,704 snare-nights; PM examination of 14 fox captures, 9 non-target captures.

- Participants filled in detailed daily pro-forma record sheets; this included describing the external condition of captured animals and the circumstances of capture. Because of the pest control context, sample sizes were large, giving plenty of statistical power. Cost and logistics prevented animals being collected and examined post mortem.
- Humaneness predictions based on 34 operators; 119,424 snare-nights; and condition data for 315 fox captures, 63 badger and 457 hare captures.

Extent of use

- Snares used on 6% of landholdings.
- Snare users are roughly 50% gamekeepers, 50% farmers. Gamekeeper operators use more snares.
- Fox control took place on 43% of landholdings. Among these, reasons for not using snares (82% of holdings where fox control took place) included avoidance of non-targets, public access, personal preferences. Main reason for using snares in the other 18% was that practical circumstances impaired the success of alternative methods.

Training and awareness of the CoP

- Gamekeepers more likely than farmers to have had some form of training and to be familiar with CoP.
- 70% of gamekeepers had received training of some kind (including informal coaching); 40% had been on a formal course.
  For farmers, 30% had training, 4% been on a course.
- 95% of gamekeepers, but only 64% of farmers, were aware of the CoP.
- 66% of gamekeepers, and 47% of farmers, had read the CoP.
- [NB – responses obtained in 2009.]

- 47% of the 34 participants had received formal training (i.e. dedicated course on snares).
- 47% of the 34 participants had read the CoP.
- [NB – responses obtained in 2007.]

Legality

- No evidence of illegal practices.
- All snares examined were legal (i.e. not self-locking).

- No evidence of illegal practices.
- Time at which captures discovered confirmed that daily inspections were carried out as required by law.

Code of Practice

- At the time of study, no CoP-compliant snares were available to buy. (A few operators possessed CoP-compliant snares because they were involved in the GWCT breakaway snare study.)
- Operators selective in adoption of CoP operating practices. Field visits to a small and non-random sub-sample of users found that most operators set at least some snares in sites where entanglement was likely.

- All 34 operators already used non-compliant snares. CoP-compliant experimental snares were supplied to mix in with these at random.
- 15% of foxes and badgers held in snares became entangled. 80% of operators had at least one case of entanglement. Conclude that use of locations with high risk of entanglement was a frequent deviation from CoP-recommended practice.

Selectivity (non-target captures)

- 14 fox **captures**, plus 27 non-target "captures"[1] (2 nts per fox)
  14 foxes **held**, plus 9 non-targets **held** (0.6 nts per fox)
  (5 badgers, 2 hares, 1 pheasant, 1 dog.)

- Highly variable **capture ratios**:
  0 to 2 badgers per fox (median 0.3)
  0 to 11 hares per fox (median 1.0)
- **Captures per operator per year**:
  1 to 55 foxes (median 7)
  0 to 17 badgers (median 1.5)
  0 to 315 hares (median 5.0)

- Animals **caught** per 1,000 snare nights:
  fox 8.2, badger 7.0, hare 3.5

- Animals **caught** per 1,000 snare nights, experimental + other snares:
  fox 6.6, badger 0.7, hare 8.5.
- Experimental snare substantially improved selectivity by allowing high proportions of non-target captures (43% badgers and 70% hares) to self-release, without compromising effectiveness of the snare to catch and hold foxes. This was the result of (a) stop position set to 26 cm; (b) breakaway link.

- Animals **held** per 1,000 snare nights:
  fox 8.2, badger 3.0, hare 1.1

- Animals **held** per 1,000 snare nights (experimental snare only):
  fox 6.0, badger 1.7, hare 2.1

[1] NB – 'capture' defined to include all animals detained by the snare for any period, even momentarily. nts = non-targets

Humaneness / condition of captured animals

• No evidence from PMs of internal injury that would not be expected from external examination.	• Condition assessed by external inspection only.
• Anecdotal evidence (from field visits to operators) that entanglement caused poor welfare.	• Among animals held in snares, the probability of injury or death was unequivocally and substantially greater where snares had become entangled with fixed obstacles (for foxes and badgers 40%, compared with 1-5% where entanglement did not occur). This upholds the CoP recommendation to avoid setting snares in cluttered locations where entanglement could occur.
• Non-CoP-compliant snare operated according to best practice by an experienced technician failed AIHTS requirements, mainly because of mechanical shortcomings that were predictable from CoP recommendations. • Anecdotal evidence that poor snare design/construction caused poor welfare.	• Non-CoP-compliant snares were much less selective than experimental snare. In combination with non-CoP working practices, this led to a level of injury/death that would probably not meet AIHTS requirements.
• CoP-compliant snare with CoP working practices passed AIHTS requirements for target species (fox). Non-target sample size too small for assessment, but no significant injuries found. All non-targets judged to be in a fit condition for release.	• A combination of the experimental snare with observed working practices (15% of held animals entangled) was predicted to surpass AIHTS requirements for foxes, but to be a marginal fail for non-targets.
• A CoP-compliant snare operated according to best practice by an experienced technician passed AIHTS requirements for foxes (non-target species not assessed).	• A combination of the experimental snare with CoP working practices (no entanglement) was predicted to surpass AIHTS requirements for both foxes and non-targets.

CONCLUSIONS

• Suggest Defra consider implementing regulatory system similar to that already in place in Scotland (compulsory training, licensing, etc).	• Well-designed snare hardware and CoP operating practices greatly reduce the problems of poor selectivity and poor humaneness associated with use of snares.
• Evidence strongly supports CoP recommendations, and should be incorporated into training material.	• Evidence strongly supports CoP recommendations, and should be incorporated into training material. Training should be considered essential.