The Impact of Snares on Animal Welfare

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Executive Summary and Conclusions

The lack of data on snares makes it difficult to accurately assess their impact on the welfare of target and non-target species. Nevertheless, having searched the scientific literature and summarized the main findings, this review can make the following statements:

- Snares do not operate humanely, either as restraining or as killing traps
- The mortality and morbidity of animals caught in snares is higher than with most other restraining traps, such as box traps
- Snares are inherently indiscriminate and commonly catch non-target, including protected, species
- Snares can cause severe injuries, pain, suffering, and death in trapped animals (target and non-target species)
- Stopping of snares may not prevent injury or death in trapped animals (target and non-target species)
- The free-running mechanism of a snare is easily disrupted and likely to fail, resulting in injury, pain, suffering, and death in trapped animals (target and non-target species)
- Animals can legally be left in snares for up to 24 hours, exposing them to the elements, to thirst, hunger, further injury and attack by predators
- It is difficult to assess the severity of injury in an animal when it is caught in a snare
- Animals that escape, or that are released, may subsequently die from their injuries, or from exertional myopathy, over a period of days or weeks
- The monitoring of correct snare use is difficult, if not impossible
- Neck snares are open to abuse because they are cheap and require minimum effort to set and maintain
- Methods used to kill animals caught in snares are not regulated, and may not be humane
- The use of neck snares is seen as the least favourable option and the least humane of all legal trapping methods by the public

It is clear that we should assess the welfare of vertebrate pest animals, however undesirable their impact on humans, in the same way as we assess the welfare of any other vertebrate animal. Vertebrate pest animals have the capacity to feel pain, fear, and to suffer just like any other vertebrate animal. Whenever control methods are considered, their effects on the welfare of these animals should be taken into account. In some cases a cost-benefit analysis is a reasonable approach to take, where the real adverse effects of the pests are compared with the extent of poor welfare of the pest animals that a control method would cause (Broom 1999). However, some pest control methods have such extreme effects on an animal's welfare that, regardless of the potential benefits, their use is never justified (Sandøe et al 1997, Broom 1999). Snaring is such a method.
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The Impact of Snares on Animal Welfare

Introduction

Historically, concerns for the welfare of animals have focused on the large numbers kept for food production, used in scientific research, housed in zoos and, more recently, kept as companion animals. In contrast, the control of wild animals considered as pests or vermin has focused on methods to kill as many animals as cheaply and as efficiently as possible with little, if any, consideration of the negative impacts these control methods may have on their welfare. Recent scientific publications, however, have drawn attention to this anomaly and identified the need to consider the welfare of these animals too (Kirkwood et al 1994, Broom 1999, Broom 2002, Mason & Littin 2003, Littin & Mellor 2005, Littin 2010, Yeates 2010). Societal attitudes towards this killing are also changing. While the need to control pest animals is recognized and generally accepted, public concerns require that the control methods should be humane (Broom 1999, Broom 2002). A questionnaire study of the different methods used to manage foxes, red deer, brown hares and mink revealed that practitioners (such as farmers and gamekeepers) and the public regarded snaring as one of the least acceptable means of control (White et al 2003).

Despite a growing body of research aimed at evaluating different methods to control certain wildlife species, the impacts of many of these methods on the welfare of the target and non-target animals remain largely unknown or poorly described. Many pest control methods currently used throughout the world are considered to be inhumane, yet are often used to kill very large numbers of animals (Mason & Littin 2003, Sharp & Saunders 2008).

A number of reasons have been proposed to explain why the suffering of animals subjected to pest control methods has not received much attention (Broom 1999, Mason & Littin 2003, Littin 2010). They include:

- Once the animal has been labeled as vermin or a pest, there is less concern for its welfare
- Pest species are viewed as a nuisance, so there is less regulation of their control
- The species is not highly valued, or is specifically vilified (e.g. the fox)
- The trapping and death of the animal is not seen by the general public, as it usually occurs outdoors, often at dawn, dusk or at night, and in relatively remote locations
- The fate of target and non-target animals that escape from traps, or other devices, is usually not known
- The harm done to the animals is considered justified on the basis of the harm (and potential harm) that they do (although the extent of this harm is often exaggerated, not defined or not quantified)
- The harm done to the animals is considered to be less than that which can occur naturally in the wild
The term ‘humaneness’ is described as ‘the quality of compassion or consideration for others (people or animals)’ [http://www.wordreference.com/definition/humaneness] and ‘humane’ as ‘marked or motivated by concern with the alleviation of suffering’ [http://www.wordreference.com/definition/humane]. When used in relation to animals, humane is often taken to mean ‘inflicting the minimum of pain’ (Concise Oxford Dictionary) and this is the normal meaning of the word when humane slaughter of farm animals, or humane killing of companion or laboratory animals, is referred to in legislation or codes of practice. A humane control method is best defined as having little or no negative effect on the animal’s welfare, and an inhumane method as having a significant negative effect on the animal’s welfare such that it is considered unacceptable and/or cruel. The term ‘humane killing’ means that the welfare of the animal just prior to the initiation of the killing procedure is good, and the procedure itself results in insensibility to pain and distress within a few seconds (Broom 1999). When evaluating the humaneness of a control method, its effects on all animals, non-target as well as target, should be considered (Mason & Littin 2003, Iossa et al 2007).

The evaluation of killing and restraining traps

Since snares can act as restraining and as killing traps, a brief summary of trap characteristics and assessment is presented below. The detailed assessment of mechanical properties of traps is described in two documents published by the International Organization for Standardization (ISO), one for killing traps (ISO 1999a) and another for restraining traps (ISO 1999b). Despite efforts by the ISO, no consensus could be reached on key thresholds for animal welfare standards such as time to unconsciousness for animals caught in killing traps, or levels of injuries for animals in restraining traps. Nevertheless, the ISO standards are an important step towards improving the welfare of wild animals subjected to trapping (Iossa et al 2007). Other legislation includes two international documents signed by the European Union: the Agreement on International Humane Trapping Standards signed between the EU, Canada and the Russian Federation (Anonymous 1998), and the Agreed Minute between the EU and the USA on humane trapping standards (see Harrop 2000). Since the initial main aim of these Agreements was to facilitate the trade of fur among participant countries, many commonly trapped European mammals (such as the fox and rabbit) are not included (Iossa et al 2007). The International Humane Trapping Standards Agreement lists criteria that killing and restraining traps should meet for a limited number of species (Anon 1998).

A review of animal welfare standards of killing and restraining traps can be found in Iossa et al (2007). The review found that few studies have evaluated the humaneness of neck snares in the same way as has been done for other types of restraining traps. When neck snares are set correctly serious injuries are purported to be relatively uncommon, though mortality of trapped animals is higher than with leg-hold snares or with box (cage) traps. Injuries from snares, such as pressure necrosis of tissues, can be difficult to detect because they may not be obvious until several days after an animal is released. The authors note that while neck snares are commonly used in the UK because they are cheap and require minimum effort to set and maintain, reports of misuse are frequent. Even when neck snares are set and used correctly, they commonly catch non-target species and these can have high morbidity and mortality.
The review concludes that the lack of data on the use of snares makes it difficult to assess their welfare impact. A similar review by Harris et al (2006) recommends that the use of neck snares should be banned.

**Killing traps**

The humaneness of traps that are designed to kill is usually evaluated on the basis of the time it takes for the trap to render an animal unconscious and insensible to pain, most often measured by the loss of the palpebral (blinking) reflex. A commonly used criterion for a humane trap is that at least 80% of animals become unconscious and unable to recover within three minutes (e.g. in the Agreement on International Humane Trapping Standards between the EU, Canada and the Russian Federation, Anon 1998). Another criterion (often used in North America) is that a killing trap must render at least 70% of animals unconscious and unable to recover within three minutes (Powell & Proulx 2003). Many studies have used these criteria when assessing killing trap performance. However, they would not be considered to indicate a humane slaughter standard for any farm, companion, laboratory or zoo animal.

The documents that set criteria fail to address what happens to the remaining 20% (or fewer) of trapped animals who take longer to die. Even if the criterion of 80% is met, the killing method cannot be considered to be humane if the remaining animals experience a lingering and painful death with very poor welfare. Failure to consider what happens to this group of animals is a serious omission that must be rectified before a killing method can be considered humane. Killing traps should be developed that are able to kill as close to 100% of animals as possible, and as there now exist traps that are able to kill some species in much less time than three minutes, this criterion should be changed in accordance with technological advances (Harris et al 2006).

No trapping method is completely species-specific and certain, including endangered species may be caught, injured and killed in killing traps set for other species. Iossa et al (2007) recommend that the welfare performance of killing traps should include three additional measures: likelihood of escape of injured animals, percentage of mis-strikes and trap selectivity. This approach is more comprehensive and likely to be a more accurate way of assessing killing traps.

**Restraining traps**

It has been argued that setting performance criteria for killing traps is easier than setting performance criteria for restraining traps, because time to insensibility and death is relatively easy to define compared with the injury, pain, anxiety, fear and stress that may be experienced by animals restrained in a trap over a period of time (Powell and Proulx 2003). However, the application of animal welfare science allows the comprehensive assessment of the effects of restraining traps on the welfare of trapped animals.

**Assessment of injuries**

The humaneness of restraining traps is most often assessed by the extent of the physical trauma caused by the trap to the captured animal, and injury level is equated
with welfare (severe injury = poor welfare). Scoring systems for injuries are ubiquitous in the literature (Olsen et al. 1986, Onderka et al. 1990, Phillips et al. 1996, Hubert et al. 1997, ISO 1999b). However, there is much criticism of such systems because a quantitative injury score is not a direct measurement of an injury level, nor of the level of suffering that is likely to be associated with such injury. The application of a scoring system requires decisions on several levels of increasing abstraction from the actual physical injuries (Engeman et al. 1997), and injury data do not directly inform on the severity of pain or suffering experienced by the animal (Rutherford 2002).

The presence of obvious physical tissue damage indicates that pain is likely to be present and this can provide a starting point for other methods of assessment. However, there is a variable relationship between injury and pain (Wall 1979): injury can occur without pain and pain can occur without injury. Tissues within the body differ in their sensitivity to pain. In addition, without a post-mortem examination by a veterinary pathologist, damage to internal organs (e.g. congestion, haemorrhage or organ rupture) and other less obvious injuries may be missed.

The ISO methods for testing restraining traps (1999b), which rely on the scoring of injuries, are considered by some researchers to be the best currently available scoring system for assessing the humaneness of restraining traps (Harris et al. 2006). They improve on earlier injury scales in three ways: they have a larger number of categories, incorporating examination of all body areas including areas previously not covered (e.g. ocular injuries), they advocate examination of injuries by veterinary pathologists, thereby reducing any individual bias, and, being international standards they allow for better comparative assessment. Nevertheless, they have the following failings:

- they do not incorporate behavioural or physiological responses as measures of welfare
- they do not account for the compounding effect of multiple lesser injuries
- some injuries receive a low or moderate injury score but are capable of causing severe pain (e.g. permanent tooth fracture with exposure of pulp cavity)
- the pathology protocol states that radiography is optional, which may lead to some luxations and fractures being missed in the injury scoring
- they do not take into account for how long the injury is present before the animal is killed
- they do not require testing of traps with non-target animals
- they do not take into account the long-term impact of some injuries in animals that escape or in non-target animals that are released
- they do not give guidelines on how to avoid capture of non-target species
- they do not provide guidelines on how animals (whether target or non-target), once caught in restraining traps, should be killed

Criteria for injuries sustained by animals in restraining traps were not set by the ISO, but a draft ISO agreement indicated that no more than 20% of tested animals could have an injury score of 75 or greater (Talling JC, personal communication). This again raises concerns about the welfare of up to 20% of animals restrained in traps who may sustain severe injuries, such as limb amputation or spinal cord damage, or
die from their injuries. Even for animals with scores of less than 75, injuries such as eye lacerations or tooth fracture exposing the pulp cavity, which receive 30 points each (ISO 1999b), are likely to cause considerable pain (Baumans et al 1994). This criterion would not be considered to indicate treatment that would be humane for any farm, companion, laboratory or zoo animal.

When the ISO standards on trap testing were developed, snares were excluded from consideration as there was disagreement among delegates as to whether they were restraining or killing devices. As a result, it has been argued that the list of physical indicators of poor welfare included in the ISO standards is only marginally relevant to snares, and that a check-list of injuries likely to result specifically from restraint in snares would be more appropriate (Murphy et al 2009).

Relatively few studies of restraining traps have used the ISO guidelines to score injuries (e.g. Shivik et al 2000, Woodroffe et al 2005, Darrow et al 2008, Muñoz-Igualada et al 2008, 2010). Other models to assess the humaneness of pest animal control methods have been developed (NAWAC 2000, Sharp & Saunders 2008), but they have not yet been widely applied.

The extent of injuries and distress experienced by a trapped animal is strongly influenced by the length of time it is restrained in the trap. A long restraint time is a factor in the development of dehydration (Powell 2005, Marks 2010), starvation, effects of exposure (e.g. hypothermia), and capture myopathy (see further). It can also cause stress by disrupting natural behaviour and motivational systems (Schütz et al 2006, Sharp & Saunders 2008). Females may be prevented from returning to their offspring, who will subsequently die of starvation. Current guidelines state that restraining traps should be checked at least once every 24 hours but this may be too long, and lead to considerable worsening of welfare, for most animals. Powell & Proulx (2003) recommend that restraining traps should be checked at least twice daily, and more often if weather conditions are poor.

**Behavioural and physiological responses**

There is currently no established scoring system for restraining traps that integrates physical injuries with behavioural and physiological responses. Some argue that interpreting such responses is too complex, in view of our lack of knowledge of normal behaviour and physiology and responses to stress in the majority of the wildlife species, and the considerable difficulties in obtaining these data (Powell and Proulx 2003, Talling & van Driel 2009). Others (Broom & Johnson 1993, Broom 2007, Marks 2010) argue that injury scores alone do not inform us sufficiently on the animal’s welfare, and that additional data can and should be collected.

We believe that the assessment of the effects of traps, including snares, on the welfare of an animal is not complete without integration of behavioural and physiological responses with physical effects. The welfare of an animal may be poor even if it has not been injured, for example if it is extremely fearful but cannot hide or escape, or if it is exposed to low temperatures without having access to shelter. Humane traps should not only minimize physical injury but also the behavioural and physiological responses that indicate poor welfare. The measures likely to be the most relevant, practicable and useful for evaluating the welfare of animals caught in snares are listed...
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in Table 1.

Table 1: Measures to evaluate the welfare of animals in restraining traps

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<th>Examples</th>
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<tr>
<td>Health</td>
<td>extent of body damage (physical injuries), effects of exposure (e.g. freezing of extremities)</td>
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<tr>
<td>Behaviour</td>
<td>activity levels, immobility, postural changes, vocalization, digging, pacing, chewing, lunging, self-mutilation, other escape behaviours and behaviours indicative of anxiety, distress, fear, pain and other negative feelings</td>
</tr>
<tr>
<td>Physiology</td>
<td>levels of cortisol and other hormones in the blood, levels of muscle enzymes in the blood, levels of blood cells as markers of the stress response (e.g. neutrophils), markers of the inflammatory response (e.g. acute phase proteins), markers of exposure or food and water deprivation (e.g. changes in haematocrit or blood proteins), heart rate, body temperature</td>
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Hunger, pain, anxiety, fear, social isolation and other stimuli elicit stress responses and, from the magnitude of these responses, inferences can be made about the animal’s welfare. Behavioural responses to acute pain include postural changes, escape and avoidance, hiding, vocalization, licking or rubbing directed towards the painful focus, and defensive behaviours such as aggression (Sanford et al 1986, Rutherford 2002). Animals may show the ‘fight or flight’ response, due to stimulation of the sympathetic nervous system and catecholamine release (Cattet et al 2003), with behavioural signs such as defaecation and urination, aggression, and attempts to escape (Powell 2005, Marks 2010). Physiological signs include pupil dilation, changes in blood pressure, increases in heart and respiratory rate, and changes in body temperature and muscle tone (Broom & Johnson 1993). Stress responses due to stimulation of the hypothalamic-pituitary-adrenal (HPA) axis are often quantified by measuring levels of glucocorticoids, muscle enzymes, proteins and inflammatory cells in the blood, changes in heart rate and body temperature, and immune function (Kreeger et al 1990, White et al 1991, Cattet et al 2003, Schütz et al 2006, Marks 2010).

Exertional or capture myopathy, a pathological condition characterized primarily by damage to muscle tissues, is brought about by physiological changes usually following extreme muscular exertion and stress (Hartup et al 1999). It can affect both mammals and birds, and is usually seen following short, intensive bursts of activity involving the large muscle groups. The condition may develop over a period of days after the event and signs include depression, muscular stiffness, lack of coordination, paralysis, metabolic acidosis, and death which can occur up to 2 weeks later (Conner et al 1987, Montané et al 2002). Exertional myopathy may develop as a consequence of being caught in a snare (Hartup et al 1999, Cattet et al 2008).

Fear is an emotional state associated with negative feelings and is therefore a sign of
poor welfare. Fear responses are either a preparation for danger or as a reaction to detectable danger. It is difficult to cope with fear and, as with pain, the extent of the difficulty gives information about how poor the welfare of the individual is. Fear may be associated with freezing behaviour (tonic immobility), escape attempts (digging, lunging), activity of the HPA axis, and heart rate elevation (Broom & Johnson 1993) It is recognized that there are important species and individual differences in behavioural responses to fear. For example, tonic immobility is a fear-motivated defence mechanism employed by some prey animals, such as the rabbit, after other strategies have failed. While it serves to limit injury and provide the possibility of escape, this behaviour is an indicator of extreme fear (McBride et al 2006).

Testing of restraining traps
The ISO standards require that restraining traps are tested with target animals in the field. This can lead to considerable operational challenges so initial tests may have to be performed in pen trials using captive animals, especially if measures of behaviour and physiology form part of the assessment. However, pen testing is an artificial setting that is unlikely to recreate the range of conditions that occur in the field (Proulx et al 1993). Some species, when restrained in snares and field tested, may struggle for longer than when tested in a pen (Talling JC, personal communication). The experimental setup or the presence of a human observer may have a profound effect on the species under investigation, to a greater extent than on domestic animals. For example, anti-predator-related activity in a wild animal may be absent or reduced in a pen trial but present in a field trial (Proulx et al 1993). Extrapolating knowledge about behaviour and physiology from domestic, or even captive wild species, to wild free-living species may not be valid, and could lead to traps failing in the field. A more useful approach may be to combine pen trials with field trials, or to reserve pen trials only for new traps where little is known about their performance.

Killing procedure
The benefits of having a humane trapping system to capture an animal are countered if the method subsequently used for killing it is not humane. All the events around the killing procedure must be considered when evaluating humaneness, such as how the trapped animal is approached, the amount and type of physical handling (if any) it receives, the killing method and how rapidly and reliably death ensues. The same consideration should apply for trapped non-target animals if they are to be killed. If the decision is made not to kill the non-target animal, additional factors to be considered include: how the animal is examined for injuries, how decisions are reached whether to seek veterinary attention or to release it, and monitoring of its subsequent fate if it is released. All these factors must be considered when evaluating the humaneness of restraining traps as a pest control method, but few studies have been carried out in this area.
Snares

Background information
There is also a distinct lack of evidence with which to inform the debate on the humaneness of snares as restraining traps. Much of the information in this review comes from the Independent Working Group on Snares report (IWGS 2005), reviews by Harris et al (2006) and Iossa et al (2007), and articles in the scientific literature. Almost all of these publications describe research that has been carried out outside the UK, and usually outside Europe, on species other than the fox or rabbit. There is more literature on leg-hold traps and leg snares (often spring-powered) than on neck snares, and more on spring-powered neck snares than on traditional neck snares. For this review, two studies were found that describe the use of neck snares as restraining traps in foxes (Frey et al 2007, Muñoz-Igualada et al 2010), and only one article was found about the use of traps in wild rabbits (Hamilton & Weeks 1985). Another study evaluated two types of spring-powered cable restraint devices as well as cage traps for trapping foxes (Muñoz-Igualada et al 2008). Marks (2010) examined the haematological and biochemical responses of red foxes to different capture methods and shooting, and whether they could assist in determining relative welfare outcomes. The capture methods studied were treadle-snares (spring-powered leg-hold snares), spring-powered padded foot-hold traps, cage traps and netting. The effects of operator skills, intrinsic properties of the snare itself, field conditions, abundance of target and non-target animals and other effects on snaring outcome have hardly been studied or quantified at all.

Additional information on snares comes from websites that campaign for or against the use of snares in the UK, or more specifically in Scotland. The results of a research project on ‘the extent of use and humaneness of snares in England and Wales’ are eagerly awaited. This research is being undertaken by the Central Science Laboratory and the Game and Wildlife Consultancy Trust, and is funded by the Department for the Environment, Food and Rural Affairs (Defra). It is due to be completed before the end of 2010.

The UK is one of a small number of countries in Europe that permits the use of snares. Of those EU countries which permit snare use, some have a more stringent regulatory regime than in the UK (Scottish Executive Environment Group 2006). A number of organizations and charities present guidelines on the use of snares on their websites (e.g. the British Association for Shooting and Conservation BASC, the Game and Wildlife Conservation Trust GWCT). Detailed advice on how to construct and place snares can also be found on field sports and hunting websites such as http://www.thehuntinglife.com/index.html. Defra has produced a Fox Snaring Code of Practice (Defra CoP 2005). Snares are used primarily to catch red foxes and rabbits, and to a lesser extent brown hares, mink, rats and grey squirrels (IWGS 2005).

For Scotland, the Snares (Scotland) Order 2010 sets the following requirements which must be complied with when using snares:

• Snares must be fitted with effective stops (fixed no less than 13 cm from the running end of the snare to catch leporidae and fixed no less than 23 cm from the running end of the snare to catch foxes)
• The action of each snare must be checked every day and at least once every 24 hours to ensure that it is free-running. If it is not free-running then it must be removed or repaired.

• A snare must be staked in place or fixed to an effective anchor to prevent the snare being dragged.

• Snares must not be set in places where it is likely that snared animals could drown or suspend themselves fully or partially, such as watercourses, ditches or fences (an animal caught in a snare set by a fence may attempt to escape by climbing over the fence, and end up suspended).

A snare must be checked every 24 hours to deal with any trapped animal and to ensure that it is still free-running. However, it may be difficult for trappers to find every snare (especially if many have been set), the snares may be set over a large area and ground cover or poor weather conditions may make detection difficult, so it is likely that a proportion of snares will be missed and not inspected every 24 hours. Because snares have a low capture rate, many will be redundant (increasing risks to non-target animals) and the trapper may not feel that it is feasible to check every snare that has been set. While it is an offence to fail to release or remove an animal, whether alive or dead, from a snare during the course of inspection, if snares are missed animals may be left in snares for days, weeks or longer. They will eventually die from their injuries, from the consequences of restraint, or be killed by predators. Because snares to catch foxes can be set at any time of the year, they may catch pregnant or lactating vixens with severe consequences for the welfare of their offspring. In general, snares for rabbits can also be set at any time of the year, although in some regions restrictions may apply.

How snares work

Neck snares have a wire loop that is set for the animal’s head to enter; as the head moves forward, the loop tightens. Foot snares, which are used much less commonly, are placed horizontally and are designed to close upon the animal’s leg(s) in order to restrain it (Powell & Proulx 2003). In both cases, the snare should be anchored to stop the captured animal from escaping with it (IWGS 2005).

Snares should be free-running and have a stop. While a free-running snare is supposed to loosen when the animal stops pulling against it, a self-locking snare will not. However, the free-running mechanism is easily disrupted and prone to failure. For example, any kink, twist, rusting, fraying, or entanglement of the wire in vegetation or branches, may prevent the snare from being free-running (IWGS 2005, Frey et al 2007, McNew et al 2007, Murphy et al 2009). A swivel is thought to help prevent this, but in practice a swivel placed near the anchor point of the snare can become jammed with vegetation and fail to work. In a study by Murphy et al (2009) where badgers were trapped in stopped restraints, 62% of restraints after use had some degree of twisting, unraveling or fraying, and damaged restraints were associated with an increased risk of injury. Swivels are not traditionally used in rabbit snares but the reasons for this are not known (IWGS 2005).

There are numerous examples which show how free-running snares become self-locking and contribute to the death of the animal (e.g. http://www.onekind.org/get-involved/campaigns/snare-free, http://www.badger.org.uk, ...
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http://www.scottishspca.org/campaigns/45_snaring), although it is not clear how frequently this happens. Self-locking snares are prohibited under the Wildlife and Countryside Act 1981 because their ever-tightening action can lead to severe injuries due to crushing, ischaemia (lack of blood supply) and necrosis of tissues, as well as death by asphyxia. However, there is no legal definition of the term self-locking (IWGS 2005).

The fact that the snare is free-running may be irrelevant if the animal does not show the behavioural response of ceasing to pull against the snare once caught. Some species or individuals may react to being trapped with the flight or fight response, and struggle against the snare or bite and chew on it or on the body area that is caught. Kreger et al (1990) found, for foxes caught in unpadded and padded leg-hold traps, that the mean proportion of time spent physically resisting the trap in an 8-hour period was 18% and 13% respectively. Fear of attack by predators may also motivate the animal to struggle against the snare or, in the case of females, the need to return to their offspring. Depending on the animal’s behavioural response to entrapment, a free-running snare may not help to prevent or minimize injury.

A stop on the snare is set so as to prevent the wire loop from tightening to less than a certain diameter. However, there is likely to be variation in size of the target animal (Frey 2007). The body size of adult foxes varies with sex and also between regions, and different organizations give different recommendations regarding stop position and minimum loop diameter (IWGS 2005, Muñoz-Igualada et al 2010). While a stop on a neck snare may be set to prevent injury to the neck of a trapped animal, it may not prevent injury if the animal is caught by another part of the body, such as the chest or abdomen, which has a larger diameter than the neck. Injuries can be particularly severe when the snare is caught diagonally across from the shoulder to the axilla (Murphy et al 2009). A stop may prevent injury in the target species but not in the non-target species if it differs in size, or behavioural response to restraint. There will also be variations between species and between individuals in the amount of subcutaneous fat in different parts of the body, and this too will influence the severity of injury that a snare can cause.

In a study of the effectiveness and selectivity of neck snares, (Guthery & Beasom 1978), 65 coyotes (and 60 non-targets) were snared with snares that had a swivel but no stop. Snares were checked daily. Fifty nine percent of coyotes were caught by the neck, and the remainder by other parts of the body (flank, leg and neck, foot). Of the catch, 52% of animals were dead and 48% were alive, though some of the animals were moribund. The authors concluded that the characteristics of snares make them less humane than other predator control methods. This study illustrates a) the severe impact on welfare that snares can have if they do not have an effective stop, b) the high proportion of non-target animals that may be caught, and c) that while snares may be set to catch animals by the neck, they frequently catch them around other body parts.

Exertional myopathy due to snaring
While reports of exertional myopathy in carnivores are few, it has been documented in species such as the North American river otter (Hartup et al 1999) and a free-ranging grizzly bear that died approximately 10 days after being captured for a period
by a leg-hold snare (Cattet et al 2008). It was not possible to determine whether exertional myopathy was the primary cause of death in the bear. Comparison of serum enzymes with those of other bears captured by leg-hold snares suggested that it was not a cause of mortality in this species, as bears with higher blood enzymes, indicating more severe muscle injury, survived. Nevertheless, exertional myopathy causes pain and suffering (Cattet et al 2008) and, together with other factors, may contribute to the death of an animal.

It is not known if foxes or other animals that escape from snares suffer from exertional myopathy, although this is likely if the animal struggles vigorously, for short bouts over a prolonged period of time before escaping. In a study of foxes trapped in foot snares, elevations of muscle enzymes were suggestive of exertional myopathy, but were not supported by other findings such as myoglobinuria and muscle necrosis on necropsy (Kreeger et al 1990). In another study to determine the cause of morbidity or mortality in 51 red foxes from the south eastern United States, the cause of death in one fox was stated as capture myopathy but further details were not provided (Little et al 1998).

**Studies of snares and foxes**

A survey of veterinary practices, Scottish Wildlife Crime Officers, wildlife rescue and protection agencies and Scottish SPCA Inspectors was carried out by the Scottish SPCA in July 2007 (Scottish SPCA 2007). These groups were all involved in the treatment of animals or in wildlife crime enforcement. They were asked whether they had dealt with an animal that had been snared since the 2004 amendments to snare use by the Scottish Parliament. Of those who responded, 59 (32%) said that they had encountered an animal that had been snared. Of 269 snared animals, there were 47 foxes and 60% of them had fatal injuries (Table 2). These data were collected prior to the Snares (Scotland) Order 2010 and may not reflect current practice.

The British Association for Shooting and Conservation/Game Conservancy Trust Joint Snares Trial, 1994-1995 (JST) was designed to compare a new type of neck snare with existing snares. As the new variety of snare performed no differently from those normally used by the participants (a self-selecting sample of gamekeepers), data from these snare types were combined and used as a single source of information on snaring by the IWGS. In the JST, 73% of foxes held in snares (n = 284) were alive and without externally obvious injury, while 27% were dead. There were differences of opinion among operators as to whether snares should be used to kill or to restrain foxes. As these data were collected over 15 years ago, they may not represent current practice.

Muñoz-Igualada et al (2010) tested traditional and new cable restraint systems to capture red fox in central Spain. Two different non-powered cable restraint devices were used: the traditional Spanish Snare (SS) and the Wisconsin Restraint (WR). The SS is authorized for use in Spain, is commonly used, is made from multi-strand steel cables that end in a simple loop, and includes a stop that prevents the snare from closing smaller than 8 cm in diameter. The WR is built with a 180 degree bend relaxing-type lock on aircraft cable, and incorporates 2 swivels, a break-way S-hook and a stop that prevents the loop from closing to less than 6.54 cm in diameter. The WR is the most similar to the snares recommended by the Defra CoP for catching foxes in the UK.
Two methods were used for placing restraints. The first was based on a traditional Spanish approach using an ‘alar’, a structure constructed from a 1,000 m linear pile of brush and branches. Gaps were opened in the alar at 10 m intervals and a restraint set in each gap. SS snares were anchored to a branch within the alar and stabilized with a wood stick, and WR snares were anchored into the ground with a stake and supported with wire. The loop height above ground level was 20 cm for all restraints.

In the second restraint placement method, WR snares were set in fauna trails using wire supports and anchored with stakes. They were set far enough from fences or rooted woody vegetation to prevent entanglement. SS snares were not set in fauna trails because a previous study found high mortality due to risk of entanglement. All devices were checked once daily, in the morning. Captured foxes were killed with a captive bolt to the head, frozen and eventually necropsied by a veterinary pathologist. Injuries were scored in accordance with internationally accepted scoring procedures (ISO 1999b).

For both snares in all settings, an average of 35% of fox captures were around the body rather than the neck. Overall, injuries were similar for all snaring methods and capture-loop placement, suggesting that the addition of swivels and a break-way hook did not improve the performance of the snare. Of 64 foxes, one was dead, two had severe internal organ damage (internal bleeding), one had joint luxation at or below the carpus or tarsus, two had major subcutaneous soft tissue maceration or erosion, three had fracture of a permanent tooth exposing the pulp cavity and four had major cutaneous laceration. Overall, 9.4% of animals had indicators of poor welfare by ISO criteria (severe injury). For how long these animals suffered from these injuries was not known, but could have been for up to 24 hours as the snares were checked once daily. Other measures of welfare, besides injury scores, were not collected.

Frey et al (2007) examined the use of neck snares to live-trap foxes for study. Traps were set in a way that would reduce trauma to captured animals (for example, they included a swivel, and a stop that prevented the snare from closing to smaller than a circle diameter of 10-12 cm). Snares were checked once daily in the early morning. Of 21 snared foxes, two had severe injuries on external examination (the snares caused deep damage to their throats); these foxes were bigger than expected. Another fox was found dead one month after capture (overall mortality was 14%). The authors noted the potential for foxes to wrap the snare line around trees and woody vegetation during trapping, and that this could cause bodily harm to the fox. Sixteen foxes were followed with radio-telemetry for 3 to 28 months. While the capture procedure did not appear to affect the foxes’ ability to reproduce and raise young, most of the estimated home ranges for neck-snared red foxes did not encompass the snare location. The authors suggest two reasons for this: firstly, the foxes might have been caught while investigating the status of another territory, and secondly the red foxes may have been avoiding the snare location after their negative experience.

White et al (1991) documented the physiological responses of captive-raised red foxes to capture in box traps, and compared them with the responses reported by Kreeger et al (1990) for untrapped foxes and foxes caught in padded and unpadded jaw-leg-hold traps. Foxes caught in a box trap demonstrated a pronounced stress response, indicated by elevated cortisol, adrenocorticotrophic hormone, increased leucocyte counts, and in some cases adrenal and renal congestion with acute lung haemorrhage. A similar but more severe response was found in leg-hold trap caught foxes. The authors concluded that foxes that are restrained by a limb undergo more trauma than
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foxes caught in box traps. Psychogenic factors, such as fear, and differences in the intensity of exertion (e.g. pacing for box trapped foxes and digging for leg-hold trapped foxes) were thought to be responsible for the differences in response to the two trap methods.

Marks (2010) found that foxes trapped in treadle-snares (spring-powered leg-hold snares) had similar haematological and biochemical responses to those found by Kreeger et al (1990) for foxes caught in leg-hold traps. Higher levels of indicators of possible muscle damage, exertion and dehydration were found in foxes trapped in treadle-snares compared to those trapped in padded foot-hold traps or in cages. The author concluded that, based on the physiological data, restraint in the treadle-snare was the most stressful for foxes.

Similar physiological changes (stress leukogram, increased blood levels of cortisol and muscle enzymes) were found in grizzly bears restrained in leg-hold snares (Cattet et al 2003). American black bears captured in foot snares had raised muscle enzymes due to exertion and evidence of dehydration, compared with controls, and increased exertion of snared bears led to increased injury (Powell 2005).

Studies of snares and rabbits

Compared to the fox, there are few standards and guidelines with regard to the snaring of rabbits. The IWGS (2005) noted that some operators use snares to kill, and some to restrain the rabbit prior to killing. It is commonly believed that snares kill rabbits rapidly by dislocating their necks. However, there do not appear to be any data with which to confirm or refute this (IWGS 2005). A rabbit should not break its neck when caught in a free-running snare with a correctly placed and functioning stop. If a high proportion of rabbits are killed, then snares set for rabbits should be evaluated as killing traps and meet the ISO standards (ISO 1999b).

Limited data are presented in a report by the Pesticide Usage and Wildlife Management Section at Science and Advice for Scottish Agriculture (SASA 2008). One hundred and sixty seven rabbits were caught over the course of 10 snaring nights, and 14% were dead the day after capture. Eight percent of the dead rabbits had most likely been killed by a predator (a fox) and 6% by cervical dislocation. The snares used in this study did not have a stop.

A rabbit should survive the snare relatively intact if the snare is acting as a restraining trap, is free-running and has an effective stop. However, the Scottish SPCA Survey (2007) found that 69% of 16 rabbits had fatal injuries. If a rabbit’s response to entering a snare is tonic immobility, this behaviour may help to limit physical injuries but nevertheless it should be recognized as an indicator of extreme fear and poor welfare in rabbits (McBride et al 2006).

There is little information on the clinical or pathological effects of traps on rabbits or on causes of death, except for data presented by Hamilton & Weeks (1985). They examined the effects of shooting, trapping (using treadle-type traps similar to box traps) and falconry on cortisol and aldosterone in cottontail rabbits (Sylvilagus floridanus). Rabbits caught by shooting were considered to be controls, since death was instantaneous. Average cortisol values in trapped rabbits were approximately four times higher than controls (values for falconry-caught rabbits were intermediate between the two other collection methods). Trapped rabbits had lower plasma concentrations of aldosterone, suggesting that there is a preferential release of glucocorticoids due to the stress of capture in traps and/or handling.
Non-target animals

While snares are largely set for foxes and rabbits in the UK, domestic animals such as cats and dogs, livestock such as sheep, protected animals such as capercaillie, badgers and otters, and other wildlife including deer, hares and birds, have been reported to have been caught (IWGS 2005). The proportion of non-target species caught and held in snares set for foxes is often high: the results of various surveys reviewed by the IWGS (2005) ranged from 21 to 69%, and similar ranges are reported by Harris et al (2006). Chadwick et al (1997) reported 46% and Muñoz-Igualada et al (2010) reported 30% for fox snares. Information is lacking about the rates of non-target capture associated with the setting of rabbit snares.

The Scottish SPCA Survey (2007) found that the majority (76%) of 269 snared animals were non-target species including cats, dogs and European protected species such as the otter (Table 2). Fifty-five percent of them had fatal injuries. These data were collected prior to the Snares (Scotland) Order 2010 and may not reflect current practice.

Table 2: Species of animal snared and number with fatal injuries (data from Scottish SPCA)

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of animals</th>
<th>Percentage of total animals</th>
<th>Number with fatal injuries</th>
<th>Percentage with fatal injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badger</td>
<td>99</td>
<td>37</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>Fox</td>
<td>47</td>
<td>17.5</td>
<td>28</td>
<td>60</td>
</tr>
<tr>
<td>Hare</td>
<td>28</td>
<td>10</td>
<td>22</td>
<td>79</td>
</tr>
<tr>
<td>Cat</td>
<td>31</td>
<td>11.5</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Deer</td>
<td>26</td>
<td>10</td>
<td>19</td>
<td>73</td>
</tr>
<tr>
<td>Rabbit</td>
<td>16</td>
<td>6</td>
<td>11</td>
<td>69</td>
</tr>
<tr>
<td>Dog</td>
<td>14</td>
<td>5</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>Other*</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>269</td>
<td>100</td>
<td>153</td>
<td>57</td>
</tr>
</tbody>
</table>

* = pinemarten (2), otter (1), hedgehog (2), owl (1), squirrel (1) and livestock (1)

In the JST, 75% of 32 badgers were alive and uninjured, 3% alive and injured, and 22% were dead. For brown hares (n = 76), 46% were alive and uninjured, 5% alive and injured, and 49% were dead. Data in the JST were collected over 15 years ago, and cannot therefore be taken as representative of current practice.

The IWGS concluded that it may be difficult in some environments to reduce the overall proportion of non-target animals caught in fox snares to below about 40%. This is due to the inherently indiscriminate nature of snares, that cannot select which animal becomes trapped. Because there is a low capture rate when snares are used, many snares are unsuccessful and therefore redundant; redundancy will increase risks to non-target animals (IWGS 2005).

When a non-target animal is captured, the snare operator will have three choices: to release the animal, to seek veterinary assistance for the animal, or to kill it. The Defra CoP provides little advice on how to assess injuries and reach a decision on the most appropriate course of action to take. In the case of a wild animal, or even a domesticated one such as a cat that is frightened and/or injured, the operator is
unlikely to be able to examine the animal adequately for the presence of injuries unless it is moribund. Internal injuries will not be immediately detectable, tissue damage due to pressure necrosis may not be evident for several days and deeper injuries may not be apparent through the animal’s fur. It is therefore possible that, should the animal be released, it will die later on from injuries (including the consequences of exertional myopathy) that were not initially obvious to the operator.

Releasing an animal from a snare safely will be difficult if the animal is struggling and fighting, especially if it is in pain or the snare is embedded in body tissues. Even if the animal has injuries that are treatable, it may be more expedient to kill it because of the difficulties in transporting it safely to a veterinary centre, or in getting expert help from, for example, an animal welfare officer. The Defra CoP recommends that a garden fork is used to help in the release of non-target animals caught by the neck, but this implement may not always be readily available nor effective.

**Injuries to non-target animals and to animals that escape**

A tightening wire around the neck, or any other body part, can lead to ischaemia and pressure necrosis of tissues which will not be immediately evident because it can take days to develop. Extensive tissue necrosis is an insidious and painful condition (IWGS 2005), prone to secondary infection with bacteria or maggots (myiasis caused by parasitic dipterous fly larvae), and could lead to the death of the animal days or weeks after release. While broken teeth receive relatively low trauma scores (see ISO Standards 1999b, 30 points severity score out of a maximum of 100), oral pain in humans is often reported as being severe, especially when the pulp cavity is exposed (the density of nerve endings in dental pulp is 20 to 40 times greater than in skin (Baumans et al 1994)). In carnivores, broken teeth may affect their ability to catch prey and their subsequent survival, yet unless the animal is moribund or dead it would be impossible to detect this type of injury when it is caught in a snare. Capture myopathy, as mentioned previously, may also cause the death, or contribute to the death, of non-target animals days or weeks after release.

Cases of bodily injuries, often severe and extensive, and death in non-target animals are widely reported by animal welfare organizations (e.g. [http://www.antisnaring.org.uk](http://www.antisnaring.org.uk), [www.league.org.uk](http://www.league.org.uk), [www.badger.org.uk](http://www.badger.org.uk)). It is not known how frequently these cases occur, as a proportion of all snare use, and how often these cases occur when the Defra CoP is closely followed, or following poor application of the Defra CoP.

**Killing of animals caught in snares**

Consideration must be given to the methods of killing of animals trapped in restraining traps, but there are no guidelines in the ISO document (1999b). In practice, the killing methods used are unknown and unregulated. The use of guns is advocated for foxes (Defra CoP 2005, IWGS 2005), but whether this method is humane will depend on how close the trapper has to get to the animal, and the accuracy of the shot. Removing the animal from the snare and administering two blows to the back of the head with a stick, or dislocating (breaking) the animal’s neck is advocated for rabbits (Defra CoP 2005, IWGS 2005). These methods require increased handling of the animal and are likely to cause additional fear and distress. The Defra CoP does not give advice on the killing of non-target animals, although it advises that care should
be taken to avoid injuring the animal or getting bitten when the intention is to release it.

While conditions in the field may be difficult, they do not reduce or minimize the ethical obligation of an individual to reduce pain and distress to the greatest extent possible when killing a trapped animal. The JAVMA Guidelines on Euthanasia (2007) advise that the amount of handling of wild animals by humans should be minimized as handling increases fear and distress. They also advise that the use of cervical dislocation should be limited to poultry, other small birds, mice, and immature rats and rabbits. Manual cervical dislocation is physically more difficult in heavy rabbits which have a large muscle mass in the cervical region. Killing animals by a blow to the head may be best reserved for young animals with thin craniums. The Guidelines recommend that those performing cervical dislocation, or killing animals by a blow to the head, should be properly trained to use these techniques (JAVMA 2007) but there is no requirement for the training of trappers on how to use these killing methods correctly and humanely. There is substantial evidence that some animals are left in snares to die from injuries, asphyxia, dehydration, starvation, or from attack by predators (e.g. http://www.antisnaring.org.uk, www.league.org.uk, www.badger.org.uk).

**Sentience, awareness and suffering**

There have been many attempts to define sentience, consciousness, awareness and other similar terms in discussions about animal welfare and, more specifically, about animal suffering (see special editions of journals of Animal Welfare 2001 and 2007, and Applied Animal Behaviour Science 2006). It is evident that advances in animal welfare science, and a clearer understanding of these concepts, mean that we are better able to make judgments about what an animal is likely to be feeling.

Sentience means the capacity to feel (New Oxford Dictionary of English). A sentient animal can experience a range of feelings, or affective states (sensations, perceptions and emotions); negative ones such as pain, fear, frustration and desperation, and positive ones such as pleasure and joy. Consciousness allows the subjective awareness of these feelings; the terms ‘aware’ and ‘conscious’ are often taken as synonyms (Griffin & Speck 2004). Broom (2006) argues that sentience implies a range of capacities: “A sentient being is one that has some ability: to evaluate the actions of others in relation to itself and third parties, to remember some of its own actions and their consequences, to assess risk, to have some feelings and to have some degree of awareness”. A prejudice exists to the effect that small animals are less likely to be sentient than large animals (Broom 2010), even though it is not generally the case that the smaller members of any particular taxonomic group of animals have less behavioural complexity or cognitive ability than the larger members.

Suffering can involve a range of negative feelings, such as anxiety, fear and pain, that continue for more than a few minutes. It may arise as a result of the animal’s inability to cope with a situation (Broom 1991), or, as suggested by Aitken (2008), ‘the experiencing of one’s life as going badly’. There is now a strong consensus that all of the vertebrate branch of the animal kingdom is sentient, conscious and has the
capacity to suffer (Kirkwood 2007, Broom 2010).

Suffering is at the centre of our concern for the welfare of animals, but how we think about them, what they mean to us, and how we use them, can influence our concerns for their suffering. We may believe that animals differ in their capacities for suffering, because we believe that they differ in their capacities for sentience and consciousness. We may be more tolerant of practices that cause pain or cruelty if we believe that the animals are less sentient (Phillips & McCullough 2005).

In the controlled conditions of slaughterhouses the period of pain and distress of animals at slaughter is often less than 60 seconds, and ongoing research aims to further shorten this time ((Mellor & Littin 2004). The killing of laboratory animals is tightly regulated and monitored, with constant efforts to improve humaneness (Yeates 2010). Every effort is made to ensure that the euthanasia of pet animals is rapid and pain-free (AVMA 2007). In contrast, three minutes is considered an acceptable time (often of extreme pain and suffering) for wild animals to take to die in killing traps, and the period permitted between visits to check for animals caught in snares can be as long as 24 hours (Harris et al 2006).

A rabbit may be viewed differently according to whether it is a family pet, a laboratory animal, an animal kept for meat production, or a wild animal that is labeled as a pest. There is no evidence, however, that a rabbit has a greater or lesser capacity to experience pain and suffering depending on how it is used by humans; its biological functioning remains the same (Broom 2010, Yeates 2010). It is also likely that the genetic similarity that exists between the dog and the fox leads to a similar capacity to experience fear, pain and exhaustion, and to suffer (Webster 2005).

Following on from this, there is no evidence that a wild animal trapped in a snare suffers any less than a domestic animal trapped in a snare. A wild animal may, in fact, suffer more: it will be more aware of the risk of predator attack, and experience extreme fear when it is approached by a human and is unable to escape. In contrast, the domestic animal will be habituated to humans, less aware of the risks of predator attack and therefore less fearful.

Summary

The lack of data on snares makes it difficult to accurately assess their impact on the welfare of target and non-target species. Nevertheless, having searched the scientific literature and summarized the main findings, this review can make the following statements:

• Snares do not operate humanely, either as restraining or as killing traps
• The mortality and morbidity of animals caught in snares is higher than with most other restraining traps, such as box traps
• Snares are inherently indiscriminate and commonly catch non-target, including protected, species
• Snares can cause severe injuries, pain, suffering, and death in trapped animals (target and non-target species)
• Stopping of snares may not prevent injury or death in trapped animals (target and non-target species)
• The free-running mechanism of a snare is easily disrupted and likely to fail, resulting in injury, pain, suffering, and death in trapped animals (target and non-target species)
• Animals can legally be left in snares for up to 24 hours, exposing them to the elements, to thirst, hunger, further injury and attack by predators
• It is difficult to assess the severity of injury in an animal when it is caught in a snare
• Animals that escape, or that are released, may subsequently die from their injuries or from exertional myopathy over a period of days or weeks
• The monitoring of correct snare use is difficult, if not impossible
• Neck snares are open to abuse because they are cheap and require minimum effort to set and maintain
• Methods used to kill animals caught in snares are not regulated, and may not be humane
• The use of neck snares is seen as the least favourable option and the least humane of all legal trapping methods by the public

Conclusions

It is clear that we should assess the welfare of vertebrate pest animals, however undesirable their impact on humans, in the same way as we assess the welfare of any other vertebrate animal. Vertebrate pest animals have the capacity to feel pain, fear, and to suffer just like any other vertebrate animal. Whenever control methods are considered, their effects on the welfare of these animals should be taken into account. In some cases a cost-benefit analysis is a reasonable approach to take, where the real adverse effects of the pests are compared with the extent of poor welfare of the pest animals that a control method would cause (Broom 1999). However, some pest control methods have such extreme effects on an animal's welfare that, regardless of the potential benefits, their use is never justified (Sandøe et al 1997, Broom 1999). Snaring is such a method.

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Comments by the authors on photographic evidence provided by OneKind of snaring incidents in Scotland in 2009 and 2010 can be found in the Appendix.

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restraining traps. International Organization for Standardization: Geneva, Switzerland


Appendix

Comments by the authors on photographic evidence, provided by OneKind, of snaring incidents in Scotland in 2009 and 2010

1. Photographs 1 and 2
Photographs 1 and 2 show how the free-running mechanism can fail. It appears that the wire has wound around branches so that it can no longer run freely. It is an offence to fail to release or remove an animal, whether alive or dead, from a snare during the course of snare inspection (which should take place at least once every 24 hours). The decomposing remains of the fox in photograph 1 indicate that this animal was left in the snare. Neck snares are open to abuse and the monitoring of correct snare use is difficult.

2. Photograph 3
The fox appears to have a snare wire wound tightly around its neck. Kinking of the wire is evident, which will stop the snare from being free-running. The fox’s body is covered in dirt, which suggests that the animal struggled vigorously to escape from the snare before death. The fox appears to have died from strangulation and asphyxiation, which is an inhumane method of killing.

3. Photographs 4 and 5
These photographs show a non-target protected species, the badger, caught by a snare around its caudal abdomen. The snare wire has cut through the skin and underlying tissues, causing very severe wounds to the caudal abdominal area which are likely to be painful and cause suffering. The animal’s snout and body are covered in dirt, which suggests that it has struggled vigorously against the snare. These pictures illustrate how neck snares are indiscriminate: they may catch an animal by another part of the body (rather than the neck), and may catch non-target, including protected, species.

4. Photographs 6 and 7
These photographs show a badger, a non-target protected species, caught in a neck snare. The snare cable wire is frayed near the neck so the free-running mechanism cannot operate, and the wire is likely to tighten further around the neck and not release. The animal’s body is covered in dirt and the ground is disrupted, which suggests that the animal has struggled vigorously against the snare in its attempts to escape. Animals may injure themselves further when trying to escape, and those that are released or that escape may subsequently die from exertional myopathy, a pathological condition characterized primarily by damage to muscle tissues. It usually develops following extreme muscular exertion and stress.

5. Photograph 8
An animal caught in a snare by a fence may try to climb over it, and become suspended. It is then likely to die by strangulation and asphyxiation, which is an inhumane killing method. This appears to have happened to the fox in this photograph. Setting a snare in a place where it is likely that the animal could
sustain itself fully or partially is an offence under the Snares (Scotland) Order 2010.

6. Photograph 9
An animal may be trapped in a snare and exposed to the elements for up to 24 hours. In snowy conditions, adverse effects from hypothermia will cause suffering and poor welfare in the trapped animal. The setting of snares in snow may increase the risk to non-target species, because the height of the snare loop from the ground will vary with the depth of the snow.

7. Photographs 10 and 11
This badger, a protected, non-target species, has been caught in a snare set on a fence line. Setting a snare on fences is an offence under the Snares (Scotland) Order 2010, but appears to be common. The animal has gnawed at the wooden pole by the fence and disrupted the ground around it, in its efforts to escape. Some of its abdominal contents are visible. This evisceration could be due to the snare wire cutting through the animal’s body tissues, due to self-mutilation and/or predator attack. This animal will have experienced severe pain, fear, suffering and very poor welfare prior to death. A stop on a snare will not prevent this type of injury because this non-target species is larger than the target species, and has been caught around its abdomen.

8. Photographs 12 and 13
These photographs illustrate the extent to which snares are indiscriminate and catch non-target species. The deer appear to have died from strangulation, which is an inhumane method of killing. A stop on a snare will not prevent this type of injury, as it will be set for the circumference of a fox’s neck, which is smaller than that of a deer. The ground around the deer is disrupted, indicating that the animals struggled against the snare.

9. Photographs 14 and 15
These photographs illustrate how snares may be set in places (such as fences, fence lines, branches, watercourses, ditches or steep banks) where animals can become suspended or can drown. Setting of snares in these places can amount to a contravention of the Snares (Scotland) Order 2010. Neck snares are open to abuse, but the monitoring of correct snare use is difficult if not impossible.

10. Photograph 16
An extensive wound is evident across the chest and right axilla of a badger that has been caught in a snare. Neither a stop on the snare (because it would have been set for a fox’s neck), nor a free-running mechanism (because badgers struggle vigorously against restraint), would have prevented this type of injury. Injuries can be particularly severe when a snare is caught diagonally across from the shoulder to the axilla, as appears to have happened to this badger.

11. Photograph 17
This rabbit is caught in a snare set in a snare line intended for foxes (based on positioning and type of cable). The snare loop is wound around its caudal abdomen, and the snare has got caught on a branch resulting in the vertical
suspension of the rabbit with its head close to the ground. Its body is covered in mud, and disruption of the ground is evidence that it has struggled against the snare. It will have been vulnerable to attack by predators, and is likely to have suffered from extreme fear, exhaustion due to struggling and, in poor weather conditions, hypothermia.

Photograph 1

Photograph 2

Photograph 3
The Impact of Snares on Animal Welfare

Photograph 4

Photograph 5
The Impact of Snares on Animal Welfare

Photograph 6

Photograph 7

Photograph 8

Photograph 9
The Impact of Snares on Animal Welfare

Photograph 10

Photograph 11
The Impact of Snares on Animal Welfare

Photograph 12

Photograph 13

Photograph 14

Photograph 15
The Impact of Snares on Animal Welfare

Photograph 16

Photograph 17