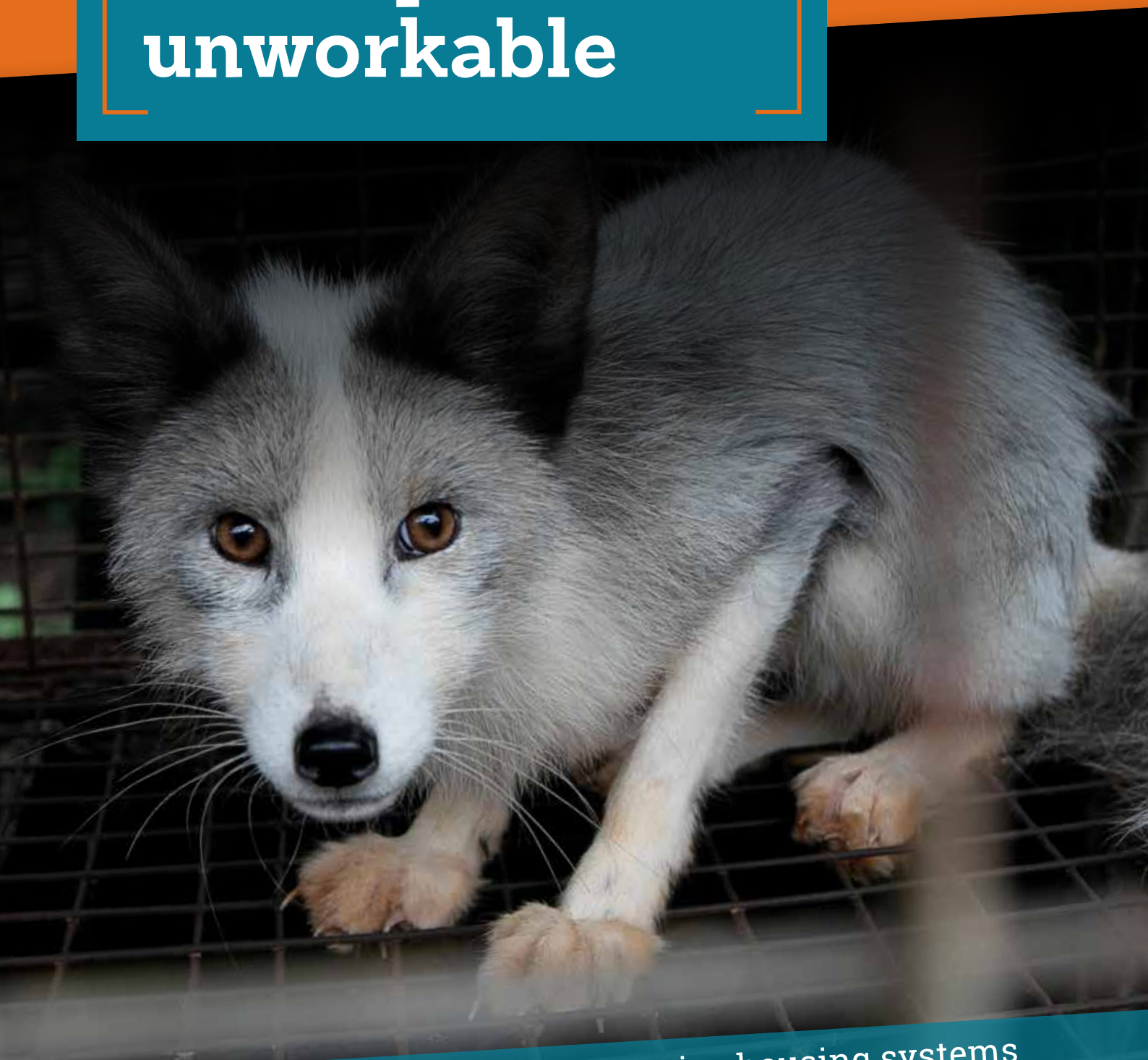
Inadequate and unworkable



How cage enrichment or alternative housing systems fail to meet the welfare needs of animals farmed for fur

A JOINT REPORT FROM

EUROGROUP FOR ANIMALS

respect for animals
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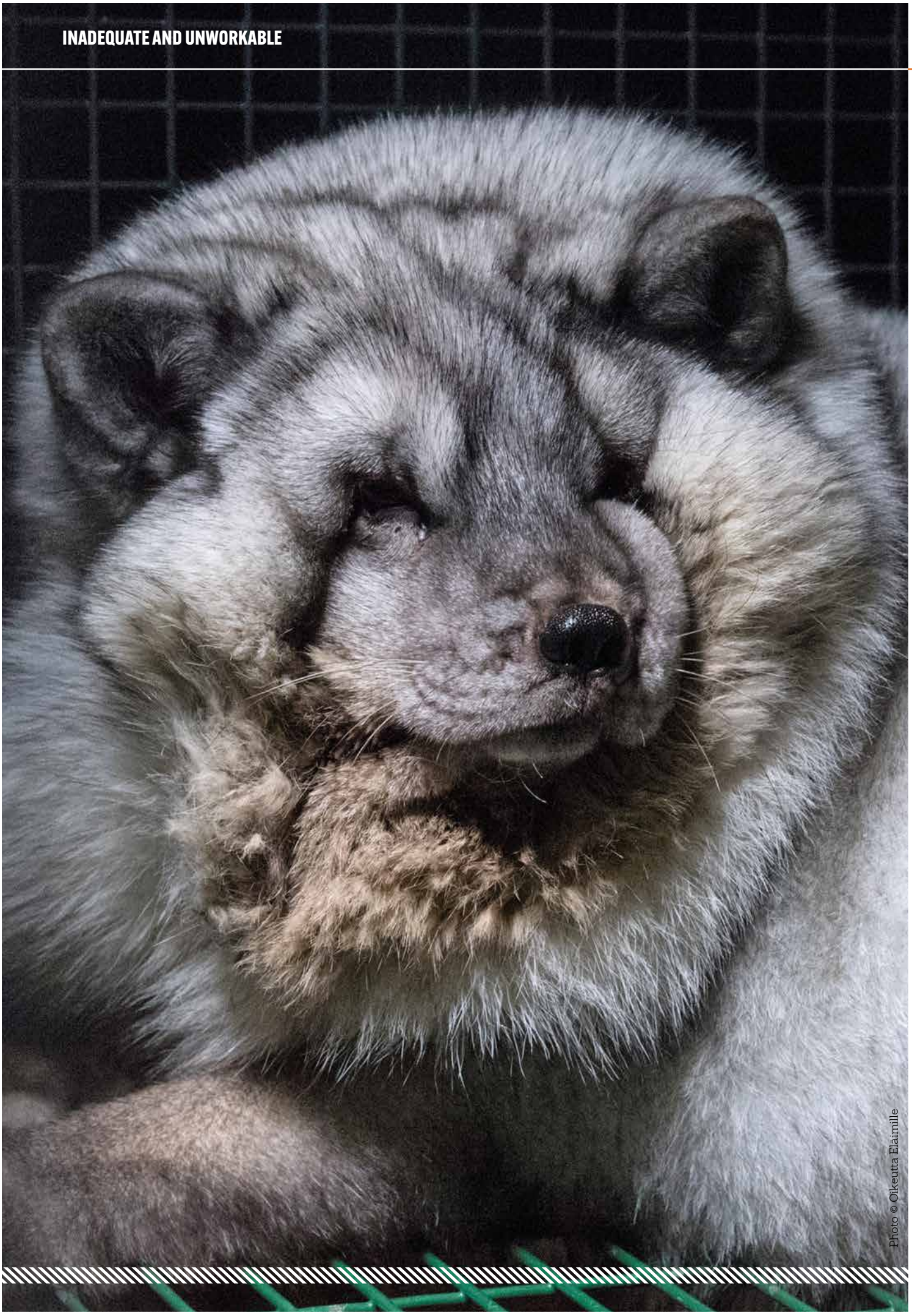

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INADEQUATE AND UNWORKABLE

How cage enrichment or alternative housing systems fail to meet the welfare needs of animals farmed for fur

A report for Eurogroup for Animals
and Respect for Animals

Heather Pickett BSc (Hons) MSc

September 2023

About the Author

Heather Pickett (pickett@animalwelfareresearch.com) is an independent consultant, available for freelance research, analysis and report writing in the fields of animal welfare, environment and sustainability, agriculture and food policy, human health and nutrition.

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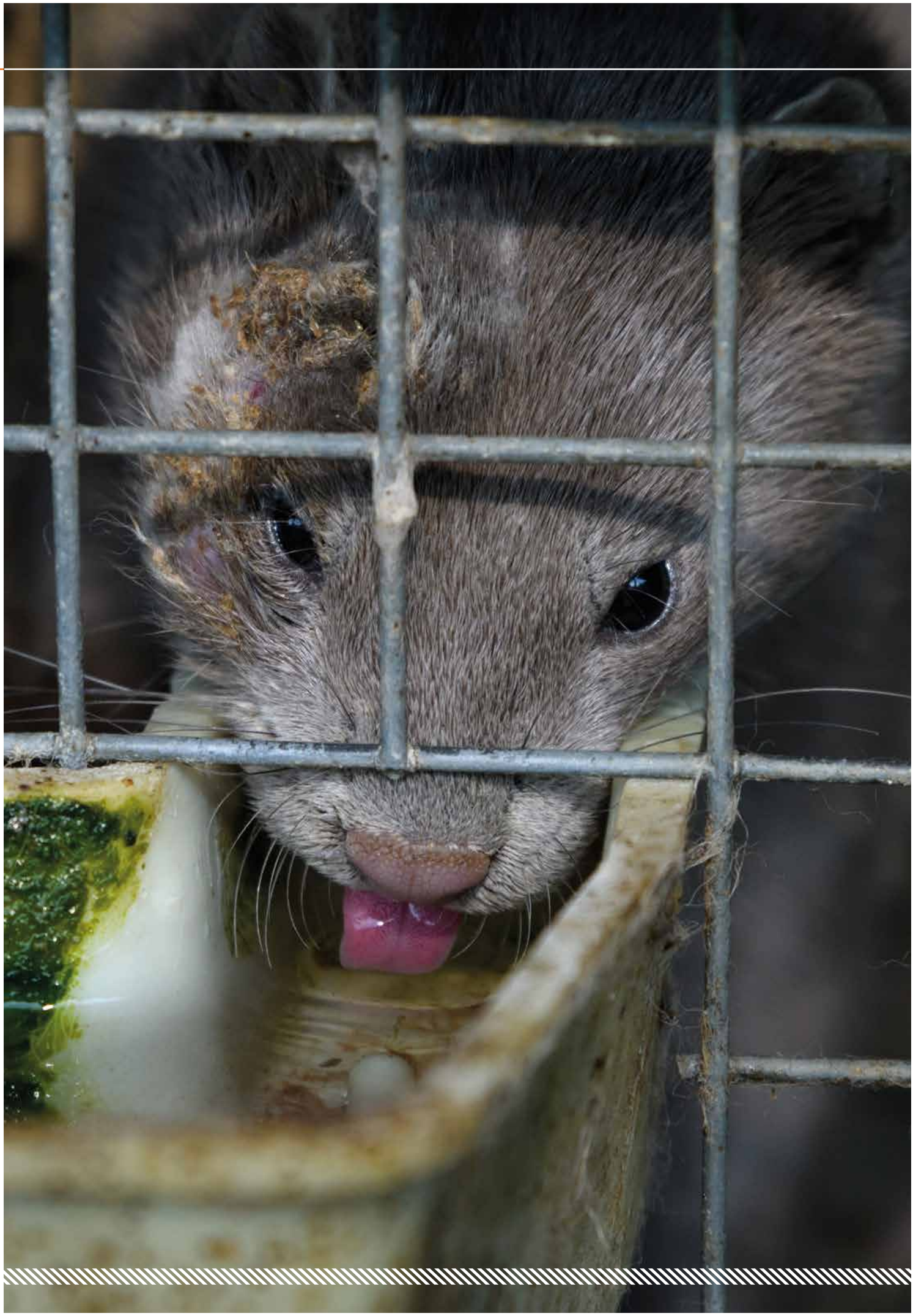

1 Introduction

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The welfare of mink, foxes and raccoon dogs farmed for fur in Europe is severely compromised across all five domains of animal welfare [1]. This briefing gives an overview of current standards for the housing of mink, foxes and raccoon dogs farmed for fur in European countries, and examines the available scientific evidence regarding the possibility of meeting the welfare needs of these species, either through enrichment / enlargement of cage systems or development of alternative housing systems.

It concludes that the possibilities for enrichment are extremely limited in cages. Crucially, it is not practical to provide access to water for swimming (mink) or substrate for digging (foxes and raccoon dogs) in a cage housing system. The available scientific evidence, together with experience in various European countries, clearly shows that enrichment / enlargement of cage systems is not able to address the major welfare issues for mink, foxes and raccoon dogs farmed for fur and there are insurmountable obstacles to the development of more extensive alternative systems. For background information on the welfare issues discussed in this briefing, see *The Case Against Fur Factory Farming in Europe: A Scientific Review of Animal Welfare Standards and 'WelFur'* [2].

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2 Mink

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Table 1 summarises the requirements for space and enrichment for farmed mink in the top-producing European countries and in countries that have introduced additional requirements relative to the minimum standards in the Council of Europe Recommendation Concerning Fur Animals.

***Table 1**. Summary of legal requirements in selected European countries regarding space and enrichment for farmed mink.*

COUNTRY	LEGAL REQUIREMENTS REGARDING SPACE AND ENRICHMENT	OUTCOME
COUNCIL OF EUROPE (CoE) RECOMMENDATIONS [3]	Minimum cage height 45cm. Minimum floor area 2550cm^2 for a single adult, a single adult with cubs, or a pair of cubs post-weaning, with an additional 850cm^2 for each additional animal. Mink must have a nest box. 'Suitable bedding and occupational material such as straw shall be regularly provided'.	
DENMARK [4]	Minimum cage height 45cm. Minimum floor area 2550cm^2 for a single adult (with a minimum of 637.5cm^2 per kg), a single adult with cubs, or a pair of juveniles post-weaning (with a minimum of 318.75cm^2 per kg), with an additional 850cm^2 for each additional animal. Nest box with ample straw. Mink must have permanent access to straw, a shelf and a tube (except the tube can be left out when the pups are young – up to no later than 1 July).	Additional enrichment requirements relative to CoE minimum specifications – fails to address welfare issues (see text)
FINLAND [5]	Minimum cage height 45cm. Minimum floor area 2550cm^2 for a single adult, a single adult with cubs, or a pair of juveniles post-weaning, with an additional 850cm^2 for each additional animal. Nest box with bedding, suitable chewing / stimulation material, e.g. straw.	Requirements are broadly in line with CoE minimum specifications – welfare is severely compromised in these conditions [6]
GERMANY [7]	Minimum height 1m. Minimum floor space 3m^2, with ≥1m^2 per adult or weaned juvenile. Nest box, tunnels, one platform per animal, climbing devices (not made out of wire), ≥1m^2 swimming pool with depth ≥30cm.	Substantially greater space and enrichment requirements than CoE minimum specifications – mink farming activity has ceased
POLAND [8]	Minimum height 45cm. Minimum floor area 2550cm^2 for a single adult, a single adult with cubs, or a pair of juveniles, with an additional 850cm^2 for each additional animal. Cages for female mink and weaned young must have a nest box with litter. All cages for mink must be equipped with a resting shelf.	Requirements are broadly in line with CoE minimum specifications – welfare is severely compromised in these conditions [9]
SWEDEN [10]	Bunk cages with minimum 2550cm^2 floor space on the lower level and minimum 900cm^2 on the upper level. Minimum height 45cm on each level. Nest box with bedding, lying shelf on both levels. Mink must have access to various objects (e.g. pipes, balls, branches, running wheels, water baths) that 'must be replaced often enough to provide the opportunity for varied activity'.	Additional enrichment requirements relative to CoE minimum specifications – fails to address welfare issues (see text)
SWITZERLAND [11]	Minimum 15m^2 outside enclosure for 1-2 animals (can include young). Sleeping boxes and 1m^2 water pool with a depth of 20cm.	Substantially greater space and enrichment requirements than CoE minimum specifications – mink farming activity has ceased

2.1 Enrichment / enlargement of cages for mink

A typical mink cage in Europe measures 70-90cm x 30cm, [12] providing a floor area approximately equivalent to four sheets of standard A4 typing paper. Stride length of mink is around 20-40cm, [13] so the animal can take no more than four strides in any direction before reaching the edge of the cage. Doubling the standard cage size, without any additional enrichment, had no effect on stereotypies, fur-chewing and welfare-associated physiology in pair-housed juvenile mink [14]. Stereotypies may be reduced, but not eliminated, with cages that are around 9 times the floor area and 1.5 times the height of a standard mink cage [15].

Farmed mink are usually provided with a nest box throughout the year, which is used for sleeping, hiding and breeding [16]. Access to uncut straw has advantages over cut straw, wood shavings or an artificial nest

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without nesting material [17,18,19]. Inadequate nesting material type, and inadequate duration of access to nesting material, as often occurs on commercial fur farms, limits nesting behaviour in mink and contributes to problems during parturition, reduced maternal care and increased kit mortality [20,21,22,23,24]. Provision of straw on top of cages (where it has to be pulled through the wire) is not sufficient for nest-building; the quality of the nest is markedly increased when straw is provided in a loose pile inside the cage [25]. Mink are motivated to build nests at times other than when they are pregnant [26], and to use more than one nest site [27], reflecting their use of multiple dens in the wild.

Adding various combinations of simple enrichments (such as plastic or wire mesh cylinders, platforms, balls and pieces of rope or lengths of hose) to standard or enlarged, e.g., double, mink cages, may reduce, but does not eliminate, tail-biting [28,29], and stereotypies [30,31]. In many cases, levels of stereotypy are unaffected by provision of simple enrichments [32,33].

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Mink are highly motivated to access a running wheel [34]. Motivation to use a running wheel may be related to ranging behaviour. Distance travelled in the wild appears to be correlated with the distance run in a wheel in wild-caught caged carnivores [35]. However, running in a wheel does not reduce stress in caged mink and both stereotypy and wheel running can be defined as repetitive, unvarying and functionless, and may be considered abnormal behaviour [36]. So, access to a running wheel does not necessarily improve welfare because using the wheel is an alternative form of abnormal behaviour that reflects the same frustrated motivation.

In the industry's *WelFur* assessment protocol for mink, various enrichments are classified according to their 'documented effect' on mink welfare [37]. Platforms / attached tubes for resting on / in, biting ropes, and unfixed soft plastic tubes are considered to have the highest value, while swimming water is considered to be of only medium value (along with other water-based enrichments, straw or similar material provided inside the cage, running wheels, hard plastic tubes, plastic chains, and balls). However, when carefully designed experiments ask the mink which resources are important to them, they tell us unequivocally that they place a very high value on access to swimming water [38]. As would be expected for a semi-aquatic species that always lives in association with water in the wild, mink are highly motivated to swim. They are frustrated when denied the opportunity to do so, and stressed when that opportunity is provided and then removed [39]. Motivation to use a water bath may be related to foraging behaviour, both on land (running, exploring) and in the water (exploring, head dipping, swimming) [40].

Access to a water bath may have little effect on stereotypies in adult caged mink [41] but may reduce the occurrence [42], and slow down the development [43], of stereotypic behaviour in individually-housed juvenile mink. So long-term access to a water bath may reduce, but does not eliminate, frustration in caged mink [44]. Access to water for swimming (in addition to a cylinder and platform) increased play behaviour in juvenile mink, compared with access to a cylinder and platform without swimming water [45].

Although consumer-demand experiments consistently show that mink place a high value on swimming water, there has been some debate about whether access to swimming water is a 'behavioural need' for mink [46]. Kornum *et al.* argue that measurements of motivational strength and welfare indicators, as well as observations of wild and feral mink, should all be included in the assessment of the significance of swimming to the welfare of mink. They conclude that 'Seen from a more complex understanding of behavioural needs, we suggest that lack of swimming opportunities for farmed mink constitutes a welfare proble' [47].

Denmark and Sweden have implemented additional requirements for space and enrichment of cages for mink relative to the minimum standards in the Council of Europe Recommendations (**Table 1**). In both cases, mink are required to have access to multiple enrichments, including enrichments considered to be of the highest value in the *WelFur* protocol. Data from *WelFur* assessments carried out across Europe between 2017 and 2019 show that these requirements have not addressed abnormal behaviours in farmed mink, which are indicative of poor welfare. Danish farms scored on average more highly than farms in other European countries for the provision of enrichments in cages, yet stereotypies and fur-chewing were more common on Danish farms [48]. Multiple factors may influence the level of stereotypies and fur-chewing observed, including the extent of feed restriction and other aspects of management. Nevertheless, **it is clear from these findings that enrichment of the cage environment, using what the industry considers to be the best available enrichment options, is not sufficient to mitigate the overwhelmingly negative experiences of mink on fur farms** [49].

Although water baths are mentioned as a possible enrichment option in the Swedish legislation (**Table 1**), there are practical difficulties in providing access to swimming water within a cage environment, in terms of the lack of space for a meaningful quantity (surface area and depth) of water and in terms of maintaining hygiene, and no commercial farms are known to be attempting this.

Enrichment of the cage environment, using what the industry considers to be the best available enrichment options, is not sufficient to mitigate the overwhelmingly negative experiences of mink on fur farms.

2.2 Development of alternative systems for mink

Two countries – Germany and Switzerland – have introduced more substantial enrichment requirements for mink, including much greater space allowances and access to water for swimming. As a result, mink farming has ceased in both countries (**Table 1**).

Substantially larger, highly-enriched outdoor enclosures, including water for swimming and multiple nest sites, provide a more complex environment that enables mink to fulfil a wide range of highly-motivated behaviours. Housing of families or groups of juveniles in such enclosures could lead to enormous welfare improvements for farmed mink, including the elimination of stereotypies [50]. The water basins are used frequently for swimming, diving, head-dipping, and social play, and do not appear to present a problem for the health or hygiene of the animals [51,52]. Mink often choose to share nest boxes when kept in this way [53]. However, in the wild, juvenile mink typically disperse before the age at which they are killed on farms, and conflict between animals may still cause problems as the mink get older [54].

Mink are farmed in such large numbers that it is not possible for farm workers to dedicate enough time to handling each individual animal to facilitate some degree of taming. If mink were kept in much larger enclosures, the time required to catch the animals when needed would make the system unworkable. Therefore, **despite the major potential benefits, fear of humans in the animals used by the fur industry and difficulties in handling and management would present insurmountable obstacles to the adoption of more extensive systems by the fur industry** [55].

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3 Foxes

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Table 2 (overleaf) summarises the requirements for space and enrichment for farmed foxes in the top-producing European countries and in countries that have introduced additional requirements relative to the minimum standards in the Council of Europe Recommendation Concerning Fur Animals.

Table 2. *Summary of legal requirements in selected European countries regarding space and enrichment for farmed foxes.*

COUNTRY	LEGAL REQUIREMENTS REGARDING SPACE AND ENRICHMENT	OUTCOME
COUNCIL OF EUROPE (CoE) RECOMMENDATIONS [56]	Minimum cage height 70cm. Minimum floor space 0.8m^2 for a single adult, 2.0m^2 for a single adult with cubs, and 1.2m^2 for a pair of juveniles after weaning, with an additional 0.5m^2 for each additional juvenile thereafter. 'Foxes must be able to conceal themselves from people and from animals in other cages or enclosures.' All weaned animals must have access to a secluded area and, for silver foxes, the secluded area must have solid walls. Pregnant vixens and vixens with cubs must have access to a nest box. All weaned foxes must have 'either an elevated platform or a nest box with a roof on which the animal can rest and observe the cage door or enclosure entrance' and 'The environment shall be enriched with objects that provide suitable stimuli to gnaw and any other occupational material'.	
FINLAND [57]	Minimum cage height 70cm. Minimum floor space 0.8m^2 for a single adult, 2.0m^2 for a single adult with cubs, and 1.2m^2 for a pair of juveniles after weaning, with an additional 0.5m^2 for each additional juvenile. Nest box with antechamber (for vixen with cubs only), platform (or nest box roof), suitable chewing / stimulation material, e.g. wooden blocks.	Some requirements in CoE Recommendations (e.g. for a secluded area) are not met for some categories of animal – welfare is severely compromised in these conditions [58]
GERMANY [59]	Minimum height 1.5m. Minimum floor space 12m^2, with ≥3m^2 per adult or weaned juvenile. Elevated nest box with antechamber, tunnels, one platform per animal. Flooring ≤10% perforated with ≥2m^2 digging space.	Substantially greater space and enrichment requirements than CoE minimum specifications – fox farming activity has ceased
POLAND [60]	Minimum cage height 50cm. Minimum floor area 0.6m^2 for a single animal, 1.2m^2 for a vixen with young, 1m^2 for a group of two animals, with an additional 0.5m^2 for each additional animal. Cages for vixens rearing young must have a nest box.	Some requirements in CoE Recommendations (e.g. for minimum space and height and for a secluded area) are not met for some categories of animal – welfare is severely compromised in these conditions [61]
SWEDEN [62]	Foxes can only be kept in such a way as to satisfy their need to be with other foxes and to move, dig and otherwise occupy themselves.	Substantially greater space and enrichment requirements than CoE minimum specifications – fox farming activity has ceased
SWITZERLAND [63]	Red fox: Minimum 100m^2 outdoor enclosure for 1-2 animals (can include young). Opportunity for digging, sleeping boxes, and screens / hiding places / possibility for separation. Arctic fox: Minimum 40m^2 outdoor enclosure and 8m^2 indoor enclosure / shelter for 1-2 animals (can include young). Opportunity for digging, sleeping boxes, and screens / hiding places / possibility for separation.	Substantially greater space and enrichment requirements than CoE minimum specifications – fox farming activity has ceased

3.1 Enrichment / enlargement of cages for foxes

Fox cages typically have a floor area of 0.6-1.2m^2 [64]. The upper end of this range is roughly equivalent to the area of a small table. Restricted space, combined with obesity resulting from selection for increased pelt size, predisposes farmed arctic foxes to orthopaedic abnormalities [65]. Moderate increases in space, of a magnitude that might be feasible on commercial farms, did not reduce stereotypies or improve bone strength and increased capture-time in juvenile arctic foxes [66,67,68,69].

Nest boxes are not usually provided for farmed foxes other than pregnant vixens and vixens with cubs. There is an intractable problem in rearing foxes in a cage environment: the animals are fearful and value the availability of a nest box or shelter in which to rest and hide from approaching humans [70,71,72,73]. However, allowing them to do so may make them even more fearful because they are not forced to maintain regular visual contact with people [74,75,76,77]. Vixens are motivated to use more than one nest site [78]. reflecting their use of multiple den sites (silver foxes) or large complex dens (arctic foxes) in the wild.

Platforms and objects / material such as bones, wooden blocks and straw are frequently used by farmed foxes [79,80,81,82,83], but they do not eliminate stereotypies [84,85,86] or reduce levels of fear or long-term stress [87,88].

Foxes are motivated to access a sand / earth floor [89,90]. Access to a sand / earth floor enhances behavioural repertoire [91,92], reduces stereotypies [93,94], and improves bone strength [95] and claw length [96] in farmed foxes. A rebound effect in digging, playing and sniffing was observed when foxes were given access to an earth floor after a period of deprivation [97]. Once arctic foxes are provided with access to a clean and unfrozen sand floor [98], they may show a stress response if they are not allowed to utilise this floor type all the time. However, there are practical difficulties in providing access to, and cleaning, a sand / earth floor in a cage. In trials, a sandbox provided within a cage environment was fouled throughout the study, irrespective of the frequency of sanitation [99]. The foxes eliminated on the newly sanitised sandbox so that the sand became fouled very soon after being replaced with clean sand. The faeces and wet sand tended to become stuck to the paws of the foxes, which then fouled the experimental cages and other resources. Also, it was not possible to replace the soiled sand with clean sand whenever the outside temperature dropped below zero because the sand froze.

It is clear from the above studies that modifications to the cage environment cannot solve the major welfare problems for foxes on fur farms.

3.2 Development of alternative systems for foxes

Three countries – Germany, Sweden and Switzerland – have introduced additional enrichment requirements for farmed foxes, including the opportunity to engage in digging. Since it is not practical to achieve this in cage housing, fox farming activity has ceased in all three of these countries (**Table 2**).

Housing of foxes in family or sibling groups in substantially larger, highly-enriched outdoor enclosures, including an earthen floor for digging and multiple nest sites, could potentially improve welfare for farmed foxes by providing a more complex environment to enable them to fulfil a wide range of highly-motivated behaviours. However, reduced human contact in these systems may result in greater fear of humans [100,101]. The inability to make exploratory movements and disperse in late autumn may also be stressful for male cubs [102]. Fear of humans in foxes reared by the fur industry and difficulties in handling and management would present insurmountable obstacles to the adoption of more extensive systems [103].
Even under zoo conditions, where animals typically have significantly more space and a more enriched environment, cub mortality is high in both red and arctic foxes [104], and is an indicator that wide-ranging carnivores, such as arctic and silver foxes, are unsuitable for rearing in captivity.

Modifications to the cage environment cannot solve the major welfare problems for foxes on fur farms.

4 Raccoon Dogs

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Table 3 (below) summarises the requirements for space and enrichment for farmed raccoon dogs in the top-producing European countries and in countries that have introduced additional requirements relative to the minimum standards in the Council of Europe Recommendation Concerning Fur Animals.

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Table 3. *Summary of legal requirements in selected European countries regarding space and enrichment for farmed raccoon dogs.*

COUNTRY	LEGAL REQUIREMENTS REGARDING SPACE AND ENRICHMENT	OUTCOME
COUNCIL OF EUROPE (CoE) RECOMMENDATIONS [105]	No specific minimum cage height or floor area specified but 'The design, construction and maintenance of enclosures and accommodation for fur animals shall at all times allow them, in accordance with their species-specific needs, sufficient room to carry out normal locomotor behaviour, to groom themselves without difficulty and to lie down, to rest, to adopt sleeping postures, to stretch their limbs freely and to rise'. 'Every animal shall have available to it an area where it can hide itself appropriately from people or from animals in other cages or pens'.	
FINLAND [106]	No minimum height or floor space specified (raccoon dogs are typically housed in fox cages). Suitable chewing / stimulation material, e.g. wooden blocks.	Some requirements in CoE Recommendations (e.g. for a hiding area) are not met – welfare is severely compromised in these conditions [107]
GERMANY [108]	Minimum height 1.5m. Minimum floor space 12m^2, with ≥3m^2 per adult or weaned juvenile. Nest box, tunnels, one platform per animal. Flooring ≤10% perforated with minimum 2m^2 digging space.	Substantially greater space and enrichment requirements than CoE minimum specifications – raccoon dog farming activity has ceased
POLAND [109]	Minimum cage height 50cm. Minimum floor area 0.6m^2 for a single animal, 1.2m^2 for a female with young, 1m^2 for a group of two animals, with an additional 0.5m^2 for each additional animal. Cages for females rearing young must have a nest box.	Some requirements in CoE Recommendations (e.g. for a hiding area) are not met for some categories of animal – welfare is severely compromised in these conditions [110]
SWITZERLAND [111]	Minimum 40m^2 outdoor enclosure and 8m^2 indoor enclosure / shelter for 1-2 animals (can include young). Opportunity for digging, sleeping boxes, and screens / hiding places / possibility for separation.	Substantially greater space and enrichment requirements than CoE minimum specifications – raccoon dog farming activity has ceased

4.1 Enrichment / enlargement of cages for raccoon dogs

Generally, housing for raccoon dogs on fur farms is similar to that used for foxes [112]. Doubling the cage size increased locomotion but did not reduce stereotypies and increased catching time in pair-housed juvenile raccoon dogs [113].

Nests are not normally provided for raccoon dogs on fur farms outside of the kit nursing period due to concerns about soiling their fur [114,115,116] and possible delayed onset of heat if breeding animals are inside the nest during daylight hours [117]. A suitable nest and/or den site is critical to the welfare of raccoon dogs, particularly over winter when they use it most of the time [118]. Wild raccoon dogs exhibit autumn fattening followed by winter sleep and typically fast for several months during cold and snowy periods [119]. Lack of access to a nest box on fur farms interferes with the species-specific behaviour of raccoon dogs to enter an extended period of winter sleep [120]. However, provision of a nest did not significantly reduce stereotypies or affect stress measures in young female raccoon dogs [121].

Caged raccoon dogs will interact with straw and a bone and, to a lesser extent, a wooden block [122,123,124]. They will also make some use of a platform and tube when available [125,126]. There are few studies that directly tested the impact on welfare of each of these provisions, but stereotypies and fur-biting were not eliminated in any of the studies where they were measured [127,128].

The above studies indicate that moderate increases in space and provision of a nest box and simple enrichments cannot mitigate the negative impacts of cage housing on raccoon dogs.

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4.2 Development of alternative systems for raccoon dogs

Two countries – Germany and Switzerland – have introduced additional enrichment requirements for farmed raccoon dogs, including much greater space allowances, nest boxes and the opportunity to engage in digging. As with foxes, since it is not practical to achieve this in cage housing, raccoon dog farming activity has ceased in both countries (**Table 3**).

Housing of raccoon dogs in family groups in large outdoor enclosures with a ground floor could provide enormous welfare improvements for farmed raccoon dogs. Raccoon dogs are more socially tolerant than mink and foxes and form strong bonds, with no marked aggression, when housed in this way [129]. Raccoon dogs are generally considered to be easier to handle (although neck tongs are still often used on fur farms), so it may be more feasible to manage raccoon dogs in large enclosures.

However, fear of humans remains a major welfare issue in the animals used by the fur industry [130] and stereotypies have been observed in raccoon dogs housed in outdoor enclosures larger than 100m² [131]. suggesting that the needs of the animals for locomotion / exploration / foraging are still not being met.

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5 Conclusions and Recommendation

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The possibilities for enrichment are extremely limited in cages. Crucially, it is not practical to provide access to water for swimming (mink) or substrate for digging (foxes and raccoon dogs) in a cage housing system.

Denmark and Sweden have implemented additional requirements for space and enrichment of cages for mink but data from *WelFur* assessments carried out across Europe between 2017 and 2019 clearly show that these requirements have not addressed abnormal behaviours in farmed mink, which are indicative of poor welfare. Therefore, enrichment of existing systems, using what the industry considers to be the best available enrichment options, has already been shown not to be a viable solution to the serious welfare problems that are inherent in cage housing.

Germany and Switzerland (and Sweden for foxes) have introduced more substantial requirements for space and enrichment, including swimming water for mink and nest boxes / digging opportunities for foxes and raccoon dogs. As a result, farming of these species has ceased in these countries. Even if such systems were economically viable, fear of humans in the animals used by the fur industry and difficulties in handling and management would present insurmountable obstacles to the adoption of more extensive systems.

The available scientific evidence, together with experience in various European countries, clearly shows that enrichment / enlargement of cage systems is not able to address the major welfare issues for mink, foxes and raccoon dogs farmed for fur and there are insurmountable obstacles to the development of more extensive alternative systems. This makes it impossible for the needs of mink, foxes and raccoon dogs to be met by the fur industry. A ban is the only viable solution to the serious welfare problems of animals farmed for fur.

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Photo © Oikeutta Eläimille

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EUROGROUP FOR ANIMALS

29 Rue Ducale, 1000 Brussels, Belgium
Tel: +32 (0) 2 740 08 20
Email: info@eurogroupforanimals.org
eurogroupforanimals.org

/eurogroupforanimals
@Act4AnimalsEU
eurogroupforanimals
eurogroup-for-animals

respect for animals
FIGHTING THE INTERNATIONAL FUR TRADE

P. O. Box 6500, Nottingham NG4 3GB
Tel: +44 (0) 115 952 5440
Email: info@respectforanimals.org
respectforanimals.org

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@Respect4Animals