Animal Welfare Institute

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Via Federal eRulemaking Portal

Public Comments Processing
Attn: FWS-HQ-NWRS-2022-0106
United States Fish and Wildlife Service
5275 Leesburg Pike, MS: PRB (JAO/3W)
Falls Church, VA 22041-3803

RE: National Wildlife Refuge System: Biological Integrity, Diversity, and Environmental Health (Docket No. FWS-HQ-NWRS-2022-0106)

Dear Director Williams:

The Animal Welfare Institute ("AWI") submits the following comments in response to the proposed regulations submitted by the U.S. Fish and Wildlife Service ("USFWS") regarding the biological integrity, diversity, and environmental health of the National Wildlife Refuge System ("NWRS"), 89 Fed. Reg. 7,345 (Feb. 2, 2024).

AWI is dedicated to alleviating animal suffering caused by people. We seek to improve the welfare of animals everywhere: in agriculture, in commerce, in our homes and communities, in research, and in the wild. Since 1951, AWI has advanced its mission through strategically crafted policy and legal advocacy, educational programs, research and analysis, litigation, and engagement with policymakers, scientists, industry, educators, other NGOs, the media, and the public. We seek scientifically-grounded protections for animals in all settings, and robust enforcement of those protections.

This comment is limited to the aspect of the proposed regulations that would prohibit predator control on NWRS lands. *Id*. at 7,352 (Section 29.3(d)(1)). AWI strongly supports this aspect of the proposed regulations due to the essential role that predators play within healthy ecosystems. The proposed regulations, however, identify five management activities[1] that

[1] The following activities are not considered to be predator control within the meaning of the proposed regulations: (i) Agency removal of native predator(s) solely to protect public health and safety; (ii) Use of barriers or nonlethal deterrents to protect the public, property, or vulnerable species, but that are not intended to reduce native predator populations; (iii) Compatible, refuge-approved taking of fish and wildlife for subsistence uses under Federal or State subsistence regulations that do not compromise maintaining biological integrity, diversity, and environmental health on the refuge; (iv) Compatible, refuge-approved

USFWS does not consider to be predator control activities within the meaning of proposed Section 29.3(d)(1). *Id.* These activities constitute significant exceptions to the prohibition on predator control. To the extent that these five identified management activities will involve the use of lethal methods to manage predators, AWI respectfully requests that USFWS incorporate into the final regulations a prohibition on the use of body-gripping traps, as defined below in Section II, when engaging in these five management activities due to the inhumaneness and indiscriminateness of these devices. If, despite the compelling evidence provided in this comment, USFWS does not include a ban on the use of body-gripping traps in this context, AWI encourages USFWS to set a mandatory trap check time of no more than 24 hours and also require the use of trap monitors for certain types of traps when the devices are used to carry out the five management activities listed in the proposed regulations.

As discussed in detail below, the lethal management of predators, and the use of body-gripping traps to carry out lethal management on NWRS lands, presents a threat to wildlife, ecosystems, recreationalists, and their companion animals that undermines the purpose these lands were established: to serve as a refuge where native wildlife can thrive, and all Americans can enjoy our great outdoors. The stated mission of the NWRS is "to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."[2] By law, the Secretary of the Interior is charged with ensuring the "biological integrity, diversity, and environmental health" of the NWRS, in addition to providing for the conservation of fish and wildlife.[3]

This comment is divided into two sections. The first section discusses the ecological importance of carnivores within functioning ecosystems. The second section addresses AWI's concerns with three types of body-gripping traps, and discusses the importance of trap check times and monitoring devices in reducing animal suffering.

I. Maintaining Carnivore Populations Is Essential to Ensuring Ecosystem Health and Balance

Predators play critical roles in maintaining the balance of ecosystems. "Predators" are animals that prey on other animals.[4] "Apex" predators, such as coyotes, wolves, bears, bobcats, and cougars, have few or no predators of their own and occupy the top of the food chain.[5] Apex predators create beneficial top-down effects that flow through and sustain ecosystems and the web of life.[6] Most apex carnivores maintain large territories to defend resources necessary for survival

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recreational hunting and fishing opportunities that do not compromise maintaining biological integrity, diversity, and environmental health on the refuge; and (v) Removal of invasive species. 89 Fed. Reg. 7,352.

[2] 16 U.S.C. § 668dd(a)(2).

[3] *Id.* § 668dd(a)(4)(B).

[4] A.S. LEOPOLD ET AL., CARNIVORE AND RODENT CONTROL IN THE UNITED STATES 9 (1964) ("The assertion that native birds and mammals are in general need of protection from native carnivores is supported weakly, if at all, by the enormous amount of wildlife research on the subject conducted in the past two or three decades.").

[5] L. R. Prugh et al., *The Rise of the Mesopredator*, 59 BIOSCIENCE 779–91 (2009).

[6] J.A. Estes et al., *Trophic Downgrading of Planet Earth*, 333 SCIENCE 301–06 (2011); W. J. Ripple, R. L. Beschta, *Trophic Cascades in Yellowstone: The First 15 Years After Wolf Reintroduction*, 145 BIOL. CONSERV. 205–13 (2012); W. J. Ripple, R. L. Beschta, J. K. Fortin, and C. T. Robbins, *Trophic Cascades*

and reproduction, such as access to food, water, shelter and mates.[7] Therefore, when prey populations and suitable habitat decline, so naturally do predator populations. This can be said of many predator-prey relationships for large carnivores.[8] Apex predators also help to control populations of large ungulates, such as deer and elk, as well as mesopredator population numbers, through predation and inter-specific competition.[9]

The indiscriminate removal of carnivores from landscapes can lead to ecosystem instability and collapse. Specifically, it is well documented that the loss of top carnivores causes a wide range of "unanticipated impacts" that are often profound, altering "processes as diverse as the dynamics of disease, wildfire, carbon sequestration, invasive species, and biogeochemical cycles."[10] The removal of apex predators can cause the "release" of mid-sized or "mesopredators" like foxes, raccoons, and skunks that are not at the top of the food chain in the presence of apex carnivores.[11] Increased abundance of mesopredators in turn can negatively affect populations and diversity of other species, including ground-nesting birds, rodents, lagomorphs, and others.[12] In some cases, declines in these species result in reduced prey for other apex carnivores and contribute to their decline and extirpation.

The remainder of this section focuses on the ecosystem benefits provided by three specific apex predators: coyotes, wolves, and mountain lions. Coyotes help to control disease transmission by keeping rodent populations in check, consume carrion, remove sick animals from the gene pool, disperse seeds, protect ground-nesting birds from smaller carnivores, and increase the biological diversity of plant and wildlife communities.[13] Studies have also found that coyotes have a positive

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From Wolves to Grizzly Bears in Yellowstone, 83 J. ANIM. ECOL. 223–33 (2014).

[7] Logan, K. A. and L. L. Sweanor. 2001. Desert puma – evolutionary ecology and conservation of an enduring carnivore. Island Press, Washington, D. C., USA.

[8] Brand, C. J. and L. B. Keith. 1979. Lynx demography during a snowshoe hare decline in Alberta. The Journal of Wildlife Management 43(4): 827-849; Ripple, W. J. and R. L. Beschta. 2004. Wolves and the ecology of fear: Can predation risk structure ecosystems? BioScience 54(8): 755-766; Ripple, W. J. and R. L. Beschta. 2005. Linking wolves and plants: Aldo Leopold on trophic cascades. BioScience 55(7): 613-621.

[9] Beschta, R. L. and W. J. Ripple. 2009. Large predators and trophic cascades in terrestrial ecosystems of the western United States. Biological Conservation 142: 2401-2414; Ritchie, E. G. and C. N. Johnson. 2009. Predator interactions, mesopredator release and biodiversity conservation. Ecology Letters 12: 982-998; Ripple, W. J., A. J. Wirsing, C. C. Wilmers and M. Letnic. 2013. Widespread mesopredator effect after wolf extirpation. Biological Conservation 160: 70-79.

[10] B.J. Bergstrom et al., License to Kill: Reforming Federal Wildlife Control to Restore Biodiversity and Ecosystem Function, 7 CONSERV. LETTERS 131–42 (2013); J.A. Estes et al., *Trophic Downgrading of Planet Earth*, 333 SCIENCE 301–06 (2011).

[11] L. R. Prugh et al., *The Rise of the Mesopredator*, 59 BIOSCIENCE 779–91 (2009); K. Crooks and M. Soulé, *Mesopredator Release and Avifaunal Extinctions in a Fragmented System*, 400 NATURE 563–66 (1999) (noting that although coyotes are mesopredators when wolves are present, they can act as apex carnivores where wolves have been extirpated).

[12] Ripple, William J., et al. Widespread mesopredator effects after wolf extirpation. Biological Conservation 160 (2013): 70-79; Ripple, J.W., Estes, J.A., Schmitz, J.O., Constant, V., Kaylor, M.J., Lenz, A., Motley, J.L., Self, K.E., Taylor, D.S., and Wolf, C., What is a Trophic Cascade? Trends in Ecology & Evolution (Nov. 2016), Vol. 31, No. 11.

[13] S. E. Henke and F. C. Bryant, *Effects of Coyote Removal on the Faunal Community in Western Texas*, 63 Journal of Wildlife Management 1066 (1999); K. R. Crooks and M. E. Soule, *Mesopredator Release and Avifaunal Extinctions in a Fragmented System*, 400 Nature 563 (1999); E. T. Mezquida, et al., *Sage-Grouse*

effect on rodent species diversity. For example, one study determined that Ord's kangaroo rat became the dominant species in areas without coyotes.[14] As their numbers increased, so did their competitive advantage. This had an overall negative effect on species diversity and richness throughout the ecosystem. Correspondingly, coyotes were found to keep kangaroo rat populations in check, which removed their competitive advantage and increased overall rodent species diversity. Coyotes also play an important role in controlling mesopredators. For example, Mezquida et al. (2006) concluded that a decrease of coyotes could adversely affect sage-grouse by allowing an increase in foxes, badgers, and ravens—mesospredators that prey on sage-grouse eggs and young.[15]

Wolves have been found to benefit a host of species, including aspen, songbirds, beavers, bison, fish, pronghorn, foxes, and grizzly bears.[16] In Yellowstone and Grand Teton National Parks, by reducing elk numbers and inducing elk to move more frequently, wolves have reduced browsing on aspen and other streamside vegetation, which has benefitted beavers, songbirds and fish populations.[17] In another study, Flagel et al. (2015) documented the occurrence of a trophic cascade involving wolves, deer, and maple tree and forb species richness in Wisconsin.[18] They compared areas of "high wolf use" with areas of "low wolf use," and found that, in areas of high wolf use, deer were 62 percent less dense, the duration of their visits was reduced by 82 percent, and the time they spent foraging declined by 43 percent. As a result, average maple sapling height and forb species richness increased 137 and 117 percent in areas of high versus low wolf use, respectively.

Studies have also examined how wolves and coyotes interact, finding that wolves can aid

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and Indirect Interactions: Potential Implications of Coyote Control on Sage-Grouse Populations, 108 Condor 747 (2006). Available at: http://repository.uwyo.edu/cgi/viewcontent.cgi?article=1003&context=zoology_facpub; N. M. Waser et al., *Coyotes, Deer, and Wildflowers: Diverse Evidence Points to a Trophic Cascade*, 101 Naturwissenschaften 427 (2014).

[14] S.F. Henke and F.C. Bryan, *Effects of Coyote Removal on the Faunal Community in Western Texas*, 63 J. WILDL. MANAGE. 1066–81 (1999).

[15] Mezquida, E.T., Slater, S.J., and Benkman, C.W. Sage-grouse and indirect interactions: potential implications of coyote control on sage-grouse populations. The Condor (2006), 108: 747-759.

[16] B.J. Bergstrom et al., *License to Kill: Reforming Federal Wildlife Control to Restore Biodiversity and Ecosystem Function*, 7 CONSERV. LETTERS 131–42 (2013); J.A. Estes et al., *Trophic Downgrading of Planet Earth*, 333 SCIENCE 301–06 (2011); W. J. Ripple, R. L. Beschta, *Trophic Cascades in Yellowstone: The First 15 Years After Wolf Reintroduction*, 145 BIOL. CONSERV. 205–13 (2012).

[17] B.J. Bergstrom et al., *License to Kill: Reforming Federal Wildlife Control to Restore Biodiversity and Ecosystem Function*, 7 CONSERV. LETTERS 131–42 (2013); L. R. Prugh et al., *The Rise of the Mesopredator*, 59 BIOSCIENCE 779–91 (2009); K.M. Berger and E.M. Gese, *Does Interference Competition with Wolves Limit the Distribution and Abundance of Coyotes*? 76 J. ANIM. ECOL. 1075–85 (2007); D.W. Smith, R.O. Peterson, D.B. Houston, *Yellowstone After Wolves*, 53 BIOSCIENCE 330 (2003); R.L. Beschta and W.J. Ripple, *Riparian Vegetation Recovery in Yellowstone: The First Two Decades After Wolf Reintroduction*, 198 BIOL. CONSERV. 93–103 (2016);

[18] D.G. Flagel, G.E. Belovsky, and D.E. Beyer, *Natural and Experimental Tests of Trophic Cascades: Gray Wolves and White-tailed Deer in a Great Lakes Forest*, 180 OECOLOGIA. 1183–94 (2016); *see also* Callan, R., N.P. Nibbelink, T.P. Rooney, J.E. Wiedenhoeft, and A. Wydeven, *Recolonizing wolves trigger a trophic cascade in Wisconsin (USA).* Journal of Ecology, 2013: p. https://doi.org/10.1111/1365-2745.12095 (finding that, within the home ranges of single wolf packs, deer do not relax and therefore deer foraging alone or in their small family groups do not linger for long periods in a single feeding patch. Therefore, near the center of activity of those individual wolf packs, the researchers observed reduced herbivory and improved growth and reproduction of understory herbs).

pronghorn populations because "wolves suppress[ ] coyotes and consequently fawn depredation."[19] Wolves also benefit scavengers by leaving carrion derived from predation; hence, wolf removal leads to reduced abundance of carrion for scavengers in specific areas.[20] For instance, the extirpation of wolves works to the detriment of grizzly bears, which are listed as a threatened species and which, in addition to acting as apex predators, can steal wolf kills. A 2013 study showed that wolves benefit grizzly bears in Yellowstone through another trophic mechanism as well; specifically, wolf predation on elk has led to less elk browsing of berry-producing shrubs, providing grizzlies with access to larger quantities of fruit.[21] Predation by wolves and other carnivores also helps to slow the spread of Chronic Wasting Disease, an always-fatal disease that strikes deer, elk, and other ungulates.[22]

Mountain lions also play important roles in maintaining ecosystem health, diversity and integrity. For example, mountain lions contribute a disproportionate amount of carrion to the landscape, supporting at least 39 species of birds and mammals.[23] Additionally, recent research found that mountain lions act as ecosystem engineers, providing habitat to at least 215 different species of beetles, including the federally endangered American burying beetle (*Nicrophorus americanus*).[24] Furthermore, in addition to helping regulate herbivore numbers through predation, the mere presence of mountain lions on the landscape can help to reduce over-browsing of plants and shrubs by herbivores, such as deer, elk and moose, thereby maintaining ecosystem integrity.[25] Like the example of wolves in Yellowstone mentioned above, an examination of Fremont cottonwood (*Populus fremontii*) recruitment in Zion National Park, Utah, linked a decline in mountain lions to a trophic cascade in Zion Canyon.[26] As mountain lion numbers declined, deer numbers increased, which led to reduced cottonwood recruitment, increased bank erosion, and decreased riparian diversity. In contrast, riparian communities where cougar populations remained undisturbed remained intact.

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[19] B.J. Bergstrom et al., *License to Kill: Reforming Federal Wildlife Control to Restore Biodiversity and Ecosystem Function*, 7 CONSERV. LETTERS 131–42 (2013); L. R. Prugh et al., *The Rise of the Mesopredator*, 59 BIOSCIENCE 779–91 (2009); K.M. Berger and E.M. Gese, *Does Interference Competition with Wolves Limit the Distribution and Abundance of Coyotes*? 76 J. ANIM. ECOL. 1075–85 (2007).

[20] W.J. Ripple and R.L. Beschta, *Trophic Cascades in Yellowstone: The First 15 Years After Wolf Reintroduction*, 145 BIOL. CONSERV. 205–13 (2012); C.C. Wilmers, R.L. Crabtree, D.W. Smith, K.M. Murphy, and W.M. Getz, *Trophic Facilitation by Introduced Top Predators: Grey Wolf Subsidies to Scavengers in Yellowstone National Park*, 72 J. ANIM. ECOL. 909–16 (2003); C.C. Wilmers, D.R. Stahler, R.L. Crabtree, D.W. Smith, and W.M. Getz, *Resource Dispersion and Consumer Dominance: Scavenging at Wolf- and Hunter-Killed Carcasses in Greater Yellowstone, USA*, 6 ECOL. LETTERS 996–1003 (2003).

[21] W.J. Ripple, A.J. Wirsing, C.C. Wilmers, and M. Letnic, *Widespread Mesopredator Effects After Wolf Extirpation*, 160 BIOL. CONSERV. 70–79 (2013).

[22] *See, e.g.*, M.A. Wild, et al., *The role of predation in disease control: a comparison of selective and nonselective removal on prion disease dynamics in deer*, 14 J. WILD. DIS. 79-93 (2011).

[23] Elbroch, L.M., C. O'Malley, M. Peziol and H.B. Quigley. *Vertebrate diversity benefiting from carrion provided by pumas and other subordinate, apex felids*. Biological Conservation 215: 123-131 (2017).

[24] Barry, J.M., L.M. Elbroch, M.E. Aiello-Lammens, R.J. Sarno, L. Seelye, A. Kusler, H.B. Quigley and M.M. Grigione. 2019. *Pumas as ecosystem engineers: ungulate carcasses support beetle assemblages in the Greater Yellowstone Ecosystem.* Oecologia 189: 577-586.

[25] Beschta, R.L. and W.J. Ripple. 2012. *The role of large predators in maintaining riparian plant communities and river morphology*. Geomorphology 157-158: 88-98.

[26] Ripple, W.J. and R.L. Beschta. 2006. *Linking a cougar decline, trophic cascade and catastrophic regime shift in Zion National Park.* Biological Conservation 133: 397-408.

The essential role that predators play within ecosystems, including the ecosystems managed as part of the NWRS, strongly supports the proposed ban on lethal predator management.

II. Body-Gripping Traps Are Inhumane and Indiscriminate

As stated above, to the extent that the five identified management activities not included in the definition of predator control activities will involve the use of lethal methods to manage predators, AWI respectfully requests that USFWS incorporate into the final regulations a prohibition on the use of body-gripping traps when engaging in those five activities. AWI defines "body-gripping traps" as the following devices: (1) neck snares; (2) padded and unpadded steel-jawed leghold traps; and (3) body-crushing traps such as Conibear, quick-kill, and snap traps. These devices are inherently cruel[27] and pose a danger to people, companion animals, and non-target species, including threatened and endangered species. Below is a discussion of our concerns about these methods.

A. Neck Snares

Neck snares are a particularly inhumane method of managing wildlife. Regardless of the intention of the snare set (i.e., killing or restraining) or the type of snare in use, the cruelty associated with neck snares is extreme. In kill sets, the snare continues to tighten as the animal struggles until strangulation occurs. In sets intended to restrain the snared animal, the captured animal is held by his or her neck until the trapper arrives to kill the animal, unless the animal has died due to the extent of his or her injuries or struggles, or from predation, extreme weather, dehydration, or starvation if the technician does not return within a certain period of time.

In their analysis of manual and powered neck snares for use in trapping canid species in Canada, Proulx et al. (2015) documented significant welfare concerns associated with the use of neck snares.[28] They found that manual and powered killing neck snares did not consistently and quickly render canids unconscious, were non-selective, and did not routinely capture animals by the neck. Proulx et al. also found the following:

1. Laboratory researchers failed to achieve exact and ideal positioning of neck snares behind the jaw of the target animal suggesting that, in the field, such exact placement would be far more difficult; for manual killing neck snares, one study of 65 snared coyotes found that 59 percent were captured by the neck, 20 percent by the flank, and 10 percent by the foot, and nearly half of the animals were still alive the morning after being snared;

2. In another study of various manual killing neck snares, between 5 and 32 percent of the snared animals were still alive when found 12 or more hours after capture;

[27] *See generally* Mammal Trapping: Wildlife Management, Animal Welfare & International Standards (Gilbert Proulx ed., 2022), Gilbert Proulx et al., Updating the AIHTS Trapping Standards to Improve Animal Welfare and Capture Efficiency and Selectivity, 10 ANIMALS 1262 (2020).
[28] Proulx, G., Rodtka, D., Barrett, M.W., Cattet, M., Dekkers, D., Moffatt, E., and Powell, R. 2015. Humaneness and Selectivity of Killing Neck Snares Used to Capture Canids in Canada: A Review. Canadian Wildlife Biology and Management, 4(1): 55-65.

3. The amount of disturbance at a capture site is not indicative of time to death of the captured animal as “captured animals may remain conscious but physically inactive due to distress, shock, injury or pain;”

4. In a thorough evaluation of power killing neck snares, three models rendered 4 of 5 anaesthetized red foxes irreversibly unconscious within 10 minutes but when used on non-anaesthetized animals in a semi-natural environment it was difficult to capture foxes behind the jaw with the snares and to cause irreversible loss of consciousness within 300 seconds.[29]

Proulx et al. noted it is not the placement or operation of the neck snares that can result in suffering, but rather that the anatomy and physiology of canids can exacerbate the suffering associated with the use of neck snares. As reported by Proulx et al., laboratory tests with dogs show that canids have the ability to continue to circulate blood to the brain after bilateral ligation of the common carotid arteries because of the ability of other arteries (e.g., vertebral arteries) situated more deeply within the neck to compensate. Collateral circulation also occurs within the venous blood flow from the brain such that drainage can continue if the internal jugular veins are occluded. Because of collateral blood circulation, it is difficult, if not impossible, to stop blood flow to and from the brain by tightening a snare on the neck.

More recently, in his book Intolerable Cruelty: The Truth Behind Killing Neck Snares and Strychnine,[30] Dr. Proulx reports that when a canid is snared, the thick musculature around the animal’s neck allows the carotid artery to continue to supply blood to the brain, but the jugular vein is constricted, cutting off blood back down to the heart. A telltale sign is the grotesquely swollen heads of the snare’s victims (which trappers refer to as “jellyheads”). Canids caught in neck snares take hours, if not days, to die.

Furthermore, the non-selectivity of neck snares for target and non-target mammal and bird species was clearly reflected in data presented in Table 1 in Proulx et al. (2015):

Species Common Name	Number of Cases		
	Injured by Snare	Killed by Snare	Total Snared
Coyote	2	0	2
Gray wolf	4	0	4
Red fox	1	0	1
American black bear	1	0	1
Bobcat	0	1	1
Canada lynx	0	8	8
Fisher	0	2	2

[29] *Id. See also* Guthery, F. S., and S. L. Beasom. 1978. Effectiveness and selectivity of neck snares in predator control. Journal of Wildlife Management 42: 457-459, Phillips, R. L. 1996. Evaluation of 3 types of snares for capturing coyotes. Wildlife Society Bulletin 24: 107-110, Proulx, G., and M. W. Barrett. 1994. Ethical considerations in the selection of traps to harvest martens and fishers. Pages 192-196 in S. W. Buskirk, A. S. Harestad, M. G. Raphael, and R. A. Powell, editors, Martens, sables, and fishers: biology and conservation. Cornell University Press, Ithaca, New York, USA.
[30] Proulx, G. 2018. Intolerable Cruelty: The Truth Behind Killing Neck Snares and Strychnine. Alpha Wildlife Research and Management Limited.

Mountain lion	0	4	4
Snowshoe hare	0	1	1
White-tailed deer	0	4	4
Wolverine	0	1	1
Bald eagle	4	75	79
Barred owl	0	2	2
Common raven	0	2	2
Golden eagle	2	25	27
Goshawk	0	3	3
Great horned owl	2	2	4
Red-tailed hawk	1	10	11
Rough-legged hawk	0	7	7
Total specimens	17	147	164

In light of the numerous concerns surrounding the inhumaneness of neck snares and the high potential for non-target animals to be captured and killed by neck snares, the use of this method should not be allowed in the final rule.

B. Steel-Jaw Leghold Traps

Steel-jaw leghold traps—whether unpadded, (so-called) padded, off-set, long-spring, coil-spring, dog-proof, or any other variety—are inhumane in terms of that pain, distress, and physical injuries that result from being caught in these devices, as well as potential mortality. Fundamentally, despite the wide range of device modifications that may be employed, no steel-jaw trap has been created that is able to reduced animal suffering to an acceptable level. The jaws of a leghold trap must slam together with sufficient force to catch the animal's limb, and they must clamp together with enough force to prevent an animal from pulling free. It is this basic operating principal that makes such traps brutal regardless of the modifications.

Some animals may suffer for an extended time in these traps until they are killed by the trapper (or are drowned). Animals may be miscaught, enduring additional trauma. Many trapped animals will violently fight the trap after being caught, often biting at the device, which results in broken teeth and gum damage in addition to the damage to the captured limb, including lacerations, strained and torn tendons and ligaments, extreme swelling, and broken bones.[31] Some trapped animals are known to chew off their own trapped limb to escape on three legs. Constriction of a limb in a trap can greatly reduce or completely cut off blood supply to the affected appendage, which can cause the appendage to slough off due to gangrene and oftentimes require amputation of the limb in non-target animals. In winter conditions, the portion of the animals' toes or foot that are below the jaws can freeze. For these reasons, steel-jaw leghold traps have been condemned as inhumane by the World Veterinary Association, the American Veterinary Medical Association, the National Animal Control Association of the United States, and the American Animal Hospital Association.[32]

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[31] *See* Iossa, G., Soulsbury, C.D., and Harris, S. 2007. Mammal trapping: a review of animal welfare standards of killing and restraining traps. Animal Welfare 2007, 16: 335-352.

[32] *See, e.g.*, *Leghold Traps*, AM. ANIMAL HOSPITAL ASS'N (Nov. 2014). Available at: https://www.aaha.org/about-aaha/aaha-position-statements/leghold-traps/ ("The American Animal Hospital

Iossa et al. (2007) provided an extensive review of the injury rates associated with multiple trap types, including padded, off-set, enclosed, and unpadded leghold traps.[33] While the percentage of no injuries for some foothold traps for select species were in excess of 50 percent, foothold traps resulted in minor injuries more than 50 percent of the time in the majority of studies reviewed, ranging from 8 percent minor injuries for Canada lynx captured in a padded foothold trap to 100 percent for a bobcat captured in a leg hold snare. For major injuries, the percentage of injuries ranged from 4 percent for red foxes captured in a padded leghold trap to 74 percent for raccoons captured in an unpadded foothold trap.[34]

The types of injuries assessed in evaluating the "humaneness" of traps include: (1) mild trauma, such as claw loss, edematous swelling or hemorrhage, minor cutaneous laceration, minor subcutaneous soft tissue maceration or erosion, major cutaneous laceration, except on footpads or tongue, and minor periosteal abrasion; (2) moderate trauma, such as severance of minor tendon or ligament, amputation of 1 digit, permanent tooth fracture exposing pulp cavity, major subcutaneous soft tissue laceration or erosion, major laceration on footpads or tongues, severe joint hemorrhage, joint luxation at or below the carpus or tarsus, major periosteal abrasion, simple rib fracture, eye lacerations, and minor skeletal degeneration; (3) moderately severe trauma, including simple fracture at or below the carpus or tarsus, compression fracture, comminuted rib fracture, amputation of two digits, major skeletal degeneration, and limb ischemia; and (4) severe trauma, including amputation of three or more digits, any fracture or joint luxation on limb above the carpus or tarsus, any amputation above the digits, spinal cord injury, severe internal organ damage (internal bleeding), compound or comminuted fracture at or below the carpus or tarsus; severance of a major tendon or ligament, compound or rib fractures, ocular injury resulting in blindness of an eye, myocardial degeneration, and death.[35]

Such injuries, particularly those included in the moderate trauma, moderately severe trauma, and the severe trauma categories, should not be considered acceptable or humane. In addition to identifiable injuries caused by the trap, when evaluating the impact of predator damage management on target and non-target species it is critical to consider the potential for indirect mortality as a result of capture in a leghold trap, or any restraining device. Intentional live capture and release of targeted species as well as unintentional capture and release of non-target species, can be harmful to the animal. Even if the animal is released with no apparent injuries or injuries deemed to be minor, the animal may still be suffering adverse side effects from restraint (including from restriction of blood flow or extended exposure to the elements), causing pain, suffering, and even death, hours, days, or weeks after capture.

This was demonstrated by Andreasen et al. (2018) in a study that examined cause-specific mortality in mountain lions unintentionally caught in leghold traps set for bobcats from 2009

Association opposes the use of steel-jaw leghold traps on the grounds that their use is cruel and inhumane."); *AVMA positions address animal welfare concerns*, AM. VETERINARY MED. ASS'N (July 1, 2001). Available at https://www.avma.org/javma-news/2001-07-15/avma-positions-address-animal-welfare-concerns ("The AVMA considers the steel-jaw leghold trap to be inhumane").

[33] Iossa, G., Soulsbury, C.D., and Harris, S. 2007. Mammal trapping: a review of animal welfare standards of killing and restraining traps. Animal Welfare 2007, 16: 335-352.

[34] *Id.*

[35] *Id.*

through 2015 in their study site in Nevada.[36] The authors found that if female mountain lions were captured in leghold traps, it directly reduced their survival by causing injuries that made the animals more susceptible to other forms of mortality. Of the forty-eight lions originally included in the study, thirty-three died during its seven-year duration. Of the thirty-three lions, seven died as a consequence of non-target trapping (five were caught in leghold traps and two in snares). Of the seven that died due to non-target trapping, five (four adult females and one juvenile) had been captured in leghold traps one or more times, and the other two had been captured in snares. Most of the injuries recorded ranged from no visible damage or slight edema, to more severe lacerations or broken toes. Of the four adult females, two died as a result of trap related injuries several weeks after capture, another died from starvation and was missing two digits on her front right paw, and the fourth died three weeks after she escaped from a trap. The fourth mortality was discovered as a result of a lion paw being found in a trap, suggesting the animal may have self-amputated the paw to escape from the trap.

In light of the numerous concerns surrounding the inhumaneness of steel-jaw leghold traps, USFWS should ban in the final rule.

C. Conibear and Other Body-Crushing Traps

Kill-type traps, which include Conibear and other body-crushing traps, are also inhumane. According to Iossa et al. (2007),[37] for a kill trap to satisfy humaneness criteria in North America, 70 percent of animals must be rendered unconscious within 70 seconds for stoats, 120 seconds for marten, lynx, and fisher, and 180 seconds for all other species. As noted in Table 1 (see below) in Iossa et al. (2007), the majority of killing traps tested, including a variety of different models of Conibear traps, failed to satisfy the loss of consciousness standard for humaneness.

[36] Andreasen, M. et al., Survival of Cougars Caught in Non-Target Foothold Traps and Snares, 82(5) J. WILDLIFE MGMT. 906 (2018).
[37] *See* Iossa, G., Soulsbury, C.D., and Harris, S. 2007. Mammal trapping: a review of animal welfare standards of killing and restraining traps. Animal Welfare 2007, 16: 335-352.

Table 1 Accepted standards of animal welfare for killing traps.

Species	Trap model	Mis-strike	Time limits to unconsciousness					Reference
			Current technology	n	Criterion	Pass	Fail	
Canis latrans	King necksnare[1]	-	> 180 s	-	180 s		×	Garrett 1999; Proulx
	Mosher necksnare[1]	-	> 180 s	-	180 s		×	1999a
*Canis lupus**	-	-	-	-	180 s	-	-	
*Castor canadensis**	Conibear 330™	-	> 180 s	6	180 s		×	Novak 1981a
	Modified Conibear 330™	-	< 180 s	6	180 s	×		
Lontra canadensis	-	-	-	-	180 s	-	-	
Lynx rufus	-	-	-	-	180 s	-	-	
Lynx canadensis	Conibear 330™	1	> 180 s	9	180 s		×	Proulx *et al* 1995
	Modified Conibear 330™	1	67.2 ± 4.0 s	9	180 s	×		
Martes americana	Conibear 120™	3	> 180 s	6	120 s		×	Barrett *et al* 1989;
	Conibear 120 Magnum™	2	68 ± 8.2 s	14	120 s		×	Proulx *et al* 1989a,b
	Conibear 160™	3	> 180 s	16	120 s	×		
	Sauvageau 2001-5™	-	> 180 s	14	120 s		×	
Martes pennanti	Bionic[2]	0	< 55 s	9	180 s	×		Proulx & Barrett
	Conibear 220™	-	> 180 s	4	180 s		×	1993a,b; Proulx
	Modified Conibear 220™	0	> 180 s	4	180 s		×	1999b
*Ondatra zibethicus**	Leprich spring trap	0	31.5 ± 16.3 s	12	180 s	×		Inglis *et al* 2001
	Conibear 110™	3	184.0 ± 31.7 s[3]	12	180 s		×	
*Procyon lotor**	Conibear 160™	-	> 180 s	5	180 s		×	Novak 1981a; Proulx
	Conibear 280™	0	> 180 s	6	180 s		×	& Drescher 1994;
	Conibear 330™	5	> 180 s	5	180 s		×	Sabean & Mills 1994
	Sauvageau 2001-8™	0	> 180 s	3	180 s		×	
Taxidea taxus	-	-	-	-	180 s	-	-	
Castor fiber	-	-	-	-	180 s	-	-	
Lutra lutra	-	-	-	-	180 s	-	-	
Lynx lynx	-	-	-	-	180 s	-	-	
Martes martes	-	-	-	-	120 s	-	-	
Martes zibellina	-	-	-	-	120 s	-	-	
Meles meles	-	-	-	-	180 s	-	-	
Mustela erminea[4]*	Fenn Mk IV	-	> 180 s	-	60 s		×	Warburton *et al*
	Fenn Mk VI	-	> 180 s	-	60 s		×	2002; Poutu &
	Victor Snapback[5]	1	37.3 ± 5.0 s	7	60 s		×	Warburton 2003;
	Waddington backcracker	4	113 s	8	60 s		×	Warburton & O'Connor 2004
Nyctereutes procyonoides	-	-	-	-	180 s	-	-	

Mis-strike refers to the number of animals struck in a non-target body part; time limits to unconsciousness refer to loss of corneal and palpebral reflexes; n is the number of animals tested.

Most of the tests were conducted in North America under the criteria that ≥ 70% of animals should be unconscious in ≤ 60, 120 or 180 seconds (eg Proulx 1999a; review in Powell & Proulx 2003). This is therefore used to assess passes and failures. The line divides North American from European species.

* Species found in both continents; [1] the trap failed because of high number of mis-strikes; [2] not tested in the field: in a different experiment 2/10 animals escaped and 1/10 mis-strike; [3] time to loss of heartbeat; [4] see main text for stoat; [5] the trap failed because of high number of escapes.

The failure of kill traps to meet established welfare standards has been documented by other researchers. Proulx et al. (1995)[38] found that the Conibear 330 trap failed to consistently render trapped lynx irreversibly unconscious within three minutes for one animal struck in the shoulder and two of eight animals struck in the neck. This trap, when modified by adding two clamping bars, did satisfy the standard. Proulx (1999)[39] determined that the Conibear 120, 160, 220, 280, and

[38] Proulx, G., Kolenosky, A.J., Cole, P.J., and Drescher, R.K. 1995. A humane killing trap for lynx (*Felis lynx*): the Conibear 330™ with clamping bars. Journal of Wildlife Diseases, 31(1), 1995, pp. 57-61.
[39] Proulx, G. 1999. Review of current mammal trap technology in North America. Chapter 1 in Proulx, G. (editor) Mammal Trapping.

330 traps did not consistently satisfy the three minute standards for irreversible unconsciousness for multiple species, while modified versions of some of these traps (e.g., Conibear 120 Magnum with pitchfork trigger, Conibear 120 Magnum with pan trigger, Conibear 330 with clamping bars) did satisfy the standard. In their assessment of the welfare implications and ethics of multiple trap types, including kill traps, Powell and Proulx (2003)[40] found that, absent modification, no standard or commercially available Conibear traps, or other types of killing traps, consistently killed animals within three minutes.

The location where the trap strikes the animal is critical in determining how quickly the trapped animal dies and, in the field, animals do not consistently enter the trap in ways that assure a rapid loss of consciousness.[41] Several studies have found misstrikes ranging from eight to fifteen percent.[42] When the neck is rotated, he determined that it is unlikely that both carotid arteries would be totally occluded preventing rapid, irreversible unconsciousness. Therefore, for a kill trap to operate effectively, the animal "must, as much as possible, be vertically aligned with no limbs obstructing the striking bar" – a circumstance that is difficult to consistently achieve in the wild.[43]

Furthermore, these devices present a significant risk of capture of non-target species. Trap selectivity is assessed by measuring the number of individuals of the target species captured relative to the number of non-target animals (Iossa et al. 2007).[44] As noted in Table 6 from Iossa et al. (see below), trap selectivity varies widely with trap type. For rotating jaw traps (or Conibear traps), one study found that forty-three percent of the devices set to trap American martens captured non-target species Canada jay's and Northern flying squirrels, all of whom were found dead in the traps. In a second study assessing the selectivity of Conibear traps, thirty percent of the trapped animals were non-target species, including the American crow, rat species, and domestic house cats.

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[40] Powell, R.A. and Proulx, G. 2003. Trapping and Marking Terrestrial Mammals for Research: Integrating Ethics, Performance Criteria, Techniques, and Common Sense. ILAR Journal, Vol. 44 (4): 259-276.
[41] Warburton, B. Evaluation of Seven Trap Models as Humane and Catch-efficient Possum Traps, 9(3) N.Z. J. ZOOLOGY 409 (1982).
[42] Phillips, R.L. 1996. Evaluation of 3 types of snares for capturing coyotes. Wildlife Society Bulletin, 24: 107-110.117 (reporting misstrikes ranging from eight to fourteen percent); Pohlmeyer, K. et al., [The total efficiency of stunning traps for the capture of stone martens and red foxes in hunting situations], 102(3) DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT 133 (1995) (reporting misstrikes ranging from thirteen to fifteen percent).
[43] *Id.*
[44] *See* Iossa, G., Soulsbury, C.D., and Harris, S. 2007. Mammal trapping: a review of animal welfare standards of killing and restraining traps. Animal Welfare 2007, 16: 335-352.

Table 6 Selectivity (number of non-target animals relative to total captures), mortality and injury caused to non-target species in various types of traps.

Trap type	Target species	Non-target species	Selectivity	Mortality	Injury	Reference
Killing traps						
Drowning trap	*Ondatra zibethicus*	*Anas platyrhynchos, Rattus spp, Mustela erminea*	1.44-7.40%[1]	-	-	Crasson 1996
Spring trap in tunnels	*Mustela erminea, M. nivalis, M. vison*	*Alectoris rufus, Erinaceus europaeus, Oryctolagus cuniculus, Mustela putorius*	5%	100%[2]	-	Short & Reynolds 2001
Tunnel traps/snare	-	*Mustela putorius*	-	61%	39%	Birks & Kitchener 1999
Spring trap	*Trichosurus spp*	*Erinaceus europaeus, Mustela putorius, Rattus spp*	23%	50%	50%	Warburton & Orchard 1996
Leg-hold snare/coil spring trap	*Oryctolagus cuniculus, Vulpes vulpes*	*Lynx pardinus*	-	64%	22.5%	García-Perea 2000
Neck snare	*Canis latrans*	*Odocoileus hemionus, O. virginianus, Bos taurus*	21%	33-63%	-	Phillips 1996
Neck snare	*Lepus americanus*	*Martes americana*	50%	0%	0%	Proulx *et al* 1994a
Rotating jaw-trap	*Martes americana*	*Perisoreus canadensis, Glaucomys sabrinus*	43%	100%	-	Naylor & Novak 1994
Rotating jaw trap	*Martes americana*	*Corvus brachyrhynchos, Rattus spp, Felis catus*	30%	-	-	Proulx & Barrett 1993a
Restraining traps						
Box trap	*Felis silvestris, Lynx lynx*	*Meles meles, Ursus arctos*	64%	0%	0%	Potočnik *et al* 2002
Box trap	*Canis familiaris*	*Corvus brachyrhynchos, Felis catus, Procyon lotor, Mephitis mephitis*	93%	-	-	Way *et al* 2002
Box trap	*Martes pennanti*	*Martes americana, Gulo gulo, Vulpes vulpes*	94%	1%	-	Weir 1997
Leg-hold snare	*Panthera leo*	*Hyaena hyaena, Crocuta crocuta, Acinonyx jubatus*	32%	0%	17%	Frank *et al* 2003
Leg-hold snare	*Puma concolor*	*Odocoileus hemionus, Canis latrans, Bos taurus*	45%	17%	-	Logan *et al* 1999
Neck snare	*Vulpes vulpes*	*Canis familiaris, Felis catus, F. sylvestris, Meles meles, Martes martes, Lutra lutra, Lepus europaeus*	46%	-	-	Chadwick *et al* 1997

[1] The relative % of injured and dead animals is not known. [2] Mortality and injury combined.

The lack of selectivity with body-gripping traps is consistently noted in the published literature. Linscombe (1976) documented 57 non-target mammals and 127 non-target birds were captured in No. 2 Victor and No. 220 Conibear traps with more non-target species, particularly birds, captured in the Conibear trap.[45] In his study of multiple trap types in Arkansas, Sasse (2018)

[45] Linscombe, G. 1976. An evaluation of the No. 2 Victor and 220 Conibear traps in coastal Louisiana.

found that non-target spotted skunks, a species of "greatest conservation need in Arkansas" that may warrant protection under the Endangered Species Act, were captured in body-gripping traps set for bobcats, raccoons, coyotes, and fox.[46] Neither Linscombe nor Sasse indicated whether any of the non-target animals trapped in their studies were found alive. Nor did they provide any estimates of time to death or unconsciousness. Hill (1987) found that trap mortality in non-target animals taken in No. 220 Conibear traps was "sufficiently high to make them unsuitable for conventional terrestrial trapping in the Southeastern United States, except for special situations such as for control of feral dogs, or predator populations on specific areas during rabies epizootics." [47] No. 120 Conibear traps also captured non-target species but not in the numbers captured in the 220 traps. Davis et al. (2012), in their study of body-gripping traps in the Cape Horn Archipelago that straddles the border of Chile and Argentina, determined that a number of non-target bird species (caracaras, kelp gulls, flightless streamer ducks) and mammal species (domestic cats, feral pigs) were captured when they used an open front configuration for their trap sets. [48]

D. Trap Check Times and Trap Monitors

In the event that USFWS continues to use body-gripping traps for the five activities identified in the proposed rule, AWI strongly encourages USFWS to institute a 24-hour trap check frequency[49] across all refuges to reduce the suffering of animals that are caught. Longer trap check frequencies are unacceptable from a humaneness standpoint. Long periods between checking animal traps results in animal suffering and the potential for long painful deaths. Studies show that 24-hour trap checks can lead to less severe injuries to a captured animal.[50] The longer a captured animal is held in a trap the more likely they are to struggle, potentially resulting in injury as a result of trying to escape. Long trap-check times can also lead to prolonged and inhumane deaths from

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Louisiana Wildlife and Fisheries Commission.

[46] Sasse, D. Incidental Captures of Plains Spotted Skunks (Spilogale putorius interrupta) By Arkansas Trappers, *2012-2017*, 72 J. ARK. ACAD. OF SCI. 187 (2018); *see also* 90-Day Finding on a Petition To List the Prairie Gray Fox, the Plains Spotted Skunk, and a Distinct Population Segment of the Mearn's Eastern Cottontail in East-Central Illinois and Western Indiana as Endangered or Threatened Species, 77 Fed. Reg. 71,759 (Dec. 4, 2012).

[47] Hill, E.P, Catch Effectiveness and Selectivity of Several Traps, 3 THIRD E. WILDLIFE DAMAGE CONTROL CONF. 23 (1987).

[48] Davis, E.F. et al., American Mink (Neovision vison) Trapping in the Cape Horn Biosphere Reserve: Enhancing Current Trap Systems to Control an Invasive Predator, 49(1-2) ANNALES ZOOLOGICI FENNICI 12 (2012).

[49] *See, e.g.*, International Organization for Standardization 10990-4:1999, Animal (mammal) traps – Part 4: Methods for testing killing-trap systems used on land or underwater § 7.5 (instructing that traps be checked "once within each 24 h period; at the same time of the day of at all possible").

[50] *See* Donald M. Broom, Some Thoughts on the Impact of Trapping on Mammal Welfare With Emphasis on Snares, in MAMMAL TRAPPING: WILDLIFE MANAGEMENT, ANIMAL WELFARE & INTERNATIONAL STANDARDS 121 (Gilbert Proulx ed., 2022) ("Animals left in snares are susceptible to thirst, hunger, further injury and attack by predators, especially if in the trap for many hours or days."); Irene Rochlitz, *The Impact of Snares on Animal Welfare, in* ONEKIND REPORT ON SNARING (2010) ("Snares can cause severe injuries, pain, suffering, and death in trapped animals" and leaving animals in snares for hours or days "expos[es] them to the elements, to thirst, hunger, further injury and attack by predators."); Gilbert Proulx & Dwight Rodtka, *Killing Traps and Snares in North America: The Need for Stricter Checking Time Periods*, 9(8) ANIMALS 570 (2019).

dehydration, starvation, and exposure.[51] Animals caught in these traps can also suffer from a condition called capture myopathy which occurs when an animal overexerts itself from struggling in a trap, and can lead to sudden death.[52] Symptoms of capture myopathy can develop within hours of capture.

Long trap check times pose a risk to non-target wildlife such as companion animals and endangered species, who can languish in these traps for days after getting caught. For instance, in a two-year period in Montana, which has no trap-check rule in place, trappers reported 63 non-target traps, and 71 percent of these non-target animals were found dead.[53] There are heartbreaking stories of the personal toll this takes, such as Wyoming family whose dog died in a trap after being caught for days; while out searching for him their other two dogs were also caught in traps and died.[54] In 2021, 35 states had instituted a daily or 24-hour trap check law for at least some kinds of traps, and it is vital that USFWS implement a similar or stricter requirement.[55]

In addition to setting a NWRS-wide 24-hour trap check time, if USFWS does not prohibit the use of body-gripping traps, it should also require the use of trap monitors. From a humane perspective, the use of monitoring devices is very important because it can greatly decrease the amount of time a captured animal is restrained, minimizing pain, stress, and injury and allowing non-target animals to be released in a timely manner to increase the likelihood of post-release survival. This was demonstrated by Will et al. (2010) in their study of the use of a telemetry-based trap monitoring system on San Nicolas Island off the coast of California during a project to eradicate the island's feral cat population.[56] Given the size of the island and the presence of fewer than 600 island foxes, the trap monitoring system was essential to "remotely check trap status, decrease staff time spent checking traps, and decrease response time to captured animals to limit fox injuries and mortalities due to exposure."[57] The system allowed a field team of six people to conduct daily checks of nearly 250 traps with a response time of less than sixty minutes during daylight hours. Specifically, Will et al. reported:

> The average daytime response time for capture events was 43 minutes ± 31 minutes (n = 162), while the average overall response time was 5 hours ± 4 hours (n = 853). Foxes that were caught after working hours spent an average of 6 hours ± 3 hours (n = 691) in traps. While 4 foxes were in a trap for an unknown amount of time because of monitor failures, no animal was in a trap for more than 14 hours with a working

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[51] *Id*.

[52] Breed, D., Conserving wildlife in a changing world: Understanding capture myopathy-a malignant outcome of stress during capture and translocation. 7(1) CONSERV PHYSIOL. (2019). DOI: 10.1093/conphys/coz027https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6612673/

[53] 24-Hour Trap Checks, TRAP FREE MONTANA. Available at: https://trapfreemt.org/the-need-for-24-hour-trap-checks/

[54] Christina M. Russo, Entire Family Of Dogs Killed In Less Than One Week, THE DODO (March 25, 2015). Available at: https://www.thedodo.com/wyoming-trapping-laws-1058977987.html

[55] Crushing Cruelty: Animal Trapping in the United States, BORN FREE USA (Spring 2021). Available at: https://www.bornfreeusa.org/downloads/pdf/BFUSA47_TrappingReport2021-final.pdf

[56] Will, D. et al., A Trap Monitoring System to Enhance Efficiency of Feral Cat Eradication and Minimize Adverse Effects on Non-Target Endemic Species on San Nicolas Island, PROCS. 24TH VERTEBRATE PEST CONF. 79 (2010).

[57] *Id.* at 79.

monitor. There were 1,012 total non-target capture events with 74 injuries, for an injury rate of 7%. There were 9 monitor failures with 4 leading to injury or casualty.[58]

In another experiment where Global System for Mobile communication trap alarms were used when capturing otter, Néill et al. (2007) found that functioning alarms permitted trapped otters to be removed within twenty-two minutes of capture and reduced the injuries suffered by the animals from an average cumulative score of 77.7 to only 5.5 on the trap trauma scale developed by the International Organization for Standardization, ISO 10990-5.[59]

Furthermore, trap monitors are beneficial to those engaging in trapping. Wildlife Service's National Wildlife Research Center ("NWRC") found that trap monitors save driving or hiking time, decrease fuel usage and reduce driving time over rough terrain, save money, and prioritize checks of particular traps.[60] Considering the benefits of such devices, particularly in terms of reducing suffering by animals left in traps for long periods of time, USFWS should mandate their use for the five management activities identified in the proposed rule if it chooses not to prohibit the use of body-gripping traps.

III. Conclusion

Thank you for providing an opportunity to submit comments on the proposed rulemaking and for your consideration of these comments. If you have any questions or there is any additional information we can provide, please do not hesitate to contact us.

Sincerely,

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[58] *Id.* at 80.
[59] Ó Néill, L. et al., Minimizing Leg-Hold Trapping Trauma for Otters With Mobile Phone Technology, 71(8) J. WILDLIFE MGMT. 2776 (2007).
[60] Darrow, P.A. and John A. Shivik, USDA APHIS Wildlife Services, Nat'l Wildlife Rsch. Ctr., A Pilot Evaluation of Trap Monitors by the USDA Wildlife Services Operational Program, PROCS. 23RD VERTEBRATE PEST CONF. 213, 216 (2008).