



CITIZEN PETITION FOR RULEMAKING

DATE: November 18, 2020

ISSUE: Request for ban on all traps, including box traps, for the purposes of recreation, sport or commerce

1. Which rule are you seeking to create or revise? Please include a copy of the rule you are proposing to create or change, preferably with the change made in redline format

We seek to revise Regulations #302 and #303 of Chapter W-3 – Furbearers and Small Game, Except Migratory Birds, codified at 2 CCR § 406-3.

The Colorado Parks and Wildlife Commission’s (hereinafter “Commission’s”) regulation allowing live trapping and subsequent killing of wildlife for recreational and commercial purposes is wholly inconsistent with Amendment 14, which bans trapping and poisoning on public lands, and contrary to the will of the Colorado citizens who voted to adopt it in 1996. Accordingly, we propose the following regulatory amendment¹ to 2 CCR § 406-3, Regulations #302 and #303, which would bring Colorado Parks and Wildlife (CPW) regulations into compliance with Amendment 14 and its implementing statutory and constitutional provisions by prohibiting the use of non-lethal cage and box traps to enable lethal take by trophy hunters and commercial trappers during furbearer seasons:

#302 – Hours

A. Hunting Hours:

1. Small game – from one-half (1/2) hour before sunrise to sunset.
2. Furbearers – from one-half (1/2) hour before sunrise to one-half (1/2) hour after sunset. Additionally; beaver, bobcat, coyote, gray fox, raccoon, red fox, striped skunk, and swift fox may be hunted at night in accordance with Regulation #'s 303(E)(7) and (E)(8).

B. ~~Trapping Hours:~~

1. ~~Small game, except game birds; game reptiles, and furbearers – day or night.~~
2. ~~All live traps (cage or box) must be visually checked on site at least once every day; except in the Canada lynx recovery area or on properties known to be occupied by Canada lynx, they must be checked every 24 hours.~~
 - a. ~~Visual lures, fresh meat baits, fish oil, and anise oil lures meant to attract felids are not permitted in the Canada lynx recovery area or on properties known to be occupied by Canada lynx.~~

#303 – Manner of Take:

The following are legal methods of take for game species listed in this chapter. Any method of take not listed herein, **including but not limited to the use of traps of any kind, including live traps and traps specifically designed not to kill as defined in #300 of these regulations**, shall be prohibited, except as otherwise provided by Statute or Commission regulation or by 35-40-100.2-115; C.R.S.

A. Special Conditions:

[...]

2. ~~Live Capture~~

- a. ~~Furbearers captured in live traps cannot be moved from the capture site and must be killed or released on site when the trap is checked.~~

3. Accidental Capture – Except for Canada lynx, which are subject to the provisions of Chapter 10, any person accidentally trapping any wildlife for which the trapping

¹ Text in ~~strikethrough~~ denotes language proposed to be removed from the regulations; text in **bold underline** denotes language proposed to be added to the regulations.

season is closed or for which trapping is not a legal manner of taking, shall, in the event of live capture of such wildlife, release such wildlife immediately. Nothing in this section permits the killing of such accidentally captured wildlife, unless the wildlife cannot be released without human endangerment. In the event of mortality resulting from such accidental capture, the carcass of such wildlife shall be delivered to a Division wildlife officer or office within five (5) days. Failure to deliver the carcass shall be *prima facie* evidence of unlawful possession of such wildlife. Provided further that any trapper who complies with this provision shall not be charged with illegal possession of such accidentally captured wildlife.

[...]

5. **Labeling of traps**—All live traps (limited to cage or box traps) placed on public lands must be labeled permanently and legibly with the trapper's Customer Identification Number (CID) in a location that is visible without having to manipulate the live trap in any way. If the trapper does not have a CID, all live traps placed on public lands must be labeled with the trapper's name. Live traps not properly labeled may be confiscated by any Wildlife Officer

[...]

D. Species listed in #300(D)(3):

1. Any method not otherwise prohibited, **except that the use of traps of any kind, including live traps and traps specifically designed not to kill as defined in #300 of these regulations shall be prohibited.**

E. Furbearers:

1. Any rifle or handgun.
2. Any shotgun.
3. Handheld bows and crossbows.
4. Any air gun, except that for coyote or bobcat the air gun must be a pre-charged pneumatic air gun .25 caliber or larger.
5. ~~Live traps, limited to cage or box traps. All live trapped wildlife shall be released immediately or dispatched by any legal method of take for that species in regulations #303.E.1 4. If local ordinances or public safety prohibit all legal methods of take from being used, American Veterinary Medical Association Guidelines for Euthanasia of Free-Ranging Wildlife, as provided in S7.6 of the 2013 edition of the AVMA Guidelines for Euthanasia of Animals, may alternatively be used to the extent allowable by law.~~

[...]

2. Why are you seeking to create or revise this rule? Please include a general statement of the reasons for the requested rule or revision and any relevant information related to the request

The Humane Society of the United States, Humane Society Veterinary Medical Association, Animal Help Now, Animal Legal Defense Fund, Center for Biological Diversity, Colorado Voters for Animals, Endangered Species Coalition, Footloose Montana, Mountain Lion Foundation, Predator Defense, Project Coyote, Nevada Wildlife Alliance, Northeast Oregon Ecosystems, Sierra Club, Trap Free Montana, Trap Free Montana Public Lands, Western Watersheds Project, Western Wildlife Conservancy, WildEarth Guardians and Wyoming Untrapped request that the CPW Commission disallow the trapping of wildlife for recreation and commerce because:

- The North American Model of Wildlife Conservation advises against the market hunting of wildlife for private profit; yet CPW allows trappers to kill wildlife and sell their pelts, which is a form of market hunting. In other words, we can find no distinction between disallowing the sale of an animal who was stalked, chased and then shot, but not disallowing the sale of one who was trapped and then killed. To

make a distinction is cognitive dissonance, and a disservice to Coloradoans who own the private and public lands where wildlife live.²

- Colorado voters passed Amendment 14 in 1996, an initiative that restricts traps and poisons on public lands *because voters believed that trapping is cruel and harmful to wildlife*.³ In 1996, Colorado voters opposed trapping, and if polled again now, we know that an even greater number of Colorado citizens would object to trapping for the purposes of sport or commerce (e.g., fur products).⁴
- Each year, trappers in Colorado set out thousands of cage traps that capture both target and non-target species, and those animals are not only subjected to exposure to the elements while captured, but also fight to free themselves, causing damage to their bodies or even death.
- Colorado's bobcats, lynx and other wildlife face significant jeopardy because of a myriad of human causes including habitat and corridor destruction, record wildfires caused by climate change, predator control, hunting, vehicle collisions and disease transmission.
- CPW does not adequately regulate trapping. It neither knows neither how many "furbearers" are killed annually, nor the health or stability of their populations. It also does not know how many non-target animals, including golden eagles and lynx, are captured in box traps. We examine swift foxes and bobcats in depth here, and we ask the Commission to ban the trapping of bobcats, swift foxes and other so-called "furbearers."

3. Amendment 14 already banned recreational and commercial trapping in Colorado

Amendment 14, part of Colorado's Constitution (Article 18 § 12b), provides: "It shall be unlawful to take wildlife with any leghold trap, any instant kill body gripping design or trap, or by poison or snare in the state of Colorado." The law allows only narrow exceptions for trapping: to protect human health or safety; to control rodent, fish, and bird populations; for scientific research or medical treatment; and on private land for a maximum of 30 days to prevent damage to livestock or crops, provided that nonlethal control methods have been tried first and landowners can show proof of ongoing damage to CPW.

The Colorado General Assembly implemented Amendment 14 by promulgating C.R.S. §§ 33-6-201, *et seq.*, which explains that the purpose of the statute is "to honor the expressed desire of the people of Colorado to promote humane methods of animal control and discourage the use of inhumane methods while preserving the ability to protect human life, health, safety, and property by taking wildlife when there is no practical alternative."

The Colorado Constitution (Article 18 § 12b(2)(c)) and C.R.S. § 33-6-206 provide that **even non-lethal (box) traps cannot be used, except for purposes of: (a) bona fide scientific research; (b) falconry; (c) relocation permitted in accordance with rules of the division; or (d) medical treatment of the animal being captured.** In other words, Colorado law only allows box trapping for these limited purposes, and does not contemplate the use of box traps in the course of trophy hunting and commercial trapping.

Despite these clear constitutional and statutory directives, the Commission, formerly known as the Colorado Division of Wildlife Commission, adopted regulations in the 2000s broadly allowing cage or box traps to be used

² Cameron Murray, "Trophy Hunters of Native Carnivores Benefit from Wildlife Conservation Funded by Others," *A report for the Humane Society of the United States* https://www.humanesociety.org/sites/default/files/docs/HSUS_Trophy-Hunting-Economics-2020.pdf (2020).

³ M. J. Manfredo et al., "Public Acceptance of Wildlife Trapping in Colorado," *Wildlife Society Bulletin* 27, no. 2 (1999).

⁴ *Ibid.*; J. B. Armstrong and A. N. Rossi, "Status of Avocational Trapping Based on the Perspectives of State Furbearer Biologists," *ibid.* 28, no. 4 (2000); National Shooting Sports Foundation and Responsive Management, "Americans' Attitudes toward Hunting, Fishing, Sport Shooting and Trapping 2019," <https://asafishing.org/wp-content/uploads/2019/04/Americans-Attitudes-Survey-Report-2019.pdf> (2019); Javan M. Bauder et al., "Identifying and Controlling for Variation in Canid Harvest Data," *The Journal of Wildlife Management* 84, no. 7 (2020).

to trap bobcats and other “furbearer” species.⁵ At the time, in their petition to the Commission, the Colorado Trappers Association (CTA) stated that opening up a trapping season “...would allow both big and small game hunters to take personal trophies,” and “...would provide opportunity for fur harvesters to take them for sale of pelts, skulls, taxidermy and other products.”

Fig. 1.
Excerpt from “Table 3” from Manfredo, Pierce, Fulton, Pate and Gill (1999)

Belief (value) statements	Utilitarians		Moderates		Protectionists	
	% Disagree	% Agree	% Disagree	% Agree	% Disagree	% Agree
It is acceptable for people to trap wildlife to protect livestock and property	5.4%	93.3%	21.1%	76.2%	43.5%	50.0%
It is acceptable for people to trap if it is done primarily to get money	57.4%	37.8%	85.4%	11.6%	97.3%	2.3%
It is acceptable for people to trap wildlife for recreation	79.5%	17.1%	90.6%	7.0%	97.7%	2.3%
Trapping is acceptable regardless of the reason it is done	77.4%	22.0%	89.6%	8.7%	95.3%	3.3%

4. Cruel and inhumane, trapping is anachronistic, unpopular and no longer economically feasible

Manfredo et al. (1999) found that in their statewide study of Coloradans—from all areas of the state – 61% would ban trapping in Colorado, *because trapping is cruel and inhumane*.⁶ Fig. 1. Animals captured in cage traps can still suffer damage or fractures to their teeth, gums and claws. As any human patient knows, those injuries, especially to the teeth and gums, can be extremely painful.⁷

The intent of Amendment 14, which was to prohibit recreational and commercial killing of wildlife using all traps, including box traps, was common knowledge at the time of its passage.⁸ CPW was aware that citizens had prohibited trapping. In fact, study authors Armstrong and Rossi (2000), who conducted a trapping study that involved 50 state wildlife managers, reported that **“the Colorado interviewee indicated that Colorado discontinued trapping licenses because of a successful ballot initiative to ban most trapping activities in 1996.”**⁹ In other words, CPW knew that Coloradans had banned trapping via a ballot measure, yet permitted trapping soon after anyway, in violation of Amendment 14 and with utter disregard to democratic public processes.

Studies and polls show that the number of Coloradans who disapprove of trapping has increased in recent years.¹⁰ Data from the Manfredo et al. (2018) America’s Wildlife Values project show that in Colorado, the

⁵ Currently, CPW regulations define “Furbearers” as “those species with fur having commercial value and which provide opportunities for sport harvest including mink, pine marten, badger, red fox, gray fox, swift fox, striped skunk, western spotted skunk, beaver, muskrat, long-tailed weasel, short-tailed weasel, coyote, bobcat, opossum, ring-tailed cat and raccoon.” 2 CCR § 406-3. Data from the CPW show that in the 2009-2010 season, the CPW opened trapping on gray foxes, swift foxes, opossums, ring-tailed cats, western spotted skunks, and long- and short-tailed weasels.

⁶ Manfredo et al., “Public Acceptance of Wildlife Trapping in Colorado.”

⁷ G. Iossa, C. D. Soulsbury, and S. Harris, “Mammal Trapping: A Review of Animal Welfare Standards of Killing and Restraining Traps,” *Animal Welfare* 16, no. 3 (2007).

⁸ Manfredo et al., “Public Acceptance of Wildlife Trapping in Colorado.”

⁹ Armstrong and Rossi, “Status of Avocational Trapping Based on the Perspectives of State Furbearer Biologists.”

¹⁰ A. M. Dietsch et al., “State Report for Colorado from the Research Project Entitled, “America’s Wildlife Values,” *Colorado State University, Department of Natural Resources* <https://content.warnercnr.colostate.edu/AWV/CO-WildlifeValuesReport.pdf> (2018); M. J. Manfredo et al., “America’s Wildlife Values: The Social Context of Wildlife Management in the U.S.,” (Fort Collins, Colorado: Colorado State University, Department of Natural Resources, 2018).

majority – 84% – want to view wildlife in the future and want wildlife protected over private property rights.¹¹ A 2019 survey of Americans by National Shooting Sports Foundation (NSSF) and Responsive Wildlife Management’s found that trapping is highly disfavored, and far more controversial than even trophy hunting.¹² Similar to Manfredo et al. (1999) (see Fig. 1), the NSSF and Responsive Management’s 2019 survey relative to Westerners found that trapping for money (55% disapproval), for clothing (61% disapproval) or for recreation (64% disapproval) are highly unpopular.¹³ Even most wildlife professionals dislike trapping.¹⁴

Nationwide, trapper numbers are in rapid decline because they have failed to recruit new, younger members, the practice is increasingly socially unacceptable, and falling pelt prices mean that trapping is no longer lucrative.¹⁵ Given that most public lands trapping was banned by ballot initiative, and because this inhumane practice is now even more unpopular, CPW must stop allowing recreational and commercial trapping in Colorado.

Meanwhile, several states have prohibited the hunting and trapping of bobcats, including California, New Hampshire, Connecticut, Rhode Island, Delaware, Maryland, Indiana and Ohio. In 2019, California became the first state to ban fur sales following bans in Los Angeles, San Francisco, West Hollywood and Berkeley. It is time for Colorado to adopt progressive wildlife management practices, as it did when it banned wildlife killing contests in April of 2020. The global fur market is tanking. The writing is on the wall.

In recent years, prominent apparel companies, including Nordstrom, Macy’s, Bloomingdale’s, Prada and Gucci, have announced fur-free policies. India banned fur imports in 2017 and the UK and Israel are looking to become the first countries to ban fur sales. Financial institutions, including the European Bank for Reconstruction and Development, ING, and Rabobank have implemented policies that no longer finance the fur trade, and in 2019, the Canadian Imperial Bank of Commerce cut off funding to the North American Fur Auction, which filed for bankruptcy shortly thereafter.

It is time for the Commission to right the error of previous Commissions and work for the people of Colorado to whom they are beholden. Furthermore, CPW has fallen short in its duty to the public trust by failing to carefully monitor all species who are trapped.¹⁶ The remedy is to prohibit the trapping of Colorado wildlife for trophies and for profit on our public lands, as the voters have already mandated.

Using case examples from Colorado’s bobcats and swift foxes, we request that CPW Commission disallow the trapping of animals in cage traps and their inhumane and unregulated slaughter.

5. The case to end swift fox trapping

a. Swift fox could be in significant jeopardy in Colorado but no one would know it

Swift foxes (*Vulpes velox*) face numerous threats, yet CPW inadequately monitors their state-sanctioned killing (“harvest”) while maintaining insufficient population estimates. CPW occupancy studies fail to relate to population abundance or trends. Therefore, because of the lack of adequate monitoring by CPW of both live and dead individuals, Colorado’s swift foxes may face significant jeopardy.

To avoid an Endangered Species Act (ESA) listing, in 1995 CPW and others convened a team of governmental officials to conserve swift foxes. In February 1992, wildlife biologist Jon C. Sharps petitioned the U.S. Fish and Wildlife Service (FWS) to list swift foxes as *endangered* under the ESA. In response, ten states, led by CPW

¹¹ Dietsch et al., “State Report for Colorado from the Research Project Entitled, “America’s Wildlife Values.””

¹² National Shooting Sports Foundation and Responsive Management, “Americans’ Attitudes toward Hunting, Fishing, Sport Shooting and Trapping 2019.”

¹³ Ibid.

¹⁴ R. M. Muth et al., “Unnecessary Source of Pain and Suffering or Necessary Management Tool: Attitudes of Conservation Professionals toward Outlawing Leghold Traps,” *Wildlife Society Bulletin* 34, no. 3 (2006).

¹⁵ Bauder et al., “Identifying and Controlling for Variation in Canid Harvest Data.”; Armstrong and Rossi, “Status of Avocational Trapping Based on the Perspectives of State Furbearer Biologists.”

¹⁶ Kyle A. Artelle et al., “Hallmarks of Science Missing from North American Wildlife Management,” *Science Advances* 4, no. 3 (2018).

biologist Rick Kahn, formed the Swift Fox Conservation Team (SFCT).¹⁷ In 1995, the FWS determined that their listing was warranted, but precluded the listing, citing other priorities. Because of the ESA-listing petition, beginning in 1995, CPW made swift foxes off limits to hunting and trapping. Then in 1996, Colorado citizens banned all trapping for predator control or recreational purposes (supra). In 1997, the SFCT wrote an assessment and drafted a conservation plan. In 1998, CPW listed swift foxes as a “species of special concern.”¹⁸ In response to the work of the SFCT, states commenced efforts to protect swift foxes. In 2001, the FWS removed them as a candidate for listing under the ESA despite their continued precarious status rangewide. In other words, the FWS relied on states to protect swift foxes from extinction, but in 2009, at the request of trappers, the Colorado Wildlife Commission suddenly permitted the trapping and hunting of them.¹⁹ Even worse, in 2010, the Commission allowed the night hunting of swift foxes.

When hunters and trappers kill swift foxes, the agency does not require that their bodies be checked or sealed with a stamp, as is done for bobcat pelts. Because of this, CPW knows little of the fates of swift foxes in Colorado. The agency endeavored to conduct phone surveys of swift fox trappers and hunters every other year,²⁰ but that failed to occur with any kind of consistency, and the results left the agency with little information and no actual numbers of swift foxes killed.²¹ At best, the agency wanted hunters and trappers of swift fox to annually “register their intent to take swift fox in upcoming seasons” and the response resulted in a modeling of the data that has no bearing on the true numbers.²² This is why CPW stopped publishing its “furbearer reports” after 2018 with the numbers of animals killed.

To date, according to the research organization NatureServe, swift foxes have disappeared from 60 percent of their former range and are considered “vulnerable” to extirpation in Colorado. NatureServe suggests, “...more information on population trends and threats is needed.”²³ Threats to swift foxes come from a variety of factors, and while NatureServe suggests that, “*overall trapping pressure has been reduced over the past few decades*” and is “*no longer a limiting factor*,”²⁴ CPW’s own data show otherwise. The last CPW furbearer report shows variations in annual kills from 107 to 11,417 swift foxes.²⁵ Yet because of CPW’s survey method, we know these numbers are highly fallible and likely inaccurate.²⁶

¹⁷ Rick Kahn et al., “Conservation Assessment and Conservation Strategy for Swift Fox in the United States,” ed. Swift Fox Conservation Team (Fort Collins, Colorado: Colorado Division of Wildlife, 1997).

¹⁸ Marty Stratman, “Status of Swift Fox in Eastern Colorado,” ed. Colorado Division of Parks and Wildlife (Brush, CO: CPW, 2017); Kahn et al., “Conservation Assessment and Conservation Strategy for Swift Fox in the United States.”; Marsha Sovada, Robert Woodward, and Lawrence Igl, “Historical Range, Current Distribution, and Conservation Status of the Swift Fox, *Vulpes Velox*, in North America,” *Canadian Field Naturalist* 123 (2009).

¹⁹ Otis Latham, “Colorado Trappers Association’s Citizen Petition,” (2008); J. Apker, “Swift Fox Management in Colorado in Ed. Stratman, M. 2013. Swift Fox Conservation Team: Report for 2011-2012,” ed. Colorado Division of Parks and Wildlife (Brush, Colo.: CPW, 2013).

²⁰ “Swift Fox Management in Colorado in Ed. Stratman, M. 2013. Swift Fox Conservation Team: Report for 2011-2012.”

²¹ Mark Vieira, “Colorado Parks and Wildlife: Furbearer Management Report: 2016-2017 Harvest Year,” ed. Terrestrial Wildlife (https://cpw.state.co.us/Documents/Hunting/SmallGame/Statistics/2016-2017_Furbearer_Report.pdf2018). “2019-20 Small Game Harvest Report,” ed. Colorado Parks and Wildlife (<https://cpw.state.co.us/Documents/Hunting/SmallGame/Statistics/18/2019-2020-Small-Game-Harvest-Report.pdf>2020).

²² Apker, “Swift Fox Management in Colorado in Ed. Stratman, M. 2013. Swift Fox Conservation Team: Report for 2011-2012.”

²³ NatureServe, “*Vulpes Velox*,”

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104178/Vulpes_velox.

²⁴ Emphasis added. Ibid.

²⁵ Vieira, “Colorado Parks and Wildlife: Furbearer Management Report: 2016-2017 Harvest Year.”

²⁶ “2019-20 Small Game Harvest Report.”

Threats to swift foxes come from various forms. According to 4 studies cited by Moehrensclager and Sovada (2004), swift foxes' annual mortality rates range from 47% to 63% per year.²⁷ While swift foxes' natural predators include coyotes, red foxes, golden eagles and badgers,²⁸ most threats come from humans. In Colorado, unknown numbers are killed every year by trappers and hunters, and humans diminish their habitats too. With human disturbance of habitats, swift foxes become more vulnerable to predation by coyotes and foxes.²⁹ Even CPW's own publication, Martin et al. (2007), noted that Colorado swift fox and their prey, prairie dogs, are vulnerable to habitat degradation and fragmentation by urban sprawl.³⁰ Furthermore, capture by cage traps—even for bona fide scientific study³¹—can injure individuals and lead to mortalities.³²

b. CPW's methods for counting swift foxes may result in detections but not abundance

CPW's methodologies to count swift fox are problematic:

1) In CPW's last survey of swift fox, Stratman (2017) makes conflicting claims: the authors conclude (without citation) that "swift fox occupancy has remained stable with no change being detected over the past 20 years in eastern Colorado."³³ Then Stratman (2017) writes: "currently, the distribution of swift fox across eastern Colorado is not completely known."³⁴ These two claims cannot be reconciled.

2) On 177 random patches of land on short grass prairie from August to October 2016, Stratman (2017) identified 227 swift fox *detections* using camera traps. Stratman (2017) states: "we categorized swift fox detections as separate and unique for all swift fox photos taken > 2 hr apart."³⁵ Detections, however, *are not* necessarily separate individuals.³⁶ Furthermore, Stratman (2017) states that camera traps were set along "common travel routes." This placement could lend itself to repeated detections of the same individuals and/or detection of foxes just passing through the area. CPW likely has used "false positive" errors by counting an individual more than once.³⁷ In fact, CPW may be counting a single individual multiple times on the same parcel, or, arguably even on different, nearby parcels.³⁸

²⁷ Axel Moehrensclager and Marsha Sovada, "Swift Fox (*Vulpes Vulpes*)," in *Canids: Foxes, Wolves, Jackals and Dogs. Status Survey and Conservation Action Plan*, ed. C. Sillero-Zubiri, M. Hoffmann, and D.W. Macdonald (Gland, Switzerland Cambridge, UK: The Wildlife Conservation Research Unit, Oxford, UK, IUCN Publications Services Unit, 2004).

²⁸ Ibid.

²⁹ CM Thompson and EM Gese, "Food Webs and Intraguild Predation: Community Interactions of a Native Mesocarnivore," *Ecology* 88, no. 2 (2007); A. M. Kitchen, E. M. Gese, and E. R. Schauster, "Resource Partitioning between Coyotes and Swift Foxes: Space, Time, and Diet," *Canadian Journal of Zoology-Revue Canadienne De Zoologie* 77, no. 10 (1999).

³⁰ Daniel J. Martin, Gary C. White, and Frances M. Pusateri, "Occupancy Rates by Swift Fox (*Vulpes Velox*) in Eastern Colorado," *The Southwestern Naturalist* 52, no. 4 (2007).

³¹ Under State law, "bona fide research" is defined as: ". . . systematic investigative or experimental activities which are carried out for the purpose of acquiring new and relevant knowledge pertaining to wildlife biology, ecology or management, or the revision of accepted conclusions, theories, or laws in the light of newly discovered facts, and which are conducted in a humane fashion by qualified personnel, and the results of which would meet the accepted standards for publication in a refereed scientific journal."

2 Colo. Code Regs. § 406-13:1300.

³² Martin, White, and Pusateri, "Occupancy Rates by Swift Fox (*Vulpes Velox*) in Eastern Colorado." Dempsey SJ, Gese EM, and Kluever BM, "Finding a Fox: An Evaluation of Survey Methods to Estimate Abundance of a Small Desert Carnivore," *PLoS ONE* 9, no. 8 (2014).

³³ Stratman, "Status of Swift Fox in Eastern Colorado," i.

³⁴ Ibid., 2.

³⁵ Ibid., 5-6.

³⁶ "Detections" mean that some animals were probably counted more than once as they were attracted to skunk-based lure stations, and so the 227 figure tells us very little.

³⁷ Yoshihiro Nakashima, "Potentiality and Limitations of N-Mixture and Royle-Nichols Models to Estimate Animal Abundance Based on Noninstantaneous Point Surveys," *Population Ecology* 62, no. 1 (2020).

³⁸ Ibid.

3) CPW is using 14% of potential swift fox habitat to extrapolate to the other 86% of potential swift fox habitat in Colorado to argue that the entire population is faring well. However, swift fox distribution is driven by more than just available habitat. Other factors such as prey availability, human disturbance, and competition with other predators and predation must be considered when CPW makes population estimates.

4) CPW counts swift foxes in the fall “to coincide with juvenile dispersal and maximize detection probabilities.”³⁹ Because of this, CPW is likely over-counting Colorado’s swift foxes. Juveniles who disperse may not survive, find a mate or even reproduce.⁴⁰ Furthermore, evidence of animals dispersing is irrelevant to their population abundance or trends. Population estimates must be based on mature individuals that will contribute to future population growth.

5) Stratman (2017) himself points out that CPW’s occupancy survey methods should not be a proxy for a population count:

... occupancy surveys continue to have their limitations since [they] can only be used to assess changes in geographic distribution of animals. Because population or density estimates are not derived from this type of survey, it is possible that substantial changes in the population may go undetected. Since occupancy modeling, as conducted in this survey, only required the detection of a single animal, it should not be used as the sole indicator of the status of Colorado’s swift fox population.⁴¹

Additionally, CPW knows nothing about the demographics of Colorado’s swift fox populations. Are populations skewed to older individuals (who have a slower reproduction rate), to younger individuals (who may reproduce more) or is there a sex bias in the population? We do not know because CPW’s surveys do not account for these details.

Also, occupancy does not equate to abundance and cannot be used as a substitute. Stratman (2017) argues that in order to properly count swift foxes, a DNA survey should be conducted.⁴² It would help to discern whether or not the same animals have been counted multiple times.⁴³ It is extremely common, if not expected, that studies using camera traps to measure abundance also use spatial capture-recapture models. Without this, the only thing that occupancy identifies is potential swift fox habitat. Counting the same individuals more than once can result in overestimations of abundance⁴⁴ and lead CPW to believe that swift foxes in eastern Colorado are thriving, when in fact they could be facing significant jeopardy. Furthermore, because abundance of swift foxes is unknown, the population trends of swift foxes in Colorado are also unknown for the past 20 years.

We request that in future studies CPW use exceedingly common spatial capture-recapture models, including DNA and Royle and Nichols (2003) type models to ensure that individuals are not counted multiple times.⁴⁵ Because CPW does not have an adequate swift fox population count, and has no idea about the swift fox population trend over the past 20 years, it cannot accurately determine what offtake amount is sustainable. CPW is operating in the dark to the detriment of a species that probably should be federally protected from unregulated take during the season by trappers and night hunters.

³⁹ D. J. Finley, G. C. White, and J. P. Fitzgerald, “Estimation of Swift Fox Population Size and Occupancy Rates in Eastern Colorado,” *Journal of Wildlife Management* 69, no. 3 (2005); Martin, White, and Pusateri, “Occupancy Rates by Swift Fox (*Vulpes Velox*) in Eastern Colorado.”; Stratman, “Status of Swift Fox in Eastern Colorado.”

⁴⁰ E. R. Schauster, E. M. Gese, and A. M. Kitchen, “An Evaluation of Survey Methods for Monitoring Swift Fox Abundance,” *Wildlife Society Bulletin* 30, no. 2 (2002b); Dempsey SJ, Gese EM, and BM, “Finding a Fox: An Evaluation of Survey Methods to Estimate Abundance of a Small Desert Carnivore.”

⁴¹ Stratman, “Status of Swift Fox in Eastern Colorado,” 12.

⁴² Ibid.

⁴³ Nakashima, “Potentiality and Limitations of N-Mixture and Royle-Nichols Models to Estimate Animal Abundance Based on Noninstantaneous Point Surveys.”; J. Andrew Royle and James D. Nichols, “Estimating Abundance from Repeated Presence-Absence Data or Point Counts,” *Ecology* 84, no. 3 (2003).

⁴⁴ Nakashima, “Potentiality and Limitations of N-Mixture and Royle-Nichols Models to Estimate Animal Abundance Based on Noninstantaneous Point Surveys.”

⁴⁵ Ibid. Royle and Nichols, “Estimating Abundance from Repeated Presence-Absence Data or Point Counts.”

c. Others have best pioneered methods to survey swift foxes, including the common use of capture-recapture models

Basic occupancy models have variations that use detection/non-detection data (1s and 0s) to estimate abundance, not just the probability of occurrence.⁴⁶ Studies comparing occupancy and abundance have shown that factors predicting occupancy do not necessarily predict population abundance.⁴⁷ These studies caution against using occupancy to extrapolate population abundance — which is exactly what CPW does. These caveats are especially true in a species that is rare, difficult to detect and widespread.⁴⁸ In addition, occupancy models seldom have the power to detect population changes, even for large declines over long time periods.⁴⁹ Occupancy models require large-scale, intensive sampling to detect population trends, and even then sampling effort is typically insufficient to monitor population abundance.⁵⁰

In their study in Utah, Dempsey et al. (2014) tested 4 survey methods (scat deposits, scent station, spot lighting and trapping) of kit foxes, who are of similar size and behavior to swift foxes. Kit and swift foxes share similar seasons when they breed, rear pups, and disperse. And both fox species are nocturnal and crepuscular. The authors found that of the 4 methods, scat deposition counts were the most reliable method, because it rendered the highest detection rates, which they then found had the highest correlation rate for determining fox abundance, and was “relatively inexpensive to perform.”⁵¹ Another benefit of detecting scat is that the fox does not have to act in an unusual manner, such as going to a scent station (which CPW uses to lure swift foxes to its camera traps)⁵² or enter into a cage trap. The scat can be used in DNA analysis to verify species and determine abundance.⁵³

Perhaps equally important, Dempsey et al. (2014) recommend counting swift foxes in the spring breeding season which means counting the resident population, not just dispersing animals. The problem with counting dispersing animals is obvious: As stated above, the agency may be counting one individual multiple times. Additionally, dispersers may not survive, may not reproduce, or may just be passing through lands that are unoccupied by resident foxes.⁵⁴

Schauster et al. (2002b), conclude that counting during the fall will elicit the most detections of any season — which is appropriate for determining the distribution of a species, but not for counting the population, as CPW must do to allow the take of a species that could be in jeopardy. Schauster et al. (2002b) emphasize the importance of counting swift foxes in the spring and not in the fall. They write:

⁴⁶ “Estimating Abundance from Repeated Presence-Absence Data or Point Counts.”; Nakashima, “Potentiality and Limitations of N-Mixture and Royle-Nichols Models to Estimate Animal Abundance Based on Noninstantaneous Point Surveys.” *ibid.*

⁴⁷ Reilly R. Dibner, Daniel F. Doak, and Melanie Murphy, “Discrepancies in Occupancy and Abundance Approaches to Identifying and Protecting Habitat for an at-Risk Species,” *Ecology and Evolution* 7, no. 15 (2017); Mark S. Boyce et al., “Review: Can Habitat Selection Predict Abundance?,” *Journal of Animal Ecology* 85, no. 1 (2016). Peter Billman et al., “Assessing Alternative Drivers of Abundance, Occupancy, and Elevational Range Retractions at the Range Core of a Climate-Sensitive Mammal” (Montana State University, 2020).

⁴⁸ Dibner, Doak, and Murphy, “Discrepancies in Occupancy and Abundance Approaches to Identifying and Protecting Habitat for an at-Risk Species.”

⁴⁹ Martha M. Ellis, Jacob S. Ivan, and Michael K. Schwartz, “Spatially Explicit Power Analyses for Occupancy-Based Monitoring of Wolverine in the U.S. Rocky Mountains,” *Conservation Biology* 28, no. 1 (2014).

⁵⁰ *Ibid.*

⁵¹ Dempsey SJ, Gese EM, and BM, “Finding a Fox: An Evaluation of Survey Methods to Estimate Abundance of a Small Desert Carnivore,” 6.

⁵² Marty R. Stratman and Jerry A. Apker, “Using Infrared Cameras and Skunk Lure to Monitor Swift Fox (<I>Vulpes Velox</I>),” *The Southwestern Naturalist* 59, no. 4 (2014).

⁵³ Dempsey SJ, Gese EM, and BM, “Finding a Fox: An Evaluation of Survey Methods to Estimate Abundance of a Small Desert Carnivore.”

⁵⁴ Schauster, Gese, and Kitchen, “An Evaluation of Survey Methods for Monitoring Swift Fox Abundance.” Robert L. Harrison, Daniel J. Barr, and Jerry W. Dragoo, “A Comparison of Population Survey Techniques for Swift Foxes (*Vulpes Velox*) in New Mexico,” *The American Midland Naturalist* 148, no. 2 (2002).

... if the principal objective is to monitor the status of a resident population, fall may be the least desirable time of the year since yearly variations detected in population size could reflect differences in productivity of local populations (Dieni et al 1996: 58). Surveys conducted in the spring would reflect the breeding population and be more representative of the surviving nucleus of resident animals required for population persistence.⁵⁵

We agree. Identifying individuals using non-invasive genetic sampling along with camera surveys or other spatial capture-recapture methods to estimate abundance will enhance CPW's survey methods.

CPW's own swift fox biologist writes that occupancy studies have limitations. CPW does not have a reliable population estimate for swift fox in Colorado, nor demographic information. It also does not know how many swift foxes are killed annually by hunters and trappers. Given that, according to NatureServe, they are vulnerable to extinction in Colorado, the CPW Commission should immediately stop the hunting and trapping of swift foxes.

6. The case to end bobcat trapping

a. Bobcats (and lynx) face a variety of threats to their survival

In Colorado, bobcats (and protected Canada lynx, a look-alike species) face a variety of threats – primarily from trophy hunters, trappers, poachers, vehicle collisions⁵⁶ and predator-control agents (for miniscule amounts of livestock losses).⁵⁷ Fig. 2. CPW's data show that trophy hunters and trappers cause most bobcat mortalities in Colorado — between 93 and 96 percent of all identified mortalities.⁵⁸ During the 2017-18 season, for instance, CPW data show that a record 2,009 bobcats were intentionally killed. Over the last decade, hunters and trappers have killed an average of nearly 1,700 bobcats annually, while only an average of 18 bobcats were killed with landowner and game damage permits during that time. See Fig. 2. During the 2018-19 season alone, trappers set 3,457 traps for bobcats. Between 2013 and 2017, an average of 639 trappers trapped for bobcats.

Bobcats' density estimates vary widely, between 4 to 6 bobcats per 100 km² (e.g., in Idaho, Minnesota, Utah) and 20 to 28 per 100 km² (e.g. Arizona and Nevada).⁵⁹ Yet, Colorado has neither reliable statewide population nor trend data, and has no information regarding demographics or the overall health of bobcats. Instead, state wildlife managers are wholly reliant on untrustworthy anecdotal data including from CPW's highly-fallible hunter surveys, sightings and vehicle collisions.⁶⁰

In a Colorado study, authors found that bobcats and mountain lions shared the same habitats, but in wildlands bobcats avoided areas where mountain lions had recently been.⁶¹ In exurban areas, however, bobcats did not avoid mountain lions and were more likely to come into contact with them — risking deadly strife. Lewis et al. (2015) conclude that human development can alter felid communities with its associated changes in ecological communities. Urbanization poses other risks in the form of pandemics. Bobcats are susceptible to disease, including from domestic cats. If they do not receive regular veterinary care and are free-roaming, domestic cats

⁵⁵ Schauster, Gese, and Kitchen, "An Evaluation of Survey Methods for Monitoring Swift Fox Abundance," 473.

⁵⁶ S. A. Poessel et al., "Roads Influence Movement and Home Ranges of a Fragmentation-Sensitive Carnivore, the Bobcat, in an Urban Landscape," *Biological Conservation* 180 (2014).

⁵⁷ The Humane Society of the United States, "Government Data Confirm That Cougars Have a Negligible Effect on U.S. Cattle and Sheep Industries," <https://www.humanesociety.org/sites/default/files/docs/Cougar-Livestock-6.Mar.19-Final.pdf> (2019).

⁵⁸ Ten years of data, 2007-2017, show that most bobcat mortalities come from trophy hunters and or commercial trappers. Vieira, "Colorado Parks and Wildlife: Furbearer Management Report: 2016-2017 Harvest Year."

⁵⁹ Hunter, L. and P. Barrett. 2011. *Carnivores of the World. Bobcat *Lynx rufus**. Princeton University Press, p. 34.

⁶⁰ L. M. Elbroch et al., "Contrasting Bobcat Values," *Biological Conservation* <https://www.springerprofessional.de/contrasting-bobcat-values/13278284> (2017).

⁶¹ J. S. Lewis et al., "Interspecific Interactions between Wild Felids Vary across Scales and Levels of Urbanization," *Ecology and Evolution* 5, no. 24 (2015).

become the source of numerous diseases to wildlife including rabies, feline leukemia virus, and parasites.⁶² In urban areas, mountain lions and bobcats are susceptible to feline immunodeficiency virus (FIV) from domestic cats.⁶³

CPW has little knowledge of Colorado’s bobcat populations and trends over time, and trappers can kill unlimited numbers of bobcats during the season. Because bobcats face numerous anthropogenic threats and the agency has no reliable bobcat population data, the CPW Commission should stop all trapping of bobcats, which will also confer protections for federally protected lynx.

Fig. 2.
Bobcats killed in Colorado, 1999-2019

Season	Hunt	Live trap	Landowner permit	Game Damage ⁶⁴	Total
2018-19	761	1,174	9	13	1,957
2017-18	708	1,269	19	13	2,009
2016-17	784	1,027	22	7	1,840
2015-16	470	882	7	2	1,361
2014-15	472	1,162	2	2	1,638
2013-14	595	1,350	9	5	1,959
2012-13	648	1,206	2	2	1,858
2011-12	607	1,021	13	4	1,645
2010-11	676	813	8	5	1,502
2009-10	782	521	18	15	1,336
2008-09	884	784	14	16	1,698
2007-08	974	769	14	5	1,762
2006-07	797	808	2	3	1,610
2005-06	656	507	33	5	1,201
2004-05	469	248	32	13	762
2003-04	453	227	7	22	709
2002-03	439	123	1	48	611
2001-02	336	51	1	25	413
2000-01	279	35	1	28	343
1999-20	162	16	0	54	232
1998-99	127	48	9	26	210

b. Bobcats reproduce slowly and provide long periods of parental care for their young, so trophy hunting and trapping harms them and their dependent kittens

While female bobcats are sexually mature at about one year of age, they do not breed until after they are two years old.⁶⁵ Males can start to mate at two years of age — but most do not until they become territorial residents after they are about three years old.⁶⁶ Bobcats can reproduce year-round but typically breed during winter and

⁶² R. W. Gerhold and D. A. Jessup, “Zoonotic Diseases Associated with Free-Roaming Cats,” *Zoonoses and Public Health* 60, no. 3 (2013).

⁶³ Lewis et al., “Interspecific Interactions between Wild Felids Vary across Scales and Levels of Urbanization.”; Gerhold and Jessup, “Zoonotic Diseases Associated with Free-Roaming Cats.”; Ashley Gramza et al., “Understanding Public Perceptions of Risk Regarding Outdoor Pet Cats to Inform Conservation Action,” 30, no. 2 (2016).

⁶⁴ “Game damage” claims are reported to the Colorado Department of Agriculture.

⁶⁵ Ibid. V. Segura, “A Three-Dimensional Skull Ontogeny in the Bobcat (*Lynx rufus*) (Carnivora: Felidae): A Comparison with Other Carnivores,” *Canadian Journal of Zoology* 93, no. 3 (2015).

⁶⁶ Luke Hunter, *Carnivores of the World* (Princeton, New Jersey: Princeton University Press, 2011).

spring, with most young born during the spring and summer months.⁶⁷ Females prefer secluded den sites, such as in hollow trees, logs, caves, or rocky crevices, to raise their litter of one to six kittens (the average is 3 kittens per litter), and will often move their kittens around between multiple den sites to prevent detection from predators.⁶⁸ Birth intervals vary, with some bobcats having two litters per year in southern climates, and in other climates, one litter per year or even one litter every two years.⁶⁹

In other words, in the world of animals, bobcat births are rare. Bobcat kittens depend on their mothers for survival for eight to ten months.⁷⁰ Bobcats are weaned at approximately two to three months of age, after which they follow their mothers on daily hunts to master the craft of survival. By wintertime, kittens make their own kills.⁷¹ When kittens are self-sufficient, typically between 9 and 24 months of age, these subadults disperse from their natal areas (where they were born) in an attempt to find their own home range and mates. Dispersal distances vary widely among young bobcats.⁷²

Trophy hunting and trapping sentient bobcats is cruel. It can also orphan dependent kittens, leaving them to starve, or die of predation or exposure. Therefore, the CPW Commission should no longer permit recreational and commercial trapping of bobcats in Colorado.

c. Bobcats' undisturbed, connected natural habitats are vanishing in Colorado

Bobcats' ability to adapt to many different natural habitats increases their survival. Bobcats have a wide habitat tolerance and can live in almost any natural habitat that provides cover, which they require to hunt. But they avoid urban and exurban lands, agricultural lands⁷³ and deep snow.⁷⁴ Alarming, exurban areas are overtaking wildlife habitats and are many times greater in size than all suburban and urban areas combined.⁷⁵ Studies show that adult females also avoid fragmented habitats.⁷⁶ Subadult bobcat transients need safe passages in order to find new habitats and establish home ranges.

Bobcats are threatened by habitat fragmentation and can become locally extinct in habitats that are highly fragmented.⁷⁷ A bobcat's home range is a fixed area that includes necessary resources for life, such as sufficient prey, water resources, and denning sites.⁷⁸ Male and female bobcats establish home ranges with considerable

⁶⁷ Crowe, D. M. 1975. Aspects of Ageing, Growth, and Reproduction of Bobcats from Wyoming. *Journal of Mammalogy*, Vol. 56, No. 1, pp. 177-198; Fritts, S. H. and J. A. Sealander. 1978. Reproductive Biology and Population Characteristics of Bobcats (*Lynx rufus*) in Arkansas. *Journal of Mammalogy*, Vol. 59, No. 2, pp. 347-353; Lawhead, D. N. 1984. Bobcat *Lynx rufus* Home Range, Density and Habitat Preference in South-Central Arizona. *The Southwestern Naturalist*, Vol. 29, No. 1, pp. 105-113.

⁶⁸ Arizona Game and Fish Department. Bobcat Fact Sheet: Understanding Bobcat Management in Arizona. Retrieved from <https://www.azgfd.com/PortalImages/files/hunting/Bobcat%20Fact%20Sheet.pdf>. Segura, "A Three-Dimensional Skull Ontogeny in the Bobcat (*Lynx Rufus*) (Carnivora: Felidae): A Comparison with Other Carnivores."

⁶⁹ Hunter, *Carnivores of the World*.

⁷⁰ Hansen, Bobcat: Master of Survival. Segura, "A Three-Dimensional Skull Ontogeny in the Bobcat (*Lynx Rufus*) (Carnivora: Felidae): A Comparison with Other Carnivores."

⁷¹ Ibid.

⁷² Hunter, L. 2015

⁷³ D. B. Lesmeister et al., "Spatial and Temporal Structure of a Mesocarnivore Guild in Midwestern North America," *Wildlife Monographs* 191, no. 1 (2015).

⁷⁴ Hunter, L. 2015.

⁷⁵ Erica Goad et al., *Habitat Use by Mammals Varies Along an Exurban Development Gradient in Northern Colorado*, vol. 176 (2014).

⁷⁶ Seth P. D. Riley et al., "Effects of Urbanization and Habitat Fragmentation on Bobcats and Coyotes in Southern California," 17, no. 2 (2003); Seth Riley et al., *A Southern California Freeway Is a Physical and Social Barrier to Gene Flow in Carnivores*, vol. 15 (2006).

⁷⁷ Lesmeister et al., "Spatial and Temporal Structure of a Mesocarnivore Guild in Midwestern North America."; Lewis et al., "Interspecific Interactions between Wild Felids Vary across Scales and Levels of Urbanization."

⁷⁸ Hansen, K. 1992. *Cougar: The American Lion*. Northland Publishing, Flagstaff, AZ.

overlap. Male bobcats generally occupy larger home ranges than females – typically two to three times the size.⁷⁹ The average range size for a female bobcat is from 1 km² to 86 km² while the average range for a male bobcat is from 2 km² to 325 km².⁸⁰ Bobcats' home range size is strongly correlated with their population density, which is dictated by prey availability.⁸¹ Because their habitats and corridors are in decline and they face mortality from diseases from domestic cats, bobcats do not need to also face trapping regimes.

d. Trophy hunting and trapping bobcats is unnecessary for livestock protection

Data show that farmers and ranchers lose nine times more cattle and sheep to health, weather, birthing and theft problems than all carnivores (including domestic dogs) combined.⁸² Bobcats are opportunistic hunters. While they are capable of killing livestock such as sheep, goats, piglets and poultry, the data show that those attacks are miniscule.⁸³

7. Conclusion

The North American Model of Wildlife Conservation advises against the market hunting of wildlife for private profit. Further, Coloradans care about wildlife and do not want these animals cruelly trapped and then killed, and in 1996 passed Amendment 14 to restrict traps and poisons on public lands in line with that value. Because it is widely accepted that trapping is cruel and harmful to wildlife, even more people would likely now vote to banish trapping on public lands. Additionally, the global fur industry is in rapid decline and trappers are not recruiting new members because the practice is economically unattractive. And finally, CPW has no idea how many swift foxes, bobcats and other “furbearers” live and die in Colorado. With all of this in mind, we ask the Commission to ban trapping on public lands, honoring the fair and democratic process of the ballot measure, and not disregard the will of the people of our state.

Thank you for this opportunity to engage in CPW's citizen petition process. Our hope is to increase citizen participation in wildlife issues that is held and managed in the public trust.

Sincerely yours,

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⁷⁹ Hunter, L. 2015.

⁸⁰ Ibid.

⁸¹ Lesmeister et al., “Spatial and Temporal Structure of a Mesocarnivore Guild in Midwestern North America.”

⁸² The Humane Society of the United States, “Government Data Confirm That Cougars Have a Negligible Effect on U.S. Cattle and Sheep Industries.”

⁸³ Hunter, L. and P. Barrett, 2011.

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