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January 12, 2018

Glenn Normandeau, Executive Director  
New Hampshire Fish & Game Commission Members  
New Hampshire Department of Fish & Game  
11 Hazen Dr.  
Concord, NH 03301

RE: Rulemaking petition to shorten New Hampshire's coyote hunting season

Dear Director Normandeau and Honorable Members of the Commission,

The Humane Society of the United States requests that you open up a public comment period on a rulemaking petition authored by Voices of Wildlife in New Hampshire. Specifically, the petition would amend Fis 303.06 to read: (a) Coyotes may be taken by use of firearm or bow and arrow year round from October 15 through March 31, ½ hour before sunrise to ½ hour after sunset. We support this amendment for the following reasons:

1. **Coyotes are the only species classified as furbearer that does not have a set season in the state.** Establishing specific opening and closing dates for the recreational hunting and trapping of this species is consistent with modern principles of responsible and humane, science-based wildlife management.
2. **Unregulated killing of coyotes during late spring greatly increases the chance of dependent pups being orphaned, leading to their slow death from starvation.** Litters of pups born in April are still dependent on both parents until weaning in early summer, and then remain under the care and guidance of their parents as they learn to hunt and become independent.
3. **The year-round, unregulated, and indiscriminate killing of coyotes does not control their populations.** More than 100 years of coyote killing has not reduced their populations. In fact, since 1850 when mass killings of coyotes began, coyotes' range has tripled in the United States.<sup>i</sup> As the University of Illinois points out, "...coyote population reduction (removing some or all of the coyotes in an area) is usually unrealistic and always temporary."<sup>ii</sup>

The indiscriminate killing of coyotes reaps only short-term population reductions and stimulates pup recruitment and immigration. Persecution of coyotes disrupts their social structure, which, ironically, encourages more breeding and migration,

and ultimately results in more coyotes.<sup>iii</sup>

The alpha pair, often the parents of different aged offspring, are the pack's only reproducers. When one or both members of the alpha pair are killed, the survivor will find a new mate, and the remaining members of the pack, who had been behaviorally sterile, will now also mate, increasing the number of breeding pairs. At the same time, lone coyotes will move in to mate, young coyotes will start having offspring sooner, and litter sizes will grow.<sup>iv</sup>

While widespread killing may temporarily reduce coyote numbers, coyotes bounce back quickly, even when up to 70 percent of their numbers are removed.<sup>v</sup>

4. **Indiscriminate and random coyote removals harm sensitive ecosystems.** Coyotes are an integral part of healthy ecosystems, providing a number of free, natural ecological services. For example, coyotes help to control disease transmission, keep rodent populations, which make up 40% of their diets, in check (curtailing hantavirus, a rodent-borne illness that kills humans), clean up carrion (animal carcasses), increase biodiversity, remove sick animals from the gene pool, and protect crops. Coyotes balance their ecosystems and have trophic-cascade effects such as indirectly protecting ground-nesting birds from smaller carnivores and increasing the biological diversity of plant and wildlife communities.<sup>vi</sup>
5. **Indiscriminate killing of coyotes will not increase ungulate populations.** The best available science demonstrates that killing native carnivores to increase ungulate populations, such as deer, is unlikely to produce positive results because the key to ungulate survival is protecting breeding females and ensuring herds have access to adequate nutrition, not predation.<sup>vii</sup>

Comprehensive studies, including those conducted in Colorado<sup>viii</sup> and Idaho,<sup>ix</sup> show that killing native carnivores fails to grow deer herds. In recent studies that involved predator removal, those removals had no beneficial effect for mule deer.<sup>x</sup>

In response to concerns by deer hunters about the perceived effect of coyotes on ungulate populations, the Pennsylvania Game Commission made the following statements in 2016:<sup>xi</sup>

- “During the late 1800s and early 1900s, the Game Commission focused much of its energy and resources into predator control efforts. During this period, we did not understand the relationship between predators and prey. After decades of using predator control (such as paying bounties) with no effect, and the emergence of wildlife management as a science, the agency finally accepted the reality that predator control does not work.”
- “[Predators] don’t compete with our hunters for game. The limiting factor is habitat—we must focus our efforts on habitat.”
- The Commission called it a “false prophecy” to “pretend that predator control can return small game hunting to the state[.]” Further, it stated that the focus must be based on “...science, not anecdotal comments stemming from theory or supposition.”

In recommending against a year-round hunting season on coyotes, the New York State Department of Environmental Conservation based their decision in part on the fact that “...random removal of coyotes resulting from a year-round hunting season will not: (a) control or reduce coyote populations; (b) reduce or eliminate predation on livestock; or (c) result in an increase in deer densities.”<sup>xii</sup> A study by that same agency found that on the whole, data indicated that deer numbers were *growing* in the presence of well-established coyote populations. Further, it found

that it is "...only when other factors, such as poor habitat, harsh winters, and other forms of predation are severe and chronic that coyote predation limits the growth of a deer population..." on a localized basis.<sup>xiii</sup>

Coyotes have a diverse diet, but their favorite prey are lagomorphs (rabbits and hares) and rodents.<sup>xiv</sup> In a study in Idaho, coyotes and mountain lions were heavily hunted to determine if mule deer numbers would rebound. They did not. The study's authors found that deer are more limited by a lack of nutrition than by their predators.<sup>xv</sup> Many other studies concur with this finding.<sup>xvi</sup>

For these reasons, The Humane Society of the United States requests that you open rulemaking on the amendment to Fis 303.06 to shorten the coyote hunting and trapping season in New Hampshire.

Respectfully submitted,



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<sup>i</sup> Robert Crabtree and Jennifer Sheldon, "Coyotes and Canid Coexistence in Yellowstone," in *Carnivores in Ecosystems: The Yellowstone Experience*, ed. T. Clark et al. (New Haven [Conn.]: Yale University Press, 1999)

<sup>ii</sup> University of Illinois Extension. *Living with Wildlife in Illinois: Coyote*. University of Illinois at Urbana-Champaign, [http://web.extension.illinois.edu/wildlife/directory\\_show.cfm?species=coyote](http://web.extension.illinois.edu/wildlife/directory_show.cfm?species=coyote).

<sup>iii</sup> F. F. Knowlton, E. M. Gese, and M. M. Jaeger, "Coyote Depredation Control: An Interface between Biology and Management," *Journal of Range Management* 52, no. 5 (1999); Robert Crabtree and Jennifer Sheldon, "Coyotes and Canid Coexistence in Yellowstone," in *Carnivores in Ecosystems: The Yellowstone Experience*, ed. T. Clark et al. (New Haven [Conn.]: Yale University Press, 1999); J. M. Goodrich and S. W. Buskirk, "Control of Abundant Native Vertebrates for Conservation of Endangered Species," *Conservation Biology* 9, no. 6 (1995).

<sup>iv</sup> Knowlton, F.F. 1972. Preliminary interpretations of coyote population mechanics with some management implications. *J. Wildl. Manage.* 36:369-382.

<sup>v</sup> Connolly, G.E. 1978. Predator control and coyote populations: a review of simulation models. Pages 327-345 in M. Bekoff, ed. *Coyotes: biology, behavior, and management*. Academic Press, New York, N.Y.

<sup>vi</sup> S. E. Henke and F. C. Bryant, "Effects of Coyote Removal on the Faunal Community in Western Texas," *Journal of Wildlife Management* 63, no. 4 (1999); K. R. Crooks and M. E. Soule, "Mesopredator Release and Avifaunal Extinctions in a Fragmented System," *Nature* 400, no. 6744 (1999); E. T. Mezquida, S. J. Slater, and C. W. Benkman, "Sage-Grouse and Indirect Interactions: Potential Implications of Coyote Control on Sage-Grouse Populations," *Condor* 108, no. 4 (2006); N. M. Waser et al., "Coyotes, Deer, and Wildflowers: Diverse Evidence Points to a Trophic Cascade," *Naturwissenschaften* 101, no. 5 (2014).

<sup>vii</sup> Bishop, C. J., G. C. White, D. J. Freddy, B. E. Watkins, and T. R. Stephenson. 2009. Effect of Enhanced Nutrition on Mule Deer Population Rate of Change. *Wildlife Monographs*:1-28; Hurley, M. A., J. W. Unsworth, P. Zager, M. Hebblewhite, E. O. Garton, D. M. Montgomery, J. R. Skalski, and C. L. Maycock. 2011. Demographic Response of Mule Deer to Experimental Reduction of Coyotes and Mountain Lions in Southeastern Idaho. *Wildlife Monographs*:1-33.; Forrester, T. D. and H. U. Wittmer. 2013. A review of the population dynamics of mule deer and black-tailed deer *Odocoileus hemionus* in North America. *Mammal Review* 43:292-308.; Monteith, K. L., V. C. Bleich, T. R. Stephenson, B. M. Pierce, M. M. Conner, J. G. Kie, and R. T. Bowyer. 2014. Life-history characteristics of mule deer: Effects of nutrition in a variable environment. *Wildlife Monographs* 186:1-62.

<sup>viii</sup> Bishop, C. J., G. C. White, D. J. Freddy, B. E. Watkins, and T. R. Stephenson. 2009. Effect of Enhanced Nutrition on Mule Deer Population Rate of Change. *Wildlife Monographs*:1-28.

<sup>ix</sup> Hurley, M. A., J. W. Unsworth, P. Zager, M. Hebblewhite, E. O. Garton, D. M. Montgomery, J. R. Skalski, and C. L. Maycock. 2011. Demographic Response of Mule Deer to Experimental Reduction of Coyotes and Mountain Lions in Southeastern Idaho. *Wildlife Monographs*:1-33.

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- <sup>x</sup> Forrester, T. D. and H. U. Wittmer. 2013. A review of the population dynamics of mule deer and black-tailed deer *Odocoileus hemionus* in North America. *Mammal Review* 43:292-308
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- <sup>xii</sup> NYS Department of Environmental Conservation. (June 1991). *The Status and Impact of Eastern Coyotes in Northern New York*, [http://www.dec.ny.gov/docs/wildlife\\_pdf/coystatnny91.pdf](http://www.dec.ny.gov/docs/wildlife_pdf/coystatnny91.pdf).
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- <sup>xvi</sup> Raymond Lee et al., "Pronghorn Management Guide, Proc. 1998-18th Biennial Pronghorn Antelope Workshop," Pronghorn Antelope Workshop, AZ Game and Fish, and Arizona Antelope Foundation, Inc., (1998); K. L. Monteith et al., "Life-History Characteristics of Mule Deer: Effects of Nutrition in a Variable Environment," *Wildlife Monographs* 186, no. 1 (2014); Bruce Watkins, James Olterman, and Thomas Pojar, "Mule Deer Survival Studies on the Uncompahgre Plateau, Colorado 1997-2001," *Colorado Division of Wildlife*, (2002); T. M. Pojar and D. C. Bowden, "Neonatal Mule Deer Fawn Survival in West-Central Colorado," *Journal of Wildlife Management* 68, no. 3 (2004); C. J. Bishop et al., "Effect of Enhanced Nutrition on Mule Deer Population Rate of Change," *Wildlife Monographs*, no. 172 (2009); T. D. Forrester and H. U. Wittmer, "A Review of the Population Dynamics of Mule Deer and Black-Tailed Deer *Odocoileus Hemionus* in North America," *Mammal Review* 43, no. 4 (2013).