PROJECT COYOTE

FOSTERING COEXISTENCE

June 19, 2018

The Honorable Nathan Deal
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Dear Governor Deal, Commissioner Williams, and Director Garrison,

On behalf of Project Coyote's Science Advisory Board and the undersigned scientists we express our strong opposition to the "Georgia Coyote Challenge" that was recently announced by the Georgia Department of Natural Resources (DNR). This purported management tool is nothing more than a wildlife killing contest (WKC), tempting participants to kill coyotes for a chance to win a lifetime hunting license.

Many hunters and wildlife managers believe, as a community, that killing animals without an adequate reason is unjustified and unsportsmanlike. Killing an animal for a prize or trophy constitutes killing without an adequate reason. Insomuch as WKCs are primarily motivated by killing for a prize or trophy, they are wrong.

The primary justification given by Georgia DNR for its WKC is that the coyote is a "non-native predator," thereby implicating it as an invasive species causing detrimental effects on "native" wildlife. In fact, one or more large canids have been a part of the Georgia ecosystem almost continuously for many millennia, and the native prey species have long been adapted to the

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presence of such a predator, whether it be gray wolf, red wolf, coyote, or indeed an admixture of those species.

The Georgia DNR argues that the Georgia Coyote Challenge is important for achieving management objectives for other species, especially game species. There is no credible evidence that indiscriminate killing of coyotes or other predators effectively serves any genuine interest in managing other species. Georgia's Deer Management Plan (2015-2024), which was prepared by the DNR, says it best: "Coyote bounties [are] viewed as an ineffective tool. … [Wildlife Resources Division] and [the Georgia State] General Assembly oppose coyote bounty programs."[1] In other words, the Georgia Coyote Challenge contradicts the DNR's own management plan! If leaders in the hunting and wildlife management community believe that WKCs, in general, serve important objectives, then the principles of wildlife management mandate that (1) these objectives be articulated and vetted by the best-available science, and (2) some reasonable, science-based case be made to justify a WKC as an appropriate means for achieving these objectives. In the absence of such an evaluation, WKCs, including the Georgia Coyote Challenge, should be prohibited. (*See* Appendix A.)

Advocates of the Georgia Coyote Challenge might argue that it will serve as an important means for realizing one or both of the following objectives: (1) decrease the loss of livestock to depredation, and (2) increase the abundance of prey species in the interest of maximizing hunting success by humans.

With respect to objective (1), a great deal of science has been developed on how to manage depredations effectively, including the use of both lethal and non-lethal methods. Lessons from that science include:

(i) Indiscriminate killing is ineffective and it is plausible, perhaps likely, that when associated with a WKC it would lead to increased risk of depredations. A primary reason for this concern is that only some, often only a few, individual predators participate in depredation. Indiscriminate and "pre-emptive" killing of predators associated with WKCs can lead to the disruption of predators' social structure and foraging ecology in ways that increase the likelihood of depredations. In hunted (exploited) coyote populations, for example, the number of surviving pups that must be fed by the parents and the number of transient individuals may increase. These factors may predispose more coyotes to depredate livestock.

(ii) The indiscriminate killing associated with a WKC does not target: (a) the offending predator, (b) the site where depredation has occurred, or (c) the time when depredation occurred. This renders WKCs ineffective as a means of depredation control.

While managing to reduce the loss of livestock is a common goal for all stakeholders, WKCs do not contribute to this goal and may work against it.

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[1] Georgia Deer Management Plan 2015-2024, at 36 (http://www.georgiawildlife.com/sites/default/files/uploads/wildlife/hunting/pdf/Game_Mgmt/Deer%20Plan%202015-2024%20Final%20Draft%2011-19-14.pdf), accessed Feb. 27, 2017.

With respect to objective (2), a large body of science indicates that killing predators, especially under circumstances associated with WKCs, is not a reliable means of increasing ungulate abundance. (*See* Appendix A.) The circumstances most likely to result in increased ungulate abundance are also the circumstances most likely to impair important ecosystem benefits and services that predators provide. Even when predators are killed to the point of impairing their ecosystem services, there is still no assurance that ungulate abundance will increase. The reason is that ungulate abundance is frequently limited by factors other than predators – factors such as habitat and climate.

Beyond objectives (1) and (2), which focus on affecting game populations and livestock depredations, lies a need to better recognize and celebrate the predators' valuable contribution to the health and vitality of our ecosystems. For example, predators serve human interests through beneficial effects such as rodent control and disease prevention and promoting diverse plant communities and soil fertility. The Georgia DNR's own website states that "despite its nuisance reputation, the coyote proves to be an asset in maintaining the balance of wildlife in Georgia."[2] Thus, reduction of the distribution and numbers of apex predators can have detrimental ecological effects.

Some advocates of WKCs might also believe that killing coyotes is vitally important for preventing coyote populations from growing out of control. This concern is unjustified. Science demonstrates that unexploited coyote populations self-regulate their numbers by means of dominant individuals defending non-overlapping territories and suppressing subordinate pack members from breeding.

The Boone and Crockett Club was founded by Theodore Roosevelt in 1887 "over the concerns that we might someday lose our hunting privileges and the wildlife populations for future generations."[3] The Club is still considered one of the most respected sportsmen's institutions in North America. The Club "does not support programs, contests, or competitions that directly place a bounty on game animals by awarding cash or expensive prizes for the taking of wildlife"[4] because WKCs contravene the club's "fair-chase" motto.

Thank you for considering our concerns on this important wildlife conservation issue.

Respectfully submitted,

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Project Coyote Founder & Executive Director

[2] Georgia DNR website (http://www.georgiawildlife.com/CoyoteFacts), accessed Feb. 23, 2017.
[3] B&C's website (http://www.boone-crockett.org/join/associates_faq.asp?area=join).
[4] *See* http://www.boone-crockett.org/bgRecords/position_statements.asp?area=bgRecords

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Appendix A. Additional Literature Cited

Here we provide additional scientific explanation (with citations) for two ideas expressed in this letter.

(1) **Some advocates of wildlife killing contests (WKCs) believe they are necessary or beneficial for effective management of livestock depredation.** We indicated that WKCs are unlikely to have this effect. The reason why is that most individual predators do not participate in livestock depredations (Gipson 1975; Knowlton et al. 1999; Sacks et al. 1999a, 1999b; Linnell et al. 1999; Stahl and Vandel 2001; Blejwas et al. 2002; Treves et al. 2002; Treves and Naughton-Treves 2005). Consequently, effective management of depredation requires (1) targeting the offending individual(s), and (2) intervening close to the site where the depredations occurred as well as responding in a timely manner (Gipson 1975; Sacks et al. 1999a, 1999b; Smith et al. 2000; Bangs and Shivik 2001). WKCs do not represent the kind of targeted effort required for effective management of livestock depredations.

Moreover, indiscriminate killing of predators is likely to exacerbate risks to livestock. The reason is that killing social carnivores like coyotes (and other large canids) can lead to the disruption of predators' social and foraging ecology in ways that increase the number of transient individuals (Bjorge and Gunson 1985; Haber 1996; Treves and Naughton-Treves 2005; Brainerd et al. 2008; Wallach et al. 2017). These transient individuals that have not been acculturated (aversively conditioned) to living in areas with livestock may be more likely to kill livestock. Studies by USDA's Wildlife Services clearly indicate that many, if not most, depredations are inflicted by the breeders (i.e., alphas) in coyote social groups (Knowlton et al. 1999; Sacks et al. 1999b). Even if the offending individuals are removed, they can be replaced by other members of the social group or from populations outside the area where the WKC is occurring. In some cases, this can also increase reproductive performance in coyotes (Crabtree and Sheldon 1999; Knowlton et al. 1999). Scientific evidence is increasingly suggesting that harvesting predators can exacerbate losses to livestock (Collins et al. 2002; Treves et al. 2010, Peebles et al. 2013, Wielgus and Peebles 2014).

(2) **Some advocates of wildlife killing contests believe they are necessary or beneficial for increasing the abundance of ungulate populations or those of other wildlife such as upland game birds. We had indicated in our letter that WKCs are unlikely to have that effect.** The reason why is twofold:

(i) Killing predators cannot result in increased ungulate abundance in cases where the ungulate population is not limited by predators, but is instead limited by other factors, such as climatic conditions or food availability (Sæther 1997; Forchhammer et al. 1998; Coulson et al. 2000; Parker et al 2009). Without careful study, the claim that killing predators will improve wild ungulate populations is simply an unsupported assumption. Moreover, science has not yet arrived at a clear understanding of the conditions that cause a population to be limited by predators as opposed to other factors (Vucetich et al. 2005; Wilmers et al. 2006).

For example, an experimental study in Idaho (Hurley et al. 2011) found that annual removal of coyotes was not an effective method to increase mule deer populations because coyote removal increased neonate fawn survival only under particular combinations of prey densities and weather conditions.

(ii) Even in cases where predators do limit prey abundance, human-caused mortality (HCM) could lead to an increase in prey abundance only if the rate of HCM was sufficient to result in a significant reduction in predator abundance. Human-caused mortality is not a reliable means of reducing coyote abundance unless the rate of HCM exceeds 70% (Connolly and Lonhurst 1975). It is difficult to imagine that any set of WKCs would be intense enough or frequent enough to result in that rate of HCM.

(iii) A massive 7-year predator removal experiment on bobwhite quail plantations in Georgia showed that removing coyotes and all other mammalian predators had no net effect on quail nest depredation, largely due to the compensatory increase in snake predation this mammal-predator removal triggered (Ellis-Felege et al. 2012).

Finally, the interest of some advocates of WKCs (i.e., increased ungulate abundance) is antithetical to good natural resource management practices in cases where increased ungulate abundances present a risk of overbrowsing (e.g., Côté et al. 2004).

Thank you for allowing us to explain ourselves further. If additional explanation on this or any other topic would be of value, please let us know.

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