



## Upper Arkansas River Predator Management Plan & Piceance Basin Predator Management Talking Points

### **Background:**

Like mule deer populations across the western U.S., Colorado's mule deer population has been on the decline (Monteith et al. 2014). As part of the Colorado mule deer strategy, Colorado Parks and Wildlife (CPW) identified predation as one of the factors limiting Colorado them. CPW wants to discover if intensive mountain lions and black bear killing will reduce mule deer predation. CPW has proposed two studies:

- 1) The Upper Arkansas River Predator Management Plan near Salida that would kill up to 50% of the mountain lions in this region over a nine year period.
- 2) The Piceance Basin Predator Management Plan near Rifle. CPW would contract with Wildlife Services to kill up to 12 mountain lions and 25 black bears each year on the Roan Plateau over a three-year period.

Based on the following points, these studies are unsound and will likely harm the already sensitive wildlife communities in these areas.

### **Point #1: Killing Native Carnivores Will Not Increase Mule Deer Populations**

- The best available science demonstrates that killing native carnivores to increase ungulate populations is unlikely to produce positive results because the key to survival is protecting breeding females and access to adequate nutrition, not predation (Bishop et al. 2009, Hurley et al. 2011, Forrester and Wittmer 2013, Monteith et al. 2014).
- Comprehensive studies, including those conducted in Colorado (Bishop et al. 2009) and Idaho (Hurley et al. 2011), 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 (Forrester and Wittmer 2013). If predators had been absent, the deer would have died from some other cause of mortality (Monteith et al. 2014).
- Black bears are not a significant mule deer predator. While they are considered carnivores, black bears are omnivorous and obtain nearly all of their nutrition from vegetation (see e.g., Ulev 2007, citing many others). Occasionally, bears will prey upon ungulates such as elk, deer, and moose (Barber-Meyer et al. 2008). However, bears are more likely to steal cached carcasses from mountain lions than kill deer themselves (Elbroch et al. 2015).

### **Point #2: Deer Require Adequate Habitat, Corridors and Nutrition to Survive**

- Young deer who have access to fewer nutrition are less likely to survive (Monteith et al. 2014). Mule deer survival is absolutely reliant on deer herds' ability to gain access to adequate nutrition – but that nutrition can be hindered by weather, habitat loss, oil and gas development, fire suppression, and competition with domestic livestock (Forrester and Wittmer 2013, Monteith et al. 2014).
- Mule deer need migration corridors that are protected from human development. An ongoing mule deer study in Wyoming has found that mule deer migration patterns are altered by human development.<sup>1</sup> As a result, Wyoming Game and Fish Department is working to further protect migration routes in the state, for instance, no more than four oil and gas well pads

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<sup>1</sup> Edwards, M. Mule Deer Struggling To "Surf The Green Wave" Of Migration. Nov. 20 2015. Retrieved from: <http://wyomingpublicmedia.org/post/mule-deer-struggling-surf-green-wave-migration>.

allowed in a migration corridor and no development allowed in corridors narrower than a quarter mile.

- Colorado's own biologists have found that deer are limited by their food quality, especially on winter range (Bishop et al. 2009, Bergman et al. 2014). Biologists found that managing winter range for deer, weed control and reseeded, greatly benefitted deer (Bergman et al. 2014).
- The decline in Colorado's mule deer population is part of a broad, regional pattern. This decline is likely the result of a combination of multiple limiting factors (Bergman et al. 2015). However a lack of high-quality winter range is likely the primary factor limiting mule deer in Colorado (Bergman et al. 2015, Johnson et al. 2016).

### **Point #3: Residential and Energy Development Harm Mule Deer Recovery**

- Residential and energy development have reduced all ungulates across the West. The low-elevation valleys and mountain foothills, once important habitat for ungulates, are filled with cities and towns (Polfus and Krausman 2012). The same is true in Colorado, according to CPW's research, particularly on winter ranges (Johnson et al. 2016). Between 1980 and 2010, western Colorado saw a 37% increase in residential land-use in mule deer habitat, primarily on their winter range (Johnson et al. 2016).
- In areas with extensive habitat loss because of energy development such as on the Roan Plateau, the cause of mortality for deer is largely irrelevant as it pertains to the doomed surplus in a population; removal of one source of mortality would result in an increase in other mortality causes (Bergman et al. 2015).
- An ongoing mule deer study by members of the Wyoming Migration Initiative has found that mule deer migration patterns are altered by human development – herds will move faster, stop less to feed, and detour around developed portions of their route. Moreover, herds that can't migrate in search of the most nutritious grasses just end up smaller in number, plain and simple.<sup>2</sup>
- Mule deer may suffer higher mortality rates in developed landscapes because of increased vehicle collisions and accidents (i.e., entrapment in fences); moreover, increased road densities expose mule deer to more hunters, poachers and predatory domestic pets (Johnson et al. 2016).
- Human development causes direct habitat loss and fragmentation through the construction of infrastructure, and indirect habitat loss through deer avoidance of infrastructure and related activities; these consequences likely reduce the carrying capacity of the landscape (Johnson et al. 2016).

### **Point #4: Killing Native Carnivores is Harmful to Their Social Structure**

- When the stable adult mountain lions are removed from a population, the disruption causes social chaos in their society. The loss of adults encourages subadult males, naturally less skilled at hunting, to immigrate, and studies show that this influx is likely to be involved in human and livestock conflicts as well as causes increased infanticide on mountain lion kittens (Robinson et al. 2008, Cooley et al. 2009, Peebles et al. 2013).
- Mountain lions and black bears are very slow to breed and few individuals survive to breed themselves because of all the threats they face. These species are not resilient in the face of heavy-handed persecution regimes (Weaver et al. 1996, Darimont et al. 2015, Ripple et al. 2016) such as those proposed in these two studies.

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<sup>2</sup> Ibid.

- Killing female mountain lions and black bears causes the orphaning of cubs and kittens (Beck et al. 1995, Stoner et al. 2006). These animals are highly dependent on their mothers well into their early years of life. Killing mother bears and lions can leave multiple young to die from starvation, dehydration, exposure or predation.

**Point #5: Killing Native Carnivores Will Harm Colorado’s Sensitive Ecosystems**

- Mountain lions and black bears are rare species that serve important ecological roles, including a variety of ecosystem services (Weaver et al. 1996, Ripple and Beschta 2006, Estes et al. 2011, Elbroch and Wittmer 2012).
- Mountain lions serve an important ecological role in their biotic communities. They structure the distribution and demography of prey; prevent the loss of biological diversity; reduce vehicle-deer collisions and the spread of Lyme disease among other problems associated with overabundant deer (Maehr et al. 2003, Gilbert et al. 2016).
- Black bears disperse seeds long distances, benefiting forest ecology (Enders and Vander Wall 2012). Bears cause small-scale ecological disturbance to the canopy that allows sun to filter to the forest floor, adding to biological diversity (Takahashi and Takahashi 2013). Bears also break logs while grubbing, which helps the decomposition process to return nutrients to the soil.

**Point #6: Americans Value Mountain Lions & We Need to Co-Exist with Them**

- George et al. (2016) found that 61 percent of people reported positive values towards mountain lions compared to 13 percent with negative values. Three Colorado studies also show that Coloradoans greatly value them:
  - “A majority of respondents had positive attitudes towards mountain lions and were likely to believe that mountain lions are a sign of a healthy environment and pose little real risk to people living near them” (Zinn et al. 1996).
  - “Mountain lions are the best representative of the Southern Rockies [AZ, CO, NM] heritage and landscape” (Decision Research 2001).
  - 96% of Coloradoans appreciate knowing these magnificent animals live in Colorado even if they never see one (Corona Research 2006).
- Because of declining available habitat, co-adaption between large carnivores and humans must occur, if carnivores are to persist (Ripple et al. 2016). Humans must be willing to share habitat and tolerate the small level of risk they pose (Carter and Linnell 2016). Humans must curb their own “hyperpredation” of other species and their habitats (Chapron and López-Bao 2016).

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