

PETITION FOR RULEMAKING TO THE TEXAS PARKS AND WILDLIFE COMMISSION RESEARCH AND MANAGEMENT OF MOUNTAIN LIONS (*PUMA CONCOLOR*) IN TEXAS

DATE: June 13, 2022

PETITIONERS:

Monica Morrison, Dallas, TX
Ben Masters, Austin, TX
Patricia Moody Harveson; Alpine, TX
Romey Swanson, Austin, TX
Mark Elbroch, Sequim, WA
Pamela Harte, Fort Davis, TX

ISSUE SUMMARY

Mountain lions (*Puma concolor*) are a large carnivore that was once found across the USA. Today, mountain lion populations exist in 16 states, including Texas. However, Texas remains the only state with an established mountain lion population that has not initiated some form of conservation management for the species (e.g., harvest management, depredation permit system). In 1973, the Texas Legislature passed the Non-game Species Act, designating mountain lions as a nongame species with essentially zero protections. In 1977, Texas added regulations to provide protections to some nongame species, but mountain lions were excluded. Today, mountain lions, including dependent young, can be killed in Texas at any time, by any means, and in any quantity if an individual holds any valid hunting or trapping license issued by the state and has permission to be on the land.

Mountain lions are listed as a “Species of Greatest Conservation Need” in the Texas Conservation Action Plan (TCAP), and classified as vulnerable to imperiled in the state.¹ The TCAP is written by the Texas Parks and Wildlife Department (TPWD) and while this plan prioritizes the monitoring and conservation of rare species, there has never been a mountain lion monitoring plan for Texas. Texas is the only state that allows mountain lion trapping, which other states have banned based on the evidence that trapping is indiscriminate and difficult to monitor in terms of harvest management. Texas is the only state with a mountain lion population that does not have a management plan for the species. Yet, there is sufficient

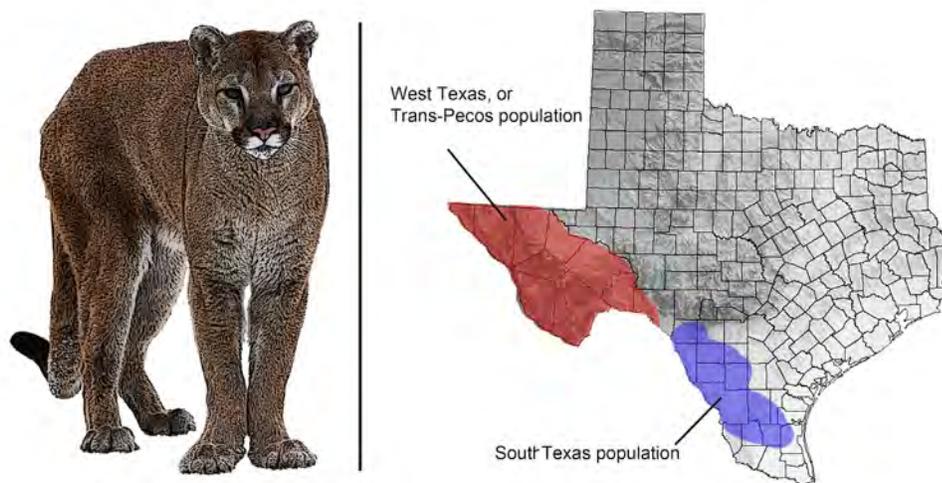


Figure 1. The state of Texas, with relief and county lines. The red delineates the approximate distribution of the West Texas, or Trans-Pecos mountain lion population, and the blue the approximate distribution of the South Texas population, which is far less certain.

research indicating that mountain lion populations in Texas require interventions to remain tenable (see [Elbroch and Harveson 2022](#))—actions that are in fact required by state law. *See* Tex. Parks & Wild. Code Ann. § 67.002(a) (requiring TPWD to “develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully”).

Texas has confirmed two breeding populations of mountain lions, one in West Texas and the second in South Texas (Fig. 1). However, independent research suggests that the South Texas mountain lion population is untenable without intervention by wildlife managers, and recent surveys in the area have turned up few animals. Research also suggests that genetic diversity among South Texas mountain lions has dropped significantly, where the effective population size (defined as the number of breeding individuals contributing offspring in the population) has declined by greater than 50% due to habitat fragmentation, predator control, and the increased isolation of the South Texas population from other mountain lion populations in West Texas and Mexico.² Historic mountain lion research conducted in Texas suggests that mountain lion mortality in the state is so high that it threatens the long-term persistence of the species in the Trans-Pecos as well³. A review of the relevant research conducted in Texas, and TPWD’s internal communications around the subject, will be published in an upcoming article in the peer-reviewed science journal, *the Wildlife Society Bulletin*, a journal that caters to wildlife professionals published by The Wildlife Society, a leading, international network of 11,000 wildlife professionals. That article is archived and accessible [here](#).

Immediate action is required to ensure the persistence of Texas mountain lions at sufficient numbers to maintain sustainable populations. The loss of functional mountain lion populations would be detrimental to Texas ecosystems and Texas culture. Mountain lions regulate prey and medium carnivore species, and may also reduce the spread of chronic wasting disease in ungulate herds, a critical topic in Texas and beyond.⁴ Culturally, the mountain lion is integral to the Texas identity, evidenced by four of the top ten Texas mascots being panthers, lions, wildcats, and cougars. The time to act is now. The Texan population is predicted to grow from 30 million to 50 million people over the next three decades, and our landscapes are becoming increasingly fragmented by roads and other infrastructure.

For these reasons and those stated in detail below, we request the Texas Parks and Wildlife Commission prescribe 6 activities and regulations. These 6 activities and regulations represent independent petitions rather than an all-or-nothing request. Nevertheless, taken together, these 6 items constitute a comprehensive action plan to ensure sustainable mountain lion populations in Texas. We, the petitioners, represent a diverse set of interested stakeholders including rural landowners, urban dwellers, wildlife biologists, wildlife advocates, livestock producers, hunters, nature enthusiasts, and photographers. We value the role that hunting and ranching contributes to conservation in Texas and believe the activities herein are respectful and reasonable measures to ensure a future in which hunters, ranchers, and mountain lions can coexist and thrive.

I. Proposed regulations and directives:

We request the Texas Parks and Wildlife Commission initiate the following activities and regulations for mountain lions in Texas:

1. Conduct a statewide study to identify the abundance, status, and distribution of the mountain lion populations in Texas. A report outlining the findings will be published by end of year (EOY) 2024, or as rapidly as reasonably possible.
2. Require mandatory reporting of wild mountain lions killed or euthanized for any reason by members of the public, state and federal agents acting in their official capacity, and other wildlife responders. Individuals and agencies must report mountain lion kills to TPWD within 48 hours of taking the animal, by presenting the carcass to TPWD staff for examination and data collection.

3. Trappers employing any form of trap or snare to capture mountain lions must examine their devices at least once every 36 hours, and remove any animals they have caught, to make mountain lion trapping consistent with current furbearer trapping regulations in Texas. Trappers must present the carcass for examination to TPWD within 48 hours of removing the deceased animal.
4. Limit mountain lion take in South Texas to 5 animals per year until TPWD can determine the size and status of the population in this area and a stakeholder advisory group can establish sustainable hunting limits for the region. This restriction would not include killing a mountain lion for the following reasons:
 - a. For public safety or for protection of threatened and endangered species, and then conducted by state or federal agents;
 - b. The incidental death of an animal as result of scientific research;
 - c. For humane euthanasia of an injured animal (e.g., struck by a vehicle); and,
 - d. For livestock protection, once a loss is confirmed and a depredation permit is issued by TPWD, as defined in [Texas Code Chapter 65, Subchapter 1, Rule 65.220](#).
5. Prohibit canned hunting of mountain lions, or more specifically, the take of mountain lions that have been restricted from movement during a hunt or prior to a hunt, as defined in Parks and Wildlife Code [Chapter 62, Subchapter F, Sec 62.101, 62.102, 62.103](#). This includes, but is not limited to, actions that intentionally injure an animal or hold an animal in a trap or other enclosure prior to the hunt.
6. Form a stakeholder advisory group to collaborate with TPWD to write a mountain lion management plan for Texas by EOY 2025. This group will include representatives from the following groups: hunting organizations, livestock organizations, wildlife conservation organizations (non-hunting), outdoor recreation organizations (non-hunting), animal welfare organizations, independent mountain lion biologists, TPWD biologists, TPWD policy managers.

II. Justifications for the requested activities and new regulations:

1. **Conduct a statewide study to identify the abundance, status, and distribution of the mountain lion populations in Texas. A report outlining the findings will be published by EOY 2024, or as rapidly as reasonably possible.**

The Parks and Wildlife Code requires TPWD to “conduct ongoing investigations of nongame fish and wildlife,” such as mountain lions, so that the department can “develop information on populations, distribution, habitat needs, limiting factors, and any other biological or ecological data to determine appropriate management and regulatory information” Tex. Parks & Wild. Code Ann. § 67.003. Further, the Code requires TPWD to “develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully” *Id.* § 67.002(a).

TPWD cannot administer such a management program for mountain lions if it does not have reliable information about the species’ population and distribution in the state, which it does not. Further, TPWD cannot determine the potential impacts of harvest and other take of mountain lions without knowing their baseline population abundance. *See* Tex. Parks & Wild. Code Ann. § 67.003. Therefore, at present, the agency cannot manage mountain lions in a manner that ensures the continued ability of mountain lions to “perpetuate themselves successfully.” *See Id.* § 67.002(a). Sound science and transparency are fundamental to maintaining public trust in wildlife management conducted by TPWD.

In order to gain such information, the Code explicitly grants TPWD the authority to “conduct scientific investigation and survey of nongame species for better protection and conservation.” *Id.* § 67.002(b). Additionally, TPWD may “disseminate information pertaining to nongame species conservation, management, and values.”

To comply with its obligations under the Wildlife Code, we request that the TPWD immediately undertake research to determine the abundance, status, densities, and distribution of Texas mountain lion populations. At minimum, the agency should establish an occupancy framework for monitoring mountain lion distribution, in combination with density estimates for key regions. Given the uncertainty and the urgent need of the species’ status in South Texas, we request that TPWD complete the initial phase of this research on the mountain lion population and publish a report of its findings by EOY 2024, or as near to as reasonably possible.

2. Require mandatory reporting of wild mountain lions killed or euthanized for any reason by members of the public, state and federal agents, and other wildlife responders to TPWD within 48 hours of taking the animal, by presenting the carcass to TPWD staff for examination and data collection.

TPWD does not regulate the taking of mountain lions, and hunters and trappers can kill an unlimited numbers of mountain lions every year. Additionally, unlike other animals that are hunted and trapped, TPWD has no reporting requirements when someone kills or euthanizes a wild mountain lion, undermining TPWD’s and other biologists’ ability to monitor the species and to ensure the continued ability of the species to successfully perpetuate itself.

Under the Parks and Wildlife Code, TPWD has an obligation to “develop and administer management programs to ensure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.” Tex. Parks & Wild. Code Ann. § 67.002. Further, TPWD is required to “conduct ongoing investigations of nongame fish and wildlife to develop information on populations, distribution, habitat needs, limiting factors, and any other biological or ecological data to determine appropriate management and regulatory information.” *Id.* § 67.003. To these ends, the Commission has the authority to issue regulations establishing “any limits on the taking . . . of nongame fish or wildlife that the department considers necessary to manage the species.” *Id.* § 67.004. We ask that the Commission adopt a regulation requiring mandatory reporting within 48 hours for all wild mountain lions killed for any reason to ensure that TPWD can properly manage the species. See justifications under “1” above.

Further we request that all mountain lions harvested or killed are presented to TPWD staff for sampling. We encourage TPWD to collect, at minimum, the following data to determine the age and sex of the animal:

- A genetic tissue sample which can be used to determine sex, genetic health of the population, immigration and source populations of transient mountain lions found in Texas;
- Frontal and lateral photos of dentition, with lips held back to ensure the visibility or absence of gum line recession on the upper canines; and,
- Photos of the interior of front legs to document the presence or absence of barring.

3. Require trappers employing any form of trap or snare to capture mountain lions to examine their devices at least once every 36 hours, to make mountain lion trapping consistent with current furbearer trapping regulations in Texas.

Under the Parks and Wildlife Code, the Commission has the authority to issue regulations establishing “any limits on the taking . . . of nongame fish or wildlife that the department considers necessary to manage the species.” Tex. Parks & Wild. Code Ann. § 67.004. We ask that the Commission adopt a regulation requiring the take of mountain lions with snares, foothold traps, body gripping traps, or live or box traps only if devices are examined at least once every 36 hours, and that any mountain lions caught in said traps be removed from devices upon discovery and presented to TPWD for sampling. These trap-check requirements are consistent with those for the trapping and snaring of fur-bearing animals in Texas. See 31 [Tex. Admin. Code § 65.375\(c\)\(2\)\(E\)-\(F\)](#).

Texas is the only state that allows the recreational use of traps to take mountain lions. Mountain lions caught in traps are not only subjected to the elements while captured, but also fight to free themselves, causing extremely painful self-harm.⁵ Importantly, traps also catch non-target species, including the state threatened black bear which shares much of the same habitat as mountain lions in West Texas. Thus, trap check requirements for mountain lions are not only necessary to manage this species, they could also help limit lethal incidental take of non-target species, allowing for management of the non-target species as well.

4. Limit mountain lion take in South Texas to 5 animals per year until TPWD can determine the size and status of the population in this area and a stakeholder advisory group can establish sustainable hunting limits.

In 2012, peer-reviewed science coauthored by TPWD biologists warned that the South Texas mountain lion population was untenable without conservation intervention⁶. This research suggested that genetic diversity among South Texas mountain lions has dropped significantly, and that the South Texas effective mountain lion population size (defined as the number of breeding individuals contributing offspring in the population) has declined by greater than 50% due to habitat fragmentation, predator control, and the increased isolation of the South Texas population from other mountain lion populations in West Texas and Mexico.⁷ To date no action has been taken, and recent surveys in the region have documented few animals, suggesting cause for concern. This research is summarized in Elbroch and Harveson (2022).

Based on current but limited data, anthropogenic mortality rates in Texas are among the highest in the US, and although the effects of human-caused mortality on population dynamics are variable, they are well beyond the suggested mortality rates recommended to maintain stable mountain lion populations.⁸ Similarly, adult female mountain lion survival in Texas studies are generally lower than female survival reported in other US studies; published female survival estimates in Texas suggest that the Texas populations studied were all likely declining when the studies were active⁹. Studies that have estimated Texas mountain lion density report abundances well below most research done on the species elsewhere; and while low densities in Texas are in part driven by the arid environments of the region, most lion mortalities in Texas are human-caused, which is almost always additive¹⁰ (in this case additive means that an animal would have unlikely died, if not for having been killed by a person).

Under the Parks and Wildlife Code, TPWD has an obligation to “develop and administer management programs to ensure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.” Tex. Parks & Wild. Code Ann. § 67.002. The Commission therefore has the authority to issue regulations establishing “any limits on the taking . . . of nongame fish or wildlife that the department considers necessary to manage the species.” *Id.* § 67.004. We ask that the Commission to temporarily limit the take of mountain lions in South Texas to 5 animals until TPWD determines the size and status of the mountain lion population in this area and sustainable hunting limits for the region are established. This temporary limit would include all counties in the TPWD South Texas Plains Wildlife District (Fig. 2).

This limit on take would not include killing a mountain lion for the following purposes:

- a. For public safety or for protection of threatened and endangered species by state or federal agents;
- b. The incidental death of an animal a result of scientific research;
- c. For humane euthanasia; and,
- d. For livestock protection, once a loss is confirmed and once a depredation permit is obtained, as defined in [Texas Code Chapter 65, Subchapter 1, Rule 65.220](#).



Figure 2. Counties in South Texas for which the limit of take would apply.

5. Prohibit canned hunting of mountain lions

We ask the Commission to ban canned mountain lion hunts, as these practices run counter to the tenets of fair chase, are ethically questionable, and open TPWD to unnecessary criticism. We define “canned” hunts as take of mountain lions that have been restricted from movement during a hunt or prior to a hunt, as defined in Parks and Wildlife Code Chapter 62, Subchapter F, Sec 62.101, 62.102, 62.103, including actions that intentionally injure an animal or hold an animal in a trap or other enclosure prior to the hunt. Currently, Texas Parks & Wildlife Code does prohibit killing or attempting to injure a “dangerous wild animal” if the animal is “in captivity,” or “released from captivity ... for the purpose of being killed,” but mountain lions are not included in the definition of “dangerous wild animal.” Tex. Parks & Wild. Code Ann. §§ 62.101,.

Under the Parks and Wildlife Code, TPWD has an obligation to “develop and administer management programs to ensure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.” Tex. Parks & Wild. Code Ann. § 67.002(a). Accordingly, the Commission has broad authority to issue regulations establishing “any limits on the taking, possession, propagation, transportation, importation, exportation, sale, or offering for sale of nongame fish or wildlife that the department considers necessary to manage the species.” *Id.* § 67.004(a).

6. Form a stakeholder advisory group to collaborate with TPWD to establish a mountain lion management plan for Texas by EOY 2025.

We request the Commission and TPWD commit to the creation of a science-based mountain lion management plan by December, 2025, and that this management plan include input from diverse

stakeholder groups empowered via the creation of a TPWD-led Mountain Lion Advisory Committee. This management plan must include baseline knowledge of mountain lion abundance and distribution across Texas, and regional management actions, including harvest guidelines co-created and sanctioned by the Advisory Committee. The creation of this committee will allow TPWD to “develop and administer management programs to insure the continued ability of nongame species of fish and wildlife to perpetuate themselves successfully.” Tex. Parks & Wild. Code Ann. § 67.002(a). Moreover, TPWD “is under the policy direction of the Parks and Wildlife Commission.” *Id.* § 11.011.

The Advisory Committee will be supported (e.g., provided presentations and materials) to ensure they are aware of the best available science on the status of the species in Texas, as well as the science governing sustainable hunting limits, such as quotas and seasons, and regulations for the take of mountain lions for predator control purposes. TPWD will act as a stakeholder within the Advisory Committee, which should include representatives from a broad group of constituents and organizations and be well-balanced with membership from urban and rural communities, consumptive and non-consumptive users of wildlife, and different cultures (e.g., Latino representation). We suggest TPWD invite participants from the following geographies and organizations, to ensure equitable opportunity for participation by diverse stakeholders: hunting conservation organizations, Texas livestock organizations, wildlife conservation organizations, outdoor recreation organizations (e.g., hiking or bird watching), animal welfare organizations, South Texas, West Texas, academic scientists, independent mountain lion biologists, and TPWD biologists and policy managers.

References (Endnotes follow)

- Baune, C., Wolfe, L.L., Schott, K.C., Griffin, K.A., Hughson, A.G., Miller, M.W., Race, B. (2021). Reduction of Chronic Wasting Disease prion seeding activity following digestion by mountain lions. *Mosphere*, 6(6), e00812-21.
- Beausoleil, R. A., G. M. Koehler, B.T. Maletzke, B.N. Kertson, and R.G. Wielgus. "Research to Regulation: Cougar Social Behavior as a Guide for Management." *Wildlife Society Bulletin* 37, no. 3 (2013): 680-88.
- Colorado Parks & Wildlife. "Colorado West Slope Mountain Lion (Puma Concolor) Management Plan: Northwest and Southwest Regions." edited by Colorado Department of Natural Resources, 2020.
- Elbroch, L. M., and Patricia Harveson. "It's Time to Manage Mountain Lions in Texas." *EcoEvoRxiv*, 28 May 2022. Web.
- Harveson, P. M., C. Dennison, B. Geary, D. Milani, D. Rumbelow, and L. A. Harveson. "Mountain Lion Ecology and Predator-Prey Dynamics in the Davis Mountains." edited by Borderlands Research Institute. Alpine, TX, USA., 2016.
- Holbrook, J. D., R. W. DeYoung, M. E. Tewes, and J. H. Young. "Demographic History of an Elusive Carnivore: Using Museums to Inform Management." *Evolutionary Applications*, no. 5 (2012a): 619-28.
- Holbrook, J. D., R. W. DeYoung, J. E. Janecka, M. E. Tewes, R. L. Honeycutt, and J. H. Young. 2012a. Genetic diversity, population structure, and movements of mountain lions in Texas. *Journal of Mammalogy* 93:989–1000.
- Iossa, G., C. D. Soulsbury, and S. Harris. "Mammal Trapping: A Review of Animal Welfare Standards of Killing and Restraining Traps." *Animal Welfare* 16, no. 3 (Aug 2007): 335-52.
- Krumm, C. E., M. M. Conner, N. T. Hobbs, D. O. Hunter, and M. W. Miller. "Mountain Lions Prey Selectively on Prion-Infected Mule Deer." *Biology Letters* 6, no. 2 (2009): 209-11.
- Sargeant, Glen A., Duane C. Weber, and Daniel E. Roddy. "Implications of Chronic Wasting Disease, Cougar Predation, and Reduced Recruitment for Elk Management." *The Journal of Wildlife Management* 75, no. 1 (2011): 171-77.
- Wild, Margaret A., N. T. Hobbs, M. S. Graham, and M. W. Miller. "The Role of Predation in Disease Control: A Comparison of Selective and Nonselective Removal on Prion Disease Dynamics in Deer." *Journal of Wildlife Diseases* 47, no. 1 (2011): 78-93.

ENDNOTES

- ¹ Texas Parks and Wildlife. 2020. Species of Greatest Conservation Need. Retrieved from <https://tpwd.texas.gov/landwater/land/tcap/sgcn.phtml>.
- ² Holbrook, J. D., R. W. DeYoung, M. E. Tewes, and J. H. Young. 2012b. Demographic history of an elusive carnivore: using museums to inform management. *Evolutionary Applications* 341 5:619–628.
- ³ Elbroch, L. M., and Patricia Harveson. "It's Time to Manage Mountain Lions in Texas." *EcoEvoRxiv*, 28 May 2022. Web.
- ⁴ See e.g., Margaret A. Wild et al., "The Role of Predation in Disease Control: A Comparison of Selective and Nonselective Removal on Prion Disease Dynamics in Deer," *Journal of Wildlife Diseases* 47, no. 1 (2011); C. E. Krumm et al., "Mountain Lions Prey Selectively on Prion-Infected Mule Deer," *Biology Letters* 6, no. 2 (2009); Glen A. Sargeant, Duane C. Weber, and Daniel E. Roddy, "Implications of Chronic Wasting Disease, Cougar Predation, and Reduced Recruitment for Elk Management," *The Journal of Wildlife Management* 75, no. 1 (2011). Baune, C., Wolfe, L.L., Schott, K.C., Griffin, K.A., Hughson, A.G., Miller, M.W., Race, B. (2021). Reduction of Chronic Wasting Disease prion seeding activity following digestion by mountain lions. *Mosphere*, 6(6), e00812-21.
- ⁵ 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).
- ⁶ Holbrook, J. D., R. W. DeYoung, J. E. Janecka, M. E. Tewes, R. L. Honeycutt, and J. H. Young. 2012a. Genetic diversity, population structure, and movements of mountain lions in Texas. *Journal of Mammalogy* 93:989–1000.
- Holbrook, J. D., R. W. DeYoung, M. E. Tewes, and J. H. Young. 2012b. Demographic history of an elusive carnivore: using museums to inform management. *Evolutionary Applications* 341 5:619–628.
- ⁷ Holbrook, J. D., R. W. DeYoung, M. E. Tewes, and J. H. Young. 2012b. Demographic history of an elusive carnivore: using museums to inform management. *Evolutionary Applications* 341 5:619–628.
- ⁸ See e.g. which note a 14% hunting mortality rate limit and 16% total human-caused mortality rate limit, R. A. Beausoleil et al., "Research to Regulation: Cougar Social Behavior as a Guide for Management," *Wildlife Society Bulletin* 37, no. 3 (2013); Colorado Parks & Wildlife, "Colorado West Slope Mountain Lion (Puma Concolor) Management Plan: Northwest and Southwest Regions," ed. Colorado Department of Natural Resources (2020).
- ⁹ Logan, K. A., and J. P. Runge. 2021. Effects of hunting on a puma population in Colorado. *Wildlife Monographs* 209:1–35.
- Elbroch, L. M., and Patricia Harveson. "It's Time to Manage Mountain Lions in Texas." *EcoEvoRxiv*, 28 May 2022. Web.
- ¹⁰ Wolfe, M. L., D. N. Koons, D. C. Stoner, P. Terletzky, E. M. Gese, D. M. Choate, and L. M. Aubrey. 2015. Is anthropogenic cougar mortality compensated by changes in natural mortality in Utah? Insight from long-term studies. *Biological Conservation* 182:187–196.