COUGAR CONSERVANCY

August 6, 2020

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Our mission is to reduce human-wildlife conflict and conserve cougar populations through science-based management and conservation.

The Honorable Anthony Portantino
Chair, Senate Appropriations Committee
State Capitol, Room 3086
Sacramento, CA 95814

RE: Assembly Bill 1788 (California Ecosystems Protection Act) - Support

Dear Chairman Portantino and Honorable Members of the California Senate Committee on Appropriations,

We urge you to review the scientific evidence on the impacts to mountain lions (*Puma concolor*) and other wildlife in California when considering Assembly Bill (AB) 1788, the California Ecosystems Protection Act.

Mountain lions provide vital ecological services that can improve habitat quality and sustain biodiversity. By regulating the behavior and abundance of their prey, mountain lions can mitigate negative consequences associated with ungulate and mesopredator population explosions. Additionally, mountain lion prey carcasses serve as nutrient inputs for other mammals, birds, reptiles, amphibians, insects, and even regenerate soils.[1]

Recent research has shown that some mountain lion populations in California could disappear in the coming decades.[2] As of April of 2020, mountain lions in Southern California and along the Central Coast were designated a candidate species under the California Endangered Species Act (CESA).

A statewide study of mountain lion habitat selection in California led by senior environmental scientist and mountain lion specialist at the California Department of Fish and Wildlife (CDFW) Justin Dellinger concluded that land management policy has a greater impact on the viability of threatened mountain lion populations than the availability of suitable habitat alone.[3] Genetically distinct mountain lion populations in Southern California and the Central Coast that are vulnerable to extinction require efforts beyond protecting natural habitat to ensure their persistence.

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[1] Elbroch, M. L., C. O'Malley, M. Peziol, and H. B. Quigley. 2017. Vertebrate diversity benefiting from carrion provided by pumas and other subordinate, apex felids. Biological Conservation 215:123-131.

[2] Benson, J. F., P. J. Mahoney, T. W. Vickers, J. A. Sikich, P. Beier, S. P. D. Riley, H. B. Ernest, and W. M. Boyce. 2019. Extinction vortex dynamics of top predators isolated by urbanization. Ecological Applications 29(3):e01868.

[3] Dellinger, J. A., B. Cristescu, J. Ewanyk, D. J. Gammons, D. Garcelon, P. Johnston, Q. Martins, C. Thompson, T. W. Vickers, C. C. Wilmers, H. U. Wittmer, S. G. Torres. 2019. Using mountain lion habitat selection in management. The Journal of Wildlife Management 2019:1-13. https://doi.org/10.1002/jwmg.21798

Currently, we know that mountain lions are being exposed to anticoagulant rodenticides (ARs) at alarming rates in California, that exposure can result in mortality, and that population-level impacts are unknown. In an ongoing health and monitoring program led by CDFW, scientists have found that >95% of mountain lions tested in California have been exposed to ARs, with >70% of those lions having 3 or more ARs in their system.[4] There is new evidence to suggest that exposure to ARs are reaching wildlife before they are even born. Researchers at the Department recently detected ARs in mountain lion fetuses, a phenomenon previously detected in bobcats in Southern California.[5,6]

In the small, isolated populations of Southern California, four mountain lions tracked as part of the Santa Monica Mountains National Park Service (NPS) study have died as a result of rodenticide exposure, including P-3, P-30, P-34, and P-53.

Increased susceptibility to severe mange pathology, an ectoparasitic disease caused by mites in the scabies family, has also been linked to the immunosuppressive effects of AR consumption in California's mammalian carnivores including mountain lions.[7] While spontaneous recovery from mange infestations can occur, mange lethality is significantly more likely in diseased animals that have also consumed ARs.[8] Mange related fatalities in Southern California bobcats with a 92% observed AR exposure rate have already precipitated a population crash that resulted in extreme genetic bottlenecking and years of sustained extirpation from some habitat fragments.[3]

Given that California's Central Coast and Southern mountain lion populations were granted candidate species status under CESA due to concerns over their long-term viability and that bioaccumulation of ARs have caused multiple mortalities within these populations, we support a moratorium on second generation anticoagulant rodenticides (SGARs) that would allow further scientific investigation of AR impacts on mountain lion demography, especially in regions where mountain lions face the threat of extinction.

Proper sanitation and exclusionary practices could replace the use of ARs for rodent pest management under most circumstances. These non-toxic preventative measures succeed in protecting non-target wildlife from poisoning and death and eliminate costs associated with mitigating AR damages such as wildlife rehabilitation.

At the discretion of CDFW, for example, the famous mountain lion of Griffith Park, P-22, had to be recaptured and rehabilitated by NPS researchers to ensure he survived AR poisoning and severe

[4] California Department of Pesticide Regulation [CDPR]. 2018. An investigation of anticoagulant rodenticide data submitted to the Department of Pesticide Regulation. Sacramento, CA, USA.

[5] Rudd, J. L., S. C. McMillin, M. W. Kenyon Jr., R. H. Poppenga, and D. L. Clifford. 2019. Anticoagulant rodenticide exposure in California mountain lions (Puma concolor). The Wildlife Society Western Section Conference, 4-8 February 2019, Fish Camp, California, USA.

[6] Serieys, L. E., T. C. Armenta, J. G. Moriarty, E. E. Boydston, L. M. Lyren, R. H. Poppenga, K. R. Crooks, R. K. Wayne, and S. P. Riley. 2015. Anticoagulant rodenticides in urban bobcats: exposure, risk factors and potential effects based on a 16-year study. Ecotoxicology 24:844-862.

[7] Riley, S. P. D., C. Bromley, R. H. Poppenga, F. A. Uzal, L. Whited, R. M. Sauvajot. 2007. Anticoagulant exposure and notoedric mange in bobcats and mountain lions in urban southern California. Journal of Wildlife Management 71(6):1874-1884.

[8] Serieys, L. E. K., A. J. Lea, M. Epeldegui, T. C. Armenta, J. Moriarty, S. VandeWoude, S. Carver, J. Foley, R. K. Wayne, S. P. D. Riley, and C. H. Uittenbogaart. 2018. Urbanization and anticoagulant poisons promote immune dysfunction in bobcats. Proceedings of the Royal Society B 285:1-10.

mange (Figure 1). P-47, a mountain lion known for his great stature, became the latest AR casualty of NPS' long-term study of Southern California carnivores in 2019 (Figure 2).

Given the scientific facts mentioned above, we respectfully ask that you support Assembly Bill 1788.

We acknowledge that the pandemic has significantly impacted our personal and professional lives, and the Cougar Conservancy would like to sincerely thank you for your time and consideration in this matter.

Respectfully,

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Leigh Douglas, B.A.
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cc: Members of the Senate Committee on Appropriations
Assemblymember Richard Bloom

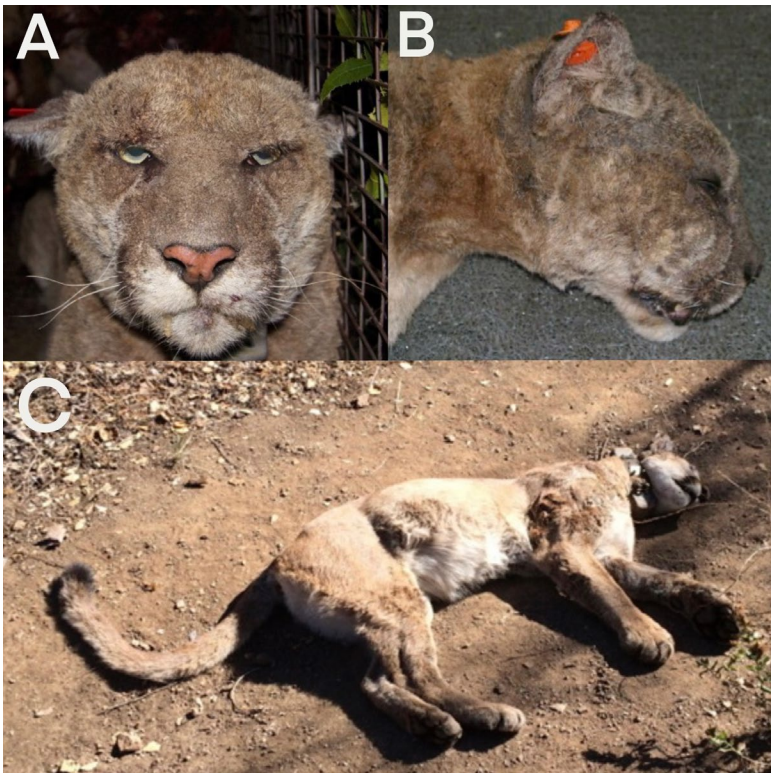

Figure 1. (A) P-22 pictured with severe notoedric mange symptoms when he was recaptured to administer medical treatment. (B) P-3 was found dead in late 2004 after being exposed to anticoagulant rodenticides and contracting mange. (C) P-34 was found dead in September 2015 after being poisoned by brodifacoum, bromadiolone, chlorophacinone, difethialone, and diphacinone. Photos: National Park Service (https://www.nps.gov/samo/learn/news/gp-lion-exposed-to-poison.htm)

Figure 2. Testing of P-47's liver tissue by the California Animal Health and Food Safety Lab revealed that the 3-year-old male had been exposed to six different anticoagulant compounds and died of internal hemorrhaging in his head and lungs in March 2019. Photos: National Park Service (https://www.nps.gov/samo/learn/nature/p-47.htm)