

Via Email and Federal Express

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Joanna Eide, Legal Services
Washington Department of Fish and Wildlife
P.O. Box 43144
Olympia, WA 98504-3144
Joanna.eide@dfw.wa.gov

Cc: Washington Fish & Wildlife Commission
600 Capitol Way N.
Olympia, WA 98501

Governor Jay Inslee
Office of the Governor
P.O. Box 40002
Olympia, WA 98504-0002

Re: Petition to Amend Washington Administrative Code Section 232-28-297

The Humane Society of the United States (HSUS), Conservation Northwest, Center for Biological Diversity, Mountain Lion Foundation, Wolf Haven International, The Cougar Fund, The Lands Council, Predator Defense, Kettle Range Conservation Group, and Gary Koehler, Ph. D., collectively “Petitioners,” hereby petition the Washington Fish & Wildlife Commission (the “Commission”), pursuant to RCW § 34.05.340(3) and RCW § 34.05.330, to amend the Commission’s May 1, 2015 regulation that unjustifiably and unsustainably increased the hunting quotas for cougars.

On February 2, 2015, the Commission published notice of a proposed rulemaking establishing regulations for, in relevant part, the 2015-2016,

2016-2017 and 2017-2018 cougar hunting seasons.¹ The proposal appeared to carefully consider the scientific recommendations of the Washington Department of Fish and Wildlife (the “Department” or “WDFW”) and other leading cougar experts. It proposed maintaining the existing harvest rate of 12-16 percent of total population, on the grounds that “[r]ecently published studies suggest that a *12-16 percent harvest rate* of a local cougar population is the *maximum* harvest rate that still has a high probability for maintaining a stable cougar population along with stable adult male territorial behavior.”² Public comment was solicited (and submitted by Petitioners) and a public hearing on the Proposed Rule was held on March 21, 2015.

But at the April 10 Commission meeting where the Proposed Rule was docketed for finalization, the Commission abruptly jettisoned this reasoning, proposing and approving a last-minute amendment increasing cougar harvest rates in select areas, the zones where wolf packs overlap with cougars, to 17-21 percent of total population.³ This amendment, which nearly doubled harvest rates in some areas, was made without providing any prior notice to the public. Many stakeholders with serious concerns as to the lack of scientific support for the change and its potential for adverse ecological consequences were made aware of the amendment for the first time *after* it passed, and were consequently left without opportunity to comment in opposition to the regulation.

¹ Proposed Rule Making, WSR 15-04-085 (Feb 2, 2015) (“Proposed Rule”).

² *Id.*, at 10 (emphasis added).

³ Rule Making Order, WSR 15-10-066 (May 1, 2015) (“Final Rule”).

To ensure that this significant policy change receives the careful deliberation and public input required by law and sound principles of wildlife management, Petitioners hereby petition the Commission and Department to amend WAC 232-28-297 to revert cougar harvest guidelines in the 14 hunting areas altered in the Final Rule to the science-based levels originally submitted in the Proposed Rule. For the reasons outlined below, the best available science strongly supports the petitioned action and the Commission therefore has a legal duty to reconsider this arbitrary regulation.

This petition is submitted pursuant to RCW § 34.05.340(3) on the grounds that the Final Rule is substantially different than the Proposed Rule, and as a citizen petition pursuant to RCW § 34.05.330 to amend WAC 232-28-297. It is filed within sixty days of the May 1, 2015 publication of the Final Rule by the Code Reviser.⁴ Proposed amended rule language is attached herewith as Attachment A.

I. Interests of the Petitioners

The Humane Society of the United States (“The HSUS”) is a nonprofit organization that promotes the protection of all animals. It is the largest animal protection organization in the United States, with several staff and thousands of members in Washington. Since its inception in 1952, The HSUS has worked to foster the humane treatment of wildlife through various programs, including initiatives to protect native carnivores.

⁴ RCW § 34.05.340(3) (60-day timeframe for filing petitions based on variance between final and proposed rule).

Conservation Northwest, based in Bellingham, Washington, has been working to conserve the wildlife and wildlands of the Pacific Northwest for more than 25 years. It focuses on protecting viable populations of large carnivores, including cougars, bears, wolves, wolverine, and lynx, and ensuring that they have large, connected landscapes with high-quality habitat in which to thrive, thereby ensuring that smaller species important to maintaining biodiversity and ecosystems are also healthy.

The Center for Biological Diversity is a national, nonprofit conservation organization with more than 900,000 members and online activists dedicated to the protection of wildlife and wild places. The Center submits this petition in support of sound, science-based cougar management on behalf of our thousands of Washington members.

The Mountain Lion Foundation is a 501(c)3 non-profit conservation organization founded in 1986 to protect cougars and their habitat. It is registered to do business in Washington, and has been involved with protecting Washington's cougars since the Initiative 655 campaign in 1996.

Wolf Haven International disagrees with using wolves as an excuse to pass laws to implement scientifically unsound kill rates of another predator just because wolves exist in the same landscape. It believes that wildlife officials should start with agreed-upon scientific parameters, and set kill rates based on public tolerance within those parameters.

The Cougar Fund is a national organization with many constituents in the State of Washington. Its mission is to protect mountain lions and other large carnivores through an effective trident of education, advocacy, and the promotion of current best science as the basis for wildlife management.

The Lands Council has been working to protect wildlife, including important predators such as cougar, for over 30 years. It has over 1500 members and supporters in Washington State.

Predator Defense is extremely concerned about the senseless killing of cougars and other territorial apex predators across the country. It is a national nonprofit organization with members in Washington.

Kettle Range Conservation Group is a non-profit organization founded in Republic, Washington in 1976 and whose mission is to defend wilderness, protect biodiversity, and restore ecosystems of the Columbia River Basin. Kettle Range Conservation Group staff and members regularly recreate throughout Washington for the purposes of hiking, recreation, bird watching, observing wildlife such as cougars, wolves and other recreational and professional pursuits.

Gary M. Koehler, Ph. D. is a retired Research Scientist for Carnivore Investigations at Washington Department of Fish and Wildlife, and the current Scientific Advisor for Snow Leopard Trust and Save China's Tigers. As WDFW's principal investigator for the studies of cougars in Washington in

his position with WDFW, and co-author of many of the publications cited in the petition, he has concerns for the Commission's lack of scientific and biological support for their decision to increase harvest for cougars in the selected portions of the state.

II. Factual and Scientific Support for Petitioned Action

From 2000 to the present, Washington State University, University of Washington, and the Department have collaborated on a series of research projects on Washington cougar management.⁵ These studies, conducted by experts - including the Department's own biologists - have formed the scientific basis for the Department's cougar management program in previous years.⁶ Yet the quota increase in the Final Rule represents a sudden and unsubstantiated shift away from the nearly unanimous conclusions reached by these researchers. It departs dramatically from the harvest thresholds recommended by cougar biologists,⁷ and ignores strong evidence of

⁵ See, e.g., Kaylie A. Peebles *et al.*, "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations," PLoS ONE 8, no. 11 (Nov. 2013); Richard A. Beausoleil *et al.*, "Research to Regulation: Cougar Social Behavior as a Guide for Management," Wildlife Society Bulletin 37, no. 3 (June 2013); Hilary S. Cooley *et al.*, "Does hunting regulate cougar populations? A test of the compensatory mortality hypothesis," Ecology 90, no. 10 (2009) ("Cooley *et al.* 1"); Hilary S. Cooley *et al.*, "Source Populations in Carnivore Management: Cougar Demography and Emigration in a Lightly Hunted Population," Animal Conservation 12, no. 4 (2009) ("Cooley *et al.* 2"); see also H.S. Robinson *et al.*, "Sink Populations in Carnivore Management: Cougar Demography in a Hunted Population," Ecological Applications 18, no. 4 (2008); C.M.S. Lambert *et al.*, "Cougar Population Dynamics and Viability in the Pacific Northwest," Journal of Wildlife Management 70 (2006).

⁶ See Washington Department of Fish and Wildlife, Final Supplemental Environmental Impact Statement for the 2015-2021 Game Management Plan" (July 31, 2014) ("Department EIS") ("The scientific findings from [these] projects...have been incorporated into how the Department currently manages cougar.") .

⁷ See, e.g. Beausoleil *et al.* at 684, 686 (14 percent harvest threshold); Department EIS at 109-10 (12-16 percent harvest threshold).

deleterious consequences for cougars and humans alike. It is imperative that the Commission open a public comment period in order to fully consider the quota increase in light of the best available science, and to engage stakeholders in a dialogue about the rationale animating this change in course.

a. The Best Available Science Concludes that Increased Hunting Quotas Will Harm Cougar Social Structures, Increase Human-Cougar Conflict, and Impede the Department’s Cougar Management Goals

i. Population Management and Dynamics

Studies specific to Washington cougars have consistently demonstrated that increased sport hunting does not result in a net change in total cougar population within a given area.⁸ Cougars display long-distance immigration and emigration patterns that compensate for and offset the population effects of sport hunting (the “source-sink” model).⁹ Even heavily hunted areas have shown no net reduction in the population.¹⁰ Because immigrants will inevitably replace cougars removed from the landscape by hunters, sport hunting is an ineffective means of controlling total population size.

But even though increased hunting will not reduce the total population, it will nevertheless have potentially harmful effects on cougar social dynamics and population structure. As the Department itself recognized in its Proposed Rule:

⁸ See Peebles *et al.*, at 6; *see also* Cooley *et al.* 1 at 2919.

⁹ See Cooley *et al.* 1, at 2913-14; *see also* Peebles *et al.*, at 6.

¹⁰ *Id.*

Recently published studies suggest that a 12-16 percent harvest rate of a local cougar population is the maximum harvest rate that still has a high probability for maintaining a stable cougar population along with stable adult male territorial behavior. Harvest rates in excess of 16 percent can result in declines in core populations of breeding females, and excessive male harvest rates result in the loss of adult male territorial behavior, which acts as a regulatory mechanism for local male cougar numbers.¹¹

The Department's reading of the leading studies is correct. They have consistently shown that removal of adult males through sport hunting adversely affects the sex and age demographics of local cougar populations by creating territorial vacancies that attract subadult, dispersing males.¹² This compensatory immigration by subadult males causes increased infanticide and a decline in adult female and kitten survival rates, undermining the local population's ability to stabilize under heavier hunting pressure.¹³

ii. Human-Cougar Conflict and Social Tolerance

The benefits of a stable social structure are not limited to the cougars themselves. Indeed, studies conducted by Department biologists and other experts have shown time and time again that the disruption in demographic structure caused by hunting in excess of the recommended 12-16 percent range generates *more* complaints and livestock depredations. Leading studies relied on by the Department suggest that "increased harvest up to 24% of the estimated population had no effect on reducing the overall number of cougar-

¹¹ Proposed Rule, at 10.

¹² Cooley *et al.* 1, at 2918-9; *see also* Cooley *et al.* 2, *supra* n. 5; Lambert *et al.*, *supra* n. 5; Robinson *et al.*, *supra* n. 5; D. Stoner, M. , M.L. Wolfe, and D. Choate, "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics," *Journal of Wildlife Management* 70, (2006);

¹³ Cooley *et al.* 1, at 2919. R. B. Wielgus *et al.*, "Effects of Male Trophy Hunting on Female Carnivore Population Growth and Persistence," *Biological Conservation* 167 (2013).

human conflicts”¹⁴ and rather “[t]he odds of increased complaints and livestock depredations increased dramatically...with increased cougar harvest.”¹⁵ This is because the demographic shifts wrought by increased harvest attract subadult male immigrants who are far more likely to engage humans and livestock, and who push adult females into hunting suboptimal prey or entering human-inhabited areas in search of food.¹⁶ The best available science therefore demonstrates that, despite its intentions, the Final Rule stands to worsen human-cougar conflict.¹⁷

b. No Evidence Exists Supporting the Purported Rationale for Increasing Quotas

Per the explanatory statement prepared by the Department, the Final Rule seeks to “increase the harvest guideline from 12-16% of the cougar population...to 17-21% in hunt areas that overlap known wolf packs.”¹⁸ While that statement does not specifically address the rationale underpinning the increased quotas for these areas, statements at Commission meetings indicate that the purpose of this change was to improve social tolerance of predators in areas with both cougar and wolf populations.

There is simply no evidence suggesting that the increased cougar quotas will achieve improved social tolerance of wolves. But the premise—that hunting carnivores will increase tolerance—has been empirically proven

¹⁴ Department EIS at 108, *citing generally* Peebles *et al.*

¹⁵ Peebles *et al.*, at 1.

¹⁶ *Id.*; *see also* B.N. Kertson, “Cougar ecology, behavior, and interactions with people in a wildland-urban environment in western Washington,” Dissertation, University of Washington (2010).

¹⁷ *See generally* Peebles *et al.*

¹⁸ Final Rule, Attachment B.

as false.¹⁹ Moreover, ample evidence suggests that increasing the hunting of cougars will have the opposite effect. First, the notion that hunting additional *cougars* will ease the social tension created by an unacceptable level of human conflict with *wolves* — an entirely different species — is facially nonsensical and is not supported by any scientific evidence.²⁰ By its plain terms the Final Rule does not address wolves, and it is unreasonable to expect that social tolerance of wolves will improve when the same number of wolves will be managed in the same way after the Final Rule is implemented.

There is, however, credible reason to believe that the Final Rule will *worsen* social tolerance of native carnivores. As discussed above, the social destabilization created by heavier cougar hunting raises the risk of increased levels of livestock depredation and other forms of human-cougar conflict.²¹ To the extent that social tolerance concerns stem from negative human interactions with wildlife, research indicates that increased harvest thresholds can *harm* social tolerance by generating more complaints and more depredations.²² If local human communities are truly unable to differentiate between cougar and wolf-related conflict, then the expected uptick in cougar depredations caused by the Final Rule may have an adverse spillover effect on the social tolerance of wolves as well.

¹⁹ Adrian Treves, "Hunting for Large Carnivore Conservation," *Journal of Applied Ecology* 46, (2009).

²⁰ Wolves, cougars, and bears can limit each other's' populations through competition and predation, a notion call *intraguild predation*. Toni Ruth and Kerry Murphy, "Competition with Other Carnivores for Prey," in *Cougar: Ecology and Conservation*, ed. Maurice Hornocker and Sharon Negri (Chicago and London: University of Chicago Press, 2010).

²¹ See, e.g., Peebles *et al.* at 6.

²² *Id.*

Finally, it should be noted that the Department’s own research illustrates that social tolerance of cougars among Washingtonians is presently very high.²³ A statewide agency survey found that 92% of respondents “agree with the statement that cougars are an essential component of Washington ecosystems, and 92% agree with the statement that cougars have an inherent right to live here.”²⁴ Conversely, “87% of Washington residents disagree with the statement that cougars are a nuisance animal damaging rural economies.”²⁵ And the overwhelming social tolerance for cougars is not limited to urban areas; rather “the positive value of cougars is a predominant sentiment in both urban and rural communities.”²⁶ In sum, the best available evidence proves that raising hunting quotas seeks to fix something that isn’t broken, and risks birthing a social tolerance problem where one does not currently exist.

II. Legal Support for Petitioned Action

a. The Petition Should Be Granted Because the Final Rule is Substantially Different From the Proposed Rule

The Washington Administrative Procedure Act (“WAPA”), RCW § 34.05 *et seq.*, governs Commission rulemaking²⁷ and protects the right of stakeholders and the general public to a robust notice and comment process.

To prevent post-notice amendments to the substance of a proposed rule from

²³ Washington Department of Fish and Wildlife, “Cougar Outreach and Education in Washington State” (Nov. 30, 2010).

²⁴ *Id.*, at 17.

²⁵ *Id.*

²⁶ *Id.*, at 52.

²⁷ RCW § 77.04.130 (“Rules of the commission shall be adopted by the commission or a designee in accordance with chapter 34.05 RCW.”).

depriving interested parties of these procedural rights, it provides that “an agency may not adopt a rule that is substantially different from the rule proposed in the published notice of proposed rule adoption or a supplemental notice in the proceeding.”²⁸ When, like in this case, no such supplemental notice is provided, WAPA allows “any interested person” to “petition the agency to amend any portion of the adopted rule that is substantially different from the proposed rule.”²⁹ This Petition seeks to amend the increased harvest guidelines contained in the Final Rule and restore them to the levels proposed in the Proposed Rule (and does not otherwise seek to amend the Final Rule). Because the Final Rule meets two out of three statutory factors – out of which any one is sufficient to make a finding of substantial difference – the Commission should initiate a rulemaking process implementing the petitioned amendment.³⁰

i. Difference in Effect

One of the factors to be considered in determining whether “an adopted rule is substantially different from the proposed rule on which it is based” is “[t]he extent to which the effects of the adopted rule differ from the effects of the published proposed rule.”³¹ Here, the effects of the Final Rule differ from the Proposed Rule because the Final Rule substantially increased

²⁸ RCW § 34.05.340.

²⁹ RCW § 34.05.340(3). Notably, the agency may not reject petitions submitted pursuant to this section and instead *must* initiate rulemaking proceedings if substantial variance is shown.

³⁰ RCW § 34.05.340(2) (three factors for substantial difference are difference in effect, difference in scope, inadequate notice to persons affected).

³¹ *Id.*

cougar quotas in fourteen areas while the Proposed Rule followed the recommendation of the Department’s biologists and other experts and kept quotas at status quo levels. And far from being a mere routine calibration of harvest guidelines, the negative ecological effects of this change – which allows for a *doubling* of cougar take in some GMUs³² – will be substantial as well. As described above, the scientific evidence predicts that the Final Rule will destabilize cougar social structures in the fourteen areas subject to the increase, resulting in imbalanced age and sex distribution, increased human-cougar conflict, and increased livestock depredation.³³

ii. **Inadequate Notice to Stakeholders**

A second factor to be considered in determining whether a final rule is “substantially different” than a proposed rule is “the extent to which a reasonable person affected by the adopted rule would have understood that the published proposed rule would affect his or her interests.”³⁴ This factor is meant to ensure that stakeholders are put on adequate notice of a possible rule change affecting their interests so that they can exercise their public input rights.

Here, many stakeholders, including non-consumptive users like Petitioners and their members, were *not* put on adequate notice (or any

³² For instance, the new maximum harvest guideline for GMUs 113, 145, 166, 175, 178 is double the prior minimum guideline. *See* Final Rule, sec. 2.

³³ These impacts were *not* considered in the Department EIS, which only analyzed the environmental impact of the Department’s recommended 12-16% harvest guideline. *See* Department EIS, *supra* n. 6, at 109-10.

³⁴ RCW § 34.05.340(2).

notice at all) of the possibility of a quota increase. Not only did the Proposed Rule maintain harvest guideline numbers at status quo levels, it expressly set out in its statement of purpose that “[t]he harvest guideline represents a sustainable 12-16 percent harvest rate for each hunt area.”³⁵ Absent supplemental notice, which was not provided in this rulemaking, a reasonable party would not have predicted that such a proposal would be stretched, at the eleventh hour, into an increase to 17-21 percent harvest rates. Stakeholders like Petitioners and other conservation groups were consequently denied their right to meaningful public input on the quota increase. And other interested parties – including Washingtonians who may now be subject to heightened wildlife conflict and livestock depredation because they happen to live near the increased harvest areas – were denied their right to notice and comment on a policy change that will concretely affect their interests.

b. Even if the Final Rule Did Not Substantially Differ From the Proposed Rule, the Commission Has the Authority and Mandate to Amend the Final Rule

WAPA also provides “any person” the right to “petition an agency requesting the...amendment...of any rule.”³⁶ If the Commission determines that the Final Rule is not substantially different from the Proposed Rule

³⁵ The proposal continued, “Recently published studies suggest that a 12-16 percent harvest rate of a local cougar population is the maximum harvest rate that still has a high probability for maintaining a stable cougar population along with stable adult male territorial behavior. Harvest rates in excess of 16 percent can result in declines in core populations of breeding females, and excessive adult male harvest rates result in the loss of adult male territorial behavioral, which acts as a regulatory mechanism for local cougar numbers.” Proposed Rule, at 10.

³⁶ RCW § 34.05.330(1).

pursuant to RCW § 34.05.340, Petitioners request in the alternative that the Commission consider this Petition to amend WAC 232-28-297.

The petitioned amendment is plainly within the authority of the Commission and Department to implement pursuant to its broad rulemaking power.³⁷ Indeed, the Department is not only authorized but *mandated* to “conserve the wildlife... in a manner that does not impair the resource” and may only “authorize the taking of wildlife... in manners or quantities” that “[do] not impair the supply of these resources.”³⁸ These mandates counsel the calibration of hunting quotas in consultation with experts and in accordance with the best available science in order to avoid type of deleterious consequences described above. The Final Rule violates the legislature’s intent by raising cougar quotas far beyond the level recommended by expert biologists, risking well-documented “impairment”³⁹ of a wildlife resource held in the public trust. Furthermore, the scientific documentation militating against the Final Rule is so overwhelming and the Commission’s justification so weak that the Final Rule may be considered “arbitrary and capricious” or “not supported by evidence that is substantial” in violation of WAPA.⁴⁰

In addition to satisfying the Commission’s statutory mandates under its authorizing statute and WAPA, the proposed amendment would also bring Department regulations into alignment with its prior reasonable policy

³⁷ RCW §§ 77.04.012; 77.04.090.

³⁸ RCW § 77.04.012.

³⁹ *Id.*

⁴⁰ RCW § 34.05.570(2)(c).

positions. The Department has long prioritized using the best available science in its wildlife-management decisions, as evidenced by the Proposed Rule and the 2015-2021 Game Management Plan Environmental Impact Statement, both of which proposed harvest guidelines of 12-16 percent premised on a careful analysis of the studies referenced in this Petition.⁴¹ Adopting the petitioned amendment would restore consistency to a management program that had previously been defined by rational, science-based decision-making.

IV. Conclusion

The Final Rule was undoubtedly a procedural and scientific misstep and the Commission is legally required to take action to bring cougar hunting quotas back to a sustainable level. To protect the right of Washingtonians to meaningful input on the management of their wildlife, and ensure the scientific integrity of the Department's cougar program, Petitioners respectfully urge the Commission to initiate a rulemaking process to amend WAC 232-28-297.

Petitioners remain available to address specific questions or provide additional documentation as requested.

Sincerely,

⁴¹ *Supra*, n. 6. While this Petition does not allege specific violations of the Washington State Environmental Policy Act ("SEPA"), it does note a major and legally actionable discrepancy between the statewide 12-16% harvest guidelines whose environmental impacts were discussed in the Department EIS and the content of the Final Rule.

Anna Frostic
Senior Attorney
The Humane Society of the United
States

Mitch Friedman
Executive Director
Conservation Northwest

Collette Adkins
Senior Attorney
Center for Biological Diversity

Tim Dunbar
Executive Director
Mountain Lion Foundation

Diane K. Gallegos
Executive Director
Wolf Haven International

Penelope Maldonado
Managing Director
The Cougar Fund

Brooks Fahy
Executive Director
Predator Defense

Mike Petersen
Executive Director
The Lands Council

Gary M. Koehler, Ph. D.
Research Scientist for Carnivore
Investigations (Retired)
Washington Department of Fish
and Wildlife

Timothy J. Coleman
Executive Director
Kettle Range Conservation
Group

Enclosure: Proposed amendment to WAC Section 232-28-297; CD
containing each of the studies cited herein and which are expressly submitted
into the administrative record.

References Cited

- Cooley, H. S., R. B. Wielgus, G. M. Koehler, H. S. Robinson and B. T. Maletzke. "Does Hunting Regulate Cougar Populations? A Test of the Compensatory Mortality Hypothesis." *Ecology* 90, no. 10 (2009): 2913-2921.
- Cooley, H. S., R. B. Wielgus, G. Koehler and B. Maletzke. "Source Populations in Carnivore Management: Cougar Demography and Emigration in a Lightly Hunted Population." *Animal Conservation* 12, no. 4 (2009): 321-328.
- Peebles, Kaylie A., Robert B. Wielgus, Benjamin T. Maletzke and Mark E. Swanson. "Effects of Remedial Sport Hunting on Cougar Complaints and Livestock Depredations." *Plos One* 8, no. 11 (2013).
- Robinson, H. S., R. B. Wielgus, H. S. Cooley and S. W. Cooley. "Sink Populations in Carnivore Management: Cougar Demography and Immigration in a Hunted Population." *Ecological Applications* 18, no. 4 (2008): 1028-1037.
- Ruth, Toni and Kerry Murphy. "Competition with Other Carnivores for Prey." In *Cougar: Ecology and Conservation*, edited by Maurice Hornocker and Sharon Negri, 163-172. Chicago and London: University of Chicago Press, 2010.
- Stoner, D., M. , M.L. Wolfe and D. Choate. "Cougar Exploitation Levels in Utah: Implications for Demographic Structure, Population Recovery, and Metapopulation Dynamics." *Journal of Wildlife Management* 70, (2006): 1588-1600.
- Treves, Adrian. "Hunting for Large Carnivore Conservation." *Journal of Applied Ecology* 46, (2009): 1350-1356.

Wielgus, R. B., D. E. Morrison, H. S. Cooley and B. Maletzke. "Effects of Male Trophy Hunting on Female Carnivore Population Growth and Persistence." *Biological Conservation* 167, (2013): 69-75.