

COMPETING INTERESTS

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SUPPLEMENTARY MATERIALS

science.sciencemag.org/content/366/6464/434/suppl/DC1
List of signatories

10.1126/science.aaz4135

Response

“...[T]he true risk is...losing funding streams that require the presence of trophy hunted species...and therefore incentivize conservation of their populations and habitat...” —Dickman *et al.*

Full text: science.sciencemag.org/
content/366/6464/434/tab-e-letters

Trophy hunting: Insufficient evidence

In their Letter “Trophy hunting bans imperil biodiversity” (30 August, p. 874), A. Dickman *et al.* argue that banning trophy hunting would be detrimental to conservation. We agree that evidence for effectiveness is important before actions are taken. However, Dickman *et al.* do not provide evidence that bans to trophy hunting harm biodiversity (1).

Dickman *et al.* claim that trophy hunting indirectly benefits biodiversity because populations (and their habitats) are better protected in places or times where trophy hunting has occurred. However, no comprehensive research has tested that hypothesis. Even previous work by Letter authors Dickman and Johnson (led by Macdonald) concludes that we know too little to infer whether trophy hunting (selective hunting for recreation) contributes to the conservation of wild lions (2)—one of the best-studied trophy-hunted species.

Dickman *et al.* overstate their case. For example, the claim that “more land has been conserved under trophy hunting than under national parks” seems based on the statement from Lindsey *et al.* (3) that “[o]ver 1,394,000 km² is used for hunting in sub-Saharan Africa, exceeding the area encompassed by national parks by 22% in

the countries where hunting is permitted” (3). However, this interpretation is misleading because those lands include private lands, protected areas that allowed subsistence hunting, and various other classes of protected areas, not exclusively trophy hunting concessions. In addition, the authors’ prediction that a ban on trophy imports or hunts would indirectly harm biodiversity could be just the converse: Perhaps hunting concessions would be upgraded in protection by catalyzing a governmental rethinking of carnivore management systems. An evidentiary basis for informing controversial policy interventions, such as trophy hunting, demands strong inference with full disclosure of uncertainties and disentangled value judgments from observations or inferences.

Stronger evidence might be gleaned through adequate tests of the effectiveness of trophy hunting for protecting the hunted population, including broad-scale experiments using multiple replicated land parcels subject either to hunting or another putative form of biodiversity protection under similar socioeconomic systems, or tracking of populations before and after trophy hunting (accounting for other threats). Rigorous examinations would likely reveal outcomes that vary by population, geography, other threats to biodiversity, and socioeconomic and governance contexts.

Finally, the addition of a long list of signatories implies a call to authority that should play little or no role in what should ultimately be an evidence-based scientific debate. By contrast, clear evidence, transparently conveyed and clearly demarcated from the ingrained values of those involved (whether they support or reject trophy hunting), could help elucidate environmental, ethical, social, and economic dimensions of this controversial activity whose ultimate conservation effects remain poorly understood.

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REFERENCES AND NOTES

1. A. Treves *et al.*, *Conserv. Biol.* **33**, 472 (2018).
2. D. W. Macdonald *et al.*, *Mamm. Rev.* **47**, 247 (2017).
3. P. A. Lindsey *et al.*, *Biol. Conserv.* **134**, 455 (2007).

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A.T. is President of the Board of Directors of Future Wildlife, a tax-exempt organization with the mission to preserve nature, especially wild animals, and an unpaid science adviser for Project Coyote.

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Response

“...[A]ction should not be taken without evidence for its effectiveness...[but] we believe the burden of proof clearly lies with those who support [the removal of trophy hunting]...” —Dickman *et al.*

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content/366/6464/435.1/tab-e-letters

Trophy hunting: A moral imperative for bans

In their Letter “Trophy hunting bans imperil biodiversity” (30 August, p. 874), A. Dickman *et al.* argue that trophy hunting should not be discontinued. However, their premise is not viable when examined under the light of basic morality.

Whether Dickman *et al.* concur or not, wildlife has the basic right of existence, irrespective of human existence and interests. Intentional killing of animals to satisfy the whims of wealthy individuals is detestable. No potential gains, even those that are promoted by Dickman *et al.* as beneficial to wildlife, justify undermining the moral basis of the protection of Earth’s natural resources. It is our responsibility to suppress the destructive tools at our disposal so that these resources remain unharmed.

Culling of endangered species is a self-evident fallacy. Our foremost emergency is to restore endangered species to their former state, irrespective of human interests. Unless required for basic existence, hunting of all forms is a practice that should be eradicated like the smallpox virus. Beyond rational arguments, the most appropriate response to the Letter by Dickman *et al.* is outrage.

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Response

“...[Discontinuing] trophy hunting...without implementing better alternatives risks worsening the situation for both wildlife and people...” —Dickman *et al.*

Full text: science.sciencemag.org/
content/366/6464/435.2/tab-e-letters