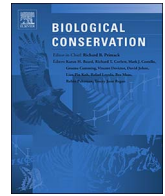




ELSEVIER

Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Short communication

Local perceptions of trophy hunting on communal lands in Namibia

Hilma N. Angula^{a,*}, Greg Stuart-Hill^a, David Ward^a, Greenwell Matongo^a, Richard W. Diggle^a, Robin Naidoo^b^a WWF in Namibia, P.O. Box 9681, Windhoek, Namibia^b WWF-US, 1250 24th Street NW, Washington, DC 20037, USA

ARTICLE INFO

Keywords:

Community-based conservation
Trophy hunting
Attitudes
Values
Wildlife conservation
Conservation policy

ABSTRACT

Trophy hunting in Africa is currently under pressure as some countries explore various policies that aim to put a halt to an activity that many people in the Western developed world view as unpalatable or unethical. However, in the debate over trophy hunting policy the voices of local communities, who in many instances allow wildlife to persist on the lands they control because of the tangible benefits they derive from it, have been largely unheard. Here, we report on an opportunistic survey of 160 rural residents of Namibia from 32 communal conservancies that generate varying levels of livelihood benefits from wildlife uses, including trophy hunting. About three quarters of these community members were employed in some manner by the conservancy. We used a mixed methods approach to assess community members' perceptions on trophy hunting, the benefits it generates, whether it was "good" or "bad", and how they would respond if trophy hunting were halted. 91% stated they were not in favour of a ban on trophy hunting, and only 11% of respondents would support wildlife on communal lands if a ban were in fact enacted. Most respondents (90%) were happy with trophy hunting occurring on communal lands due to the benefits it provides. These responses were consistent across respondent demographic categories, although those who stand to lose the most (i.e., those employed by or managing a conservancy), viewed trophy hunting in an even more favourable light. Our results suggest that in Namibia, a trophy hunting ban would be viewed very poorly by conservancy residents, and would seriously weaken their support for wildlife conservation. The imposition of trophy hunting policies by countries far from where rural land managers are conserving wildlife would not only restrict communities' livelihood options, but may have perverse, negative impacts on wildlife conservation.

1. Introduction

In the debate over trophy hunting that is currently playing out in public and policy spheres (di Minin et al., 2016; Macdonald et al., 2016a, 2016b), the voices of local communities have been conspicuously absent. Local communities are the land managers who will dictate the fate of conservation efforts in large parts of Africa that are outside of protected areas (Roe et al., 2009), therefore policy changes that are likely to impact their wildlife conservation decisions should proceed cautiously and on the basis of the best available scientific information. Yet despite having little understanding of how communities perceive the issue, and of how they may change their land use and wildlife management practices should a major source of livelihood benefits be removed, countries such as Kenya and recently Botswana have banned trophy hunting (Pabst, 2013) while governments of countries in Europe and Australia have stopped or are considering banning the import of trophies of various species (Milman, 2015).

Increasing public opposition to trophy hunting from people living in many developed Western countries may eventually result in the industry being shut down. Yet, a failure to understand how trophy hunting of wildlife and its benefits and costs are perceived by local communities may result in conservation policies that achieve the exact opposite of the intended effect, i.e., a reduction in biodiversity and in the amount of area under wildlife management (di Minin et al., 2016).

To address this gap, we present in this research note the results of a preliminary survey of 160 rural residents across 32 communal conservancies in Namibia, a country in which trophy hunting is a common activity pursued on private, state, and communal lands (Lindsey et al., 2013; Naidoo et al., 2016). Communal conservancies are areas of customary landholdings whose natural resources are managed by local communities for their own benefit, with trophy hunting and nature based tourism being the dominant wildlife-based enterprises that generate livelihood returns (Naidoo et al., 2011a; Naidoo et al., 2011b). These activities, and the communal conservancy program more

* Corresponding author at: WWF in Namibia, 19 Lossen Street, Windhoek, Namibia.
E-mail address: hna20@cam.ac.uk (H.N. Angula).

Name of conservancy: Sesfontein Conservancy

Age: < 25 years 26 to 39 years 40 to 49 years 50+ years

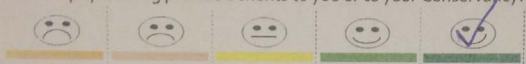
Gender: Man Woman

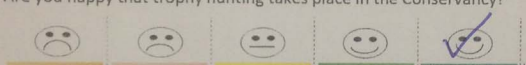
• Are you employed by the conservancy? Yes No

• If yes, as what? Game Guard Manager Secretary Finance Other (please specify) Camp Manager

• Are you a Committee Member? Yes No

• Are you employed by the lodge? Yes No

• Does trophy hunting provide benefits to you or to your Conservancy?


• Are you happy that trophy hunting takes place in the Conservancy?


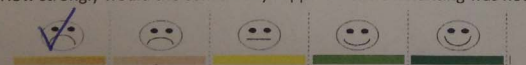
Why is trophy hunting Good?
It generates income for the conservancy.

Why is trophy hunting Bad?
It is not bad, but the income generated is not a lot.

• Should trophy hunting be banned? Yes No

• Is trophy hunting bad for wildlife? Yes No

• Which is best:
 Tourism only
 Trophy Hunting only
 Both Tourism and Hunting

• How strongly would the community support wildlife if hunting was not allowed?


• What do you want to say to people who want to ban trophy hunting?
We rely on trophy hunting for the successful operation of our conservancy do not ban trophy hunting.

Fig. 1. A completed questionnaire on attitudes towards trophy hunting and a possible ban that was administered to 160 rural residents of communal conservancies in Namibia.

broadly, are recognized as having contributed to dramatic recovery of wildlife populations across the country as well as significant improvements in rural livelihoods (Roe et al., 2009). Trophy hunting can generate substantial benefits for local communities (Naidoo et al., 2016). These include revenues for conservancy management (typically between 30 and 75% of a trophy prices), jobs for local community members at hunting camps, and perhaps most importantly, meat distribution to all community members. However, less positive aspects of trophy hunting can include low or inequitable distribution of benefits from hunting operators to local communities, poor skills among community members to fully participate in the hunting industry, and questions about the ecological sustainability of hunting (Suich, 2010; Yitbarek et al., 2013; Lindsey et al., 2006a, 2006b).

2. Materials and methods

We employed a mixed methods survey approach (Johnson et al., 2007), using an in-person interview comprising both closed and open-ended questions that asked community members for their feelings on trophy hunting (Fig. 1), for reasons why hunting is either “good” or “bad” for themselves or their communities, and their thoughts on a possible trophy hunting ban. Using a 1-to-5 Likert scale (colour-coded and represented by “smiley” faces to facilitate understanding by rural residents), we asked conservancy members to rate their support for trophy hunting, the level of benefits it provides to themselves or the local community, and what their degree of support for wildlife conservation would be if trophy hunting were banned on their lands. Open-ended questions allowed respondents to voice why they thought hunting was good or bad, and whether it should or should not be

banned. We additionally collected basic demographic and livelihood information from respondents. These short surveys were deployed opportunistically in January and February 2016, at which time communal conservancies were holding annual audits that involved conservancy members and staff gathering to discuss the management of their lands and wildlife. During this time, we approached conservancy employees (game guards and management committee) and non-employees (those not directly employed by the conservancy) to participate in the survey. All participants approached took part willingly and without any refusals. The 32 communal conservancies that were surveyed represent a wide geographic spread across the western (Kunene) and eastern (Zambezi) regions of Namibia, and also span conservancies that derive various levels of livelihood benefits from trophy hunting ($n = 13$ conservancies), nature-based tourism ($n = 3$), both activities ($n = 12$), or neither ($n = 4$).

We modelled the degree of agreement with the question "Does trophy hunting provide benefits to you or your conservancy?" as a function of region (dummy variable "Zambezi" in Tables 2–4), respondent age (4 levels, with reference category over 50 years old, and dummy variables for less than 25 - "age25", 26 to 39 years old - "age 26_39", and 40–49 years old, - "age40_49", sex ("male" dummy variable), occupation (dummy variables for committee member - "committee", game guard - "game.guard", or general conservancy employee - "employee"), and whether they lived in a conservancy that currently hosts trophy hunting operations ("some.hunt.inc" dummy variable). Because the data were dominated by responses in the "agree" and "strongly agree" categories (i.e., categories 4 and 5), we collapsed these two categories into an "agree" category, with categories 1 to 3 folding into a 0 or "do not agree" category. We then conducted Bayesian logistic regression, with this agree/do not agree variable as our dependent variable, uninformative priors on the independent variables, and using two chains with 500 warm up samples and 1500 posterior samples each. This analysis was conducted using package brms (Buernker, 2016) in the statistical computing software R (R Development Core Team, 2008). For consistency, we used the same procedure to model responses to the questions "Are you happy that trophy hunting takes places in the conservancy?" and "How strongly would the community support wildlife if hunting was not allowed?". For all three models, we evaluated the strength of evidence of independent variables using 95% Bayesian credible intervals, where intervals that do not overlap with zero are taken as strong evidence of a variable's impact on the dependent variable in question.

3. Results

Across all respondents ($n = 160$), an overwhelming majority (91%) of respondents stated they would not be in favour of a ban on trophy hunting, and only 11% of respondents believe their community would continue to support or strongly support wildlife on communal lands if a ban were in fact enacted. In response to the open-ended question "What would you say to those who want to ban trophy hunting", two-thirds (65%) stated that 'this would be depriving them of income or employment that is critical for their livelihoods' (Table 1). Smaller fractions mentioned 'the loss of meat' (14%), 'a resulting increase in human-wildlife conflict' and retaliatory killing of wildlife (6%), and an increase in poaching (6%) as possible outcomes of a trophy hunting ban. A small percentage (13%) were open to a trophy hunting ban, but did not see what other alternatives could replace the lost benefits that a ban would entail.

Most respondents strongly agreed that trophy hunting provides benefits to communities and were happy with it taking place on communal lands (Fig. 2), although 18% ($n = 28$) of respondents are concerned that trophy hunting is in fact bad for wildlife. The most common reason given by these respondents for why trophy hunting was bad (see also Table 1) was "the potential for wildlife declines" (mentioned by $n = 12$ people), followed by "few actual benefits" ($n = 5$), and

Table 1

Statements to open-ended questions on why trophy hunting is good, why trophy hunting is bad, and response to a possible ban on trophy hunting.

What would you like to say to people who want to ban trophy hunting?
<i>"Trophy hunting is lifting us from poverty. It creates employment opportunities for us. We also give meat benefits to our members".</i>
<i>"We want to conserve our wildlife and use it in a sustainable manner, but the benefits need to go to the general members".</i>
<i>"Please give us a reason for wanting to take us back to being poor and with no benefits from our wildlife. I need an explanation of why it is good for photographers to benefit but not for us".</i>
<i>"Why do you want to take away my job? Why do you want me to suffer from elephants destroying my crops without any benefits, just so you can satisfy your needs of looking at these animals? Trophy hunting is well managed and beneficial for us, we cannot ban it".</i>
<i>"Trophy hunting is our means of conservation and survival. Our members benefit, our wildlife is well guarded against poaching, why ban a good thing?"</i>
<i>"If hunting stops, we will be left with nothing (no money, jobs or meat to the people). Then poaching will escalate".</i>
<i>"Trophy hunting improved our living conditions, it helps alleviate poverty. If it is banned, the community will revert to illegal hunting".</i>
<i>"We suffer a lot from conflict with wildlife, especially with Hippos. Trophy hunting helps reduce this conflict while investing back into the community".</i>
<i>"If we are to stop trophy hunting, what alternatives would we have? Trophy hunting is our only source of income at the moment".</i>
<i>"Yes, please ban trophy hunting, tourism is better. Our grandchildren will not find wildlife outside national parks if we continue hunting".</i>
Why is trophy hunting good/bad?
<i>"It brings income into our community and also creates employment opportunities".</i>
<i>"It brings money and meat to our conservancy, this prevents poaching".</i>
<i>"It generates income which allows for the operation of our conservancy".</i>
<i>"It brings income into our conservancy, creates employment for the people, pays salaries and gives the meat to the people".</i>
<i>"It brings income to our association, enabling us to install water pumps for the communities and support local schools".</i>
<i>"It benefits people which helped in curbing poaching and retaliatory killing of wildlife".</i>
<i>"It is selective, only takes out old and post-reproductive male animals".</i>
<i>"It is a beneficial way of controlling wildlife numbers especially problem animals. We benefit greatly from trophy hunting, both from meat and money".</i>
<i>"Trophy hunting chases animals away from the people and from the area. It will also reduce our wildlife numbers in the near future".</i>
<i>"It is taking place every single year, this will reduce our wildlife in the long run".</i>
<i>"The benefits are only enjoyed by a few individuals within the community"</i>

"possible negative effects on tourism" ($n = 2$). One person mentioned "wounding of animals" as an issue and one person mentioned that "hunting makes animals more aggressive towards people". Importantly, the ethical concerns of hunting individual animals for sport that are mentioned by wealthy people living in developed western countries as justification to stop trophy hunting were not mentioned at all by local community members living with wildlife.

A strong majority of respondents, were happy with trophy hunting operating on their communal lands, whether actually occurring at present or not (Fig. 2). 90% of respondents either agreed or strongly agreed with the question "Are you happy that trophy hunting takes place in the conservancy?". The dominant reason given by respondents for why trophy hunting was good (see also Table 1) was that it generated income or employment for themselves or community members (85%). Other reasons for why hunting was good was the meat it provides (46%), the fact that it is well managed and has little impact on wildlife (5%) and the removal of problem animals (3%).

Parsing out the dependent variables by employed versus non-employed at the conservancy (Fig. 3), we find that strong majorities of employees (89%) ($n = 110/118$) and non-employees (88%) ($n = 35/40$) believe their community would not support wildlife on communal lands if a ban were enacted. An overwhelming majority of both employees (93%) and non-employees (88%) are happy with trophy hunting taking place in the conservancy while 91% of employees and 58% of non-employees agreed that trophy hunting provides benefits to communities. Although non-employees do not view benefits from trophy hunting as highly as do conservancy employees, they

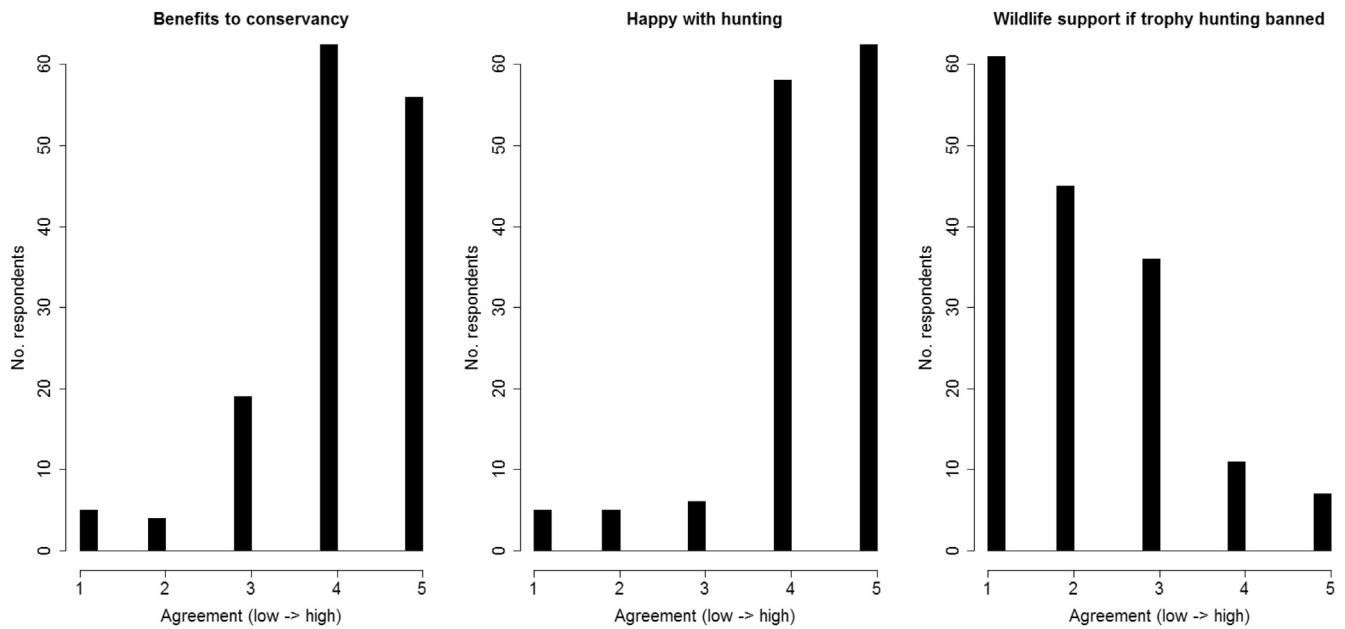


Fig. 2. Histogram of responses to the questions "Does trophy hunting provide benefits to you or to your conservancy?" (left panel), "Are you happy that trophy hunting takes place in a conservancy?" (middle panel), and "How strongly would the community support wildlife if hunting was not allowed?" (right panel).

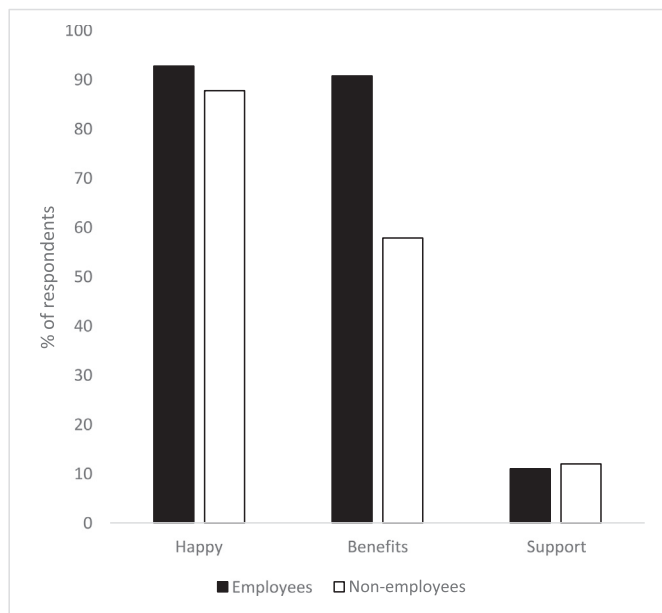


Fig. 3. Employed versus non-employed responses to the questions "Are you happy that trophy hunting takes place in a conservancy?", "Does trophy hunting provide benefits to you or to your conservancy?" and "How strongly would the community support wildlife if hunting was not allowed?".

nevertheless support trophy hunting at a similar level, and are similarly pessimistic about future support for wildlife conservation if trophy hunting were ever to be banned.

All of the Bayesian regression models converged appropriately and posterior predictive checking showed that they were able to generate predicted values that looked similar to the actual data (Fig. 4). The model for trophy hunting benefits generation correctly classified 70% of the respondents who did not agree that trophy hunting produced benefits, and 82% of those who did agree. For happiness with trophy hunting operations, the model correctly classified 67% of those who were happy and 56% of those who were not happy with hunting on conservancy lands. Finally, for continued support of wildlife

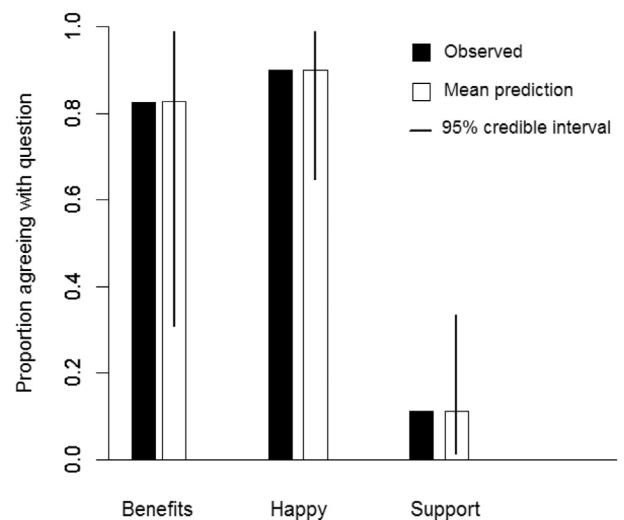


Fig. 4. Actual versus model-predicted proportions of respondents agreeing with the questions "Does trophy hunting provide benefits to you or to your conservancy?" ('Benefits'), "Are you happy that trophy hunting takes place in a conservancy?" ('Happy'), and "How strongly would the community support wildlife if hunting was not allowed?" ('Support').

conservation, 69% of individuals who would no longer support wildlife were correctly classified, while 56% of those would support wildlife conservation were correctly classified.

Demographic variables (age and gender) and the type of conservancy (those currently generating benefits from trophy hunting versus not) were not important factors predicting how favourable respondents' views were on the benefits that trophy hunting can generate for themselves or their community (Table 2). However, employees of conservancies and committee members ($n = 120$) were more likely to agree that trophy hunting produces benefits for themselves or their community than those not employed by a conservancy (Table 2). In addition, respondents from the Zambezi region were more likely to agree that trophy hunting provided benefits to the community, probably because hunting operations are more widespread there than in the Kunene region.

Table 2

Results from a Bayesian logistic regression of agreement that benefits are generated from trophy hunting, with variables whose 95% Bayesian credible interval does not overlap with zero in bold.

	Estimate	Est. error	l-95% CI	u-95% CI	Eff. sample	Rhat
Intercept	-1.70	1.23	-4.14	0.62	3036	1
Age25	0.43	1.20	-1.81	2.95	2732	1
Age26_39	0.31	0.78	-1.30	1.77	2857	1
Age40_49	-0.30	0.81	-1.94	1.22	2576	1
Some.hunt.inc	-0.37	0.69	-1.76	0.99	3583	1
Male	0.79	0.61	-0.40	1.99	4000	1
Committee	1.81	0.76	0.42	3.38	3120	1
Game_guard	0.38	0.69	-0.92	1.80	3849	1
Employee	2.33	0.69	1.04	3.70	3342	1
Zambezi	1.97	0.67	0.69	3.28	3011	1

Table 3

Results from a Bayesian logistic regression of happiness with trophy hunting operations, with variables whose 95% Bayesian credible interval do not overlap with zero in bold.

	Estimate	Est. Error	l-95% CI	u-95% CI	Eff. Sample	Rhat
Intercept	-0.47	1.30	-2.94	2.21	3011	1
Age25	1.59	1.61	-1.17	5.20	2685	1
Age26_39	0.85	0.88	-0.94	2.50	2626	1
Age40_49	0.25	0.91	-1.57	1.92	2664	1
Some.hunt.inc	-0.62	0.92	-2.47	1.09	4000	1
Male	0.79	0.66	-0.50	2.13	4000	1
Committee	2.07	0.87	0.47	3.89	2844	1
Game_guard	1.08	0.84	-0.52	2.78	4000	1
Employee	1.45	0.74	0.05	2.96	3388	1
Zambezi	1.14	0.78	-0.41	2.67	3216	1

Table 4

Results from a Bayesian logistic regression of support for wildlife conservation in the event of a trophy hunting ban, with variables whose 95% Bayesian credible interval do not overlap with zero in bold.

	Estimate	Est. error	l-95% CI	u-95% CI	Eff. sample	Rhat
Intercept	-2.55	1.63	-6.09	0.21	1874	1
Age25	1.32	1.89	-2.52	5.24	1934	1
Age26_39	2.39	1.37	0.25	5.48	1584	1
Age40_49	1.03	1.50	-1.45	4.39	1804	1
Some.hunt.inc	-2.73	1.06	-4.90	-0.74	3033	1
Male	0.35	0.66	-0.92	1.67	4000	1
Committee	-1.22	0.77	-2.80	0.23	4000	1
Game_guard	-1.42	0.78	-3.03	0.05	3731	1
Employee	0.87	0.79	-0.57	2.50	4000	1
Zambezi	0.58	0.96	-1.20	2.56	3415	1

Age and gender variables were again not important predictors of responses to the questions on happiness with trophy hunting operations, however employees and committee members were more likely to be happy with trophy hunting than those not employed by the conservancy (Table 3). For support of wildlife conservation, gender and the type of conservancy were not important in explaining community support for wildlife in the event of a trophy ban, but the few respondents who would continue to support wildlife were more likely to be in the 26–39 age range rather than older than 50. In addition, respondents in conservancies with current trophy hunting operations would be even less likely to continue to support wildlife conservation in the event of a trophy ban than respondents in conservancies where hunting is not currently taking place (Table 4).

4. Discussion

This preliminary work suggests strong support for trophy hunting among conservancy members, especially those employed by or managing the conservancy. The data also suggest a large drop-off in support

for wildlife conservation in the event of a hunting ban, a result which appears particularly acute in those conservancies currently realizing livelihood gains, in the form of meat and income for conservancy management, from trophy hunting operations. Most respondents believed that trophy hunting was “good”, listing the immediate livelihood gains they realize as a result of hunting, and that would be lost due to a ban. Smaller fractions mentioned the potential negative effects on wildlife of a trophy hunting ban, including increases in poaching and retaliatory killings of problem animals. Fewer than 1 in 5 respondents felt trophy hunting was “bad”, and while these respondents expressed concern for potential population declines of wildlife due to hunting, they did not mention concerns for the welfare of individual animals. This contrasts sharply with views in wealthy Western countries, where outrage over the killing of individual animals, illustrated vividly by the response to the shooting of Cecil the lion in Zimbabwe, appear to be driving policies that are making trophy hunting in Africa more difficult (Macdonald et al., 2016a, 2016b; di Minin et al., 2016; Novelli et al., 2006).

Results from elsewhere in Africa also suggest that where tangible benefits are received, either via nature-based tourism or from hunting, local communities have more favourable attitudes towards wildlife. In central Kenya, where trophy hunting has been banned since 1977, a majority of local community members would support the return of trophy hunting, and benefits derived from trophy hunting or tourism was the most-cited reason given for how they could better co-exist with predators (Romanach et al., 2007). The likelihood or not of receiving benefits was also the primary concern of residents asked for their opinion on elephant reintroduction to group ranches in Kenya (Browne-Nunez et al., 2013). In both Zambia and Zimbabwe, where community-based conservation programs have relied heavily on trophy hunting as a source of benefits for impoverished rural communities, the major conservation outcome of these programs was that community attitudes became more favourably predisposed towards wildlife (Leader-Williams and Hutton, 2005; Lewis and Alpert, 1997; Loveridge et al., 2006). And in Tanzania, respondents who received more meat from hunted animals were more likely to have positive conservation attitudes than those who received less meat (Gillingham and Lee, 1999). Given that large areas of Africa are outside of protected areas and unsuitable for nature-based tourism (Lindsey et al., 2006a, 2006b), it is imperative that communities who control natural resources in these areas and who benefit from well-managed trophy hunting operations are encouraged, rather than dis-incentivized, to support wildlife conservation.

Our survey was conducted opportunistically during community meetings and was restricted to conservancy members. A large number of respondents were employed in some manner by the conservancy, and employment-related variables were significant predictors of responses on benefits generated from, and satisfaction towards, trophy hunting. Given that our sample is biased towards respondents who are associated with conservancies, future work should sample a broader sample of rural residents to determine whether rural communities at large in Namibia share these same views.

5. Conclusion

Our data gives a voice to the viewpoints of local communities on the trophy hunting debate, a debate in which they have been almost entirely ignored even as policy decisions made overseas threaten substantial negative impacts on their livelihood options. They also support research, both from Namibia and from other parts of Africa, that emphasizes the importance of benefits from hunting for local communities, which leads to economic incentives for conservation in communal lands outside of formal protected areas (Störmer, 2016; Hoole, 2008; Loveridge et al., 2006; Naidoo et al., 2016; White and Belant, 2015). Imposing policies in rich, Western countries that cut off these livelihood gains, without an in-depth understanding of how local community land managers may react, risks generating unintended consequences that

could result in negative conservation outcomes.

References

- Browne-Nunez, C., Jacobson, S.K., Vaske, J.J., 2013. Beliefs, attitudes, and intentions for allowing elephants in group ranches around Amboseli National Park, Kenya. *Wildl. Soc. Bull.* 37, 639–648.
- Buerkner, P.-C., 2016. *Brms: Bayesian Regression Models Using Stan*. R Package Version 0.7.0. <https://CRAN.R-project.org/package=brms>.
- Gillingham, S., Lee, P.C., 1999. The impact of wildlife-related benefits on the conservation attitudes of local people around the Selous game reserve, Tanzania. *Environ. Conserv.* 26, 218–228.
- Hoole, A., 2008. *Community-Based Conservation and Protected Areas in Namibia: Social-Ecological Linkages for Biodiversity*. Natural Resources Institute. University of Manitoba, Winnipeg, Canada.
- Johnson, B.R., Onwuegbuzie, A.J., Turner, L.A., 2007. Toward a definition of mixed methods research. *J. Mixed Methods Res.* 1 (2), 112–113. <http://dx.doi.org/10.1177/1558689806298224>.
- Leader-Williams, N., Hutton, J.M., 2005. Does extractive use provide opportunities to offset conflicts between people and wildlife? In: Woodroffe, R., Thirgood, S.J., Rabinowitz, A. (Eds.), *People and Wildlife: Conflict or Coexistence?* Cambridge University Press, Cambridge, UK.
- Lewis, D.M., Alpert, P., 1997. Trophy hunting and wildlife conservation in Zambia. *Conserv. Biol.* 11, 59–68.
- Lindsey, P.A., Alexander, R.R., Frank, L.G., Mathieson, A., Romanach, S.S., 2006a. Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable. *Anim. Conserv.* 9, 283–291.
- Lindsey, P.A., Frank, L.G., Alexander, R., Matheson, A., Romanach, S.S., 2006b. Trophy Hunting and Conservation in Africa: Problems and One Potential Solution. *Conserv. Biol.* <http://dx.doi.org/10.1111/j.1523-1739.2006.00594>.
- Lindsey, P.A., Havemann, C.P., Lines, R.M., Price, A.E., Retief, T.A., Rhebergen, T., Van der Waal, C., Romanach, S.S., 2013. Benefits of wildlife-based land uses on private lands in Namibia and limitations affecting their development. *Oryx* 47, 41–53.
- Loveridge, A.J., Reynolds, J.C., Milner-Gulland, E.J., 2006. Does sport hunting benefit conservation? In: Macdonald, D., K. Service (Eds.), *Key Topics in Conservation Biology*. Blackwell Publishing Ltd., Oxford, UK.
- Macdonald, D.W., Johnson, P.J., Loveridge, A.J., Burnham, D., Dickman, A.J., 2016a. Conservation or the moral Highground: siding with Bentham or Kent. *Conserv. Biol.* 9, 307–308.
- Macdonald, D.W., Jacobsen, K.S., Burnham, D., Johnson, P.J., Loveridge, A.J., 2016b. Cecil: a moment or a movement? Analysis of media coverage of the death of a lion, *Panthera leo*. *Animals* 6 (5). <http://dx.doi.org/10.3390/ani6050026>.
- Milman, O., 2015. Australia bans hunting 'trophies' from lions entering or leaving the country. In: *The Guardian Friday*, 13 March.
- di Minin, E., Leader-Williams, N., Bradshaw, C.J.A., 2016. Banning trophy hunting will exacerbate biodiversity loss. *TREE*. <http://dx.doi.org/10.1016/j.tree.2015.12.006>.
- Naidoo, R., Weaver, L.C., De Longcamp, M., Du Plessis, P., 2011a. Namibia's community-based natural resource management program: an unrecognised payments for environmental services scheme. *Environ. Conserv.* 38, 445–453.
- Naidoo, R., Weaver, L.C., Stuart-Hill, G., Tagg, J., 2011b. Effect of biodiversity on economic benefits from communal lands in Namibia. *J. Appl. Ecol.* 48, 310–316.
- Naidoo, R., Weaver, L.C., Diggle, R.W., Matongo, G., Stuart-Hill, G., Thouless, C., 2016. Complementary benefits of tourism and hunting to communal conservancies in Namibia. *Conserv. Biol.* 30, 628–638.
- Novelli, M., Barnes, J.I., Humavindu, M., 2006. The other side of the ecotourism coin: consumptive tourism in southern Africa. *J. Ecotourism* 5, 62–79.
- Pabst, M., 2013. Botswana: trophy hunting to ecotourism. In: *The Financialist*, March 15, 2013.
- R Development Core Team, 2008. *R: A language and environment for statistical computing*. ISBN 3-900051-07-0. URL <http://www.R-project.org>, Vienna, Austria.
- Roe, D., Nelson, F., Sandbrook, C., 2009. *Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions*. IIED, London, UK.
- Romanach, S.S., Lindsey, P.A., Woodroffe, R., 2007. Determinants of attitudes towards predators in central Kenya and suggestions for increasing tolerance in livestock dominated landscapes. *Oryx* 41, 185–195.
- Störmer, N., 2016. *A Survey of Values and Attitudes Towards Wildlife in Communal Conservancies in Namibia* (Master thesis). Friedrich Schiller University Jena.
- Suich, H., 2010. The livelihood impacts of the Namibian community based natural resource management programme: a meta-synthesis. *Environ. Conserv.* 37, 45–53.
- White, P.A., Belant, J.L., 2015. Provisioning of game meat to rural communities as a benefit of sport hunting in Zambia. *PLoS One* 10, e0117237.
- Yitbarek, T.W., Tadie, D., Timer, G., Fischer, A., 2013. Evaluating governance processes in the sharing of revenues from wildlife tourism and hunting in Ethiopia. *Environ. Conserv.* 40, 253–265.