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Perceived and Actual Human-Tiger Conflict in Bardia National Park, Nepal

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Introduction

Human-wildlife conflict is common and significant problem in areas where large predators are present, often leading to retaliatory killings of predators. Human conflicts with tigers (*Panthera tigris*) are particularly challenging as they often involve human losses and an endangered species, warranting special mitigation strategies. Given that public perceptions affect the success of such strategies, we compared the perceived and actual levels of conflict in Bardia National Park (BNP), Nepal in order to identify appropriate tiger conservation approaches.

Methods

We measured actual level of human-tiger conflict by analyzing the park records from 1994-2007 in terms of human casualties to tigers and causes of tiger mortality. Perceived conflict was measured by conducting semi-structured interviews (270 farmers, 27 key informants) in six villages located in the buffer zone of BNP. Three villages were randomly selected within areas of high tiger prey density and three from areas of low prey density as inferred from extensive local knowledge.

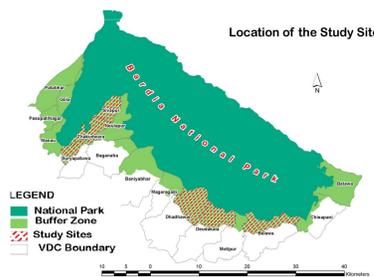


Figure 1: Location of study sites



Results

Livestock depredation

The livestock depredation rates were significantly higher for cattle (Mann-Whitney U Test; $Z = -3.6$, $p < 0.001$) and goats/sheep ($Z = -5.8$, $p < 0.001$), but not for buffaloes, pigs, and chickens. Tigers were responsible for mean loss of 2% of local livestock herds, more than the losses attributed to leopard (*P. pardus*: 1.5%; unpublished data).

Human casualties and tiger loss

Within the study period, twelve people were killed and four injured in tiger attacks in BNP and a total of six tigers were killed by humans (22% of 27 known tiger deaths: Fig. 2).

Acknowledgements

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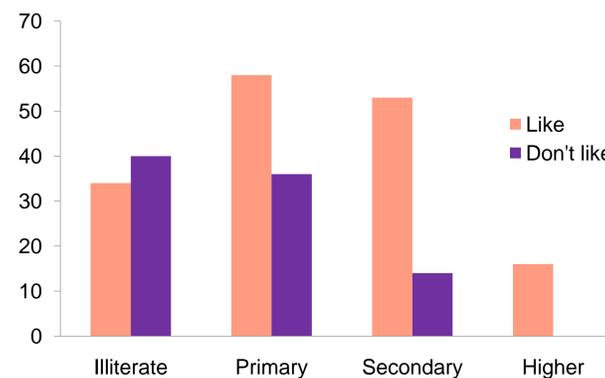


Figure 4: Education level and perception



A camera trapped tiger at Bardia National Park (Photo: DNPWC)

Table 1: Reported mean livestock losses (animals/year) to tigers in areas of low and high wild tiger prey availability.

Livestock type	Low tiger prey areas	High tiger prey areas
Cattle	0.48	0.17
Buffalo	0.01	0.02
Goat/Sheep	0.78	0.19
Pig	0.02	0.03
Chicken	0.1	0.01

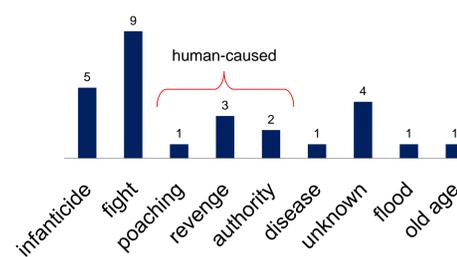


Figure 2: Cause of mortality of documented tigers deaths (n=27; 1994-2007)

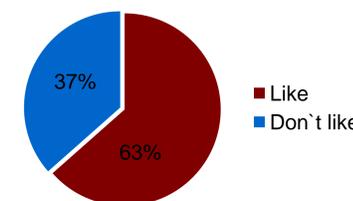


Fig 3: Interviewed peoples' reported attitude towards tiger conservation (n=270)

Perception of locals

Despite the considerable levels of current conflict between humans and tigers, the local people's attitude towards tiger conservation was generally positive, with people willing to tolerate some loss of livestock, but not of humans. Educated people had more positive attitude than the illiterate people (Fig. 4) and male respondents were more positive (69.4%) than female ones (45.3%).

Conclusion

- There is a need to validate the reported higher livestock depredation in areas of low wild tiger prey density.
- Although local support for tiger conservation remains high, it could be strengthened by reducing the economic burden incurred by pastoralists via the introduction of a compensation scheme and the improvement of livestock night corrals.
- Our results suggest that further increase in tiger conservation support could be achieved through increased education of locals.