Determinants of attitudes towards predators in central Kenya and suggestions for increasing tolerance in livestock dominated landscapes

Stephanie S. Roman˜ach, Peter A. Lindsey and Rosie Woodroffe

Appendix

Questionnaire used to assess respondents’ attitudes towards and tolerance for livestock losses from cheetahs, jackals, leopards, lions, spotted hyenas, striped hyenas, and wild dogs. The questionnaire includes a mixture of closed- and open-ended questions (see text for further details).

Interviewer's name………………………………………… Date…………………………………………………..
Interview location………………………………………….. GPS coordinates………………………………………
Interview language………………………………………… District……………………………………………….

Questionnaire: Attitudes towards predators

This questionnaire is only for research purposes, conducted through Mpala Research Centre and Laikipia Wildlife Forum. Your name is not being recorded and your answers will be kept confidential. Your answers will not affect government policies, such as taxes or compensation. Please be as truthful as possible.

I. Property details

1. Property/community name where you (interviewee) live…………………………………………………………
2. Property type: ☐commercial ranch ☐group ranch ☐settlement scheme ☐other (specify)………………
   If answer is commercial: Is this property the owner’s primary source of income? ☐yes ☐no
3. Is there any wildlife tourism currently on the property/community? ☐yes ☐no
4. Is there any livestock currently on the property/community? ☐yes ☐no
5. Does most of the property/community income come from (choose ONE answer):
   ☐livestock ☐tourism ☐agriculture ☐other
   If answer is NOT tourism, what indirect benefits does the property/community receive from wildlife? (for example, radio fees paid, school built, or other). Answer can be none…………………………………………………..
6. Is there a wildlife conservancy currently on the property/community? ☐yes ☐no
   If no is the property/community preparing to start a conservancy in the next two years? ☐yes ☐no

II. Experience with local predators

7. Please identify the predators in the photos (if predator names known ONLY in a language other than English or Kiswahili, write the predator name in the known language, and write the name of the language beside the answer).
   a)………………………………………………………… b)…………………………………………………………
   c)………………………………………………………… d)…………………………………………………………
   e)………………………………………………………… f)…………………………………………………………
   g)………………………………………………………… h)…………………………………………………………
8. (a) Which of the following predators occur on your property as a whole (yes, no, or don’t know)?

(b) If you currently have a conservancy, how frequently are the predators detected (sight, sound, or tracks) in the conservancy compared to the rest of the property (less, same, more, don’t know; mark n/a if not on property)?

<table>
<thead>
<tr>
<th>Predator</th>
<th>On property / community as a whole</th>
<th>In conservancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Jackal</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Leopard</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Lion</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Striped hyena</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Wild dog</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
</tbody>
</table>

9. (a) Which of the following wild prey occur on your property as a whole (yes, no, or don’t know)?

(b) If you currently have a conservancy, how frequently are the prey detected (sight, sound, or tracks) in the conservancy compared to the rest of the property (less, same, more, don’t know; mark n/a if not on property)?

<table>
<thead>
<tr>
<th>Prey</th>
<th>On property / community as a whole</th>
<th>In conservancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dik Dik</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Impala</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Gazelle</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Plains zebra</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Grevy’s zebra</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Kudu</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Hartebeest</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Warthog</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
<tr>
<td>Klipspringer</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td>☐ less ☐ same ☐ more ☐ don’t know ☐ n/a</td>
</tr>
</tbody>
</table>

10. (a) Indicate how abundant you think the following predators are currently (2004) in the District (absent, rare, or common).

(b) Indicate how abundant you think the predators are outside the District, in the rest of Kenya (absent, rare, or common).

<table>
<thead>
<tr>
<th>Predator</th>
<th>District</th>
<th>Outside District in general</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Jackal</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Leopard</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Lion</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Striped hyena</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
<tr>
<td>Wild dog</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
<td>☐absent ☐ rare ☐ common ☐ don’t know</td>
</tr>
</tbody>
</table>

11. Which, if any (you don’t have to chose any), of the following predators do you think are in danger of going extinct in Kenya?

☐ cheetah ☐ jackal ☐ leopard ☐ lion ☐ spotted hyena ☐ striped hyena ☐ wild dog ☐ none

III. Attitudes towards predators

12. Given the choice, would you prefer to have the following predators on your property? (Yes, no, or don’t know). You may give a reason why.

<table>
<thead>
<tr>
<th>Predator</th>
<th>Yes, no, or don’t know</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Leopard</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Lion</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Striped hyena</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td>☐ yes ☐ no ☐ don’t know</td>
<td></td>
</tr>
</tbody>
</table>
13. Based on their current (2004) numbers on your property, please indicate whether you would like numbers of each predator to decrease, stay the same, or increase? You may give a reason why.

<table>
<thead>
<tr>
<th>Predator</th>
<th>Decrease, same, or increase</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Leopard</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Lion</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Striped hyena</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
</tbody>
</table>

14. Do you think that sport hunting of predators should be allowed in Kenya? □ yes □ no

Why?………………………………

………………………………………………………………………………………………………………

………………………………………………………………………………………………………………

………………………………………………………………………………………………………………

………………………………………………………………………………………………………………

Only answer question 16 below if you DO NOT have tourism on your property right now. If you do have tourism, skip to section IV. Livestock (question 17).

16. If you were to start tourism, would you like predator numbers on your property/community to decrease, stay the same, or increase?

<table>
<thead>
<tr>
<th>Predator</th>
<th>Decrease, same, or increase</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Leopard</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Lion</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Striped hyena</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td>decrease □ same □ increase</td>
<td></td>
</tr>
</tbody>
</table>

IV. Livestock

17. Please rank the following predators in terms of their effect upon cattle in the District (1 = highest impact, 7 = lowest impact), and then rank them in terms of effect on goats & sheep (1 = highest impact, 7 = lowest impact). (Interviewer: write n/a if interviewee does not think the predator attacks livestock.)
V. Lethal control

19. Last year (2003), did you kill or allow predators to be killed on your property/community (by staff, other ranch/community members, or KWS)? ☐ yes ☐ no

If yes, please indicate the approximate number of your livestock that were lost to each predator last year (2003).

(Interviewer: If 0, please fill 0 in the box, and do not leave any boxes blank. Write n/a in the box if interviewee does not own the livestock species)

<table>
<thead>
<tr>
<th>Predator</th>
<th>Cattle</th>
<th>Camels</th>
<th>Donkeys</th>
<th>Goats &amp; sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Leopard</td>
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</tr>
<tr>
<td>Lion</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spotted hyena</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Striped hyena</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. Did you lose any livestock to predators last year (2003)? ☐ yes ☐ no

If no, skip to section V. Lethal control (question 19).

If yes, please indicate the approximate number of your livestock that were lost to each predator last year (2003).

(Interviewer: If 0, please fill 0 in the box, and do not leave any boxes blank. Write n/a in the box if interviewee does not own the livestock species)

<table>
<thead>
<tr>
<th>Predator</th>
<th>Cattle</th>
<th>Camels</th>
<th>Donkeys</th>
<th>Goats &amp; sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leopard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lion</td>
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<tr>
<td>Spotted hyena</td>
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<tr>
<td>Striped hyena</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20. If no skip to question 22.

If yes, which predators were killed?……………………………………………………………

how many individuals of each were killed?…………………………………………………

why were they killed?…………………………………………………………………………

how were they killed?…………………………………………………………………………

21. Did the killing reduce livestock losses on your property/community?

☐ greatly ☐ some ☐ not at all

22. Indicate the number of cattle and sheep & goats (shoats) you would tolerate losing to predators before you would try to kill the predator responsible. Or you may indicate whether you would not kill the predator no matter how many livestock were killed OR whether you would try to kill the predator before it killed any livestock (zero tolerance). And please specify how you would be likely to kill the predator responsible.

(Interviewer: write n/a if interviewee does not think the predator attacks livestock.)

<table>
<thead>
<tr>
<th>Predator</th>
<th>Number of livestock willing to loose</th>
<th>How would you kill the predator?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Jackal</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Leopard</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Lion</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Spotted hyena</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Striped hyena</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
<tr>
<td>Wild dog</td>
<td><em>cattle</em> <em>shoats</em> ☐ wouldn’t kill ☐ zero tolerance</td>
<td></td>
</tr>
</tbody>
</table>
23. Did you manage or own livestock as an adult (over 18 years old) 20 years ago? ☐ yes ☐ no

If no, please skip to section VI. Wild dogs (question 25).

If yes please answer question 24 below.

24. If asked question #22 20 years ago, how would your answers have been different? Indicate the number of cattle or sheep & goats (shoats) you would have tolerated losing to predators before you would try to kill the predator responsible. Or you may indicate whether you would not have killed the predator no matter how many livestock were killed, whether you would have tried to kill the predator before it killed any livestock (zero tolerance), or if your answers would have been the same as now (2004). You may also give a reason why.

<table>
<thead>
<tr>
<th>Predator</th>
<th>Number of livestock willing to lose</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheetah</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Jackal</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Leopard</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Lion</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Spotted hyena</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Striped hyena</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
<tr>
<td>Wild dog</td>
<td>☐ cattle ☐ shoats ☐ wouldn’t kill</td>
<td>□ zero tolerance □ same □ don’t know</td>
</tr>
</tbody>
</table>

VI. Wild dogs

25. Have you ever seen wild dogs in the wild in Kenya? ☐ yes ☐ no ☐ don’t know

If yes, have you ever seen wild dogs on your property/community? ☐ yes ☐ no ☐ don’t know

26. If you have seen wild dogs in the wild in Kenya

When was the last time you saw wild dogs (month and year)?.................................

Where did you last see them?.....................................................................................

How many did you last see?...........................................................................................

27. Do you think wild dogs have ever been on your property/community? ☐ yes ☐ no ☐ don’t know

If they ever disappeared, when did they disappear from your property/community (year)?.................................

If they returned, when did they come back to your property/community (year)?.................................

28. If you saw wild dogs in 2003 in Kenya

How many times did you see wild dogs last year?...........................................

What was the largest number of wild dogs you saw in one group last year?...........

29. Over the last 5 years, do you think that wild dog numbers in the District are:

☐ decreasing ☐ stable ☐ increasing ☐ don’t know

30. Do you think wild dogs ever kill livestock?

☐ yes ☐ no ☐ don’t know

Why?..................................................................................................................................

VII. Comments

31. Are there any solutions you would suggest to promote the coexistence of people and predators?

32. Are there any other comments you would like to make about predators?
VIII. Personal details

33. If commercial, position on property: □ owner □ manager □ other (specify) ………………………………

34. Age…………………………………………… 35. Gender: □ male □ female

38. Ethnic group………………………………… 37. Highest education……………………………………

38. If NOT commercial, does most of your household’s income come from (choose ONE answer):

□ livestock □ tourism □ agriculture □ employment other than tourism □ other

Interviewer’s comments (to be filled by interviewer AFTER interview is complete):