Miles to Go
Before We Sleep: Wildlife Conservation in Botswana’s Okavango Delta

Kelly J. Stoner
Yale School of Forestry & Environmental Studies
May 14, 2013
Roadmap
Roadmap

Why Botswana & the Okavango Delta?
Roadmap

Why Botswana & the Okavango Delta?

Narrative versus Reality
Roadmap

Why Botswana & the Okavango Delta?

Narrative versus Reality

Miles to go before we sleep...
Land use types: diamonds, wildlife

http://www.cccarto.com/atlas/diamondmines/
African elephant population by country

Notes: Data for each country ranges from 1991 to 2006. Definite count is defined as the number of elephants actually seen or as the lower 95% confidence limit of the population.

African elephant range and population density

Elephant population density
Number of elephants per 100 square kilometres
- 0 to 20
- 20 to 60
- 60 to 120
- 120 to 200
- 200 to 300
- 300 to 520

Elephant range, 2007
(no population data available)
- Known
- Possible

Note: The population count and distribution indicated are estimates based on different survey methods in selected input zones, and in different years, ranging from 1995 to 2005.

Source: African Elephant Database (AED)/IUCN/SSC African Elephant Specialist Group (AESSG)
Community-based Natural Resource Management

- Economic Development
- Biodiversity Conservation
- Sustainable Resource Utilization
CBNRM in Botswana

1989: Natural Resource Management Programme (NRMP) established

1993: first CBNRM program launched

1994 & 1995: BPCT study on attitudes performed

1999: NRMP discontinued
2012: Rural Development Policy adopted

2011: EWB wildlife study published

2012: K. Stoner’s study of attitudes performed

2014: Hunting ban effective
Claims of success
Claims of success

Wildlife thriving in a pristine environment
Claims of success

Wildlife thriving in a pristine environment

CBNRM helping to increase understanding of and attitudes toward wildlife
<table>
<thead>
<tr>
<th>Animal</th>
<th>Chobe</th>
<th>Ngamiland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elephant</strong></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Buffalo</strong></td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Eland</strong></td>
<td>73%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Giraffe</strong></td>
<td>0.7%</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Hippo</strong></td>
<td>5000%</td>
<td>344%</td>
</tr>
<tr>
<td><strong>Impala</strong></td>
<td>894%</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Kudu</strong></td>
<td>62%</td>
<td>79%</td>
</tr>
<tr>
<td><strong>Lechwe</strong></td>
<td>97%</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Ostrich</strong></td>
<td>21%</td>
<td>96%</td>
</tr>
<tr>
<td><strong>Roan</strong></td>
<td>28%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Sable</strong></td>
<td>58%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Tsessebe</strong></td>
<td>150%</td>
<td>83%</td>
</tr>
<tr>
<td><strong>Warthog</strong></td>
<td>896%</td>
<td>81%</td>
</tr>
<tr>
<td><strong>Wildebeest</strong></td>
<td>51%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>Zebra</strong></td>
<td>9.3%</td>
<td>53%</td>
</tr>
</tbody>
</table>
WILDLIFE DAMAGE AND AGRICULTURE: A DYNAMIC ANALYSIS OF COMPENSATION SCHEMES

Daniel Rondeau and Erwin Bulte

Whose Elephants? Conserving, Compensating, and Competing in Northern Botswana
Rachel DeMotts a & Parakh Hoon b

Evaluation of a compensation scheme to bring about pastoralist tolerance of lions
Seamus D. Maclellan a,c,*, Rosemary J. Groom b, David W. Macdonald a, Laurence G. Frank c,d

a Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, Tubney House, Abingdon Road, Tubney, Abingdon, Oxfordshire OX13 5QL, UK
b School of Biological Sciences, University of Bristol, Woodland Road, Bristol BS8 1UG, UK
c Living with Lions, Wildlife Conservation Society, 2300 Southern Blvd. Bronx, NY 10467, USA
d Museum of Vertebrate Zoology, University of California, Berkeley, CA 94720, USA
Successful compensation requires...
Successful compensation requires...

- Quick, accurate verification of damage
Successful compensation requires...

- Quick, accurate verification of damage
- Prompt & fair payment
Successful compensation requires...

- Quick, accurate verification of damage
- Prompt & fair payment
- Sufficient & sustainable funds

Nyhus et al. 2003. Conservation in Practice
Successful compensation requires...

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- Site specificity
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Nyhus et al. 2003. Conservation in Practice
Historical study in 1994 & 1995
Historical study in 1994 & 1995

Test importance of ethnicity
Historical study in 1994 & 1995

Test importance of ethnicity

77 surveys in 4 villages
Historical study in 1994 & 1995

Test importance of ethnicity

77 surveys in 4 villages

Irrelevant data discarded
Methods

Data collection mirrored original study

40 interviews in one village

performed by Batswana research assistants

Results analyzed in SPSS
I feel cattle are more important than wild animals.

It is unimportant to me whether our elephants are many or few in number.

I believe tourism is good for Botswana and for our community.

Wild animals are important to me and my community, we want to protect them.

It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.

National parks and reserves are a waste of land.
There are as many lions as there are impala in Botswana.

Wild dogs will attack people.

The more animals that are hunted, the more will be born to replace them.

Our community does make money from wildlife, even wild dogs.

The number of people in our country is more than the number of cattle.
It is important to keep a place where animals live.

strongly agree: 5

strongly disagree: 1
It is important to keep a place where animals live.
strongly agree: 5
strongly disagree: 1

There is too much land reserved for wildlife.
We need more land for cattle.
strongly agree: 1
strongly disagree: 5
<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # Surveys</td>
<td>77</td>
<td>39</td>
</tr>
<tr>
<td>% Male</td>
<td>64%</td>
<td>82%</td>
</tr>
<tr>
<td>Average Age</td>
<td>**</td>
<td>35 to 59</td>
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Results

Overall, no difference between historical and current samples
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Neither gender nor reported experience of damage significantly impacted attitudes
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Overall, no difference between historical and current samples

Neither gender nor reported experience of damage significantly impacted attitudes

Impact of compensation varied
Compensation’s significant impact:

It is important to keep a place where wild animals can live.

<table>
<thead>
<tr>
<th>Received</th>
<th>Did Not</th>
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<td>4.59</td>
<td>4.24</td>
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Compensation’s significant impact:

It is important to keep a place where wild animals can live.

It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.

National parks and reserves are a waste of land.

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<td>4.59</td>
<td>4.24</td>
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<tr>
<td>It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.</td>
<td>1.53</td>
<td>2.43</td>
</tr>
<tr>
<td>National parks and reserves are a waste of land.</td>
<td>3.65</td>
<td>4.21</td>
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2012’s significantly lower scores (p<0.001)

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<tr>
<td>It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.</td>
<td>2.76</td>
<td>1.62</td>
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2012’s significantly lower scores 
(p<0.001)

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<td>3.79</td>
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### 2012’s significantly lower scores (p<0.001)

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<td>Our community does make money from wildlife, even wild dogs.</td>
<td>4.00</td>
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Cautiously Optimistic

Are results of my study conclusive?
Cautiously Optimistic

Are results of my study conclusive?
Challenge: Effective, efficient monitoring
Cautiously Optimistic

Are results of my study conclusive?

Government leaders keen to preserve wildlife
Cautiously Optimistic

Are results of my study conclusive?

Government leaders keen to preserve wildlife
Challenge: Earn support of entire society
Thoughtful

Values, needs & goals of communities
Thoughtful

Values, needs & goals of communities

Hunting ban’s economic and ecological impact
Thoughtful

Values, needs & goals of communities

Hunting ban’s economic and ecological impact

What does success look like?