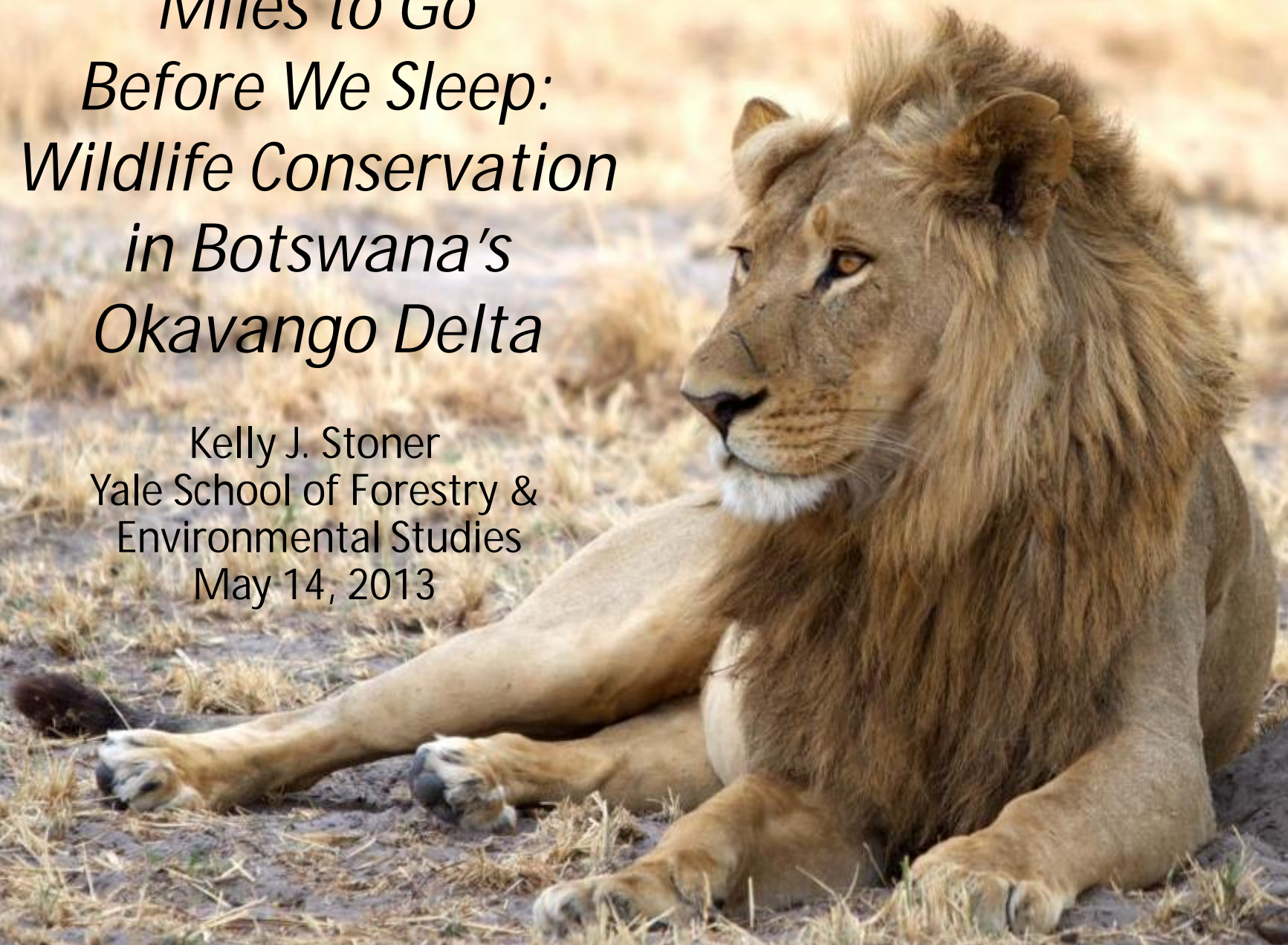


*Miles to Go
Before We Sleep:
Wildlife Conservation
in Botswana's
Okavango Delta*

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?

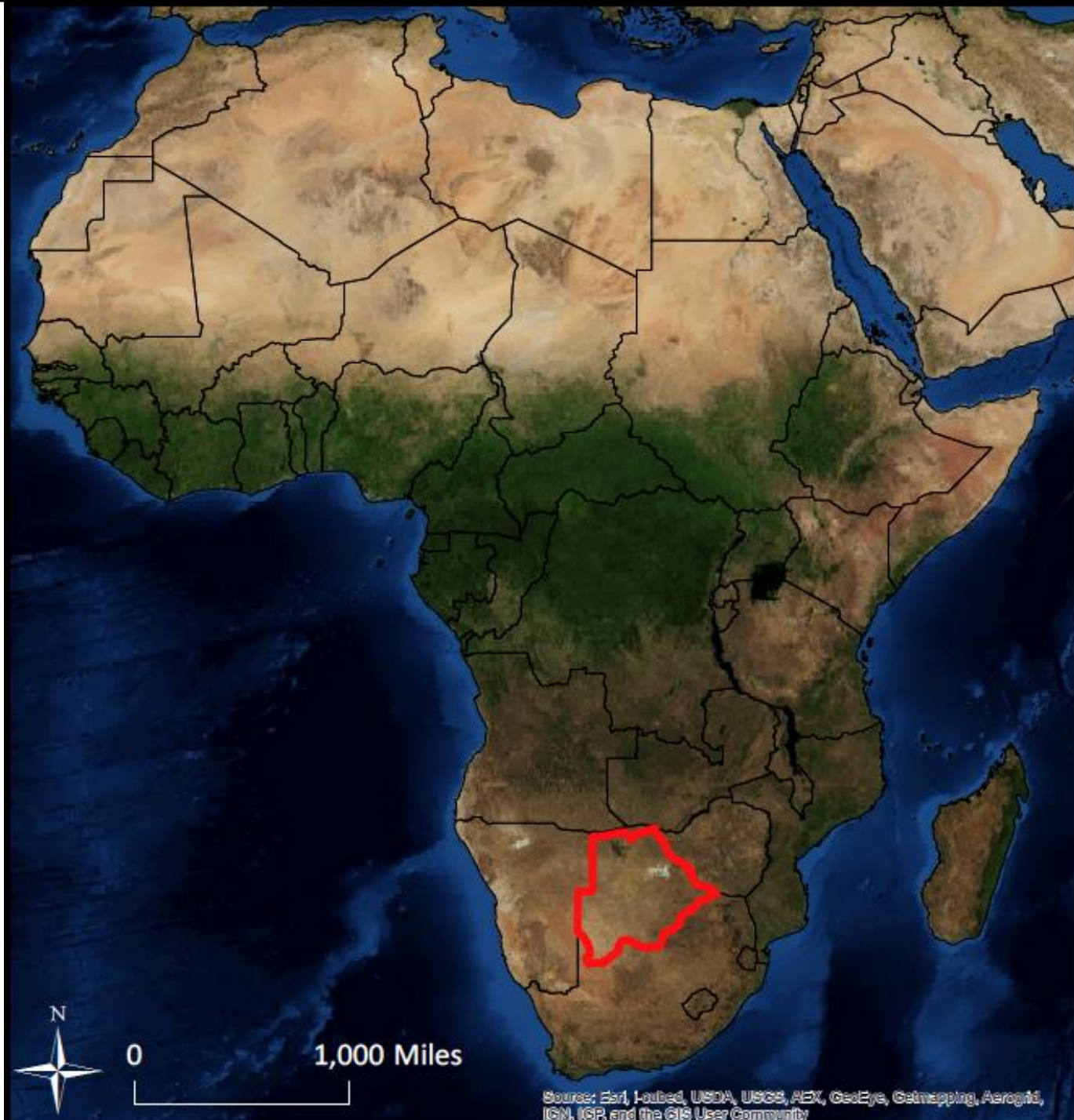
Narrative versus Reality

Roadmap

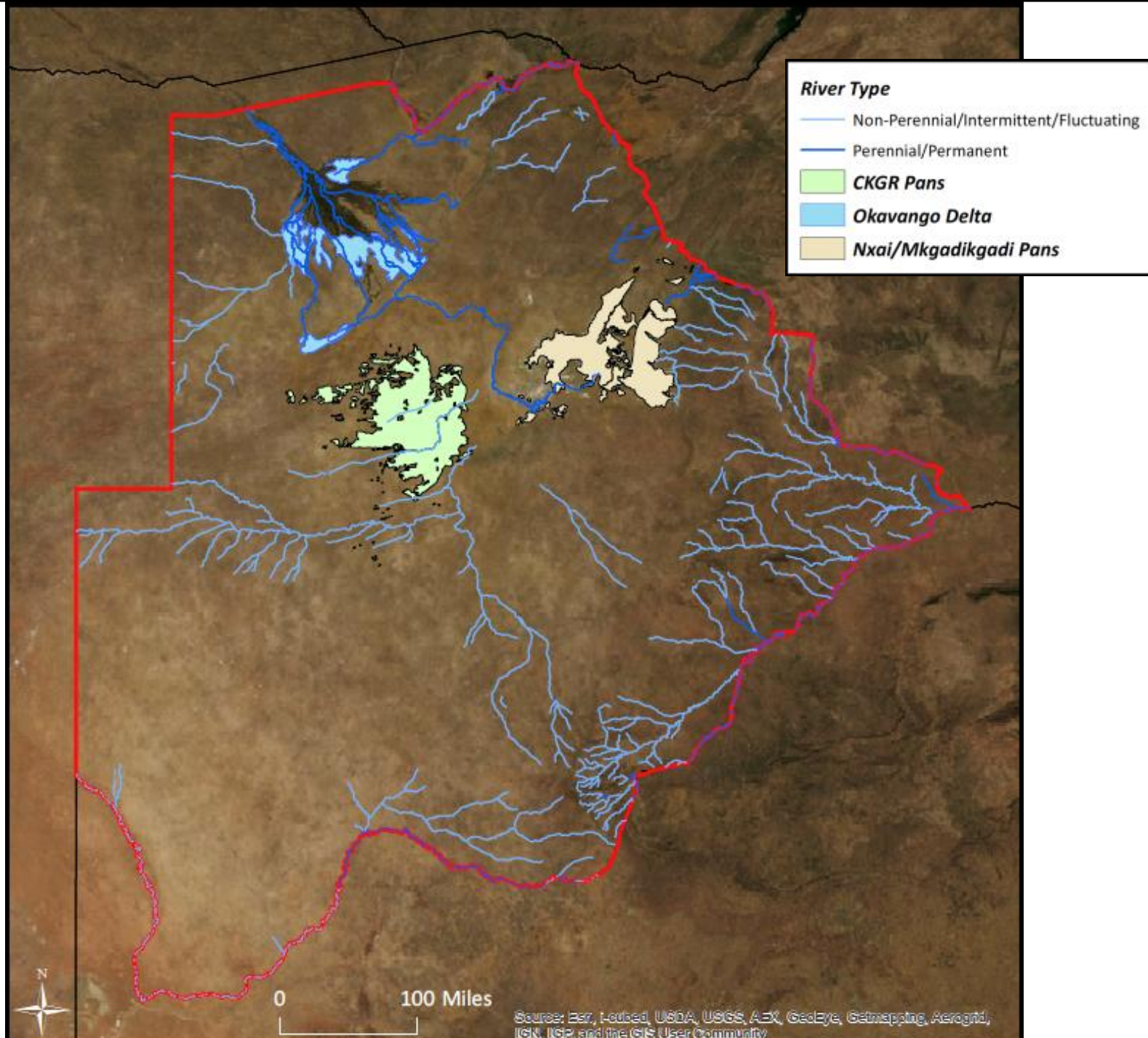
Why Botswana & the Okavango Delta?

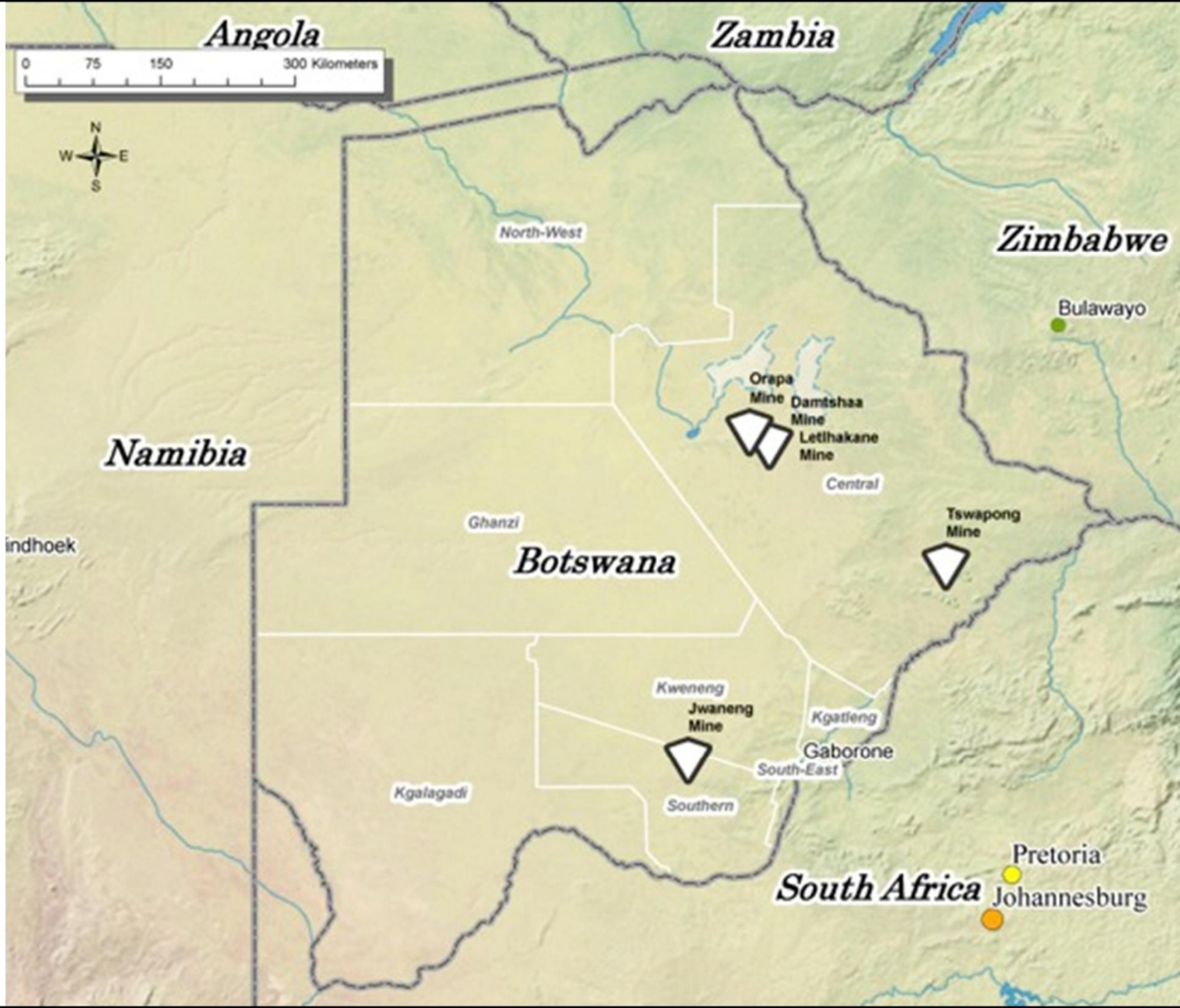
Narrative versus Reality

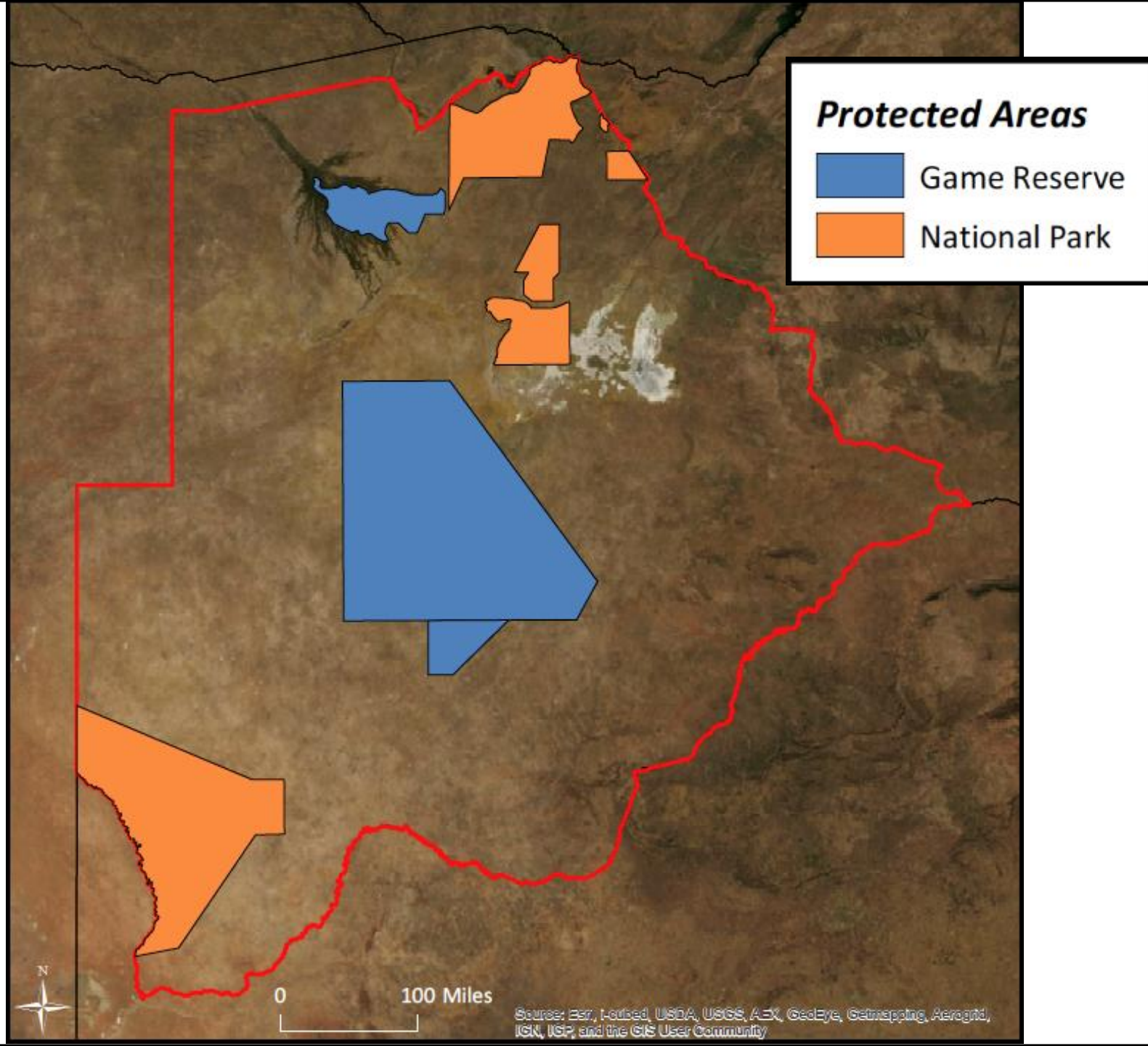
Miles to go before we sleep...

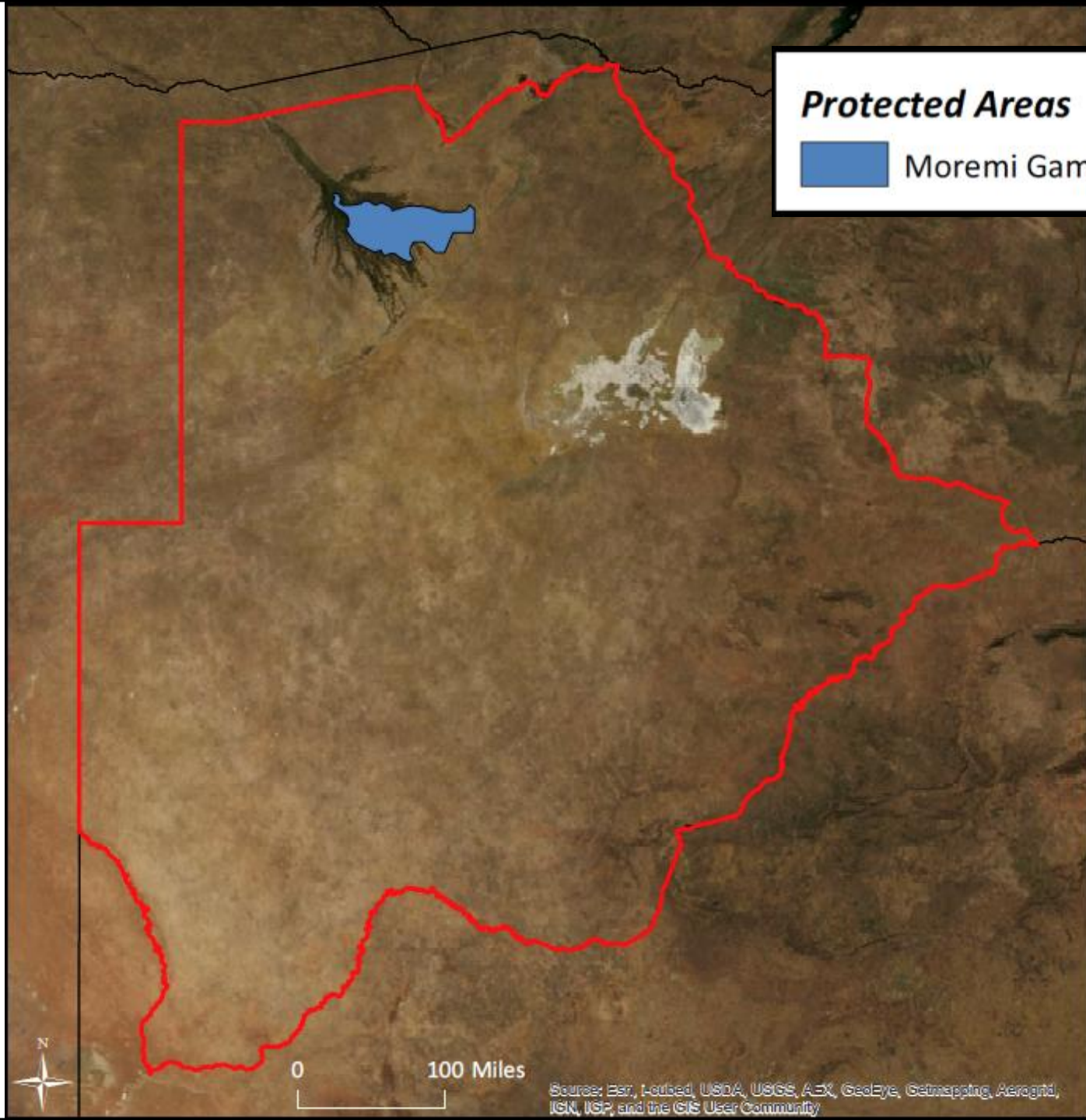


Source: Esri, Imagery, USDA, USGS, AEX, GeoEye, GeoMapping, AeroGRID, IGN, IGP, and the GIS User Community









Protected Areas



Moremi Game Reserve



0

100 Miles

Source: Esri, Imagery, USDA, USGS, AES, GerdEye, Getmapping, Aerogrid,
IGN, IGP, and the GIS User Community

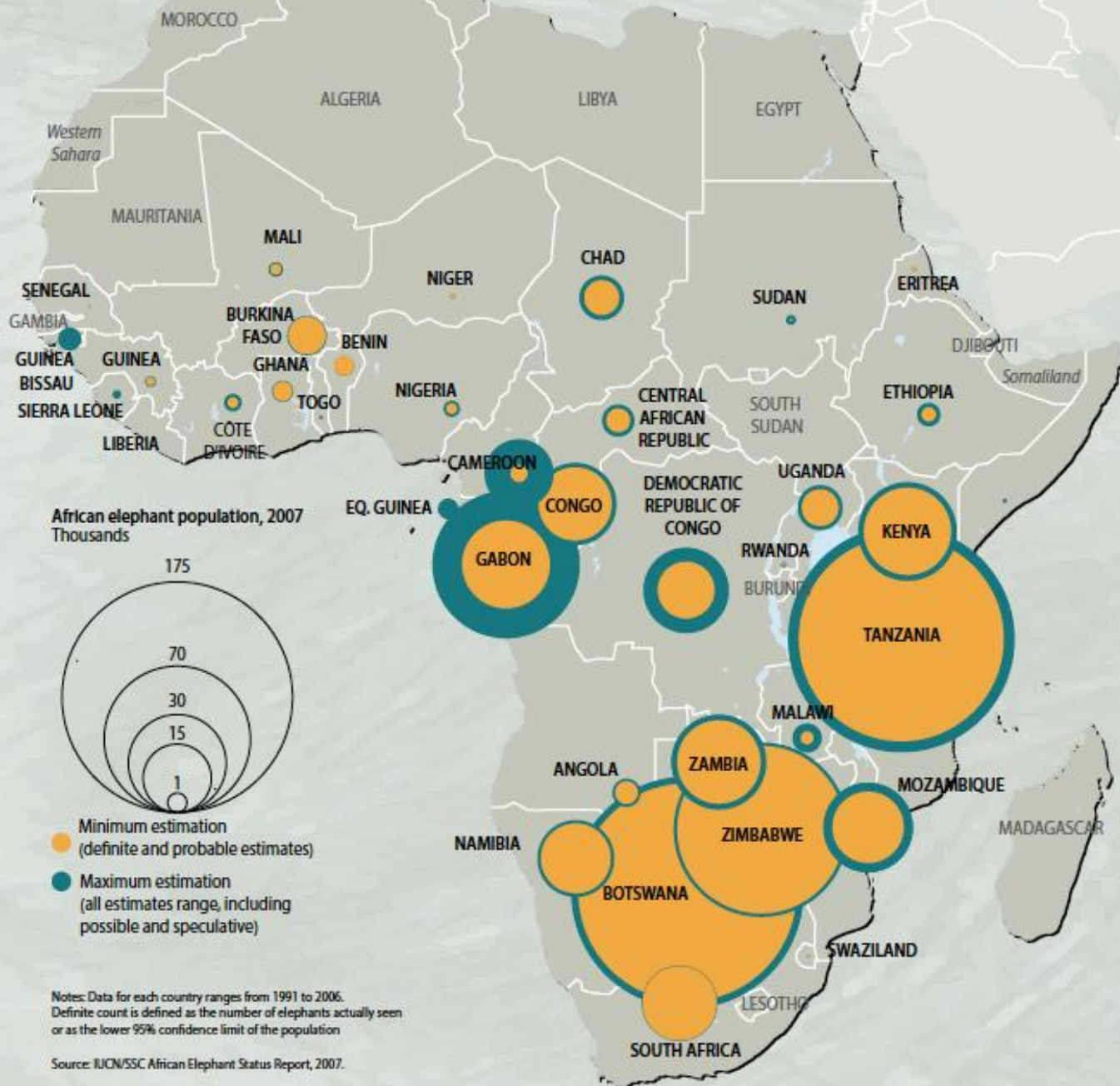




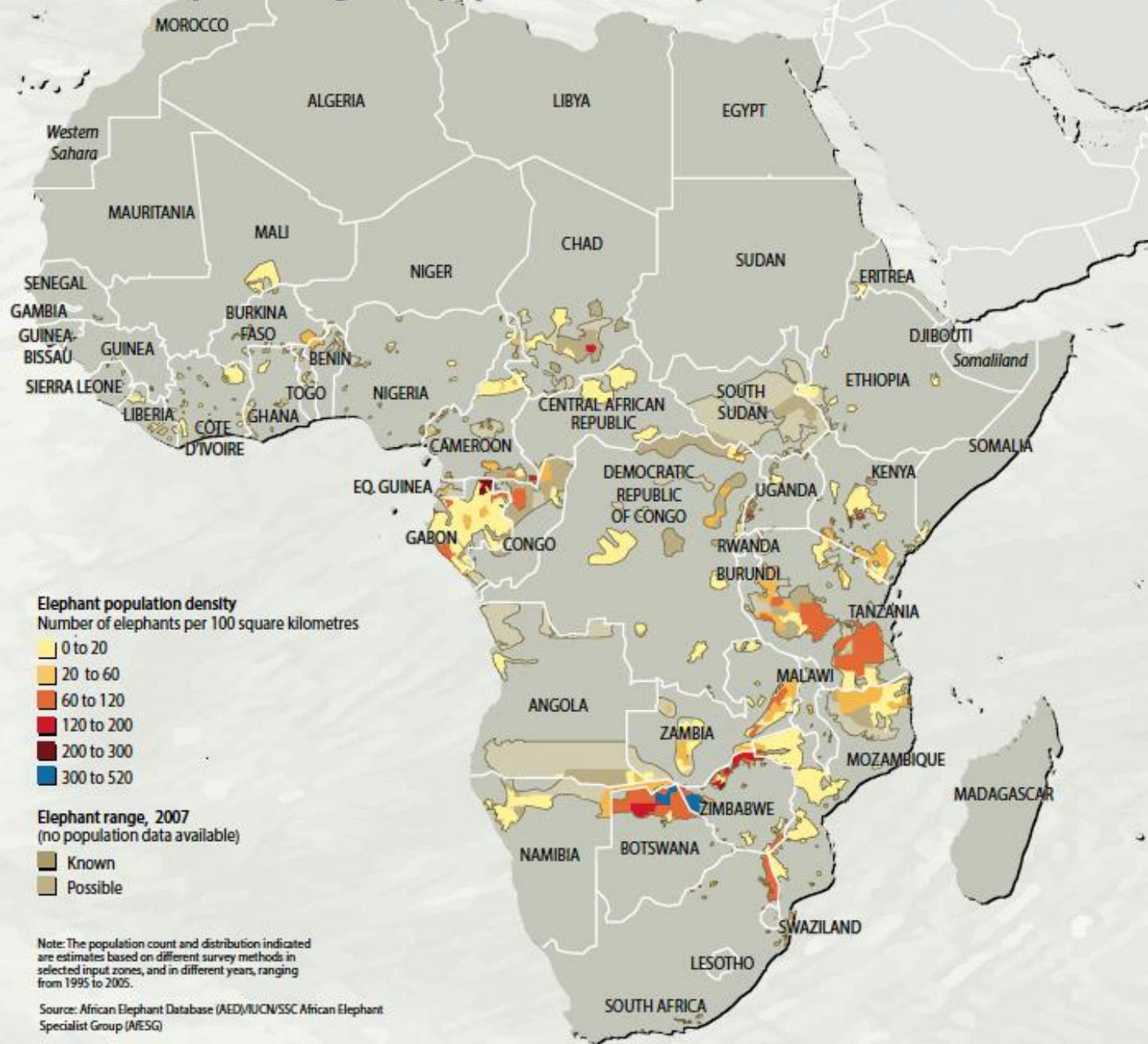




African elephant population by country

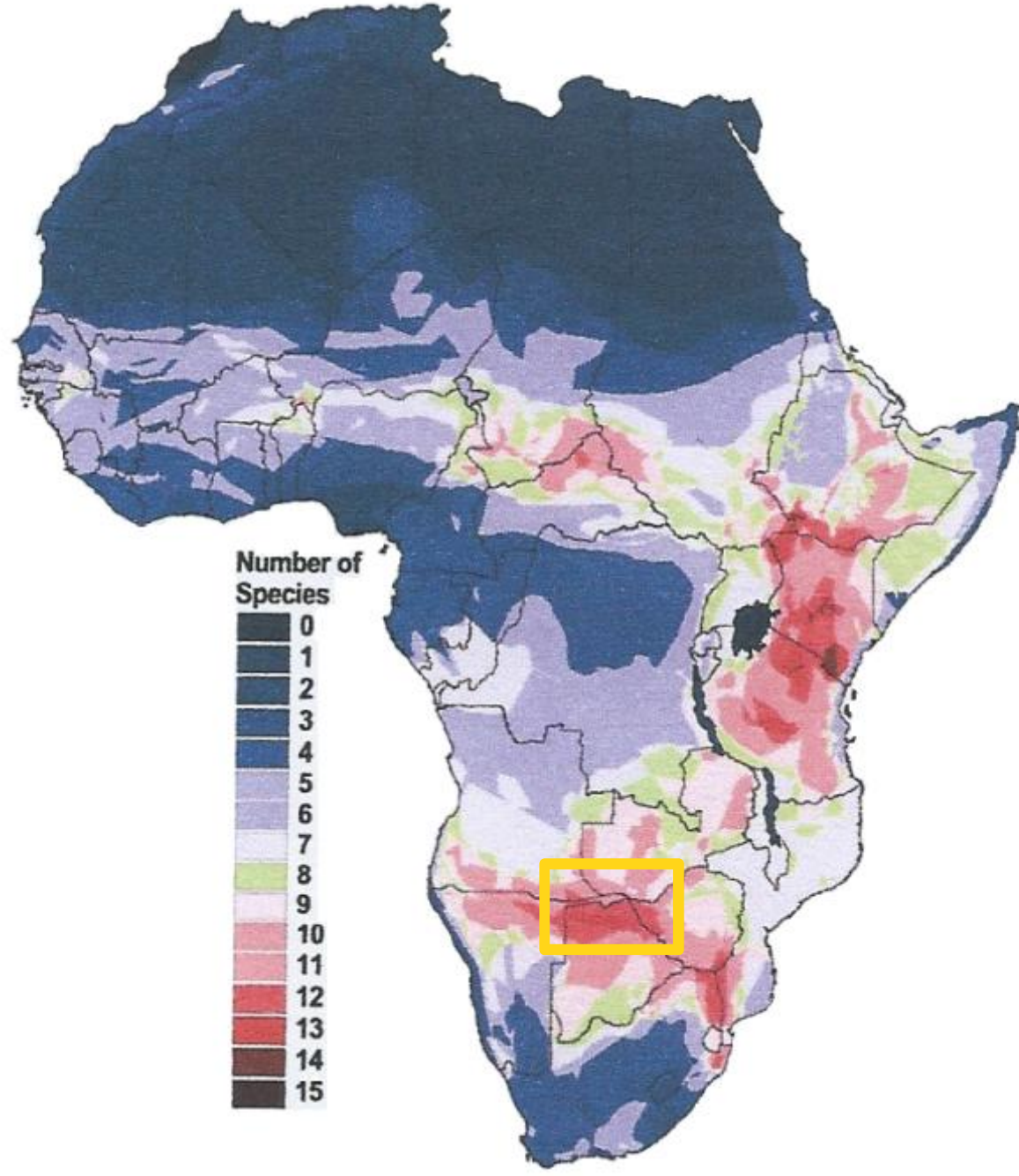


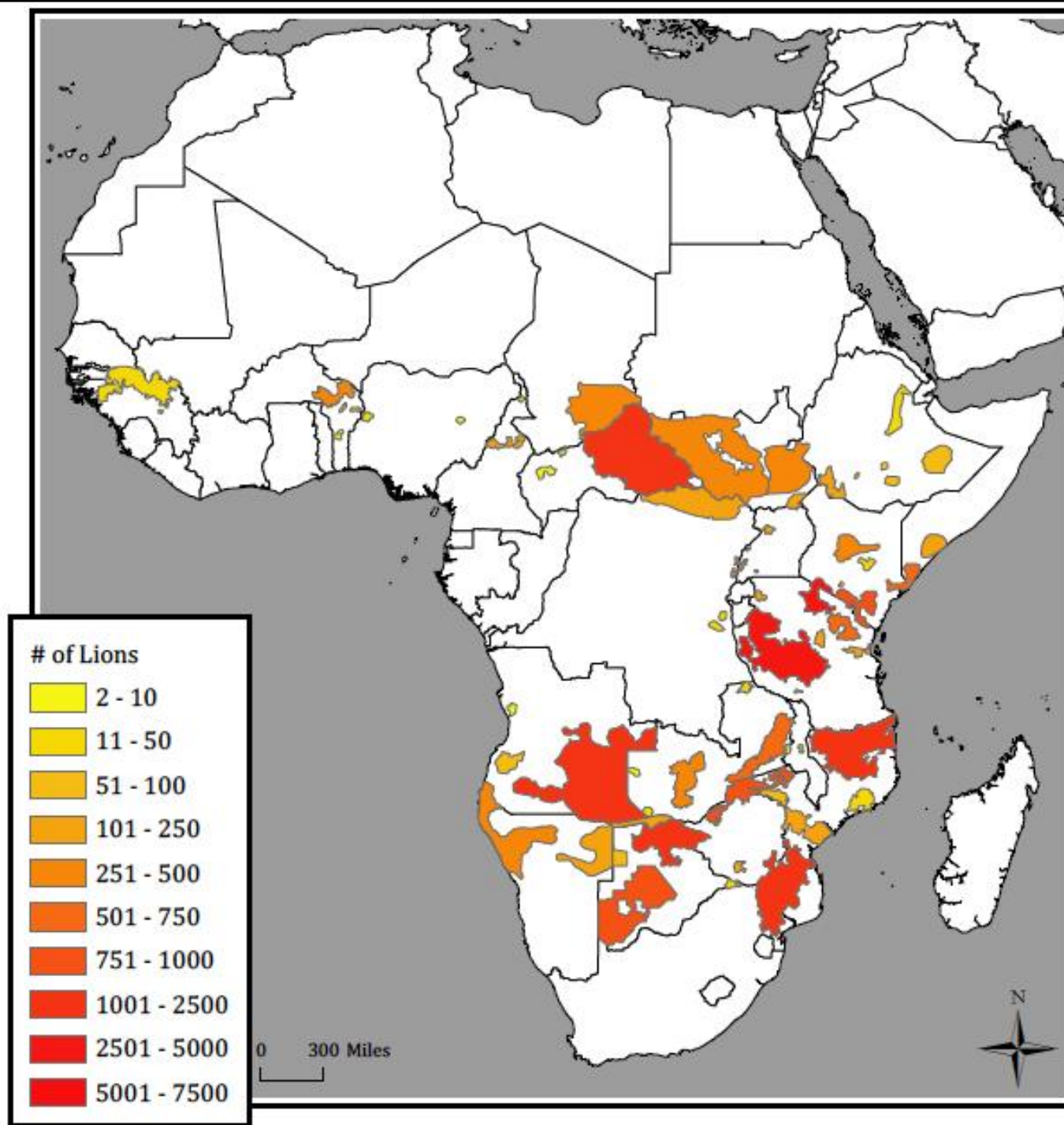
African elephant range and population density

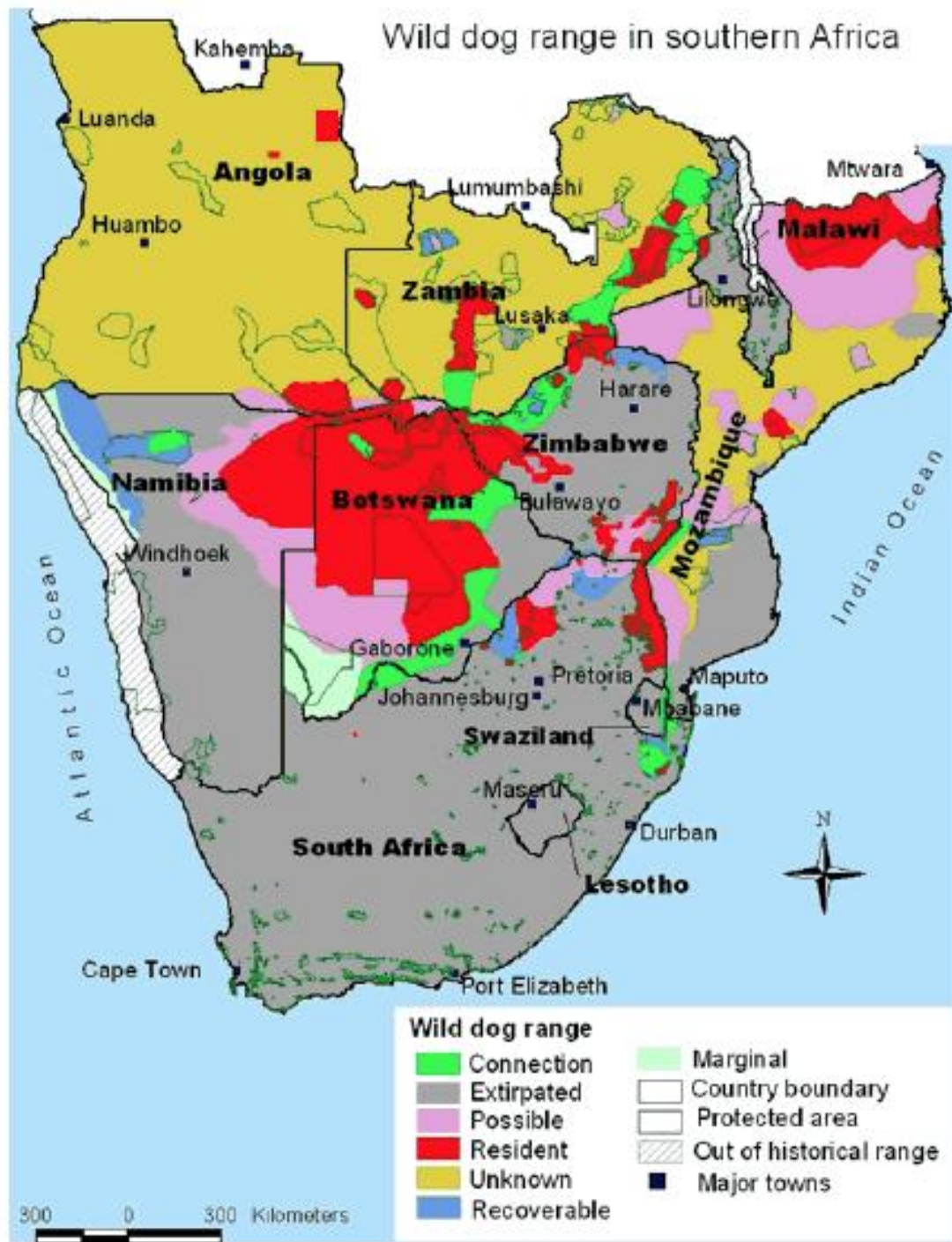




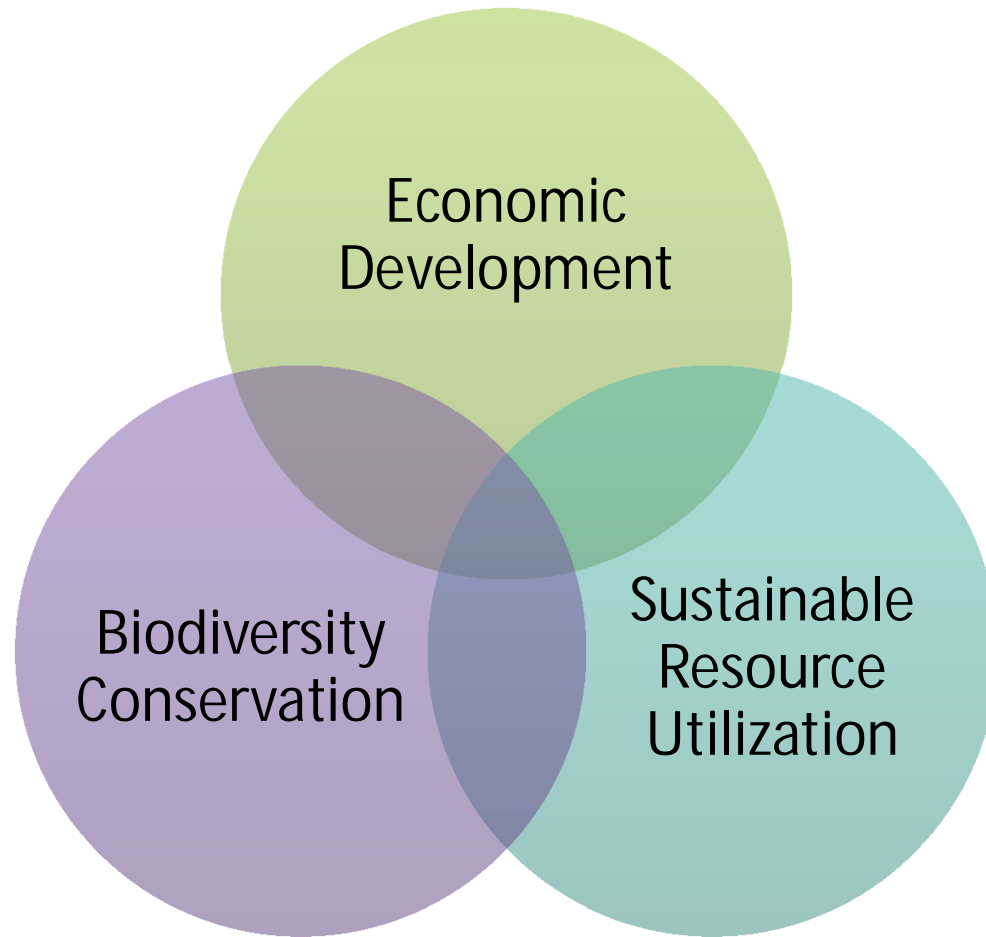




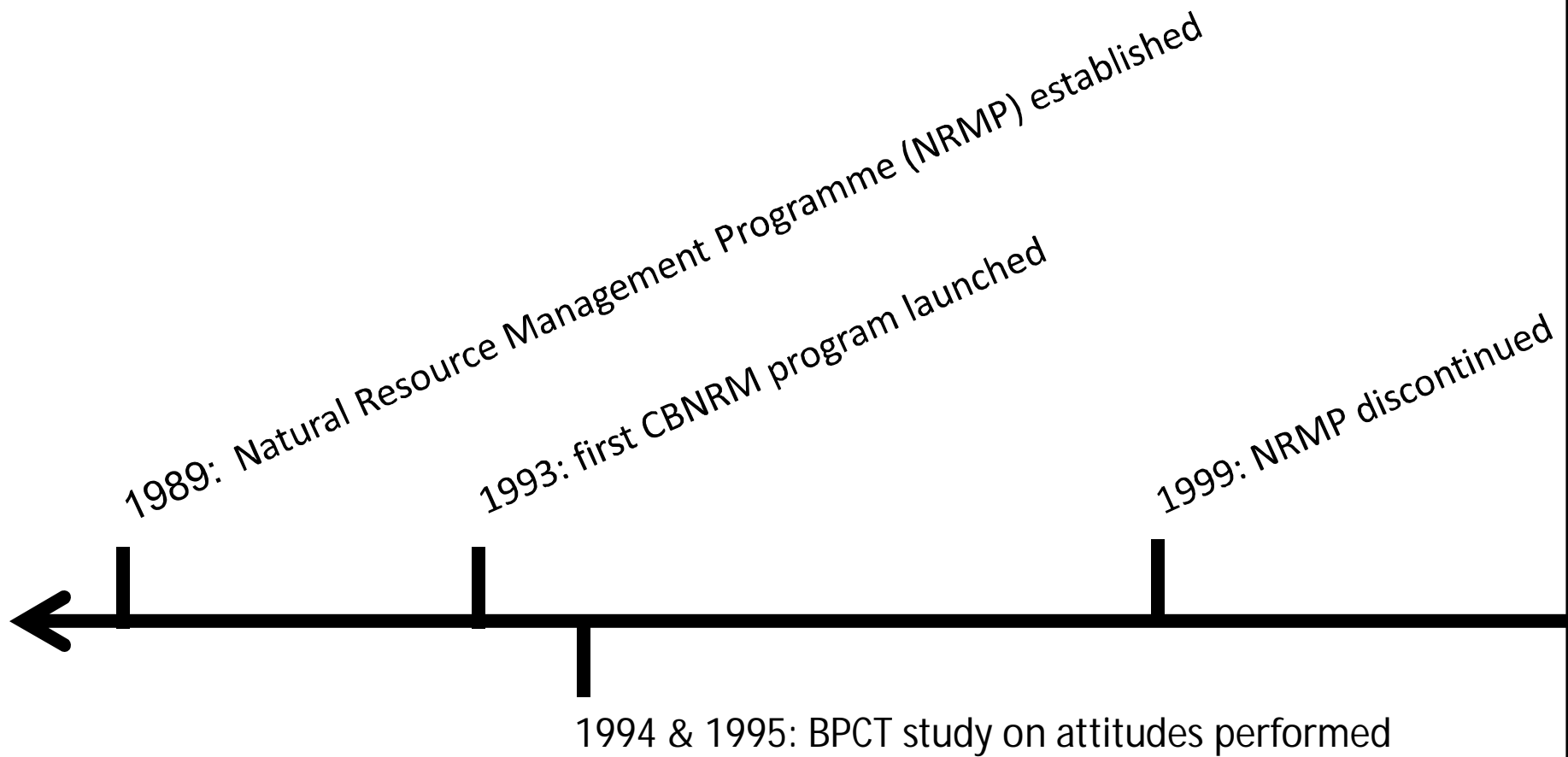


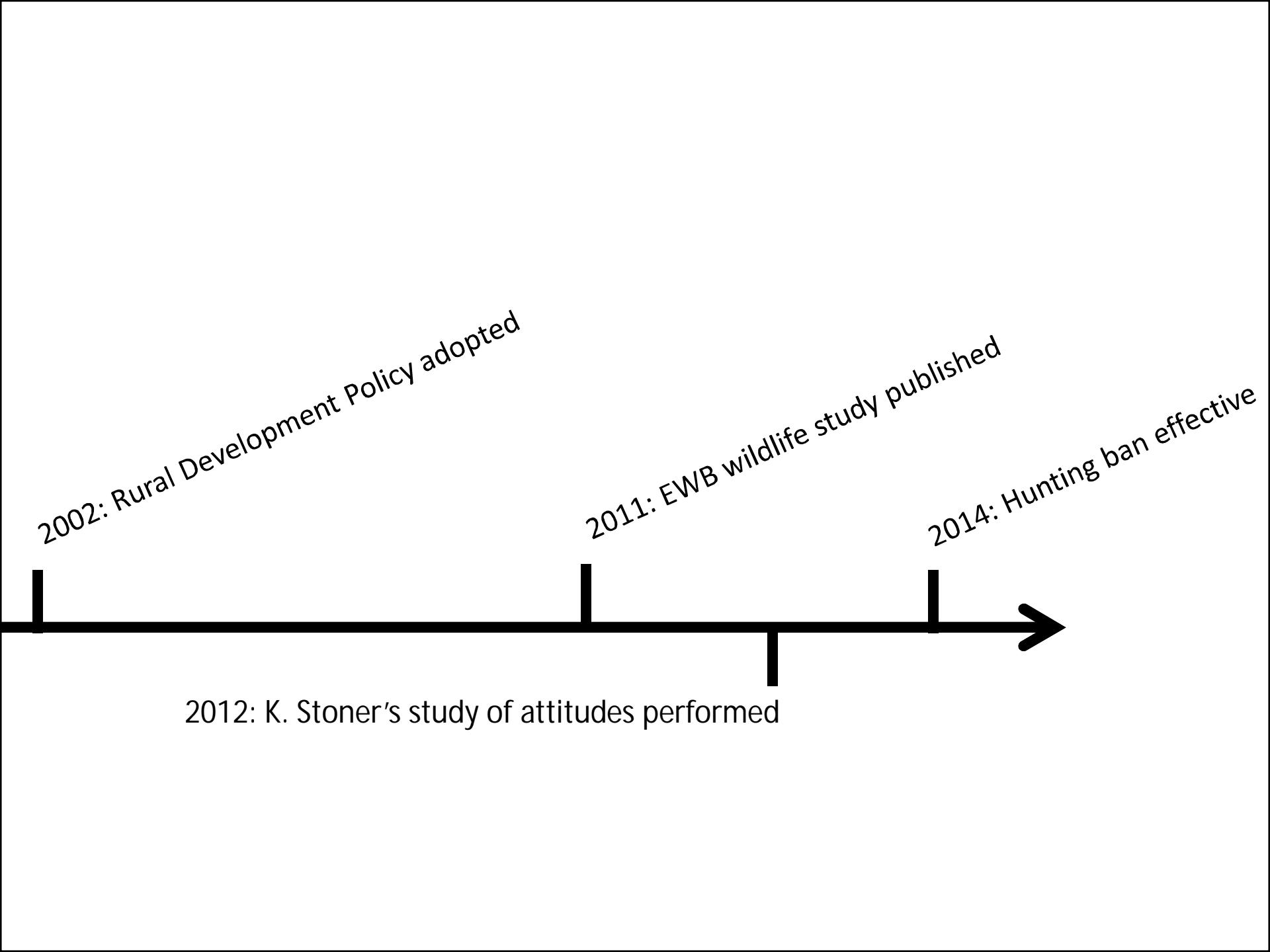


Community-based Natural Resource Management



CBNRM in Botswana





Claims of success

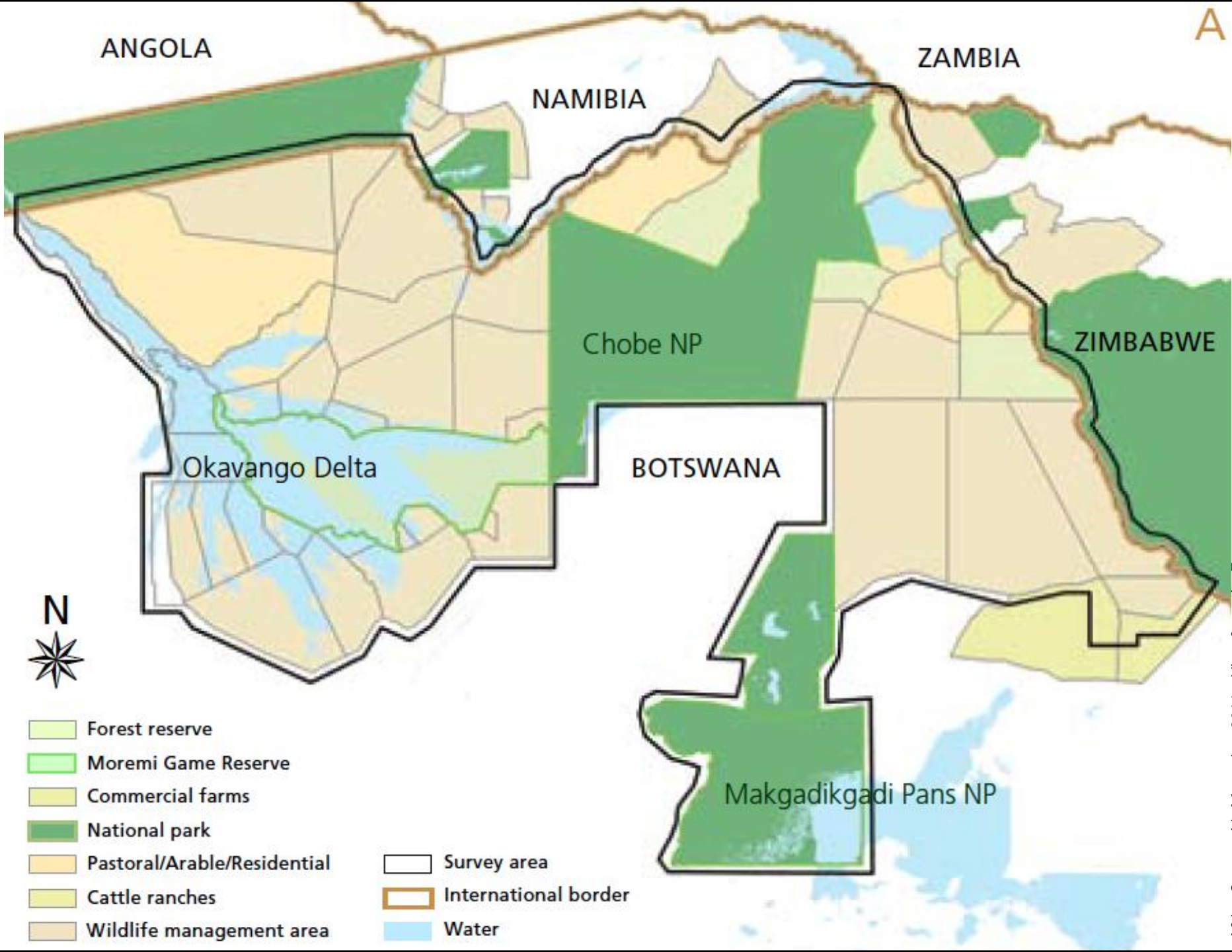
Claims of success












































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



CHOBE		NGAMILAND	CHOBE		NGAMILAND	CHOBE		NGAMILAND
	0%	0%		 894%	 24%		 58%	 20%
	 11%	 6%		 62%	 79%		 150%	 83%
	 73%	 25%		 97%	 58%		 896%	 81%
	 0.7%	 65%		 21%	 96%		 51%	 90%
	 5000%	 344%		 28%	 60%		 9.3%	 53%

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. MacLennan^{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

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- Prompt & fair payment

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

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Introduction

What is the problem?

Why do we need to do this?

What are the goals?

How do we do it?

What are the challenges?

What are the solutions?

What are the next steps?

What are the outcomes?

What are the lessons learned?

What are the future plans?

What are the conclusions?

What are the recommendations?

What are the acknowledgments?

What are the references?



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

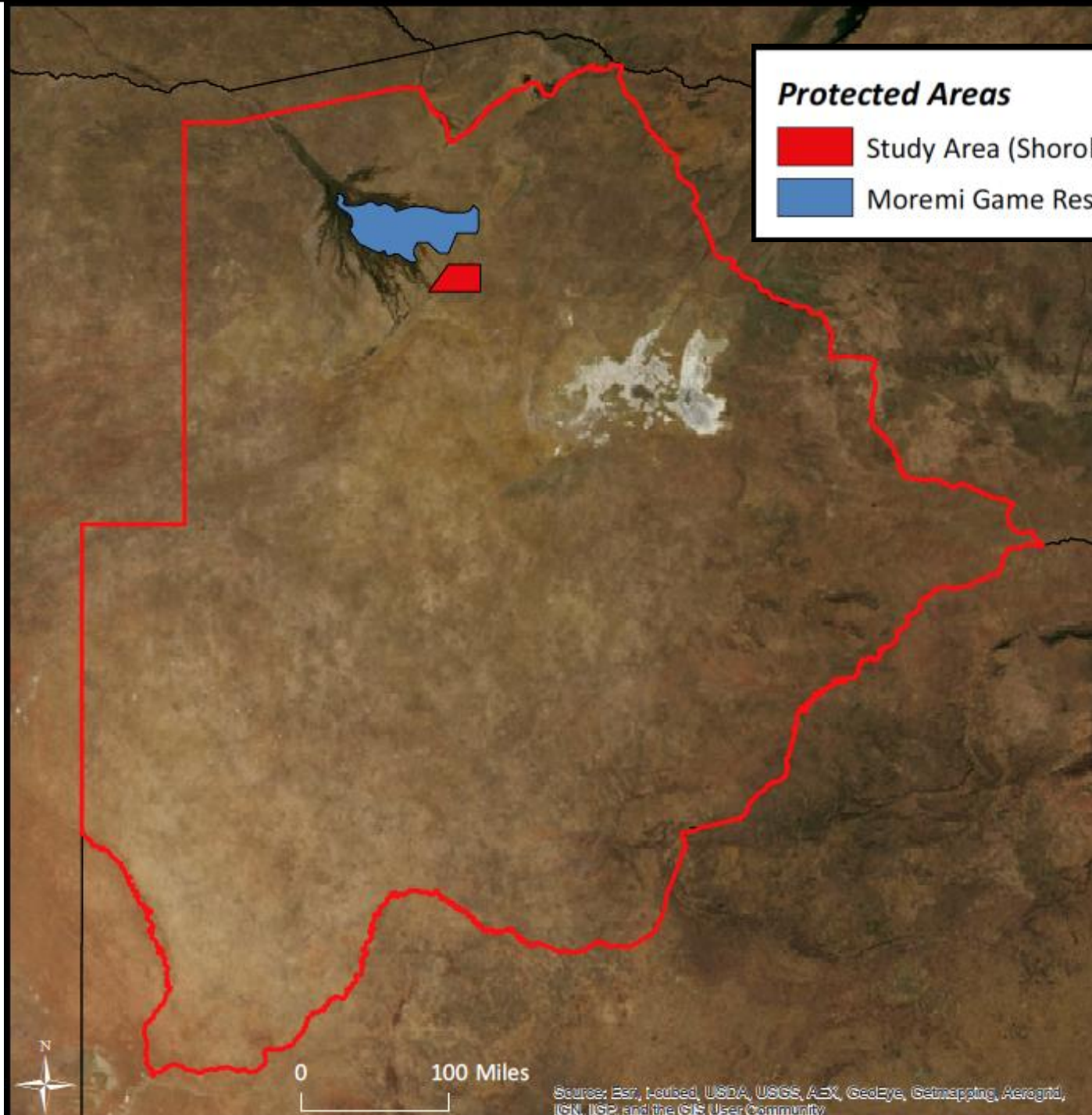


Historical study in 1994 & 1995

Test importance of ethnicity

77 surveys in 4 villages

Irrelevant data discarded



Protected Areas

- Study Area (Shorobe Village)
- Moremi Game Reserve



0 100 Miles

Source: Esri, Imagery, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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

● *Survey Locations (n=32)*

● *Maun*

— *Roads*

— *Gomare-Shorobe Fence*



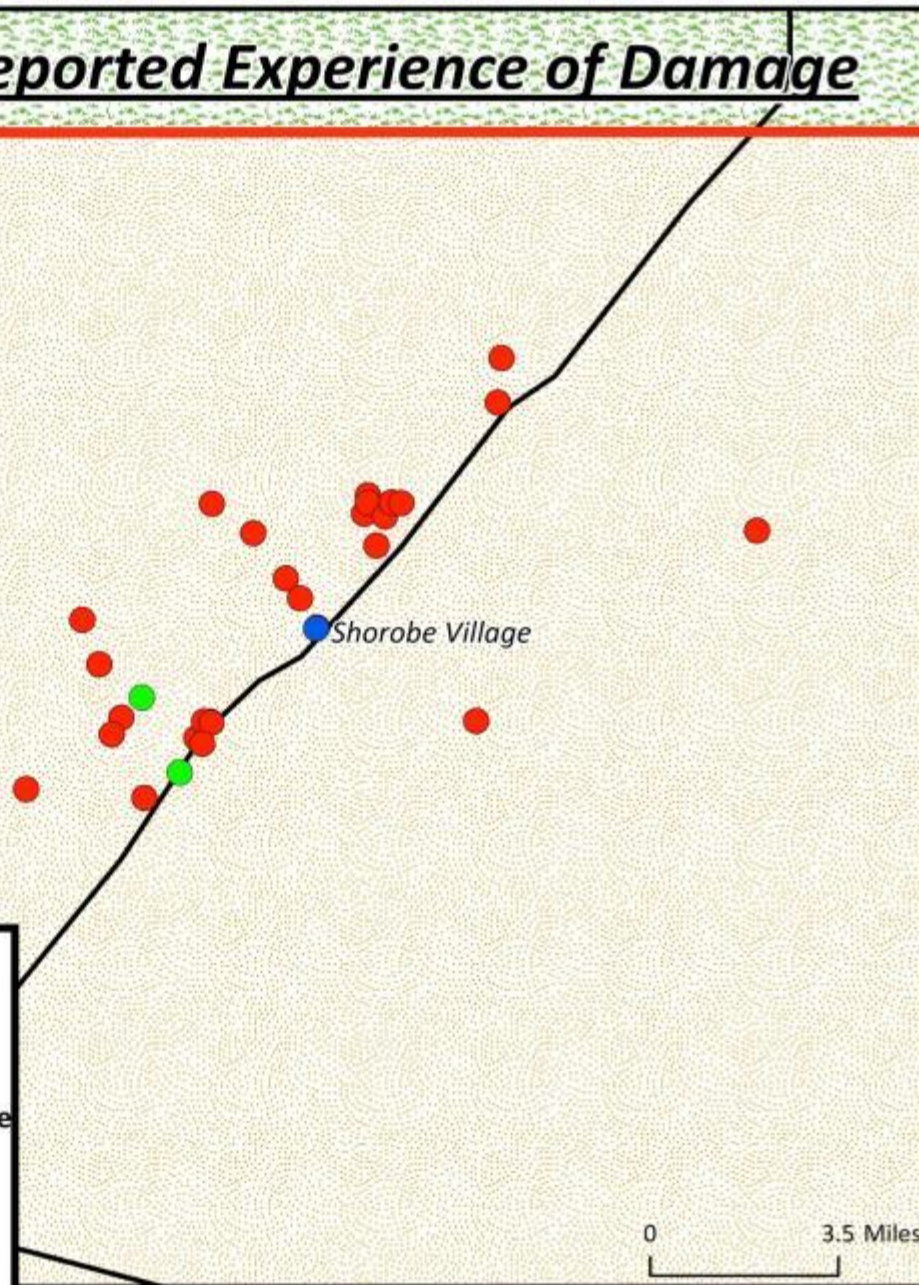
0 10 Miles

Source: Esri, Intel, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

	1995	2012
Total # Surveys	77	39
% Male	64%	82%
Average Age	**	35 to 59



Reported Experience of Damage

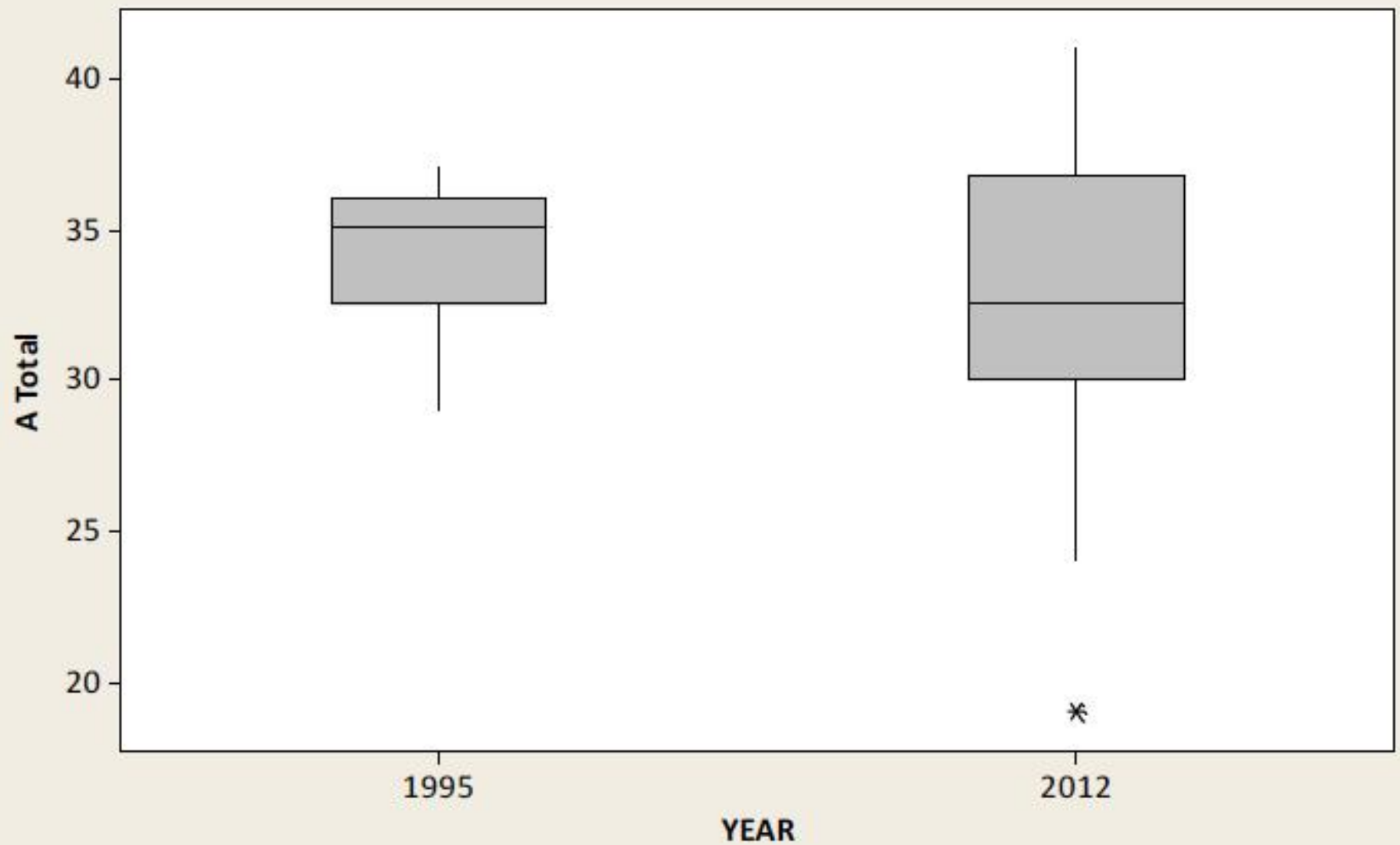


Cartography by Kelly J Stoner

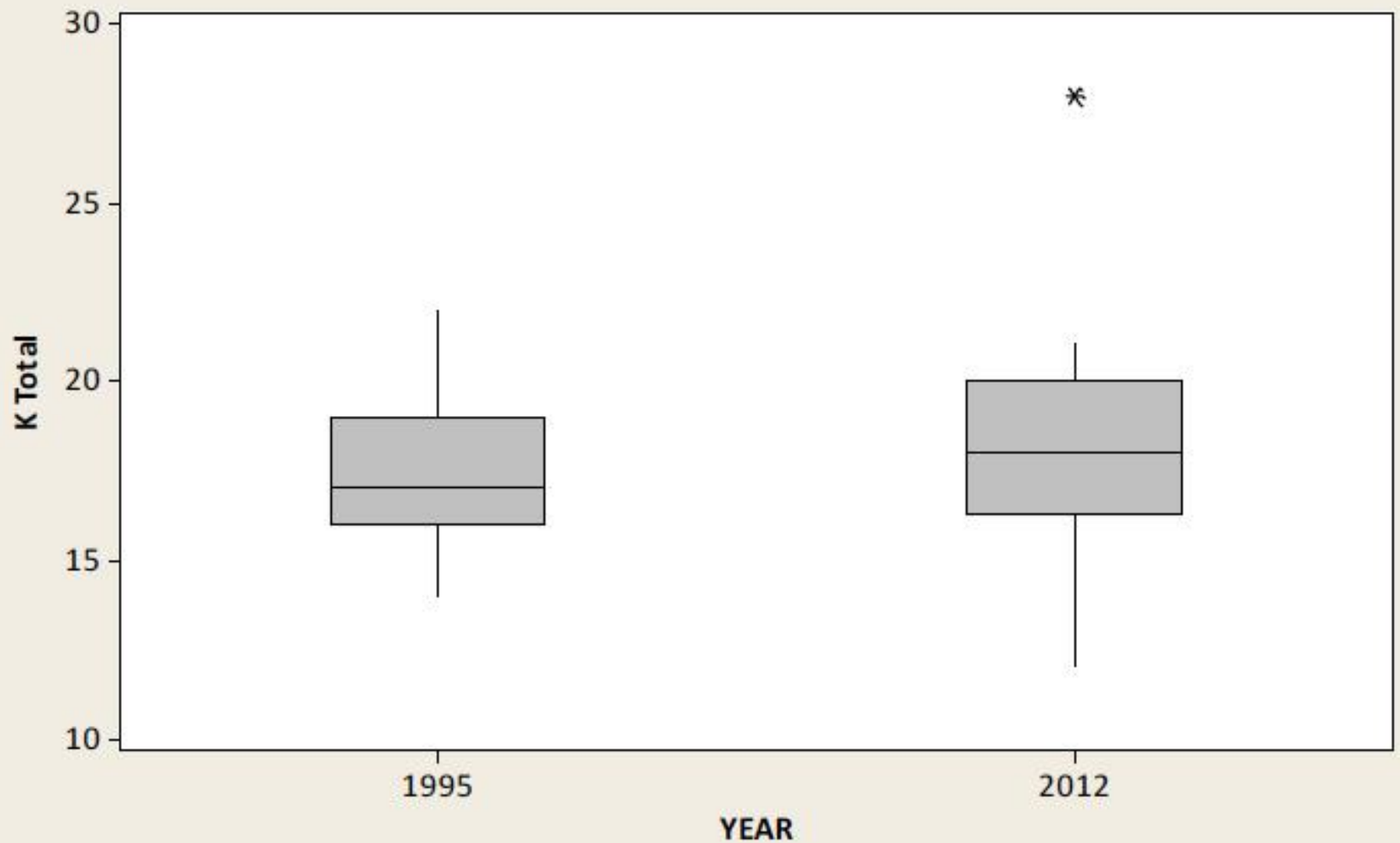
Results

Overall, no difference between
historical and current samples

Overall Attitude Score (Out of 50)



Overall Knowledge Score (Out of 30)



Results

Overall, no difference between
historical and current samples

Neither gender nor reported experience of
damage significantly impacted attitudes

Results

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.

Received

4.59

Did Not

4.24

Compensation's significant impact:

	<i>Received</i>	<i>Did Not</i>
It is important to keep a place where wild animals can live.	4.59	4.24
It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.	1.53	2.43
National parks and reserves are a waste of land.	3.65	4.21

2012's significantly lower scores ($p < 0.001$)

	<i>1995</i>	<i>2012</i>
It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.	2.76	1.62

2012's significantly lower scores ($p < 0.001$)

	<i>1995</i>	<i>2012</i>
It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.	2.76	1.62
National parks and reserves are a waste of land.	4.36	3.79

2012's significantly lower scores

($p < 0.001$)

	1995	2012
It would be okay to have some cattle areas changed into wildlife areas if we got wildlife-related jobs.	2.76	1.62
National parks and reserves are a waste of land.	4.36	3.79
Our community does make money from wildlife, even wild dogs.	4.00	2.95

Claims of success

Wildlife thriving in a pristine environment

CBNRM helping to increase understanding of
and attitudes toward wildlife

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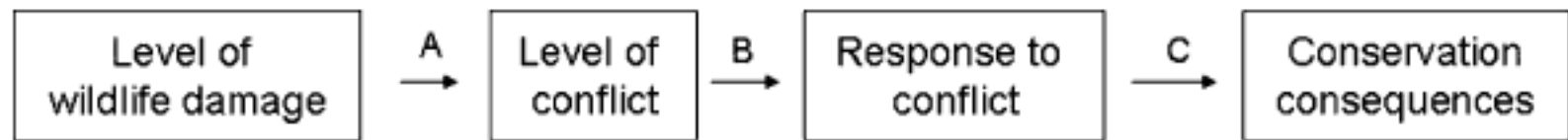
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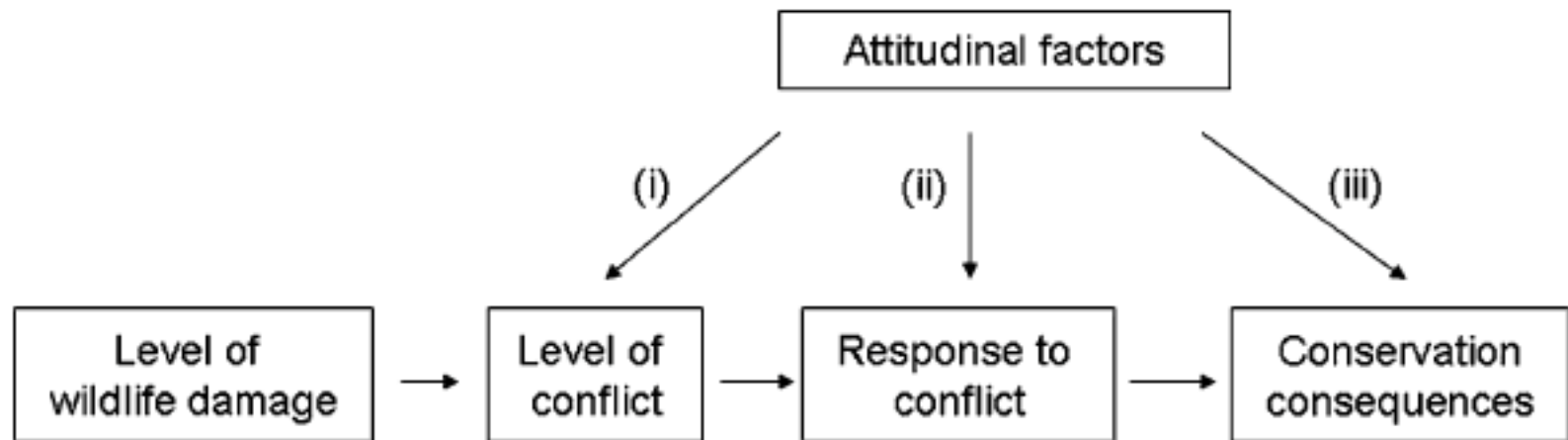
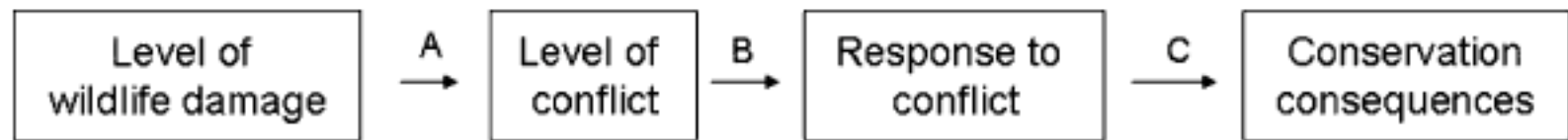
Wildlife thriving in a pristine environment

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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?



Wildlife photos by KJS