

Status and conservation of the lion population in the Maasai steppe, Northern Tanzania



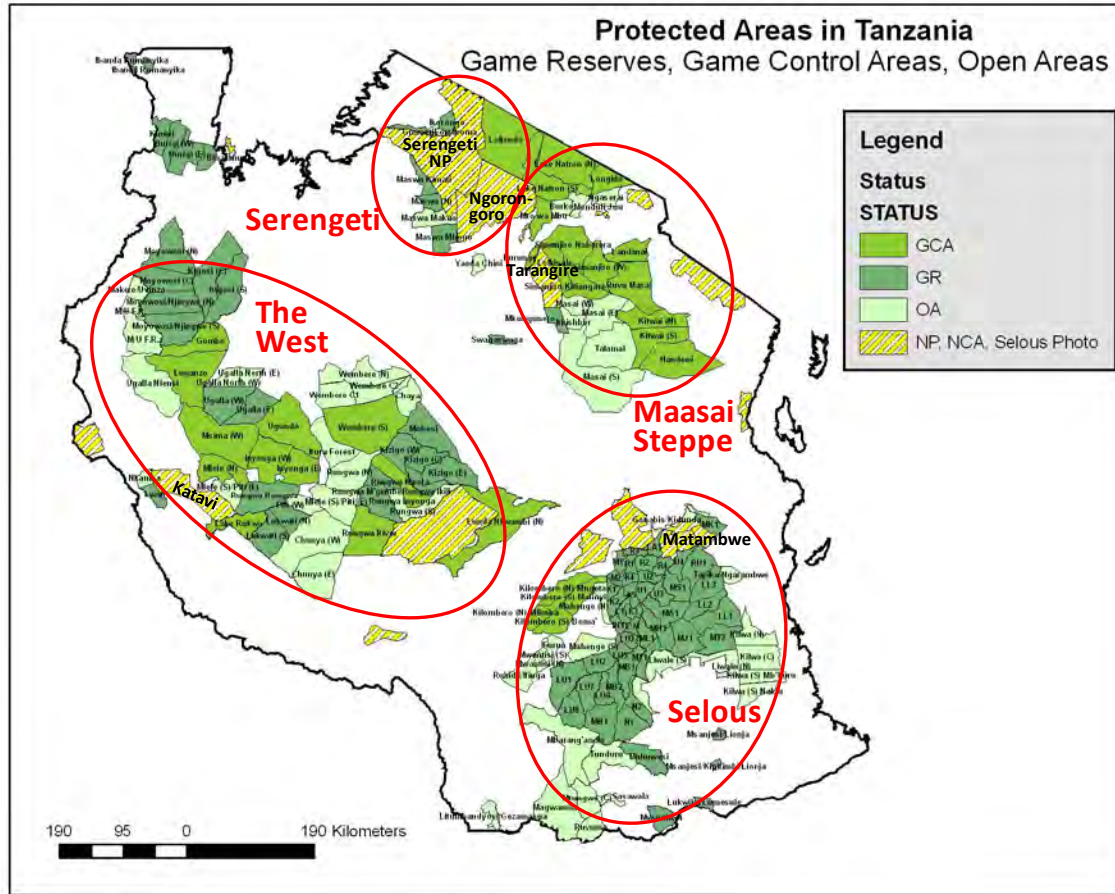
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AFRICA



TANZANIA



Estimated number of remaining lions

- Estimated number across Africa:
23,000-40,000
- Estimated number for Tanzania:
16,800 (Mesochina et al 2010)
- > 50% of lions remaining in Africa are in Tanzania

Threats to lion conservation

- Human related threats

 - Habitat fragmentation (Encroachment)

 - Blockage of corridors/migratory routes

 - Hunting

 - Human-lion conflicts

 - Persecution, snaring, poisoning

- Diseases

- Isolation into small populations

 - inbreeding depression

Lion research and conservation in Maasai steppe

Lion population

Applied research and monitoring

Range use patterns

Demography

Human dimension of lion conservation

Human-lion conflict

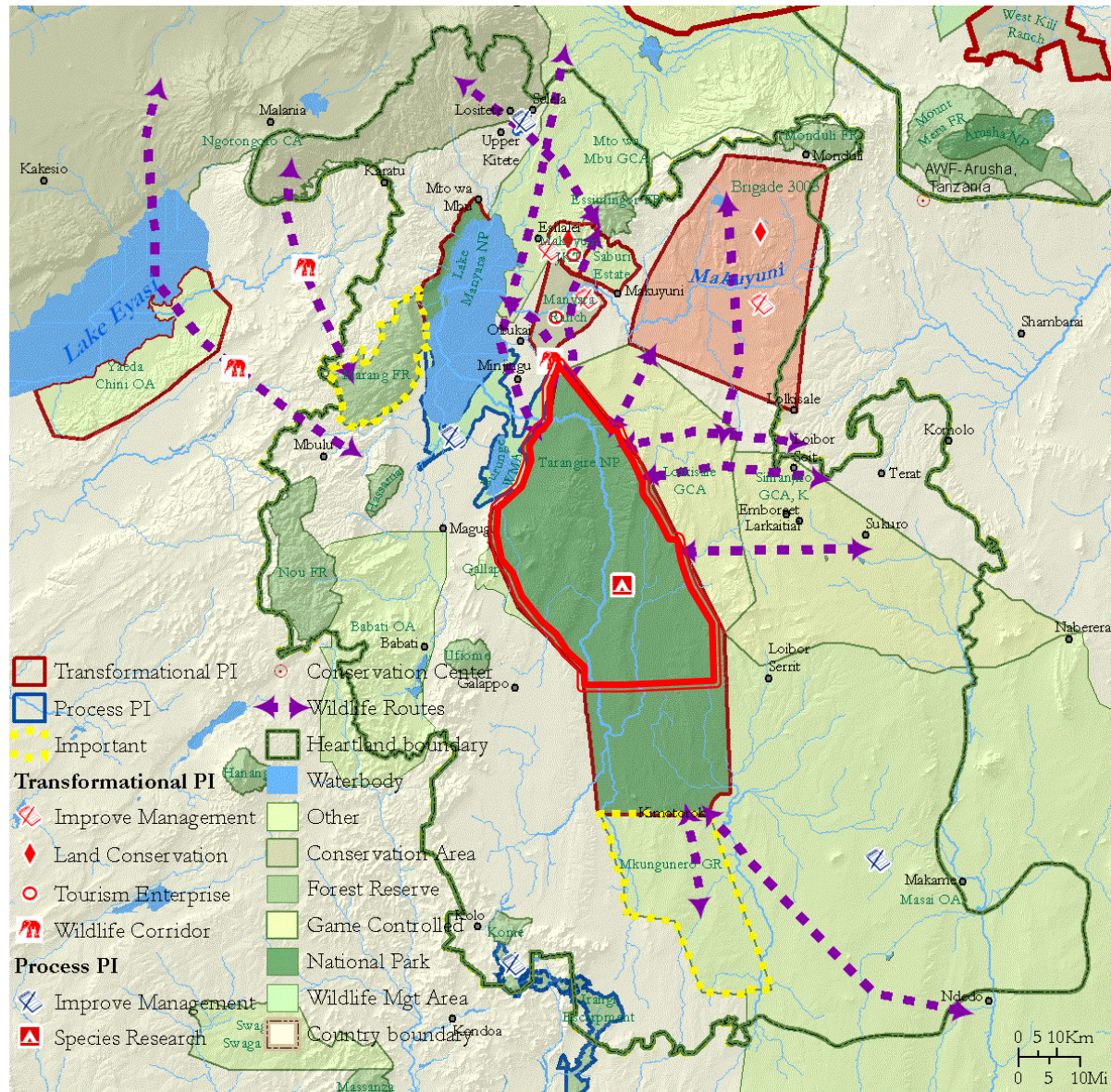
Livestock predation

Retaliatory lion killing

Conflict mitigation

Husbandry practices

Maasai steppe



Sources: AWF, Instituto Oikos, FAO-Africover
SRTM 90m, Tracks4Africa



AWF Spatial Analysis
Laboratory, Jan-09

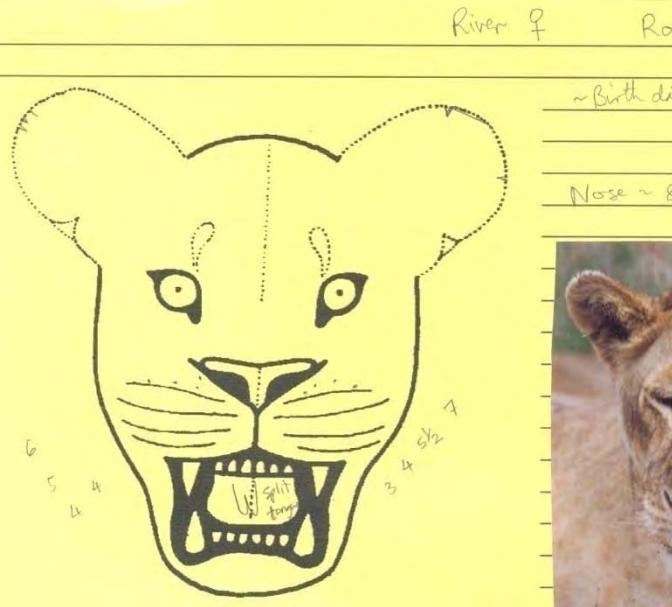
Field data collection

Radio telemetry data (VHF and GPS collars)



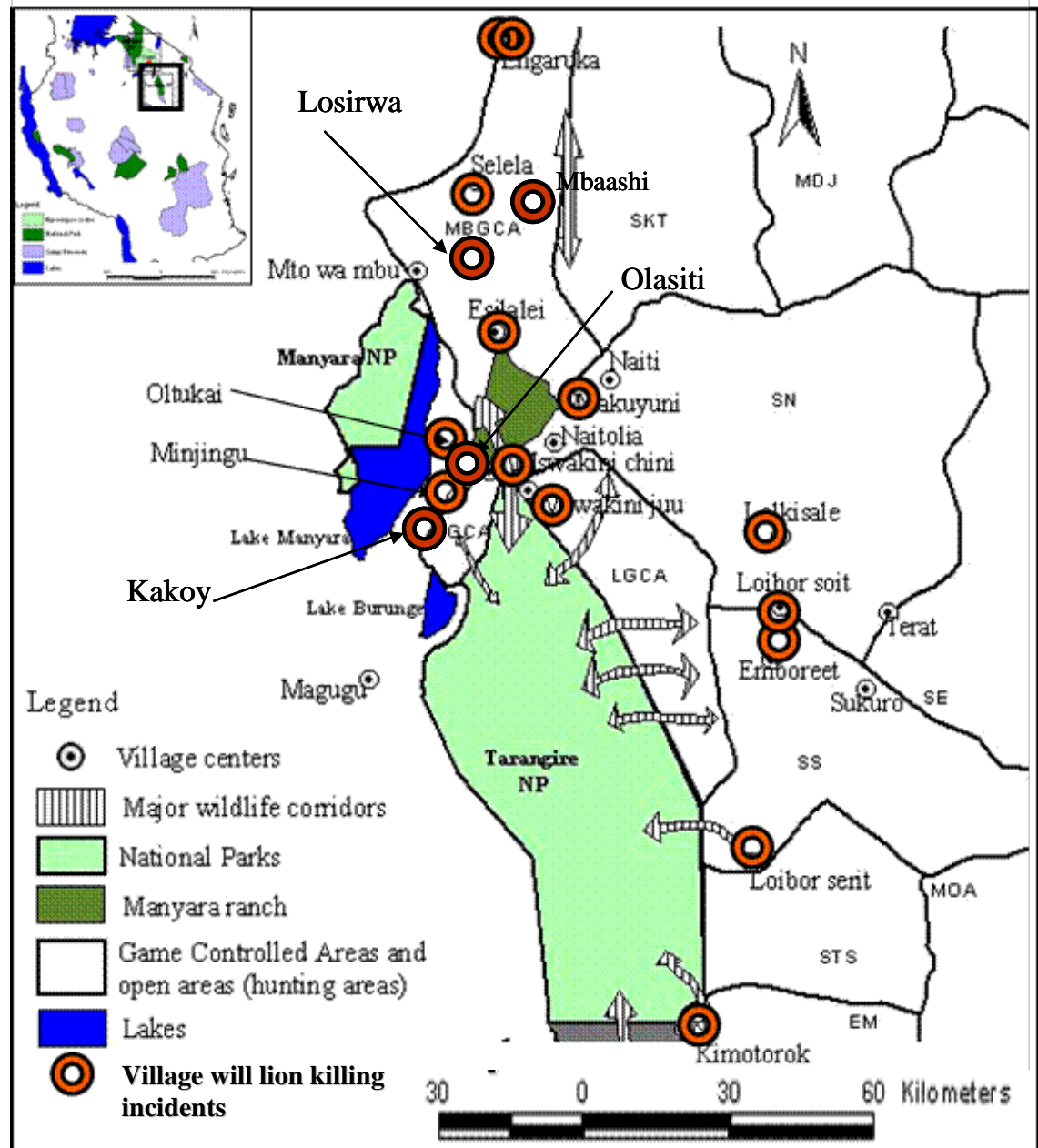
Long-term monitoring (Population dynamics)

Individual identification



Human-lion conflicts

Esilalei,
 Selela,
 Loiborsoit,
 Emboret,
 Engaruka chini,
 Engaruka juu,
 Oltukai,
 Minjingu,
 Kakoy
 Makuyuni
 Loiborserit,
 Lolkisale,
 Olasiti,
 Kimotorok,
 Losirwa,
 Mswakini chini,
 Mswakini juu
 Mbaashi



Where do livestock predation attacks occur?



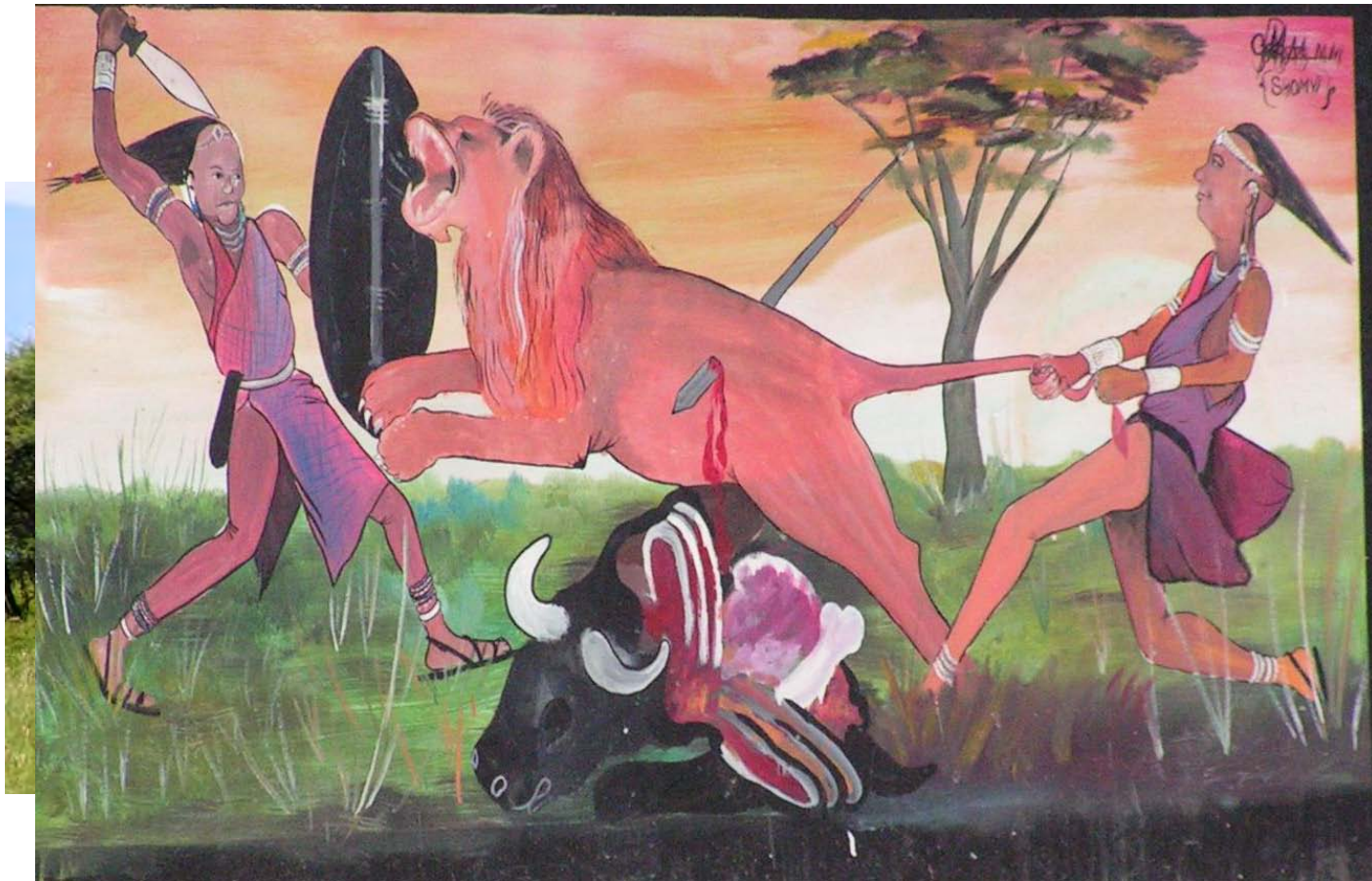
Night



Daytime

Retaliatory killing of lions

Direct pursuit with spears



Retaliatory killing of lions



March 2010

Lion poisoning

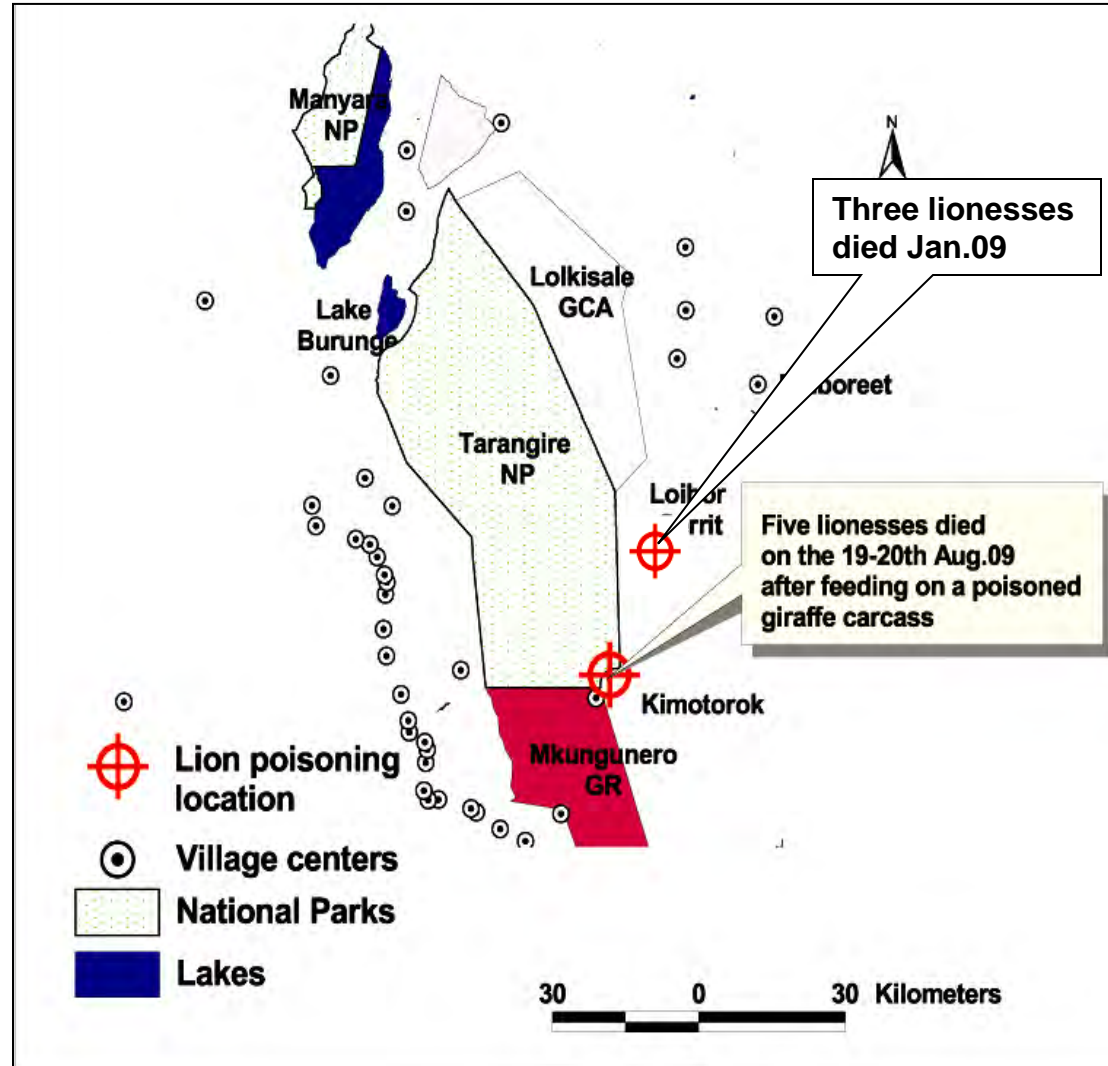
Aug. 2009
Kimotorok village

Five lion carcasses

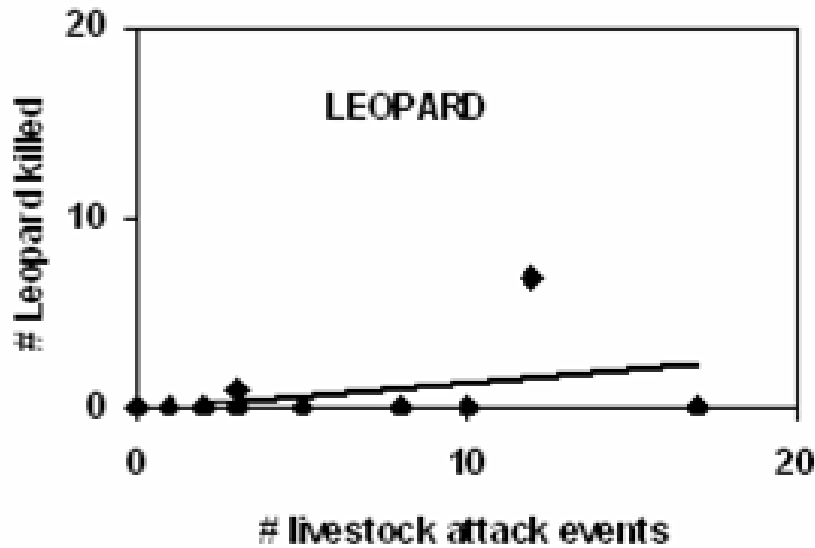
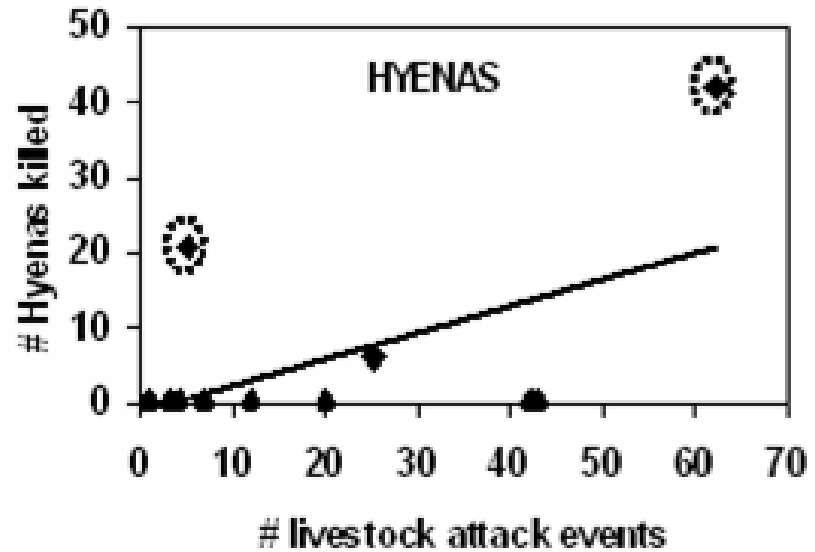
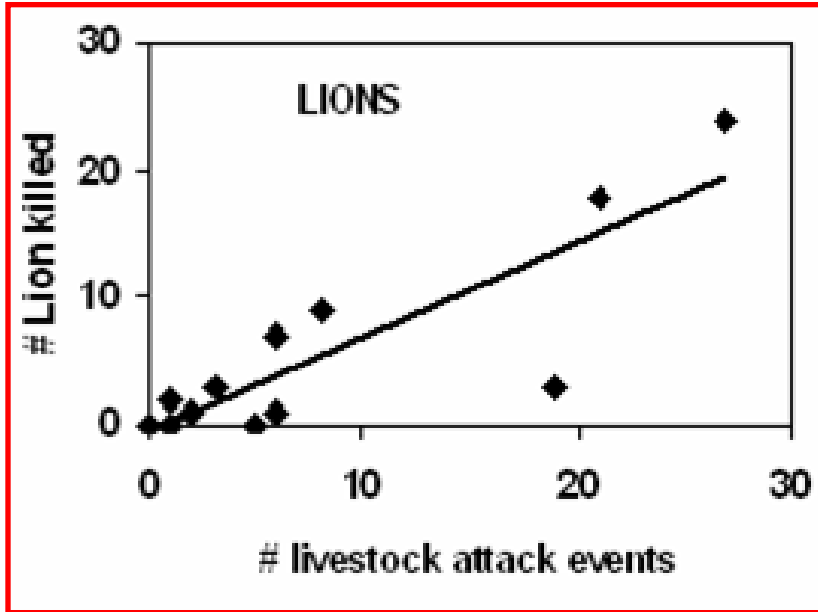


Lion poisoning

Giraffe carcass laced with poison



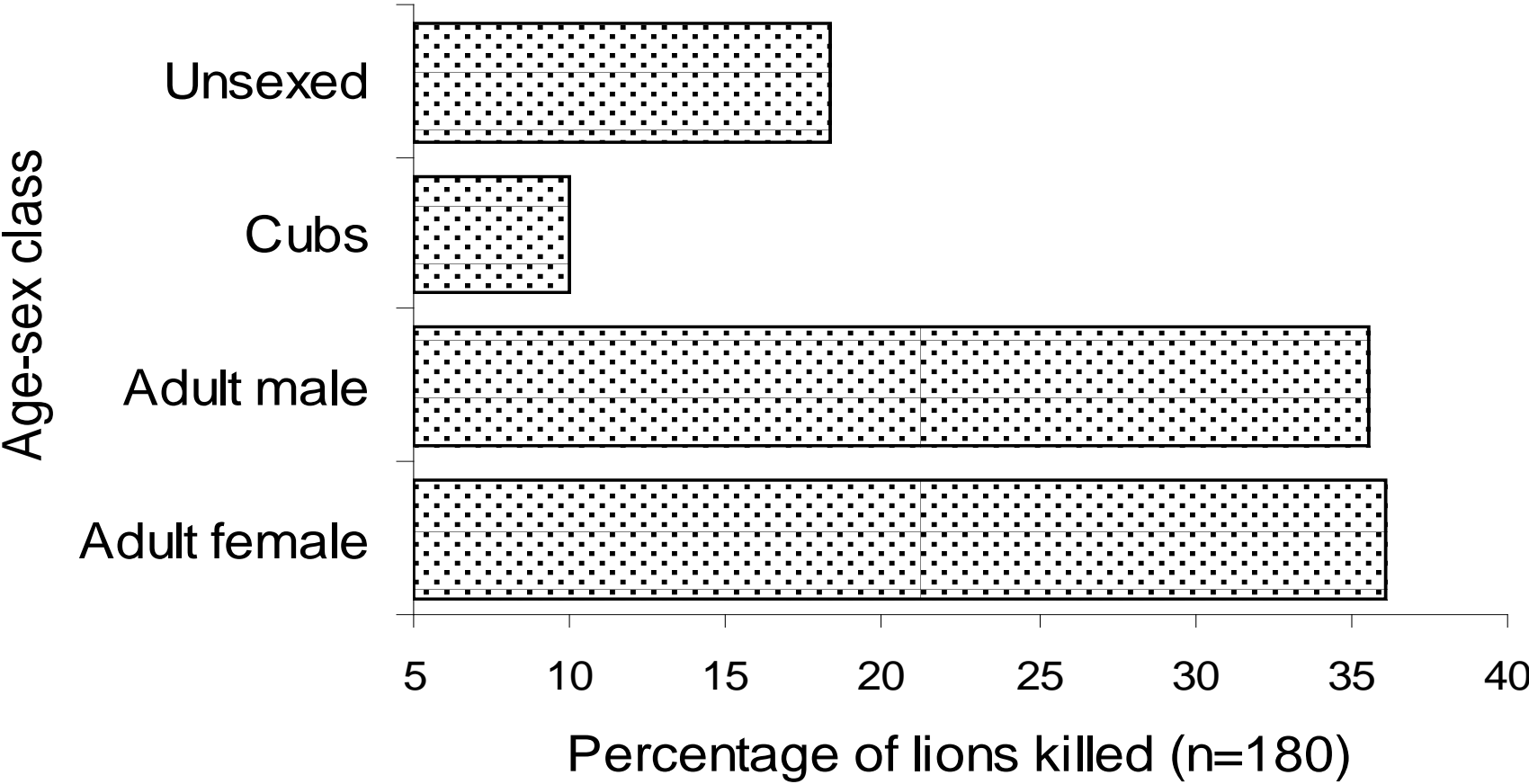
Retaliatory lion killing



Conflict mortality

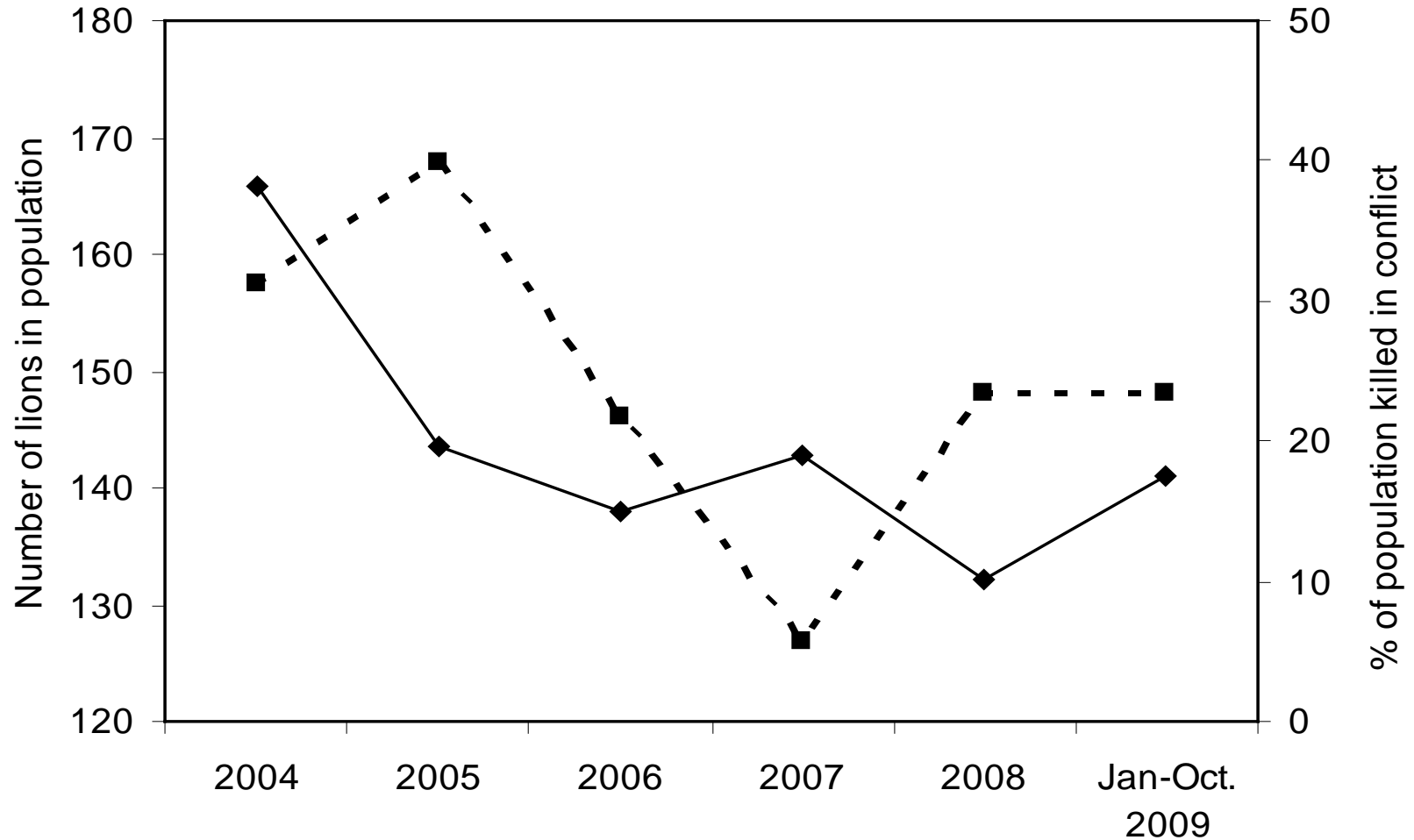
Year	Lions killed
2004	60
2005	33
2006	22
2007	24
2008	15
2009	30
2010	17
Jan-Mar 2011	12
TOTAL	209

Conflict mortality



Conflict mortality 2004-Oct. 2009

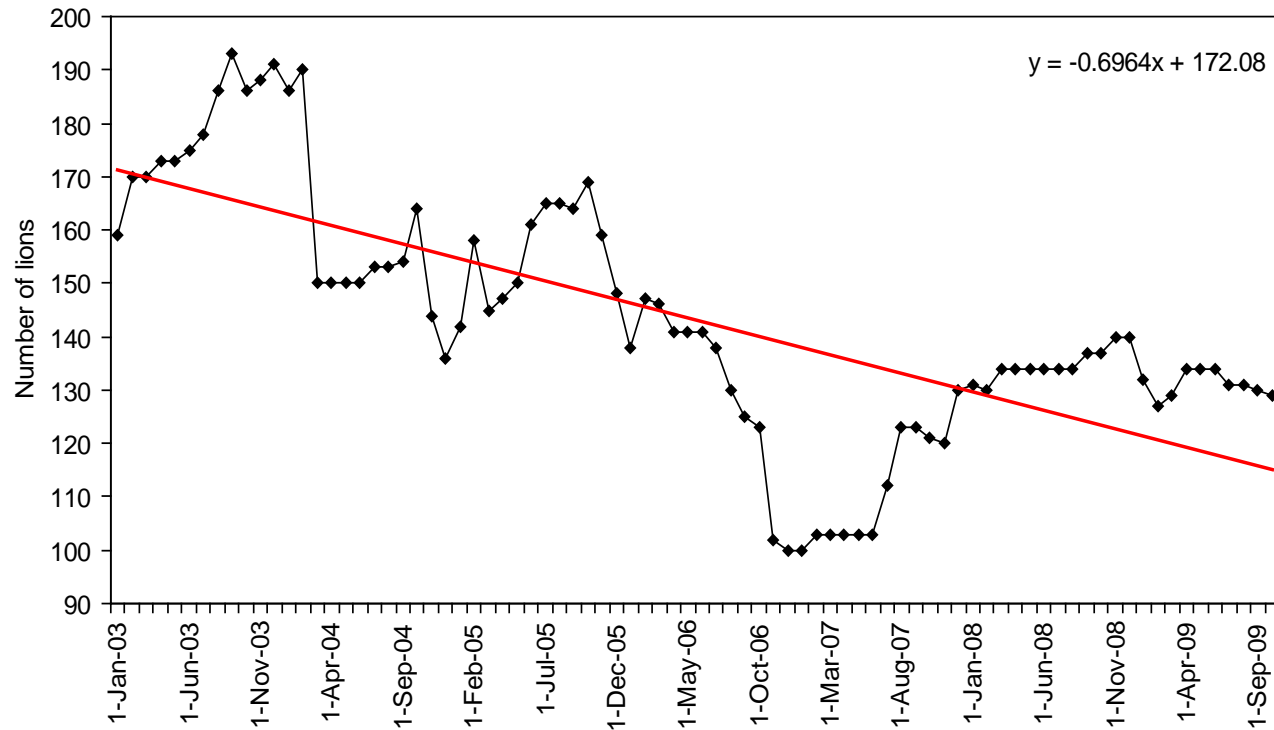
averages 15-20% annually



- ■ - Lion population size (monthly averages) —◆— % of popn killed in conflict

Population trend

- High human-lion conflicts - livestock predation
- Retaliatory killing of lions



Livestock losses by lions

Lion	Cattle	Calves	Donkey	Sheep	Goat	Grand total
2004	64	7	15	4	49	139
2005	27	0	5	0	12	44
2006	15	0	5	6	21	47
2007	88	5	17	26	27	163
2008	25	2	3	3	13	46
2009	40	0	1	5	3	49
2010	10	0	4	15	14	43
Grand Total	269	14	50	59	139	531

Husbandry strategies against predation at homesteads



Boma made of poles and thorn bushes



Boma made of thorn bushes



Boma made of planted trees for enclosure



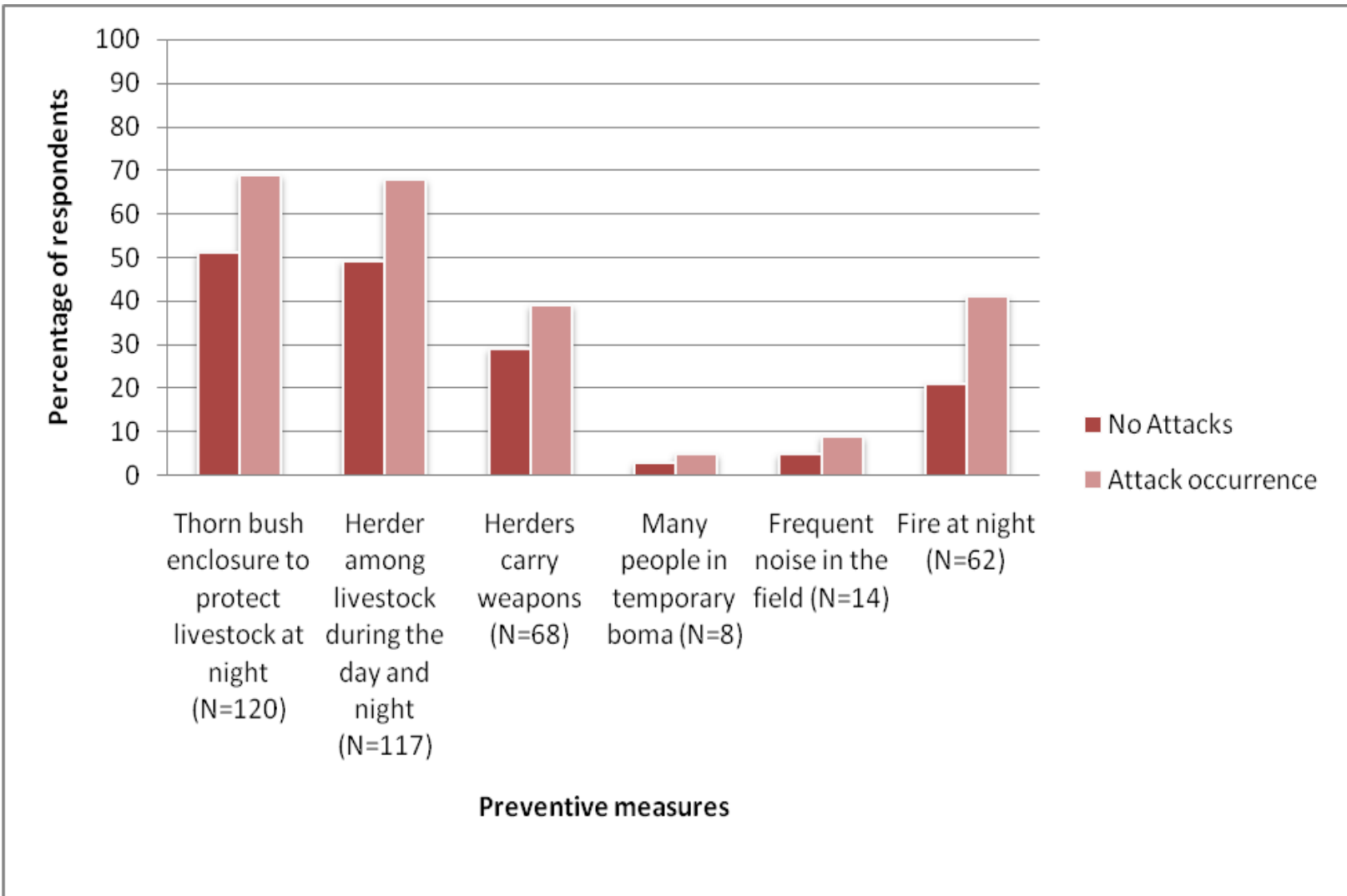
Mud/dung huts, sometimes bricks

Others: Person stay in livestock at night, Dogs

Husbandry strategies vs. predation in the field

- Splitting livestock into smaller herds
- Herders among livestock
- Herders carrying weapons (spear/stick)
- Herders in groups
- Noise
- Domestic dogs

Husbandry strategies



$\chi^2 = 1.712, df = 5, p = 0.887$

Approaches to conflict mitigation

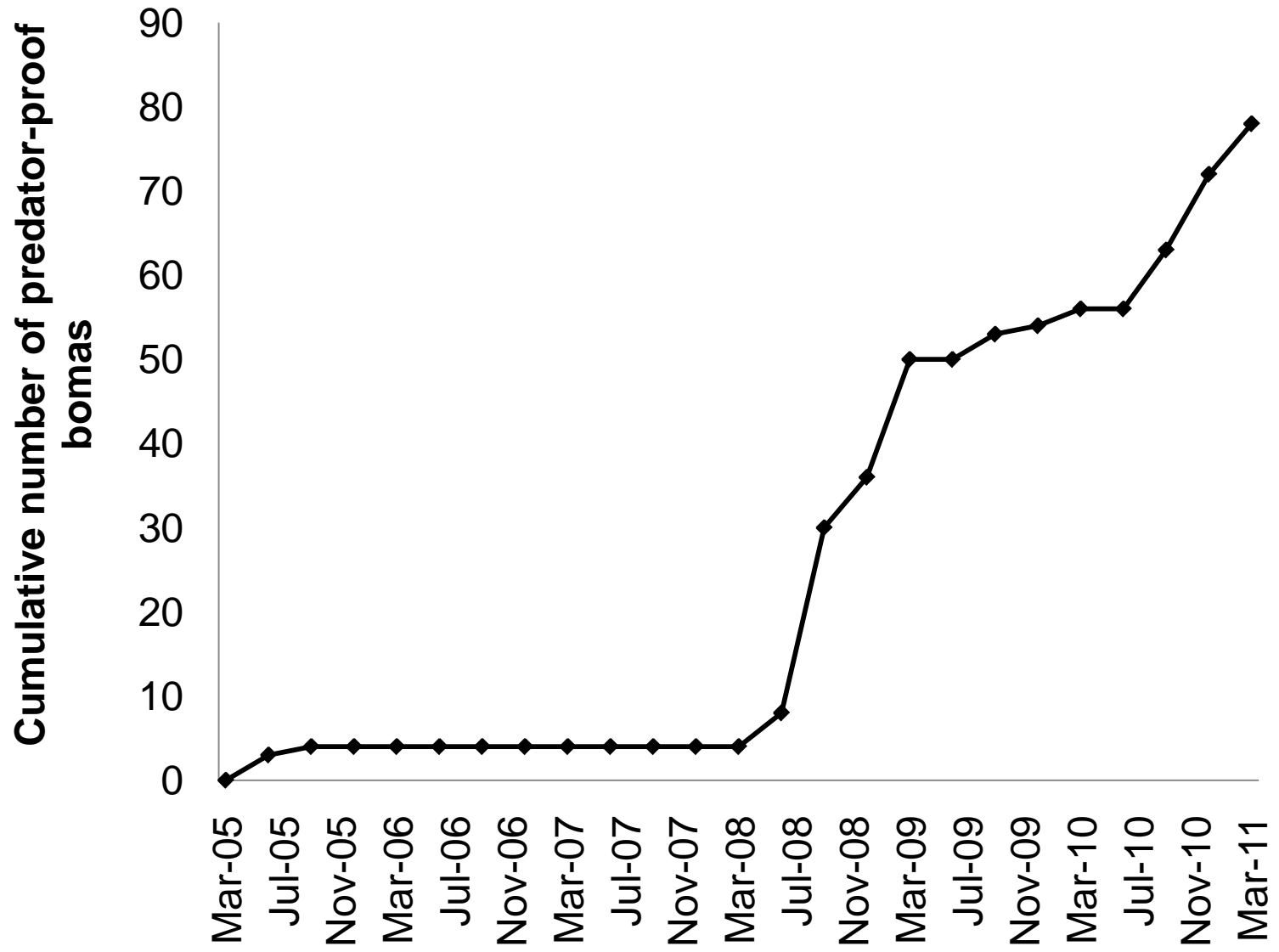
Direct reduction of livestock predation

Improve livestock security-chain-link fences through 50% cost sharing



Affordability?

Predator proof bomas



How effective are chain-links?

Monthly follows (May 2006 to March 2010)

	Number of bomas reinforced with chain-link fences (Experimental bomas)	Number of bomas constructed with thorn bush walls (Control bomas)
Boma visited	43	41
Number of visits	412	394
Predation Attempts	20	19
Predation success	0	6
Probability of predation success	0	0.32

Community engagement

Direct payments as consolation for losses

Now engrained in the Tanzania wildlife policy

Regulations formulation

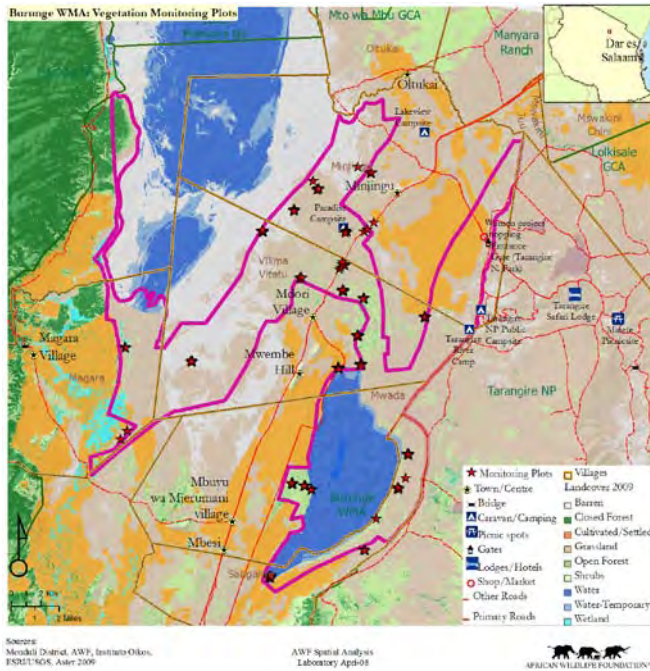
Planned pilot consolation schemes

Community engagement (indirect)

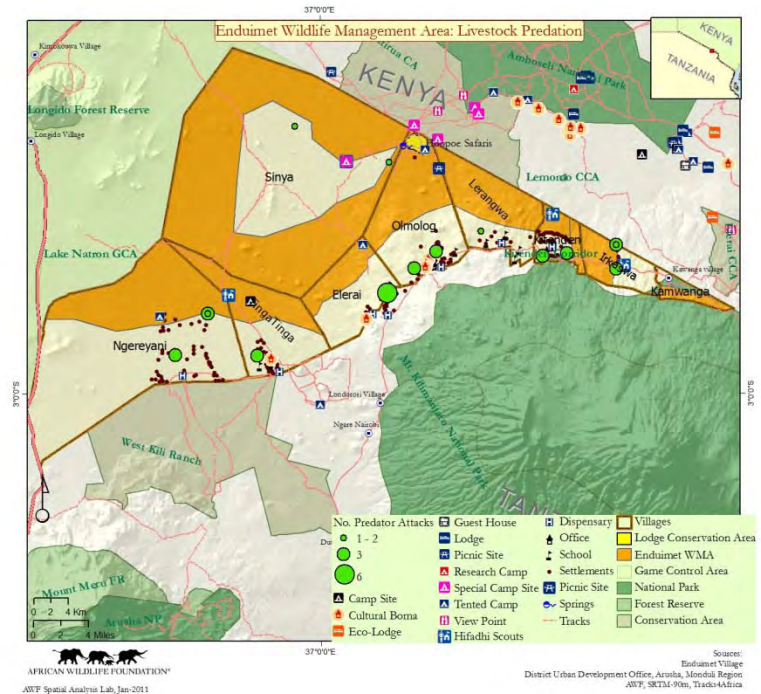
Creation and promotion of Wildlife Management Areas (WMAs)

- Increase economic benefits to communities
- Attitudinal changes
- Create connectivity and wildlife habitat outside protected area

AWF supported WMAs



BURUNGE WMA



ENDUIMET WMA

OTHERS UNDERWAY:
NDEDO-MAKAME WMA
MAKUYUNI-LOLKISALE
LAKE NATRON

