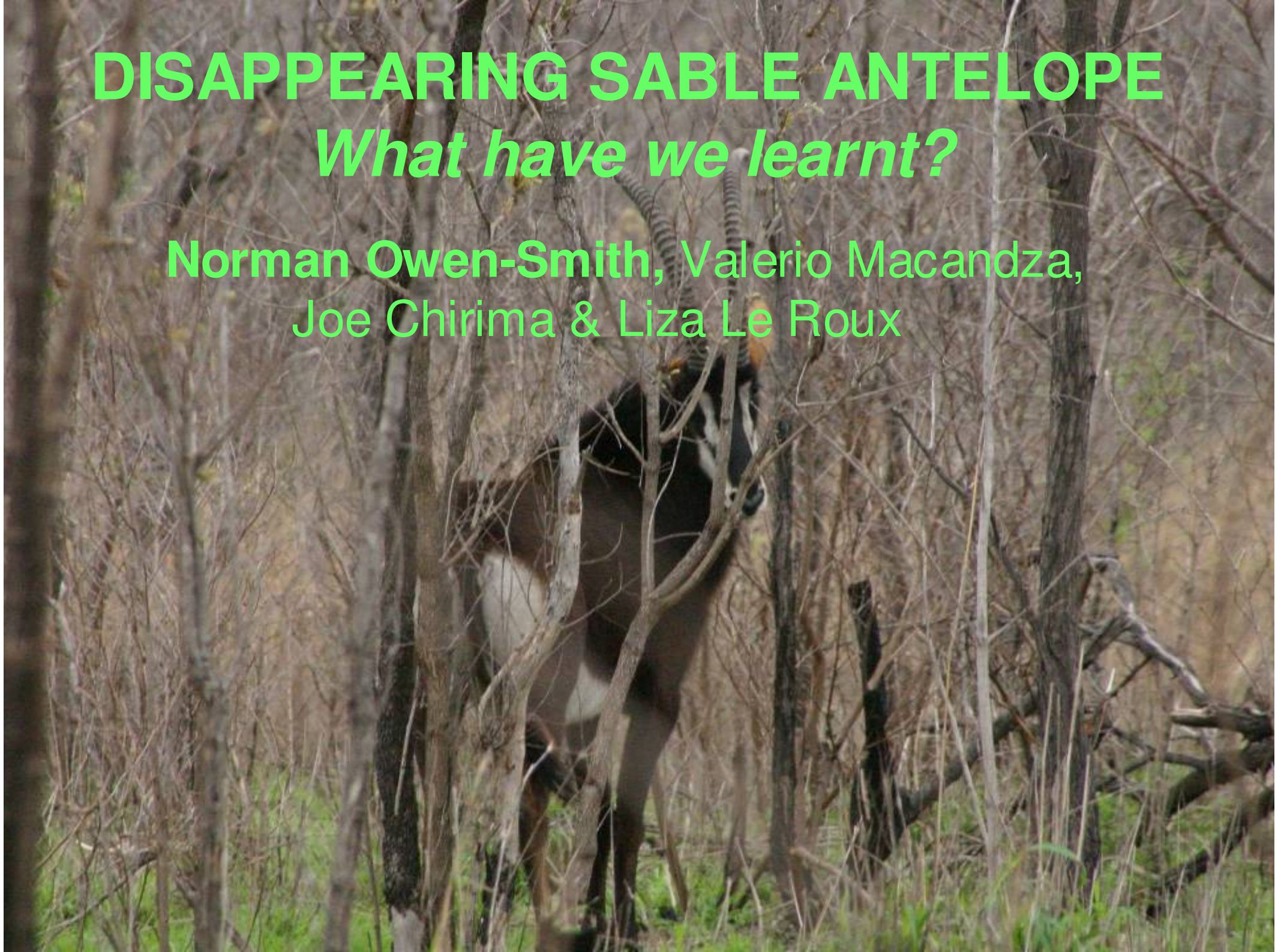


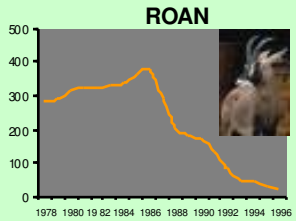
DISAPPEARING SABLE ANTELOPE

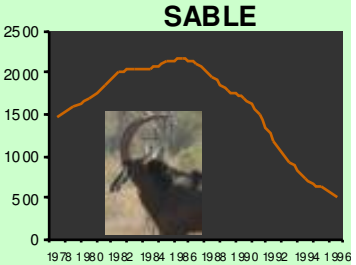
What have we learnt?

Norman Owen-Smith, Valerio Macandza,
Joe Chirima & Liza Le Roux

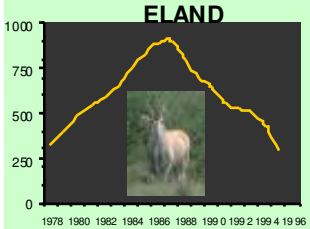
WHAT WAS THE MAIN CAUSE OF THE RARE ANTELOPE DECLINES?

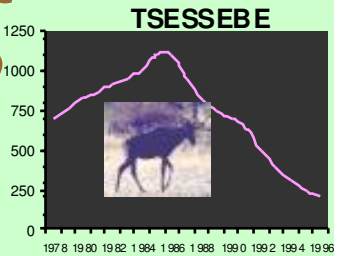
– ***External influences from climate and habitat change?***





– ***Internal influences from management of surface water affecting predation?***





WHAT IS NOW PREVENTING POPULATION RECOVERY?

ROAN ANTELOPE STORY

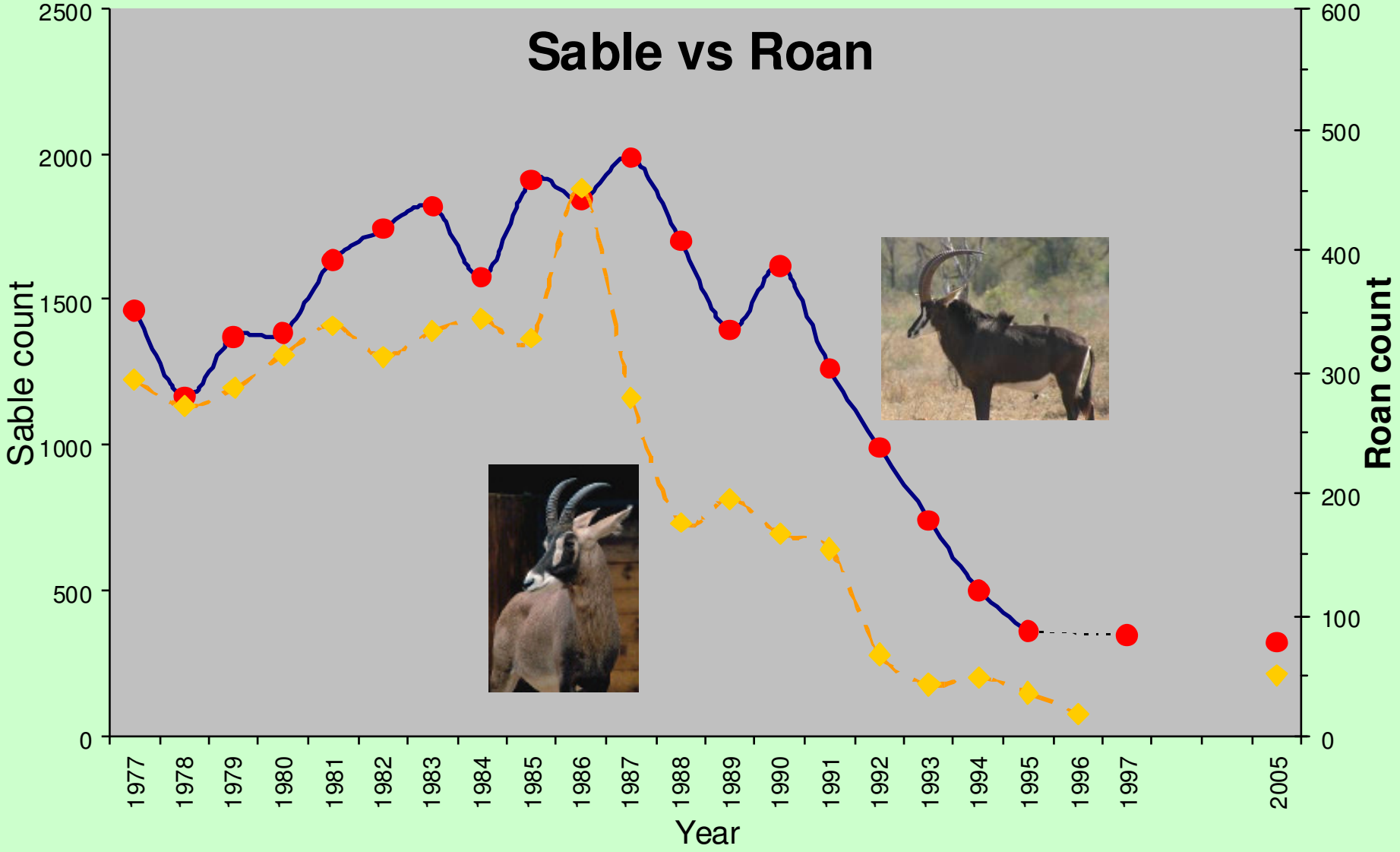
Zebra increase

→ lion increase

→ roan decline

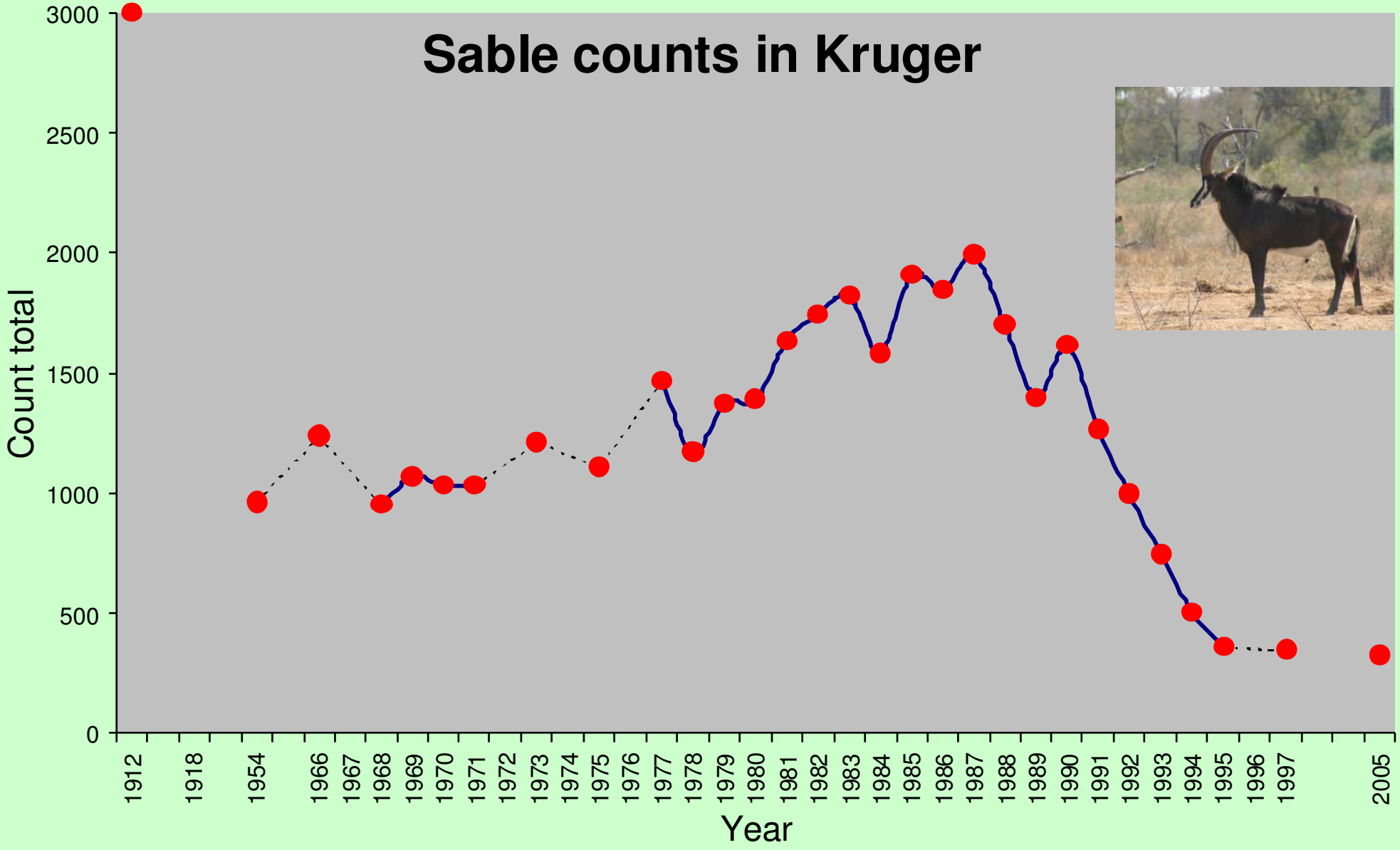
"APPARENT COMPETITION"

(with water points setting the context
& droughts the timing)

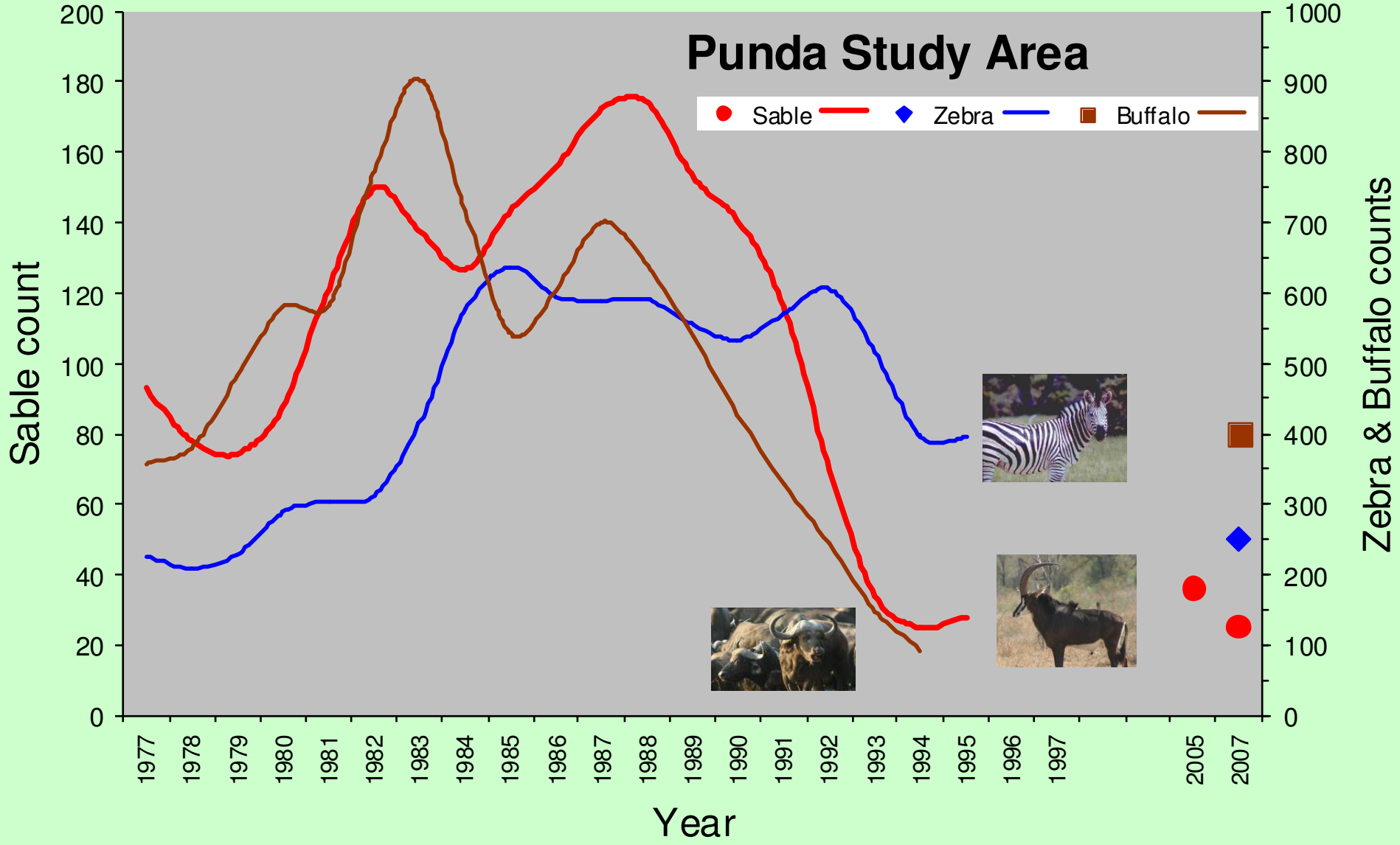


Sable decline occurred later

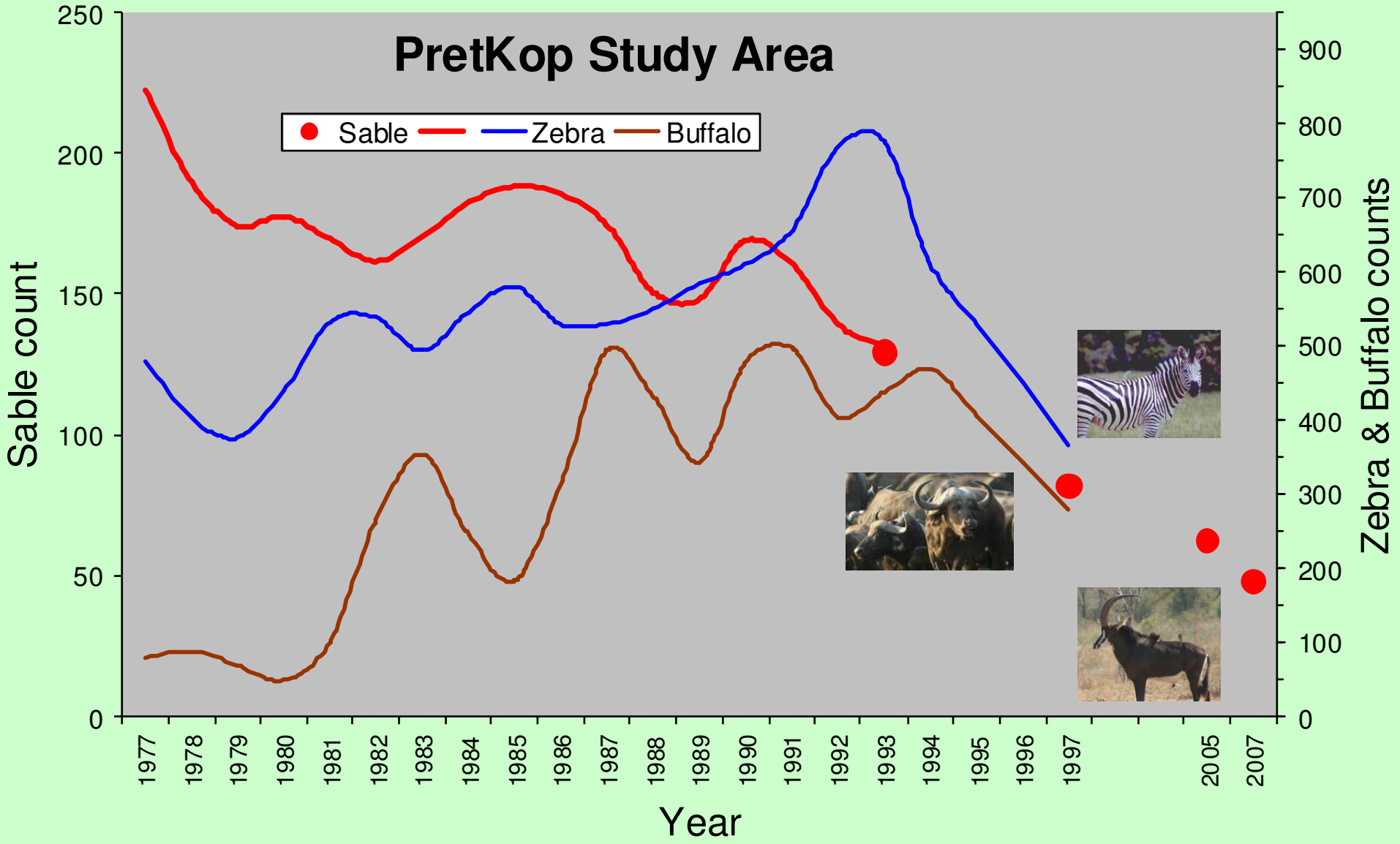
SABLE ABUNDANCE TREND



Sharp decline after 1991



Zebra & buffalo increased - but sable decline was delayed until extreme 1991/2 drought

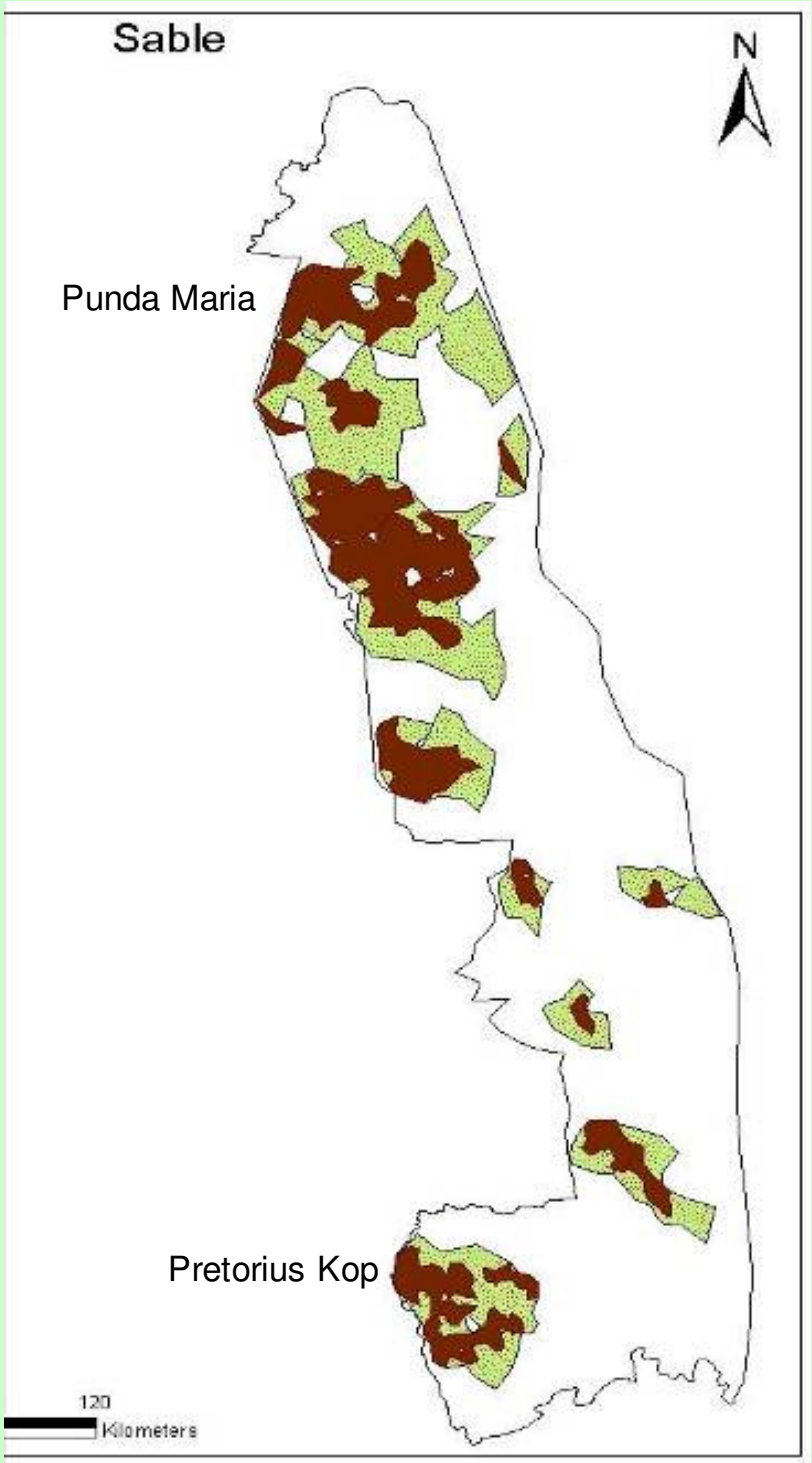


Buffalo increased but not zebra
& sable decline occurred after 1991/2 drought

Joe Chirima
EAS data

Sable are patchily distributed –

Why?

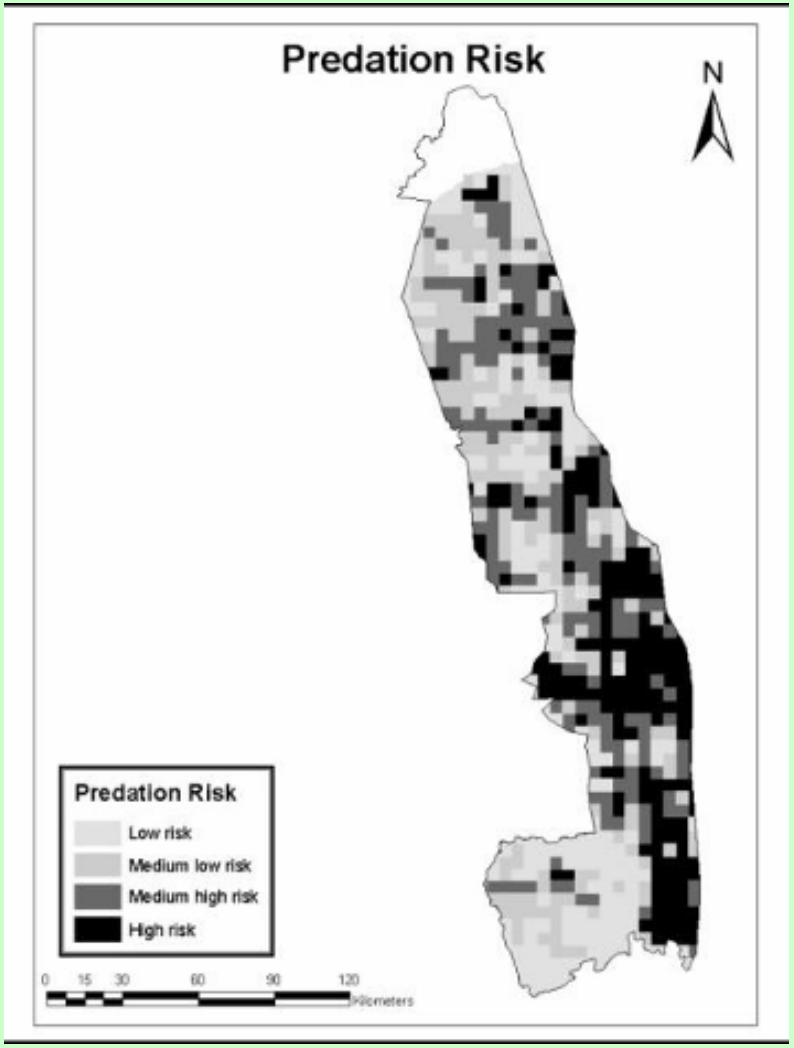


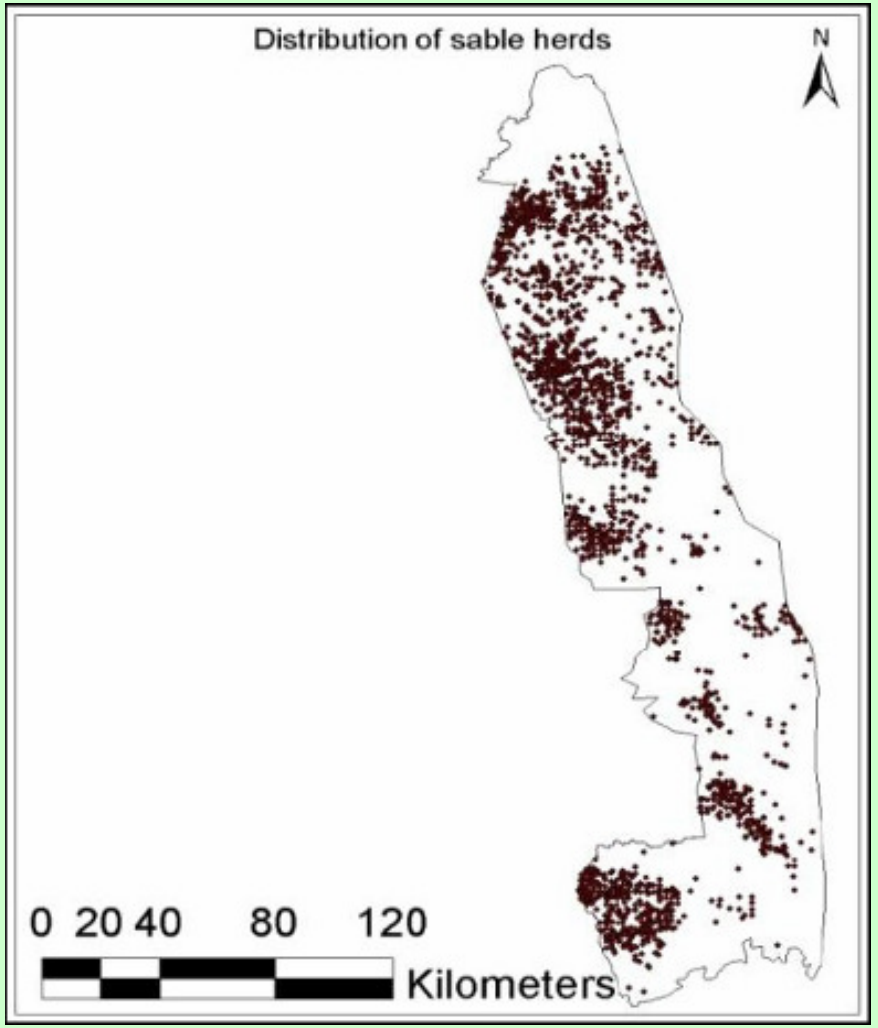
HABITAT PREFERENCES

- Sable herds favour
  - Granitic & sandstone substrates > basalt & gabbro
  - Sour bushveld & mopane > knobthorn-marula & thornveld
  - Indifferent to rainfall variation
  - Avoid impala and wildebeest habitats

SABLE DISTRIBUTION IS MOST CLOSELY ASSOCIATED WITH

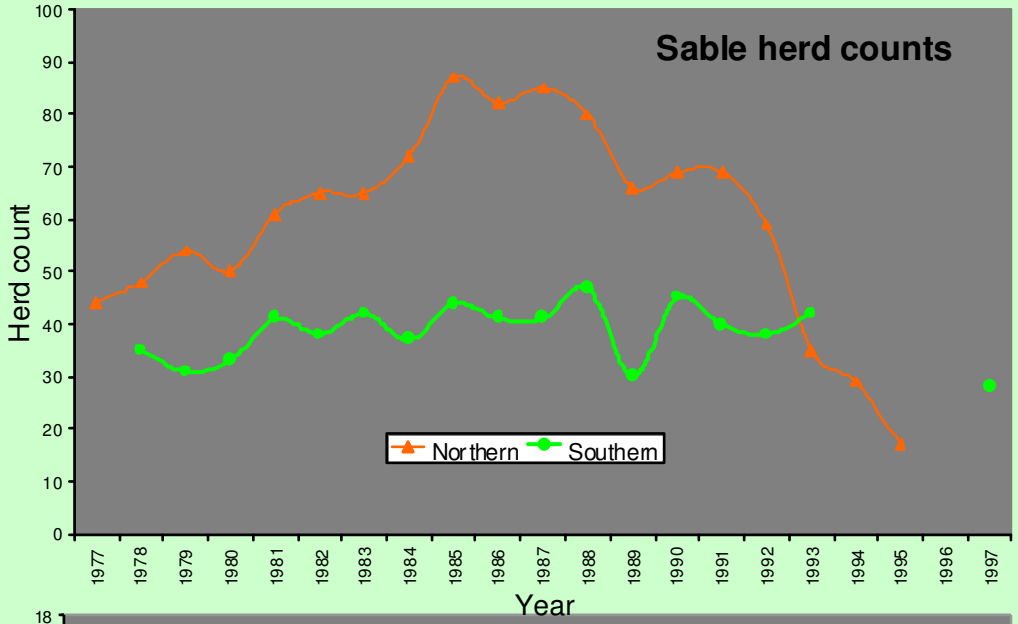
Low prey availability for lions



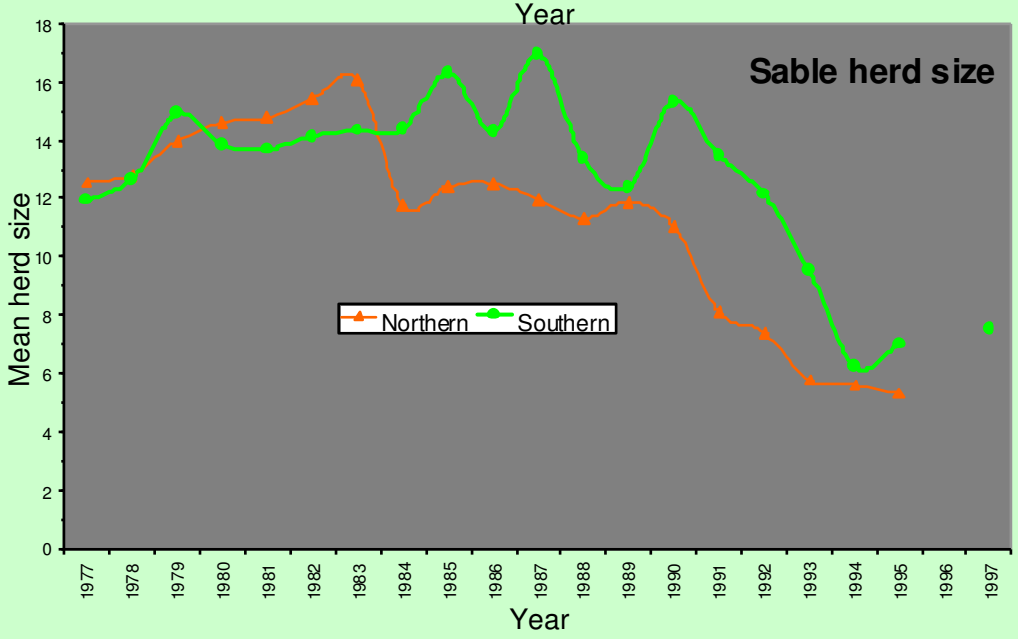


MECHANISMS OF THE POPULATION DECLINE

Herds disappeared especially in northern KNP



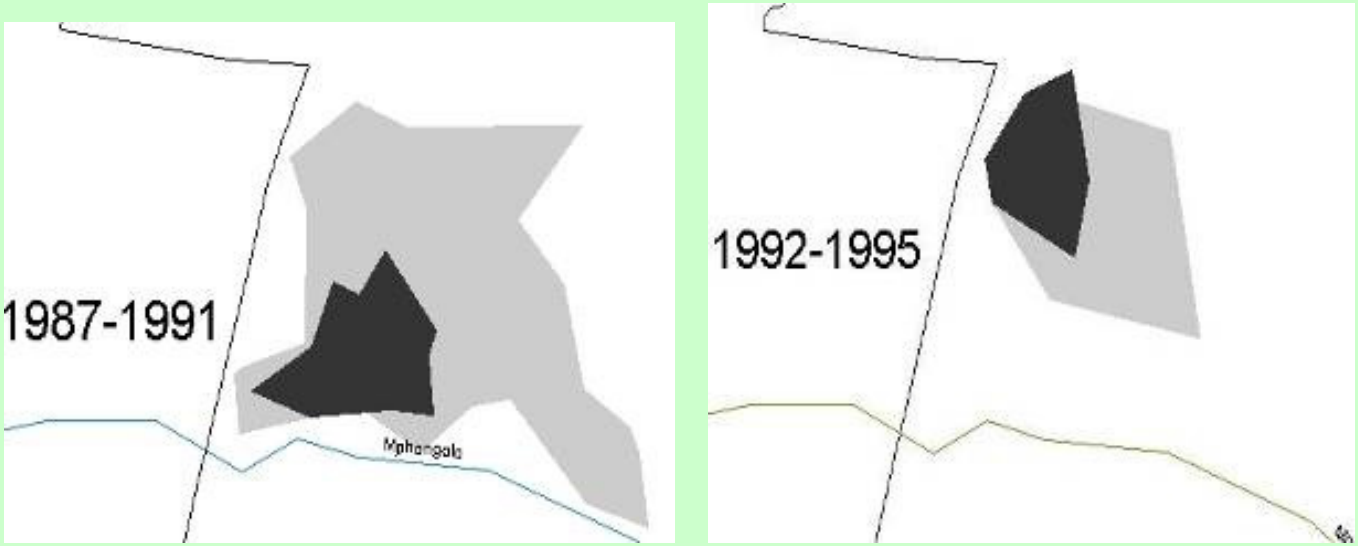
Herd size decreased in north and south



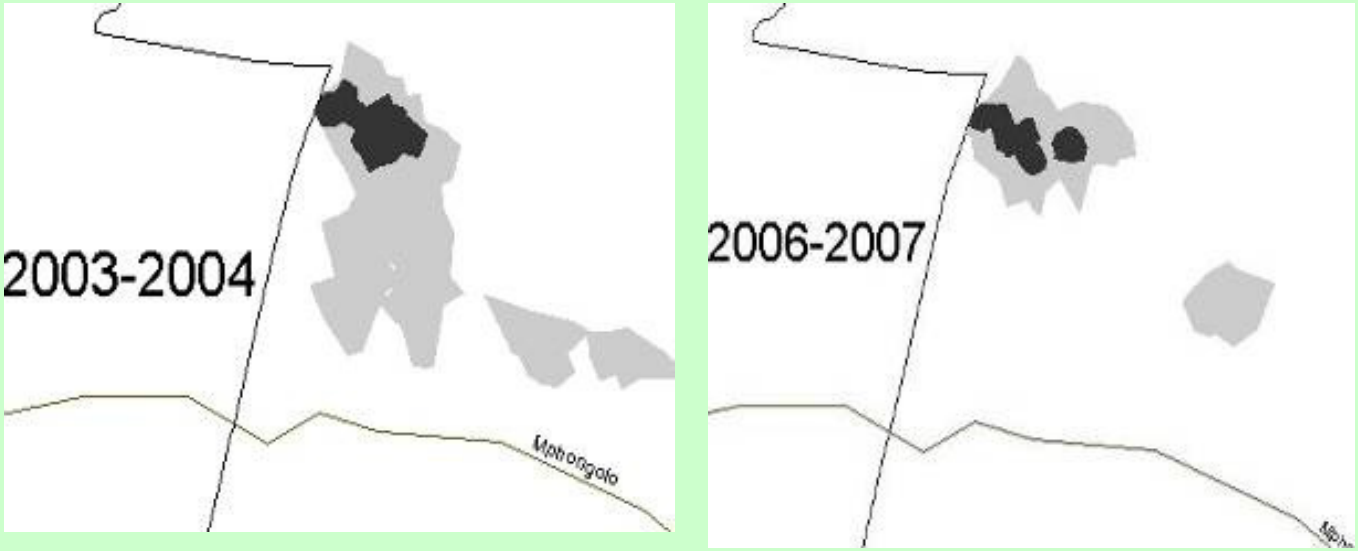
HERD DISTRIBUTION SHRUNK

Punda Maria

EAS



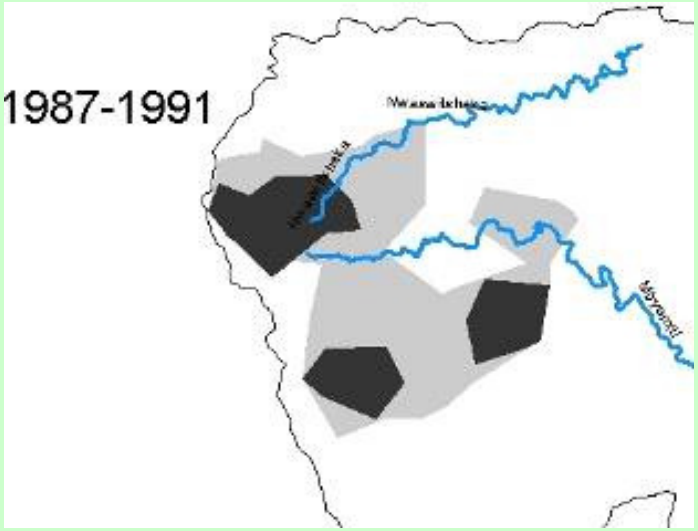
GPS

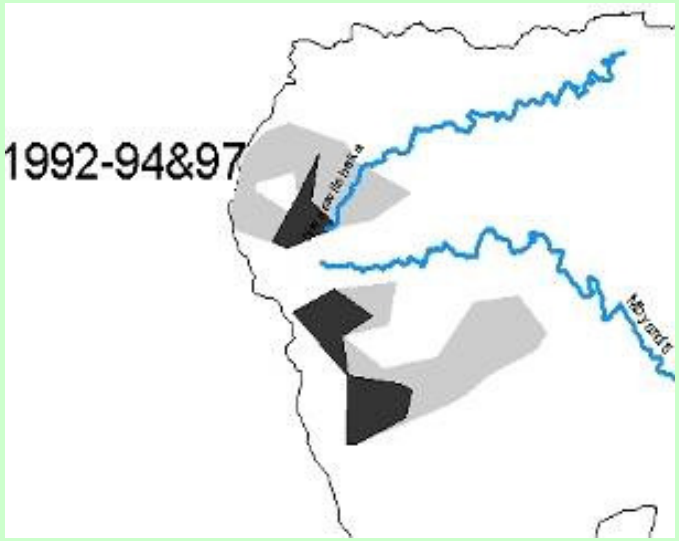


HERD DISTRIBUTION SHRUNK

Pretorius Kop

EAS





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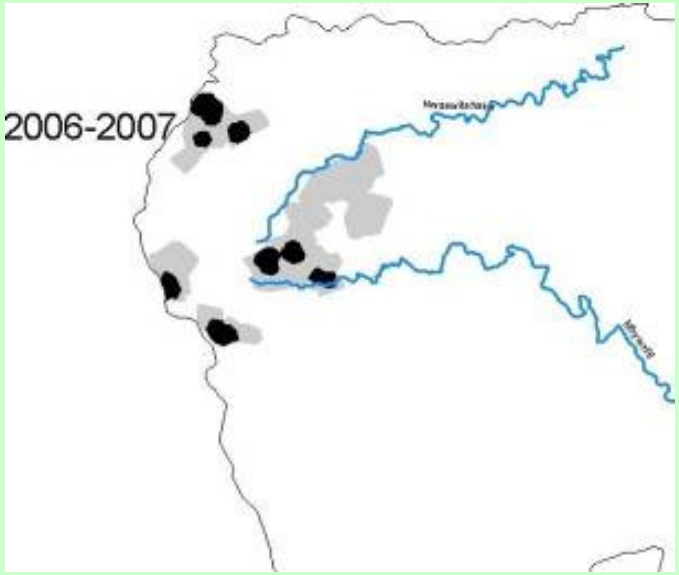
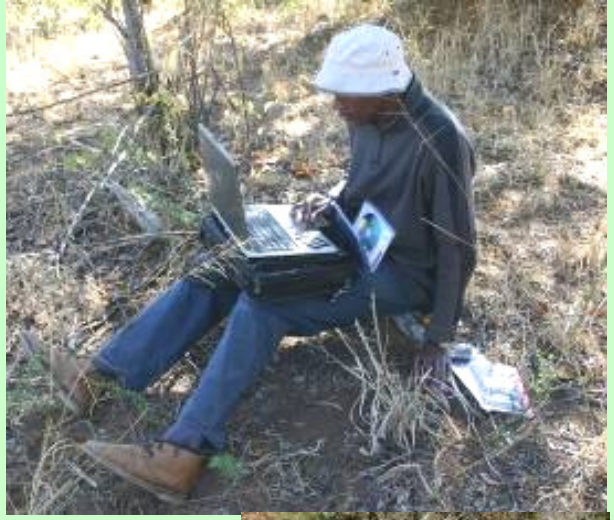


Valerio Macandza

GPS tracking comparing sable, zebra & buffalo

(Punda Maria)

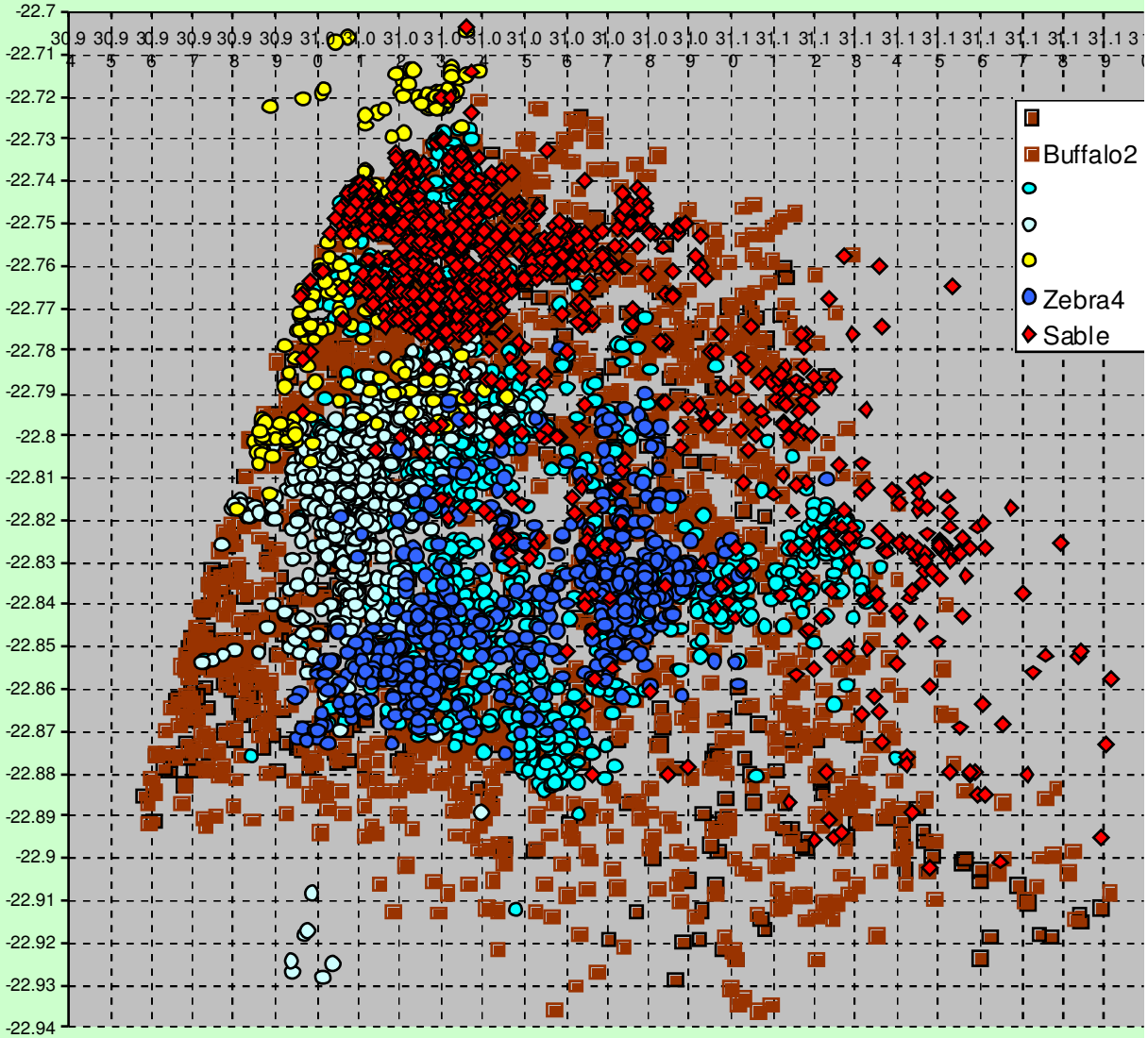


- Sable favour
  - *Slightly less open habitats than zebra*
  - *Somewhat taller grass than zebra*
  - *Make less use of bottomlands than buffalo*
  - *More precisely select* **greener grass** *than zebra or buffalo*

SPACE USE PATTERNS

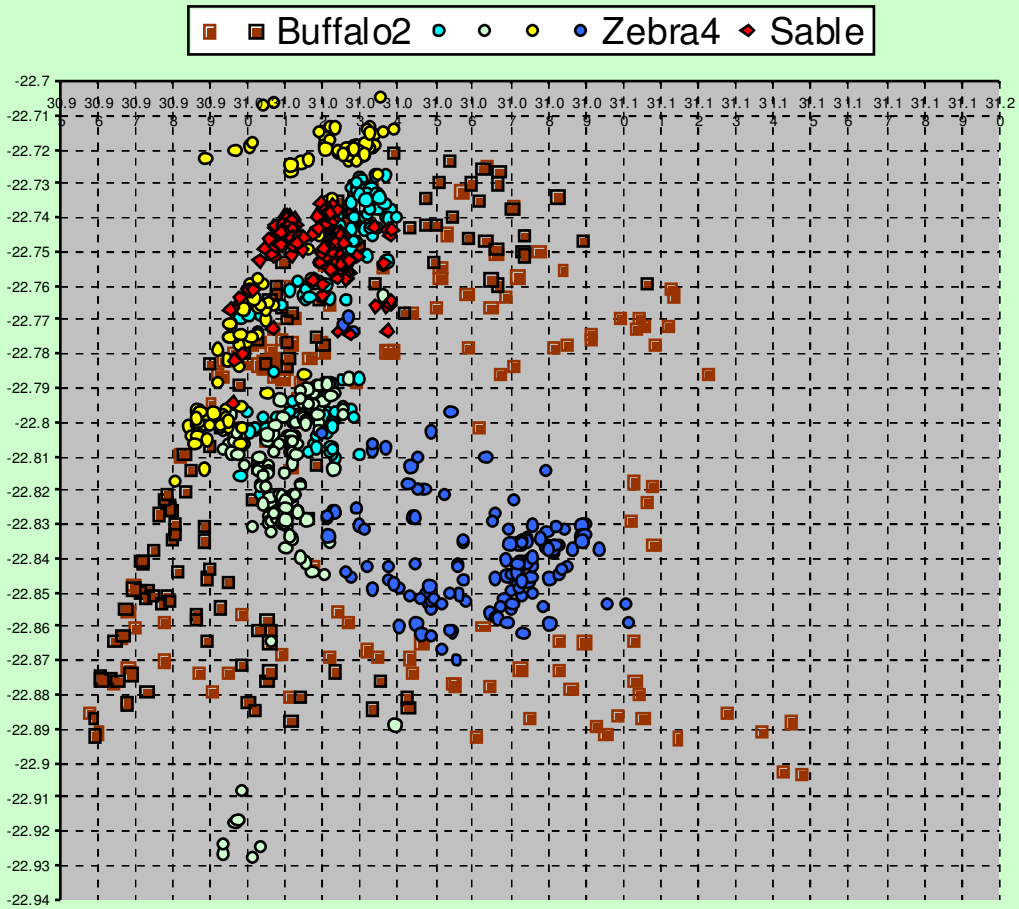
YEAR

Sable herd range is nested within buffalo & zebra herd ranges

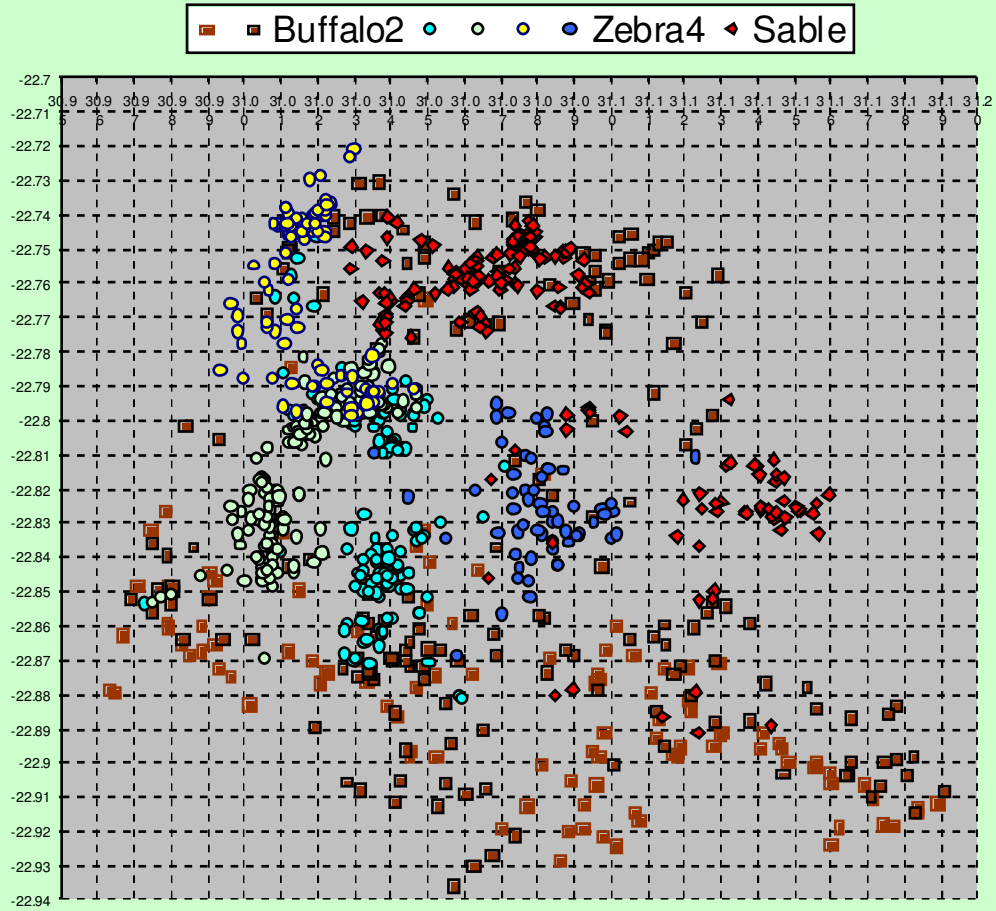


SEAONAL MOVEMENT PATTERNS

Early Dry Season 2006



Late Dry Season 2006



Sable avoid areas where buffalo & zebra concentrate

Liza Le Roux

Sable herd comparison

(Pretorius Kop)

- Sable utilize a wide range of grass species
- Sable consume even tall, stemmy grass

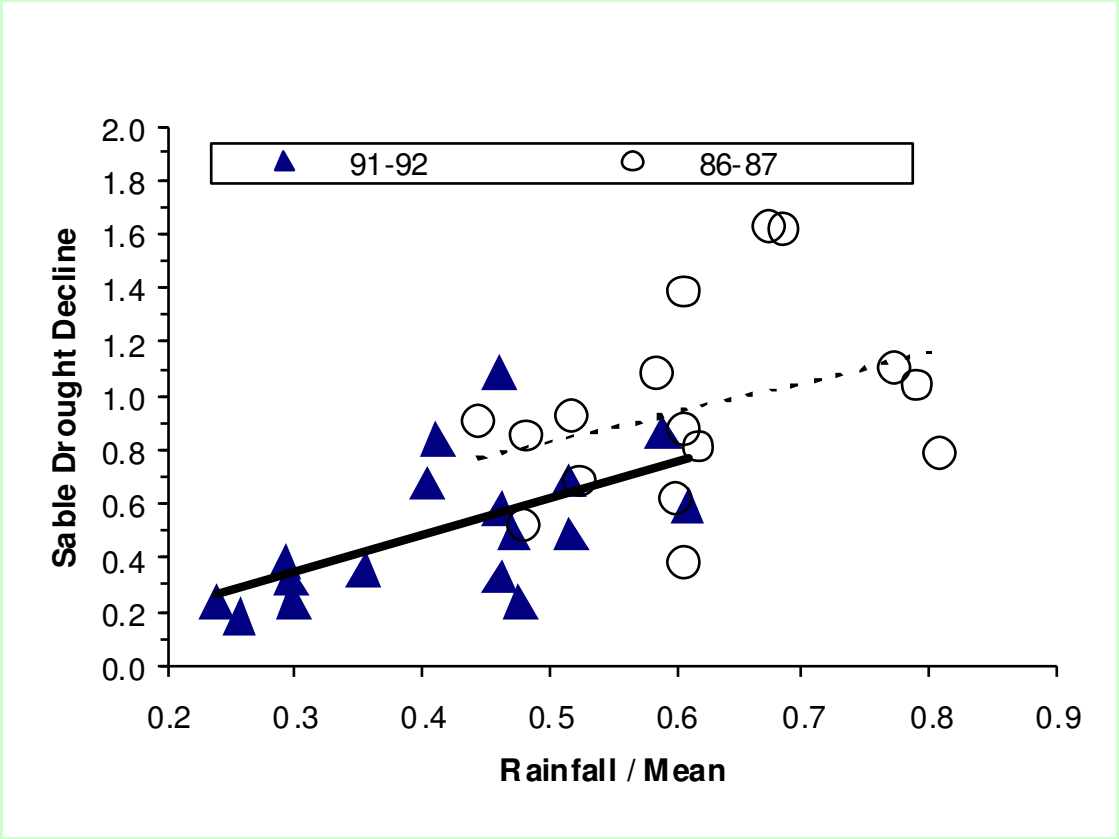
Sable are not narrowly selective!

DO SURVIVING HERDS INDICATE:

- ***Remaining islands of suitable habitat?***

- ***Remnant groups held down by predation?***

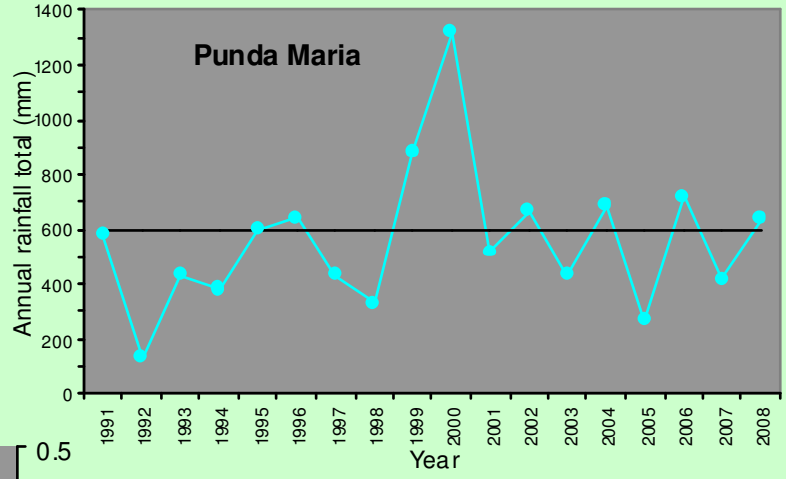
SPATIAL VARIATION IN DROUGHT DECLINE AMONG CENSUS BLOCKS

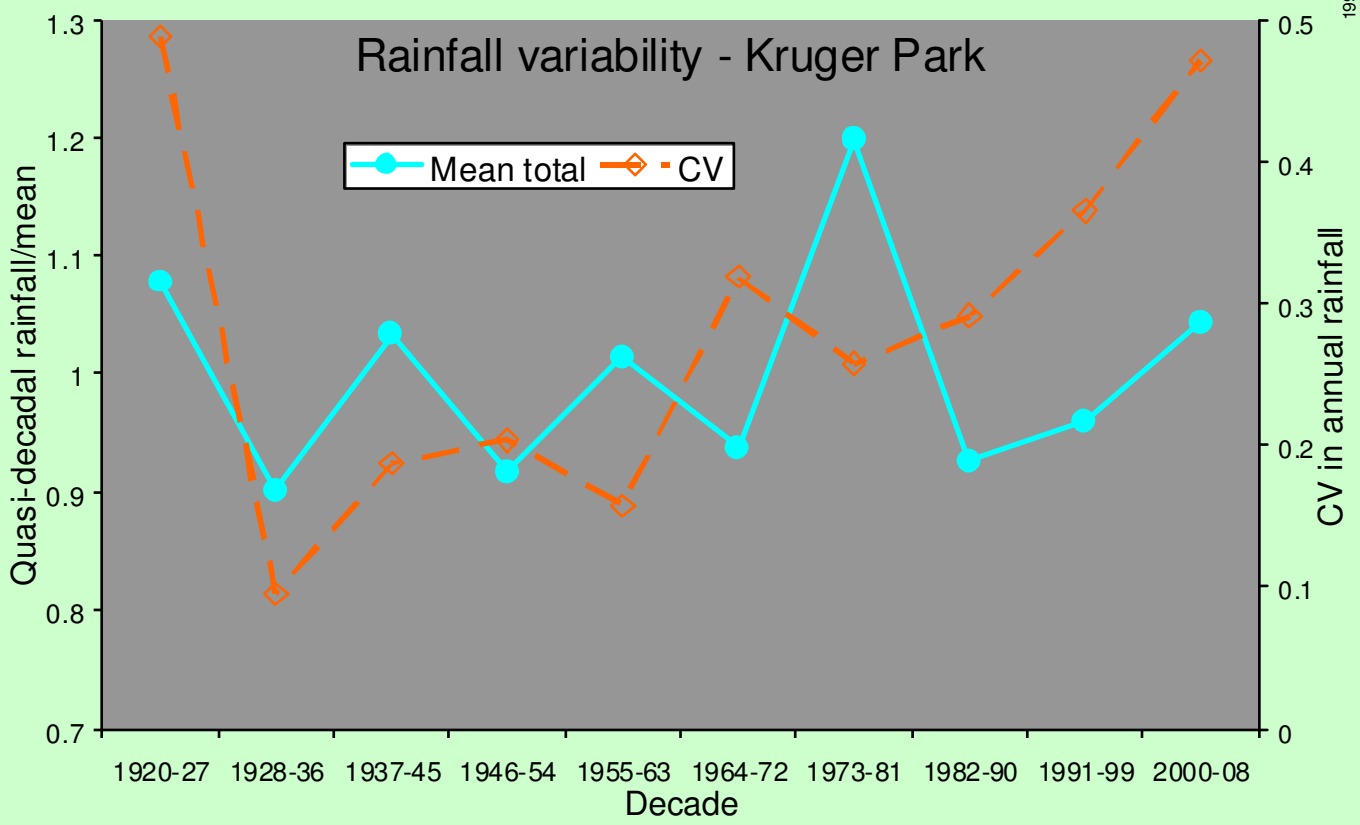


Entirely explained by rainfall in 1991/2

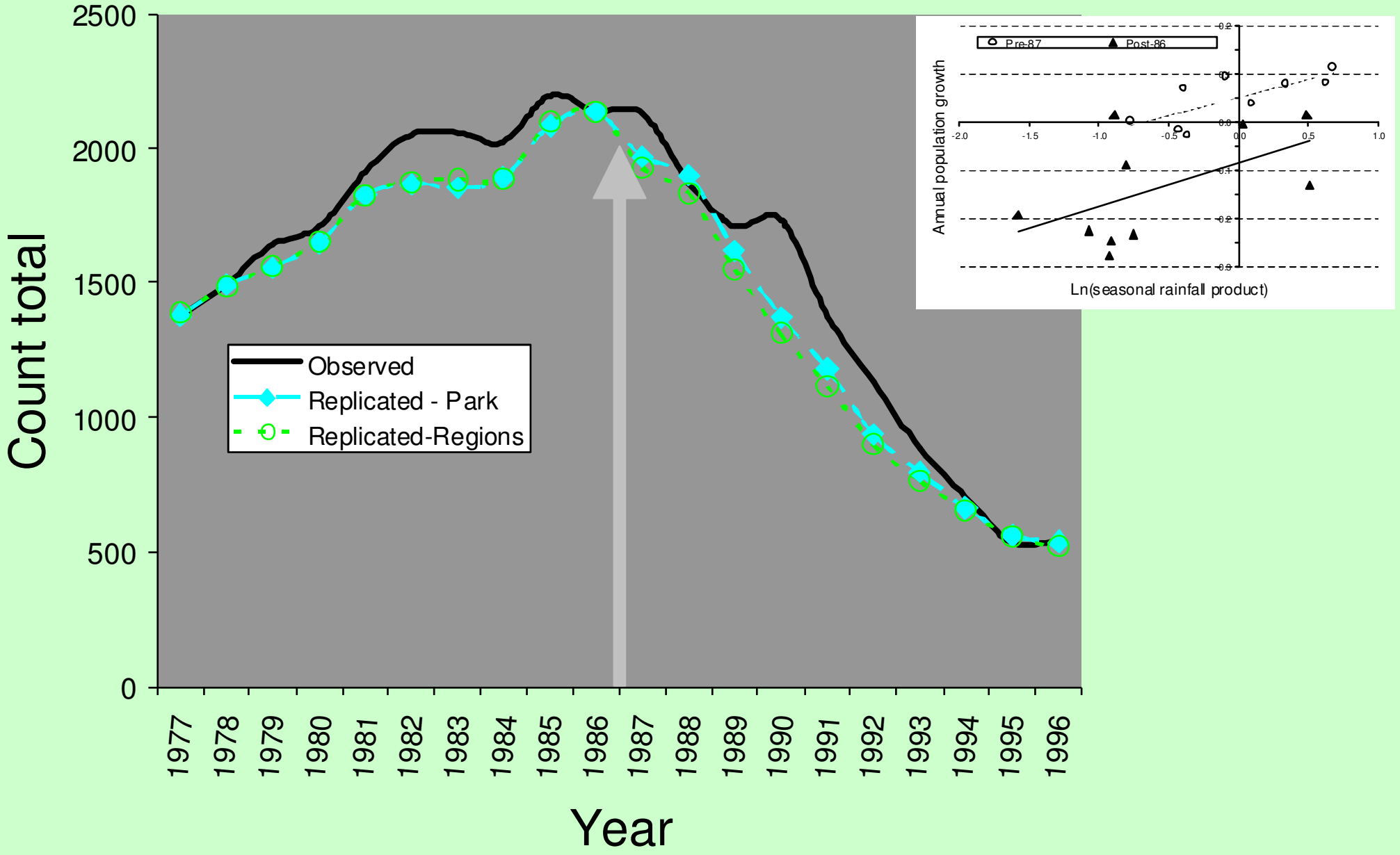
Prior zebra increase made no contribution

WIDENED RAINFALL VARIABILITY MAY BE HAMPERING POPULATION RECOVERY

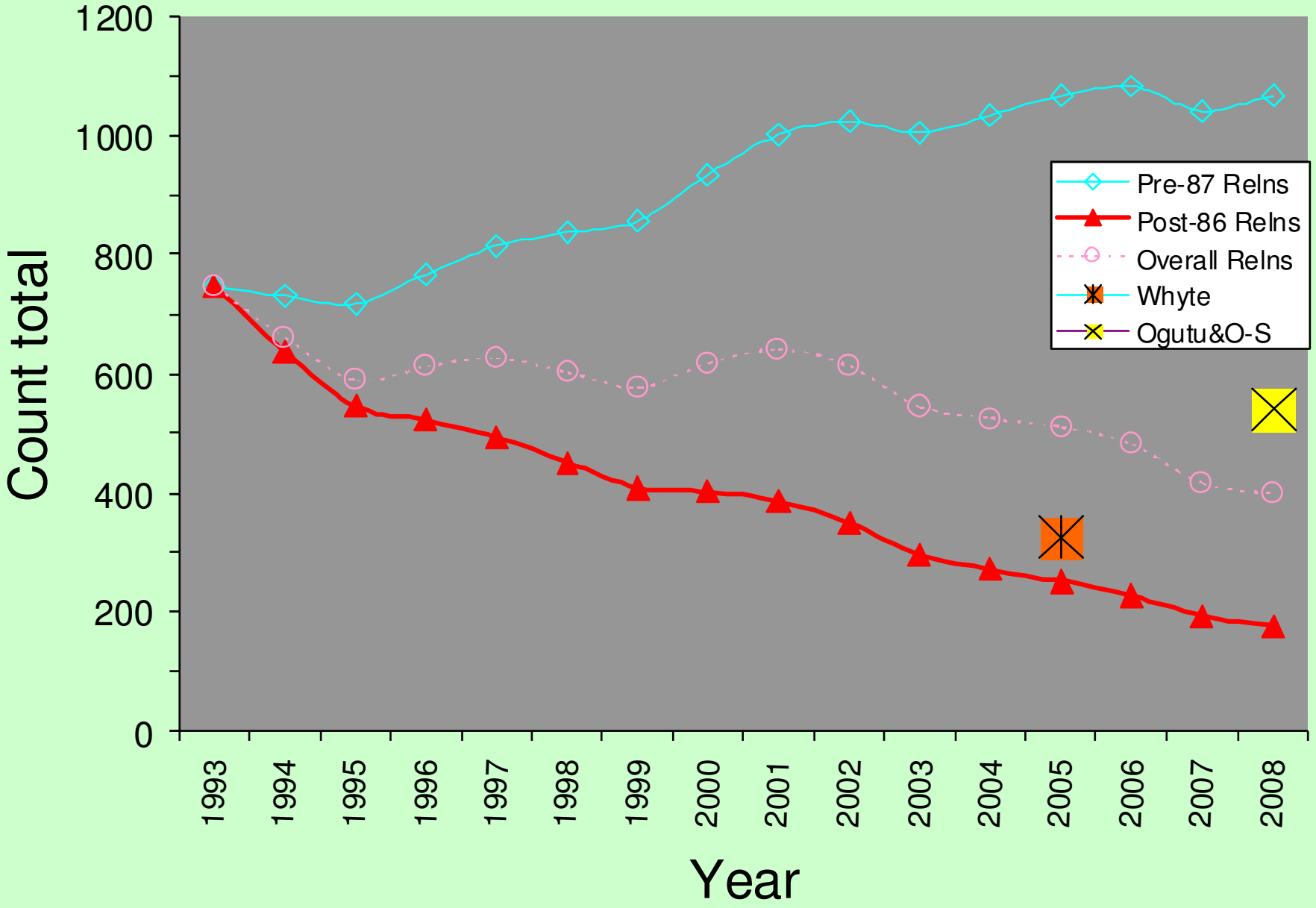




RAINFALL-DRIVEN MODEL:
REPLICATION



RAINFALL-DRIVEN MODEL:
PROJECTION



HABITAT DOES NOT APPEAR OBVIOUSLY UNSUITABLE

but grass layer changes may be subtle

Pretorius Kop

Punda Maria

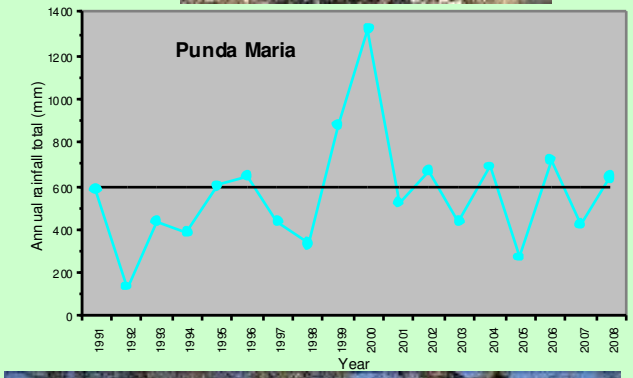
SURVIVING HERDS ARE MOSTLY SMALL

Therefore
insecure against predators

CONCLUSIONS

- **Apparent competition mediated by predation remains best-supported for both the initial downward trend and subsequent lack of population recovery**

- **Widened rainfall variation may be hindering population rebound**



- **Habitat change following 1991/2 drought cannot be excluded as a contributory factor – but no data**

BYE-BYE SABLE?

ACKNOWLEDGMENTS

We thank all of the Kruger Park staff who have supported our studies over the past 8 years:

- *Veterinarians catching animals to place collars*
- *Game guards protecting us in the field*
- *Scientific staff helping us surmount logistic problems, and putting up with demands on their time of students and academics*
- *Camp managers accepting caravans parked in corners of their camps*