

Managing rhino, even in the absence of poaching

Howard H. Hendricks

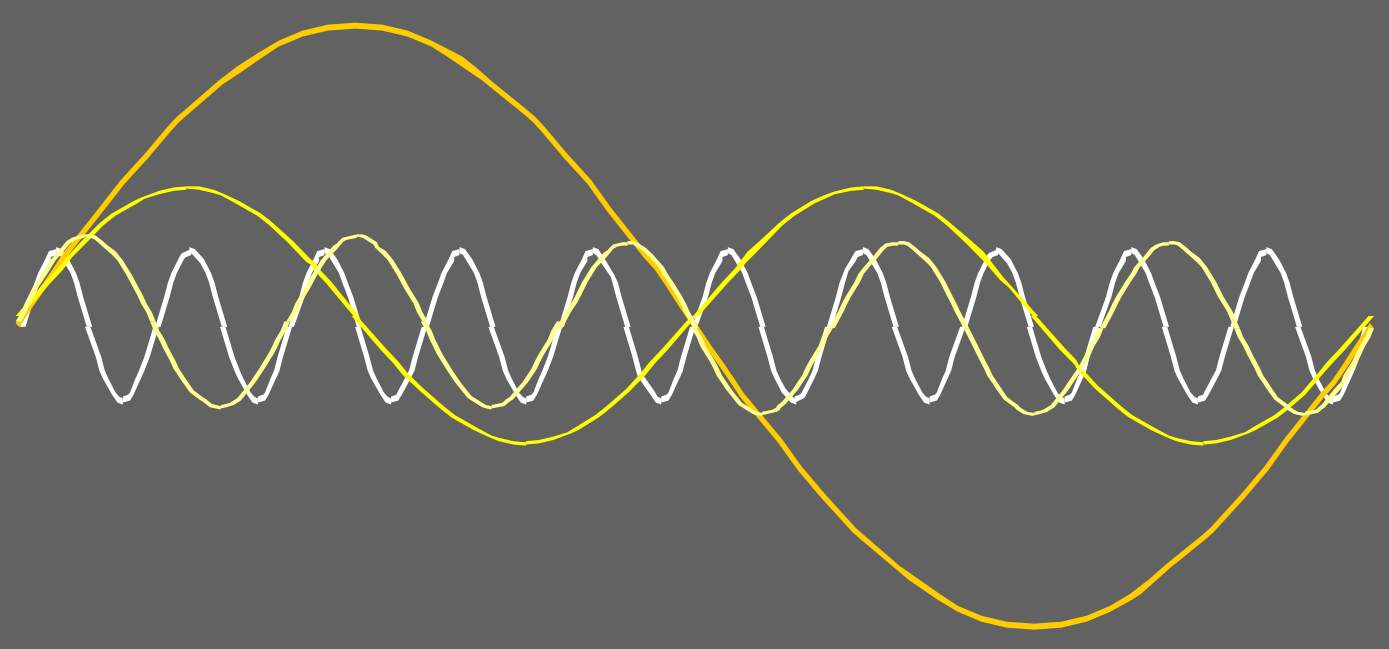


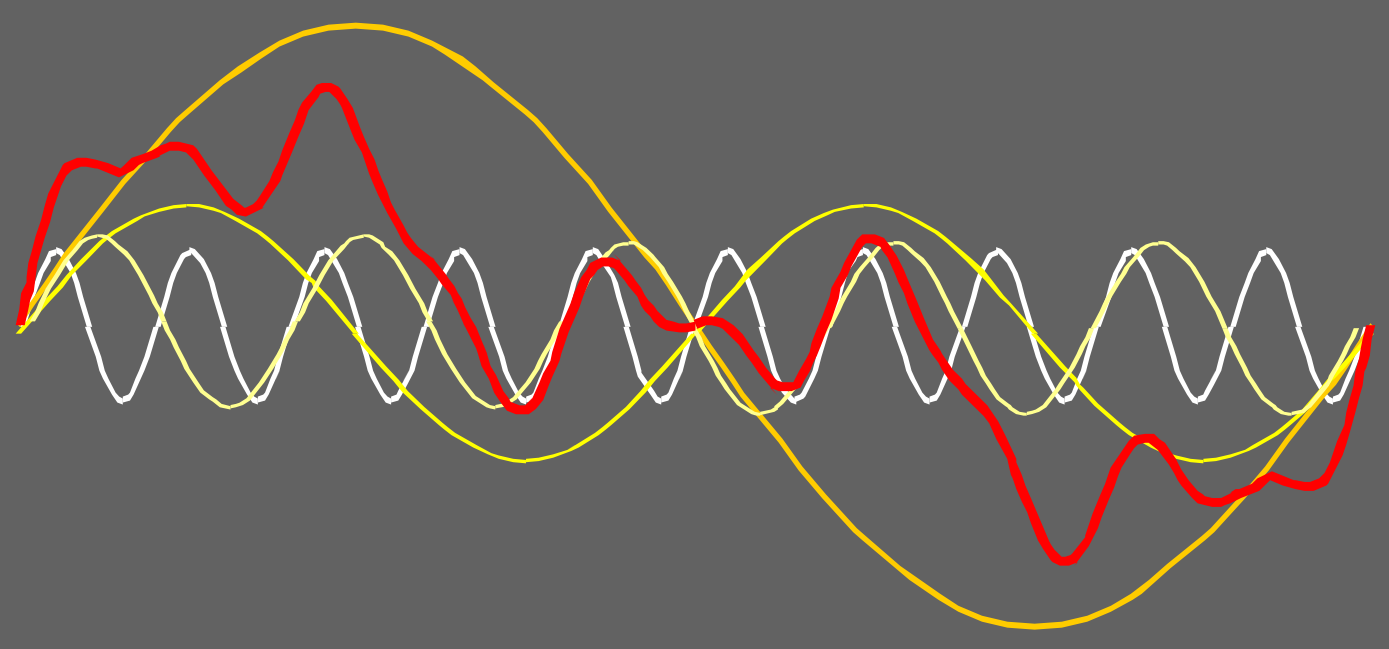
South African
NATIONAL PARKS

Markus Hofmeyr, Sam Ferreira and Mike Knight



South African
NATIONAL PARKS







Source: Rowan-Martin













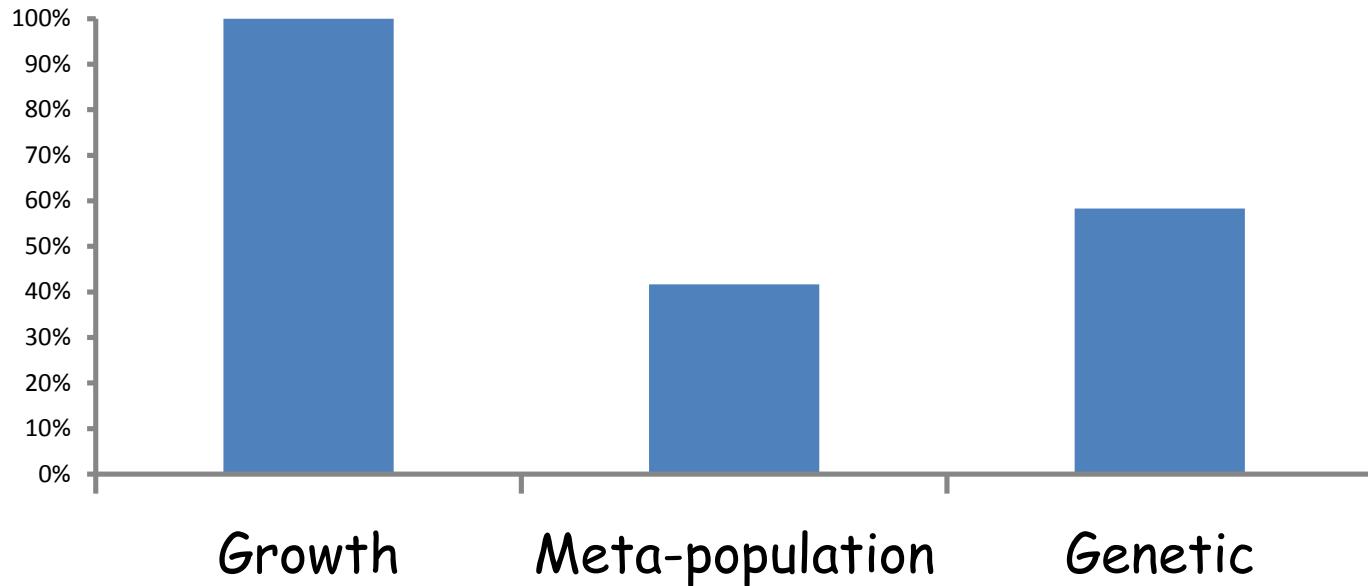
Why should rhinos matter?

Species	Ecosystems
Varied threats	Mega-herbivore disturbance
Endangered and threatened	Disturbance key process
Existence value	Heterogeneity
Educational value	Biodiversity
Indicator species value	Resilience
Science value	Ecosystem services



What are conservation objectives?

Range state reports and strategies



Where did South Africa come from?

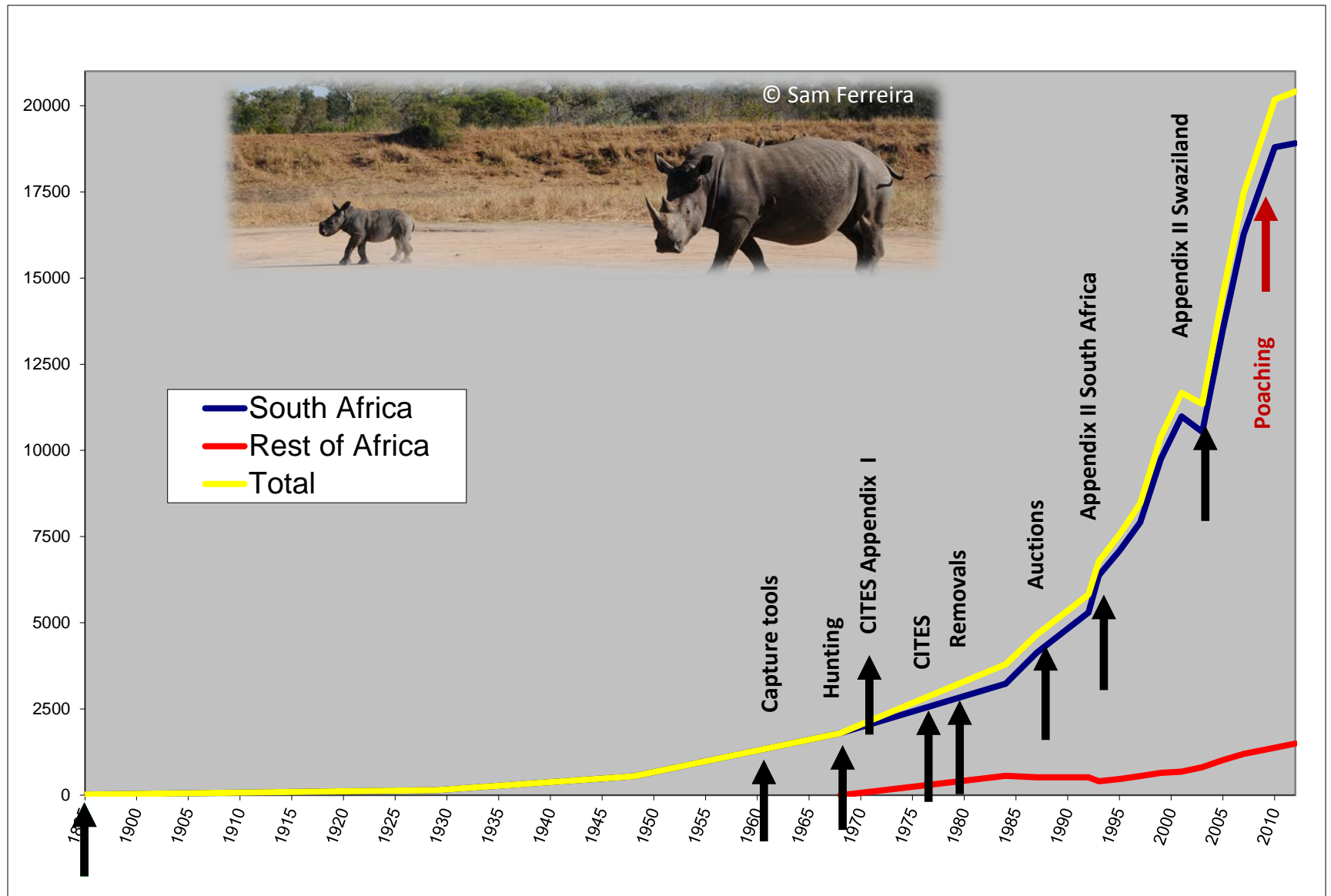
Population enhancement and range expansion

Year	Key event
1895	20-50 white rhinos in Hluhluwe-iMfolozi Park
1961	Development of capture techniques
1968	First hunts
1977	CITES Appendix 1
1981	Management removals intensify
1988	1 st Auction of live rhinos - Private ownership allowed
1993	CITES Appendix 2 for South African White Rhinos
2003	CITES Appendix 2 for Swaziland White Rhinos
2008	Poaching intensifies

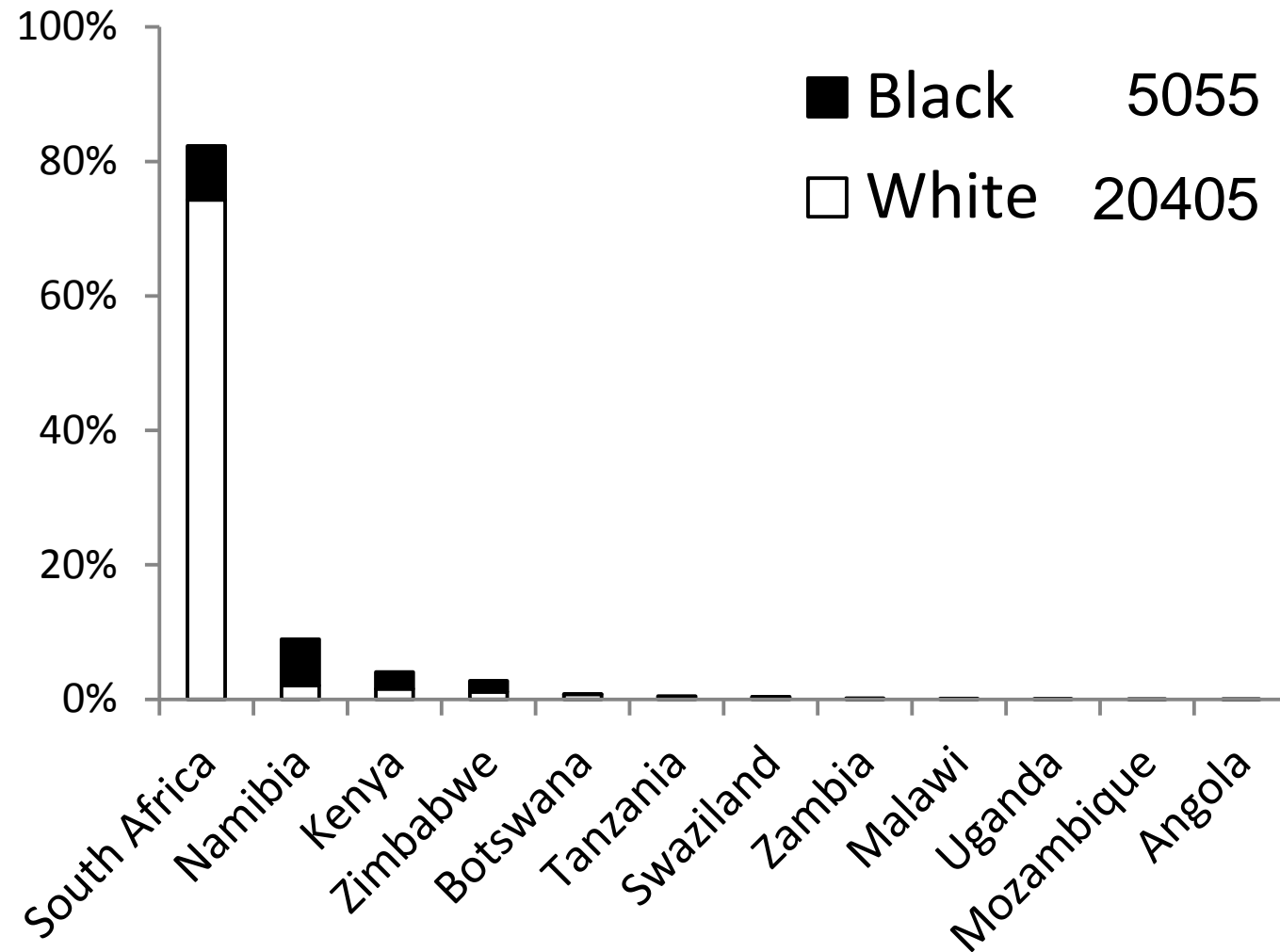


SOUTHERN WHITE RHINO

SOUTH AFRICAN CONSERVATION SUCCESS



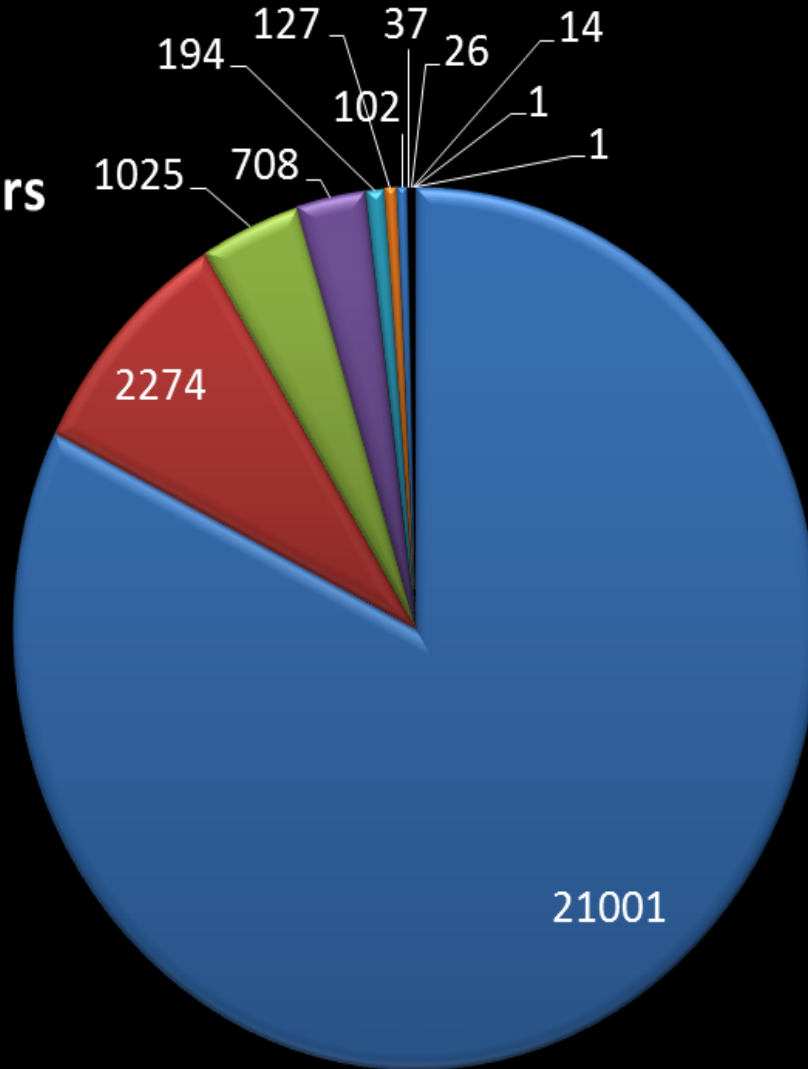
Where are Africa's rhinos?



RHINO CONSERVATION IN AFRICA

- South Africa is key
- Four range states
 - 96% of black rhinos
 - 99% of white rhinos

Rhino numbers



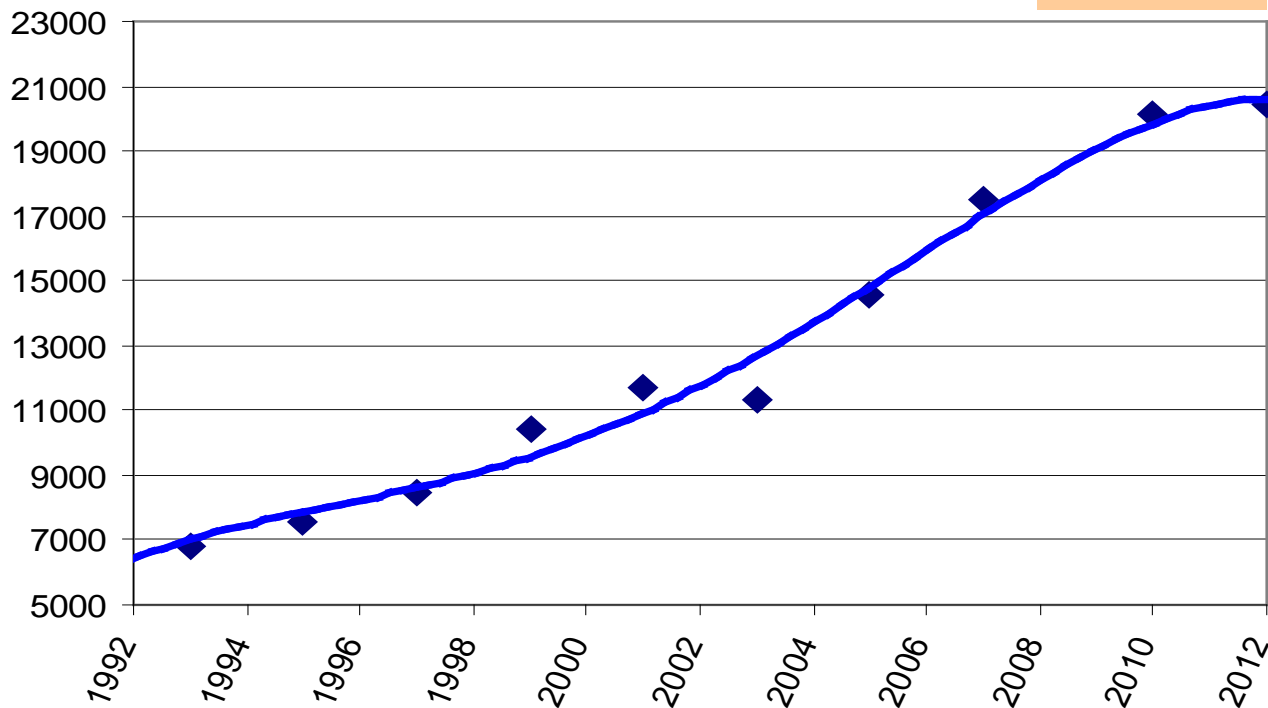
- South Africa
- Namibia
- Kenya
- Zimbabwe
- Botswana
- Tanzania
- Swaziland
- Zambia
- Malawi
- Uganda
- Mozambique
- Angola

RHINO CONSERVATION – White rhino

White Rhino Numbers

20,430

(2012)



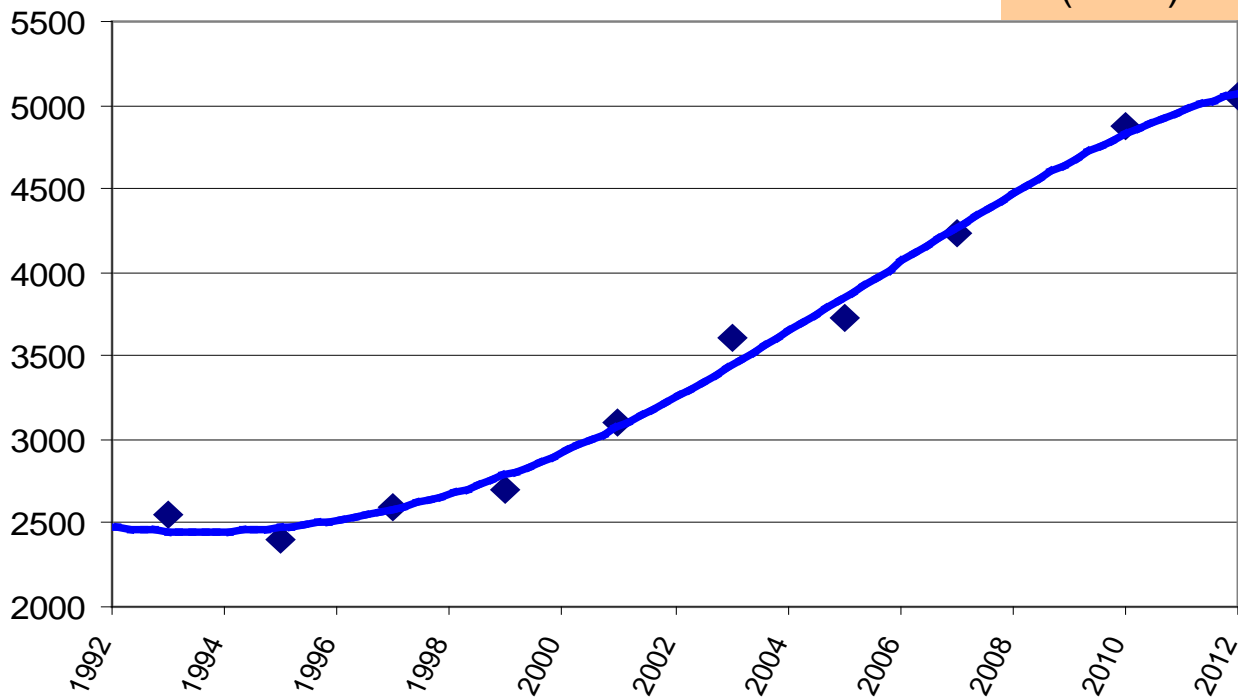
Country	Number	
South Africa	18933	↑
Namibia	524	↑
Kenya	394	↑
Zimbabwe	284	↓
Botswana	185	↑
Swaziland	84	↔
Zambia	10	↑
Uganda	14	↑
Mozambique	1	↓



RHINO CONSERVATION – Black rhino

Black Rhino Numbers

5,080
(2012)



Country	Number	
South Africa	2068	↑
Namibia	1750	↔
Kenya	631	↑
Zimbabwe	424	↓
Botswana	9	↑
Tanzania	127	↑
Swaziland	18	↑
Zambia	27	↔
Malawi	26	↑
Mozambique	0	?
Angola	1	?



RHINO CONSERVATION SUCCESS

Conservationists applied best practice management

Pioneers saw value in what they were doing

Large protected areas provided recovery

Innovative approaches provided expansion

Legal incentives provided more areas

Most values of rhinos were recognized

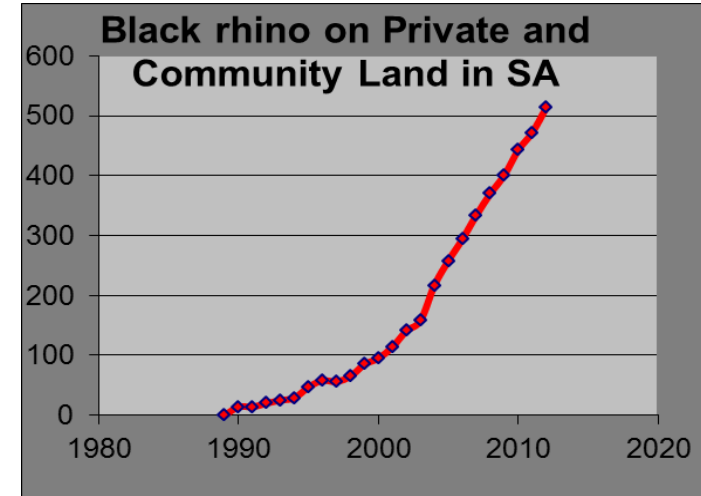
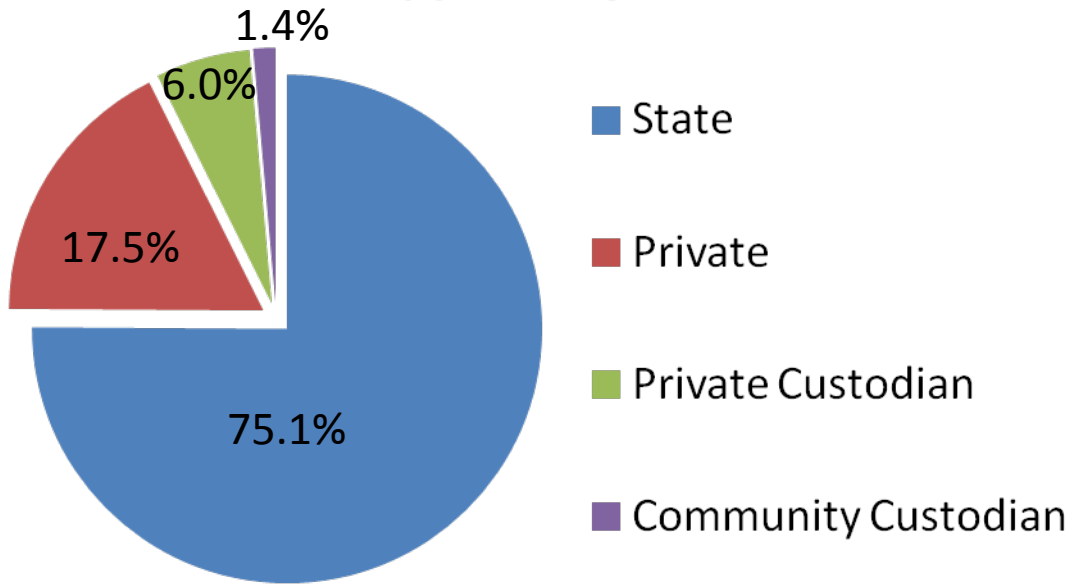


SOUTH AFRICA'S RHINO CONSERVATION

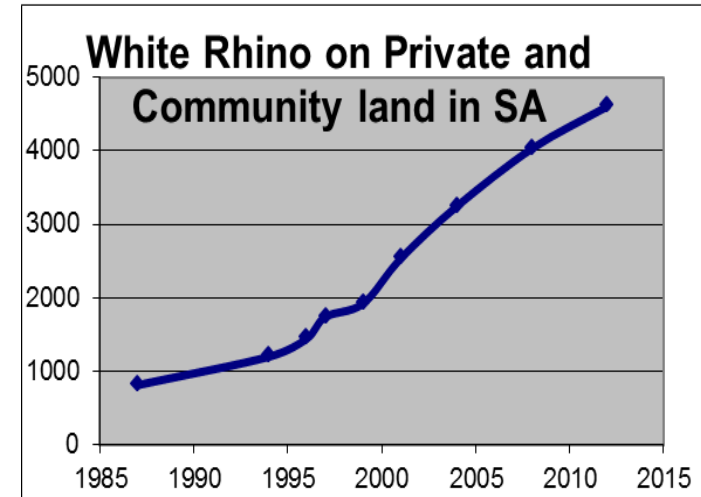
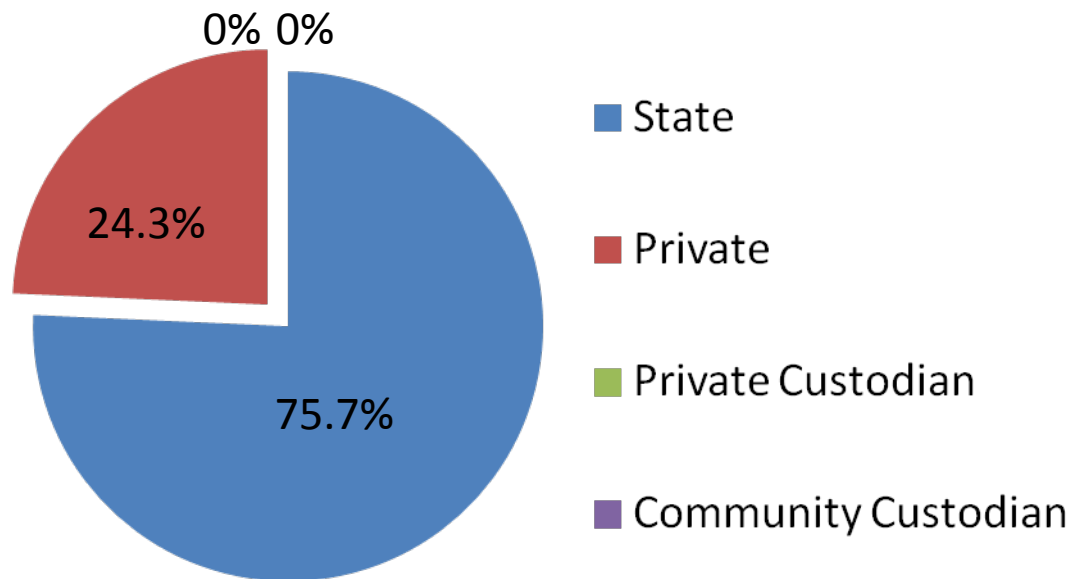
- Sound biological and conservation management
- Recognizing a values associated with rhinos



Black Rhino



White Rhino



Rhino ownership in South Africa 2010

Ownership	White rhino	Black rhino
Private land	4531	446
SANParks	10605	775
Provincial	3644	695
Totals	18780	1916



© Sam Ferreira

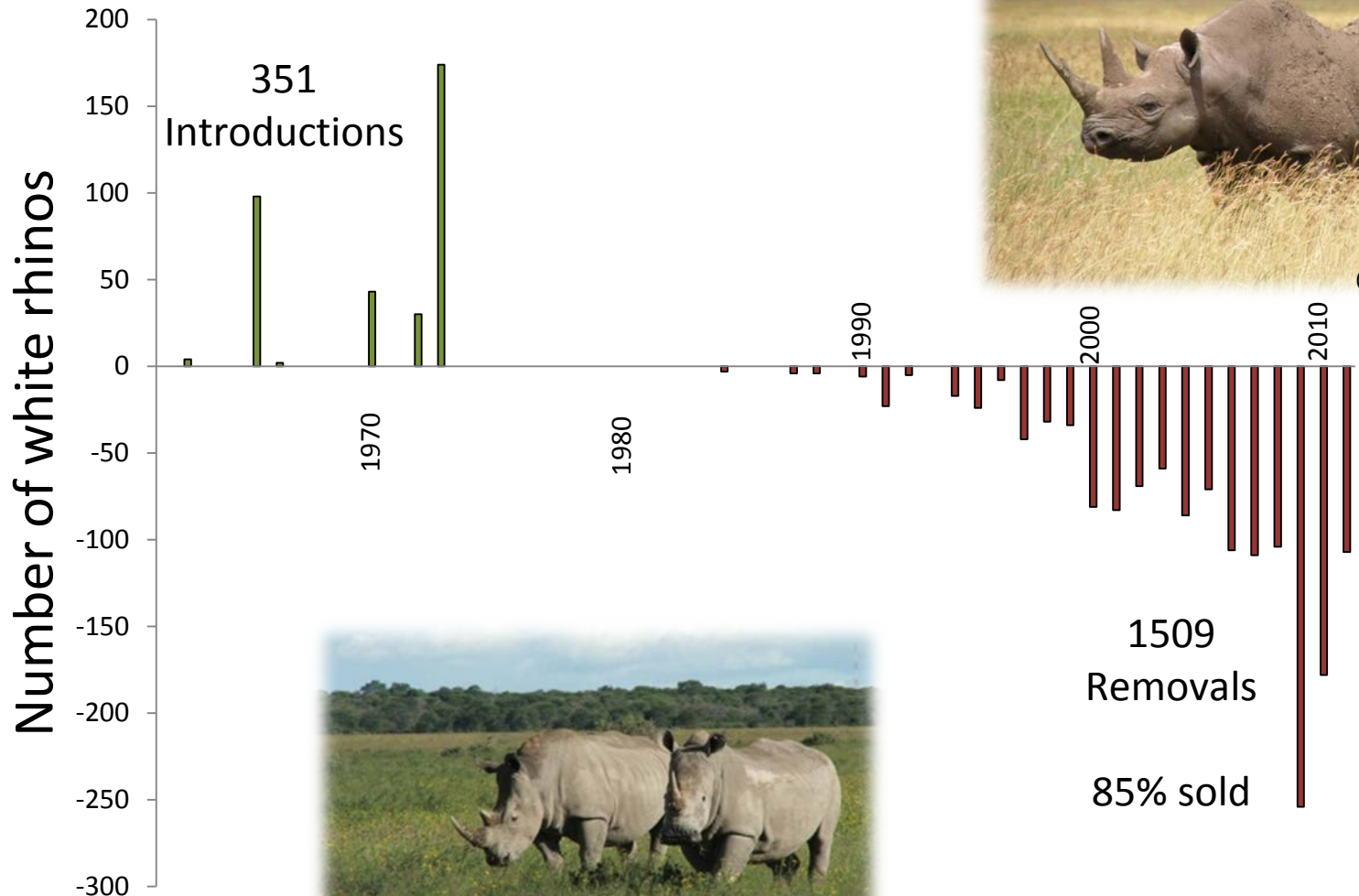
Rhino ownership in South Africa 2012

White Rhino	2010	2012
SANParks	10 649	10 641
Provinces	3 644	3 710
Private owners	4 531	4 527

Black rhino	2010	2012
SANParks	797	913
Provinces	695	697
Private owners	447	434

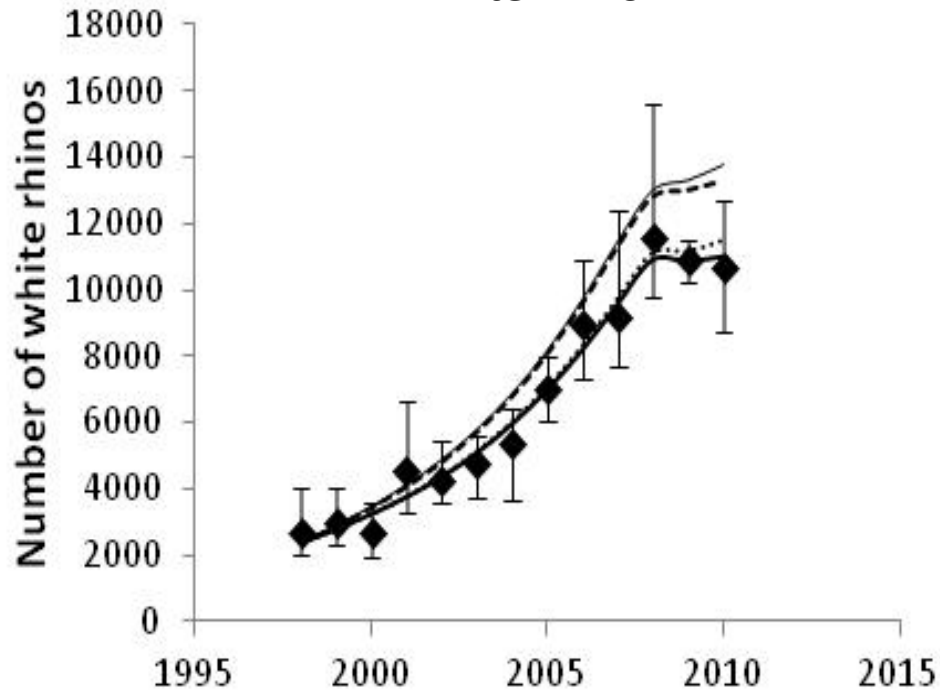


White rhino population manipulation in Kruger



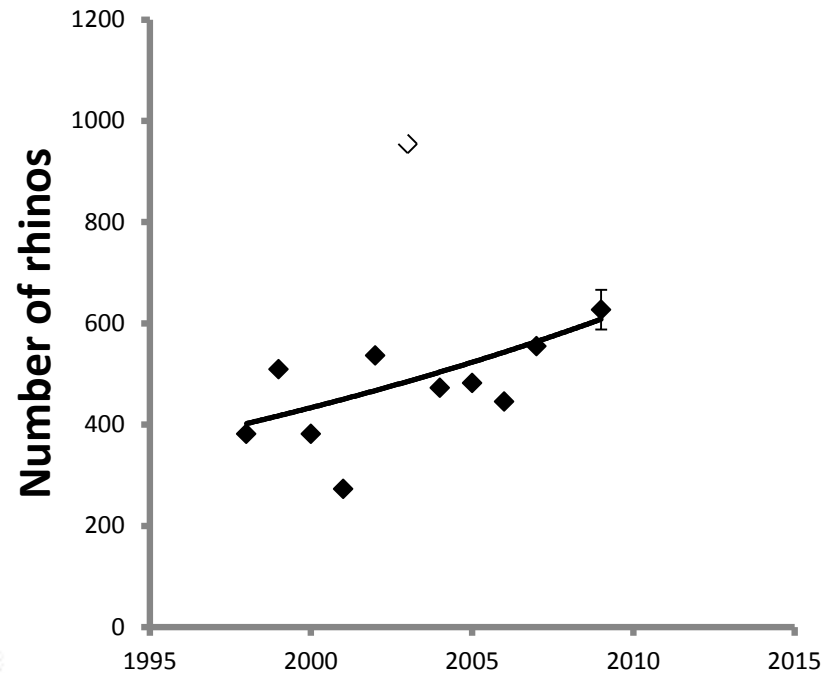
What is current status?

White rhino



Ferreira, Botha & Emmett 2012

Black rhino



Ferreira, Greaver & Knight 2011



The tenuous basis of numbers

- Observer bias
 - Availability bias
 - Detectability bias
 - Capture bias
-



Checking population status

Survey $\approx 40\%$ of Kruger using blocks.

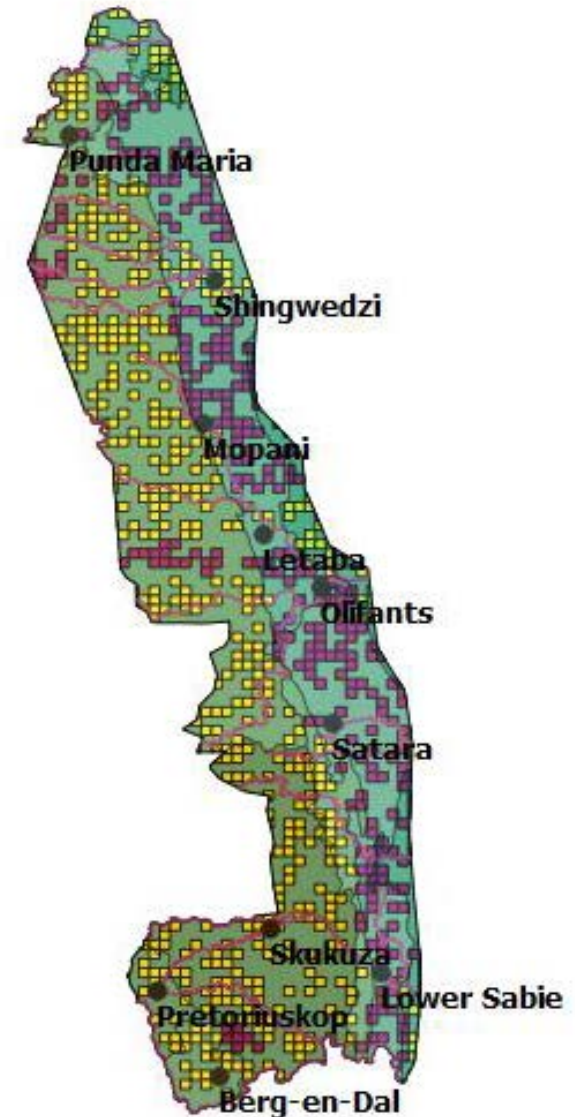
Define biases influencing estimates

Define population sizes using Jolly-Seber aerial survey estimators

Evaluate the trends in population estimates

Define optimal survey designs to detect trends

Define a survey strategy for Kruger

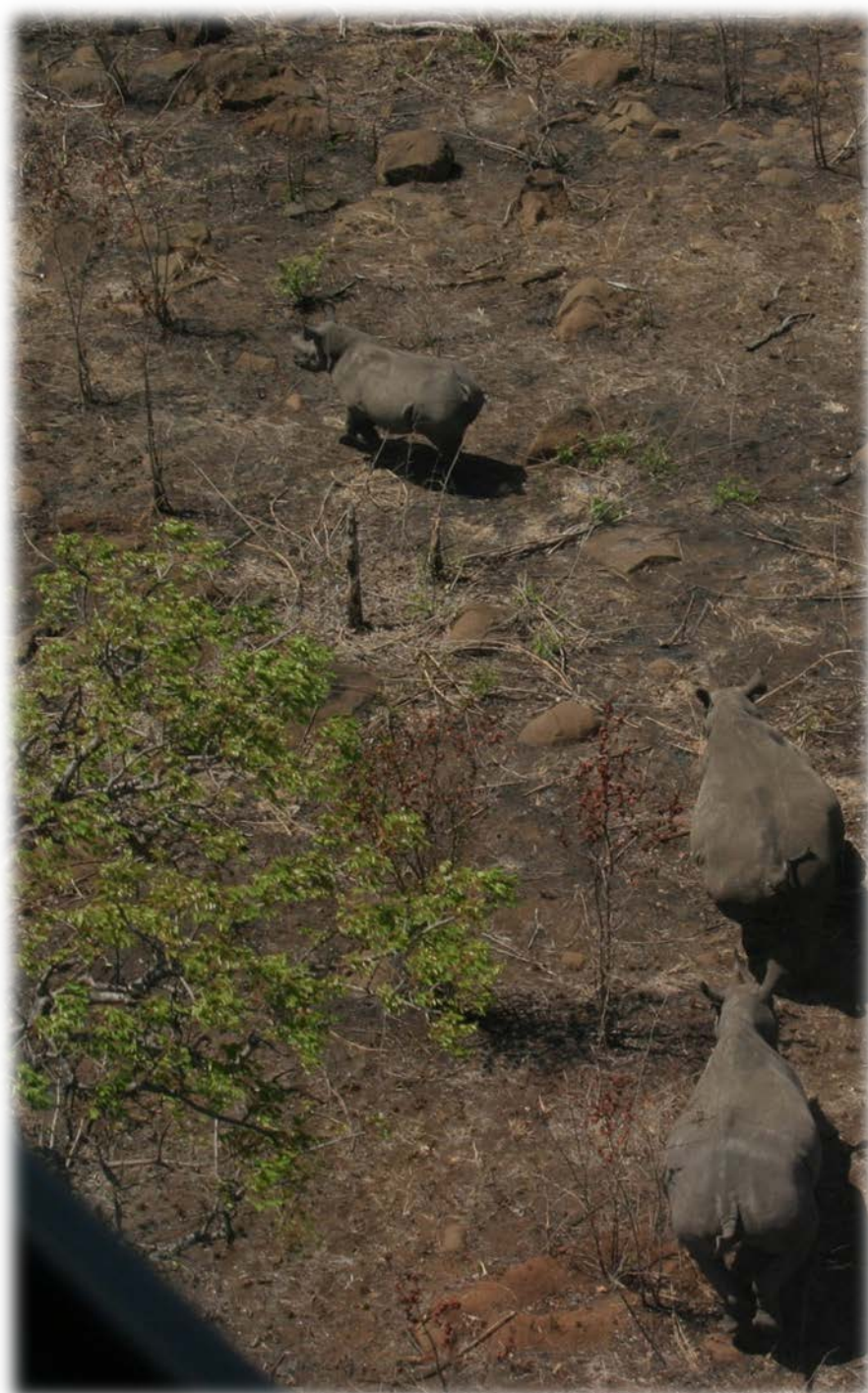
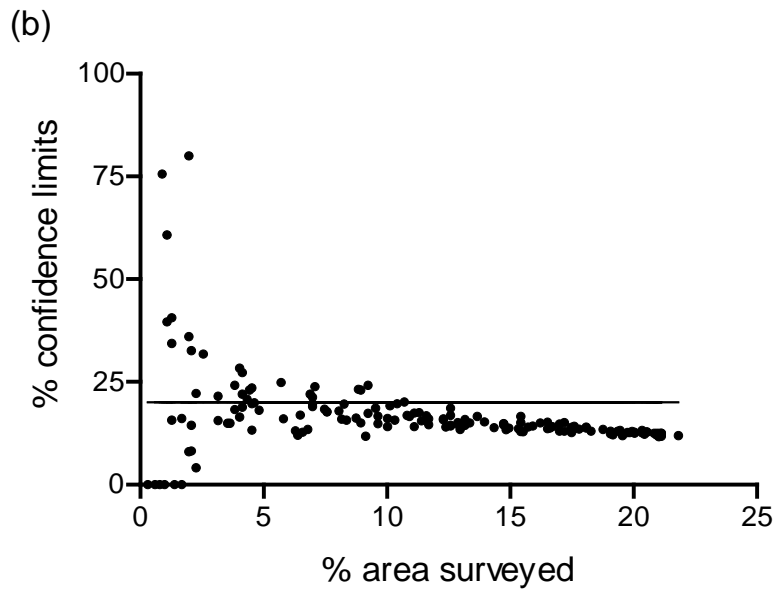
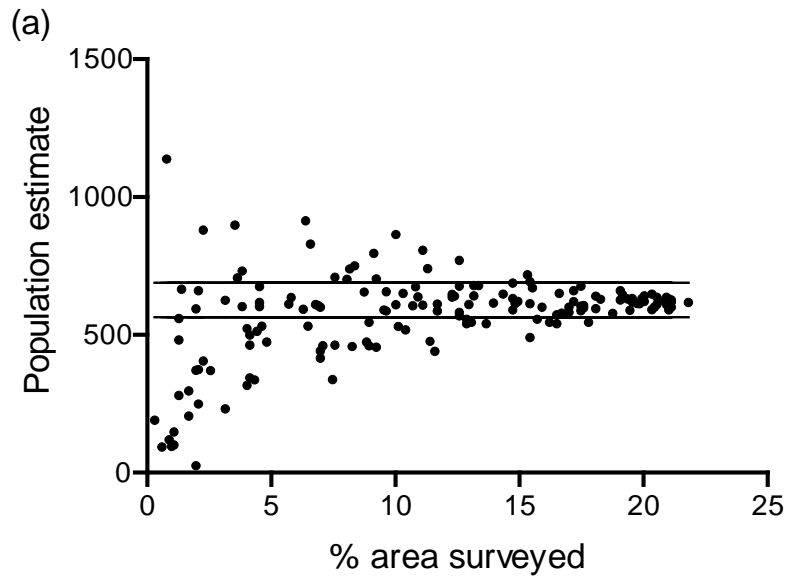


What rhinos did we see?

- Surveyed 878 blocks
- Represent 41.7% coverage of Kruger
- Bias assessments
 - 56 White rhinos
 - 23 Black rhinos

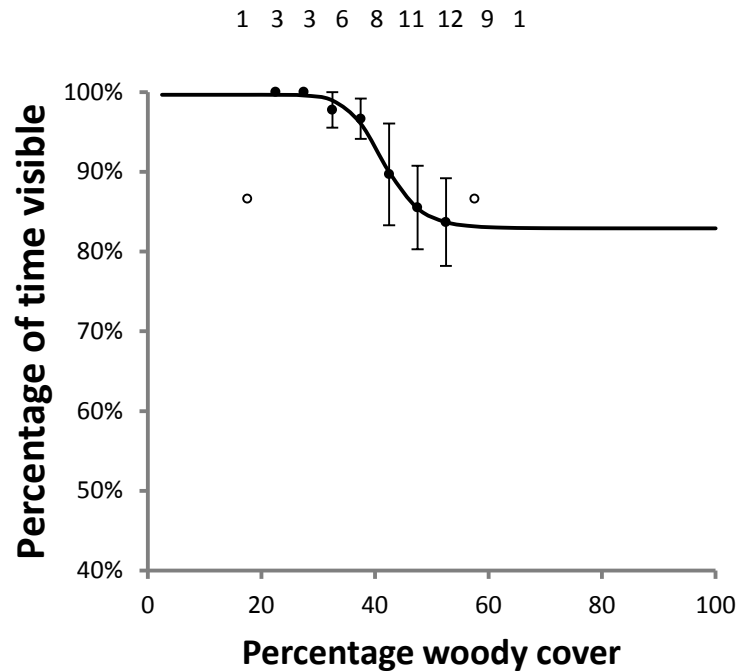


Optimal sampling efforts?

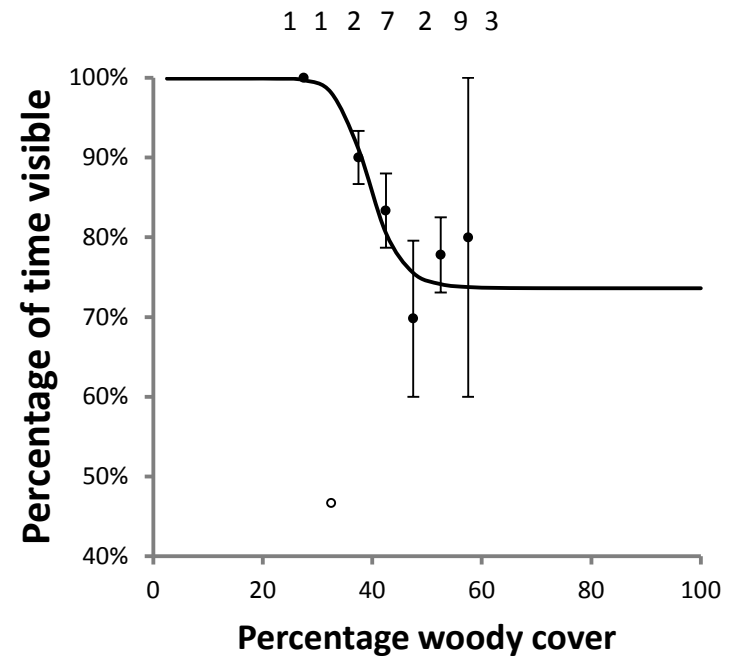


Availability Bias

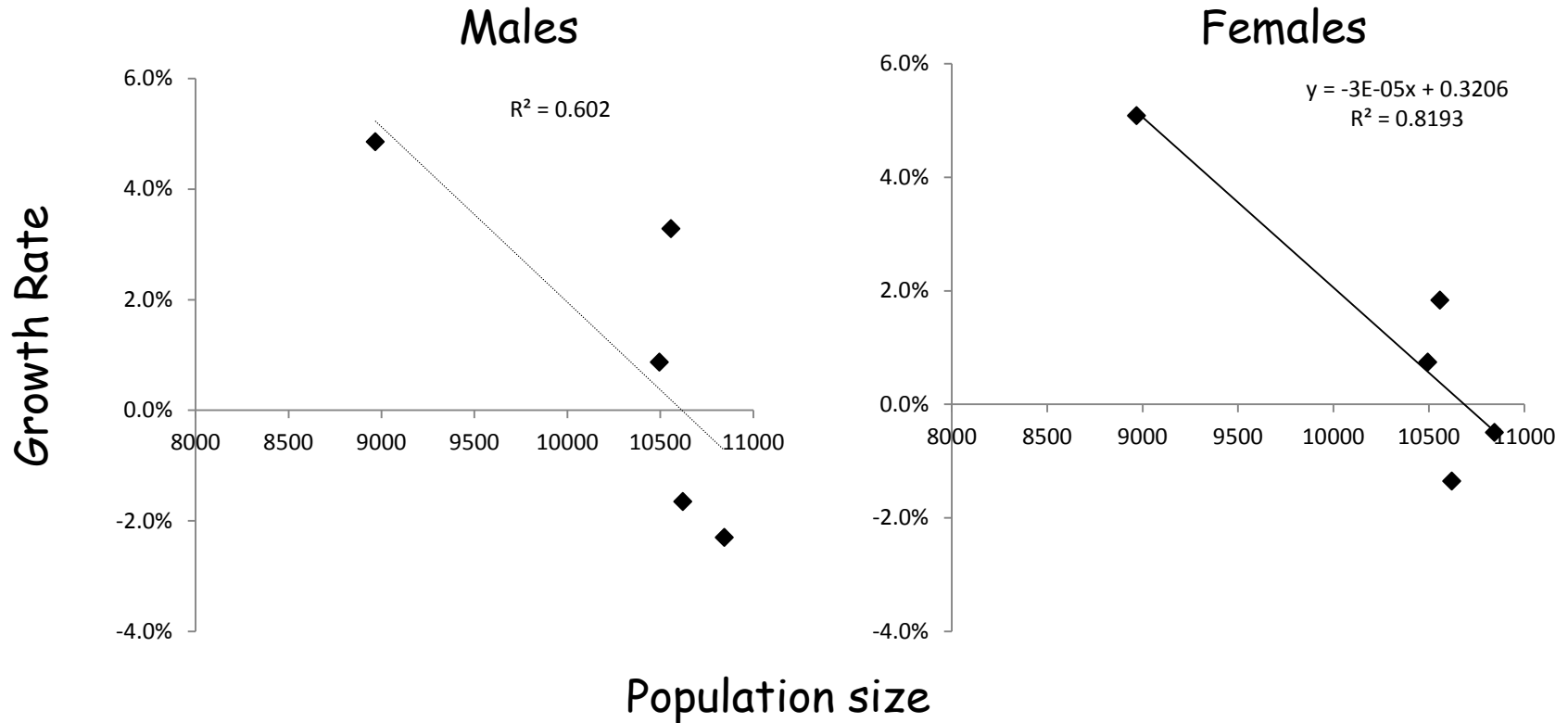
White Rhino



Black Rhino



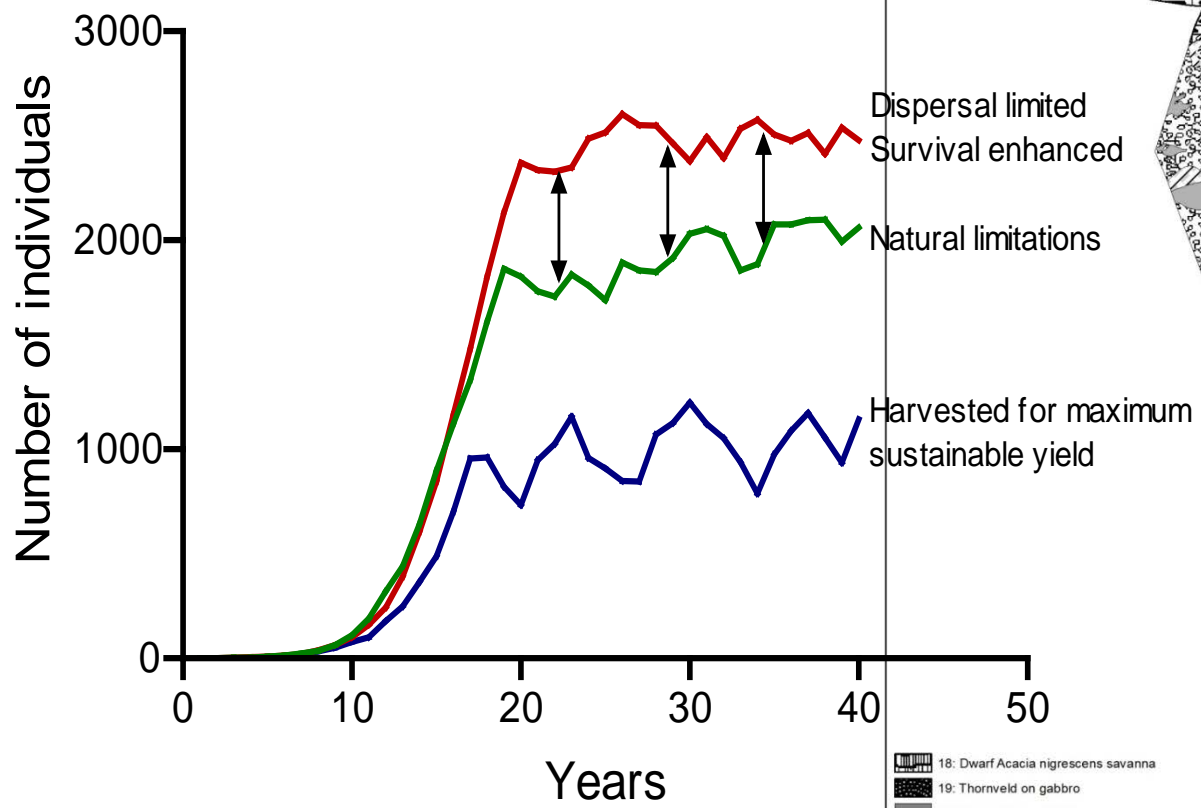
Regulation and limitation



Death rates associated with environment and density

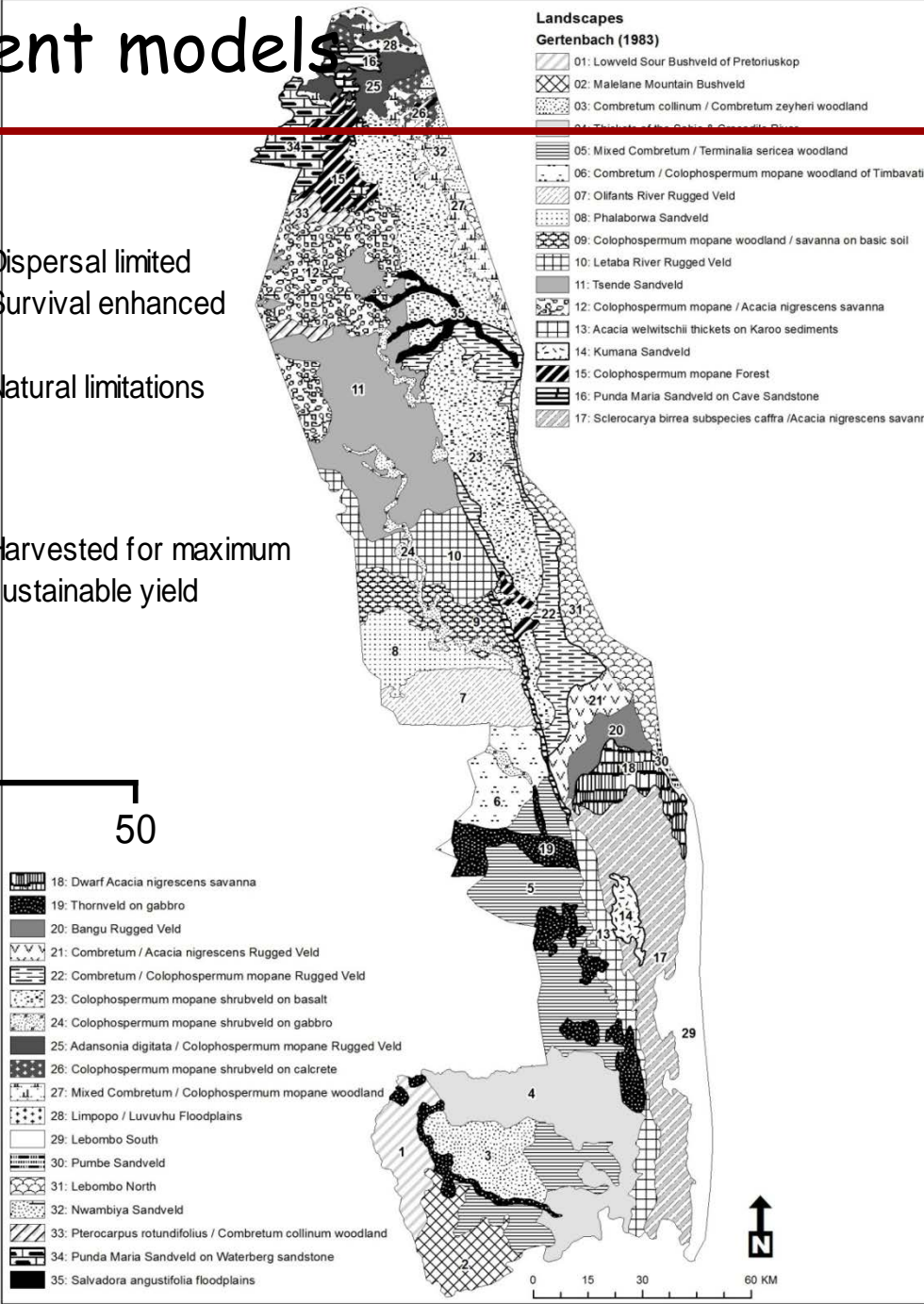
Birth rates associated with density

Rhino population management models



Landscape specific models

- Several landscape have high densities
- Several landscape equilibrium dynamics
- Economic removal - half growth rate
- Mimicking ecological effects lower



The changing South African context

2007 to 2010

Annual increase of 4.7%

18,780 white rhinos

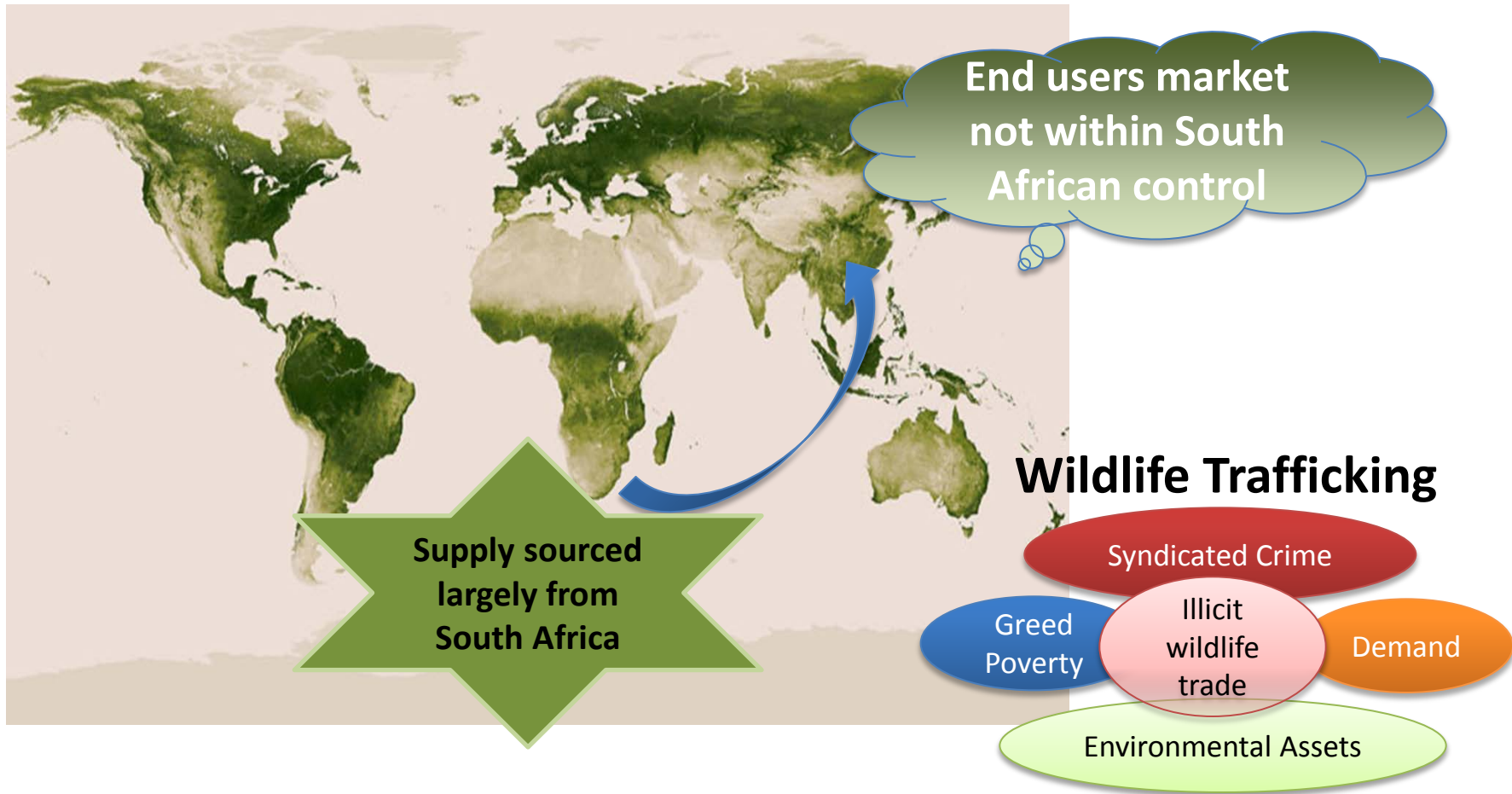
758 poached rhinos

1,797 rhinos fewer



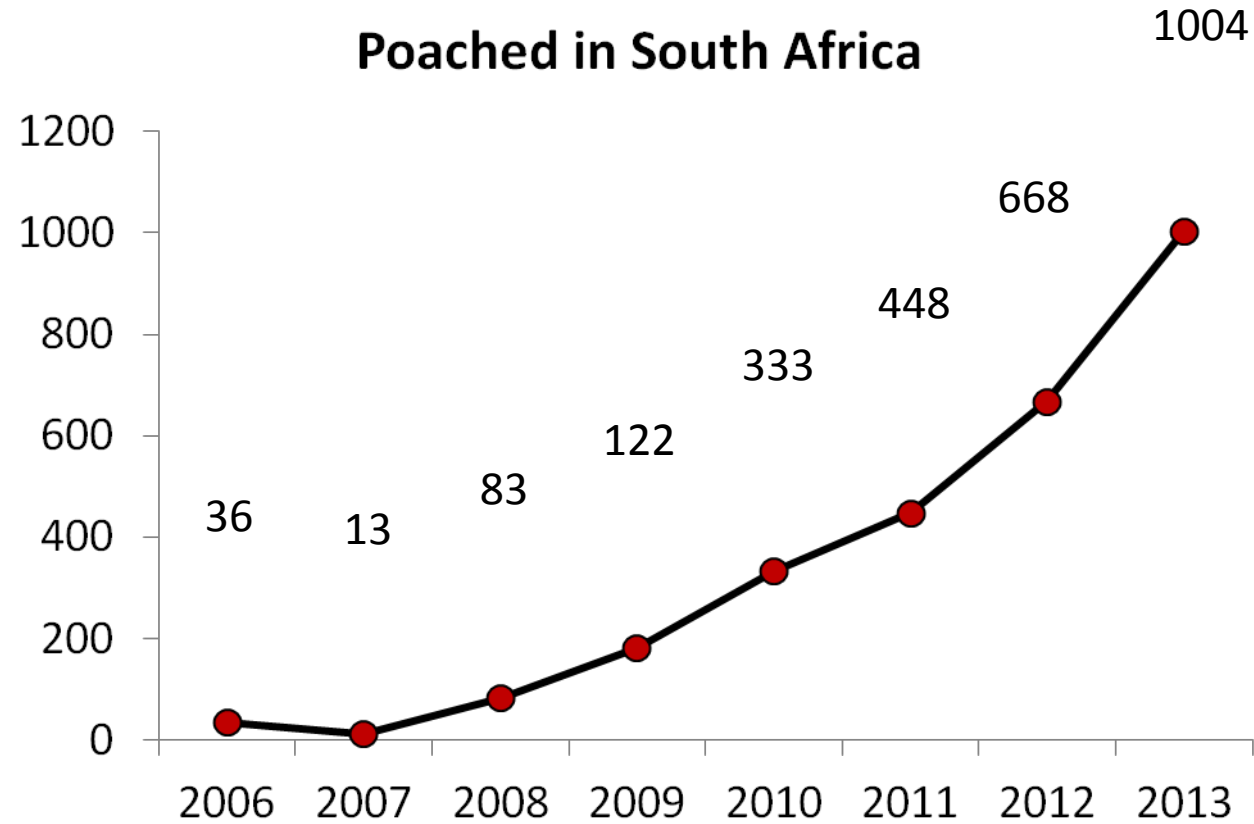
Rhinos increased but could have done so faster if no poaching

A GLOBAL CHALLENGE



THREAT TO RHINO: POACHING

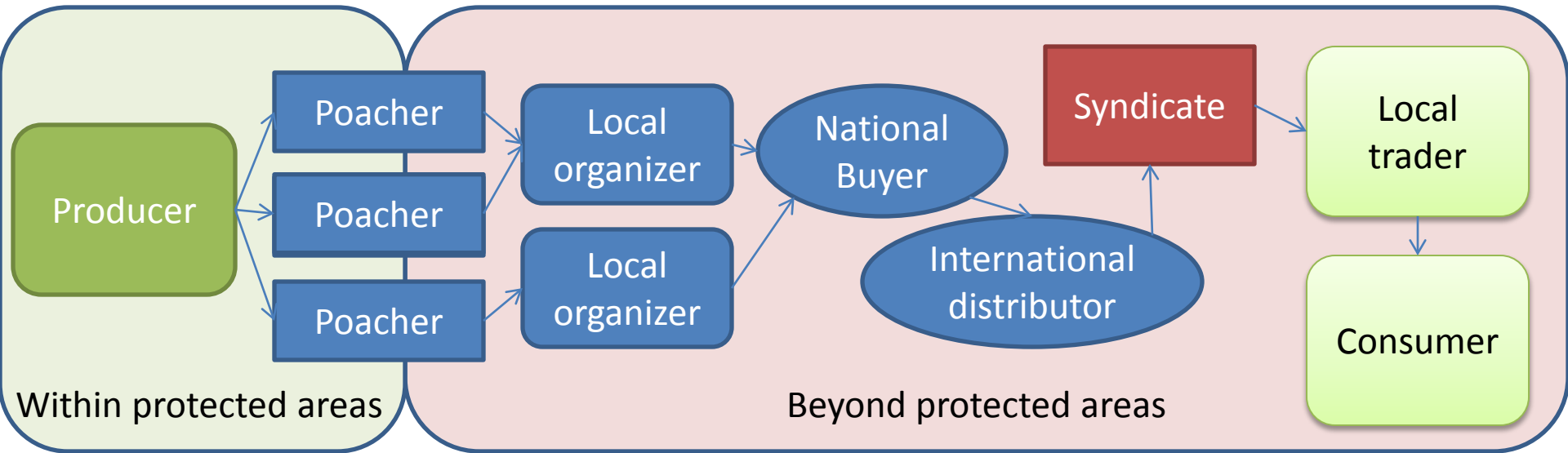
Poached in South Africa



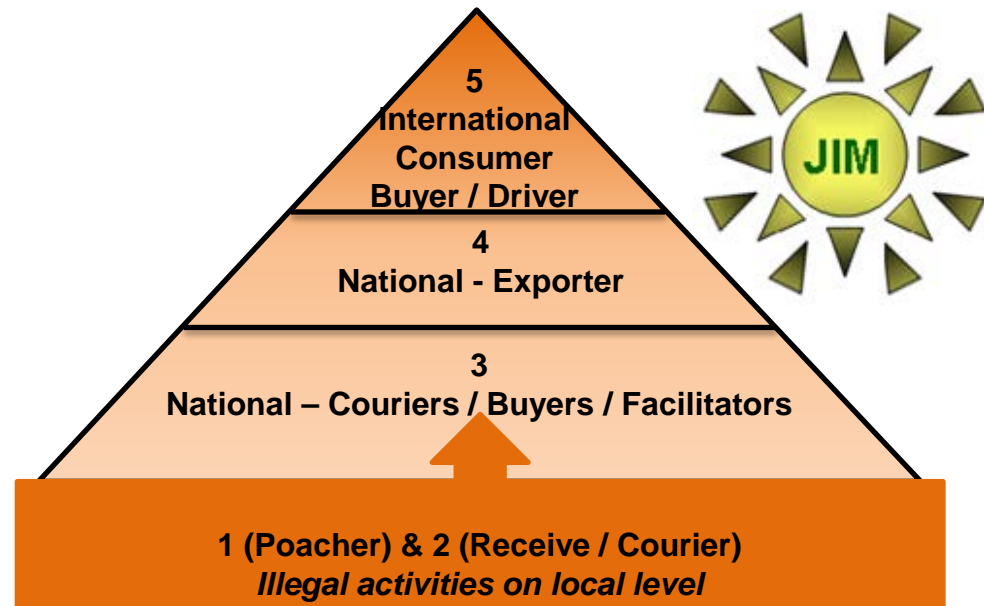
Country	2012	2013
Botswana	1.03%	0.52%
Kenya	2.83%	5.82%
Malawi	7.69%	11.54%
Mozambique	1200%	200%
Namibia	0.04%	0.22%
South Africa	3.18%	4.61%
Swaziland	0.00%	0.00%
Tanzania	1.57%	0.00%
Uganda	0.00%	0.00%
Zambia	0.00%	0.00%
Zimbabwe	4.10%	1.84%
Africa	2.92%	4.07%



WHAT CHANGED? HOW TO DEAL WITH IT SYSTEMICALLY?



Traditional response



Getting smart?

Must have solutions
Pro-active anti-poaching

Rhino creation solutions
Strategic removals
Sanctuaries, conservancies, strongholds
Conservation husbandry



Idealistic strategic solutions
Creating sustainable demand
Trade options

Game-breaking solutions
Disruption of transnational organized crime
Alternative economic choices for communities
Incentivized asset consolidation

Rhino creation solutions

Maximize rhino productivity

Strategically remove rhinos

Stimulate growth

Remove asset

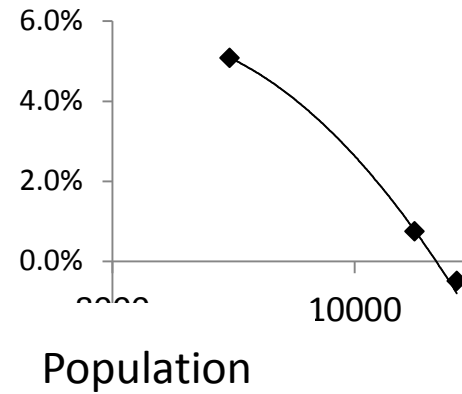
Numbers stable

Periphery

Little poaching

Poaching hotspot

Growth



Strategic Rhino Strongholds

Intense protection

Rhino husbandry

One ranger per 10 km²

Maximize births

Partner Stronghold

Protected areas

Community areas

Share expertise

Private Stronghold

Private land

Consumptive use

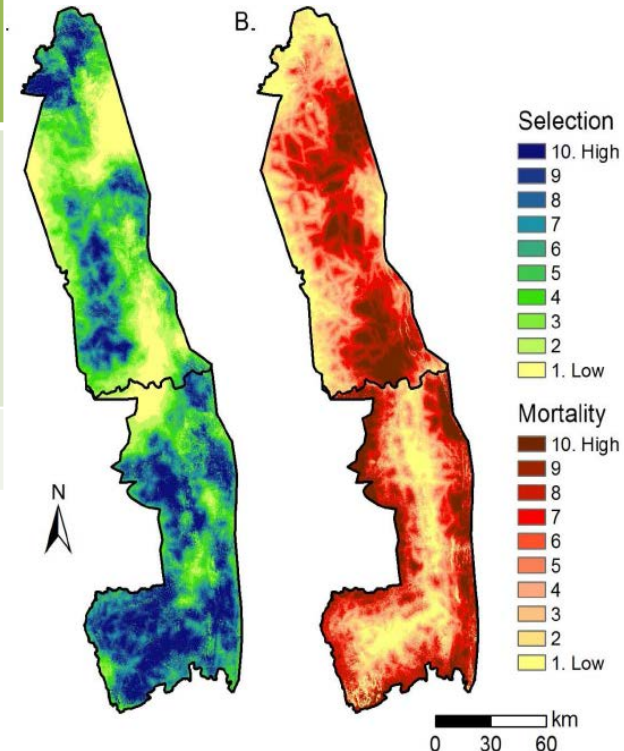
Share expertise/return not given

International Conservancies – Expansion Programmes

Strategic rhino revenue

Fund conservancies

Support husbandry



LESSONS LEARNT

Conservation

- Sound conservation and sustainable use principles play key roles
- Long lag effects for outcomes to materialize from actions taken now

Governance

- Political will essential – unpopular decisions often required
- Joint, integrated and strategically focused efforts have more impact
- International collaboration essential should be strengthened

Stakeholders

- Active participation of communities essential
- Increase economic incentives essential to promote rhino populations
- Costs of interventions are under-estimated

Law enforcement

- Legislation should be current, relevant and a deterrent
- Penalties should align with severity of offences
- Regional law enforcement – Mozambique key focus



PRIORITY ACTIONS

Managing the Threat

Safety and Security

**Transnational
Organized Crime**

Managing the Rhino

Robust Conservation

Disrupt organized crime

Create economic choices

Enhance rhino populations

**Implement long-term
sustainability**

Funding

Governance

International Cooperation





Thank you

Dr Howard H. Hendricks

Snr GM: Policy & Governance

Conservation Services Division

SOUTH AFRICAN NATIONAL PARKS (SANParks)

E-MAIL: howard.hendricks@sanparks.org

643 Leyds Street, Muckleneuk

PO Box 787, Pretoria, 0001

Tel: +27 (0)12 426-5165

Cell: 0836405296

Fax: +27 (0)12 343 2832