

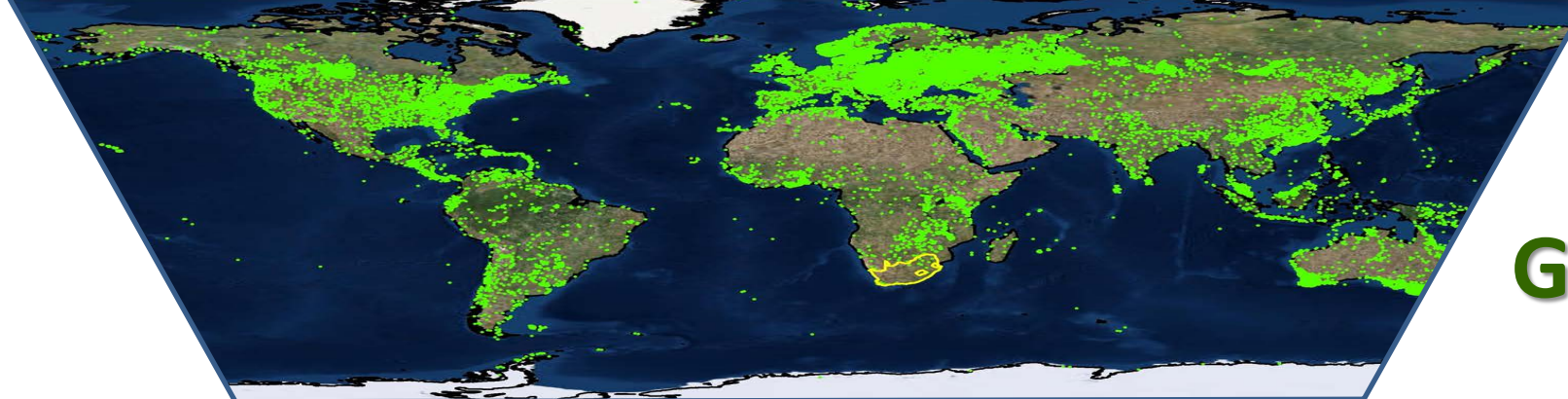
Invasive Alien Plants in Protected Areas: Global Patterns and the South African Experience

Llewellyn Foxcroft

South African National Parks &

Centre for Invasion Biology, Stellenbosch University

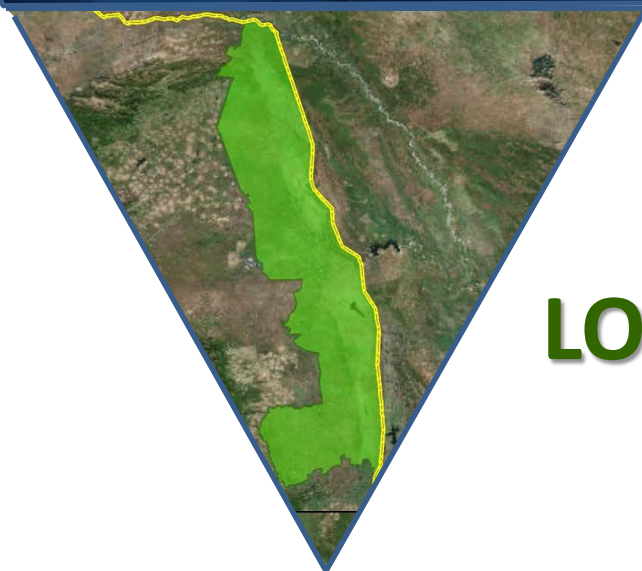




GLOBAL

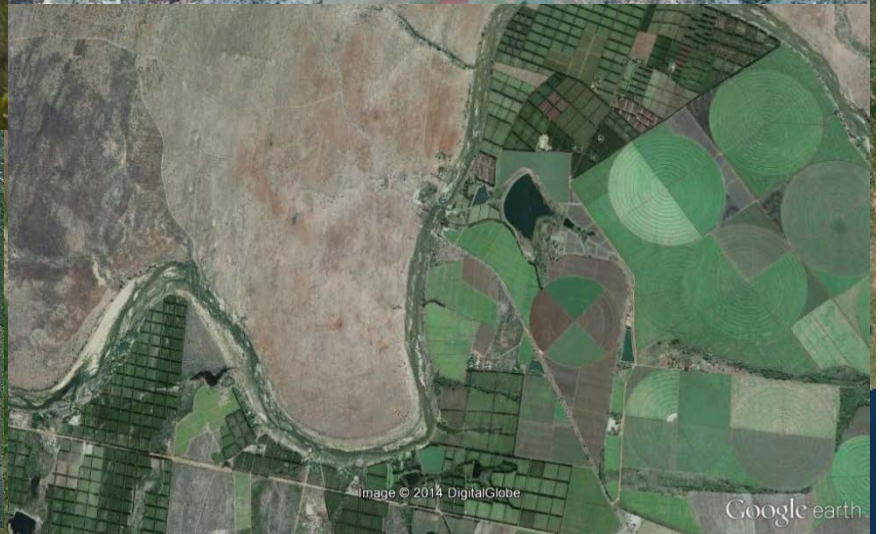
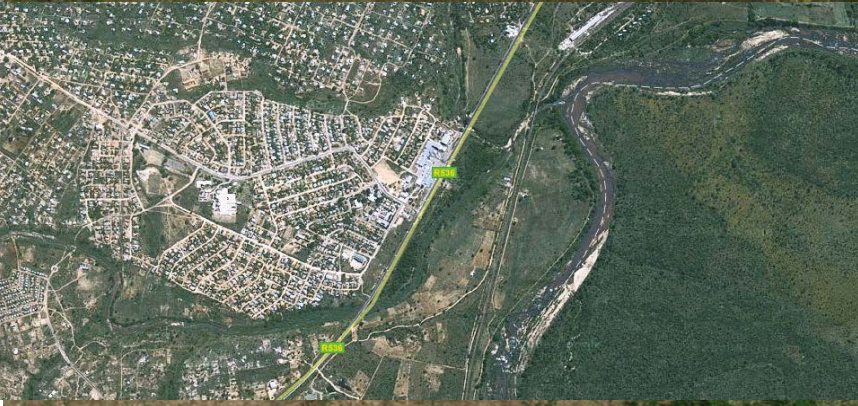


REGIONAL

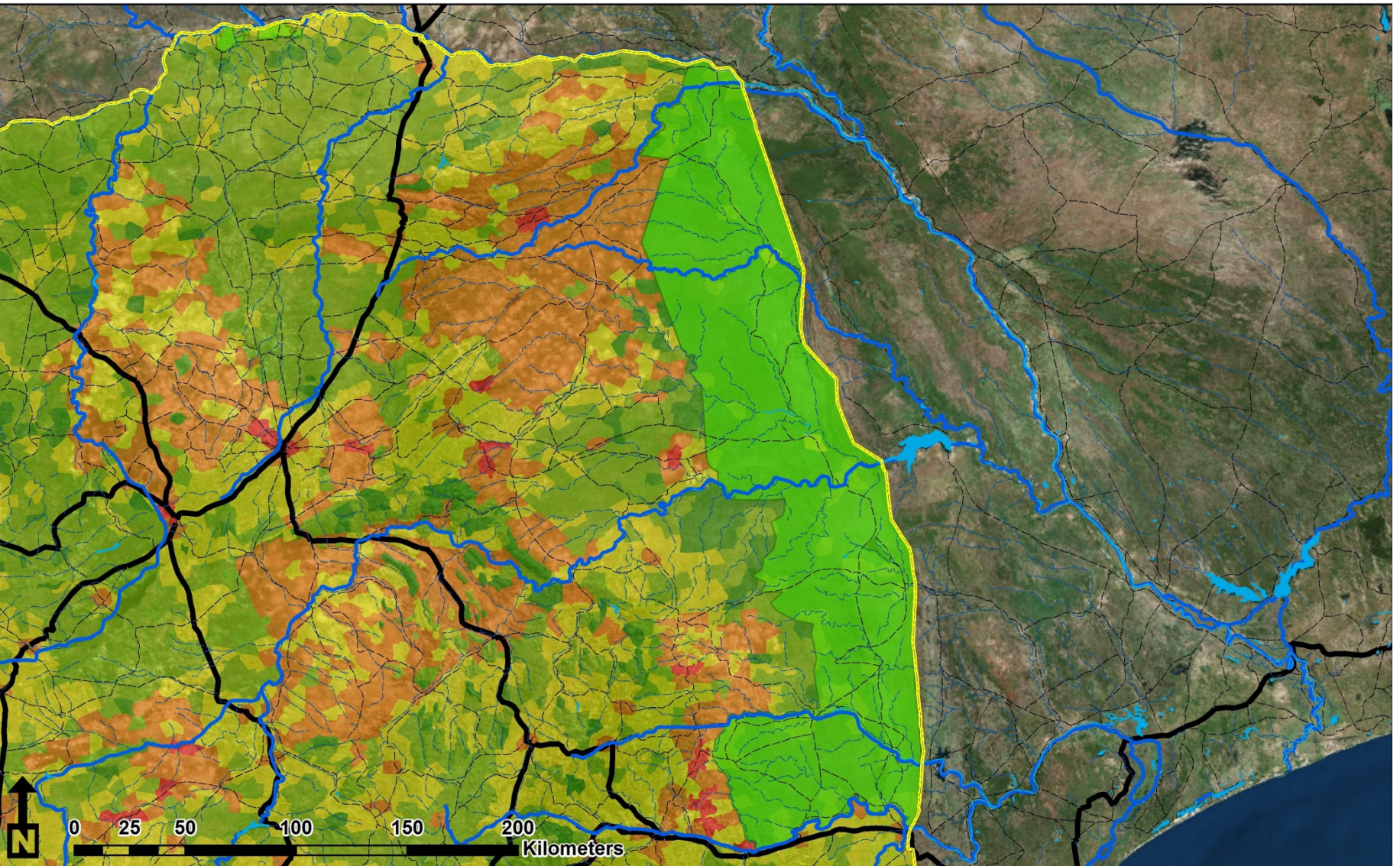


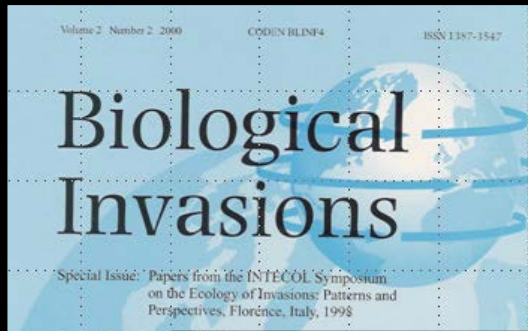
LOCAL

PROTECTED AREAS - THREATS

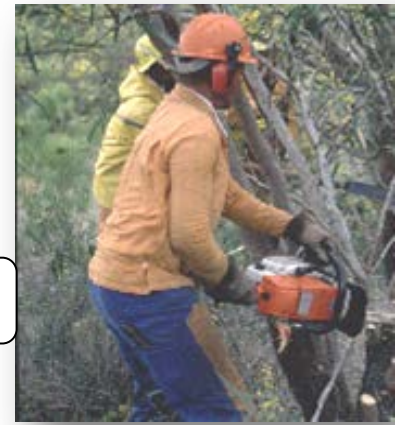
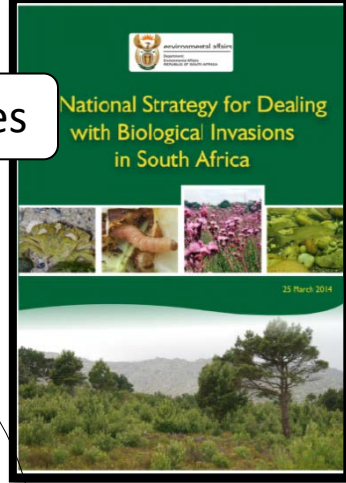


THREATS – INVASIVE SPECIES





Policy guidelines

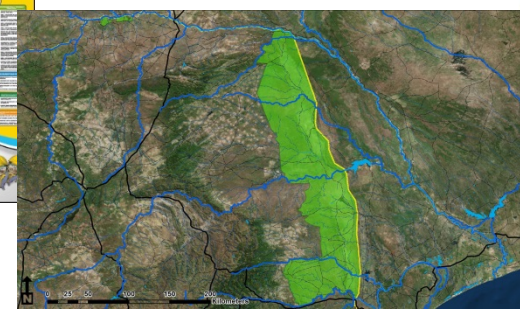


Control

Opportunities & social benefits



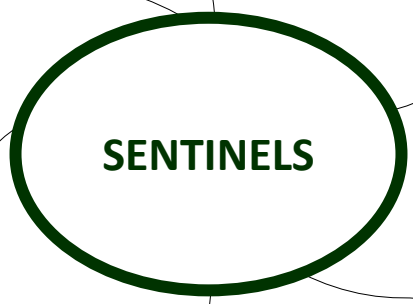
Awareness



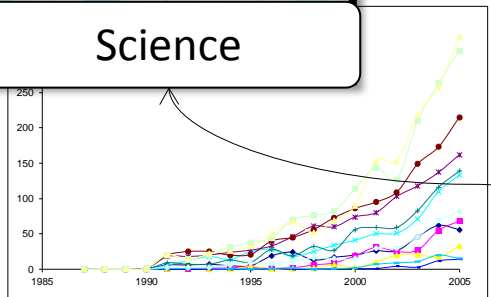
Monitoring



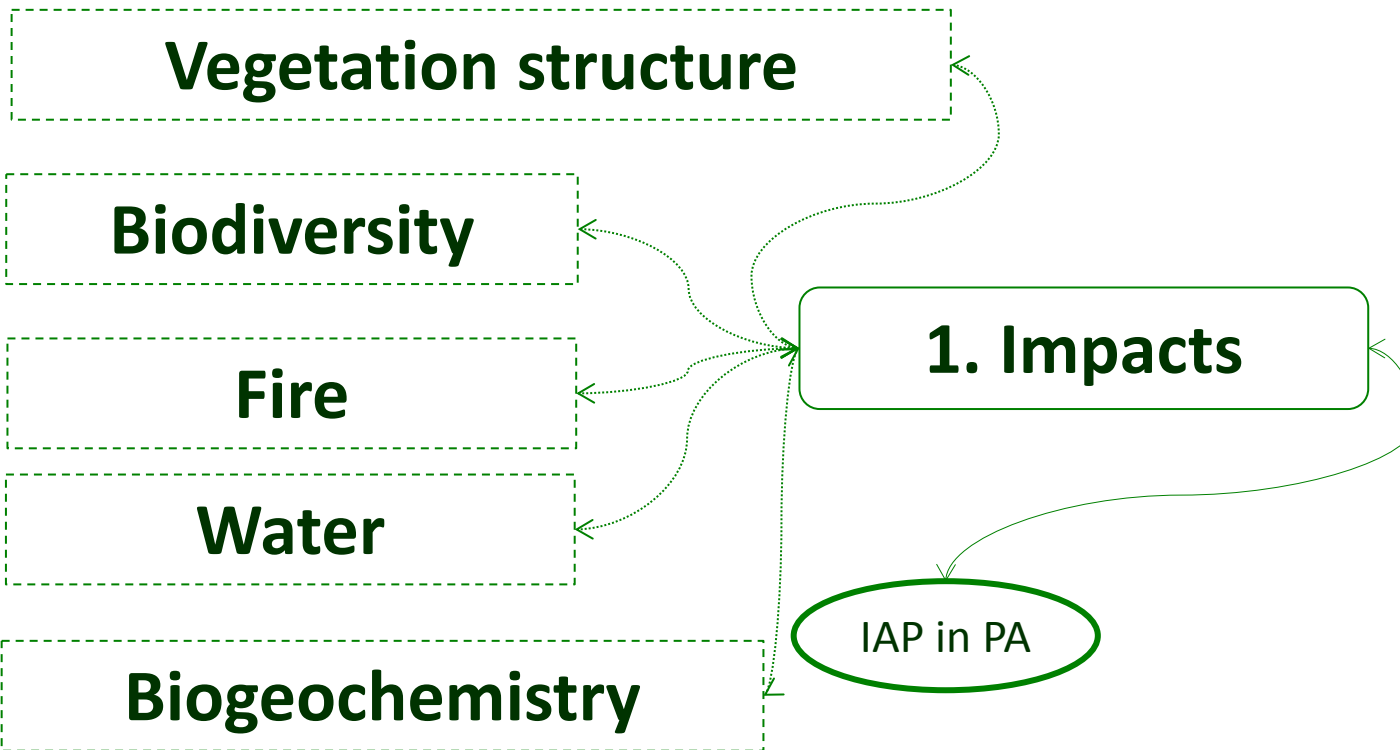
Impacts



Science



IMPACTS OF INVASIVE PLANTS



IMPACTS – SPECIES & COMMUNITIES



- Black rhino: toxicity
- One-horned: habitat loss

Kaziranga NP India - *Mikania micrantha* & *Mimosa rubicaulis*



IMPACTS – SPECIES & COMMUNITIES



- Nile Crocodile: Nesting Habitat and Sex Ratios
- Spider / Beetle: Assemblage Patterns, Abundance, Diversity, Estimated Species Richness



IMPACTS – DISTURBANCE REGIME

- Fire 'ladders' into previously unburned areas

Florida Everglades, *Lygodium microphyllum*



IMPACTS – HABITAT TYPE

- Woodland Savanna to High Biomass Grasslands

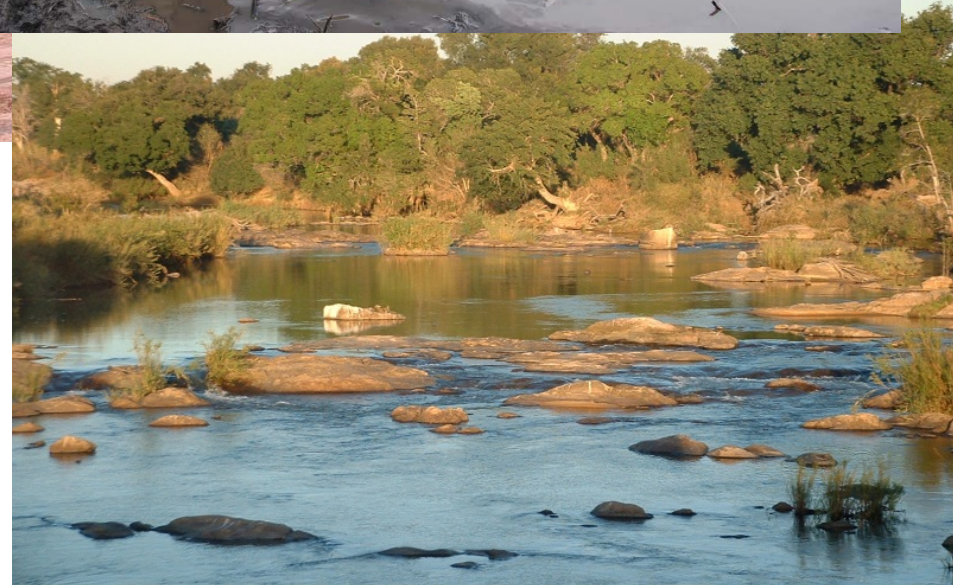
Northern Australia, *Andropogon gayanus*



IMPACTS – ECOSYSTEM SERVICES



Regulating



IMPACTS – HUMAN & ANIMAL HEALTH

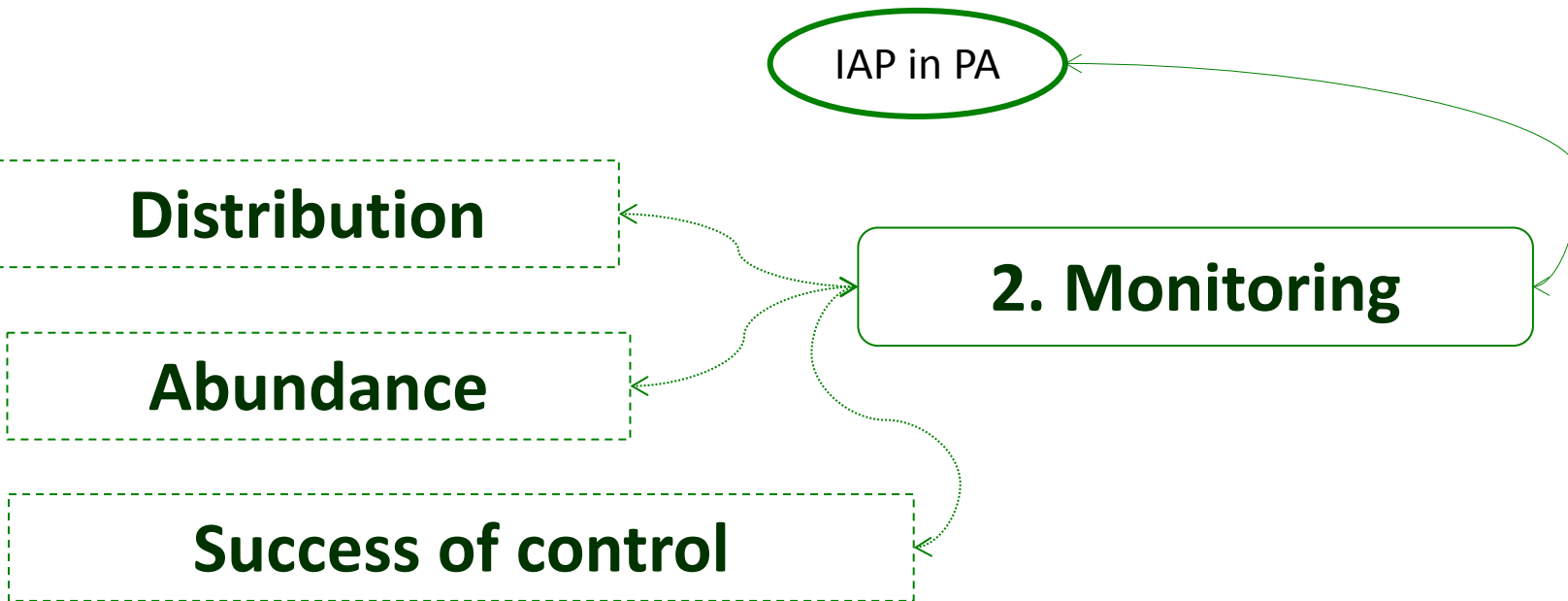
Parthenium hysterophorus



IMPACTS – ECONOMIC

- Lack of resources generally
- Czech Republic nature conservation: **US\$ 100,000** pa management of most important invasive plant species
- Conservation areas in Germany: Management costs *Prunus serotina* **US\$ 184 million**
- Snowdonia NP, Wales: *Rhododendron ponticum* **US\$ 71 million**

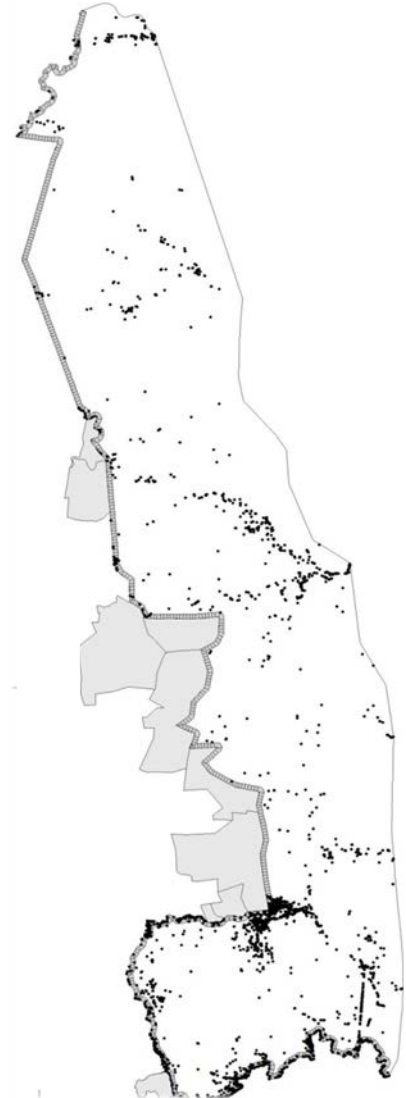
MONITORING



DISTRIBUTION & ABUNDANCE



IAP
Distribution

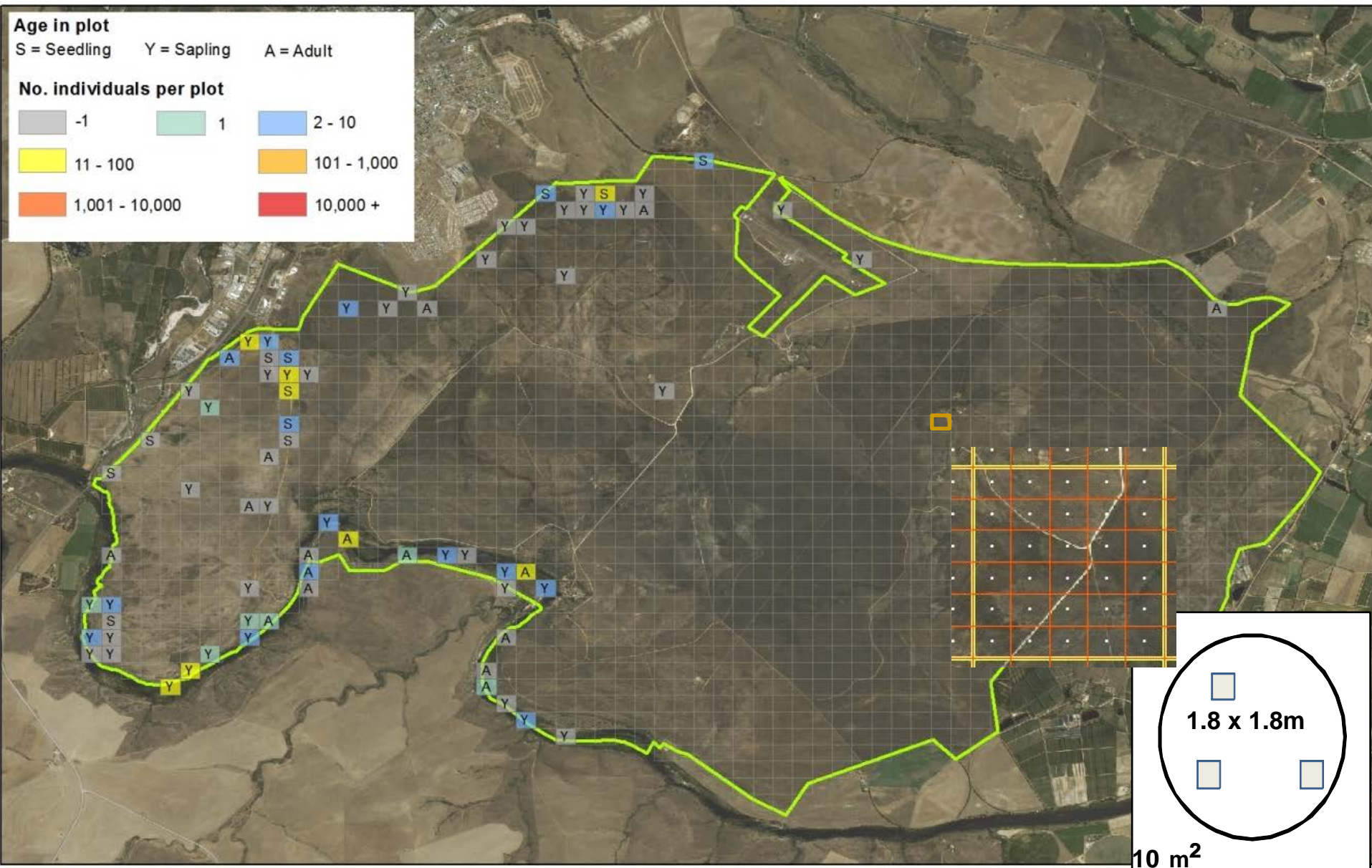


Survey 2
million ha

Kruger National Park, South Africa

Bontebok National Park, South Africa

Acacia mearnsii (black wattle)



SCIENCE

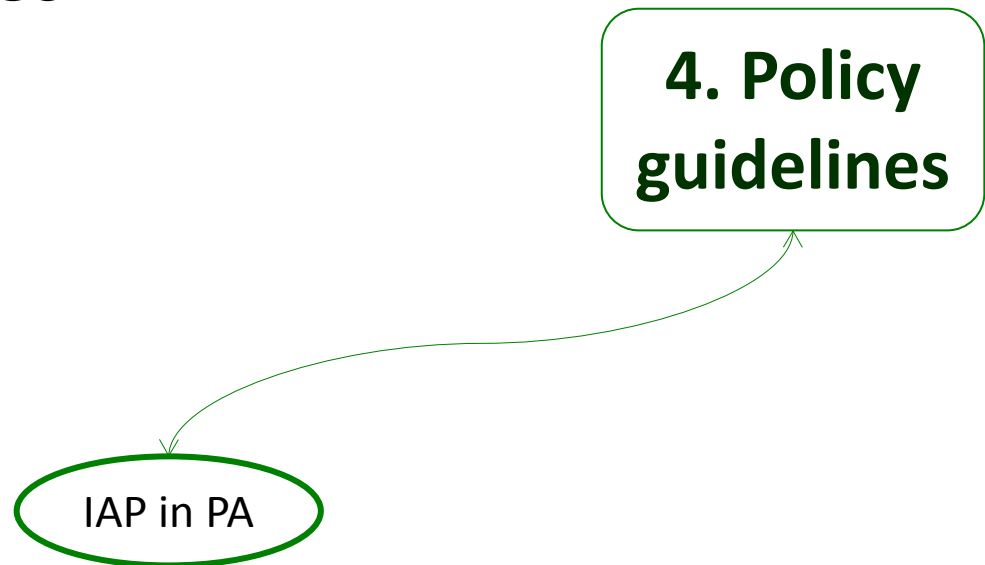
- Natural Laboratories
 - Range in size of PAs & habitat types
 - Time Since Proclamation / rates invasion
 - Management Practices
 - Disturbance Regimes
 - Species Diversity
- Bridging the Science-management Divide
 - Not just published in scientific journals

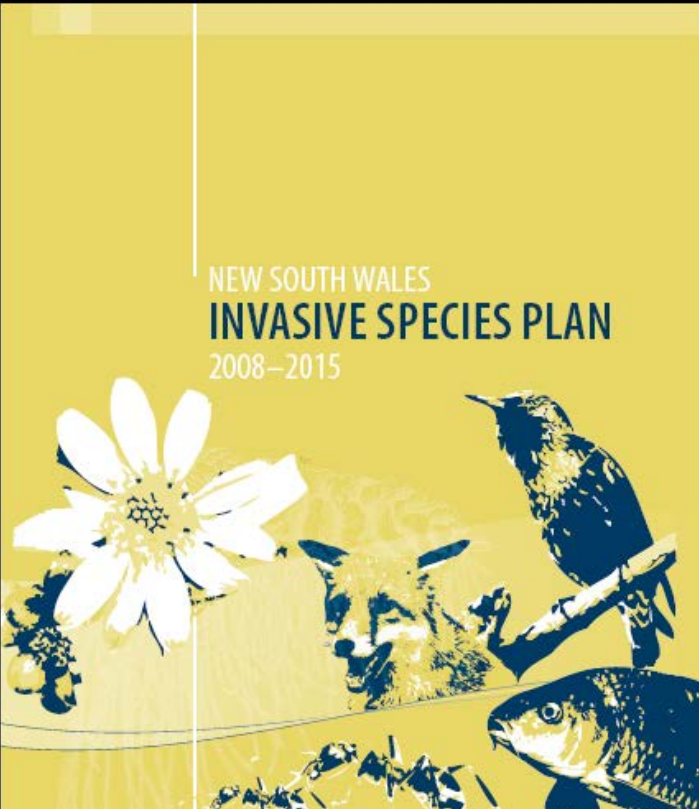
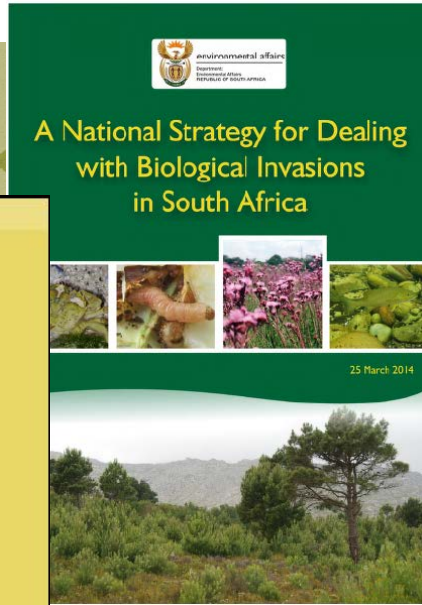
3. Science


IAP in PA

POLICY

- Science and Experience Translated Into Policy
- International Conventions
- National Strategies
- PA Strategies








National Park Service

Nature & Science

National Park Service
U.S. Department of the Interior



Biologic Resources

NPS >> Nature & Science >> Biology >> Invasive Species

Search Nature

☒ Nature & Science
☐ All NPS

[Advanced Search](#)
[Search A to Z](#)

A Strategic Plan for Managing Invasive Nonnative Plants on National Park System Lands

U. S. Department of the Interior
National Park Service
August 1996

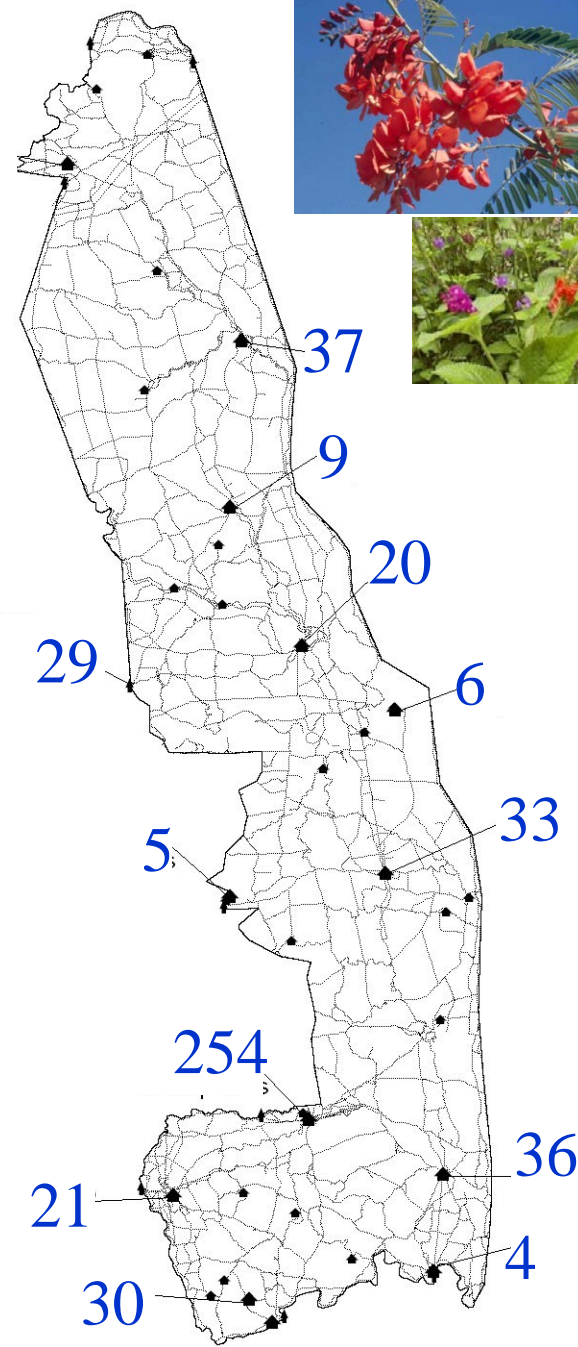
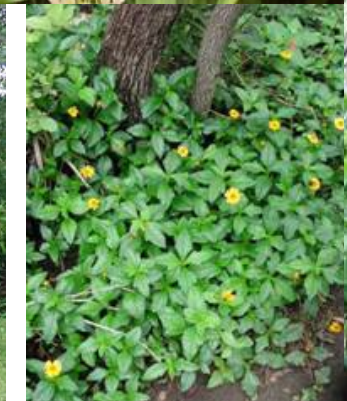


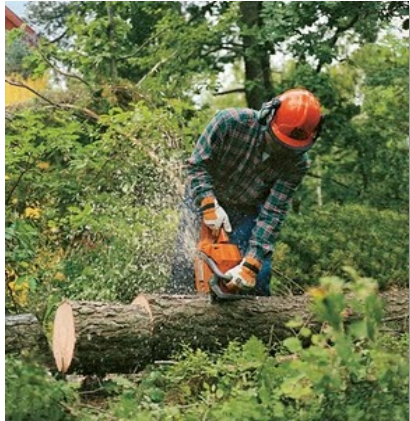
South African
NATIONAL PARKS

PROTOCOL FOR THE MANAGEMENT OF ORNAMENTAL ALIEN PLANTS AND LANDSCAPING IN ALL DEVELOPED AREAS OF THE KRUGER NATIONAL PARK

29

Alien
species





5. Control

Mechanical

chemical

Biological

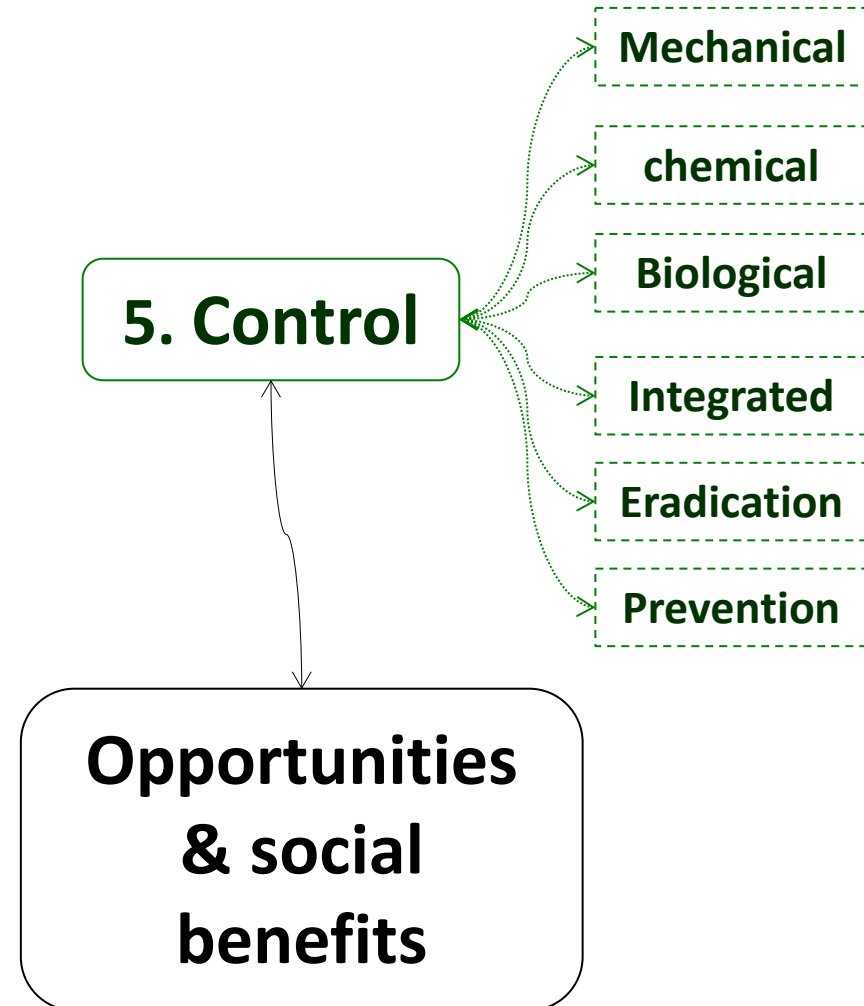
Integrated

Eradication

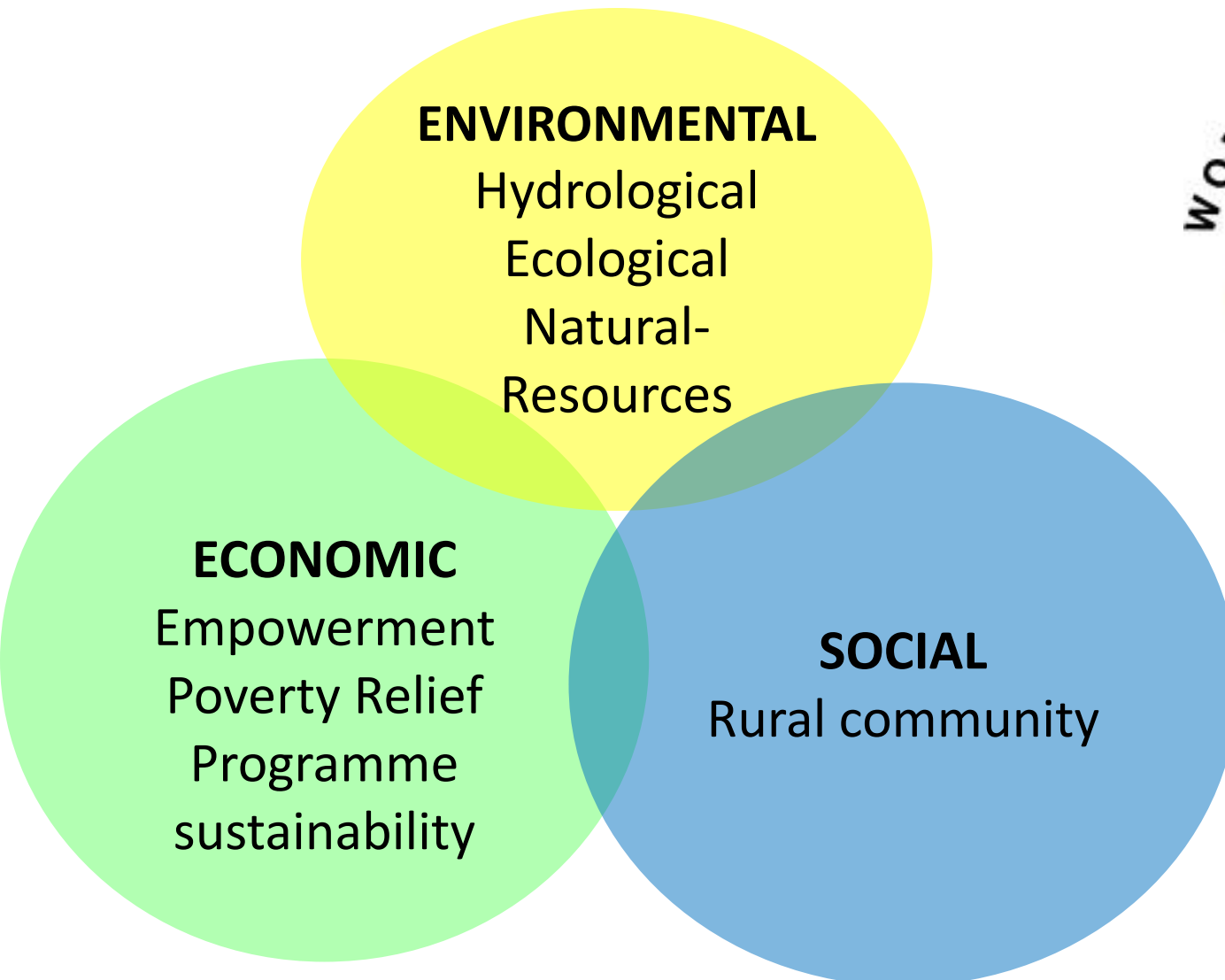
Prevention



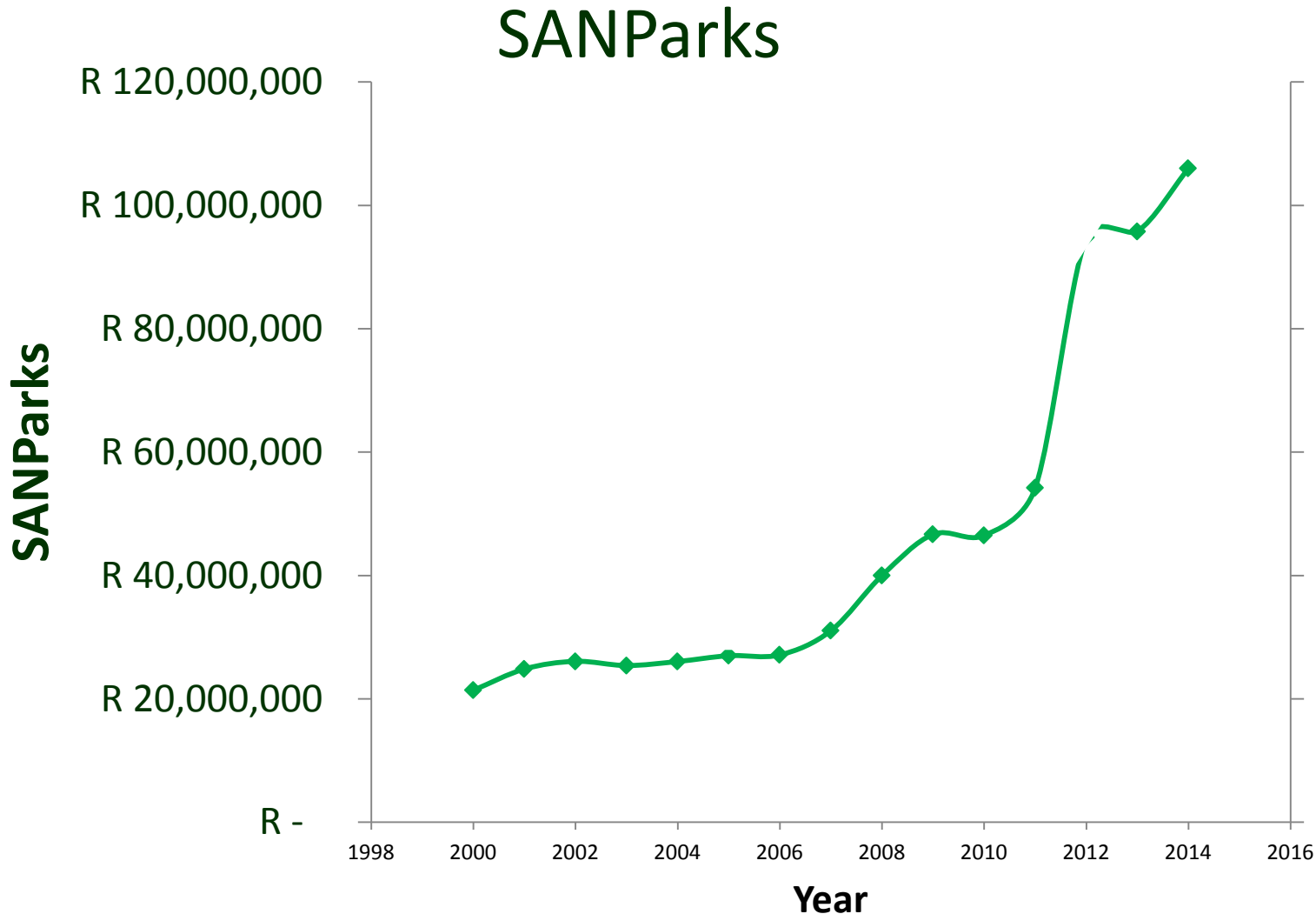
CONTROL



SA WORKING FOR WATER MODEL

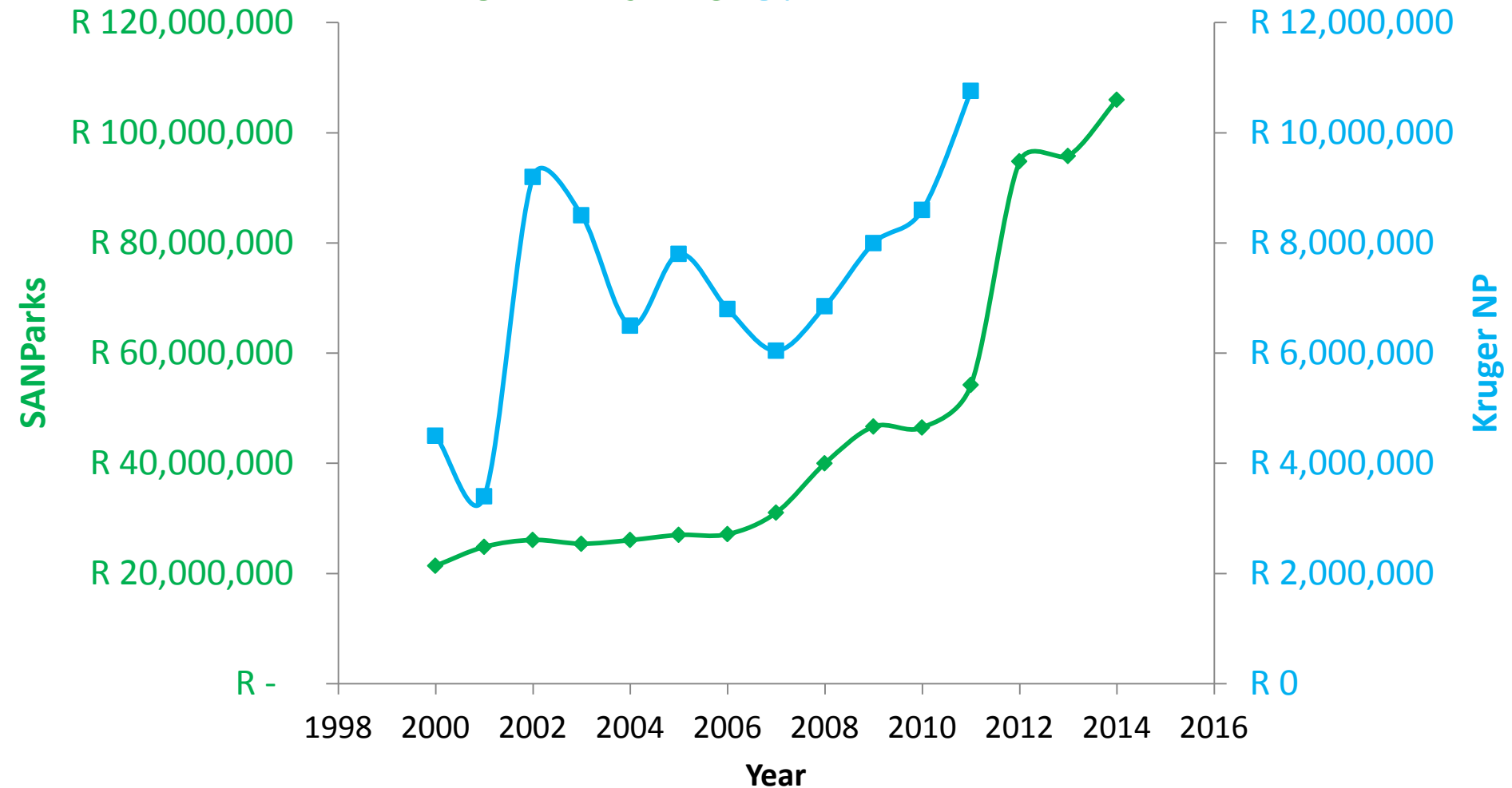


CONTROL– COSTS & PARTNERSHIPS

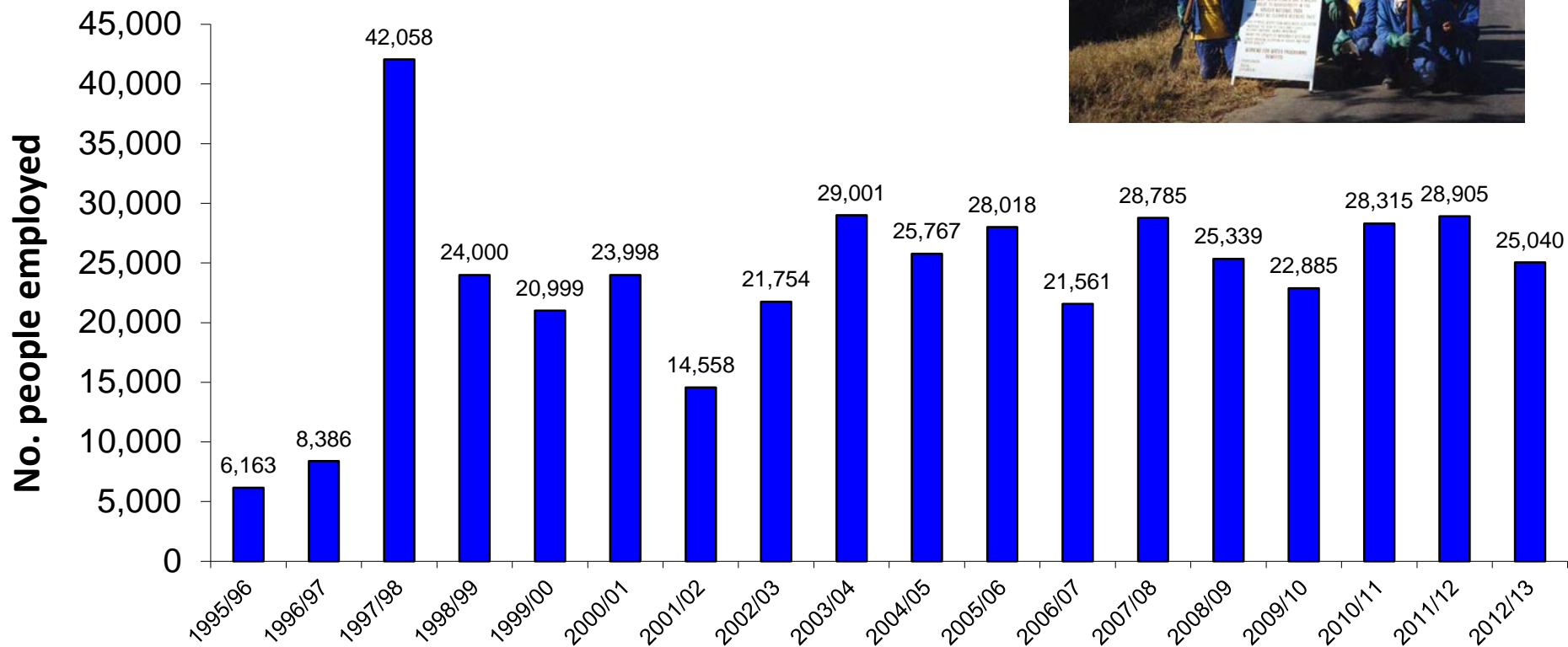


CONTROL– COSTS & PARTNERSHIPS

SANParks & KNP



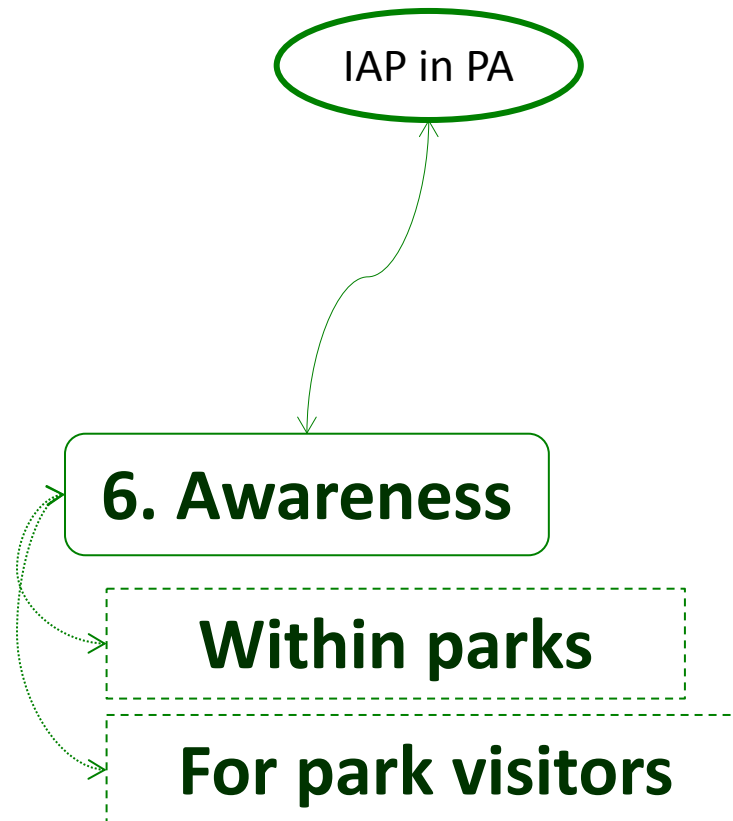
CONTROL - OPPORTUNITIES



Working for Water Employment Opportunities

AWARENESS

- Unique Position of PAs



SAVE THE ENVIRONMENT



SUBTROPICAL



- [illegible]

- PREVENTION OF POLLUTION AND EROSION
- CLEARING OF ALIEN PLANTS
- IMPROVEMENT IN THE ENVIRONMENT
- IMPROVEMENT IN THE QUALITY OF LIFE
- CONTINUED SUSTAINABILITY

- SLAUGHTER (KILLING) OF ANIMALS IS PROHIBITED (HARAM)
- JUDGMENT (KILLING) OF ANIMALS IS PROHIBITED (HARAM)
- JUDGMENT (KILLING) OF ANIMALS IS PROHIBITED (HARAM)
- JUDGMENT (KILLING) OF ANIMALS IS PROHIBITED (HARAM)

- CAN BE PULLED OUT BY HAND
- RYF DOWN FLIES TO THE GROUND
- SPRAYS WITH VERBENAIDE
- BIOLOGICAL CONTROL E.G. BY IMPORTED NATURAL ENEMY SPECIES

KEY STATISTICS

- ABOUT 25 000 ALIEN PLANTS THAT HAS BEEN INTRODUCED INTO SOUTH AFRICA FOR COMMERCIAL, AGRICULTURAL, AND DOMESTIC USE
- NOT ALL ALIEN SPECIES ARE INVASIVE. CURRENTLY ABOUT 200 ARE REGULATED BY LEGISLATION AND NEED TO BE CONTROLLED (LESS THAN 2%)

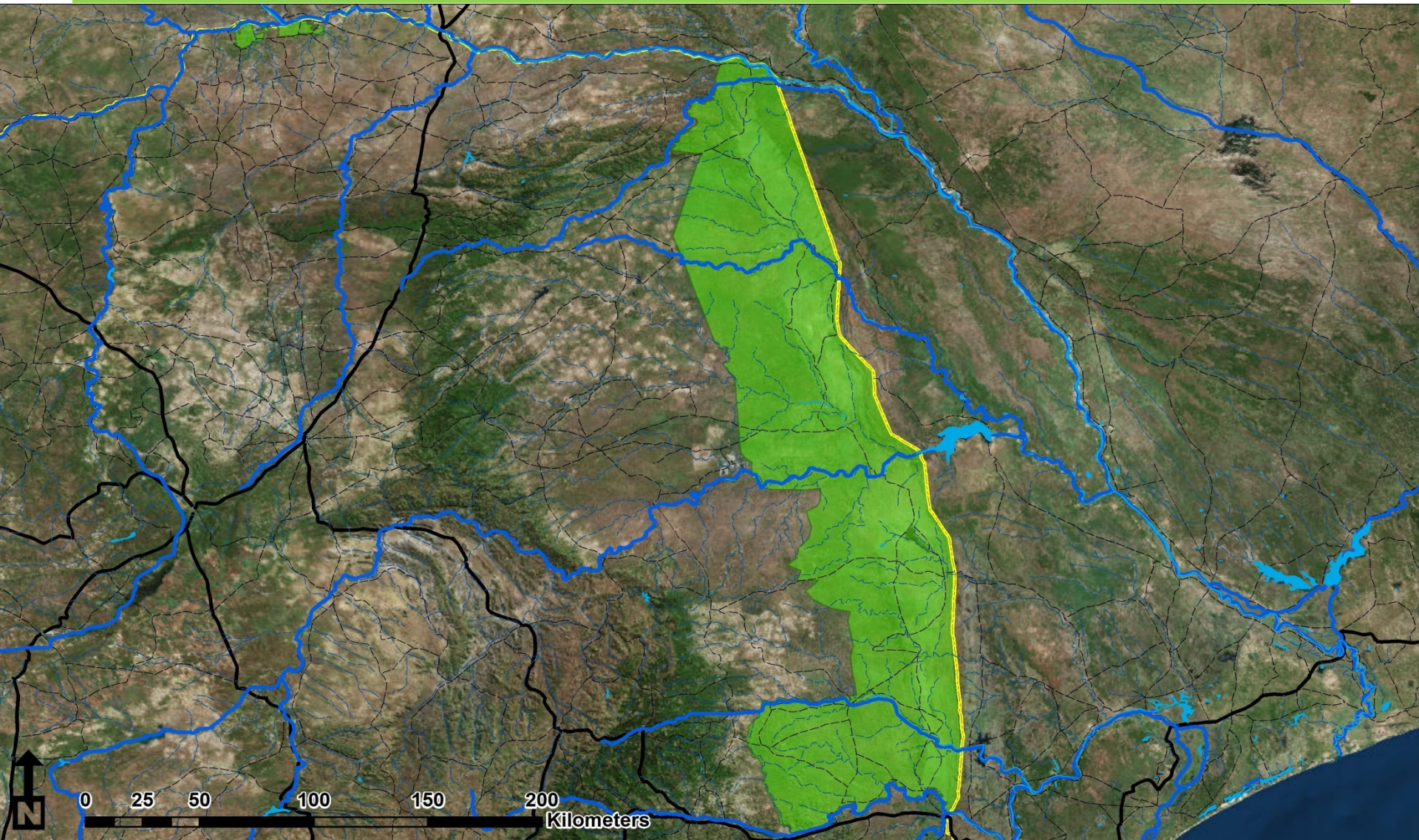
Working for Water
Programs
Tell-free Number
800 005 374



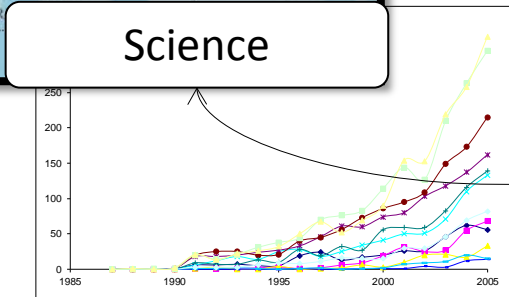
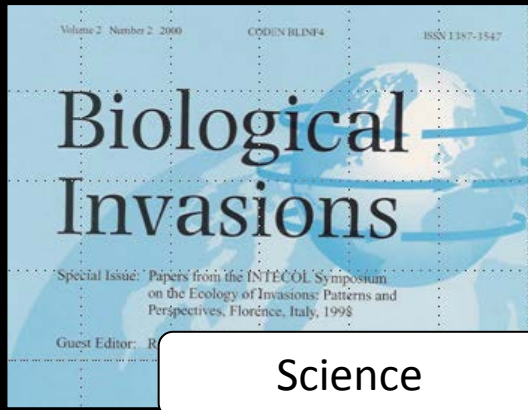
AWARENESS – ROLE OF PAs

- Encourage and Engage
 - Strategies Across Landscape
 - Surveillance
 - Prevention
 - Early Detection and Eradication
 - Control
- Importance of PAs
 - Motivation for Additional Resources

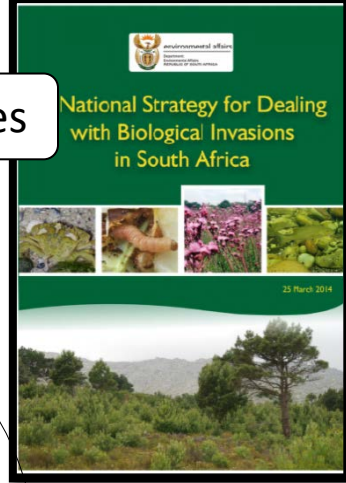
AWARENESS – ROLE OF PAs



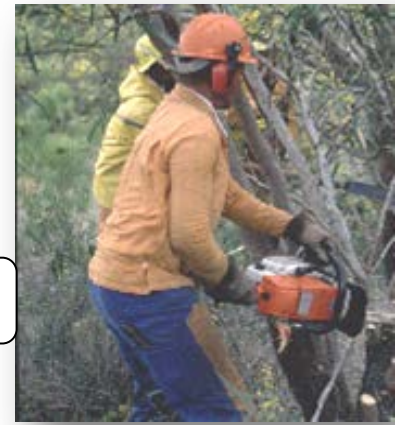
IN CONCLUSION



Policy guidelines



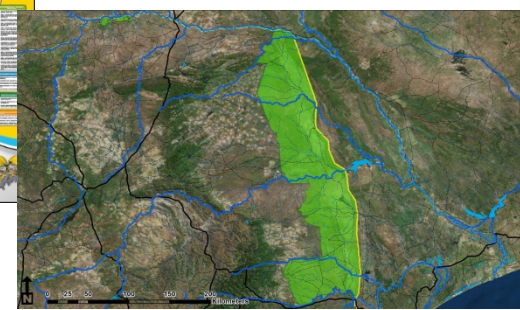
Control



Opportunities & social benefits



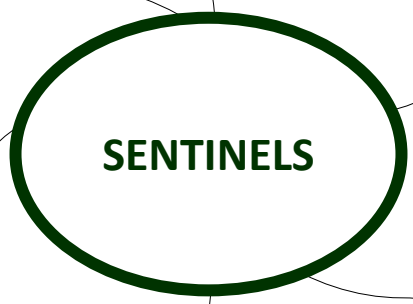
Awareness



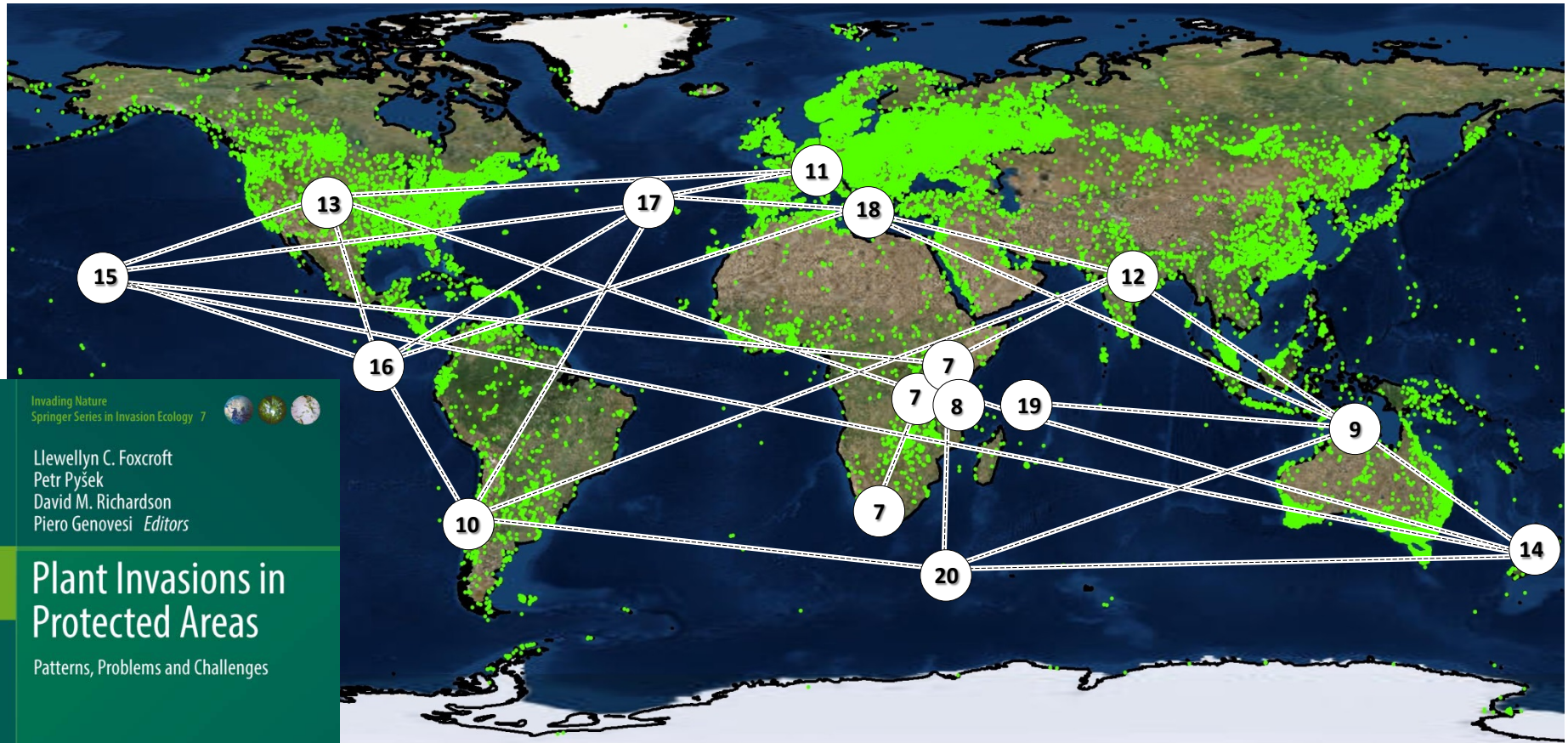
Monitoring



Impacts



PA COLLABORATIVE NETWORKS



Invading Nature
Springer Series in Invasion Ecology 7

Llewellyn C. Foxcroft
Petr Pyšek
David M. Richardson
Piero Genovesi Editors

Plant Invasions in Protected Areas

Patterns, Problems and Challenges

THANK YOU

- Piero Genovesi
- IUCN SSC Invasive Species Specialist Group
- National Research Foundation (South Africa)
- Centre for Invasion Biology, Stellenbosch University
- South African National Parks
- Springer (ebook access)



National
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Invading Nature
Springer Series in Invasion Ecology 7



Llewellyn C. Foxcroft
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Piero Genovesi *Editors*

Plant Invasions in Protected Areas

Patterns, Problems and Challenges

 Springer