



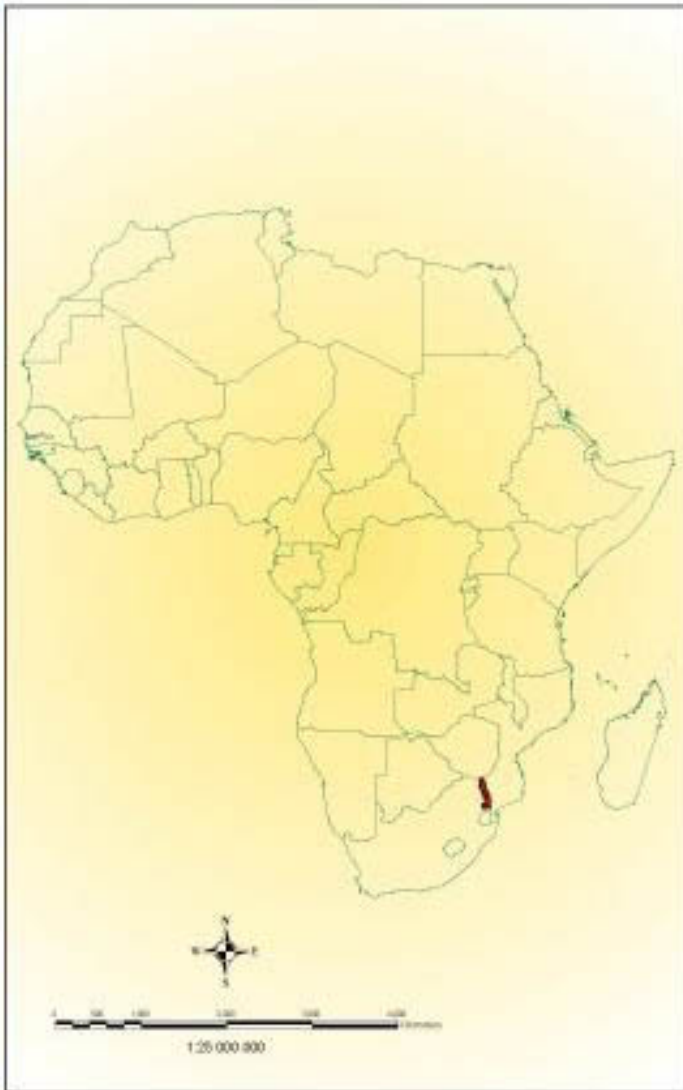
South African
NATIONAL PARKS

Zoning Conservation: KNP 50 years>, the blue sky scenario

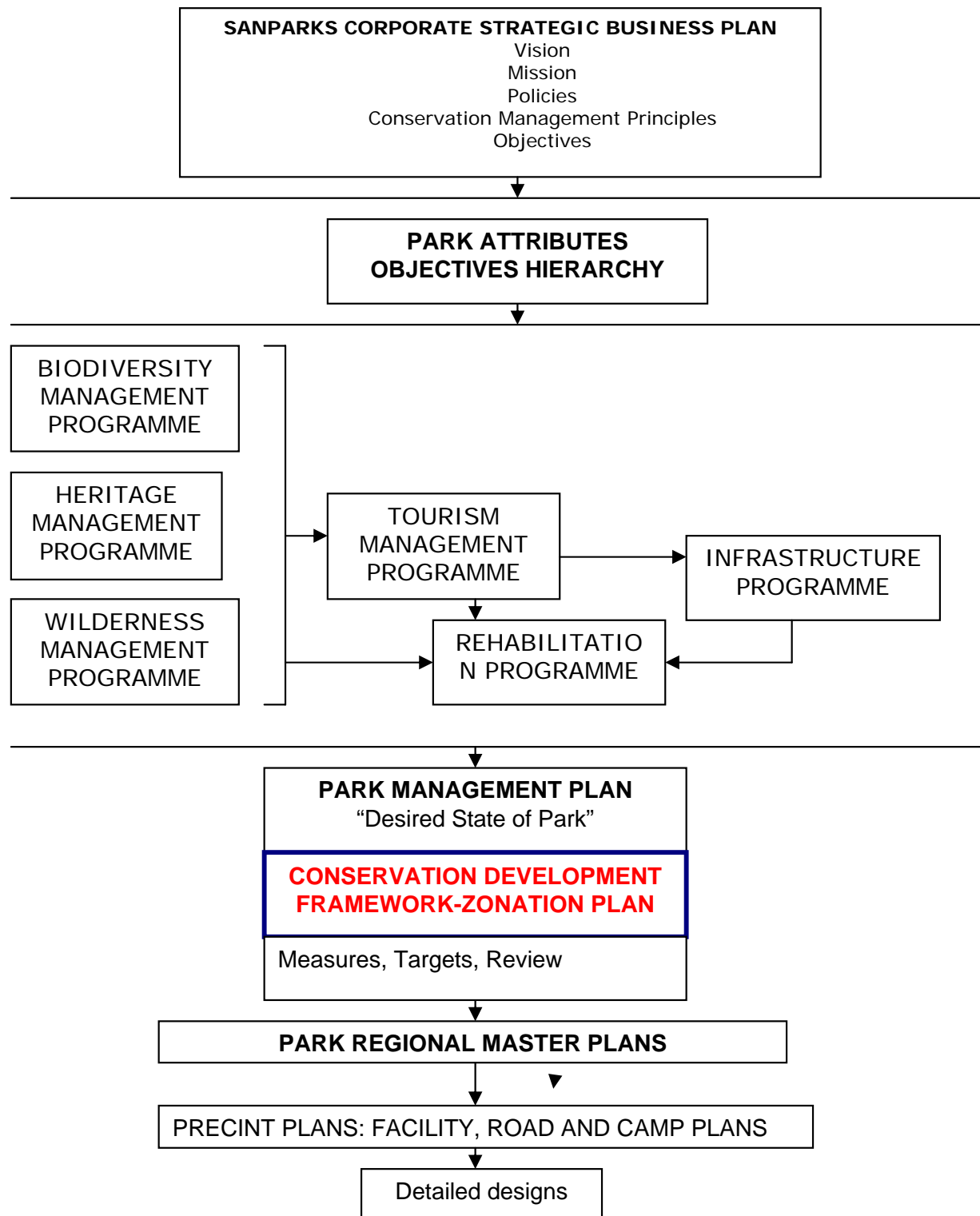
S. Eber, S. MacFadyen, F. Venter

Where is Kruger Park?

The Kruger National Park in Relation to Africa and Southern Africa



- Legend**
- Africa Countries
 - Kruger National Park



<1952

- Ranger's posts at:
water holes
high-density game areas
Scenic places (look-out, tall trees, river frontage)
- Development of tourist facilities at rangers posts
- Roads linking ranger's post for services



The Distribution of Windmills in the Kruger National Park at different time intervals between 1920 and 2001



1927

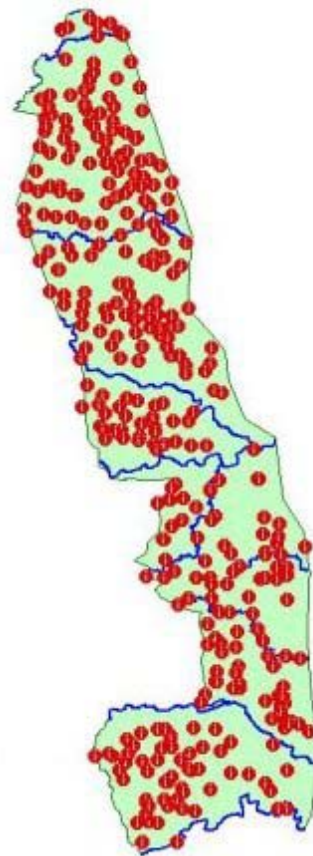
1940

1960

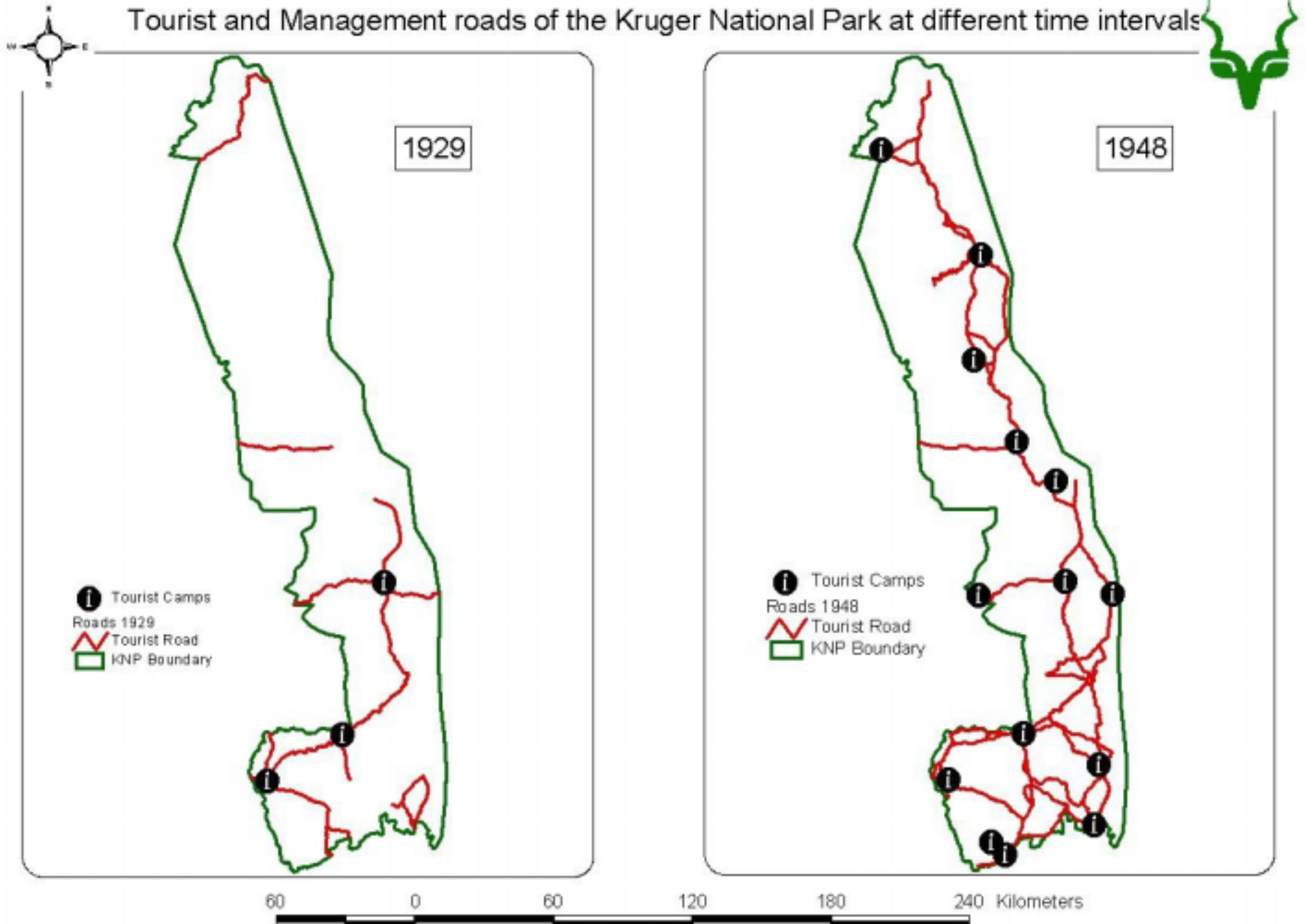
1970

1985

2001



<1952 Map



<1952

- Impact of tourism becomes visible:

Road deaths

Litter

Noise

Light

The Hoek Report (1952)

Aim 1:

Protect Wilderness

Recommendations:

Option 1: Road outside the western boundary from N to S

Option 2: Road on western boundary

Option 3: Tar existing internal N S road

Divide park into 5 compartments (based on rivers)

Separate access to each zone

Camps on the periphery

Services on periphery

Wilderness in centre

The Hoek Report (1952)

Aim 2:

Minimize effect of tourism

Objectives:

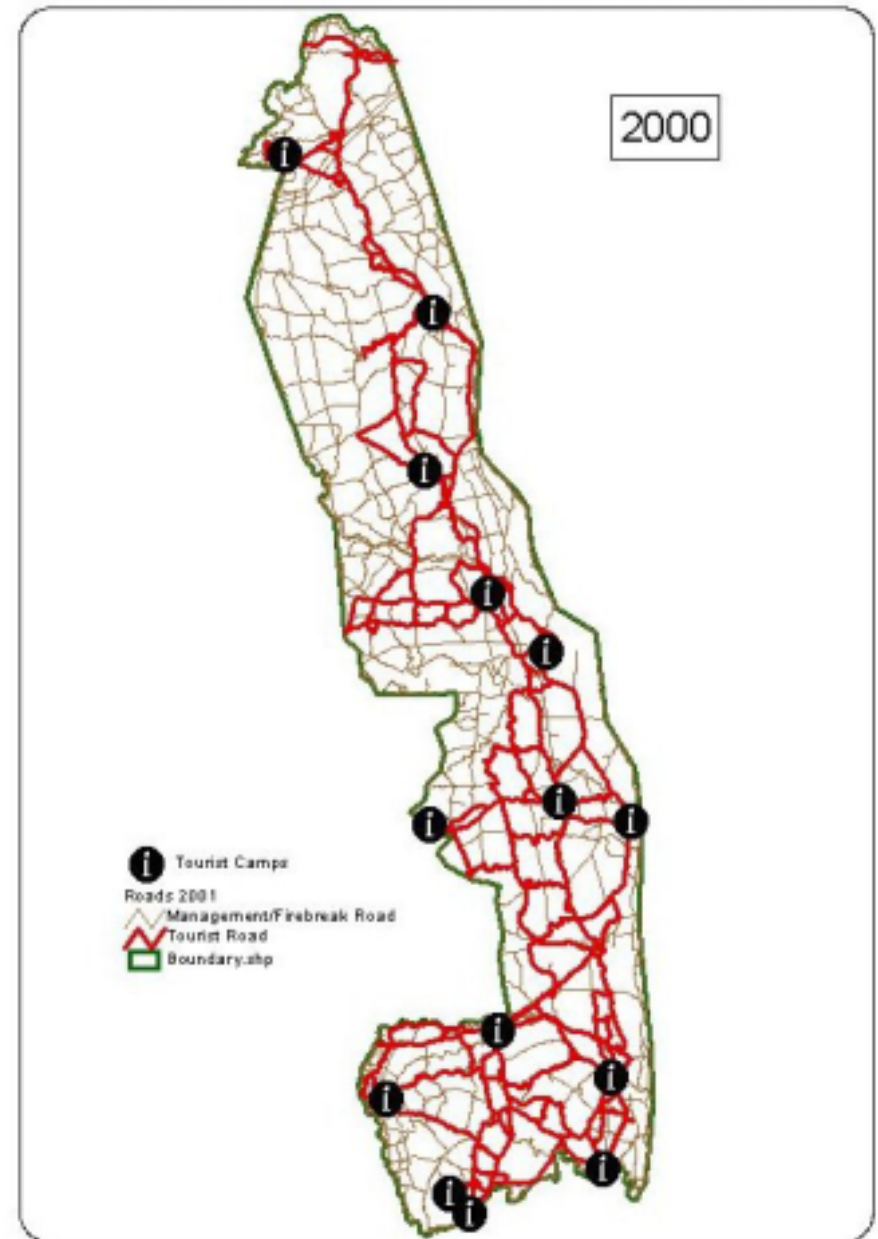
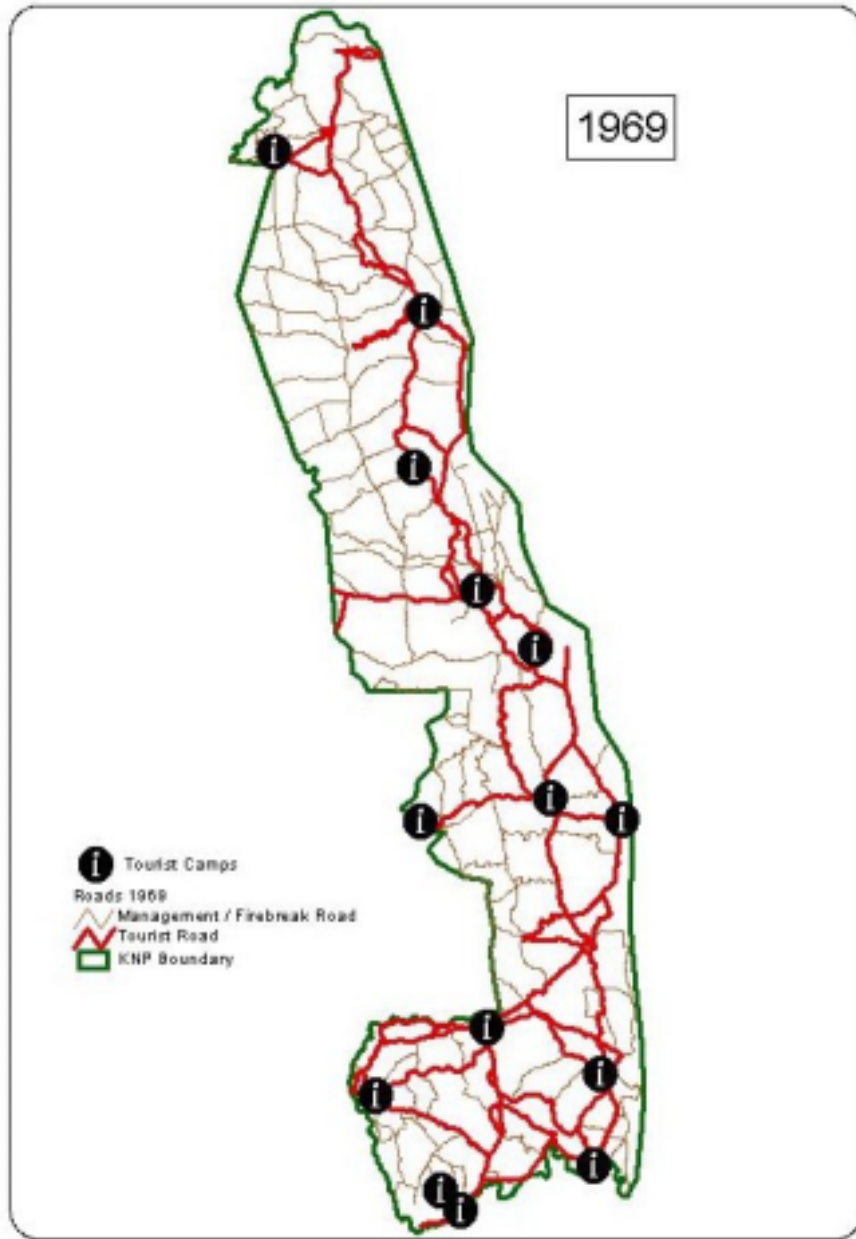
- *i) limit and control the number of vehicles in a specific area,*
- *ii) put a stop to excessive speeding, and*
- *iii) prevent traffic directly from one compartment to the other, thereby preventing driving solely for the purpose of getting from one camp to the next.*

Implementation of Hoek Report

- Only certain parts implemented during 1952-1975, mainly in terms of rest camp layout and huts
- Tarring of H1-4 (road on western boundary and compartments not approved by board)
- Tarring of internal road (3rd option) had major impact on successive generations, e.g. Camps in centre, zoning by default, transport impacts
- Government nature conservation

>1952 Map of KNP

60 0 60 120 180 240 Kilometers



Canadian Zonation 1966-1970

- **special zones** - "worthy of total protection" in which management would be restricted to the minimum and with no access roads or other forms of construction;
- **wilderness zones** - "the major aim of this class is the preservation of a wilderness environment for recreational use as wilderness areas and should be independent of changes in surrounding areas. Ecological management will take place, but no construction or man-made element is allowed";
- **natural zones** - "these areas are important in preserving the quality of the first two, and they can be described as buffer areas between the wilder landscapes and the more developed parts. They would present the backdrop to the developed zones and would act as a landbank where, until more information is available, land can be stored for a decision at a later stage. These zones protect the basic wilderness character of the park";
- **tourist zones** -i.e. areas set aside for the provision of the facilities required for visitors; and
- **development zones** - i.e. areas set aside for services which are essential to the administration of the park, e.g. workshops, airfields, processing depots, etc.

IUCN Zonation 1972

- strict natural areas "set aside for the absolutely free inter-action of ecological factors";
- managed natural areas, where "management is required for the maintenance of ecological stability";
- wilderness areas, i.e. "areas set aside for the use of man as wilderness areas". Requirements for such areas were that they should be extensive in size, free of man-made constructions and to be used by man only in such a way that does not necessitate access roads, and
- natural environment recreation areas, i.e. areas set aside for the construction of the necessary facilities to accommodate visitors.

US National Park Services 1970s

- high density recreation and public service parklands;
- general outdoor recreation parklands;
- natural environment parklands;
- outstanding natural features;
- primitive parklands, and
- historic, archaeological and cultural resources.

KNP Masterplan zoning 1975

Aim:

Zoning based on conservation priorities

- **Botanical reserves** - Areas of particular botanical interest.
- **Wilderness areas** - Areas of minimal human influence to serve as reference sites, especially for research purposes.
- **Rare antelope reserves** - Areas managed for the maximum benefit of rare antelope and/or other species.
- **Elephant reserves** - Areas which harbor large concentrations of elephants but where they do not pose a threat to the habitat and/or associated animal populations.
- **General wildlife areas** - Areas representing a large variety of associated animal populations and in which management is not directed at the benefit of one or more selected species.

Implementation of 1975 Masterplan

- **Botanical reserves** were created at Pretoriuskop and Punda Maria/Pafuri areas
- **Wilderness areas** were created but not properly implemented – water provision and veld fire management by graded firebreaks continued
- **Rare antelope reserves**
 - Annual anthrax inoculation program for roan antelope
 - Introduction of rare antelope from other areas (e.g. roan from Malawi, eland from Golden Gate, red duiker from Mariepskop, suni from Natal)
 - Breeding camps
- **Elephant reserves** – no culling allowed in these areas

KNP 1986 Zonation

Aim:

Conserve wilderness and biodiversity

All zones in all of the 35 landtypes

- (a) Wilderness zones
- (b) Natural zones
- (c) Development and general tourism zones

Implementation of 1986 zonation

- Zones clearly delineated and described its (biodiversity, developments, size, etc.)
- Move towards inclusion of parts of biodiversity in wilderness, i.e. parts of each landscape included in wilderness
- Wilderness trails camps built and the walking experience introduced
- Manipulating management activities continued in both natural and wilderness zones, thus confusing the wilderness notion

Philosophy: ROZ 1997

Criteria:

- Humans not to be excluded from any area in Kruger – access and impact to be managed per zone
- Notion of wilderness
- Limits of Sophistication
- Impact minimization
- ‘sensitivity’: land-types
- Attributes
- Guidelines/regulations

KNP ROZ 1997

Approach used for delineation of zones in the KNP

- wilderness areas added based on additional biodiversity knowledge
- due consideration for the distribution of current wilderness areas and associated wilderness trails
- designation of the most appropriate and suitable environmental zonation for a specific area
- the extent to which the zonation for a specific area could potentially be affected and altered in both kind and degree by future human actions (which could either be internal or external)
- the distribution of the impacts which *currently* determine the zonation for a specific area through time and space (e.g. could a current

ROZ 1997

Influences:

- Fire policy
- Bovine TB
- Elephant distribution
- Edutainment
- Areas suitable for walking (e.g. permanent short grass with many pans)
- Special-interest groups (Rare plants, Birding)
- Peripheral development
- Peace Park initiative
- Security considerations (international boundary; proximity to high-density areas)
- Proximity to aesthetically unacceptable areas (mining)
- Current realities of infrastructure in KNP (trade-off with long-term plan)
- Zonation by "default" (pristine wilderness zonation based on "what is left")
- Leave options for posterity

ROZ 1997

Zones:

- **A Pristine**
- **B Primitive**
- **C Semi-primitive**
- **D Limited motorised**
- **E Motorised**
- **F High-density development**
- **G Edutainment (not approved)**

ROZ 1997

Limits of sophistication

- Recreational opportunity (tourism activity/use)
- Levels of sophistication provided (engineering)
- Interaction with other users
- Evidence of other users
- Access
- Overnight facilities
- Toilet facilities
- Washing facilities
- Lighting/Heating
- Cooking
- Refrigeration
- Seating
- Water provision
- Appropriate building material
- Additional facilities (sports facilities, pools)

ROZ 1997 Map



Implementation of ROZ

Positives:

- Redirecting and limiting developments to appropriately zoned areas
- Limits of Sophistication for each zone
- New developments biased towards reversible “touch the Earth lightly” principles
- Strong focus on hiking and tent safari type activities

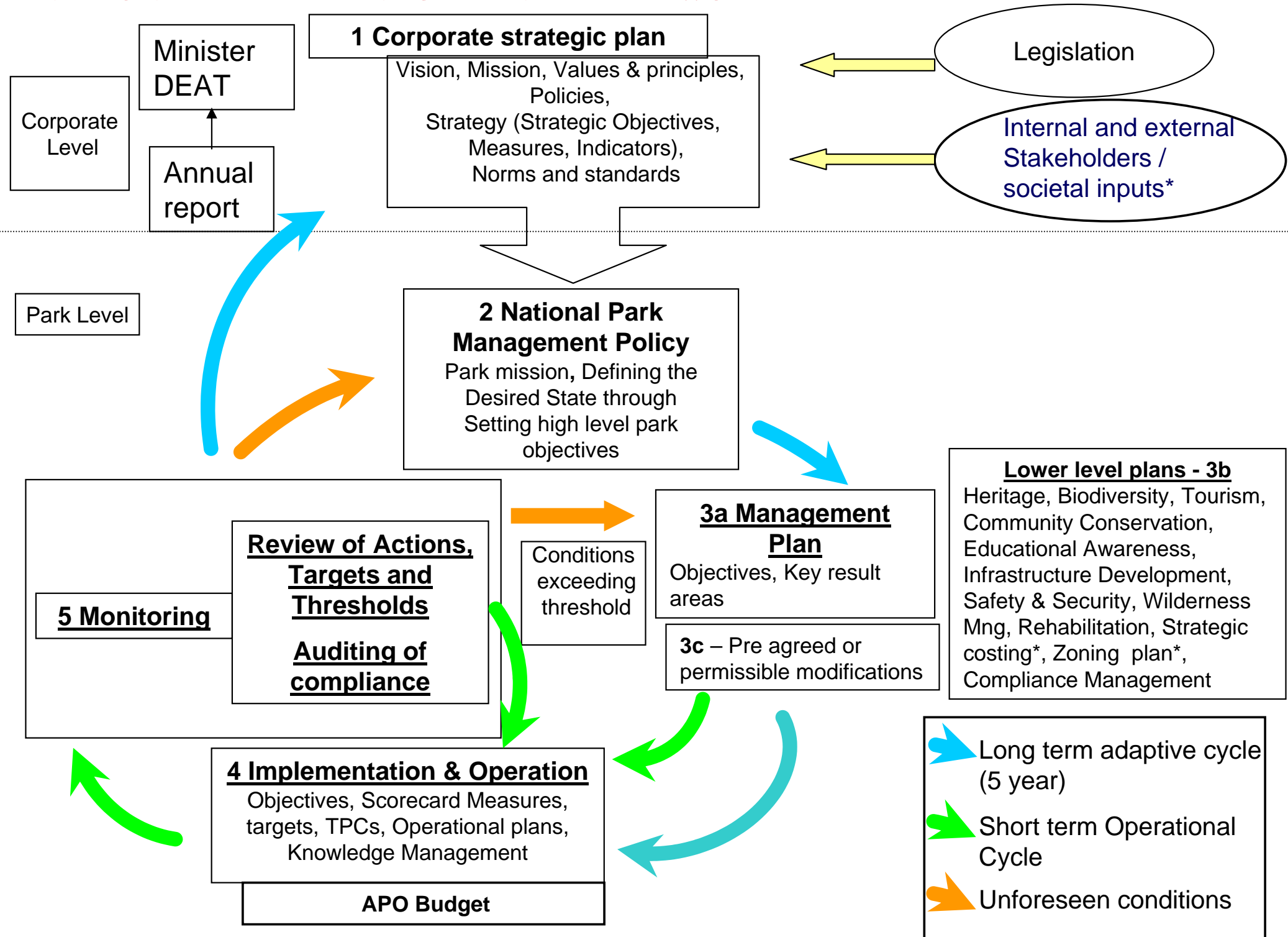
Negatives:

- **‘Hard’ building construction not natural materials – termites**
- **‘Touch the Earth’ lightly not implemented (tar roads, concrete)**
- **Road through wilderness area to Mozambique**
- **Mopani Camp (?)**
- **Initial temporary structures became permanent in wilderness areas (trails toilets, camping sites, lights)**
- **Development in wilderness areas (Makuleke Land Claim)**
- **Development creep**

KNP Zonation 2006

- Values
- Management Framework/CDF
- Attributes: Optimize wilderness
- Objectives
- Tourism study

NATIONAL PARK MANAGEMENT FRAMEWORK



Values?

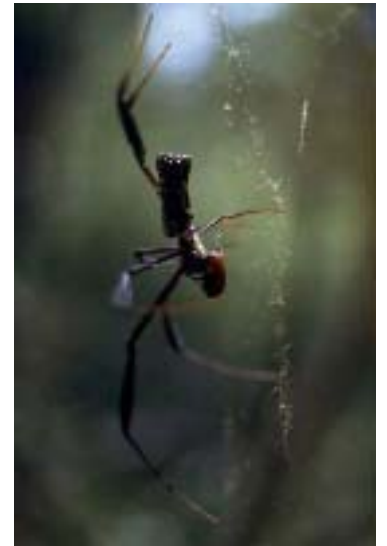
- Communities are not homogenous.
- Constituency: Shared value
- **Economic value**: People on the boundary could of derived direct benefits, but they've lost grazing land, medicinal plants etc because of restricted access and biodiversity promotion. Gaining economic spin-offs from tourism.
- **Recreational value**: Biodiversity conservation promotes wilderness which enhances wilderness experience
- **Scenic value**: Wilderness enhances sense of place
- **Spiritual value**: Access to 'nature'
- **Historical value**: Loss of access to heritage sites, preservation of heritage sites
- **Educational value**: Providing field based education
- **Scientific value**: Benchmark provided, arena for science (open-air laboratory)
- **Health value**: Sense of well-being

And what is it ? ...

**Landscape diversity in Kruger ...these are
'attributes**



**and biotic diversitythese
are 'attributes'**



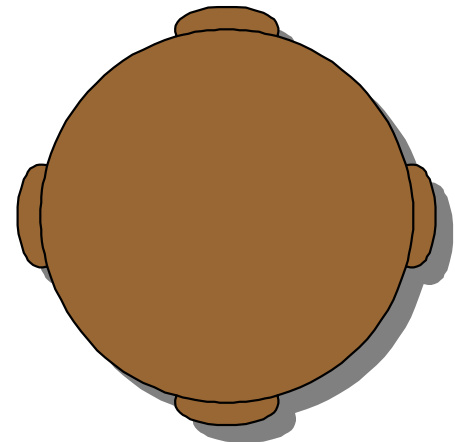
Informants

- SANParks policy framework
- Kruger's hierarchy of objectives
- Wilderness
- Biodiversity sensitivity-value of the park (specifically the SANBI priority areas)
- Heritage sites within the park, and potential cultural-heritage tourism routes
- Marketing study of appropriate tourism products and activities
- Tourism activities potential for the park
- Development and human density considerations
- Access routes to the park
- Regional tourism linkages
- Existing wilderness areas
- The concluded and potential land claims
- International borders and border control gates
- Surrounding land uses including; Association of Private Nature Reserves (APNRs) Limpopo National

Result

- Institutional knowledge highly 'accurate' – most likely that based on to days knowledge we would of followed the same development pattern.
- It's about 'personal values'!
- It's about interrelationships and power relationships

Who's at the table?



KNP 2006 Zones

- **WILDERNESS**
- **REMOTE**
- **PRIMITIVE**
 - Primitive Area (not concession)
 - Primitive – management
 - Primitive – camp
 - Primitive Area – Concession
- **LOW INTENSITY LEISURE**
 - Low – area
 - Low-gate
 - Low-transport
 - Low-camp
- **HIGH INTENSITY LEISURE**
 - Medium – camp
 - High-transport
 - High - camp

2006 zone defined ito:

- **Primary Zone**
- **Node**
- **Infrastructure**
- **Camp sites**
- **Sophistication of Facilities**
- **Staff beds**
- **Types of tourist Road**
- **Management track**
- **Approved activities (tourism motorized & non-motorised, management)**
- **Communication st masts/ lightning arresters**
- **Primary movement within zone**
- **Attributes/ aesthetics**
- **Unique Features**
- **Experiential Qualities**
- **Interaction between user groups**
- **Extent of human impact**

KNP zonation aligned to SANParks



Comparison 1996 & 2006

- 1997
 - **A Pristine**
 - **B Primitive**
 - **C Semi-primitive**
 - **D Limited motorised**
 - **E Motorised**
 - **F High-density development**
 - **G Edutainment**
- 2006
 - **WILDERNESS**
 - **REMOTE**
 - **PRIMITIVE**
 - **LOW INTENSITY LEISURE**
 - **HIGH INTENSITY LEISURE**

1996 & 2006 area comparison

Methodology:

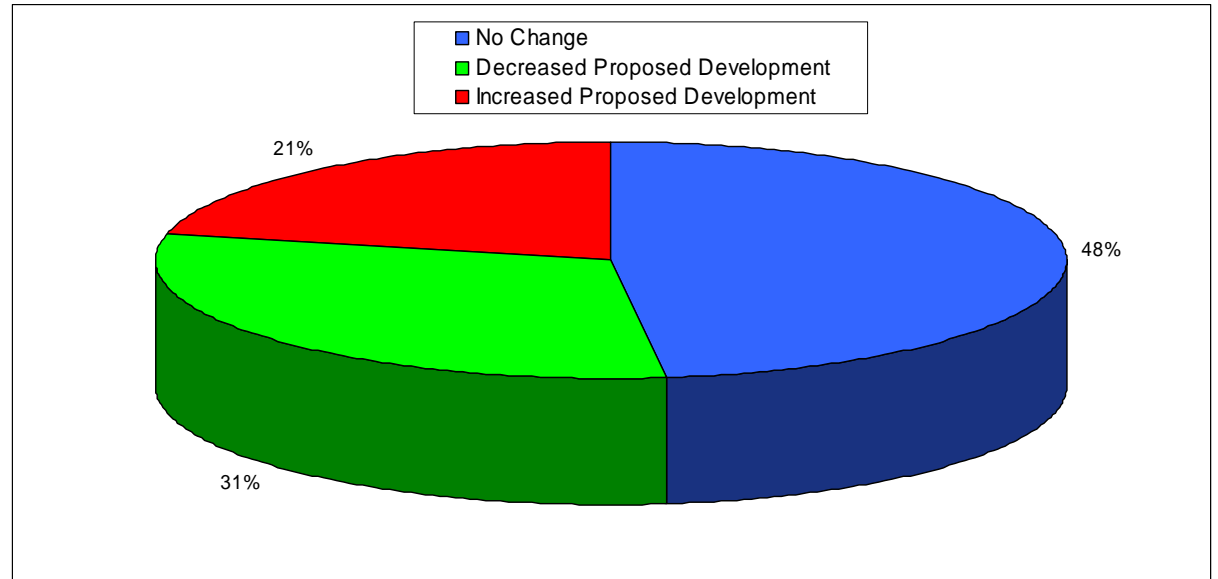
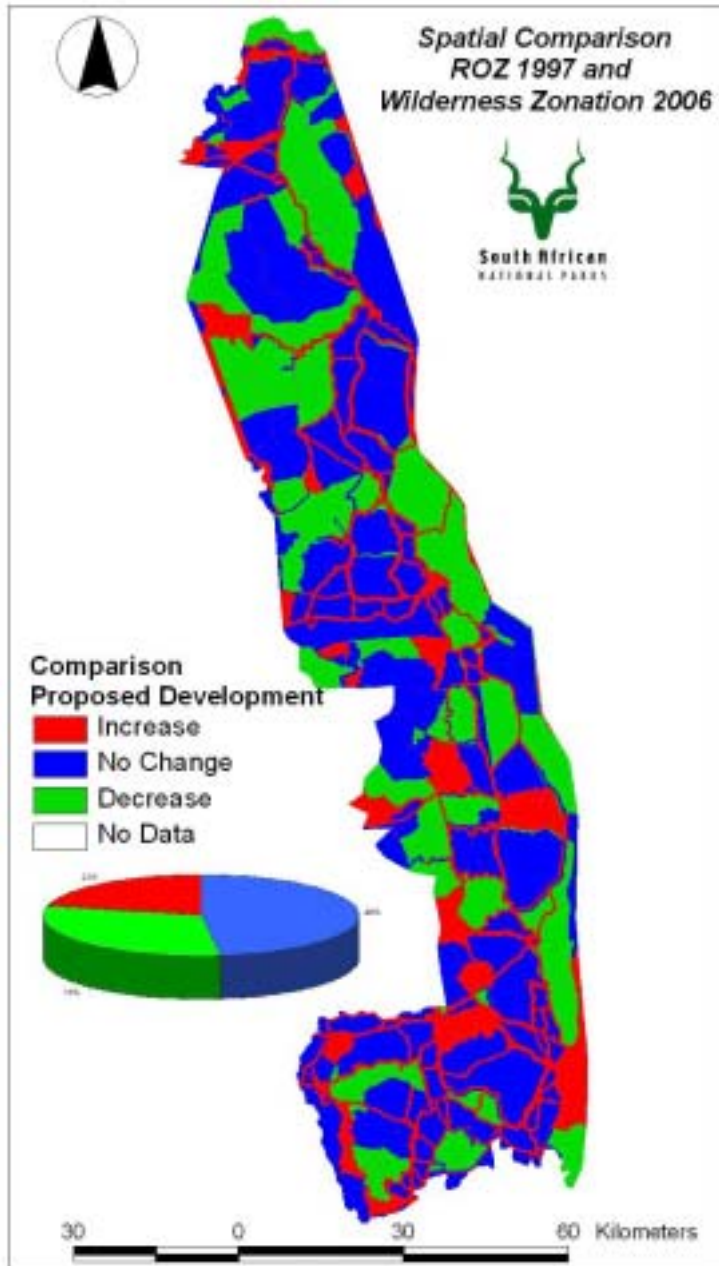
1996

- Pristine
- Primitive
- Semi-Primitive
- Limited Motorised + Motorised
- High Density Development + Edutainment

2006

- = Wilderness
- = Remote
- = Primitive
- = Low Intensity Leisure
- = High Intensity Leisure

1997 and 2006 comparison



- ⇒ 48% of the 2006 Wilderness Zonation remains unchanged from the ROZ of 1997
- ⇒ 31% decrease in the potential for development
- ⇒ 21% increase in the potential for development

* Baring in mind however that the E – F categories of the ROZ were not included in the analysis. These were never mapped into the zonation but rather used as overlays.