

# How well do statutory protected areas conserve main rivers in South Africa?

Protected Areas to Conserve Freshwater Ecosystems  
and Biodiversity

Skukuza

8-13 October 2006

# National spatial biodiversity assessment 2004-5

South African  
National Spatial Biodiversity Assessment  
2004  
**Summary Report**

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**DRAFT**  
October 2004

South African  
National Spatial Biodiversity Assessment  
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**Technical Report**  
Volume 1: Terrestrial Component

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**DRAFT**  
October 2004

South African  
National Spatial Biodiversity Assessment  
2004  
**Technical Report**  
Volume 2: River Component

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CSIR Report Number DMI-04-2004-003

South African  
National Spatial Biodiversity Assessment  
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**Technical Report**  
Volume 3: Estuary Component

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National Spatial Biodiversity Assessment  
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**Technical Report**  
Volume 4: Marine Component

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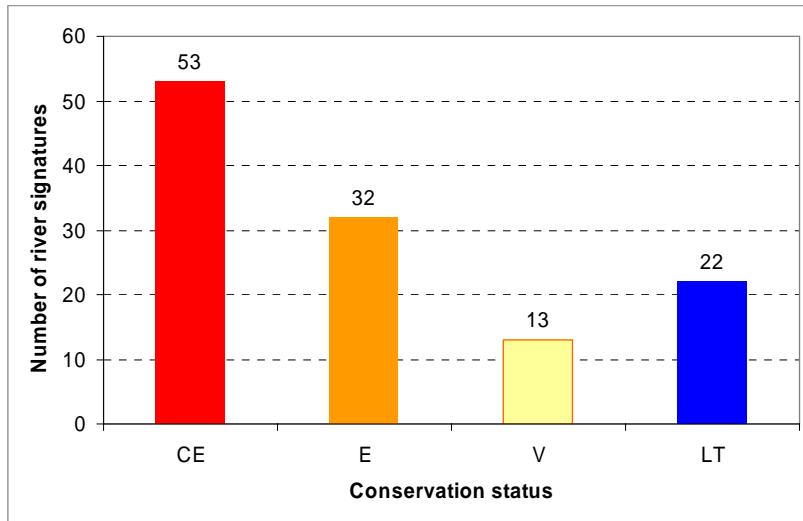
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October 2004

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# Status of terrestrial and river ecosystems



- Drew explicit & quantitative attention to state of FW ecosystems

Ecosystems of main rivers

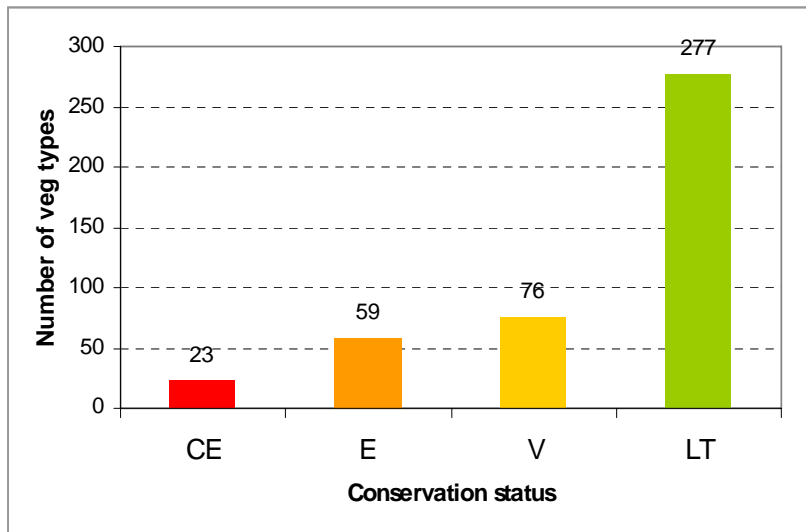
84% threatened

44% critical

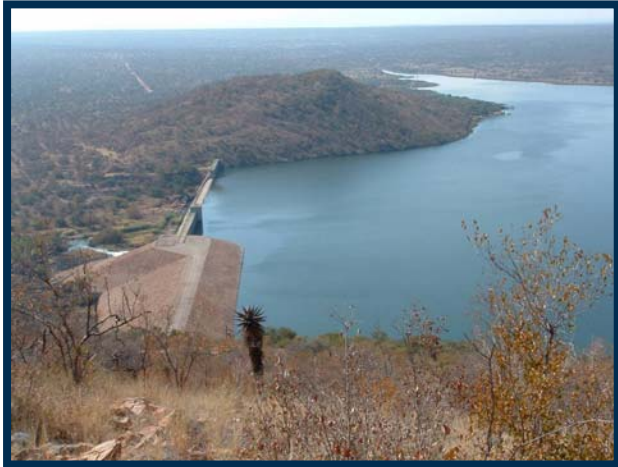
Terrestrial ecosystems

34% threatened

5% critical



# Current protected areas in SA



- Focus on terrestrial ecosystems
- There is general ignorance about what is good for freshwaters
- For example, many PAs are built around dams:
  - 20 out of 900 PAs have “Dam” in their name

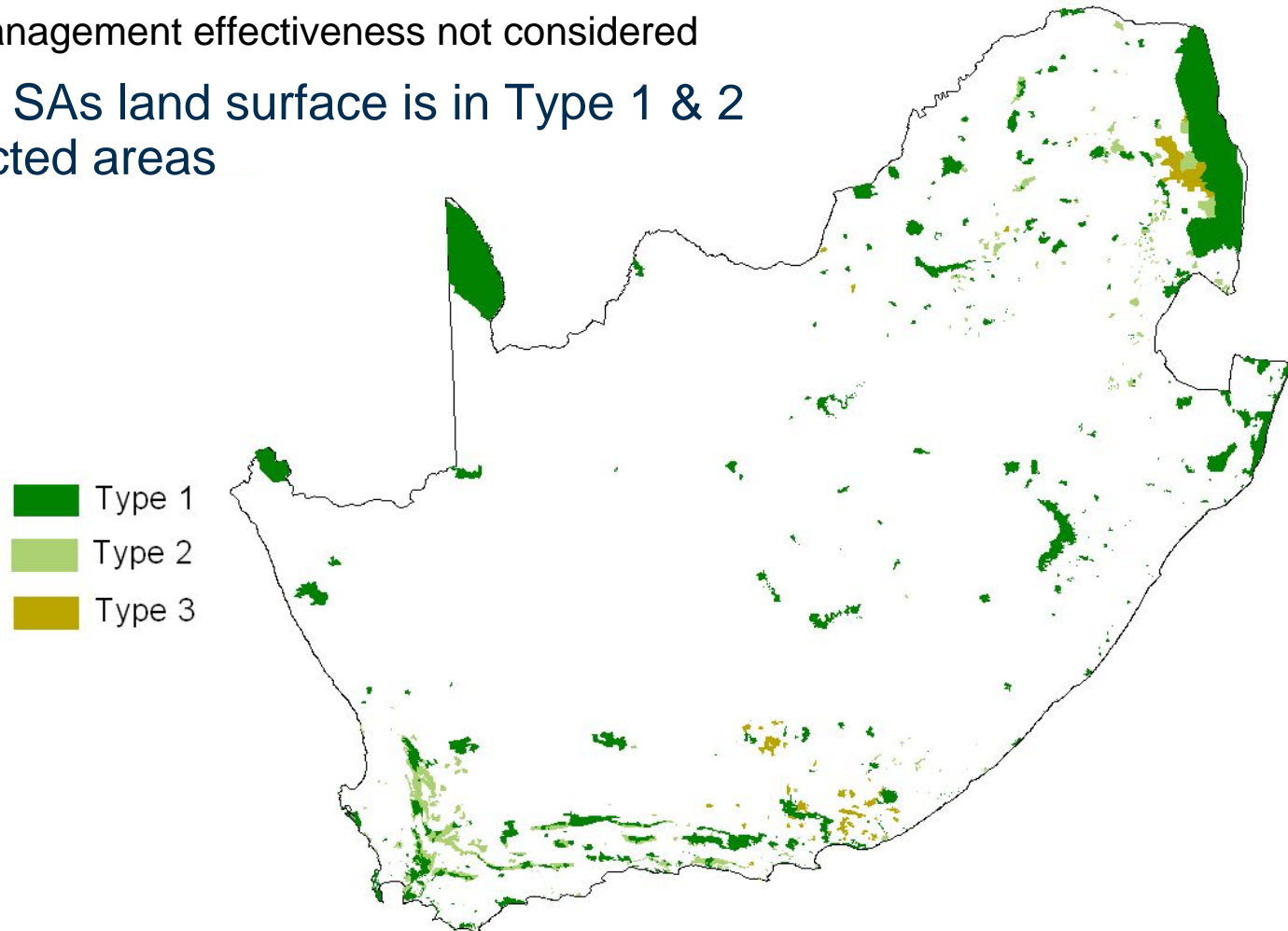


# GAP analysis

- Assessing representation of river ecosystems alone is not enough
- Need to look at river functioning
  - Used river ecological integrity
- Measured the proportion of conservation target met within protected areas for each river type
  - Conservation target = 20% length of each river type
  - Protected areas
  - River types
  - River integrity

# Protected areas in South Africa

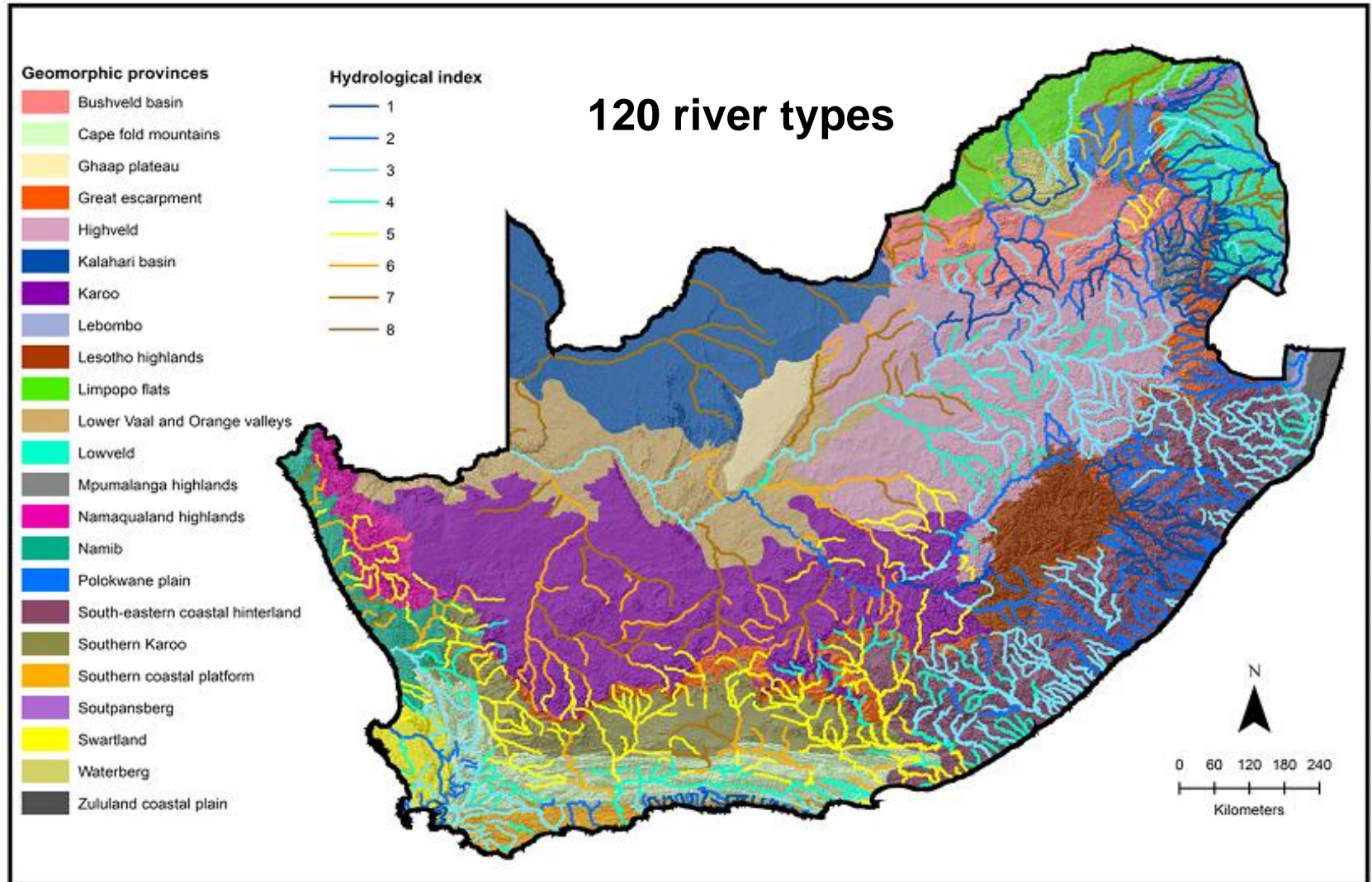
- Type of PA associated with legal mechanisms controlling them
  - Management effectiveness not considered
- 6% of SAs land surface is in Type 1 & 2 protected areas





# River ecosystem types




- Based on geomorphology & flow variability

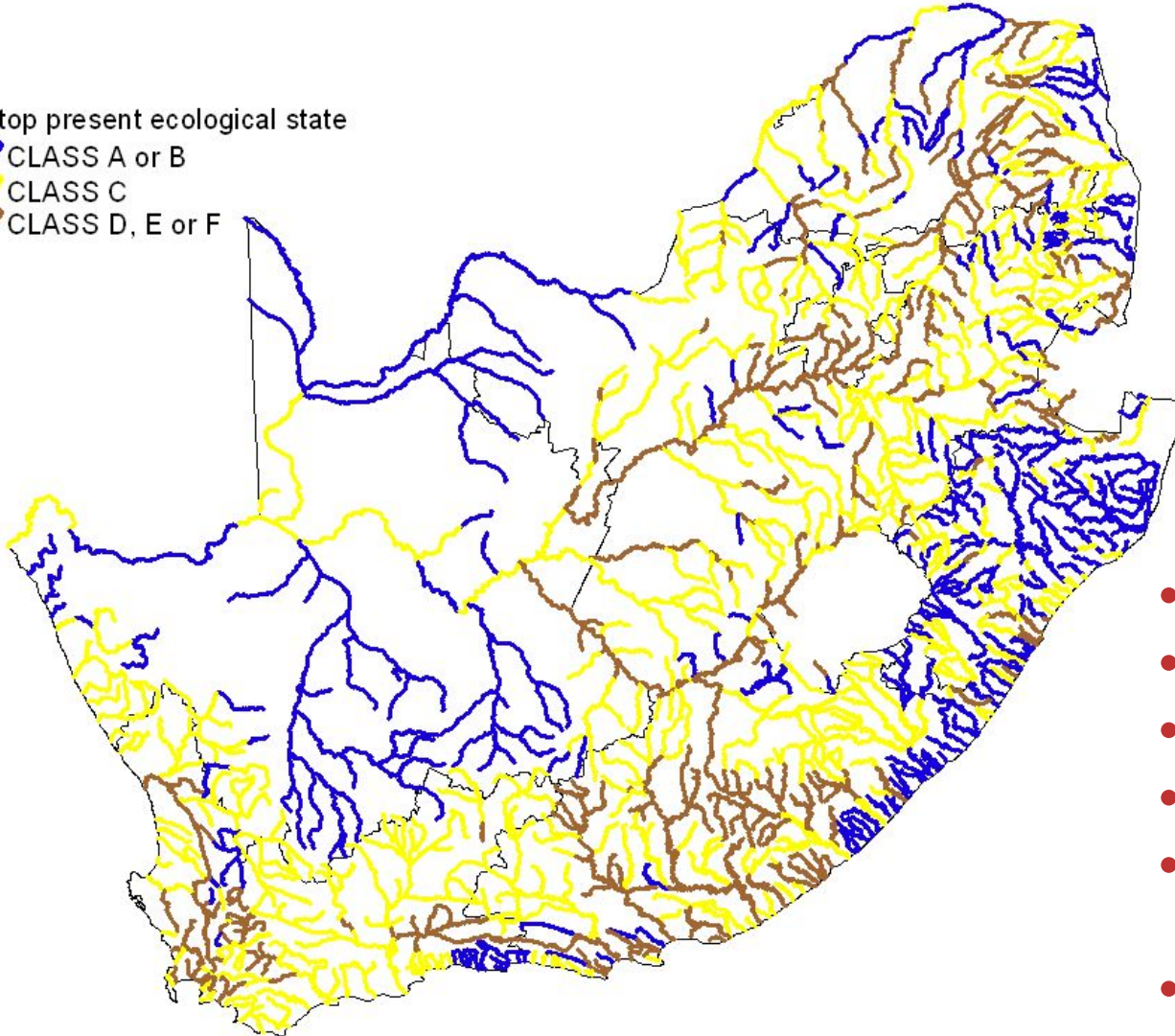


# River ecological integrity



Desktop present ecological state

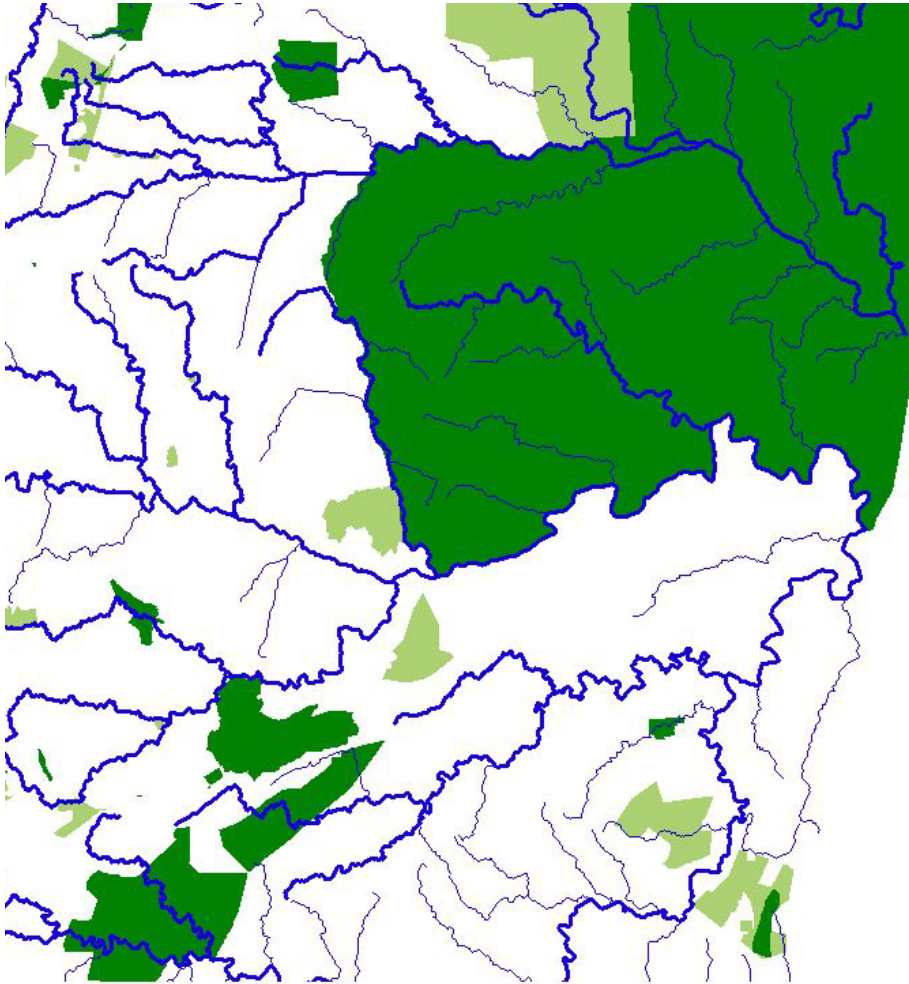
-  CLASS A or B
-  CLASS C
-  CLASS D, E or F



- flow,
- inundation
- water quality
- stream bed condition
- introduced instream biota
- riparian or stream bank condition

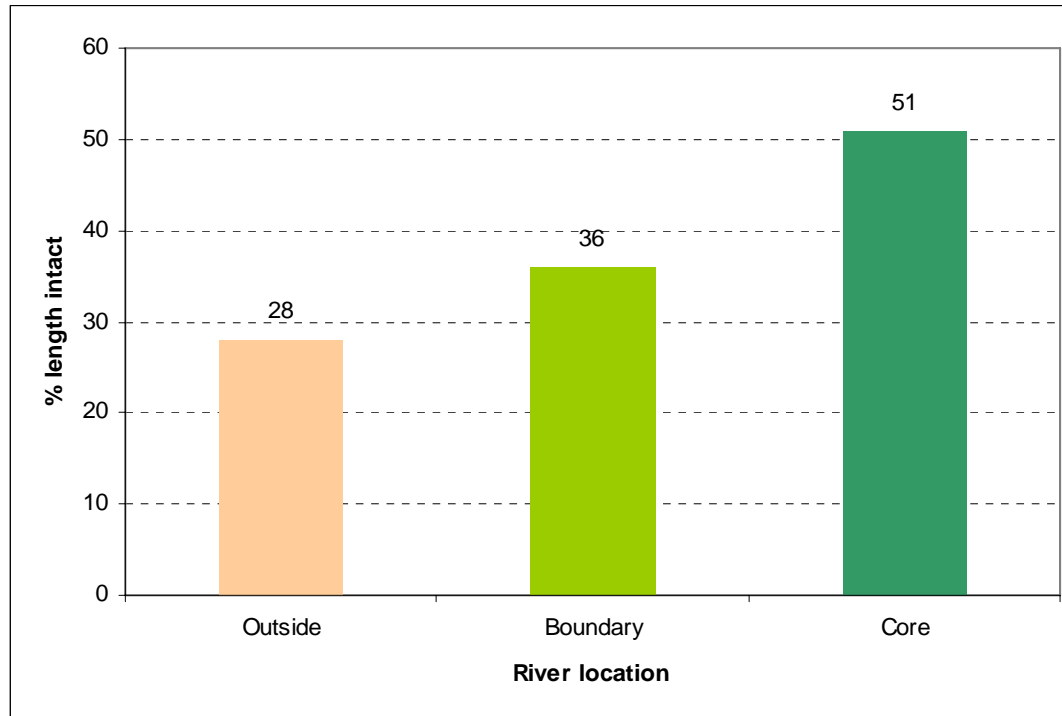


# Some overall stats



- > 90% of rivers fall outside PAs
- Half the remaining form boundaries
- Only 5% are inside protected areas
- Very few rivers are fully contained within a PA

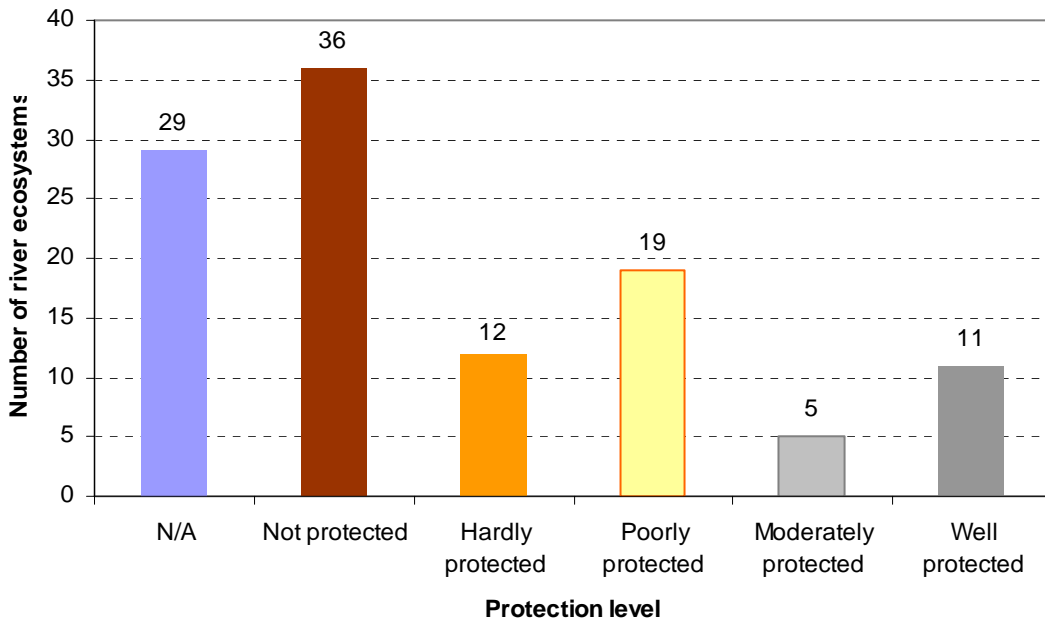
# River integrity in protected areas



- Only half the rivers inside PAs are in good condition
- YET:
  - This is markedly better than the condition outside protected areas
  - Emphasizes the positive effects of appropriate land management on river recovery

# Representation of river ecosystem types in PAs

Type 1 core rivers

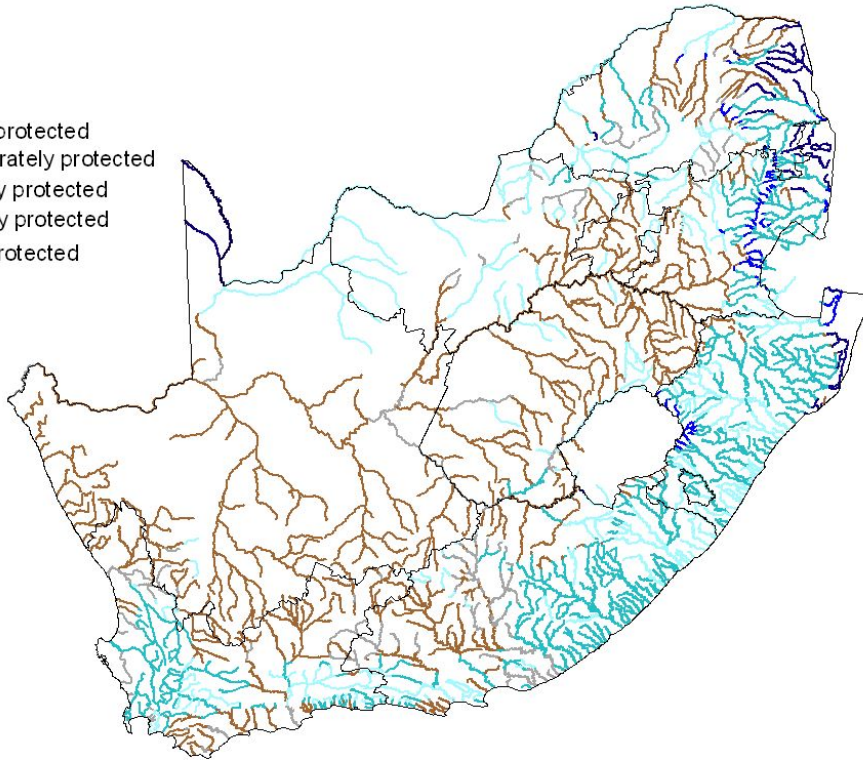


## Protection level as % target achieved in PAs:

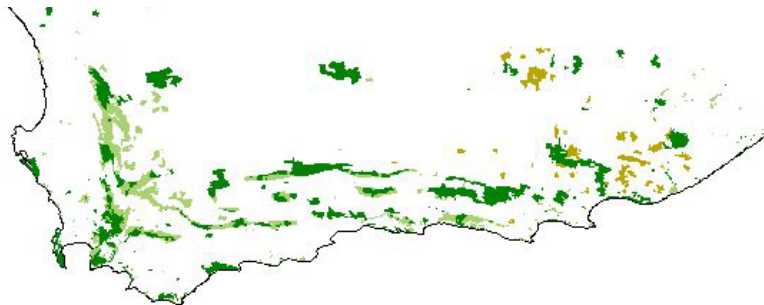
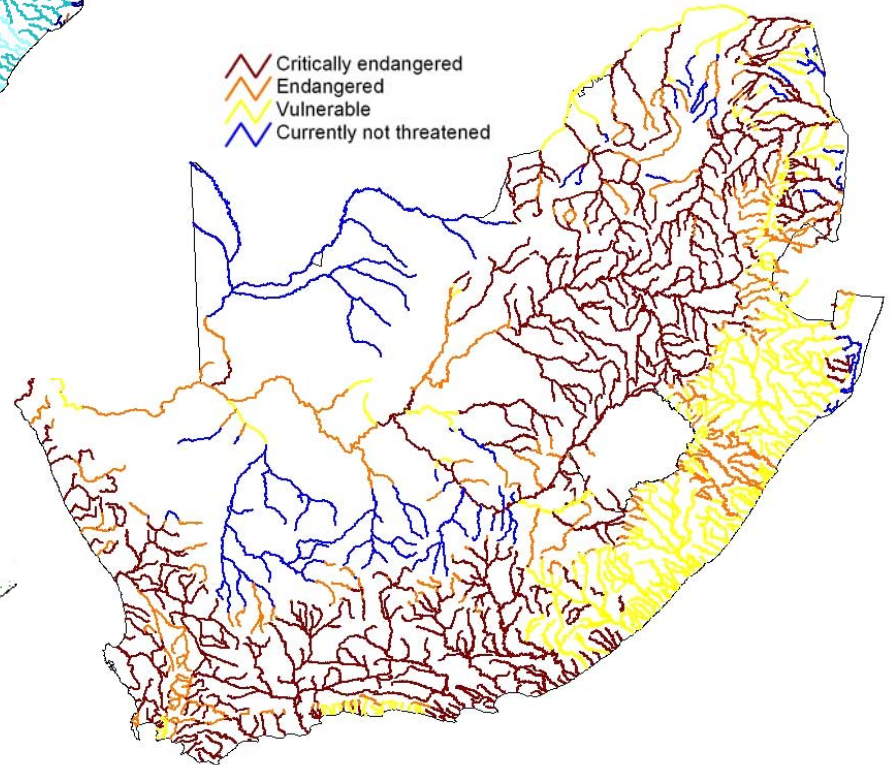
- not protected (0%)
- hardly protected (<5%)
- poorly protected (5 – 50%)
- moderately protected (50 – 100%)
- well protected ( $\geq 100\%$ )

# Spatial distribution.....

- Well protected
- Moderately protected
- Poorly protected
- Hardly protected
- Not protected
- N/A



- Critically endangered
- Endangered
- Vulnerable
- Currently not threatened





# Summary

- It is intended to increase SAs PA system from 6% of the land surface to 10% by 2010
- In designing the expanded protected area system, the following should be considered:
  - Representation of freshwater ecosystems, not only rivers
  - Avoid using rivers to delineate PA boundaries
  - Expansion of existing protected areas could yield large benefits
  - These should be complemented with adequate off-reserve management