



Pressures on Biodiversity: impacts on drought and fires

Western Cape Spatial Information Forum

7 March 2017

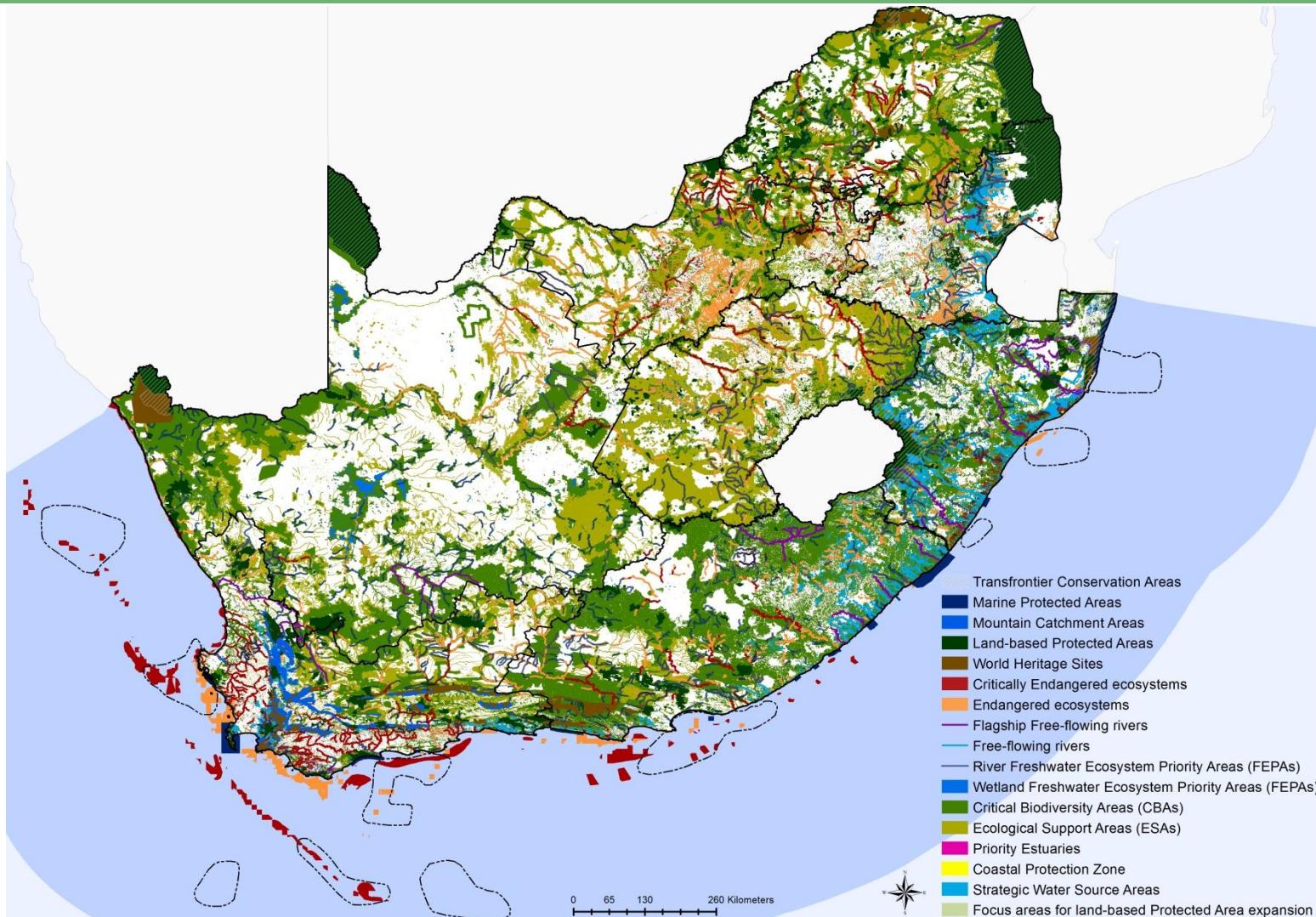
Introduction

- Conservation Practitioners - WHAT species are WHERE and HOW much is currently present?
- National Biodiversity Assessment – lead by SANBI in partnership with a range of organisations (including stakeholders, scientists and biodiversity management experts).
- NBA is central to SANBI's mandate in terms of NEMBA (Act 10 OF 2004).
- NBA assesses the state of SA's biodiversity – terrestrial, freshwater, estuarine and marine environments, emphasizing spatial information for both ecosystems and species.
- NBA produces biodiversity science information to inform policymakers, decision makers and practitioners in a range of sectors.

Biodiversity Priority Areas

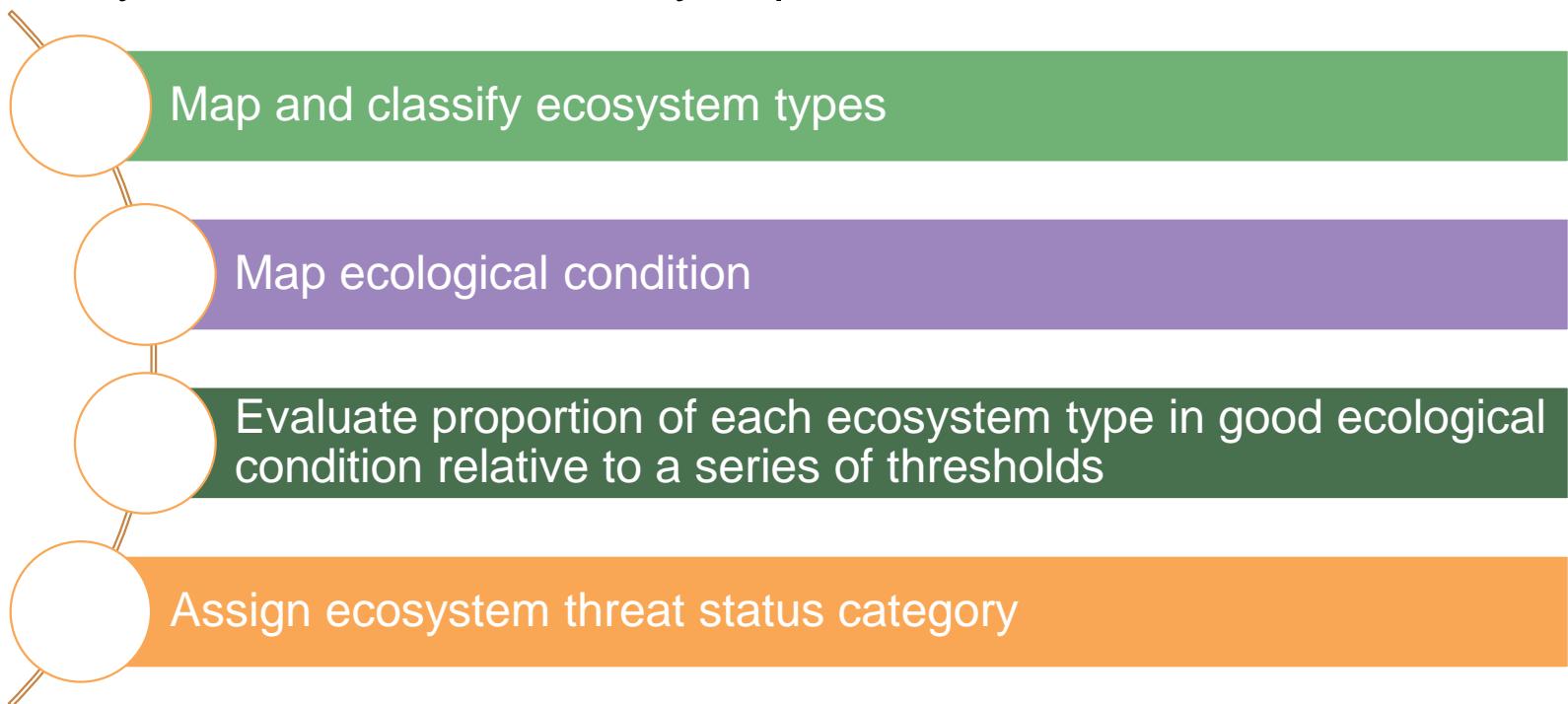
- Areas important for conserving a representative sample of ecosystems and species, for maintaining ecological processes, and for providing ecosystem services.
- These areas include:
 - Protected Areas
 - Critical Biodiversity Areas
 - Ecological Support Areas
 - Threatened Ecosystems
 - Freshwater Ecosystem Priority Areas
 - Priority Estuaries
 - Strategic Water Source Areas

BPA Map

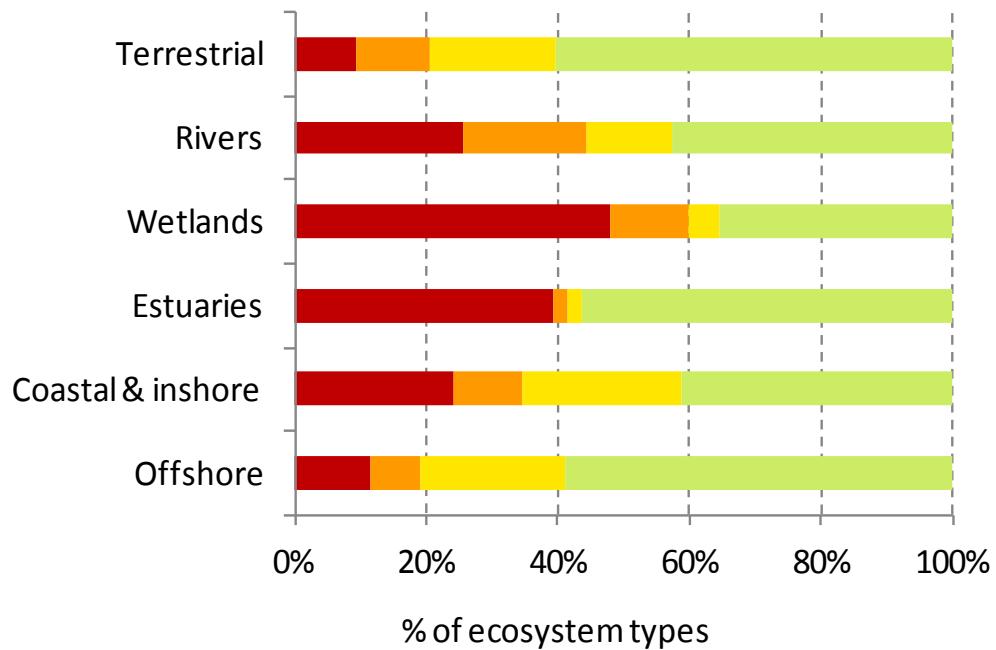


Ecosystem threat status

- Ecosystem threat status tells us about the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends.

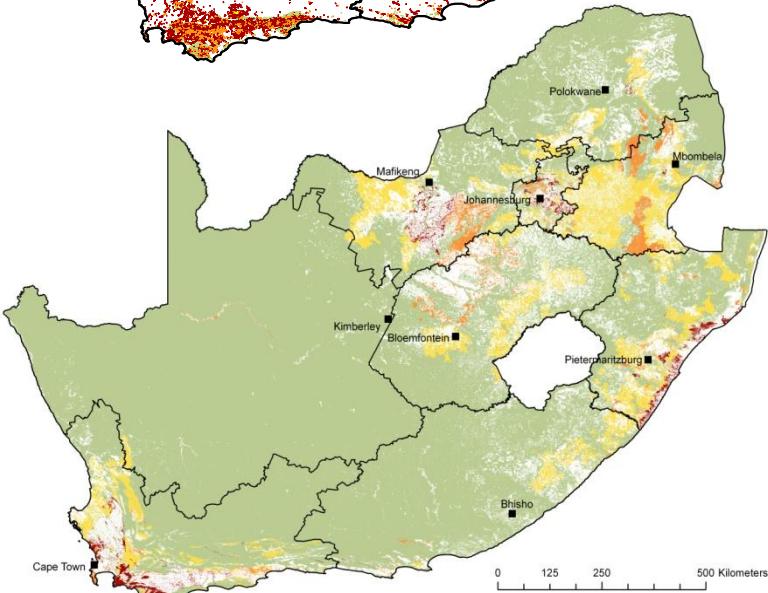
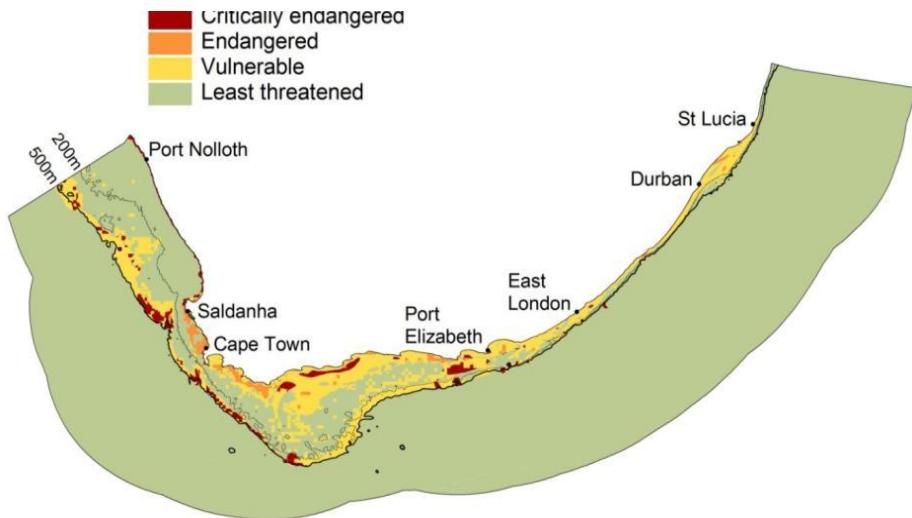


Ecosystem Threat Status



Critically endangered
Endangered
Vulnerable
Least threatened

CR
EN
VU
LT



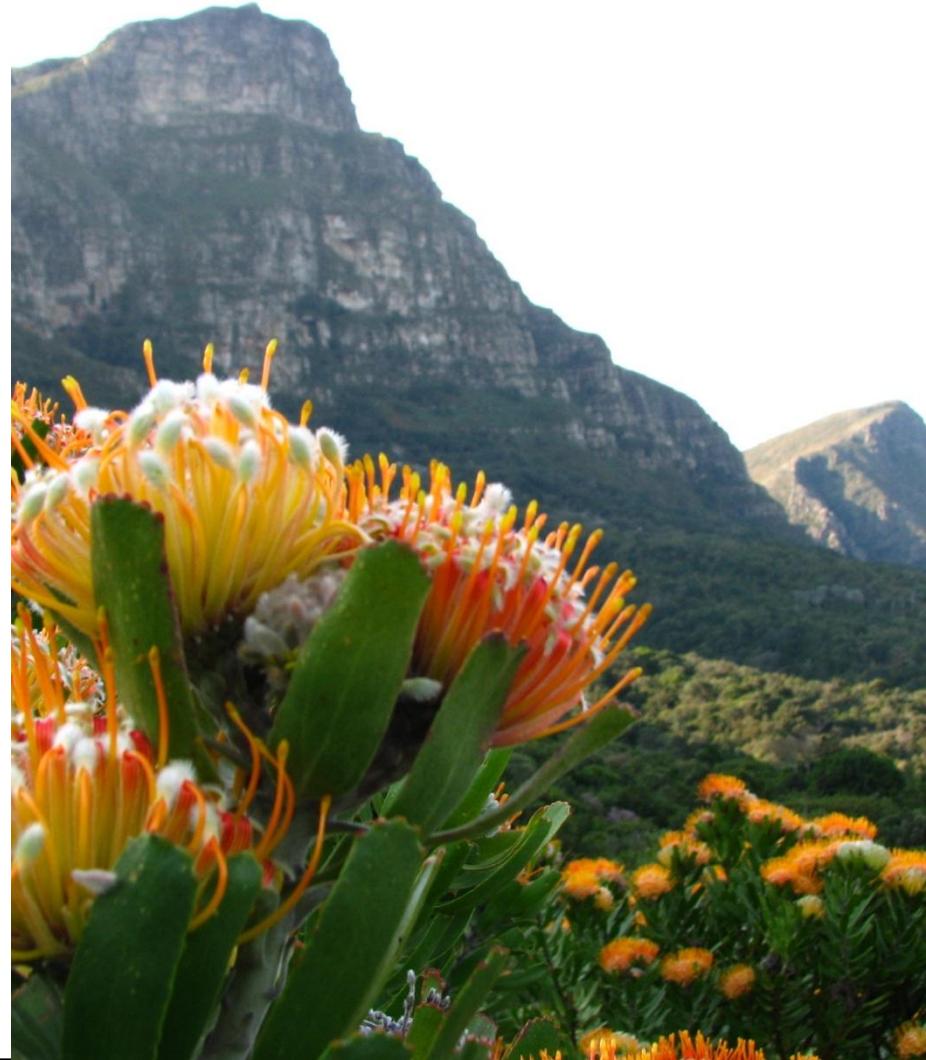
Cape Floristic Region

- Cape Floristic Region is a biodiversity hotspot (one of the six floral kingdoms in the world).
- Has the highest concentration of plant species in the world.
- It contains an estimated 9 500 species, of which 70% is endemic.
- Only 9% of the biome is formally protected.



Fynbos biome

- Fynbos biome is a fire-driven ecosystem, it requires fire to survive and to rejuvenate itself.
- Needs to burn periodically to maintain its diversity and ecological health.
- Fynbos vegetation is flammable and requires occasional fires in order to regenerate.



Pressures on biodiversity

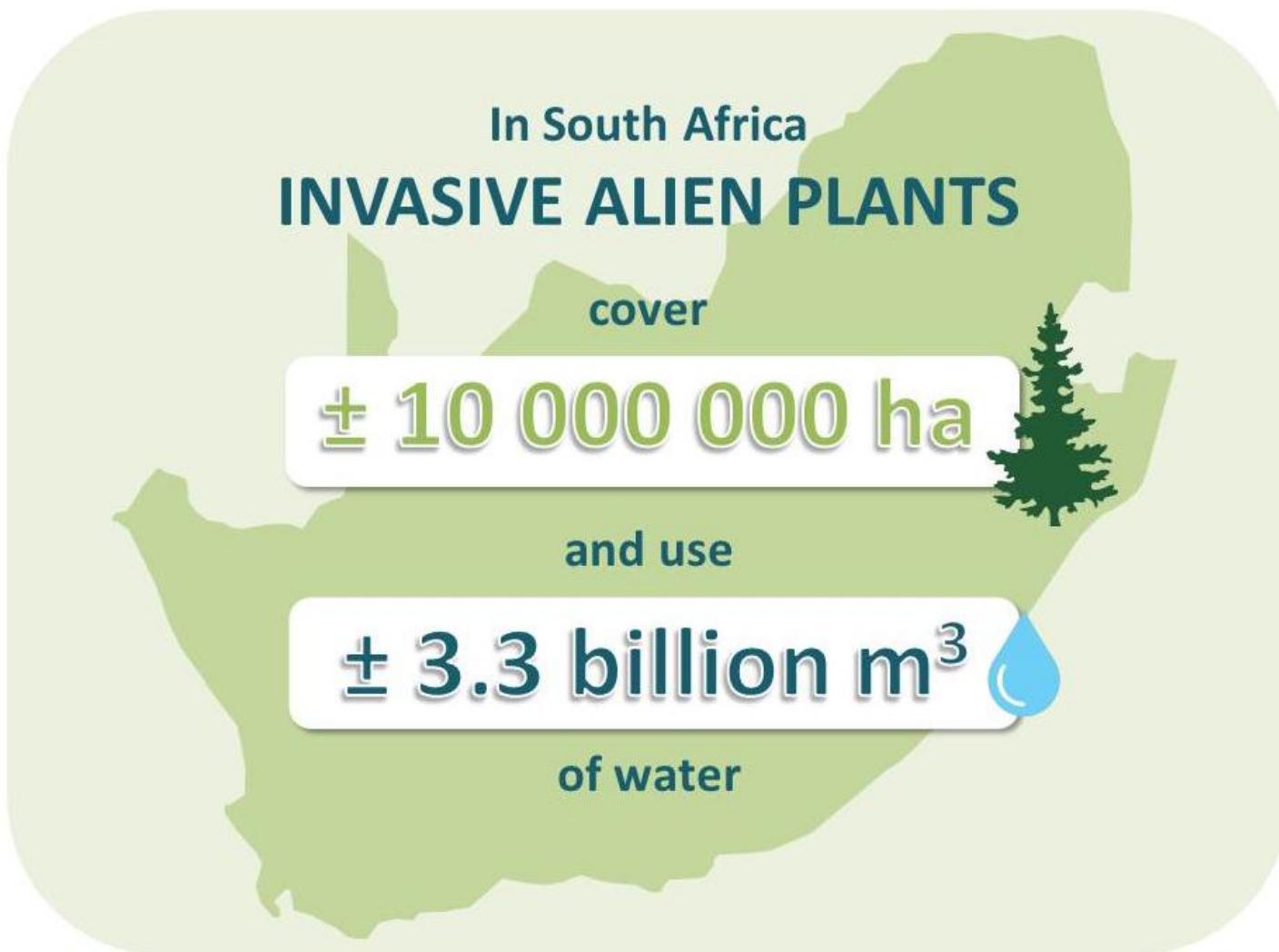


- Habitat loss (land use change)
- Invasive alien species
- Habitat degradation
- Harvesting
- Pollution
- Changes in species dynamics
- Climate change
- Natural disasters

Invasive Alien Species

- Species that are non-native to an ecosystem, and which may cause economic or environmental harm.
- 660 plant species and 150 animal species (under-estimates).
- More is known about the distribution of invasive woody plant species than other groups of invasive species.

Invasive Alien Species



Impacts

- Increased risk, frequency and severity of fire.
- IAS threaten the delivery of ecosystem services.
- Intensify the impact of floods and increase soil erosion.
- IAS have serious socio-economic impacts.
 - water security
 - reduced productivity of rangelands
 - crop agriculture



Responses to biodiversity pressures

- DEA's NRM programmes
 - Working for water
 - Working on fire
 - Working for wetlands
- Invasive alien species programme



Other initiatives

- Cape Nature
- Cape Town's Early Detection and Rapid Response

Recent Fires

- Wildfires in Western Cape
 - Fires in and around Table Mountain National Park
 - The Somerset West (Helderberg) fires caused R60m of damage, excluding the costs of fighting the fires.
- Report compiled by WC agriculture department
 - 122 700 ha destroyed due to fires in 2017
 - natural vegetation, grazing, agricultural infrastructure and a range of crops were hardest hit.
- Property and livelihoods are threatened.

Hout Bay fires



Water issues facing Cape Town



LAWRENCE J WRIGHT

Theewaterskloof dam



Conclusion

- Importance of NRM programmes and other restoration interventions.
- Biodiversity spatial data feeding into and informing land use decision making.
- GIS as a tool to inform decision making.

Thank you!

