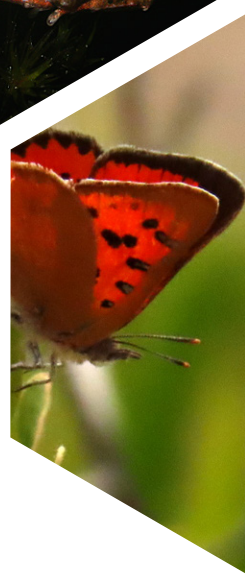
WESTERN CAPE 2021 STATE OF CONSERVATION REPORT









CapeNature

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WESTERN CAPE STATE OF CONSERVATION REPORT 2020

WESTERN CAPE STATE OF BIODIVERSITY 2017

WESTERN CAPE STATE OF BIODIVERSITY 2012

WESTERN CAPE STATE OF BIODIVERSITY 2007

STATE OF BIODIVERSITY REPORT 2002

FOREWORD

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

UN CLIMATE CHANGE CONFERENCE UK 2021 COP26

SUSTAINABLE DEVELOPMENT GOALS

IUCN WORLD CONSERVATION CONGRESS Marseille 2021

Together we can build back better.

The Western Cape is endowed with exceptional biodiversity which faces significant threats to long-term persistence through modification of land, climate change and alien invasive species.

CapeNature acknowledges the outcomes of the COP26 and the IUCN World Conservation Congress, that emphasise that the **climate** and **biodiversity** emergencies are two aspects of one crisis.

The entity endeavours to provide annual snapshots of the conservation status of species and ecosystems, highlighting achievements and impacts. This is the second State of Conservation Report that will inform the Western Cape State of Biodiversity Report, as mandated by the newly assented Western Cape Biodiversity Act.

In support of the United Nations Decade of Ecosystem Restoration 2021-2030, CapeNature underscores a shift from "maintaining" towards "redress and restore", focussing on improving the status of ecological infrastructure for the provision of ecosystem services to support the economic recovery of the province.

CapeNature will continue the drive its contribution to the priorities of the Western Cape by providing sustainable access to biodiversity, creating jobs in rural communities, particularly for women, youth and physically challenged people and enabling a biodiversity economy.

CapeNature will publish an updated Western Cape Biodiversity Spatial Plan, integrating the impacts of land modification, the status of ecosystems and habitats for threatened species and incorporating climate change corridors aimed at mitigating the potential impacts of climate change on the social and ecological communities of the province.

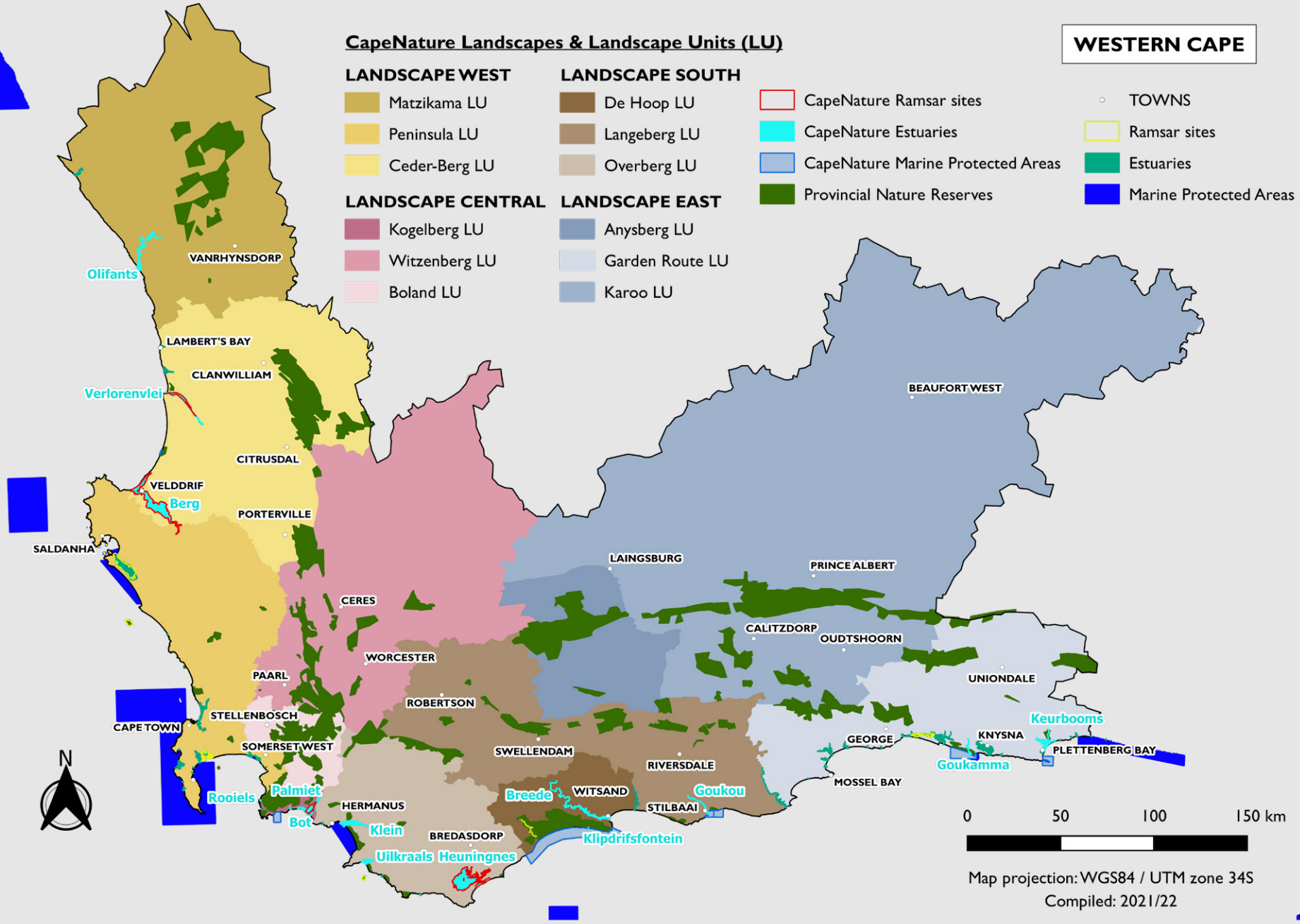
Dr Razeena Omar
CEO

- COP 26
- WORLD CONSERVATION CONGRESS
- UN DECADE OF RESTORATION
- THE MARSEILLE MANIFESTO

CAPENATURE

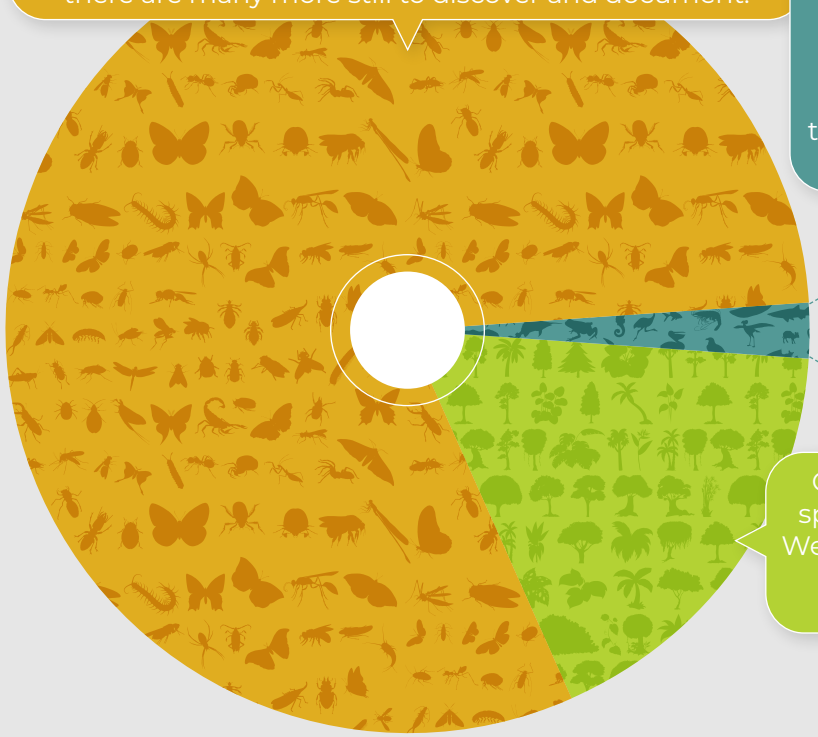
CapeNature, executive arm of the Western Cape Nature Conservation Board, is the provincial authority responsible for nature conservation in the Western Cape. CapeNature manages World Heritage Sites, Provincial Nature Reserves and Marine Protected Areas which supply ecosystem services to citizens, climate change resilience and access for ecotourism, research and environmental education.

- Implements biodiversity and environmental management legislation, policies, procedures and guidelines in the Western Cape
- Contributes to the development of biodiversity legislation and policies, provincially and nationally
- Monitors and reports on the state of biodiversity in the Western Cape



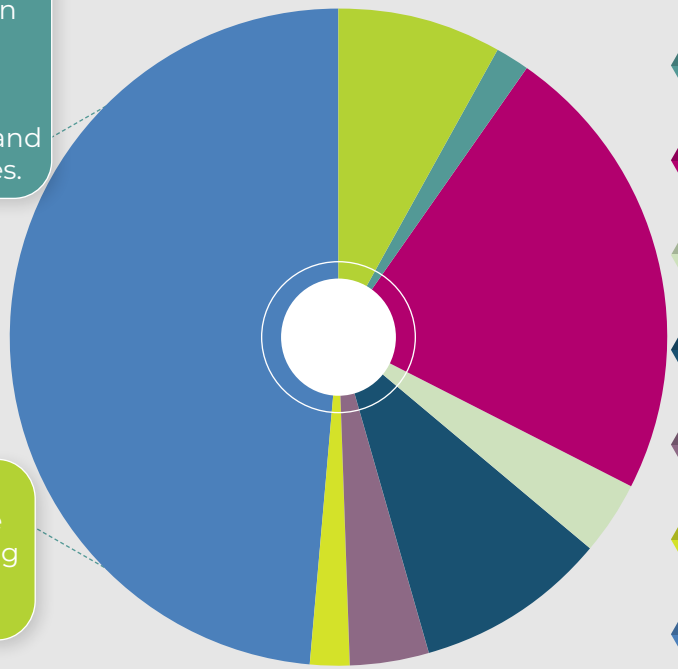
THE BIODIVERSITY OF THE WESTERN CAPE

Over **55 000** invertebrate species have been described in South Africa. The invertebrate fauna of the Western Cape is equally rich with **300** known types of butterflies, **968** arachnids, **84** dragonflies and damselflies, and **156** net-winged insects. Many only occur in this province and there are many more still to discover and document.



1 556 vertebrate species have been recorded in the Western Cape. These include terrestrial, marine and freshwater species.

Over **13 000** plant species occur in the Western Cape making it a biodiversity hotspot.

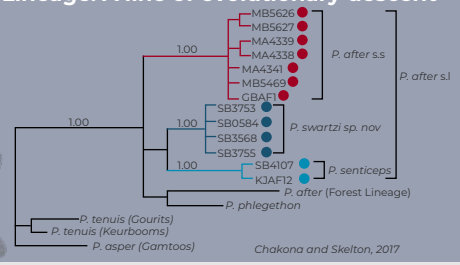


- Mammals - terrestrial **126**
- Mammals - marine **27**
- Birds - terrestrial **337**
- Birds - pelagic **57**
- Reptiles **149**
- Amphibians **60**
- Fish - freshwater **42**
- Fish - marine **758**

Taxon: taxonomic group of any rank, such as an order or species

Kingdom:	Animalia
Phylum:	Chordata
Class:	Actinopterygii
Order:	Cypriniformes
Family:	Cyprinidae
Subfamily:	Barbinae
Genus:	*Pseudobarbus*
Species:	***P.afer***

Lineage: A line of evolutionary descent



Chakona and Skelton, 2017

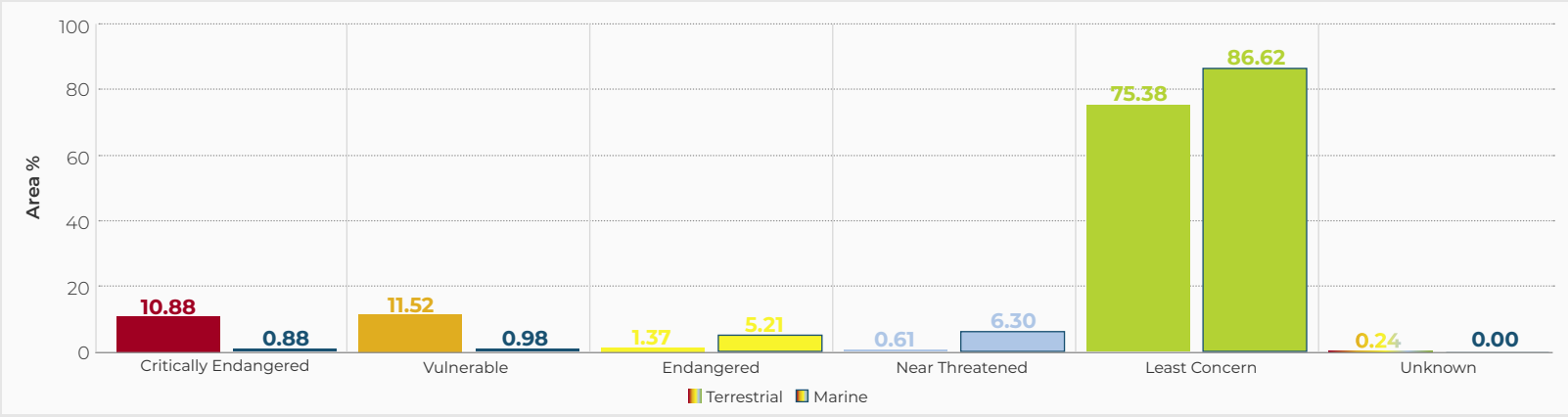
TAXONOMIC UPDATE FOR AFRICAN ELEPHANT

Previously regarded as two subspecies, the Endangered savanna elephant *(Loxodonta africana)* and the Critically Endangered forest elephant *(L. cyclotis)* have now been elevated to species level.

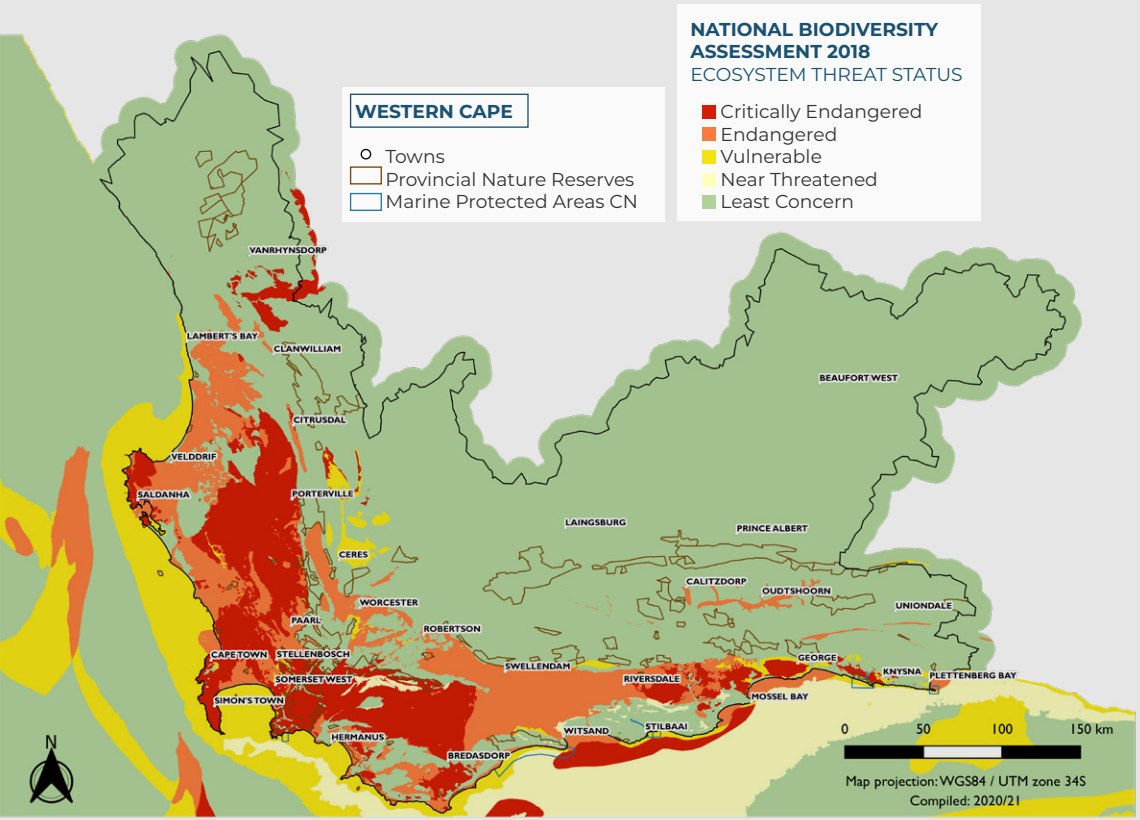
THE STATUS OF WESTERN CAPE
ECOSYSTEMS

IUCN RED LIST CRITERIA FOR ECOSYSTEMS

- COLLAPSED
- CRITICALLY ENDANGERED
- ENDANGERED
- VULNERABLE
- NEAR THREATENED
- LEAST CONCERN



2018 NATIONAL BIODIVERSITY ASSESSMENT



The Western Cape Province is classified according to the threat status of ecosystems as **reported in the 2018 National Biodiversity Assessment**.

Breede Alluvium Fynbos (Endangered)

Swartland Shale Renosterveld (Critically Endangered)

Revised List of Threatened Terrestrial Ecosystems

Following consultations with national, provincial and metropolitan conservation authorities in 2020/1 the Red List of Ecosystems 2021 was approved by the Minister for public comment. The Red List of Ecosystems 2021 will replace the current 2011 National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004): National List of Ecosystems Threatened or in Need of Protection.

2021 ECOSYSTEM STATUS

THE STATUS OF WESTERN CAPE
MARINE ECOSYSTEMS

CapeNature uses three complementary monitoring methods to provide a comprehensive view of the status of marine species and threats to these in Marine Protected Areas.

The National Marine Linefish System (NMLS)

- Developed to determine fishing pressure on fish & bait species
- Used by CapeNature to determine impact of recreational & subsistence fishers on natural resources in protected areas

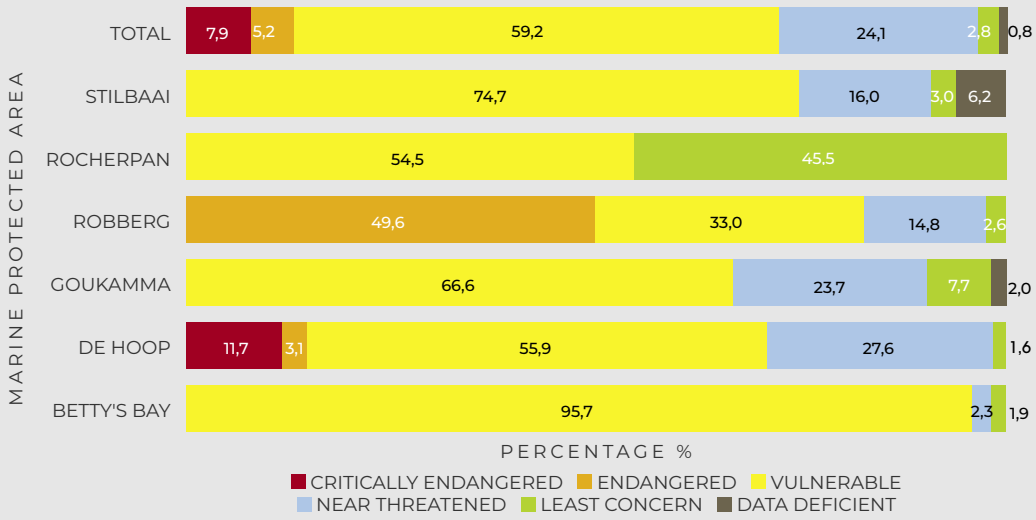
Baited Remote Underwater Video (BRUV)

- Used to assess reef fish community, specifically invertebrate carnivores, generalist carnivores and cartilaginous species

Catch Per Unit Effort (CPUE)

- Used to develop a long-term dataset of inshore line-fish catch rates
- Used to assess efficacy of CapeNature MPAs in protecting inshore linefish species

ECOSYSTEM THREAT STATUS PER MARINE PROTECTED AREA



CapeNature manages six Marine Protected Areas (MPAs) totalling **42 785.4 ha.** These MPAs represent **25** different marine and estuarine ecosystems, of which:

1 CRITICALLY ENDANGERED	**2** ENDANGERED	**6** VULNERABLE
3 NEAR THREATENED	**9** LEAST CONCERN	**4** NOT YET ASSESSED

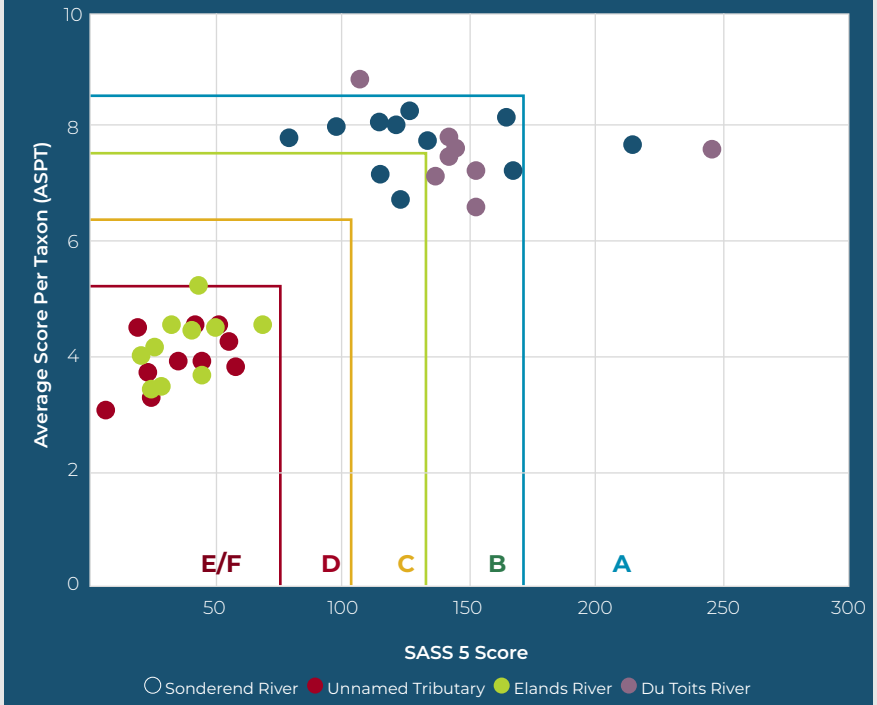
SoCR 2020 reported 2 CR, one of which is now deemed terrestrial

THE STATUS OF WESTERN CAPE
FRESHWATER ECOSYSTEMS

THEEWATERSKLOOF RIVERS MONITORING

Seasonal Present Ecological State results (using SASS 5) for the four long-term monitoring sites in the Theewaterskloof Dam catchment area from May 2018 – May 2021

SASS



Ecological category	Description
A	Unmodified, natural
B	Largely natural
C	Moderately modified
D	Largely modified
E/F	Seriously / critically modified

- The Theewaterskloof Dam is fed by surface and groundwater from the Boland Strategic Water Source Area
- Seasonal assessments at 6 sites for chemical pollution and macro-invertebrates indicates status of water quality and habitat availability

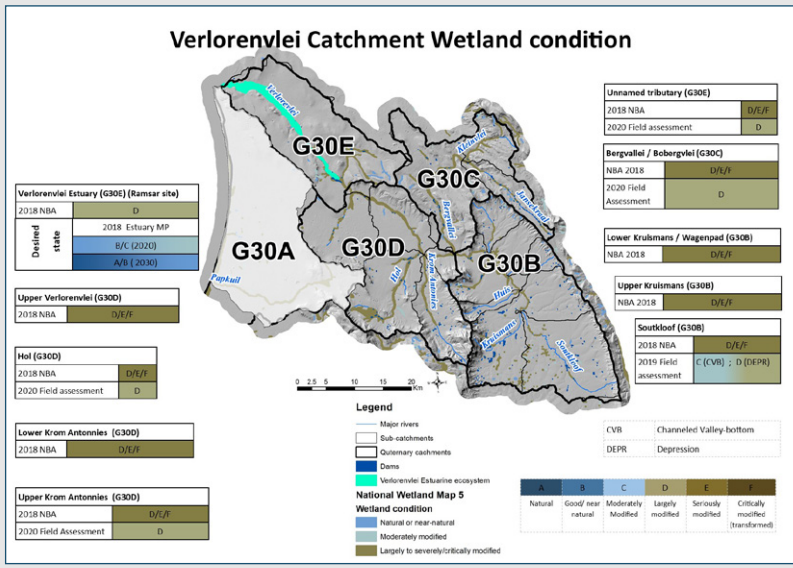
The upper Sonderend River is home to the Critically Endangered giant redfin minnow Pseudobarbus skeltoni.

Threat Status of all Western Cape River types

19.3% CRITICALLY ENDANGERED	**20.1%** ENDANGERED
2.2% VULNERABLE	**58.4%** LEAST THREATENED

Threat status of all Western Cape Wetland types

53.2% CRITICALLY ENDANGERED	**7.8%** ENDANGERED
26.1% VULNERABLE	**7.6%** LEAST THREATENED
5.3% UNCLASSIFIED	



- Ramsar site and Important Bird Area
- Catchment supports 3 fish taxa of conservation concern: the endemic and Endangered Verlorenvlei redfin minnow (*Pseudobarbus verloreni*), an endemic lineage of the Cape galaxias (*Galaxias sp. 'zebratus Verlorenvlei'*) and a near-endemic lineage of the Cape kurper (*Sandelia sp. 'capensis west coast'*)
- Upper catchment heavily impacted by agriculture and the drought
- Monitoring done in collaboration with: Department of Water Affairs & Sanitation, Western Cape Department of Environmental Affairs & Development Planning, CapeNature, SANBI Breede-Gouritz Catchment Management Agency

THE STATUS OF WESTERN CAPE
TERRESTRIAL ECOSYSTEMS

IUCN RED LIST CRITERIA FOR ECOSYSTEMS

- COLLAPSED
- CRITICALLY ENDANGERED
- ENDANGERED
- VULNERABLE
- NEAR THREATENED
- LEAST CONCERN

- WESTERN CAPE PROTECTED AREA EXPANSION STRATEGY 2015-2020
- 2018 NATIONAL BIODIVERSITY ASSESSMENT
- THE NATIONAL PROTECTED AREA EXPANSION STRATEGY 2016-2020

WESTERN CAPE TERRESTRIAL ECOSYSTEMS REPRESENT:

- **171** terrestrial ecosystems
- **13 489** recorded plant species, of which **6 776** (50.2%) are endemic
- **7** biomes: Fynbos; Succulent Karoo; Nama-Karoo; Albany Thicket; Forests; Grassland and Azonal Vegetation
- the Greater Cape Floristic Region - the smallest but most diverse of the six Floral Kingdoms of the world

CapeNature ensures the formal protection of **135** terrestrial ecosystems in the Western Cape covering **975 170.8 ha**, an increase of **9 62.9 ha** from the **975 107.9 ha** reported in 2020:

16 of 25 CRITICALLY ENDANGERED	**19 of 20** ENDANGERED	**7 of 9** VULNERABLE
2 of 2 NEAR THREATENED	**84 of 115** LEAST CONCERN	**7** DATA DEFICIENT (DD)

TERRESTRIAL RED LIST OF ECOSYSTEMS 2021: EASTERN LITTLE KAROO (ELK) VEGETATION TYPE

- During 2020 CapeNature motivated for elevation of threat status from a proposed Least Concern status to an Endangered status to more accurately reflect loss and afford improved protection status
- Evidence provided: mapped degraded areas, photographic evidence of the major negative impact that grazing and associated trampling has on ELK
- Degradation has been gradual over more than 50 years
- Result: The proposed new list reflects ELK as Endangered which will elevate its protection status

Healthy Eastern Little Karoo vegetation

Definition of a *Terrestrial Ecosystem*: An ecosystem unit that has been identified and delineated as part of a hierarchical classification system, based on biotic and/or abiotic factors. Terrestrial ecosystems can also be defined as ***vegetation types.***

Updated map of degraded areas, representing gradual continuous extensive degradation over 50 yrs.

Photographic evidence of degraded landscape that once supported Eastern Little Karoo vegetation type.

THE STATUS OF WESTERN CAPE
INDIGENOUS SPECIES

HOW DEEP IN THE RED ARE WE?

The IUCN **Red List** is the world's most comprehensive information source on the global conservation status of wild species and their links to livelihoods. Far more than a list of species and their status, it is a tool to inform and catalyse action for biodiversity conservation, critical to protect the natural resources we need to survive.

This graph includes plant and animal groups for which South African conservation assessments (Regional IUCN Red Lists) have been done for the majority of members of the groups, and shows the percentages of the total number of known taxa in the Western Cape within the different IUCN threat categories

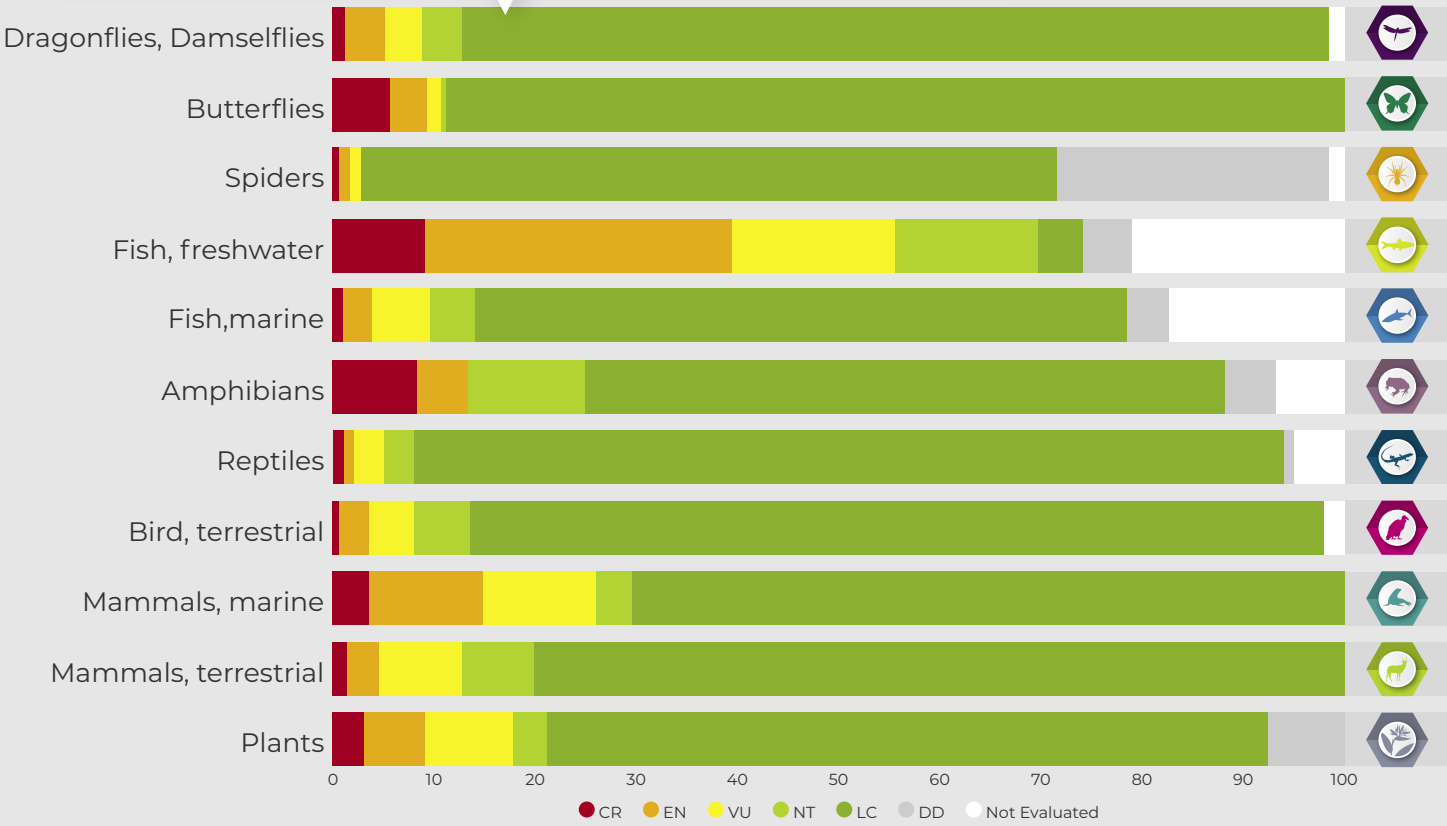
KEY TO THE IUCN RED LIST CATEGORIES AND CRITERIA

SOUTH AFRICAN RED LIST OF PLANTS

SOUTH AFRICAN RED LIST OF ANIMALS

IUCN LIST CATEGORIES AND CRITERIA

Spiders are highly diverse, ecologically important and charismatic. South Africa recently completed the first ever national red list assessment of spiders. A 2020 publication[6] indicates spider endemism is high in Fynbos, Succulent Karoo and Forests. Threats include habitat destruction through urbanization and agriculture.



	Total	Threatened	WC Endemic	WC Near-endemic
Dragonflies, Damselflies	78	7	6	1
Butterflies	300	32	Unknown	Unknown
Spiders	955	27	306	Unknown
Fish, freshwater	42	22	33	6
Fish,marine	758	73	Unknown	Unknown
Amphibians	60	8	36	0
Reptiles	149	7	21	1
Bird, terrestrial	337	28	1	7
Mammals, marine	27	7	Unknown	Unknown
Mammals, terrestrial	126	16	8	9
Plants	13 509	1 924	6 776	Unknown

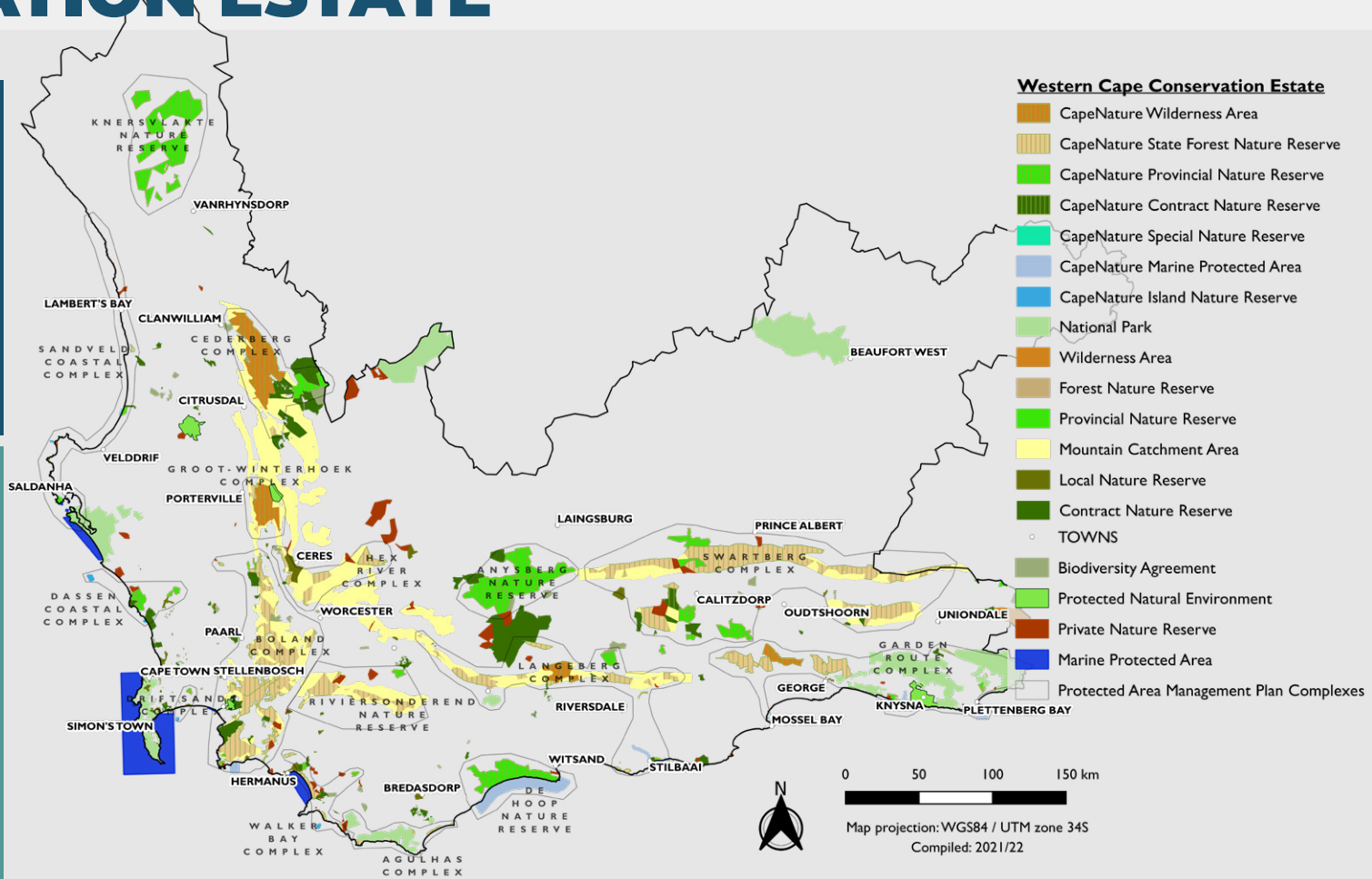
Note: the change in the number of marine fish taxa between the previous and current reports reflects a revision of the Western Cape Province species list, not a loss of species.

THE STATUS OF WESTERN CAPE
CONSERVATION ESTATE

CAPENATURE MANAGES 16 NATURE RESERVE COMPLEXES, COMPRISING A TOTAL OF **659 761 HA**

THE CAPENATURE PROTECTED AREA ESTATE, TOTALLING **1 019 427 HA** INCLUDES CAPENATURE MANAGED PROTECTED AREAS AND FORMAL STEWARDSHIP SITES SUPPORTED BY CAPENATURE.

Western Cape Conservation Estate	Area (hectares)
State Conservation Land vested with CapeNature	659 761
CapeNature vested State Land/Sea Protected Areas	**659 761**
CapeNature Managed Protected Areas	169 205 +
CapeNature Managed Protected Area Estate	**828 966**
CapeNature Protected Area Estate	190 461 +
CapeNature Protected Area Estate	**1 019 427**
Western Cape Protected Areas	1 096 691 +
Western Cape Protected Area Estate	**2 116 118**

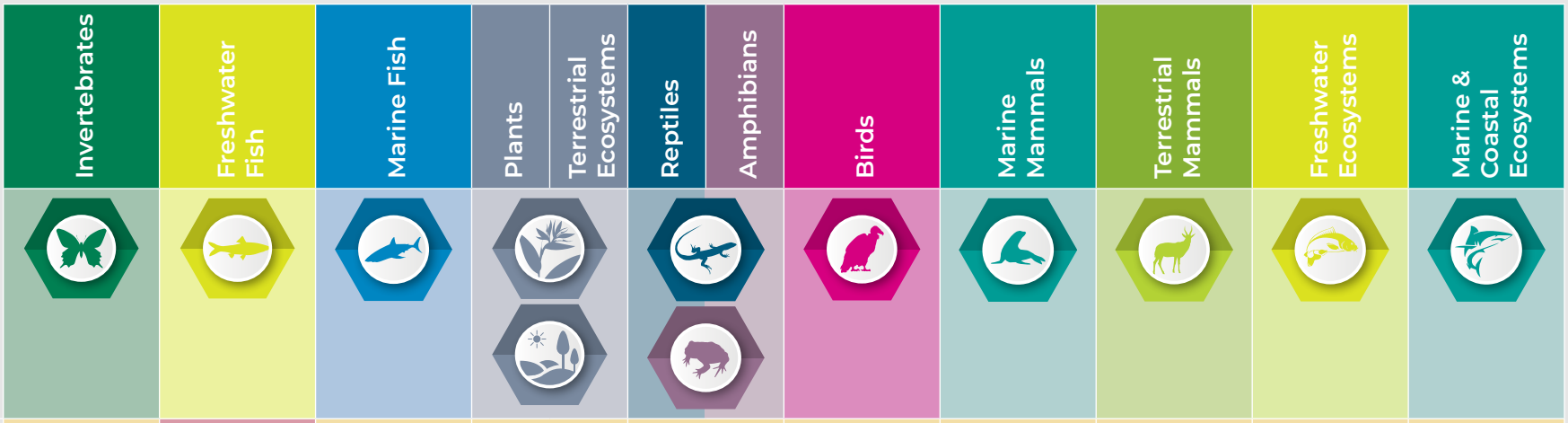


WWF AND PROVINCIAL SITES DECLARED DURING 2020/21	
Kwessie Nature Reserve	429.65
Triangle Nature Reserve	989.06
Fontein Nature Reserve	400.69
Kogelberg Nature Reserve	776.45
Rietkraal Nature Reserve	922.32
Total hectares declared:	**3 518.17**

STEWARDSHIP AGREEMENTS SIGNED IN 2020/21	
Puntjie Nature Reserve	102.11
Grootbos Nature Reserve	2554
Fynbostrand Nature Reserve	425.70
Keisersdrift Biodiversity Agreement	198.3
Zoetigheid Biodiversity Agreement	139.24
Diemersdal Biodiversity Agreement	26.87
Riverscape Biodiversity Agreement	256.32
Total new hectares for stewardship:	**3702.54**

- CAPENATURE
- SOUTH AFRICAN NATIONAL PARKS
- WESTERN CAPE PROTECTED AREA EXPANSION STRATEGY 2015-2020
- WESTERN CAPE PROTECTED AREA EXPANSION STRATEGY 2021-2025

THE STATUS OF THREATS TO WESTERN CAPE BIODIVERSITY



THREATS TO BIODIVERSITY

	Invertebrates	Freshwater Fish	Marine Fish	Plants / Terrestrial Ecosystems	Reptiles / Amphibians	Birds	Marine Mammals	Terrestrial Mammals	Freshwater Ecosystems	Marine & Coastal Ecosystems
Habitat Loss / Degradation	Indirect	Direct	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect
Climate Change	Indirect	Indirect		Indirect	Indirect	Indirect	Indirect		Indirect	Indirect
Too-frequent fire				Direct	Direct					
Biological Invasions	Indirect	Direct		Direct	Indirect			Indirect		
Transport Infrastructure			Direct		Direct			Direct		
Unsustainable Harvesting			Direct	Direct						
Pollution		Direct		Indirect	Indirect	Indirect	Indirect		Indirect	Indirect
Illegal Harvesting	Direct		Direct	Direct	Direct					
Illegal Trade	Direct		Direct	Direct	Direct					

■ DIRECT THREAT ■ INDIRECT THREAT

NBA WESTERN CAPE SUMMARY REPORT (2018)

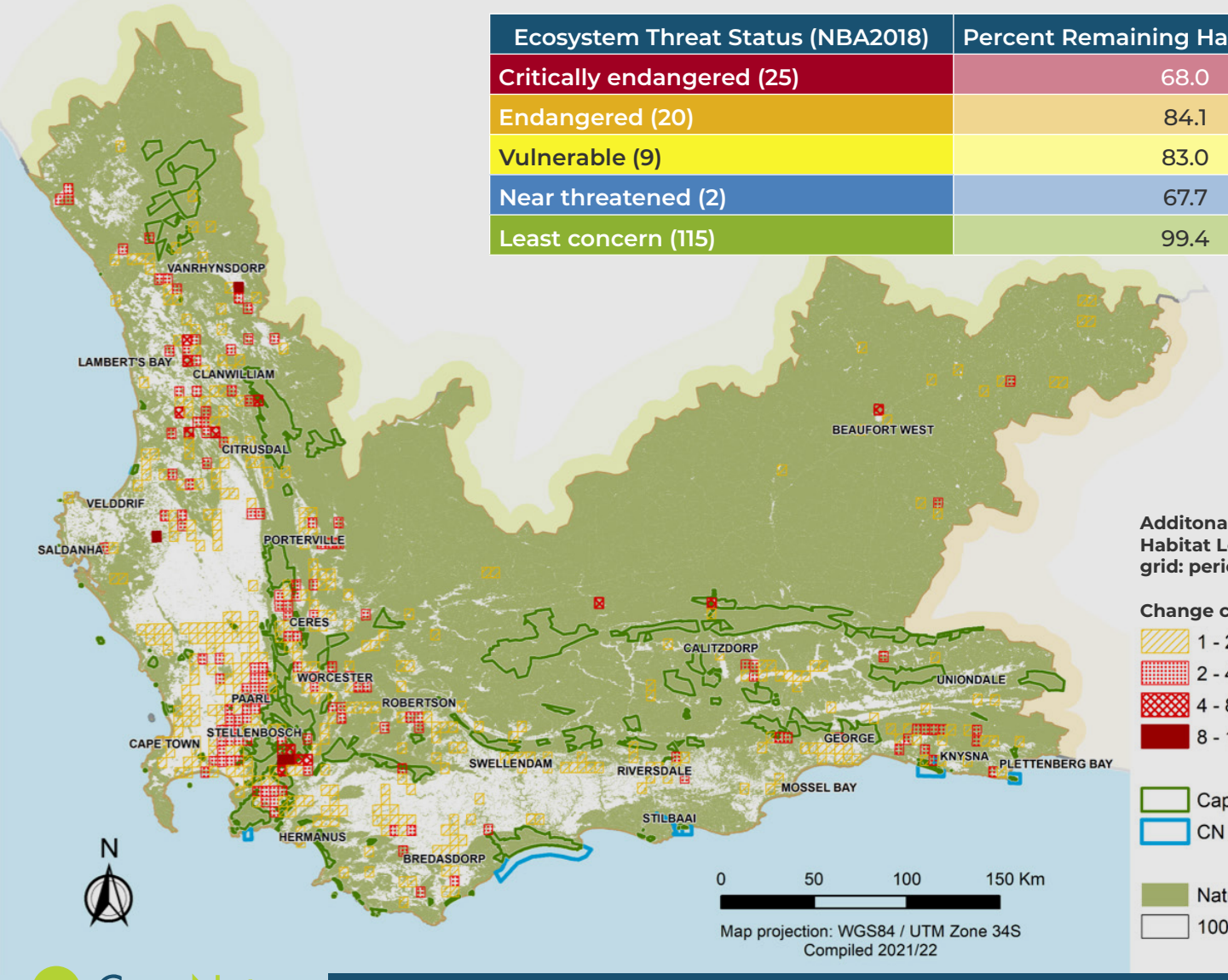
NATIONAL BIODIVERSITY ASSESSMENT (2018)

STATE OF BIODIVERSITY REPORT (2017)

THE STATUS OF **HABITAT LOSS**

Habitat loss is expressed as the change between two consecutive National Land Cover datasets: 2018* and 2020*. Over this time period, Critically Endangered ecosystems decreased in area by 0.33% due to habitat loss. Similarly, Endangered, Vulnerable and Near Threatened ecosystems decreased by 0.16, 0.4, 0.3 and 0.01 % respectively.

Ecosystem Threat Status (NBA2018)	Percent Remaining Habitat as of 2020	Remaining Habitat (Ha) as of 2020
Critically endangered (25)	68.0	419 502
Endangered (20)	84.1	223 660
Vulnerable (9)	83.0	24 744
Near threatened (2)	67.7	21 691
Least concern (115)	99.4	39 604

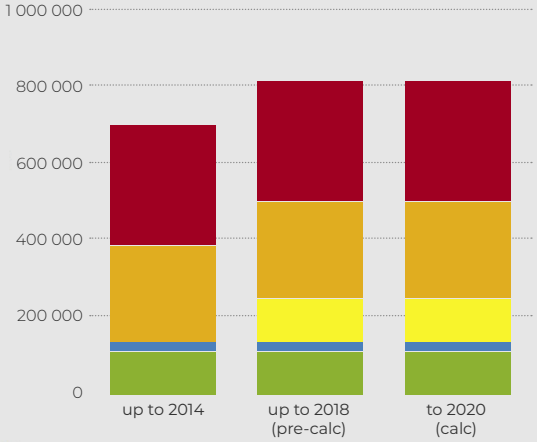


Additonal % change in Habitat Loss per 3 -minute grid: period 2018-2020

Change category

- 1 - 2%
- 2 - 4%
- 4 - 8%
- 8 - 14%

- CapeNature Protected Areas
- CN Marine Protected Areas
- Natural/Near Natural Habitat
- 100% Modified Habitat



Cumulative loss reflected in hectares per threat status category

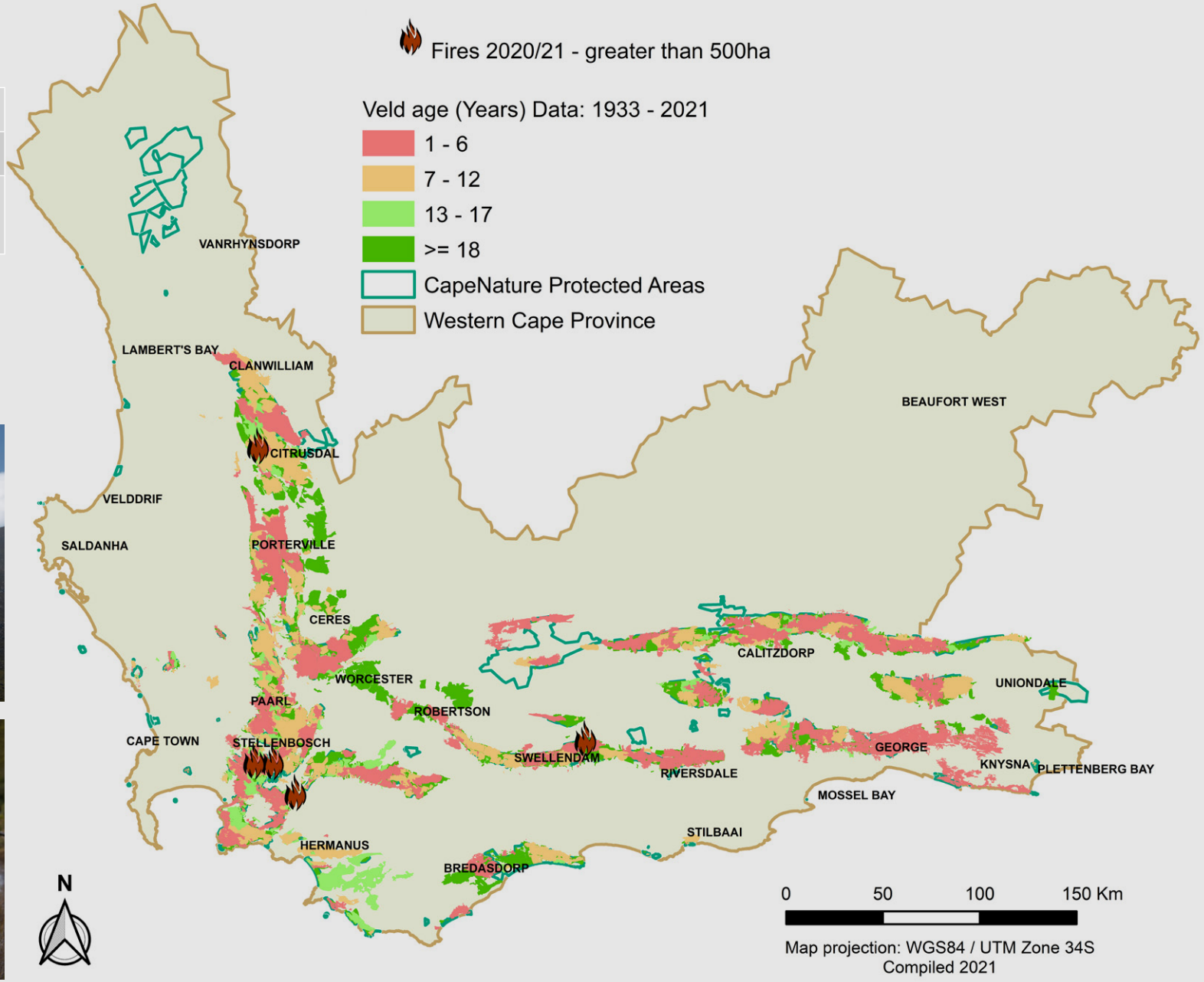
*DEPT. FORESTRY, FISHERIES AND THE ENVIRONMENT COMPUTER AUTOMATED LAND-COVER (CALC) PRODUCTS

STATUS OF **FIRE**

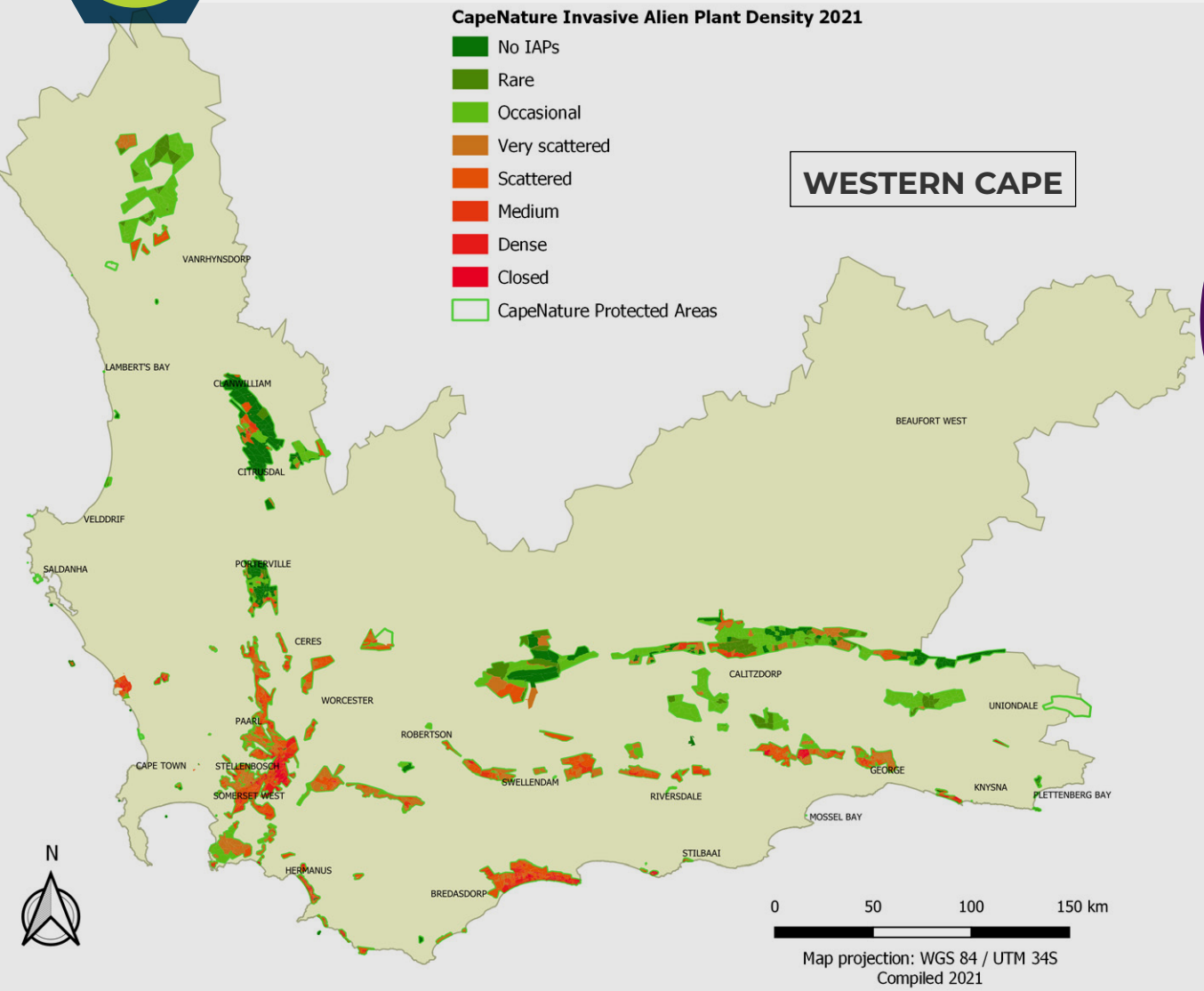
WILDFIRE AND PRESCRIBED BURNS APRIL 2020 TO MARCH 2021

Total area burnt	**31 198.7ha**
Total number of fires	**76**
The area of vegetation under 6 years old that burnt.	**5 250.2ha (16.8%)**

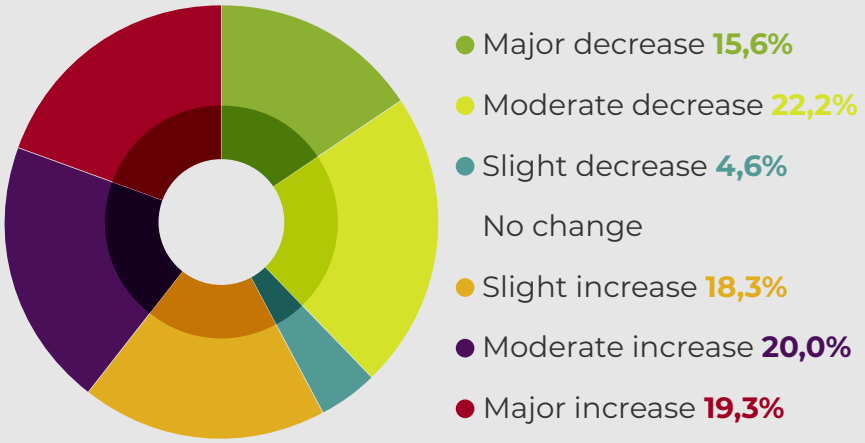
Represents all fires irrespective of size as per fire reports from CapeNature Nature Reserves, Mountain Catchment Areas and any adjacent fires in natural veld that CapeNature responded to.



THE STATUS OF
INVASIVE ALIEN PLANTS SPECIES (IAPS)



% Change in IAP density on CapeNature Protected Areas 2018 to 2020



Total hectares invaded in CapeNature Protected Areas per invasive alien plant density class for period as at 2021

Density class		Area (ha)	% of total area
No IAPs recorded		128 586.70	16.1
Rare	<= 0.01%	236 782.06	29.7
Occasional	0.01 – 1%	69 291.21	8.7
Very scattered	1 – 5%	136 547.80	17.2
Scattered	5 – 25%	154 721.62	19.4
Medium	25 – 50%	39 895.91	5.0
Dense	50 – 75%	21 412.55	2.7
Closed	> 75%	9 581.98	1.2
Grand Total		**796 819.82**	**100.0**

ALIEN CLEARING

YEAR	FUNDER	EXPENDITURE	ACTUAL PERSON DAYS	ACTUAL (ha)
2019/2020	CN	R1 498 146.50	6931	2048

BIODIVERSITY CRIME RESPONSE 2020-2021

31 CRIMINAL DOCKETS OPENED

4 Criminal dockets still under investigation

31 Criminal dockets handed to NPA for decision

2 Criminal dockets did not proceed to trial

1 Criminal docket declared *Nolle prosequi* (No prospect of successful prosecution

1 Criminal Docket temporarily withdrawn (Accussed absconded, arrest warrent issued

29 Criminal dockets proceeded to trial

25 Criminal dockets still in trial proceedings

4 Criminal dockets finalised

1 Criminal docket finalised through plea bargain

3 Criminal dockets finalised through convictions

78 FINES ISSUED

25 Issued under Nature Conservation Ordinance

20 issued under the Provincial Notice 955 of 1975

7 issued under the Marine Living Resources Act, Act 18 of 1998

16 Issued under the Marine Living Resource Act regulations, GNR 1111 of 1998

10 were issued under the Regulation for a prohibition on fishing at night in the estuary of the Breede River, GNR 886 of 2013

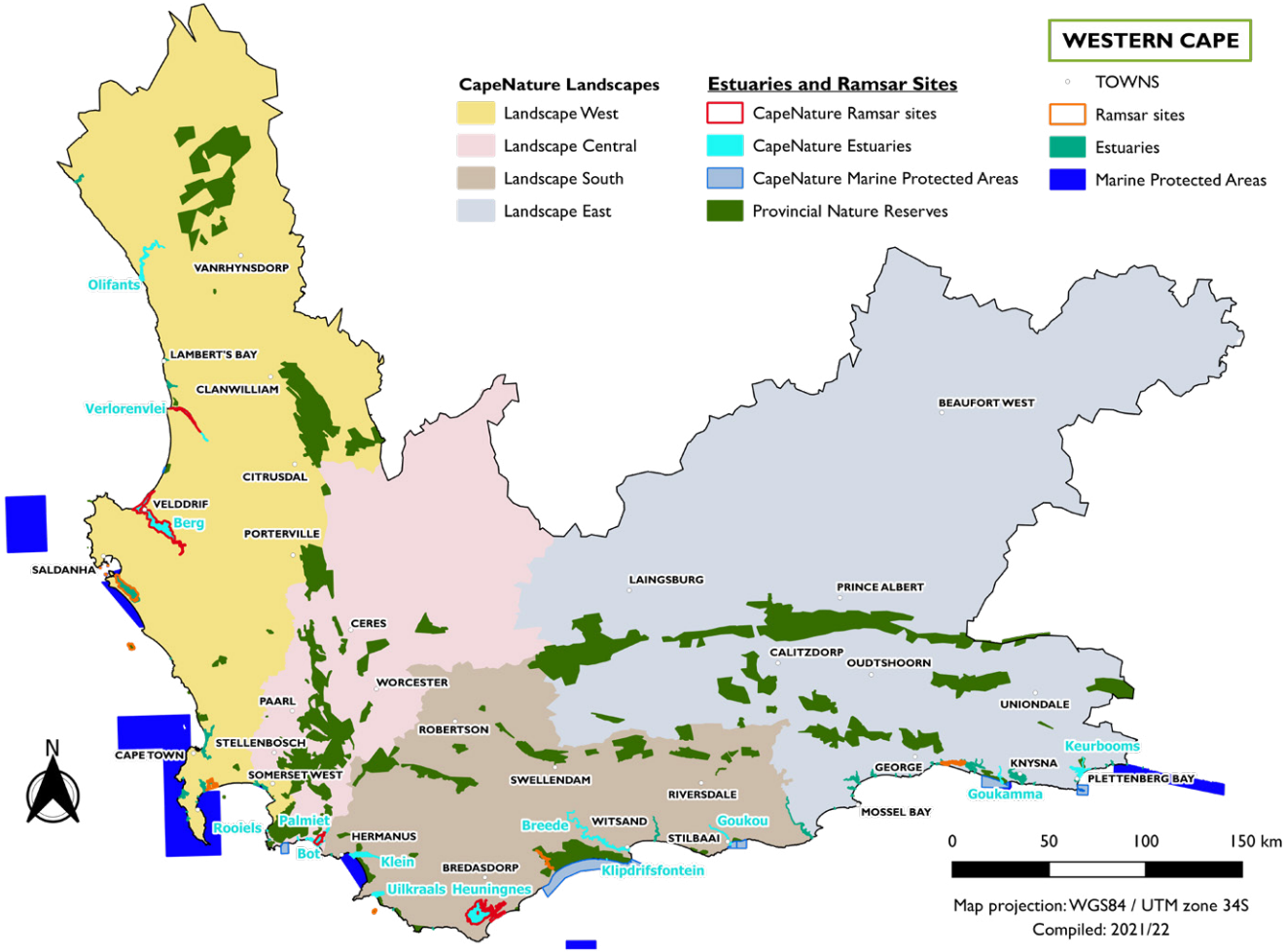
R136 900 Admission of guilt fines issued

Wellington CAS 272/06/2020: The accused was charged for the possession of pangolin carcass without a permit, and the selling of a pangolin carcass without a permit. The accused was sentenced to eight years imprisonment of which two years was suspended for five years.

ESTUARIES OF THE WESTERN CAPE

CAPENATURE IS THE RESPONSIBLE MANAGEMENT AUTHORITY FOR 13 PRIORITY ESTUARIES IN THE WESTERN CAPE

- Olifants Estuary
- Verlorenvlei Estuary (Ramsar site)
- Berg Estuary (Ramsar site)
- Rooiels Estuary
- Palmiet Estuary
- Bot Estuary (Ramsar site)
- Klein Estuary
- Uilkraal Estuary
- Heuningnes Estuary (Ramsar site)
- Klipdrifontein Estuary
- Goukou Estuary (Marine Protected Area)
- Goukamma Estuary (Marine Protected Area)
- Keurbooms Estuary




Heuningnes Estuary


Keurbooms Estuary


Klein Estuary


Goukamma Estuary

CLIMATE CHANGE RESPONSE

CLIMATE CHANGE MITIGATION AND CAPENATURE TOURIST ACCOMMODATION

Climate change and lifecycle sustainability considerations inform the design and operation of CapeNature's tourism facilities on reserves including features such as:

- Passive heating and cooling
- Waterless toilets
- Rainwater harvesting
- Renewable energy - solar energy
- Lightweight buildings (can be moved/easily decommissioned) made from local and sustainable materials
- Recycling old/existing footprints; off-site manufacture; recycling/re-using in situ materials
- Controlling impact: boardwalks and logical way finding

Many older facilities have been rejuvenated and retrofitted with these goals in mind while new developments are geared entirely at becoming prime examples of our principle of touching the earth lightly.

Kogelberg tourist accommodation features planted roofs which soften the view of the landscape against the backdrop of the Kogelberg's natural veld as well as provide passive heating and cooling.

MODELLED PREDICTED IMPACTS OF CLIMATE CHANGE IN WESTERN CAPE

- Decrease in rainfall
- Increased severity of drought
- Higher average temprature
- Increased Intensity of extreme events
- Increase in flooding and storm surges
- Allen vegetation reduces viability of ecosystems
- Increase in coastal impacts
- Fewer cold and frost days
- Increased fire risk

STATUS OF THE WESTERN CAPE
PROTECTED AREA EXPANSION STRATEGY

The **Western Cape Protected Area Expansion Strategy (WCPAES)** is aligned and informed by the National Protected Area Expansion Strategy (NPAES), CapeNature's Strategic Plan (2021-2025) and the Protected Areas Act.

The emphasis of the WCPAES is **landscape conservation** with focus on strategic partnerships.

The 2021-2025 **WCPAES** addresses the need to urgently protect priority threatened ecosystems. Priority areas are identified in the updated Conservation Action Priorities Map.

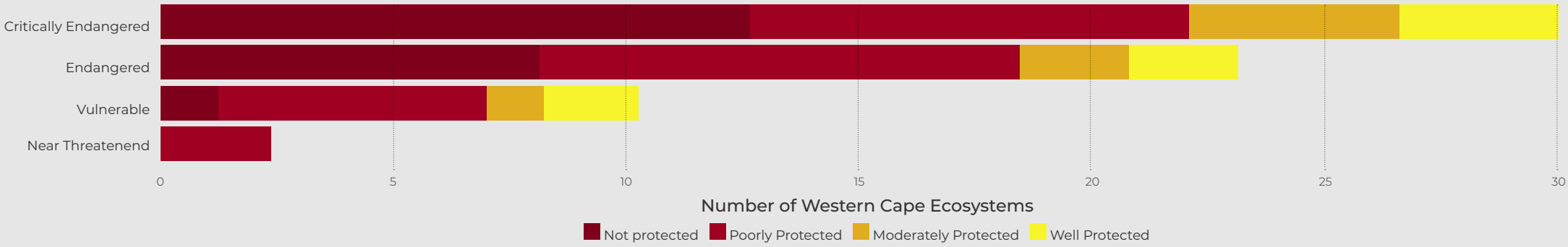
WCPAES 2021 – 2025 GOALS		
Expand the protected area network to increase its representivity and resilience	Regularise the protected area network to ensure NEM: PAA compliance and environmental security	Post declaration support to private protected areas

OBJECTIVES				
Secure poorly protected critically endangered ecosystems	Contribute towards under-protected ecosystems and strategic landscapes	Secure essential habitat for selected species	Advance marine, estuarine, and coastal conservation	Secure freshwater ecosystems

TARGETS		
Conservation agencies and NGOs aim to formally protect an additional 543 740ha of the province	Increase NEM: PAA compliance of the protected area network from approximately 40% to 50%	Fulfil contractual obligations to support management authorities to fulfil their legislative mandate and implementation of management objectives

THE WESTERN CAPE PROTECTED AREA EXPANSION STRATEGY AIMS TO INCREASE REPRESENTATION OF THREATENED ECOSYSTEM TYPES IN THE CONSERVATION ESTATE

Representation of threatened ecosystems per protection level category



CAPENATURE'S CONSERVATION TOOLS

CONSERVATION MANAGEMENT SYSTEM (CMSI) HARNESSES GIS AND DATABASE TECHNOLOGY IN A SINGLE TOOL THAT SERVES AS THE PRIMARY WAREHOUSE FOR ALL DATA RELATED TO RESERVE MANAGEMENT AND BIODIVERSITY.

Key outputs reliant on CMSi:

- Protected Area Management Plans
- Protected Area register
- Stewardship register
- METT Means of Verification
- State of Biodiversity Report
- State of Conservation Report

CMSi enables CapeNature to report against national biodiversity conservation targets:

- Size of Area conserved
- METT - management effectiveness for protected areas
- Number of stewardship sites

CMSi PROJECT TREE

This is all the data that will be captured on CMSi

Ecological monitoring

- *Alien vegetation management*
  - Alien vegetation monitoring
  - Biological control monitoring
  - Alien impact monitoring
  - Post clearing impact monitoring
  - Clearing
  - Biological control releases
- *Occurrence surveys (SOB/baseline)*
- *Population monitoring*
  - Amphibians
  - Birds
  - Fish
  - Invasive fauna
  - Invertebrates
  - Mammals
  - Plants
  - Reptiles
- *Vegetation*
  - Natural Resource
  - Management/Sustainable use
  - Habitat recovery and restoration
  - Habitat monitoring

Ecological monitoring cont.

- *Water*
  - Groundwater monitoring
  - River monitoring
  - Estuary monitoring
  - Wetland monitoring
  - Wetland ground truthing
  - Rainfall monitoring
- *Fire management*
  - Fire mapping
  - Firebreak monitoring
  - Permanent Protea plot monitoring
  - Post-fire Protea monitoring
  - Post-fire monitoring (non-Protea)
  - Firebreak management
  - Infrastructure protection
  - Ecological burn
  - Fuel load management
  - Fire suppression

Cultural and heritage resources

- *Cultural and heritage baseline*
- *Cultural and heritage monitoring*

Law enforcement and compliance

- *Wildlife management*
  - Natural Resource Management/Sustainable use
  - DCA management

Infrastructure management

- *Infrastructure baseline survey*
- *Infrastructure monitoring*

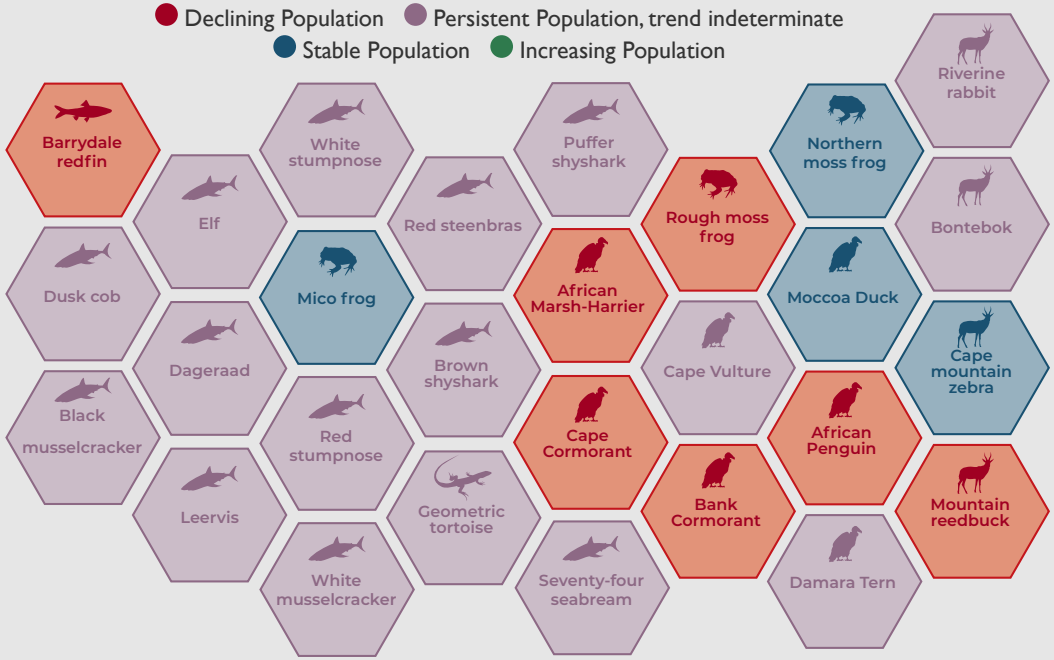
Protected Area Expansion

- *State Land Transfer*
- *Land Purchase/Donation*
- *Regularisation*
- *Stewardship*

MONITORING AND SURVEILLANCE
PRIORITY SPECIES

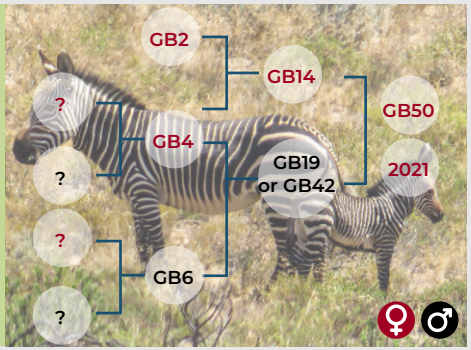
CapeNature identified 146 terrestrial and freshwater species for surveillance and monitoring in the Western Cape and tracks population trends for the identified priorities as indicated below.

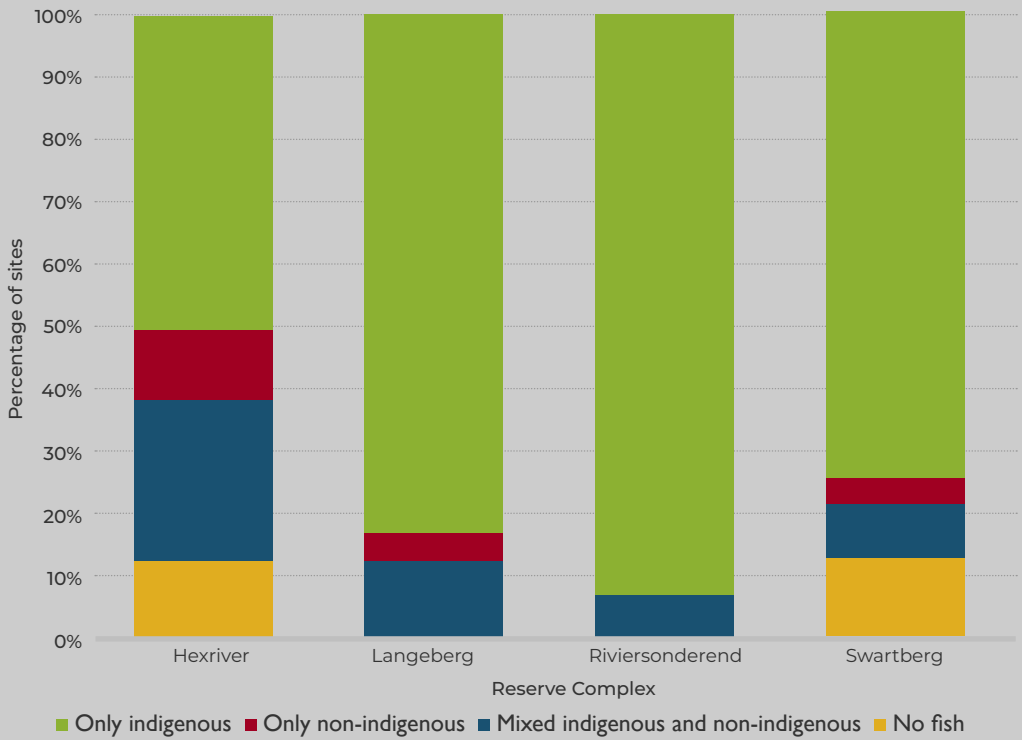
Population Trends for Priority Species Monitored or Surveyed - 2020



CAPE MOUNTAIN ZEBRA

Stripe patterns are, like human fingerprints, unique to each animal. At Gamkaberg Nature Reserve, a photo-identification file has been developed for all zebra, allowing the construction of family trees. A record is kept of which animals are in which herds, and where herds are located, providing information on herd dynamics and habitat use.





RESULTS OF SURVEYS OF FISH SANCTUARIES IDENTIFIED IN PROTECTED AREA MANAGEMENT PLANS

- Since the 2017 State of Biodiversity Report, CapeNature has surveyed fish sanctuary areas associated with four major Reserve Complexes: Langeberg, Riviersonderend, Hexrivier and Swartberg.
- Most sites had pristine habitat and the fish community comprised mainly indigenous species.
- This data supports national initiatives such as the National Freshwater Ecosystem Priority Areas Project and is also used for reviewing the Red List Status for freshwater fish species.
- Focal areas for 2022 include the Outeniqua and Cederberg Nature Reserve Complex.

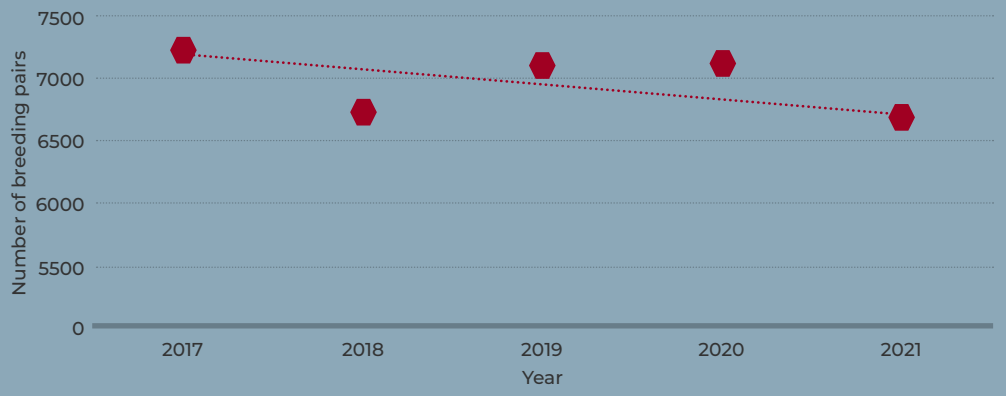
MONITORING AND SURVEILLANCE
PRIORITY SPECIES

EXAMPLES OF MONITORING OF PRIORITY SPECIES

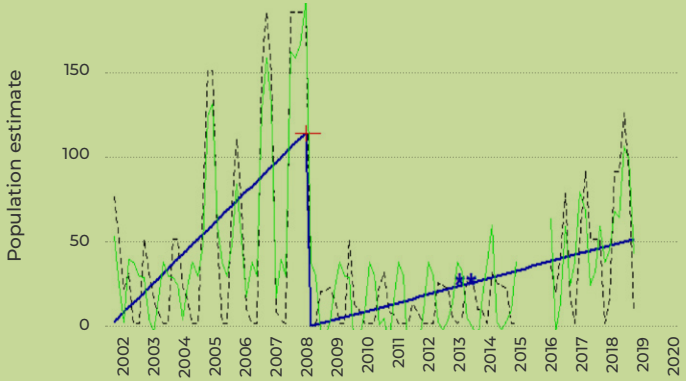
The African Penguin *(Spheniscus demersus)* population comprises only **2%** of historical numbers. Thirteen colonies are monitored annually in the Western Cape. No breeding pairs were detected at six colonies. Another six colonies showed a decline in the number of breeding pairs. Only the population at Dyer showed increase in breeding pairs.

[1]*Makhado AB, Masotla MJ, Dyer BM, Upfold L, Crawford RJM (2021) African penguins face extinction. Recent trends in numbers breeding in South Africa. FISHERIES/2021/JUL/SWG-PEL/45*

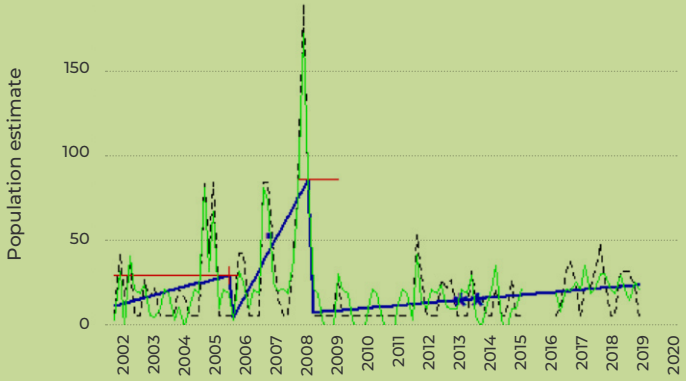
African penguin *S. demersus* population data for all Western Cape colonies

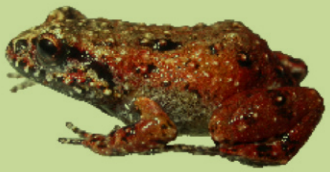


Longterm monitoring of the **Landdros and De Villiers's moss frog** populations demonstrates rapid population declines after fires. Frogs are generally sensitive to environmental disturbances and are thus good indicators of the impacts of climate change. Long term monitoring shows Landdross and De Villiers's moss frog species undergo rapid population declines after fires, De Villiers's moss frog is capable of more rapid population recovery. This data aids in determining minimum fire return intervals. For the high altitudes of the Hottentots-Holland Nature Reserve, this interval is more than 12 years.



De Villiers's moss frog





Landdros moss frog

PARTNERSHIPS FOR CONSERVATION SUCCESS

CapeNature values collaboration with partners in support of sustaining biodiversity conservation and the biodiversity economy and works with communities, landowners, civil society, conservation organizations, researchers, tertiary institutions and other spheres of government to deliver on conservation targets. Depicted here are partners with whom CapeNature has formal agreements specific to biodiversity conservation however there are many other equally valued less formal collaborations.

- Greater Cederberg Fire Protection Association
- NRF SAIAB
- Western Cape Government
- Cape Peninsula Fire Protection Association
- Cape Peninsula University of Technology
- Knysna Municipality
- CIB
- DM West Coast
- The Nature Conservancy
- Westen Cape Umbrella Fire Protection Association
- Flower Valley Conservation Trust
- South African National Parks
- SANBI
- SANCCOB saves seabirds
- Overberg Renosterveld Conservation Trust
- Conservation at Work
- Table Mountain Fund
- Cape Winelands District Municipality
- Cape Leopard Trust
- Working on Fire
- Southern Cape Fire Protection Association
- WWF
- Buffalo Valley Trust
- Volunteer Wildlife Services
- Overberg District Municipality
- NRF
- McGregor Tourism
- City of Cape Town
- Overstrand Municipality
- Nelson Mandela University
- Heuningvlei Community
- Department of Agriculture
- SAEON
- SA Shark Conservancy
- MTO Forestry
- Greater Overberg FPA
- University of the Western Cape
- University of the Free State
- DFFE

EXAMPLE OF A PARTNER ORGANISATION:
OVERBERG RENOSTERVELD CONSERVATION TRUST

The ORCT works to secure the long-term conservation and management of remaining Renosterveld through active partnerships. To date, 20 easements have been signed which preserve an approximate total of 6 500 ha. Landowner support includes management interventions such as veld restoration, ecological burning and alien clearing and biodiversity inventories for landowners. Partner organisations in conservation support delivery on strategic objectives such as those in the Western Cape Protected Area Expansion Strategy.

www.overbergrenosterveld.org.za

FURTHER READING
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BIBLIOGRAPHY

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FURTHER READING
LINKS

2021 ECOSYSTEM STATUS	CAPENATURE PROTECTED AREA MANAGEMENT PLANS	CONVENTION ON BIOLOGICAL DIVERSITY	COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH
DEPT. FORESTRY, FISHERIES AND THE ENVIRONMENT COMPUTER AUTOMATED LAND-COVER (CALC) PRODUCTS	IUCN CATEGORIES OF EXTINCTION RISK	KEY TO THE IUCN RED LIST CRITERIA	NATIONAL PROTECTED AREA EXPANSION STRATEGY
OPEN STANDARDS FOR THE PRACTICE OF CONSERVATION	PROVINCIAL BIODIVERSITY STRATEGY AND ACTION PLAN	RED LIST OF SOUTH AFRICAN FAUNA	RED LIST OF SOUTH AFRICAN FLORA
SASS	SIP 19. 2014. ECOLOGICAL INFRASTRUCTURE FOR WATER SECURITY	STATE OF BIODIVERSITY REPORT 2002	STATE OF BIODIVERSITY REPORT 2007
STATE OF BIODIVERSITY REPORT 2012	STATE OF BIODIVERSITY REPORT 2017	STRATEGIC WATER SOURCE AREAS: FRESHWATER ECOSYSTEM NETWORK	THE GREATER CAPE TOWN WATER FUND
THE NATIONAL BIODIVERSITY ASSESSMENT 2018	THE WATER HUB	THE WESTERN CAPE PROTECTED AREA EXPANSION STRATEGY	THE WESTERN CAPE STATE OF ENVIRONMENT OUTLOOK REPORT
VIRTUAL MUSEUMS	WATER RESEARCH COMMISSION. 2018	WESTERN CAPE BIODIVERSITY SPATIAL PLAN HANDBOOK	WESTERN CAPE BIODIVERSITY SPATIAL PLAN – OVERVIEW
WESTERN CAPE ECOLOGICAL INFRASTRUCTURE INVESTMENT FRAMEWORK (EIIF)	WORKING FOR WETLANDS	WWF-SA: DEFINING SOUTH AFRICA'S WATER SOURCE AREAS	WWF LIVING PLANET REPORT

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