

Stellenbosch AIS Forum

By Monique Ruthenberg
CapeNature
Conservation Manager
Boland

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CapeNature – Boland Mountain Complex

- Where are we and what are we responsible for?
- Protected Area Management Plan – Biggest threats and Strategies
- Research projects
- Internal Monitoring
- Use of technology (Satellite and drones)
- Alternate clearing methods (Aerial Basal Bark Application & Biocontrol)
- Other invasives (Non-plant)
- Alien Clearing Challenges
- Alien Clearing Partners
- Contractor Training & Selection
- Status quo with Clearing
- Monitoring and Tracking
- Compliance
- Environmental Awareness and Capacity Building
- What can you do?



Boland Mountain Complex

Located approximately 120 km northeast of Cape Town and stretches from Sir Lowry's Pass and Bot River to Nuwekloof Pass (South – North).

Includes five nature reserve clusters:

Kogelberg Nature Reserve Cluster

Hottentots Holland Nature Reserve Cluster

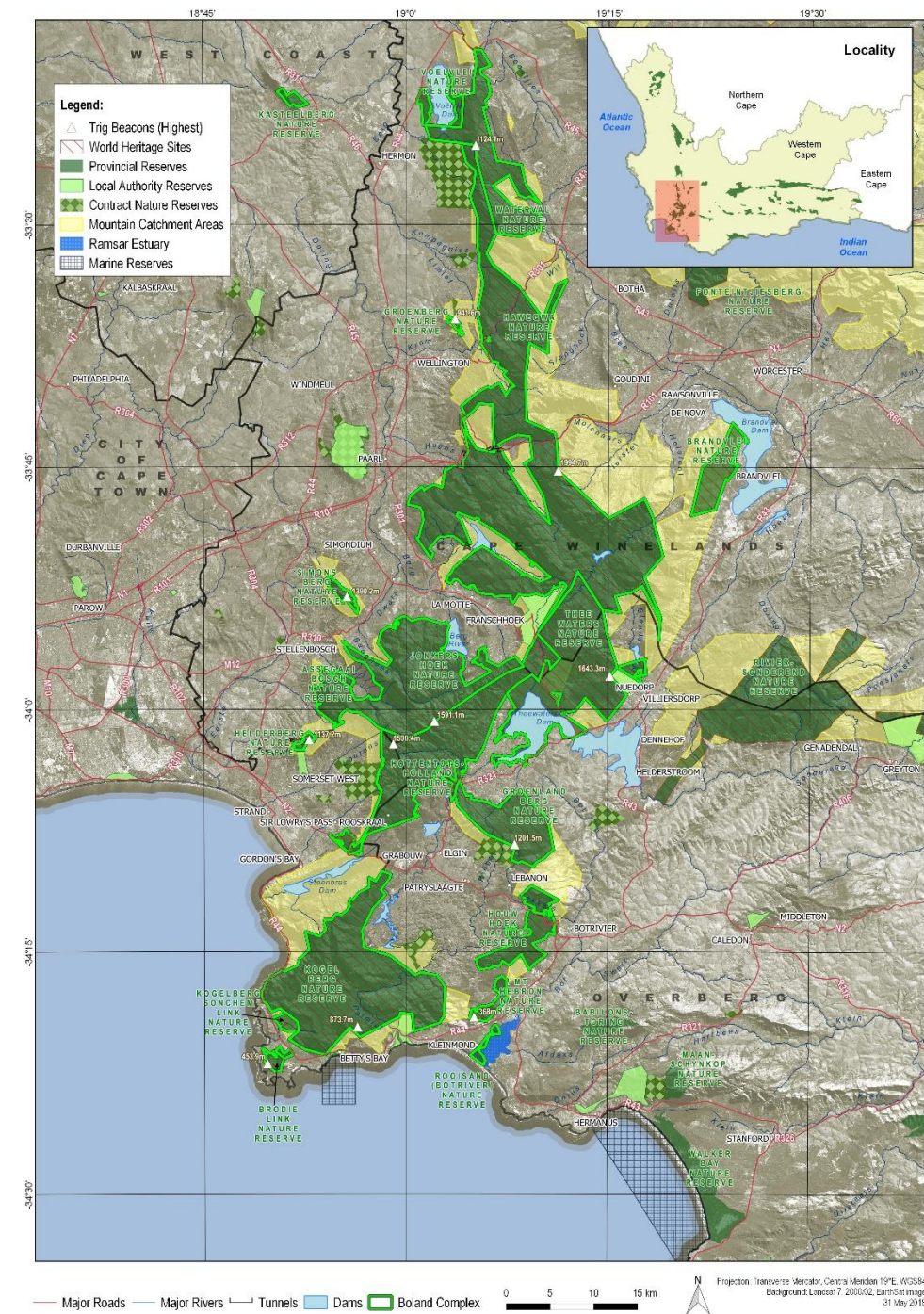
Jonkershoek Nature Reserve Cluster

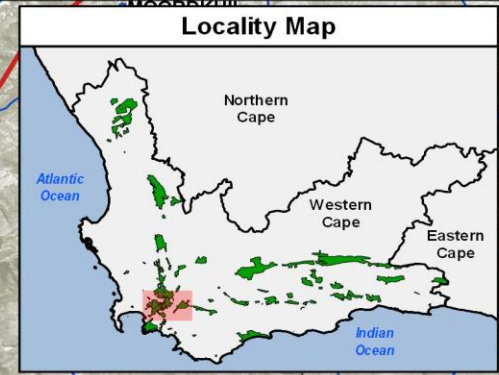
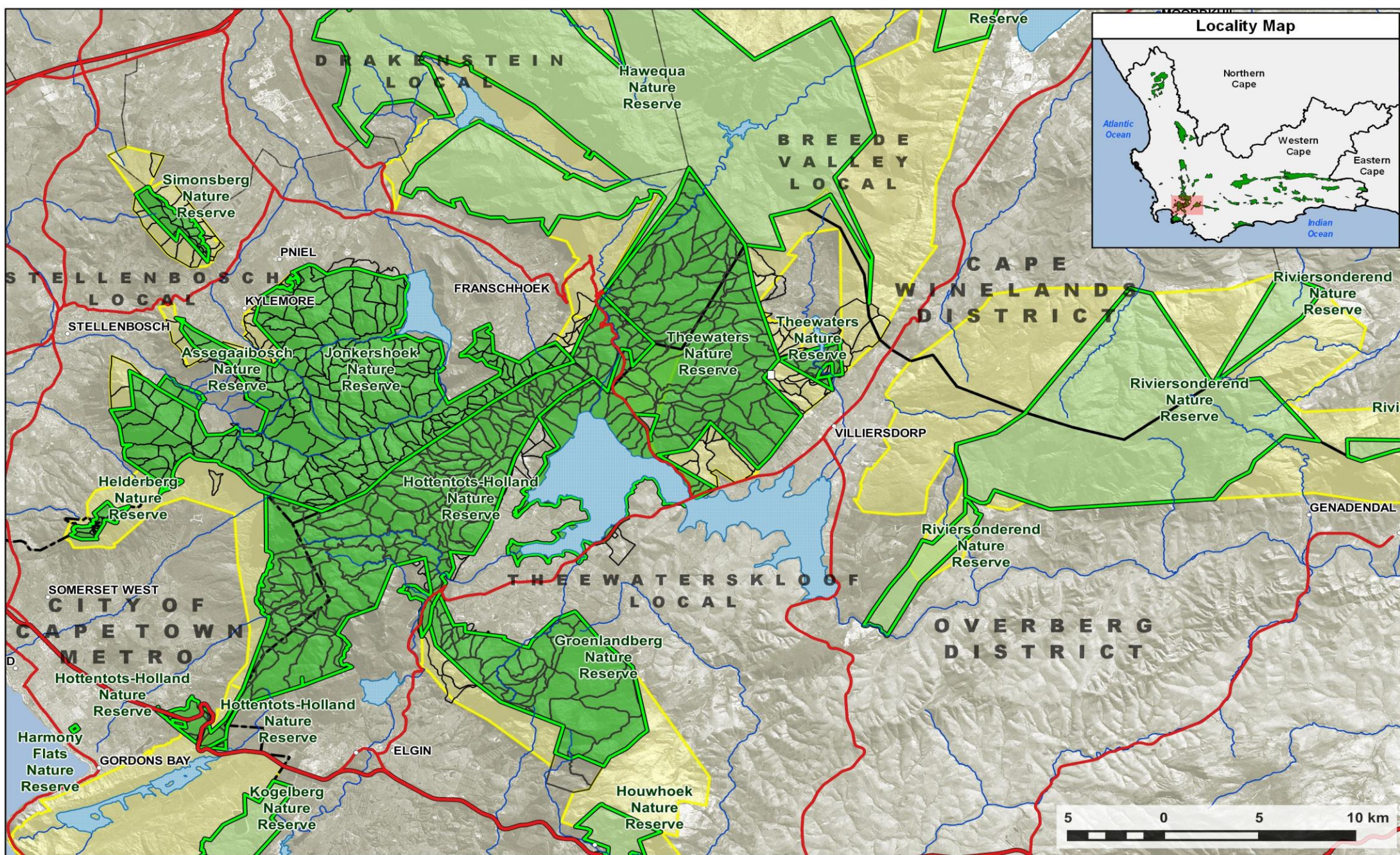
Limietberg Nature Reserve Cluster

Waterval Nature Reserve Cluster

Approximately 131 256 hectares

Managed by four Conservation Managers, Conservation Managers (Off Reserve) and SEO





Legend

- Major Roads
- Major Rivers
- Compartments
- Dams
- Hottentots-Holland Centre
- Provincial Reserves
- Mountain Catchment Areas

Projection: UTM 34 S (WGS84)
Background: Landsat 7, 2000/02,
EarthSat image
6 August 2021



Top 3 threats in Boland Complex



Threat	Mountain & Lowland Fynbos
Inappropriate fire regime due to anthropogenic fires	Very High
The negative impact of Invasive alien vegetation on fire regime, biodiversity and water availability.	Very High
Impacts of over abstraction on groundwater dependent ecosystems.	Very High

Key Strategies mitigate against priority threats - Fire and Aliens (Boland Complex)

Strategy 1: Update and implement the long term Alien Invasive Clearing Plan

Strategy 3: Enhance the implementation efficiency of the Invasive Alien Vegetation Management and Fire Programmes

Strategy 6: Implement the integrated compliance and enforcement plans and develop focal projects that will address common issues that require elevated coordination, capacity, and specialised skills/equipment

Strategy 9: Refine and implement a targeted environmental education and awareness plan through key partnerships to decrease ignition points of anthropogenic fires and to improve the understanding of the impacts of invasive alien vegetation on fire risk, biodiversity and water supply.



Research applications 2021-2022

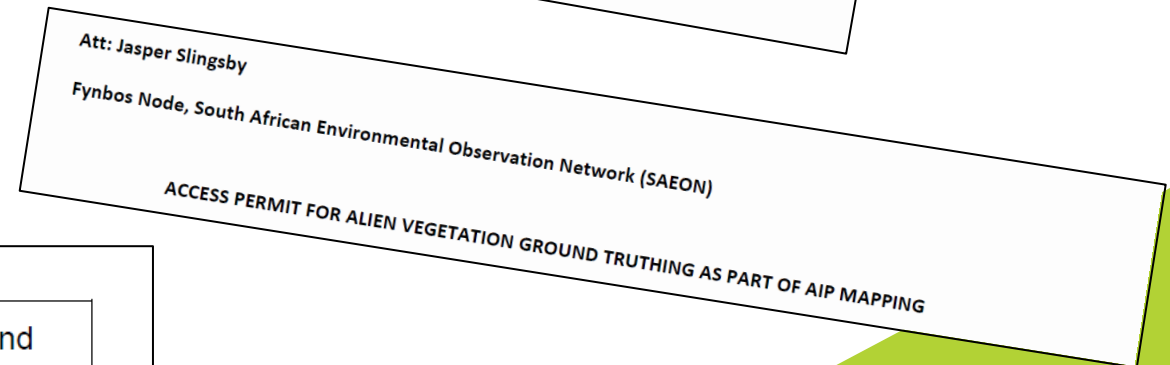
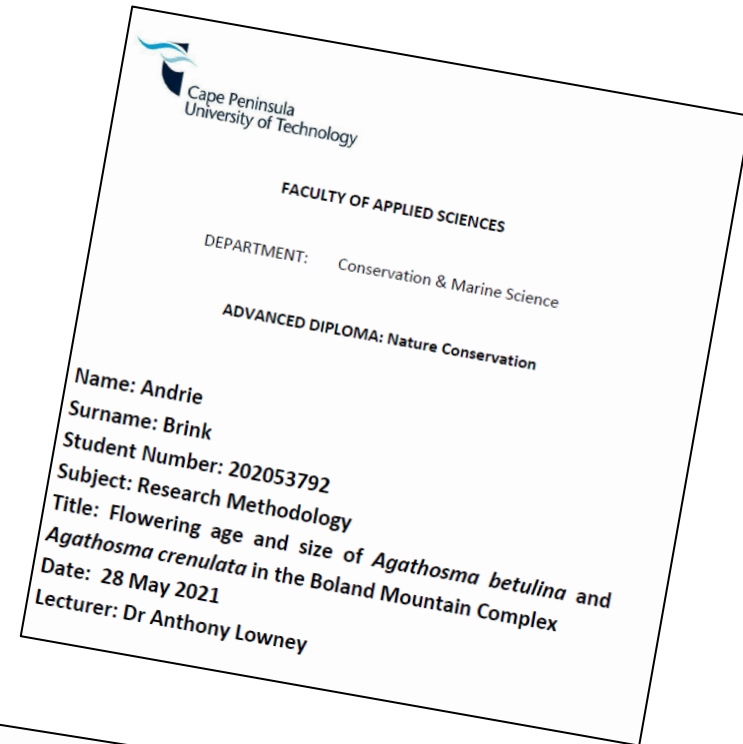
- Indigenous flora – 8
- Insects – 3
- Amphibians – 2
- Arachnids – 1
- Invertebrates – 3
- Fynbos and Fire – 1
- Reptiles – 1
- Land use and impacts and bats – 1
- Medicinal use of indigenous flora – 1

Total Approved = 20

2.1

Title of project
(Attach project
proposal. Refer to guidelines.):

Bark and ambrosia beetles, associated mites and
associated fungi from woody plants in the Cape
Floristic Region

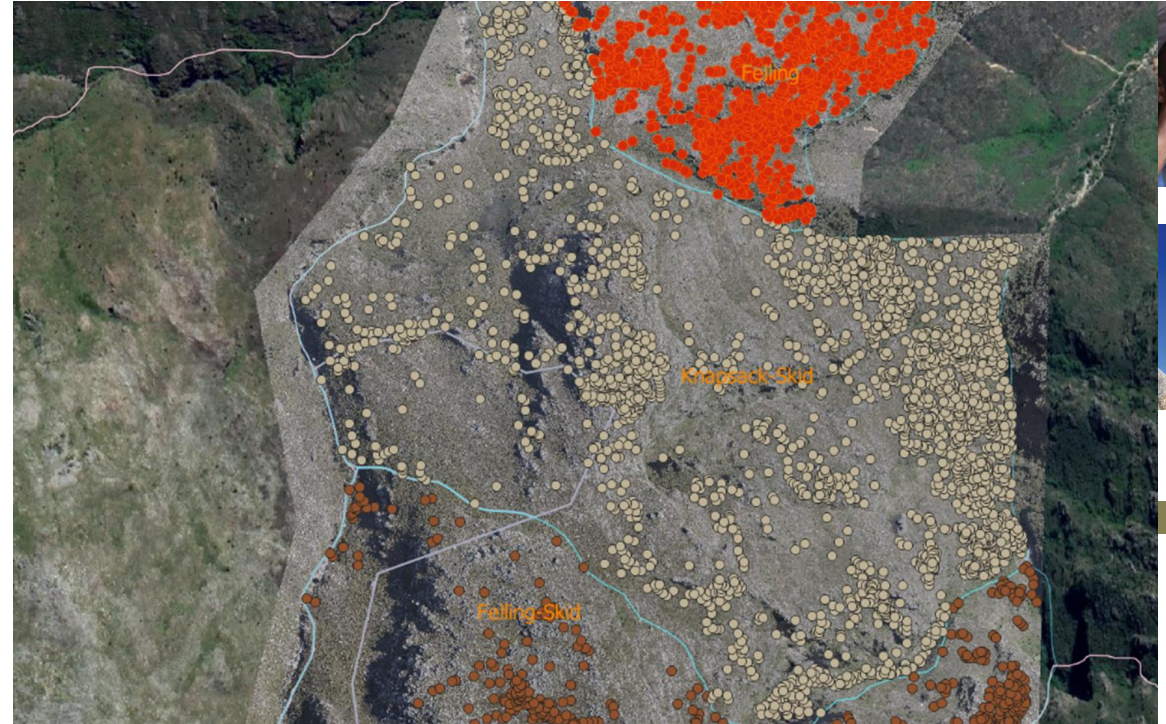


Key biodiversity, alien clearing and fire internal monitoring and research

- PAMP – SWOT analysis (Understanding challenges, barriers, limitations to implementing IAS Control Plan)
- Understanding invasions and preparing specific response plans (e.g. Polyphagous shothole borer)
- Implementing Eco-Matrix, focussed on:
 - Density Verifications
 - Alien vegetation mapping
 - Biocontrol mapping
 - Invasive and alien indigenous fish monitoring
 - Post fire monitoring
 - Permanent protea plot monitoring – related to fire impacts
 - River health and SASS monitoring



Use of Imaging Technology



Satellite Data: Constant improvement, costs to purchase can become high

Helicopters: Cost, human capacity, weather dependent, quality of photos taken

Drones: Cheaper, Capital investment, Pilot needed, limitations in terms of flights & distance. Useful for covering larger area and getting good images, especially pre and post inspections.

Aerial Basal Bark Application



- Highly directed stream applied from a helicopter
- Can reach any tree
- Very effective in New Zealand
- Can be very efficient
- Limited to lowish densities
- Not registered for pines yet



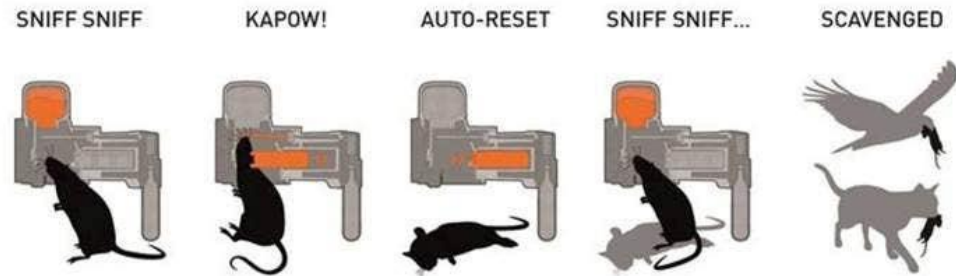
Biocontrol

- Annual Performance Plan – Approved annually with Budget
- Contractor awarding completed, purchase order being raised
- Contract in place between CapeNature and PPRI/DFFE (Plant Protection Research Institute)
- New agents being developed and researched
- Lacking agents for Pine in the Western Cape



Invasive rodents e.g. House mice

- Self-resetting gas operated traps



- No secondary effects on scavengers or predators



Invasive Fish Species

- Invasive alien fish a severe threat to indigenous species
- Eg: largemouth bass, common carp, rainbow trout, spotted bass, bluegill sunfish, sharptooth catfish
- Rotenone is effective piscicide (e.g. England)
- Full recovery of indigenous species
- Not fully researched in South Africa and not registered yet



Effectiveness of IAS Control Plan implementation

How effective are we really?

- Under ideal conditions, we would be highly effective (consistent and sufficient funding, sufficient trained staff, equipment etc.), but the reality is there are many challenges:
- Limited clearing techniques (Chemical, Mechanical, Biological)
- Capacity of teams (Type of team, Numbers, Training, Equipment and PPE)
- Timing (Seasons for clearing, Timing after a fire, delays in appointing contractors)
- Coordination and Cooperation between Land Owners and Management Authorities
- Funding
 - Each funder has own requirements, focus and administrative challenges
 - Funding processes are different, some more adaptable than others
 - Key is to build partnerships with different agencies/funders



Common challenges faced by landowners and management authorities

- Boundaries and Land Ownership – who is responsible for what ?
- Coordinate implementation – work systematic and not hap-hazard
- Funding security and funding coordination (what to spend where and when)
- Limited capacity (Management, Project team and Contractors)
- Contract management (Internal systems in line with legislation & funder requirements)
- Specialized teams and skills are limited (High Altitude, Intermediate, Biocontrol)
- Limitations for creative and out of the box thinking

SOLUTION 1: MULTI-AGENCY TASK GROUP FOCUSING ON OVERALL ALIEN CLEARING NEEDS, LOOKING BEYOND INDIVIDUAL BOUNDARIES TOWARDS A COORDINATED APPROACH. CAPACITATING AND RESOURCING AGENCIES THROUGH AN EXTERNAL NGO.



Alien Clearing Partnerships

CapeNature has a 3-year cycle contract in place with DFFE

- Annual Plan is drafted, approved & budgeted for
- Focus is follow-up work
- **Jonkershoek Budget - R 706 650.87**

Greater Cape Town Water Fund (GCTWF):

- Partnerships and MOU with The Nature Conservancy (Louise Stafford), WOF, WWF.
- Additional partners in the GCTWF includes Province, City of Cape Town
- Focus in on 7 Sub-Catchments with expansion into the Cape Town Water Supply System
- GCTWF: 2 Working Groups:
 - Data and Operational Working Group
 - Partner Implementation Team



forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

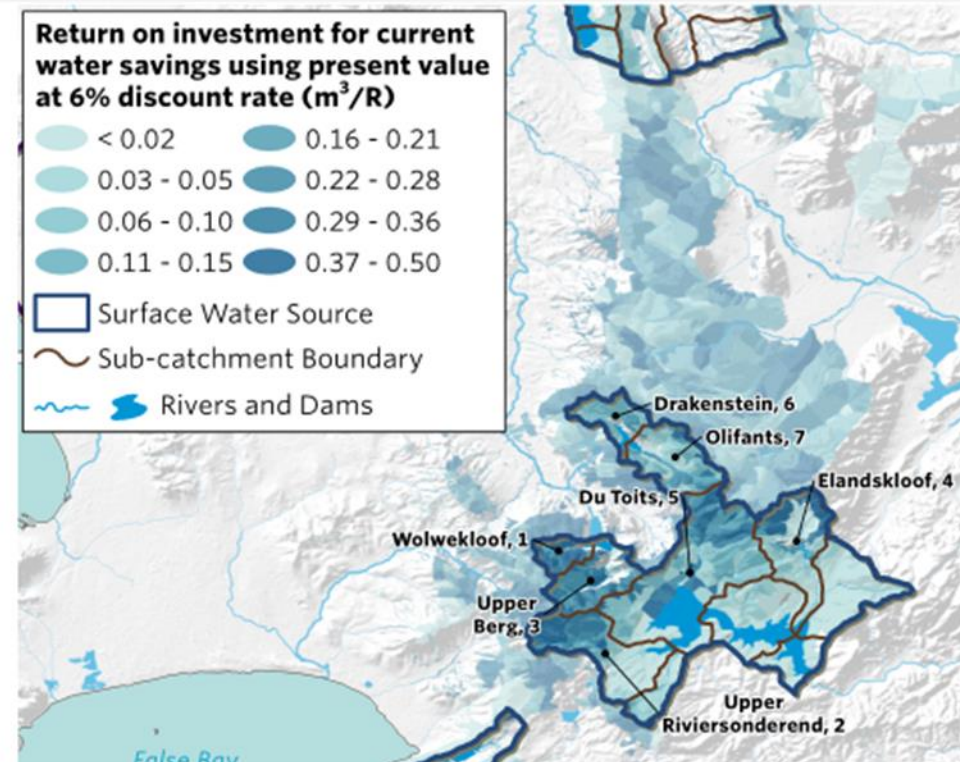


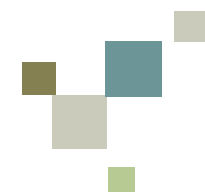
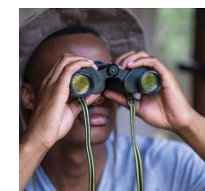
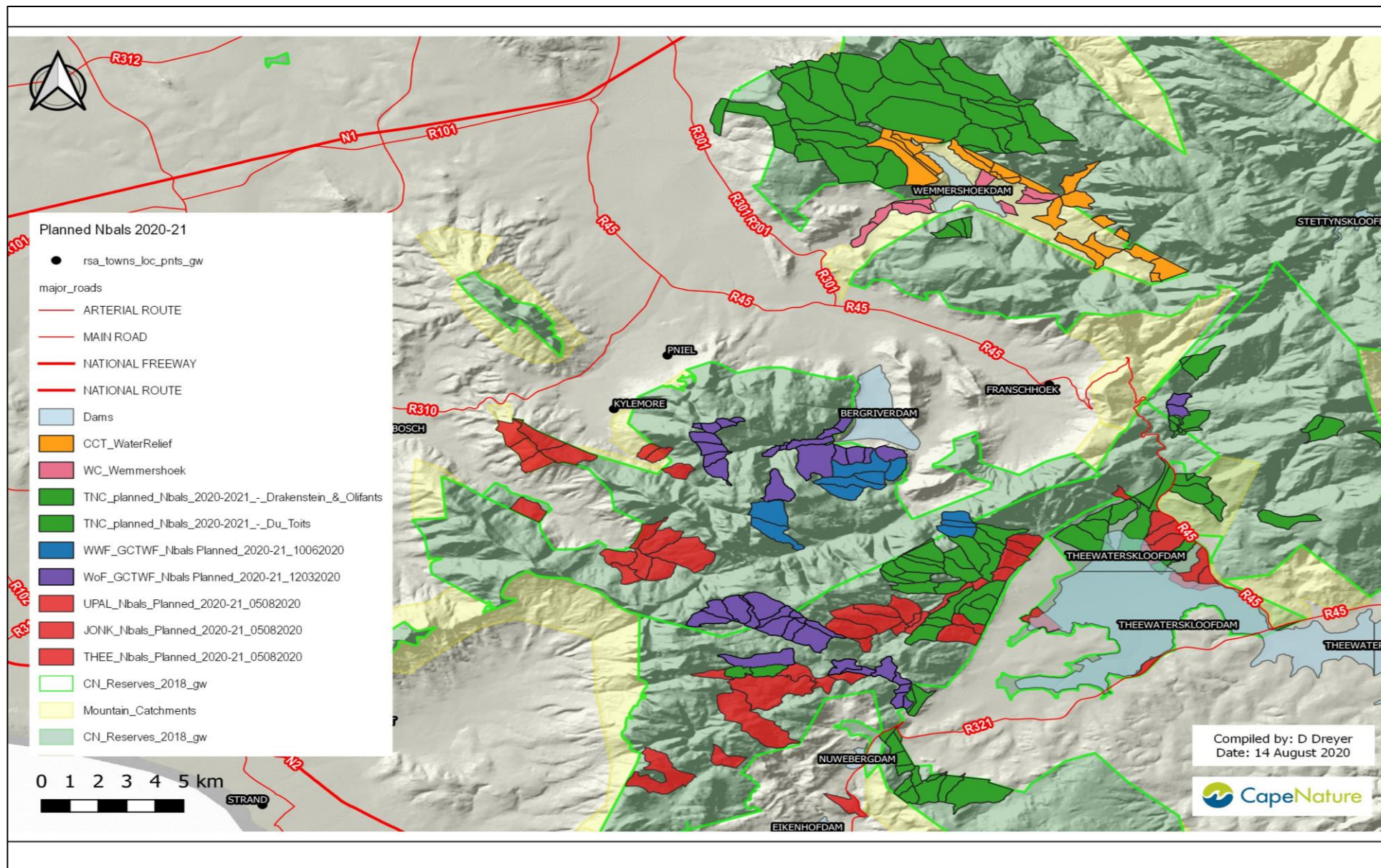
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD



Prioritization of compartments & Process (Simplified)

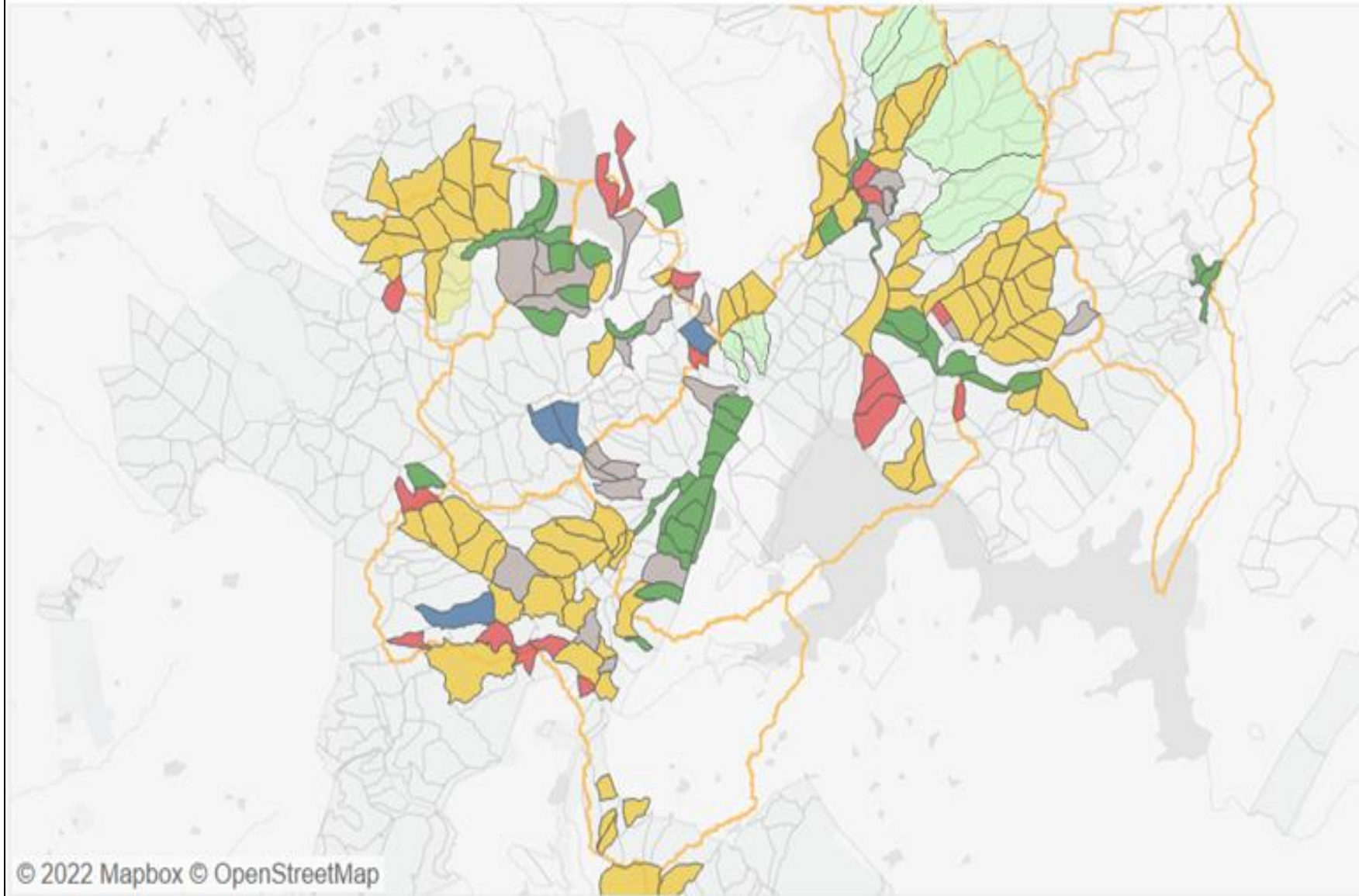
- Long term MUCP (Management Unit Clearing Plans) done with focus on clearing all alien invasive to increase biodiversity and water production. From the MUCP and APP (Annual Plan) is prepared.
- Coordinated approach with partners to compliment clearing (avoid hap hazard clearing)
- DFFE sites are determined by:
 - Follow up status – 3 year cycles (using hand tools)
 - Clearing cost and budget
 - Availability of trained contractors (Not High Altitude or Intermediate)
- Greater Cape Town Water Fund Sites are prioritized via the Working groups. Contributing factors:
 - Clear harder to reach High Altitude sites using the WOF HAT teams, WWF (Manfred Pautse) and TNC HAT contractors.
 - Focus in Initial Clearing – maximizing positive impact and water flow to rivers and dams





Implementer GANTT Workplan Map (FY22)

Geo View 7 Priorities + Atlantis



Implementer

- ☐ CapeNature
- ☐ CCT
- ☐ SANBI
- ☐ TNC
- ☐ WoF-HAT
- ☐ WWF

Execution Status

- ☒ 1. Completed
- ☐ 2. Infield
- ☐ 3. Contracted
- ☐ 4. Upcoming
- ☐ 5. Attention Requ..

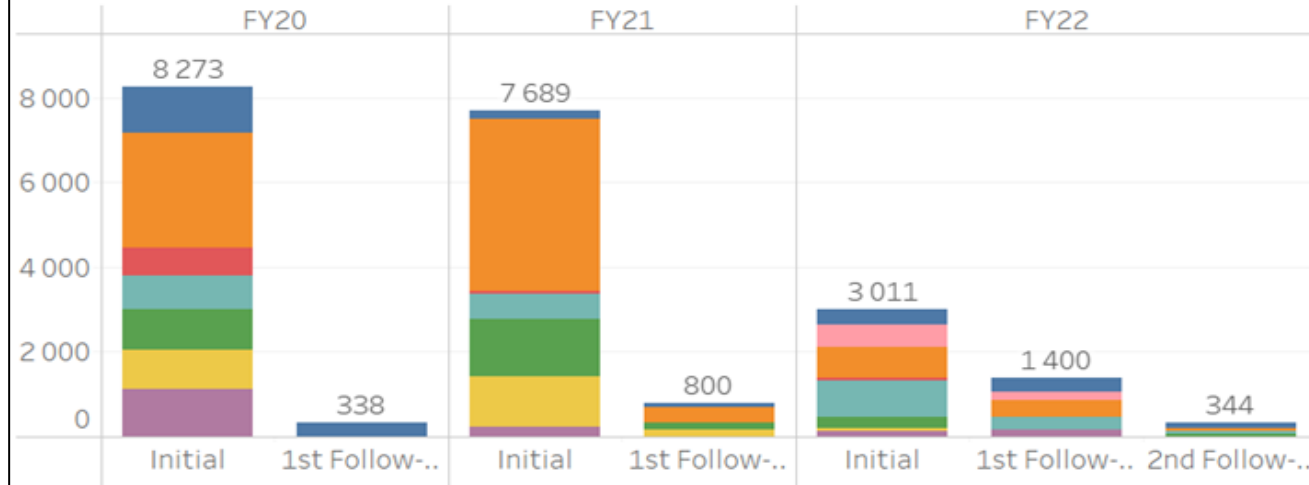
© 2022 Mapbox © OpenStreetMap



Overall Progress Summary

Geo View 7 Priorities + Atlantis

Annual Completed Hectares: 7 Priorities + Atlantis



Sub Catchment

- Atlantis
- Drakenstein
- Du Toits
- Elandskloof
- Olifants
- Upper Berg
- Upper Riviersonderend
- Wolwekloof

Table View

- ☒ Implementer
- ☐ Subcatchment

Annual Completed Actuals by Implementer: 7 Priorities + Atlantis

		FY20		FY21		FY22		Grand Total	
		Budget	Ha	Budget	Ha	Budget	Ha	Budget	Ha
Initial	CapeNature	R1.5M	2 048					R1.5M	2 048
	CCT					R2.1M	1 301	R2.1M	1 301
	TNC	R6.6M	4 031	R9.5M	5 962	R3.6M	1 254	R19.8M	11 248
	WoF-HAT		1 577	R0.3M	1 001		325	R0.3M	2 903
	WWF	R1.5M	617	R1.4M	726	R0.4M	131	R3.2M	1 474
1st Follow-up	CCT	R0.1M	338			R1.0M	877	R1.1M	1 215
	TNC			R0.7M	541	R0.5M	371	R1.3M	911
	WoF-HAT				139		152		291
	WWF			R0.2M	120			R0.2M	120
2nd Follow-up	CCT					R0.1M	236	R0.1M	236
	TNC					R0.1M	49	R0.1M	49
	WoF-HAT						59		59
Grand Total		R9.7M	8 611	R12.1M	8 489	R7.9M	4 756	R29.7M	21 855



Selection and Training of Teams

- Local Communities
- Must meet DFFE requirements in terms of Male/Females; Youth; Disability targets
- High Altitude teams receive specialized Rope Access training in addition to standard contractor training
- Internal Training:
 - Induction to the Nature Reserve
 - Do's and Don'ts
 - Environmental Awareness
 - Clearing methods
 - Fire awareness
 - OHS
 - Camping (set up and rules)
 - Communication (Radio and Whatsapp groups)
 - Emergency Response protocols
- External / Certified training (Minimum) - **Jonkershoek Budget this year: R 53 781,17**
 - Chainsaw, Brushcutter, Herbicide
 - Health and Safety and First Aid
 - Snake Awareness



Number of Teams operating /planned

- WOF – Stellenbosch (1) Franschoek (2); Berg River Dam (4) – Camping & Walk-in
- CapeNature (DFFE) – Jonkershoek (3)
- TNC - Focussing on TWK, Franschoek, and Wemmershoek areas
- WWF – Manfred Paulse (HAT) – Bergriver dam (2) moving over to Three streams (3) _Western Cape Water Supply System – FPA/ fire risk



-
- A close-up photograph of a young man with dark skin, wearing a light blue t-shirt, looking through a pair of black binoculars. The binoculars have green straps. The background is slightly blurred, showing an outdoor setting with greenery.

[illegible]

Integrated Compliance Management

Threats:

- Illegal and over harvesting, hunting
- Spread of alien vegetation and fish
- Domestic animals in the reserve
- Unlawful occupation, Anti-social behaviour, illegal access
- Illegal or irresponsible commercial and recreational activities, illegal trails, irresponsible tourism activities
- Unregulated commercial farming practises (Bee-Hives on reserve borders, dredging of rivers etc)



Compliance Plan

First Draft completed
Implementation is ongoing

Permit systems

<https://www.capenature.co.za/permits>

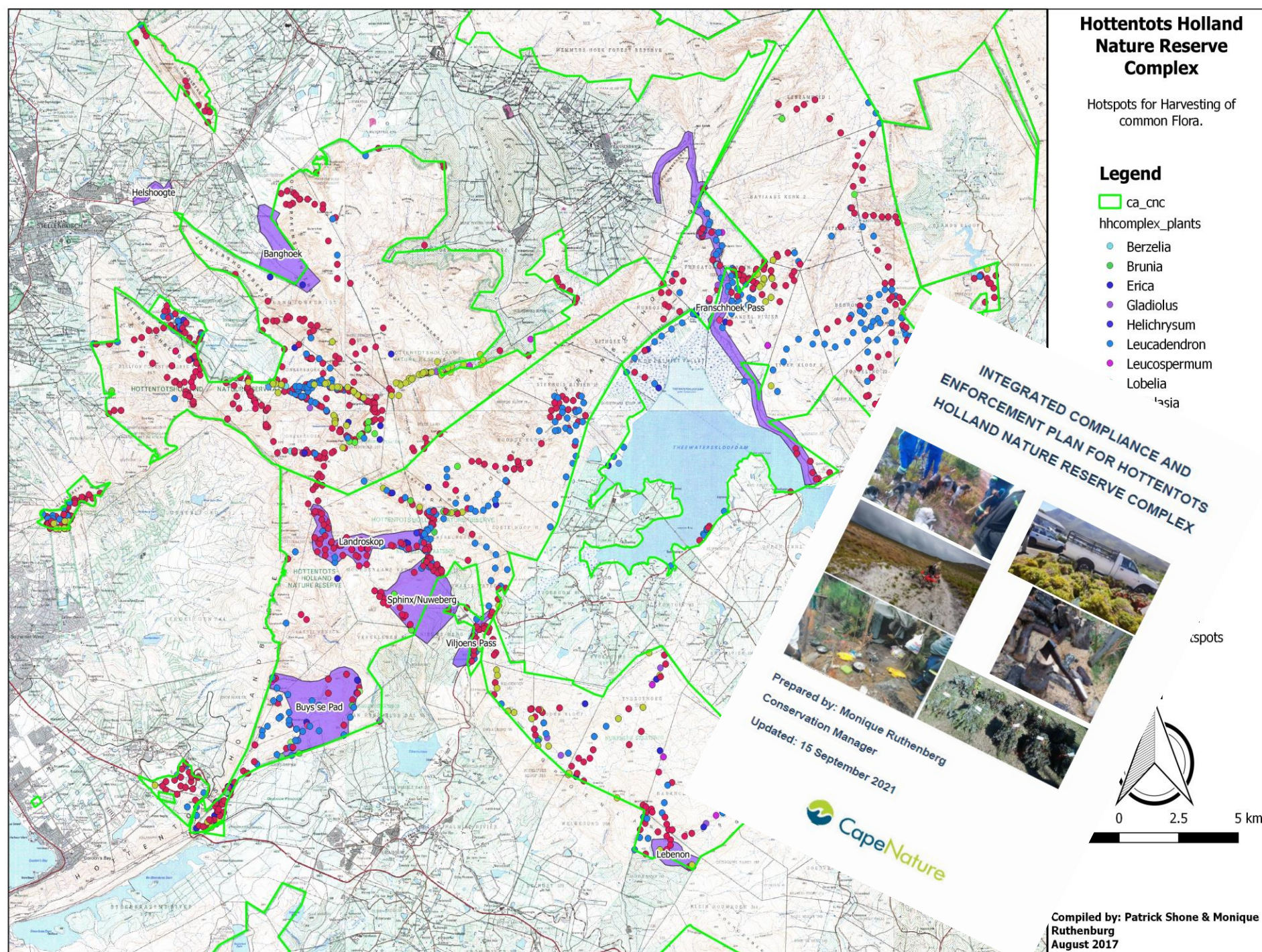
**Conservation Manager
(Off Reserve – Tinie vd Westhuizen)**

Tel 021 866 1560

Email:

mvdwesthuizen@capenature.co.za

Fauna, Flora, Hunting,
Fishing, CITES, Research
Tourism – Hiking, Cycling,
Overnight



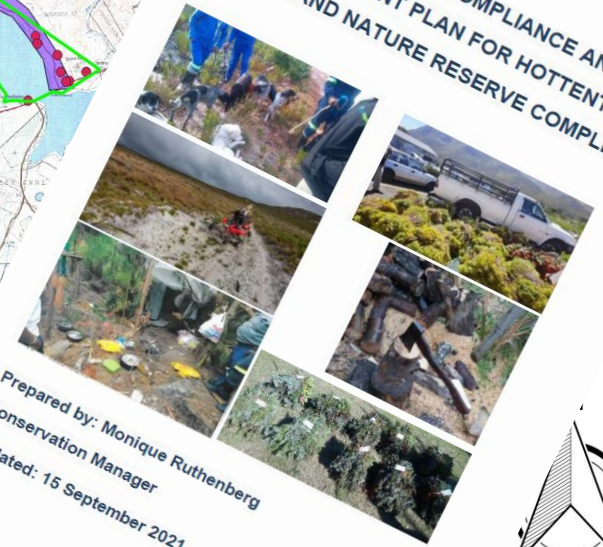
Hottentots Holland Nature Reserve Complex

Hotspots for Harvesting of common Flora.

Legend

- ca_cnc
- hhcomplex_plants
- Berzelia
- Brunia
- Erica
- Gladiolus
- Helichrysum
- Leucadendron
- Leucospermum
- Lobelia

Integrated Compliance and Enforcement Plan for Hottentots Holland Nature Reserve Complex



Prepared by: Monique Ruthenberg
Updated: 15 September 2021



Compiled by: Patrick Shone & Monique Ruthenberg
August 2017

Capacity building and Awareness

- Environmental Awareness and Capacity Plan – PAMP linked to address threats
- Stakeholder Engagement officer, Rangers, Students
- Focus is on:
 - Schools (Environmental talks, Field Excursions) – Aliens, Fire, Water, Biodiversity
 - Partner with Contour Group (Mini SASS, interpretive walks) – River Health and Biodiversity
 - IDAS Valley (Talks and Litter clean up, expand to Alien Clearing, Patrols, Environmental Awareness – Capacity Building)
 - Adult Groups – Capacity Building with Contractors & Special interest groups – Fires / Clearing



What can you do?

It's easy to complain, it is more difficult to come up with solution and to effect change

My challenge to everyone sitting here is to

- 1) Be a part of the solution
- 2) Change starts at home, start today!

