

# A brief for Thicket Rehabilitation in the Frontier Region



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA



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# Eastern Cape Restoration Programme (ECRP)

## Subtropical Thicket Restoration Project (STRP)

### Addo Baviaans Fish Restoration Project (ABFRP)

SANParks

Addo Elephant  
National Park

ECPTA

Baviaanskloof  
Nature  
Reserve

Great Fish  
River Nature  
Reserve

Other STRP  
projects

Private sector  
thicket  
restoration

### Other ECRP restoration projects:

Matiwane Forest Restoration Project

St Francis Thatch

Kouga Riparian Restoration Project

## FUNDS MANAGEMENT

### ABFDA committee

- Ensures funds are spent appropriately.

Provides oversight for management of the ABFDA.

### Development Bank of Southern Africa Drylands Fund

Provides funding for project operations from the ABF sub-account.

- Contracts parties to do fund management when and where necessary
- Ensures all key parties are satisfied with progress and with implementation of the MOA and associated business and implementation plans - supports project implementation and monitoring of progress.
- Manages the ABF sub-account in line with principles of the Drylands Account.
- Ensures annual audits of sub-account according to standard DBSA protocols.
- Ensures that carbon credits are sold at a fair market price.
- Ensures all funds emanating from carbon sales are deposited in the ABF sub-account.
- Links to other drylands initiatives and funding opportunities

## IMPLEMENTATION

### Oversight and lead implementing agency (NRM)

Contracts monitoring/implementing agents as required.

### NRM implementing agent

(Third parties with necessary skills to assist in monitoring, planting, carbon accounting and other project activities).

- Carry out monitoring and planting roles as required by ECRP committee.
- Ensure records are kept of all actions and outcomes.

### Eastern Cape Restoration Programme Committee

- Advances the common interest of the Parties in matters concerning the restoration of thicket.
- Undertakes research, monitoring and evaluation of ABFRP
- Ensures permanent records are kept.
- Ensures cooperative governance and engagement of key parties

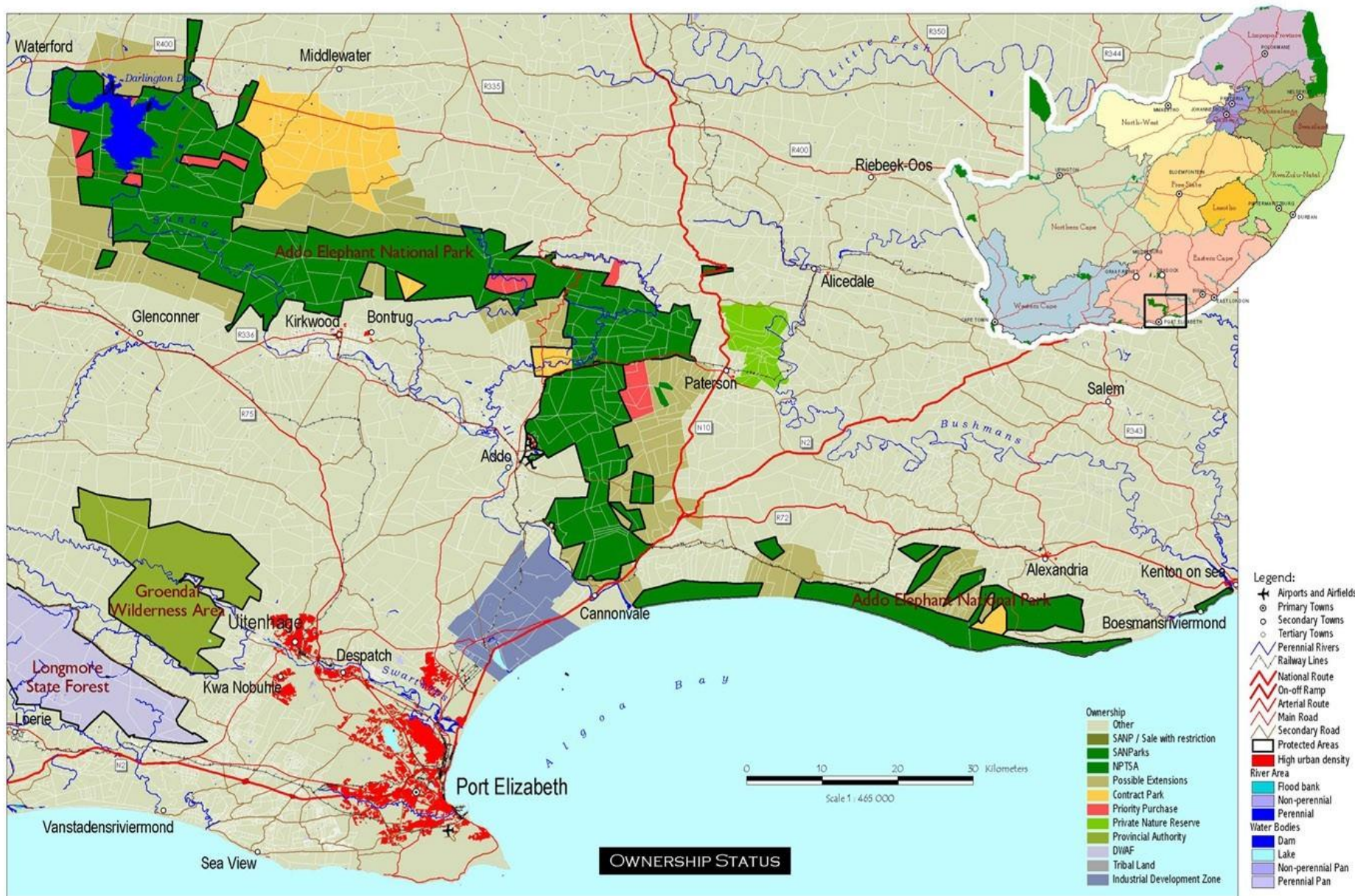
### Implementing agents (SANParks, ECPTA)

- Ensure that planted landscapes are managed in order to facilitate establishment of *P. afra* planting (in line with Protected Areas Act mandate).
- Ensure that credit for a successful project is spread amongst all stakeholders.

Management planning to ensure long-term success of restoration programme – adaptive management and risk management.

# Frontier Region - Parks situation





Vector Data from SANParks and ENPAT

Projection System: Lambert Azimuthal Equal-Area  
 Units: Meters  
 Central Meridian: 20E  
 Reference Latitude: 5N



# Addo Elephant NATIONAL PARK

Map Compiled by  
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 De Boers  
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 South Africa  
 Tel: +27 (0)21 8876188  
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 email: park@ppf.org.za  
 http://www.pearceparks.org

AD\_Own\_A3  
 25/06/2003



Pearce Parks Foundation GIS  
 has been accepted by the  
 Conservation Program  
 (ESRI & GIS)

# Guiding factors steering the restoration approach within SANParks

- **National Environmental Management: Protected Areas Act, of 2003 (Act No. 57 of 2003)** management and conservation of biodiversity, and the sustainable utilization of protected areas in a manner that would preserve the ecological character of such areas
- **Landscapes management** where *P. afra* truncheons are planted through the ABFRP are managed in such a way that their establishment into mature *P. afra* plants is expedited
- **Ensure that once the *P. afra* plants are mature**, browsing levels are managed so that the biomass of the plants is not significantly reduced from year to year
- **Consideration of Tourism product** - game areas/concessions
- **BSP/EPWP guidelines**
- **Monitoring framework and adaptive management**



# Initiation of the Thicket restoration in the Addo Elephant and Camdeboo National Parks

- Sort scientific guidance through scientific structures involved and represented on the ECTRC.
- Sourced guidance, practical approach and methodology options through fellow Project Partners and Implementers already implementing such projects ( eg: Gamtoos Irrigation Board)
- Initiated broad scale assessment mapping, classification of degraded thicket areas within the Parks and recommendation Planting plan development through (Vlok).
- Consulted CSS – GIS and Mapping work (Cobbing).
- Development of three year Business plan which was approved through Natural Resource Management(BSP)



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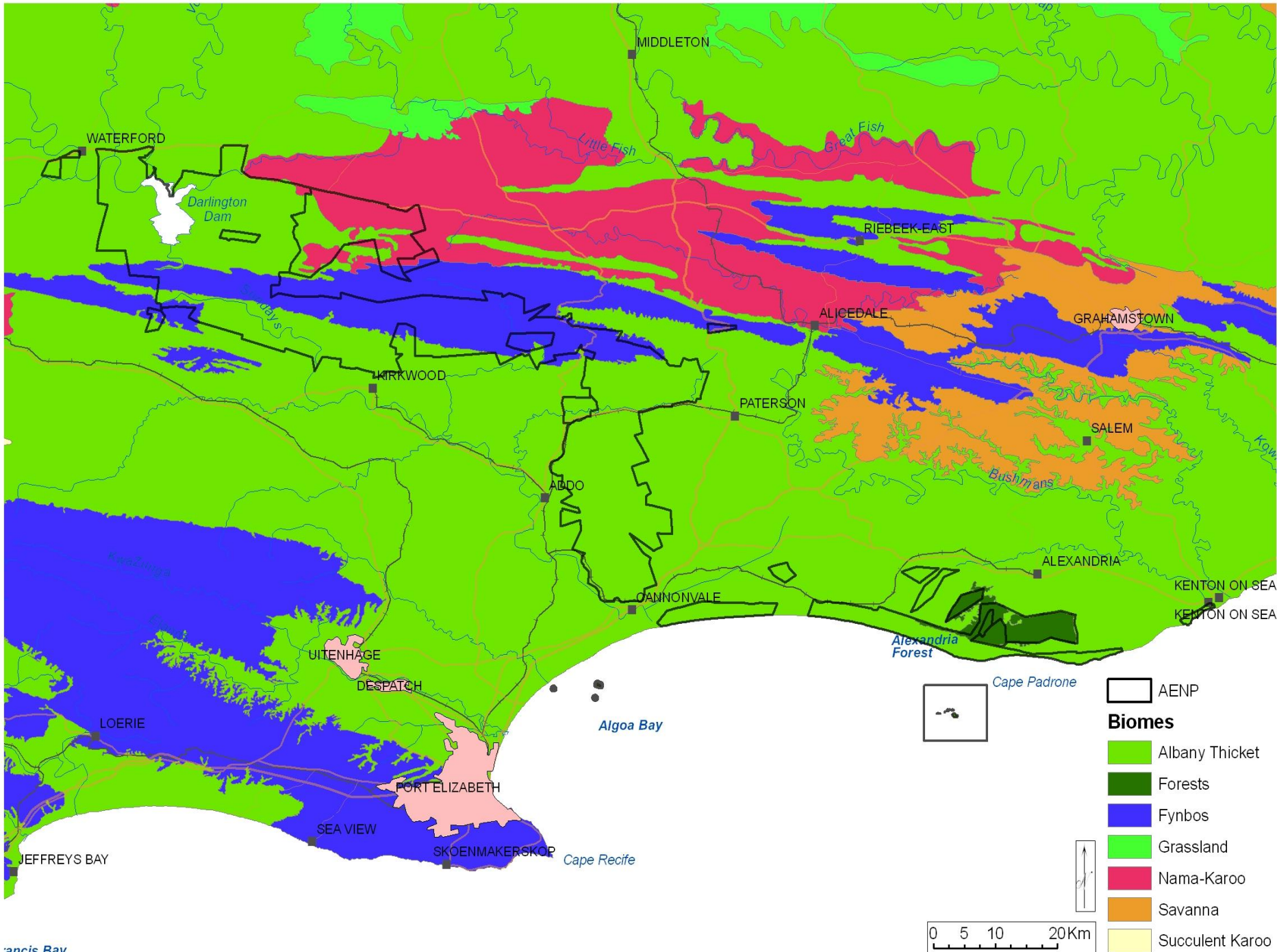




# Approach taken in creating Recommendations for Spekboom restoration in the AENP( Vlok).

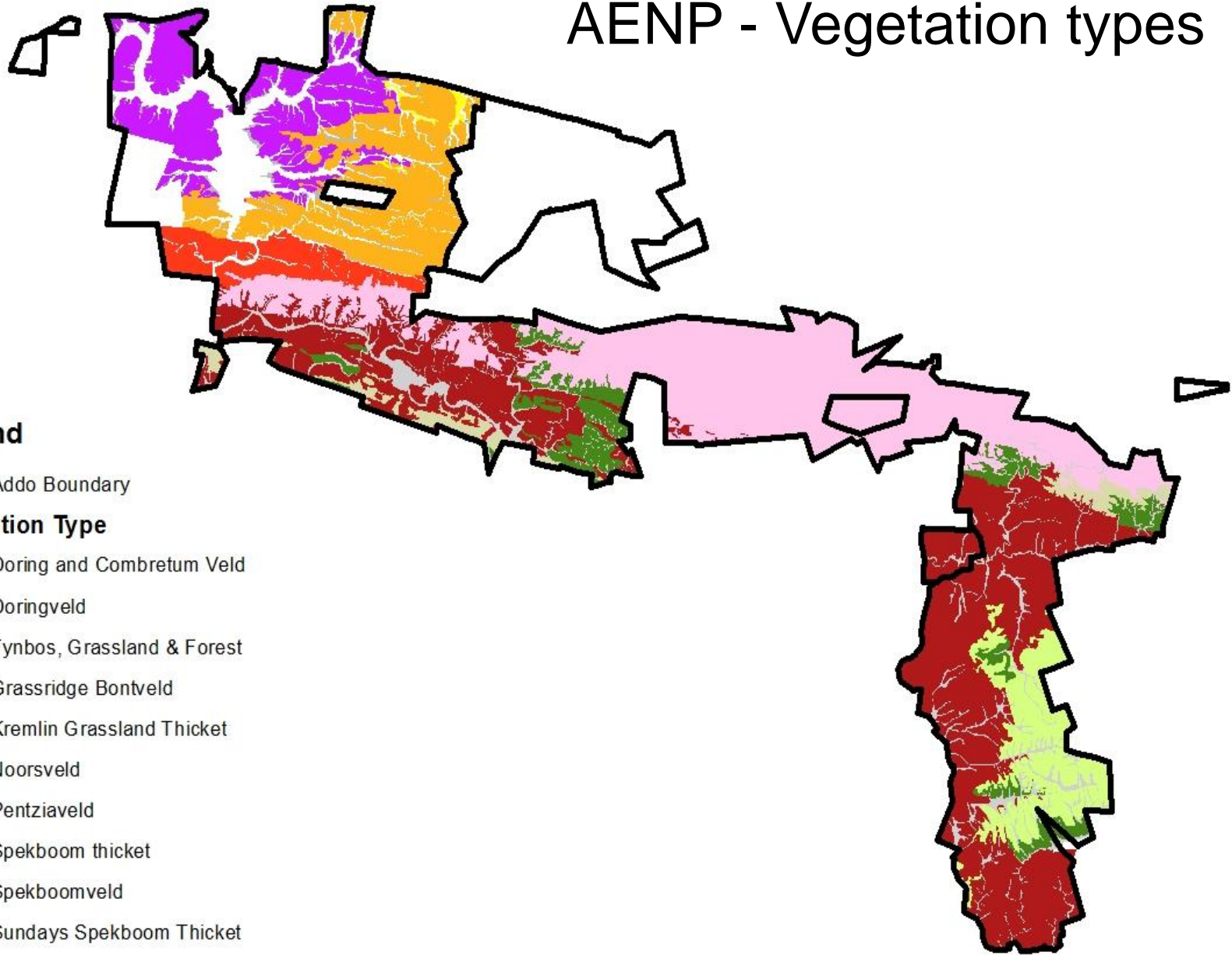
- To map the Subtropical Thicket (with a focus on Spekboom rich) vegetation types of the of the AENP at a scale of 1:15 000.
- To determine the approximate original densities of Spekboom in the different Thicket vegetation types
- To map the degree of transformation vegetation types regarding the current occurrence of Spekboom at three levels: pristine, moderately transformed and severely transformed.






ancis Bay

# AENP - Vegetation types



## Legend

 Addo Boundary

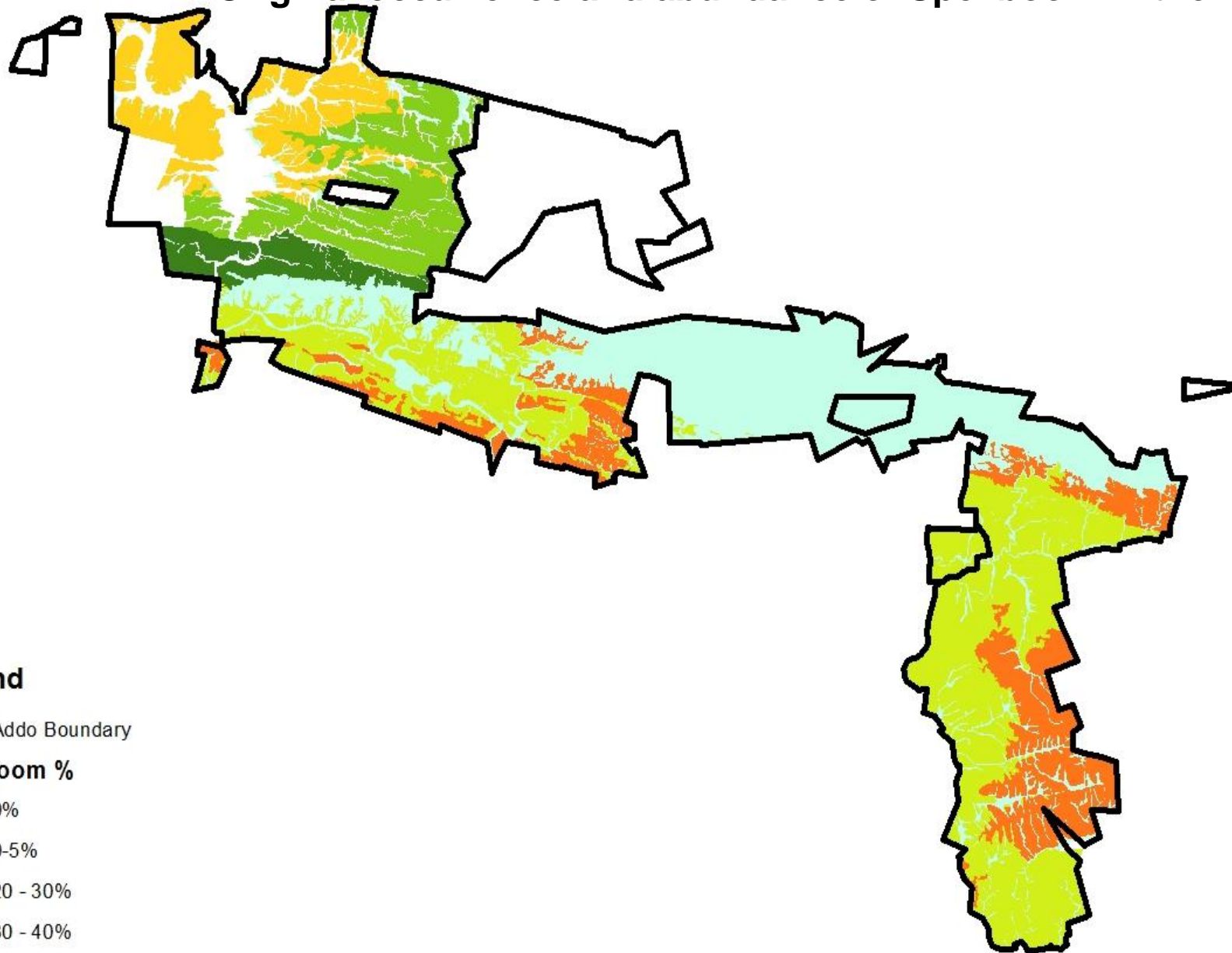
## Vegetation Type

-  Doring and Combretum Veld
-  Doringveld
-  Fynbos, Grassland & Forest
-  Grassridge Bontveld
-  Kremlin Grassland Thicket
-  Noorsveld
-  Pentziaveld
-  Spekboom thicket
-  Spekboomveld
-  Sundays Spekboom Thicket
-  Sundays Thicket
-  Water


0 2.5 5 10 15  
Kilometers



# Original occurrence and abundance of Spekboom in the AENP



## Legend

 Addo Boundary


## Spekboom %

-  0%
-  0-5%
-  20 - 30%
-  30 - 40%
-  50 - 60%
-  70 - 80%

0 2.5 5 10 15 Kilometers



**Legend**

Addo Boundary 


**Severely Transformed Area**


**% Natural Spekboom**

0% 

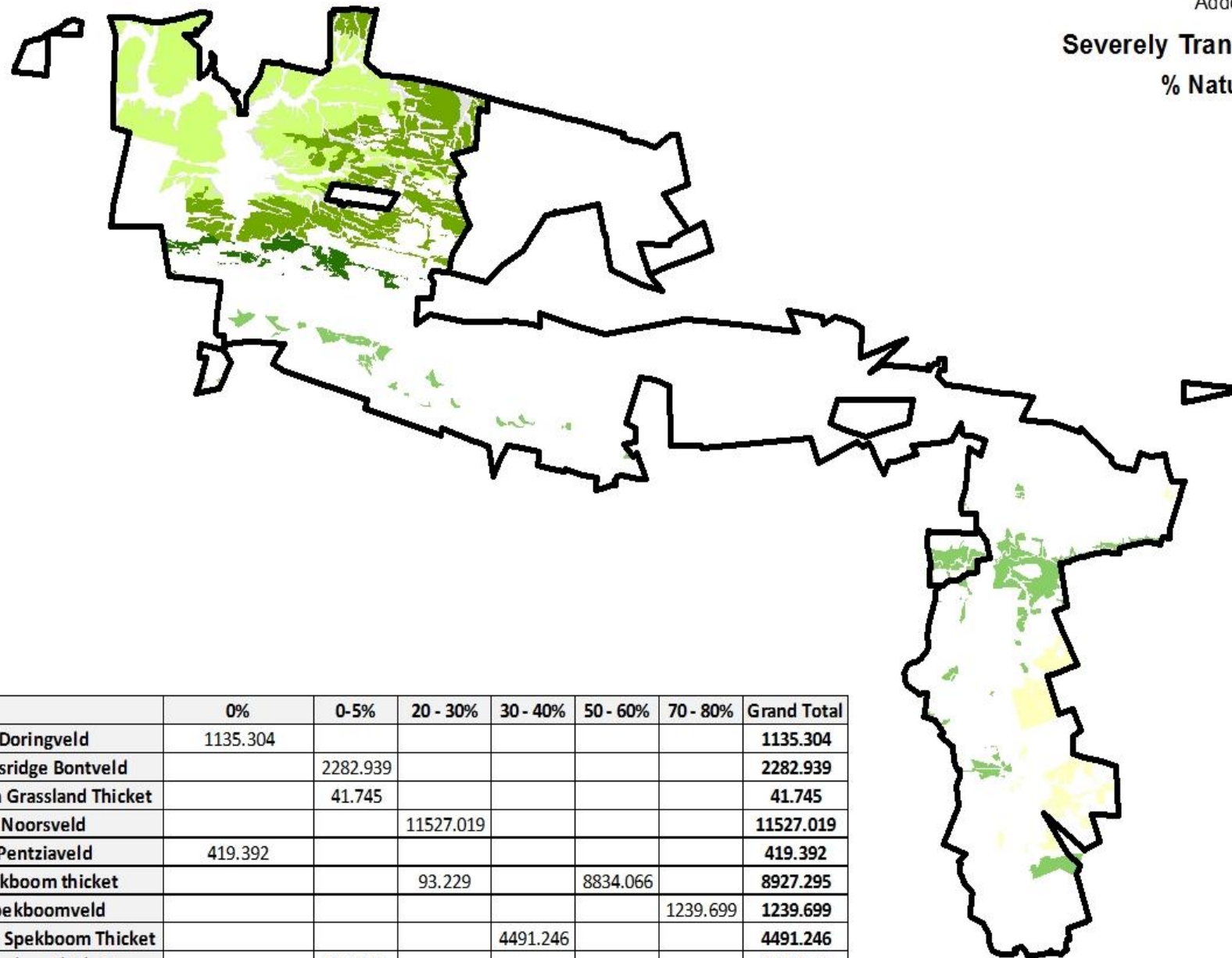
0-5% 

30% - 20% 

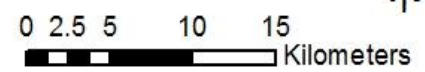
40% - 30% 

60% - 50% 

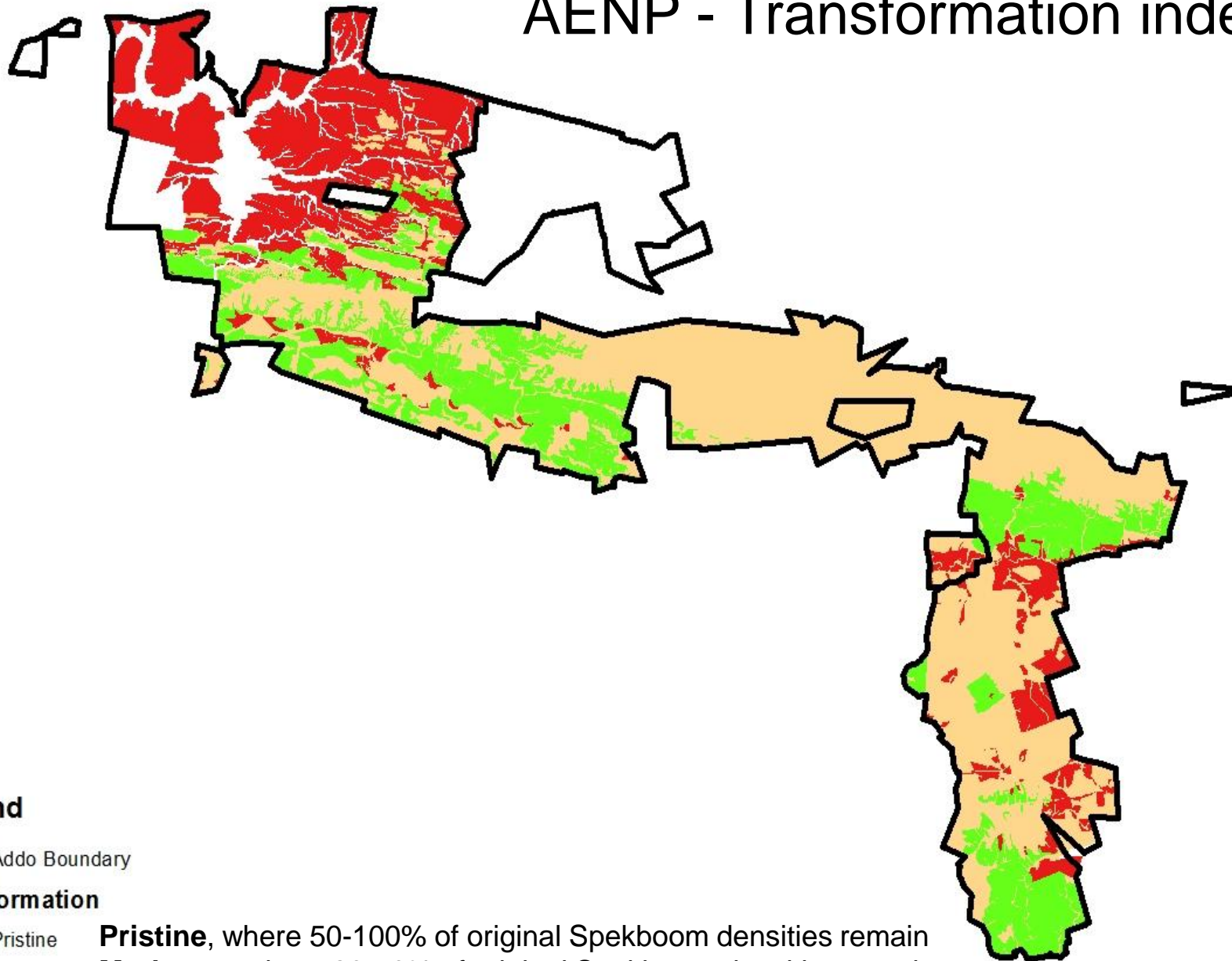
80% - 70% 




	0%	0-5%	20 - 30%	30 - 40%	50 - 60%	70 - 80%	Grand Total
Doringveld	1135.304						1135.304
Grassridge Bontveld		2282.939					2282.939
Kremlin Grassland Thicket		41.745					41.745
Noorsveld			11527.019				11527.019
Pentziaveld	419.392						419.392
Spekboom thicket			93.229		8834.066		8927.295
Spekboomveld						1239.699	1239.699
Sundays Spekboom Thicket				4491.246			4491.246
Sundays Thicket		190.953					190.953
Water	9.041						9.041
<b>Grand Total</b>	<b>1563.737</b>	<b>2515.637</b>	<b>11620.248</b>	<b>4491.246</b>	<b>8834.066</b>	<b>1239.699</b>	<b>30264.633</b>



# AENP - Transformation index




## Legend

 Addo Boundary

## Transformation

 Pristine

 Moderate

 Severe

**Pristine**, where 50-100% of original Spekboom densities remain

**Moderate**, where 20-50% of original Spekboom densities remain.

**Severe**, where <20% of original Spekboom densities remain.

0 2.5 5 10 15  
Kilometers



Near pristine example of **Sundays Spekboom Thicket** in the foreground, with **Grassridge Bontveld** along the upper slope.



**Severely transformed Sundays Spekboom Thicket with cultivated lands in the foreground and severely overgrazed veld in the background.**





# Moderately transformed **Sundays Spekboom** **Thicket**

Obscuring dangerous animals

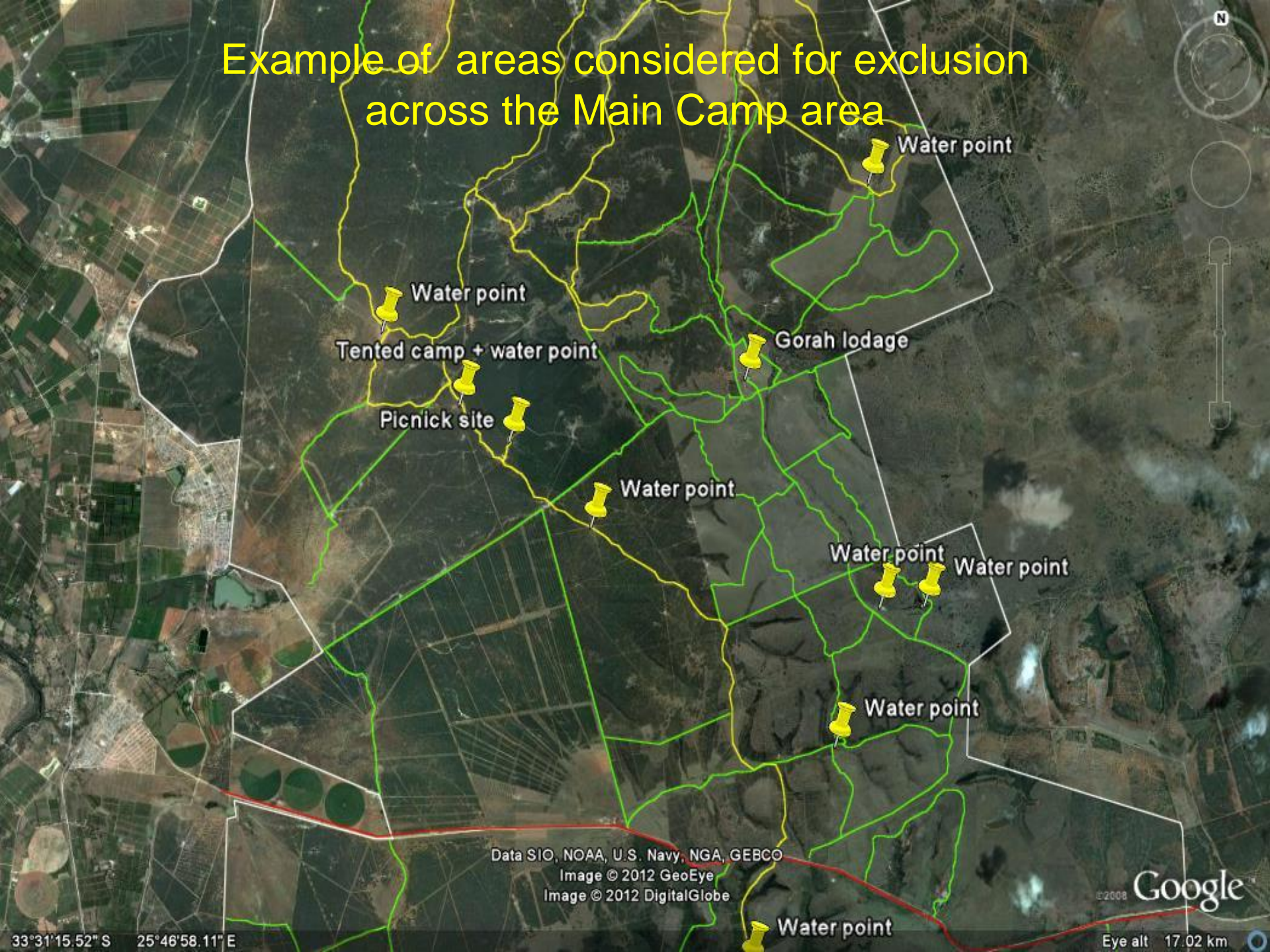


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Severely transformed **Sundays Spekboom Thicket**  
near water holes.



# Example of areas considered for exclusion across the Main Camp area



Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2012 GeoEye  
Image © 2012 DigitalGlobe

©2008 Google

Eye alt 17.02 km

33°31'15.52" S 25°46'58.11" E

# Example management Nbal ID's developed for the actual restoration reflecting exclusions



Image © 2013 DigitalGlobe

© 2013 AfriGIS (Pty) Ltd.

© 2013 Google

Google earth

Imagery Date: 1/22/2013 2003

33°26'37.96" S 25°47'59.30" E elev 535 ft

Eye alt 20992 ft

Recommended planting densities in severely transformed Thicket vegetation units of the AENP, with an assumption of 50% mortality after 1<sup>st</sup> planting.

Vegetation Unit	Sundays Spekboom Thicket	Grassridge Bontveld	Sundays Thicket & Kremlin GT
Spekboom Cover (%)	30-40%	0-5%	0-5%
Planting Densities (plants/ha)	1 500	350	None
Plant Spacing	On old lands an even density with 2 m spacing between plants, but rows at 3 m intervals.	Along outer perimeter of thicket bush-clumps. On old lands in circles of 10 m diameter with 1.5 m spacing between plants and 25 m between circles. Thus about 10 circles/ha	None.



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# Example of historical Restoration efforts and the practical application with in SANParks



# Preparation prior to restoration

- Carbon Baseline surveys - preceding planting
- Landscape Function Analysis/sp. composition sampling
- Setting up of monitoring protocol and sites



# Methodology Selection for implementation of harvesting and planting





# Challenges presented



Challenges continue...

Animal damage (Elephant, Baboons, Kudu) bridge repair, frost



# Success



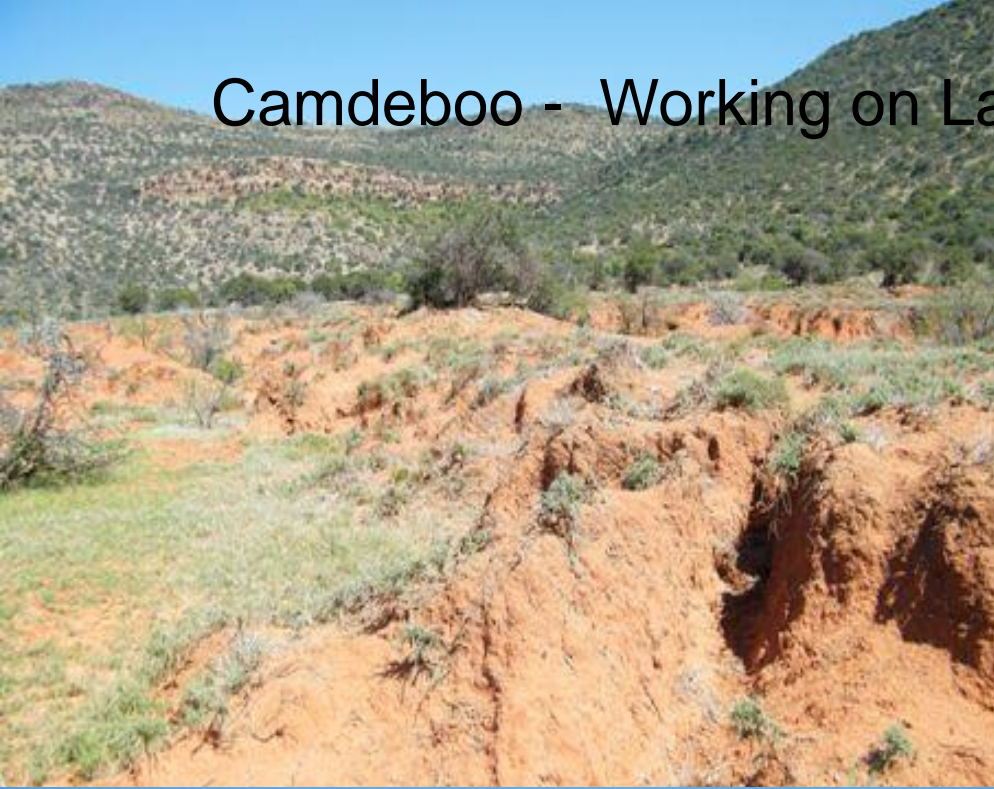
# Economy of Scale

Period	Budget	Pdys	R/pd	ha	R/ha	Carbon tons /ha	Potential \$/value
2011/12	R 3,502,790	14399	R 243	1456	R 2,406	<b>291 200</b>	<b>\$ 1 892 800</b>
2012/13	R 7,044,808	26814	R 263	2099	R 3,356	<b>419 800</b>	<b>\$ 2 728 700</b>
2013/14	R 5,090,441	16581	R 307	1428	R 3,565	xxx	xxx
Total	R 15,638,039	57794	R 271	4983	R 3,109	<b>836 600</b>	<b>\$ 4 621 500</b>

# Other restoration and rehabilitation initiatives in the Frontier Region

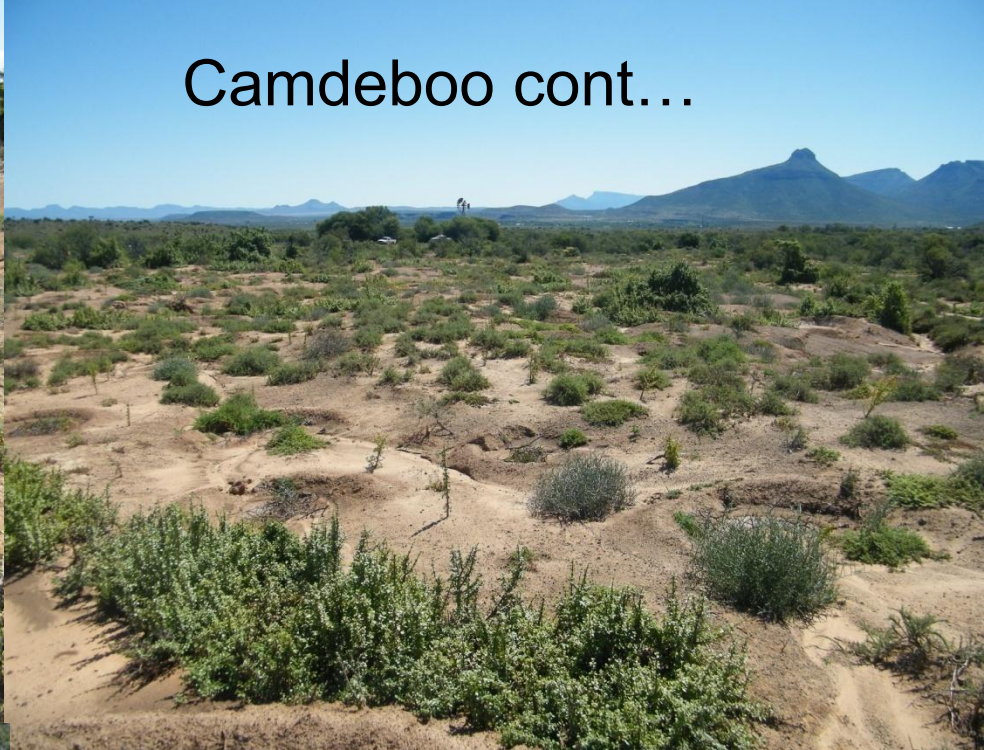


# Camdeboo - Working on Land rehabilitation efforts





Camdeboo cont...

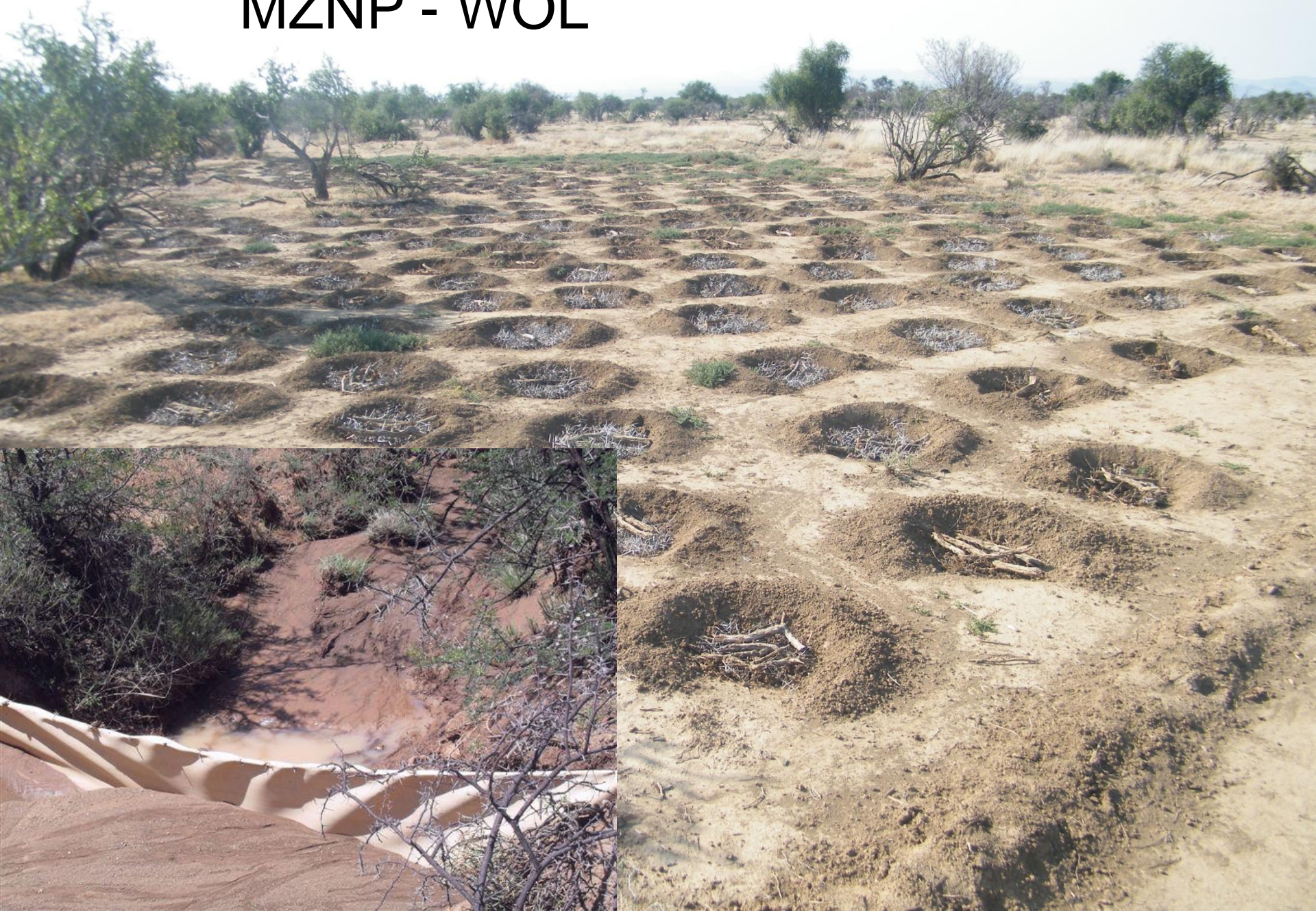


# Addo - WOL





# MZNP - WOL









Monitoring....



## Addo – Nursery

- Propagation of rehab sp.
- Sale of Spekboom, Trees, vegetables and herbs
- Sustainable entity



Thank you ...

