INDIGENOUS GARDENS

Environmental Control Plan

Erf 385, Hoekwill, George Municipal Area

Date: 14/01/2022

Compiled by: Indigenous Gardens

Client: Wilderness Fruit PTY LTD

Review: Dr C Ebersohn

Property: Erf 385, Hoekwill, Western Cape

Date review: 07/02/2022

Approval
Department of Water Affairs, Biosecurity, Competent Authority
Approved……..
Date……

STATEMENT OF INDEPENDENCE

I, John Gibbs, trading as Indigenous Gardens, in terms of section 33 of the NEMA, 1998 (Act No. 107 of 1998), as amended, hereby declare that I provide services as an independent Horticultural specialist and receive remuneration for services rendered for expressing a factual account of the baseline environment. I have no financial or other vested interest in the project. Botanical information contained in the report may not be copied without the authors consent.

TERMS OF REFERENCE

The purpose of this Invasive Species Monitoring, Control and Eradication Plan (Control Plan), in compliance with the National Environmental Management Biodiversity Act, 2004 (Act 10, of 2004) and Invasive Species Regulations (October 2014), hereinafter referred to as NEMBA; is to comply with the NEMBA Act. The timeframe for implementation is approximately Five years, unless the arborist and operator can clear-fell the extent of invasion covering the property in one year.

The report will compromise a detailed Invasive Species Control Plan and be submitted, to be approved by the DFFE; and provide the following required information:

• A map indicating the extent of the current invasion of invasive Plant Species

• A systematic clearing approach

• A control and maintenance plan for clearing and maintenance and for prioritization of high-risk areas along boundaries; including post clearing control and maintenance;

• Method for control of the individual Invasive Alien Species

Contents

1. INTRODUCTION

Section 73 of 3 of the National Environmental Act: Biodiversity Act, 2004 (Act 10 of 2004) both state that the landowner is legally responsible for the removal and control of declared invasive plant species on their properties.

Contact details of the landowner:	**Christoph Grey**
Local or district municipality:	**George Municipality**
Province:	**South Western Cape**
The land use:	**Agriculture**
Property size:	**265.87858 HA**

Declared/Alien invasive plant species are plants that are not indigenous ie. The plant species originate from outside our national borders, once in the area the alien species begin to spread and disperse on their own. Some are so aggressive that the Alien Invasive Species (AIS) are able to penetrate and take over area's that were once totally pristine with indigenous vegetation occurring naturally in the area. The negative environmental impacts with regard to AIS are identified as follow:

- Threat to scares water resource areas;
- Damage the quality of soil nutrients;
- Fire Hazard: an increase to the fire index with the increase of bio-mass , height and highly flammable resins found in some invasive species all of which leads to an increased intensity of the fire;
- Invasive plant species have an impact on the diversity of local species resulting in the loss of endemic Species;
- Establishment of a green dessert.

The author was commissioned to compile a Control Plan for the above mentioned property. Site visits were made to evaluate the density and composition of the vegetation infested with AIS.

2. HISTORY OF ERF 385 AND AIS CLEARING TO DATE

ZONING

The property is zoned Agriculture. Agriculture zone is defined in the George Integrated Zoning Scheme Bylaw:

"The draft George Integrated Zoning Scheme By-Law was adopted by the Council of George Municipality in terms of Section 12 of the Municipal Systems Act, Act 32 of 2000, at a meeting held on 24 August 2017. Final promulgation of the George Integrated Zoning Scheme By-Law was published in the Provincial Gazette of 01 September 2017":

"AGRICULTURE" Land use description: "agriculture" **means the cultivation of land for raising crops and other plants, including plantations, the keeping and breeding of animals, birds or bees, stud farming, game farming, intensive horticulture; intensive animal farming; a riding school or natural veld, and—**

(a) Includes—

(i) the harvesting, packing, cooling, storing, sorting, and packaging of agricultural produce grown on that land unit and surrounding or nearby farms;

(ii) harvesting of natural resources, which are limited to living organisms, for delivery to the market;

(iii) agricultural buildings or infrastructure that are reasonably connected with the main farming activities, including a dwelling house, agricultural worker accommodation and rooftop base telecommunication stations;

(vi) agricultural industry;

and (b) does not include aquaculture; an abattoir, a farm shop, an animal care centre, any mining activity, utility services and renewable energy structures for commercial purposes.

CURRENT USE OF ERF 385

Erf 385 is currently exercising their agricultural rights with the planting of horticultural crops.

The previous owner Andrew Walker received a pre-directive on 30/11/2016. The pre-directive was issued with regards of the alien species occurring on erf 385. Mr. Walker appointed Invasive plant solution to compile an Environmental Management Plan for the control of alien invasive vegetation species on Erf 385 Hoekwill. The Department of Environmental Affairs approved the alien control plan.

The Department issued a close out letter on 29/05/2019 stating that the control and eradication of listed AIS on Erf 385 have been completed.

With regard to the above close out letter the new property owner of Erf 385 upon inspection realised the need for further AIS clearing and disputes the fact that all AIS clearing was completed.

DFFE conducted a site visit on 02/02/2021 and advised Wilderness Fruit PTY LTD to compile a new control plan in order to complete the required timeframes for AIS control with feasible and reasonable methods for the clearing of AIS.

Wilderness Fruit PTY LTD commenced with further AIS clearing on Erf 385 as per the approved AIS control plan compiled by Invasive Plant solutions.

Wilderness Fruit PTY LTD completed the following as per the approved “ISCP” (page 13 describes the work completed to date):

1. Perform de-forestation and site clearance operation on all AIV by grubbing up roots and filling in holes.

2. De-limb and cross-cut trees

3. Gather and stack all biomass debris to in situ stock piles.

4. Prepare fire breaks around stacked biomass debris piles and perform controlled burn operation.

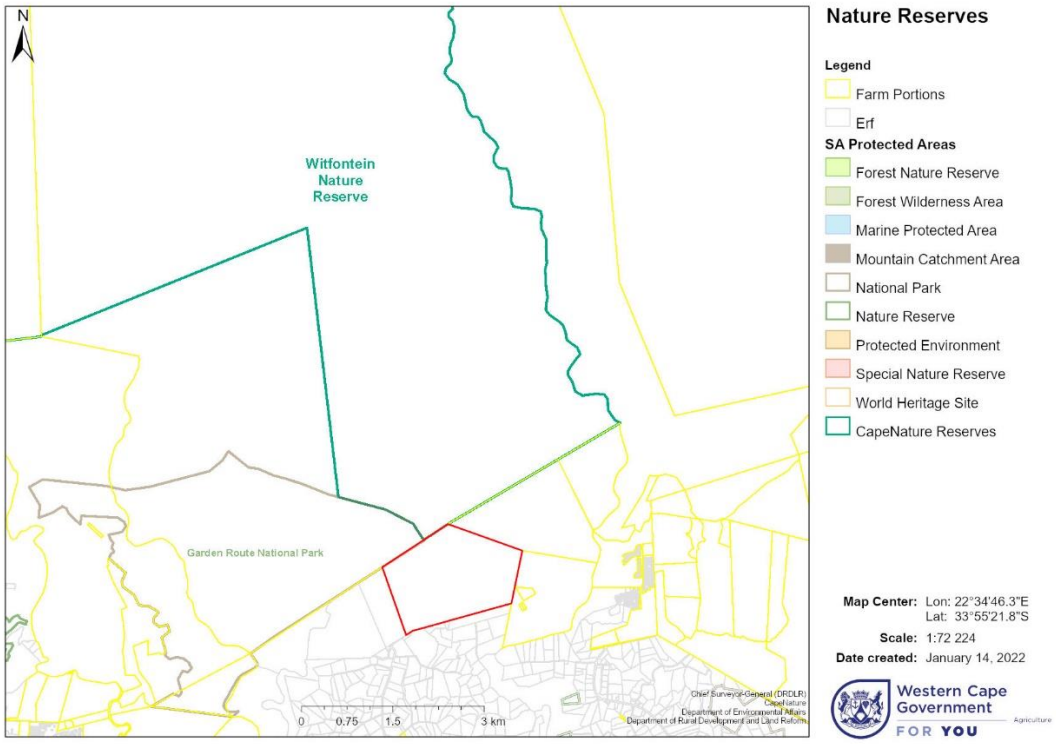
Wilderness Fruit PTY LTD joined the Southern Cape Fire Protection Agency (SCFPA) and Mr Japie Hendriks provided insight and instruction with regards to biomass removal and the construction and placement of debris piles and fire breaks on erf 385.

AIS control needs to be ongoing and reassessed as a result of re-infestation of AIS currently occurring on Erf 385.

Eco Route Environmental Consultancy has been appointed to complete a Basic Assessment Report as per the NEMA Act (Act 10107 of 1998) in order for the applicant to exercise his agricultural rights on Erf 385.

3. LOCALITY

Erf 385 is located in Hoekwill, South Western Cape and is ± 265 Hectares in extent. It boarders the Witfontein Nature Reserve and the Garden Route National Park to the North.



4. Purpose and scope of the plan

The purpose of this Invasive Species control plan in compliance with the National Environmental Management Biodiversity Act, 2004 (Act 10, of 2004) and Invasive Species Regulations (October 2014) hereinafter referred to as NEMBA.

The timeframe for implementation is 10 years (2022 to 2032).

The plan applies to the entire 265.87858 hectares of the property that is not under agricultural practises, all the terrestrial, aquatic and riparian areas. It includes invasive and alien plant species and because no invasive animals were observed during the site assessment. Surveys to detect invasive invertebrates were not conducted and should invasive invertebrate species be detected, an invertebrate specialist will be appointed and a management plan will be proposed.

5. Listed alien and invasive species present on the property

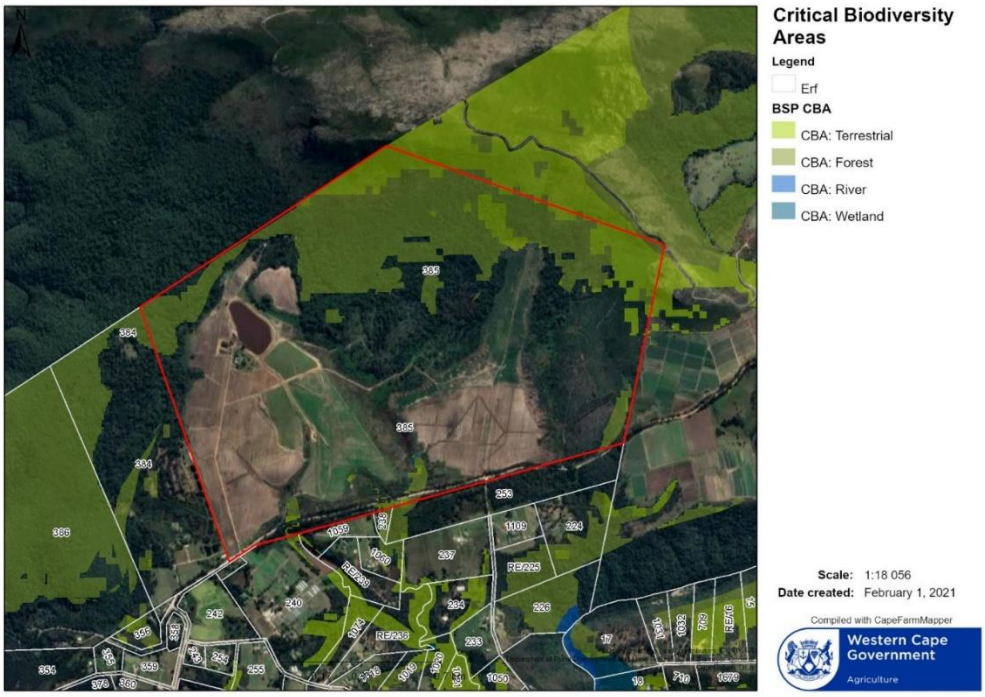
Plant Species	Common name	NEMBA Category
Acacia mearnsii	black Wattle	2
Acacia melanoxylon	blackwood	2
Acacia salinga	port jackson willow	1b
Eucalyptus camandulensis	red river gum	1b
Eucalyptus diversicolor	karri gum	2
Hakea sericea	silky hakea	1b
Nephrolepsis exalta	sword fern	1b
Paraserianthes lophanta	stinkbean	1b
Pinus pinaster	stone pine	3

Pinus radiata	radiate pine	1b
Rubus cuneifolius	bramble	1b
Senna didymobotrya	peanut butter cassia	1b
Solanum mauritianum	bugweed	1b

6. CONSERVATION STATUS OF ERF 385

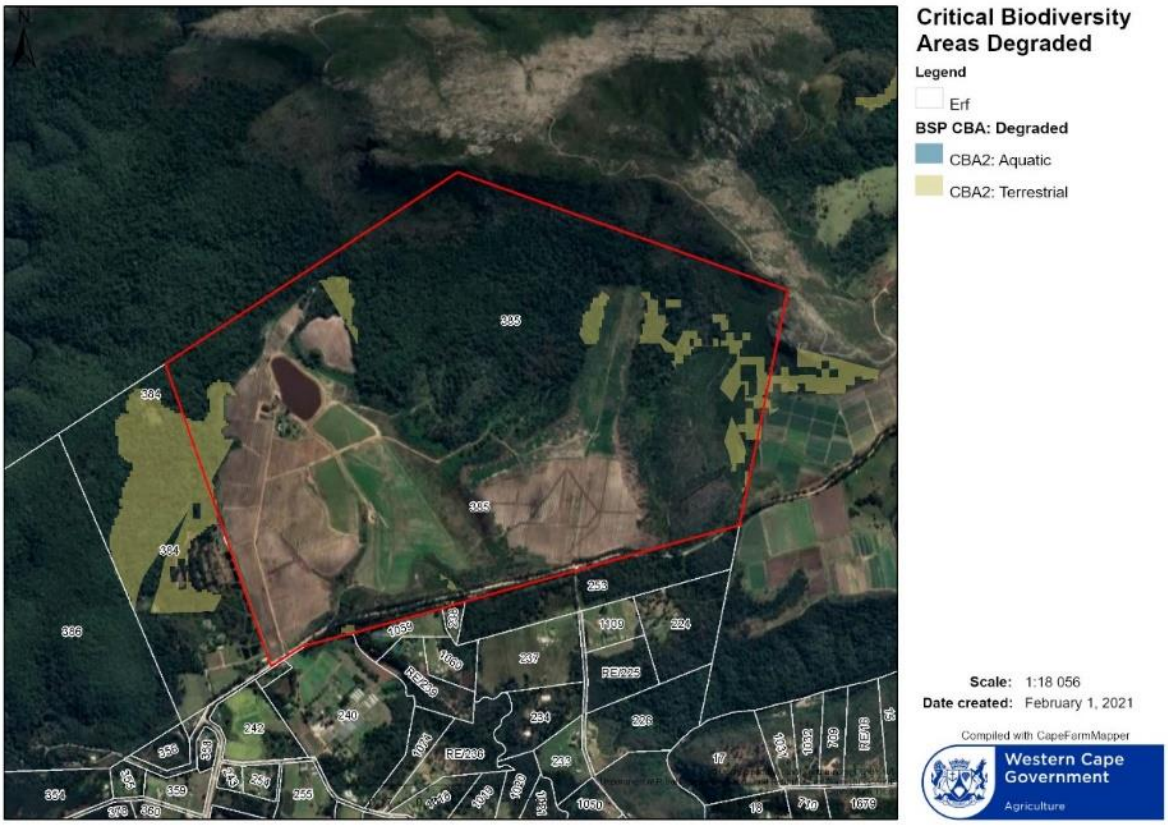
Cape Farm Mapper is a free web-based **mapping** application that gives you access to spatial databases and web services. This web tool can help with **agriculture** practices, environmental management and **farm** planning.

CRITICAL BIODIVESRITY AREAS



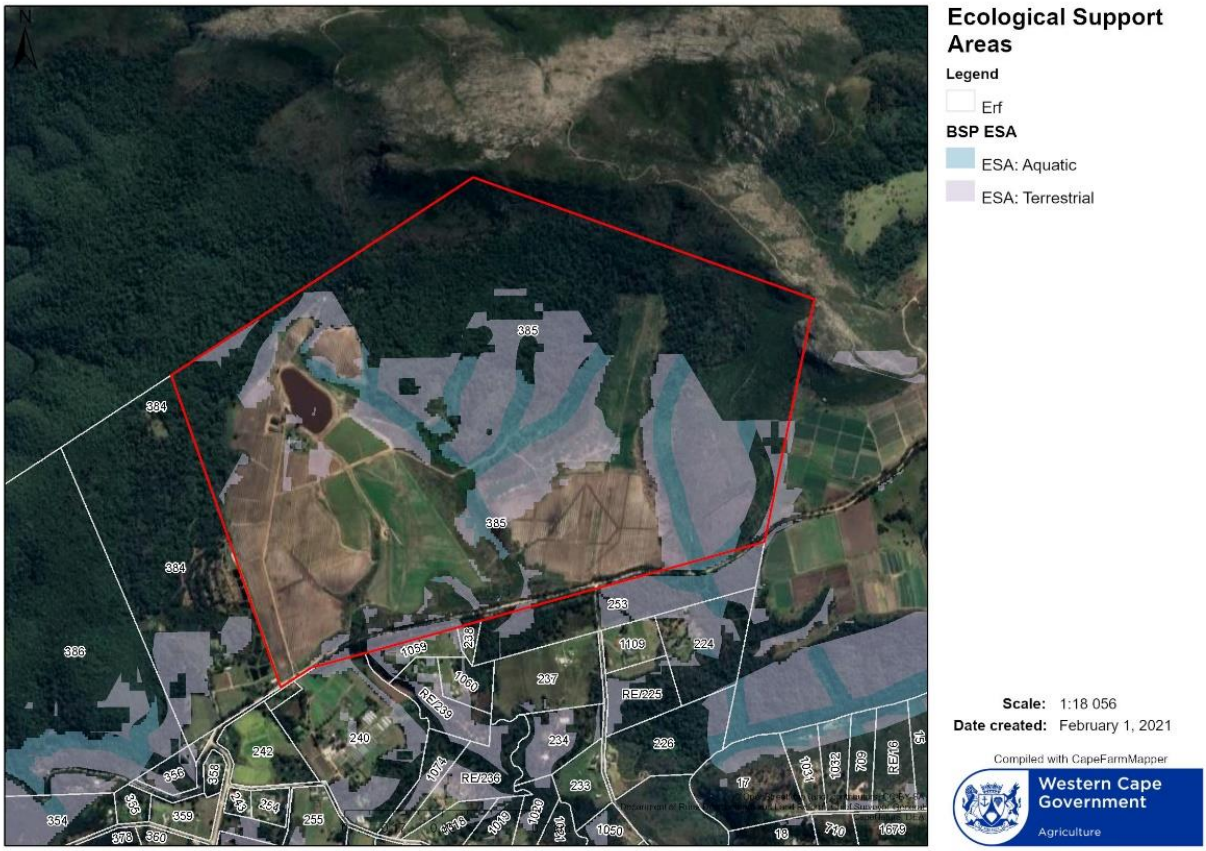
Critical Biodiversity Areas	
Category 1:	CBA: Terrestrial
Category 2:	CBA: Forest
Definition:	Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
Objective:	Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

CRITICAL BIODIVERSITY AREA DEGRADED



Critical Biodiversity Areas (Degr)	
Category 1:	CBA2: Terrestrial
Category 2:	CBA2: Forest
Definition:	Areas in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
Objective:	Maintain in a natural or near-natural state, with no further loss of habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land-uses are appropriate.

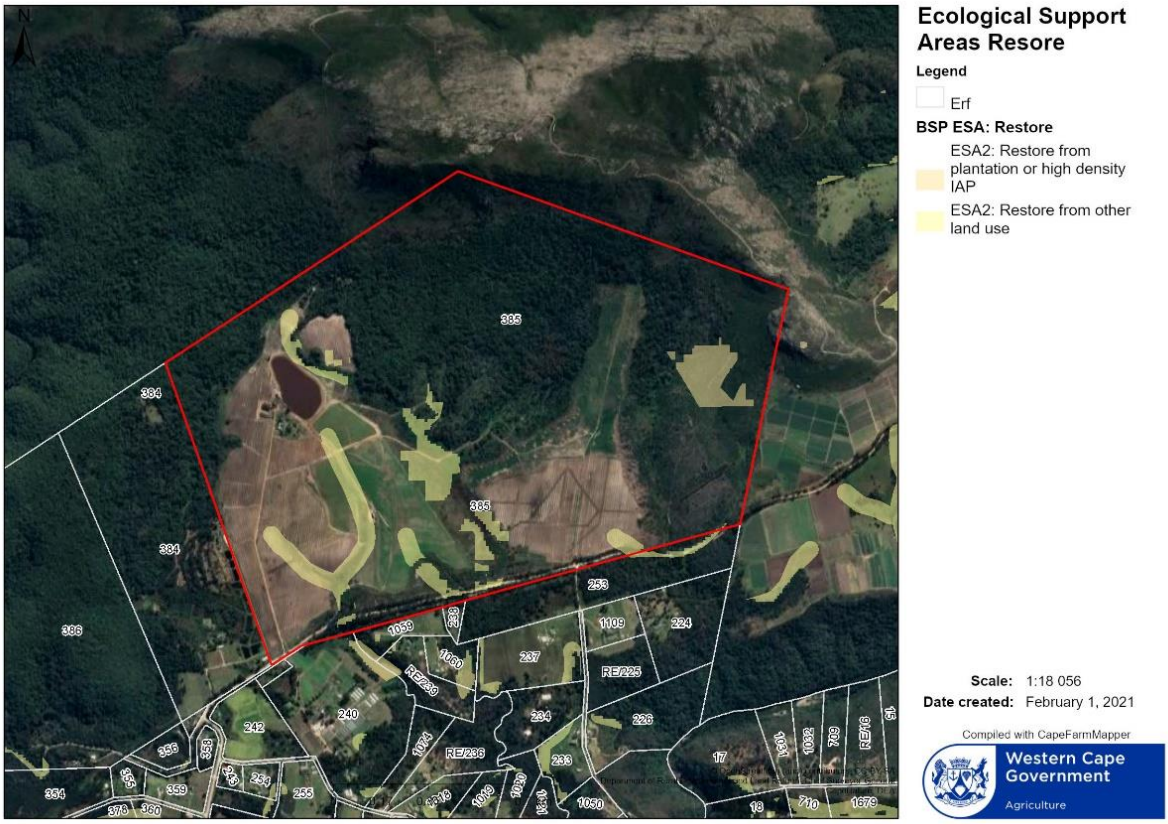
ECOLOGICAL SUPPORT AREA



Ecological Support Areas

Feature:	Climate Corridor, Critically Endangered or Endangered veg, Water Source
Category 1:	ESA: Terrestrial
Definition:	Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective:	Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.

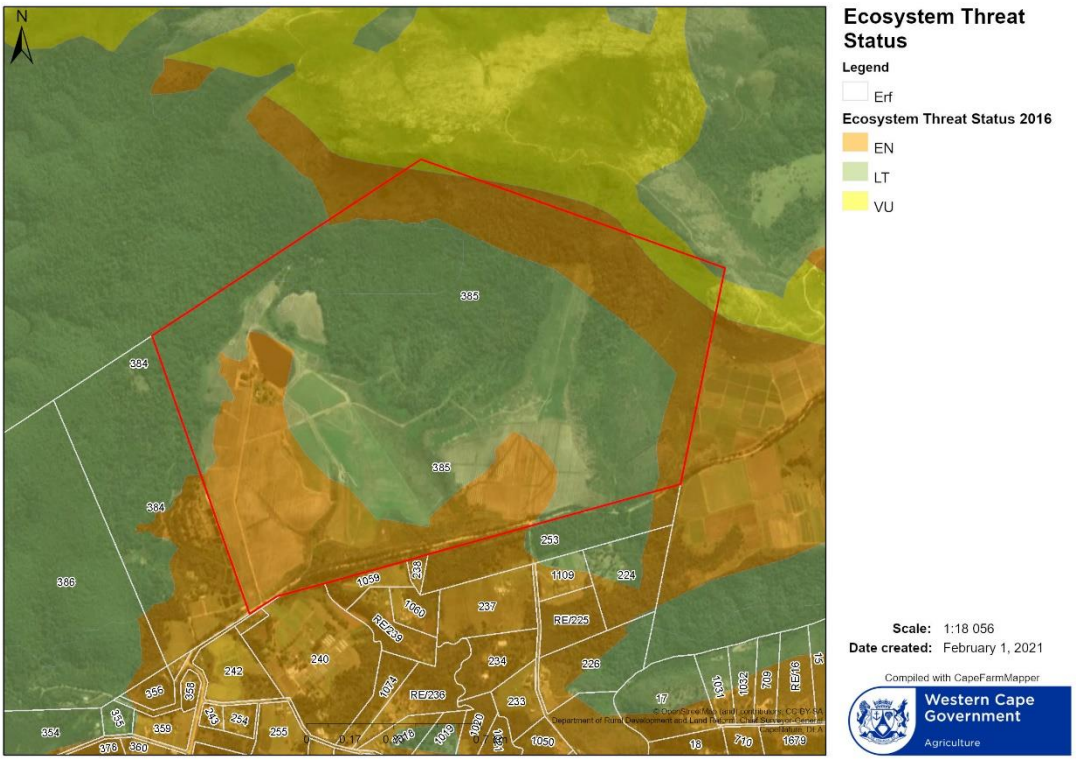
ECOLOGICAL SUPPORT AREA- RESTORE



Ecological Support Areas (Res)

Feature:	Forest, Climate Corridor, Watercourse
Category 1:	ESA2: Restore from other land use
Definition:	Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective:	Restore and/or manage to minimize impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and to allow for faunal movement.

ECOSYSTEM THREAT STATUS



Ecosystems Threat Status

Name:	Southern Afrotemperate Forest
Status 2016:	LT
Status 2014:	Least Threatened (LT)
Status 2011:	LT

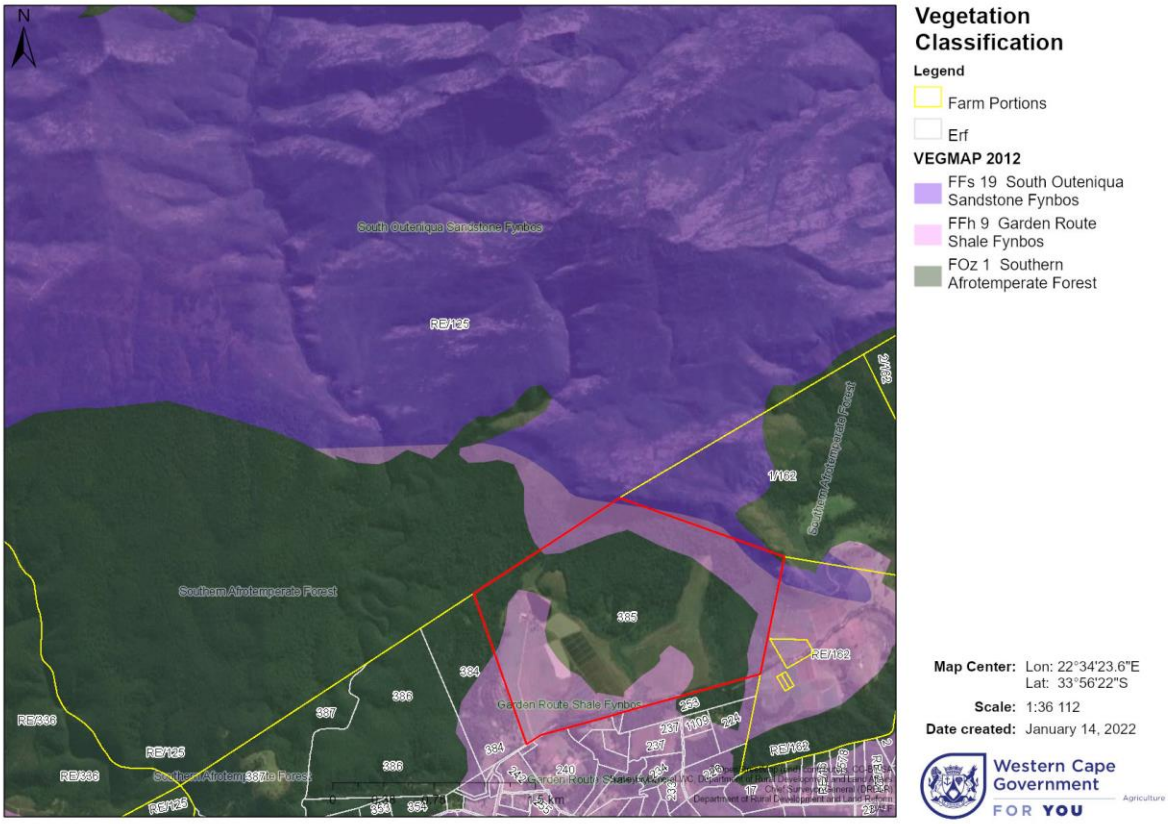
Ecosystems Threat Status

Name:	Garden Route Shale Fynbos
Status 2016:	EN

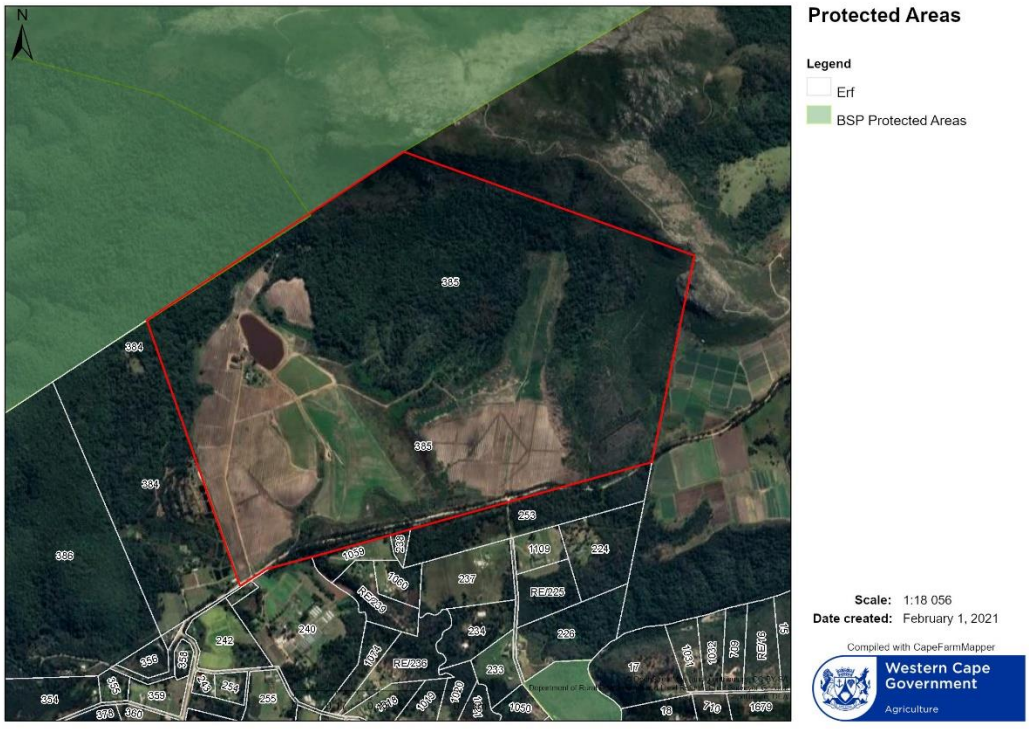
Ecosystems Threat Status

Name:	South Outeniqua Sandstone Fynbos
Status 2016:	VU

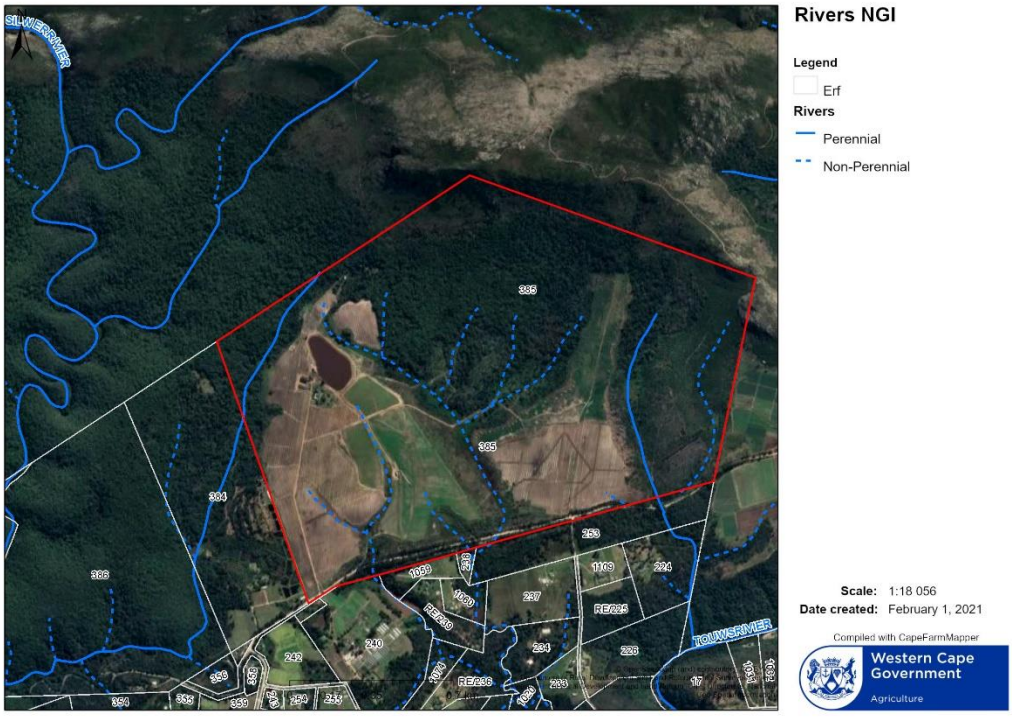
VEGETATION MAP



PROTECTED AREA



RIVERS



7. Strategic Objectives

Framework for the prevention, eradication and control of alien and listed AIS.

7.1 Prevention

Prevent the introduction and the spread of AIS according to the NEMBA listed invasive plants onto Erf 385/ or spreading of AIS to the properties bordering Erf 385

7.2 Detection and Response

Mapping of any new AIS species outbreaks or re-growth from completed AIS cleared areas, before sustainable populations are established and start spreading. This can be achieved by regular inspections of the property.

Any new category a1 species found on the property must be reported to DFFE for assistance/control and if required to update the control plan to ensure compliance.

All AIS seed bed germination, re-growth or vegetative self-propagation observed must be dealt with immediately before the species produce further seeds or off-spring.

7.3 Control Methods

Control methods will be articulated in section 8, within the report per identified sections with regards to how clearing of AIS species needs to occur on Erf 385.

7.4 Biomass control and Fire Prevention

Wilderness Fruit PTY LTD is a member of the SFCPA and their guidance and assistance will be implemented in ensuring that all the required firebreaks and appropriate methods to control biomass are adhered too. Chapter 5 of NEM:BA places a duty on all owners to be ready to fight fires by acquiring equipment and having available personnel to fight fires. It provides conditions for giving power to certain persons and officials to enter land and fight fires in an emergency.

7.5 Duty of Care

As per NEMA (Act 107 of 1998) as amended in April 2017 section 28:

"*Every person who causes has caused or may cause significant pollution, or degradation of the environment must reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimize or rectify such pollution or degradation of the environment."*

8. Alien Vegetation Clearing can be broken down into the following PHASES:

8.1 PHASE 1: Removal by cutting, excavating, burning, ringbarking, hand pulling, herbicide spraying and biological measures.

8.2 PHASE 2: The removal of all biomass by either burning, chipping or removing usable material.

8.3 PHASE 3: (Follow up) which is critical to the success of the AIS clearing to achieve the following:

- Rehabilitation of the infested area to its natural or near natural state or
- To exercise the land rights as per the agricultural rights (horticultural or agricultural purposes).

8.4 PHASE 4: Implement a long term maintenance plan in order to combat further germination of AIS as a result of:

- The seedbank has been exposed and disturbed as a result of clearing, this will result in germination of the seeds from within the AIS seedbank in situ.
- The resulting germination rate and density will far higher than the original infestation.

- There will still be further germination of seeds disbursed by wind / birds form surrounding properties that are infested with AIS

9. Types of Recommended Treatments for AIS

9.1 Felling and Herbicide Treatment

This method applies to AIS that can regenerate by coppicing (regrow from the cut stump). When felling. Always cut the AIS as horizontal and close to the ground as possible so as not to leave sharp points that could be a danger to others.

A registered herbicide with the Department of Agriculture is then applied to the cut stump.

A sticker agent may also be needed depending on the type of herbicide used plus the use of vegetable dye should be added to your herbicide mix to allow for tracking of what has and what has not been sprayed.

Herbicide when used in this method is applied via solid cone nozzle the herbicide must be applied to the cut stump as soon as possible to allow the herbicide to be absorbed by the plant via the xylum phloem canals (a plants version of veins and arteries).

These veins are found cambium layer which is the area between the bark and the wood, and this is where the herbicide must be applied. i.e the outer rim of the cut stump.

Cut material (biomass) needs to be removed / stacked depending further use or burnt / chipped. When felling AIS don't to block riparian zones with cut material.

9.2 Felling

This applies to species of invasive plants that cannot regenerate by coppicing e.g. most pine species. As with treatment 1 cut as horizontally and close to the ground as possible.

Cut material (biomass) needs to be removed / stacked depending further use or burnt / chipped. When felling AIS don't to block riparian zones with cut material.

9.3 Clearing with an Excavator

This is done when the end goal is use the land for horticultural or agricultural practises. This involves pushing the AIS into piles for burning after the first burn these piles can be consolidated into another pile and burnt again.

Should any biomass remain after the second burn, an excavator may be used to bury the remaining biomass.

The excavator is perfect for ripping out root balls so there is no need for the use of herbicide with this method. A positive for using this method is an area of soil that is free from stumps and roots, allowing for easy ripping ploughing / planting.

9.4 Ringbarking

Used on AIS in areas where it is impossible to remove the biomass or where felling would damage the surrounding indigenous habitat.

This involves simply cutting a ring half a meter up the trees trunk exposing cambium layer then painting the exposed cambium layer with approved herbicide from the Department of Agriculture.

9.5 Folio Spraying with Herbicide

This method is mainly restricted to follow up phases over areas where the seed bank has germinated on mass.

When doing this wait till the newly germinated AIS have reached a height of 1 meters as at this point of growth this will result in killing the early and late germinating seedlings.

This process will have to be repeated depending on the depth of the seedbank which correlates to the frequency of AIS germination.

9.6 Hoeing or pulling seedlings by hand.

This method should be a way of life i.e. if AIS species is observed, hand pulling is recommended where possible. It is best to pull by hand after rainfall.

This method also applies to areas that are sensitive, e.g. riparian zones where herbicide is not allowed or areas where the use of an herbicide could harm surrounding natural ecosystems or commercial crops.

10. Map of Biomes and the Associated Control Methods

Management unit	Hectares	Extent of overall invasion (%)	Comment	Priority
001	84 HA	± 8%	Very light AIS in Natural Forest area	Low
001	19 HA	±32%	High encroachment of AIS on Forest Edge	High
002	19.1HA	±41%	Most of this area has already been cleared as per the previous AIS plan. As a result of the disturbance of top soil new seedlings have emerged. As per the biodiversity report "*Currently, they are completely cleared of alien species, but the potential for re-invasion is persistent. They are currently managed by regular mowing to keep the vegetation short, and removal of alien plants.*"	High
003	5 HA	23%	The riparian is very vulnerable to AIS infestations. The riparian areas are very important ecological zones.	High
004	46.4 HA	±87%	Heavy infestation of AIS	High
Total	**173.5 HA**		**The remaining HA is under agricultural practices.**	

10.1 Southern Afrotemperate Forest Area:

Polygon 001 – Forest Area

Management unit	Hectares	Extent of overall invasion (%)	Comment	Priority
001	84 HA	± 8%	Very light AIS in Natural Forest area	Low
001	19 HA	±32%	High encroachment of AIS on Forest Edge	High
Total	**103 HA**			

As per the National Forest (Act 84 of 1998), Principles to guide decisions affecting forests:

(a) natural forests must not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits;
(b) a minimum area of each woodland type should be conserved: and
(c) forests must be developed and managed so as to-
    (i) conserve biological diversity, ecosystems and habitats;
    (ii) sustain the potential yield of their economic, social and environmental benefits

Southern Afrotemperate forest vegetation status is classed as least threatened, however this forest type is protected under the National Forests Act.

Removal of AIS within the Southern Afrotemperate forest will require a permit from the Department of Forestry, Fisheries and the Environment (DFFE).

Control Method

Within the Afro-temperate forest the following alien invasive species were identified:

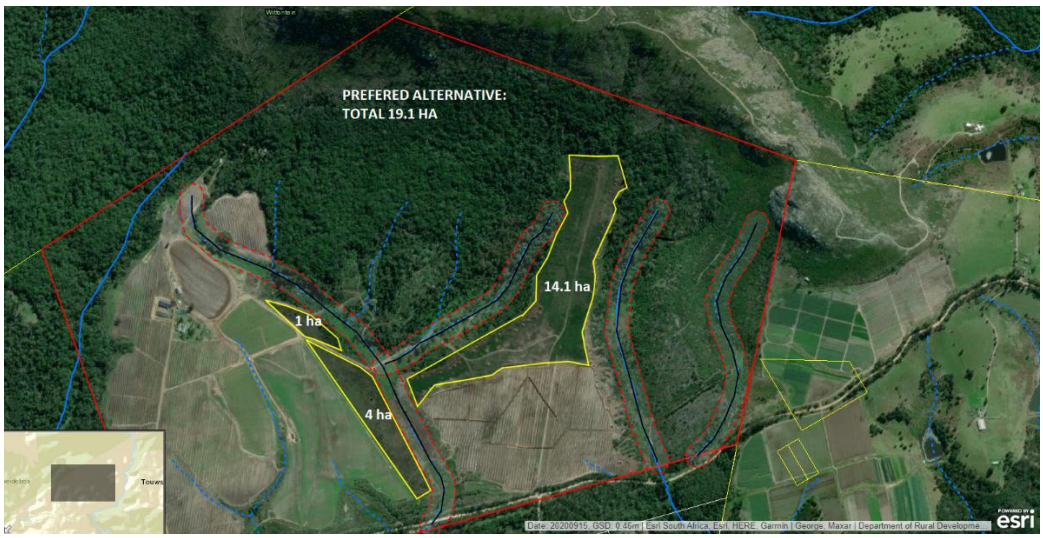
1. Blackwood trees
2. Stinkbean trees
3. Peanut Butter cassia

The following methods can be used for clearing AIS within the Southern Afrotemperate Forest:

- The Southern Afrotemperate forest /indigenous forest will have to be cleared on foot only, of all AIS.
- Blackwood tree's that can be felled without damaging the surrounding indigenous forest. This can be achieved by felling and cross-cutting then herbicide must be applied as a cut-stump treatment.
- In cases where the felling would damage the surrounding indigenous forest, it is required that the tree is ringbarked and then herbicide is applied to the exposed cambium layer. The subsequent slow death of the tree will result in reducing the canopy of the tree, which reduces the damage that a falling canopy would cause to the surrounding forest.
- Please note no heavy machinery is permitted to work in this area and all this work is to be carried out by chainsaw operators and herbicide applicators on foot.
- Should the cut material pose a fire risk this material should be removed to an open area where it can be dealt with in the appropriate manner i.e. chipping /burning ect.
- The forest margin area is small but extremely important as this is the area where AIS first crop up and then further invade deeper into the indigenous forest. This area needs to be constantly monitored for new growth of invasive alien species.
- Follow-up by hoeing or pulling young seedlings by hand.

Action	Frequency	Timeframes
Clearing: ➢ Felling ➢ Ringbarking ➢ Herbicide	Once Off	2022 -2025
Follow up: ➢ Ringbarking ➢ Hoeing	Annually	In perpetuity

10.2 Previous and Current arable Land to be cleared of AIS



Polygon -002

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Management unit	Hectares	Extent of overall invasion (%)	Comment	Priority
002	19.1HA	±41%	Most of this area has already been cleared as per the previous AIS plan. As a result of the disturbance of top soil new seedlings have emerged. As per the biodiversity report "*Currently, they are completely cleared of alien species, but the potential for re-invasion is persistent. They are currently managed by regular mowing to keep the vegetation short, and removal of alien plants.*"	High
Total	**19.1 HA**			

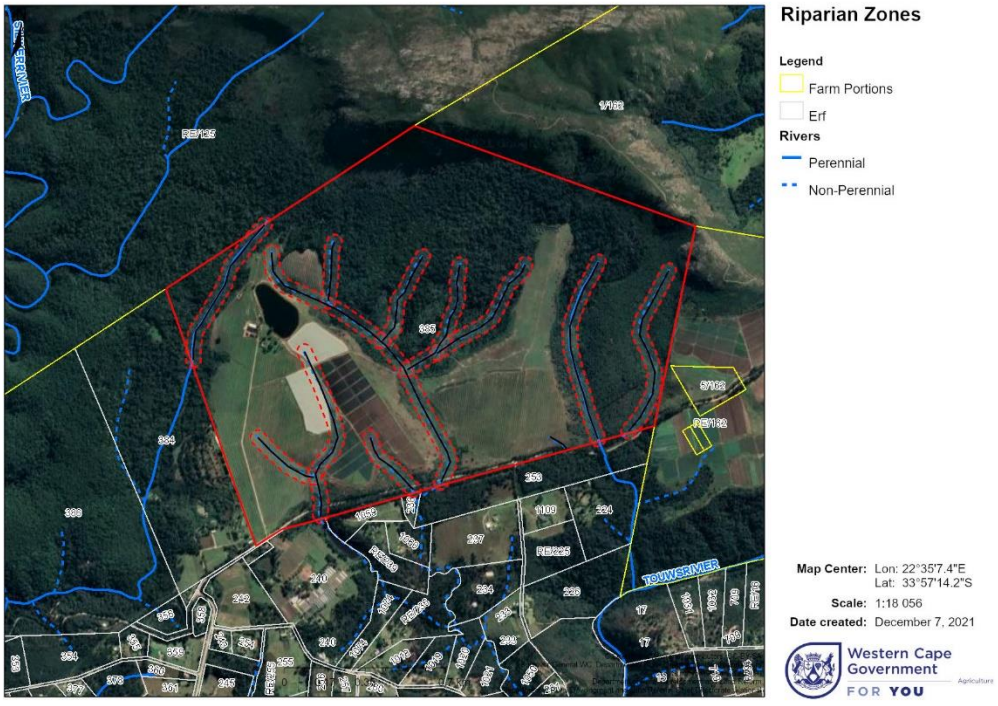
Control Method

The following methods can be used for clearing AIS:

- Clear by means of an excavator.
- Push all biomass into heaps.
- Have a controlled burn the under supervision of the fire department in conjunction with the SCFPA.
- The remaining materials can then be pushed into another heap and burnt.
- Any remaining material can then be buried using the excavator.

Action	Frequency	Timeframes
Clearing: ➢ Excavator ➢ Controlled burn of biomass heaps	Once Off	2022 -2025
Follow up: ➢ Agricultural Practises ➢ Hand pulling seedlings	Annually	In perpetuity

10.3 Riparian Zones



Polygon 003 – Riparian Areas

Management unit	Hectares	Extent of overall invasion (%)	Comment	Priority
003	5 HA	23%	The riparian is very vulnerable to AIS infestations. The riparian areas are very important ecological zones.	High
Total	**5 HA**			

A riparian zone or riparian area is the interface between land and a river or stream. Riparian is also the proper nomenclature for one of the terrestrial biomes. Plant habitats and communities along the river margins and banks are called riparian vegetation, characterized by hydrophilic plants.

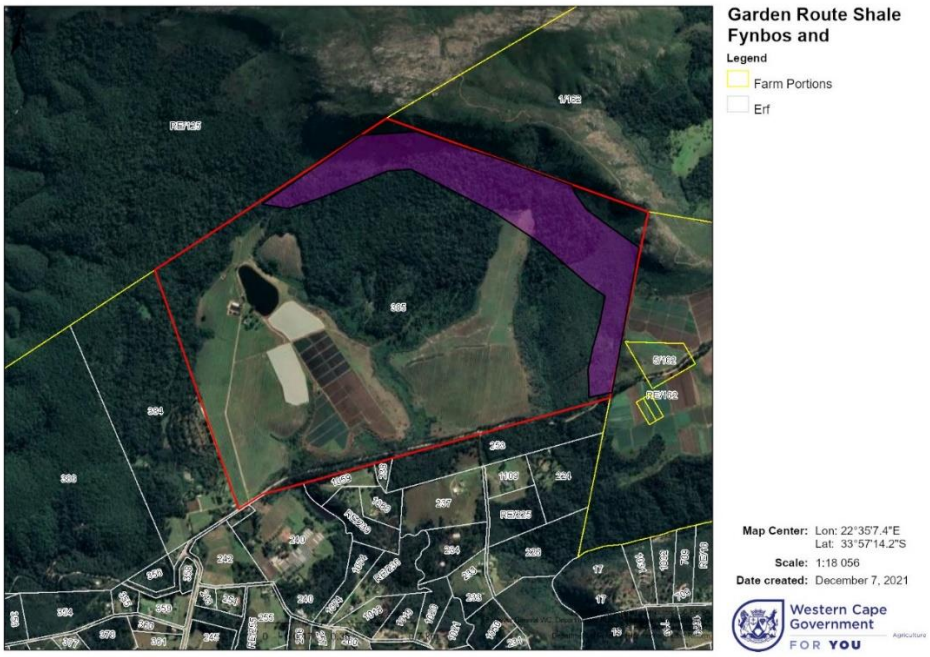
No excavators will be permitted within 32 meters of the banks of the river.

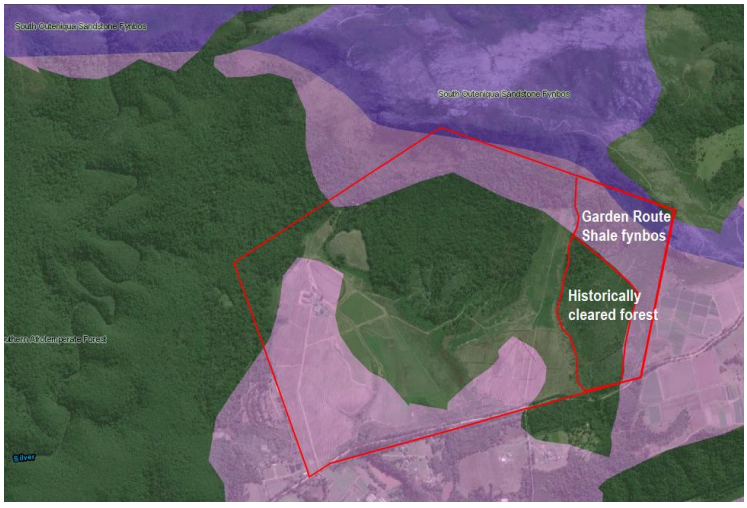
Control Method

- All of the work within the riparian zone is on foot by chainsaw operators.
- Felling or Ringbarking applies to this area.
- No biomass must be left blocking the water flow.
- All biomass must be removed by hand or a skidder with drum winch operating from outside the riparian zone.
- Biomass material can then be chipped, burnt or removed from the property.
- Follow up treatment will be by hand pulling / hoeing as folio spraying is not permitted within a riparian zone.

Action	Frequency	Timeframes
Clearing: ➢ Felling ➢ Ringbarking	Once Off	2022 -2025
Follow up: ➢ Hoeing ➢ Hand pulling seedlings	Annually	In perpetuity

10.4 Garden Route Shale Fynbos and Southern Afrotemperate Forest





Polygon 004

Management unit	Hectares	Extent of overall invasion (%)	Comment	Priority
004	46.4HA	±87%	Heavy infestation of AIS	High
Total	**46.4 HA**			

Due to the sensitivity of this area machinery is not allowed in the riparian zones.

Control Method

- Felling and Herbicide Treatment
- Excavator
- Felling
- Ringbarking
- Biomass to be removed by hand and dealt with in the appropriate manner.

Action	Frequency	Timeframes
Clearing: ➢ Excavator to only be used outside the riparian corridors ➢ Felling ➢ Ringbarking	Once Off	2022 -2025
Follow up: ➢ Hoeing ➢ Folio spray outside the riparian corridors ➢ Hand pulling seedlings	Annually	In perpetuity

11. Monitoring

Monitoring involves repeated observations or recording of data to be able to track progress and determine the efficacy of control methods. A very basic monitoring programme applies to private land.

WHAT	FREQUENCY	HOW	RESPONSE
How effective are the control methods	4-6 months after every operation	Survey cleared areas and look for regrowth	Continue with methods or adapt to be more effective
Do the infestation levels decrease	Annually	Visual, photos	Continue clearing – you are doing well
How much herbicides were used	After every operation	Herbicide records	Keep track of cost and ensure no wastage
Does the fynbos / forest recover in the cleared areas?	Annually	Photos, survey	If it does – you are doing well, if not, look at clearing methods, clearing intervals or consult an expert
How many jobs were created	After every operations	Timesheets	Send to DFFE

12. Objectives:

Objective 1: Prevention

To put measures in place to prevent the introduction of new NEMBA listed invasive plants and animals onto the property, and invasive species from spreading from the property to neighbouring properties.

12.1 Preventative actions

- No listed invasive and alien plant species will be planted
- Areas bordering onto neighbouring land will be prioritized for control to prevent existing invasive plants from spreading beyond the boundaries of the property
- No listed invader animal species will be introduced on the property
- These prevention measures will be communicated to all users of the property (where applicable)

Objective 2: Early Detection & Rapid Response (EDRR)

To put measures in place whereby new and secondary invasive species are detected early and removed before establishing sustainable populations and start spreading (Early Detection and Rapid Response)

12.2 Early Detection and Rapid Response actions

- Regularly survey the property to detect any new or emerging invader plant species
- Report category 1a species immediately to the Department of Environmental Affairs and ask for assistance with the control of the species
- Do not allow emerging or new species to produce seeds or off-spring, or start growing vegetatively, act immediately by removing them
- Update species list by including these species and indicate where on the property they were located
- Increase surveillance in the areas where the species occur to ensure the plants re-sprout or re-occur.

Objective 3: Restricted Activities and Duty of Care

To adhere to Restricted Activities and Duty of Care as determined by NEMBA & Regulations concerning invasive and alien species.

12.3 Actions NEMBA Regulation 6(a-g) Restricted Activities

- Prevent spreading or allowing the spread of, any specimen of a listed invasive species.

12.3.1 Actions Section 69 & 71 Duty of Care relating to alien species

- Take all required steps to prevent or minimise harm to biodiversity
- Notify the competent authority, in writing, of the listed invasive species occurring on the property
- Take steps to control and eradicate the listed invasive species and to prevent it from spreading; and

Objective 4: Appropriate means and method of control

To ensure the means and methods of control are appropriate to the species and environment and are implemented in such a way that it minimizes the risk to biodiversity and the environment

12.4 Actions to ensure appropriate means and control methods

- Implement measures to prevent the starting of wildfires, including spreading to neighbouring land and to be ready and able to combat fires on the farm should they occur
- Mechanical and hand tools must be best suited to the work and the size of plants being cleared and in a good working condition
- Control methods must be appropriate for the species and the environment
- Control methods are to be implemented in such a way that it prevents harm to biodiversity and the environment

Objective 5: Fire prevention and preparedness

Implement measures to prevent the starting of wildfires on the property, wildfires spreading to neighbouring land, and ensuring fire-preparedness and ability to combat fires on the property should they occur.

12.5 Actions: Fire prevention and preparedness

- Manage fuel loads by controlling invasive plants
- Prepare and maintain a fire break around the property, ensure
    - it is wide enough and long enough to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring land;
    - it does not cause soil erosion; and
    - it is reasonably free of inflammable material capable of carrying a veldfire across it
- Train staff to combat fires
- Keep adequate, appropriate and serviceable firefighting equipment.
- Join the Fire Protection Association (FPA)(Mr Grey is already a member of the SCFPA)

Objective 6: Implement Control Plan

To bring the invasive plant infestation on the property under control by 2032 by reaching the desired state.

Category	Desired state – by 2032
Category 1 b trees	All mature trees are removed; follow- up control programme in place. All the management units are in maintenance. Overall infestation does not exceed 10% of the property. (These will include seedlings and re-sprouting trees, mainly gums and poplars. Acacia species will be under control with the correct control methods and pines and hakea will be under control as they do not re-sprout following correct clearing methods.)
Category 1b herbaceous species	Less than 2%
Category 1b annual species	Less than 2%
Category 2 species	All mature trees are removed; follow- up control programme in place. All the management units are in maintenance. Overall infestation does not exceed 10% of the property. (These will include seedlings and re-sprouting trees, mainly gums. Acacia species will be under control with the correct control methods)
Category 3 species	All mature trees are removed; follow- up control programme in place. All the management units are in maintenance. Overall infestation does not exceed 10% of the property. (These will include seedlings and re-sprouting trees, pines will be under control as they do not re-sprout following correct clearing methods.)

13. Recommendations

As per the Site Sensitivity Verification report: Erf 385, Hoekwil, George, Western Cape Province PREPARED BY: Dr David Hoare:

The following recommendations are made to protect and enhance sensitive ecological features on site, which occur outside the proposed footprint areas:

- Wetlands should be treated as sensitive. A buffer zone along the margins should be maintained to protect the wetlands from direct impacts. Alien invasive species management should be implemented within these buffers, as well as within the wetlands, to protect them from this degrading process.

- Forest margins should be treated as sensitive ecological areas. A buffer zone along the margins should be maintained to protect the forest edges from direct impacts. Alien invasive species management should be implemented within these areas.
- An ongoing alien invasive management programme should continue to take place on site. This will protect sensitive habitats from degradation and could potentially be the biggest contribution to maintaining and protecting biodiversity on site and in surrounding areas.
- Practical fire break position will depend on a co-management agreement with neighbouring property owners. The SCFPA must be consulted in the preparations of fire breaks.
- Timeframes for the clearing of management unit compartments will need to be established by the appointed contractor or the applicant and submitted to DFEE for approval.
- Health and safety requirements including the use of PPE must be adhered too and is the responsibility of the appointed contractor/ applicant.

Appendix A: Herbicide Recommendations:

Herbicide requirements are focused around cut-stump treatments, ringbarking and follow-up folio spraying. Refer to below list of the various herbicides available on the market presently and a breakdown of the relevant data with regards to these herbicides.

As per the Department of Agriculture the following recommendations should be adhered too:

- Pest Control Officer (PCO) with a valid PCO licence to sign off on herbicide usage
- The PCO must ensure that the correct procedures for applying herbicide were adhered too
- A Herbicide Register must be kept, which will include the following information:

    - Herbicide trade name
    - Mixing dosage
    - Stock register of stock in hand, stock issued and stock returned
    - Date applied and area applied
    - Environmental Conditions when applied
    - The herbicide active ingredient

It would be appropriate if the appointed herbicide applicator has completed the relevant herbicide applicators course which one of the forestry companies i.e. P G Bison should be able to provide contact details of specialist with specialised training.

Recommended Herbicides

Cut-Stump and folio spraying treatments

Name	Garlon 4
Active ingredient	triclopyr
Type of formulation	soluble liquid
Gram per active ingredient	360g per lt
Dosage	4 percent mix
Time of application	after cutting
Remarks	cut stump treatment and folio spraying

Ringbarking

Name	Access
Active ingredient	picloram
Type of formulation	soluble liquid
Gram per active ingredient	240g per lt
Dosage	60mil per lt water
Time of application	cambium layer application
Remarks	ringbarking

Appendix B: Safety, Health and Environment (SHE)

It is the landowner's responsibility to ensure a safe working environment and that the teams working on the property adhere to the minimum safety requirements. This can be achieved by sourcing appropriately trained and experienced teams. The principle of "leave no trace" applies.

The landowner should liaise with the contractor to ensure the following minimum SHE requirements are adhered to:

Toilet facilities

- The contractor is responsible for providing a mobile toilet on site for the duration of the work
- Clean water must be made available in suitable containers for drinking and mixing herbicides
- The landowner should allow the contractor to fill containers on the farm

Team's skills requirements

- Chainsaw operators in possession of valid certificates
- Herbicide applicators certified

Work methods and equipment

- Equipment must be suitable for the work and in good working condition
- Adhere to work methods stipulated in the site specification

Herbicides

- Refer Appendix B

Vehicle and driver

- The driver must be in possession of a valid PrDP
- The vehicle must be road worthy

- Tools must be transported in the trailer, separately from the workers

Safety precautions

- Certified SHE Rep on site
- Certified Safety Office on site
- The SHE Rep must conduct daily safety talks
- The first aid kit must be on site

COID

- The contractor must be in possession and present proof of a valid certificate of good standing with the Compensation Commissioner
- Any incidents must be reported to the landowner
- An indemnity form must be signed stating that the contractors excepts full liability for any COID related matters and that the landowner will not be held liable should the contractor not comply with minimum standards
- The contractor deals with COID cases and not the landowner
- Near misses, incidents and accident register must be kept

Insurance

- The contractor must be appropriately insured for the vehicle and equipment
- The contractor must provide proof of third party and liability insurance
- Sign an agreement whereby the contractor accepts liability for damages in case of negligence

Storage of fuel and herbicides

- Fuel and herbicides must be left in a shady area, away from the resting/eating area
- The area must be clearly marked with bunting
- The bunting must be removed on completion of the job
- Herbicide mixing and refuelling must be conducted on a spill blanket
- A spade must be on site to cover any accidental spillage
- A serviced and functional fire extinguisher must be kept at the fuel refilling area

Preventing fires

- No smoking while working, assign a designated smoking area
- Remove cigarette butts
- No smoking during windy conditions
- Keep 1 fire beater for every team member within reach of the workers
- No chainsaw work during Code Red days - Fire Danger Indices (FDIs) obtainable from FPA

Correct PPE are being worn at all times

Item	Supervisor	Machine operator	General workers SHE Rep; 1st Aid Rep; Driver	Specialized herbicide applicator
Sunhat (follow up operations)	✓	✓	✓	✓
Hard hat (when chainsaws are being used)	✓	✓	✓	✓

Hard hat with visor and certified earmuffs (SABS or EU),	x	✓	x	x
T-shirt	✓	✓	✓	✓
Conti suit	✓	✓	✓	✓
FESA approved chainsaw pants (eleven layers) with broad belt or braces	x	✓	x	x
Whistle	✓	✓	x	x
Safety boots	✓	✓	✓	✓
Gumboots (only when working in riverine/wetland areas)	✓	✓	✓	✓
Chainsaw safety boots	x	✓	x	x
Gloves	✓	✓	✓	✓
Chainsaw operators gloves	x	✓	x	x
Safety goggles	✓	✓	✓	✓
Cape (when using a knapsack)	x	x	x	✓
Mask (when applying herbicides)	x	x	x	✓
Rubber gloves (for mixing herbicides)	x	x	x	✓
Rubber apron (for mixing herbicides)	x	x	x	✓
Rain suit (during rainy conditions)	✓	✓	✓	✓

It is recommended that the requirements are stipulated in the work specifications and the contractor accept accountability in writing.