OUTENIQUA GAME FARM

I N V A S I V E S P E C I E S C O N T R O L P L A N

In compliance with the National Environmental Management Biodiversity Act, 2004 (Act 10, of 2004)

January 2020

This plan has been compiled by Kerryn Smith for Outeniqua Game farm

Contents

1 Introduction:

Name: Outeniqua Game Farm
Address: Farm 420 and 375
OH 35
R328
Ruiterbos
6499

Map:

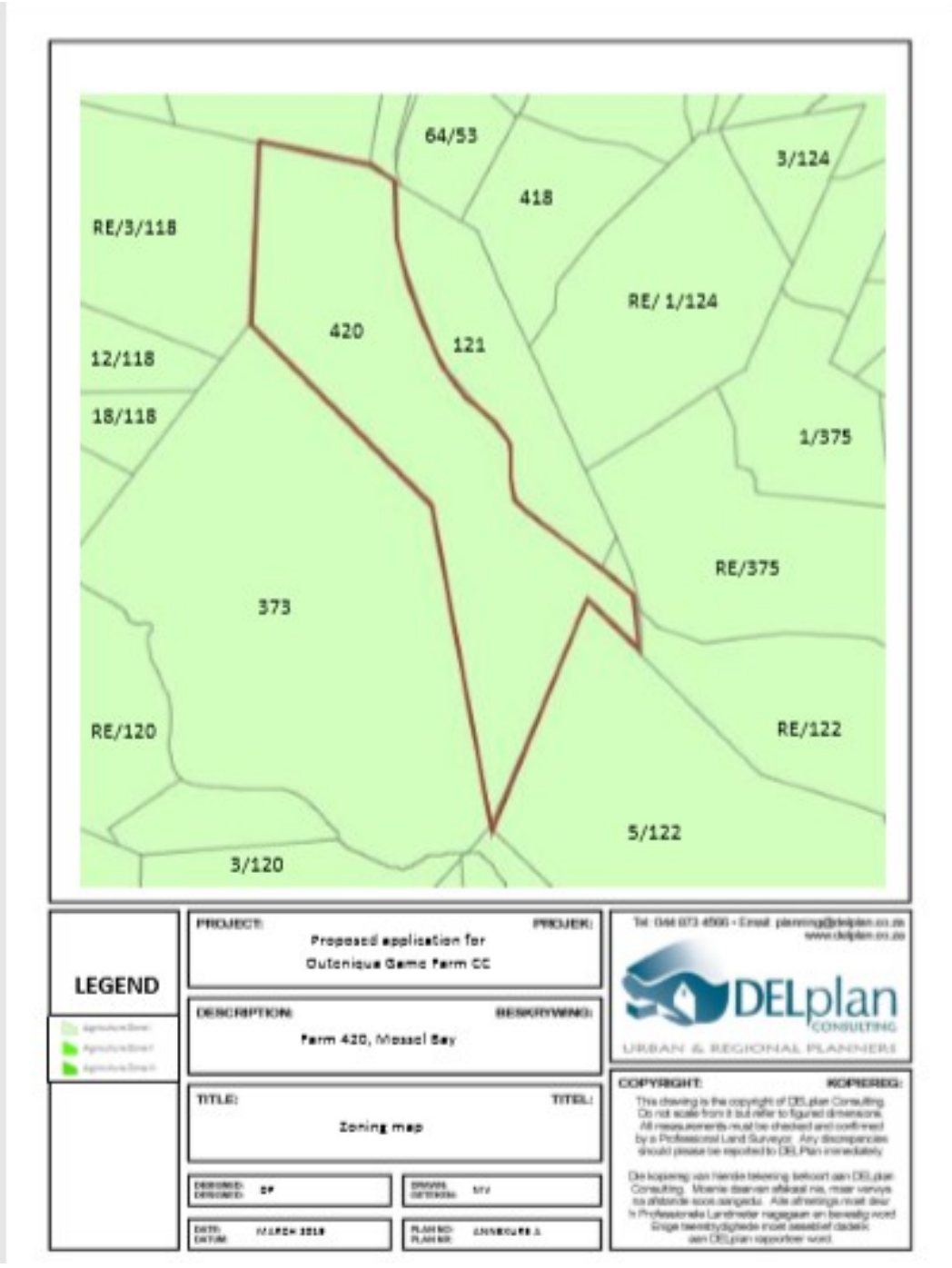


Figure 1: Zoning Map

Land Use: Agricultural

Property Size: 1278.40 Ha
Land Owner: Patric Reeves Moore
Lyndall Reeves Moore 082 401 0126
Clint Smith 082 564 6443
Kerryn Smith 082 218 9633 (Contact Person)

The Purpose of the control Plan:
To be compliant with NEMBA by bringing all invasive plants under control on the property.

Time Frame:
10 years

Desired Result:

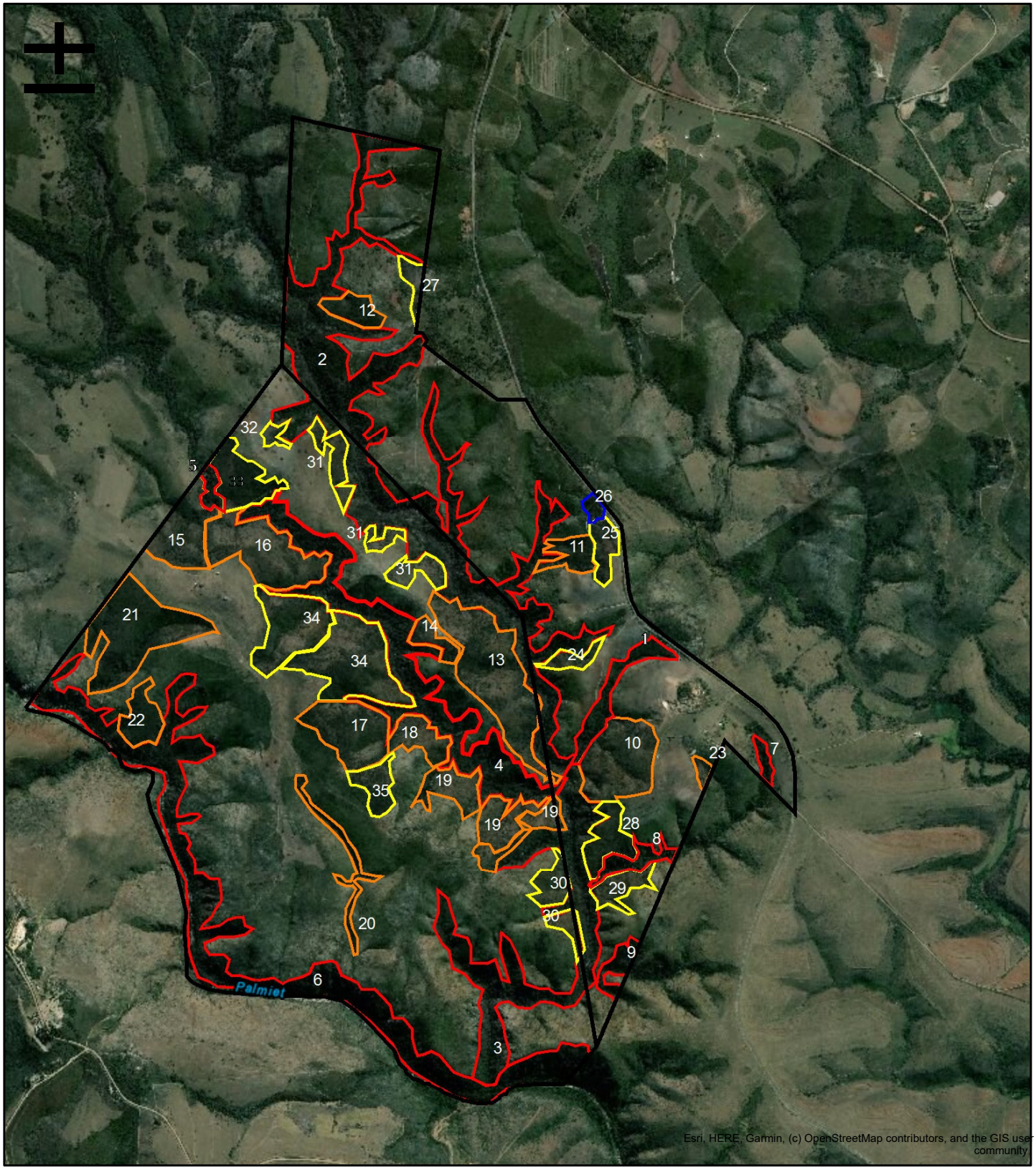
2. Listed Species on the Property

Species	Common Name	NEMBA Category	Control Method	
Acacia mearnsii	Black Wattle	2	Biological Herbicide Mechanical	
Hakea sericea Schrad.& J.C. Wendel	Silky Hakia	1b	Mechanical	
Lantana Camara	Lantana	1b	Herbicides	
	Blue Gum			

Table 2: Nemba Listed IAS on the property

3. Extent and Distribution of the species on the property:

Outeniqua Game Farm



0 0.45 0.9 1.8 km

Scale: 1:36 112

Date created: January 19, 2020

Western Cape Government
Agriculture

Management unit	Hectares	Comment	Extent of overall InvasionComment	ESTIMATED CLEARING TIME
Red 1	8 Ha'' 80%	Olive land valley	Dense wattle, extensive regrowth after fire	2 YEARS
Red 2	109 Ha 80%	Ruiterbos River Valley- Up Stream	Dense wattle, extensive regrowth after fire	5 YEARS
Red 3	45 Ha 80%	Ruiterbos River Valley- Down Stream	Dense wattle, extensive regrowth after fire	2 YEARS
Red 4	46.1 Ha 80%	Huis Rivier Valley - Downstream	Dense wattle, extensive regrowth after fire	2 YEARS
Red 5	2.3 Ha 80%	Huis Rivier Valley - Up stream	Dense wattle, extensive regrowth after fire	2 MONTHS
Red 6	70.3 Ha 80%	Palmiet River Valley	Dense wattle, extensive regrowth after fire	3 YEARS 5 MONTHS
Red 7	1.7 Ha 40%	Bull Camp	Dense wattle, extensive regrowth after fire	I MONTH
Red 8	4.4 Ha 40%	Billy Valley 1	Dense wattle, extensive regrowth after fire	3 MONTH
Red 9	3.6 Ha 70%	Billy Valley 2	Dense wattle, extensive regrowth after fire	2 MONTHS
Orange10	17.3 Ha 60%	Pieter Slope	Meduim sized wattle trees - poles	8 MONTH
Orange 11	5 Ha 90%	Blue Gum North	Meduim sized wattle - poles	3 MONTH
Orange 12	4.7 Ha 60%	Eco		3 MONTH
Orange 13	27.9 Ha 50%	Middle Land North	High density Meduim size wattle	1 YEAR 3 MONTH

Orange 14	3.4 Ha 40%	Middleland Gerhard	High density small wattle trees (feed)	2 MONTH
Orange 15	11.7 Ha 70%	Chris Nel	High density small wattle trees (feed)	6 MONTHS
Orange 16	18.8 Ha 60%	Eden Dam Slope	high density meduim sized wattle (Poles)	9 MONTHS
Orange 17	14.1 ha 50%	Gerhard1	Small wattle trees	6 MONTHS
Orange 18	6.1 Ha 60%	Gerhard 2	Small wattle trees	3 MONTHS
Orange 19	18.6 Ha 60%	Ruins land	Meduim sized wattle trees sized	7 MONTHS
Orange 20	5.1 Ha 80%	Ruins Valley Land	Meduim sized wattle Poles	3 MONTHS
Orange 21	23.5 Ha 50%	Palmiet Solar camp	Small Wattle trees, Hakia	1 YEAR 1 MONTH
Orange 22	6.1 Ha 70%	Freek Outpost	High density Small Wattle trees	4 MONTHS
Orange 23	1.2 Ha 70%	White dam	SmallWattle trees	1 MONTH
Yellow 24	2.7 Ha 60%	River road Right	Low density Wattle -	2 MONTHS
Yellow 25	4.4 70%	Bluegum wattle land	Small trees – ±5 – 7 cm Diameter	3 MONTHS
Blue 26	1.4 90%	Bluegum Forest	Large Bluegums	
Yellow27	2.5 60%	Eco – Koos Fence	Low Density Wattle (Small trees), Hakia	2 MONTH
Yellow28	7.3 70%	Picnic slope	Steep Slope high density small trees	4 MONTH
Yellow29	5 80%	Cave Veiw	High density small trees	2 MONTHS
Yellow30	7.3 70%	River Veiw	High density small trees	4 MONTHS
Yellow31	11.3 60%	Middle Land	Small trees	6 MONTHS

Yellow32	1.5 50%	Singleton Dam	Small trees	1 MONTH
Yellow33	9.4 70%	Eden Ruins veiw	Small trees	4 MONTHS
Yellow 34	35.4 60%	Ruins east	Small Trees	I YEAR
Yellow 35	5.1 40%	Ruins	Small Trees	2 MONTHS

Table 3: Total Invasive plant infestation per management unit

4. Objectives and Action

Objective 1 : Control Invasive Plant Infestation

Bring the Invasive Plant infestation on the property under control by 2030

Catagory	Desired State by 2030
Catagory 1b	All mature trees are removed; follow up control programme in place. All management units are in maintenance. Overall infestation does not exceed 10% of the property
Catagory 1b Herbaceous Species	Less than 2%
Catagory 1 b – annual species	Less than 2%

Objective 2: Prevention

To put measures in place to prevent the introduction of new NEMBA listed IAS onto the property, and from spreading from the property to neighbouring properties

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 3: Early Detection & Rapid Response (EDRR) and eradication

To detect emerging IAS through regular surveys and remove them before they become established, produce seeds or offspring and start spreading.

Emerging species refer to those alien species with the potential to become important problems without timely intervention. When the management option of EDRR is implemented, the new or emerging species can be locally eradicated before they produce seeds/increase by growing vegetatively or producing offspring.

Category 1a species will typically fall in this category. The South African National Biodiversity Institute (SANBI), City of Cape Town and eThikweni municipalities have Early Detection and Rapid Response (EDRR) programmes targeting certain emerging species. Landowners can obtain more information from the relevant websites (See Annexure H Useful Contacts) and can apply for assistance should any of the target species occur on their land.

Landowners can also register as a spotter in the City of Cape Town and eThikweni municipal areas for logging target species. Logging target species is advisable as the target species may be controlled by the SANBI EDRR programme or City of Cape Town and eThikweni municipalities at no cost to the landowner.

Early Detection and Rapid Response and Eradication actions

- Regularly survey the property to detect any new or emerging listed invasive plant and/or animal species
- Learn more about the SANBI/City of Cape Town/ eThikweni EDRR programmes and register as a spotter where applicable
- Report category 1a species immediately to the Department of Environmental Affairs/Provincial Conservation Agency/Local Municipality/South African National Biodiversity Institute (SANBI) EDRR programme 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 the species list by including these species and indicate where on the property they were located
- Increase surveillance in the areas after the species were controlled to quickly remove re-sprouting plants or seedlings.

4. Monitoring

1) Monitor to determine whether adequate progress is being made in achieving the objectives within the set timeframes;

2)to detect and remove emerging species before they become established;

3) to ensure the control methods are effective;

4) to monitor expenditure and job creation.

Table 5 provides a framework for such a monitoring programme, what to monitor, how often, the methods and how to respond to the results obtained through monitoring.

Table 5: Monitoring framework

WHAT	FREQUENCY	HOW	RESPONSE
How effective are the control methods	4-6 months after every operation	Survey the cleared areas and look for regrowth. Before and after pictures are very effective. Look out for non-target effects of herbicide application.	If the survey reveals that the control methods are effective, e.g. low levels of re-sprouting, continue following the herbicide mixtures and control methods. If non-target plants are dying off where herbicides were applied, ensure appropriate training for herbicide applicators, demonstrate the off-target effects to herbicide applicators to ensure they are using the correct methods and herbicides. (Gums are difficult to control and re-sprouting often occurs, therefore shorter follow-up interventions may be required). If the results show that the control methods are not effective, adapt by e.g. cutting lower above ground or changing herbicides or timing of herbicide application.
Do the infestation levels decrease	Annually	Survey the cleared areas and record species, densities and size. Before and after pictures are very effective.	If the infestation levels are not decreasing, reconsider clearing intervals and look at clearing methods. If infestation levels are decreasing - continue clearing, you are doing well!
How much herbicides were used	During every operation (If WFW provides the herbicides, a landowner agreement will be signed and the records are to be submitted to WFW)	Keep track of cost and ensure no wastage. Record herbicide usage – see Annexure C	Track usage over time, it will reveal a certain trend in quantities for different infestation levels. Less herbicides should be used when the infestation levels are lower. Record herbicide cost.
Does the indigenous vegetation recover in the cleared areas?	Annually	Survey the cleared areas and look out for indigenous species variety and presence. Before and after pictures are very effective.	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 operation	Timesheets	Job creation figures are useful when asking for landowner assistance from WFW or to demonstrate contributions to jobs and socio-economic conditions
How many person days (PD) were spent per operations	After every operation	Timesheets	Keep track of cost and assist with planning and budgeting. Determine cost per personday (PD)

Annexure A: Planning and budget

CLEARING TEAMS

Clearing Teams	Equipment	PD planned	PD rate	Control cost	R/month	Expected COST / day	
Chainsaw Team 1	2 x chainsaws Nap Sack PPE	3	Operators – R200 Poisoner - R180	Wage	R580	R380	
				Fuel/ oil	R2640	R60/ chainsaw	
				Poison	R0.00		
				PPE			
				Chains	R120		
				TOTAL	**R3340**		
Chainsaw Team 2	2 x chainsaws Nap Sack PPE	3	Operators – R200 Poisoner - R180	Wage	R580	R380	
				Fuel/ oil	R2640	R60/ chainsaw	
				Poison	R0.00		
				PPE			
				Chains	R120		
				TOTAL	**R3340**		
Chainsaw Team 3 **(POLES)**	2 x chainsaws Nap Sack PPE	3	Operators – R200 Poisoner - R180	Wage	R580	R380	
				Fuel/ oil	R2640	R60/ chainsaw	
				Poison	R0.00		
				PPE			
				Chains	R120		
				TOTAL	**R3340**		
Pullers	PPE	4	R 800		R800		
Poppers	2 x Poppers PPE	4	R 800		R800		
			MONTHLY TOTAL		**R11 620**		
			ANNUAL TOTAL		**R 139 440**		
			PROJECT TOTAL – 9 YEARS (ALLOWING FOR 10 % INCREASE		**R1 893 509**		

		Y1 2019	Y 2 2020	Y 2 2021	Y 2 2022	Y 2 2023	Y 2 2024	Y 2 2025	Y 2 2026	Y 2 2027	Y 2 2028	Y 2 2029	Y 2 2030
Management unit	**Ha**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**	**Team**
Red1	8 Ha	CH 1	PULLER	PULLER									
Red 2	109 Ha	CH 1	Ch 1 PULLER	CH1 PULLER	CH1 PULLER	CH1 PULLER	CH1 PULLER	PULLER	PULLER				
Red 3	45 Ha				CH2	CH2 PULLER	CH2 PULLER	CH2 PULLER					
Red 4	46.1 Ha		Ch2 PULLER	CH2 PULLER	PULLER								
Red 5	2.3 Ha				CH2 PULLER	PULLER	PULLER						
Red 6	70.3 Ha									CH1 CH2	CH1 CH2 PULLER	PULLER	
Red 7	1.7 Ha							CH PULLER	PULLER				
Red 8	4.4 Ha							CH1 PULLER	PULLER				
Red 9	3.6 Ha							CH1 PULLER	PULLER				
Orange 10	17.3 Ha		Ch3 PULLER	PULLER S									
Orange 11	5 Ha		CH3	PULLER	PULLER								
Orange 12	4.7 Ha		POPPER	CH3 PULLER	PULLER								
Orange 13	27.9 Ha			CH3 POPPER	CH3 PULLER	PULLER							
Orange 14	3.4 Ha				CH3	PULLER	PULLER						
Orange 15	11.7 Ha				POPPERS	CH3 PULLER	PULLER						
Orange 16	18.8 Ha				POPPPER	CH3 PULLER	PULLER						
Orange 17	14.1 ha					POPPERS CH3	PULLER						
Orange 18	6.1 Ha						POPPERS CH3 PULLER	PULLER					
Orange 19	18.6 Ha						POPPER CH2 PULLER	PULLER					
Orange 20	5.1 Ha							CH3 PULLER	CH3 PULLER				
Orange 21	23.5 Ha							CH1 CH2 PULLER	CH1 PULLER	PULLER			
Orange 22	6.1 Ha							CH2	CH2 PULLER	PULLER			
Orange 23	1.2 Ha		POPPER PULLER	PULLER									
Yellow 24	2.7 Ha		POPPER PULLER	PULLER									
Yellow 25	4.4		POPPER	PULLER									
Blue 26	1.4										CH1 CH2	PULLER	

Yellow 27	2.5		POPPER	PULLER	PULLER								
Yellow 28	7.3			POPPER	PULLER								
Yellow 29	5							CH2 PULLER	PULLER				
Yellow 30	7.3					POPPER PULLER	PULLER	PULLER					
Yellow 31	11.3			POPPER CH3	PULLER								
Yellow 32	1.5		POPPER	CH3	PULLER								
Yellow 33	9.4			POPPER	POPPERS PULLER	CH3 PULLER							
Yellow 34	35.4					POPPER CH3 PULLER	PULLER						
Yellow 35	5.1						POPPER	PULLER					

Annexure B: Clearing schedule

Legend :

I = Initial clearing

F 1 = First follow-up

F2 = Second follow-up

F3 = Third follow-up

DS = Desired State

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2020	Red 1	8 Ha	P1	P1							P2			
	Red 2	109 Ha	CH1	CH1	CH1 P1	CH1	CH1	CH1	CH1	CH1	CH1	CH1 P1	CH1 P2	CH1
	Red 3	45 Ha												
	Red 4	46.1 Ha	CH2	CH2	CH2	CH2	CH2 P1	CH2	CH2	CH2	CH2	CH2	CH2 P1	CH2 P2
	Red 5	2.3 Ha												
	Red 6	70.3 Ha												
	Red 7	1.7 Ha												
	Red 8	4.4 Ha												
	Red 9	3.6 Ha												
	Orange10	17.3 Ha		CH3	CH3	CH3	CH3	CH3	CH3 P1	CH3	CH3			
	Orange 11	5 Ha										CH3	CH3	CH3
	Orange 12	4.7 Ha							PO1	PO1	PO1			
	Orange 13	27.9 Ha												
	Orange 14	3.4 Ha												
	Orange 15	11.7 Ha												
	Orange 16	18.8 Ha												
	Orange 17	14.1 ha												
	Orange 18	6.1 Ha												
	Orange 19	18.6 Ha												
	Orange 20	5.1 Ha												
	Orange 21	23.5 Ha												
	Orange 22	6.1 Ha												
	Orange 23	1.2 Ha	P01					P1						P2
	Yellow 24	2.7 Ha		PO1	PO1	P1						P2		
	Yellow 25	4.4				PO1	PO1	PO1			P1			
	Blue 26	1.4												
	Yellow27	2.5										PO1	PO1	
	Yellow28	7.3												
	Yellow29	5												
	Yellow30	7.3												
	Yellow31	11.3												
	Yellow32	1.5												PO1
	Yellow33	9.4												
	Yellow 34	35.4												
	Yellow 35	5.1												

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2021	Red 1	8 Ha	P3	MAINTENANCE										
	Red 2	109 Ha	CH1	cH1	CH1	CH1 P1,,	CH1 P2	CH1 P3	CH1	CH1	CH1	CH1 P1,	CH1 P2	CH1 P3
	Red 3	45 Ha												
	Red 4	46.1 Ha	CH2	CH2	CH2	CH2	CH2	CH2	CH2 P1,	CH2 P2	CH2 P3	CH2	CH2	CH2
	Red 5	2.3 Ha												
	Red 6	70.3 Ha												
	Red 7	1.7 Ha												
	Red 8	4.4 Ha												
	Red 9	3.6 Ha												
	Orange10	17.3 Ha		P1					P2					P3
	Orange 11	5 Ha					P1					P2		
	Orange 12	4.7 Ha	Ch3					P1					P2	
	Orange 13	27.9 Ha						PO1	PO1		Ch3	Ch3	Ch3	Ch3
	Orange 14	3.4 Ha												
	Orange 15	11.7 Ha												
	Orange 16	18.8 Ha												
	Orange 17	14.1 ha												
	Orange 18	6.1 Ha												
	Orange 19	18.6 Ha												
	Orange 20	5.1 Ha												
	Orange 21	23.5 Ha												
	Orange 22	6.1 Ha												
	Orange 23	1.2 Ha						P3	MAINTENANCE					
	Yellow 24	2.7 Ha			P3	MAINTENANCE								
	Yellow 25	4.4					P2					P3		
	Blue 26	1.4												
	Yellow27	2.5				P1				P2				P3
	Yellow28	7.3								PO1	PO1	PO1	PO1	
	Yellow29	5												
	Yellow30	7.3												
	Yellow31	11.3	PO1	PO1	PO1 Ch3	PO1 Ch3	PO3 Ch3	Ch3	Ch3	CH3				P1
	Yellow32	1.5		CH3						P1				
	Yellow33	9.4												PO1
	Yellow 34	35.4												
	Yellow 35	5.1												

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2022	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha	CH1	cH1	CH1	CH1 P1,,	CH1 P2	CH1 P3	CH1	CH1	CH1	CH1 P1,	CH1 P2	CH1 P3
	Red 3	45 Ha							CH2	CH2	CH2	CH2	CH2	CH2
	Red 4	46.1 Ha	P1	P2	P3					P2	P3			P3
	Red 5	2.3 Ha	CH2	CH2	CH2	CH2	CH2 P1	CH2					P1	
	Red 6	70.3 Ha												
	Red 7	1.7 Ha												
	Red 8	4.4 Ha												
	Red 9	3.6 Ha												
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha			P3				MAINTENANCE					
	Orange 12	4.7 Ha				P3			MAINTENANCE					
	Orange 13	27.9 Ha	CH3	CH3	CH3	CH3	CH3	CH3	CH3 P1	CH3	CH3	CH3		P2
	Orange 14	3.4 Ha											CH3	CH3
	Orange 15	11.7 Ha										PO1	PO1	PO1
	Orange 16	18.8 Ha				PO1	PO1	PO1	PO1	PO1	PO1			
	Orange 17	14.1 ha												
	Orange 18	6.1 Ha												
	Orange 19	18.6 Ha												
	Orange 20	5.1 Ha												
	Orange 21	23.5 Ha												
	Orange 22	6.1 Ha												
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3	P1					P2					P3	
	Yellow29	5												
	Yellow30	7.3												
	Yellow31	11.3					P2						P3	
	Yellow32	1.5	P2					P3			MAINTENANCE			
	Yellow33	9.4	PO1	PO1	PO1					P1				
	Yellow 34	35.4												
	Yellow 35	5.1												

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2023	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha	CH1	cH1	CH1 P1	CH1 P2	CH1 P3	CH1	CH1	CH1	CH1	CH1 P1,	CH1 P2	CH1 P3
	Red 3	45 Ha	CH2 P1	CH2	CH2	CH2	CH2	CH2	CH2 P1	CH2 P2	CH2 P3	CH2	CH2	CH2
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha				P2					P3			
	Red 6	70.3 Ha												
	Red 7	1.7 Ha												
	Red 8	4.4 Ha												
	Red 9	3.6 Ha												
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha					P2						P3	
	Orange 14	3.4 Ha				P1					P2			
	Orange 15	11.7 Ha					CH3	CH3	CH3	CH3				
	Orange 16	18.8 Ha			CH3	CH3								
	Orange 17	14.1 ha								PO1	PO1	PO1	CH3	CH3
	Orange 18	6.1 Ha												
	Orange 19	18.6 Ha									PO1	PO1	PO1	
	Orange 20	5.1 Ha												
	Orange 21	23.5 Ha												P01
	Orange 22	6.1 Ha												
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5												
	Yellow30	7.3						PO1	PO1	PO1	P1			
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4	CH3	P1 CH3					P2					P3
	Yellow 34	35.4	PO1	PO1	PO1	PO1	PO1				CH3	CH3	P1	
	Yellow 35	5.1												

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2024	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha	CH1	cH1	CH1 P1	CH1 P2	CH1 P3	CH1	CH1	CH1	CH1	CH1 P1,	CH1 P2	CH1 P3
	Red 3	45 Ha	CH2 P1	CH2 P2	CH2 P3	CH2	CH2	CH2						
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha												
	Red 7	1.7 Ha												
	Red 8	4.4 Ha												
	Red 9	3.6 Ha												
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha				P3				MAINTENANCE				
	Orange 15	11.7 Ha		P1					P2					P3
	Orange 16	18.8 Ha	P2				P3							
	Orange 17	14.1 ha				P1				P2				P3
	Orange 18	6.1 Ha			P1						P2			
	Orange 19	18.6 Ha	PO1	PO1	PO1	CH3	CH3	CH3	CH3			P1		P1
	Orange 20	5.1 Ha												
	Orange 21	23.5 Ha												
	Orange 22	6.1 Ha												
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5												
	Yellow30	7.3			P1	P1	P1					P2		
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4				P2						P3		
	Yellow 35	5.1					PO1	PO1	CH3	CH3				

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2025	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha				P1,,	P2	P3				P1,	P2	P3
	Red 3	45 Ha							P1					
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha												
	Red 7	1.7 Ha	CH1					P1				P2		
	Red 8	4.4 Ha		CH1	CH1	CH1								
	Red 9	3.6 Ha					CH1	CH1					P1	
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha						MAINTENANCE						
	Orange 15	11.7 Ha						MAINTENANCE						
	Orange 16	18.8 Ha						MAINTENANCE						
	Orange 17	14.1 ha						MAINTENANCE						
	Orange 18	6.1 Ha	P3						MAINTENANCE					
	Orange 19	18.6 Ha		P2						P3				
	Orange 20	5.1 Ha		CH3	CH3			P1						P2
	Orange 21	23.5 Ha							CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1
	Orange 22	6.1 Ha												Ch2
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5				CH2	CH2						P1	
	Yellow30	7.3	P2					P3						
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4						MAINTENANCE						
	Yellow 35	5.1	P1					P2					P3	

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2026	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha				P3								
	Red 3	45 Ha						MAINTENANCE						
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha		CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2 P1	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2 P2	CH1 CH2
	Red 7	1.7 Ha		P3										
	Red 8	4.4 Ha	P2						P3					
	Red 9	3.6 Ha			P2					P3				
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha						MAINTENANCE						
	Orange 15	11.7 Ha						MAINTENANCE						
	Orange 16	18.8 Ha						MAINTENANCE						
	Orange 17	14.1 ha						MAINTENANCE						
	Orange 18	6.1 Ha						MAINTENANCE						
	Orange 19	18.6 Ha						MAINTENANCE						
	Orange 20	5.1 Ha				P3								
	Orange 21	23.5 Ha	CH1				P1						P2	
	Orange 22	6.1 Ha	CH2					P1						P2
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5					P2					P3		
	Yellow30	7.3						MAINTENANCE						
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4						MAINTENANCE						
	Yellow 35	5.1						MAINTENANCE						

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2027	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha						MAINTENANCE						
	Red 3	45 Ha						MAINTENANCE						
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2 P1	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2 P2	CH1 CH2	CH1 CH2
	Red 7	1.7 Ha						MAINTENANCE						
	Red 8	4.4 Ha						MAINTENANCE						
	Red 9	3.6 Ha						MAINTENANCE						
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha						MAINTENANCE						
	Orange 15	11.7 Ha						MAINTENANCE						
	Orange 16	18.8 Ha						MAINTENANCE						
	Orange 17	14.1 ha						MAINTENANCE						
	Orange 18	6.1 Ha						MAINTENANCE						
	Orange 19	18.6 Ha						MAINTENANCE						
	Orange 20	5.1 Ha						MAINTENANCE						
	Orange 21	23.5 Ha			P3									
	Orange 22	6.1 Ha				P3								
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4												
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5						MAINTENANCE						
	Yellow30	7.3						MAINTENANCE						
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4						MAINTENANCE						
	Yellow 35	5.1						MAINTENANCE						

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2028	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha						MAINTENANCE						
	Red 3	45 Ha						MAINTENANCE						
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	P1				P2			P3
	Red 7	1.7 Ha						MAINTENANCE						
	Red 8	4.4 Ha						MAINTENANCE						
	Red 9	3.6 Ha						MAINTENANCE						
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha						MAINTENANCE						
	Orange 15	11.7 Ha						MAINTENANCE						
	Orange 16	18.8 Ha						MAINTENANCE						
	Orange 17	14.1 ha						MAINTENANCE						
	Orange 18	6.1 Ha						MAINTENANCE						
	Orange 19	18.6 Ha						MAINTENANCE						
	Orange 20	5.1 Ha						MAINTENANCE						
	Orange 21	23.5 Ha						MAINTENANCE						
	Orange 22	6.1 Ha						MAINTENANCE						
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4					CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2	CH1 CH2
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5						MAINTENANCE						
	Yellow30	7.3						MAINTENANCE						
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4						MAINTENANCE						
	Yellow 35	5.1						MAINTENANCE						

	Management unit	Ha	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
YEAR 2029	Red 1	8 Ha						MAINTENANCE						
	Red 2	109 Ha						MAINTENANCE						
	Red 3	45 Ha						MAINTENANCE						
	Red 4	46.1 Ha						MAINTENANCE						
	Red 5	2.3 Ha						MAINTENANCE						
	Red 6	70.3 Ha	P1					P2					P3	
	Red 7	1.7 Ha						MAINTENANCE						
	Red 8	4.4 Ha						MAINTENANCE						
	Red 9	3.6 Ha						MAINTENANCE						
	Orange10	17.3 Ha						MAINTENANCE						
	Orange 11	5 Ha						MAINTENANCE						
	Orange 12	4.7 Ha						MAINTENANCE						
	Orange 13	27.9 Ha						MAINTENANCE						
	Orange 14	3.4 Ha						MAINTENANCE						
	Orange 15	11.7 Ha						MAINTENANCE						
	Orange 16	18.8 Ha						MAINTENANCE						
	Orange 17	14.1 ha						MAINTENANCE						
	Orange 18	6.1 Ha						MAINTENANCE						
	Orange 19	18.6 Ha						MAINTENANCE						
	Orange 20	5.1 Ha						MAINTENANCE						
	Orange 21	23.5 Ha						MAINTENANCE						
	Orange 22	6.1 Ha						MAINTENANCE						
	Orange 23	1.2 Ha						MAINTENANCE						
	Yellow 24	2.7 Ha						MAINTENANCE						
	Yellow 25	4.4						MAINTENANCE						
	Blue 26	1.4	P1					P2					P3	
	Yellow27	2.5						MAINTENANCE						
	Yellow28	7.3						MAINTENANCE						
	Yellow29	5						MAINTENANCE						
	Yellow30	7.3						MAINTENANCE						
	Yellow31	11.3						MAINTENANCE						
	Yellow32	1.5						MAINTENANCE						
	Yellow33	9.4						MAINTENANCE						
	Yellow 34	35.4						MAINTENANCE						
	Yellow 35	5.1						MAINTENANCE						

Annexure C: Control Methods

Following best practice described in this document, ensures compliance with NEMBA Section 75 (1) (2) & (3) in that 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.

- Control actions must be taken with caution to cause the least possible harm to biodiversity and the environment (take care not to remove native species or damage them for example by using the incorrect herbicide application; or bulldozing).
- Offspring, propagating material and regrowth should be tackled to prevent species from producing offspring, forming seed, regenerate or re-establish
- 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

Initial clearing

- Equipment required: Chainsaws, loppers, Poppers, bow saw, 2ℓ handheld herbicide cans.
- Pines and hakea: fell and cut, no herbicides required
- Port Jackson & longleaf wattle: fell and cut, apply herbicide to stumps within 1 minute after cutting or felling. Apply herbicides at applicable rates

Follow up clearing

- Conduct follow up within six months after initial clearing, before plants have the opportunity to produce seeds.
- Pines and hakea: cut , no herbicides required
- Port Jackson & longleaf wattle: cut, apply herbicide to stumps within 1 minute after cutting or felling. Apply herbicides at applicable rates

Mechanical & manual control methods

- Fell trees with a stem diameter of > 200mm with a chainsaw
- Cut trees with a stem diameter of < 200mm with a bow saw or silky saw
- Cut trees and plants with a stem diameter of < 100mm with a lopper
- Cut as low as possible above ground level, ideally 10 cm or below the last growth point.
- Ensure even cuts

- Seedlings can be hand-pulled in sandy soil, important to uproot the entire plant, breaking off will cause it to regrow.

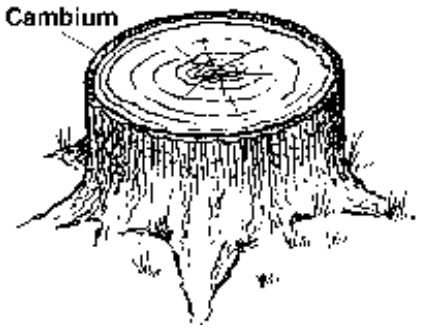
Herbicide application

Ensure herbicide applicators are appropriately skilled.

- Wear correct personal protective equipment (PPE)
- Only apply registered herbicides at prescribed rates, follow label instructions

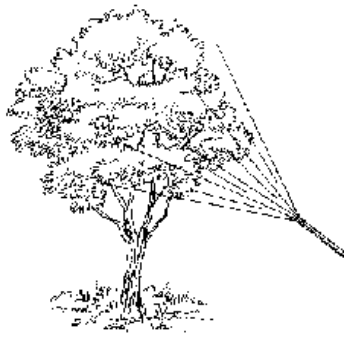
Cut stump treatment:

Use spray can (2ℓ spraymaker) for smaller plants and knapsack for larger trees and apply herbicides to the stump immediately after cutting or felling.



For larger stumps, only apply herbicides to the outer 50mm (cambium).

Minimize collateral damage by applying herbicides using the correct nozzle and pressure.



Foliage treatment

Suitable for plants up to 1m tall. Use a knapsack sprayer with a pressure regulator to evenly apply herbicides at the required mixture.

Precautions during herbicide application:

The risk of herbicide drift exists especially in the vicinity of vineyards/orchards or crops. Apply only under suitable weather conditions, at appropriate rates by appropriately qualified herbicide applicators. Treatment is least effective in very hot weather or when the plants are water stressed. Do not apply herbicides during windy conditions to prevent herbicide drift and damaging non-target plans.

Complete herbicide control sheet to maintain usage records

Herbicide Control Sheet							
Site name						**Hectares**	
Day	**Herbicide (name)**	**Herbicide (name)**	**Herbicide (name)**	**Herbicide (name)**	**Herbicide (name)**	**Actipron**	**Dye**
1							
2							
etc							

Annexure D: Fire prevention and preparedness (where applicable)

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.

Should landowners fail to adhere to the provisions of the **National Veld and Forest Act, 1998 (Act 101 of 1998), (NVFA)** e.g. preparing of a fire break, notifying about their intention to conduct a burn on their land, or meeting the standards, penalties are involved (NVFA, Sec 19).

In addition, NVFA Sec 19 (5) states that any owner, occupier of person in control of land [a101y1998s19]on which a fire occurs who fails to take reasonable steps to extinguish the fire, or to confine it to that land, or to prevent it from causing damage to property on adjoining land, is guilty of an offence. Bringing alien plant infestations under control is an important step towards preventing fires from spreading to neighbouring land as these fires burn up to 10 times hotter than fynbos fires. Fires in alien invested land are very difficult to control, especially under windy and very hot conditions.

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
- Join the Fire Protection Association (FPA)
- Be ready to fight fires by acquiring equipment and having available personnel to fight fires

- In an emergency certain persons and officials will be given permission to enter land and fight fires
- Notify the FPA and neighbouring landowners about fires and take the necessary steps to stop the spread of fires should they occur (for more information see section 18 of the The National Veld and Forest Act, 1998 (Act 101 of 1998)

Annexure E: 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 (it is not in all cases possible to provide a mobile toilet, where the field conditions are not suitable for a mobile toilet, human waste should be buried by digging a hole of at least 20 cm deep)
- Clean water must be made available in suitable containers for drinking and mixing herbicides

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

Vehicle and driver

- The driver must be in possession of a valid PrDP
- The vehicle must be roadworthy
- 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.

Annexure F : Useful contacts

Websites

www.sanbi.org/biodiversity-science/state-biodiversity/biodiversity-monitoring-assessment/invasive-aliens-early-det

www.invasives.org.za

www.environment.gov.za/projectsprogrammes/wfw

www.capetowninvasives.org.za

www.arc.agric.za/arc-ppri

Invasive Animal Contacts

CAPE Invasive Animal Forum: Louise Stafford - louise.stafford@capetown.gov.za

National Invasive Animal Forum: Tim Snow - snowman@bundunet.com

CapeNature: Jaco van Deventer - jvdeventer@capenature.co.za

Cape of Good Hope SPCA : - wildlife@spca-ct.co.za

Department of Environmental Affairs

Invasive Animals: Debbie Sharp - dsharp@environment.gov.za

Compliance: AIScompliance@environment.gov.za

Permitting: AISpermits@environment.gov.za