

DRAFT

**CONSERVATION STEWARDSHIP MANAGEMENT PLAN
FOR THE SWELLENDAAM RÛENS CLUSTER:
CONTRACT NATURE RESERVES AND BIODIVERSITY AGREEMENTS**



Includes the farms: Voorstekop, Skeiding, Dikkopskraal.

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Date: April 2009

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GENERAL INTRODUCTION

The Management plan for the Swellendam Ruens Cluster provides broad guidelines for the management of the area, and is followed by specific guidelines for each individual Stewardship site. This document is intended to provide guidance, using simple, clear strategies, which will help achieve the conservation targets for the area, through partnerships formed between landowners and CapeNature ('the agency').

The Management Plan also details who is responsible for each specific management intervention, as well as the costs and timelines for these interventions. It is set up in a way that ensures management can be monitored and assessed on an annual basis, in a simple and time-efficient manner.

This Management Plan should be viewed as a dynamic, ever-changing and improving, document, which should be updated and altered whenever appropriate, so that management strategies are seen as responsive and adaptive and thus, most effective.

Figure 1 Location and infrastructure in the Swellendam Cluster. Blue lines indicate the cadastres being targeted for stewardship contracts in the Swellendam-Heidelberg region.

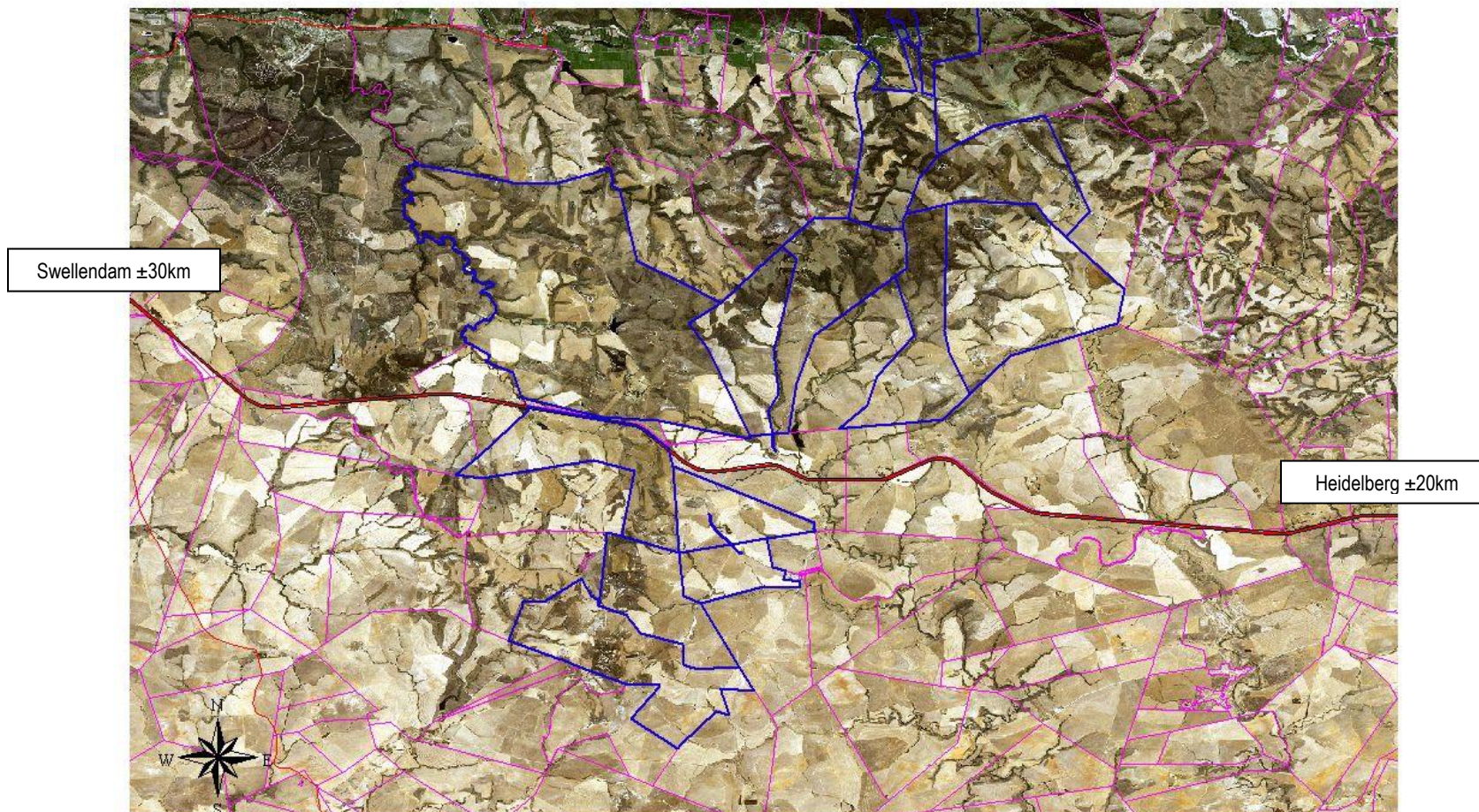


Table 1 Management Schedule for Voorstekop Contract Nature Reserve (see Fig. 2, Fig. 3 & Fig. 4) for 2009 – 2013.

FRAGMENT / BLOCK	SIZE (ha)	VELD AGE (LAST BURN)	ALIEN CLEARING	FIRE BELT	BLOCK BURN	MONITORING	FENCING REQUIRED (m) (**=priority)
VV1		<1974	Port Jackson, Rooikrans, Wattle in valley to be cut & stumps poisoned	Prepare in March 2011 with brushcutter	Burn in March/April 2011		1703
VV2		2008	Wattle in southern end of block to be cut & stumps poisoned			TMF plots	1358**
VV3		<1974					476**
UV1		<1984	Blackwoods to be cut & poisoned				
UV2		2001			Burn in March/April if necessary in ±2012 on advice from specialists	FP Photography	
UV3		2003					2545**
UV4		2003					
UV5		2003	Wattle in eastern kloof to be cut & stumps poisoned. Thistles in northern end to be sprayed				2039
UV6		2003					
UV7		2003					

- **ORANGE** = Landowner responsibility
- **GREEN** = CapeNature responsibility
- **BLACK** = Both parties' responsibility (CapeNature & landowner)

Figure 2 Voorstekop Management Blocks

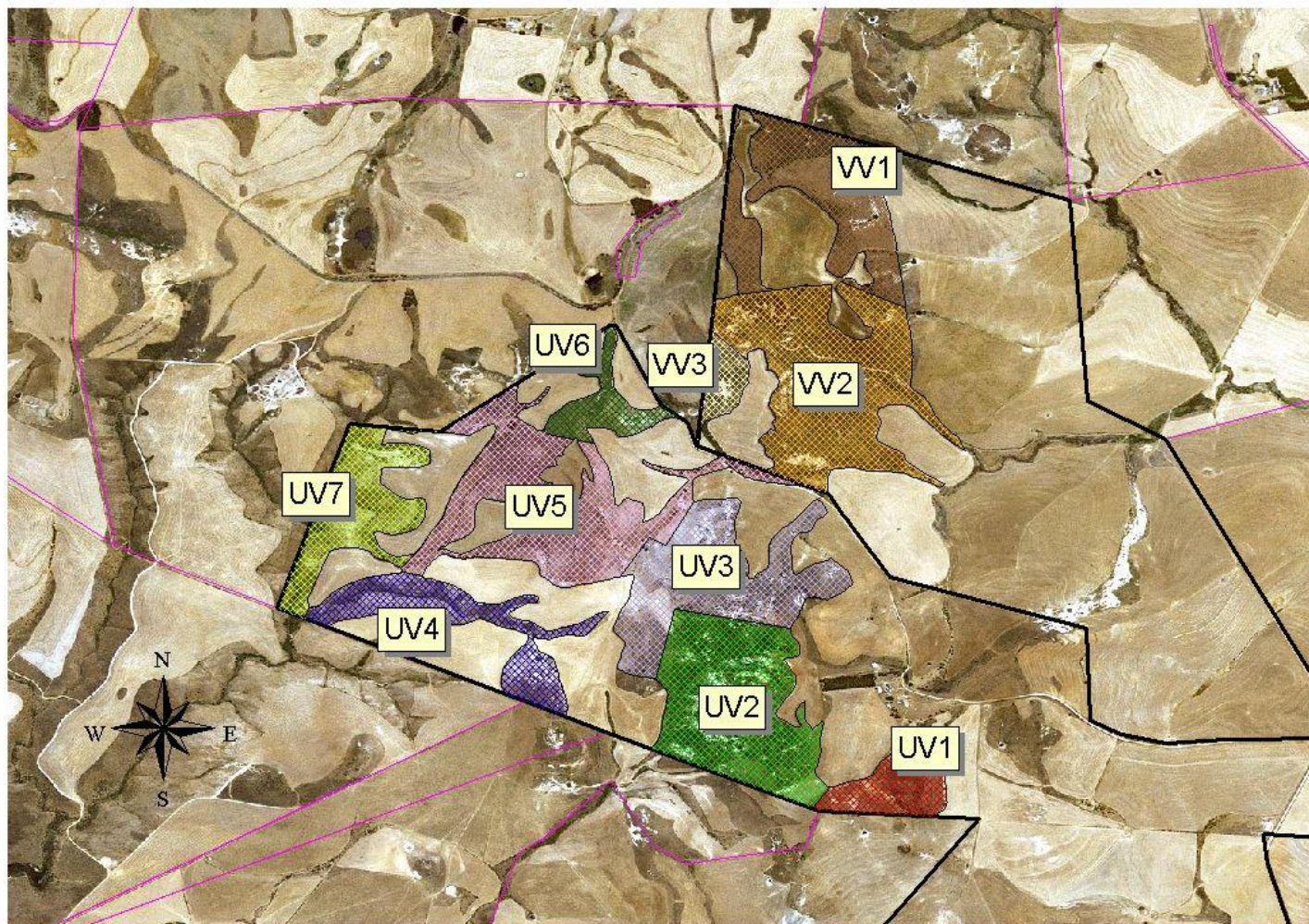


Figure 3 Planned and existing fencing at Voorstekop

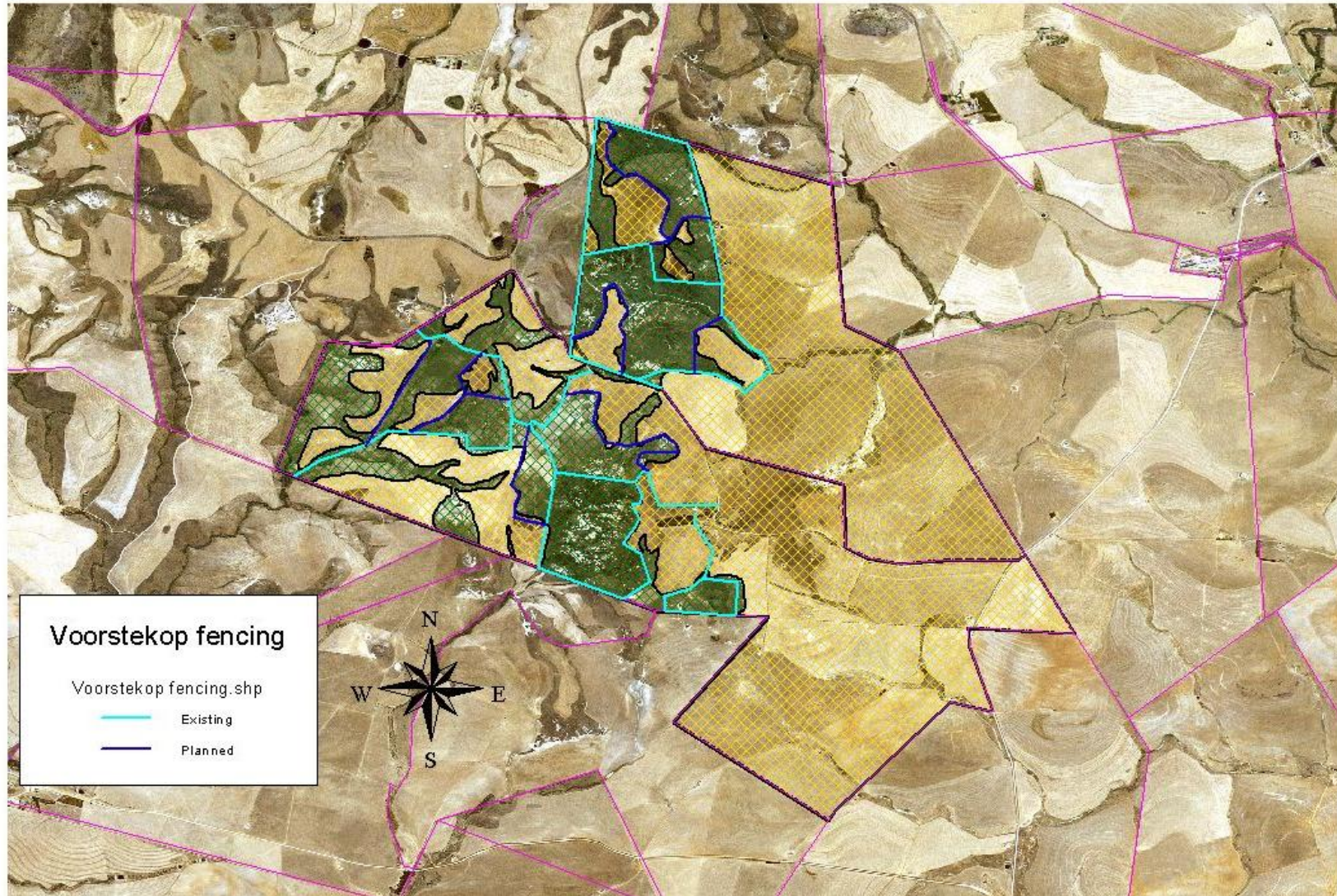


Figure 4 Veld age at Voorstekop Eco Reserve

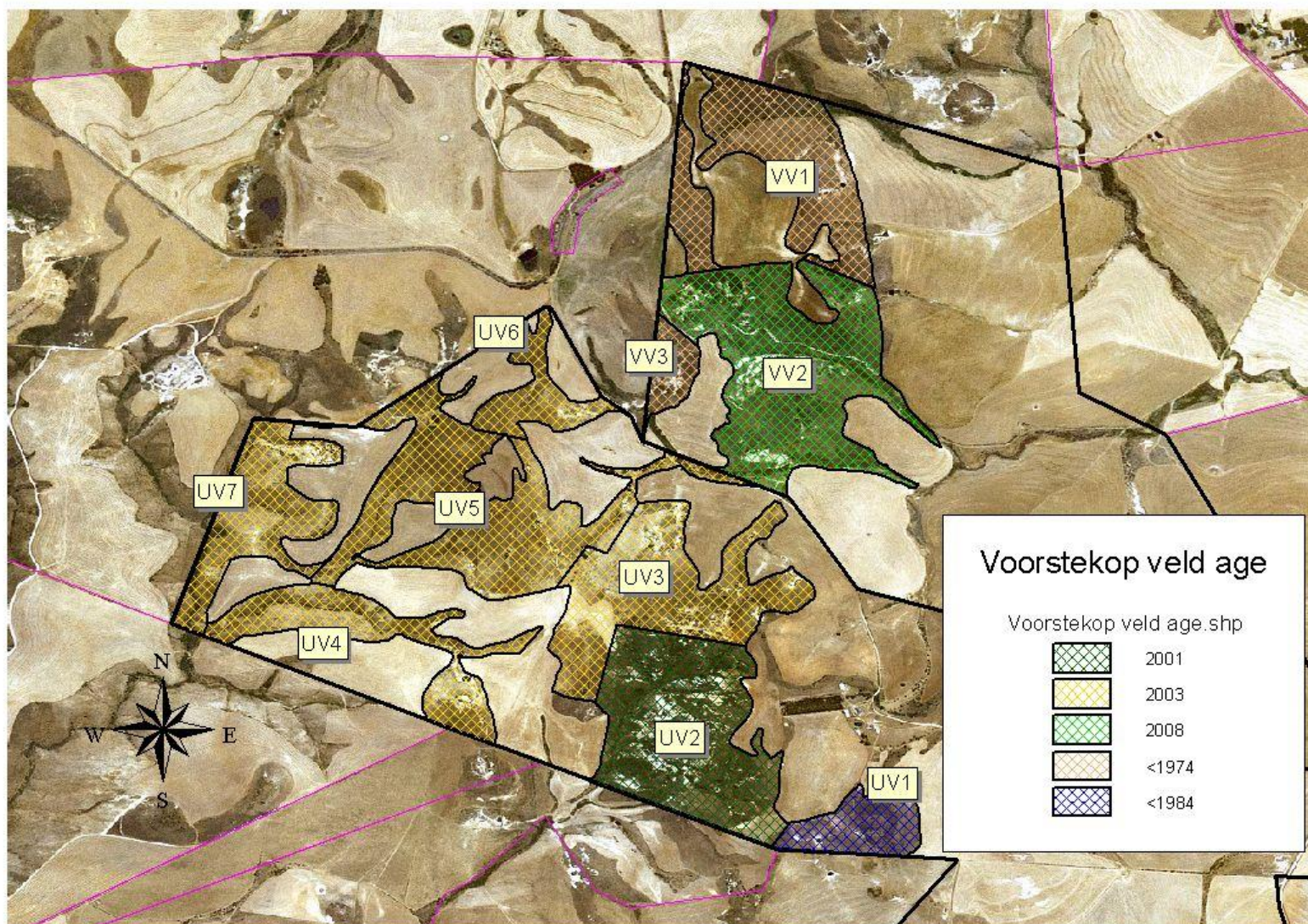


Table 2 Management Schedule for Skeiding Contract Nature Reserve (see Fig. 5 & Fig. 6) for 2009 – 2013.

FRAGMENT	Sub-fragment	SIZE (ha)	VELD AGE	ALIEN CLEARING	FIRE BELT	BLOCK BURN	MONITORING	FENCING REQUIRED (m) (**=priority)
SK1	SK1(a)	43	mixed (W >20; E <2)		Prepare breaks Autumn 2010	Possible burn Autumn 2010	Effects of burn (CREW, etc.)	0
SK2	SK2(a)	20	6-7 yrs	Clear all wattle in river course by end 2009, follow-up regularly to maintain			Monitor recruitment of wattle seedlings & follow-up	0
SK3	SK3(a)	14	<1yr				Effects of game on veld if game introduced	1600** (entire block)
	SK3(b)	29	Mixed (S $\pm$ 4 yrs, N >20 yrs)				Effects of game on veld if game introduced	0
	SK3(c)	5	<1yr					820 (entire block)
SK4	SK4(a)	11	>20 yrs		Prepare breaks Autumn 2010	Possible burn Autumn 2010, if fragment has been fenced		1470** (entire block)
	SK4(b)	48	Mixed (N <1 yr; E $\pm$ 8 yrs; middle >20 yrs)					0
	SK4(c)	4	3 yrs					860 (entire block)
	SK4(d)	30	Mixed (>20 yrs; W 70% <1 yr)					4500** (entire block)

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Figure 5 Skeiding Management Blocks (blue borders indicate areas where fences are required)

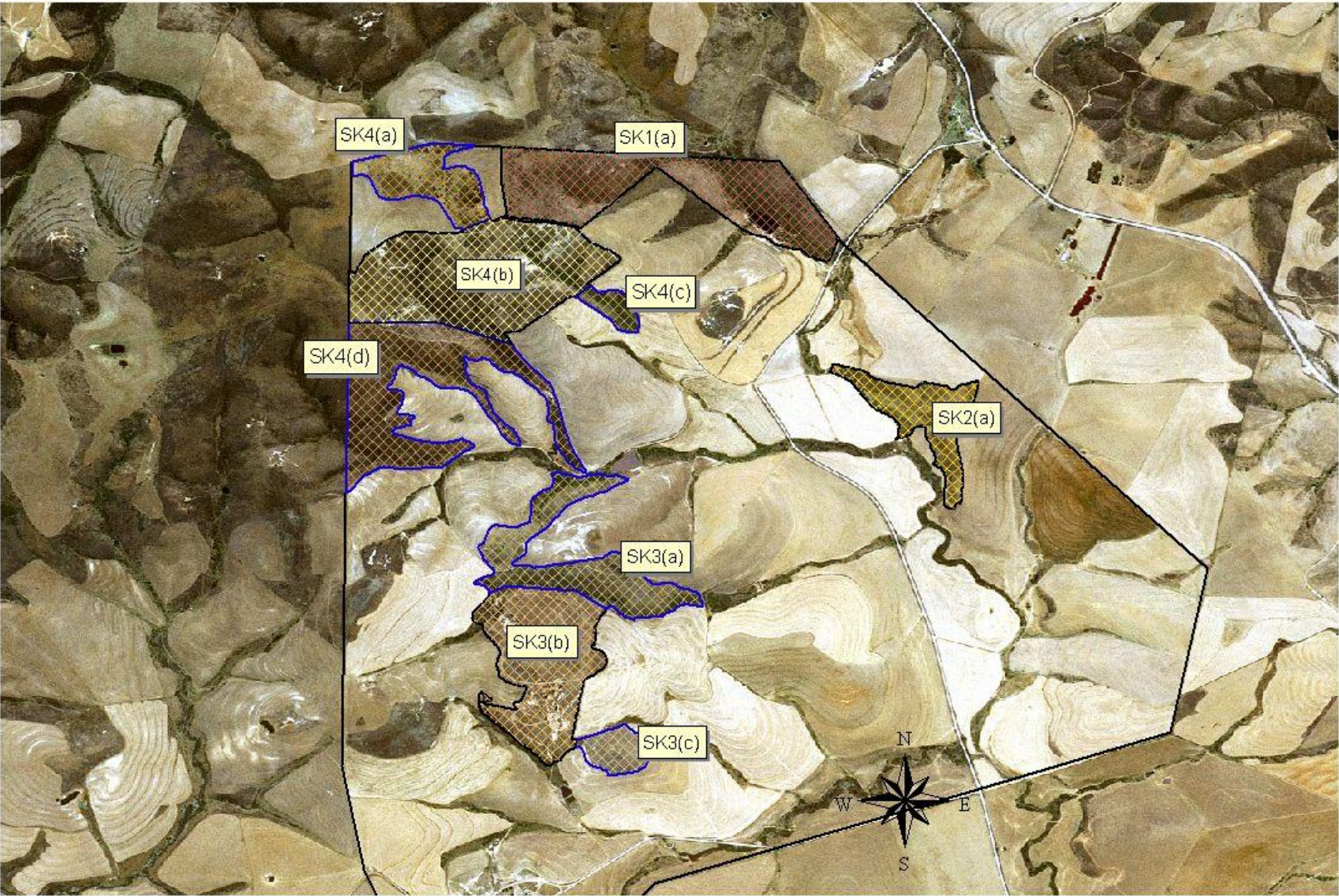


Figure 6 Skeiding veld age

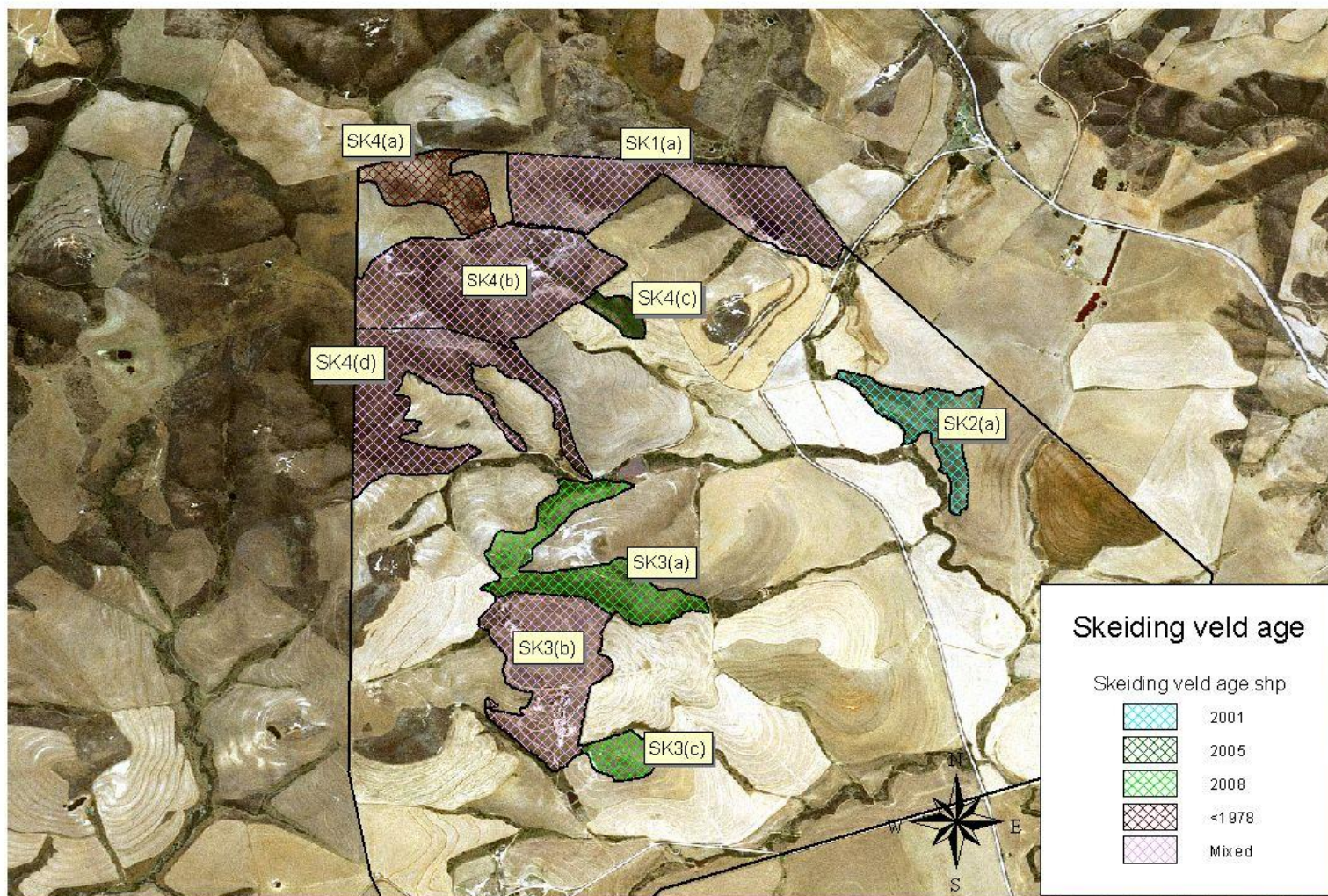


Table 3 Management Schedule for Dikkopskraal Contract Nature Reserve (see Fig. 7 & Fig. 8) for 2009 – 2013.

FRAGMENT	SIZE (ha)	VELD AGE	Last burn	ALIEN CLEARING	FIRE BELT	BLOCK BURN	MONITORING	FENCING REQUIRED (m) (**=priority)
DK1	350	10 yrs	-	Continue with follow-up on WfW work done in 2006		Managed with neighbours & FPA		0
DK2(a)	78	15 yrs	-	Continue with follow-up on WfW work done in 2008	River used on N, Brushcut breaks in April 09	Burn in April / May 2009		0
DK2(b)	56	3 yrs	April 2006	Continue with follow-up on WfW work done in 2007				1253
DK3(a)	132	<1 yr	April 2009	Follow-up on WfW work done in 2009	N/A – ploughed lands	Burn in April / May 2009	Fixed point photography	1929
DK3(b)	115	<1 yr	April 2009	Clear isolated populations / individual trees	N/A – ploughed lands	Burn in April / May 2009	Fixed point photography	4136

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- **GREEN** = CapeNature responsibility
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Figure 7 Dikkopskraal management blocks

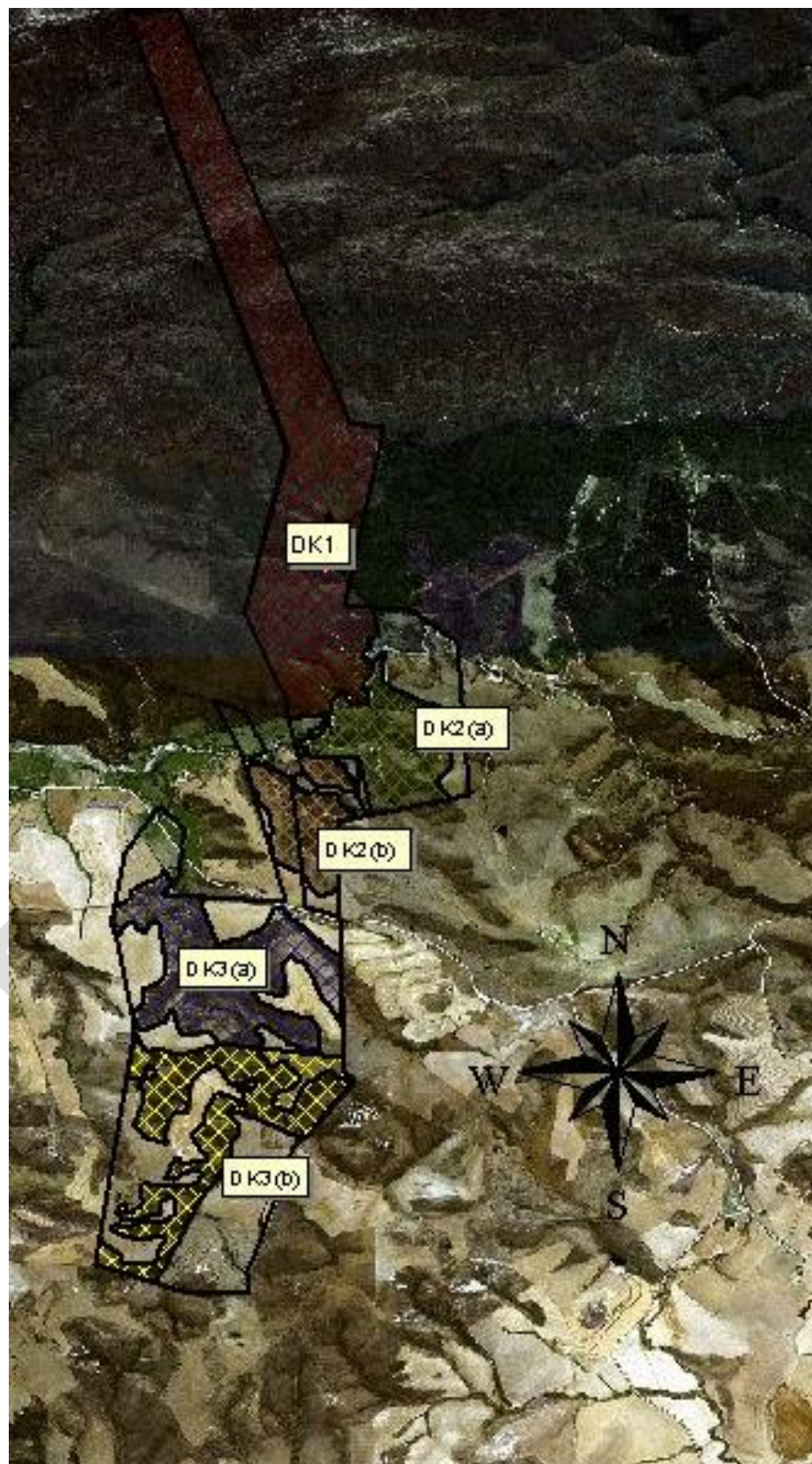
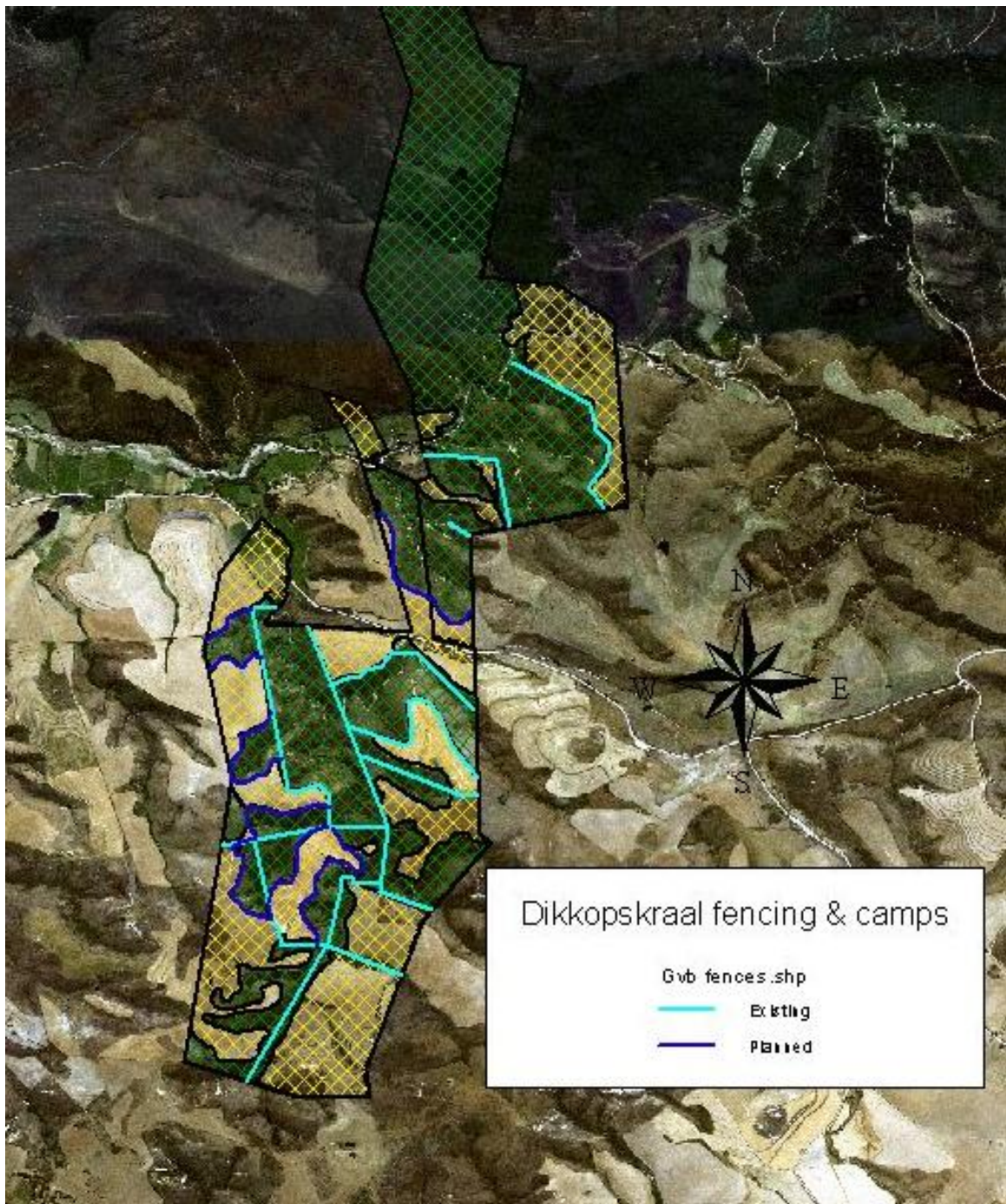


Figure 8 Planned and existing fencing at Dikkopskraal



MANAGEMENT ACTIONS: GENERAL MANAGEMENT ACTIONS FOR RENOSTERVELD

FRAGMENTS IN THE CLUSTER

The following is a list of the important management actions which are to take place within the cluster.

MANAGEMENT ACTION 1: CLEARING OF WOODY ALIENS

Significant Black Wattle infestations are a serious threat to vegetation in some valleys and river courses on some of the farms within the cluster. These should be removed immediately, in order to avoid significant infestations developing from the nuclei that currently exist.

Responsible party: Individual landowner, with guidance (and sometimes assistance where necessary / possible) with clearing plans and activities, depending on the severity of the problem.

Timeframe: ongoing

Means:

- An alien-management plan will be generated for each individual farm, where woody aliens pose a threat to natural vegetation within the Conserved Area. The plan will consist of a map detailing the densities of problem aliens, and a detailed clearing schedule, with a cost analysis.
- Alien-infested areas adjoining the reserves (which result in alien vegetation spreading into the Conserved Areas) should be targeted first by the landowner in their private capacity to remove aliens from the demarcated “private areas” on the properties.
- A record of all clearing operations, including the associated costs must be kept. This will enable comparisons between the expected costs and the actual costs and will therefore guide future plans and budgets.
- Where significant stands of aliens pose a serious threat to the Conserved Areas, CapeNature will endeavor to source funding for assistance to clear these areas.
- See Appendix 7 for alien-clearing guidelines

MANAGEMENT ACTION 2: THISTLE REMOVAL & CONTROL

This includes the control of both exotic (Scottish Thistle with purple flower) and indigenous (*Berkheya* sp. with yellow flower) thistles. Thistle control will be an ongoing process, which will

become more effective as we learn about the most effective means of controlling thistles, through field experiments.

Responsible party: Individual landowner, with guidance (and sometimes assistance) with clearing plans and activities, depending on the severity of the problem.

Timeframe: ongoing

Means:

- Higher levels of disturbance promote the growth and spread of thistles. Thus, resting the veld and minimizing disturbance (particularly after a fire) will greatly reduce this problem.
- After burning, thistles should be mechanically removed or sprayed with a broad-leaf specific herbicide (e.g. Confront), at the first available opportunity (and before they produce seed). The techniques used will depend on the density and spread of the thistle problem.
- Where herbicides are used to combat thistles, care should be taken not to spray during the growing season for bulbs (i.e. winter and spring) and other indigenous broad-leaved plants (thus ensuring no, or minimal damage to indigenous flora).
- See Appendix 4 for guidelines for herbicide use.

MANAGEMENT ACTION 3: USE OF PESTICIDES & HERBICIDES

Maximum care must be taken, at all times, to ensure that when pesticides and herbicides are used in the lands adjoining renosterveld fragments, there is minimum spill-over or drift from crop-sprayers and other means of distributing pesticides and herbicides.

Responsible party: Landowner

Timeframe: ongoing

Means:

- Spray only on calm days (i.e. no wind) to avoid drift from the spray).
- Never clean machinery or other equipment in the Conserved Areas.
- See Appendix 4 for guidelines for herbicide use.

MANAGEMENT ACTION 4: FIRE MANAGEMENT

Many renosterveld fragments in the cluster are > 20 years old. Therefore, an important aspect of restoring the veld here will be to burn it (through a series of block burns, creating a mosaic of

different-aged veld through the landscape). Of primary importance in restoring and maintaining the biodiversity here will be the resting period from grazing, after the burn (see livestock management).

It is strongly recommended that landowners within the Cluster form a Fire Protection Association (FPA): this will simplify permit procedures and form a base for landowners to work together to improve and coordinate burning practices. Dikkopskraal Nature Reserve is already a member of the Grootvadersbosch FPA.

Responsible party: Individual landowners are responsible for cutting and maintaining firebreaks. CapeNature will assist with the compilation of a burning plan and schedule for the cluster, which will include a map of the veld ages in each renosterveld fragment and a detailed plan for each burn. CapeNature will endeavor to facilitate support through their relevant programmes such as Working on Fire.

Timeframe: ongoing

Means:

- Management burns are to follow CapeNature procedures at all times.
- CapeNature will provide burning schedules and in some cases, aid with preparation and maintenance of firebreaks and with the actual burning. This will vary according to the needs on each site.
- Where firebreaks follow a road or old lands, they should be maintained in accordance with the road maintenance schedule. The maintenance period of the fire breaks is not specified by the CapeNature due to the variable circumstances pertaining to the burning of renosterveld and other lowland vegetation types.
- Ecological burns should take place between 1 Feb – 30 May (weather dependent and generally after the first rains). This will 1) encourage grasses at the expense of unwanted shrubs (e.g. renosterbos), 2) ensure that most bulbs are dormant and therefore safe during the burn and 3) ensure that palatable grasses such as *Themeda* have had the chance to produce seed (which generally happens in October / November).
- See Appendix 1 for list of contacts for fire-response and Appendix 2 for fire planning guidelines.
- See Appendix 6 for agreement between landowners to share firebreaks.

ECOLOGICAL BURNS & SHARED FIRE BREAKS

It is strongly recommended that where ecological burns are planned for fragments which spread over two or more properties, that landowners liaise and share fire breaks and other responsibilities.

MANAGEMENT ACTION 5: LIVESTOCK MANAGEMENT

All large renosterveld fragments on the farm should ideally be completely fenced, so that access to the veld by livestock can be controlled. Guidelines for optimal grazing in renosterveld should be adhered to (see Grazing Guidelines - Appendix 3).

Responsible party: Each landowner is responsible for ensuring that livestock do not overgraze / degrade natural habitats within the Conserved Area. CapeNature can provide technical assistance and guidelines for ensuring that grazing impacts are monitored properly and are therefore not detrimental to the health of natural habitats.

Timeframe: ongoing

Means:

- Monitoring of the effects of livestock on the veld is essential (see Monitoring below).
- Where possible, fences should be erected in order to control livestock access to the veld. It is understood that this is an expensive undertaking and therefore not always immediately achievable. This should, however, be part of each reserve's primary objectives. Where necessary, CapeNature will endeavor to source funding to assist with fencing.
- Livestock feed / supplements should not be put in the veld, but rather on productive lands, in order to prevent the introduction of alien grasses and other unwanted species. Feeding animals on the veld also promotes concentrated trampling and disturbance in a small area, making the area prone to trampling effects, such as erosion and invasion by alien grasses and weeds.

MANAGEMENT ACTION 6: GAME MANAGEMENT

Small antelope (Cape Grysbok, Common (Grey) Duiker, Steenbok and Vaal (Grey) Rhebok) occur naturally in the area, and move freely between farms. There is currently no need to manage these populations. Where exotic Fallow Deer occur, these should be controlled and it should be ensured that their impacts on the natural vegetation are negligible. Bushbuck and Bushpig numbers are

increasing in the area, particularly on those farms close to Grootvadersbosch Nature Reserve. Where landowners believe there is a need to control these populations, this should be done in consultation with local CapeNature officials or managers and carried out with the necessary permit/s as required by law.

Some individuals within the cluster are considering the introduction of game into selected camps of natural veld. This should be approached with caution, and with close consultation with CapeNature, as once in an area, contrary to livestock, game cannot be moved between camps and therefore their impacts on a fragment of veld can be severe. Thus, areas must be large enough and have sufficient carrying capacity to tolerate pressure from introduced game and landowners must be willing to control populations (through culling or selling animals) when necessary. Game introductions must only happen with the necessary permits and no extra-limital species will be permitted.

MANAGEMENT ACTION 7: DEVELOPMENT

Agricultural Development:

No further agricultural development will be permitted within the Conserved Areas. All development agreed upon by CapeNature, and the landowner will have a "Method Statement" (supplied by CapeNature) attached.

Development of Infrastructure:

Where individual landowners seek to develop certain infrastructure (e.g. for tourism), this should be done away from *Critically Endangered* habitats (i.e. not on renosterveld fragments) and preferably in already disturbed areas. No building will be permitted on renosterveld fragments. Wherever a building, or other new infrastructure, is proposed by the landowner, a full EIA (Environmental Impact Assessment) will be required (with or without a Stewardship Contract). Where a landowner is planning to add new infrastructure to the farm, recommended sites will be designated within the farm-specific management plan.

Erecting of Cellular Towers:

No more cellular towers ('high sites') will be permitted within the Conserved Areas. If necessary, additional transmitters may be added to existing towers. The CapeNature Policy regarding 'high sites' applies to the Cluster.

Responsible party: Individual landowner. The responsible landowner will ensure that development areas (see figure x) and method statements are complied with.

Timeframe: ongoing

Means: Should a landowner have any plans for development, these should be discussed with the Agency, so that, where possible, these can be accommodated in the specific management plans. The method statements agreed upon by CapeNature and the responsible landowner must be followed.

MANAGEMENT ACTION 8: BUSINESS (INCL. ECOTOURISM)

Ecotourism will be permitted within the cluster, as long as it has minimal impact on the environment. All tourism activities should be non-consumptive (i.e. no flower picking, commercial hunting, etc.) and leave a negligible human footprint on the environment.

Responsible party: Individual landowner

Timeframe: ongoing

Means:

- All tourism impact must be closely monitored (see Monitoring).
- All tourism facilities utilized within the Conserved Areas must be maintained.

MANAGEMENT ACTION 9: ROAD MAINTENANCE & EROSION CONTROL

Road maintenance and erosion control comprise a continual monitoring process, where reactive responses to potential problems are essential. Erosion control essentially involves managing water runoff, through various means, depending on the severity of the problem. Detailed erosion control plans will be discussed in detail, where necessary, under specific farm plans. Erosion must always be stopped immediately and the causes of the erosion minimized or stopped where possible.

Four-wheel Drive vehicles

Four-wheel Drive vehicles will be permitted in the Conserved Areas for management purposes and, where necessary / appropriate, for ecotourism ventures. Areas affected by sheet and gully erosion are to be repaired where possible and erosion controlled according to the schedule. The Provincial Department of Agriculture has agreed to give engineering advice.

Erosion of Roads

Some of the Contract Reserve roads will be used for tourism activities such as reserve drives, hiking and horse riding. Several of these roads are prone to soil erosion, due to steep slopes on which they occur. It is therefore necessary to monitor these roads on a continual basis for soil erosion. These roads must be in suitable condition at all times to be used by any tourism vehicles. The impact of the eco-tourism will have to be mitigated and governed by a limit of tours allowed per day.

As soon as erosion starts degrading these roads for usage, they must be repaired and the cause of erosion must be minimised or stopped where possible by preventative measures.

Responsible party: Individual landowners are responsible for all erosion control and road maintenance.

Timeframe: ongoing

Means:

- All roads within the Conserved Areas are to be demarcated on a map. Any new roads proposed for the Conserved Area are to be indicated before a contract is signed.
- Any additional soil or gravel imported to repair the roads must be sterile, free of alien vegetation, have a low nutrient value and be derived from a local source.

MANAGEMENT ACTION 10: WATER MANAGEMENT

All water management within the cluster must comply with the National Water Act, 1998 (No. 36 of 1998). Should abstractions take place, these abstractions should not be excessive (i.e. have obvious detrimental affects on the surrounding biodiversity and ecosystem functioning). Care needs to be taken to ensure that above-ground pipelines are not in danger of being damaged by fire. Landowners on irrigation schemes should belong to a Water Users Association.

Responsible party: Individual landowners

MANAGEMENT ACTION 11: RUBBISH DUMPS

No renosterveld fragments should be used as landfills / rubbish dumps. Where this is currently the case, these should be cleared immediately and moved to a suitable venue, where the impact on the natural veld is zero. This is particularly important in areas where dumps occur in watercourses.

Responsible party: Individual landowners

Timeframe: All farms must have moved their dumps within 6 months of signing their contracts (i.e. Nature Reserve or Biodiversity Agreement).

Means:

- Where rubbish dumps are present in renosterveld: remove as much of the material as possible and either burn or bury the rest.
- Prepare a suitable landfill site away from natural veld (e.g. in an old land).

MANAGEMENT ACTION 12: RESTORATION

Where possible, in areas agreed on by the owner and the agency, C-grade lands should be fenced in with renosterveld / fynbos fragments and allowed to go fallow (but controlled for alien thistles and grasses, where possible). The possibility of actively restoring these areas (e.g. seeding with *Themeda triandra* and other pioneer plants (e.g. legumes) should also be investigated, as enormous opportunity for research and experimentation in this field exists here. It should be noted that there are very few interventions that make this worthwhile.

Responsible party: Individual landowners, in partnership with CapeNature

Timeframe: ongoing

Means: Setting aside fallow fields adjacent to renosterveld fragments and reseeding them with appropriate indigenous vegetation (e.g. *Themeda triandra*, legumes, other palatable grasses and other pioneer species). This is only recommended where it can be sure that this will not use up valuable resources for other important management interventions (e.g. burning, fencing and alien clearing) and where landowners are keen to set up trial sites to test the viability of restoration in these areas. Restoration will be considered a priority management intervention when it connects large, contiguous fragments (e.g. where it contributes to the formation of corridors).

MANAGEMENT ACTION 13: MONITORING

In order to ensure that management interventions are effective and non-detrimental to ecosystem integrity, they need to be monitored closely, so that the management strategies can be adapted, where necessary. The following management interventions need to be monitored (monitoring is an ongoing process):

1) Woody-alien clearing

In terms of the control of woody aliens, the most important aspects to monitor are: the effectiveness of the operation, the effectiveness of the follow-up, methods used, compliance with the alien clearing schedule and environmental damage such as herbicide spillage.

Responsible party: Individual landowners of contracted Stewardship sites, with yearly audit by the agency.

Means: Written records noting observations and fixed-point photography.

2) Thistle control

The same aspects monitored for woody-alien control should be monitored for thistles – i.e. effectiveness of the operation, effectiveness of the follow-up, methods used, compliance with the alien clearing schedule and environmental damage such as herbicide spillage.

Responsible party: Individual landowners of contracted Stewardship sites, with yearly audit by the agency.

Means: Written records noting observations and fixed-point photography.

3) Fire management

Fire breaks need to be in place and maintained according to schedule. The management and scheduling of burns should be monitored where appropriate. Where possible, the impact of burning on rare, threatened and endemic plants should be monitored. Specific monitoring programmes will be put in place on a sample of the farms within the cluster.

Responsible party: Individual landowners of contracted Stewardship sites, with yearly audit by the agency. Permanent monitoring plots will be selected and set up through partnerships between CapeNature and individual landowners.

Means: Fixed point photography and where possible, permanent plots.

4) Impacts of grazing

It is vital that the impact of grazing be monitored constantly, using either 1) permanent plots or 2) some form of rapid assessment technique for monitoring veld quality. CapeNature will assist with setting up a monitoring programme here and can teach landowners how to continue the process. When the information becomes available (this is still being researched) and Rapid Assessment Techniques can be provided, these will be presented to landowners, so that they can be trained to assess veld condition for themselves.

- In the meantime, the indicators under 'Grazing Guidelines for renosterveld' (Appendix 3) can be used to assess the impacts of grazing.

Responsible party: Individual landowners of contracted Stewardship sites, with assistance (in terms of setting up monitoring programme and providing guidelines on how to monitor) from the Agency. Also, a yearly audit by CapeNature.

Means: Rapid assessment techniques used by landowners where possible, as well as fixed-point photography.

5) Impacts of tourism

The impacts of tourism (local and international) on the natural environment should be monitored continually. Some impacts may include: monitoring of trampling effects by people in areas frequented by tourists, impacts of human activity near sensitive areas (particularly those containing rare and threatened plants) and the impacts of increased vehicle activity on road maintenance and erosion.

Responsible party: Individual landowners of contracted Stewardship sites, with annual audit by the agency.

Means: Monitoring of tourism impacts should be a continuous process, incidental with other management activities.

6) Road maintenance and erosion control

Roads and paths should be monitored continually by landowners and erosion control measures put in place at the first sign of possible erosion problems.

Responsible party: Individual landowners of contracted Stewardship sites, with yearly audit by CapeNature.

Means: Monitoring of roads and paths should be a continuous process, incidental with other management activities.

CONSERVATION SIGNIFICANCE

Renosterveld is a *Critically Endangered* veld type, with less than 7% remaining in the lowlands of the Western Cape. The 'Eastern Ruens Cluster' consists of several large, well-connected renosterveld fragments, thus representing a highly significant proportion of the remaining renosterveld in the Western Cape. The incorporation of these contiguous fragments into Stewardship agreements will not only greatly increase the chances of survival of several threatened species, but also, ensure the conservation and maintenance of the vital ecosystem processes at a larger landscape level. Healthy ecosystems are vital for both the conservation of rare and threatened plants and animals, and the maintenance of healthy farming systems.

Summary of qualifying site assessment criteria:

1. The largest, most connected fragments within the cluster have been highlighted in the 5-year plan for the lowlands, while other sites surrounding the core fall into the 20-year plan.
2. The cluster contains several rare, endemic and threatened plants, with viable populations.
3. The cluster contains some of the largest, most well-connected fragments, thus conserving these fragments is also likely to ensure the continued preservation of ecosystem processes across the landscape. Several opportunities exist for corridors to be secured or created between significant tracts of renosterveld habitats. Managing the area as a cluster will make management simpler and more cost effective.
4. Thus far, the cluster collectively secures the conservation of 188 ha of Eastern Ruens Renosterveld – a *Critically Endangered*, 100% irreplaceable habitat. This implies 0.07% of extant ERS renosterveld would be conserved, contributing 0.25% to the targets for the conservation of this habitat type. The cluster also contains 537 ha of Swellendam Silcrete Fynbos – an *Endangered*, 100% irreplaceable habitat. Therefore 0.62% of extant SS Fynbos would be conserved, contributing 2.06% to the targets for the conservation of this habitat type. In addition, the cluster contains 374 ha of Ruens Silcrete Fynbos, which represents 1.78% of extant RS Fynbos and contributes a significant 6.6% to the targets for this vegetation type. Thus, the inclusion of this area into Stewardship will make a significant contribution to the status three very threatened veld types. More farms in the area (i.e. neighbouring the ones already listed in this Management Plan) are being targeting for stewardship contracts and this will add significantly to the percentage targets reached for these habitats.

POLICY & LEGISLATIVE FRAME WORK

Protected Areas Act (Act No. 57 of 2003)

The [Minister/MEC] is empowered, under section 23(1) of the National Environmental Protected Areas Act, 57 of 2003, ("the Protected Areas Act") to declare an area as a Nature Reserve if:

- (aa) It has significant natural features or biodiversity;
- (bb) Is in need of long-term protection for the maintenance of its biodiversity or for the provision of environmental goods and services.

Biodiversity management agreements

The Minister may enter into a biodiversity management agreement with the person, organization or organ of state identified in terms of section 43(2), or any other suitable person, organization or organ of state, regarding the implementation of a biodiversity management plan, or any aspect of it.

National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)

Purpose

"The purpose of the Act is to prevent and combat veld, forest and mountain fires throughout the Republic."

Firebreaks

In terms of section 12 and 14 every landowner must prepare and maintain a firebreak as determined in section 13. Failure to do so is an offence in terms of section 25(3), unless he has been exempted by the Minister in terms of section 15.

Fighting Preparedness

There is also a further duty on landowners to have equipment, protective clothing and trained personnel available in the eventuality that there may be fire on their property (section 17). Failure to meet this requirement is an offence in terms of section 25(4).

Conservation of Agricultural Resources Act (CARA), 1983 (No 43 of 1983)

Summary of restrictions applicable to the conservation area as stated in Section 5 (5.5.1 – 5.7) of the contract agreement (Appendix 1):

	Restriction
✓	No buildings or other structures
✓	No ploughing, cutting, ripping of any indigenous vegetation, ecosystems or habitats in/on the Contract Reserve.
✓	No mining, public works, trade or industry
✓	No rubbish dumping
✓	No act that adversely affects biota
✓	No alien invasive plants
✓	No non-indigenous fauna or extra-limital game species (except where prior permission has been obtained by WCNCB)
✓	No destruction or removal of indigenous flora (except for seed collection for restoration projects or where prior permission has been obtained from WCNCB)
✓	No hunting unless it is necessary for the proper management of the fauna located in/on the <i>[Property/ Conservation Area]</i> and is catered for in the management plan.
✓	No removal or destruction of any indigenous flora or fauna.
✓	No removal of any timber, including fallen timber, from the Contract Reserve. This excludes Alien vegetation.
✓	No activities will be permitted which may adversely affect the natural state, flow, supply, quantity or quality of any water resource located in the Contract Reserve.
✓	No operation of, any trade, industry or business in/on the Contract Reserve, unless provided for explicitly in the management agreement.
✓	No placement of any transmission lines, telecommunication lines, cellular towers or public works in the Contract Reserve.
✓	No subdivision of the Contract Reserve.
✓	No motorcycles or four-wheel drive vehicles in the Conservation Area unless their use is necessary for the proper management and protection of the Contract Reserve. (or for business purposes).
✓	No public access to the <i>[Property/Conservation Area]</i> unless otherwise catered for in the management agreement.

APPLICABLE CapeNature POLICIES

Most Relevant Legislation

- Protected Areas Act (Act No. 57 of 2003)
- Biodiversity Act (No. 10 of 2004)
- Nature Conservation Ordinance (19/1974)
- Western Cape Nature Conservation Board Act No 15 of 1998
- Conservation of Agricultural Resources Act, 1983 (No 43 of 1983)
- National Veld and Forest Fire Act, 1998 (No 101 of 1998)
- National Water Act, 1998 (No 36 of 1998)

Other Relevant Acts:

- Constitution of the Republic of South Africa Act, 1996 (No 108 of 1996)
- Environment Conservation Act No 73 of 1989
- Forest Act No 122 of 1984
- National Environmental Management Act, 1998 (No 107 of 1998)
- National Heritage Resources Act, 1999 (No 25 of 1999)
- World Heritage Convention Act, 1999 (No 109 of 1999)
- Western Cape Tourism Act, No. 3 of 1997
- Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970)

The administration of the Act has been assigned to the Board by virtue of Act 3 of 2000 as published in Provincial Gazette Extraordinary No. 5442 dated 24 March 2000.

Other Relevant Legislation:

- Land Use Planning Ordinance 15/1985 (section 29)
- Nature and Environmental Conservation Regulations (Provincial Notice 955/1975)
- CNC WC Fire Management Plan and Guidelines
- CNC Guidelines for the management of leopard management areas
- CNC Baseline and monitoring manual
- CNC guideline for river maintenance
- Policy on the re-establishment of Cape Mountain Zebra Populations
- Policy on the certificates of adequate enclosure
- Hunting Proclamation

(There might be other legislation applicable to the Contract Reserve and it is the landowner's responsibility to determine this if necessary).

SUMMARY OF MANAGEMENT RESPONSIBILITIES

	Costs to be borne by landowner	Costs to be borne by CapeNature
Woody-alien clearing	Clearing of individual trees and / or scattered populations must be done by the individual landowner.	Where assistance is required for clearing large / dense stands of aliens, CapeNature may endeavour to source funds (through, for example, Working for Water) for assistance.
Thistle control	All individual Contract Reserves are responsible for maintaining thistle control.	Will supply appropriate herbicides and guidelines for thistle control (i.e. Confront) if available.
Fire management	Maintenance of all fire breaks.	Will endeavour to raise funding for assistance with burning where required (i.e. labour).
Livestock management	Erection and / moving of fences to control livestock access to renosterveld fragments. Maintenance of fencing. Control of livestock pressure in renosterveld fragments.	Will endeavour to raise funding for assistance with fencing (i.e. material costs and/or labour).
Monitoring	Continual monitoring of 1) the effectiveness of woody-alien and thistle control, 2) the effects of fire on the veld and 3) the effects of livestock on the renosterveld. Fixed Point Photography.	A joint monitoring schedule to be compiled and monitoring activities shared by CapeNature and the landowner. Assist landowner with setting up points for Fixed Point Photography. Annual audit. Will endeavour to get aid with monitoring from voluntary organisations (such as CREW, bird clubs).

***All other general Management Actions are the responsibility of the individual landowner

LIST OF APPENDICES

Appendix 1. Fire fighting response plan

Appendix 2. Burn Preparation

Appendix 3. Grazing guidelines

Appendix 4. Guidelines for controlling thistles using herbicide

Appendix 5. Guidelines for Fixed Point Photography

Appendix 6: Landowner agreement for sharing firebreaks & responsibilities

Appendix 7: CapeNature's Guidelines for alien-clearing

APPENDIX 3: FIRE FIGHTING RESPONSE PLAN

THE FOLLOWING IS A LIST OF TELEPHONE NUMBERS IN CASE OF FIRE

Contact immediately when you observe an uncontrolled fire:

- Brandbeheersentrum \ Fire Control Room - Oudtshoorn
- Brandbeheersentrum \ Fire Control Room - Bredasdorp 028 4251690\1
- Reinard Geldenhuys (Fireboss, Bredasdorp) - 083 2738234
- U naaste bure \ Your nearest neighbours:

Keith Moodie - 028 7222044

Ian Harper - 028 7221859

Bruce Napier - 082 9642461 / 028 5123763

Tom & Trevenen Barry - 082 4564316 / 028 5123780

Nelis Swart - 072 4269813 / 028 5123621

Neethling Dippenaar - 072 3571155 / 028 5123739

Neels Uys - 082 4400242

Dirk van Papendorp - 082 9248715 / 028 5123761

HOU HIERDIE LYS BYDERHAND TE ALLE TYE!

KEEP THIS LIST HANDY AT ALL TIMES!

APPENDIX 2: GUIDELINES FOR BURN PREPARATION IN FRAGMENTED RENOSTERVELD

PRESCRIBED BURNING

General construction guidelines for firebreaks:

- **Tracer Belts (“Skoffel” Belts)** prepared for prescribed burning should be a minimum width of two and half times the height of the adjacent vegetation including a brushcut shoulder of 1m. (Hoed vegetation should be raked and dispersed deep into the area to be burnt – piled too close to the tracer’s edge poses a fire hazard during the burning operation and also suppresses vegetation growth if stacked in dense mats). Where possible avoid steep gradients and routing tracer belts perpendicular to the slope to prevent soil erosion.
- **It is important that only the aerial portion of the vegetation is skoffled off thus ensuring that the roots of those resprouting plants continue to bind the soil and prevent erosion.**
- No chemical vegetation suppressants may be used in the preparation and maintenance of tracer belts.

PRESCRIBED BURNS

STATE LAND (MCA’S & PROVINCIAL NATURE RESERVES)

Prescribed burning under safe burning conditions can be considered to assist with the attainment of the following goals. Each goal is coupled to a prescribed fire management goal: This will be done to try and obtain the optimum veld age distribution. **Where applicable, alien vegetation must have been felled prior to burning.** Veld age maps and compartment/management unit schedules must be updated annually.

WITHDRAWING FROM PRESCRIBED BURNS

After the initial extinguishing of any fire, preventive measures must be taken to prevent possible flare up. After the burn, *continuous patrols* must occur for a period of 48 hours, thereafter, *intermittent patrols* will begin for an additional minimum period of 5 – 7 days.

Weather forecasts and fire danger indexes must be monitored for appropriate management actions during the mopping up and patrol operations.

NOTE: The decision to withdraw all, or some of the personnel from the fire, is taken at the discretion of the acting *Fire Boss*.

BURNING ON FRIDAYS AND PUBLIC HOLIDAYS

In exceptional cases burning may be carried out on Fridays or on the day before a Public Holiday. No burning may be carried out on Saturdays, Sundays or Public Holidays.

BURNING AT NIGHT

Nighttime burning is permissible and also considered safer if personnel safety can be maintained.

BURN-DAY PREDICTION, WEATHER FORECASTS AND FIRE DANGER RATING.

Weather patterns must be studied before a burning operation is initiated. Weather patterns should be stable. Wind speed and direction should get special attention. Extra care must be exercised on those days which have been predicted at short notice (i.e. shorter than two days previously) as this can be an indication of unstable weather systems.

Predicted weather parameters should preferably fall within the following guideline limits before a burning operation can be initiated:

	Norm	Ideal
Wind speed	< 30 kph (The wind speed and direction must be stable)	5 – 15 kph
Maximum temperature	< 28°C	22 – 26°C
Maximum Relative Humidity (RH)	> 25%	38 – 60%

SIZE OF AREA

If possible no area larger than that which can practically be burnt in 24 hours should be subjected to prescribed burning. Operations that take longer than a day to complete could be subject to unexpected weather changes.

AUTHORITY FOR BURNING

Discuss with neighbours and reach agreement

- Determine mutually acceptable dates.
- Inform your Fire Protection Association (FPA) (if one exists).
- Have enough people present to prevent fire from spreading.
- If the neighbour is not present on the agreed day, you can burn in his/her absence.

Requirements for firebreaks

- The Act doesn't specify requirements for firebreaks.
- This is because requirements will vary from one situation to the next. For example, on the Cape Peninsula (where extensive tracts of Fynbos occur), firebreak requirements would be different to what is needed in isolated fragments of Renosterveld in the Overberg.
- Local practice and local issues must determine what the requirements are.
- The Act states that the owner must pay attention to weather, climate, terrain and vegetation in deciding on how to prepare the break.
- The break must:
 - be wide enough and long enough to have a reasonable chance of stopping the veldfire
 - not cause soil erosion
 - be reasonably free of inflammable material.

APPENDIX 3: GRAZING GUIDELINES FOR RENOSTERVELD FRAGMENTS

The veld should not be grazed for a minimum of 18 months after the burn and the grazing period hereafter should be short and intense. Current knowledge suggests that grazing should only take place between late November and early March (as this promotes bulbs and grasses). Current recommendations (Dr. Sue Milton, Stellenbosch University) for stocking rates in lowland renosterveld areas with an average annual rainfall of between 400-600 mm are 4-10 ha per LSU (Large Stock Unit) and 0.6-1.6 ha per SSU (Small Stock Unit). However, in areas with less than 400mm rainfall per annum and areas where veld has been significantly degraded through previous mismanagement, lower stocking rates are recommended. Because area-specific knowledge in this field is lacking, constant monitoring of the veld for signs of overgrazing is essential. At present, scientific studies carried out thus far suggest the following broad guidelines for renosterveld grazing and burning:

- No live stock allowed in the renosterveld Camps during winter to early summer.
- Use renosterveld Camps as reserve food sources in the summer.

To encourage grass, burn in autumn before resting. Spring burning followed by grazing leads to dominance by Renosterbos.

The following **are useful indicators of overstocking** and, where these are witnessed, animals should be removed from the camp immediately and the veld left to rest until it has recovered:

a) Where Rooigras *Themeda triandra* occurs at significant densities and is therefore a useful indicator of overgrazing:

- If flowering stems have been grazed off of more than 85% of *Themeda triandra*/ *Rooigras* bunches in a camp, all livestock have to be removed from the camp.
- If flowering stems have been grazed off of more than 90% of *Themeda triandra*/ *Rooigras* bunches in a camp, the vegetation (Renosterveld) is overgrazed. All livestock must immediately be removed from the camp / contract reserve.

b) Where Rooigras occurs at naturally low densities in the veld and is not useful as an indicator species:

- Heavy browsing of 85% of all individuals of high and medium palatability species
- Browsing of 30% of low palatability species (such as Renosterbos) is noted, stock should be removed and the veld rested until recovery is seen.
- Signs of trampling and soil degradation, especially destruction of 70% or more of living soil crust cover formed from algae and mosses are an indicator of overstocking and all livestock should be removed from the area until recovery is visible.

Where red data book species are present, these should be carefully monitored for signs of negative impacts from grazing and stocking timing and densities adjusted accordingly.

** This information was gathered by Sue Winter and Dr. Sue Milton, who are thanked for allowing it to be used here.

Other references / further reading:

Cowling RM, Pierce SM & Moll EJ 1986 Conservation and utilization of South Coast Renosterveld, an endangered South African vegetation type. *Biological Conservation* 37: 363-377

Rebello A 1995 Renosterveld conservation and research. Pages 33-43 in Low AB and Jones FE (eds) FCC report 95/4 Botanical Society, Kirstenbosch

Tainton NM (ed) 1999. *Veld Management in South Africa*. University of Natal Press, Pietermaritzburg.

Walton BA 2006 Vegetation patterns and dynamics of Renosterveld at Agter-Groenberg Conservancy, Western Cape, South Africa. MSc thesis, University of Stellenbosch.

APPENDIX 4: SUGGESTED METHODOLOGY FOR CLEARING / CONTROLLING EXOTIC & INDIGENOUS PROBLEM THISTLES

Several farmers have suggested thistle control as one of the major challenges in renosterveld management in the Overberg. At this stage, we do not yet have the knowledge on how to combat thistles and welcome any suggestions / experiments in this field. Most importantly, we need to find the best way in which to control thistles invading in natural habitats (e.g. renosterveld), in a way that ensures no detrimental affects on the indigenous vegetation.

RESOURCES NEEDED:

- Appropriate herbicide for killing thistle (a broad-leaf specific – e.g. Confront), along with a sticking agent (Actipron) and preferably, also a dye
- Back-pack spray for spot spraying AND / OR
- Boom spray for sweep spraying
- Protective gear for labour to wear while spraying (e.g. gloves, masks).

CONFRONT MIX:

0.5% Confront in water

2% Actipron (sticking agent)

Dye

IMPORTANT NOTES (also applies to precautions for spraying pesticides / herbicides):

- Spray on a windless, calm day, in order to avoid drift onto untargeted (indigenous) species
- In areas where thistles are invading natural veld: spot spray thistles only. Be careful not to spill any herbicide on indigenous vegetation (particularly other broad-leaved plants). Try to avoid spraying from about June-November, when the bulbs are out and therefore vulnerable to spillage. Where infestations are very dense, the entire area may have to be sprayed, at the short-term expense of some indigenous shrubs.
- In old lands / productive lands: larger areas can be sprayed (i.e. not just spot-sprayed), but where these areas are adjacent to natural habitats, care must be taken not to allow spray to drift into these – thus, it is recommended that edges of natural habitat fragments are spot-sprayed.

APPENDIX 5: GUIDELINES FOR FIXED POINT PHOTOGRAPHY

Fixed point photography is an essential in short to medium term monitoring of vegetation communities. This because it provides:

1. Cheap and permanent record which is easy to access and review trends.
2. A rapid means of assessing short to medium term trends in vegetation structure.
3. An achievable means of evaluating and interpreting the impact of external influences like fire and game on vegetation.

Setting up a fixed point photo monitoring network:

1. Aerial photos are preferable for large scale changes not readily visible from the ground.
2. At ground level - select points throughout the reserve that give adequate coverage of the vegetation communities present – record the GPS position for each point. Plant a pole to mark the position of the camera and number each for easy reference.
3. To standardize photos use a fixed lens instead of a zoom lens.
4. Photo's can be taken at fixed compass directions – a 35mm lens covers a 62° arc thus eight photo's can be taken 0°, 45°, 90°, 135° etc. this ensure good overlap between photo's. Aim to achieve a 10-30% overlap between photos. Alternatively digital cameras with a panorama function may be used.
5. As far as practically possible – take photos at the same time and date during each survey.
6. Proper labeling, storage and archiving of the photographic record are essential.

EXAMPLE: Fixed Point Photograph Monitoring Log Sheet

PROPERTY NAME: Example

PROPERTY NUMBER: 113/5 Paarl



Photo Number	e.g. 113-5PAW0305 Property number/photo point/direction/date (113/5 Paarl) / A / W /03052005
Date	03/05/2005
Time	12h00
Direction	N
Weather Conditions	Cloudy & Windy
GPS Reading	S 07' 16.211" E 09' 39.994"
Photographer	R. Jantjies
Camera Specifications	HP R707 8.0mm zoom 3 MP
Additional Notes	Severe erosion caused by flooding on 25/04/2005

Fixed Point Photograph Monitoring Log Sheet

PROPERTY NAME:

PROPERTY NUMBER:

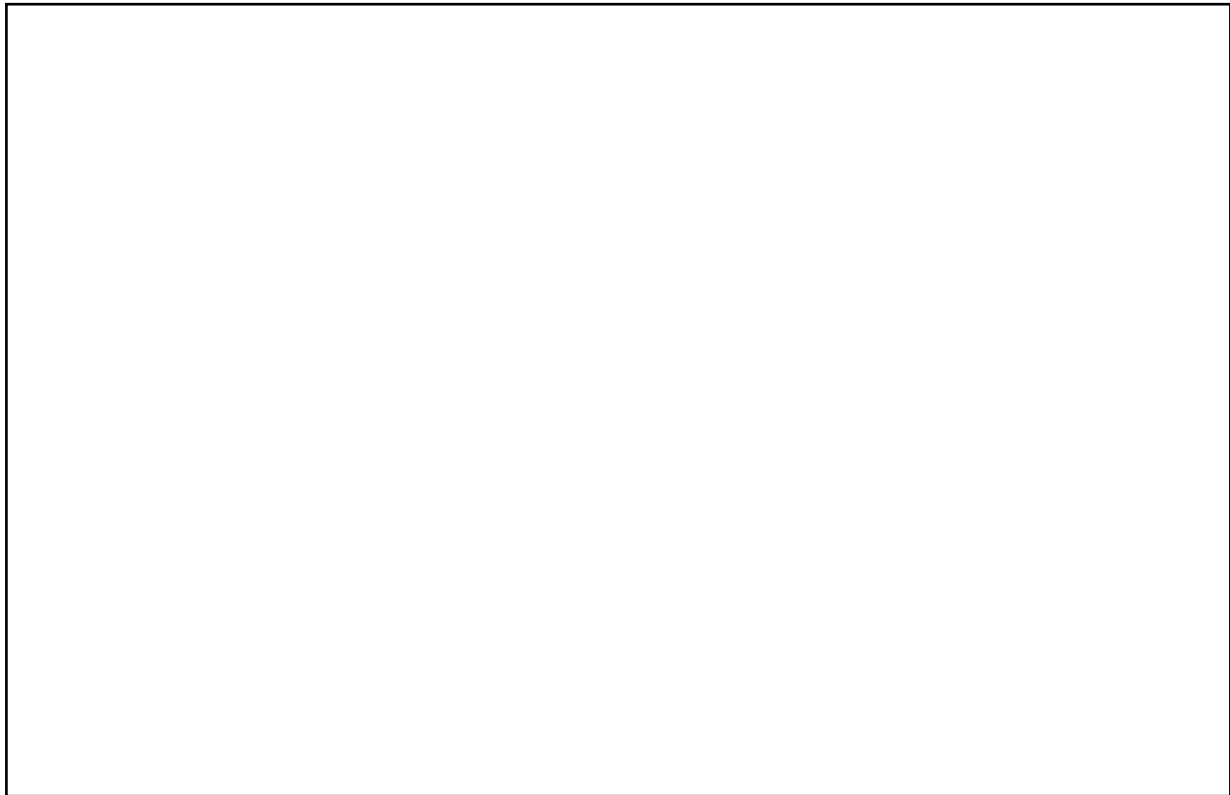


Photo Number	Property number/photo point/direction/date
Date	
Time	
Direction	
Weather Conditions	
GPS Reading	
Photographer	
Camera Specifications	
Additional Notes	

**APPENDIX 9: MEMORANDUM OF AGREEMENT FOR CLEARING AND MAINTENANCE OF A FIRE
BELT/BREAK AND COST RECOVERY IN THE EVENT OF A FIRE**

Entered into and concluded between

.....

(Name of Owner)

(Identity number)

Of the property known as

.....

Name, Number and Magisterial District of property

And hereinafter referred to as Landowner “A”, the one party

and

.....

(Name of Owner)

(Identity number)

Of the property known as

.....

Name, Number and Magisterial District of property

And hereinafter referred to as Landowner “B”, the other party

A. Preamble

Wildfires periodically occur in the natural fynbos and karroid / thicket vegetation types that are to be found in the Cape Floristic Region. In terms of the National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998 as amended) ("the Act") every owner of land has a duty to prevent a fire that originates on his or her land from spreading to any other property. Section 12(1) of the Act requires, amongst others, that landowners prepare and maintain firebreaks on the boundary of his/her land and any adjoining land. Section 12(7) of the Act however makes provision for situations where the optimal firebreak position may not be along a common boundary but rather at a position that is agreed to by the respective adjoining landowners.

In order to facilitate the optimal positioning of the required fire protection measures the above-mentioned landowners and neighbours have met and mutually agreed upon the position, type and conditions pertinent to the construction and maintenance of the fire protection measures common to both landowners.

Now therefore the parties agree as follows:-

B. Duration

This agreement shall be for a period of (5) five years as fromand shall continue thereafter until terminated by ninety (90) days written notice by either of the parties hereto.

C. Alignment

The required firebreak as stipulated in section 12(1) of the Act will not be created and maintained along the common boundary but, in terms of Section 12(7), will be placed and maintained away from the common boundary along a route as described below and depicted in Annexure 1 respectively;

D. Description of and reason for repositioned fire-belt/break:

1. Route Description

.....
.....
.....

2. Reasons/motivation (i.e. improved access and utility)

.....
.....
.....

E. Terms and conditions:

1. Type

The said fire belt/break will be prepared and maintained by way of:

.....
.....
.....
.....

Describe precise make up of belt in terms of (1) overall width; (2) width of road (where applicable), hoed, slashed, ploughed, burnt, herbicide sections; (3) maximum height of remaining vegetation: (4) Erosion control measures

2. Maintenance cycle

- 2.1 The said fire belt/break will be maintained, after initial preparation, on a maximum cycle of Years. The fire belt/break may, if necessary, be maintained on a shorter cycle but only with the written agreement of both parties.
- 2.2 The party conducting the maintenance activities must ensure that the fire belt/break is maintained to the same standard immediately after the initial preparation.

3. Obligations and Rights

- 3.1 The costs of preparing and thereafter maintaining, the said fire belt/break will be borne by the two parties in a proportion to be agreed upon, which will be effected by one or more of the following means:-

*(a) By one party, namely. preparing and maintaining the said fire belt/break along the entire route, and by the other party, namely. paying half of the costs of such preparation and maintenance upon presentation of an invoice by the said

*(b) By one party, namely. making. labourers available to the other party, namely for the clearance and maintenance of the said fire belts/breaks under the supervision of the said or his/her representative.

*(c) By each party, preparing and maintaining an equal width of the fire-belt along the said route;

*(d) By
.....
..... (e.g. By landowner maintaining the road and neighbour slashing 5 metres alongside the road)
(*DELETE WHERE APPLICABLE)

- 3.2 Neither party shall claim any compensation from the other party for any damage or loss suffered during such preparing or maintenance of a fire belt/break.
- 3.3 Should either party fail to carry out his obligations in terms of this agreement, the other party reserves the right to prepare or maintain such fire belt/break and to claim such actual expenditure in so doing from the other party.
- 3.4 Either party undertakes to give the other party no less than 30 days prior notice of his intention to prepare or maintain a fire belt/break.

- 3.5 Should any part of the fire belt/break which is to be cleared and maintained as shown on the attached sketch plan (Annexure 1) fall within or adjoining a road reserve of a public road, the party responsible for the supervision of that part of the fire belt/break preparation shall take all necessary precautions for the safety of any members of the travelling public using the said road during such preparation or maintenance activities

F. Special Conditions

Actions during a fire

1. Both parties agree to not hold the other party liable for any damages or loss suffered should a natural fire start in the area between the actual boundary and the agreed upon position of the fire-belt.
2. Both parties will assist with the combating of a fire along the agreed upon fire-belt should a fire be approaching the fire-belt from one side or the other (*as required by the Act*). Either party reserves the right to claim for actual expenditure (overtime, rations, transport etc) incurred during such fire suppression activities.

Fences

1. Describe specific responsibilities and conditions relevant to the protection measures required for both boundary and internal fences (e.g. width, method, position, cycle, responsibility of both parties)
 - a.
 - b.
 - c.
- G. This agreement does not release the parties to this agreement from any other obligations defined in the Act or any other relevant legislation.
- H. Any change in ownership of the properties applicable to this agreement will render this agreement null and void and this agreement must be re-negotiated with the new landowner.
- I. No variation, addition, deletion, or agreed cancellation shall be of any force or effect unless in writing and signed by or on behalf of the Parties hereto.

J. Notice and Domicilia

The Parties choose as their respective *domicilium citandi et executandi* for the purpose of giving or sending any notice provided for or necessary in terms of this Agreement, the following addresses -

Landowner "A"

(Supply street address and postal address, contact person and telephone and fax number)

Landowner "B"

(Supply farm name and district and postal address, contact person and telephone and fax number)

DRAFT

THUS DONE AND SIGNED AT thisday

of200.....

AS WITNESSES

1.....

Landowner "A"

(DESCRIPTION OF TITLE AND PRINT NAME OF OWNER)

2.....

THUS DONE AND SIGNED AT thisday

of200.....

AS WITNESSES

1.....

Landowner "B"

(DESCRIPTION OF TITLE AND PRINT NAME OF OWNER)

2.....

APPENDIX 7: ALIEN CLEARING GUIDELINES:

UNDERSTANDING THE TIME AND COST SCHEDULE FOR ALIEN CLEARING

Step 1

- Map the area in question, breaking the property down into polygons of uniform alien species and/or densities. Draw Polygons in GIS (if available) to calculate the area of each polygon.
- Enter ID numbers (eg. 1- 10) and corresponding hectares into the scheduling sheet.
- Classify dominant density and age for each polygon.
- Calculate person days according to the norms given per species and density in the norm sheet.

Step 2

- Prioritise polygons according to which year the initial treatment should take place.
→Keep in mind that:
 1. Highly infested areas such as river courses, which won't increase substantially in density or spread, should be left until last.
 2. Scattered areas with the possibility of spreading further should be targeted first.
 3. If young pine is scattered and won't produce seed within the first year it may be left for the following year.
 4. Gaps between initial clearing and subsequent follow up operations are species dependant. For example, a two to three year gap can be left between initial clearing and the first follow up with scattered pine but Black Wattle and Eucalyptus spp. must be followed up the following year at least. In some cases, a follow-up may be required after 6-8 months depending on the species, location, density of infestation as well as the amount of time the area had been invaded for.

Step 3: Calculating Density and resulting person days

- The estimated density of the follow ups differ from species to species, for example; Black Wattle and other re-sprouter species will increase in density after the first follow up while non- sprouter species such as pine will decrease.
- It may be advisable to not change the densities for non-sprouter species for the first follow up and just change the age to young.
- Person days is calculated as follows: Hectares x norm for the relevant density (supplied on norm sheet) eg. C28*20.1
- Most of the formulas are already in the spreadsheet but always check for any abnormalities.

Step 4: Cost

- Copy across the person days and hectares from time schedule to the cost spread sheet.
- Cost is calculated as follows: Total person days x cost per person day eg. B5*(\$C\$3) This is a daily wage and is likely to differ from landowner to landowner.
- Herbicide cost is calculated as follows: (Hectares x percentage density) x litres herbicide (specified per species) x cost per litre eg. (C5 * 0.6)*2.25*159.05

- All herbicide norms appear on the herbicide norm sheet attached.
- “Other Cost” indicated in the example as R36.00, allows for extra costs such as protective clothing etc. This is a guideline, and is likely to change per scenario.

Herbicide Costs

<i>Herbicide</i>	<i>Working for Water Rates</i>	<i>Normal Rates</i>
Timbrel	R159.05	R184.11
Chopper	R179.60	R220.00
Garlon	R159.50	R171.25
Actipron	R15.83	R20.40
Dye	R152.20	R152.20

CONTRACT SELECTION AND CONTRACTOR MANAGEMENT GUIDELINES:

In order to manage contractors and day workers during alien clearing operations on your property, planning of the area to be cleared should be done before clearing commences.

Pre Contract:

- Allocate a budget and draw up an alien clearing plan for your property.
- Identify the priority areas on the property to be cleared. Priority areas could be areas scheduled for follow up, blocks where flora harvesting is done or areas of low density infestation of which the cost could increase if left until a later stage (see CapeNature Alien Clearing Manual).
- The area selected should be clearly marked in the veld. Barrier tape, Duco spray or strips of plastic could be used. Limit the use of equipment that could pollute.
- The future usage of the area should be taken into account when selecting clearing methods. Labour intensive methods would be used where the aim is to conserve the natural vegetation where as a bulldozer would be used where transformation of a vegetation type is planned. Mechanical clearing including stacking and logging will influence the cost/ ha if compared with frilling/ring barking which is more a manual operation.
- Determine the size/hectares of the area to be cleared by using a GPS, service provider or a tape measure.
- The accessibility of the area to be cleared could require the landowner/manager to allocate extra time for the contract. This could be added as walking time.
- Estimate the cost for the block by using the CapeNature cost/ha guideline or records of previous clearing operations done on the property.

Labour selection:

- The landowner/manager should determine the work schedule and experience of current farm labour if he wants to use them to complete the contract.
- If not, the landowner/manager should identify possible contractors to quote for the job. The local CapeNature office can be contacted for a list of contractors.
- Arrange with contractors to have a site meeting where the proposed contract could be viewed and supply information regarding the clearing methods with other specific instructions.
- Ask the contractors to supply references and follow up on them in order to check on their track record.

After the contract has been awarded the landowner/manager should monitor the process of work:

- The quality of work needs to be monitored during the duration of the contract to ensure that the work is done according to the correct clearing methods. Make use of the CapeNature Alien Clearing Manual where the correct clearing methods are discussed or contact your local CapeNature office for technical assistance. Incorrect clearing methods could result in resprouting/ regrowth that could double the follow up cost. Species should be cut below the lowest growth node to prevent resprouting, while stacking in dense areas is recommended. This will benefit follow up operations. Herbicide should also be applied directly after a species is cut down to ensure sufficient absorption. Do not foliar spray during rainy or windy conditions. Refer to the self audit and quality control sheet in the CapeNature alien clearing manual.
- Make sure that the contractor uses the equipment that he quoted for. Using one chainsaw instead of two chainsaws could influence the persondays spent on the contract.
- The quality of the tools/equipment used for the contract could also influence productivity/persondays. Tools influencing ergonomics would lead to lower productivity and could result in injuries to workers. The correct equipment should be used for the task performed. Using loppers where a bow saw should be used will influence time/tree and ultimately production/persondays.
- If required the landowner/manager should issue the pre mixed herbicide on a daily basis for the contract. This is to ensure that the correct dosage is used for the species treated. Dye should also be added to the herbicide to aid the contractor/herbicide applicator and assist the landowner/manager with quality inspections. The landowner/manager must use his own discretion if he wants to make it the contractor's responsibility to supply and mix his own herbicide. Consult the CapeNature Alien Clearing Manual to determine which species require herbicide. The herbicide label should also be consulted. If it is not possible to pre-mix the herbicide yourself, a clause should be included in the contract indicating that the contractor could be held liable for regrowth up to six months after the completion of the contract.

Responsibilities of the contractor: (to be made clear to him/her)

- The contractor must complete a daily timesheet that should be checked weekly and signed by the landowner/manager. If a dispute arises regarding the contract/persondays the landowner could determine if the correct persondays have been worked, Absenteeism on a daily basis by workers will influence the total persondays/cost.
- Transport to and from the site should be the responsibility of the contractor unless by arrangement with the landowner/manager.

- The contractor should set daily/weekly targets that is clearly indicated and communicated to all the workers. This would ensure that the contractor meets the time as allocated by the contract. The Landowner/manager should check the targets weekly.
- Where the contractor requests to make firewood during the contract he/she should appoint additional people to prevent influencing the person days. It is not always practical to wait until the completion of the contract but it is possible.
- The contractor must ensure that he is registered for workman's compensation to cover himself in case of an injury on duty.
- The correct health and safety standards should also be maintained during the contract to ensure a safe working environment. Also see the Chainsaw safety pamphlet).

DRAFT