APPENDIX 3

MAINTENANCE MANAGEMENT PLAN FOR CLEARING ALIEN INVASIVE VEGETATION ON THE PREEKSTOEL COASTAL ESTATE PROPERTY, INCLUDING ERF 593

Revision September 2023

1. INTRODUCTION

This document forms an Appendix of the Environmental Management Programme (EMPr) that was compiled for the Construction and Operational Phases of the Preekstoel Coastal Estate (which has been renamed as the Preekstoel Beach Lifestyle Estate). In terms of the Conditions of Approval issued by the Department of Environmental Affairs and Development Planning (DEADP), the developer had to compile a Maintenance Management Plan for the removal of alien invasive vegetation from the development area (comprising a portion of Erf 1028 and a portion of Portion 2 of Erf 599), Erf 593 and a coastal portion of Erf 1028. The two properties used for the development have subsequently been consolidated into one property, known as Erf 2343. A conservation coastal corridor, previously comprising a portion of Erf 1028 has now been assigned a new Erf number, Erf 2341. This Erf was rezoned to Open Space III for conservation purposes.

The alien invasive vegetation of these properties is primarily rooikrans, *Acacia cyclops* which is native to Australia and was brought to South Africa by the then Department of Forestry to assist in stabilising the mobile dune systems along the coastline of the then Cape Province (Western Cape and Eastern Cape) during the early 1900's.

These invaders are more competitive than the indigenous species as here they are released from their natural enemies that control their population sizes in Australia. The absence of natural enemies results in plant populations that produce larger seed stores resulting in increased seedling recruitment and establishment than indigenous fynbos species. The fact that the germination of many of these species seeds is activated by fire and their sheer population size makes them better able to colonise new areas in the wake of a fire.

The area between the Goukou Estuary and through to Geelkrans Nature Reserve used to be a mobile dune field. Stabilisation of the Still Bay East mobile dune system was started in in 1928 and by the early 1960's was completely overgrown with rooikrans. The only section of the Preekstoel coastal section that had any locally indigenous Blombos Strandveld growing on it was the fossilised ancient dune system just east of the Preekstoel Beach, namely the steep aeolianite foreland scarp. This indigenous vegetation soon became infested by rooikrans, but still contains a number of Strandveld plants.

Over the past 75 years, the artificially stabilised frontal dune system east of the Goukou Estuary mouth to the then stable aeolianite foreland scarp on Erf 1028 was severely impacted by anthropogenic means, namely trampling and the use of 4X4 vehicles, and natural storms, both high storm seas and gale force winds. The Preekstoel beach and frontal dune system was most impacted section of coastline with the erosion of the hummocky and primary dunes being severely denuded of vegetation and eroded by wind. The result was that the sand from the frontal dunes was accumulated by the rooikrans growing on the back dune area, with the result that the back dune became higher and higher.

This document focuses on recommendations for effective clearing of dense rooikrans *Acacia cyclops* from the properties used for the development (Erf 2343) and Erf 593, and less dense stands from the remnant steep coastal foreland scarp which is also hedged (outer leaves are "burnt" by the salt laden strong winds), to:

a) avoid any un-intentional negative environmental impacts resulting from the clearing operation and
b) optimise results in terms of economy and practicality.

The purpose of this management plan is to:

- Provide the primary strategic tool for management of the Preekstoel properties, informing the need for specific programmes and operational procedures.
- Provide for capacity building, future thinking and continuity of management.
- Enable the landowner to develop and manage these properties in such a way that their values and the purpose for which it has been established are protected.

The reasons for clearing rooikrans from the properties, the methods of clearing, wood chipping, fire management and biological control are all discussed below. The monitoring of the success and follow-up management of the cleared areas of rooikrans is also discussed. In addition, the laws pertaining to the control of alien invasive vegetation are highlighted at the end of this report.

2. REASONS FOR CLEARING, THE PROBLEM SPECIES AND THEIR CONTROL

2.1 Australian Acacias

Adaptations to fire and competition with native flora.

Australian acacias produce enormous amounts of viable seed in the absence of natural seed predators (Jones 1963, Milton 1980, Jeffery *et al.* 1988, Cronk and Fuller 1995, Pieterse and Boucher 1997, Cilliers *et al.* 2004). These seed banks build up in the soil, do not lose much viability over time and germinate profusely following fires, which break their dormancy (Boucher 1978, Milton 1980, Milton and Hall 1981, Pieterse 1986, Pieterse and Cairns 1986, Holmes 1988). Milton and Hall (1981) state that: "*the large seed bank is a major obstacle to the removal of Australian acacias from the indigenous vegetation of the Cape*."

It is also well known that these aggressive plants are capable of rapid growth. Roux and Middlemiss (1963) state that "*no indigenous tree or bush species exhibits such rapid or sustained growth as the invaders, and no indigenous tree growing in the same habitat can overtop them*."

The result of these adaptations is that, if left un-checked, these species quickly dominate the landscape. **They reduce biodiversity, utilize more water than indigenous vegetation and increase both the fire risk and damage caused by fire where they occur in dense stands.**

Control of mature Acacias

Although foliar herbicide applications may kill mature trees it is not an economically viable or indeed practical option and trees may produce even more seeds when stressed/dying (Dr. Charlie Boucher pers. comm. 2002, Dean Ferriera pers. comm. 2006).

Where mature **rooikrans** (*A. cyclops*) forms a dense thicket where very little or no locally indigenous plants occur, the most effective way to clear the thicket is using a bulldozer which rips the plants out roots and all together with the topsoil and leaf litter. This material should be stacked in rows for further processing. Such processing includes the use of a frontend loader equipped with specialised steel tines that is used to separate the brushwood from the leaf litter and topsoil. The brushwood is then stored in readiness for being chipped with an industrial woodchipper. The resulting wood chips are then stored in heaps for later spreading over the exposed sandy surface to prevent wind erosion from taking place. It can be expected that seedlings of Rooikrans will start

growing within a month of clearing. It may be more economical to spray seedlings over large areas than trying to hand pull them.

According to Boucher and Stirton (1978) "*A. longifolia (**long-leaved wattle**) does not coppice and A. cyclops (**rooikrans**) rarely does so, so while herbicide treatment on the cut stumps is unnecessary, plants should be cut as near as possible to ground level*". The herbicide suppliers do, however, suggest cut stump applications of 30ml Timbrel + 5ml Actipron + 1ml EcoBlue per litre of water for these species.

In recently burnt stands of mature plants, follow-up treatment must occur within a few months (especially in wet areas), before the mass of regenerating seedlings have a chance to grow, mature, flower and produce more seed.

Control of Acacia seedlings

Very dense stands of Acacia seedlings may be sprayed with a foliar herbicidal spray mixed with a wetting agent. Alien saplings should be less than 1.5 m tall for the foliar application to be most effective (plants become more difficult to kill as they grow taller). Foliar sprays should be conducted on wind free days to avoid contamination of non-target native plants, wasting of the herbicide, drift and possible health hazards. Importantly, spraying should only be conducted when the air is cool. This is due to the fact that leaf stomata close above 22°C resulting in ineffectual herbicide absorption (Willie Meyer pers. comm.).

Appropriate eradication treatment needs to be re-applied where necessary and the area inspected for survivors on a bi-annual basis since some species grow to flowering in one year under optimal conditions (Dr. Charlie Boucher pers. comm. 2006). Regular inspection and follow up work is especially important since remaining un-germinated soil borne seeds will most likely be stimulated to germinate by environmental cues following the foliar herbicide application and death of the first swathe of seedlings (Dean Ferreira pers. comm. 2006).

Individual or sparsely distributed small (< 30 cm tall) acacias can be pulled by hand or by using a puller/popper tool (when plants are between 30 cm and ± 50 cm tall (NB this does not apply to Blackwood or Port Jackson seedlings). Saplings (>30 cm tall, all species) may alternatively be cut using a lopper (long-handled secateur-like instrument) or brush-cutter and the stumps painted with herbicide in the case of coppicing species (Anonymous 2000).

A. cyclops (**rooikrans**) and *A. longifolia* (**long-leaved wattle**) seedlings (which germinate en masse after fire or soil disturbance) can be hand-pulled (sparse infestations) or sprayed with 0.7% *Confront* used in conjunction with 0.5% *Actipron* (dense infestations) and a wetting agent. This approach must be repeated annually in order for successful eradication.

The chemicals and herbicides suggested in this document should be available locally, from various distributors, Agricultural Co-ops and nurseries and have been chosen because:

a) they are effective and
b) they have low or negligible short or long-term environmental toxicity.

Unless stated herbicide/dye mixing concentrations and application rates for the different Australian Acacia species are available from the suppliers. Importantly, Material Safety Data Sheets (MSDSs) for all chemicals and herbicides used must be available on site at all times. These documents contain vital information pertaining to environmental toxicity, health and safety regulations, flammability, storage instructions, procedures to follow in case of accidental ingestion and disposal methods.

3. METHODS AND CONSIDERATIONS NEEDED FOR EFFECTIVE SEEDLING CONTROL

3.1 Hand-pulling

Gloves are needed. Seedlings need to be gripped by the stem as close to the ground as possible and pulled out in one smooth motion - taking care to remove the entire root system. Seedlings should be stacked on brush piles or rows along contour lines, to facilitate easy follow-up.

3.2 Foliar spraying

All herbicides must be mixed on a drip/ground sheet when working in the veld in a demarcated area, out of direct sunlight and well away from surface water. The workers should under no circumstances rinse herbicide equipment in the veld. They should as a matter of necessity observe the instructions for the safe use, mixture and application of the herbicide.

The workers should use knapsack sprayers fitted with cone nozzles (e.g. Spraying-Systems TG-2 or equivalent type) and wear the appropriate safety clothing at all times (protective gloves, rain suit and face-shield or safety glasses and a filter mask). This nozzle-type (larger droplet size than the Systems TG-1 nozzle) used in conjunction with a pressure of 100 kPa helps minimize drift onto surface water or non-target plants. The herbicide should be applied over the top of the seedlings, holding the nozzle about 50 cm above the plants and moving along straight lines, but making sure that all the leaves are covered.

Herbicides are also generally most effective when plants are actively growing. This implies that they will be more effective if applied on sunny days or during warm weather conditions (but below 22°C).

Herbicides must also not be sprayed if there is wind or evidence of drift, if plants are over 1.5 m tall, during rain or on wet, damp leaves. General safety precautions should always be adhered to viz. not allowing pregnant women to be directly involved in herbicide operations and never spraying near children, animals or directly over surface water.

Herbicide spraying should only be considered when the density of alien seedlings is high, otherwise hand pulling or other mechanical methods remains the preferred alternative.

4. MECHANICAL FELLING OF MATURE PLANTS

4.1 Introduction

Mechanical felling applies to all species, and most situations for the initial clearing operation and includes the options of physical felling or uprooting of plants and their removal from the site or stacking (often in combination with burning, see Section 6). Coppicing species, however, require chemical treatment immediately after cutting.

All plants should, however, be cut as close to the ground as possible since even small branches left on acacias can continue to grow. Another advantage of cutting low is that this increases the size of the stump area - which results in improved herbicide intake.

While contractors usually select and provide their own equipment the following suggestions should be kept in mind. Hand-tools such as slashers and bowsaws can be used where stems do not exceed 50mm diameter. Slashers should, however, not be used for coppicing species as they do not produce a flat, clean surface for effective herbicide application.

With larger plants moderately sized chainsaws in the 2.5kW range become necessary. Note that only experienced operators may use chain saws and that full PPE (Personal Protective Equipment) must be worn at all times (including ear protection). Chain saws can be twice as cost-efficient as

hand-tools if plants exceed 50mm stem diameter. In the case of dense infestations of tall, slender (50-80mm diameter) plants, brush-cutters in the 2.5 to 3 kW class should be used.

Note that if the user opts to conduct the manual clearing operation him/herself (and not employ specialist contractors) then it is imperative that all workers attend a chain saw / brush-cutter course (usually provided by the suppliers). Remember that all re-fuelling should be done over drip-trays (to prevent spills). Fuel should be properly stored on bunded concrete slabs or in drip-trays.

5. WOOD CHIPPING – General principles

One method of reducing the fuel load after clear felling is to feed alien slash through a mobile mechanical chipper. Chips can be caught in a trailer and dumped on site in an area where construction will not take place. These chips can be used later in the rehabilitation programme or to stabilise loose sandy areas.

6. FIRE

Fire has in the past been used as an effective tool for alien plant management in conjunction with mechanical clearing, for example in the burning of piles of felled alien slash or block-burning previously cleared areas where alien seedlings/saplings have germinated.

The use of fire is a high-risk activity and therefore making use of experienced service providers is recommended for

a) controlled block-burning operations; or for
b) alien clearing operations involving burning of large volumes of slash.

Various factors need to be taken into account if burning is to be considered as a management option. A full risk assessment should be undertaken and a fire management plan (which includes the lay-out of fire breaks and agreements with neighbours etc.) must be drafted. Burning should only be allowed in late autumn (open fires are only allowed in certain months of the year as per Government Gazette). Burning is also only allowed under certain weather conditions on the day (blue or green Fire Danger Index). The Fire Danger Index is updated daily and is available at http://www.weather-sa.co.za for most major centres in the Western Cape. The relevant authorities (CapeNature, local municipality, local fire department and DFFE) and neighbouring landowners must be informed in writing of any planned burning operations. If, for any reason burning is to be done outside of the allowed dates as per Government Gazette a burning permit must be obtained from the DFFE.

7. BIOLOGICAL CONTROL

Various biological control agents have been brought into South Africa as a management practice to control the spread of alien plants. Biological control involves the introduction of host specific pathogens and insects onto a plant in order to either kill it or reduce its reproductive output. This method forms part of integrated regional-wide governmental alien eradication programmes and, while probably not directly applicable to the property, is presented here for the sake of completeness.

The following paragraphs describe examples of biological control currently employed in the Western Cape.

The infection of *Acacia saligna* by the biological agent *Uromycladium tepperianum* involves the formation of galls (heavily infected plants may bear several hundred).

Acacia longifolia plants are also often characterised by galls formed by the wasp *Trichilogaster acaciaelongifoliae* while it's seeds are eaten by the recently introduced weevil *Melanterius ventralis.*

However, due to the unforeseen fact that plants sometimes inadvertently produce more seeds while stressed/dying, specialists (for example the Agricultural Research Council/Plant Protection Research Institute tel. 021 887 4690) are used to advise on and supply bio-control agents.

8. CLEARING OF ROOIKRANS FROM THE PREEKSTOEL PROPERTIES

8.1 Development Site Comprising Erf 1028 and Erf 599

The cover of alien infestation on the northern portion of Erf 1028 is dense and equally so on Erf 399 (now known as Erf 2343). According to the botanist, these erven comprise 75-80% rooikrans. Erf 593 is also densely populated with rooikrans with some areas where rooikrans has been previously removed by CapeNature and contains some locally indigenous Strandveld species. Since the botanist indicated that there was very little locally indigenous vegetation of Erf 2343, and that there were no areas of concern on this property, the botanist indicated that the most efficient way of clearing the rooikrans on these two erven was by use of a bulldozer. The rooikrans and the upper leaf litter, including the seed bank was also removed by bulldozer (**Photo 1**).

Photo 1: Shows the site has been cleared by bulldozer and the topsoil layer comprising leaf litter and seed.

The removed rooikrans was worked with a frontend loader to shake out the sand. It was then stored on site and chipped with an industrial sized chipper. The mulch was saved in various large mounds across the site (**Photo 2**). The leaf litter with the seed bank and very little topsoil was removed to the future site of the Private Open Space (POS), in the middle of the development site (**Photo 3**). Following the removal of rooikrans, the mass earthworks was undertaken to produce stabilized building platforms for Phase 1 of the development.

The following Strandveld species are to be found in the back dune plateau: *Searsia crenata, Searsia crenata, Searsia lucida, Searsia glauca, Searsia laevigata, Maytenus procumbens, Euclea racemose, Carpobrotus acinaciformis, Lessertia canescens, Cynanchum obtusifolium, Tetragonia fruticose, Passerina paleacea* (dune gonna), *Chrysanthemoides monilifera* (bietou), *Otholobium bracteolatum* (skaapbostee*), Muraltia* spp*., Zygophyllum flexuosum, Geranium incanum, Ehrharta villosa, Phyllobolus canaliculatus, Thesium* spp*., Pentameris pallid, Asparagus capensis, Restio Eleocharis, Ficinia lateralis, Hellmuthia membranacea, Metalasia muricata* (blombos), *Helichrysum crispum, Helichrysum teretifolium, and Lessertia canescens*.

Photo 2: Shows the mounds of woodchips on the property

Photo 3: Shows the heaps of topsoil, leaf litter and rooikrans seed heaped up on the development site (arrows)

8.2 Frontal Dune System on the Southern Portion of Erf 1028 (now Erf 2341)

The frontal dune system contained a variety of locally indigenous dune strand plants (mostly pioneers) (*Thinopyrum distichum* (sea wheat), *Arctotheca populifolia* (dune daisy; sea pumpkin), *Tetragonia decumbens* (kinkelbossie), *Ehrharta villosa* (pypgras), *Chrysanthemoides monilifera* (bietou), *Carpobrotus acinaciformis* (pink suurvy)), *Searsia crenata* (dune crowberry), and *Helichrysum teretifolium)*.

Some of the remnant dunes near the front of the dune system, were held together by rooikrans, while the remnant back dune area was inundated by rooikrans (no locally indigenous plants)

In terms of the rehabilitation of the frontal dune system, brushwood fences were constructed along the base of the back dune area (**Photo 4**) to prevent more sand being blown onto the top of these dunes and into the dune slack to the north, and to trap sand being blown off the beach and onto and off the hummocky dunes.

Photo 4: Shows the brushwood fence along the toe of the high back dune of the frontal dune system. Note the large blow-outs (arrows) with sand blowing into the dune slack inundated with rooikrans.

Brushwood fences were also erected within the large blow-outs to trap windblown sand (**Photo 4**). This system of sand traps collected about 30m³ in just under a year of being deployed. Whilst the use of brushwood fences have worked well in other coastal areas, such as Cape Agulhas-Struisbaai coastline, it has not worked at Still Bay East.

As such, a new methodology, which has worked well along the City of Cape Town's coastal dune systems, was discussed with Deon van Eeden of Vula, who has undertaken a number of dune rehabilitation programmes for the City of Cape Town, e.g., Blouberg and Hout Bay. In the latter projects, sand removed by wind erosion into the back dune areas was mechanically (excavator) removed from the back dune areas to the hummocky dunes just up from the Spring tide level. The

latter methodology was then also used for the Preekstoel frontal dune system (**Photo 5**). The rooikrans in the back dune area was also removed by an excavator, the most efficient way of removing rooikrans from the back dune area and moving sand over a relatively small area (approximately 10 260 m²).

Photo 5: Shows the movement of sand trapped in the back due area by dense rooikrans by excavator towards the hummocky dunes above the high water mark.

8.3 Steep Foreland Scarp on the Southeastern Portion of Erf 1028

The steep foreland scarp contained about 60-65% locally indigenous Strandveld and the rest was invaded by rooikrans. The Strandveld species found on the steep foreland scarp comprise *Chrysanthemoides monilifera* (bietou), *Maytenus procumbens, Searsia crenata* (dune crowberry), *Searsia glauca, Diospyros dichrophylla* (bladder nut), *Euclea racemose, Pterocelastrus tricuspidatus* (kershout), *Sideroxylon inerme* (milkwood), and *Tarchonanthus littoralis* (camphor tree).

In terms of the removal of rooikrans from the steep, stable foreland scarp, and to reduce the impact of wind erosion, it was recommended that the rooikrans growing in between the locally indigenous Strandveld plants (**Photo 6**) on this sensitive dune system, would be to remove individual rooikrans plants by hand, using a long handled pair of shears. The rooikrans must be cut as low down as possible. Fortunately, these rooikrans plants do not carry many seed pods, if at all. Each rooikrans plant must be removed from this dune system and chipped if need be. Care must also be taken not to damage the indigenous plants when moving in and out of the dune area. In-planting of hardy, locally indigenous Strandveld must be undertaken in the gaps provided by the removed rooikrans. Such planting must only take place once the first good winter rains have fallen as it will be near impossible to keep these new plants watered, and hope that follow-up rains will maintain a high moisture level in the upper dune sand layer during winter and into spring.

Photo 6: shows the steep aeolianite foreland scarp with a covering of locally indigenous Blombos Strandveld and invasive rooikrans (arrows). Note the "hedging" effect of the vegetation caused by salt laded strong winds.

9. CLEARING OF ROOIKRANS FROM ERF 593 : METHOD STATEMENT

The rooikrans within the remainder of Erf 593 will be cleared by hand using chain saws. **Figure 1** below shows the pathways to be cleared first in a swath about 3m wide. The cut rooikrans shrubs will be removed to the nearest road for stockpiling before being removed to the cleared area of the development site to the west for chipping.

Given that the removed rooikrans shrubs will have seedpods on them, the leave component of the shrub will be separated from the stems. These stems will then be chipped. Once these pathways have been cut, the interior of the blocks will be cleared. The leaf component of shrubs will be stockpiled on the development site for later burning in small piles. The necessary permits for burning the residue leaves will be obtained.

Any locally indigenous vegetation will be left in situ.

The leaf litter and seed will be raked together and removed to the development site for burning. The cleared areas will be lightly covered with the resultant mulch to ensure that wind erosion does not take place. Locally indigenous Blombos Strandveld species will be planted at random within the cleared areas during April/May of each year thereafter. Any seedlings of rooikrans will be spot sprayed with a suitable herbicide.

Follow up planting and spraying of rooikrans seedlings will take place each year until a sustainable covering of local indigenous Blombos Strandveld has covered the area by self-seeding itself.

10. MONITORING SEEDLING GROWTH AND SAND EROSION (WIND AND WATER)

Monitoring is an important function of rehabilitation of areas that were heavily infested with rooikrans to check on rooikrans seedling growth, wind and stormwater (run-off) erosion and regrowth of locally indigenous plants and grasses.

Regular checks on areas that have been cleared of rooikrans must be undertaken by management (e.g. initially by the developer and later by the Home Owners Association). The above methodology of using chemicals to kill the rooikrans seedlings will be important to prevent them growing higher that 0.5m. When infestation of rooikrans has been dense, and once cleared, one generally finds that the rooikrans seedings are also very dense and the only efficient and cost effective way to kill them is by foliar spraying. Because Erf 593 was part of the Preekstoel mobile dune field it is not expected that many seedlings of locally indigenous Strandveld would be found. It may therefore be required to in-plant such climax Strandveld species over the bare areas. Such species would include the species listed in Section 8.1 above.

Of especial importance during monitoring is to check for wind erosion evidence, especially in the frontal dune system where the initiation of blow-outs might be expected especially after storm events where gale force winds have occurred. It will be important to lay brushwood cuttings into the blow-out scars to trap sand blown off the beaches and from hummocky dunes. When sufficient sand has been trapped, seedlings of strand plants and Strandveld should be planted onto the infilled blow-out. More cut brushwood can be placed over the planted area to create a micro-climate to stimulate plant growth.

11. CONCLUSIONS and CLOSING RECOMMENDATIONS

It has been well documented by many authors that the single most important aspect governing the success of alien plant control is monitoring and follow-up work (Fenn 1979, Milton and Hall 1981, Ashton 1985, Pennington 1986, Phillips 1986, Pieterse and Boucher 1987, Macdonald *et al*. 1989, Martens 1994).

Follow-up clearing should thus commence as soon as possible after initial clearing as if left unattended, the rooikrans seedlings could grow to form impenetrable thickets which will be much more costly and difficult to eradicate. If, however, follow-up clearing remains a priority then alien plants will be effectively controlled.

Alien plant clearing should not, however, be seen as a “stand-alone” operation. Rehabilitation (seeding and planting) of locally indigenous Strandveld is a must to ensure stabilisation of sand and in so doing to prevent large-scale erosion of denuded surfaces.

Keep in mind, however, that, if not well informed, rehabilitation by means of re-planting can do more harm than good, if incorrect species choices are made. Specialist advice is therefore recommended, as restoration can be a costly exercise. Deon van Eeden of Vula Environmental Services deon@vula.biz 082 564 5748 may be contacted for rehabilitation and locally indigenous landscaping advice.

12. LAWS CREATING A LEGAL DUTY ON LANDUSERS TO CONTROL INVADING ALIEN PLANTS.

9.1 Introduction

1. The adverse impacts of invading alien plants have been well-documented and scientifically verified.

2. Landowners are under a legal obligation to control invading alien plants occurring on their properties. This obligation exists as a result of the various laws. The relevant laws identified at this stage are the following:

   i. The common law relating to neighbours and nuisance;
   ii. Section 151(1) of the National Water Act 36 of 1998
   iii. Section 28 of the National Environmental Management Act, 107 of 1998;
   iv. Section 31A of the Environment Conservation Act, 73 of 1989;
   v. Municipal by-laws and the National Veld and Forest Fire Act 101 of 1989
   vi. Regulations in terms of the Conservation of Agricultural Resources Act, 43 of 1983.

9.2 The Common Law

1. The common law is the law developed by the courts as opposed to laws that are written in an act of Parliament. A principle has been developed in terms of the common law relating to neighbours and nuisance in terms of which the owner of land may not use his or her land in such a way that it impacts on the use and enjoyment by other land owners of their land. This is based on the Roman law principle sic *utere tuo ut alienum non laedas* but it is also contained within the concept of ubuntu in South Africa.

2. If a landowner breaches the common law rule relating to neighbours and nuisance an aggrieved party may approach the court for an order compelling the landowner to remove the cause of the nuisance. This is normally done in the form of an interdict.

9.3 National Environmental Management Act No 107 of 1998

1. Section 28 of the National Environmental Management Act, 107 of 1998 states the following:

   "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring…"

   The National Environmental Management Act makes it possible for the Director General of Environmental Affairs or a provincial head of department or, if the powers have been delegated to it, a local authority to direct a person causing such pollution or damage to the environment to remove the cause. Should such a directive be ignored the Director General may adopt reasonable measures to remedy the situation and to recover from that person the costs thereby incurred.

9.4 Environment Conservation Act No 73 of 1989

1. **Section 31A of the Environment Conservation Act, 73 of 1989** states that:

   "If, in the opinion of the Minister or …[other] authority concerned, any person performs any activity or fails to perform any activity as a result of which the environment is or may be seriously damaged, endangered or detrimentally affected, the Minister or … [other] authority, as the case may be, may in writing direct such person –

   (a) to cease such activity; or
   (b) to take such steps as the Minister or … [other] institution… may deem fit,
   within a period specified in the direction, with a view to eliminating, reducing or preventing the damage, danger or detrimental effect.

2. The Minister or other authority may further require the responsible person to rehabilitate any damage. Should the responsible person fail to do so the Minister or other authority may rehabilitate the damage and recover from the responsible person any expenditure incurred.

3. Failure to comply with a directive in terms of section 31A is a criminal offence in terms of section 29(3) of the Environment Conservation Act.

4. **Municipal By-laws and the National Veld and Forest Fire Act 101 of 1998**

   Before dealing with each of these provisions it is necessary to mention that a legal obligation to control invading alien plants may also be created by the rules of Fire Protection Associations established in terms of the National Veld and Forest Fire Act 101 of 1998 and by municipal by-laws.

9.5 Conservation of Agricultural Resources Act No 43 of 1983

1. Regulations that have been promulgated in terms of the Conservation of Agricultural Resources Act, No 43 of 1983 further make it unlawful to allow various species of weeds and invader plants to grow on ones property.

9.5.1 Guide to the Conservation of Agricultural Resources Act, No 43 of 1983

The Conservation of Agricultural Resources Act regulates various activities that may have an impact on agricultural resources including water sources and deals directly with the combating of invasive alien plants.

The enforcement of the legislation is the responsibility of the "Executive Officer" who is a person appointed by the Minister or a person to whom a power has been delegated.

This legislation is binding on all land users

Who is a land user?

'landuser' is defined in the Act as the owner of land, and includes-

(a) any person who has a personal or real right in respect of any land in his capacity as fiduciary, fideicomissary, servitude holder, possessor, lessee or occupier, irrespective of whether he resides thereon;

(b) any person who has the right to cut trees or wood on land or to remove trees, wood or other organic material from land; and

not a person who carries on prospecting or mining activities

What is a weed or invader plant?

'invader plant' is defined in the Act as "a kind of plant which has under section 2(3) been declared an invader plant, and includes the seed of such plant and any vegetative part of such plant which reproduces itself sexually".

'weed' is defined as "any kind of plant which has under section 2(3) been declared a weed, and includes the seed of such plant and any vegetative part of such plant which reproduces itself asexually".

In terms of the Act the Minister may by regulation declare any plant to be a weed or an invader plant for the purposes of this Act, either throughout the Republic or in one or more areas therein.

What plants have been declared weeds and invader plants?

Regulations were passed in 1984 in terms of which about 50 species were declared "weeds" or "invader plants". This includes species such as mesquite, black wattle and a number of other species that the Working for Water Programme is clearing.

The Department of Agriculture has now published a draft amendment to these regulations.

The proposed amendment increases the number of species that are declared weeds and invader plants and also divides the weeds into three categories:

10.4 What are Category 1 plants?

- They are declared weeds.
- They may not occur on any land or on any inland water surface throughout the Republic.
- No person may:

    (a) sell, agree to sell or offer advertise, keep exhibit, transmit, send, convey or deliver for sale, or exchange for anything or dispose of to any person in any manner for a consideration, any weed, or

    (b) in any manner permit whatsoever disperse or cause or permit the dispersal of any weed from any place in the Republic to any place in the Republic

10.5 What are Category 2 plants?

- They are generally plants grown for commercial purposes but may also be uses as a woodlot, shelter belt, building material, animal fodder, soil stabilisation or other beneficial function that may determined;
- They are invader plants that may only be allowed to grow in demarcated areas.

10.6 What is a demarcated area?

- **"demarcated area"** is defined in the draft regulations as "any area demarcated by the Executive Officer as an area where invader plants of the kinds specified as Category 2 are established or are to be established and may be retained".
- An area in respect of which a water use license for stream flow reduction activities has been issued in terms of section 36 of the National Water Act, 36 of 1998 shall be deemed to have been demarcated in terms of these regulations.
- No area shall be demarcated for the growing of invader plants of a kind specified as Category 2 unless the land user is able to establish to the satisfaction of the Executive Officer that, as far as may be practicable:

    (a) The invader plants shall be confined to such demarcated areas; and

    (b) Controlled circumstances of cultivation of the invader plants shall prevail in the demarcated areas; and

    (e) All steps are taken by the land user to curtail the spreading of the propagating material of the invader plants to land and inland water surfaces outside the demarcated areas; and

    (f) Financial guarantees to the satisfaction of the Executive Officer are furnished by the land user for the cost of the control of any invader plants that may in

the future grow outside the demarcated area from propagating material emanating from invader plants inside the demarcated area. The Executive Officer may dispense with the requirement for financial guarantees if the Executive Officer is satisfied that financial guarantees furnished by the land user in terms of any other law are adequate; and

10.7 What are Category 3 plants?

- Category 3 plants are invader plants that may continue to grow where they already exist.

- However, no new planting or trade or propagating of these plants is permitted.

10.8 What happens when plants occur in contravention of the regulations?

- If weeds or invader plants occur contrary to the provisions of these regulations, the land user must control those weeds or invader plants by means of any of the control methods that are appropriate for the species concerned and the ecosystem in which it occurs.

- Any action taken to control weeds or invader plants must be executed with caution and in a manner that will cause the least possible damage to the environment.

- Regulations 2 to 14 must be adhered to including the obtaining of written consents to cultivate virgin soil and to burn veld, the protection of land against erosion, the protection of vlei, marshes, water sponges and water courses and the restoration of degraded land.

10.9 What happens to land users who fail to comply with the regulations?

- It is a criminal offence to ignore the regulations and to allow species to grow in contravention of them. A criminal case may then be brought against the land user.

- If a land user does not comply with the regulations the Department may issue a directive setting a date by when the property must be cleared.

- The directive is binding on a successor-in-title (person to whom the property is later sold.

- If the directive is ignored the Department can clear the land or engage someone (such as Working for Water or an implementing agent or an emergent contractor) to do so.
  It may be worth compiling a list of emergent contractors who can be employed for this purpose.

- The costs of this clearing can then be recovered from the land user and can also be registered against the title deeds of the property in terms of the Agricultural Credit Control Act. This is then like a mortgage bond. The property can't be sold until these moneys have been repaid.

The Department is considering introducing a prohibition on the transfer or sub-division of land unless it has first been certified as being free of weeds and invader plants. If accepted, this will not be included in the regulations but in the Act itself when it is amended later in the year.

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FIGURE 1: Shows the eastern portion of Erf 593 that needs to be cleared of its dense stands of Rooikrans (*Acacia cyclops*)