Milnerton Racecourse Development

Operational Phase – Environmental Management Plan

(OEMP)

Volume 2: Conservation Area

DRAFT 3 –December 2002

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1. 1 CONTEXTUAL INFORMATION

1.1 INTRODUCTION

The Milnerton Training track is situated on portion 25939 of Erf 935, Milnerton. The property is wedged between Rietvlei Nature Areas to the West, Race Course Road to the South and Koeberg Road to the East.

The Milnerton Racecourse Development Complex, as envisaged and reproduced on **Plan 1 (Development Framework Plan – DF/SP/01)** includes:

- Residential area in Precincts A, B, C E & F each of which will be a managed by a separate Property Owners Association.
- Office and Business and commercial parks in Precincts D, to be managed by Property Owners Association.
- Gold Circle will manage the training track and stables, used for horse training.
- Fynbos reserves in Precincts H & I are the responsibility of the Landowner, managed by the EMC and funded by the Property Owners Association. The EMC should be empowered, if at any stage it considers it appropriate or necessary, to transfer the ownership of the conservation area to the City of Cape Town. The City of Cape Town should then declare the area a Local Authority Nature Reserve.
- City of Cape Town Blaauwberg Administration will manage the civic facilities used by City of Cape Town's Blaauwberg Administration.
- An area earmarked for a future phase of the development, referred to as Precinct G.

This document deals with the management of the conservation areas situated in the centre and adjacent to the Milnerton Racecourse.

The purpose of this document is to provide a set of management guidelines and requirements, to ensure that the areas shown as the Fynbos Reserves **H** & **I** on **Plan 1**, are suitably managed and conserved. The goal and objective of the OEMP in its entirety, is to sustain these conservation areas and to ultimately enhance the surrounding areas by managing within the concept of "Best Management Practice".

1.2 KEY TERMS

Property Owners Association/: A body for each identified precinct or group of similar and connected use areas, representative of the owners, managers and tenants of the buildings. Each Property Owners Association/Body Corporate will be responsible for ensuring the implementation of the environmental management requirements, as outlined in this document, in their respective precincts.

Conservation Areas: The two Fynbos reserve areas in precincts H and I respectively, to be managed according to the requirements of this OEMP, to ensure conservation of the sand plain fynbos and associated species, which exist in these areas.

Conservation Management Authority: Landowner and ultimately the Property Owners Association, the EMC should be empowered, if at any stage it considers it appropriate or necessary, to transfer the ownership of the conservation area to the City.

Environmental Management Committee (EMC): The committee responsible for the overall environmental control of the entire Milnerton Racecourse site, as detailed in section 1.5.2.

Gold Circle: The owners and management authority of the training track, stables and associated facilities.

Local Authority: City of Cape Town – Blaauwberg Administration.

Operational Phase Environmental Management Plan: The document, in three volumes, providing guidelines and specifications for the long term management of various aspects of the Milnerton Racecourse Development complex, to ensure that the environmental impacts on the conservation areas associated with the development complex, and the surrounding areas are minimised, throughout the lifespan of the development.

Precinct A, B, C, E, F and G:	**Residential**
Precinct D:	**Office, Retail, and Service Industry:.**
Precincts H & I:	**Conservation Areas**

1.3 ABBREVIATIONS

MRCA	Milnerton Racecourse Conservation Area
CCTBA	City of Cape Town – Blaauwberg Administration
EMC	Environmental Management Committee
EMP	Environmental Management Plan
OEMP	Operational Phase Environmental Management Plan
POA	Property Owners Association
CMA	Cape Metropolitan Area

1.4FORMAT OF THIS DOCUMENT

This document has been divided into a number of sections as follows:
Section 1: Contextual Information - Provides details regarding the nature of the conservation sites, purpose and implementation of this document, as well as auditing and monitoring requirements.

Section 2: Environmental Management Requirements – Provides specific management requirements, or actions to be taken in the management of various aspects of the conservation areas.

Section 3: Record Keeping – Provides tables to facilitate the keeping of records of specific activities taking place on site, for monitoring and auditing purposes.

1.5IMPLEMENTATION OF THE MANAGEMENT PLAN

1.5.1 Management Authority

The management of the conservation areas associated with the Milnerton Racecourse Development complex will be the responsibility of the landowner.

1.5.2 Environmental Management Committee (EMC)

The EMC, operating according to the constitution included as **Annexure A**, will play a supervisory role, to ensure that suitable management practices as outlined in this document are implemented on site by the Management Authority for the conservation areas. The EMC will oversee the management of all Precincts, and will thus be responsible for resolving any conflicts in use or management requirements, which may arise.

The following organisations should be represented on the Environmental Management Committee:

- Local Authority – CCT Blaauwberg Administration - Environmental Management Branch
- Botanical Society of South Africa
- Land Owners – represented by Residents'/ Home owners association(s)
- Developers/Bodies Corporate
- Gold Circle
- Friends of Rietvlei NGO

Should any of these organisations wish to decline from becoming involved, they are to provide the EMC with a letter of no interest. Organisations fulfilling the same functions should be invited to attend the EMC meetings to ensure adequate supervision of management of the conservation area. It is, however, compulsory for a delegated member of each Property Owners Association/Body Corporate or his/her successor to remain on the EMC.

The primary functions of the EMC with regards to long-term management of the site include:

- To co-ordinate environmental management for all precincts of the site.
- To ensure implementation of each of the operational phase EMPs by the relevant management authorities.
- To ensure effective management of the conservation precinct associated with the racecourse.
- To coordinate or facilitate the environmental audits to be undertaken by an independent environmental consultant, when necessary.
- To review the results of the environmental audits, as required.
- To ensure implementation of the auditors recommendations, where applicable.
- To approve proposed changes to the EMP documents.
- To manage the funding of the conservation precincts provided by the developments, or ensure that they are suitably managed by the management authority of the conservation precinct.
- To provide a forum for discussion and decision-making regarding any issues relating to the local environment of the site, or any disagreements which may arise in the management of different precincts, as they may relate to the environment.
- To liase with surrounding landowners regarding issues applicable to them.

The EMC shall at any time be empowered to require any person involved in management of each of the precincts to cease any activity by which the environment is or may be seriously damaged, endangered or detrimentally affected, and ensure that such persons take the necessary action, within a period specified by the EMC to eliminate, reduce or prevent the damage or detrimental effect, or remediate damaged areas if necessary.

1.6 LEGAL STATUS OF THE EMP

By virtue of the fact that this document has been compiled to fulfil a condition of approval of the rezoning application by the local authority, City of Cape Town – Blaauwberg Administration and

Aerial Photograph - Royal Ascot Development

DEADP (see Annexure B), there exists a legal obligation for the specifications of this Operational Phase Environmental Management Programme (OEMP) to be complied with. This OEMP includes all relevant documentation contained or referred to within it, along with any amendments or annexes to this document.

1.7 FAILURE TO COMPLY WITH EMP REQUIREMENTS

Should failure to comply with the specifications of the OEMP be noted, the matter is to be referred to the EMC.

Following discussion of the matter at the next EMC meeting, the chairperson of the EMC is to provide the responsible party with a written warning, detailing the action to be taken, the time within which the action is to be taken and the monetary penalty which will be imposed should suitable action not be taken within the required timeframe. In addition to this, the responsible party will be responsible for carrying the costs of any remedial action required as a result of the transgression.

Monetary penalties are to contribute to additional management or conservation initiatives in the conservation areas, as agreed by the EMC.

This process can be modified by the EMC if required, without formal amendment to the EMP documentation.

1.8 AUDITING PROCEDURES

An assessment of the compliance with the OEMP will be undertaken by an independent environmental consultant yearly for the first three years and thereafter once every third year, unless otherwise agreed by the EMC and CCTBA. The resulting audit report is to be submitted for information by the EMC to the local authority and Departments of Environmental and Cultural Affairs and Sport (DECAS). This audit, along with that of the racing facilities and conservation areas will be undertaken as a single exercise, to be co-ordinated through the EMC.

Audit reports will detail the progress, problems and issues arising, as well as make recommendations for improved environmental management.

1.9 REVIEW OF OPERATIONAL PHASE MANAGEMENT PLAN

Based on the recommendations resulting from the environmental audits, the OEMP is to be reviewed annually for the first 3 years of implementation, and thereafter once every third year, unless otherwise required by an authority or as agreed by the EMC.

The auditor is to highlight issues to be addressed in the OEMP, or changes required, which are to be presented to the EMC, and if considered practical forwarded for information to the local authority, and included as appendices to the document.

The EMC is responsible for ensuring that the relevant changes are included in the OEMP documentation, distributed to the relevant management bodies and suitably implemented.

1.10 FUNDING OF ENVIRONMENTAL MANAGEMENT REQUIREMENTS

The Property Owners Association/Body Corporate must ensure that sufficient funding is provided to manage the core area effectively. Budgets for the management of this core area should be provided by the EMC. All future owners of the land that currently comprises erf 25739 will be liable for payment of a levy to the Property Owners Association/Body Corporate. The amount of the levy to be determined in accordance with the required management of the conservation areas and any other obligations of the Property Owners Association/ Body Corporate. The Property Owners Association/ Body Corporate in consultation with the EMC will administer the levies in a dedicated fund. That portion of the levy required for the management of the conservation area will be held in a trust account dedicated to this purpose.

Gold Circle or any future landowner will be required to make a contribution of 20 % of the managing cost budget for the conservation area to the EMC and the POA the rest of the 80 % via the levey which will escalated annually in accordance with the current applicable Consumer Price Index.

There will be an initial period of time where there will be insufficient levies, which can be applied to meet the financial requirements for the management of the conservation area. It is proposed that until the proposed levies are sufficient, the developer/landowner be responsible for ensuring that the funds to meet the budget for the management are provided. (Refer to Annexure C Ownership and Management of the conservation area)

The costs of environmental audits and reviews of the OEMP will be covered by this fund, although the costs of any remedial action, or rehabilitation required as a result of transgressions of the requirements of the EMP or any other actions with a detrimental effect on the environment are to be covered by the management authority, or other party responsible for the damage.

2 ADMINISTRATIVE BACKGROUND

2.1 RESERVE

The Central Conservation "fynbos" areas are 17,6 ha in extent.

The conservation area is made up of the following properties:

Precinct H, 14,2ha
Precinct I, 3,4ha

2.2 LOCALITY DATA

The Milnerton Racecourse Development is situated at 33°50'15 S and 18°30'05' E (3318DC quarter degree square). The relevant magisterial district is Blaauwberg within the Cape Metropolitan Council region of the Western Cape Province.

It is situated on Erf 25939 Portion of Erf 935, Milnerton. The property is wedged between Rietvlei Nature Area in the West and Race Course Road in the South and Koeberg Road in the East.

The site is approximately 81 ha extent (Locality map A). .

2.3 OWNERSHIP

The ownership and management of the natural conservation areas will remain with the landowner and ultimately the POA with a specific agreement that the area may only be used for conservation purposes. The Landowner should make application to have the natural conservation area declared a Private Nature Reserve. The EMC should be empowered, if at any stage it considers it appropriate or necessary, to transfer the ownership of the conservation area to the City of Cape Town. The City of Cape Town should then declare the area a Local Authority Nature Reserve. (See Annexure C, Ownership and Management of the conservation area)

2.4 MANAGING AUTHORITY

The roles and responsibilities of the Management Authority have been clearly set to ensure continuity in management of the conservation area. The management authority is to:

- Ensure that the conservation area is managed according to the specifications of this document (and revisions thereof), or as otherwise considered to be in the best interests of the local natural environment and agreed to by the EMC
- Keep a comprehensive set of records of all management actions.
- Serve on the Environmental Management Committee
- Facilitate actions required by Gold Circle in terms of upkeep of training facilities, and training activities.
- Communicate to the EMC any issues of concern as they relate to activities relating to racing or the developments.
- Report to the EMC on management of the conservation area.

2.5LEGAL STATUS OF THE CONSERVATION AREAS

2.5.1 Site boundaries

A residential neighbourhood immediately to the northwest surrounds the site, while Race Course Road separates the residential area to the southwest from the site. The southeast boundary comprises of stables and horse facilities and an activity corridor along Koeberg Road, institutional and industrial uses occur at the northwest edge.

2.5.2 Conservation areas boundaries

The conservation area is situated within Milnerton Training track, consisting of the conservation-worthy central core (Precinct H) and one smaller area within in Precinct I, as illustrated on **Plan 1.**

2.5.3 Conservation Status

The interior of Milnerton Training track supports an irreplaceable botanical community of Very High conservation priority (McDowell 1997, Rebelo 1997, Maze and Rebelo 1999). These assessments are based primarily on McDowell's original botanical survey of the site (1997), during which approximately 232 indigenous plant species were recorded, plus a further 23 alien species. The conservation status assessment is based on the high diversity of indigenous species, the large number of threatened species that are listed in the Red Data Book (10 listed in McDowell 1997, with a further two which merit RDB status, but 18 noted in Maze and Rebelo 1999), the fact that for certain species found there this is the only known habitat within the CMA, and above all, on the fact that this habitat and mix of species is critically rare and endangered within the CMA.

The status of the site is a critically important and irreplaceable conservation area within the CMA it is ranked amongst the top three in the CMA in terms of priority conservation areas on the Cape Flats (conclusion of the Rebelo (1997) study).

The natural vegetation on the site is in excellent condition, the relative lack of alien vegetation, the healthy populations of critically rare species, and the potential for long term conservation of the site is therefore of utmost importance.

2.5.4 Relevant Ordinances.

Species are protected in terms of the Nature and Environmental Conservation Ordinance (Ordinance 19 of 1974).

2.5.5 Relevant Acts

Legislation relevant to the conservation area:

- Constitution of the Republic of South Africa (Act 108 of 1996);
- National Environmental Management Act (Act 107 of 1998);
- Environment Conservation Act (Act 73 of 1989);
- Atmospheric Pollution Prevention Act (Act 45 of 1965);
- National Forests Act (Act 84 of 1998);
- Forest Act (Act 122 of 1984);

- National Water Act (Act 36 of 1998);
- National Veld and Forest Fire Act (Act 101 of 1998)

2.6 BIOPHYSIOGRAPHIC REGION INFORMATION

2.6.1 Biophysiographic region

The biophysiographic region can be described as the "Cape Flats" (McDowell, C. & Low, B. 1990).

The boundaries of this region are False Bay in the south; the extremity of the coastal sands in the west (towards the Cape Peninsula mountain chain and upper Table View) the line of 33'50" latitude in the north (Table View to Kraaifontein) and the line 18'45" longitude in the east (Kraaifontein to Macassar). (McDowell, C. & Low, B, 1990).

2.6.2 Geology and Geomorphology

The Cape Flats is underlain by mainly Malmesbury Group rocks, with varying degrees of influence from Cape Granite and Cape Super group rocks. In the south, the Flats is bordered by the Cape Fold mountains that consist largely of Table Mountain Group rocks. Northwards, Cape Granite and Klipheuwel rocks occur (Hill et al, 1992).

The Cape Flats region, as described above, is generally low lying with little variation in height (generally less than 100 m variation). Sand dune remnants provides variation in the geomorphology towards the south, while the hills of Durbanville and Tygerberg represent high points in the landscape with lower, undulating hills to the north.

The dominant lithology of the region consists of well-leached soils derived from the sandstones of the Cape Supergroup which are defined as light-grey to pale-red, fine to medium grained quartzitic sandy soils of the Springfontein Formation (Class - Qs). These soils have very low mud content and are regarded as high-grade silica sand.

The deep acid sandy soils supports Sandy Plain Fynbos. Most of these sands are of Tertiary origin, being aeolian and podsolized, but some are derived from the Cape Granite Suite and Table Mountain Group sandstones. In some areas waterlogging may occur, with wetland and swamp communities, but usually the sands are well drained.

2.6.3 Vegetation

The dominant vegetation of the biophysiographic region is described by Acocks (1975) as Coastal Macchia (Type 47) and by Low and Rebelo (1998) as Sand Plain Fynbos. The other veld type that is also present is West Coast Renosterveld (Low & Rebelo) or Coastal Renosterveld (Acocks).

2.6.4 Average annual precipitation

The average annual rainfall of the area varies from 375 mm at Melkbosstrand to 909 mm at Muizenberg Pavillion (Cape Town Weather Office).

2.6.5 Drainage region

The Cape Flats falls within the West Coast drainage region.

2.6.6 Land use

The dominant land-use within the biophysiographic region is urban development.

2.7 INFORMATION ON CONSERVATION AREAS

2.7.1 Reserve

The reserve is known as Milnerton Racecourse Conservation Area (MRCA).

2.7.2 Geomorphology

The site is situated on the edge of a topographic high area situated at an elevation of 10 – 15 (m) MSL. The slope gradient across the site is approximately 1:200 towards the north and northwest. A few, small, seasonal wetland areas have developed in the fynbos area inside the grassed training track. Along a portion of the western boundary, the slope increases to about 1 : 20. This steeply sloped area forms part of the north-western edge of the Milnerton ridge. The eastern extent of the Rietvlei lagoon is situated about 500m to the northwest of the site. The natural topography on the site has been modified in places as a result of the development of structures associated with horse racing activities.

2.7.3 Geology and soils

The training track area is underlain by shales (phyllites) of the Malmesbury Group rocks. Boreholes drilled nearby indicate that the rock level is between 5 – 7m below surface. The typical soil profile below the site is described in Table 1. Residual Malmesbury shale soils comprising slightly clayey silty sands are commonly developed above the weathered rock level. Alluvial soils comprising sands, shell fragments, silt and quartz grit occur above the residual soils. A clayey sand horizon ranging in thickness between 0,4 – 1,4m has developed below most of the site. A well developed pedogenic hardpan ferricrete layer is developed directly above the clayey sand horizon. This pedogenic ferricrete layer has developed as a result of fluctuating, iron-rich groundwater, precipitating out iron and transforming (by pedogenesis) the original alluvial gritty sands into a well cemented hardpan ferricrete. Gritty sand and Aeolian (windblown) sand covers the ferricrete layer. Sand fill material has been used to level the training track and builders rubble and concrete blocks have been placed to raise the level at the northern end of the site.

2.7.4 Hydrology

Precipitation

Rainfall is not measured at Milnerton, but figures for the Cape Town International Airport (from the Cape Town Weather Bureau Office) are:

Annual average rainfall: 515 mm
24 Hour maximum: 65 mm
Months of highest rainfall: May to August
Other forms of precipitation (number of days/year): Hail: 1; Snow: 3; Fog: 58

Drainage region

The conservation area falls within the quaternary subcatchment G22D (Drainage Regions – Base Map. Surface Water Resources of South Africa 1990.)

Surface Water

There Milnerton Racecourse Conservation Area is situated inland and there are no rivers flowing through the conservation area. The fynbos conservation area is predominantly a dry Sandveld area and is slightly elevated above the existing training tracks. Thus ponding of water should only occur in the north eastern part of this area, which contains a number of old borrow pits that flood after heavy winter rains. Over the rest of the conservation area the water table should occur below the root zone throughout the year.

The natural drainage of the surface water for the site is generally regarded as being moderate to poor. This is mainly due to the very low gradient created by the undulating topography across the site. Overall the surface water drainage is towards the north west of the site. The drainage is affected by seasonal changes, which result in the northern and western portions of the site becoming flooded after heavy winter rains.

Groundwater

The groundwater represents a perched water table and sits above the clayey alluvial sediments. In some areas the ferricrete may also be highly impermeable and this result in water perching within 1m of the ground surface. The perched water table is recharged by rainfall migrating through the permeable soils above and is strongly influenced by surface water drainage features, i.e. ponds, open stormwater trenches an local irrigation

The groundwater flow directions follow the topography and the flow is dominantly northwards westwards. Due to the low hydraulic gradients flow rates are generally slow with groundwater accumulating in low points. A second water table occurs within the sand layers within the fluvial succession. This aquifer is developed on a regional scale and the potential recharge area is so extensive that the re-redevelopment of the Racecourse will have no discernible effect on the either water levels or water quality.
At deeper levels groundwater can also be expected in the fractures of the Malmesbury Group rocks that underlie the site depths of between 5m to 20m.

2.7.5 Vegetation

The conservation area incorporates a large area of intact Sand Plain Fynbos, a vegetation type that has been described as ranking as one of the world's hottest spots for loss of plant biodiversity.

The indigenous system occurring within the Milnerton Racecourse Conservation Area represents the last significant relict of natural vegetation surviving in Milnerton. The Sand Plain Fynbos vegetation found inside the training track includes West Coast Standveld elements, and a community of mainly salt tolerant wetland species. Only approximately 324 hectares of Sand Plain Fynbos of reasonable health survives on the Cape Flats. Plant diversity within the conservation area is high; 232 species, of which 13 are Red Data species, see Annexure D. A large number of succulent species coexist on the site; 16 species of Mesembryanthemaceae (vygie family) and 7 species of the related Aizoaceae. There is a large bulb diversity (31 species); 17 Iridaceae, 7 Orchidaceae, 5 Oxalidaceae and 2 Amaryllidaceae. There are two fynbos sectors divided by the training track; 11 plant species confined to the northern sector and 22 species confine to the southern sector.

2.7.6 Incidence of fire

Much of the site has not been burned for well over thirty years, which is generally regarded as about the maximum period that a Sandplain Fynbos area is likely to remain healthy and vibrant without a fire. Much of the site looks to be in good condition, and there is little sign of senescence. There does appear to be a lack of young plants of many species, which is probably a product of the dense vegetation cover inhibiting inter-fire recruitment of seedlings.

2.7.7 Fauna

Mammals: There is a large amount of small mammal activity at the racecourse relative to other areas in the immediate region. The most suitable habitat for mammals is the deep sandy depositions overlying the ferricrete. No Red Data species occur. See Annexure H for list of Mammals.

Reptiles: No reptile species is particularly common at Milnerton Race Course Development. The most important species is a Dwarf Chameleon (Microsaura pumilum), which can be described as vulnerable on the Cape Peninsula. No Red Data species. See Annexure H for list of Reptiles.

Amphibians: The racecourse does support a healthy frog population. No Red Data species. See Annexure H for list of Amphibians.

Birds: The racecourse provides habitats for a variety of birds, including grassland, vlei, and wetland species. Seventy-nine bird species are recorded from the racecourse with 30 of these associated primarily with ephemeral pans and water bodies. No Red Data species. See Annexure H for list of Birds.

2.8CONSERVATION BACKGROUND

2.8.1 Nature Conservation Significance of Reserve

Vegetation

Sand Plain Fynbos is one of only five types of fynbos recognised by Low and Rebelo (1996) in their listing of national vegetation types, and is found in scattered areas between the Olifants River mouth in the north, and Muizenberg in the south. The vegetation type is defined by the presence of deep, acid sands on the flats. It is likely that more than 50% has already been transformed (mainly by urbanization, agriculture, and alien plants), and the conservation status of the remaining areas is generally extremely unsound, with approximately 1.05% currently conserved, making it the second most poorly conserved fynbos type (after Laterite Fynbos). Being entirely restricted to lowlands, in a rapidly developing area, Sand Plain Fynbos is exposed to massive threats to its continued survival. The total number of plant species endemic to this habitat is unknown, but it is undoubtedly high (well over 100 species), and the majority of these face extinction if current trends of habitat destruction continue. On both a national and regional scale, Sand Plain Fynbos is thus of the Highest conservation significance.

Three centres of endemism are recognized within Sand Plain Fynbos (Low and Rebelo, 1996), the Peninsula District being much the smallest of the three (some 300km^2), extending from near Durbanville to Cape Point. The Sand Plain Fynbos of the Cape Flats is the most endangered subtype within this Peninsula centre of endemism. Brown (1990) estimated that a mere 3.8 % (about 18ha) of the Sand Plain Fynbos on the Cape Flats was formally conserved in proclaimed Nature Reserves. Since 1990 some of the largest areas of rehabilitable Sand Plain Fynbos on the Cape Flats have been lost to development and/or dense alien infestation (*eg.* Kraaifontein Forest Reserve in 1993), and the potential for inclusion of some of these areas as conservation areas has thus disappeared forever. It has been calculated that the number of Red Data plant species in the remaining patches of Cape Flats Sand Plain Fynbos is approximately 15.3 Red Data species/km^2 (McDowell *et al*, 1990). This shocking figure that was thought to be the greatest concentration of threatened plant species in any natural habitat (other than small islands) anywhere in the world. With the loss of virtually all of the 140ha Kraaifontein Forest Reserve (bulldozed in April 1993), the concentration of Red Data plant species in the Sand Plain Fynbos of the Cape Flats has risen to 21.5 species/km^2, a figure that is almost certainly the highest in the world for a continental area of this size. What this means is that right here in the Cape Metropolitan area (CMA) are the remnants of a natural habitat that has one of the highest, if not the highest, conservation priorities of anywhere in the world. The importance of the CMA is reiterated by Rebelo (1992), who wrote that "the most urgent strategic requirement for the preservation of biotic diversity in the Cape Floristic Region is thus within the Greater Cape Town metropolitan area".

Fauna

Mammals
Most important from the mammal perspective is the sheer abundance of small mammal activity in the area. The deep sandy depositions found overlying the ferricrete form an ideal habitat for the burrowing species (Cape Molerat, Cape Golden Mole, Cape Gerbil) and although none of these species are under any threat, the sheer abundance of these animals is noteworthy.

Reptiles
Dwarf Chameleon populations have been seriously depleted through development and fire. The Milnerton Racecourse Conservation Area is a natural remnant which has largely been protected from these threats, and it appears to have a very healthy population of chameleons. The surrounding areas would still have the odd chameleons surviving in suburban garden but to find them surviving in a tract of natural vegetation such, as the racecourse is unique and conservation worthy.

Birds
One of the most pleasant aspects of the natural remnant of vegetation found at Milnerton Training track is the surprisingly varied bird life for such a relatively small area. The interior of the training track offers suitable habitat to grassland and vlei species, whilst the pans and artificial wetlands attract waders and waterfowl. The Rietvlei/Milnerton lagoon system is adjacent to the Millerton Training track, and 173 species have been observed there (Pietersen & Tripp). Butt given the fact that this system is spread over at least 500 ha compared to the 22,4ha of the racecourse, and has vast tracts of open water a comparison is difficult. Considering that with ongoing observation upto 100 species could be recorded at the racecourse. The area is important for grassland species associate with Sand Plain Fynbos and Strandveld habitat – little of the former remains on either the Cape Flats or Cape Peninsula itself.

Threats

The external man-induced threats on the conservation area and its biodiversity are:

- Threats from outside the boundary of the Milnerton training track are limited to groundwater and alien plants due to the boundaries of the track. Alien plant species can spread into the conservation area through wind and bird dispersal, while foreign birds and mammals can enter the site and threaten indigenous species.

- The potential impacts of changes in groundwater status (quantity and quality) in the conservation area from development around the training track pose one of the most significant threats to the continued sustainability of the conservation area.

- Activities in other precincts on the property, including fertilising, drainage and the presence of plant species that have the potential to intrude/invade into the natural area and possible predation by pets. Of specific concern are the new developments of which the direct and indirect impacts on the conservation area are not yet well known.

- Of particular concern is Kikuyu that invade the conservation area from its boundaries.

- Development pressure cannot be excluded as a threat, since it has led to reduced area available for conservation and corridors since the establishment of the training track

Internal man-induced threats on the biodiversity of the conservation area are:

- Exclusion of fire.
- Cutting of indigenous plants (disturbance and interference with specie's natural growth and reproduction patterns).
- Poor management to date has reduced the effectiveness and frequency of alien plant control. Alien plants threaten both plant species and wetland biota due to changes in ground water quality and quantity.
- Internal drainage channels drain water towards an artificial dam, to the detriment of natural habitats.
- Edge effects from activities adjacent to the conservation area due to the fact that these activities "flow" over into the conservation area.
- Fragmentation of the conservation area into two sectors by the training track and loss of buffer areas to development.

The conservation area does form an important part of the core conservation areas on the Cape Flats and is therefore extremely important for species conservation. Linkage to other conservation areas through corridors is, however, extremely limited, as buffer areas to development or habitat gradients. Rapid species loss can, therefore, be expected in the event of climate change.

2.9 SOCIAL/CULTURAL SIGNIFICANCE OF THE RESERVE

2.9.1 Indirect benefits

The conservation area contributes to the aesthetic value of the area. It does have intrinsic value in being an important remnant of Sand Plain Fynbos. The fynbos biome has, on a large scale, gained interest internationally for its species diversity with subsequent funding for conservation projects. This funding, as well as possible increased eco-tourism, should benefit communities on a larger scale.

3 MANAGEMENT PROGRAMME

3.1 MANAGEMENT AIMS & OBJECTIVES

3.1.1 Aims of the Conservation Area

To protect and manage a remnant of fynbos on the Cape Flats for the following purposes:

- as an example of a vegetation type historically found over a wider area;
- as a valuable open space within the Metropolitan area.
- as a natural area with ecosystem functions to the benefit of the residents of the Metropolitan area (e.g. carbon fixation).
- to protect rare and threatened species for their intrinsic and other real and potential values.
- to act responsibly in terms of the International Convention on Biodiversity.

3.1.2 Reserve objectives

Primary conservation objectives

1. To conserve the Milnerton Racecourse Conservation Area as one of the core flora conservation sites within a minimum set of sites required for species conservation on the Cape Flats.
2. To maintain the diversity of the fynbos supported on the site.
3. To ensure protection of the endemic, threatened and endangered flora and fauna currently occupying the site.
4. To ensure that the activities and requirements of Gold Circle, the managers of the racecourse are complemented by conservation efforts, while impacts of the training track on the conservation area are avoided.

Secondary conservation objectives

1. To control access to and use of the conservation area.
2. To prevent further encroachment on the conservation area by horse activities.
3. To manage invasive alien plants and indigenous species which are posing a threat to the conservation worthy indigenous species on the site, or are disruptive to training activities.
4. To reduce and where possible avoid impacts from surround development and potential developments on the conservation area.

3.2 ZONING

Milnerton Racecourse Conservation Area consists of Precinct H and I that is the conservation zones of the larger Milnerton Racecourse Development (Figure 1).

Milnerton Racecourse Conservation Area is fragmented into 2 discreet sectors. These sectors will be used as management units.

Precinct H makes out the central core of the Training Track and main body of the conservation area to which the other smaller sector are linked via boundaries created by Precinct C9 (residential units).
No real boundary occurs between Precinct F and H, this should be demarcated with range fencing.

3.3MANAGEMENT ACTIVITIES

3.3.1 Approach to management plan

In the section below, the management tasks to be performed are all laid out according to the programme into which it is categorised, e.g. the Legal/Administrative Management Programme, the Ecological Management Programme, etc. All tasks are described in detail. The tasks are summarised in Table 2.

3.3.2 Legal/Administrative Management Programme

Legal Status of the Conservation Area

Description

There are two options, which, with the concurrence of the current landowners, could offer additional protection to the Milnerton Racecourse Conservation Area. These are to declare the areas as a) a Protected Natural Environment in terms of section 16 of the Environment Conservation Act (73 of 1989) [ECA] or b) as a Special Nature Reserve/Private Nature Reserve/Local Authority Reserve in terms of section 18 of that Act.

Both of these sections remain in force since they were not specifically repealed by the National Environmental Management Act (107 of 1998) [NEMA].

a) Declaration as a Protected Natural Environment (PNE)

Section 16 of the ECA permits the competent authority to declare any area defined by it to be a protected natural environment provided that the competent authority is of the opinion that the declaration thereof will substantially promote the preservation of specific ecological processes, natural systems, natural beauty or species of indigenous wildlife or the preservation of biotic diversity in general, after consultation with the owners of, and the holdersreal rights in, land situated within the defined area.

PNE status can only be withdrawn by the competent authority after consultation with the relevant Local Authority or Government institution to which control and management of the area has been assigned.

The competent authority may also (in terms of section 17 of the ECA) establish a management advisory committee to advise it on the control and management of the PNE in order to advance the objectives of its declaration as a PNE.

b) Declaration as a Special Nature Reserve

In terms of section 18 of the ECA, the Minister of Environmental Affairs and Tourism may declare any area defined by him/her to be a Special Nature Reserve (SNR). Such a declaration may only be made for the purpose of the protection of the environment in or special characteristics of such area and at the request of and with the written consent of the owner of such land.

The minister may assign the control of a SNR to any competent authority, local authority or government institution provided that they concur to such assignment, that a management plan is drawn up in consultation with them and the landowner agrees to such an assignment. The management plan may only be amended with the consent of the Minister.

Of note, no person shall gain admittance to a SNR nor perform any activity in or on a SNR, with the exception of any person required to enter it to carry out the management functions of the management plan. With the Minister's permission, any scientist occupied with a specific project and any other person wishing to view the SNR on account of its special nature or characteristics may enter a SNR, subject to any conditions imposed by the Minister.

The airspace 500 metres above a SNR is also part of that SNR and the exclusions above also apply to it.

Approach
Ensure the most effective conservation status for the MRCA through legal methods.

Method

1. Identify the highest and most appropriate legal status to protect the MRCA.
2. Apply to the relevant authority for that designation.

Responsibility

Landowner advised by the EMC

Supplementary funding

Description
The management budget may not be able to cover capital items, such as signboards. These and other items could be funded from supplementary funds such as sponsorships or any other sources of money.

Approach
Actively seek sponsorships or other sources of supplementary funding to supplement the management fund for the MRCA.

Methods
All members of the EMC, Gold Circle and the managing authority will investigate and seek sponsorships and other sources of supplementary funding.

Management of contractors

Description
Tasks, such as clearing of alien vegetation could possibly be done through contractors. It is important that the objectives of this management plan are not compromised through the use of contractors.

Approach
Ensure high quality, sensitive management at all times that is to the benefit of the MRCA.

Method

1. In the event of contractors being appointed to implement any of the tasks stipulated in this management plan, only contractors with appropriate training and experience in working in sensitive areas will be considered.
2. All persons entering the MRCA to perform work must have attended an environmental education/awareness training session. This has to be arranged by the Management authority.
3. A qualified conservation manager will at all times supervise contractors.
4. Ensure that appropriate toilet facilities are arranged for use by contractors.

Ablution facilities

Description
Teams of workers spending one or more days in the MRCA could have a detrimental impact on the fynbos and general hygiene if appropriate toilet facilities are not arranged for.

Approach
Supply the necessary toilet facilities to limit the potential impact on the MRCA and ensure good hygiene of the general area.

Methods

1. Whenever teams of labour have to work in the area, e.g. such as for alien plant control or vegetation burning, adequate temporary toilet facilities will be arranged close to the work area.

Responsibility
Landowner advised by the EMC

3.3.3 Ecological Management Programme

This programme addresses the issues or management tasks that are required for maintenance of the biological diversity and habitat functioning in the Milnerton Racecourse Conservation Area.

Alien and Indigenous Invasive Vegetation Control

Description
Woody alien vegetation on the site is not currently a major problem, as the racecourse management has over the years removed most of the woody aliens due to them interfering with the visibility of the track. There are thus remarkably few woody aliens on the inside of the track, and those that there are can be easily removed. A more significant threat to the natural vegetation at this stage is the gradual invasion of alien grasses, notably kikuyu (*Pennisetum clandestinum*) and ryegrass (*Lolium* sp.).

The main patches of woody aliens within the tracks are the gums (*Eucalyptus* spp.) at the southern end, which cover probably 0.5ha, the Australian myrtle (*Leptospermum laevigatum*) hedge along the western side of the tracks near the old scoreboard (covering about 0.1ha), and scattered Port Jackson willow (*Acacia saligna*) and rooikrans (*Acacia cyclops*), particularly in the northern portions (covering about 0.5ha). A single specimen of the alien invasive Brazilian pepper tree (*Schinus braziliensis*) was noted near the northwestern corner of the main track. The total area of woody aliens is thus likely to be less than 1ha, and I estimate that costs to remove these aliens (and treat the stumps with herbicide) would be approximately R3000.

There are a substantial number of alien herbs also present on site, many of which are annuals or short lived perennials, and all these should be removed by hand by a well trained crew. Species that should be particularly targeted include *Conyza bonariensis* (fleabane), *Inula graveolens* (Cape khakibos), *Trifolium angustifolium* (grassleaf clover), *Vicia benghalensis* (purple vetch), *Polygonum aviculare* (prostrate knotweed), and *Polygonum lapathifolium* (spotted knotweed) in the areas around the dams. *Berkheya rigida* (dissel), although indigenous, is a serious invasive and should be removed.

The alien grasses are more of a problem, as some are particularly invasive, and gradually crowd out the indigenous vegetation. Ryegrass (*Lolium* sp.) occurs very commonly on the site, but as it occurs as individual plants it is not recommended that it be sprayed, as this would also kill many non-target species. Kikuyu (*Pennisetum clandestinum*) is used on the training track and is invading the surrounding areas in some places, such as along the southern edge of the northern extension to the track, and in the northern portion of this extension. It is a priority to clear the kikuyu from all conservation areas, and this is probably best achieved by spraying dense swards with a suitable glyphosate herbicide in November (the middle of the peak growth season, and after many of the indigenous species have stopped growing), and also by manual removal in areas where it is not yet very dense. Any spraying should only be done by well trained operators under still, windless conditions.

Methods

TABLE 1
MECHANICAL/CHEMICAL CONTROLS FOR ALIEN INVADERS

Species	Common Name	Control
Acacia cyclops *Acacia saligna*	Rooikrans Port Jackson	▪ Spray foilage with 0.5% Garlon or 1% Tordon 101. ▪ Paint stumps with 2% Tordon 101. ▪ Pull out seedlings by hand.
Eucalyptus spp.	Eucalyptus	▪ Treatment is best during spring to maximise the effect of painting stumps with 2% Garlon (tricopyr) in diesel. ▪ For larger trees that cannot be cut down, paint a 0.5 m band of 2% Garlon in diesel (10 cm above ground) around stem. ▪ Pull out seedlings by hand. ▪ Spray suckers/saplings/stump resprouts with 0.5% Garlon.
Paspalum vaginatum	Couchgrass	▪ Uncertain. Possibly Roundup (glyphosate), as with kikuyu grass below.
Pennisetum clandestinum	Kikuyu grass	▪ Spray with 1% Roundup and followup as many times as possible, preferable monthly in the dry season until all resprouts have ceased.

The control of alien invasion at this particular site is not expected to be either expensive or time consuming. Careful and sustained control is likely to reduce the problem to a very minor management cost.

Responsibility
Landowner advised by the EMC

Rehabilitation /Restoration /Remediation/Introduction of plant species

Description

The Concept Of Rehabilitation vs Restoration And Remediation

In terms of formulating management needs and recommendations for the MRCA, it is important that the concepts of restoration, rehabilitation and remediation be defined. The concept of **restoration** implies an inherent degree of naturalness; viz. that whatever efforts are undertaken will strive to restore aspects such as vegetation, hydraulic and/or hydrological patterns, water quality or faunal composition to their natural condition. By contrast, **rehabilitation** recognizes that restoration may be neither pragmatic nor possible. However, the enhancement of core aspects of ecological functioning and processes, in order to resemble a semi-natural condition, is attainable. **Remediation** procedures are common for systems that have been grossly abused (e.g. mine tailing wetlands), and any semblance of original condition is no longer possible. Here the goal would be to improve the ecological condition, to an endpoint that is unlikely to mirror any previous natural state.

Approach

1. No work will be undertaken without a prior specialist study on the relevant species or area.
2. Only introduce plant species that come from a similar habitat to that in the conservation area.
3. Introduce rare or special species only into suitable habitat that is clear of alien vegetation or other threats.
4. Spread plant species of special interest in the conservation area from smaller sectors.
5. Decide which is appropriate: restoration, rehabilitation or remediation. Different concepts can be relevant to different areas, depending on the degree of disturbance.

Methods

1. Identify the relevant category of restoration/rehabilitation/remediation for the areas if any or when ever areas occur to be restored/rehabilitate or need to be remedied.
2. Identify the restoration/rehabilitation/remediation requirements, methods etc. for each area, involving relevant specialists to ensure adequate sensitivity.
3. Identify species that only occur in the small sectors of the conservation area and identify sites which these plants can be spread.
4. Investigate the best method of reintroducing the specific species.
5. Present proposal to spread species to the EMC for approval.
6. Prepare the identified site. Reprioritise areas for alien vegetation clearing, if necessary.
7. Introduce rescued or reproduced species from outside MRCA according to the required method(s) for the specific species.
8. Develop a monitoring protocol as required for implemented actions.
9. Revise the monitoring programme for the MRCA to include monitoring of introduced species or other actions.

Responsibility
Landowner advised by the EMC
Approval: EMC
To be performed by a qualified botanist with experience in translocation of species.

Vegetation Burning

Description

Much of the site has not been burned for well over thirty years, which is generally regarded as about the maximum period that a Sandplain Fynbos area is likely to remain healthy and vibrant without a fire. One would thus expect to see many species starting to senesce (lose vigour), which would often be accompanied by a lack of young plants of these species. However, much of the site looks to be in good condition, and there is little sign of senescence. There does appear to be a lack of young plants of many species, which is probably a product of the dense vegetation cover inhibiting inter-fire recruitment of seedlings. Based on observations of similar habitat elsewhere on the Cape Flats and west coast it would thus be predicted that a fire, or series of managed fires, would be beneficial in terms of seedling establishment. Of potential concern in this regard is the high number of succulents (sixteen species recorded, many of which are rare or threatened), as a few of these species (eg. *Ruschia geminiflora, Lampranthus stenus, Lampranthus calcaratus*) are more typically coastal Strandveld inhabitats, a vegetation type that is not generally fire prone, and whose species are not always well adapted to surviving a fire, either by seed, or by resprouting.

Approach

A fire through the habitat in which these species occur would thus potentially be harmful, and may result in the local extinction of these species, which would be highly undesirable. Prior to any burn schedule being drawn up for the site a map of the habitats that should not be burned must be produced. An initial scoping of the site would suggest that the following habitats (Vegetation Associations in McDowell 1997) should not be burned: areas 2, 4, 7, 10, 12, 15, and parts of area 1. A very detailed mapping of the site should be done to determine the areas that should be excluded from fire, bearing in mind the actual practicality of fire management on the site, the sensitivity of the vegetation to fire, and the availability of surrounding seed sources in order to recolonise the burnt portions. (See Plan 3, plant communities within Fynbos)

Methods

1. The area should be divided into about eight management zones which could be burnt in a staggered program of controlled burns.
2. Clear a planned burn with the Property Owners Association/Body Corporate, Gold Circle, the Department of Water Affairs and Forestry, Blaauwberg Administration and the City of Cape Town prior to burning. All burns are to be arranged with City of Cape Town and Milnerton Fire Station, and permission obtained from the Chief of Conservation and Forestry.
3. Distribute letters of intent about burning to residents and information offices (e.g. library & police station) prior to burning an area.
4. Brushcut a 3m tracerbelt along the internal boundaries of a sector shortly prior to a planned burn, if a road or track is not available to act as a belt. Do not create fire/tracer belts along the outside (training track) boundary; use the road. Cut material can be raked into the burn area, but seed bearing alien vegetation is to be removed from site.
5. Remove alien plants and all cut material and refuse prior to burning a sector
6. Inform the EMC and Gold Circle of the intention and planned time period (e.g. month) of a burn. Obtain dates of events during which burning should not occur.
7. Burn sectors according to a burning program.
8. Inspect sector for smouldering material (such as thick logs) after the burn, prior to the burning teams leaving the site.
9. Provide for after burn supervision for at least one day (including night). In adverse weather conditions and in the event of large amounts of smouldering material being present, this supervision period will be appropriately lengthened. Communication methods (e.g. two-way radio or cellphone) are to be provided to aftercare supervisors.

Responsibility

Burns are to be undertaken and managed by and under the direct supervision of experienced staff of the Western Cape Nature Conservation Board.

Note: If budget and or labour allocations do not permit the clearing programme to be followed, sectors that do not require burning in the subsequent year can be programmed for the following year.

Fire Management

Description

Unplanned, accidental fires will not be used as a management tool, since the size of the conservation area and the importance of the vegetation, as well as the use of the racecourse limit the desirability of risk taking.

Approach

1. No person shall be allowed to make an open fire in the Milnerton Racecourse Conservation Area, without authorisation from Gold Circle or the Managing Authority. Fires will only be permitted for management purposes and has to be approved by the City of Cape Town/Blaauwberg Administration.
2. All unplanned, accidental fires will be extinguished as fast as possible with all the necessary resources. All fires starting within the boundaries of the Milnerton Racecourse Development (not only the conservation area) will be regarded as potential hazards to the conservation area.
3. Fire prevention and reaction will be planned for all high risk events.
4. Fire breaks will not be used as a precautionary or management tool, since the conservation area is too fragmented and small for such methods. The training track and roads provide adequate opportunities for fire control and will act as fire breaks.
5. Fire trucks or other vehicles are not allowed off the existing, recognised tracks in the conservation area. Less damage will be done by an uncontrolled fire than by vehicles driving through the fynbos.
6. A manager form Gold Circle will be trained as "Fire Boss" to oversee and coordinate fire-fighting activities between the Fire Department and any other fire fighting teams(s). Special fire fighting equipment/facilities and trained staff will not be available in the conservation areas due to the presence of fire extinguishers and horses at the racecourse, housing and office estates and the proximity of the Milnerton Fire Department.

Methods

1. Draw up a fire response plan.
2. Train all racecourse, office and housing estate staff to know how to respond to fire emergency.
3. Place fire response telephone numbers on clearly visible positions.
4. Gold Circle staff will immediately respond to the emergency with all available staff and equipment. Gold Circle staff will only leave the site of a fire upon arrival and deployment of the Fire Department.
5. The Milnerton Fire Department is to be contacted immediately on **Tel: 555 2222** to assist in fire fighting operations.
6. A report on each fire, detailing the following is to be filled in and filed after a fire.

Responsibility

Landowner advised by the EMC.

Groundwater

Description

The natural vegetation and seasonal and permanent wetlands on site is characterised by its dependence on a high natural water table and acidic water of low nutrient status. Any alteration of this hydrological and chemical regime, particularly a drying out of the soils, could have direct consequences for the fynbos and wetland fauna. Many plant and animal species may become locally extinct. The maintenance of the current groundwater status is essential.

Approach

Maintain groundwater levels and chemical composition at the status prior to development of all Precincts.

Method

1. Monitor groundwater levels and quality (see Water Quality Monitoring Protocol as Annexure E)
2. Determine whether predictions of impacts and suggested mitigation measures were accurate, correctly implemented and maintained (i.e. are there any residual or unpredicted impacts?).
3. Adapt groundwater management according to findings in 2 above.

Ponds and Wetlands

Description

The seasonal wetlands and pond are important habitats for fauna that are becoming endangered elsewhere on the Cape Flats. It is important that these wetlands and pond keep functioning in the way they are doing at present.

These wetlands and pond also function as important ecosystems.

Approach

Maintain the seasonal, little disturbed wetlands habitats

Methods

1. Maintain the groundwater status of the conservation area.
2. Remove alien or indigenous invasive plants from the wetlands.

Responsibility

Landowner advised by the EMC.

Poaching

Description

Although no specific damage or species reduction could be detected due to unauthorized collection of plants, continued export of regenerative plant material will influence plant community dynamics (especially for the rare species) in time.

Approach

1. The unauthorized trapping of game birds (even by internal staff members) will not be allowed. This brings with it associate problems such access control, vegetation damage, fire risk etc. Trapping and culling of game birds should be incorporated into a program that allows for the control of excessive numbers of these birds and if some of the staff can benefit from this resource sustainable then it could be included in the management of the area.

2. Flower and plant collection will not be allowed in the Milnerton Racecourse Conservation Area. Again the additional resources required in monitoring it, the sensitivity of the plant communities in the area and the fact that it sets a president for unchecked utilization makes this an unacceptable practice.

Method

1. All staff working in the Milnerton Racecourse Conservation Area will be informed through environmental education training and handouts about the sensitivity of the conservation area and the prohibition of the collection of plant or animal material.
2. Disciplinary action for above mentioned staff would include unauthorised poaching.
3. Site access will be controlled strictly
4. Information regarding the prohibition of poaching and plant/flower collection will be displayed on site by means of a clearly visible and maintained signboard.
5. The boundary fence surrounding the conservation area will to need be maintained.

Responsibility
Landowner advised by the EMC

3.3.4 Infrastructure Management Programme

This programme addresses the issues or management tasks that are required for creating and or maintaining the infrastructure required for managing the conservation area.

Roads / Vehicle Tracks

Description

A road are found crossing over the core of conservation area. This road is generally used in the management and maintenance of the pump station. Maintenance of this road will, therefore, not be an issue of this management plan, although this road is/will also be used for conservation management purposes. The methods and impacts of road use and maintenance, however, need to be addressed.

Approach

Only the track surrounding the conservation area sectors may be used for racecourse management.

No new roads or paths will be made in any sector of the conservation area. The existing road will be restricted to the management of the area.

Methods

1. The main route through the conservation area will only be used for management of the conservation area. This road does not need resurfacing and will only be maintained as access tracks with limited maintenance requirements.

Responsibility
Landowner and Gold Circle advised by the EMC.

Signage

Description

Information signs that inform people (visitors and residents) of the value of the conservation area and rules of entry need to be placed strategically, e.g. possible points of entry to conservation areas, as well as on boundaries of areas frequented by surrounding land users.

Approach

Provide guiding, educational and interpretative information on conservation area.

Signboards are to be made of materials that are weather and (to a fair extent) vandal resistant and will not easily fade from the sun.

Signage will not be placed in natural, high quality fynbos where its placement and maintenance will create a disturbance to fynbos.

Method

1. Provide signs with information on controlled access and permit offices at points of possible entry into all sectors of the conservation area.
2. Provide information on the value of the MRCA and its fynbos at the entry gate to the property and in other strategic locations (e.g. main offices or information centres).
3. Signage will be provided along boardwalk and sand tracks used by horses indicating to riders and walkers that they are to remain on allocated paths, and not cross through conservation areas.
4. Signboards will be replaced when required to ensure that information is always clear and up to date to users of the conservation areas, and surrounding land.

Responsibility

Landowner advised by the EMC.

Bulk Services

Description

It is possible and likely that water, sewerage or other main services cross the conservation area in some place, although no evidence of this could be found. Replacement or repair of such services could result in a significant impact on the conservation area.

Approach

Prevent and reduce impacts on the conservation area.

Method

1. Determine from various authorities whether any bulk services cross the conservation area.
2. Draw up rules for working in the conservation area in the event of maintenance work being required (management plan).
3. Always have a qualified environmental site officer on site during work in the conservation area.

Responsibility
Landowner advised by the EMC.

Borders and Fencing

Description

The boundaries of the two conservation areas need to be demarcated and fenced to prevent accidental and intended, but unauthorised entrance of the MRCA.

Approach
Fence areas where people are likely to gain unauthorised access.

Should training tracks be considered in future the following must be considered.
It is taken that the training track provides adequate restriction to vagrants or visitors to the racecourse to enter the sectors inside the training track.

Methods

1. Horse exercising tracks should be identified and marked on plan, but not fenced, since fencing will create more of an impact than the odd horse bolting. Pole fencing may not be used, since it will interfere with fire management and other management requirements.
2. All fences shall be maintained and replaced when required.
3. No fence may be removed (other than for maintenance or replacement) or moved without the express and written consent of the EMC and Local Authority.

Responsibility
Landowner advised by the EMC.

3.3.5 Visitor / Activity Management

Environmental Management Committee to make decision (not envisaged currently).

Footpaths

Environmental Management Committee to make decision (not envisaged currently).

Environmental Education

Environmental Management Committee to make decision (not envisaged currently).

Research

Environmental Management Committee to make decision (not envisaged currently).

Recreation

Environmental Management Committee to make decision (not envisaged currently).

Access Control

Environmental Management Committee to make decision (not envisaged currently).

Emergency Response

Description

Having visitors to the MRCA (including workers and jockeys exercising horses) creates the potential for emergency situations such as snakebites, broken ankles, or any other medical or other emergency to people or horses. Emergency response needs to be arranged prior to anything happening.

Approach

Provide visitors to the MRCA with the necessary service to ensure their safety. This service may be combined with a general service to the greater Milnerton Racecourse Development.

Methods

Provide emergency service, at an existing office on the Milnerton Racecourse Development. This service includes having a first aid kit and emergency telephone numbers and staff to contact emergency services (including police, ambulance, fire, etc.) when required.

Place information about the emergency service and its location on information boards and pamphlets.

Responsibility
Landowner and Gold Circle advised by the EMC.

3.3.6 Development Interface Management

This management programme addresses the issues that impact on the MRCA, but originate from other precincts of the greater Milnerton Racecourse Development.

Refuse and waste management

Description

No waste, other than cut or removed invasive plants originating from the MRCA. All other waste originates from surrounding activities. Improper management of this waste will impact on the MRCA through litter and other ways.

Approach

No waste will be dumped or stored within the MRCA.

The following will be considered being waste that needs removal and or management (but is not exclusive):

- Litter
- Soil and sand stockpiles
- Brush and grass dump sites
- Building rubble and refuse.
- Waste from the quarantine station, e.g. wash water, manure, bedding material from stables.

Method

1. All dumped material will be removed from the MRCA to an appropriate dumpsite or other location. This includes:
   - Plant material (cut brush and grass clippings)
   - Soil and sand stockpiles
   - Litter
2. The removal of plant material and soil stockpiles is to be planned with alien plant control.
3. One major litter removal exercise will be undertaken soon after start up of management according to this plan. Thereafter, litter removal will be undertaken and during alien plant removal.
4. All waste created through management of the MRCA will be taken from site in appropriate, sealed bags or containers after completion of the management tasks.
5. Vagrants will not be allowed to enter the MRCA, thereby litter will be limited.
6. The presence of litter or dumped material is to be checked during quarterly field ranger patrols.

Responsibility

Landowner and Gold Circle advised by the EMC

Fertiliser, herbicides, pesticides and other chemicals

Description

Fertilisers and various chemicals are being used to maintain the lawn on the training track, as well as in landscaped and other areas on the Milnerton Racecourse Development. These chemicals pose a threat to the biological elements of the MRCA if any are allowed to enter the groundwater through leaching or surface water through spray drift or run-off. Aquatic and other freshwater organisms are particularly sensitive to the smallest traces of chemicals in water.

The use of chemicals has been addressed in the management plans of the other Precincts. This issue is being emphasised and expanded on through placement in the MRCA management plan.

Approach

Avoid pollution or other impacts of chemicals and their use on the elements of MRCA.

Methods

1. Avoid the use of any chemicals in all Precincts as far as possible.
2. Only use chemicals strictly according to the guidelines in the management plans.
3. Apply chemicals in such a way that it does not enter the MRCA through e.g. spray drift, runoff or any other way.
4. Application equipment may not be washed out onto the ground or into groundwater at any stage.
5. Empty containers, disused chemicals or anything that is related to the chemicals or their use must be disposed of in sealed; leak proof containers to appropriate dump sites.
6. A groundwater monitoring programme has to be undertaken to detect any traces of pollution (see Annexure E)
7. Keep strict records of chemicals used, their active ingredients, date and method of application and area (place & size) treated. Also record climatic conditions (subjective), such as windy, humid, very hot, etc. This can enable correlation with frog population trends, if any trends are found (climatic conditions could inform on possibility of spray drift, runoff, etc).
8. Supply chemical records to the EMC twice a year.

Responsibility

Landowner and Gold Circle advised by the EMC.

Problem Animal Control

Description

Apart from stray dogs and cats, the problems caused by animals on Milnerton Development relate to the up keeping of the racing track and not the conservation area as such. Nevertheless the control of these animals influences their populations in the conservation area.

The problem animals can be divided into two sections. The first are animals indigenous to the area causing structural damage to the training track and its associated facilities and creating a hazard in the racing activities. The second consist mainly of stray dogs and domestic cats that enter the area and threaten natural animal populations.

Stray dogs do not cause significant damage but they can disrupt nesting birds and contribute to the danger of horses becoming startled during a race.

Approach

1. No chemical or physical control of moles will be practised within the MRCA.

2. Manage the habitat and or predator populations to control fauna species that are problematic due to altered ecological circumstances on site. Other control measures are to be used in addition to habitat/predator management only, where necessary.

3. Stray dogs will be kept out of the property. Also pets will not be allowed to visit the area.

Method

1. Maintain the boundary fence of the MRCA to prevent dogs from entering.
2. Residents/tenants of any other Precincts or residential development that was part of the Milnerton Racecourse Development property have to control their pets and not allow them to stray to the MRCA. Appropriate methods for control of animals are to be arranged by the Property Owner Association/ Bodies Corporate.
3. Assess which fauna species are problematic on the training track and what population sizes would be acceptable for limited to no damage.
4. Remove all alien/ foreign plant species that provide shelter/nesting sites for problem bird species.
5. Investigate the habitat preferences of problem species and the presence of this habitat that encourage large numbers of these species to be present. Alter or manage this habitat, if it is found to be a disturbed habitat foreign to natural fynbos
6. Investigate and consider the reintroduction of predator species, such as mole snakes, genets, mongoose and others that would control problem species.
7. Game birds will frequent certain spots of the track for dust baths or for foraging. Once an area is used the birds will return to it compounding the problem. Therefore it is essential that track staff follow up with track repairs as soon as damage appears. A well maintained and thick grass cover will be less attractive and susceptible to damage by these birds.

Responsibility
Landowner, tenants and Gold Circle advised by the EMC.

Drainage ditches

Description

The drainage ditches all around the training track, carrying run-off from the majority of the site to the detention ponds.

Approach

Avoid any activity that may impact on groundwater in the MRCA.

Methods

1. Drainage ditches around the conservation area will be maintained.

Responsibility

Landowner advised by the EMC.

Lighting

Description

Light influences the biology of plants, insects and other life. Unnatural light (light pollution) will, therefore, impact on the MRCA.

Approach

Avoid light pollution from within the Milnerton Development onto the conservation area.

Methods

1. Lighting in any other Precinct must be placed in such a manner that it does not shine into the MRCA.
2. All lights that are not absolutely essential (e.g. for security) are to be turned off immediately after use.
3. No lighting will be provided within the MRCA.

Responsibility

Landowner advised by the EMC.

Stormwater

Description

Stormwater usually contains pollutants such as chemicals, oils and organic waste that can affect the fynbos in the MRCA.

Approach

Prevent or minimise the impacts of stormwater on the MRCA. Stormwater from any area on the outside of the training track may not enter any section of the MRCA.

Methods

1. See Stormwater Plan, Plan 2

Responsibility

Landowner advised by the EMC.

Training track or equestrian activities

Description

The following activities that are related to the training track may enter and or impact on the MRCA:

- Exercising of horses

Many formalized and non-formalized footpaths and horse trails cross H of the conservation area.

Approach

Prevent or minimise impacts on the MRCA through preventing activities that may impact on it.

Responsibility

Landowner and Gold Circle advised by the EMC

3.3.7 Monitoring Programme

Field Ranger patrols

Description
Many tasks do not require formal monitoring, but can be adequately checked through observations during regular field ranger patrols.

Approach
Establish a regular presence in the MRCA to detect possible problems or changes.

Method

1. Patrol conservation areas monthly on foot and record findings in a field rangers record book.
2. Patrols are not to be pre-arranged with any management body or the EMC to prevent preparation for such patrols. Clearance for entry of field rangers onto the property at any time will be arranged.
3. Patrols are to be at random in terms of timing and routes to be walked.
4. The following will be noted if observed during patrols (not an exclusive list):
   - The presence of people (management, visitors or vagrants) in the MRCA with descriptions of activities.
   - Anything related to poaching issues
   - Any detectable large scale mortality of species, with description (not treated alien plants). Samples of fauna species to be taken for analysis.
   - Any noticeable, unusual activities by fauna.
   - Litter and dumping.
   - Disturbances, such as ground clearing, collection of sand, etc.

Responsibility

Landowner advised by the EMC.

Vegetation Monitoring

Description

The long term monitoring of the vegetation is an essential management tool that will allow us to objectively document any changes that may take place in the overall composition of the site in terms of both individual species and plant communities. Any botanical monitoring needs to be accompanied by detailed monitoring of environmental conditions, the most important being rainfall and groundwater levels. If any monitoring wells have been sunk on the site the information should be made available to help interpret any vegetation changes. Also important will be a map of the vegetation age, if indeed any areas are currently younger than other areas.

The following need to be monitored:

- Success of treatment methods for clearing invasive species.
- Recolonisation of cleared areas by indigenous fynbos, with reference to treatment methods.
- Alien invasive plant species present in the MRCA and their population trends.
- Fynbos recruitment and successional (population) changes after burns.
- Species and populations of plants in the pristine wetlands

Approach
Measure and check management action and their success in order to inform management and ensure improvement in habitat quality.

Methods

The ideal way to monitor vegetation changes would be to set up permanently marked and numbered monitoring plots of perhaps 10m by 10m (indicated by 2m tall aluminium posts at each corner, with plot number attached), with the number of plots in each habitat type (Vegetation Association as in McDowell 1997) determined by the size and sensitivity of the habitat. Very small habitats, such as 12, 15, and 16, should have no more than one plot, medium size habitats such as 5,6, and 8 could perhaps have two plots, and larger habitats might have three plots. These plots would then be surveyed at the same time, once a year in spring, by a competent botanist familiar with the flora of the area, and species presence and abundance data should be collected in the form of Braun Blanquet cover abundance values. A data sheet should be prepared with all the site's rare and threatened species listed, and the surveyor should fill in the relative cover abundance of these special species, in addition to the most dominant species in the plot. The cover abundance of alien plants should also be recorded, as should the percentage of open ground. A total site count of some of the larger, threatened perennials could also be done. Suggested species include *Leucadendron levisanus, Muraltia satureoides, Cliffortia hirta*, and *Aspalathus acanthophylla*.

Fauna Monitoring

The Environmental Management Committee must determine which species need to be monitored.

Water Monitoring

Description

The water quality monitoring is implemented as part of the Environmental Management Plan for the development.

The water quality monitoring protocol involves the implementation of suitable surface and groundwater monitoring requirements, as follows:

- Twice yearly (end of winter and end of summer) monitoring of water quality and water levels for one year to measure any post construction impacts. The monitoring can be extended if previous monitoring has detected water quality problems that require mitigation action.

Approach

Monitor water quality and levels to detect changes and make adaptations to management.

Methods

1. Establish groundwater monitoring wells as recommended in the groundwater report by Arcus Gibb. Details on the number, position, etc. of wells, water quality and level monitoring see Hydrogeological Study and Baseline Monitoring, Annexure F.

2. Measure the following criteria of water samples taken from the MRCA:

Water Quality Parameters

Construction & Post-Construction Monitoring

- PH
- Electrical Conductivity
- Dissolved Organic Carbon (DOC)
- Total Dissolved Solids (TDS)
- Ammonia
- Nitrate/Nitrite
- Alkalinity
- Phenols

These are key indicators that can be added to, or omitted as the monitoring program proceeds. The sampling frequency and analytical program should be reviewed depending on the results of the monitoring program.
Reporting should be as follows:

- Construction Monitoring Summary Reports.

3.3.8 Management priorities and Budgets

A high priority tasks table will be set up by the EMC. High priority tasks receive attention from year one, while the medium to low priority tasks may be delayed until management budget, labour requirements, etc. allow for these tasks to be attended to. All tasks must, however, receive attention during the lifespan of this management plan. See Annexure G for budget proposal for year 1 and 2 – 5 years for maintenance of conservation area.

The EMC to establish priorities.

Eg.

Table 2: Task Priority Rating

Task no	Task Name	Priority Rating
	Legal Status of MRCA	
	Supplementary funding	
	Management of contractors	
	Invasive Vegetation Control	
	Vegetation Burning	
	Fire management	
	Groundwater	
	Signage	
	Environmental Education	
	Vagrants	
	Access Control to conservation area	
	Emergency Response	
	Refuse & waste Management	
	Fertiliser and other chemicals	
	Vegetation Trimming	
	Topsoil Disturbance	
	Lighting	
	Stormwater	
	Racecourse & Equestrian activities	
	Field Ranger Patrols	
	Vegetation Monitoring	
	Fauna Monitoring	
	Water Monitoring	
	Rehab. Restore, Remediation	
	Pond and Wetlands	
	Poaching	
	Roads / Vehicle Tracts	
	Borders and Fencing	
	Boardwalk	
	Drainage ditches	
	Small Mammal Survey	
	Reintroduction of Fauna	
	Pump Station	
	Problem Animal Control	

The levy will initially be adequate to do basic management as required from this management plan and will escalate annually in accordance with the current applicable Consumer Price Index.

The cost of tasks that are for the benefit of or arising from management of the racecourse or any other surrounding landuse is to arise from the budget of that landuse.