



BIODIVERSITY MANAGEMENT PROGRESS REPORT

July 2017 – June 2018

Transport and Urban Development Authority
Environmental Management Department
Biodiversity Management Branch



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD



TDA
CAPE TOWN

The City of Cape Town's Transport
and Urban Development Authority

Table of Contents

Page

1. EXECUTIVE SUMMARY	3
2. STRATEGY, POLICY, LEGISLATION AND PLANS	18
3. GREEN JOBS	22
4. CONSERVATION SERVICES.....	25
5. INVASIVE SPECIES.....	54
6. FIRE	62
7. NATURE CONSERVATION	66
8. PEOPLE AND CONSERVATION	71
9. SECURITY AND LAW ENFORCEMENT.....	81
10. STAFF MATTERS	84
11. ADMINISTRATION	90

1. EXECUTIVE SUMMARY

Conserving biodiversity: our natural capital

"Cape Town is the Most Biodiverse City in the world" – Thomas Elmqvist, leader of UN's City and Biodiversity Outlook Project and Swedish expert in natural resource management and urban landscapes.

The City's **Integrated Development Plan (IDP)** and draft **Municipal Spatial Development Framework (MSDF)** recognise Cape Town's critical environmental assets, its globally important biodiversity, and the significance of its 308 km coastline. The City's **Environmental Strategy** recognises and commits the City to conserving Cape Town's unique and globally important biodiversity (including freshwater systems) for both present and future generations.

The Environmental Management Department's (EMD's) Biodiversity Management Branch (BMB) is responsible for the planning and implementation of the Local Biodiversity Strategy and Action Plan (LBSAP), which incorporates protected areas expansion, conservation services, people and conservation (nature conservation tourism, recreation and education), job creation, skills development, invasive species control, restoration and management of the City's nature reserves.

During 2017/18, the BMB continued to implement its objectives aligned with the IDP, and specifically the Strategic Focal Area (SFA) 1 – Opportunity City:

Text from IDP 2017 to 2022 in italics

'1.3.b.3 EPWP Localised Project

The City will continue to localise community works and Expanded Public Works Programmes (EPWP) in order to ensure that Subcouncils are involved in the drafting of labour-intensive community programmes benefiting local residents during implementation. A focus will be on the continued improvement of the Jobseeker Database system to address weaknesses in the current system and to operate optimally.'

From 1 July 2017 to 30 June 2018, 3 244 job opportunities (original target was 910); 75 440 person days of temporary employment; 328 FTEs (Full Time Equivalents) were created on the reserves and Biodiversity Network (BioNet). Additionally, the branch facilitated 597 opportunities (Working for Water, Working for Wetlands, Working for the Coast, Greenest Metro, and Subcouncils; 50 059 person days or 217 FTEs).

The focus of employment was on the local communities living adjacent to the reserves with individuals being employed most of the time from the relevant Sub-councils' Jobseekers Database. Supporting and running parallel to the job creation programme are training and formal skills development programmes. These programmes include on-the-job training for learners, students and interns. It is critically important to be able to assist with career development and the BMB makes every effort to provide opportunities for EPWP and skills development incumbents. In the last financial year and in partnership with Cape Town Environmental Education Trust (CTEET), 74 interns and learnerships were placed on the nature reserves.

Finally, it is important to provide long-term employment. Of the eight permanent workers, field ranger and admin posts in the branch, seven were filled with students, interns, and EPWP staff. Another three posts were filled with skill development individuals (promotional posts).

'1.4.b.4 Biodiversity management project

The City's biodiversity and ecosystem services will be restored and managed to ensure their long-term sustainability and efficacy. This will be achieved through on and off reserve management, guided by the City's Bioregional Plan and focused on optimising socio-economic benefits and opportunities where ecologically sustainable.

Managing biodiversity and ecosystems strengthens their resilience to climate change and improves the resilience of the city as a whole to the impacts of climate change. The following will form part of this project:

- *Securing the protection of the BioNet (target of 65%)'*

The City has set a target to ensure the conservation of 65% of the BioNet, the fine scale conservation plan of the City of Cape Town (CCT) area, by 2022. The BioNet includes all priority natural and semi-natural wetlands and rivers, and indicates which parcels of land are classified as Critical Biodiversity Areas (CBAs) and have to be conserved to meet National Conservation targets. The BioNet and Management Guidelines were consolidated into the **Bioregional Plan** which was approved as policy by the City Council in July 2015. To date, **64,8%** of the 2009 BioNet is conserved or in the final stages of proclamation.

- *'Continued implementation of the Bioregional Plan monitored through the Management Effectiveness Monitoring Programme.'*

In 2018, the CCT completed the Management Effectiveness Tracking Tool (METT)-SA03 for all of the City's Protected Areas. This is the first time this latest version was used, as previous METT versions were used over the past 10 years. The City will compile all the evidence for the METT-SA03 and submit to CapeNature in early 2020, who will in turn submit to the Department of Environmental Affairs (DEA). Undertaking the METT and submitting the results to DEA is required in terms of South Africa's national and international commitments. The City also ensured alignment with the Ramsar-METT (R-METT) for False Bay Nature Reserve, a Ramsar site.

- *'Conservation Programme which includes all education, events and visitor programmes.'*

The City's nature reserves received just over **410 000 visitors**. This information was mostly recorded through its manned access points and events (the majority of reserves are open access so this figure is an under estimate). An income of R1,91 m was collected (158% of target) through paid gates and venue hire.

Four hundred and sixty-one individuals, totalling 3 771 person days with a rand value of R850 000, volunteered in 2017/18. A further 645 individuals (9 776 person days – valued at R5,3 m) worked on the reserves via sponsored programmes. The reserves and the outreach programmes saw **34 951 learners** from **531 schools** resulting in 48 466 person days of education. With other events and exhibitions, a total of **71 266 individuals** took part in education and awareness activities.

Meetings of the Protected Areas Advisory Committees (PAACs) were successfully held for 11 of the reserves. The initial three-year terms expired in 2017/18 and advertisements for new members were publicised. Final appointments will be made in the first quarter of 2018/19. A forum for the PAACs' chairpersons, in order to support and share ideas, highlights and challenges, was held three times in the last year.

'1.4.b.5 Invasive species management project

The City's invasive species management programme focuses on:

- *Identifying and managing invasive species introduction pathways in collaboration with national and provincial stakeholders and minimising the movement of invasive species within the metro.*
- *Detecting and controlling new and emerging invasive species before establishing viable populations and spreading into new areas.'*

The City and SANParks, in collaboration with DEA, implemented a compliance intervention. During the operation, landowners were made aware of their legal responsibilities and encouraged to control, manage and extirpate invasive plant species. A total of 45 properties were inspected during the interventions.

The City and CapeNature hosted a meeting of the CAPE's Invasive Species Animal Working Group (IAWG). This group consists of managers and researchers to identify pathways and ways forward in terms of dealing with invasive animal species. The City is also part of the provincial meeting ACRAE (Alien Clearing, Restoration and Alien Biomass Economies) focusing on invasive plant species. Lastly, BMB runs a Spotter Network focusing on locating identified emerging invasive plants.

- *'Controlling existing invasive species to improve ecosystem health and services and to protect biodiversity.*
- *Control target invasive species according to a species management plan.*
- *Maximising green job opportunities through labour-intensive control methods and associated jobs such as clearing litter in river channels.*
- *Monitoring efficacy of control methods and reporting progress.*

The National Environmental Management: Biodiversity Act (NEMBA) Act 10 of 2004 Alien and Invasive Species Regulations (2014) requires all organs of state at all spheres of government to control invasive species, monitor and report progress and to incorporate invasive species management, control and eradication plans into IDPs.'

In the last year, 70% of the control plans for the City's protected areas were completed and submitted. The outstanding control plans are being finalised and should be submitted in September 2018. Invasive alien clearing targets have been finalised and incorporated into the LBSAP.

1.1 Highlights

In addition to the above, notable initiatives during the period July 2017 to June 2018 included the following:

1) Local Biodiversity Strategy and Action Plan 2019 update

In 2008, the Framework for a Strategy and Action Plan for the Management of Invasive Species in the City was adopted by Council. The Local Biodiversity Strategy and Action Plan (LBSAP) 2009-2019 was approved in 2009. In 2017/18, the LBSAP was updated, incorporating the latest draft invasive species strategy; was discussed with the City's Strategic Policy Unit (SPU); and submitted to line management for final comments. The updated LBSAP has been divided into two parts: the strategy component (Part 1) and the action plan component 2019-2029 (Part 2). It is planned that the final document will be submitted to Council by June 2019.

2) Biodiversity Report: Celebrating a decade of Biodiversity Management 2008 to 2018

In 2008, under the auspices of ICLEI's Local Action for Biodiversity (LAB), the City prepared a report on Biodiversity in Cape Town. In 2018, this report was revised and updated, and is available on the City's website. This report is a state of biodiversity and provides updated statistics, updated information, and highlights the successes and changes over the last 10 years (Figure 1).

3) Witzands Multipurpose Centre and management of the Witzands Dunes, Witzands Aquifer Nature Reserve

This is the largest construction project that has been undertaken by the branch. The Centre, completed in June 2018, will serve the citizens of Cape Town by providing a gateway to the Witzands Dunes, with ablution facilities, coffee shop and secure parking. The centre has also enabled the function of permitting the activities

on the dunes to be moved from Bulk Water to Biodiversity Management (Figure 2). The Centre was launched by Cllr Suzette Little, Area Mayco Member.

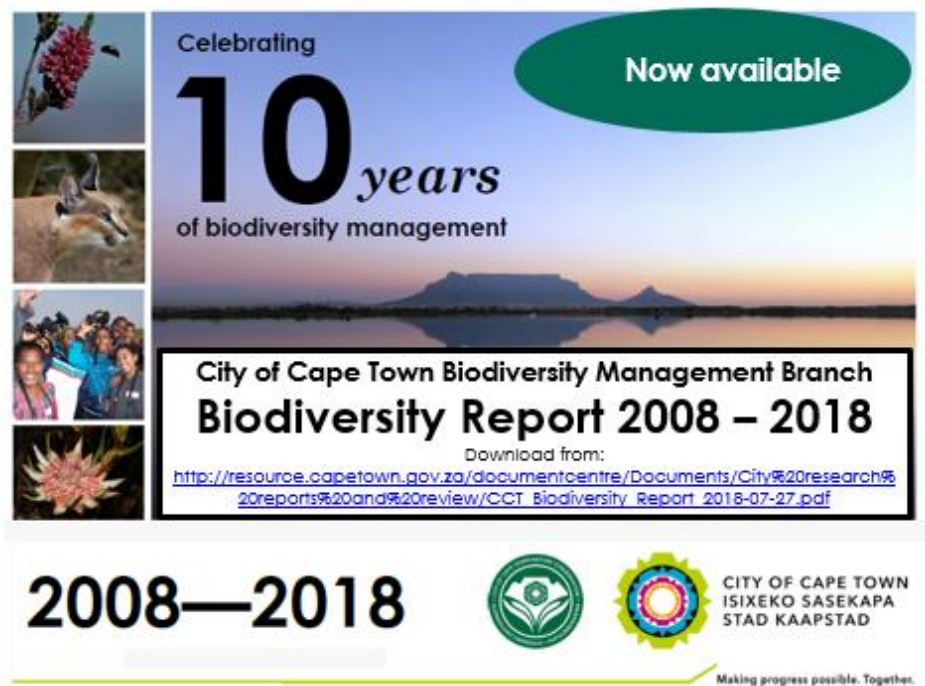


Figure 1: Poster depicting report and its URL.



Figure 2: Completed Witzands Multipurpose Centre.

4) Budget

Budgets were spent timeously, with an increase of financial control on individual reserve income and expenditure. Controllable operating budget was slightly overspent with permission. Overall, operating spend was 97,22% (non-controllable staff budget was underspent) and revenue of R1,9 m was 158% more than the planned amount. Initially, an amount of R14,15 m was allocated from the EPWP office to the Kader Asmal grant. However, another R7,6 m was allocated in two tranches – at the end of April and again in June 2018.

In total, 99,09% of the budget was spent on priority projects. For Capital, 98,5% of the budget was spent. Additionally, R1,67 m Capex budget was obtained for conservation land acquisition. These funds, which remained on the Housing budget, were all spent.



Figure 3: *Babiana blanda* at Woodlands offset site.

5) Facilitating development

In the last financial year, BMB assisted TDA to facilitate development in Maroela Park, by motivating, securing budget, and buying a site with the Critically Endangered plant species, *Babiana blanda* (Figure 3).

6) City of Cape Town Screensaver

The City used the biodiversity screen saver on all corporate computers for two weeks to coincide with International Day for Biological Diversity on 22 May 2018 (Figure 4).

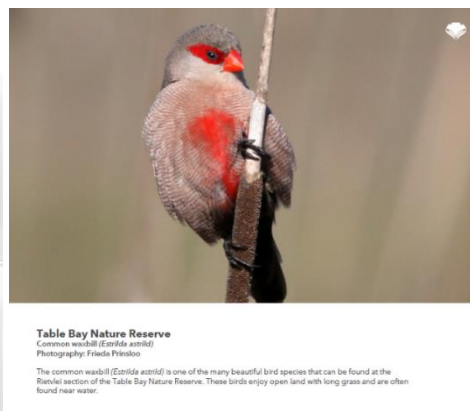


Figure 4: City's desktop background/wallpaper in May 2018 (22 May is International Day for Biological Diversity).

7) Other milestones achieved in the 2017/18 financial year

- Securing 64,8% of the 2009 BioNet (IDP target is 65% by 2022)
- Critically Endangered *Protea odorata* (only five plants remaining in the wild) population was the focus of a prescribed burn to assist with its restoration and conservation
- Nationally required audit (METT-SA03) was undertaken on all protected areas
- An application for funding various projects was submitted to the Natural Resource Management Department. A budget of R35 452 648,55 was approved to implement the Terrestrial, Special and Peninsula Rehabilitation Projects over three years
- The Invasive Plant Tender (City wide tender which ensures best practice) was approved and implemented
- Additional budget obtained for security and uniform.

1.2 Challenges

1) Security and law enforcement

The most serious issue is large-scale land invasions in the Metro SE (Figure 5 and 7). This is affecting not only critical biodiversity but also the future planning and development in the City. Unplanned sprawl, often in unsuitable areas such as low-lying flooded areas, hampers the City in its ability to deliver services and ensure a resilient city. The majority of the areas affected are not on the City's proclaimed reserves, although there were incidences of land invasion into Edith Stephens Nature Reserve. Fortunately, with the help of Law

Enforcement, these shacks were removed. There is, however, an ongoing legal process on the land invasion in the Slangetjiebos Section of the False Bay Nature Reserve. Continued surveillance of this area, in conjunction with City's law enforcement, is critical. The BMB does experience widespread illegal squatting on most of the City's protected areas; however, most of the squatters are removed within 24 hours as a result of ongoing patrols.

Increased incidences of violence due to land invasions, taxi wars and service delivery protests have affected the nature reserves, and have sometimes resulted in reserves being closed and/or staff being sent home or confined to the offices. These occasions negatively affect performance and the ability to deliver services to the surrounding communities.

Other challenges include illegal dumping, illegal harvesting, and general security threats to visitors, staff and contractors.

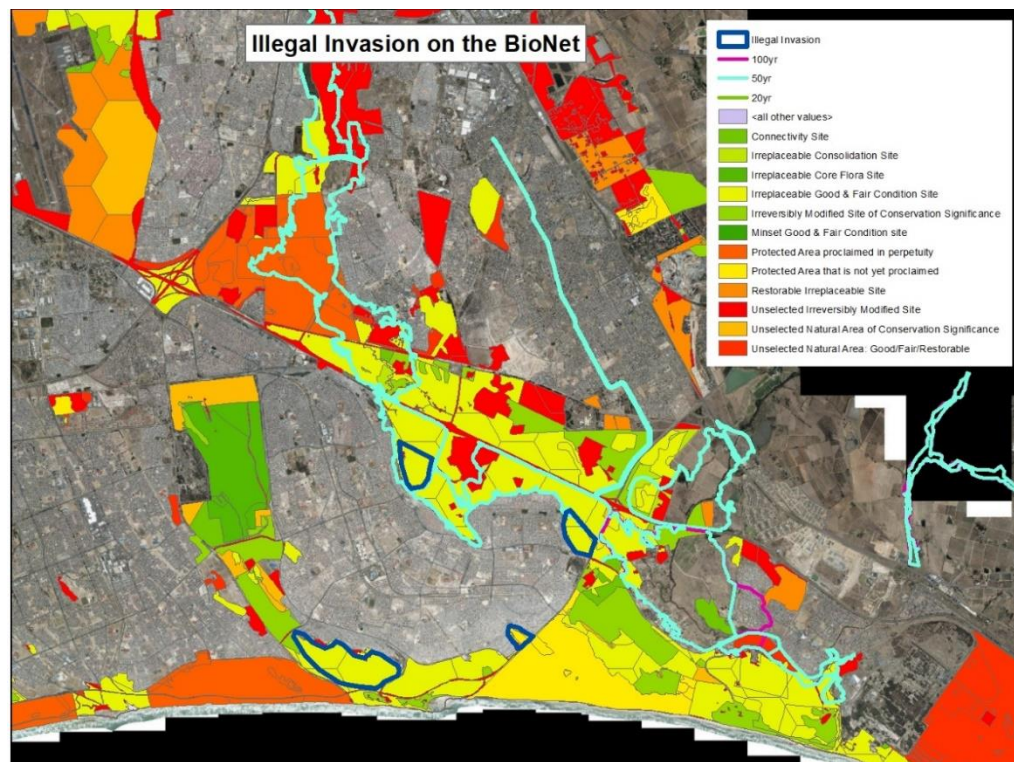


Figure 5: Map showing the most serious land invasions in the Metro SE which are affecting not only Biodiversity, but also planning, housing and service delivery.

2) Staff and budget

There is still a lack of permanent staff in key positions such as administrators, people and conservation officers, field rangers, mechanical operators, project managers and invasive species quality controllers. A realignment process to address some critical gaps is urgently needed and will assist in staff shortages. Security, not surprisingly, is one of the largest budget items and is still inadequate to ensure the safety of resources, people and infrastructure.

3) Comments on development

EIA comments and recommendations (based on BioNet and Bioregional Plans) are rarely adopted in development decision-making by the Department of Environmental Affairs and Development Planning (DEA&DP), and developments are often approved without sufficient mitigation for biodiversity loss.

4) The current water crisis

Increasing potable water requirements, owing to a growing human population, coupled with several years of below-average rainfall, have resulted in a drought situation whereby demand exceeds supply from the dams. This precipitated the fast-tracking of abstraction from the aquifers, including the Atlantis, Cape Flats and Table Mountain Group aquifers. Abstraction from the former two aquifers may be developed on already-degraded land, thereby minimising direct negative impacts on biodiversity, and have potential for aquifer recharge using treated waste water. By contrast, drilling into the Table Mountain Group aquifer may directly impact pristine natural areas in the mountains (Figure 6). The infrastructure supporting an aquifer wellfield requires roads, pump houses, powerlines and pipelines in addition to the boreholes. Furthermore, abstraction will need to be carefully managed in order for it to remain sustainable in the long-term and not cause the drying of springs and wetlands, with associated flora and fauna that depend on ground water linked to the aquifer. All the TMG boreholes underwent an extensive ecological screening process. Seventeen of the proposed boreholes in the Steenbras wellfield (many in highly sensitive areas) are in the process of being drilled and pump tested. Input to the required ecological monitoring of the Cape Flats and Witzands aquifers is ongoing.



Figure 6: Drilling into the Table Mountain Aquifer at Steenbras Nature Reserve.



Figure 7 Left to Right: Cleaning dumped material, Wolfgat Nature Reserve; illegal structure, Zandvlei Nature Reserve; and illegal land invasion, Enkanini Dunes.

Table 1: Reserves / offices, each illustrating at least one major highlight and one major challenge

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
South Region	The end of the 2017/18 financial year saw a large influx of EPWP staff on to the nature reserves; totalling over 200 at one stage. These EPWP staff were sourced from the City's in-house programmes as well as from the National Working for the Coast project. With this influx of labour, many labour intensive projects were completed.	The ongoing drought continues to be a major factor on the reserves and wetlands in the South. Large wetlands such as Rondevlei and Zeekoevlei only just reached their full level at the end of the last quarter.	Monitor impacts of drought
Zandvlei Estuary (including Muizenberg East Private Nature Reserve and Psoralea Park Private Nature Reserve)	Old nursery infrastructure was removed from the northern shore reserve offices area as part of the longer term precinct plan and the wetland area on the site was rehabilitated. Extra EPWP staff deployed at the reserve in the last quarter.	The machinery breakdowns, staff time and windy days resulted in backlogs in pond weed harvesting. Of the 92 days in one of the quarters, the weed harvester (Kingfisher) did not work 42 of these days due to the down time. The reserve facilities struggle to support the additional numbers of EPWP staff working out of them.	Motivate to buy new weed harvester for Zandvlei Investigate upgrading of facilities
Edith Stephens	New Kwik Space building installed and electricity, water and sewage were all connected to the new Kwik Space classrooms, making the building a viable additional educational space. An event was held in collaboration with the Association for People with Disabilities, to encourage access to nature for all. High numbers of EPWP staff enabled several vegetation clearing projects to be done.	Land invasions and the ongoing threat of land invasions.	Increase surveillance
Kenilworth Racecourse Rondebosch Common and Liesbeeck River	A new vehicle replaced the old, unreliable vehicle at Kenilworth. Ismail Wambi, the People and Conservation Officer (P&CO) for Kenilworth, left at the end of the last quarter. His post was filled by Abongile Madyolo, who has been working on the CTEET educational programme at Zeekoevlei. Two new bird species were recorded for Kenilworth. Further plant species found bring the total of threatened plant taxa at the site to 46.	The lack of conservation status of the Kenilworth Race Course Conservation Area is an ongoing concern. The reluctance of Kenilworth Racing to confirm any form of stewardship agreement has not changed, despite extensive attempts by City staff to offer a variety of stewardship options to Kenilworth Racing.	Ongoing negotiations with Kenilworth Racing.

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
East Region	<p>Visitor numbers have shown an increase at both Helderberg and Steenbras Nature Reserve resulting in a growth in the revenue for the region.</p> <p>Community interactions both within the Reserve and in the adjacent areas have been enhanced with the continuation of Protected Area Advisory Committees, bolstered by the establishment of the PAAC for Steenbras Nature Reserve.</p> <p>The region gained staff with the placement of staff via incapacity transfers and the Conservation Learnership / Internship programme that is being run in partnership with CTEET. The ad hoc allocation of EPWP staff substantially contributed to the work completed.</p>	Security continues to be the biggest threat and item of expenditure on the region's budget.	Ongoing
Wolfgat (including Macassar Dunes)	<p>Successful Heritage Event held on 20 and 21 September 2017 at Wolfgat Multipurpose Environmental Education Centre.</p> <p>Incapacity transfer from solid waste confirmed.</p> <p>EPWP Staff from three programmes: Greenest Metro DEA Implementation project – 20 People from Mitchells Plain until end March 2018 used to collect waste and clear invasive plants at Monwabisi Resort. Coastal Clean-up DEA Implementation project - 31 people from Khayelitsha working in the Monwabisi CA until end June 2018 used to cut alien invasive Rooikrans. Area Based EPWP from Sub Council 12 Wolfgat – 8 people working at the WMEEC cleaning and maintenance.</p>	<p>Waste and waste removal a major challenge in WGNR.</p> <p>Waste in fire break at Wolfgat continually needs to be removed.</p> <p>Numerous fires at WGNR during this quarter; mostly arson related as on more than one occasion two separate fires started at one time.</p> <p>Land invasions happening on a huge scale at Monwabisi Coastal Area Endlovini (concern for WGNR potential land invasion), Enkanini Dune (concern for MDCA land invasion), Khayelitsha Wetlands, Makhaza and Kuils River Wetland Green Park.</p>	<p>Ongoing; liaising with solid waste and joint clean up days organised periodically.</p> <p>Worki with Solid Waste to organise clean up days</p> <p>Continue to motivate for action from law enforcement and City authorities.</p>

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
Steenbras	<p>The 2017 CPUT Nature Conservation WIL student will stay at SNR on a year internship programme through CTEET.</p> <p>SNR received five EPWP workers for the period 5 February to 30 March 2018.</p> <p>Having an additional 4x4 greatly assists operational needs.</p>	<p>Many compliance issues are not being addressed by Recreation and Parks at Kogel Bay Resort, i.e. waste management, illegal shooting of baboons with paint ball markers and pellet guns, the use of fireworks excessive drinking, fire risks, loud music, coastal poaching, theft etc.</p> <p>Large scale water augmentation programme at SNR is being implemented with a potential impact. Staff time was spent monitoring the activity.</p> <p>Safety and security issues include (amongst others) poaching with dogs and armed men.</p> <p>Management of invasive species in the Steenbras Nature Reserve remains a serious challenge due to a lack of dedicated funding and having to rely on transient funding sources which have become unreliable and unpredictable.</p>	<p>Discussions with Recreation and Parks</p> <p>Ongoing. Staff alert authorities to rectify snvironmental spills</p> <p>Ongoing challenge</p> <p>The initiation of the New Water programme (invasive alien clearing work stream) will hopefully assist here</p>
Harmony Flats (including Morkel's Cottage)	<p>The reserve student was appointed as an intern through CTEET.</p> <p>Not one fire occurred within the borders of the HFNR (a significant improvement on previous years), due to the presence and effort of the Quemic staff.</p>	<p>Safety at the reserve during work hours, after hours and at night, due to the open access as the reserve is not fully fenced. Quemic Rangers safety at night is now a risk, as one shift was robbed by gunpoint at the reserve in early December 2017.</p> <p>Not having a permanently employed P&CO for HFNR is affecting the previously built partnerships with the surrounding communities, as there is currently no environmental education taking place in the area.</p> <p>Little progress has been made to complete the unfinished Harmony Flats Visitor Education centre due to the structure still residing under the National Department of Tourism.</p>	<p>Ongoing safety issue</p> <p>Ongoing challenge included in draft EMD staffing strategy</p> <p>Receiving attention by the City's legal department</p>

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
Helderberg (including Silverboomkloof and Lourens River PNE)	<p>The successful hosting of the annual Helderberg Mountain Challenge, 750 runners completed the three routes.</p> <p>The first Sunset Concert of 2017/18, hosted by the Friends of the Helderberg Nature Reserve, on 16 December 2017. The main act was Mark Haze supported by the Parel Vallei High Show Band.</p> <p>Several Infrastructure projects were implemented: Construction of a facility for Volunteer Wildfire Services (VWS), Renovation of the Mike Woods Environmental Education Centre, boardwalk and ± 150 m x 4.5 m road paving. The success of these projects highlighted a positive collaborative relationship between BMB, the Friends of Helderberg Nature Reserve and other relevant City departments.</p> <p>All three CTEET NQF Level 2 Learnership candidates completed the yearlong programme. They all received distinctions. Beranize Minnaar was offered a yearlong employment contract by CTEET, to assist with the ECO SCHOOL Programme.</p>	<p>The vendor delayed the delivery of sanitary bins for the Helderberg Nature Reserve lavatories.</p> <p>Supply Chain Management's slow processing of documents hindered the completion of several critical projects including firebreaks, Personal Protective Equipment for the staff and air hand dryers for the bathrooms.</p> <p>With the low volumes of water being flushed down the toilets, there were several blockages in the public toilets.</p> <p>Unreliability of the nature reserve's Small Plant Equipment (brush cutters and clearing saws) delayed several maintenance projects. The issues are still unresolved but are being addressed by the Vendor.</p> <p>Illegal wood harvesting and littering are some the challenges faced by the Silverboomkloof section of the nature reserve. Illegal wood harvesting was reported by local residents, while littering problems were identified by nature reserve staff members during routine patrols.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Being addressed</p> <p>Ongoing</p>
Central Region	Successful spring events held in central.	Lack of P&COs and rangers/compliance officers.	Ongoing challenge included in draft EMD staffing strategy
Tygerberg (including Bothasig Fynbos Nature Reserve (BFNR) and Van Schoorsdrift)	<p>New Red List species found (is not on the reserve species list): <i>Eriospermum capense stoloniferum</i> VU. Spring floral assessments and monitoring done at TNR, BFNR and VSCA with staff and CREW.</p> <p>Mandela Day picnic area at Van Schoorsdrift community. The new TGB 16 pathway was marked and cutting began. Staff hosted the annual Edgemoed High hike. TNR won Reserve of the Year 2017 (see page 68).</p> <p>Proclamation and gazetting of BFNR on 20 October 2017.</p> <p>Van Schoorsdrift Conservation Area was reserved adding over 54 ha.</p>	<p>Over R30 000 worth of tools and machines were stolen from the TNR stores.</p> <p>The lack of drivers and field staff, as well as vehicles and machines that had to be serviced and repaired, hampered operational abilities.</p>	<p>Insurance claimed</p> <p>Ongoing challenge</p>
Durbanville, Uitkamp and Botterblom	<p>A White-throated Canary was ringed for the first time at Botterblom Nature Reserve by the bird ringing unit.</p> <p>A team of EPWP workers was appointed to clear Port Jackson at Durbanville Nature Reserve and most of the adult Port Jacksons were cleared.</p>	<p>Many Port Jackson seedlings are still emerging in the burnt block at Durbanville.</p> <p>The reservoir opposite the Durbanville Nature Reserve continues to overflow into the nature reserve, despite several requests to the Water and Sanitation Department to resolve this problem.</p>	<p>Invasive clearing operations</p> <p>Liaising with Water and Sanitation Department</p>

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
North Region	The Witzands Aquifer Nature Reserve's Multipurpose Centre Project 34Q/2016/17 handed over to the construction contractor in early February 2017 is completed.	The delays in the filling of vacancies are causing many of the reserves to lose critical posts. This needs to improve to support operational needs.	Ongoing – issue elevated to higher management.
Blaauwberg	<p>The ever popular Battle up Blaauwberg Hill Trail Challenge returned for its seventh year in 2017! The West Coast Athletic Club in partnership with the Friends of Blaauwberg Conservation Area and CCT organised the event on 30 September 2017.</p> <p>The Biodiversity Agreement between the Western Cape Nature Conservation Board and CCT for the City-owned land on Atlantic Beach was signed. The Western Cape Nature Conservation Board, CCT and Atlantic Beach Management (Pty) Ltd, as lessee of the City owned land, recognised the conservation value on this property and signed this co-management agreement in order to protect the biodiversity. The protected area will be known as the Atlantic Beach Conservation Area and managed in perpetuity in favour of biodiversity conservation.</p> <p>Proclamation of the Blaauwberg Nature Reserve by the DEA&DP under the National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) was completed.</p>	<p>Relocation of Residents at Blaauwberg's vlei still not resolved.</p> <p>Caracal (<i>Caracal caracal</i>) occupancy and their influence on domestic cats have been a pressing issue on Atlantic Beach Estate for a couple of years with concern from some parties regarding the loss of pets.</p> <p>The CCT's Tender for the Control of Terrestrial and Aquatic Invasive Plants and the removal and disposal of biomass and litter came to an end at the end of June 2017. The new Tender is being finalised and as a result there were no invasive alien species contractor teams on site for October to December 2017.</p>	<p>Ongoing legal case</p> <p>Ongoing, City supports the containment of cats to private landowner's properties.</p>
Table Bay	<p>The Rietvlei Water Area re-opened at the beginning of the last quarter after a protracted closure due to a persistent blue-green algal bloom.</p> <p>A portion of the Zoarvlei section, which was being occupied by illegally parking vehicles along Grey Street, was reclaimed with assistance from the Roads Department and Paarden Eiland City Improvement District. A compacted gravel surface was removed and dumped at a landfill site. An Armco guardrail barrier was placed to prevent any future parking on this land, which is a few meters away from a wetland.</p> <p>A new plant species, <i>Gethyllis ciliaris</i>, was added to the species list of the Milnerton Racecourse by reserve supervisor, Kyran Wright.</p>	<p>The estuary mouth at the Milnerton Lagoon closed due to the formation of a sand bar at the mouth. This resulted in water levels rising steadily until the water started spilling.</p> <p>Various litter clean-ups were done in the Zoarvlei section, where illegal dumping is rife and litter is strewn everywhere. This is an ongoing-problem. It appears that the local residents do not value the natural open space and simply do not care about its upkeep.</p> <p>Illegal overnight structures and displaced people are some of the toughest challenges faced. Displaced people generate a large amount of waste that is never removed, unless special teams are sent to do the work. Some of the locations are extremely unsanitary.</p> <p>Illegal prawn collecting after normal working hours at Milnerton lagoon.</p>	<p>Agreement and plan of action with Water and Sanitation.</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
Witzands Aquifer	<p>The Greenest Metro fencing project got underway at Dunes Gate 1 on the 11/09. The project comprises the construction of a 1 km ClearVu fencing at the entry gate.</p> <p>Two Work Integrated Learnership (WIL) students from the Cape Peninsula University of Technology (CPUT) commenced their WIL year with the Dassenberg Coastal Catchment Partnership (DCCP) on the 02/01/2018. The students will be involved in all daily operations, baseline surveys and monitoring programmes at the Reserve.</p> <p>The Greater Cape Town Water Care Fund (GCTWCF) launch event for the Atlantis Aquifer took place at Pond 07 on the 19/02/2018. The event was organised by the Water Care Fund Project and the aim was to launch the invasive clearing project currently being undertaken at WANR14 (Pond 07). The project is funded through The Nature Conservancy (TNC).</p>	<p>The DCCP remains without a permanent P&CO since 2009. This is a huge disadvantage to both the DCCP and communities, as the relationships, programmes and opportunities conducted with the schools/groups/events are affected. The P&CO maintains and builds on relationships with communities and or members of the public. It is of paramount importance now more than ever that this position is acquired for the DCCP with the construction of the office complex, in particular with the Hall which would be a venue to host formal and informal environmental education groups and programmes.</p>	<p>Ongoing challenge included in draft EMD staffing strategy</p>
Head Office	<p>The new uniform tender was awarded. TRF has been awarded the bulk of the uniform items.</p> <p>The arrival of the Toyota 4x4s enabled us to access the boreholes that are being drilled in the Steenbras catchment area to conduct impact assessments and ongoing monitoring.</p>	<p>There has been a slight increase in the reported IOD injuries for the period under review. This is mainly due to very small incidents occurring and is of such a nature that not much can be done to mitigate.</p> <p>Some drivers are still not doing their pre-trip inspection before leaving the depot. This is evidenced by some vehicles having unexplained damages that are not repaired by Fleet. We will be liable for the cost repair from our own Cost Centres.</p>	<p>Monitor</p> <p>Ensure monitoring and corrective action.</p>
Maitland (Head Office)	<p>The plastic and glass recycling project has been implemented. The Maitland team was informed about the project and are using it to recycle the above items. The program is ongoing.</p> <p>Mr Cassiem Johnson has taken up a trial period for alternative placement at the workshop.</p> <p>Mr Riddle has proven to be invaluable during this time due his versatility and adaptability.</p>	<p>There have been no tenant meetings since the October meeting was cancelled. We still await the repairs to the workshop roof notwithstanding numerous follow-up emails.</p>	<p>Liaise with Corporate</p>

Name of reserve	Highlight(s)	Challenge(s)	Management response to challenge
Invasive Species Unit	<p>During the last quarter of the 2017/18 financial year the unit accepted an additional R7,6 m from the EPWP office with a target of an additional thousand job opportunities created by the end of June 2018.</p> <p>During the 2017/18 financial year, the unit achieved 372% of its planned hectares to clear, clearing more than 3 times the area planned and simultaneously creating 161% of the planned job opportunities.</p>	<p>The removal of aquatic biomass remains a challenge.</p> <p>Struggled to secure an incineration of EDRR seeds and animal carcasses.</p> <p>The ISU consists of 15 permanent positions. The rest of the staff is on contract. Not having the continuity has a huge impact on the implementation and overall quality of projects.</p> <p>Inconsistency in funding makes it extremely difficult to plan, implement and maintain invasive species control programmes. The majority of the funding received is externally funded and the funding amounts differ per year.</p>	<p>Ongoing Permanent truck driver post motivated for. This will assist to remove the weed timeously.</p> <p>This will be resolved in the new financial year with the assistance of the Supply Chain Management Department.</p> <p>Ongoing challenge included in draft EMD staffing strategy.</p> <p>The Unit has planned for this in their APOs.</p>
Westlake Conservation Centre and Habitat Restoration Facility	<p>Penelope Glanville (ex- Area Manager Tygerberg) was transferred to the Monitoring and Evaluation team to function as Knowledge Manager from 1 June 2018.</p> <p>The 10-year review of the City's Biodiversity Report was finalised during the quarter. This project was coordinated by Volunteer Charmaine Oxtoby.</p> <p>The Conservation Services Coordinator was fire boss at the ecological burn at Joostenbergkloof on 4 April.</p> <p>The Veterinary Council dismissed the complaint of unprofessional conduct against CCT by Baboon Matters.</p> <p>In order to render professional veterinary services for the CCT BMB a wildlife facility was registered with the South African Veterinary Council. It is a specialised type of facility that caters for wildlife translocation, field treatment and advisory. There are plentiful minimum requirements in terms of appropriate transport, drug security, equipment, record keeping etc. that need to be upheld to have a successful facility inspection. Fortunately, the South African Veterinary Council was satisfied that all requirements are fully met after a facility inspection conducted on 28 November 2017.</p>	<p>Three critical vacancies exist within the CSU at the moment (two leaving at the end of July 2018). It is critical that these highly specialised posts be filled by competent individuals as soon as possible. HR is currently under huge strain with the posts frozen during the drought crisis suddenly being unfrozen.</p> <p>The Conservation Services Unit (CSU) has no dedicated operational budget. This makes operational functions rather complex as we have to get approval from the Cost Centre Managers of other budgets before we spend.</p> <p>There has been an ongoing avian influenza (AI) H9N5 outbreak in wild bird populations in the City since last year, the worst species affected thus far have been swift terns. Of particular concern are the eighteen African penguins that have succumbed to the disease since the start of the outbreak. The Boulders Beach colony is under joint management by City of Cape Town and SANParks. Veterinary services have been providing support to City management to help safeguard the penguins.</p>	<p>Ongoing challenge</p> <p>Trying to resolve</p> <p>Ongoing monitoring</p>

2. STRATEGY, POLICY, LEGISLATION AND PLANS

2.1 Local Biodiversity Strategy and Action Plan

In 2008, the Framework for a Strategy and Action Plan for the Management of Invasive Species in the City was adopted by Council. The Local Biodiversity Strategy and Action Plan (LBSAP) 2009-2019 was approved in 2009. These documents provided strategy and action plans for the protection and conservation of the City's biodiversity and natural assets, and invasive species control. The strategies included implementing the Biodiversity Network (the fine-scale, systematic conservation plan for Cape Town known as the BioNet).

The LBSAP was updated in 2018 and includes the updated invasive species strategy. The LBSAP has been divided into two parts: the strategy component (Part 1) and the action plan component 2019-2029 (Part 2). The strategy component, aligned to the City's Environmental Strategy (ES), will replace the Biodiversity Strategy approved in 2003 and the Framework for a Strategy and Action Plan for the Management of Invasive Species in the City approved in 2009. The Strategy component, together with the Action Plan, will replace the LBSAP 2009-2019. Both the vision and the strategic objectives in this updated version have not been changed. The LBSAP also includes the updated targets for 2022 as aligned to the City's 5 year IDP (2017-2022).

The strategy component with vision (Part 1) needs to be recognised and endorsed by Council. The action plan (Part 2) will require updating as the various actions are completed and/or some may require reconsideration. It is proposed that the action plan items will be approved by the City's Executive Management Team (EMT), and the City Manager will capacitate the interventions as they are required. Support from EMT is required in capacitating the relevant City departments in their implementation of the action plan, and it is proposed that it will be supported by the formation of an EMT-sanctioned work group, with deliverables aligned to their formation. These deliverables would be monitored by the relevant Section 79 Committee.

2.2 Invasive Species Control Plans

The Invasive Species Strategic Framework dated September 2008 was revised in the previous financial year and aligned with the National Environmental Management Biodiversity Act, Act 10 of 2004 (NEMBA) regulations and the Invasive Alien Species Lists (dated October 2014). The National Environmental Management: Biodiversity Act (NEMBA) Act 10 of 2004 Alien and Invasive Species Regulations (2014) requires all organs of state at all spheres of government to control invasive species, monitor and report progress and to incorporate invasive species management, control and eradication plans into IDPs. The City submitted 11 of the 16 control plans. Of the outstanding five control plans three are currently being reviewed, and two have outstanding data due to additional management units added to the nature reserves.

2.3 Biodiversity Network (BioNet)

The Biodiversity Network (BioNet) is the fine-scale conservation plan for the CCT. It has also been incorporated into the 2017 Western Cape Spatial Biodiversity Plan.

The 2016 BioNet was continually updated. During spring the BioNet remnants (particularly the poor habitat condition areas) were ground truthed to improve the accuracy of mapping and vegetation conservation status statistics. Following the capture of this information, the vegetation statistics were updated and included in the Biodiversity Report.

An ecological assessment of the Paardevlei (wetlands are recognised as important by the BioNet) and surrounding land was conducted on 2 October 2017. A report indicating botanical sensitivity and proposing a natural open space system was produced and submitted.

The BioNet was also used as a the base layer from which to comment on Environmental Impact Assessments (EIAs). The staff across the branch commented on EIAs to support and assist the City to make informed decisions.

2.4 Recreational Water Use By-law

The final draft of the Recreational Water Use By-law for Cape Town's water bodies is in the final stages and has been given the go-ahead to submit to Council. It is hoped that this by-law will be approved in the next financial year (2018/19). This by-law is a tremendous improvement on the previous by-laws and will assist with recreation use and control on the recreational water bodies in Cape Town.

2.5 Biodiversity Report 2018

The CCT is a member of ICLEI – Local Governments for Sustainability, and was instrumental in developing the Local Action for Biodiversity (LAB) as a global programme in conjunction with ICLEI, following the ICLEI World Congress in Cape Town in 2006. A key outcome of this programme was a 'State of Biodiversity Report' completed in 2008. This 2018 report is the updated version which includes the latest updated flora and fauna statistics. Below is an extract from the Executive Summary:

Cape Town's natural beauty and biodiversity are part of what makes the city a unique and desirable place to live and work. Cape Town is famous for its amazing variety of plants, collectively known as the Fynbos. Cape Town has irreplaceable biodiversity of international importance crammed into almost every open space and road verge. This led Thomas Elmqvist (leader of United Nation's City and Biodiversity Outlook Project) to note:

"Cape Town is the Most Biodiverse City in the World".

As well as important biodiversity, the City has adopted a people-centred approach to biodiversity management. Without buy-in from the general public, especially neighbouring communities, the continued protection of natural areas would not be possible. This is especially important in an urban setting such as Cape Town, where biodiversity sites must coexist surrounded by densely populated areas. The opposite is also true. People need biodiversity, not only for survival (we rely on essential ecosystem services), but also for recreation, stress reduction, employment, income-generating opportunities, and education. The City of Cape Town's nature reserves are often the only quality natural area remaining within a short distance of many communities. The most notable benefit to the citizens of Cape Town has undoubtedly been the significant job creation linked to our biodiversity spaces.

At least 190 plant species are locally endemic to Cape Town. Of the 660 Red List plant taxa, 405 are threatened with extinction, many on the Cape Flats. Linked to this extremely rich plant diversity are rich small mammal, frog, reptile, insect and other invertebrate faunas. This special biodiversity and its associated habitats are critically important for the range of ecosystem services that they deliver. Well-managed catchments are being recognised as critically important in the current water crisis – these include the high mountain catchment areas (rivers, streams, dams and aquifers) and the lowland reserves (aquifers). The conservation of our precious natural resources is a critical part of a sustainable and resilient city that is adapted to climate change.

Analysis of vegetation remnant losses over the past decade shows that threatened lowland vegetation types continue to be the most negatively impacted. Cape Flats Sand Fynbos and Atlantis Sand Fynbos have lost

the largest areas, followed by Swartland Shale Renosterveld and Lourensford Alluvium Fynbos. For some, such as Cape Flats Sand Fynbos and Swartland Shale Renosterveld, it is too late to achieve the necessary targets for adequate conservation. All remaining patches must be secured to keep some of this special biodiversity for future generations. For the few lowland vegetation types with enough habitat left to meet the required conservation targets (e.g. Atlantis Sand Fynbos), sufficient habitat has yet to be secured and managed for conservation.

Despite many challenges, good progress has been made in implementing the Biodiversity Network (BioNet), especially through protected area expansion. This has been enabled by the appointment of qualified management staff, individual commitment to conservation by various staff, and support through partnership projects. There are many highlights of the past decade worth celebrating.

Top 10 achievements of the past 10 years:

1. The BioNet of priority sites and corridors now includes biodiversity adaptation to climate change incorporated into the methodology. It was adopted as City of Cape Town (CCT) Policy in 2015 and incorporated into the Western Cape Spatial Biodiversity Plan 2017. In 2018, 64,8% of the BioNet is conserved compared to 34,1% a decade ago.
2. 15 000 ha CCT land formally proclaimed under the Protected Areas Act (Act 57 of 2003).
3. 18 Conservation Stewardship agreements with private landowners.
4. Innovative approaches to offset programmes, including conservation land banking.
5. Improved management effectiveness of Protected Areas through dedicated budgets, management plans, ecological burning, demarcation of boundaries, and monitoring the performance of management actions in relation to biodiversity goals.
6. Ecological restoration projects in progress to improve ecosystem functioning. Habitat condition assessments and restoration subsidiary plans for reserves, a restoration prioritisation study and a dedicated Restoration Facility support these efforts.
7. Invasive Species Control Programme CCT-wide tender for invasive alien clearing since 2010 has resulted in reduction in woody invasives, aquatic weeds, and 'early detection' weeds. Mallard, House Crow and Guttoral Toad are also part of this programme.
8. Job creation through the Kader Asmal Integrated Catchment Management Expanded Public Works Programme.
9. A multifaceted, formal skills development programme for staff, and on-the-job training for learners, students and interns.
10. An improved People and Conservation Programme that includes all environmental education, volunteers, tourism, events and visitor programmes.

3. GREEN JOBS

3.1 Job Creation



Figure 8: EPWP staff assisting with gabion structure at Tygerberg Nature Reserve.

From 1 July 2017 to 30 June 2018, 3 244 job opportunities (the original target was 910); 75 440 person days of temporary employment; 328 FTEs (Figure 8; Table 2), were created on the reserves and BioNet, mainly as a result of the Invasive Species Unit. The Baboon Management Programme contributed a small amount. DEA's National Resource Management Programme Grant created an additional 27 874 person days, giving a total of 103 314 person days of temporary employment created by EMD.

Additionally, the nature reserves facilitated (Working for Coast; Greenest Metro; Water Fund; Subcouncils) 579 job opportunities and over 22 000 person days (96 FTE's).

The focus of employment was on the local communities living adjacent to the reserves with individuals being employed most of the time from the relevant Sub-councils' Jobseekers Database.

Table 2: Breakdown of EPWP Statistics as verified by the City's EPWP office.

Directorate	Department	Project Name	Jobs Achieved	FTE
TDA	Environmental Management	Baboon Management	79	28.00
	Environmental Management	Kader Asmal Project	3 165	300.00
		Total	3 244	328

The Invasive Species Unit also facilitated the job creation of 288 job opportunities for other line functions on their land (3 250 person days). This close partnership with other line departments ensures job creation while upholding best management practice in clearing alien invasive species from City land. Due to various reasons, including budget cuts, the line departments could not supply the budgets requested and as a result only priority areas were prioritised for clearing.

Thus, 4 111 individuals from communities across the City benefitted directly from the nature reserves and BioNet.

3.2 Social Development

During the 2017/18 financial year the social development programme linked with the Kader Asmal EPWP programme focused more on contractor skills development, whereby all main contractors had to attend a business skills development workshop. The workshop focused on growing their businesses and how to manage their money; 48 individuals attended the workshop.

The social development programme addresses and supports the various social and health aspects that the workers deal with on a daily basis, including a women's and men's health intervention. The medical intervention held on 29 March 2018 reached 59 workers (Table 3, Figure 9). During the medical intervention 51 people were tested for HIV; no new cases were reported.

In collaboration with various stakeholders, 345 EPWP workers were supported through outreach programmes. The outreach programmes included one-on-one interventions with EPWP workers and covered subjects such as medical and substance abuse interventions. Due to the high number of workers employed, the last quarter of the 2017/18 financial year focused on EPWP inductions. A total of 255 new workers were reached.

Formal training with workers was scheduled for the second half of the year 2018. In total 1 403 workers were reached through various interventions, including toolbox talks. These talks highlighted and addressed the various Safety Health and Environmental (SHE) subjects within a team, and the specific site where the team is working. During the interaction with the teams, the social development officer also implemented the phase 3 document which records how dependents benefit from the Kader Asmal Programme.

Table 3: Formal training and social development for EPWP.

	Number of interventions	Person days	Staff
Training Days for the Kader Asmal Programme	Contractor skills development	24	48
	Medical intervention (HIV, Diabetes, High Blood Pressure)	59	256
	Outreach	60	345
	Inductions	2 hr	255
	Toolbox talks	499	499
	TOTAL		1 403



Figure 9: Intervention Session conducted by Westlake clinic staff.

4. CONSERVATION SERVICES

4.1 Protected Area Expansion

Cape Town's BioNet is implemented via a partnership with internal line functions and external stakeholders. The BioNet Implementation Committee was set up in 2010 as a governance mechanism to implement the BioNet. This committee comprised of three levels of state authorities, namely SANParks (the national protected area authority), CapeNature (the provincial conservation authority), and the CCT (the local authority), as well as the Cape West Coast Biosphere Reserve (CWCBR). The BioNet Implementation Committee partners signed a memorandum of understanding (MOU) which detailed each of the authority's obligations in respect to the implementation of the BioNet (CCT *et al.* 2011). The City and its partners assessed and agreed on strategies for each parcel of land prioritised on the BioNet.

The Protected Areas Expansion programme was very successful in 2017/18 with both stewardship and land acquisition playing a part. The conservation estate is now 64,81% of the 2009 BioNet (target approved in the IDP is a figure of 65% by the year 2022).

As part of the Protected Areas Expansion work, key projects included:

1) Reserve Proclamation

This milestone of the proclamation of the City's reserves is significant, as in the past most of the managed City reserves never had any conservation status. In 2009, only 2 264 ha were formally proclaimed local authority nature reserves. The recent proclamation regularised the situation on the ground and included the important catchment areas of Steenbras and Witzands. Last year, the proclamations of the City's nature reserves were signed by the Provincial MEC, verified, and processed for gazetting. To date, 14 of the City's nature reserves have been notarised and nine (Blaauwberg NR, Bothasig NR, Botterblom NR, Bracken NR, Edith Stephens NR, Steenbras NR, Tygerberg NR, Uitkamp wetlands NR and Witzands Aquifer NR) have been gazetted. There were some minor issues with Table Bay Nature Reserve which had to be resubmitted. This was done and Table Bay Nature Reserve was notarised in June 2018. The gazetting of the remaining five (False Bay NR, Helderberg NR, Table Bay NR Wolfgat NR and Zandvlei NR) is eminent.

It was recommended by the Protected Area Review Committee on 17 August 2017 that the Westlake Conservation Centre warrants status as a nature reserve due to the presence of Western Leopard Toads, the wetland on site, and the proximity to the Table Mountain National Park.

The conservation estate of all proclaimed and secured areas (e.g. land purchased and not yet proclaimed) increased from 54 744,8 ha (64 % of the BioNet) in 2015/16 to 55 091 ha (64,81% of the BioNet; Table 4). This is an increase of 346,2 ha.

Table 4: Land ownership of protected areas in the City.

Organisation	Hectares (ha)	% of the BioNet
SANParks (TMNP)	25 100	29,53
City	17 101	20,11
Private landowners – stewardship	2 242	2,64
CapeNature	7 822	9,20
Eskom (Koeberg)	2 826	3,32
Total	55 091	64,81

2) Reservation of City Land (conserving private land)

Applications for the reservation of 19 Erven totalling 320 ha for BMB have been submitted. To date, four (two in Melkbos, Van Schoorsdrift and a road reserve in the DCCP) have been completed. A bulk reservation process for all the City Reserves was completed and all erven that are being proclaimed are now reserved for the BMB.

3) Conservation Stewardship (conserving private land)

Last year 22 new landowners were approached and four new properties were signed up: Knorhoek, 80 ha (perpetuity nature reserve; Figure 10a and b), Atlantic Beach, 20 ha (perpetuity Biodiversity Agreement) Manning Family (4,5 ha perpetuity Biodiversity Agreement) and Joubert Family Trust (3 ha perpetuity Biodiversity Agreement). In total, 19 properties (excluding properties on the peninsula that have agreements with SANParks) have signed Biodiversity Stewardship agreements. Seven of these properties have signed perpetuity agreements totalling 2 242 ha.



Figure 10a: A MoU to declare Portion 32 Knorhoek farm (80 ha) a nature reserve was signed in December. This property is above Somerset West.

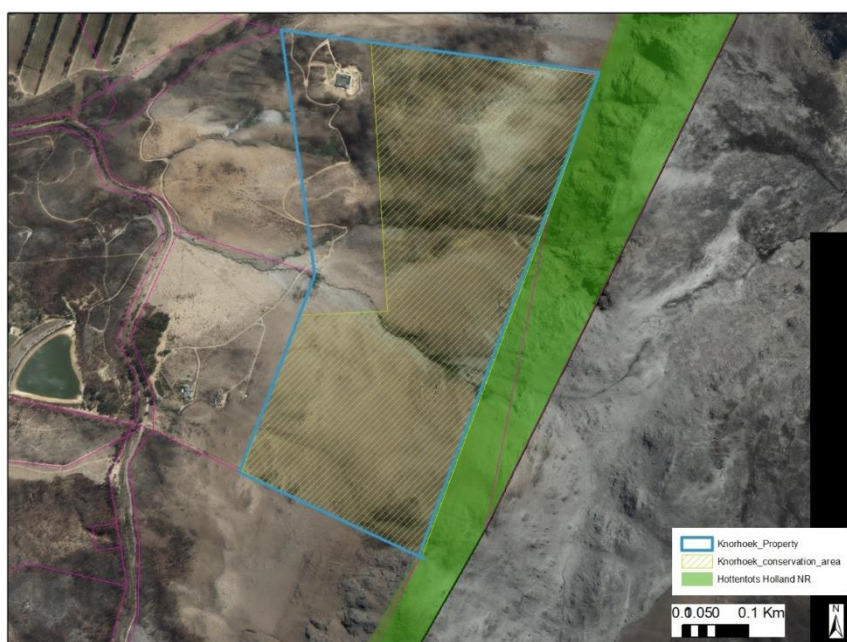


Figure 10b: A map showing the boundaries of the conservation area at Knorhoek farm and their proximity to CapeNature's Hottentots Holland Nature Reserve.

Funding for stewardship sites, to assist with ecological management (alien vegetation clearing, signage and fire management for example), plays a significant role as an incentive for landowners who set land aside for the greater good. Raising funds for these critical interventions remains a challenge. The Table Mountain Fund (TMF) has been exceptional in their support for the City's Protected Area Expansion initiatives, with R150 000 funding support over three years for critical pre-proclamation processes (valuations, SG Diagrams and legal fees for example) and a further R80 000 for alien vegetation clearing and mountain bike trail construction. During 2017/18, various conservation incentives for private landowners were implemented with funding sourced from the organisations in Table 5.

Table 5: Organisations that have contributed funding for Conservation Stewardship.

Organisation	Budget	Comment
TMF via Conservation@Work	R79 800	Two small grants for alien clearing and construction of MTB trail
TMF	R35 000	Pre-proclamation processes
LandCare	R311 374	Alien clearing
NRM (through CCT Invasive Species unit)	R80 000	Alien clearing
Total	R506 174	

4) Development facilitation through land banking and other offsets

The Atlantis industrial incentive scheme includes a land banking component. This means that key biodiversity properties outside the urban edge are proactively purchased and conserved to mitigate the loss of biodiversity remnants within the urban edge and industrial area of Atlantis, thereby facilitating new investment opportunities in the area. This scheme is supported by Province's DEA&DP and CapeNature. This pragmatic approach facilitates development while ensuring that priority land is added to the conservation estate, thereby securing biodiversity resources and the vital ecosystem services they deliver. Since 2012/13, 940 ha has been secured for the land bank, and just under 100 ha of development in Atlantis has been facilitated.

All the paperwork (including the Mayco report and deed of sale) for the purchase of a 16 ha portion of PTN 49 Driefontein Farm was concluded. The R1,6 m payment has been processed and should be paid at the end of July. This offset was funded by the Housing Reserve Fund in an effort to facilitate the strategic Maroela Park Human Settlements development.

5) The Dassenberg Coastal Catchment Partnership

The DCCP is an ongoing initiative of the CCT, CapeNature, WWF-SA, TMF, SANParks, the Wilderness Foundation, the Cape West Coast Biosphere, DEA&DP and the South African National Biodiversity Institute (SANBI). In the year under review, the DCCP continued with the partnership and initiated the implementation of the grant received from the GEF5 for the coordination of the partnership and initiation of key projects (Figure 11). The contract for the GEF5 funded DCCP coordinator, Martin Albertus, expires at the end of 2019.



Figure 11: Andre Rossouw leading the GEF5 DCCP project midyear review field trip.

6) Metro Southeast Strandveld Conservation Implementation Plan (CIP)

The Metro Southeast Strandveld CIP is a collaborative City-led project including external conservation partners such as CapeNature, DEA&DP and SANBI. Owing to the urgent need for housing development land in the metro southeast, and the rapidly shrinking area of endemic and endangered natural vegetation in the area, this project was initiated to identify a key set of areas required to secure biodiversity resources and vital ecosystem services, and to set aside other, less critical BioNet land for development. A framework and set of maps for this plan were developed and approved in 2013/14. Operational funds of R2,5 m were allocated in the 2017/18 financial year to secure and manage Symphony Way West as an offset to the Bosassa emergency housing development (1 115 housing units) and the Mfuleni Extension housing projects (1 092 housing units) (Table 6). Operational funds of R3,5 m for Vesuvius Way were secured for the 2018/19 budget. Capital funds for vehicles and radios to the value of R2 m were secured as well as R9,6 m funds for fencing.

Table 6: Budget for the following staff was approved for Symphony Way West as part of the CIP.

#	Post	Grade	Number
1	Reserve Supervisor	T10	1
2	People and Conservation officer	T11	1
4	Senior Field Ranger	T7	1
5	Worker	T2	2

7) Public land

State land

The Department of Public Works combined the City's with CapeNature's process regarding the application for the eight parcels of state land to be transferred to the City and proclaimed under the Protected Areas Act. Feedback from Department of Rural Development and Land Reform has been received regarding the land claim status on these properties. There are no registered land claims on any of these state land parcels except for Parent Erf Cape Farm no. 544, which includes Macassar Conservation Area.

Steenbras catchment forestry exit land

A site visit to discuss and action the future of the forestry exit land in the Steenbras catchment was held with CapeNature on 26 June (Figure 12). Progress with how to best safeguard this critical catchment area is a priority in terms of water security, and will be taken forward in the next financial year.



Figure 12: CapeNature and City staff at site visit to discuss forestry exit area land in the Steenbras Catchment.

4.2 Core Flora Sites

The Core Flora Sites form an important component of the BioNet lowlands (refer to Map 3 BioNet), and have remained a priority to secure by the conservation partners in the city. In 1999, only 7 of the 37 sites (or 22% by area – Figure 13) had some protection status, either as a local authority or provincial nature reserve, or Protected Natural Environment:

- Rietvlei, Durbanville, Bracken, Wolfgat, Rondevlei and Tygerberg managed by various previous municipal substructures; and
- Driftsands managed by CapeNature.

The Cape Flats Nature Reserve was managed for conservation by the University of the Western Cape.

By June 2018, apart from Driftsands and Cape Flats (where the original sites have decreased in area), six sites have dramatically increased in conserved area and are being proclaimed under the Protected Areas Act. Nine additional sites have been proclaimed, three are in process and four are managed (PAA status is planned). Almost 65% of the original Cape Flats Core Flora Sites have been secured for conservation. Figure 13 below shows the status by area (hectares). In addition to this, four sites are managed with no conservation status: Blouvillei, Cape Flats Nature Reserve, Macassar Dunes and Kenilworth Racecourse.

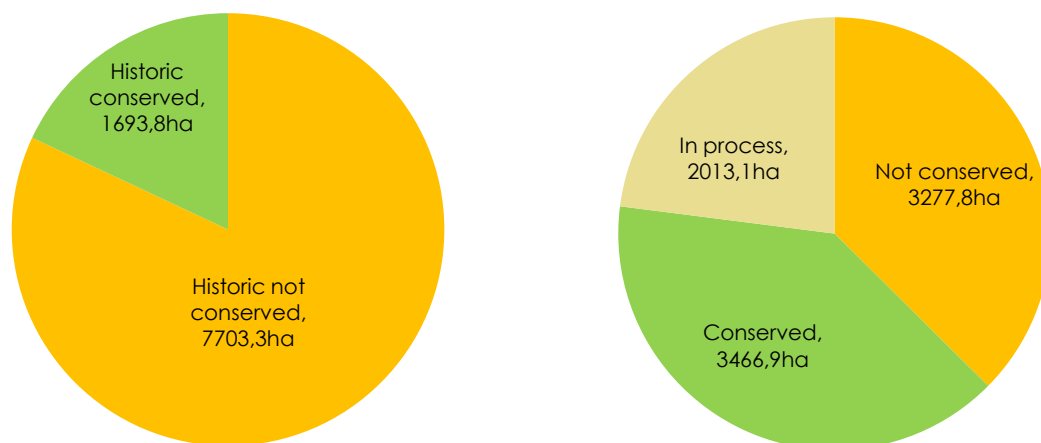


Figure 13: Conservation status of Core Flora Sites in 1999 (left) and in 2018 (right).

4.3 Flora

The City is situated in a global biodiversity hotspot and is home to some of the most threatened plant species in the world. The City's team and conservation partners such as the WWF-SA; CREW and CapeNature are working together towards protecting these Critically Endangered and unique floral gems from extinction.

1) Biodiversity floral finds of the 2017/18 year

Contenders for the flora discovery of the year include:

- Discovery of a population of the Endangered *Pauridia canaliculata* found south of Atlantis (Figure 14).
- A population of the vulnerable *Stereiodiscus targetes* found in Retreat. This is the first record of the species from the south of its range in over 20 years. This material is of critical importance in establishing the species at False Bay and Zandvlei Nature Reserves (Figure 15).
- Abraham Saaiman relocated a single plant of the Critically Endangered *Marasmodes fasciculata* at Van Schoorsdrift (Figure 16).



Figure 14: A population of the Endangered *Pauridia canaliculata* found south of Atlantis.



Figure 15: A population of the Vulnerable *Steiriodiscus tagetes* found in Retreat.



Figure 16: A single specimen of the Critically Endangered *Marasmodes fasciculata* found at Van Schoorsdrift.

2) *Protea odorata* conservation

The MOU between the CCT and WWF-SA is still being finalised to allow funds to be transferred to the City for the acquisition of the Joostenbergkloof remnant (near Fisantekraal).

The Swartland sugar bush (*Protea odorata* – Figure 17) is currently the most threatened *Protea* in the world, with only five individuals remaining in the wild. Historically the species was abundant on the seasonally moist clay flats between Klapmuts and Kalbaskraal, but has lost more than 99% of its habitat within the last 70 years. By 1970, two distinct sub-populations remained near Kalbaskraal and Fisantekraal respectively. Unfortunately, between 1980 and 1995, several fires followed by infestations of Port Jackson entirely wiped out the northern Kalbaskraal population; the Fisantekraal population, containing only three plants at this point, became the only remaining individuals in the wild. This last population occurs on a private property near Fisantekraal, north-east of Durbanville (Joostenbergkloof). Over the past three years, WWF-SA and the City engaged in negotiations with the current landowner regarding the preservation of the species, along with more than 60 other species of conservation concern known to occur within this Core Flora Site, one of the most important properties for biodiversity conservation in the country. An agreement was reached with the landowner to sell the natural remnant to the City, to be incorporated into the City's network of Protected Areas. WWF-SA has offered to provide critical funding towards the acquisition, with the City's BMB taking over the management authority of the property once purchased.

The severe drought in 2017 killed off several of the now ageing *Proteas*, reducing them to five individuals. The *Protea* is a fire stimulated serotinous species (plants that keep their seed in a canopy stored seedbank until they are released when the parent plant is killed – usually by fire). As such, seeds have had to be collected, smoked and stored while an ecological burn of these remaining plants was attempted in April 2018. With a limited window of time, and conditions that were less than favourable, the wind direction changed and the fire stopped short of the *Proteas*. Another attempt under more favourable conditions will be made again in February 2019. Meanwhile, one of the areas that did burn was sowed with over 1 500 seeds (it is estimated that only about 10% are viable), scattered in an area with the same appropriate habitat (Figure 18). Reserve staff will continue to monitor the site while the CSU works with WWF-SA to finalise the acquisition of the property.



Figure 17: Only five plants of *Protea odorata* remain at Joostenbergkloof.



Figure 18: Biodiversity Management staff spreading *Protea oderata* seed after the ecological burn at Joostenbergkloof.

3) The algae *Hydrodictyon africanum* (Cape Water Net)

This interesting algae was found on seasonal pans in the Rietvlei wetlands Table Bay Nature Reserve. The water net starts as a very small net of single cells that sticks together under the water. As the net grows the individual cells become bigger until they reach the size of grapes, at which point they start to break off and float freely in the water. Unlike grapes, which consist of thousands of cells, these water net cells are each an individual algal cell, and they contain only water.

4.4 Fauna

1) New additions to the City's species list

During the reporting period, four new species were added to the CCT bird list, namely:

- Eurasian Blackcap (*Sylvia atricapilla*) seen and photographed by many in a garden in Durbanville.
- African Hawk-eagle (*Aquila spilogaster*) seen near Somerset West.
- White-backed Vulture (*Gyps africanus*) seen and photographed in the Witzands Nature Reserve and many localities in the Dassenberg Coastal Catchment Partnership area.
- Hooded Vulture (*Necrosyrtes monachus*) seen on two occasions at Strandfontein Sewage Works and subsequently at Zandvlei (Figure 19).



Figure 19: A photo of the first Hooded Vulture ever recorded in the CCT.
Photo: Taken near Zandvlei by Andrew de Blocq

2) Game management and fauna introduction

Berg-Breede Whitefish

The CapeNature-run initiative to introduce Berg-Breede Whitefish (*Cheilobarbus capensis*) to Wemmershoek Dam was supported by the Bulk Water Department. The introduction is planned to happen in spring 2018.

Cape Grysbok

Cape Grysbok are numerous on the City's reserves. A female Cape Grysbok (*Raphicerus melanotis*) was discovered stuck between an access gate and a fence in the Strandfontein section on 15 May 2018 (Figure 20). A rescue effort was made by reserve staff to free the animal. The rescue attempt was successful at first as the animal was able to move off after being let go, but then it got itself stuck again by leaping into a sewage sludge pan next to the access gate. Rescue effort number two then got underway. The Biodiversity Area Coordinator rescued the animal. The Grysbok was loaded into a transport box and taken to the Good Hope SPCA in Grassy Park, where it was kept overnight in the rehabilitation centre, before being released.



Figure 20: Cape Grysbok (*Raphicerus melanotis*) wedged between gate and fence (left) and stuck in sewage sludge pan (right).

Eland

The process to habituate the herd at Blaauwberg Nature Reserve with weekly feeding commenced during the reporting period. This was done in an attempt to dart and remove a non-functional collar. A trial on a replacement collar revealed that this collar was also non-functional. Arrangements have now been made to rather have a student project to assess the vegetation impact through monitoring. The student will receive training from the Gantouw project and will conduct monitoring every change of season.

Several follow-up informal visits to the Gantouw project at Rondevlei Nature Reserve were conducted to familiarise BMB staff with the conditions on the ground and the impact of the eland. This background knowledge will be very valuable when deciding on the way forward with regards to the project. The eland will remain at Rondevlei until the end of 2018 when the results of the project are due be presented and a way forward proposed.

Hippopotamus

Another new calf was detected in the hippo herd in the last quarter of the reporting period which means there are two babies in the herd. The hippo herd is very elusive and it takes considerable time before any new additions are detected.

False Killer Whales

A series of False Killer Whale strandings took place between 5 and 8 February 2018. It started with two carcasses that were found at the Koeberg Nuclear Station, and the Department of Environmental Affairs performed post mortems in field. A 'Whale Stranding Meeting' hosted by the Department of Environmental Affairs was also held. Veterinary support would be provided for such cases where capacity allows. An additional four False Killer Whales found themselves confined to the Cape Town harbour. A task team, which included an Urban Wildlife Specialist, was set up to encourage the animals to leave the harbour, because the harbour is not considered a natural or safe place for them to be. The behaviour was later attributed to one of the whales being injured/sickly and the others remaining with him in the harbour, which is typical behaviour for the species. Once this injured animal died, the others immediately left the harbour. A day later (8 February 2018) another False Killer Whale stranded, this time alive. The animal was severely injured and in need of humane euthanasia. A tranquiliser was administered to calm it down, and fortunately the animal died shortly thereafter (Figure 21).

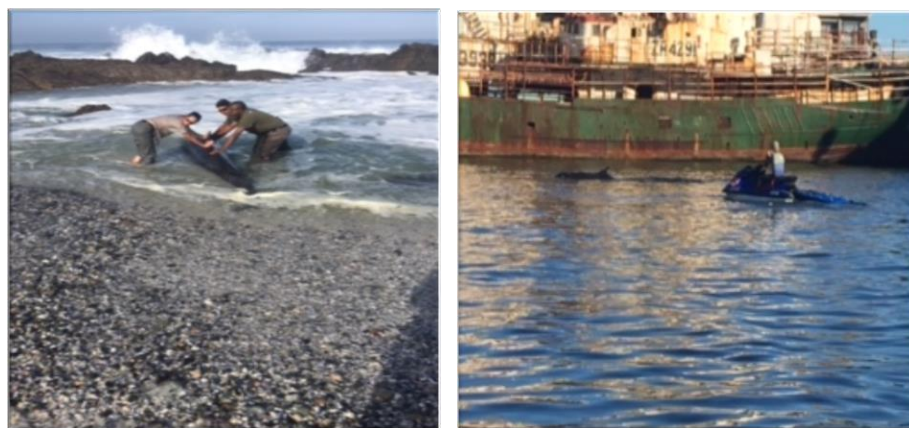


Figure 21: False Killer Whales, one stranded animal at Blaauwberg (left) and an attempt to herd them out of Cape Town harbour (right).

Western Leopard Toads

Biodiversity Management continue to support the Western Leopard Toad Conservation Committee and facilitated the annual breeding migration awareness campaign. A review and update of the distribution maps is underway in collaboration with Environment and Heritage Management as well as EMD GIS analysts.

Game Register

The game register for the game animals located on the City reserves can be found in Table 7. This register is important and in the near future BMB will be required to report to CapeNature on these statistics.

Table 7: Game spreadsheet for period July 2017 to June 2018.

Species	Translocations	Births	Deaths	Total in CCT	Animals on loan	Animals on CCT Reserves
Bontebok (<i>Damaliscus pygargus pygargus</i>)	0	0	0	9	8	1
Grey Rhebok (<i>Pelea capreolus</i>)	0	0	0	3	0	3
Hippopotamus (<i>Hippopotamus amphibious</i>)	0	1	0	7	0	7
Eland (<i>Taurotragus oryx</i>)	0	1	0	15	0	15
Red Hartebeest (<i>Alcelaphus buselaphus</i>)	0	0	0	5*	0	5

*Two Red Hartebeest that naturally appeared last year at Braakefontien disappeared within this year resulting in a total of five animals remaining on City reserves (animals located at Blaauwberg Nature Reserve).

4.5 Baboons

The Chacma Baboon (*Papio ursinus*) forms part of the city's rich biodiversity and is a considerable tourism asset (Figure 22). After many years of management, the Peninsula baboon population is growing steadily overall (the managed troops grew from 368 in June 2013 to 414 in June 2018) and is thus not considered to be under threat (Table 8). This is despite the number of individuals in the troops declining in the last financial year as a result of a number of baboons disappearing. The possible cause(s) of this are not yet known. Where illegal activity is suspected the relevant authority has been notified and autopsies



Figure 22: Baboons in their natural habitat.

performed. The results of these autopsies are provided in monthly Baboon Technical Team (BTT) reports which are available to the public. The BTT is investigating the disappearances. The human/baboon conflict, although reduced to manageable levels, can still be a problem for residents, property owners, fishermen, tourists, and businesses such as wine farms, shops and restaurants.

The existing programme continues to deliver excellent results and the partnership with the authorities via the joint BTT (comprising the CCT, SANParks, CapeNature and the Navy) and advised by SPCA and Baboon Research Unit, UCT is going exceptionally well. The regular meetings with the community's Baboon Liaison

Group (BLG) (comprising of Councillors, representatives of the affected ratepayers) has been reduced with more focused regional meetings being more effective. The programme is run as a City tender and the current service provider, Human Wildlife Solutions (HWS), is contracted until June 2020. HWS has been involved since August 2012 and has done a very professional job. The programme, which mainly focused on employing rangers to keep baboons wild and 'out of town', remains costly and runs at about R12 m per year. The tender focuses on 11 of the 16 troops on the Cape Peninsula. In terms of the current tender, HWS has a ranger stationed on Plateau Road to manage the interface between baboons and tourists on the road. However, the Plateau Road Troop does not raid in the official urban area and is therefore not a managed troop. Figure 23a and 23b show the ranges of the troops, divide into the northern troops located in Constantia and Tokai, and the southern troops located in the southern Peninsula.

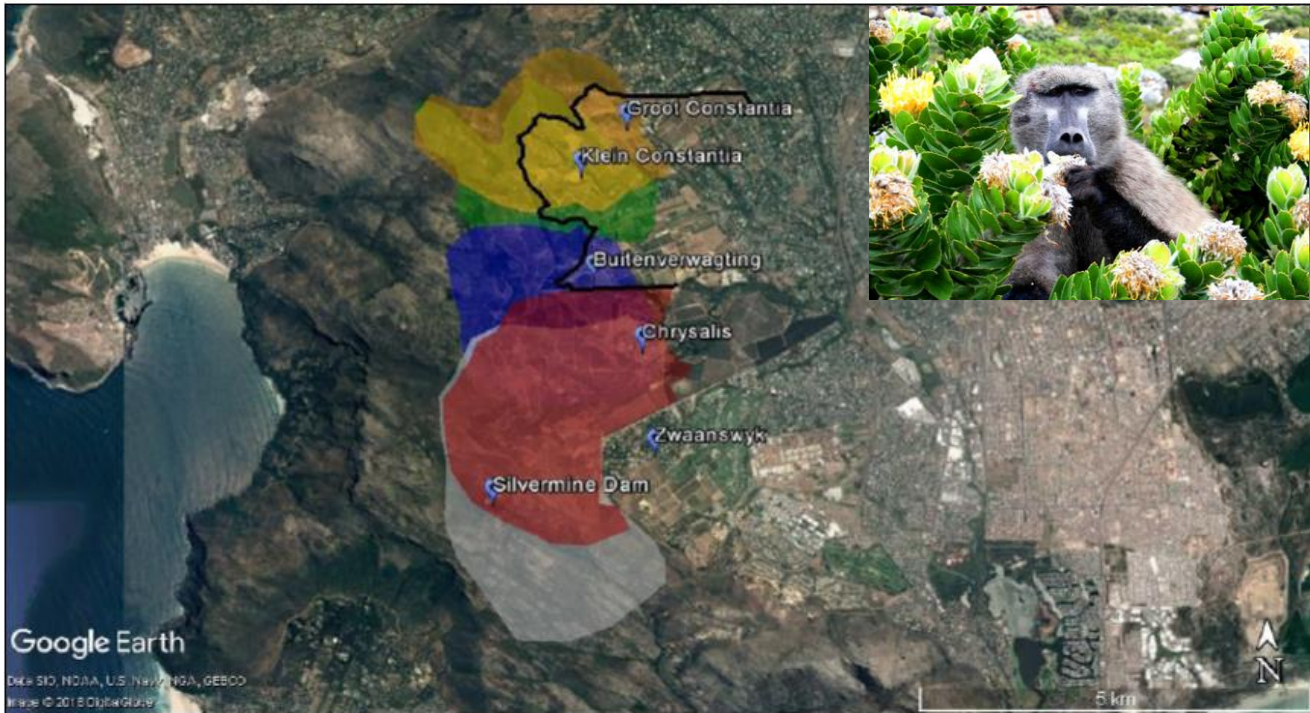


Figure 23a: Home ranges for the five northern baboon troops in 2017/18.



Figure 23b: Home ranges for the six southern baboon troops in 2017/18.

Table 8: Baboon population statistics.

Population Data for the 11 Managed Troops from 31 December 2012

TROOP	June Population Totals:						TOTAL BIRTHS July 2017 to June 2018	TOTAL DEATHS July 2017 to June 2018	EMIGRATION/ IMMIGRATION changes to population totals from July 2017 to June 2018	TOTAL EXPECTED POPULATION per Monthly Report Figures for June 2018	REMOVED per CapeNature Permits to Two Constantia Wine Farms	TOTAL COUNTED/ OBSERVED ON THE GROUND @ 30 June 2018
	2013	2014	2015	2016	2017	2018						
Da Gama Troop	42	43	46	52	52	55	17	8		62		55
Smitswinkel Bay	21	22	24	29	33	35	6	4	1	35		35
Waterfall	28	29	31	33	37	40	9	2	-1	44		40
Groot Olifantsbos*	20	19	16	17	23	29	4	1	1	25		29
GOB Main Troop*						23				19		23
GOB Individuals*						6				6		6
Misty Cliffs*	17	16	9	11	0	0	0	0		0		0
Slangkop	37	40	35	41	40	44	6	2		43		44
SUB TOTAL	165	169	161	183	185	203	42	17	1	209		203
Zwaanswyk	28	28	27	28	30	20	8	14	3	25		20
Tokai	64	70	61	65	69	75	14	7	-1	74		75
Mountain	41	47	49	47	57	60	16	8		62	3	60
Constantia 1 & 2:	70	69	77	81	85	56	19	8	-3	94	4	56
Constantia 1**					63	46	5	5		65	2	46
Constantia 2**					22	10	2	0		29	2	10
SUB TOTAL	203	214	214	221	241	211	57	37	-1	255	7	211
TOTAL	368	383	375	404	426	414	99	54	0	464	7	414

*The Misty Cliffs individuals were included in the GOB Troop totals since January 2017, when they merged with the GOB Troop. These individuals later returned and continue to move above and between Scarborough and Misty Cliffs. Sub-totals are shown in this table to differentiate between the GOB Main Troop and the six individuals (three adults and 3 juveniles). **The Constantia Troops totals are split between CT1 and CT2 from December 2017 to differentiate between the total baboons for each of these two troops from 2018.

In the last year, Table 9 and Figure 24 show that the troops, on average, spent 99,7% (consistently increased over the last five years) of their time out of town (the tender stipulates that the troops need to stay out of town for over 90% of the time). Individual baboons on average raided 6,7% of the time.

Table 9: Time spent out of town for troops and individuals over the last five years.

Baboon Troops' Percentage Time Out of Town

Overall 5 Year Average from July to June

Management Year	Troops	Individuals
2013/14	98.8%	96.4%
2014/15	98.7%	97,0%
2015/16	98.9%	95,9%
2016/17	99.4%	95.1%*
2017/18	99.7%	93.3%*

*Although troop time out of town continued to increase year on year, individual time out of town decreased over the past two years, to levels below 2012/13. This is largely as a result of individuals raiding in Simon's Town, Scarborough, Da Gama and Welcome Glen.

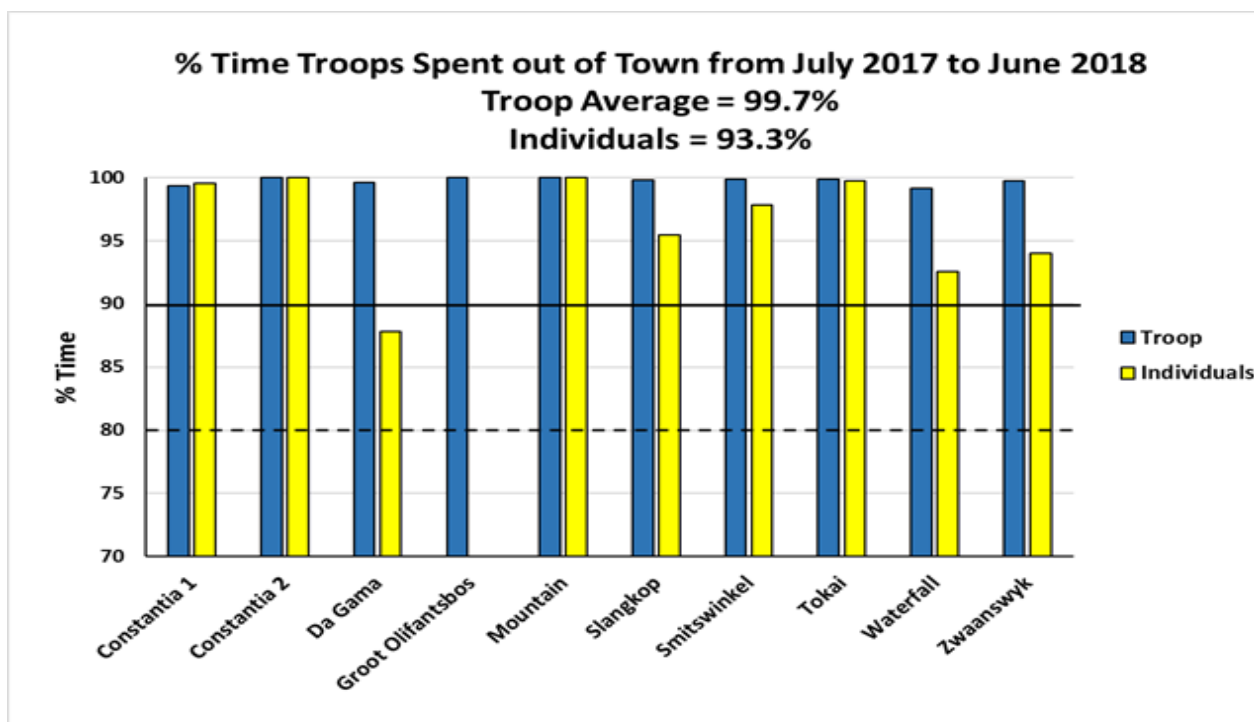


Figure 24: Percentage of time baboon troops and individuals spent out of town.

The hotline calls for the last year are one of the indicators that illustrate the urban areas with high conflicts. This is not a complete correlation as there might be many calls on one baboon, but it does indicate where the recurring problems are. For example, there are a high number of hotline calls in Welcome Glen where the Da Gama troop is located (see Figure 25) and whose individual males spend a relatively high percentage of their time in town. Similarly, Simons Town can be correlated with the Waterfall troop, and Tokai with the Zwaanswyk troop.

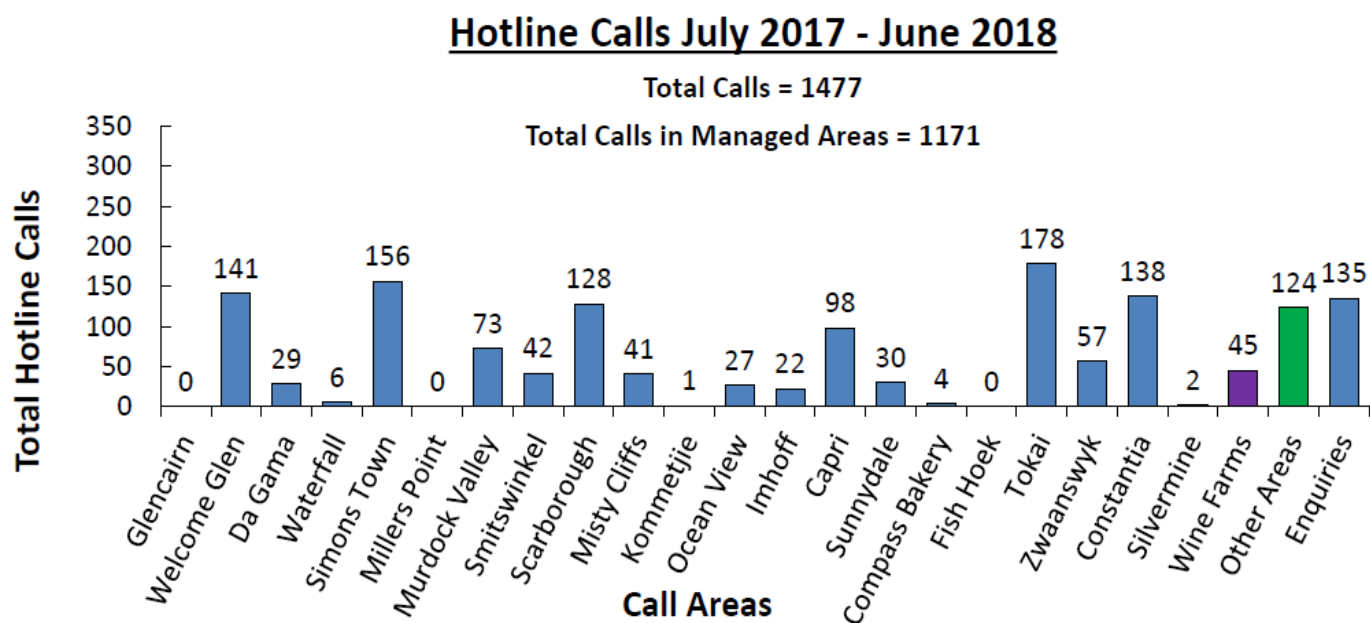


Figure 25: Baboon hotline calls for 2017/18.

Fire has probably had the most significant effect on the managed baboon troops over the past three years. In 2015, the fire in the north burnt almost the entire foraging range of the four troops that live there. This resulted in most of the pine trees in the plantations needing to be felled, and removed a high percentage of the baboons' diet. The Constantia Troop split into two sub-equal groups, thus increasing the total number of baboon troops in the north from four to five. After the pine plantations were felled, the trees were not replaced by fynbos, but mostly by a bank of invasive alien vegetation. This rapidly grew into an almost impenetrable thicket that limited both baboon and human movement, and severely restricted the baboons' access to natural forage. As a result of reduced forage for baboons and long sections of the Constantia wine farms' electric fences being burnt, three baboon troops increased their foraging efforts on the wine farms. In 2017 two wine farms applied to CapeNature for a permit to hunt the baboons as damage-causing animals. To date seven baboons officially were shot during 2017 on the farms in terms of this permit. In addition, a number of animals (as mentioned before) still remain unaccounted for.

There were widespread fires across the south in January 2016 and again in January 2017. The only baboon troop in the south whose home range was not affected by these fires was the Smitswinkel Troop. The drought of 2016 and 2017 compounded the effects of all the fires, but particularly in the south as they came just after the fires and then provided almost no rain for regrowth. The regrowth of fynbos only became evident in 2018, and as a result saw raiding by individuals, especially in summer, increase from 2016 and 2017 (Table 9).

It is pleasing to note that, despite the fires and drought, the average percentage time the troops have spent out of town has consistently increased almost every year. Thus, baboons are spending more time in the wild (Figure 26).

In addition to the baboons on the Cape Peninsula, the City's BMB manages baboon troops in the Steenbras Nature Reserve. In 2016 the Virtual Fence system was implemented to limit human/baboon conflict in Gordon's Bay. This management method takes the natural behaviour traits of baboons into consideration and simulates the formation of a boundary which the baboon troop no longer find desirable to cross. Implementation of the Baboon Virtual Fence at the Steenbras Nature Reserve continues to be extremely successful, releasing staff from being on baboon standby to being able to focus on other important Reserve activities. Baboons have been prevented from coming into town since the implementation of the system.

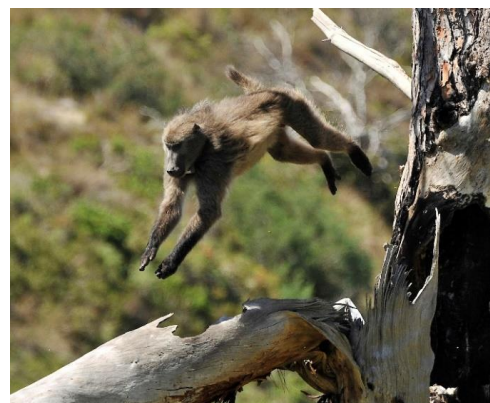


Figure 26: Baboon on the Cape Peninsula.

4.6 Water

1) Water restrictions

Water restrictions and water rationing were implemented by the CCT. The nature reserves also took steps to prevent the loss of water by placing information signage, removing or putting stoppers in external taps, fixing water leaks, suspending various cleaning activities, changing the fire-fighting approach, and using rainwater for flushing toilets.

2) Water quality

Regular sewer spills and eutrophication of our watercourses within the nature reserves remain an on-going challenge. The effects of the drought have also been evident, especially in our seasonal wetland systems which have remained at very low levels throughout the winter.

Rietvlei section, Table Bay Nature Reserve

The Rietvlei Water Area was finally re-opened to the public in July 2018 after a protracted closure due to a persistent blue-green algae bloom. After the re-opening of the water area, the water sports activities started to return to normal. This was also borne out by a rise in the visitor numbers recorded at the main entrance gate. The Milnerton Aquatic Club was selected by South African Sailing to host the launch of the new Team Sailing League at the Rietvlei Water Area on 09/09/2017. This event was covered by the media and two articles appeared in the local community press.

Milnerton Lagoon section, Table Bay Nature Reserve

Water quality concerns at the Milnerton Lagoon were addressed at a public meeting on 23/08/2017 by Mayco member for the Area North, Cllr Suzette Little, as well as other CCT officials. The pollution in the Milnerton Lagoon is primarily caused by raw sewage that enters the open stormwater drainage systems upstream and flow down to the lagoon. Some of this pollution comes from areas where backyard dwellers without direct access to sanitation systems (flushing toilets) empty their night soil and other waste into the open stormwater canals. Other sources of sewage contamination could also include existing reticulation and pumping systems that are not working optimally, and occasionally spill over into the stormwater drainage network. Public health warning signs were placed at the Milnerton Lagoon, and the Milnerton Canoe Club was advised that they should not use the water, or to do so at their own risk. The nature reserve's Advisory Committee requested that various plans to address the pollution sources be prioritised and funded. The City's pollution abatement plans include capping and/or diverting open stormwater channels, as well as reviewing sanitation systems and bulk sewer infrastructure.

Zandvlei Estuary Nature Reserve

The Zandvlei water area was closed from 27 April 2018 to 4 May 2018, as a precautionary measure following water quality concerns. The closure only applied to recreational activities in the Zandvlei water area, including fishing. Access to the Zandvlei Estuary Nature Reserve and other visitor facilities in the area remained open to the public. The CCT undertook water quality testing at various points within the Zandvlei water body due to water quality concerns. The test results showed high levels of faecal coliforms (*Escherichia coli*) within the water body, which indicates an elevated risk to human health. The public was advised to avoid all contact with the water at Zandvlei until the levels fell back within national recreational water use guidelines.

The high *E. coli* count was as a result of a sewage spill due to a bulk sewer main collapse. The City monitored the effect of the sewage spill into the water body and the additional pollutants entering the vlei from the catchment area. The additional pollutants were as a result of the flushing effect of the recent rain after an extended dry period. The results of these water quality tests dictated the decision to apply a precautionary approach for the safety of the residents of Cape Town.

3) Maintenance of rivers and wetlands

In terms of routine watercourse maintenance activities undertaken within the City, detailed input is provided in the drafts of the River Maintenance Management Plans being compiled for each Catchment. These are to ensure sustainable and environmentally sensitive watercourse maintenance activities within the City in the long term, in accordance with the National Environmental Management Act and the National Water Act. Future watercourse maintenance activities undertaken by Asset Management and Maintenance will be in close collaboration with BMB staff in and around the City's nature reserves, to facilitate a consistent and sensitive approach.

Milnerton Lagoon mouth management

The estuary mouth at the Milnerton Lagoon, Table Bay Nature Reserve, closed due to the formation of a sand bar at the mouth. This resulted in water levels rising steadily until the water started back-flooding into the stormwater infrastructure and spilling over roads on the banks of the lagoon. On 12/09/2017 a decision was made to attempt to breach the mouth of the estuary, but in terms of NEMA an Environmental Authorisation is required to artificially breach an estuary mouth. An amendment to the existing Environmental Authorisation for stormwater management was approved, to allow the use of an excavator to open the sand bar to prevent flooding. From 13-14/09/2017, however, the estuary breached the sand bar naturally and the water flowed out to sea freely (Figure 27). However, the mouth closed very quickly again and an excavator was then used to open the sand bar to prevent flooding on nine more occasions (on 17/10/2017, 07/11/2017, 05/12/2017, 21/02/2018, 26/02/2018, 6/04/2018, 20/04/2018, 21/05/2018, and 25/05/2018). The breaching prevented the water level from rising to the point where nearby public infrastructure could become flooded. With the onset of the winter rains the estuary remained open in June 2018.



Figure 27: Estuary started to breach naturally on 14/09/2017.

Drawdown Zeekoevlei

The drawdown of Zeekoevlei has played an important role in ensuring that the water quality of the vlei is kept at an acceptable and safe standard for human contact. Cape Town is currently experiencing one of its worst droughts and it was decided that, due to the drought conditions, there will be no 2018 drawdown.

The first drawdown took place in 1997 and has been done annually for the past 20 years without fail. The drawdown allows excess nutrients to be released from the system and prevent major algal outbreaks which can become toxic to animals and humans alike. Even though no drawdown was done this year, shorelines to adjacent property owners were still exposed due to the drought. This allowed residents to do much needed shoreline maintenance such as reed removal and erosion control (Figure 28).



Figure 28: Reed piles collected from residents who have done shoreline maintenance at Zeekoevlei.

4) New Water Programme

The challenges with the groundwater programme are detailed earlier (refer to page 9). As a result of the water crisis, the City initiated the New Water Programme (NWP) which has a number of work streams. One of the positives coming from the water crisis is the recognition of the role of well managed alien-free catchments in water production. Invasive alien trees (especially wattles, pines, hakea and gums) are of larger stature than fynbos species and consume much more water, thus reducing run-off from our catchment areas into dams and reducing aquifer recharge. Ecologists regularly highlight the importance of good catchment management, particularly invasive alien control and fire, in order to conserve fynbos biodiversity and safeguard the ecosystem services upon which we all rely.

EMD's BMB has agreed to lead the NWP Invasive Plant Control to address the severely invaded catchments. Clearing the City's strategic water sources will be in partnership with CapeNature, Department of Environmental Affairs and Development Planning, Department of Environmental Affairs, Department Water and Sanitation, and The Greater Cape Town Water Fund (a partnership programme with The Nature Conservancy, which seeks to secure water sources by investing in conservation activities such as forest protection and good farming practices, in land that drains into the rivers, lakes, and aquifers that supply their drinking water). A pilot project was launched on 19 February 2018 in the Atlantis Dunes focusing on clearing invasive aliens at Pond 7 to increase water supply in the aquifer. Clearing is being sponsored by Coca Cola.

The City relies on some catchments outside of the CCT boundary to provide much of our water, including the Boland and Groot Winterhoek mountains (Theewaterskloof, Berg River and Voelvlei catchments). It is critical to ensure that sufficient resources are being allocated towards invasive alien species control in these areas as well as priority sites within the CCT boundary. In the last financial year, the City collated the following information, noting that the BMB focuses on five key water catchments where the City owns and manages land:

Wemmershoek Catchment

The CCT owns and manages 2 400 ha (30%) of the Wemmershoek Catchment area, with the rest managed by CapeNature as part of the Limietberg Nature Reserve. The CCT shares 98% of the Wemmershoek Catchment boundary with CapeNature. To date, 2 075 ha have been cleared of invasive species.

Steenbras Catchment

The Steenbras dam, located in the Steenbras Nature Reserve, is managed by the CCT. The rest of the catchment area falls outside the City boundary. So far, 134 ha have been cleared of alien vegetation in this catchment.

Atlantis Aquifer

The Atlantis Aquifer spans the Witzands Aquifer Nature Reserve and Brakkefontein Biodiversity Agreement site. To date, 350 ha have been cleared of alien vegetation. In collaboration with the Cape Town Water Fund, Pond 7 and Pond 6 have been prioritised for invasive plant clearing and rehabilitation to optimise water infiltration and improve water quality.

Cape Flats Aquifer

The Cape Flats Aquifer covers an area in excess of 400 km² and extends from False Bay in the south, to Tygerberg Hills in the northeast and Milnerton in the northwest. In collaboration with various CCT departments, nature reserves, public open spaces, rivers, canals and wetlands have been cleared of invasive alien species and maintained. The challenge for departments other than EMD is that invasive species management is not their primary mandate, so they do not have a budget allocation for invasive species control; thus much work is done reactively. Invasive plant control operations within nature reserves across the Cape Flats Aquifer cover 1 436 ha.

Lourens River Catchment

The upper reaches of the Lourens River Catchment are relatively natural, with some negative impact from commercial pine plantations. The removal of natural riparian vegetation along the river banks has resulted in the invasion by alien plants from seeds dispersed downstream. The Lourens River mostly runs through privately-owned properties, making it a challenge to manage as a unified catchment. Nevertheless, through the Kader Asmal programme progress has been made, and CCT departments have collaborated to tackle this challenge by integrating their objectives; as a result, there are 41 848 ha cleared and in follow-up.



Figure 29: Initial clearance

The targeted removal of invasive alien plants (Figure 29) and maintenance of cleared areas will remain a leading priority for the BMB's Invasive Species Unit, so that further spread can be prevented. By eradicating invasive alien plants (especially trees), the base flows of rivers can increase and augment our water supply. This is especially effective where clearing takes place upstream of existing dams. A key strategy is thus targeted clearing combined with the aim of securing the ecological flow requirements of these rivers and estuaries. In a water-scarce municipality, quantifying the impacts of invasive alien plants, and understanding the associated management needs, must take place on the basis of ongoing and comprehensive monitoring.

4.7 Restoration

1) Ecological Restoration Prioritisation Project

Much of the remaining habitat in the city is threatened, and many areas in the protected area network are degraded and require restoration in order to contribute towards conservation targets. However, owing to this need and the high resource-intensity of ecological restoration, prioritisation was needed. We used an interactive analytical hierarchical processing tool, which enabled staff to agree on a set of criteria and sub-criteria for biodiversity and ecological functioning (including ecosystem services) prioritisation. These sub-criteria and criteria were weighted, the spatial datasets prepared and the spatial analyses run. Vegetation types within reserves that gave the highest scores were listed as priorities and the outputs used to assist with restoration planning. Priority areas were then assessed in terms of other factors, such as fire and invasive plant clearance, in order to schedule an appropriate date for active restoration interventions (i.e. post-fire sowing and/or planting) according to the subsidiary restoration management plans.

The active restoration prioritisation spatial analysis technical report was finalised (Table 10). The priority sites are Blaauwberg, Helderberg and Tygerberg Nature Reserves. For all three there are already restoration projects underway.

Table 10: Top 40 active restoration priority sites in Cape Town as per the spatial analysis.

Protected Area name*	Mean prioritisation score**	Mean prioritisation score**	Mean prioritisation score**	Total degraded + modified (ha)***
	Fynbos	Renosterveld	Strandveld	
Blaauwberg	6.215	7.279	4.827	870.42
Helderberg	4.967	6.996		53.84
Tygerberg	5.570	6.973		131.73
Coastal Corridor (West Coast)	4.703	5.959	5.679	166.75
Dassenberg	4.228	5.959		66.72
False Bay - Rondevlei section	5.891		5.758	130.52
Uitkamp Wetland		5.808		19.12
Botterblom		5.643		0
Table Mountain	4.940	5.503	5.159	126.46
Sonop	4.706	5.472		0
Harmony Flats	5.444			4.68
Joostenberg Kloof	4.031	5.404		51.65
Klein Dassenberg	4.947	5.392		57.41
Capaia Wines		5.443		0
Mellish		5.285		0
Table Bay - Fynbos Corridor	5.221			210.08
False Bay - Zeekoevlei section	5.187		4.478	156.33
Melkbos	5.165		4.216	37.42
Table Bay - Rivergate section	5.150			11.74
Tygerberg Hill	2.685	5.120		0
Zandvlei Estuary	5.036		4.621	88.58
Steenbras	5.034		3.766	59.79
Witzands Aquifer	4.976		4.440	54.37
Durbanville	4.058	4.974		0.96
Bracken	4.964			34.73
Table Bay - Milnerton Race Course section	4.863			9.53
Haasendal	4.847	3.901		37.06
Hottentots-Holland	4.778			0.84
Table Mountain - Tokai Park section	4.765			0.1
Fraai Uitsig	3.733	4.756		59.19
Wolfgat			4.755	49.28
Macassar Dunes			4.706	27.9
Sandown	4.700			13.71
Kenilworth Race Course	4.697			18.48
Highberry Wine Estate	4.061	4.684		0
Bothasig Fynbos	4.652			6.62
Aurora Park		4.575		0
Nirvana	4.557			0.23
False Bay - Pelican Park section			4.546	91.67
False Bay - Slangetjebos section			4.540	106.72

2) Restoration Plans

By the end of the reporting period, 24 reserves/reserve sections had been mapped, and 12 restoration plans completed, with restoration plans in progress for Harmony Flats and Three Fountains. Several of the completed plans still need the latest fire mapping to be inserted. A meeting was held with Blaauwberg staff to plan for the 2019 prescribed burn and associated active ecological restoration of a degraded Renosterveld block on the eastern slopes of Blaauwberg Hill.

3) Restoration Facility

The BMB habitat restoration facility, based at the Westlake Conservation Centre, collects and processes local indigenous seeds and propagates priority indigenous plant species for selected ecological restoration projects in the CCT. The Restoration Facility received a permit to collect plant material from natural areas within the City under a CapeNature collecting permit (CN37-28-1702). It expires on 31 December 2022. The restoration facility continues to be very productive creating a large number of plants (Figure 30 and Table 11). The restoration facility in the last financial year set up a seed room for the safe storing of seed for the use in restoration programmes. Broadcasting seed coupled with fire events is by far the preferred method of restoration where possible.



Figure 30: Sorting seeds for propagation (left) and smoking fynbos seeds to facilitate germination (right).

Table 11: During the last financial year, the restoration facility produced the following plants.

Method:	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total for 2017/18
Plants donated	404	0	0	349	753
Plants planted out	10 693	0	5 390	9 832	25 915
Plants bagged/potted	3 786	7 893	11 418	7 252	30 349
Plants propagated/by cuttings	27 642	0	28 656	4 430	60 728
Search and rescue pots and cuttings	894	0	497	0	1 391
Seed trays sown	13	0	0	56	69
Total (excluding seeds):	4 3419	7 893	45 961	21 863	119 136

4) Restoration implementation

There are numerous restoration projects across the BMB, of which a few are highlighted below.

Zeekoevlei Eastern Shore

Restoration planting at Zeekoevlei Eastern Shore, False Bay Nature Reserve, occurred in June 2018 in follow-up to previous planting and seed scattering events. This was a two-day planting event, preceded by days in the field to insert wind breaks, broadcast annual seed and prepare plants in the nursery for planting out. The planting team included Zeekoevlei staff and interns, international volunteers, EPWP and CCT staff. This particular project is closely linked to the conservation of the butterflies *Kedestes barberae bunta* (Barber's Ranger) and *Kedestes lenis* (Unique Ranger) as this project not only aims to restore Endangered Cape Flats Dune Strandveld but also to provide a suitable habitat for these highly threatened butterflies.

Interestingly, due to the negative impact on the plants of sand blasting on the dunes, the planting depth was increased to compensate for the amount of surface sand that would be lost in the months to come; thereby giving the plants time to establish. The outcome of this approach will be monitored and reported on in future. Progress on site has been slow due to the drought conditions but positive observations include the survival and establishment of some noteworthy species such as *Hermannia ternifolia*, *Ruschia macowanii*, *Ifloga thelliana*, as well as some geophytes including *Haemanthus coccineus* and *Lachenalia bulbifera*. The flowering plants are attracting some common butterfly species such as Common Geranium Bronze (*Cacyreus marshalli*). The site is already showing a significant increase in species diversity since the onset of the restoration project and further interventions will focus on augmenting the species diversity within the established pioneer vegetation component. This project is also providing valuable information on effective rehabilitation interventions for future extensions of the restoration efforts along the Eastern Shore (Figure 31).



Figure 31: Planting activities at the Zeekoevlei Eastern Shore Restoration Project site.

Watsonia Restoration Area

The *Watsonia* restoration area project was initiated in 2016/17 at Tygerberg Nature Reserve on the old ploughed fields (previously Swartland Shale Renosterveld). Over 6 kg of seeds were collected and cleaned during the year. An area of 50 x 50 m was tilled, wood chips and leaf litter added and then seeds sown. The Reserve staff and Working on Fire staff conducted an ecological restoration burn on half of the plot area in order to stimulate the renosterveld species seeds to germinate. The other half of the plot was left unburnt to have a comparison site for future restoration efforts.

In the last financial year, weekly checks were done on the restoration area to record species recruitment. Various species including *Lachenalia lilliflora*, *Otholobium hirtum*, *Oxalis pescapre*, *Watsonia marginata* etc. have emerged (Figure 32).



Figure 32: Various species found to be establishing well at the *Watsonia* restoration site, Tygerberg, during the weekly monitoring.

Plant species germinating and growing were recorded between June 2017 and May 2018. From the original 53 plant species seed sown, 14 plants were recorded (a 26,41% success rate). Twenty-two plant species recorded in 2017 and 2018 were NOT SOWN, therefore establishing from the leaf litter and wood chips.

The following are four recommendations for future restoration efforts to rehabilitate old ploughed fields.

1. Add wood chips and till the soil
2. Seed must be collected, cleaned and sown under sods in the area
3. Add leaf litter and branches to the area sown
4. The area should be burnt in February or March before the first rains

Milnerton Racecourse Restoration

The restoration of the Cape Flats Sand Fynbos in a portion of the Milnerton Racecourse reached several milestones, including:

- Changes to the boundary configuration of the Milnerton Racecourse Section due to the realignment of the tracks of the racecourse in terms of an amended development approval.
- A land swap agreement resulted in the donation of Erf 35526 (from the racecourse) to the nature reserve to compensate for the loss of a small piece of land as a result of the track re-alignment (Figure 33a).
- A Master's degree study by Landi Louw on the restoration of this Critically Endangered Cape Flats Sand Fynbos was registered at the Cape Peninsula University of Technology.
- Veldspan steel mesh fence (700 m) was purchased by the CPUT and the NRF to support the Masters Research Project of Landi Louw. An additional 200 m of Veldspan fencing was purchased by the Milnerton Racecourse Environmental Management Committee (EMC). This steel mesh fence replaced an old shade-cloth fence constructed by the landscaping contractors of the Milnerton Racecourse, which was removed off-site. The steel mesh fence, which was constructed by nature reserve staff, is expected to last longer and be more effective at keeping grysbok out of the restoration area.
- Removal of all the laterite infilling in the restoration site.
- Transfer of the topsoil and brush-cut plant material from the lost site to the restoration site.
- Transfer of bulbs and live plants from the lost site to the restoration site.
- Collection of seeds and plant cuttings for propagation and later replanting.
- Ecological prescribed burn undertaken (see page 58) – first recorded burn on this section of the Racecourse.
- After the burn, smoke-treated fynbos seeds were broadcast over the burnt area on 13/04/2018. Planting of propagated plants is scheduled to take place during the next financial year (2018/19).
- *Carprobrotus edulis* (sour figs) were hand-pulled from the restoration area from 22/05/2018 onwards to prevent them invading the whole area and outcompeting the fynbos plants. The pile of sourfigs were removed off-site (Figure 33b).
- Bird perches are going to be placed at the restoration area to facilitate the return of raptors.
- The Cape Grysbok population was surveyed during two drive counts. The population had exceeded the carrying capacity, being more than 30 animals, and needs to be reduced.

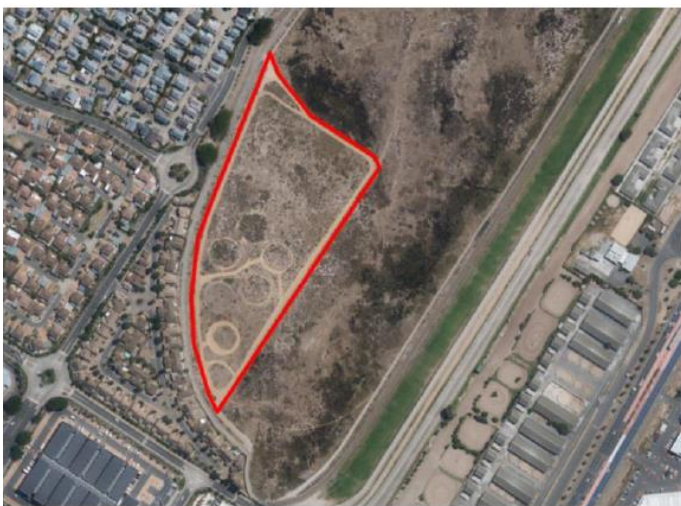


Figure 33a. The restoration area.



Figure 33b. Piles of removed sour figs.

***Typha capensis* (bulrush) reeds control**

The *Typha* were treated with herbicide in the water bodies at Waves' Edge and Dolphin Beach Hotel. The suppression of the reeds is done to alleviate the impact of seed dispersal on the surrounding residential communities. Ward 107, Cllr Nicky Rheeder, contributed R80 000 towards the project. Another R100 000 was provided by the EMD. The dead bulrushes are left in place to retard any regrowth of the reeds. It is expected

that the reeds will eventually grow back again since these water bodies are being used as stormwater retention ponds. Pollution and nutrients in stormwater speed up the growth of the reeds.

4.8 Soil Erosion

The Peninsula Working for Wetlands completed the Tygerberg Gabion. The Peninsula Rehabilitation project managed to achieve its targets by re-vegetating 160 870 m²; propagating 80 000 plants; and building two gabion weir structures that comprised of excavating over 384 tons of soil and packing 230 m³ of gabion rock into baskets, all of which was done entirely by hand (Figure 34a and 34b).



Figure 34a: Team excavating gabion by hand



Figure 34b: Completed Gabion structure

Revegetation interventions were successfully completed for Spaanchemaat, Kirstenhof, Grootboskloof, Diep River Trail, and Langvlei. A total of 8 827 plants were planted in the sites (Figure 35 and 36).



Figure 35: Indigenous vegetation establishing



Figure 36: Team replanting indigenous plants after invasive plant clearing operation

4.9 Ecological Monitoring

1) Monitoring plans

A monitoring framework has been compiled for the BMB conservation management activities. Once approved, this framework will guide the review or compilation of the reserve monitoring plans as part of the process to update the Integrated Reserve Management Plans for the proclaimed nature reserves.

A professional officer has been transferred to work with the Co-ordinator of Monitoring and Evaluation. This increase in capacity will ensure that more can be done to ensure correct and standardised monitoring

procedures are followed in all Branch conservation sites, through training and communication of procedures. The incumbent will also be addressing knowledge management issues such as improving the turn-around time in collecting and analysing data; and ensuring information is available both to reserve staff, and for evaluation.

2) Key monitoring projects

Water monitoring

In addition to the City's standard programme of water quality monitoring, BMB has for a number of years had a Service Level Agreement (SLA) with Scientific Services to undertake specific samples. In this last year, the sampling sites for the Biodiversity Management SLA agreement with Scientific Services was reviewed. All outstanding information, such as exact coordinates for existing sites, was sourced to allow accurate mapping and consistent sampling. The existing sites were then workshopped with staff and reviewed by conservation services, Scientific Services and Catchment Management. The final list of new rationalised sites was compiled, and will be subject to mapping and inclusion on the City's GIS layers for ease of reference once formally adopted as an amended SLA Agreement. This process has resulted in the intent for a similar review and updated mapping exercise for Catchment Planning and to source similar information from Water and Sanitation. Furthermore, a Standard Operating Procedure (SOP) for the BMB on water sampling information and procedures was developed and circulated.

Water-related monitoring

A River Health survey was conducted at a perennial stream in Steenbras Nature Reserve following a contamination event from borehole drilling activity (at point H8A7). The results were presented in a report to the EMD team in charge of ensuring management of impacts of this activity, and the report has been added to the other monitoring work underway on site.

An amphibian survey has also commenced. All amphibians are being surveyed and relative abundance of each species at each location assessed according to the Winsconsin Anuran Call Index. The change in relative abundance of *Arthroleptella villiersi* will be used as an indicator of wetland health or, more specifically, long term persistent loss of surface water in the affected area of Steenbras Nature Reserve. Vegetation surveys have commenced to monitor for change in species richness and structure relative to surface impacts and changes in water table.

Flora monitoring

The Blaauwberg Browse monitoring programme is ongoing. The GPS collar system installed was not working correctly, so an interim method was devised to measure the level of use of the different areas within the fenced section of the Reserve by the large herbivores introduced in 2016 (Eland and Red Hartebeest). These surveys commenced in May 2018. The vegetation surveys were conducted in the 24 browse study plots in September to November 2017.

The monitoring and evaluation team continued to assist with the Gantouw Project data collection: The third fauna activity survey (camera trap survey) was conducted from September 2017 to February 2018; the fixed-point photos, vegetation transect surveys and bush biomass photographic surveys were repeated (February to April 2018); and the burn plot surveys were conducted again in March and April 2018.

The Restoration Monitoring Protocol was completed and tested on the Zeekoevlei Restoration Site. Some gaps in data from the first planting effort made it difficult to execute the protocol. Some adaptations have been made and the protocol will be tested on other sites. Data collection and collation of plant species of special conservation concern (SSCC plants) has commenced, to facilitate compilation of plans per reserve in order to monitor persistence of priority SSCC plants in the City and inform management decisions.

Fauna monitoring

The Fauna Survey Camera Trap project is ongoing: This survey covers all City nature reserves larger than 10 ha. The survey could not be completed at the Edith Stephens Nature Reserve due to the threat of land invasions on site, and fear of loss and damage to the camera traps. Some data were collected, which will be handed over at the end of the survey. At the time of this report, three sites are still to be surveyed.

The City assisted with the camera trap survey at the Atlantic Beach Estate to determine if Caracal numbers at the estate were unnaturally high compared to the area outside the fence and to other sites in the city. Results showed that there was no Caracal activity on the estate over the time of the survey and thus the recommendation to the Environmental Liaison Committee was that the Caracal numbers on the estate were not unnaturally high, and the request to remove Caracal from the estate was unnecessary and should not be supported or approved.

A small mammal survey was conducted at the Westlake Conservation Centre as a baseline survey. Pygmy Mouse, *Mus minutoides*, was recorded as new to the site's species list.

The camera-trap monitoring of fauna, with specific focus on the Cape Leopard, is taking place at the Steenbras Nature Reserve and the natural areas within the Helderberg Basin Area. Currently it is estimated that 14 Leopards occupy the current monitored area.

3) Biodiversity Database

A minimum of 3 308 sightings were logged from beginning July 2017 to end June 2018 and 13 new users were added this reporting period. The statistics at the end of June 2018 are shown in Table 12.

Table 12: Statistics from the database showing status of all species recorded in City of Cape Town sites. Figures and text in red show an update of the statistics from the previous report.

Species Class	Present on site	Previously on site (not recorded since 2008 or before)	Lost To Site (not recorded since 1998 or before)	Class Total	Notes
Plants	1866	91	363	2320	Unchanged
Crustaceans	2	0	0	2	Unchanged
Mammals	68	6	5	79	Unchanged
Pisces (Fish)	32	1	2	35	One species moved to Lost to Site list
Birds (Aves)	298	3	34	335	Unchanged
Reptilia	60	1	4	65	One exotic species, <i>Indotyphlops braminus</i> , Flower-pot snake, has not been recorded since 2008
Amphibia	22	0	2	24	Unchanged
Insecta (Insects)	55	1	0	56	Unchanged
Arachnida	5	0	0	5	Unchanged, however there are more sightings that need to be confirmed
Fungi	23	0	9	32	Unchanged

4.9 Ecological Research

1) Sevengill Shark Research

Veterinary services were provided to assist in the tagging of sevengill sharks as part of ongoing collaborative research by the Shark Spotter program, SANParks Marine Services and the University of Cape Town (Figure 37).



Figure 37: A sevengill shark was carefully restrained and oxygenated water provided while measurements were taken and a tracking device very quickly inserted.

2) Biological Control

The Invasive Species Unit continued collaboration with Rhodes University with regards to research aimed at finding the best practices for Biological Control in South Africa. BMB assisted in two projects (1 PhD and 1 MSc). The PhD study is looking at the survival of biocontrol agents in various environmental conditions (mainly looking at the quality of water) focusing on the *Neohydronomus affinis* (biological control agent for Kariba weed). The MSc study was looking at the genetic make-up of the Mexican Water Lily in comparison with the indigenous one in order to find the best biological control agent for the Mexican Water Lily that will not feed on the indigenous one. The study also looked at the possible hybridisation between the Mexican Water Lily and the indigenous one, because this could have major implications for the biological control of the species.

3) *Phytophthora* research

Phytophthora is a microscopic plant parasite which is known to cause root rot in a number of indigenous plant species, and ultimately lead to their death. Due to their impact on indigenous flora, it is important to identify which species are present in our reserves and to identify any new invasions. In some areas, this parasite has caused fairly large patches of veld to die out.

A total of 113 soil samples were collected around various plants that were displaying signs of die-off, from 19 nature reserve sections within the CCT; for use in the University of Stellenbosch *Phytophthora* sampling and identification project (Figure 38). The soil samples will be tested by University of Pretoria PhD student, Joey Hulbert, for the occurrence of the root fungus *Phytophthora*.



Figure 38: A portion of the soil samples collected, labelled and delivered to University of Stellenbosch in furtherance of Phytophthora research.

4) Blaauwberg Restoration Research Project

The largescale project to define the best methods for the ecological restoration of Critically Endangered Cape Flats Sand Fynbos continued at the Blaauwberg Nature Reserve over the last year. Stuart Hall, who has been one of the main researchers involved in the project, graduated with a PhD on 20 March 2018.

External funding from the Hans Holstein Trust for additional preliminary restoration research to the amount of R30 000 was approved. In December, an application for the second tranche of Hans Hoheisen Trust funding to continue restoration ecology research at Blaauwberg NR was submitted. Stellenbosch University has applied for the research operational budget and BMB, via our Cape West Coast Biosphere Reserve partnership; has applied for operational funding for alien clearance, seed collections and other operational restoration management budget. Stellenbosch University still needs to finish spending their initial project funding from this Trust (for pre-clearance surveys and seed collecting) before the Trust will contemplate funding the main project phase.

5. INVASIVE SPECIES

5.1 Terrestrial Invasive Plant Management

The Invasive Species Unit facilitates control of invasive species across the city and collaborates with different line departments to clear woody and aquatic invasive plants. Workload assessments were produced for the majority of the City sites (Figure 39 and 40). Workload assessments need to be done annually (they will also change if there is a fire), and guide costing for the contracts. They also provide a baseline for the invasive densities across the City. The plans, which feed into the restoration plans, are also the base of the invasive species control plans that are done per site. The Invasive species control plans for all City land is a requirement of NEMBA.



Figure 39: Density map for Alien Invasive Species on City land.

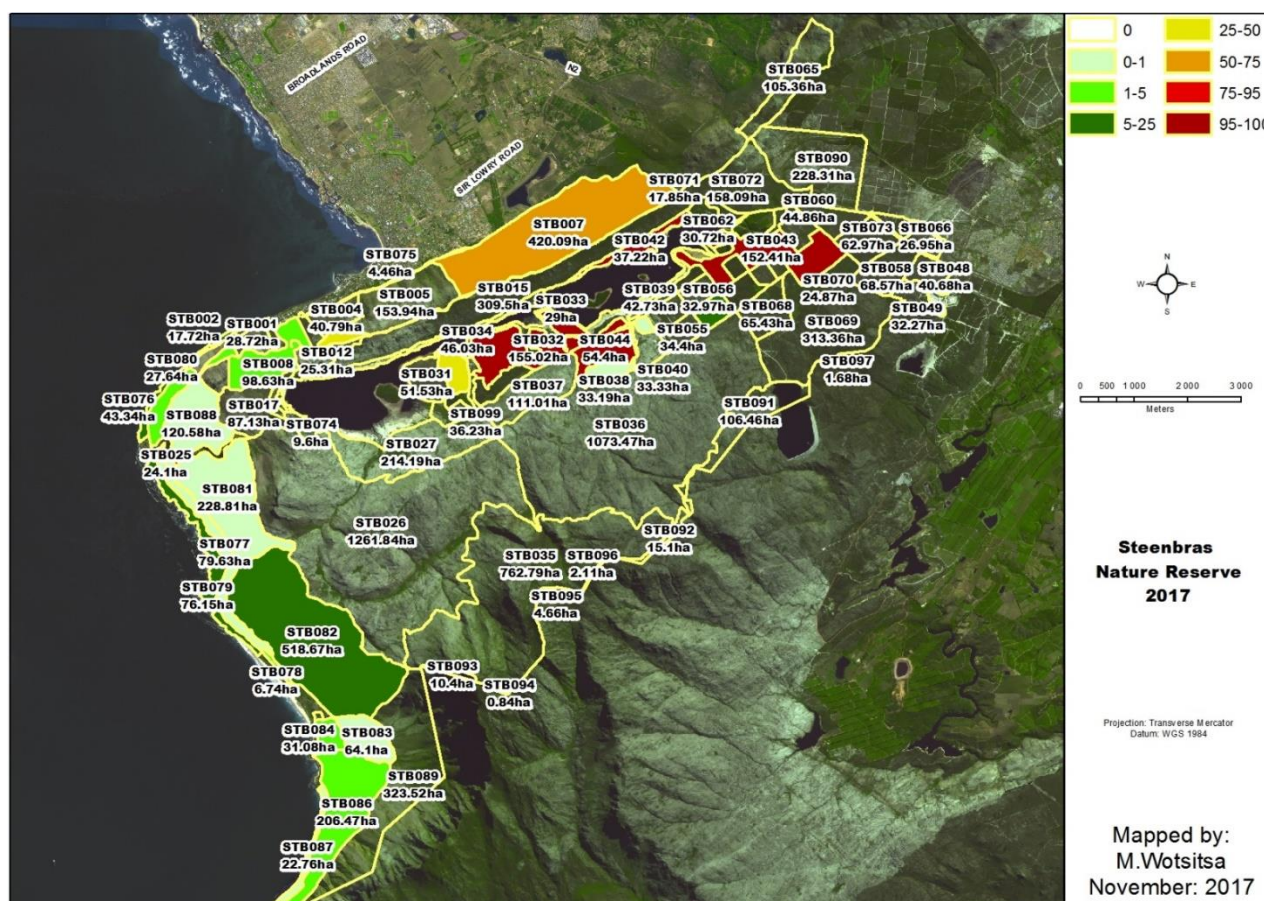


Figure 40: Detailed alien invasive species map for one site – in this case Steenbras Nature Reserve.

Figure 41 and 42 show baseline information and can be used to show trends as the City strives to ensure all land is in the density class of <5% invasion by woody alien invasive species.

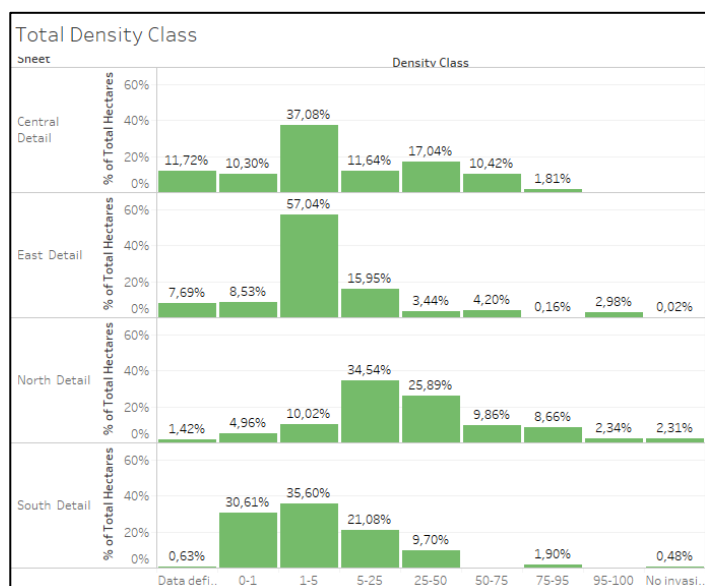


Figure 41: Density classes of City owned protected areas

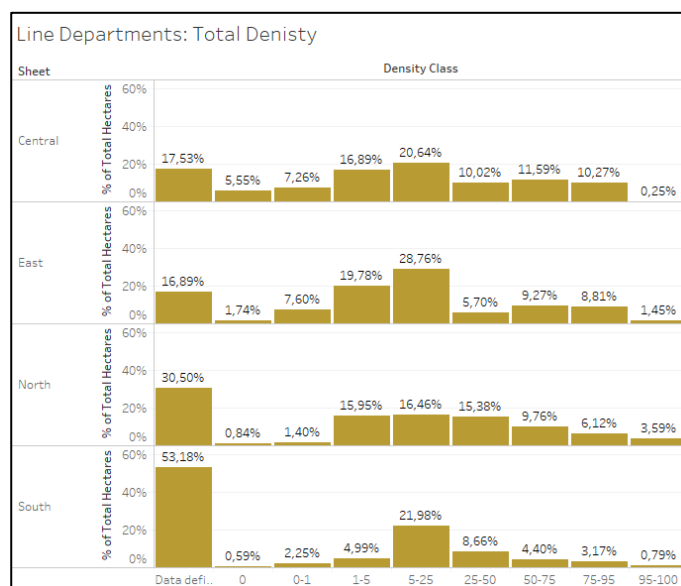


Figure 42: Density classes of City owned land

Cumulatively, 11 500 initial ha and 12 591 follow up ha were cleared from both protected areas and other departmental land. Target setting for woody alien invasive species over the next five-year cycle is in process.

5.2 Biocontrol

A total of 55 300 biological control agents were released in the 2017/18 financial year, of which 25 650 were released outside City of Cape Town boundaries (Table 13).

Table 13: Number of biological control agents released last year.

Biocontrol release sites	Type of site	Catchment	Numbers released
Keyser River	River	Sand River Catchment	8 950
Kogmanskloof	Dam	Breede Catchment	800
Westlake River	River	Sand River Catchment	3 000
Hartebeespoort	Dam (outside CCT)	Hartebeespoort Dam Catchment	500
Bree River	River	Breede Gouritz Catchment	3 600
Botfontein	Retention Pond	Eerste-Kuils	17 700
Swellendam (privately property)	River	Breede	16 750
Rhodes University	Pond	N/A	2 000
Temba Dam	Dam	Crocodile Dam	2 000
TOTAL			55 300

On 26 October 2017, Des Cologne, coordinator of the Mass Rearing Insect Workshop that took place in Stellenbosch, organised a field trip of 40 participants. The participants came from different organisations that are also engaged in biological control. The main purpose for the trip to our facility was for the participants to get exposure to the mass rearing process and to the biocontrol for alien aquatic species (Figure 43).

In November 2017 Sabelo Lindani and Fay Howa from Recreation and Parks organised a biocontrol tour for 39 EPWP workers from different depots. The purpose was for them to learn about aquatic weeds. Some of the EPWP staff worked in wetlands and they came across aquatic weeds on a daily basis (Figure 44 and 45).

The biological control mass rearing facility also hosted the Mayco Member for Transport and Urban Development Cllr Bret Herron (Figure 46). The Cllr wanted to understand what the project entails and how it impacts the CCT and the rest of the country.

Professor Martin Hill from Rhodes University visited the mass rearing facility on 23 March 2018. The purpose of his visit was to formalise the partnership between the CCT and Rhodes University. He also offered training assistance for any new staff working at the mass rearing facility. A Memorandum of Agreement will be formed between the entities in the new financial year.



Figure 43: Mass Rearing Insect Workshop attendees.



Figure 44: Siphokazi Atoli explaining the Biocontrol process to EPWP workers from Recreation and Parks.



Figure 45: Chandre Rhoda, the Invasive Species Programme Manager, welcoming the EPWP workers to the Biocontrol Facility.



Figure 46: Sabelo Lwana showing Cllr Bret Herron how biological agents are collected.

5.3 Invasive Animal Management

1) House Crows

The 2017/18 house crow season was characterised by low productivity. This was due to constraints on the project by the City's supply chain processes and limited funding. In trapping, baiting and mass-baiting, numbers caught remained low throughout the year. The highest recorded number of carcasses collected was in February, coinciding with the use of chicken, donated from a chicken farm in Phillipi, to bait the house crows. Going forward, different bait will be tested and different control methods will be combined. A Supply Chain Management (SCM) tender process is also underway to facilitate operations.

2) Mallard Duck

This year, BMB focused its efforts on Zandvlei and Marina da Gama. Due to the delay in the handover of funds, BMB was only able to carry out two removal operations during March 2018 (Figure 47a and 47b). During these two operations, a total of 148 mallards were removed. Invasive species unit staff worked alongside the service providers to reach the target. The City's Vet assisted with the euthanasia of the mallards along with a student from Stellenbosch University, who used the mallards collected for research on mallard hybridisation. Despite interference from some of the residents in Marina da Gama, especially on the second day when law enforcement had to be called in to assist, the operations were successful. An estimated 45 mallards remain in Marina de Gama and these will be controlled during the new financial year.



Figure 47a: Mallards being captured by net during operation.



Figure 47b: Staff baiting Mallards.

3) Wasp

Wasp control teams worked from January 2018 until the end of June 2018. Most of the reports received were for the removal of European Paper Wasp nests. The teams removed a total of 3 552 European Paper Wasp nests, with the highest number (1 183) recorded in February. From May onward BMB experienced technical difficulties with the reporting website and residents were not able to report through the site. The teams removed a total of 15 German Wasp nests during their operational period with the bulk of the removals taking place in April (4) and June (6) coinciding with peak German Wasp nest numbers as the wasps prepare for winter. BMB again started working with SANBI and Stellenbosch University through an entomologist who is researching the German Wasp (as was done in 2014 and 2015). Going forward, BMB will continue to exchange data, tips, samples, and research findings; and will assist with trials for new control agents.

4) Guttural Toad

The Guttural Toad operation was implemented later than usual due to delays in SCM. This breeding season, BMB decided (along with the latest research) to no longer capture tadpoles and eggs. According to a study by Giovanni Vimercati (a researcher from the Centre for Invasion Biology), the time it takes to dredge ponds and water bodies for the eggs and tadpoles, separate the eggs and tadpoles from the dirt and muck, and

individually count the tadpoles and weigh the eggs, ultimately reduced the team productivity and the efforts would be better utilised if focused on adults, juveniles, and metamorphs. Operations for the 2017/18 breeding season commenced on 11 December 2017 and were concluded on 31 March 2018. During this period, 1 362 Guttural Toads (excluding tadpoles) were captured and recorded. The total consisted of 182 males, 104 females, 397 juveniles and 679 metamorph toadlets, respectively. This breeding season, the majority of the toads captured were metamorphs. Male and female Guttural Toad captures were significantly lower than previous years, resulting in the lowest number of total adults compared to previous years.

5.4 Early Detection and Rapid Response (EDRR)

Preventing the introduction of invasive species is the first line of defence; the second is the early detection and rapid response that targets species while populations are still localised, and can be contained and possibly eradicated. This EDRR programme can save costs by detecting invasive species before they become established and require widespread control measures. The EDRR Programme targets 23 listed invader species for control, and works with various landowners across the city to detect, identify and control these target species from expanding and invading large areas. Management plans have been completed for all these target species.

More information can be found on the website: <http://www.capetowninvasives.org.za/edrr>

At the end of the 2016/17 financial year, the number of species listed for EDRR in CCT was 22. Another species was added to the list in October 2017. The species added was Mauritius Hemp (*Fucraea foetida*), a NEMBA Category 1a species requiring eradication/extirpation (Figure 48). The decision to add it came after an agreement with SANBI (Western Cape region) that the Invasive Species Unit will take over control of the species within the CCT boundaries. Subsequent to adding the species on to the list and spotter network, field surveys were conducted to ascertain its distribution within the City. These data were then used to create contracts to deploy teams to remove the species.



Figure 48: Team removing Mauritius Hemp in Simons Town.

The addition of this species to the CCT's EDRR programme was also featured on the City's Contact Magazine (Figure 49).

A Mauritian menace

If a new invasive species is detected, it goes through a verification process and risk assessment by the South African National Biodiversity Institute (SANBI). Once it is confirmed as potentially invasive, a control strategy is developed and awareness raised to encourage members of the public to help spot new populations of the species.

A species recently added to the Spotter Network's list of invasive aliens is *fucrea foetida* (or "Mauritius hemp"). "SANBI has been aware of this species for some time in KwaZulu-Natal and parts of the Western Cape. But when they

Mfene, Thobisa Ntingiso, Busisiwe Stemela and Tabile Mdoko.



Hit the hemp: The invasive Mauritius hemp (*fucrea foetida*) has gained a foothold in Simon's Town.

alerted ISU of its presence in Simon's Town, we decided to help manage all populations of the species found in the Cape Town metro," says Phumudzo.

"Once the team has finished removing this species in Simon's Town, they will move on to focus on other alien populations discovered elsewhere."

Although many EDRR programmes globally are aimed at eradication, it is often difficult to declare that a plant species has been completely eradicated, as many specimens remain

in private gardens.

"That is why we need as many people as possible to join the Spotter Network and tell us when they see these species in their gardens and elsewhere so that we can respond," says Phumudzo. "Our website provides all the information about the species that the ISU is targeting, including pictures to assist with identification."

- Visit www.capetowninvasives.org.za/edrr to register as a fellow spotter, or e-mail phumudzo.ramabulana@capetown.gov.za.

Figure 49: Featured article on the Mauritius Hemp in the City's Contact magazine.

The EDRR Spotter Network project was featured in an article in Contact Magazine to disseminate information about the City's EDRR programme, and encourage City residents to register as spotters and subsequently spot and log sightings on the Spotter Network (Figure 50).

Control of alien vegetation needs many sharp eyes to help spot the "nasties". The City's Invasive Species Unit invites anyone interested to join the Spotter Network and help the team identify problem plants.

Early detection is essential to control alien vegetation in Cape Town, and anyone can get involved. The Invasive Species Unit (ISU) of the Environmental Resource Management Department is inviting more people to join the City's Spotter Network to help identify and manage alien vegetation.

Anyone with access to a personal computer, laptop or smartphone with internet can belong to the Spotter Network. No credentials are required. "All you need is passion and an interest in environmental issues, particularly invasion biology," says Phumudzo Ramabulana, Project Manager: Invasive Species.

Catching them early

The Spotter Network was launched in 2011 by the City's ISU, which is mainly involved in the management of species and monitoring the effectiveness of control and management interventions. The network forms an essential part of the early detection and rapid response (EDRR) programme, which focuses on invasive alien species that have not yet grown into large populations.

Phumudzo monitors all Spotter Network activities. "After a sighting has been logged, I physically go and verify whether it is indeed the target species. Once verified as alien, I send a specialised team to control or remove the plants," he says.



Species specialists: Members of the Invasive Species Unit, which clears alien vegetation with the help of the public via the on-line Spotter Network. Seated in front, from left, are Bongani Mdoko (team supervisor), Phumudzo Ramabulana (Project Manager: Invasive Species) and Chuma Luhla (team supervisor). Back: Andiswa Matsiba, Namasonto Makazana, Thandikhaya Mayile, Mzwandile Maqolotho, Jobela Mthwakazi, Asanda Ganaqza, Unathi Mhlawuli, Thembakazi Simavile, Lundi Pita, Ntomboxolo

Figure 50: Featured article of the EDRR project in the City's Contact Magazine.

6. FIRE

The majority of staff have undertaken the pack test, remaining fit for fires. All the required firebreaks on the reserves were completed in preparation for the 2017/18 fire season. Firebreaks, staff training and equipment checks were routinely conducted to ensure that the various areas were compliant with BMB standards.

Firebreaks maintenance is sometimes undertaken for ecological reasons. The firebreak along Strandfontein Road and Pelican Heights Beak Road is part of the conservation manage patrol strategy for the conservation of the Critically Endangered skipper butterfly *Kedestes barbarae bunta*. The firebreaks along the road are to prevent fires from starting and running into the area where the butterfly occurs. This butterfly species occurs nowhere else in the world (it is a local endemic); with fewer than 50 individuals left (Figure 51).



Figure 51: EPWP staff clearing a firebreak (left) and collecting litter (right) from Pelican Park section.

6.1 Wildfire

On the City's nature reserves there were numerous small, uncontrolled (wild) fires of 10 ha or less (total of 284 ha burnt, Figure 52), one medium large (Klein Dassenberg – 15,87 ha), and one very large fire (Steenbras Nature Reserve – 1845 ha). This has implications for veld management: if invasive species management, i.e. post-fire clearing, does not occur, areas that were previously under control or maintenance may become infested, leading to higher budget needs in the future. For example, the wildfires in Witzands dunes in 2016/17 resulted in a critical invasive alien infestation. Plans to clear this area are in place.



Figure 52: Wildfire at Rietvlei section, Table Bay Nature Reserve (28/08/2017)

During the Steenbras Wildfire, BMB focused on the areas within the nature reserve to help contain the blaze. Most of the veld area burned was already in excess of 12 to 15 years old. As a result, the environmental damage was not a concern. The fire also moved through the area rapidly, so the normal biodiversity processes experienced in fynbos in terms of fire system functioning were allowed to be carried out naturally. There was enough material still standing so it is anticipated that erosion will not become too much of a problem. In recent weeks there was significant regrowth and the veld recovered well despite the summer drought conditions (Figure 53).



Figure 53: Nature restores itself very quickly. These photographs were taken 48 hours after the Gordon's Bay wildfire.

6.2 Ecological Burns

The City's fire management strategy was adapted due to the continuing drought crisis. The Fire Service implemented various water saving initiatives to minimise the use of drinking water during fire-fighting periods. The nature reserves also reduced their water use during fire-fighting by using rainwater instead of potable water, and limiting the use of water to the absolute minimum. In addition, only two ecological prescribed burns were undertaken.

1) Milnerton Racecourse

A prescribed ecological burn was conducted in a 1,9 ha portion of a fynbos restoration site at the Milnerton Racecourse on 12 April 2018 (Figure 54). A burn permit was obtained from the City's Air Pollution Unit on 5 April 2018. The BMB, Fire Department and Working on Fire cooperated to implement the burn. About 50 staff members were in attendance. The local Fire Department, Cape Peninsula Fire Protection Agency (CPFPA) and the Air Pollution Unit were informed of the burn, according to the permit requirements. No water was used to control or extinguish the fire due to the water restrictions in place. Some non-potable water was kept on standby to put out the fire, if needed, but this was not required. The burn site was cleared of small antelope (Cape Gysbok) that occur on site prior to burning and they experienced no danger. The burn took place between 10:30 and 12:30. No complaints were received about smoke. Notices appeared in the local press about the burn.



Figure 54: Ecological burn being undertaken at Milnerton Racecourse (Photo: Charl van der Merwe).

2) Joostenbergkloof

A site meeting with experts from CCT BMB, SANBI and Kew was conducted in October 2017 and again in February 2018. It was decided that it was critical to conduct an ecological burn by the end of March in order

to save the remaining individuals and, with the burn through the senescent veld, give the older plants an opportunity to open cones, drop seed and hopefully increase the population. The prescribed ecological burn was conducted on 3 April 2018. Unfortunately, only small patches were burnt and far less than the planned 11 ha, as a result of the veld being too patchy, with no ground litter to carry the fire and with almost no wind.

6.3 Brush Pile Burning

A total of 141 brush pile stacks were burnt across the reserves during the year (Figure 55). The need to stack and burn as a method of fuel load reduction is being assessed as a result of the ecological research being conducted at the Blaauwberg Nature Reserve. Brush pile burning only takes place if there is a fire hazard, because of the associated ecological damage and the heat scar created.

Limiting stack burning has also supported minimising water use, important in the current drought.



Figure 55: Staff burning brush piles at Tygerberg Nature Reserve.

7. NATURE CONSERVATION

7.1 Overall Reserve Management

The reserves below were recognised at the Branch's Performance Recognition and Teambuilding Day in November 2017.

Reserve of the Year: Tygerberg Nature Reserve and area (Bothasig and Van Schoorsdrift) (Figure 56)

The reserve staff have worked together to resolve illegal encroachments; consolidating and incorporating open space into the reserve; continued restoration on Bothasig and Van Schoorsdrift (newly acquired land); ecological burns over many years have restored the vegetation. This is one of the only reserves that is dedicated to conserving biodiversity through the back to basics approach which includes seed collection, planting and monitoring. The reserve under Penny's leadership needs to be recognised for this.

Nominated by Julia Wood; Snr managers



Figure 56: Reserve of the Year certificate presented at the annual Performance Recognition and Teambuilding Day.

Runner up: Bracken Nature Reserve and area (Hassendal; Perdekop)

Despite not having the best office space and using a container as an EE Centre, they have managed to make the most of the space. Bracken Nature Reserve is currently welcoming over 200 visitors a month and the play area proved to be a great asset to the reserve. The space where the small house is, is now an amphitheatre for the Spring Event cannon firing. The old building has been phased out and is now going to be seeded with seeds collected by the team. The reserve staff has made sure that protecting our biodiversity remains our focus, we don't compromise on that! The reserve's unique biodiversity is constantly highlighted through media releases and EE programmes. The reserve team also ensures that they work closely with other departments.

Nominated by: Julia Wood; Snr managers

Highly Recommended: Wolfgat Nature Reserve

The team at Wolfgat Nature Reserve are managing the vegetation; consistent success in clearing woody aliens; controlling illegal activities; and working with the communities which border the area.

Nominated by: Julia Wood

7.2 Management Effectiveness of the nature reserves

It is recognised worldwide that management effectiveness should be monitored via a Protected Areas Management Evaluation tool. The most commonly used is the Management Effectiveness Tracking Tool (METT) developed by WWF to assess and monitor the management of protected areas. The CCT was the first organisation in South Africa to formally adapt the METT. As a result of the work that the City undertook, the tool was taken up first by Cape Action for People and Environment (CAPE) and then CapeNature. Shortly afterwards it was further adapted and taken up by DEA. This tool is now prescribed by DEA that all protected areas in South Africa will undertake a METT every two years. The latest version is the METT-SA03.

The new version of the Management Effective Tracking Tool (METT-SA03) assessment was completed for all applicable reserves and conservation areas. The process is now in the verification stage, where evidence of performance is evaluated before the final scores are approved by the Branch Manager and submitted to CapeNature, who in turn will submit them to the Department of Environmental Affairs. The Ramsar site, False Bay Nature Reserve was also aligned to Ramsar-METT (R-METT). The City hosted workshops with CapeNature in October 2017 on the METT-SA03 and with DEA in November 2017 on both the METT-SA03 and R-METT. These workshops enabled staff to engage with the METT-SA03 tool.

As part of management effectiveness, senior managers visit the reserves each year between August and October. The annual reserve visits for 2017 were successfully conducted for all reserves (Figure 57).



Figure 57: Reserve visit to Table Bay Nature Reserve on 15/08/2018.

7.3 Assessing management systems in the nature reserves

In November 2018, a second group of eMBA students from the Danish University of Technology conducted their International Consultancy project in BMB assessing the management systems in the reserves. Following from the findings of the 2016 DTU team, the 2017 team planned to determine where and how to improve on some operational inefficiencies uncovered by the 2016 team.

In preparation for this work, a Time Spent survey was conducted with all staff on a salary level of T7 and higher over a period of six weeks (September to October 2017).

Each staff member of the required grade was sent five forms in total to complete over the period. The forms were sent to a sample of the target staff members each day asking them to complete the form the very next day. The form prompted the respondent to note all tasks performed in a day and how long each task took to complete. Respondents were able to remain anonymous. The overall response rate was 24,7%.

All responses were analysed by coding all tasks and grouping these according to the standard format of the Annual Plan of Operations (APO) used for operations planning and reporting in the Branch. The amount of time each respondent spent on each APO task was calculated and the relative proportion of time spent in each category was calculated.

Results showed that a disproportionately low percentage of time (10% overall) was spent on Biodiversity functions (Flora, Fauna, Soil, Fire and Water Management). The most time was spent on People work: 47% overall, including 17% spent on staff management. Another disproportionate amount is spent on Administration (31% overall), with a considerable proportion of time spent on reporting (9%). See Figure 58 for a diagrammatic representation of the results.

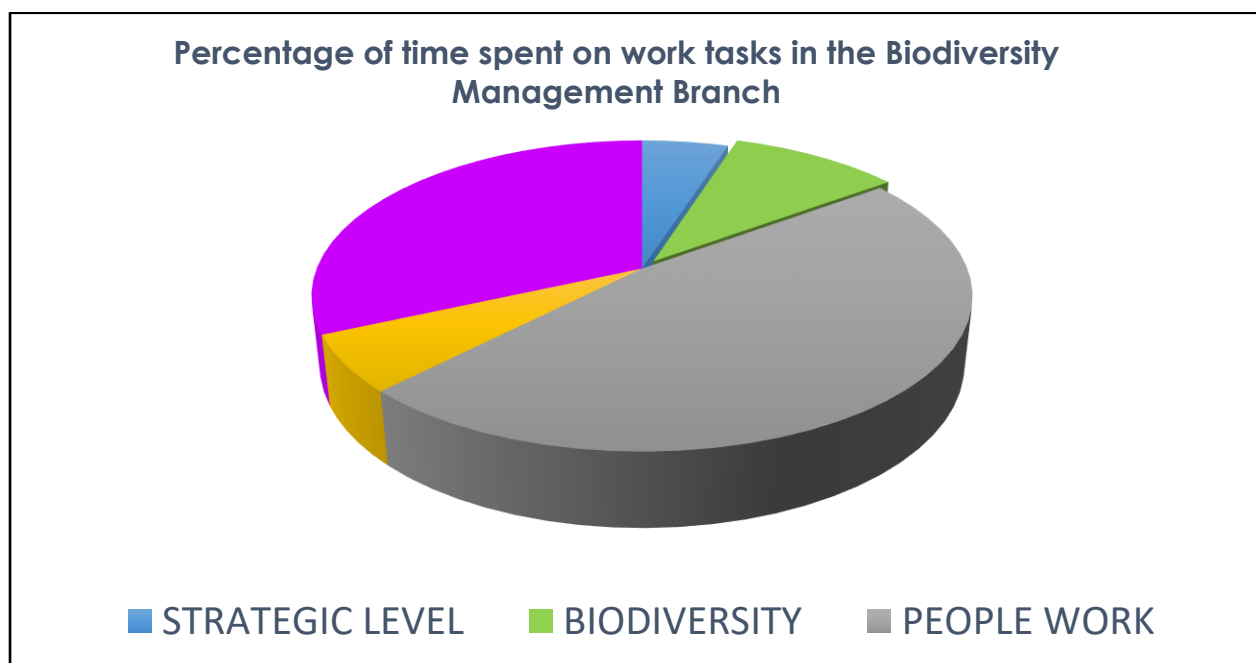


Figure 58: Diagram showing the proportion of time spent in the different categories of work in the BMB.

The 2017 DTU team assessed the results and chose to work on a way forward to improve reporting within the Branch, with the aim to facilitate improvements in efficiency by reducing the amount of ad hoc reporting required. The team assessed the existing reporting lines, structures and functions through team meetings and a workshop.

The recommendations for improving the reporting structure included suggestions to streamline the compilation of the end-product reports (the quarterly and annual reporting). The aim is to produce shorter and more succinct reports that draw from a reliable data collection method or system that allows for the automated extraction of results. The recommendations for moving forward included concentrating on building or fixing less complex systems that are accessible, trusted and used by all so that reporting source datasets are complete and correct. The team also suggested applying an Urgency vs Importance Matrix compiled as a product of the workshop when assessing what should be covered in each type of report.

BMB was also advised to remain aware of technological advances that will allow for automation and improvement in efficiency to plan ahead to adapt to changes in reporting requirements. A Data Management work group should be established to lead improvement.

8. PEOPLE AND CONSERVATION

8.1 Environmental Education

1) Formal environmental education

A total of 34 951 learners from 531 schools (with 13 507 adults) resulted in 48 466 person days of education (Figures 59 and 60). Including ad hoc education related events described below, 71 266 individuals were involved in formal education, events, exhibitions, formal or awareness activities on and off reserves. This included the work under taken on the reserves by the City's partner, CTEET. Figures were similar to last year and more than predicted targets (e.g. 40 000 person days of environmental education). The past financial year saw the Environmental Calendar Days celebrated, including: Arbour Day, Heritage/Tourism Month, Coastal Clean-Up Week, Marine Month, Western Leopard Toad Month, Biodiversity Month, Wetlands Month and Water Week (with an invasive species topic). Various holiday programmes were successfully held at the nature reserves throughout the year.



Figure 59 (Left to Right): Madrasa learners meeting a chameleon along the pathway at the Rondevlei Section of the False Bay Nature Reserve; Learners from Manzomthombo Secondary school doing bird watching at Table Bay Nature Reserve; Learners from Somerset College take a walk around Helderberg Nature Reserve.



Figure 60: Environmental Education Programmes on the nature reserves.

2) Events, holiday programmes, exhibitions and other

In total 26 special events were held at the nature reserves with approximately 4 553 people attending. Events ranged from annual events such as the Helderberg trail run to monthly events such as the Tygerberg Full Moon walks.

In addition to the formal events, 2 973 people attended guided hikes through the City's nature reserves during this period.



Figure 61: Grade 7 learners from Impendulo Primary School engaging in an interactive wetlands exhibition at the Invasive Species Unit stand on 2 February at the Kayelitsha Wetlands Park.

The BMB had many exhibitions across the city with an estimated 5 503 people attending. Exhibition themes varied, but the most prominent three included careers, marketing and educational exhibitions (Figure 61).

Awareness event topics included fire awareness, baboon awareness, snake awareness and beach safety. Over 4 955 people were reached. Community conservation training sessions were held this year with approximately 1 061 community members being trained. General community engagements included 1 500 people through various contact sessions. Approximately 1 947 people participated in activity based learning efforts such as beach clean-ups and hacks. This number was similar to last year.

Education support was provided by People and Conservation Officers to students, teachers and volunteers. Over 161 people received this support.

8.2 Communication

1) Resource development

- Outdoor signage:
 - DCCP signage implementation finished
 - Witzands Aquifer NR (new facility) signage part 1 implementation done
 - Witzands Aquifer NR (new facility) signage part 2 mock ups completed
 - Helderberg designs and implementation completed
 - Strandfontein designs completed
 - Blaawberg West Coast Way signs started (Figure 62)
 - Zandvlei Park Run Signage draft 2 completed (Figure 63)
- All A5 reserve pamphlets were converted to A4s
- The biodiversity section of the Smart Living book was revised
- Various ad hoc resources and requests were dealt with (notices, templates, invitations, etc. including design, approval and coordination) (Table 14). Of the 55 resource requests dealt with, some were very large with over 50 designs, whereas others one simple page.



Figure 62: Three of the 12 new signs created for Blaauwberg Nature Reserve. These showcase the new TDA branding being used.



Figure 63: Two of the five posters designed for Zandvlei Estuary Nature Reserve.

Table 14: Resource and other queries dealt with during the 2017/18 financial year.

Project	Status
TDA Templates for project	Complete
Witzands complex new flags	Complete
Vehicle decal Charline McKie	Complete
Tygerberg new flags	Complete
Greywater booklets for exhibition	Complete
Proofread letter to school for garden partnership Bracken NR	Complete
Woodbridge Island	In Process
Volunteer application forms redo	Complete
Milnerton Racecourse sign	Complete
Smart Living pledges print	Complete
CSU Mugs brand info and approval	Complete
Tick questionnaire proofread and edit	Complete
Biodiversity Report Pictures	Complete
Milnerton second and third signs	Complete
GVI contracts and new information for volunteers edit	Complete
Certificates EPWP training	Complete
Strandfontein Signage replace	Complete
Temporary rehabilitation in progress sign Scouts at Zandvlei EE programme	Complete
Wolfgat Signage	In Process
False Bay Birdathon Poster redo	Complete
False Bay Maps - volunteer project	Complete
ISU Banner walls	In Process
Urbio Abstracts proofread /check EE	Complete

Project	Status
Human interest stories source for Biodiversity book	Complete
Zandvlei NR Park Run Signage	In Process
Smart Living Book Review	In Process
Signage goods for Natalie Newman	In Process
Blaauwberg West Coast Signs WESSA	In Process
Mandela Day Invitation check	Complete
Restoration posters various	Complete
Signage Westlake	In Process
Diep River Signage	Complete
Blaauwberg Buss Card request	In Process
Licence disc size stickers of identifier	In Process
Vehicle decals 2018	In Process
Mallard Duck poster	Complete
Helderberg Signage	Complete
Directional maps (additional)	In Process
Zandvlei Signage part1 - informative	In Process
Zandvlei Signage part2 - interpretive	In Process
Fynbos Book Pictures	Complete
Order CDs for photos	Complete - cancelled
Quote for 200 USBs	Completed
Baboon Newsletter revised June 2018	In Process
Holiday Programme Invites check	Completed
Vouchers for Sustainable Energy Markets	In Process
Tygerberg Youtube videos	Completed
Notice Fire Blaauwberg NR	Completed
Durbanville Library Holiday Programme Letter/Table Bay/Blaauwberg	Completed
Melkbos Pamphlets amend hectares (A5 and letter)	Completed
PAAC thank you letter draft	In Process
Photo and caption holiday programmes	Completed
Witzands Aquifer Mandela Day invitation	Completed
Witzands gate goods (entry form/vehicle and pedestrian access cards)	Completed

2) Media matters (media releases, radio interviews, articles, internal journals, etc.)

Stories were submitted to CONTACT and BMB related stories were in the editions throughout the year. There were also many media releases and media queries last year; some were written by BMB communication staff, for others a response was simply coordinated or an already written article edited and sent up for approval.

8.3 Protected Area Advisory Committees

Current PAAC's include:

- Blaauwberg Nature Reserve
- Bracken Nature Reserve
- False Bay Nature Reserve
- Helderberg Nature Reserve
- Lourens River Protected Area
- Steenbras (including Harmony Flats)
- Table Bay Nature Reserve
- Tygerberg Nature Reserve (including Bothasig)
- Witzands Aquifer Nature Reserve
- Wolfgat Nature Reserve
- Zandvlei Estuary Nature Reserve

The establishment of Protected Area Advisory Committees (PAACs) is provided for in the Protected Areas Act, and is primarily intended to involve neighbouring communities in decision-making regarding protected areas. In terms of the Constitution of the PAACs, the committees serve a period of three years, after which they must reform. All existing members would have to apply to renew their membership, and prospective new members can also apply. Advertisements were placed in local and regional newspapers from 14-18/05/2018. The closing date for application submissions was on 14/06/2018, and a panel will review all applications in the next financial year (2018/19).

Three chairperson forums were held during the year and following elections, new updated Subcouncil representatives were appointed to all the PAACs.

8.4 Subcouncil Presentations

BMB staff attended 22 Subcouncil meetings. A total of 26 Subcouncil staff and councillors from seven Subcouncils visited the nature reserves during October and November 2017.

8.5 Customer Service

C3 notifications

The notifications are being dealt with in the prescribed timeframes. Some line departments are still forwarding notifications older than 10 days, which is contrary to the City Manager's directive. Usually this would cause a delay whilst it is referred back to the sending department for closing and for the creation of a new notification. We usually action the request whilst waiting for the rectification. This enables the branch and the department to meet the prescribed timeframes. These are dealt with on a case by case basis.

8.6 Tourism

In the last financial year, 412 885 visitors visited CCT nature reserves via the manned access points and key events. Income was R1,9 m across the nature reserves as a result of paying gates and hall hiring.

BMB continues to market its nature reserves wherever possible. This mostly includes media releases, exhibitions, and internal media (CONTACT and Green Piece) pamphlet handouts, e-mailing all contacts, using the EE Friends, the City's EE and Comms Forum and showcasing the reserves at events.

1) Witzands Dunes

The Witzands Aquifer Nature Reserve is an important area for biodiversity and water security and is part of the Dassenberg Coastal Catchment Partnership, a critical climate change corridor as recognised by WWF-SA. The Atlantis Dunes within the Witzands Aquifer Nature Reserve provides a high water recharge for the Atlantis Aquifer and it is an important recreational and commercial area for many activities including off-road vehicles, sandboarding and film productions.

Currently, these activities are managed remotely, which is a risk to all users. In order to enhance the use and to promote access (for environmental education purposes) to the area, the City is constructing a Multi-Purpose Centre to serve as a gateway to the Atlantis Dunes. There are also facilities such as a hall and a boardroom for hire at the office complex. The tariff for community conservation activities, including the hiring of the hall is waived for communities if related to nature conservation activities. The final report for the transfer of functions from Bulk Water's Water and Sanitation department to the BMB was approved and implemented. With it a combined total budget and income of over R2,3 m was transferred. Positions of two Visitor Access Control Officers (VCO) and Specialist Clerk (SC) have been approved and are currently undergoing Human Resources processes to have them filled.

The Multipurpose Centre (see infrastructure and contract management), besides being the administrative centre for managing access into the Atlantis Dunes for the above recreational and commercial activities, will ensure sustainable provision of water to the local communities through the protection of its biodiversity and provide employment opportunities for local communities. The facility recently advertised 64 m² for commercial activity to increase the economic opportunity available to the local community. A recent approval for a MyCiTi bus stop at the entrance off Dassenberg Drive will further improve the accessibility to the new complex for local communities and staff alike.

2) Cape Town Visitors Guide

The 2018 Cape Town Visitors Guide (by Cape Town Tourism) was updated with all the relevant nature reserve information and additional biodiversity information added.

8.7 Volunteers, Friends Groups and Sponsored Programmes

1) Sponsored programmes

Sponsored programmes, mainly through CTEET, resulted in 645 individuals and 9 776 person days of work in the BMB (approximate value is R5,38 m). Some 29 staff members were employed in the conservation projects at the sites listed below:

- Invasive Species Unit – 4 staff members
- Gantouw Project – 4 staff members
- Kenilworth Racecourse Conservation Area – 4 staff members
- Muizenberg East Biodiversity Cluster – 1 staff member
- Strandfontein – 2 staff members (this ended on 31 December 2017)
- African Penguin Conservation Project – 4 staff members
- Milnerton Racecourse Section of Table Bay Nature Reserve – 1 staff member
- Atlantic Beach Golf Course Conservation Area – 3 staff members
- Haasendal Nature Reserve – 1 staff member
- Western Leopard Toad Underpass Project – 1 staff member (this ended in September 2017)
- Helderberg Eco-Schools Programme – 2 staff members (only 1 from January – June 2018)

- Kedestes Conservation Project – 1 staff member
- Princessvlei Conservation Area – 1 staff member (City Parks site)
- Zoarvlei Wetlands section of Table Bay Nature Reserve – 1 staff member

In the past year CTEET continued to be BMB's largest partner in terms of programmes offered and on-the-ground management input.

2) Volunteer programmes

The volunteer action plan was revised to better include the City's volunteer policy instructions. A new email account set up exclusively for volunteer queries and People and Conservation Officers were trained on how to deal with volunteer queries. Changes have been rolled out across the Branch. CTEET is assisting with the administration. The volunteers (mainly Friend groups) resulted in 461 individuals and 3 771 person days on the reserves (valuing approximately R850 000) (Figure 64). The work undertaken by the sponsored and volunteer programmes equated roughly to a third of the work undertaken by permanent staff.



Figure 64: Volunteers doing a beach clean-up at Blaauwberg Nature Reserve (left) and Scout volunteers rehabilitating a bank at Zandvlei Nature Reserve (right).

8.8 Skills Development

The training of EPWP, as well as formal skills development programmes, is critically important. Of the eight permanent workers (a field ranger and admin posts in the branch), seven were filled with students, interns, and EPWP staff. Another three promotional posts were filled with previous skill development individuals.

The BMB was involved in various skills development programmes including the City's Urban Sustainability Graduate Intern Programme (three interns), WIL Nature Conservation students, and the CTEET skills development programmes.

1) City's nature conservation WIL students and interns

BMB assisted the CPUT advisory board committee to plan the way forward for the work integrated learning (WIL) programme and new curriculum. The WIL Student programme continues to be of a high standard. This year's results of the Cape Peninsula University of Technology (CPUT) nature conservation students (WIL students) were exceptional with one of the City's students being awarded the best overall student from CPUT. In eight out of the last 14 years, a City student has been the best overall CPUT student.

In 2017, 13 students were placed with the CCT, of which nine successfully completed their year. The average score for the students that submitted work for examination was 58%, which is 2% higher than the class average.

The CCT students performed really well in the individual WIL categories, three of the five prizes went to CCT students. Matthew Gatinho, who was based at Rietvlei, did the best overall in Conservation Compliance, while Nwabisa Majali, from Wolfgat, had the highest marks for Conservation Communication. Ntombi Lolwane who was based at Steenbras performed the best in Resource Management. Ntombikayise Lolwane received an award from BMB for the best overall student for 2017.

We currently have 11 WIL students and 3 interns for 2018 (Head Office Communication and Education, and one Education Officer at Tygerberg and one at Helderberg).

Other conservation organisations have indicated that they will be increasing their WIL student intake for 2019. Their recruitment processes are more efficient than ours and we may only be able to fill eight positions with WIL students in 2019.

2) CTEET learnerships and interns

The largest skills development programme on the nature reserves is in partnership with CTEET. All in all, 74 youth (learners and interns) were based on the City's reserves over the course of 2017/18 (Table 15).

Table 15: Skills development programme in partnership with the City.

Name	Programme	Number	Length of Time	Reserve	Comment: Qualified and/ job
NQF 2 Nature Conservation: Resource Guardianship	Learnership	25	1 July 2017 – 30 June 2018 (12 months)	False Bay NR Zandvlei NR Wolfgat NR Gantouw Project (Rondevlei Section) Helderberg NR Edith Stephens NR Harmony Flats NR Tygerberg NR CTEET	21 – Got qualification 3 – Employed
Conservation Scientist and Nature Conservation	Internship	13	1 July 2017 – 30 June 2018 (12 months)	False Bay NR Zandvlei NR Wolfgat NR Steenbras NR Gantouw Project (Rondevlei Section) Helderberg NR Edith Stephens NR Harmony Flats NR Tygerberg NR CTEET	10 – Employed 1 – Continuing studies
NQF 2 Nature Conservation: Resource Guardianship	Learnership	9	1 October 2017 – 31 March 2018 (6 months)	Tygerberg NR DCCP False Bay NR Gantouw Project (Rondevlei NR) Wolfgat NR ABGCCA (Blaauwberg NR)	9 – Employed 7 – Got qualification
NQF 2 Nature Guiding	Skills Programme	7	1 July 2017 – 31 January 2018	CTEET – Rondevlei and Zeekoevlei education	2 – Continuing studies 4 – Employed 7 – Got qualification

Name	Programme	Number	Length of Time	Reserve	Comment: Qualified and/ job
Nature Conservation	Internship	10	16 October 2017 – 15 October 2018	False Bay NR Wolfgat NR Steenbras NR Table Bay NR KRCA Helderberg NR Edith Stephens NR Harmony Flats NR Tygerberg NR Gantouw Project (Rondevlei NR)	7 – Still on programme 1 – Employed 2 – Resigned (personal reasons)
Nature Conservation	Internship	10	14 November 2016 – 13 November 2017	Durbanville NR Harmony Flats NR Helderberg NR Tygerberg NR False Bay NR Zandvlei NR Table Bay NR KRCA	7 – Employed 2 – Continuing studies

9. SECURITY AND LAW ENFORCEMENT

Of concern this year were several land invasion attempts on False Bay and Edith Stephens Nature Reserves. These invasions were removed. There were also large scale land invasions on off-reserve sites (page 8). These sites have very high biodiversity.

The security situation in the protected areas and BioNet remains a concern and escalated in 2017/18. In addition, there were a number of service delivery protests and taxi violence episodes on the boundaries of the City's protected areas putting pressure on staff and negatively affecting service delivery. All protected areas noted break-ins, vandalism or theft of infrastructure during the year. Again the public toilet facilities on the eastern shore of Zeekoevlei were a target for vandalism and theft.

The safety of staff, visitors and infrastructure continued to be a concern. Poaching, arson, illegal dumping, illegal squatting, illegal overnight structures, snare hunting, and grazing of livestock are common occurrences. Overall, there has been an increase in vagrancy and apart from the more formalised land invasion, an increase in squatting has been observed. Safety of the invasive species contractors is also becoming an increasing concern and certain teams were removed from various sites due to safety concerns. Foot and vehicle patrols are conducted on a daily basis in all management sections of the protected areas (staff are assisted by Quemic Rangers). During these patrols various other sightings are also recorded, including animal tracks, wildlife sightings, vandalism, damage to infrastructure, and overflowing sewers.

Law Enforcement continues to be a challenge with no dedicated capacity to fulfil this essential function.

1) Illegal occupants and illegal structures

Displaced people and illegal structures remain some of the biggest challenges in the nature reserve. Despite years of effort to remove make-shift shelters from the natural spaces, the pressure does not seem to abate (Figure 65).

Blaauwberg Nature Reserve

The continued refusal by the occupants at Blaauwberg's valley to vacate the property poses a threat to the reserve's fauna and flora, vegetation restoration efforts and archaeological research.

Slangetjebos (False Bay Nature Reserve)

The illegal land occupancy at Slangetjebos (False Bay) continues, which results in informal shacks, farming and illegal commercial activities in the form of plastic recycling. Informal farming is still taking place in the kraal structures that cannot be removed due to their age. Again this year, three court hearings have been held to deal with the illegal recycling facility; however, at the time of writing these had been postponed on each occasion by the defence.

Table Bay Nature Reserve

The illegal occupation sites are extremely unsanitary and hazardous due to waste, faeces, scrap, litter and drug paraphernalia strewn everywhere. These displaced people mainly gain income by selling scrap metal and recyclable waste that they collect from residential and industrial areas. If this problem is not addressed on a regular basis, the nature reserve will be completely overrun by illegal structures and waste in a short time.

Several joint operations were conducted with Law Enforcement to remove illegal structures and sleeping places of displaced people in the nature reserve. The management sections affected the most include the Zoarvlei Section, Coastal Section, Diep River, and the Milnerton Lagoon.

Law Enforcement issued fines to some illegal occupants for transgressing the local by-laws but these fines don't do enough to deter the displaced people since they don't have identity documents and they cannot be traced to an address. Some illegal occupants become violent when confronted. One person attacked a staff member in a vehicle and broke the windscreen. The attacker was later arrested and charged with

attempted assault and causing damage to Council property. The Social Development Department offers assistance to displaced people to reintegrate them into society, but some displaced people don't accept offers of assistance.

In the Zoarvlei Section, the Transnet Freight Rail Agency and the Paarden Eiland City Improvement District are also involved in the joint operations, since many of the displaced people move under the railway bridge or the industrial area during joint operations.

2) Domestic animals

Domestic farm animals, including goats and cattle, that illegally graze in the Diep River Section were impounded on several occasions during joint operations with Law Enforcement (Figure 66). A total of 44 goats and five cattle were impounded during one such operation. The Diep River Section contains Endangered Cape Flats Sand Fynbos. The intensive grazing of cattle and goats is threatening the future survival of this vegetation in the nature reserve. However, Law Enforcement decided to stop doing impoundments since violent protest took place in Dunoon and the cattle are owned by residents in Dunoon.



Figure 65: Staff clearing a site where people were sleeping.

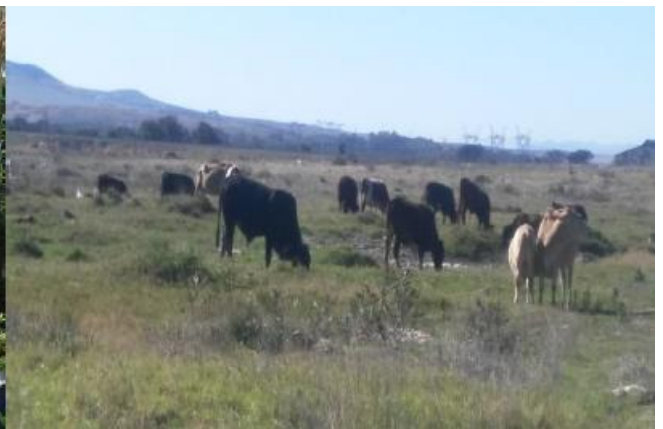


Figure 66: Cattle grazing in the Diep River.

3) Visitor and staff safety

In order to alleviate the visitor and staff safety and security issues, Quemic Africa, the City's service provider, deployed rangers for the provision of visitor and staff safety management in the nature reserves and open spaces in the operational area of the CCT. Rangers are deployed on a 24/7 basis, consisting of two rangers and a 4x4 vehicle. They are the first line of medical and emergency fire response and also respond to water emergencies, water rescues, crime and related offences, anti-poaching and environmental emergencies. They are responsible for escorting/ guiding services to contractors, reptile handling and removal, after-hour gate or building closing and opening, as well as regular safety and security visits, mobile data collection and reporting and assistance during the execution of special law enforcement operations with SAPS, Metro Police and Law Enforcement Units.

Quemic Africa has a control room, manned on a 24/7 basis. This is the heart of the Quemic operation and also serves as the emergency contact centre to members of the public. Operations and emergency call-outs to applicable CCT nature reserves are planned and executed from the control room.

Quemic Africa currently renders a service to the following CCT protected areas and offices:

False Bay Nature Reserve; Zandvlei Estuary Nature Reserve; Wolfgat Nature Reserve; Westlake Conservation Offices; Edith Stephens Nature Reserve; Tygerberg Nature Reserve; Durbanville Nature Reserve; Harmony Flats Nature Reserve; Witzands Aquifer Nature Reserve.

10. STAFF MATTERS

10.1 Retirements and Appointments

Two new staff members joined the Wolfgat Nature Reserve from other Council departments. The protected areas were also bolstered by the placement of a number interns; learnerships and students completing their experiential training for the Conservation Diploma. Although funding for the Metro SE conservation areas staffing was approved, no appointments were made due to the extremely protracted processes for the creation and approval of new positions within the City. Hopefully these will be filled early in the new financial year. Ten posts were filled last year (Table 16). The pack test has been successfully implemented as part of the interview process for the majority of BMB posts.

Table 16: New staff

Name	Source	Location and designation
Damon Hope	WIL student	Tygerberg Field Ranger
James Morton	CTEET intern	Durbanville Field Ranger
Oratiloe Khunyeli	EPWP	Invasive Species Unit Snr clerk
Siphelele Mdlulwa	EPWP	Invasive Species Unit Snr Clerk
Phumla Ntakana	From City database	Harmony Flats worker
Thozama Notshati	CTEET	Field Ranger
Lamla Sigenu	Advert outside	Artisan engineer Blaauwberg
Stefan Dreyer	BMB staff worker	Tygerberg Field Ranger
Rolivhuwa Murovhi	BMB staff Field Ranger	False Bay Reserve Supervisor
Phumudzo Ramabulana	BMB staff Quality Controller	Professional Officer (Invasive Species Unit)

10.3 Staff Training

Training for permanent staff was undertaken in terms of WPSDP and is shown in Table 17.

Table 17: Courses; numbers and person days for permanent staff.

	2014 – 2015	2015 – 2016	2016 – 2017	2017 – 2018
Number of courses	72	82	75	76
Number of staff that attended	126	143	123	120
Number of person days	1 760	1 188	620	595

There has been a slight decrease in the training interventions attended during the 2017/18 financial year and a marked decrease in the number of staff who attended training interventions.

Highlights

- The ICS 100 and 200 was well attended

Challenges

- Small plant operator tender has just been finalised. The delay has resulted in a backlog of trainees.
- The driving instruction tender has expired and a new tender is currently being processed.

10.4 Staff Industrial Relations (IR)

All IR matters were dealt with timeously and reported on via the formal SAP process. Please refer to Table 18 for the details of the various disciplinary matters that were attended to during the last financial year.

Table 18: Summary of the various disciplinary matters attended to.

Disciplinary				
	2014 – 2015	2015 – 2016	2016 – 2017	2017 – 2018
Financial	0	0	0	1
Non-financial	7	7	2	3
Informal hearing	0	2	4	5
Counselling	0	5	7	1
Appeals	0	1	0	1
Grievance	2	3	2	0
Total	9	18	15	11
11Incapacity	6	7	11	10

There has been a slight decrease in the amount of IR matters during the period under review (11) compared to the previous corresponding period (15). This translates to about a 27% decrease.

10.5 Staff Health and Safety

Highlights

- We have finally obtained permission to make use of Fire and Rescue's tenders' for PPE, but are still waiting for some detail before finalising the documents.

Challenges

- There has been a slight increase in IOD cases, mainly due to very small incidents occurring and is of such a nature that not much can be done to mitigate (Table 19).

Table 19: IOD cases as per the EHS Incident Management.

IOD Injuries			
2014 – 2015	2015 – 2016	2016 – 2017	2017 – 2018
17	14	13	19

10.6 BMB Performance Recognition and Team-Building Day

BMB has over 175 permanent staff members in 17 offices across the City. Many of these offices have little communication as telephone lines are often down and emails can be intermittent. Communication is a challenge and staff, especially field staff, hardly ever get to interact with fellow colleagues. In order to facilitate interaction, BMB has, since 2007, arranged a staff performance recognition and team-building day every year in November. This has been very successful and bolstered staff morale. The friendly competition between reserves also improves productivity. Each year various awards are handed out and this has become a motivator for staff through the year and a highlight of the day.

Last year's event was held on 10 November 2017 at the Zandvlei Caravan Park. The event was attended by Cllr Brett Herron and Commissioner Whitehead. The recipients of the awards are chosen by the Branch Manager in consultation with the senior managers. Awards are made on the basis of outstanding annual performance; the annual reserve visits and a nomination process open to all branch staff.

Outstanding staff members branch-wide:

David Morris, Reserve Supervisor, Hassendal

He has really taken on the role as site manager and is doing a great job. Hassendal is going from strength to strength. He fits in with the Central family and is a great asset.

Nominated by: Tshepo Mamabolo

Nestus Neethling, Head Office

Always willing to help, good listener and can give good advice; assistance with all programmes especially the students. Very cooperative and a willing colleague I've worked with. He always finds ways to meet project objectives without any complaints.

Nominated by: Erika Foot; Bongani Mnisi

Jerome September, Environmental Education Officer, Wolfgat

Environmental Education achievement. Outstanding work done in the community and building relationships with schools, teachers and community members. Jerome has consistently ensured that he reaches a high number of learners.

Nominated by: Roy Ernstzen; Lewine Walters

Leighan Mossop, Monitoring and Evaluation Co-ordinator

Works tirelessly to encourage and mentor students, going above and beyond the call of duty. Leighan is always very helpful and willing to go out of her way to assist, even at events after hours. Leighan is constantly researching up to date methods relating to M&E.

Nominated by: Dalton Gibbs

Mfundo Tafeni, Professional Officer, Invasive Species Unit

He is someone who is willing to not only do their job well, but who goes above and beyond, whether that's helping others or just being a general source of energy and upping the standard for the rest of the team. Mfundo has worked in all of the ISU projects and has grown tremendously from being appointed with the unit straight after his student years to become the senior project manager in the unit. After taking over the management of the WFW terrestrial project the relationship between the CCT and DEA Bellville office has been thriving. His peers respect him for his knowledge, kind spirit and sense of humour. I also know that during the potjie completion you need to watch him as he has been known to borrow or steal ingredients.

Nominated by: Chandre Rhoda

Shireen Pieterse, Admin, Invasive Species Unit

She has proven herself over the years with the unit and knows the workings and dealings of the unit inside out. She goes over and above her core duties and also implements small projects. In the last financial year she managed a team of 150 EPWP workers over 5 days when we received the additional funds. She did not only manage the team but did absolutely everything from recruitment, EPWP induction, administration and reporting of the project. She is the most senior of the admin staff in the unit and is one of the go-to people in the unit. With her vast knowledge of EPWP and all the contacts that she has built up, she always brings solutions to problems even if it is outside her core role.

Nominated by: Chandre Rhoda

Natanya Dreyer, Snr Environmental Education Officer

She does a lot behind the scenes and yet her work continues to make the branch shine i.e. coordinating the signage, running Growing Together, the EE workshops where P&C learn and grow each other. She deserves recognition.

Nominated by: Bongani Mnisi

Eric Thobela Bunu, Reserve Supervisor, Bracken

Wow, what an amazing human being. No Work request is ever too much for him, he has been my rock since 2006, he has seen Bracken develop, he has shared my vision and he has contributed towards Bracken and Haasendal and now he wants to tackle Joostenberg. He always motivates the team, constantly wants to learn and strive for the best, he takes pride on his work and has never undermined authority. We have four alternative placement staff members in our team and he constantly, not a single disciplinary to his name, I don't have any doubt in my mind that should I move from Bracken, it will be in great hands and will continue to develop and be the best because he will be in charge.

Nominated by: Tshepo Mamabolo

Highly Recommended Teams**Hippo Capture Team Staff of False Bay Nature Reserve**

In a successful capture operation on 28 and 29 June 2017, a young male hippopotamus was captured at the False Bay Nature Reserve and translocated to the Garden Route Game Lodge. Here the young male hippo will join two female hippo and hopefully form a breeding herd. This hippo capture was done quietly and efficiently, which is no small feat!!

Nominated by: Julia Wood

Protected Areas Expansion Team / Cliff Dorse, Andre Rossouw and Jacques van der Merwe

This team has the responsibility of ensuring that we meet our biodiversity targets. At present our target approved in the IDP is 65% by 2022. As of June 2017, a total of 64% was reached. In the last three years, funds secured in the adjustment budget have been successfully spent on land acquisition (a process that usually takes two years was achieved in only six months!!)

Nominated by: Bongani Mnisi

Restoration Mapping / Pat Holmes and Charmaine Oxtoby

These plans are at the cutting edge of conservation planning and management. The plans will also link invasive species; fire and restoration plans. Once finished these plans will also allow us to monitor ecological success. Charmaine is also a volunteer.

Nominated by: Julia Wood

Invasive Species Unit / Chandre Rhoda and her team

This team has remained working at a high level despite the challenges and changes in the unit. They delivered on over 1 000 jobs and spent R4m in just over one week. They also created 2 620 job opportunities through the KA funding; and 775 job opportunities for line departments and 148 job opportunities for Working for Wetlands.

Nominated by: Bongani Mnisi

Biodiversity find of the year:**Flora**

Gladiolus orchidiflorus and various other geophytes found at Van Schoorsdrift

Abraham Saaiman

Nominated by: Cliff Dorse; Julia Wood

Fauna

Temminck's Stint

Asieff Kahn and Rolivhuwa Murovhi

Temminck's Stint: In late 2017 another extremely rare bird, a Temminck's Stint, was found at the Cape Flats Waste Water Treatment Works section of the False Bay Nature Reserve. This was the first record of the species in southern Africa for over 30 years and again over 1 200 people made the pilgrimage to see it.

Nominated by: Cliff Dorse; Julia Wood

11.ADMINISTRATION

11.1 Budget

Operational budgets were spent timeously. There was an increase of financial control on individual reserve income and expenditure. The Branch investigated overtime of staff and decided to re-schedule shifts to result in fair practice across the reserves and as a result a reduction in excess overtime. Items like tea, coffee and refreshments are no longer supplied to the offices.

- Controllable budget, including R&M – slightly overspent with permission.
- Opex – 97,22% (non-controllable staff budget was underspent).
- Ward projects 96% spent.
- Revenue was 158% (R1,9 m raised on the reserves).
- Kader Asmal EPWP:
 - R14 150 000 was allocated initially. Another R7,6 m was allocated at the end of April and then again in June 2018. In total, 99,09% of the budget was spent on priority projects.
- Capital budgets were spent timeously – 98,5% spent (R187 235,76 not spent; of which R80 000 was CRR and rolled over to 2018/19); all these funds were spent on priority projects.
- Additional R1,67 m Capex budget obtained for conservation land acquisition, but remained on Housing budget. Funds were spent.

In the last year, the City received over R6,24 m from the National Resources Management Programme (a programme which includes Working for Water and Working for Wetlands); 99,9% of the NRM funds were spent.

R2,2 m of other departments' budgets were made available to spend on Invasive Clearing by the ISU.

R426 174 obtained from TMF; Conservation@work and LandCare for invasive alien clearing; proclamation and construction of a mountain bike trail in DCCP.

Operational (R2,5 m for Symphony Way and R3,5 m for Vesuvius Way) and Capital funds (R9 m for fencing and vehicles) obtained for Metro SE CIP – facilitating development.

BMB motivated for additional funds; obtaining R4 m for the security budget. Additional budget was secured from Bulk Water for Witzands dunes.

11.2 Fleet and Assets

1) Fleet

BMB has 114 vehicles and 14 trailers.

The following 13 vehicles shown in Table 20 are due for replacement in terms of Fleet's criteria and will be replaced according to their budget availability. In the last financial year BMB received a number of new vehicles (Table 21). BMB benefitted greatly from this replacement roll and most of our aged light motor vehicles have been replaced.

Table 20: Vehicles which need to be replaced.

Reg No	Description	Age
CA435529	Mercedes Benz Unimog 4x4 1982	36
CA423885	Suzuki DR250 1983	35
CY181842	Suzuki DR250 1984	34
CA87451	Ford Triton 1988	30
CA418178	Mercedes Benz Unimog 4x4 1992	26
CFM16799	Isuzu 7 Ton 1996	22
CY34141	Isuzu F6500D(FN) 1996	22
CFR16583	Toyota Dyna 6-104 1997	21
CA654506	Suzuki DR350 1999	19
CA36508	Honda TRX250 2002	16
CA71234	Honda TRX250 2002	16
CA40175	Honda TRX250 2002	16
CA29882	Nissan Hardbody 2.4 4X4 2002	16

Table 21: New vehicles received by the BMB.

Registration Number	Vehicle
CCT33659	Toyota Hilux DC 4x4
CCT33526	Toyota Hilux DC 4x4
CCT33520	Toyota Hilux DC 4x4
CCT33592	Nissan NPR400
CCT33591	Nissan NPR400
CCT33882	Nissan NPR400
CCT31879	Vivo
CCT33574	Nissan NP200

The arrival of the Toyota 4x4s enabled us to access the boreholes that were being drilled in the Steenbras catchment area to conduct impact assessments and ongoing monitoring.

Some drivers are still not doing their pre-trip inspection before leaving the depot. This is evidenced by some vehicles having unexplained damages that are not repaired by Fleet. We will be liable for the cost repair from our own Cost Centers. Many new staff members have been tested by Fleet Risk and failed to obtain their Council Authorisation due to their inability to drive properly. This poses a risk to the branch as these staff members may not use Council vehicles.

2) Assets

We have about 3 032 assets within the BMB, of which 85,29% have been verified to date. The verification process is ongoing and will be aided with the assistance of two additional staff members during this period.

Radio Data

Asset verification has again highlighted the need for maintaining a current radio database. It is recommended that each region includes a current radio database as part of their quarterly reporting and that any changes be noted in their report. This will ensure that the branch's radio database is current and can be accounted for.

11.3 Infrastructure

The infrastructure priorities in the branch remained the same as last year and can be seen in Figure 67.

The Wolfgat Environmental Education Centre Phase 1 has been completed and BMB is fixing final snags. Telecommunications and City intranet has been an issue and is still not resolved. Funds will have to be sourced for Phase 2. Concept planning for the Helderberg Visitor Education Facility has been completed and the project is on track for completion by June 2020 with the appointment of consultants to do detailed design and run the project through to completion.

Sadly, the building at Harmony Flats, a National Department of Tourism (NDT) project, remains uncompleted. NDT have now agreed to transfer the building to the City and a formal process to resolve the issue is underway. Completing the Harmony Flats building remains a priority.

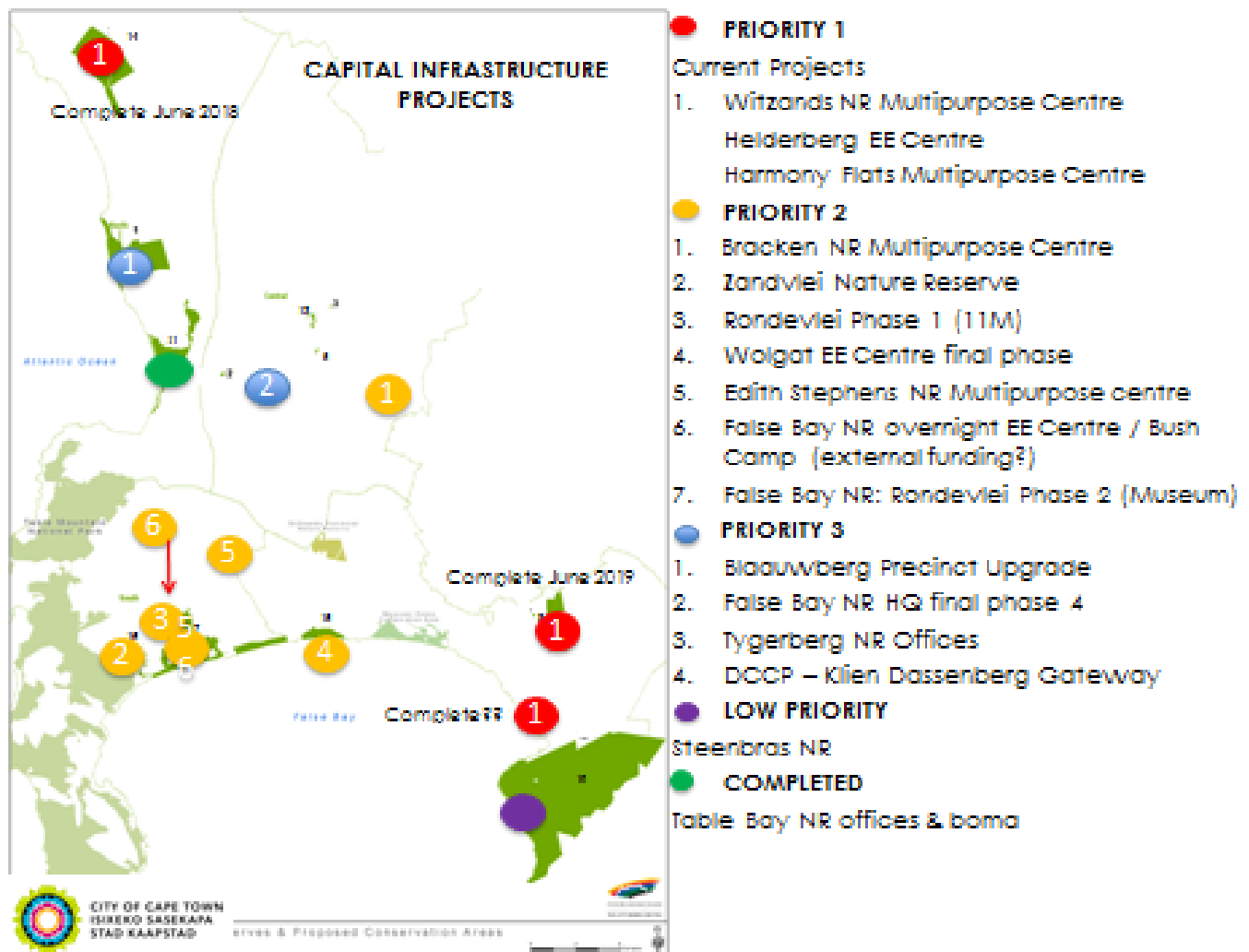


Figure 67: Priority capital projects in BMB.

1) Witzands Multipurpose Centre

The Witzands Aquifer Nature Reserve's Multipurpose Centre Project 34Q/2016/17 handed over to the construction contractor in early February 2017 was completed in June 2018 (Figure 68). Mari-Louise Van Den Berg from the Environment and Heritage Branch was excellent as the onsite and construction Environmental Control Officer. The department is highly appreciative of her work and dedication to the project. The project received an additional Capital injection of over R1 m with which various items such as the procurement of Information and Technology (IT) Equipment, completion of paving the large parking area within the building, installation of electricity to and motorisation of the main gate to the reserve, installation of an exit loop by the works yard area, and installation of fibre and Wi-Fi communication system within and outside the building to be accessed by the public were accomplished. The newly constructed building will be launched in August 2018.



Figure 68: Completed Witzands Multipurpose Centre.

The entire centre, except for the Environmental Education Hall, Staff Quarters and equipment such as fridges, microwaves, beds and tables was furnished with second-hand furniture. The centre will be ready to operate as soon as telecommunication is made live.

2) Milnerton Race Course Section, Table Bay Nature Reserve

The dismantled boardwalk in the Northern Area of the Milnerton Racecourse Section (MRC) was replaced. While all materials were sourced by the Environmental Management Committee (EMC), the boardwalk itself was built internally by staff (Figure 69). The EMC and Paarden Eiland City Improvement District (PECID) have both donated new signage for their respective sections of the reserves. This is a result of the partnerships built over time. It is critical that such relationships are maintained to ensure continued support of conservation initiatives that are of the highest priority, but without budget allocations (Figure 70).



Figure 69: Old boardwalk replaced internally by staff (top and bottom).



Figure 70: EMC and PECID donated signage for MRC (top) and Zoarvlei (bottom).

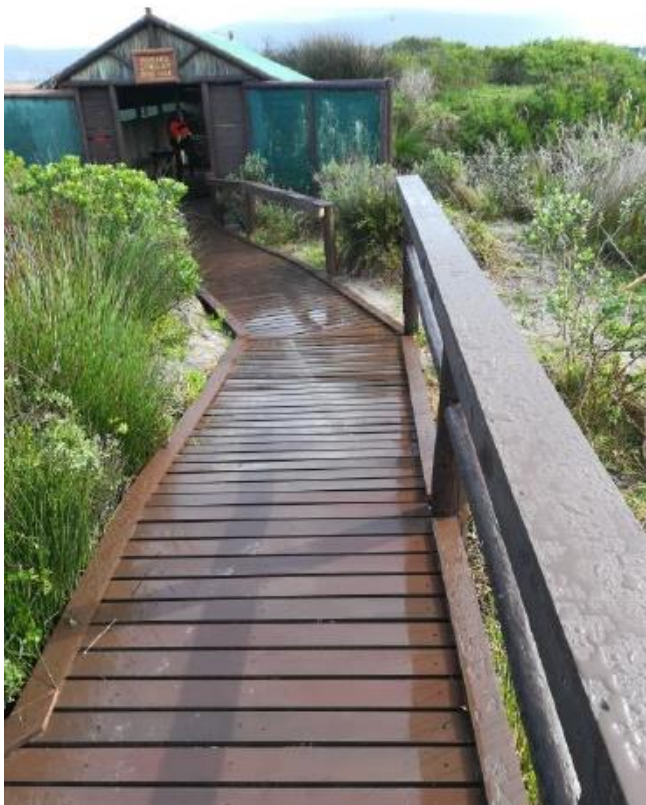


Figure 71: Completed board walk entering bird hide 3.

Rondevlei Section, False Bay Nature Reserve

The False Bay Nature Reserve management decided to make a concerted effort to fix the existing infrastructure as much as possible this year. Notifications were created for the student house, boma, top office and lecture hall.

Material for the bird hides was ordered which included roof sheets, board walk planking and paint. Bird hides one to five have been painted and bird hide 1 repairs are completed.

Last year, BMB completed the board walk at bird hide 3, and the board walk at bird hide 4 is 90% complete. The face lift of the boardwalks is giving the space a totally different feel. For now the section is wheel chair friendly up to bird hide 4, and we are striving to get the entire pathway and bird hides in line with universal access standards (Figure 71).

11.4 Contract Management

The Witzands Aquifer Nature Reserve's Multipurpose Centre Project 34Q/2016/17 was completed. The project was exceptionally successful and 99% of the budget allocated was spent. Refer to the Infrastructure section above for more information.

The Uniform tender 307G/2016/2017 received an additional R2 m to provide all staff with a complete set of uniforms. Although the entire funds were not spent due to late deliveries, what was delivered created much joy amongst staff.

The baboon tender (229S/2016/17) was awarded in June 2017 for three years (2017/18 to 2019/20) to Human Wildlife Solutions. The current tender expires in June 2020.

The Invasive Plant Species tender (16S/2017/18) was awarded in January 2018. This tender, with other City line departments is critical to the success of the invasive plant control in the City and expires in June 2020.

The Staff and Visitor Safety tender (212S/2017/18 - from July 2018 to June 2021) was finalised and will be awarded in July 2018.

BMB continued to ensure that the Tender Tracking updates and Project Portfolio Management (PPM) progress comments were captured and reported on time.

The EDRR, Invasive Animal and Green Job tenders are in process.

11.5 Reporting

The quarterly reports of all nature reserves are presented at the relevant quarterly Protected Area Advisory Committees and provide a more detailed account of the activities on the reserves. The statistics for the BMB include protected area expansion statistics (including stewardship), fires, EPWP job creation, environmental education, exhibitions and events, visitor numbers, service-in-kind (volunteers and sponsored programmes), skills development, invasive species, species collected, species propagated, game register, work load assessments, and security incidences. A high quality annual report for 2016/17 was completed during this financial year, and the 2017/18 report is in progress (i.e. this report; to be completed in early 2019). These annual reports are a summary of the highlights and challenges and can't begin to accurately cover all activities undertaken on and off reserves by the BMB.

Successful senior management meetings were held (every month apart from August 2017 and June 2018) as well as branch meetings (four annually). Branch meetings focus on information sharing and are an important place for staff to connect. Presentations on the annual report for 2016/17 were given to the TDA portfolio committees and all subcouncils in September.