



The emancipatory potential of extinction reporting in the public sector: an analysis of trends in South African National Parks

A research report submitted by

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ABSTRACT

South Africa is home to biomes which cannot be found anywhere. The rich biodiversity within her borders requires protection from extinction events and activities which can lead to a decrease in biodiversity mass. SANParks is responsible for the conservation and preservation of biodiversity within South Africa and reports on how it meets its mandate not only to protect biodiversity but also to use biodiversity in a sustainable manner which improves the socio-economic circumstances of local communities. The study is the first to explore biodiversity disclosure themes in a state-owned entity in South Africa, responsible for the conservation, and uses the disclosure to construct an emancipatory extinction account. The study is qualitative, using content analysis to investigate the disclosure themes in the SANParks reports. The findings indicate that SANParks increased the quantum of information on biodiversity over five years (2013 – 2017) suggesting an integrated thinking approach is adopted by SANParks in disclosing biodiversity. While the current disclosure practices of SANParks does not provide a comprehensive extinction account, the results of the content analysis are used to develop a reporting framework which can be used to provide a detailed emancipatory extinction account, drawing on principles from the IIRC, financial accounting literature and biodiversity-related literature. The study adds to the existing body of knowledge by incorporating the six capitals in the extinction reporting framework.

KEYWORDS: anthropocentrism, deep ecology, emancipatory accounting, extinction accounting, SANParks

DECLARATION

I, **Michael Carl Büchling**, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Commerce in Accountancy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Michael Carl Büchling

Signed at

On the day of 20.....

DEDICATION AND ACKNOWLEDGEMENT

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ABBREVIATIONS

CBD	Convention of Biological Diversity
IUCN	International Union for Conservation of Nature
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
KNP	Kruger National Park
NGO	Non-government organisation
NPO	Non-profit organisation
RPS	Rhino Protection Strategy
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks (SOC) Limited
SNA	Statement of National Accounts
WWF	World Wildlife Foundation
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change

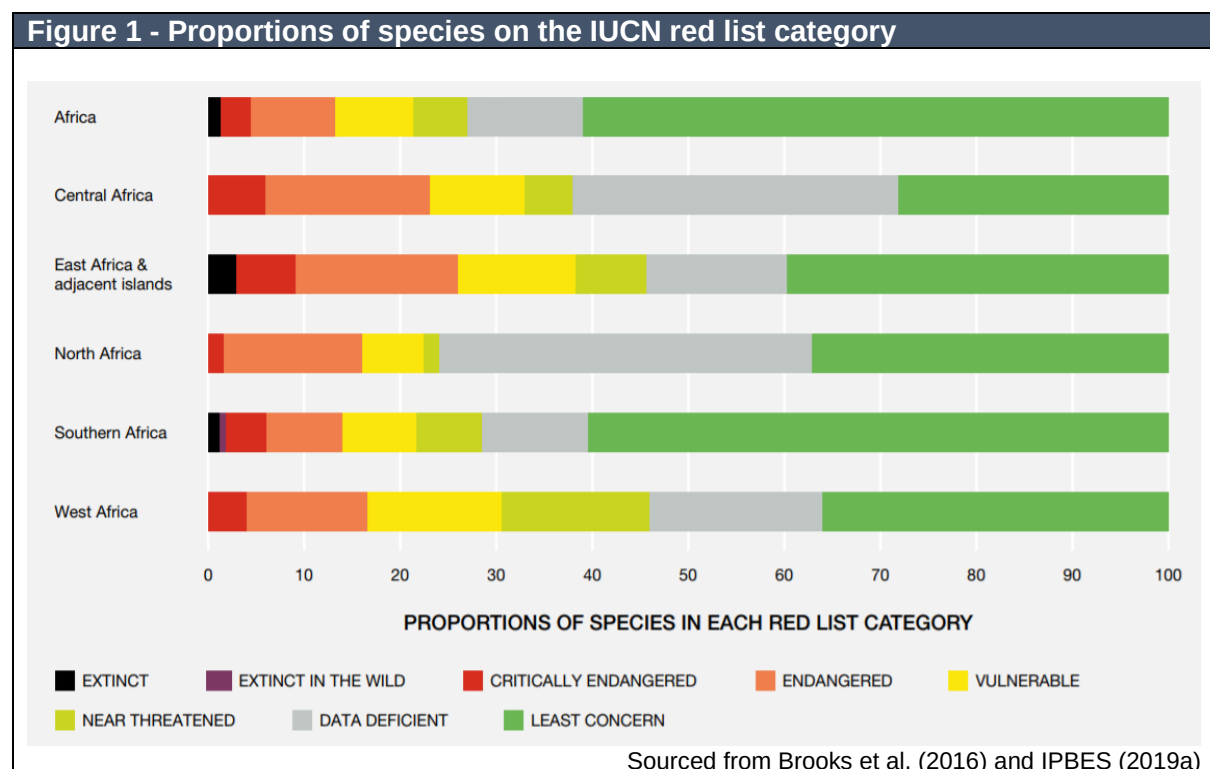
1 INTRODUCTION

1.1 Purpose

The purpose of the research is to explore biodiversity reporting trends of South African National Parks (SANParks) and to use existing disclosure themes found in the organisations' annual reports to build an emancipatory extinction account.

1.2 Context of this study

The impact of human development has led to the destruction and extinction of 872 known species (IUCN, 2019) and since 1970, has reduced the monitored vertebrate animal population by 60% (WWF, 2018). Recently, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reported that one million species were identified as being at risk of extinction (IPBES, 2019b). IPBES (2019a) and Brooks et al. (2016) report there are a large number of species which are threatened with extinction. The impact of human development in Africa and how it impacts on species extinction is illustrated in Figure 1.



Environmental Agencies (see, for example, IPBES (2019a, 2019c, 2019d); WWF (2018)) are reporting that the natural world is facing threats on several fronts. IPBES (2019d) reports that the following factors are contributing to the destruction of the natural world:

- Change in the use of land and sea;
- Direct exploitation by humans;

- Climate change;
- Pollution and
- Invasion of alien species.

IPBES (2019d, pp. 3-4) found that the underlying cause for the destruction of the natural world may be attributed to “societal values and behaviours that include production and consumption patterns, human population dynamics and trends [and] trade, technological innovations”. The behaviour of society has, however, led to the concern that humans may be causing an extinction event (United Nations, 2019). If society does not change its values and behaviour, the planet will face massive biodiversity loss, ecosystem collapse and, eventually, human extinction (Christian, 2019; United Nations, 2019). In 2017 scientists re-issued their 1992 warning that “[to] prevent widespread misery and catastrophic biodiversity loss, humanity must practise a more environmentally sustainable alternative to business as usual” (Ripple et al., 2017, p. 1028). The warning was not ignored.

Various organisations, NGO’s, governments, wildlife groups, businesses, and communities, have started initiatives to combat the activities threatening the natural world (Atkins & Atkins, 2019). While some NGO’s, such as the WWF (2018), focus on educating society, other eco-warriors employ passive-aggressive tactics in the fight to protect the natural world. Methods used by eco-warriors include silent public protests by organisations such as Extinction Rebellion (2019) or protests by Greenpeace at selected mining sites (Greenpeace, 2018).

The international community has held numerous conferences to develop mechanisms to combat the adverse effects of human society’s push for ever more anthropological gains. The first step taken was the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 in which the United Nations developed a framework of international co-operation to combat¹ the damage done by humans to the climate (UNFCCC, 2019). In the same year, the UN held the Rio Summit (Conference on Environment and Development) in which the Convention on Biological Diversity (CBD) was established. The CBD was established in 1993 to assist in the conservation of biodiversity, ensure sustainable use of biodiversity and ensure equitable sharing of benefits attributable to the utilisation of genetic resources (CBD, 2019). The CBD developed five strategic objectives to assist in the conservation of biodiversity, as illustrated in Figure 2.

¹ also read as reverse

Figure 2 - Aichi Strategic Goals 2020

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

- Increased understanding of biodiversity value to ensure people conserve and use biodiversity appropriately.
- Development of accounting framework to include biodiversity in the national accounting and reporting frameworks.
- Amendment in subsidies to encourage biodiversity conservation and discourage biodiversity destruction.
- Governmental policies to manage the use of natural capital.

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.

- The loss of natural habitats have been reduced or brought to zero.
- Fish and invertebrate stocks are managed responsibly through the application of ecosystem-based approaches.
- Manage and conserve biodiversity related to agriculture, aquaculture and forestry.
- To reduce pollution levels that impact ecosystem functions and biodiversity. Development and implementation to identify and prioritise invasive alien species to eliminate, control or prevent the impact on local biodiversity.
- To minimize the impact pressures placed on vulnerable ecosystems impacted by climate change or ocean acidification.

Strategic Goal C: Improve the status of biodiversity by safeguarding eco-systems, species and genetic diversity

- Conservation measures have been implemented for ecosystems in terrestrial, inland water (17%), coastal and marine areas (10%) that ensures effective, efficient and equitable management of biodiversity.
- The extinction of known threatened species has been prevented and their conservation status solidified.
- Strategies have been developed and implemented for minimizing genetic erosion and safeguarding genetic diversity of biodiversity.

Strategic Goal D: Enhance the benefits to all from biodiversity and eco-systems services

- Ecosystems which provide anthropocentric services need to be restored, taking into account the needs of women, indigenous communities and the poor and vulnerable.
- Conservation and restoration of at least 15% of ecosystems contributing to carbon stocks, thereby contributing to climate change mitigation and combatting desertification.
- By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their utilization is in force and operational, consistent with national legislation.

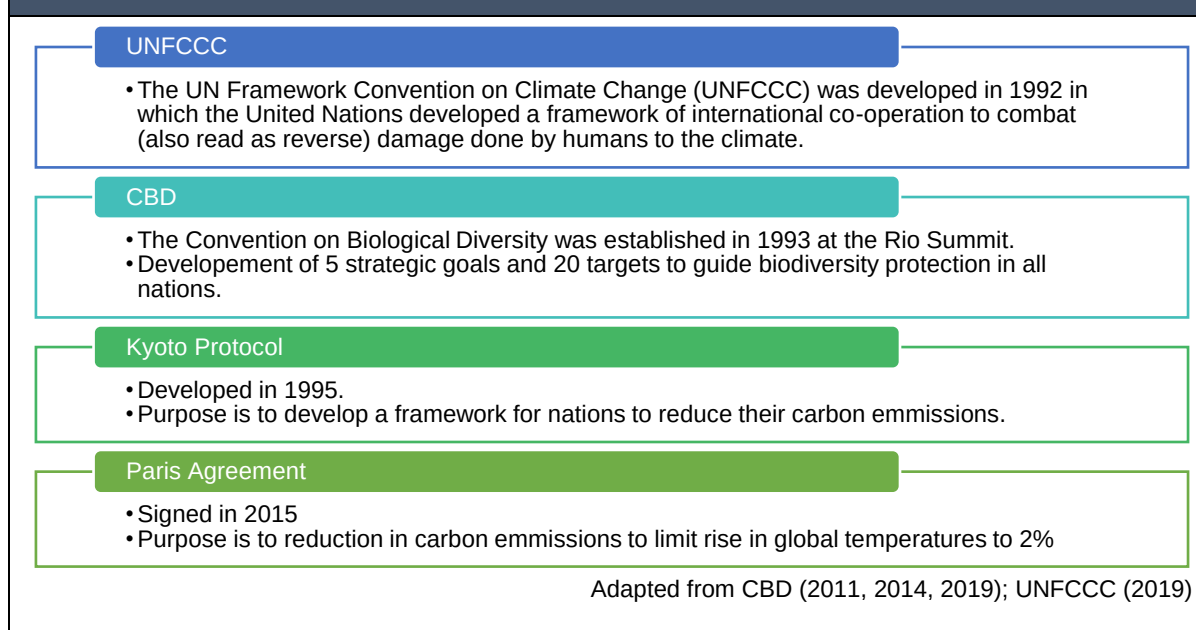
Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building .

- By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
- Indigenous and local knowledge regarding biodiversity is fully integrated in national legislation and biodiversity action plans.
- Biodiversity knowledge, technologies and values, status and functioning have been shared widely, transferred and applied.
- Finalisation and implementation of the financing mechanisms to meet the objectives of the Aichi Conference.

Adapted from CBD (2011)

The Kyoto Protocol followed the creation of the CBD in 1995 in which targets were set to reduce carbon emissions (UNFCCC, 2019). The most significant step taken on an international scale was the agreement to the terms of the Paris Agreement in 2015, which seeks to accelerate and intensify the actions taken by governments to ensure a sustainable low-carbon future (UNFCCC, 2019). The Paris Agreement aims to limit the increase in the rise of global temperatures to 2% by requiring signatories to implement regulations and strategies to reduce carbon emissions (UNFCCC, 2019). The milestones are illustrated in Figure 3.

Figure 3 - Milestones in international action taken to protect biodiversity



Throughout the process followed to combat climate change and reverse ecological damage international organisations have questioned whether the measures in the agreements described above will have a measurable impact (See for example IPBES (2019b); IPBES (2019d); UNFCCC (2019); United Nations (2019); WWF (2018)). In particular, the Aichi Strategic Targets set by the CBD was recently discussed by IPBES (2019b). IPBES (2019b) raises concerns whether or not the 2020 deadline will meet the targets set at the Aichi Conference. Included in the strategic targets is the requirement that (CBD, 2011, p. 3):

...biodiversity values [have to be] integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting system [own emphasis added].

The inclusion of biodiversity values into economic accounts will require a comprehensive accounting system which can be implemented at a local and national governmental level. The need to develop an accounting system led to the publishing of the *System of National Accounts* (SNA) by the United Nations (United Nations, 2008). The SNA provides an alternate accounting system to nations to account for biodiversity in their economies: this can be used for policymaking, analysis and research purposes (United Nations, 2008). The SNA is used by various nations, including South Africa (South Africa, 2018). The SNA, however, does not include disclosure on biodiversity but requires the monetisation of natural capital. In the *Global Biodiversity Report 4*, the CBD acknowledges the fact that biodiversity and the impacts on biodiversity are often ignored by conventional accounting practices (CBD, 2014). This is a limitation which has also been raised by the academic literature (see, for example, Atkins &

Atkins 2016; Atkins & Maroun, 2018; Atkins, Maroun, Atkins, & Barone, 2018; Büchling & Maroun, 2018; Gray & Milne, 2019; Maroun & Atkins, 2018; Zhao & Atkins, 2018)

Although South Africa has adopted the principles of the SNA, the inherent limitation of the SNA would require South Africa to develop its accounting system to account for biodiversity to meet strategic targets set by the CBD. This will require South Africa to include core principles from the CBD in a national biodiversity accounting system (Kenessey, 1994). In 2014, South Africa reported to the CBD that the National Biodiversity Framework was published and biodiversity is included in the National Development Plan. What is missing is a conceptual framework for operationalising the principles espoused by the CBD and environmental action groups (The Republic of South Africa, 2014). This provides the basis for this research, which will focus on understanding the current biodiversity reporting trends by one of South Africa's custodians of natural capital and advance a normative emancipatory accounting schematic.

1.3 Research question

RQ 1 - What has South African National Parks disclosed about biodiversity in the ecosystems under its management in their annual/integrated reports from 2013-2017?

RQ 2 - How can existing biodiversity disclosures and reporting be organised to provide an emancipatory account of biodiversity management?

1.4 Significance of the study

The research adds to the existing literature on biodiversity reporting, which, to date, has focused almost exclusively on international listed companies (Adler, Mansi, & Pandey, 2018; Atkins & Atkins, 2019). It will provide empirical evidence on biodiversity reporting from an innovative case setting helping to address the dearth of African-specific research on biodiversity (Atkins et al., 2018; Usher & Maroun, 2018) and, more generally, in environmental reporting (Russell, Milne, & Dey, 2017). From a theoretical and practical perspective, the research adopts a constructivist view which mobilises existing (and predominantly descriptive) research to develop a normative accounting schematic in keeping with an emancipatory conceptualisation of contemporary "accounting crafts" (Atkins & Atkins, 2019). This can be adopted by the South African government and implemented in state-owned entities on a local and national level to assist in meeting the country's treaty obligations and promote a more detailed accounting of the nation's "reserves" of natural capital.

1.5 Delimitations

SANParks was selected for review as it is a state-owned entity responsible for the management of South Africa national parks. SANParks does not excessively rely on grants from the government but generates its revenue through the charging of conservation fees and accommodation fees for the use of park facilities. Unlike other entities under the control of the Department of Environmental Affairs, SANParks is self-sufficient. In the interest of pragmatism, no other state-owned entities or environmental agencies are covered. SANParks only issues an Annual Report which is also its integrated report. The reports were chosen as the unit of account as they are publically available and are issued to discharge SANPark's reporting obligations. A study of the organisation's internal systems, management accounts and scientific activities are deferred for future research.

1.6 Definitions of terms

Anthropocentric ecology frames ecology (or the natural world) in terms of the benefits which nature provides, directly or indirectly, to humanity (Christian, 2019).

Biodiversity is:

the variability among living organisms from all sources including [among other things] terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part... [including] diversity within species, between species and of ecosystems (Jones & Solomon, 2013, p. 672; Spicer, 2012, p. 2).

Deep ecology can be seen as the opposite of the anthropocentric view of nature. The natural world is understood as having an intrinsic value which is independent of humanity. Human society is part of the natural order and not regarded as being served by nature. Deep ecology places nature at the centre and includes humans as part of the ecosystem and not separate from nature (Chrisitan, 2019; Devall, 1980; Drengson, 1995; Khisty, 2006; Naess, 1973).

2 THEORETICAL FRAMEWORK: BIODIVERSITY REPORTING AND EXTINCTION ACCOUNTING

Biodiversity has various definitions. Some, such as the definition used by CBD, has a deep ecological view on biodiversity, describing biodiversity as the variety of life which exists in various forms (see, for example, CBD, 2014; Jones & Solomon, 2013). This definition stands in contrast with the GRI's definition of biodiversity which incorporates a technical, biological assessment which also frames biodiversity in terms of the value it provides to humanity (GRI, 2016). In other words, biodiversity is understood in anthropocentric terms. This has its roots in Western culture and Judeo-Christian beliefs which place humanity above all other lifeforms (Watson & Watson, 1969) and describes biodiversity in terms of its value to humanity (Jones & Solomon, 2013).

An anthropocentric account sees biodiversity as a type of natural capital in order to frame it as part of the productive economy (Garner, 2017). For example, the benefits provided by pollinating insects are understood in monetary terms (Atkins & Atkins 2016; IPBES, 2019a). The prior research values these species according to the pollinating services provided to the food industry, which, in the absence of these insects, will have to incur additional costs to maintain food production (Atkins & Atkins 2016; IPBES, 2019a). Similarly, different species of plants, fish and mammals are assessed according to the benefits they provide from tourism, use in an industrial or medicinal application or being harvested or consumed directly (IPBES, 2019a, 2019b, 2019c, 2019d).

Anthropocentrism is useful for making an economic case to protect biodiversity (Atkins & Maroun, 2018) but it is also criticised for neglecting the intrinsic/non-monetary value of different plant and animal species (Gray & Milne, 2018; Russel et al., 2017; Sullivan & Hannis, 2017). For example, Russell et al. (2017, p. 1426) argue that a reporting model grounded in economic and financial discourse oversimplifies the complex interconnection between lifeforms with an "input-output" or "information throughput" logic. As a result, environmental accounts fail to provide the level of detail and context required to appreciate the importance of biodiversity fully, both to the reporting entity and the broader society (see also Atkins, Atkins, Thomson, & Maroun, 2015; Dillard & Reynolds, 2008).

Similarly, Sullivan and Hannis (2017) are concerned that applying a double-entry accounting model for recording assets and claims against assets in a biodiversity reporting context will have unintended consequences. "Instead of creating standardisation and clarity" (ibid,p.1459) the application of conventional accounting practices to reporting on changes in biodiversity mass, ignore the non-monetary value and fail to report on critical ecological indicators which give the real measure of the health of an ecosystem (see also Jones & Solomon, 2013). Tregidga (2013) and Freeman and Groom (2013) share these concerns. They argue that conventional accounting systems lack the sophistication necessary for wholly and accurately costing biodiversity loss and quantifying ecological risk². This leads to underestimating the environmental impact, something which may result in the continuation of unsustainable business practice.

In response to the above limitations, the academic community has explored the possibility of reporting on biodiversity from a deep ecological perspective. This is discussed in briefly in Section 2.1

² More specifically, it is difficult to determine the fair value of biological entities and ecosystems as these are not traded on an active market and fair value estimations (such as replacement cost) are difficult and subjective to determine. Similarly, financial models for pricing risk do not explicitly take environmental risks into account (Tregida, 2013; Freeman & Groom, 2013)

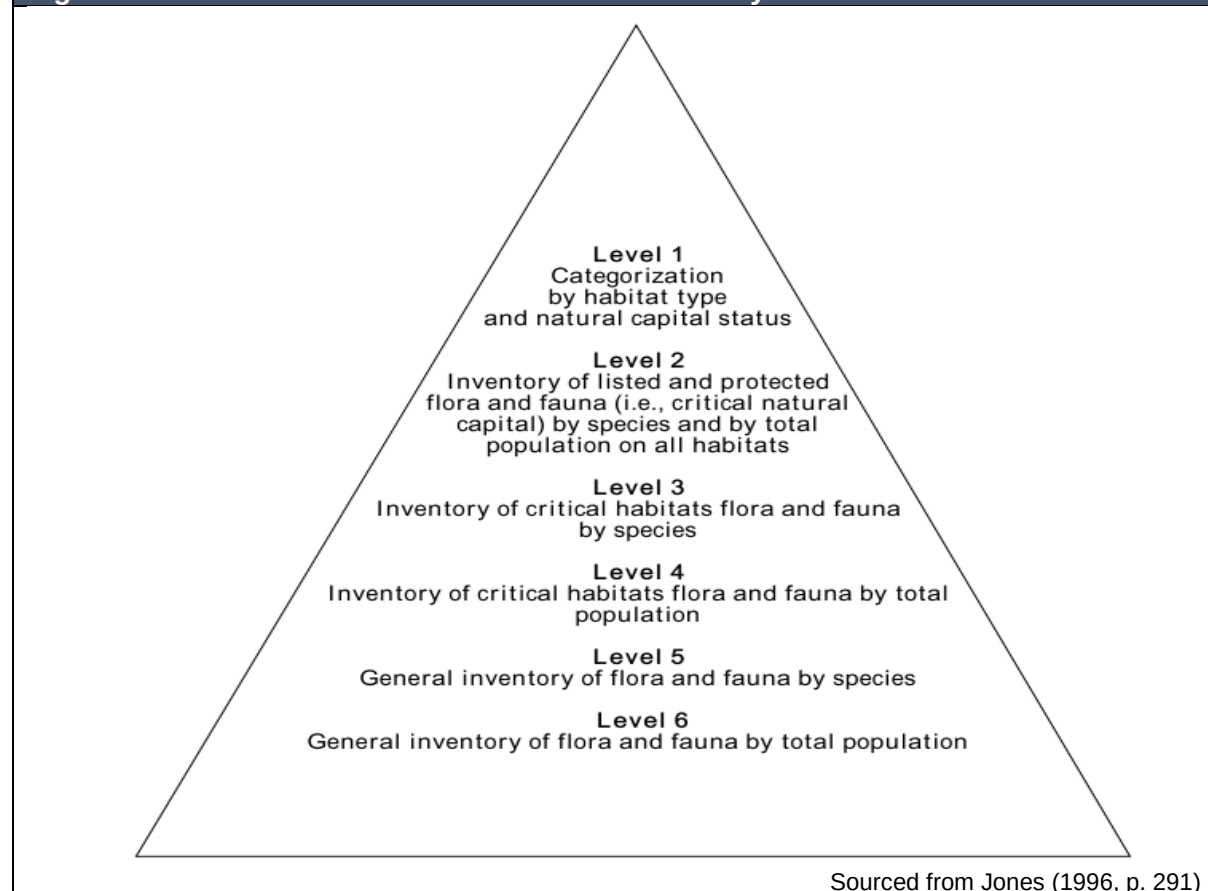
2.1 The view from the deep greens

The natural world should not be seen only in anthropocentric terms. According to Naess (1973) and Khisty (2006, p. 299), "the survival of natural systems and the capacity of the planet for self-renewal [are] crucial to all life, human as well as non-human". As a result, it is inappropriate to place people's needs above the long-term sustainability of the planet.

From this "deep green" or ecocentric perspective, people, plants and animals are all part of a single system. Each has an important role to play in the food chain and an inherent right to existence. In other words, protecting biodiversity is a biological, moral and ethical imperative (Atkins & Atkins 2016; IPBES, 2019c, 2019d; WWF, 2018). This is the case even if the value of different plant and animal species is seen as negligible or non-determinable from an anthropocentric perspective (IPBES, 2019c).

There are examples of environmental accounting drawing on a deep ecological framework. One of the earliest is provided by Jones (1996;2003). He measures changes in biodiversity using a hierarchical reporting framework. This focus on reporting on specific species, total populations/ecosystems, and the level of extinction risk. The model is presented in Figure 4.

Figure 4 - "Natural inventories: hierarchical criticality"



Siddiqui (2013) uses the above model (Figure 4) to produce a natural inventory report for a mangrove forest declared a World Heritage Site by UNESCO. The aim is not to monetise biodiversity but to prepare a chart of accounts which provides a habitat statement (Level 1), lists natural inventory by the level of the risk of extinction (Levels 2-4) and a general inventory/ecological account (Levels 5-6) (see also Jones & Solomon, 2013). Accounting for biodiversity at the ecological level is also addressed by Cuckston (2017). He sees

...the social and natural as inseparably intertwined in socio-ecological systems: complexes of relations between (human and non-human) actors, being perpetually produced by fluid interactions (Cuckston, 2017, p. 1537).

A simple double-entry accounting system cannot describe this life-network. Biodiversity Accounting must explain the respective sites' geography and the ecology of living systems. This should be supported by scientific classifications, ecological monitoring, movements in species' populations and changes in biodiversity mass for the ecosystem as a whole (Cuckston, 2017). Importantly, this type of deep ecological accounting does not rely only on quantified measures; narratives, images of different species and site maps are used to complement scientific measures and provide a more detailed description of the ecological unit of account (see also Atkins et al., 2015; Cuckston, 2017, 2018b; Russell et al., 2017; Sullivan & Hannis, 2017).

2.2 A combined deep ecological and anthropocentric perspective

Deep ecology and anthropocentrism are often seen as two opposing paradigms (Gray & Milne, 2018). This research adopts a more pragmatic approach. In accounting for biodiversity:

...it may be possible to use the features of existing accounting infrastructure to contribute to improved transparency and accountability and operationalise sustainable development. This can take into consideration the intrinsic value of the natural world (as espoused by deep ecologists) while simultaneously recognising the anthropocentric case for preserving so-called 'natural capital' (Maroun & Atkins, 2018, p. 5).

Cuckston (2013) adopts a similar position by using a case study method to construct a carbon stock for flora and soil which, in its own right, illustrates the ecological value of this biomass (for scientific detail see du Preez, Huyssteen, & Mnkeni, 2011). This is grounded in a strong deep ecological position on biodiversity. At the same time, anthropocentric concepts are used to promote normative conservation recommendations. The research goes on to examine how the total carbon store can be used as a basis for determining available offset credits which can be traded and valued in the over-the-counter carbon market. This results in the financialisation of biodiversity. Nevertheless, Cuckston (2013) maintains that – despite the departure from a purely deep ecological philosophy – this type of accounting can be used to promote the protection of natural forests.

Atkins et al. (2018) take a similar position on preventing the extinction of the rhinoceros. They examine how South African companies report on, and internalise, the risk of the loss of the species. There are indications of companies using the protection of the rhinoceros as a method for improving their brand and encouraging customer support. At the same time, the researchers find evidence of a genuine concern about the plight of this animal which goes beyond its value in financial terms (see also Atkins & Maroun, 2018; Atkins et al., 2018). In other words, by drawing on both deep ecological and anthropocentric principles, accounting for biodiversity can be used to promote positive change. This is because accounting can function as part of an "emancipatory project" which can influence people's awareness of, and attitude towards, issues such as the extinction of species (Gallhofer & Haslam, 2011, 2017; Gallhofer, Haslam, & Yonekura, 2013). This does not require a rejection of the relevance of Capitalism. As explained by Gallhofer and Haslam (2017, p. 6)

...there is a move away ... from the position that emancipatory accounting – if still, a radically progressive notion – necessarily reduces to an accounting that is an instrument of revolutionary or grand radical transformation consistent with the position suggested in the Marx-inspired line of thought pursued by [critical theorists].

Instead, emancipatory accounting promotes positive change by providing detailed information on critical environmental issues and an explanation of how environmental risks are managed in order to ensure long-term sustainability and accountability (Atkins & Maroun, 2018; Jones & Solomon, 2013). This requires the limitations of current forms of biodiversity reporting to be addressed.

2.3 Limitations of current reports on biodiversity

The GRI provides most detail on how to report on biodiversity. Recommended disclosures are summarised in Table 1.

Table 1 - GRI Biodiversity disclosure requirements	
Indicator	Explanation
GRI304-1	Provides the required disclosure regarding the "operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas."
GRI304-2	Description of the significant impact of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
GRI304-3	Habitats protected or restored.
GRI304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations.

Adapted from GRI (2016)

The GRI provides a useful reference for companies interested in reporting on their biodiversity impact but there are some limitations. For example, the GRI does not define biodiversity reporting or explain precisely how biodiversity should be managed (Cuckston, 2018a; Mansoor & Maroun, 2016). It also does not refer to an emancipatory logic. There is no guidance on how to identify biodiversity issues, assess materiality and design interventions which can limit, or prevent biodiversity loss. Practical application also appears to be a challenge (Atkins & Maroun, 2018).

For example, a study of reporting of Fortune Global 500 companies shows an overall lack of reporting even though these large organisations have the resources and expertise to identify and report on their biodiversity impact (Adler et al., 2018). Similar findings are reported in Sweden (Rimmel & Jonäll, 2013), Denmark (van Liempd & Busch, 2013), the United Kingdom (Jones & Solomon, 2013) and South Africa (Mansoor & Maroun, 2016). What little information is disclosed is usually the result of applying the GRI as a disclosure checklist with the result that the biodiversity reporting lacks context (Jones & Solomon, 2013).

To address the above problems, Atkins and Maroun (2018) suggest that an emancipatory framework for reporting on biodiversity should include:

- sufficient information on species affected by operations and on the broader ecosystem (see also Cuckston, 2017);
- the reasons why a company is concerned about biodiversity loss (van Liempd & Busch, 2013);
- strategies, planned conservation initiatives and current actions taken to prevent the loss of species (Adler et al., 2018) and
- an explanation of the interconnection of policies, risks and actions related to biodiversity management and the resources being made available to protect biodiversity (Maroun & Atkins, 2018).

This broad outline provides a basis for developing a more detailed reporting scheme which can be used to code current examples of biodiversity reporting and provide normative recommendations. This is discussed in more detail in Section 2.4.

2.4 A biodiversity reporting schematic

It is challenging to determine exactly what to include in an account of biodiversity (Boiral, 2016; Jones & Solomon, 2013). One of the first efforts to outline the elements of a biodiversity

report is provided by van Liempd and Busch (2013). They develop a coding instrument made up of seven biodiversity reporting categories. These include:

1. Scene setting
2. Species related
3. Social engagement
4. Performance evaluation
5. Risk
6. Internal management and
7. External reports.

Scene setting requires a company to define "biodiversity". This could be included in a biodiversity mission statement, policy and strategy, which explains what biodiversity is and why it is important in both general terms and for the purpose of operating the company's business (Atkins & Maroun, 2018; van Liempd & Busch, 2013). To support the biodiversity mission statement, companies can disclose the number and types of species present in their area of operations (van Liempd & Busch, 2013). These disclosures should rank species according to the level of extinction risk using objective scientific references. For example, the categorisations of species on the IUCN Red List may be used to identify the species at greatest risk of extinction and inform the amount of information which the company should report on the respective species (Maroun & Atkins, 2018). To ensure that disclosures are context-specific, there should be a clear indication of the specific species affected by an organisation's activities both in total and at different operating sites. Effective biodiversity reporting should give an indication of population size per species, changes in population, habitat range and how each of these metrics has been affected by business operations (van Liempd & Busch, 2013).

In the interest of ensuring that biodiversity reporting is not too granular, Cuckston (2017) suggests that disclosures should be provided for individual species and at the ecological level, i.e. species-specific. This is illustrated with a practical explanation of how to account for peatland habitat (Cuckston, 2017). Scientific classifications are used to report on specific species but the disclosure also explains the interconnection of species. The aim is to report not only on individual plants and animals in a specific region but also on the status of the underlying ecosystem (see also Cuckston 2013). In this way, disclosures can be used to give a "consolidated view" on biodiversity mass affected by a company's operations and how this changes over time.

To reduce biodiversity impact, companies may need to enter into partnerships with various stakeholders, for example, universities, conservation bodies and other non-governmental

organisations (NGO's) (Atkins et al., 2018). These partnerships may be used as a means of legitimising an organisation's biodiversity reporting by making it appear as if it is being proactive about protecting biodiversity (Gray & Milne, 2018; Gray and Milne, 2019; Russel et al., 2017) . Effective biodiversity reporting is, however, about more than impression management (Russell et al., 2017). For example, companies can engage the scientific community to identify biodiversity risks that otherwise may go unnoticed. Experts can also be engaged to define ecosystems affected by an organisations operations, to study plant and animal species found on sites and to generate findings on changes in biodiversity mass. It is also possible for NGO's, conservation bodies and research institutions to provide practical guidance on the steps which can be taken to reduce a company's impact on biodiversity (Atkins & Atkins 2016).

Other social/stakeholder engagements can complement partnerships between organisations and environmental experts\NGO's. For example Atkins et al. (2018, p. 688) find that organisations can enter into joint arrangements with their competitors in an effort to "raise public awareness and encourage public participation in conservation programmes" as well as "bring attention to those companies which are donating funds and resources to [environmental] conservation and protection". Similarly, companies can work with communities, employees and local government to identify current and emerging biodiversity risks, develop plans for mitigating biodiversity loss and coordinating conservation efforts (Adler et al., 2018; Gaia & Jones, 2017; Weir, 2018).

To ensure that biodiversity reporting is about more than just paying lip service to environmental issues, companies need to report on their performance. This can include disclosures on their stakeholder engagements, implemented and planned conservation initiatives and measurable outcomes.

Companies should consider explaining how they have identified key stakeholders and the nature and results of the engagement with these stakeholders (Atkins et al., 2018). For example, a company could disclose specific environmental groups it is collaborating with and the reasons for choosing to work with those bodies. Details should also be given on key focus areas, recommended action plans, progress on these action plans and material challenges encountered (adapted from IOD, 2016). This can be complemented by a detailed explanation of any steps taken independently by a company to protect biodiversity. Disclosures may include:

- projects which increase biodiversity mass (or prevent the loss of biodiversity) analysed according to operating sites or biodiversity enhanced at sites not under the company's control;

- land reclamation or rehabilitation activities undertaken during the current reporting period and planned for future periods;
- nature of and the total amount invested in research and development, technologies and innovations designed to conserve or restore biodiversity;
- amounts donated for conservation and protection of species and any awards for conservation efforts;
- number of indigenous/endemic species protected, reintroduced or lost due to operations (i.e. an impact assessment at the species level);
- the total area under conservation and changes in total conservation over time, including a review of changes in the level of extinction risk of specific species as per the IUCN Red List and the impact which a company has on ecological corridors³ (i.e. an impact assessment at the ecological level) and
- Participating in biodiversity offsetting⁴ arrangements including, for example, total investment, amount offset, actual vs planned benefits and analysis of the variance.

(Adler et al., 2018; Cuckston, 2017; Maroun & Atkins, 2018; Usher & Maroun, 2018)

It is important that performance evaluation disclosures are not superficial. Companies should indicate the specific plans introduced in response to biodiversity risks, clearly measured outcomes and feedback on the extent to which plans met or fell short of expectations (Maroun & Atkins, 2018). These plans and conservation initiatives should be supported by appropriate management control systems. Alrazi, de Villiers, and Van Staden (2015) do not deal directly with biodiversity reporting but their research is applicable because it explains the importance of "environmental proactivity" for high-quality sustainability and integrated reporting (see also de Villiers, Hsiao and Maroun (2017) & Farooq & Devillier (2018). Environmental proactivity requires formal systems, databases on environmental performance and charts of accounts to collect and organise data on environmental performance indicators. Where effective management systems are in place, an organisation should be able to aggregate and synthesise data on environmental performance and report effectively to stakeholders. An effective management system also allows for ineffectual performance to be identified and for corrective action to be taken (Alrazi, De Villiers, & Van Staden, 2015).

These principles can be applied to biodiversity reporting. For example, Jones (1996) provides a natural inventory hierarchy which can be used to classify flora and fauna by level of extinction risk and role in the ecosystem. The inventory hierarchy can also provide categories which are

³ Ecological corridors are areas or structures which enable spreading, migration and exchange of species between core areas and nature development areas inside an ecological network (Ferretti & Pomarico, 2013).

⁴ Biodiversity offsetting is the "conservation actions intended to compensate for the residual unavoidable harm to biodiversity caused by development projects, so as to ensure no net loss of biodiversity" (Tregida, 2013, p 807; Carlor, 2017; Sullivan & Hannis, 2017)

useful for organising data collected on changes in the number and range of species and reporting this in a way which is easy to understand by non-scientists (see also Jones, 2003). Similarly, Atkins and Maroun (2018) use environmental proactivity to explain how a company can identify the type of information which stakeholders require on biodiversity risks and how these risks are being managed. They also suggest that proactivity can be used to determine how environmental performance should be measured and the data required to report on each performance indicator (see also Guthrie, Manes-Rossi, & Orelli Rebecca, 2017; McNally, Cerbone, & Maroun, 2017). This will allow a company to set materiality for their reporting purposes based on the type of data they have and what is necessary to explain biodiversity to its stakeholders (Rimmel & Jonäll, 2013).

Environmental proactivity can be enhanced if it is cross-referenced to a biodiversity risk analysis. From an anthropocentric perspective, biodiversity loss can pose a significant business risk. For example, over-consumption of fish stocks has been identified as a material financial risk for the global and South African seafood industry (Usher & Maroun, 2018). Similarly, the collapse of pollinator species is taking place in several developing and developed economies (Atkins & Atkins 2016; IPBES, 2019a). This can result in a reduction in the quality and yield of essential crops with adverse implications for the revenues of the food industry and global food security (Atkins & Atkins 2016; IPBES, 2019a). There are also deep ecological reasons for wanting to protect biodiversity. As explained by Atkins and Maroun (2018) "where species are a part of the cultural or social fabric" their loss can undermine a sense of social heritage or identify with direct socio-cultural implications. A company may also find that its reputation can come under threat if it is not seen to be taking sufficient steps to protect biodiversity (Atkins & Atkins 2016; IPBES, 2019a).

For example, habitat destruction and mass extinction of species are not only biological concerns. There is growing public pressure for companies to accept their responsibility for the impact of their operations on biodiversity and to report how they are preventing biodiversity loss (Jones & Solomon, 2013). The last two decades have also seen an increase in the number of environmental regulations which require companies to manage and disclose their environmental impact (Mansoor & Maroun, 2016; Rimmel & Jonäll, 2013). Added to this is the emergence of sustainability and integrated reporting guidelines which establish minimum standards for environmental and social reporting (de Villiers, Hsiao & Maroun, 2017; Farooq & de Villiers, 2017; Maroun & Lodhia, 2017) and the demands of the responsible investment community for companies to explain how they are managing critical environmental risks (Atkins & Maroun, 2015; Van Zijl, Wöstmann, & Maroun, 2017).

In this context, companies should explain significant environmental risks and how these relate to their operations' impact on biodiversity. For completeness, these risks should be categorised from either an anthropocentric or deep ecological perspective (Atkins & Maroun, 2018; Russell et al., 2017). Risks should also be cross-referenced to the respective species and habitats, the IUCN classifications of affected species and policies put in place and actions taken to mitigate biodiversity-related risks (Maroun & Atkins, 2018). This can be complemented by providing details on material incidents, disputes with NGO's/environmental groups, regulatory findings and fines or penalties incurred (Adler et al., 2018).

Finally, Rimmel and Jonäll (2013) suggest that the applicable reporting frameworks should be referred to when preparing a biodiversity report. This is consistent with the guidance provided by the IIRC (2013) and GRI (2016) which suggest that a company explains the basis for preparing its integrated and sustainability report respectively. The aim is not to reduce biodiversity reporting to a disclosure checklist but to provide the user with an understanding of any reporting guidelines which might have been used to inform the nature and extent of specific biodiversity disclosures (Jones & Solomon, 2013; Rimmel & Jonäll, 2013).

A summary of disclosure codes/themes and associated reporting elements is provided in Table 2.

Table 2 - Disclosure matrix	
Codes/Themes	Elements
Scene-setting	Does the company define biodiversity directly or take biodiversity into account when setting its mission statement or vision?
Species-related	Reporting on specific species at risk of extinction per site or operational area. This will include the population and biodiversity mass with specific species categorised by extinction risk.
Social and stakeholder engagements	Reporting on engagements with stakeholders such as the Department of Environmental Affairs, local communities, NGO and other projects aimed at rehabilitation or preservation of ecosystems. This can also include disclosure on engagements with communities to promote awareness around biodiversity issues.
Performance evaluations – biodiversity specifics	Reporting on action plans and the extent to which environmental objectives have been met. Examples include land reclamation or rehabilitation targets, donations and awards budgeted and clear goals achieved.
Internal management	Information relating to a plan or officer to address biodiversity concerns which stakeholders may have. This can include internal

Table 2 - Disclosure matrix	
Codes/Themes	Elements
	reporting systems or changes made to the control environment to address biodiversity risks.
Risk	Disclosing biodiversity as one of the company's material risks and the impact on the communities and the ecosystems. Incidents such as drought, land claims or poaching may be included in this disclosure category.
External reporting	Reference to a biodiversity disclosure framework, such as the GRI or integrated reporting frameworks
Assurance	Reporting on the different assurance services used to confirm the biodiversity information in the different parks. This can include assurance obtained over animal populations, the success of anti-poaching initiatives and assurance over the biodiversity-related targets.

Adapted from Adler et al. (2018); Atkins and Atkins (2016); Cuckston (2013); GRI (2016); Jones and Solomon (2013); Maroun, Usher, and Mansoor (2018)

The reporting categories and elements in Table 2 will be used to analyse the annual reports of SANParks from 2013 to 2017. This addresses the first research question which asks:

RQ1 - What is South African National Parks disclosing about changing biodiversity in the ecosystems under its management from 2013-2017?

In addition to this analysis, the framework developed by Atkins and Maroun (2018) builds on the guidance provided by the GRI (2016), the IIRC (2013) and the prior academic research on integrated reporting (see Table 2): This addresses the second research question which asks:

RQ2 - How can existing biodiversity disclosures and reporting be organised to provide an emancipatory account of biodiversity management?

The model used to answer RQ2 is summarised in Table 3.

Table 3 - Elements in an extinction accounting framework	
Element	Purpose
Element 1: Extinction accounting context	Description of extinction risk in the context of the SANParks operations and the different reasons for wanting to address the risk. This can include compliance with laws and regulations, the latest poaching trends or damage done to ecological areas.

Element 2: Action-focused reporting	Disclosure on the actions the company takes and plans to take to reduce extinction risk, such as land rehabilitation, using armed forces to combat poaching, research to understand extinction trends.
Element 3: Partnership reporting	Action-focused reporting by explaining broader partnerships/initiatives formed to combat/reverse extinction trends. This can include community initiatives to combat deforestation or desertification.
Element 4: Analysis and reflection	Reporting on how SANParks evaluated extinction prevention initiatives against the aims/targets to inform changes and partnerships. This can include action plans to address variances which have occurred during the year;
Element 5: Assessment	Reporting on the results of an audit of affected species/population biomes. This can include the method used to verify the number of species or populations in the biomes.
Element 6: Reporting	Provide an account of the progress made to date on preventing or mitigating extinction, planned future action and risk exposure. This will include the disclosure of performance indicators measured against the outcomes with disclosure about events which limited the success of action plans.

(reproduced from Atkins & Maroun, 2018; Maroun & Atkins, 2018)

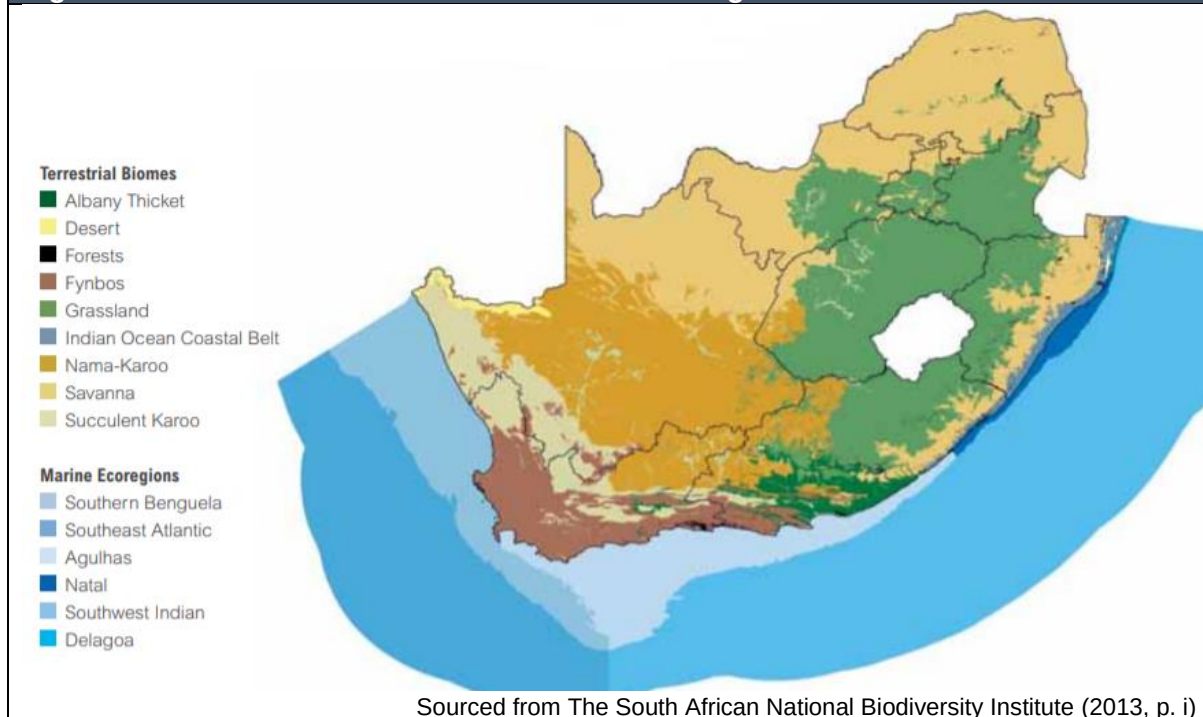
3 BIODIVERSITY CONSERVATION IN SOUTH AFRICA

This section makes a case for the protection of biodiversity in South Africa (Section 3.1). Section 3.2 will discuss the various mechanisms used to assist in the protection of biodiversity. The section will end with the role that SANParks plays.

3.1 The anthropocentric and deep ecological case for protecting biodiversity

South Africa is home to some of the world's most diverse and unique biomes (SANBI, 2013; Wynberg, 2002) with 95 000 species contributing to a significant portion of the world's biodiversity (The Republic of South Africa, 2014). In particular, the fynbos biome is so unique as the biodiversity within that biome cannot be found any other place in the world (SANBI, 2013). The biomes stretch across South Africa and are illustrated in Figure 5 below.

Figure 5 - South African biomes and marine eco-regions



The biomes and the biodiversity contained within each ecosystem in the biome are regarded as the natural capital of South Africa, given the role nature plays in local communities, the economy and politics (SANBI, 2013). The natural capital is, however, under threat on multiple fronts. The threats include:

- Climate change;
- Loss and degradation of terrestrial, freshwater and marine environments;
- Invasive animal, plant and insect species;
- Water storage and management systems (such as dams);
- Pollution and
- Urbanisation.

(IPBES, 2019c; Maroun et al., 2018; SANBI, 2013; The Republic of South Africa, 2009, 2014; Usher & Maroun, 2018)

The effects of human progress have been catastrophic and have led to increases in extinction risks in river systems, grassland and coastal areas (see SANBI, 2013). The effects of human development on the ecosystems in South Africa is illustrated in Figure 6 below.

Figure 6 - Change in extinction risk in land-based ecosystems

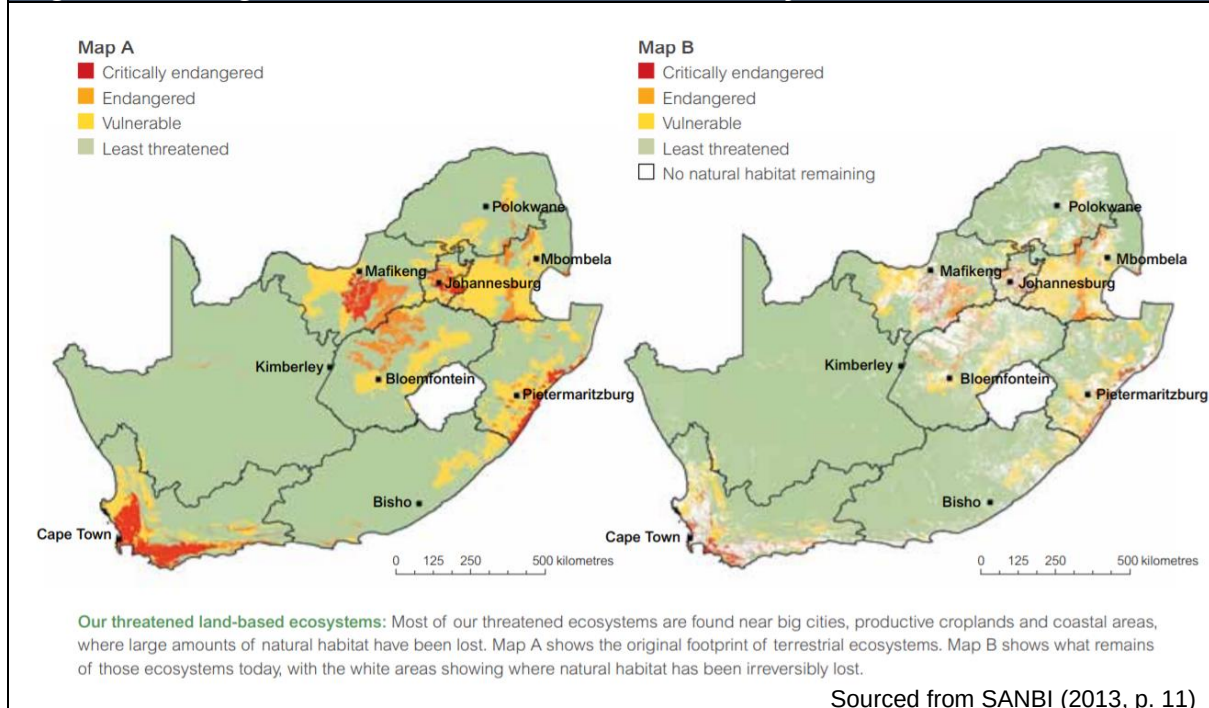
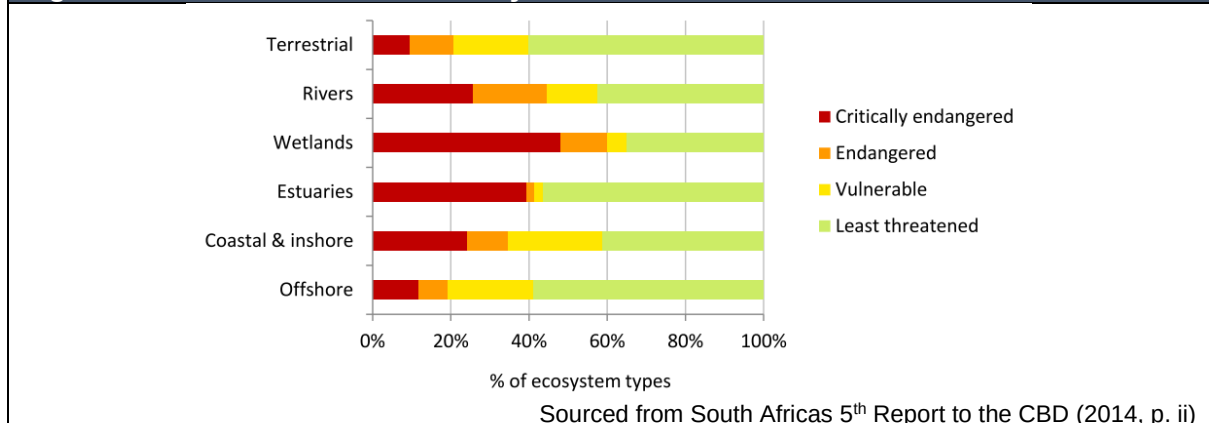


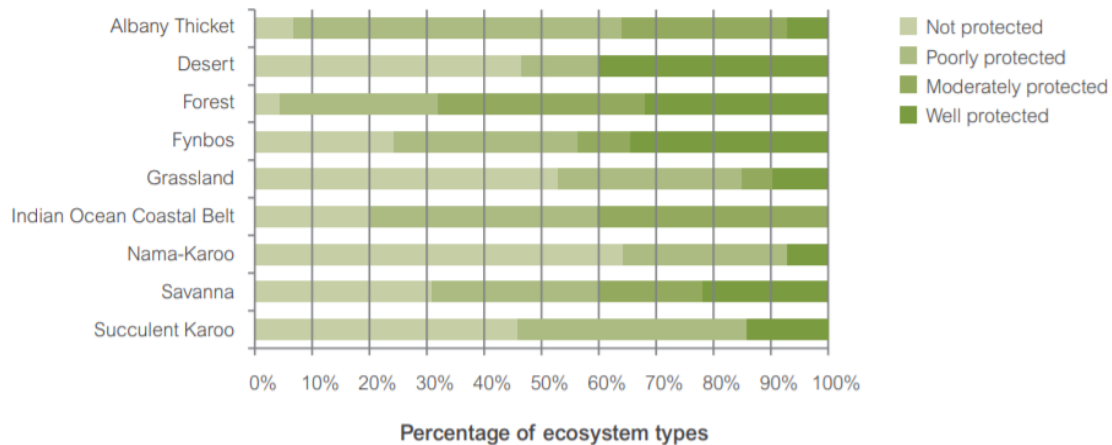
Figure 6 shows that biodiversity in each significant ecosystem is under threat with some habitats destroyed. Wetlands, estuaries and rivers are most adversely affected with the respective flora and fauna either classified as endangered or critically endangered (refer to Figure 7).

Figure 7 - Extinction status of ecosystems in South Africa



Given the level of extinction risk in the different ecosystems of South Africa, it is expected that ecosystems are given adequate protection. This is not the case as SANBI (2013), and the South African Government (2014) have reported on the level of protection provided for each biome and ecosystem. Refer to Figure 8 and Figure 9

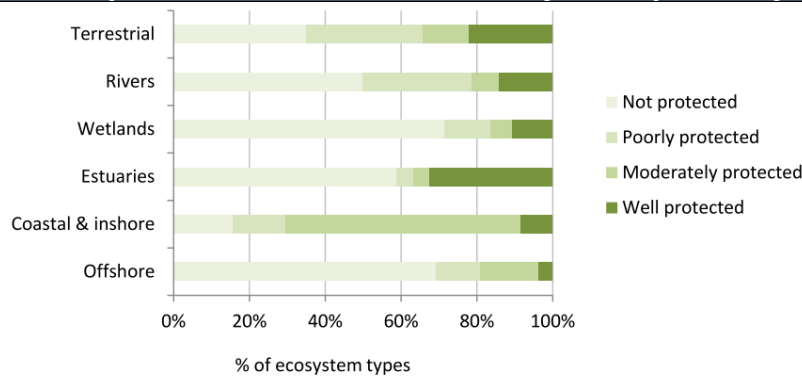
Figure 8 - Protection of ecosystems in South Africa by biome



Caring for the land: This graph shows the levels of protection for our land-based ecosystem types, by biome.

Sourced from SANBI (2013, p. 13)

Figure 9 - Protection provided to South African ecosystems per ecosystem



Sourced from South Africa's 5th Report to the CBD (2014, p. iii)

Blamey and Bolton (2018) adopt an anthropocentric view on the kelp forests along the coast in South Africa, demonstrating how vital the kelp forests are for the protection of various marine species and the economic value of ecosystem services⁵ added to the communities. This includes value obtained from fishing, abalone harvesting and shark cage diving. Anderson, Ankor, and Sutton (2017) state that more investment into eco-infrastructure needs to be made as the value derived from ecosystem services is significant in the South African economy and the valuation of South Africa's natural capital. Mensah et al. (2017) add that local communities, especially in rural areas, rely heavily on ecosystem services and should, therefore, play an active role in protecting the environment. Jorgensen, Trotter, and Hill (2016) suggest that local governments also have to protect the ecosystems under their jurisdiction as

⁵ "Ecosystem services (ES) are the resources and processes derived from natural environments which benefit societies and economies at a range of scales" (Jorgensen, Trotter & Hill, 2016: 263).

this can assist in delivering essential services (for example, flood protection and clean drinking water) to the local communities.

At the deep ecological level, kelp forests (as an example) provide nursery grounds for a variety of fish species, providing a suitable habitat which provides food, light and protection for the marine inhabitants of the kelp forests. Without this protection, fish species will die out, and this can affect multiple ecosystems leading to the collapse of food chains (Teagle, Hawkins, Moore, & Smale, 2017)

The examples and arguments above suggest that there is an apparent anthropocentric and deep ecology reason to protect the biodiversity and ecosystems in South Africa. Various environmental groups assist the government in their duty to protect the local biodiversity. This is discussed in section 3.2.

3.2 Environmental action groups operating in South Africa

The Department of Environmental Affairs (DEA) is responsible for the management, administration, support and leadership in environmental affairs in South Africa. This includes the development of policy to protect the environment (DEA, 2019). The actions of the DEA also aim to manage conservation efforts to protect the environment for the benefit of all South Africans, but also the global community (DEA, 2019). The vision of the DEA is to create a natural state of co-existence between the environment and human society (DEA, 2019). Table 4 summarises the DEA's strategic objectives.

Table 4 - Strategic objectives of the DEA	
Strategic objective	Purposes
Administration	To provide leadership, executive support and to facilitate effective governance to enhance the monitoring, management and evaluation of environmental action plans. This includes support for international conservation initiatives which support and strengthen of South African environmental development priorities.
Legal authorisations and compliance enforcement	To provide legal support, frameworks and legislation to strengthen the compliance with environmental laws. This includes the development of multi-sector regulatory compliance mechanisms to assist the government in decision-making processes to protect the environment.
Oceans and coastal management	To protect the marine ecosystems of South Africa through the management of threats to the quality and integrity of ecosystems or biodiversity. This includes adding to knowledge through scientific

Table 4 - Strategic objectives of the DEA	
Strategic objective	Purposes
	research to determine the policy which can assist the government in protecting biodiversity and the environment.
Climate change and air quality management	The objective of the DEA is to increase the air and atmospheric quality through the development and implementation of management and reporting mechanisms. This includes managing threats to environmental quality and integrity and enhancing sectoral monitoring, and evaluation practices.
Biodiversity and conservation	The objective is to ensure adequate regulation and management of all biodiversity assets takes places in a sustainable manner that drives economic development. This includes developing regulatory frameworks to allow equitable and fair access to the benefits provided by nature and to enhance scientific research.
Environmental programmes	The purpose is to create an environment which allows extensive public work and green economy projects in the environmental sector. This will enhance socio-economic benefits to communities involved in the projects while also ensuring that ecosystems are conserved, managed and sustainably used.
Chemicals and waste management	The purpose is to develop and lead the implementation of policies and legislation to ensure the effective and safe management of chemicals and other waste.

Adapted from DEA (2019)

The DEA objectives are anthropocentric, placing the needs of humans above those of nature while ensuring the continued existence of biodiversity. In order to deliver on its mandate and meets its strategic objectives, the DEA is assisted by the following public entities (National Treasury, 2017)

- iSimangaliso Wetland Park
- South African National Biodiversity Institute
- South African Weather Service
- South African National Parks

3.2.1. iSimangaliso Wetland Park (SWP)

The iSimangaliso Wetland Park (SWP) was established in November 2000, consolidating 16 separate conservation areas. SWP aims to integrate the conservation activities with the eco-services sustainably provided to the communities. Among all of the objectives of SWP, SWP

aims to restore water flow to Lake LaLucia from the Umfolozi Catchment area after the water flow was disrupted in 1950, negatively impacting biodiversity (iSimangaliso Wetland Park, 2011). SWP does not issue separate annual reports and was excluded from the study.

3.2.2. South African National Biodiversity Institute (SANBI)

To ensure that research informs national policy, the National Environmental Management: Biodiversity Act 10 of 2004 allowed the incorporation of the SANBI expanding its mandate from its predecessor, the National Botanical Institute. The SANBI is responsible for the monitoring of biodiversity, including threats to biodiversity, and the evaluation of mechanisms to protect biodiversity (SANBI, 2019). Included in its mandate, SANBI should report to the DEA on the following (in terms of the National Environment Management: Biodiversity Act, 2014):

- the status of biodiversity within South Africa's borders and jurisdictions;
- the conservation status of all listed and threatened/protected species and ecosystems and
- the status of all listed invasive species.

SANBI is also responsible for the implementation and co-ordination of the rehabilitation of ecosystems which include the management of public work programmes. SANBI aims to educate society on the biodiversity assets of South Africa and how to protect and sustainably use the natural capital of South Africa (SANBI, 2019).

3.2.3. South African Weather Service (SAWS)

The South African Weather Service (SAWS) is responsible for the dissemination of accurate information about the weather, to act as an early-warning system for South Africans when the weather patterns change. SAWS is also responsible for reporting on pollution of natural ecosystems, climate, air, soil and oceans. This will ensure sustainable resources and improved air quality (SAWS, 2018).

3.2.4. South African National Parks

The idea of a national park to be used for the conservation and preservation of biodiversity in South Africa was first raised in *Die Volksraad* (the parliament of the Transvaal⁶) in 1885 because of the large number of species being hunted in the then Transvaal (Carruthers, 1994). At this time, the Transvaal had not created any national parks. According to Carruthers (1994, p. 267), the need for a national park to protect biodiversity was the “*snelle uitroeijing*”⁷ of a variety of species because of the hunting activities of the citizens of the Transvaal. A number

⁶ The Transvaal was the Boer Republic that included the provinces of Gauteng, Limpopo and Mpumalanga.

⁷ rapid extermination

of parks were created over 20 years. The most notable reserve during this period was the Sabie Game Reserve, settled between the Crocodile and Sabie rivers in 1898 (Carruthers, 1994).

After the Anglo-Boer war in 1902, the British took control of the Transvaal and its territories and started making significant changes to the regulatory frameworks (Carruthers, 1994). This included the amalgamation of the Cape Colonies, Transvaal and Orange Free state to form the Union of South Africa in 1910 (Carruthers, 1994; Magubane, 1996).

In 1910, the Union of South Africa placed the responsibility of the management of the game reserves under the control and administration of Transvaal. The Transvaal administration reclassified the game reserves as national parks. With the National Parks Bill tabled in Parliament in 1922, the Kruger National Park (KNP), as it is known today, was established (Carruthers, 1994)

With democracy in 1994, the National Parks Act (Year) was repealed and replaced with the Environmental Management: Protected Areas Act, 57 of 2003⁸ (SANParks, 2017a). SANParks has also become a primary custodian of South Africa's natural capital and works closely with leading research institutions such as the SANBI (SANParks, 2017a). The emphasis is not on the maximisation of profits; SANParks seek to manage their parks in a sustainable way which represents the natural and cultural heritage of South Africa to ensure that all citizens can share in the benefits of South Africa's natural capital (Büchling & Maroun, 2018; SANParks, 2018). This is stated by SANParks in its mission statement (2016, p. 7):

To develop, expand, manage and promote a system of sustainable national parks that represents biodiversity and heritage assets, through innovation and best practise for the just and equitable benefit of current and future generation.

In taking steps to meet the goals of its mission, SANParks has increased its area of operations. It is responsible for managing and protecting over 4 million hectares, distributed among 21 national parks. As a state-owned entity, SANParks also reports on their activities to provide stakeholders of an account of how well the organisation has performed in terms of environmental, financial and social performance indicators. By reporting on how it meets its objectives, SANParks offers a type of extinction accounting at national level (Büchling & Maroun, 2018) which and can be used to mobilise action by drawing on accounting's emancipatory potential.

⁸ The National Parks Act was repealed and replaced by Environmental Management: Protected Areas Act, 57 of 2003 to take into account the change in political systems and to provide for the inclusion of local communities participation in the management of protected areas to define new protected areas and to assist the government in managing the biodiversity assets of South Africa (The Republic of South Africa, 2003).

4 METHOD

4.1 Overview of methodology

The study is predominantly qualitative. Thematic content analysis was used to collect and analyse data, supported only to a limited extent by quantitative evaluation of disclosure themes⁹. A qualitative approach is necessary given the limited prior research on emancipatory accounting in the public sector (Atkins and Atkins, 2019) and the need to understand the social context in which SANParks discloses information (see also de Villiers, 2015, Maroun, 2012 and Smith, 2017). The chosen method is also well-suited for studying varied or unstructured data typically included in integrated or sustainability reports and has been followed in similar studies (see, for example, Adams, Potter, Singh & York, 2016; Beattie, McInnes & Fearnley, 2004) .

4.2 Selection of SANParks

As discussed in Section 3, SANParks is one of the principal custodians of natural capital in South Africa. It also prepares annual reports which are publicly available. As a result, it offers an excellent case for examining how a state-owned entity is reporting on biodiversity- and conservation-related themes.

The annual reports were selected as these are the only reports issued by SANParks which relate to its operations and finances¹⁰. There are no separate sustainability or environmental reports.

The period selected is 2013 to 2017. These years are chosen because they coincide with the release of an international framework on integrated reporting¹¹ and the time frame during which the Aichi Targets become applicable. Purposeful selection of reports is appropriate, considering the need to maximise the availability of data for exploratory research and the fact that the intention is not to produce generalizable results in a quantitative sense (see Creswell, 2014).

4.3 Research method

4.3.1. RQ1 – Data collection and analysis

Thematic content analysis was used to obtain and analyse data contained in SANParks' annual reports. Content analysis has become a popular method for analysing texts and images

⁹ According to Creswell (2014), this is not a mixed method study in the truest sense because quantitative techniques are used as part of the qualitative content analysis rather than being used to confirm qualitative findings or provide a basis for collecting additional qualitative information based on quantified trends or patterns.

¹⁰ The results can be relied upon as the annual reports are audited by the Auditor General.

¹¹ "An integrated report is a report on how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short-, medium- and long-term" and is prepared in terms of the IIRC Framework (IIRC, 2013: p. 7).

and generating new insights, principles or recommendations (Guthrie et al., 2017; Guthrie, Petty, Yongvanich, & Ricceri, 2004; Krippendorff, 2018; Milne & Adler, 1999). For RQ1, the aim is to explore what SANParks reports on the biodiversity under its protection.

A deductive approach was followed to identify data from the annual reports which deal directly or indirectly with biodiversity-related issues (Finfgeld-Connett, 2014). To isolate the relevant disclosures, each report was read several times to gain a sense of its content and structure. The reports were analysed on a systematic basis to ensure that all sections are covered (Atkins and Atkins, 2019).

Identified disclosures were listed in a theme register or data map and supported by illustrative examples to enhance clarity and understanding of each type of disclosure. To avoid overlooking key details, interconnections among disclosures and context, the units of account were paragraphs, diagrams, charts or sub-sections in the annual reports, rather than individual words or sentences (Beattie et al., 2004; Krippendorff, 2018). Nevertheless, to ensure that all disclosures were identified, a search for keywords was performed. Examples included extinction, rhino's, biodiversity, rehabilitation, restoration, protection, species, pollution, climate change and drought (adapted from Atkins et al., 2018).

The data collection and analysis process were iterative. As each report was read and analysed, new themes were identified. Where this occurred, the themes were added to the register, and the annual reports were re-coded. This continued until data saturation was achieved or no new themes were identified (Beattie et al., 2004; Krippendorff, 2018).

Once the theme register was finalised, the qualitative data was "quantised" to assist with the analysis (C. Adams et al., 2016; Beattie et al., 2004). For this purpose, each identified disclosure theme was assigned a value of '1'. Where disclosure was not located, a score of '0' was awarded. A simple frequency table for disclosure themes was generated, showing a frequency score per disclosure theme per year. The data are presented graphically in frequency charts and supported by descriptive statistics and univariate Spearman correlations (for non-normal data). Spearman Rho is a nonparametric measure of the strength and direction of association which exists between two variables (in this case the report section and the disclosure theme). A Spearman Rho was used as the data are continuous or ordinal. The results of the Spearman Rho were supported by Kendall's Tau B because of the relatively small number of observations under review. Gauging the quality of the disclosures was not within the scope of this study and has been deferred for future research. Given the focus on a single entity, inferential statistics were not run (Guest, MacQueen, & Namey, 2011; Heyvaert, Maes, & Onghena, 2013).

4.3.2. RQ 2 – Data collection and analysis.

Specific disclosures identified in SANParks' annual reports used to address RQ 1 were treated as open codes and organised according to pre-determined axial codes. To ensure focus and enhance validity, the axial codes are derived from the literature and are summarised in Table 2 and Table 3 in Sections 2.4. This resulted in each disclosure theme (from RQ1) being “tagged” with one or more of the “elements” of an emancipatory extinction accounting schematic outlined by, inter alia, Russell et al. (2017) and Atkins et al. (2018).

As with RQ1, an iterative data analysis process was applied where disclosure themes were coded and re-coded until data saturation was achieved. The result was a data mindmap which showed how extinction accounting might be operationalised by SANParks, using biodiversity disclosures found in its existing annual reports. Examples were provided for each of part of the extinction accounting typology to produce an illustration of a full emancipatory account which can be applied in a practical context. The intention is not to test for the widespread application of extinction accounting but to document in detail information currently being reported on species loss and extinction prevention in order to demonstrate what a comprehensive extinction account might contain.

4.4 Validity and reliability

As in any study of this type, the coding process is an inherently subjective one (S. Adams & Simnett, 2011). This is a defining feature of research performed in the interpretive tradition rather than a threat to validity and reliability (Creswell, 2014). This does not, however, mean that the coding process can be inaccurate.

To avoid inter-coder reliability problems, only the researcher was responsible for coding the annual reports. The coded results were re-analysed by the researcher one month after initial results were generated to ensure that the data are consistently analysed. Where there was any uncertainty about the tagging of a disclosure theme, the researcher reviewed the literature to determine the appropriate coding of the disclosure and confirmed the findings with the supervisor. As a final safeguard, peer debriefing with an independent academic was used to test the coding process (Beattie et al., 2004)

In qualitative studies of this type, validity and reliability are enhanced by deriving axial codes from the prior literature. This limits the degree of researcher bias and ensures the completeness of the data instrument and the themes. A systematic coding process was complemented by limited quantitative analysis to ensure that interconnections, trends or patterns in the disclosure themes were not overlooked. It must be iterated that quantitative techniques were used only in a supportive role. The study does not aim to generate findings

in a positivist sense and, as a result, the validity and reliability concerns relating to scientific text analysis are not applicable here (see Creswell, 2014).

5 FINDINGS AND DISCUSSION

5.1 Descriptive statistics

Analysis of the disclosures found 1664 observations distributed over the period 2013 – 2017. There is an increase of 21% in the number of biodiversity-related disclosures from 2013 to 2017. The number of disclosures is illustrated in Figure 10 below.

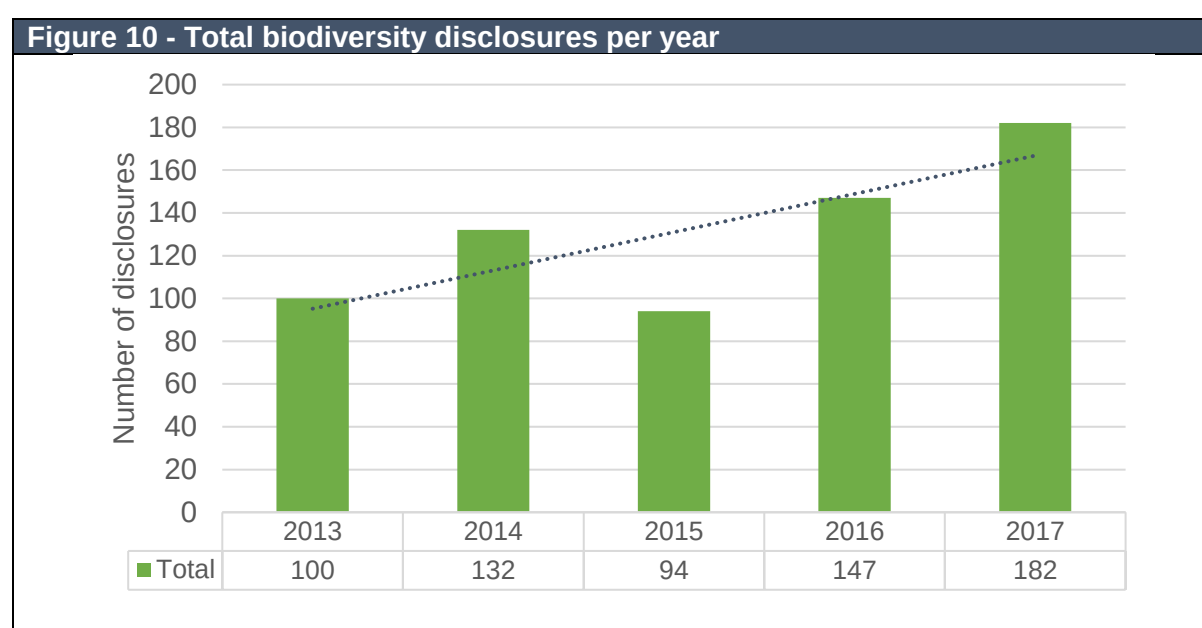


Figure 10 illustrates that there were 32 additional disclosures in 2014, which amounts to a 32% increase. In 2015, there were only 94 disclosures which relate to biodiversity compared to 2014, a 29% decrease in biodiversity disclosures. In 2016, there were 53 additional disclosures, which accounted for a 56% increase from 2015. This was followed by an increase of 35 additional disclosure items in 2017, which accounted for a 24% increase. Overall there is an 82% increase in disclosure from 2013 to 2017. Figure 10 depicts how the number of disclosures has increased but does not indicate if the change in disclosures were significant. A Kruskal-Wallis test was run on the total disclosure score with the year as the grouping variable to determine if the change in the quantum of disclosures were significant. The results are indicated below.

Table 5 – Change in disclosures over time with a year as the grouping variable		
	Kruskall Wallis	Jonckheere-Terpstra
Test statistic	41.107	94791.000
Df	4	4
Asymp. Sig.	.000**	.000
** significance at the 1% level; *significance at the 5% level		

There is a statistically significant change in total disclosure over the five years ($H=41.107$, $p<0.01$). A Jonckheere-Terpstra post hoc test confirmed a positive year-on-year change in disclosures ($J=94.971$, $p<0.010$). For a more refined analysis, a Mann-Whitney U test was performed to evaluate the disclosures on a year-on-year basis. To reduce the risk of a Type 1 error, an alpha of 1% was used¹². The results of the Mann-Whitney U test are presented in Table 6.

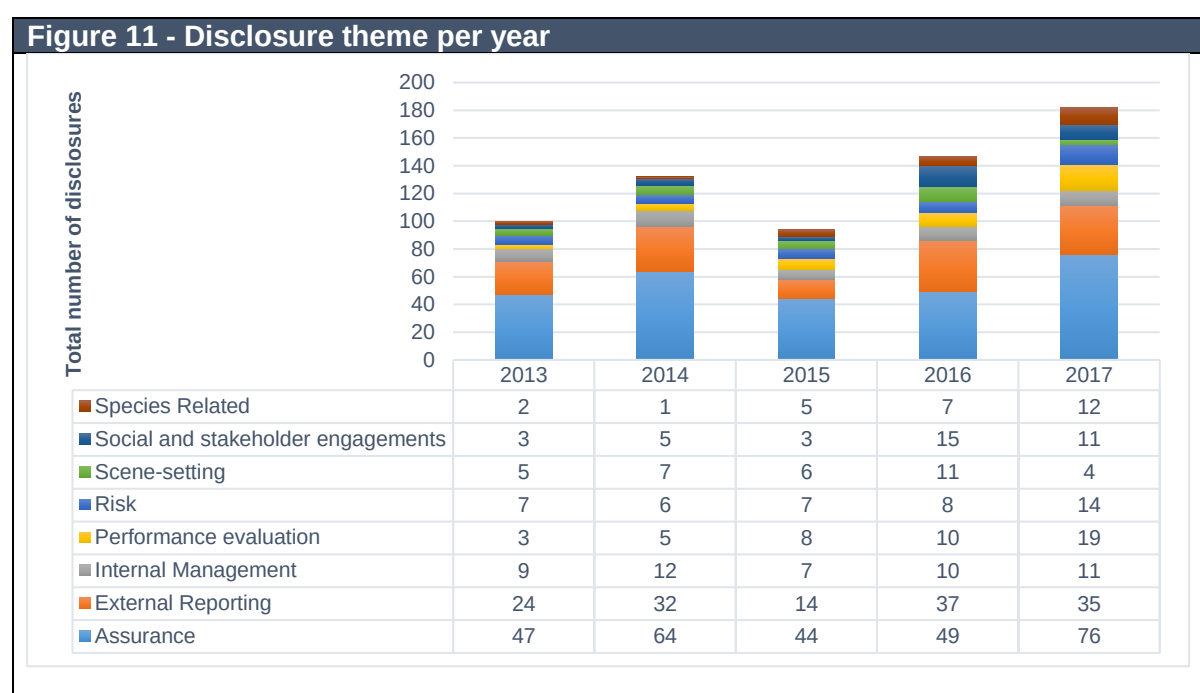
Table 6 - Mann-Whitney U Test		
Year-on-Year	Mann-Whitney U	Asymp Sig (2-tailed)
2013-2014	7 520	0.220
2014-2015	7 184	0.062
2015-2016	6 250**	0.000
2016-2017	6 845*	0.016

** significance at the 1% level; *significance at the 5% level

Table 6 shows there was a statistically significant change in the biodiversity disclosure between 2015 and 2016 ($U=6\,250$, $p<0.01$) and from 2016 to 2017 ($U=6\,845$, $p<0.05$). This is illustrated in Figure 10, which shows that the total number of disclosures increased from 97 (2015) to 147 (2016). To understand the increase in the number of disclosures, the disclosures were analysed per theme in Section 5.2.

5.2 Change in the disclosure themes per year

Analysing biodiversity disclosures across each theme allows for the assessment of the nature and extent of the disclosures within the themes. Results are presented in Figure 11.



¹² as opposed to the 5% used in the Kruskal Wallis Test.

5.2.1. Species-related

Species-related disclosure was the worst performing theme. Disclosures were limited to the mission, vision or mandate of SANParks. Broad statements were made that SANParks' mandate is to protect biodiversity and species but this was not sufficient for a disclosure score of '1' (see section 0) to be awarded. The number of disclosures increased toward 2017, but disclosure was limited to rhino's and specific invasive alien species (although this was limited to a few occurrences). The increase in the disclosure regarding rhinos is because of the cultural importance of the species and the increased news coverage of rhino poaching in national parks (Atkins et al., 2018).

The lack of species-specific disclosures may be attributed to political pressures (De Villiers & van Staden, 2011) placed on SANParks, being a state-owned entity, not to disclose information which can lead to public scrutiny of the governing political party (Büscher, 2016). Büscher (2016) adds that most species-related information about population sizes and decreases in poaching activities are reported by the DEA. However, the information has increasingly been challenged by environmental groups. Given this context, SANParks may also not disclose additional information on specific species to avoid public scrutiny and accountability for not meeting stakeholder expectations related to their mandate (van Liempd & Busch, 2013). The lack of species-specific disclosure suggests a lack of reporting guidance for SANParks. Given the vital conservation and preservation role it plays in South Africa, a framework for disclosure is required (Maroun et al., 2018).

5.2.2. Social and stakeholder engagements

One of the objectives of SANParks is to educate communities on the importance of the ecosystem and the role nature plays in the lives of communities (SANParks, 2017b). Disclosure regarding stakeholder engagements is vital, given that the vision of SANParks is to create a "sustainable National Park System connecting society" (SANParks, 2017b, p. 2).

Disclosures were varied and, in some instances, limited or superficial. The disclosures were orientated to meeting social responsibilities and transferring animals to other national parks for conservation efforts. Toward 2017, disclosure improved to include more examples of the activities which relate to the conservation and education of youth. Consider, for instance, the following information contained in the 2017 annual report:

Arbor Day/Month serves to promote awareness of the need to plant and maintain indigenous trees throughout South Africa. September is Arbor Month, so activities were undertaken throughout the month. It is through these activities that SANPark aims to make communities aware of the roles of trees in our ecosystem and differentiate between indigenous and alien species. Arbor Day was celebrated at the Marakele, Addo, Agulhas, Kgalagadi Transfrontier and Augrabies Falls national parks, with nearby schools and communities (SANParks, 2017b, p. 118)

The disclosure illustrates how SANParks involve the communities - living in the vicinity of national parks - in the conservation process. If the community identifies invasive tree species, the community may be able to take action and remove the alien species, to further the conservation effort. (How this forms part of a more emancipatory accounting framework is discussed in more detail in Section 6.1.)

The increase in the disclosures regarding the social and stakeholder engagements can be attributed to the lack of species-specific disclosure in the annual reports. By providing less information on species in their reports, SANParks can illustrate how their other activities are geared toward conservation and involving the communities in the conservation effort. This can decrease the extent to which SANParks will be subjected to public scrutiny for not performing well in other conservation areas (consider also van Liempd & Busch, 2013).

In managing the public perception, SANParks monitors and actively engages with the media. The engagement with the media is regarded by SANParks as necessary to its operations as it is included in their key performance indicators. For example:

Figure 12 - Media interactions

PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
4.1 Total Number of Proactive Media Engagements	Media releases = 25 Media Events = 10	Media releases = 42 Media Events = 21
Performance Analysis	For the year under review, SANParks issued 42 proactive media releases. The majority of articles related to the on-going poaching incidents in national parks, particularly in the Kruger National Park. Articles were published in various newspapers including, Beeld, The Star, The New Age, Rapport, Pretoria News, IOL and The Times. Reasons for variance The variance is attributable to the increase in the number of incidents within the organisation, which required many more media releases, such as visits by prominent individuals to the Kruger National Park, notably the President, Prince Harry and Secretary Sally Jewel of the USA.	
Planned Improvement/ Corrective Actions	No corrective actions are required at this stage.	
PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
4.2 Media Reputation Rating	Positive/ Neutral > 95%	Positive/ Neutral > 99%
Performance Analysis	For the period under review, SANParks' media reputation rating (positive/neutral) was 99%. This is better performance considering the situation in regular media reports about the on-going rhino poaching incidents in the Kruger National Park and an escaped lion in the Karoo National Park at the end of March 2016. For the reporting period, SANParks had 6 914 media clips with an Advertising Value Equivalent (AVE) of R213 387 568. • 3% Positive 440 (AVE: R6 472 164) • 1% Negative 91 (AVE: R1 474 384) • 96% Neutral 6 383 (AVE: R205 441 020) Reasons for variance This variance is attributable to the proactive and transparent manner in which SANParks dealt with the media throughout the year.	
Planned Improvement/ Corrective Actions	No corrective actions are required at this stage.	

Sourced from SANParks (2016, p. 44)

Figure 12 illustrates how active SANParks is in managing its reputation while providing the public with key information on its conservation initiatives. Poaching, especially of animals

such as the rhino has become a major concern in South Africa (Atkins et al., 2018). With higher incidence of poaching, SANParks provides the public with more information on the activities taking place to curb rhino poaching. The disclosure suggests that the media campaigns have been successful as they have exceeded their target with most of the news reports being neutral. The disclosure also provides users with the operational areas monitored by the media (i.e. Karoo National Park and KNP). SANParks can use this knowledge to educate society and stakeholders about challenges faced by SANParks. It can also set the scene for the anti-extinction activities which take place and the role that SANParks plays in conservation.

5.2.3. Scene setting

Given the high level of extinction facing species in South Africa and the impact of human development on ecosystems (see section 1.2 and 3.1), SANParks provides detailed information about the context in which they operate. The disclosures related to the scene were lacking and the focus was placed on the socio-economic factors. For example:

SANParks manages a system of 19 functional national parks in seven of the nine provinces of South Africa with a total area of just over 4 million hectares comprising 67% of the protected areas under state management. The SANParks of today is recognised as a world leader in conservation and protected area management. In the last two decades, seven new national parks have been established, totaling over 700 000 hectares, with much of this being in the under conserved biomes such as the Succulent Karoo and Fynbos. During the past year alone, 3 873 ha has been included into the conservation estate. (SANParks, 2017b, p. 6)

In the example, SANParks provides disclosure on the role it plays in conservation and preservation but does not refer to combatting extinction within its operational area. Few references are made to the threat of extinction in the annual reports and how many of the threats exist within SANParks' operational areas. There are numerous broad environmental statements, but this is insufficient to be considered as a scene-setting disclosure theme. This is of concern given the conservation role that SANParks has in the South African context. This lack of disclosure suggests a lack of disclosure/reporting guidance. This is an area which should be improved upon as the extinction context is relevant to stakeholders (Atkins & Maroun, 2018; Maroun & Atkins, 2018).

5.2.4. Risk disclosures

Risk-related disclosures are essential as they show how SANParks assesses the risk of extinction and what measures have been put in place to mitigate extinction risk (Raemaekers, Maroun, & Padia, 2016). The following is an example of a disclosure incorporating details on species at risk of extinction and on conservation goals.

Biological management interventions, the cornerstone of successful rhino recovery, continue to form a key component of SANParks' response. In the short to medium-term, strategic removals from areas of high poaching risk in [Kruger National Park] and high density, but low poaching allow offsets through reducing poaching risks and stimulating increased birth rates'. (SANParks, 2016, p. 96)

The disclosure provides context for stakeholders by illustrating the importance of moving rhinos from high-risk poaching areas in the KNP. It suggests that SANParks uses biological management interventions to manage rhino populations. The disclosure can be improved by referring explicitly to the extinction risks faced by rhinos.

In general, there are few examples providing stakeholders with detailed information on how SANParks is managing extinction risk at a species level and in total. The disclosures are generic and often lacked actions relevant to improve the state of biodiversity. The disclosure rarely referred to the extinction status of species or the total level of extinction activities within the different operational areas. The risk management processes also contain enough information to allow comparisons between periods. In order to improve the biodiversity reporting, the aspects above need to be improved upon (Atkins & Maroun, 2015; Maroun & Atkins 2018; Maroun et al., 2018).

5.2.5. Performance evaluation

SANParks' reports provide a significant amount of information dealing with performance evaluation. The scores recorded are, however, lower because of the performance indicators and measurements are assured and classified under the assurance theme by the researcher. This approach was considered appropriate as assurance provides more assurance over information (Maroun, 2018b. Maroun & Atkins, 2015).

The performance evaluation disclosure is excellent, indicating targets for each measure and the actual results obtained for the year. The performance measurements relate to strategic objectives about biodiversity, including land reclamation, ecosystem rehabilitation and measurement of anti-poaching initiatives. For example, Figure 13 illustrates how SANParks provides information to users on its performance management and its key performance indicators.

Figure 13 - Example of performance evaluation from SANParks reports

PERFORMANCE INDICATOR	ANNUAL TARGET		ACTUAL PERFORMANCE													
2.1 Total Hectares of Land Rehabilitated / Restored Follow up = 196, 341 ha *** Target updated from 209, 630 ha following mid-term review Wetlands = SANParks = 6 600 m ³ (26 sites)	Initial = 43 697 ha **** Target updated from 38, 537 ha following mid-term review)		Initial = 45 493.42 ha (104%)													
	Follow up = 196 341 ha *** Target updated from 209, 630 ha following mid-term review		Follow up = 223,181.71 ha (114%)													
	Wetlands = SANParks = 6 600 m ³ (26 sites)		Wetlands = SANParks 6 188 m ³ (94%) (25 Sites)													
PERFORMANCE ANALYSIS	Number of hectares rehabilitated: Rehabilitation of land in all national parks continued through the implementation of the Working for Water (WfW) and Working for Ecosystems (WfE) programmes, funded by the he Department of Environmental Affairs Natural Resource Management Programme (DEA NRMP). Rehabilitation includes clearing of alien invasive vegetation, erosion control and bush encroachment. Reporting for full year performance is against the revised targets as approved by DEA:															
	<table><tr><th>Initial 2016/17 Target</th><th>Revised 2016/17 target</th><th>Full Year Achievement</th><th>Percentage</th></tr><tr><td>Initial = 38,537 ha</td><td>Initial = 43,697 ha</td><td>Initial = 45,433 ha</td><td>104%</td></tr><tr><td>Follow-up = 209,630 ha</td><td>Follow-up =196,341 ha</td><td>Follow-up =223,115 ha</td><td>114%</td></tr></table>				Initial 2016/17 Target	Revised 2016/17 target	Full Year Achievement	Percentage	Initial = 38,537 ha	Initial = 43,697 ha	Initial = 45,433 ha	104%	Follow-up = 209,630 ha	Follow-up =196,341 ha	Follow-up =223,115 ha	114%
	Initial 2016/17 Target	Revised 2016/17 target	Full Year Achievement	Percentage												
	Initial = 38,537 ha	Initial = 43,697 ha	Initial = 45,433 ha	104%												
	Follow-up = 209,630 ha	Follow-up =196,341 ha	Follow-up =223,115 ha	114%												
Reasons for Variance Due to the drought situation in the Northern areas of the country, teams had to be moved to work in other areas, as well as doing more follow-up work in alien invasive vegetation areas. In total, SANParks exceeded the planned target for initial rehabilitation with 1,736 ha (4%). Follow-up rehabilitation in all parks and integrated zone areas exceeded the annual planned target of 26,774 ha (14%). More work was undertaken in follow-up areas due to the impact of the drought on the densities of alien invasive vegetation areas.																
Wetlands rehabilitation: The rehabilitation of wetlands had a delayed start in August 2016 due to late approval of the business plan for 2016/17. During the six month implementation, teams were doubled and the Working for Wetlands programme was on track to achieve the planned target. Heavy rains in Mapungubwe-, Golden Gate Highlands- and Kruger National Park impacted on structures and teams could not get in-field for periods of time. The Department of Environmental Affairs extended the implementation to end of April 2017.																
PLANNED IMPROVEMENTS/ CORRECTIVE ACTIONS	Continued implementation of the land rehabilitation plan.															

Sourced from SANParks (2017b, p. 30)

Sourced from SANParks (2017b, p. 30)

The disclosure not only offers the rehabilitation targets set by SANParks but also the revised targets. To illustrate the degree to which the target has been met, SANParks expresses the actual performance as a percentage of the target to highlight by what margin the targets have been exceeded. The disclosure adds that the targets were revised after a mid-term review which suggests that a review process takes place internally, giving users information about the internal processes and that the targets may change. In particular, users are able to determine that internal processes exist within SANParks allowing the review of targets. Of importance is the fact that the DEA has to approve the final targets, suggesting that SANParks may not determine or change targets with the DEA approval.

The disclosure provides information which makes it possible for users to understand that rehabilitation, in this context, refers to the removal of invasive alien vegetation, reversing the effects of ground erosion and bush encroachment. The rehabilitation is not limited to only ground rehabilitation but includes wetlands. In particular, the disclosure provides information

on the parties involved in the rehabilitation activities (Working for Water (WfW)¹³ and Working for Ecosystems¹⁴ (WfE)). This provides users with information about how rehabilitation activities take place and the involvement of other stakeholders. The users are given more information which can provide context to the extent of involvement of stakeholders in the conservation effort (see also Section 5.2.2.).

In the analysis of the actual results, the variances are explained by explaining how variances are caused by changes in the external environment to SANParks (i.e. the drought faced by the northern part of South Africa). Information is also provided on how heavy rains have affected the rehabilitation of the wetlands. This disclosure provides the users with information on the external factors which impact the conservation activities of SANParks. However, the sites covered by the wetland rehabilitation activities are not disclosed, leading to vagueness. The disclosure can be improved by disclosing the sites selected for rehabilitation and the biomes in which the wetlands can be found.

5.2.6. Internal management

The disclosure of internal management processes was limited to internal controls related to accounting-related activities that indicated there were no internal controls to report reliable performance information (SANParks, 2017b). The lack of disclosure on internal controls suggests that SANParks may not want to discuss internal controls in their reports to avoid public scrutiny (see van Liempd & Busch, 2013). The fact that the performance indicators are audited by the Audit General can be regarded as a compensating control, enhancing the reliance which can be placed on the information reported in the performance indicators.

The internal controls referred to in the annual reports only apply to financial measures and not to the biodiversity targets. This should be addressed to strengthen the reliability of the information. A combined assurance approach should be adopted to ensure that the information disclosed to external parties and data used for internal decision-making processes are accurate (Institute of Directors Southern Africa, 2016).

5.2.7. External reporting

The number of disclosures has increased over time. The external reports contained disclosure about the revenue generated from the tourism activities, reporting on the anthropocentric gains made by SANParks. The reports also include information on the acquisition of new land as part of the reclamation process, rehabilitation costs capitalised, and the total amount spent on

¹³ Working for Water (WfW) is a government initiative which rehabilitates water systems by removing invasive alien species (Department of water and environmental affairs, 2019(b)).

¹⁴ Working for Ecosystems (WfE) is a government programme in which land is in rural communities (Department of water and environmental affairs, 2019(a)).

research and development. The total number of disclosures changed over time as the GRI standards were amended and new requirements included (Rimmel & Jonäll, 2013) but also because the financial statements became more sophisticated. The financial statements, although reporting financial information, disclose biodiversity-related information which provides the users with information relevant to biodiversity management.

5.2.8. Assurance

A significant number of the biodiversity-related disclosures was assured by the Auditor General (43% of total disclosures between 2013 - 2017). On closer analysis, the disclosures related to the assurance included information on the strategic objectives (which include performance indicators) of SANParks, of which the majority was related to biodiversity objectives. This indicates that SANParks assures the information related to how they achieve their biodiversity-related objectives for stakeholders. The assurance of the biodiversity information strengthened the reliance placed on the disclosures as stakeholders will perceive the information to be more credible (Farneti & Guthrie, 2009; 2018; Hodge, Subramaniam, & Stewart, 2009). The assurance of the information also increases the quality of the disclosures as the disclosures comply with relevant frameworks, such as the GRI (Maroun et al., 2018).

5.3 Connection between sections of the annual reports.

The biodiversity disclosures are not limited to a specific section in the annual reports¹⁵. To explore interconnections among disclosure themes in more detail, a Spearman Rho (r_s) is used to evaluate univariate correlations. As a single case entity is used and the sample sizes are relatively small, results are corroborated using Kendall's Tau-B (ρ). The results of the correlation analysis are tabulated in Table 7.

There is a statistically significant correlation between performance against predetermined objectives (K) and strategic outcome orientated goals (J) ($\rho = 0.950$, $p < 0.01$), Chief Executive Officers Report (D; $\rho = 0.907$, $p < 0.01$), About SANParks (A; $\rho = 0.964$, $p < 0.01$), Ministers forward (B, $\rho = 0.780$, $p < 0.01$) and Conservation services report (L, $\rho = 0.698$, $p < 0.01$). . This suggests that an integrated process is followed in reporting on extinction and biodiversity and that reporting is done with purpose (Rinaldi, Unerman, & De Villiers, 2018).

¹⁵ Refer to Appendix A for a description of the different sections of report and the labels used for the correlation analysis.

Table 7 - Correlation analysis																						
	Kendall Tau – B																					
		A	B	C	D	E	F	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Spearman Rho	A	1.00	.911 ^a	.914 ^a	.918 ^a	.841 ^a	.715 ^b	.707 ^a	0.53	.907 ^a	.964 ^a	.735 ^a	.717 ^a	.833 ^a	.968 ^a	.946 ^a	0.32	.865 ^a	.955 ^a	.950 ^a	.746 ^a	0.33
	B	.829 ^b	1.00	.773 ^a	.764 ^a	.823 ^a	.626 ^b	.608 ^b	.565 ^b	.704 ^a	.780 ^a	.615 ^b	.640 ^b	.669 ^b	.914 ^a	.775 ^a	0.11	.951 ^a	.839 ^a	.811 ^a	.749 ^a	0.17
	C	.760 ^b	.655 ^b	1.00	.996 ^a	.697 ^a	0.45	0.47	0.18	.979 ^a	.907 ^a	.719 ^a	0.44	.694 ^a	.896 ^a	.909 ^a	0.46	.834 ^a	.862 ^a	.907 ^a	.559 ^b	0.45
	D	.776 ^b	.668 ^b	.980 ^a	1.00	.699 ^a	0.46	0.46	0.22	.975 ^a	.910 ^a	.756 ^a	0.44	.689 ^a	.905 ^a	.913 ^a	0.46	.806 ^a	.869 ^a	.896 ^a	0.53	0.44
	E	.800 ^b	.764 ^b	.600 ^b	.612 ^b	1.00	.850 ^a	.847 ^a	.575 ^b	.663 ^b	.747 ^a	0.34	.847 ^a	0.54	.718 ^a	.640 ^b	-0.23	.746 ^a	.659 ^b	.688 ^a	0.55	-0.23
	F	.663 ^b	.592 ^b	0.42	0.43	.829 ^a	1.00	.997 ^a	.677 ^b	0.52	.715 ^a	0.21	.997 ^a	.702 ^a	.554 ^b	.595 ^b	-0.18	0.49	.618 ^b	.650 ^b	.694 ^a	-0.18
	H	.619 ^b	.547 ^b	0.44	0.45	.811 ^a	.978 ^a	1.00	.613 ^b	0.54	.717 ^a	0.17	.986 ^a	.699 ^a	0.53	.593 ^b	-0.18	0.49	.604 ^b	.657 ^b	.697 ^a	-0.18
	I	0.49	0.53	0.16	0.21	.561 ^b	.677 ^b	.602 ^b	1.00	0.18	0.44	0.47	.736 ^a	0.48	0.53	0.40	-0.12	0.28	0.53	0.35	0.42	-0.12
	J	.760 ^a	.567 ^b	.920 ^a	.898 ^a	.600 ^b	0.48	0.50	0.16	1.00	.950 ^a	.704 ^a	0.50	.787 ^a	.867 ^a	.946 ^a	0.53	.758 ^a	.884 ^a	.943 ^a	.614 ^b	0.51
	K	.840 ^a	.655 ^a	.760 ^a	.776 ^a	.700 ^a	.663 ^b	.678 ^a	0.41	.840 ^a	1.00	.727 ^a	.707 ^a	.910 ^a	.914 ^a	.982 ^a	0.46	.750 ^a	.959 ^a	.979 ^a	.754 ^a	0.45
	L	.611 ^b	.571 ^b	.611 ^b	.668 ^a	0.33	0.20	0.16	0.45	.611 ^b	.698 ^a	1.00	0.25	.653 ^b	.856 ^a	.814 ^a	.704 ^a	0.53	.843 ^a	.704 ^a	0.40	.683 ^b
	M	.678 ^a	.611 ^b	0.38	0.39	.811 ^a	.978 ^a	.913 ^a	.722 ^b	0.44	.619 ^b	0.23	1.00	.699 ^a	.570 ^b	.593 ^b	-0.18	0.48	.629 ^b	.637 ^b	.685 ^a	-0.18
	N	.793 ^a	.618 ^b	.611 ^b	.601 ^b	0.51	.683 ^b	.668 ^b	0.46	.702 ^a	.838 ^a	.568 ^b	.668 ^b	1.00	.801 ^a	.919 ^a	0.55	.612 ^b	.920 ^a	.926 ^a	.892 ^a	.570 ^b
	O	.898 ^a	.891 ^b	.735 ^a	.771 ^a	.663 ^b	0.52	0.48	0.50	.653 ^a	.776 ^a	.757 ^a	.542 ^b	.763 ^a	1.00	.940 ^a	0.44	.864 ^a	.969 ^a	.918 ^a	.706 ^a	0.46
	P	.853 ^a	.698 ^a	.768 ^a	.783 ^a	.640 ^b	.579 ^b	.566 ^b	0.39	.853 ^a	.938 ^a	.791 ^a	.566 ^b	.869 ^a	.849 ^a	1.00	.593 ^b	.756 ^a	.984 ^a	.982 ^a	.757 ^a	.593 ^b
	Q	0.27	0.10	0.44	0.45	-0.22	-0.18	-0.17	-0.12	0.50	0.44	.676 ^b	-0.17	0.50	0.39	.566 ^b	1.00	0.17	0.54	0.51	0.30	.986 ^a
	R	.698 ^a	.857 ^a	.786 ^a	.757 ^a	.655 ^b	0.46	0.48	0.27	.698 ^a	.611 ^b	0.43	0.42	.568 ^b	.757 ^a	.651 ^b	0.16	1.00	.782 ^a	.819 ^a	.726 ^a	0.25
	S	.869 ^a	.772 ^a	.626 ^b	.660 ^a	.631 ^b	.579 ^b	.536 ^b	0.49	.707 ^a	.869 ^a	.772 ^a	.596 ^b	.869 ^a	.907 ^a	.948 ^a	0.48	.639 ^b	1.00	.962 ^a	.791 ^a	.559 ^b
	T	.840 ^a	.655 ^a	.760 ^a	.735 ^a	.650 ^b	.603 ^b	.619 ^b	0.33	.840 ^a	.920 ^a	.611 ^b	.560 ^b	.883 ^a	.776 ^a	.938 ^a	0.44	.698 ^a	.869 ^a	1.00	.835 ^a	0.53
	U	.615 ^b	.672 ^b	.517 ^b	0.48	0.52	.668 ^b	.690 ^b	0.40	.566 ^b	.665 ^b	0.35	.617 ^b	.836 ^a	.628 ^b	.709 ^a	0.29	.725 ^a	.696 ^a	.763 ^a	1.00	0.39
	V	0.32	0.16	0.38	0.39	-0.22	-0.18	-0.17	-0.12	0.44	0.38	.611 ^b	-0.17	.568 ^b	0.45	.566 ^b	.913 ^a	0.23	.536 ^b	0.50	0.36	1.00
^a is significant at the 1% level. ^b is significant at the 5% level																						

This is supported by the statistically significant correlations between the Strategic Outcomes (J) and About SANParks (A, $\rho = 0.907$), Ministers Forward (B, $\rho = 0.704$), Chairpersons Report (C, $\rho = 0.979$) and the Chief Executive Officers Report (D, $\rho = 0.975$). The correlations imply that SANParks' strategies, as they relate to biodiversity management and extinction prevention, are fully embedded and supported by the executive board. In addition to a commitment to active management by the board of directors, the correlations suggest that disclosures are not only used as an impression management tool (Talbot & Boiral, 2018). There is a strong correlation between disclosures in the Corporate Governance section (Q) and the Conservation Services report (L, $\rho = 0.704$) pointing to the internalisation of biodiversity protection as part of SANParks' broader governance ethos.

As discussed in Section 5.2.8, to stress the importance of the biodiversity disclosures, SANParks have ensured that the performance indicators of the reports (K) are assured by the Auditor General¹⁶. This implies that the executives take accountability seriously as they assure information about how the company has achieved its strategic objectives and effectively managed its risks. Similarly, the assurance of the information indicates that the biodiversity disclosures is disclosed with a purpose and not merely to manage impressions of stakeholders (Diouf & Boiral, 2017).

Given the integrated nature of the disclosures, it is no surprise that there are low levels of correlation in the Situation Analysis (section I), Corporate Governance (section Q) and Human Capital Management (section V) compared to the other sections of the annual report. The Corporate Governance report is, however, moderately correlated to the Conservation Services Report (L, $\rho = 0.704$), indicating that the governance structures of SANParks are geared towards conservation efforts and goals. Human Capital Management is correlated with the Corporate Governance Report (Q, $\rho = 0.986$) as the disclosures related to the directors, total number of employees and key matters dealing with labour management (including interaction with unions).

The analysis of the disclosures has provided evidence of integrated thinking with discussions on the different elements of the reporting frameworks (discussed in section 2.4). Section 5.4. will use the information to construct an emancipatory account.

5.4 Constructing an emancipatory account (RQ2)

SANParks must provide disclosure on its legislative mandate and how that mandate will be achieved through its vision, mission and mandate (Büchling & Maroun, 2018). In SANParks' 2017 annual report, this is illustrated as follows:

¹⁶ See section 5.2.8.

Figure 14 - SANParks mandate, vision and mission

	LEGAL AND CONSTITUTIONAL MANDATE SANParks was initially established in terms of the now repealed National Parks Act, 57 of 1976 and continues to exist in terms of the National Environmental Management: Protected Areas Act, 57 of 2003; with the mandate to conserve, protect, control, and manage national parks and other defined protected areas and their biological diversity (Biodiversity). As a public entity, SANParks is also governed by the Public Finance Management Act, Act 1 of 1999 (as amended by Act 29 of 1999), and it is listed as a Schedule 3 Part A: 25, public entity. MANDATE Delivery of the conservation mandate by excelling in the management of a national park system. VISION A sustainable National Park System connecting society. MISSION To develop, expand, manage and promote a system of sustainable national parks that represents biodiversity and heritage assets, through innovation and best practise for the just and equitable benefit of current and future generation.	
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Sourced from SANParks (2017b, p. 2)

The disclosure provides the user with an understanding of why SANParks exists, that is, to conserve and preserve biodiversity. It explains that SANParks is a state-owned entity and, as a result, acts as a mechanism for the state to conserve biodiversity. The deep ecological nature of the legislation can be inferred as a reference is made to the protection and conservation of natural capital. The anthropocentrism of SANParks is evident from their vision, in which they aim to connect society to nature and to promote sustainable use of biodiversity.

The disclosure, however, stops short of explaining exactly how SANParks operates. In the 2015 and 2016 annual report, SANParks describes its purpose as follows:

SANParks' main purpose is the conservation of a representative system of biodiversity, landscape, encompassing fauna, flora, geological structures and unique scenery within the national park under its management authority. SANParks does not focus on traditional natural resource management of species, but rather on ecosystem management and ecological integrity within the national park. SANParks can intervene in ecosystems responsibly and sustainably, but it focuses management on complementing natural processes (e.g. floods, fires and disease outbreaks) under a minimum interference philosophy. SANParks does not manage for the reproduction of biodiversity, but for biodiversity representivity and complementarity that promote resilience and ensure ecosystem integrity. SANParks acquired the majority of biodiversity at no cost to SANParks. (SANParks, 2015, p. 149)

The disclosure takes on a deep ecological view and illustrates the tension which exists within the SANParks operating model. This tension becomes clear when comparing the mandate of SANParks to the way the ecosystem is managed (as reported in the annual reports). This tension is exacerbated by the fact that SANParks does not manage the reproduction of biodiversity. The disclosure points to the managers of SANParks having more information available than stakeholders do: this can create an information symmetry which should be resolved (Cui, Jo, & Na, 2018). This creates the opportunity to apply an emancipatory extinction accounting framework which can give more context and reduce or eliminate the information asymmetry.

5.4.1. Element 1: Extinction accounting in the context

SANParks reports on the number, size and location of national parks under its management, not only in terms of operational areas but also as a percentage of the biodiversity managed:

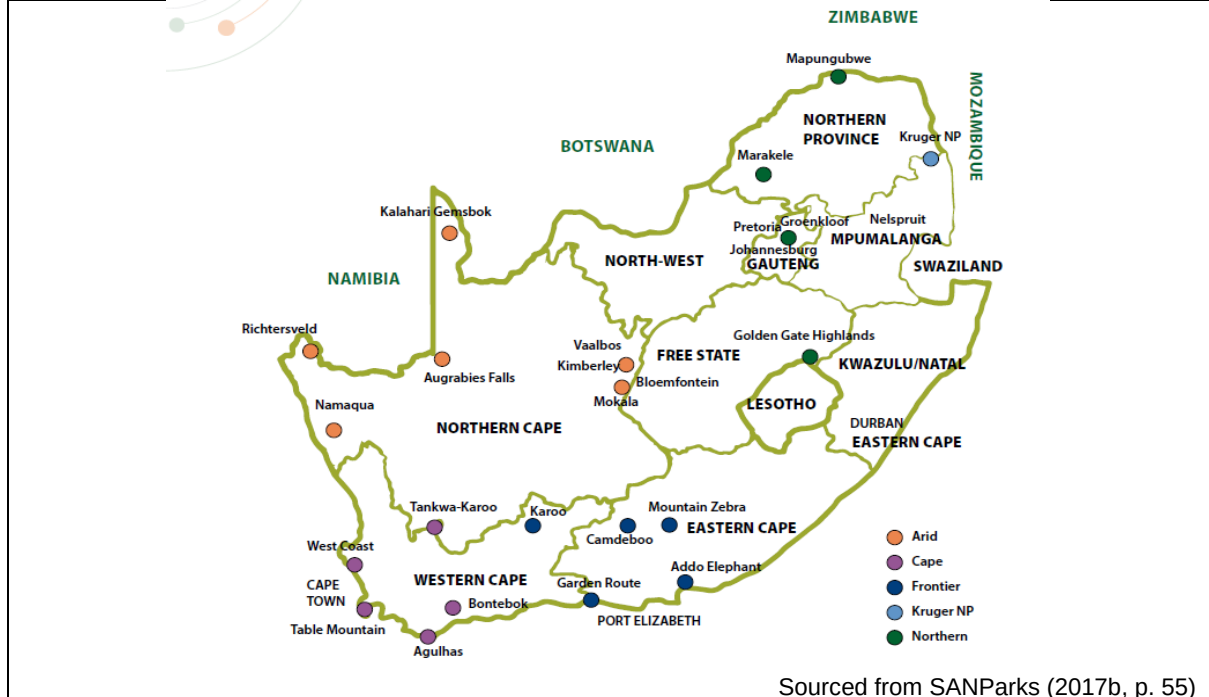
SANParks manages a system of 19 functional national parks in seven of the nine provinces of South Africa with a total area of just over 4 million hectares comprising 67% of the protected areas under state management. The SANParks of today is recognised as a world leader in conservation and protected area management. In the last two decades, seven new national parks have been established, totalling over 700 000 hectares, with much of this being in the under conserved biomes such as the Succulent Karoo and Fynbos. During the past year alone, 3 873 ha has been included into the conservation estate (SANParks, 2017b, p. 6).

The disclosure provides information on the area which is under the management of SANParks. It adds to the overall disclosure by indicating that the operational area has increased and refers to the specific biomes which are protected by law. The disclosure falls within the reporting framework of the GRI (2016) by disclosing the following:

- The total area size under SANParks management;
- The percentage of protected areas under SANParks (or state) management
- The increase in the area of operation by biodiversity type
- The increase in the area of operations by protection status.

The disclosure is complemented by a map depicting the location of the operational areas under SANParks' management. The different operations (i.e. national parks) are also categorised per region, providing information on the operations of SANParks.

Figure 15 - Location of SANParks operations



This provides an easy-to-understand overview of how SANParks is organised and managed at the operational level. However, the map does not provide information on the individual park's biomes. This makes it difficult for users to evaluate how biomes are conserved and their importance. The disclosure can be improved by indicating the location of each national park in a biome map. This will provide users with an account of the operational areas per biome, showing how, and by whom, the biome (and biodiversity) is conserved and protected. This was done in the SANParks 2015 annual report (see Figure 16 below).

Figure 16 - SANParks operational areas on the biome map

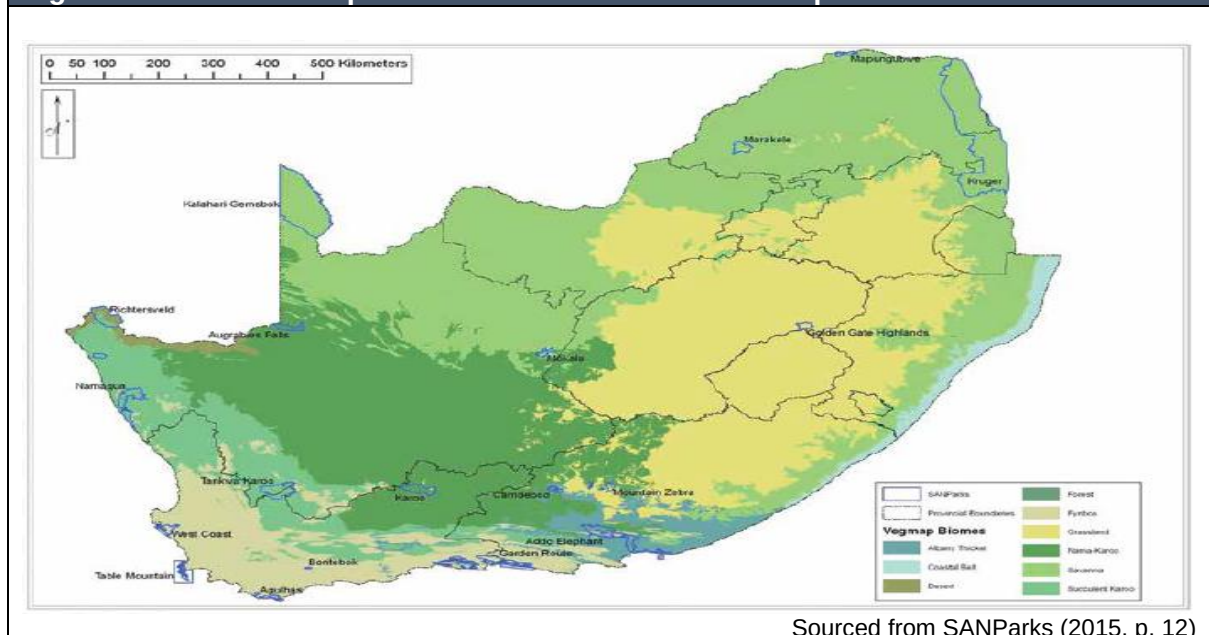


Figure 16 illustrates how SANParks activities affect diverse biomes to be found in South Africa. Although the map depicts where the parks are situated, more information may be required to explain the size of the areas under SANParks operational control in context to biomes in which they operate. Any additions to the park, or areas under control of the park, might not be made clear, leading to ambiguity in the annual reports.

An important inclusion (illustrated in Figure 17) is the operational area of each national park, categorised by region. This disclosure provides the year in which the national park was proclaimed and the size of the park. This disclosure complies with the GRI (2016) requirements for indicating the total area of operations per operational site. The usefulness of the disclosure lies in the year in which the sites were proclaimed, providing an account over time on how SANParks has extended its area of operation.

Figure 17 - SANParks National parks per region and size

Region		Name	Proclamation	Size (ha.)
Arid	1	Kruger National Park	1926	1 962 362
	2	Augrabies Falls National Park	1966	52 905
	3	Kalahari Gemsbok National Park	1931	956 665
	4	Mokala National Park	2007	32 335
	5	Namaqua National Park	2002	138 552
	6	Richtersveld National Park	1991	179 792
Cape	7	Agulhas National Park	1999	21 038
	8	Bontebok National Park	1931	3 479
	9	Table Mountain National Park	1998	25 000
	10	Tankwa-Karoo National Park	1986	140 642
	11	West Coast National Park	1985	46 817
Frontier	12	Addo Elephant National Park	1931	178 117
	13	Camdeboo National Park	2005	19 455
	14	Garden Route National Park : Knysna (1985); Tsitsikamma (1964); Wilderness (1983)	2009	141 712
	15	Karoo National Park	1979	88 325
	16	Mountain Zebra National Park	1937	26 997
Northern	17	Golden Gate Highlands National Park	1963	32 700
	18	Mapungubwe National Park	1998	20 182
	19	Marakele National Park	1994	64 677
Other *	a	Groenkloof National Park	1968	7
	b	Graspan/Vaalbos National Park	1986	4 575

*(NOTE: GROENKLOOF AND GRASPAN/VAALBOS ARE DECLARED NATIONAL PARKS IN LEGISLATION BUT ARE NOT OPERATIONALLY FUNCTIONAL NATIONAL PARKS).

Sourced from SANParks (2017b, p. 57)

The disclosure, however, does not indicate the biodiversity under each operational area or national park. Users will not be able to determine which biomes or ecosystems are being conserved by SANParks. The disclosure should be complemented by including the biomes in Figure 17, in particular, the size of the operational area. This can provide information about

how the operational site adds to the conservation of the biomes. SANParks has made such disclosures. For example:

*The park includes the previously proclaimed Tsitsikamma and Wilderness NPs, state forests and mountain catchment areas, as well as the Knysna National Lake Area. Addo Elephant NP conserves a representative sample of the Eastern Cape's unique mix of biodiversity ranging from the marine areas and representatives of **five terrestrial biomes (Thicket, Forests, Fynbos, Nama-Karoo, and Grassland)** and the azonal wetlands in a landscape diverse environment with offshore islands, coastal plains, dune fields, mountains and arid plains... **Camdeboo represents the Karoo biome** which is recognised as a world conservation priority. **Karoo NP** is situated in the semi-arid Nama- Karoo and falls within two biomes namely **Nama-Karoo and Grassland**. Mountain Zebra NP is located in a transitional area between four biomes: Grassland, Nama Karoo, Thicket and Savanna. All of the major vegetation types are currently very poorly conserved elsewhere in South Africa. (SANParks, 2017b, p. 55 [own emphasis])*

The disclosure illustrates the role of the national park in the conservation of biomes and which biomes form part of each operational site. Interestingly, the reports also disclose the acquisition of land (see, for example, SANParks (2017b, p. 185), and the area acquired which relates to a specific biome (see, for example, SANParks (2017b, p. 60)). Details on the species at risk are not explicitly dealt with but there are references to complex ecosystems and the suggestion that these need protection. There are also examples of threats posed to species which are analysed by operational area. For example:

No rhinos were poached in the six parks outside of KNP, however the incidence of rhino poaching in areas of close proximity to these parks (14 successful attempts close to Addo; 3 to Mountain Zebra; 3 to Mokala and 1 close to Mapungubwe) highlights the very imminent threat of poaching. The Rhino Protection Plan for Parks is being effectively implemented and assists immensely towards efforts to protect rhinos in the parks. In terms of rhino poaching fatalities year on year in Kruger there has been a significant reduction of 21% which is very encouraging given the fact that poaching activities year on year has increased by 9%. Although there has been a significant increase of 18% shown in elephant poaching, this translates to 37 animals in 2015/16 versus 44 animals in 2016/17. (SANParks, 2016, p. 24).

The disclosure provides an account of locations where there is an increase in the risk of poaching of a specific species (rhino and elephant) and the outcome of initiatives to reduce poaching. However, the reports do not indicate the number and type of species within each national park or biome. This would be useful as it can indicate the changes year-on-year in populations in different areas and indicate where there is a risk of extinction, given changes in the biodiversity mass and populations.

In addition to providing a narrative discussion on the effects of poaching (or threats to biodiversity for a specific species), the reports explain external natural events which affect specific species:

The past year has seen one of the driest years in the country and most parks were affected with the Kruger National Park being the most severely impacted; it experienced the worst drought season in recorded history. The resilience of the

ecosystem however, allowed for quick recovery and adaptation following the 2016/17 rainy season...Death rates amongst large mammals such as hippo and buffalo were the most significant, though other species were also impacted they displayed better adaptation to the situation (SANParks, 2017b, p. 63).

The disclosure refers to specific species that are affected by the drought but does not provide any additional detail on the death rates of mammals. In addition, no information is provided on endangered or critically endangered species and the effect of the drought on these species' populations. This could provide a detailed account of the changes in populations based upon extinction risk.

The disclosures do not only relate to ecological factors, such as the drought, but also include disclosures of man-made disasters¹⁷ within the operational area of SANParks:

SANParks embraces an integrated approach aligned with South Africa's Rhino Management Strategy that seeks to maintain persistent black and white rhino populations throughout their distribution ranges. The approach identifies that rhinos may play key roles in providing opportunities to improve people's livelihoods through aesthetic, ecological and economic values. Rhino poaching, however, impacts on SANParks achieving these objectives. At the beginning of the financial year, SANParks rhino population was estimated at between 8991 and 10,305 animals in seven national parks comprising both black and white rhino. At the close of the financial year, the rhino population was best estimated between 8573 to 9984 animals across all seven national parks... For the period under review, SANParks lost 878 rhinos due to poaching, with Kruger National Park being the most affected national park...For the same reporting period, a total of 178 suspects were arrested in the Kruger National Park in relation to rhino poaching. (SANParks, 2015, p. 14, emphasis added)

The disclosure illustrates the effect of poaching on the rhino populations, providing comparative information to provide context for the seriousness of the situation. The disclosures also point to the fact that there may be a financial consequence (anthropocentric orientated disclosure) if the populations of rhino's decrease. This is supported by the cultural importance of the rhino in South African culture (Atkins et al., 2018). The disclosure also provides information about the number of suspects arrested for poaching, indicating an area where there is a high risk of poaching. This provides the user or stakeholder with evidence that SANParks is actively taking steps to meet its mandate and preserve the rhino population (Cuckston, 2017).

In particular, the account of the change in animal numbers can be seen as a reconciliation. The opening and closing balances are provided, even though it is an estimate, making it possible for the user to work out the movement in the species numbers for the year. However, the number of rhino births and natural deaths are not reported which makes the reconciliation inaccurate. The following possibilities arise:

¹⁷ The term man-made disaster is regarded appropriate by the researcher to indicate the real cause of the scourge.

- There is evidence of analogies to the core ideas in financial reporting and, which are being applied to natural capital. This is part of the context-specific focus of the extinction account.
- The extinction account can be used to show the movement in species populations, applying the logic of IAS 1 (IAASB, 2018). This can provide the users with information about how the populations have changed and what the change relates to. In the case of rhinos (or any other critically endangered species), the disclosure can show how the anti-poaching or biodiversity measures have impacted on the natural capital populations.
- As estimates are often used when calculating the population of a species, this will require a separate section in the accounting policies to provide the users with information regarding how the estimate was made (IAASB, 2018).

The disclosures are not related only to events which take place within the operational area but include events that have taken place outside of the operational areas. For example:

In addition to drought, man-made disasters are covered:

A wildfire that started on private property on August spread through the Wilderness Section of the Garden Route National Park. Phragmites that growths on the banks of the lakes as well a gale force wind resulted in the rapid spread of the fire into a residential suburb next to the park. Four houses were destroyed in the fire. A wildfire burned for 16 days during December in the Tsitsikamma section of the GRNP. No damaged caused to any property and 4 700 ha of senescent fynbos was burnt (SANParks, 2017b, p. 64).

The damage done was not to the park but to the community surrounding the park. Reference is made to the area of lost biodiversity: this complies with the requirements of the GRI (2016). The disclosure is important as it provides information about the effects of a disaster outside its operational area. The disclosure of the biodiversity loss can provide additional information on how important it is for SANParks to conserve and protect biodiversity under its management. In particular, the disclosure illustrates how SANParks acknowledges that its operations are affected by events outside of their operational area. The inclusion of the disclosure demonstrates how an integrated approach is followed for reporting in which stakeholders are made aware of the events and circumstances which affect the operation of SANParks

5.4.2. Element 2: Action-focused reporting

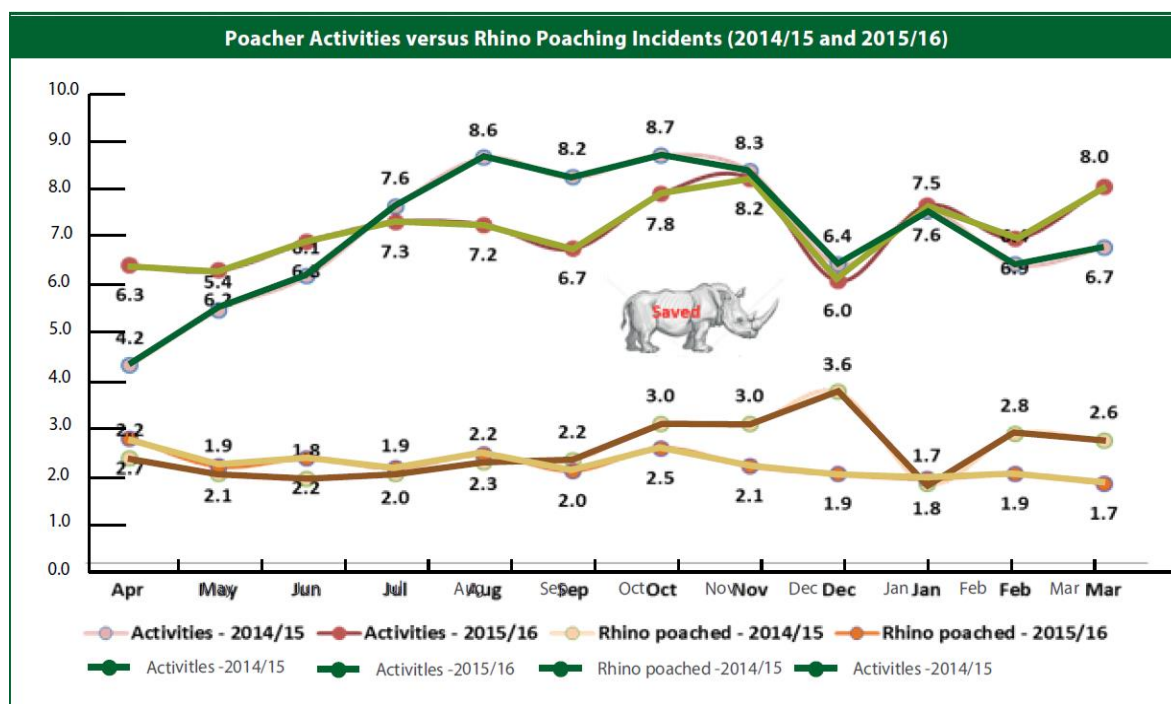
Atkins et al. (2015), Gallhofer and Haslam (2017) and Maroun and Atkins (2018) explain that, for extinction accounting to be emancipatory, it has to explain how biodiversity and anti-extinction policies are implemented to reverse extinction trends. In particular, the disclosures must report on the results of conservation or environmental initiatives (*ibid*). The disclosures

in the annual reports of SANParks do not disclose this as two separate themes. Instead, they are combined to ensure context-specific and action-orientated reporting. This section will provide examples of action-focused reporting, yet some reporting examples will include how partnerships form a part of SANParks actions to combat extinction and conserve biodiversity. For example:

The anticipated “spike” in poaching activity, which historically occurs towards the end of the year (November and December), and again in the beginning of the new year (late January and February) was largely averted by a concerted and sustained security effort carried out in the park by the joint KNP, SAPS [South African Police Service] and SANDF [South African National Defence Force] security forces alliance to exercise and ensure control over access both to and from the park and movement inside the park (SANParks, 2016, p. 99).

The extracts provide clarity on partnerships formed to combat poaching in the Kruger National Park. The disclosure is complemented by an illustration of the total number of rhinos poached compared with the rhino poaching activities (see Figure 18). There has been a decrease in the total number of rhinos poached although there has been an increase in poaching activity. This demonstrates that the actions taken by SANParks have decreased the risk of extinction.

Figure 18 - Poacher activities vs rhino poaching incidents



Sourced from SANParks (2016, p. 99)

The actions taken by SANParks, regarding the extinction of rhinos, is complemented by extracts from the Rhino Management Strategy (RPS) (see Figure 19). The disclosure suggests that SANParks has developed a strategy to deal with poaching, forming partnerships with the local communities and other governments. An anthropocentric approach is followed

as SANParks seeks to include local communities and this can lead to the economic development of the communities. A deep ecology approach is also taken as the ecological management can create and maintain rhino habitats and establish rhino populations outside of the Kruger National Park. This adds to the understanding of how the operations of SANParks balances the needs of society (i.e. anthropocentrism) and the needs of its natural capital (i.e. deep ecology).

Figure 19 - Disclosure regarding Rhino Management Plan

However, we believe without the interventions made by the South African government and SANParks in particular the challenge with rhino poaching would have been much more desperate as compared to where we are currently.

In the last year SANParks has developed a Rhino Management Strategy with two broad strategic objectives:

1. Managing the threat of rhino poaching by:
 - Disrupting organised transnational crime networks.
 - Creating economic opportunities for neighbouring communities to provide viable alternatives to rhino poaching.
2. Managing the rhinos themselves through:
 - Ecological management to create and maintain rhino habitats.
 - Establishing viable rhino populations outside of the Kruger National Park.

In an amplified effort to fight the scourge of rhino poaching an international agreement with the Mozambican authorities has been signed by Minister BEE Molewa, South Africa's Environmental Affairs Minister and Minister Carvalho Muária of Mozambique to strengthen working relations and introduce legislative improvements in the fight against rhino poaching.

Sourced from SANParks (2014, p. 10)

In addition to the RPS objectives, SANParks includes specific disclosure on the implementation of the RPS, illustrated in Figure 20. The disclosure shows how SANParks measures its actual performance against predetermined targets. The disclosure does not, however, provide any additional information about why only 30% of the planned activities have been implemented. This suggests that problems have been experienced in the implementation of the strategy and the plans. The disclosure (refer to figure 20) can be improved by incorporating the explanations for the poor performance and by disclosing how the activities have been implemented per operational area.

Figure 20 - Percentage implementation of SANParks rhino management strategy

PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
2.5 % Implementation of SANParks Rhino Management Strategy	100% implementation of planned annual activities	30% of activities planned and prioritised for 2016/17 have been implemented.
PERFORMANCE ANALYSIS	30% of the activities were planned and prioritised for 2016/17 and these have been implemented as per plan. These activities include: • Risk assessments, • Strategic needs analysis, • Full spectrum integrated anti-poaching operations, • Dedicated black Rhino rangers, • Rhino protection plans for parks.	
PLANNED IMPROVEMENTS/ CORRECTIVE ACTIONS	Implement actions as per Rhino Management Strategy	

Sourced from SANParks (2017b, p. 33)

What is essential is that SANParks does not only provide disclosure regarding high profile extinction risk animals:

A KNP [Kruger National Park] Management Plan for Parthenium hysterophorus (Famine weed) was drafted to control this extremely aggressive invader in Kruger...Strategic adjustments were made in the way in which the clearing of invasive alien plants is done in KNP. The focus has shifted to the perennial rivers in the KNP, with one team on each river undertaking the clearing and mapping/monitoring of invasive alien plants. Increased focus to clear invasive alien plants outside the park on river systems that enter the KNP have been initiated. Twenty-six invasive alien plants have been prioritised (as per the CSIR [Council for Scientific and Industrial Research]) and various workshop recommendations). Famine weed is getting special attention. The Working for Ecosystems (Land Rehabilitation) Program has also been re-evaluated. Alternative methods such as the use of machinery with the assistance of people have been implemented (SANParks, 2016, p. 96)

The disclosure refers to the CSIR report. The CSIR report recommends that SANParks should prioritise 26 invasive alien plants which may affect the ecosystems of the Kruger National Park. These species are not well-known by the general public or covered extensively by the press. The reporting suggests that SANParks is dealing with an actual biological risk which brings with it a strong deep ecological tone. SANParks is not simply disclosing information to manage the perceptions of the public but is explaining the risks faced by the parks. Although no other information is provided, the targets set (see section 5.2.5) incorporate action plans. This reaffirms that SANParks is not applying a system of impression management and is sincere in how they disclose information to the users.

Interestingly, the above example relates to areas outside of the operational area of SANParks which affect the river systems in and biodiversity of its operational area (the KNP). The inclusion of disclosure regarding external threats which impact the ecosystems in the KNP is an example of a reporting boundary (IIRC, 2013). The reporting boundary provides information to the users to signal that there are risks outside of the financial reporting area which can affect how SANParks will be able to meet its objectives of biodiversity conservation. This inclusion, therefore, might be regarded as material to users as it can impact the value creation processes of SANParks (IIRC, 2013). It is location specific and suggests that a

change in the strategy was made, but it could have been complemented with disclosure on other invasive species identified as affecting the relevant ecosystems.

The reporting of the actions taken to preserve biodiversity is not limited to species. It includes the targets to expand the operational area of SANParks. This includes disclosure in both the annual financial statements, and as the performance targets met. Consider, for example, in Figure 21.

Figure 21 - Acquisition of additional area's added to SANParks		
PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
1.1 Total Area Added to National Parks	Terrestrial: 1 387 ha	Terrestrial: 3 873 ha
	Marine : 0 km ²	Marine : 0 km ²
PERFORMANCE ANALYSIS	Reasons for variation This target is over achieved due to the following reasons: - Obtaining land is based on the "Willing buyer, willing seller" principle and it can therefore never be predicted accurately - Exorbitant prices of certain land parcels, which had originally been identified for inclusion, caused SANParks to buy affordable land elsewhere. - Limitations placed on the Land Grant to only purchase in thicket, savannah and Fynbos, limits opportunistic purchase of land parcels. Terrestrial: The hectares acquired exceeded the target by 2 846 ha. This was made possible by the use of donor funds to acquire approved parcels of land. The hectares added to National Parks comprise 1.15 ha in Thicket Biome and 3 873 ha in the Succulent Karoo and Thicket Biome. Both these biomes are classified as under-represented. Marine: No new marine protected areas have been proclaimed and SANParks is reliant upon the DEA processes towards and for proclamation. The Draft Implementation Plans for Addo, Robben Island and Namaqua MPAs have been completed. These plans must be proclaimed and gazetted by the Minister.	
PLANNED IMPROVEMENTS/ CORRECTIVE ACTIONS	Continued implementation of the land acquisition plan	

Sourced from SANParks (2017b, p. 27)

Figure 21 provides users with information on the challenges faced by SANParks when expanding its operational area. In particular, the land grants which can be used for the acquisition of land are limited to the thicket, savannah and fynbos biomes. The limitation placed on how the land grant may be used may allow the providers of the financial capital power to control how the value is created by SANParks. This is an example of disclosing the financial capital available to SANParks to create value and meet its biodiversity and conservation-specific objectives (see also IIRC, 2013).

In addition to disclosing information on limitations placed on financial capital, the targeted acquisition of land is also disclosed. The challenges faced by SANParks in the acquisition of land¹⁸ are also explained. Although SANParks exceeded their target in terms of terrestrial land acquisitions, the variance is explained, referring to the area of land purchased based upon each biome. This information is useful to users as it explains how SANParks acquired land, even with the limitations placed on financial capital. The targets are, however, not

¹⁸ willing buyer willing seller principle and limitations placed the Land Grant.

disaggregated into the different biomes based upon risk. This disclosure can be further clarified by disclosing the area of land to be acquired based upon biodiversity risk per biome. This will illustrate how the targets being set by SANParks also aligns with the mission of SANParks.

Although targets were not set for the acquisition of marine areas, SANParks provides information on why no acquisitions exist. In making this disclosure, the report provides details on the process which has to be followed before the area can be acquired. The Minister of the Department of Environmental Affairs must proclaim an area as a conservation area and the information has to be published in the government gazette. This additional disclosure also provides context for the challenges faced by SANParks in the acquisition of additional area when expanding its areas of operations.

The action-focused reporting provides users with an understanding of the extent to which SANParks has met its obligations or targets. It provides information on the different targets, some species related, and others not. The inclusion of the disclosure provides information on the capital used to combat extinction, such as human capital (Rangers), social capital (communities) and manufacturing capital (helicopters used in anti-poaching activities)¹⁹. The action-focused reporting applies an integrated thinking methodology as the disclosure incorporated various capitals and illustrates how the capitals are used to add value to the conservation process. In applying integrated thinking to the disclosure, the emancipatory potential of accounting is illustrated as the policies of government to address biodiversity loss have been translated into actions, and the results of the actions have been reported on. In the majority of the disclosures, SANParks provides details of the different partnerships that are used to assist it in meeting its targets and objectives. The next section will discuss how partnerships are used by SANParks in their conservation efforts and meeting its objectives.

5.4.3. Element 3: Partnership reporting

Given the large area under the operational management and the public interest in the conservation effort (see, for example, Atkins et al. (2018)), SANParks has entered into various partnerships to assist in the conservation effort. The partnerships include regional, as well as international partnerships. For example:

SANParks continued to collaborate with regional and international enforcement networks such as the World Customs Organisation (WCO), the CITES Secretariat, World Bank, United Nations Office on Drugs and Crime (UNODC) and Interpol (making up the International Consortium on Combating Wildlife Crime (ICWC)). SANParks also hosted the bi-annual meeting of the IUCN SSC African Rhino Specialist Group. SANParks was thus able to strengthen its contributing actions at

¹⁹ These disclosures are made in the SANParks reports but are not included in the research in the interest of brevity.

a national level and harness the support of international partners for those priorities that involve transnational syndicates. SANParks also continued to participate in the national Committee of Inquiry to investigate the feasibility of a possible international trade in rhino horn (SANParks, 2016, p. 53).

The extract provides information on the different international organisations involved in the conservation effort and illustrates how SANParks aims to capitalise on the involvement of these communities to combat extinction and biodiversity loss. In particular, SANParks acknowledges that it is impacted by transnational syndicates which impact the conservation effort. This disclosure provides more context to the risks faced by SANParks and also highlights the importance of international partnerships. The partnerships can help lead to a new policy which can lower the extinction risk in the area of SANParks operations and also lead to better protection of at-risk species. Per Figure 22, partnerships with international organisations are complemented by collaborations with local organisations.

Figure 22 - Expanded Public Works Programme of SANParks

EPWP Programme	Description	Implementation status
Working for the Coast	Cleaning of beaches, rehabilitation of coastal systems and maintenance of tourism infrastructure, including Blue Flag beaches.	Implementation started on the 2016/18 cycle. Participants worked 3 days a week from July to October.
Environmental Monitors	Support to conservation functions in parks, buffer zones, provincial nature reserves and private nature reserves.	The second cycle of implementation started during 2016/17 1,446 of the 1,500 planned Environmental Monitors were appointed.
People & Parks	Infrastructure development and improving integrity of protected areas	Implementation continued in Bushbuckridge Nature Reserve, Mpumalanga Tourism and Parks Agency. The staff accommodation and bulk services were completed and approval was obtained from all stakeholders to erect the perimeter fence. The planning for the three approved projects in Mokala, Ais! Ais! Richtersveld and GRNP-Tsitsikamma National Parks were updated, but approval not finalised.
Wildlife Economy	Involving communities in wildlife economy through game farming, breeding, eco-tourism	DEA approved funding for two projects next to the Kruger National Park boundary on this programme. Planning started and the Peace Parks Foundation did Feasibility Studies for both projects.
Working for Water	Clearing of invasive alien vegetation	Alien vegetation clearing projects were implemented in all national parks. Projects exceeded initial and follow-up rehabilitation targets
Working for Ecosystems: Rehabilitation and Bush Clearing	Soil erosion projects, bush encroachment control and Addo Spekboom project for carbon sequestration.	This programme was implemented in most national parks, nature reserves of the Mpumalanga Tourism and Parks Agency (MTPA) and the Kruger to Canyons Biosphere Bush clearing continued in Marakele- and Kruger National Parks
Working for Wetlands	Rehabilitation of wetland systems.	Project implementation started in August 2016 only and the completion date was extended to April 2017. Heavy rains in Kruger-, Mapungubwe- and Golden Gate Highlands National Parks further impacted on implementation and teams could not get in-field.
Eco Furniture Programme	Manufacturing of school desks and furniture from alien vegetation	Five factories were operational, with management of Ficksburg mill transferred to SANParks. 95,810 school desks were delivered and assembled. Budget constraints seriously impacted on implementation.
Working on Fire and High Altitude Teams	Fire prevention & control in national parks, and removal of alien vegetation from inaccessible mountainous areas & cliffs.	Eight firefighting bases are established in national parks, and the high altitude teams mainly worked in Table Mountain- and Garden Route National Parks
National Department of Tourism Social Responsibility Programme	Development of tourism infrastructure	The Agulhas Southernmost Tip project was approved, and implementation started with the appointment of two contractors for the roads and iconic structure projects.

Sourced from SANParks (2017b, p. 70)

Figure 22 describes the objective of the different programmes. Some are rooted in the deep ecology movement (for example, Working for Wetlands, Working for Water and Working for

the Coast) while others lean towards an anthropocentric stance to biodiversity protection (for example, Wildlife Economy). In particular, the disclosure demonstrates how different partnerships exist to assist SANParks in managing conservation activities and the extent to which the programmes have been implemented. The programmes balance the mission and vision of SANParks as they are managed to ensure the long-term sustainability of the national parks through education initiatives, using the by-products of the rehabilitation (invasive plants) and protecting biodiversity-rich areas (such as wetlands). To account for the benefits derived from the programmes, SANParks discloses how the programmes have added value to communities. See Figure 23.

Figure 23 - Social deliverables of EPWP

Programme	No of People	Person days	FTE's	Training	SMME's	Amount paid to SMME's ('000)	Exp Actual ('000)
Planned 2016/17	7,610	1,429,464	6,215	77,332	440	R 166.549	R 512.563
DEA Environmental Protection and Infrastructure Programme							
Working for the Coast	913	73,988	322	4,816	51	R 12.960	R 17.29
Environmental Monitors	1,446	283,317	1,232	-	-	-	R 56.14
People & Parks	150	36,472	159	2,681	15	R 5.602	R 9.48
Sub-Total: DEA EPIP	2,509	393,777	1,712	7,497	66	R 18.562	R 82.90
DEA Natural Resource Management Programme							
Working for Water	7,425	330,777	1,438	31,310	350	R 62.410	R 97.76
Working for Ecosystems: Rehabilitation & Bush Clearing	3,893	237,419	1,032	19,380	205	R 45.190	R 70.94
NRMP Field Guards	289	31,064	135	-	-	R 0.000	R 50.93
Working for Ecosystems: Mpumalanga Tourism and Parks Agency	295	29,773	129	1,380	23	R 5.670	R 7.38
Kruger to Canyons Land Incentive	336	40,346	175	2,013	16	R 6.610	R 8.78
Bio-control & Alien fish	322	13,811	60	863	12	R 2.680	R 3.65
Eco Furniture Programme	3,445	208,549	907	23,958	146	R 43.620	R 169.54
Umoyou	167	5,870	26	582	5	R 1.233	R 1.82
Working for Wetlands	561	32,053	139	5,269	33	R 6.990	R 11.18
Sub-Total: DEA NRMP	16,733	929,662	4,042	84,755	790	R 174.40	R 421.99
Working on Fire							
Working on Fire	254	40,540	176	3,366	-	0.00	-
High Altitude Teams	137	18,990	83	-	-	0.00	-
Sub-Total	391	59,530	259	3,366	-	-	-
TOTAL	19,633	1,382,969	6,013	95,618	856	R 192.96	R 504.89
Percentage	257.99%	96.75%	96.75%	123.65%	194.55%	115.86%	98.50%

Sourced from SANParks (2017b, p. 71)

Figure 23 demonstrates how SANParks adopts an anthropocentric attitude towards reporting on the programmes. It stresses job creation and revenue generation as key benefits of its conservation initiatives. The aim is to make a case for local communities to become more proactive in protecting the environment by illustrating potential monetary benefits. SANParks does not, however, neglect the deep ecological perspective on biodiversity. Consider Figure 24:

Figure 24 - Biodiversity deliverables of EPWP Programmes

Deliverables	Planned	Actual	%
Beach Clean up			
WftC Beach clean-up (km)	17,856	15,741	88%
Wetlands Rehabilitation			
Cubic meters	7,339	6,188	84%
Environmental Monitors			
EMs appointed	1,500	1,446	96%
Co-operation Agreements renew	20	20	100%
Alien vegetation clearing			
Initial hectares	27,277	37,630	138%
Follow up hectares	223,078	199,731	90%
Working for Ecosystems			
Initial rehabilitation (ha)	6,406	7,803	122%
Follow up rehabilitation (ha)	19,348	23,384	121%
Rehabilitation (Alien vegetation, erosion & bush clearing)			
Initial rehabilitation (ha)	43,697	45,433	104%
Follow up rehabilitation (ha)	196,341	223,115	114%
Eco Furniture Programme			
School desks Equivalents (SDEs)	96,000	60,710	63%
School desks delivered	102,701	95,810	93%

Sourced from SANParks (2017b, p. 72)

The disclosure shows the deep ecological gains made by SANParks through the various partnerships. It discloses the planned rehabilitation and conservation targets and the actual performance. The disclosure is divided into six categories, namely:

- Beach clean-up;
- Wetlands rehabilitation;
- Alien vegetation clearing;
- Working for ecosystems;
- Rehabilitation (Alien vegetation, erosion and bush clearing and
- Eco Furniture Programme

All but one (eco-furniture programme) are rooted in deep ecology, focusing on conservation efforts. The eco-furniture programme does not fall within the deep ecology paradigm as the programme does not relate to the conservation and preservation of the environment due to its inherent or non-economic value. Instead, it falls within the anthropocentric paradigm as the desks are used by humans and are a by-product of the conservation activities. The beach clean-up, wetland rehabilitation and alien vegetation clearing are rooted in the deep ecological paradigm as nature will benefit from the actions taken. The restoration of habitats through the wetland rehabilitation project can lead to an increase in biodiversity in wetlands and removing alien vegetation can reduce the impact of water shortages on the local fauna and flora, leading to the preservation of the different species (Department of water and environmental affairs, 2019a, 2019b)

Programmes which involve communities and partnerships form part of the social and relationship capital of SANParks. In managing the social capital and building on the relationships with the community, SANParks can advance the conservation cause. The involvement of the communities and the inclusion of indigenous knowledge of biodiversity is also a target set by the Aichi Conference (CBD, 2011). However, the management of social capital alone may not be enough.

As indigenous knowledge about biodiversity and history grows, SANParks has been expanding their research objectives in collaboration with various partners. In expanding the biodiversity-related research activities, SANParks is disclosing information about its intellectual capital. For example:

...310 registered research projects were active across SANParks' three research nodes in 2016. Of these registered research projects, 110 are essential and 138 important, mounting to 80% of research projects addressing key SANParks' knowledge needs. SANParks continued to assist researchers, providing intellectual input, research coordination, access to parks, long-term datasets, field experiments and logistical support. Notably, the Annual Savanna Science Networking meeting held in Kruger National Park hosted 200 delegates, representing 79 scientific and conservation organisations, from 14 countries. The programme included 110 platform presentations and 28 poster presentations (SANParks, 2017b, p. 76).

SANParks plays an active role in managing its intellectual capital, ensuring that research being done within its operational area addresses its conservation needs. It describes how SANParks assists researchers by granting access to the park and long-term datasets. In particular, SANParks hosted a conference in which scientists and conservations organisations can meet and key results from research can be shared. To demonstrate the rigour of the research being carried out, SANParks refers to the peer review process followed by academic journals:

Peer-reviewed publications in 2016 continued to play a crucial role in providing scientific evidence and facilitating critical thinking with rigorous learning in support of increasingly difficult management and policy challenges. SANParks' scientists contributed to 41 research publications in peer-reviewed journals. These publications reflect empirical research, based on fieldwork and the collection of primary data in the fields of freshwater and marine conservation, disease dynamics, climate change and socio-ecological dynamics (SANParks, 2017b, p. 76).

The disclosure describes the method by which intellectual capital is acquired. It also explains the type of intellectual capital acquired (data in various ecological fields). In addition to the disclosure of the total number of articles, SANParks also discloses the number of articles per operational area.

Figure 25 - SANParks related research articles per operational area

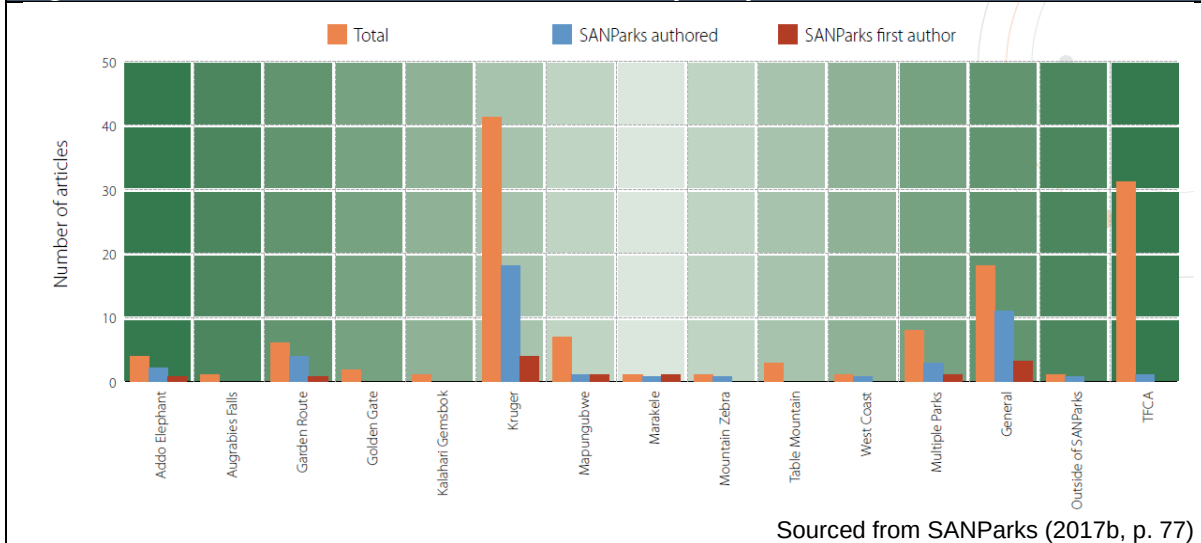


Figure 25 illustrates the total number of articles published in which SANParks was an author, the first author or articles in which SANParks provided data. The illustration makes it clear that the majority of the research takes place in the KNP, the main operations of SANParks. The illustration also suggests that SANParks takes an active part in the research as it has published several articles as a first author. This supports the argument that SANParks takes its conservation role seriously and is actively managing its intellectual capital. The disclosure also illustrates how research is conducted outside the operational area, suggesting that SANParks acknowledges that ecosystems under its management are affected by external factors which need to be understood.

There are some limitations in the existing reporting. For example, annual reports do not provide details of the research undertaken per operational area or how the research furthers the conservation effort. In particular, the disclosures do not deal with how the research has been operationalised to lower the risk of species extinction. For the disclosures to be emancipatory, they should include information about the type of research performed per biome or extinction risk species and how the research has been operationalised. This should include a post-implementation analysis of the action plans and a reflection on the results. This is discussed in the next section.

5.4.4. Element 4 and 5: Analysis, reflection and assessment

SANParks reports on key performance indicators, providing the targets, as well as the actual performance. The reports include discussions of favourable and unfavourable variances, suggesting that SANParks is engaged in more than just impression management. For example:

Figure 26 - Percentage progress against Biodiversity Monitoring Plan

Performance Indicator	Annual Target	Actual Performance
4.3 % progress against Biodiversity Monitoring Plan	100%	89%
Performance Analysis	SANParks Biodiversity Monitoring Plan achieved 89% of the planned deliverables for the year under review. The performance can mainly be attributed to limited resources such as aerial support, which made it impossible to complete some of the planned aerial censuses, including constraints of travelling in wider geographic locations of national parks. The following are key deliverables undertaken under SANParks Biodiversity Monitoring Plan for the period under review: - Monitoring and evaluation of the abundances of water birds within the Wilderness lakes system; - Completion of field surveys of prawn density, biomass and diversity of other invertebrates in the Langebaan section of the West Coast National Park; - Collection of the baseline data for monitoring of indigenous vegetation of Tokai section of the Table Mountain National Park following recent field fire; - Location and mapping of floral species of special concern in Bontebok National Park; - Evaluation of riparian vegetation and herbaceous recovery in Mapungubwe National Park; - Evaluation of landscape functionality and vegetation recovery in degraded areas of Marakele National Park; - Monitoring and evaluation of vegetation adaption and recovery in Mokala National Park; - Assessment and mapping of various water catchments/wetland in Golden Gate Highlands and Mountain Zebra National Parks; - Monitoring and evaluation of spekboom re-vegetation, cycad and river fish biodiversity in the Addo Elephant National Park; - Investigation and control or treatment of fatal disease outbreak amongst water birds of Wilderness Lakes section of the Garden Route National Park.	
Planned Improvement/ Corrective Actions	Biodiversity monitoring programmes will be implemented on an on-going basis across all national parks as part of conservation mandatory obligations. It should be noted, however, that as much as the organisation would like to pursue more comprehensive biodiversity initiatives, limited resources constrain progress in this regard.	

Sourced from SANParks (2015, p. 61)

In Figure 26, SANParks does not meet its annual target. The disclosure alerts the users to the fact that SANParks had a shortage of aerial support (manufacturing capital) affecting meeting the objectives of the Biodiversity Monitoring Plan, suggesting more manufacturing capital is required to address extinction risks. In the corrective actions to be taken, SANParks does indicate that it would like to apply more comprehensive conservation initiatives but a lack of resources constrains the process. The disclosure stops short of explaining how SANParks plans to acquire more manufacturing capital or resources to assist in its conservation efforts. The disclosure can be improved by disclosing information on planned actions to obtain more manufacturing capital or using other sources of financial capital to enhance the existing manufacturing capital.

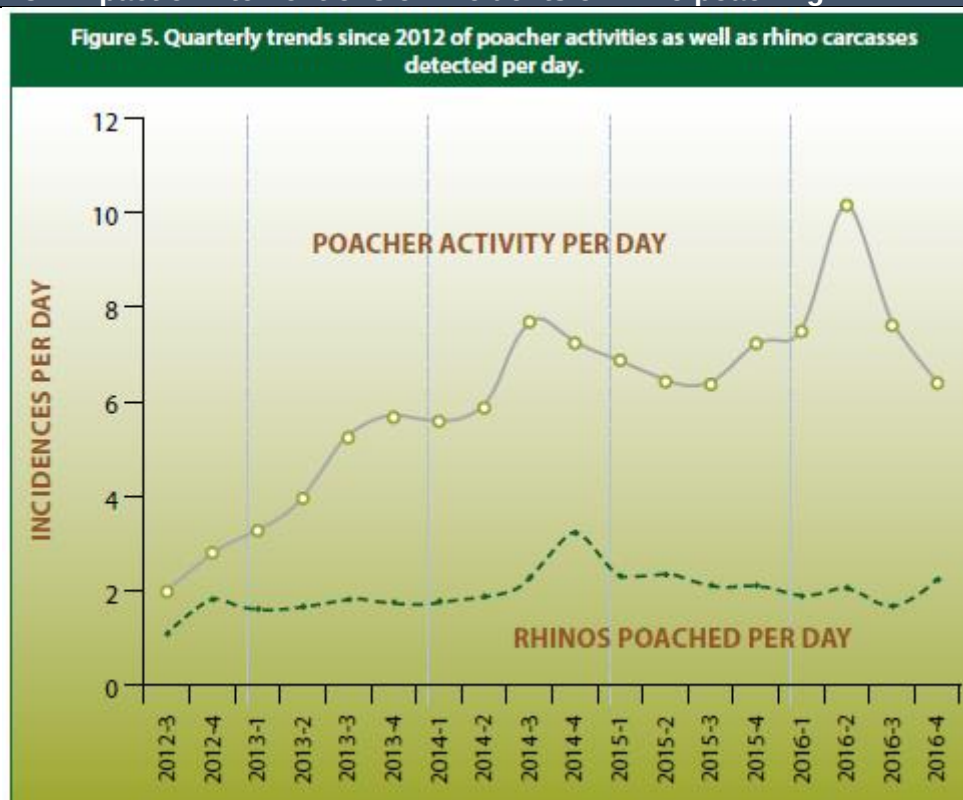
Figure 27 demonstrates how SANParks provides information on the specific interventions aimed at protecting at-risk species (in this instance, rhinos and elephants). The disclosure is complemented by details on the interventions and also disclosing some of the operational areas where the interventions have been implemented. In this example, SANParks does not have any corrective actions as they have met their targets. The disclosure is complemented by a graph depicting the success of the interventions on instances of rhino poaching (see Figure 28).

Figure 27 - Total number of Species Protection Interventions implemented

PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
2.5 Total Number of Species Protection Interventions Implemented	6	6
Performance Analysis	For the period under review, the following was achieved: a. Rhino compulsory interventions: Programme that provides rhino security continued in all national parks that have rhinos. The number of rhino poached per day remained stable even though poaching activities per day increased. b. Rhino biological management interventions: Internal translocations of rhino in Kruger National Park out of poaching hot-spots, to the Intensive Protection Zone (IPZ) continued and five individuals are constantly being monitored. c. Rhino long-term sustainability interventions: SANParks' participation in the DEA' Commission of Inquiry tasked with assessing the feasibility of trade in rhino horn, as part of the strategic responses of South Africa to curb rhino poaching was completed in January/February. d. Rhino game-changing interventions: A pledge made by SANParks in support of the country's wildlife economy resulted in a document to guide SANParks' contribution towards a community-based wildlife economy. The document outlines the desired outcome, the key factors for consideration to achieve this outcome and various organisational risks for consideration. e. Rhino population census: Census and analyses for Kruger and Marakele National Parks were completed. Ground-based monitoring of individual rhino and registration records for Mapungubwe, Mokala, Addo Elephant, Mountain and Karoo National Parks have been completed. f. Elephant impact interventions: Management protocol completed. Experimental testing continued in Addo Elephant and Kruger National Parks.	
Planned Improvement/ Corrective Actions	No corrective measures are required at this stage.	

Sourced from SANParks (2016, p. 35)

Figure 28 - Impact of interventions on incidents of rhino poaching



Sourced from SANParks (2017b, p. 87)

Figure 28 suggests that rangers have had a positive effect on curbing rhino poaching in the national parks. As the number of poaching incidents increases, the rangers have been able

to reduce the number of poached animals. This suggests that SANParks assesses the effectiveness of its species protection plans. The disclosure indicates that SANParks does not disclose the information for the sake of meeting stakeholder expectations but takes an interest in the results of the measures. The disclosure is specific to an endangered species and provides users with assurance that SANParks interventions are working. The disclosure provides users with insight into the strategies which have provided excellent results. In particular, comparative numbers are presented to provide more context and to show how the strategic measures have yielded success over some time. This borrows from financial accounting principles in which comparative figures are disclosed (see for example IAS 1 in IAASB (2018)). The disclosure is complemented by illustrating the seriousness of the poaching activities and the results of the measures. This is done using narratives complemented by graphs/charts, as illustrated in Figure 29.

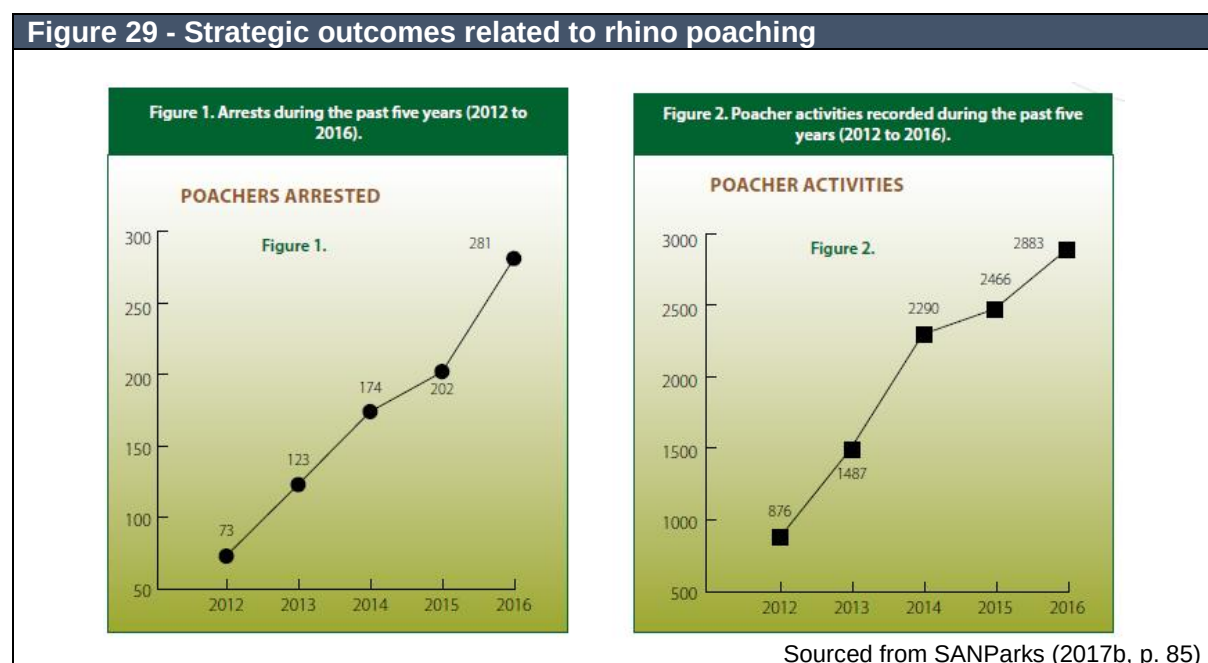


Figure 29 illustrates how poaching activities have increased over five years, as well as how many poachers have been arrested. The disclosure is at an aggregated level and related to events in the KNP (SANParks, 2017b, p. 85). The disclosure, when read with Figure 28, provides users with a good overview of the success of the rhino interventions. The graphs indicate a drop in instances of rhino poaching but an increase in arrests being made in an environment where poaching incidents were identified. The disclosure suggests that, even though the interventions have been implemented, they do not automatically ward off poachers. This is also supported by the inclusion and disclosure of anti-poaching performance indicators.

Figure 30 - Performance indicator: Reduction in elephants and rhino's poaching deaths

PERFORMANCE INDICATOR	ANNUAL TARGET	ACTUAL PERFORMANCE
2.3 % Reduction in recorded fatalities of rhinos and elephants poached as a ratio of recorded number of poaching activities in KNP	2% reduction from baseline (YoY)	There has been a 7.2 % reduction (YOY) in recorded fatalities of rhino and elephant poached in KNP.
PERFORMANCE ANALYSIS	Reasons for variance It is difficult to predict the efficacy of any ant-poaching measures that gets implemented and this year results were effective and yielded positive outcomes. The huge improvement is due to the following reasons: • Earlier detection due to improved technologies in place. • The severe drought made it easier for tracking. • Additional K9 dogs have been used in fields. 663 animals were poached in 2016/17 and a total of 2 764 poaching activities were recorded resulting in a ratio of 1:4.17 (i.e. 23.99%). The ratio for 2015/16 was 1:3.14 (i.e. 31.87%). The outcome reflects a 7.2% reduction (YOY) in the number of animals poached, despite an increase in poaching related activities.	
PLANNED IMPROVEMENTS/ CORRECTIVE ACTIONS	Poaching efforts continue to increase. SANParks plan to increase its effort on awareness raising within neighbouring communities	

Sourced from SANParks (2017b, p. 31)

In demonstrating its commitment to conservation, SANParks discloses the reduction in rhino and elephant deaths due to poaching. The variance, although favourable, is explained with reference to the manufacturing capital used to combat poaching. This includes using animals, such as dogs, in the field.

The inclusion of the dogs in the fight against the poachers is an example of how natural capital is used to combat poaching. This demonstrates how SANParks utilises its available capital to add value to stakeholders through the conservation and preservation of biodiversity. Also, the disclosure impresses on the users how the actual results achieved in the current year are significant, in the context of the increase in the poaching activities.

Interestingly, the disclosure borrows from traditional financial accounting principles through the disclosure of comparative figures. The disclosure of the comparative figures can assist users in understanding the long-term benefits and results of the initiatives adopted to fight poaching. This enhances the accountability of SANParks (Hopwood, 1987, 1990)

The examples given above can be used to make a case that more needs to be done to protect at-risk species. This call can be aimed at communities to assist in identifying poachers, international organisations and anti-poaching operations to focus their attention on high-risk areas. This is the emancipatory potential of extinction accounting. In disclosing the activities undertaken to protect a species, reporting on how the interventions or activities have affected poaching activities, SANParks will be better able to develop strategies to address the risks through better utilisation of its social, financial, intellectual and manufacturing capital.

To ensure that different forms of capital are better utilised, SANParks has to improve its disclosure. The disclosure should be disaggregated to show the success of the interventions at the operational site level. This will give an account of the poaching events at the different operating levels and the number of arrests that have taken place. This will provide the stakeholders with information about the effectiveness of the strategic measures at the operation level, which addresses the extinction risk. The disclosure should also include instances of poaching related to other at-risk species and not only focus on the rhino.

5.4.5. Element 6: Reporting

The examples extracted provide evidence of the reporting strategies used by SANParks to report on biodiversity and extinction. Information on the operational areas (see Figure 15) and the biomes in each operational area (see Figure 16) is provided. The disclosures incorporate details on the extinction risk faced by specific species (see Figure 18 and Figure 19). Illustrations of how partnerships and societal interventions are used to combat the extinction of species are provided (see Figure 22, Figure 23 and Figure 24). The outcomes of planned actions are reported, complemented by an analysis of the actual outcomes and an analysis of favourable and unfavourable variances (see for examples Figure 13, Figure 21 and Figure 26).

The disclosures suggest that SANParks has adopted an integrated approach to report on biodiversity which takes on the form of an emancipatory account and that it applies a holistic approach to its reporting. Strategies, risks and actions are discussed in detail and illustrations are used to provide context and summarise narrative disclosures. Performance is being evaluated and variances explained, even when targets are exceeded. This indicates that SANParks takes its conservation role seriously and that its reporting is not just an example of impression management. Instead, SANParks follows an emancipatory style of reporting as it provides the stakeholder with an account of the extinction risks, how the risks are managed and an analysis of the success of the strategies implemented

Overall, the disclosure practices indicate that it is possible to provide a detailed extinction account and how *this* risk is managed. SANParks' reporting is not, however, without limitations. The disclosures do not provide a holistic account of how extinction is managed. Instead, disclosures are focussed mainly on the conservation and preservation of the rhino. This reinforces the need for a comprehensive framework which can be used by SANParks to report on extinction, providing sufficient, relevant and useful information which makes it possible for users to understand how SANParks is meeting both its deep ecology and

anthropocentric mandates. A comprehensive reporting framework to account for extinction is developed in section 6.

6 CONCLUDING DISCUSSION

Accounting frameworks that are aimed at addressing biodiversity and conservation concerns have been criticised for not providing a clear nexus between the reporting entity and the conservation of the environment (Cuckston, 2018a). Profit-orientated entities, operating in a capitalist economy, have to provide shareholders with positive earnings and may not be able to sacrifice profits in the interests of conservation. According to Cuckston (2018a), most companies report on minor conservation activities, such as donations, and engage in impression management to manage their reputation. Research in biodiversity supports this claim (see, for example, Atkins and Atkins, 2016, Mansoor and Maroun, 2016; Maroun & Atkins, 2018 and Maroun et al., 2018). In SANParks' case, this argument does not hold.

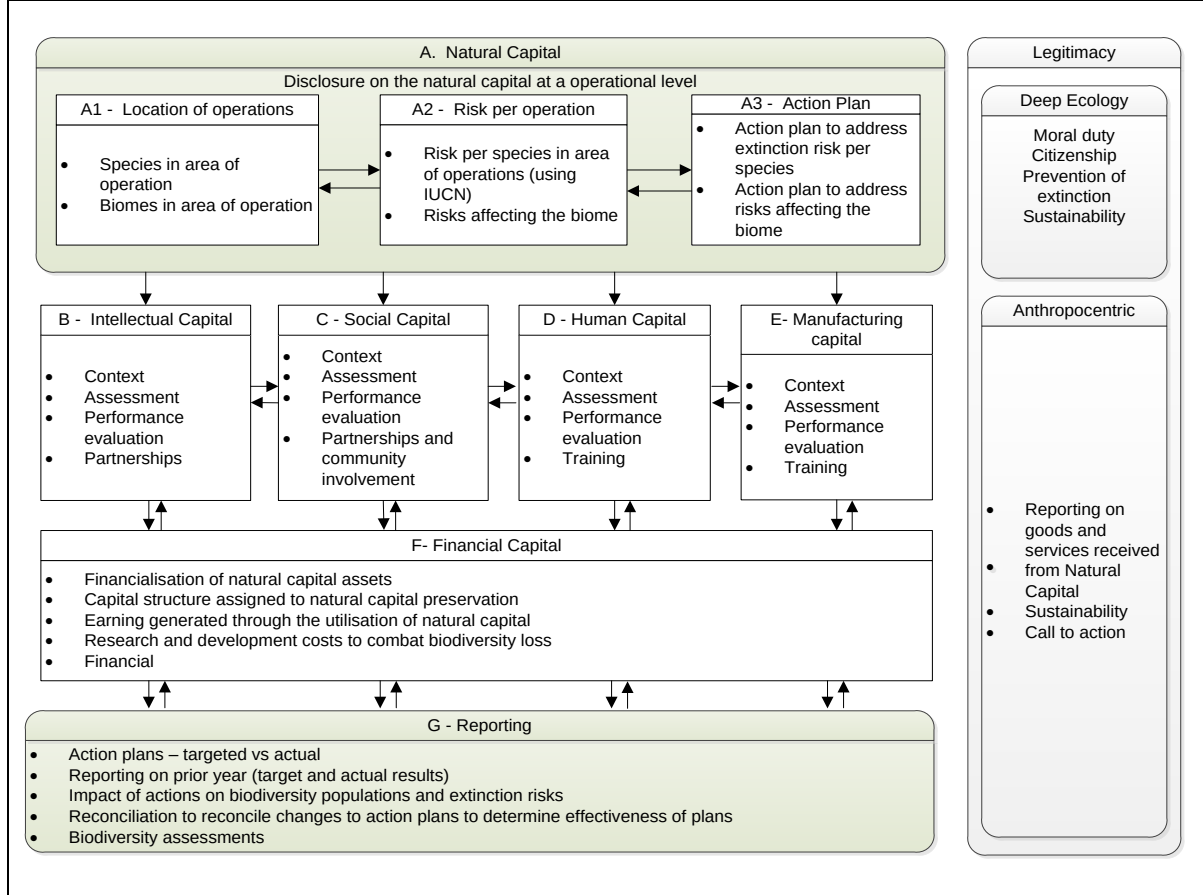
SANParks, as the custodian of biodiversity in South Africa, is held accountable by the public and government if biodiversity targets are not met (SANParks, 2014, 2015, 2016, 2017b). SANParks can be seen as the agent, managing biodiversity on behalf of citizens of South Africa. Through accounting for extinction and biodiversity, the agency role of SANParks is made more transparent, leading to more accountability which, in turn, can lead to better conservation and preservation of species. An emancipatory accounting framework can assist in this regard.

6.1. An emancipatory extinction account

To address the weaknesses and limitations of biodiversity disclosure in the SANParks reports, a comprehensive framework has been developed. This framework draws from the GRI, Integrated Reporting, and conventional financial accounting principles (see Table 2 and Table 3 in section 2.4) to ensure that qualitative and quantitative aspects can be included in an extinction account. Given its prominent use in South African corporate reporting (Atkins and Maroun, 2015), the proposed framework takes the six capitals identified by the IIRC into consideration. (Atkins & Maroun, 2018; Jones & Solomon, 2013).

As suggested by Atkins and Maroun (2018), the framework uses natural capital (A) as the starting point. Making natural capital as the starting point indicates that natural capital is essential for all the other capitals and the how the organisations' operations are affected. The natural capital is not limited to only critically endangered species (see De Groot, Van der Perk, Chiesura, and Van Vliet (2003) and Brand (2009)) but to all natural capital included directly or indirectly in the operational area of the reporting entity. This ensures an eco-centric approach to disclosure inspired by a deep ecological perspective.

Figure 31 - An emancipatory account of the extinction



The area of operations should be disclosed (A1), as well as the biodiversity risks faced by each operational area (A2). The action plans to address the risks can then be disclosed (A3). This should be done at the species level for A1 – A3 as well as the biome level. This will ensure that the ecosystem risks are addressed comprehensively. The objective is to make a case for the preservation and conservation of different species based on moral responsibility, biological importance and anthropocentric grounds (see Brand (2009); De Groot et al. (2003). The disclosures should demonstrate how actions are aimed at preventing the extinction of at-risk species in the operational areas under the organisation's control.

To ensure that the reporting is complete, details on ecosystems or biomes which are not controlled by the reporting entity but which affect is natural capitals directly or indirectly should also be provided At the same time, information on the activities and plans implemented to address the extinction risk will ensure that disclosures are not dismissed as impression management but understood as a genuine commitment to preventing extinction of species (Atkins & Maroun, 2018; Atkins et al., 2018). This will ensure legitimacy because the entity acts as a good corporate citizen, protecting the environment, not only for anthropocentric gains but because every citizen should protect the environment (Atkins et al., 2018; Büchling & Maroun, 2018; IOD, 2016).

An indirect consequence of the disclosure is that it addresses the sustainability of not only the ecosystems but also the entity. The framework places natural capital at the centre of the economic structure of the entity and demonstrates how the protection of natural capital can lead to the sustainability of the entity. Preparers will have to have an understanding of the relevant natural sciences which underpin the information being disclosed (Mace, 2019). Once the risks and actions at the operational level have been disclosed, the entity should disclose how the intellectual capital (B) is used to protect the natural capital. The disclosure should include the following (Atkins & Maroun, 2018; Atkins et al., 2018; Büchling & Maroun, 2019; Gray & Milne, 2019, Maroun & Atkins, 2018):

- the resources required and made available to research extinction within each operational area at the species and biome level;
- the objectives or targets which have to be achieved;
- the methods used to evaluate the performance of the intellectual capital against predetermined targets;
- the effectiveness of the output of intellectual capital in preservation and protection of species under threat and
- how the partnerships, if any, are utilised by the entity in meeting its conservation objectives.

The disclosure should include a description of how intellectual assets have been deployed to each operation and which specific risks it is addressing. For projects managed by intellectual capital which addresses biodiversity objectives, the following needs to be disclosed, in addition to the above:

- The human capital requirements to complete the project;
- Current funding structure, source of the funding and additional funding requirements;
- The technology requirements needed (manufacturing capital) and
- Systems, processes and operations needed and utilised to complete the projects.

(adapted from Atkins & Maroun, 2018; Atkins et al., 2018; Büchling & Maroun, 2019; Gray & Milne, 2019, Maroun & Atkins, 2018)

Nature is complex and the loss of even one species can have unknown or unanticipated effects on an ecosystem (IPBES, 2019a, 2019b, 2019c, 2019d). In disclosing information on intellectual capital, the entity will provide useful information to assist users in understanding how natural capital is understood. The disclosure can be used to gauge the effectiveness of different programmes, initiatives and partnerships used to protect the environment and prevent the loss of species

Once the risks and actions have been developed to understand the natural capital (A) and new actions developed by the intellectual capital (B), informed decisions can be taken to manage the social capital (C). The entity should disclose how communities are engaged to combat extinction risk at both the operational and the species level. The disclosure should include information on the partnership initiatives aimed at educating communities on the boundaries of the operational area to lower the extinction risk of species at the operational level. Where partnerships are used to address the extinction risk, whether in research (intellectual capital), manpower (human capital) or technology (manufacturing capital), nature and objectives have to be disclosed. This will provide a means for users to understand how society is involved in the conservation project and the role it plays.

To ensure relevant and useful information is disclosed, the objectives should be measured against the actual results to determine the effectiveness of societal organisations assisting in conservation (see, for example, Maroun & Atkins, 2018; Atkins et al., 2018). The objectives should be referenced to the risks and action plans at the operational and species level, as determined in A (natural capital). This disclosure will indicate how effective the partnerships are in addressing the extinction risks and where improvements can be made. It will also indicate where more human capital may be required to address the extinction risks at the operational level.

The entity should include a description of how the human capital (D) has been used to address extinction risk at the operational and species level. This will provide information on how human capital has been deployed, and in what number, to the operational areas and how effective human capital has been through the different actions taken. The training provided to staff and other human capital should be disclosed. The training provided should be referenced to the action plans and risks as disclosed in A (natural capital) to demonstrate how the training supports the conservation efforts.

In explaining how intellectual, social and human capitals are used to address the risk of extinction, the importance of manufactured capital cannot be overlooked. Reporting can include, for example,

- A reconciliation between the opening and closing balances of manufacturing capital used;
- The nature of the manufacturing capital used by each of the other capitals and
- Future planned improvements to manufactured capital.

Discussing the nature and use of manufacturing capital will provide users with a sense of how different resources are managed and, deployed and developed by the entity to combat extinction. The need for additional resources can also be identified and explained more clearly.

Determining different capital requirements will not take place at one point in time. It should be an iterative exercise which is explained to stakeholders. Any problems encountered and how these have been resolved should be addressed. This, in turn, will inform the internal controls of the entity, ensuring that additional controls are put in place to improve the accuracy of information used to make decisions. The process will ensure that accurate information is used when managing the reporting entity's financial capital

Reporting on financial capital (F) will be multi-dimensional. On one level, values are attributed to the goods and services received directly or indirectly from the reserves of natural capital. Examples include revenue from tourism and incomes earned from the sale of flora and fauna. The disclosure should also include details on how the capital structure of the entity is utilised to address extinction. For example, details of the funds have been used by each of the other capitals (B, C, D and E) should be provided and compared with budgets. The value added by partnerships and social initiatives should also be disclosed. In particular, the financial capital made available to research and development should be disclosed and linked to the development of intellectual capital.

Reporting on the capitals, as indicated above, will be an iterative process. The reporting should not be made for impression management purposes but should illustrate a desire of the entity to protect and conserve biodiversity (Atkins & Maroun, 2018; Atkins et al., 2018; Büchling & Maroun, 2019; Gray & Milne, 2019). This will require reporting on variances between actual and planned results for all the capitals. The variances, positive and negative, should be explained. Where a variance is caused by insufficient capital, reference to the capital should be made, and action plans disclosed. The disclosure should include prior-year figures to make the information comparable, ensuring progress can be tracked and reported. This will also make it possible for users to determine whether actions have had an impact on reversing or combatting extinction risk. This can take place in the form of a reconciliation to account for the changes in biodiversity mass, based on the actions implemented. The reporting can be complemented with annual biodiversity assessments which are performed: this can support the analysis and results of the capitals used to combat extinction.

6.2. Limitations of the study

The proposed framework is based on reporting by SANParks and excludes other state-owned entities. The framework does not provide guidance on how to monetise the value of ecosystem services as these fall within the scope of the anthropocentric paradigm. The

monetisation of ecosystem services is an area for further research and can be used to inform the SNA, as developed by the United Nations (2012). The results of the study are not generalizable as the study is qualitative (see also Creswell, 2013; Elo & Kyngäs, 2008; Yilmaz, 2013). The framework is limited in its application and can, therefore, not be used at a local or national government level. The framework is specifically developed for a company and does not take into consideration legislative requirements which apply to local or national government.

In particular, the research does not make any recommendations for the internal controls which should be implemented by SANParks to ensure the operationalisation of the framework. The controls required will be unique to each company as each company will have different operational (internal) controls. The research also does not make recommendations about internal controls which can be applied at a local or national government level as this was excluded from the scope of the research.

In the context of South Africa, the study acknowledges that there may be institutional problems which can limit the implementation of reporting frameworks. As discussed by Virto, Weber, and Jeantil (2018), developing countries are hindered by a lack of political will to report efficiently on natural capital. The situation in South Africa is not unique, with the Statistician-General relying on ministerial departments to report on environmental affairs and natural capital (Virto et al., 2018). The framework developed in this study, and the operationalisation and implementation is limited by the extent to which there is political will to report accurately and, in doing so, develop internal control systems to gather the necessary data.

6.3. Contribution and future research

The study adds to the framework developed by Atkins and Maroun (2018) and Maroun & Atkins (2018) through the incorporation of the different capitals (see IIRC (2013)). The study examines the reporting trends of SANParks related to biodiversity, which suggests that SANParks incorporates an integrated thinking approach to its disclosure. The disclosure themes related to biodiversity also suggest that SANParks' reports can be used to account for extinction in a more refined manner, applying the framework developed by the study. The study is also the first study to develop a reporting framework for a state-owned entity to account for extinction. The study has identified the following areas for future research:

- The study only used the annual reports for SANParks to develop an emancipatory account for extinction. Future research can expand on this framework by including other state-owned entities to determine biodiversity and extinction accounting trends in other state-owned entities. By expanding the research to other state-owned entities, a better understanding can be obtained on how state-owned entities operations affect

biodiversity. This can lead to better management of natural capital and biodiversity-related assets which can enhance accountability.

- The study was focused on a state-owned entity and not on biodiversity on a local or national level. Future research can use the findings of the study to develop a reporting framework which can be replicated at a local or national government level to ensure better disclosure of a nation's natural capital. With more information available on the current state of its natural capital, local and national governments can implement laws and regulations to protect biodiversity and other natural capital assets more effectively. Potentially, the framework can allow local and national governments to hold individuals or organisations accountable for any damages done to biodiversity.
- A limitation of the framework, developed in this thesis, is that it does not take into consideration the internal control mechanisms which may be required to gather all the information. For purposes of this study, the internal controls and management processes of SANParks were not included. Future research can determine what internal controls and management processes should be implemented by SANParks to ensure that information will be available to construct an emancipatory account. As state-owned entities have to comply with similar laws and regulations, the controls that would be required by SANParks can inform management and accounting processes at other state-owned entities, ensuring that information gathered will be accurate and complete.
- The framework developed is qualitative in nature and excludes the monetisation of ecosystem services. Future research can use the framework to incorporate quantitative information, based on a reporting framework to include measurement and recognition of natural capital.

APPENDIX A – REPORT SECTION OF SANPARKS ANNUAL REPORTS

The annual reports of SANParks consist of various sections. These are explained below and are used to organise the core findings.

Table 8 - Report section of SANParks annual reports		
Reference in Data instrument	Section of report	Description of section
A	About SANParks	This section gives an overview of the operational area of SANParks, its mission and its vision.
B	Minister's foreword	The Minister's foreword provides the users of financial statements with an overview of the progress that SANParks has made during the year, focusing on challenges at the macro-political level, changes to the board and risks faced by the company.
C	Chairperson's report	The Chairperson's report provides an overview of the risks that SANParks faced during the year, how the company responds to risks and what progress has been made by the company to meet its strategic goals. This section also describes macro-political solutions to problems faced by the SANParks.
D	Chief Executive Officers (CEO) report	The CEO's report describes the risks faced by SANParks and how the company overcomes the risks they are facing. The report focuses on tourism goals, in particular, the increase in the black African visitors to the park.
E	Statement of responsibility and confirmation of the accuracy of the annual report	This section of the reports details the responsibilities management has in terms of relevant legislation, the responsibilities related to internal controls and the preparation of the financial statements.
F	Organisational structure	The operational structure provides a breakdown of the executive structures of SANParks. However, this was only used from 2015 – 2017. This section was incorporated in the

Table 8 - Report section of SANParks annual reports

Reference in Data instrument	Section of report	Description of section
		SANParks Board members and Executive management section in prior years.
G	SANParks Board members and Executive management	This section provides a breakdown of the executive structures of SANParks. This section was used in the 2013 and 2014 annual reports. This section was incorporated in the Operational Structure section of the report in subsequent years
H	Auditor General's Report on premeditated objective	This section contains the audit report, submitted by the Auditor General, assuring the premeditated objectives of SANParks. In 2015, 2016 and 2017, the audit report also contained the report in the annual financial statements. The report also gave a summary of deficiencies in internal control or where procurement laws and regulations were not complied with during the applicable fiscal period.
I	Situation analysis	The situation analysis provides a brief overview of the operational goals that were met during the year. This section illustrates the key risk areas or objectives of the company and the factors affecting performance, positively or negatively.
J	Strategic outcome-oriented goals	The strategic outcomes section provides the users with the key strategic outcomes for SANParks group together as: • Conservation objectives; • Tourism objectives; • Socio-economic transformation objectives; and • Corporate Governance objectives.
K	Performance against Predetermined Objectives	This section provides the actual results against the planned results for each of the objectives. The section also details how the results were measured and if any, factors that impacted the meeting of the objectives. The planned steps to be taken to improve results would also be detailed in this section.

Table 8 - Report section of SANParks annual reports

Reference in Data instrument	Section of report	Description of section
L	Conservation services report	This section explains the conservation efforts that SANParks is engaged in, including research initiatives, ecosystem conservation initiatives and the results from any initiatives related to biodiversity.
M	Tourism development and Marketing report	The tourism and marketing report provides details on the tourism objectives of SANParks with emphasis on the occupancy rates at the different parks. This section also explains the effect of the media on the company's operations, both positive and negative.
N	Corporate services report	The corporate services division was started in 2013 and incorporates disclosures on information technology, social developments, stakeholders engagements.
O	Socio-economic development report	This section explains all the green and blue economy programmes that SANParks has developed. Green economy programmes are programmes that allow the community to participate in the wildlife value chain. The Blue Economy Programme promotes access and the use of marine resources, for example, fishing. It also provides information on the contributions made to education programmes and other social projects.
P	Operations report	The operations report provides information on the various operations in the SANParks, the date on which each operation has been proclaimed and the size of each operation. Details are also provided on events that have an effect on operations (fires and droughts, etc.) and the rehabilitation and conservation initiatives and the progress made during the financial year.
Q	Corporate Governance report	The corporate governance report provides details on the board of directors, the classification of the directors (executive or non-executive), appointment and termination dates.

Table 8 - Report section of SANParks annual reports

Reference in Data instrument	Section of report	Description of section
R	Audit and Risk Committee report	This section of the report provides details on the internal control responsibilities of management, issues related to the management of risk or quality over the internal audit process and the committee's evaluation of the financial statements.
S	Directors report	The Director's report was replaced by the <i>Statement of responsibility and confirmation of the accuracy of the annual report</i> from 2015. The report provides an overview of the responsibilities of the directors, background information of SANParks and the general structure of the board of directors.
T	Audit report	The audit report contains the audit opinion and findings as they relate to the financial statements. However, this was replaced from 2015 with an overall audit report, dealing with the financial statements and the objectives.
U	Annual financial statements	This section contains the audited financial statements of SANParks
V	Human capital management	This section provides detail regarding human resources with emphasis on the demographic split between the different management levels, salary levels and the outcomes of salary disputes.

APPENDIX B – SIGNIFICANCE OF CHANGES OVER TIME

Given the changes in the number of disclosures which have taken place, descriptive statistics were used to understand the change in the disclosures better.

Table 9 - Distribution of disclosures		
Year	Skewness	Kurtosis
2013	1.428	1.967
2014	1.184	0.596
2015	1.456	1.361
2016	1.769	4.326
2017	1.300	2.113

Un-tabulated test statistics show that the disclosures are not normally distributed. To test if the outliers are significant, a Kolmogorov-Smirnov and Shapiro Wilk test was applied. The results of the test are summarised below.

Table 10 - Test for normality of outliers						
Year	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
2013	.300	128	.000	.755	128	.000
2014	.273	128	.000	.785	128	.000
2015	.340	128	.000	.715	128	.000
2016	.290	128	.000	.784	128	.000
2017	.279	128	.000	.839	128	.000

The results of the Kolmogorov-Smirnov and Shapiro-Wilk test indicate that the data are not normally distributed. A Levene's test was run to test the null hypothesis that the variance between the different reporting years is equal. The results of the Levene's test are indicated below.

Table 11 - Test of homogeneity of variances				
	Levene Statistic	df1	df2	Sig.
Based on mean	1.316	4	635	.263
Based on median	1.445	4	635	.218
Based on median and with adjusted df	1.445	4	615	.218
Based on trimmed mean	1.452	4	635	.215

The Levene's test showed that F (4.635) equals 1.316 with $p > 0.05$. The null hypothesis is, therefore, not rejected and the assumption of homogeneity of variances holds, indicating that there is no relationship between the variances in the outlier disclosure items.

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