

THE BUSINESS CASE FOR BIODIVERSITY STEWARDSHIP

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Executive summary

This report presents a case for increasing sustained investment in biodiversity stewardship programmes in South Africa. It has been developed by the South African National Biodiversity Institute (SANBI) for the Department of Environmental Affairs (DEA). Biodiversity stewardship is recognised as a vehicle for delivering on targets in Presidential Delivery Agreement Outcomes 7 and 10.

Biodiversity stewardship in South Africa

The conservation, management and sustainable use of South Africa's biodiversity depends on a range of strategies, including expanding and consolidating the protected area network, reducing loss and degradation of natural habitat in biodiversity priority areas, and in some cases restoring biodiversity priority areas. Biodiversity stewardship is a key tool for contributing to each of these broad strategies, especially but not only to expanding and consolidating the protected area network. Biodiversity stewardship is complemented by a range of other tools, approaches and mechanisms, and often works hand in hand with, for example, mainstreaming initiatives and natural resource management programmes. The focus of this report is on biodiversity stewardship as one key aspect of South Africa's biodiversity conservation effort, with the aim of making the case for increasing sustained investment in the biodiversity stewardship programmes in South Africa. The report also provides an overview of biodiversity stewardship in South Africa.

Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners, led by conservation authorities.

Conservation NGOs often play a key supporting role. The objective of biodiversity stewardship is to conserve and manage biodiversity priority areas through voluntary agreements with landowners. This can include formal protection, management and restoration of terrestrial and aquatic ecosystems. Biodiversity stewardship contributes to several broader goals:

- Conserving a representative sample of biodiversity,
- Involving landowners as custodians of biodiversity,
- Contributing to the rural economy,
- Investing in ecological infrastructure,
- Contributing to climate change adaptation and mitigation,
- Supporting sustainable development.

A suite of different types of biodiversity stewardship agreements exist, ranging from non-binding agreements to long-term, formally declared protected areas. Those biodiversity stewardship agreements that are formally declared in terms of the National Environmental Management: Protected Areas Act (Act 57 of 2003) are considered contract protected areas and form part of South Africa's protected area network. They contribute towards meeting national protected area targets established in the National Protected Area Expansion Strategy (NPAES).

Key role players in biodiversity stewardship include landowners (private or communal), conservation authorities, DEA, SANBI and conservation NGOs. The first provincial biodiversity stewardship programme was initiated in 2003 in the Western Cape, with other provinces developing and

initiating their own programmes in the subsequent years. By 2012, all nine provinces in South Africa had some form of biodiversity stewardship programme in development or operation. SANBI and DEA have been working alongside these programmes since 2003, as have some NGOs. SANBI convenes the Biodiversity Stewardship Technical Working Group, which feeds into the Protected Area Technical Task Team convened by DEA. The Global Environment Facility (GEF) has been instrumental in catalysing biodiversity stewardship in South Africa, for example through funding provided to the CAPE and Grasslands programmes.

Biodiversity stewardship is making substantial contributions to protected area expansion. By the end of 2014, over 70 protected areas, amounting to over 450 000 ha, had been declared through the provincial biodiversity stewardship provincial programmes, with an additional 145 sites, totalling nearly 560 000 ha, in negotiation for protected area declaration through these programmes. At the time of writing, biodiversity stewardship agreements were in the process of being created, or had been created, on over twenty land reform sites across the country through the Land Reform Biodiversity Stewardship Initiative, covering over 100 000 hectares and benefitting several thousand land reform beneficiaries.

South African National Parks (SANParks) has also been securing protected areas with private and communal landowners, with over 40 contract protected areas created since the 1980s, many of which are consistent with the biodiversity stewardship approach. Some metropolitan municipalities are also involved in biodiversity stewardship, such as the City of Cape Town, which works closely with CapeNature and SANParks.

Initial research suggests that landowners participate in biodiversity stewardship for a range of reasons, often motivated by their own intrinsic value system. Non-financial incentives such as regular visits and technical advice from conservation authority officials, as well as practical management support (for example assistance with clearing invasive plants), are often important to landowners. Fiscal incentives such as tax deductions and property rates exclusions exist in terms of national legislation for some types of biodiversity stewardship agreements.

Biodiversity stewardship programmes have achieved impressive gains with limited numbers of staff and small budgets. Not only are biodiversity stewardship programmes capable of making a significant contribution to meeting protected area targets, they are doing so at a fraction of the cost associated with establishing or expanding traditional state-owned protected areas, as discussed below in more detail. But first a look at the range of benefits associated with biodiversity stewardship.

The benefits of biodiversity stewardship

Biodiversity stewardship brings a great deal of value to both the conservation sector and South Africa more broadly. Biodiversity stewardship is making substantial contributions to **meeting national protected area targets** set out in the National Protected Area Expansion Strategy. As mentioned above, by the end of 2014 over 450 000 ha of protected areas had been declared through biodiversity stewardship, with an additional 560 000 ha in negotiation. Provinces with well-resourced biodiversity stewardship programmes may be able to meet their 20-year protected area

targets almost entirely through biodiversity stewardship. There is a strong focus on ensuring that contract protected areas declared through biodiversity stewardship are declared on land of high biodiversity importance, such as Critical Biodiversity Areas and threatened ecosystems, thus contributing in the majority of cases to meeting protected area targets for under-protected ecosystem types.

The cost to the state of biodiversity stewardship is a **fraction of the cost** of acquiring and managing state-owned protected areas. Biodiversity stewardship **leverages private sector investment** in support of government's mandate to secure protected areas, which would otherwise have to be fully covered by government through costly land purchase and ongoing management by conservation authorities.

Biodiversity stewardship is particularly **effective in multiple-use landscapes** where biodiversity priority areas are embedded in a matrix of other land uses. A flexible range of biodiversity stewardship agreements is available which can combine biodiversity protection and sustainable production. This makes biodiversity stewardship appropriate for a wide variety of landscapes, including agricultural and communal areas. It also allows for the protection of threatened ecosystems, which are often highly fragmented and thus not suitable for the establishment or expansion of large state-owned protected areas.

Biodiversity stewardship can be used to **enable other programmes and policies**. For example, biodiversity stewardship is able to complement and provide additional security to state investment in the landscape through programmes such as Working for Water and Working for Wetlands, and can also play an important role in enabling and supporting biodiversity offsets.

Biodiversity stewardship has the ability to support the **stimulation of the rural economy** by diversifying rural livelihood options, creating nodes of rural development and stimulating job creation and skills development. Biodiversity stewardship agreements have been implemented on communal land, **integrating biodiversity conservation into broader land reform processes**. While not all communal areas would benefit from biodiversity stewardship, or are suitable for biodiversity stewardship, some are. There are opportunities for protected area expansion and biodiversity stewardship to support the land reform agenda, especially on marginal agricultural land.

The financial case for biodiversity stewardship

A financial analysis of the longest running provincial biodiversity stewardship programmes, in CapeNature and Ezemvelo KZN Wildlife, indicates that biodiversity stewardship is substantially more cost effective as a means of securing protected areas than the alternative of land acquisition and management by the state.

Two sets of costs were examined:

- The cost of establishing a protected area, which is a once-off cost (sometimes incurred over more than one financial year),
- The cost of managing a protected area, which is an ongoing annual cost.

Based on the Western Cape and KZN experience, **establishing a protected area through biodiversity stewardship costs the state between 70 and 400 times less per hectare than land acquisition.** This cost ratio depends heavily on the price of land (which makes up by far the bulk of the cost of land acquisition) and the average site size. Land prices in areas where biodiversity stewardship is active in the Western Cape and KZN tend to be high, so these ratios may be somewhat less dramatic in some other provinces, although nevertheless substantial. An analysis of the cost per hectare to SANParks of negotiating land purchase and declaring a state-owned protected area, *excluding the cost of the land itself*, shows that it is broadly in line with the cost per hectare to CapeNature and Ezemvelo of negotiating a biodiversity stewardship agreement and declaring a contract protected area. The dramatic cost saving of using a biodiversity stewardship approach to establish protected areas thus comes primarily from savings on land purchase, rather than from savings on negotiation and declaration costs.

When it comes to ongoing management, the bulk of the cost of managing a contract protected area declared through biodiversity stewardship is covered by the landowner, as the landowner is the management authority for the protected area. Based on the Western Cape and KZN experience, **the cost to the state of supporting the management of a contract protected area by the landowner is between 4 and 17 times lower per hectare than the cost to the state of managing a state-owned protected area itself.** This is because the biodiversity stewardship approach effectively **leverages significant private sector investment** into biodiversity conservation, by establishing and maintaining partnerships in the landscape. The exact ratio depends on a range of management related factors, and is likely to vary from province to province. Most provinces probably fall within the range represented here by the Western Cape (4:1) and KZN (17:1). This means it is possible to say confidently that the ongoing cost of biodiversity stewardship to the state is at least four times lower than the ongoing cost of managing state-owned protected areas.

While state purchase of protected areas remains an important means of establishing protected areas in South Africa, it is often not possible for conservation authorities facing significant resource limitations to pursue this option to any substantial degree. The biodiversity stewardship approach to securing protected areas provides a sound and vastly more cost effective alternative.

Investing in biodiversity stewardship into the future

Given the current trajectory of biodiversity stewardship uptake among landowners, it is fair to believe that, with sufficient resources, biodiversity stewardship programmes within provinces, metros and national agencies can continue to grow substantially for the next decade, if not longer. The major obstacle impeding biodiversity stewardship in the provinces is not a lack of landowner willingness, but rather a lack of state resources supporting the programmes. With modestly increased resources, biodiversity stewardship could make even greater contributions to meeting protected area targets and increasing protection levels of under-protected ecosystems, with potential for significant contributions to the protection of river, wetland and estuarine ecosystems as well as terrestrial ecosystems.

A typical, adequately resourced provincial biodiversity stewardship programme would require a budget of approximately R9 million per year (in 2013/14 Rands), including staff costs and

operational costs. This would provide for a staff complement of a Programme Manager, Deputy Programme Manager, Admin Assistant, five Senior Stewardship Officers, five Junior Stewardship Officers, a legal specialist, and two full-time-equivalent ecologists (in practice the biodiversity stewardship programme would likely share ecologists with other programmes, and may draw on more than two people in this role). The estimated staff requirements and operational costs are based on an understanding of the resources that are required to run a successful and sustainable biodiversity stewardship programme, based on the experience of provincial conservation authorities to date. The exact requirements of different provincial conservation authorities would need to be worked out in more detail with the provinces concerned, with the assistance of National Treasury and the relevant provincial treasuries, taking into account the share of national protected area targets for which each province is responsible.

Using an indicative budget of R9 million per province per year, **the total investment in biodiversity stewardship for nine provinces would be in the order of R80 million per year. Such an investment would enable the state to meet its national targets for expanding land-based protected areas, and to support the ongoing management of those protected areas**, while leveraging significant private investment and securing a range of other benefits. Assuming an average land price of R3 000 per hectare (much lower than the land price in biodiversity stewardship areas in the Western Cape and KZN), **the alternative of meeting protected area targets through acquisition of land would cost the state over R2 billion per year for the next 14 years (or a total of nearly R29 billion) just for establishment of protected areas, not counting the cost of ongoing management.**¹

Recommendations

The following recommendations are made in order to maximise the potential of biodiversity stewardship:

- Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year.
- Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape.
- Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements, which contribute directly to targets in Outcome 7.
- Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in.
- Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters.
- The community of practice for biodiversity stewardship should be strengthened and expanded.

¹ This is based on the outstanding hectares as of the end of 2014 required to meet the 2028 targets set out in the National Protected Area Expansion Strategy 2008. The revision of the National Protected Area Expansion Strategy 2008, underway at the time of writing, may include a revision of these national protected area targets.

Contents

1	Introduction	1
2	Biodiversity stewardship in South Africa	2
2.1	Types of biodiversity stewardship agreements	3
2.2	Key role-players	7
2.3	Incentives for landowners.....	9
3	History and current trends of biodiversity stewardship in South Africa	11
4	The benefits of biodiversity stewardship.....	16
5	The financial case for biodiversity stewardship.....	18
5.1	The cost of establishing protected areas	19
5.2	The cost of ongoing management of protected areas	21
5.3	Summary of the cost to the state of contract protected areas through biodiversity stewardship vs state-owned protected areas	23
6	Investing in biodiversity stewardship into the future.....	25
7	Recommendations	28
7.1	Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year	28
7.2	Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape.....	28
7.3	Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements, which contribute directly to targets in Outcome 7	28
7.4	Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in	29
7.5	Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters	29
7.6	The community of practice for biodiversity stewardship should be strengthened and expanded	30
	References	31
	Appendix I: Calculation of past costs for establishing and managing protected areas	32

List of Boxes

Box 1: Biodiversity priority areas	2
Box 2: Protected areas and conservation areas in South Africa	4
Box 3: Biodiversity stewardship in national policy	8
Box 4: Ecological infrastructure defined	17

List of Tables

Table 1: Provincial conservation authorities.....	7
Table 2: Provincial biodiversity stewardship programmes: year of programme initiation and year of first protected area declaration.....	11
Table 3: Staff resources within the provincial biodiversity stewardship programmes, DEA and SANBI (1 October 2014)*	13
Table 4: Summary of protected areas declared and in negotiation through provincial biodiversity stewardship programmes (as at 1 October 2014)	14
Table 5: Biodiversity stewardship contribution to provincial protected area targets set in the National Protected Area Expansion Strategy 2008 (as at 1 October 2014)	15
Table 6: Cost comparison for the establishment of contract protected areas through biodiversity stewardship vs state-owned protected areas, in the Western Cape and KwaZulu-Natal.....	20
Table 7: Cost comparison for the ongoing management of contract protected areas established through biodiversity stewardship vs state-owned protected areas, in the Western Cape and KwaZulu-Natal.....	22
Table 8: Summary of cost comparison for protected areas declared through biodiversity stewardship vs state-owned protected areas, based on Western Cape and KwaZulu-Natal provincial conservation authorities.....	24
Table 9: Cost calculation for CapeNature stewardship officer and scientific support: protected area establishment, 2012/13	33
Table 10: Cost calculation for CapeNature stewardship programme manager, administrative support and internal legal support: protected area establishment, 2012/13	34
Table 11: Cost calculation for CapeNature stewardship programme: protected area establishment, 2012/13.....	34
Table 12: Cost calculation for EKZN stewardship programme: protected area establishment, 2013/14	36
Table 13: Cost calculation for CapeNature stewardship officer and scientific support: protected area management support, 2012/13.....	37
Table 14: Cost calculation for CapeNature stewardship programme manager and administrative support: protected area management support, 2012/13	38
Table 15: Cost calculation for CapeNature stewardship programme: protected area management support, 2012/13	38
Table 16: Cost calculation for EKZN stewardship programme: protected area management support, 2013/14.....	39
Table 17: Cost to negotiate a sale and declare a protected area for SANParks, based on eight protected areas established in 2012/13, and adjusted to 2013/14	41
Table 18: Cost of properties in biodiversity stewardship areas in the Western Cape, 2012.....	42
Table 19: Cost of properties in biodiversity stewardship areas in KZN for the year 2014	43
Table 20: Cost of biodiversity management in protected areas in the Western Cape, 2013/14, adjusted to 2012/13.....	44
Table 21: Cost of biodiversity management in protected areas in KZN, 2013/14.....	46

Acronyms

CAPE	Cape Action for People and the Environment
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DENC	Northern Cape Department of Environment and Nature Conservation
DETEA	Free State Department of Economic Development, Tourism and Environmental Affairs
DRDLR	Department of Rural Development and Land Reform
ECPTA	Eastern Cape Parks and Tourism Agency
GDARD	Gauteng Department of Agriculture and Rural Development
GEF	Global Environment Facility
KZN	KwaZulu-Natal
LEDET	Limpopo Department of Economic Development, Environment and Tourism
MEC	Member of the Executive Council
MTPA	Mpumalanga Parks and Tourism Agency
NGO	Non-government organisation
NPAES	National Protected Area Expansion Strategy
NWPTB	North West Parks and Tourism Board
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
UNDP	United Nations Development Programme
WWF-SA	Worldwide Fund for Nature - South Africa

1 Introduction

This report presents a case for increasing sustained investment in biodiversity stewardship programmes in South Africa. It is intended to be used primarily by the Department of Environmental Affairs (DEA) and conservation authorities. It has been developed by the South African National Biodiversity Institute (SANBI) for DEA, at the request of the Biodiversity Stewardship Technical Working Group, which is convened by SANBI and has representation from all provincial biodiversity stewardship programmes, DEA and key NGOs. The work was supported by the Grasslands Programme with Global Environment Facility (GEF) funding through the United Nations Development Programme (UNDP).

The conservation, management and sustainable use of South Africa's biodiversity depends on a range of strategies, including expanding and consolidating the protected area network, reducing loss and degradation of natural habitat in biodiversity priority areas, and in some cases restoring biodiversity priority areas. Biodiversity stewardship is a key tool for contributing to each of these broad strategies, especially but not only to expanding and consolidating the protected area network. Biodiversity stewardship is complemented by a range of other tools, approaches and mechanisms, and often works hand in hand with, for example, mainstreaming initiatives and natural resource management programmes. The focus of this report is on biodiversity stewardship as one key aspect of South Africa's biodiversity conservation efforts.

Biodiversity stewardship is recognised as a vehicle for delivering on targets in Presidential Delivery Agreement Outcomes 7 and 10. It is also highlighted in the National Protected Area Expansion Strategy 2008 as a key mechanism for meeting national protected area targets.

The report begins by describing biodiversity stewardship in South Africa in Section 2, providing overview different types of biodiversity stewardship agreements, key role-players and incentives for landowners. Section 3 presents the history and current trends of the provincial biodiversity stewardship programmes. Section 4 looks at key benefits of the biodiversity stewardship approach to establishing and managing protected areas. Section 5 presents the financial case for biodiversity stewardship, comparing the cost to the state of establishing and managing contract protected areas through biodiversity stewardship to the costs of establishing and managing state-owned protected areas. Section 6 presents a proposal for investing in biodiversity stewardship into the future, and Section 7 provides recommendations for maximising the potential of biodiversity stewardship across South Africa.

2 Biodiversity stewardship in South Africa

Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners. Biodiversity stewardship programmes are led by conservation authorities, often with support from conservation NGOs.

The objective of biodiversity stewardship is to conserve and manage biodiversity priority areas (see Box 1) through voluntary agreements with landowners. This can include formal protection, management and restoration of terrestrial and aquatic ecosystems. Biodiversity stewardship contributes to several broader goals:

- Conserving a representative sample of biodiversity
- Involving landowners as custodians of biodiversity
- Contributing to the rural economy
- Investing in ecological infrastructure
- Contributing to climate change adaptation and mitigation
- Supporting sustainable development

A suite of different types of biodiversity stewardship agreements exist, ranging from non-binding agreements to long-term, formally declared protected areas (see Section 2.1). Biodiversity stewardship agreements can be concluded on any land other than land that is owned by a provincial or national conservation authority. Such land may include municipal land, other government owned land, communal land^{2,3} and private land. To date, biodiversity stewardship programmes have focussed predominantly on private and communal land.

Biodiversity stewardship is making substantial contributions to protected area expansion. As discussed further in Section 3, by the end of 2014, over 70 protected areas had been declared through the provincial biodiversity stewardship programmes, amounting to over 450 000 ha, with an additional 145 sites, totalling nearly 560 000 ha, in negotiation for protected area declaration.

Box 1: Biodiversity priority areas

Biodiversity priority areas are geographic areas in the landscape or seascape that are important for conserving a representative sample of ecosystems and species, for maintaining ecological processes, or for the provision of ecosystem services (SANBI, in prep). They include a number of categories, of which those most relevant to biodiversity stewardship are: Critical Biodiversity Areas, threatened ecosystems, and focus areas for protected area expansion. Biodiversity priority areas are identified using a systematic spatial biodiversity planning process, based on the best available science.

In a multiple-use landscape, the range of different types of biodiversity stewardship agreements allows for flexibility to align the biodiversity importance, the degree of restriction on land use, and

² Communal land may be owned by the state (predominantly the Department of Public Works and the Department Agriculture, Forestry and Fisheries), held in trust for the sole use of the communities who live on and use the land. It can also be owned by a Public Benefit Organisation or a Trust.

³ For the purposes of this document, communal land users are referred to as landowners along with private landowners.

the landowner's willingness to conserve all or elements of biodiversity on their land. This enables the effective management and restoration of biodiversity and ecological infrastructure at a landscape scale, by engaging with multiple landowners through a range of different types of agreements. This approach allows landowners not only to retain ownership of their properties, but also to combine other compatible land-uses with biodiversity conservation, such as grazing or ecotourism, thereby reducing the opportunity cost of conservation.

Within the suite of types of biodiversity stewardship agreements, the two higher levels, Nature Reserves and Protected Environments, allow for the establishment of protected areas on private land (see Section 2.1). These protected areas are recognised as such by the state, formally declared by the national Minister of Environmental Affairs or provincial MEC for Environmental Affairs in terms of the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act), and are as secure as state-owned protected areas. By allowing for protected areas to be declared on private land, the state is not required to carry the cost of purchasing and managing the land, although tax incentives that exist to support landowners do effectively shift a portion of the cost onto the state (see Section 2.3). Biodiversity stewardship is recognised in the National Protected Area Expansion Strategy as a key mechanism for achieving national protected area targets.

The biodiversity stewardship approach to establishing and managing protected areas also allows for the protection of threatened ecosystems, which are often highly fragmented and thus not suitable for the establishment or expansion of large state-owned protected areas. The ability to declare a portion of a property as a protected area through biodiversity stewardship addresses this need, catering for protection in fragmented landscapes with multiple land uses.

2.1 Types of biodiversity stewardship agreements

Five types of biodiversity stewardship agreements exist, described below and summarised in Figure 1. Each requires commitments from the landowner(s) to adhere to certain conditions, and in most cases restrictions apply to the use of the land. The types of agreements require different levels of commitment. Each successive level of agreement provides more protection for biodiversity and involves more land-use restrictions. In line with this, increased support is provided to the landowner at higher levels of commitment. In addition, the relative importance of biodiversity is taken into consideration for eligibility at each level. In order to qualify for the higher levels of agreement, the property must have sufficient biodiversity importance. There are also cases where the biodiversity importance is high, but the landowner prefers a lower level of commitment.

As mentioned above, the highest two levels of biodiversity stewardship agreements, namely Nature Reserve and Protected Environment, are recognised as protected areas in terms of the Protected Areas Act (see Box 2). Commitments by landowners in terms of these agreements result in land being formally declared as a protected area. These contract protected areas contribute to South

Africa's protected area estate in the same way that a state-owned and managed protected area would.⁴

Box 2: Protected areas and conservation areas in South Africa

In South Africa, protected areas are defined as geographic areas that are formally protected in terms of the Protected Areas Act and managed mainly for biodiversity conservation. They constitute the protected area estate and contribute to meeting protected area targets.

Conservation areas are areas that are not formally protected in terms of the Protected Areas Act but are nevertheless managed at least partly for biodiversity conservation.

Nature Reserves are protected areas declared only on properties of high biodiversity importance. A title deed restriction is also placed on the property, thereby creating two layers of protection on the property – the declaration of a Nature Reserve, and a title deed restriction. A contract is signed between the landowner and the conservation authority, with a duration of at least 30 years, up to 99 years, or in perpetuity⁵. This effectively secures both the property, regardless of future ownership changes, as well as binding the landowner to certain activities. Management plans are developed by the conservation authority and the landowner (sometimes with NGO support, see Section 2.2), and are reviewed every five years.

Protected Environments are protected areas that can be declared on multiple properties, although they can also be used for single properties. A title deed restriction is also placed on the property, thereby creating two layers of protection on the property – the declaration of a Protected Environment, and a title deed restriction. A contract agreement is signed between the landowner(s) and the conservation authority, typically with a duration of 30 to 99 years, or in perpetuity. Management plans are developed by the conservation authority and the landowner(s) (sometimes with NGO support), and are reviewed every five years. Protected Environments allow for a wider range of compatible land uses on the property than a Nature Reserve would.

Biodiversity Management Agreements are enabled by the National Environmental Management: Biodiversity Act (Act 10 of 2004) (hereafter referred to as the Biodiversity Act), and require a Biodiversity Management Plan (also enabled by the Biodiversity Act) to be in place. Biodiversity Management Agreements should have a minimum duration of five years, and can be renewed in five year increments in line with the Biodiversity Act. At the time of writing, no Biodiversity Management Agreements had been entered into. Biodiversity Management Agreements are not considered protected areas, but they are considered conservation areas (see Box 2).

Biodiversity Agreements are entered into in terms of contract law. These agreements are typically five to fifteen years in duration, although some are signed in perpetuity. These agreements are more

⁴ In South Africa, all state-owned protected areas are managed by the state. For the remainder of this report, references to 'state-owned protected area' imply that the protected area is also managed by the state.

⁵ Some provinces use 99 years as the maximum duration of a contract, others use 'in perpetuity'.

flexible than the higher levels of biodiversity stewardship. Biodiversity Agreements are not considered protected areas, but they are considered conservation areas (see Box 2).

Biodiversity Partnership Areas⁶ are informal agreements between the landowner and conservation authority. This type of agreement does not legally bind either party to any obligations, and often takes the form of a Memorandum of Understanding. While some Biodiversity Partnership Areas may be considered conservation areas (see box 2), this depends on the activities on the land, and is not an automatic assumption based on the category of Biodiversity Partnership Area.

⁶ Previously referred to as Conservation Areas or Voluntary Conservation Areas.

TYPE OF AGREEMENT	LEGAL MECHANISM	
Nature Reserve*	National Environmental Management: Protected Areas Act (Act 57 of 2003)	<ul style="list-style-type: none"> • Suitable for sites with highest biodiversity importance • Binding on property: declaration of Nature Reserve, and a title deed restriction • Binding on landowner: contract with landowner usually for 30 – 99 years/in perpetuity • Considered to be part of South Africa’s protected area estate, and contributes to meeting protected area targets
Protected Environment	National Environmental Management: Protected Areas Act (Act 57 of 2003)	<ul style="list-style-type: none"> • Suitable for declaration over multiple properties • Less restrictive land use than Nature Reserve • Binding on property: declaration of Nature Reserve, and a title deed restriction • Binding on landowner: contract with landowner usually for 30 – 99 years/in perpetuity • Considered to be part of South Africa’s protected area estate, and contributes to meeting protected area targets
Biodiversity Management Agreement	National Environmental Management: Biodiversity Act (Act 10 of 2004)	<ul style="list-style-type: none"> • Less restrictive than protected area declaration • Must have a Biodiversity Management Plan (in terms of Biodiversity Act) on all/part of the property • Binding on landowner: contract with landowner for a minimum of 5 years, or longer in 5 year increments
Biodiversity Agreement	Contract law	<ul style="list-style-type: none"> • Less restrictive than protected area declaration • Binding on landowner: contract with landowner for a minimum of 5 years or longer
Biodiversity Partnership Area	Informal agreement	<ul style="list-style-type: none"> • Non-binding partnership • May include a Memorandum of Understanding

* Or National Park

Figure 1: Hierarchy of biodiversity stewardship agreements

2.2 Key role-players

Biodiversity stewardship programmes are implemented through a collaborative approach involving private and communal landowners and partnerships with various state and non-state organisations. Key role-players within the programmes are landowners and conservation authorities, with support from national government. In many provinces, conservation NGOs also play a critical role in supporting the programme. Each of these key role players is discussed below.

Landowners

In this document, the term ‘landowner’ is used to refer to private landowners as well as communities living on communal land. However, in reality, some communal land is owned by the state, and the community is granted the rights to live on and manage the land. In biodiversity stewardship programmes, the ownership and management of the property remains with the landowner. A management plan for the property is co-developed between the conservation authority and the landowner, and technical advice is provided to the landowner. The cost of management is primarily borne by the landowner, with assistance in-kind from the conservation authority where possible. In some instances, some costs are also borne by NGOs or other state programmes. For instance, the Working for Water programme may assist with managing invasive alien plants on a Nature Reserve, with the primary costs covered by the Department of Environmental Affairs.

State

Conservation authorities negotiate biodiversity stewardship agreements with landowners, provide on-going assistance to the landowners, and conduct annual audits to ensure that landowners comply with the conditions of the agreements. By 2012, provincial biodiversity stewardship programmes existed in each of the nine provinces. In provinces where a conservation agency has been established under the provincial environmental affairs department, the agency plays the role of implementing the biodiversity stewardship programme (Table 1). Other organs of state, such as SANParks and municipalities, may also implement biodiversity stewardship.

Table 1: Provincial conservation authorities⁷

Province	Conservation authority
Eastern Cape	Eastern Cape Parks and Tourism Agency (ECPTA) (agency)
Free State	Department of Economic Development, Tourism and Environmental Affairs (DETEA)
Gauteng	Gauteng Department of Agriculture and Rural Development (GDARD)
KwaZulu-Natal	Ezemvelo KZN Wildlife (agency)
Limpopo	Limpopo Department of Economic Development, Environment and Tourism (LEDET)

⁷ ‘Provincial conservation authority’ refers either to the provincial department with the mandate for environmental affairs or to the conservation agency with delegated responsibility from the provincial department.

Province	Conservation authority
Mpumalanga	Mpumalanga Tourism and Parks Agency (MTPA) (agency)
North West	North West Parks and Tourism Board (NWPTB) (agency)
Northern Cape	Department of Environment and Nature Conservation in the Northern Cape (DENC)
Western Cape	CapeNature (agency)

The national Department of Environmental Affairs plays the role of enabler and regulator. DEA is responsible for the legislation governing some of the biodiversity stewardship agreements (Nature Reserves, Protected Environments and Biodiversity Management Agreements), and well as any related norms and standards. DEA is responsible for the administrative process for declaring national protected areas. DEA also maintains the protected area and conservation area register (PACA), which includes all protected areas and conservation areas on private and communal land. DEA convenes the Protected Areas Technical Task Team, which addresses issues related to all types of protected areas, including those established through biodiversity stewardship. DEA is also actively involved in the Biodiversity Stewardship Technical Working Group, convened by SANBI (see below).

Box 3: Biodiversity stewardship in national policy

The important role of biodiversity stewardship in achieving South Africa's biodiversity objectives is explicitly recognised in key policies and strategies in the biodiversity sector. These include South Africa's National Biodiversity Framework 2008 (DEAT, 2009a) and the National Protected Area Expansion Strategy 2008 (Government of South Africa, 2010). The contributions of biodiversity stewardship were also highlighted in the National Biodiversity Assessment 2011. A Biodiversity Stewardship Guideline Document, aimed at guiding operational practices within biodiversity stewardship programmes, was produced by DEA and approved by MINMEC (the Ministers and Members of Executive Councils Meeting) in 2009 (DEAT, 2009b).

SANBI supports biodiversity stewardship on two levels. At the implementation level, SANBI has provided direct support to provincial conservation authorities, including salaries for staff, through its GEF-funded bioregional programmes (CAPE and the Grasslands Programme). At the enabling level, SANBI provides technical and policy tools and advice, and convenes the national Biodiversity Stewardship Technical Working Group. The Technical Working Group, consisting of members from DEA, provincial conservation authorities, SANBI and key NGOs that play a national role in biodiversity stewardship, meets twice a year. Its key role is to address technical, legal, policy and operational challenges as the biodiversity stewardship programmes are developed and rolled out across the country, drawing on shared expertise and experience. Relevant issues from the Biodiversity Stewardship Technical Working Group are fed into the Protected Areas Technical Task Team. SANBI also coordinates the Land Reform Biodiversity Stewardship Initiative (see below).

The national Department of Rural Development and Land Reform (DRDLR) has an important role to play with communal landowners engaged in biodiversity stewardship. In order to facilitate this, the Land Reform Biodiversity Stewardship Initiative, with founding members of DRDLR, DEA and SANBI, was established in 2008. The initiative aims to work with provincial conservation authorities to support the establishment of biodiversity stewardship agreements on communal land, by co-

ordinating a learning and innovation hub for nature-based rural development and biodiversity conservation, building capacity within communities, creating partnerships between key stakeholders, promoting nature-based sustainable rural livelihoods and economic development and strengthening conservation outcomes out of land reform and rural development projects.

NGOs

Biodiversity stewardship programmes benefit greatly from NGO support and innovation. The role of NGOs includes financial contributions to support incentives for landowners, assistance from NGO staff with expertise in land or species management, landowner negotiations, and other contributions relevant to biodiversity stewardship. Some landowners may prefer working with NGOs than with government officials (Cumming, 2007). In KwaZulu-Natal, for example, the provincial biodiversity stewardship programme works alongside four different NGOs. These NGOs provide technical support and guidance such as conducting site assessments, developing management plans and annual plans of operation. They also negotiate directly with landowners.

While the role of NGOs in supporting biodiversity stewardship can be extremely beneficial, it is important that the work of NGOs is closely aligned with the relevant provincial biodiversity stewardship programme. This is particularly important in the case of negotiating land for protected area declaration, as this will require provincial MEC approval and significant support from the conservation authority over the long term.

2.3 Incentives for landowners

Landowners participate in biodiversity stewardship for a number of reasons, motivated by their own intrinsic value system, as well as by incentives – inducements on the part of an external agent designed to positively motivate behaviour (Cumming, 2007). Types of incentives include financial and tangible incentives as well as non-financial and less tangible factors, such as a sense of contributing to the greater good.

Research in the Western Cape has shown that, while landowners tend to enter the biodiversity stewardship programme primarily for altruistic reasons (such as the landowner having a strong connection to the landscape and conservation values), their commitment to remain in the programme is more heavily reliant on tangible incentives. The most important incentives seem to be support for land management (such as managing invasive alien plants) and regular visits from conservation authority officials (Selinske *et al*, in press).

Biodiversity stewardship programmes endeavour to provide incentives to participating landowners in relation to the level of commitment from the landowner – i.e. a landowner agreeing to a 99-year Nature Reserve declaration will be offered more incentives than, for example, a landowner with a five-year Biodiversity Agreement. Incentives may include technical advice and support for biodiversity management from the conservation authority, the provision of herbicide for invasive alien plant control, donations of high value wildlife from state owned protected areas, and recognition and marketing opportunities.

In addition to the incentives that are offered by the conservation authority, **fiscal incentives** exist in national legislation which can be utilised by participating landowners. Nature Reserves, Protected Environments and Biodiversity Management Agreements are afforded specific tax deductions in Section 37(C) and (D) of the Income Tax Act (Act. 58 of 1962, as amended 2014). All of these commitments allow for deductions based on actual management expenses incurred. In addition, Nature Reserves with a contract duration of at least 99 years afford the landowner the right to make a further deduction based on the value of the land.

The Municipal Property Rates Act (Act 6 of 2004) Section 17(e) states that Nature Reserves (along with Special Nature Reserves and National Parks) are excluded from being charged municipal property rates. This provision does not include portions of the property used for commercial, business, residential or agricultural purposes. This allowance, while governed by national legislation, is applied largely at a municipal level. The interpretation and application of the section, particularly in determining which portions of the property are used for commercial or agricultural purposes and which are not, has proven to be challenging, both for state-owned protected areas and contract protected areas (Cumming, 2013).

3 History and current trends of biodiversity stewardship in South Africa

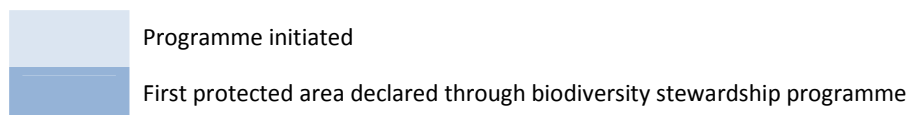
The first provincial biodiversity stewardship programme was initiated in 2003 in the Western Cape, with other provinces initiating and developing their own programmes in subsequent years. SANBI and DEA have been working alongside these programmes since 2003, as have some NGOs. The GEF has been instrumental in catalysing biodiversity stewardship in South Africa, for example through funding provided to the CAPE and Grasslands programmes.

By 2012 all nine provinces had some form of biodiversity stewardship programme in development or operation. Table 2 shows when each province initiated its programme, and when the first protected area was declared through the programme. Some provinces are still developing a biodiversity stewardship programme, or have begun negotiating with landowners but not yet declared any protected areas through their biodiversity stewardship programmes. More detail on protected areas declared and in negotiation per province is shown in Table 4 below.

SANParks has also worked with private and communal landowners in securing protected areas, with over 40 contract protected areas created since the 1980s. Many of these are consistent with the biodiversity stewardship approach. The majority are National Parks, often adjoined to National Parks owned by SANParks. At the time of writing, SANParks was in the process of declaring its first two Protected Environments with multiple landowners through the biodiversity stewardship approach. Some metropolitan municipalities are also involved in biodiversity stewardship, such as the City of Cape Town, which works closely with CapeNature and SANParks.

Table 2: Provincial biodiversity stewardship programmes: year of programme initiation and year of first protected area declaration

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Western Cape												
Northern Cape												
KwaZulu-Natal												
Mpumalanga												
Eastern Cape												
Free State												
Limpopo												
North West												
Gauteng												



The provincial biodiversity stewardship programmes have different staff resources, as shown in Table 3. Just over 30 full-time equivalent staff work within the provincial biodiversity stewardship programmes. Many programmes rely significantly on portions of time of staff within the conservation authority for programme management, landowner negotiation and support, and technical support, rather than having staff dedicated solely to biodiversity stewardship. A provincial biodiversity stewardship programme ideally requires a programme manager with administrative support, several biodiversity stewardship officers responsible for working directly with the landowner in establishing and supporting a biodiversity stewardship agreement, technical support from ecologists and botanists for site assessments, developing management plans and auditing sites, and legal specialists assisting with the contracts and declarations.

At the time of writing, all of the staff in the provincial biodiversity stewardship programmes were funded by the provincial conservation authority concerned. However, external funding has played a fundamental role in initiating and sustaining these programmes. For example, the Mpumalanga biodiversity stewardship programme manager post was donor funded for the first five years of the programme (GEF-funded, through the Grasslands Programme). They have also had a project manager, stewardship officer, ecologist, agricultural extension officer, land-use advisor and community liaison officer funded externally during the course of the provincial programme's lifespan to date (through the Grasslands Programme and WWF-SA). The KwaZulu-Natal biodiversity stewardship programme currently relies on nine NGO staff who commit all or part of their time to support the programme. These individuals are employed by WWF-SA, Endangered Wildlife Trust, the Botanical Society of South Africa and the Midlands Conservation Forum.

While donor funding has been critical for the establishment of biodiversity stewardship in the country, it is not necessarily sustainable into the long term, particularly as a means of funding core biodiversity stewardship programmes in conservation authorities. Conservation authorities benefiting from these resources ultimately face the reality of needing to internalise staff costs that were previously covered by external funding, which requires foresight and commitment to carry these costs into the future. This is not to say that any form of external support is necessarily unsustainable – other models of support, such as established NGOs assisting with providing incentives and conservation expertise and helping to build landowner relationships, are beneficial for the long-term effectiveness of biodiversity stewardship programmes, and can play a valuable complementary role. While NGOs rely on donor funding to function, a long history of effective NGO work in the country suggests that there can be a fair degree of sustainability within a government-NGO partnership.

Table 3: Staff resources within the provincial biodiversity stewardship programmes, DEA and SANBI (1 October 2014)*

	Full-time on biodiversity stewardship (e.g. programme manager, stewardship officer, admin assistant)	Portion of time on biodiversity stewardship (e.g. programme manager, stewardship officer, admin assistant)	Scientific support (e.g. ecologist or botanist)	Legal support	Total number of people (full-time or portion of time)	Total full-time equivalents**
Eastern Cape	1	0	2 (5% each)	0	3	1.1
Free State	0	2 (5% each)	0	0	2	0.1
Gauteng	4	1 (30%)	6 (5% each)	1 (10%)	12	4.7
KwaZulu-Natal	5	5 (5% each)	3 (10%, 5%, <5%)	1 (<1%)	14	5.5
Limpopo	2	1 (50%)	0	0	3	2.5
Mpumalanga	3	0	1 (5%)	0	4	3.1
North West	2	0	1 (5%)	1 (10%)	4	2.2
Northern Cape	3	0	2 (5% each)	1 (5%)	6	3.2
Western Cape	6	14 (5% - 80%)	3 (5% each)	1 (100%)	24	9.2
Total provincial	25	23 (5% - 80%)	12 (<5% – 10%)	3 (<1% to 100%)	73	31.6
DEA	0	2 (75% and 25%)	0	0	2	1
SANBI	0	1 (50%)	0	0	1	0.5
Total national and provincial	25	26 (5% - 80%)	12 (<5% – 10%)	3 (<1% to 100%)	83	33.1

*This does not include NGO staff supporting the provincial programmes

** Rounded to nearest tenth

As mentioned in Section 2, by 1 October 2014, 74 protected areas had been declared through the provincial biodiversity stewardship programmes, amounting to over 450 000 ha. An additional 145 sites, totalling nearly 560 000 ha, were in negotiation for protected area declaration through biodiversity stewardship programmes. Table 4 provides a provincial breakdown of these figures. Sites ‘in negotiation’ refer to properties where the landowner has indicated a desire to have their land declared, and the contract agreement and management plan are in the process of being developed. In some cases the contract has already been signed, and the only step remaining is protected area declaration by the MEC. A site ‘in negotiation’ tends to be formally declared within six to nine months on average.

Table 4: Summary of protected areas declared and in negotiation through provincial biodiversity stewardship programmes (as at 1 October 2014)

Province	Protected areas declared		Protected areas in negotiation	
	Number	Hectares	Number	Hectares
Eastern Cape	7	90 448	6	143 626
Free State	0	0	1	17 456
Gauteng	2	173	3	2 700
KwaZulu-Natal	19	59 902	56	208 766
Limpopo	0	0	3	56 010
Mpumalanga	7	103 937	5	25 388
North West	0	0	2	2 736
Northern Cape	4	154 854	15	58 894
Western Cape	35	43 665	54	43 782
Total	74	452 979	145	559 358

The provincial biodiversity stewardship programmes that have been declaring sites for the longest (Western Cape, KwaZulu-Natal, Mpumalanga and Eastern Cape) are making substantial contributions to their 20-year provincial protected area targets for 2028, as set out in the National Protected Area Expansion Strategy 2008, as summarised in Table 5. For example, Ezemvelo KZN Wildlife will have met a third of its 20-year provincial protected area target through the biodiversity stewardship programme, based on the area of land already declared as well as that in negotiation (268 668 ha). During the period since the provincial biodiversity stewardship programme has been in existence in KZN (i.e. since 2006), only 1 165 ha have been added to the provincial protected area estate through means other than biodiversity stewardship, all through land donations.

In Mpumalanga, land under negotiation and already declared through the provincial biodiversity stewardship programme (129 325 ha) will amount to a fifth of the 2028 provincial protected area target. No other additional land has been brought into the Mpumalanga protected area estate over the same time period of time (i.e. since the Mpumalanga biodiversity stewardship programme came into existence in 2009). While the Eastern Cape and Western Cape programmes will have achieved slightly lower proportions of their 2028 targets (15% and 9% respectively) it is important to note that the targets for these provinces are larger than those for KwaZulu-Natal and Mpumalanga. Since

2008, when the Eastern Cape biodiversity stewardship programme was initiated, no additional hectares have been added to the provincial protected area estate through any other mechanism. The Western Cape has had a substantial 100 026 ha added to the provincial protected area estate through means other than biodiversity stewardship. As in the case of KwaZulu-Natal, this was through land donations rather than land purchases by the provincial conservation authority.

Table 5: Biodiversity stewardship contribution to provincial protected area targets set in the National Protected Area Expansion Strategy 2008 (as at 1 October 2014)

Province	Addition still required in 2008 to meet the 20-year (2028) provincial protected area target (ha)	Contract protected areas declared and in negotiation through biodiversity stewardship (ha)	% contribution of contract protected areas declared and in negotiation to 20-year (2028) provincial protected area target	Hectares acquired in the same time by the provincial conservation authority through any mechanism other than biodiversity stewardship
EC	1 570 000	234 074	15	0
KZN	842 000	268 668	32	1165*
MP	632 000	129 325	20	0
WC	1 004 000	87 447	9	100 026*

*These hectares were all acquired through land donations rather than land purchase

Provincial biodiversity stewardship programmes have achieved impressive gains with limited numbers of staff and small budgets. Not only are biodiversity stewardship programmes capable of making a significant contribution to meeting protected area targets, they are doing so at a fraction of the cost associated with establishing or expanding traditional state owned protected areas. The cost effectiveness of biodiversity stewardship is discussed in more detail in Section 5.

Through the Land Reform Biodiversity Stewardship Initiative, by October 2014 biodiversity stewardship agreements were in the process of being created, or had been created, on over twenty land reform sites, including communal land, redistributed land and land under restitution.⁸ This covers over 100 000 hectares and benefits several thousand land reform beneficiaries. Of these agreements, one Nature Reserve and two Protected Environments had been declared, covering over 21 000 hectares.

⁸ A comprehensive survey of all land reform biodiversity stewardship sites was being undertaken by SANBI at the time of writing.

4 The benefits of biodiversity stewardship

Biodiversity stewardship brings a great deal of value to both the conservation sector and South Africa more broadly. These benefits are discussed below.⁹

Biodiversity stewardship is making substantial contributions to **meeting national protected area targets**, as discussed in Section 2. There is a strong focus on ensuring that the contract protected areas declared through biodiversity stewardship programmes are on land of high biodiversity importance, such as Critical Biodiversity Areas and threatened ecosystems.

The cost to the state of biodiversity stewardship is a **fraction of the cost** of acquiring and managing state-owned protected areas. Biodiversity stewardship **leverages private sector investment** in achieving a government mandate of securing protected areas that would otherwise have to be fully covered by the fiscus. As discussed in Section 0, establishing protected areas through biodiversity stewardship is between 70 and 400 times less costly than establishing protected areas through land acquisition by the state, based on the two provinces analysed. Furthermore, the cost to the state of supporting the ongoing management of contract protected areas by landowners is between 4 and 17 times lower than the cost to the state of managing state-owned protected areas itself, based on the experience of the two provinces analysed. These cost savings to the state are explored further in Section 0.

Biodiversity stewardship is particularly **effective in multiple-use landscapes** where biodiversity priority areas are embedded in a matrix of other land uses. A flexible range of biodiversity stewardship agreements is available that can combine biodiversity protection and sustainable agricultural production. This makes biodiversity stewardship appropriate for a wide variety of landscapes, including agricultural and communal areas. It also allows for the protection of threatened ecosystems, which are often highly fragmented and thus not suitable for the establishment or expansion of large state-owned protected areas.

The biodiversity stewardship can be used to **enable other programmes and policies** within the biodiversity sector. Biodiversity stewardship is able to complement and provide additional security to state investment in DEA's Environmental Programmes, such as Working for Water and Working for Wetlands. These programmes focus on restoring and maintaining ecological infrastructure through a range of interventions in the landscape, such as removing invasive alien trees from catchments and rehabilitating wetlands.

A major challenge with government investments in natural resource management in the landscape, for example through DEA's Environmental Programmes (such as Working for Water and Working for Wetlands), is the lack of implementation of the required follow-up work once the state funded programme has moved on, such as the landowner taking on the responsibility of ensuring follow-ups on invasive alien clearing. If this follow-up work is not done, the state investment in the land is not

⁹ For more on biodiversity stewardship and the role the programmes play in South Africa's landscape approach to conservation, see Cadman et al (2010).

only lost, but the initial environmental problem is often exacerbated. When natural resource management work is undertaken by the state on biodiversity stewardship land, the biodiversity stewardship contract allows for the implementation of the required follow-up work to be built into the landowner's contractual obligations, thereby **securing and adding value to the state's investment in natural resource management**.

Box 4: Ecological infrastructure defined

Ecological infrastructure refers to naturally functioning ecosystems that generate and deliver valuable services to people. It includes, for example, healthy mountain catchments, rivers, wetlands, coastal dunes, and nodes and corridors of natural habitat, which together form a network of interconnected structural elements in the landscape. Ecological infrastructure is the asset, or stock, from which a range of valuable services flow (SANBI, 2014).

Biodiversity stewardship can also play an important role in **enabling biodiversity offsets**. A biodiversity offset is a measurable conservation outcome that results from actions to remedy significant negative impacts of development on biodiversity. In South Africa, biodiversity offsets are implemented through development authorisation processes, to ensure that a real contribution is made to securing biodiversity priority areas, as identified in provincial and municipal systematic biodiversity plans and protected area expansion strategies. A biodiversity offset must result in an increase in the protection level of the ecosystems impacted on, as well as ensure the appropriate management of the offset receiving area. Biodiversity stewardship can play a key role in enabling and supporting biodiversity offsets by providing a flexible mechanism for securing biodiversity.

Biodiversity stewardship has the ability support the **stimulation of the rural economy** by diversifying rural livelihood options, creating nodes of rural development and stimulating job creation and skills development. Jobs are created directly on biodiversity stewardship sites through land management and restoration, as well as commercial activities that are complementary to biodiversity stewardship, such as game farming and eco-tourism. For example, a study in the Eastern Cape showed that game farming employs 4.5 times more staff than farming, and an average of 4.8 times increase in annual salary per full-time employee, as well as large increases in revenues (Langholz & Kerley, 2006). In another example, the Zululand Rhino Reserve in KwaZulu-Natal, a biodiversity stewardship site, demonstrated a 25% increase in the number of jobs on the protected area. Jobs ranged from hospitality to reserve management.

Biodiversity stewardship agreements have been implemented on communal land, **supporting the land reform agenda** and integrating biodiversity conservation into broader land reform processes, as discussed in Section 2. While not all communal areas would benefit from biodiversity stewardship, or are suitable for biodiversity stewardship, some are. There are opportunities for protected area expansion and biodiversity stewardship to support land reform and diversification of rural livelihood options, especially in agriculturally marginal areas.

5 The financial case for biodiversity stewardship

A financial analysis of two provincial conservation authorities, CapeNature and Ezemvelo KZN Wildlife, indicates that biodiversity stewardship is substantially more cost effective as a means of securing protected areas than the alternative model of land acquisition and management by the state. Based on the experience of these two provinces, **establishing a protected area through biodiversity stewardship is between 70 and 400 times less costly to the state than land acquisition.** Furthermore, because the bulk of the cost of managing land in contract protected areas is covered by the landowner, **the cost to the state to support the ongoing management of a contract protected area is between 4 and 17 times less costly than managing a state-owned protected area.** The methodology and results of this financial analysis are presented below, with a more detailed explanation of the methods in Appendix I.

The costs of two provincial biodiversity stewardship programmes were compared to the alternative approach of land purchase and management by the conservation authority. CapeNature's biodiversity stewardship programme in the Western Cape has been running since 2003, with the first protected areas declared through the programme in 2008. By October 2014, 35 contract protected areas totalling over 43 000 ha had been declared in the province through the biodiversity stewardship programme. An additional 54 contract protected areas or approximately 43 000 ha were in negotiation. CapeNature manages approximately 840 000 ha of state-owned land-based protected areas.¹⁰

The Ezemvelo KZN Wildlife biodiversity stewardship programme in KwaZulu-Natal began in 2006, with the first protected areas declared through the programme in 2009. By October 2014, the programme had contributed almost 60 000 ha to the protected area estate, consisting of 19 contract protected areas. A further 56 contract protected areas were in negotiation, which would contribute an additional 208 766 ha to the protected area estate. Ezemvelo KZN Wildlife manages a state-owned land-based protected area estate of over 538 000 ha.¹¹

Two sets of costs were analysed for each province:

- The cost of **establishing a protected area**, which is a once-off cost (sometimes incurred over more than one financial year) (set out in Section 5.1),
- The cost of **managing a protected area**, which is an ongoing annual cost (set out in Section 5.2).

Each of these sets of costs was looked at for contract protected areas declared through biodiversity stewardship on the one hand, and for state-owned protected areas on the other.

Costs to the state associated with the **establishment of land-based protected areas** are made up of:

- The cost of negotiating and declaring a contract protected area, in the case of biodiversity stewardship, OR
- The cost of negotiating a sale, purchasing a property, and declaring a protected area, in the case of state-owned protected areas.

¹⁰ Data from CapeNature, August 2014.

¹¹ Data from Ezemvelo KZN Wildlife, August 2014. This excludes marine protected areas and iSimangaliso Wetland Park.

Costs to the state associated with the **ongoing management of land-based protected areas** are made up of:

- The cost of assisting the landowner in managing a contract protected area, in the case of biodiversity stewardship, OR
- The cost to the conservation authority of managing a protected area themselves, in the case of state-owned protected areas.¹²

The cost to the landowner of managing a contract protected area was not looked at, nor was the opportunity cost to the landowner. For contract protected areas declared through biodiversity stewardship, the bulk of the management costs are carried by the landowner, who is responsible for implementing the management plan, agreed on as part of the establishment process. This leverages substantial private resources for the management of protected areas.¹³

The cost to the fiscus of income tax deductions related to biodiversity stewardship agreements (see Section 2.3) was not analysed, as no landowner had yet claimed this deduction at the time of writing. The cost to the fiscus of the property rates exclusion applied by local municipalities was also not included, due to the difficulty in obtaining this information.

5.1 The cost of establishing protected areas

The cost of negotiating and declaring protected areas through biodiversity stewardship was obtained from the provincial conservation authorities for the financial years 2012/13 (CapeNature) and 2013/14 (Ezemvelo KZN Wildlife).¹⁴ This included staff costs, operational costs, and the costs related to the legal declaration of properties as protected areas. In cases where costs were not captured in the budget for the biodiversity stewardship programme, but carried by other programme budgets within the organisation (such as some staff costs), these costs were included to represent as accurate a picture as possible of the full costs of biodiversity stewardship. In cases where core functions to establish a protected area through biodiversity stewardship were funded or implemented by an NGO, these costs were also included. Again, this was done in order to present as accurate as possible a picture of the actual cost of biodiversity stewardship, rather than simply a provincial budget analysis.

The cost of acquiring land for protected area expansion was drawn from two sources. Firstly, the cost of running a unit to expand protected areas through acquisition was obtained from SANParks, as SANParks is the only conservation authority in South Africa that has a unit dedicated to protected

¹² The analysis of protected area management costs excluded costs related to marine protected areas. In South Africa, property rights preclude biodiversity stewardship programmes from operating in the marine environment. Including costs related to marine protected areas for state-owned protected areas would therefore reduce the accuracy of the cost comparison.

¹³ Further research to quantify the size of this private investment in managing contract protected areas would be extremely useful.

¹⁴ Costs were adjusted to a base year, chosen as the financial year for which the bulk of the costs could be obtained. In the case of the Western Cape, this was 2012/13. In the case of KwaZulu-Natal, this was 2013/14.

area expansion that obtains land primarily through purchase. These costs included staff, operational costs, and costs related to the legal declaration of the property.

Secondly, the market price of land in relevant areas in the two provinces was obtained. In the Western Cape, this involved determining an average land price per hectare based on all sales of farms in 2012 in areas within which the provincial biodiversity stewardship programme operates. In KwaZulu-Natal, the market price was determined by interviewing a number of estate agents who were experts in farm sales in areas where the provincial biodiversity stewardship programme operates.

The results showed that establishing protected areas through biodiversity stewardship is substantially more cost effective than establishing protected areas through land acquisition in both provinces, as summarised in Table 6. In the Western Cape, the cost of establishing a protected area through the biodiversity stewardship programme was on average R197 000 per site (2012/13). This was over 70 times less costly to the conservation authority when compared to the cost that would be incurred if the conservation authority were to establish a protected area through land purchase in the same areas. In KwaZulu-Natal, establishing a protected area through the biodiversity stewardship programme costs on average R169 000 per site (2013/14). This was over 400 times less costly than if the provincial authority were to establish protected areas through land purchase in the same areas. In both provinces, this indicates enormous savings to the conservation authority in the establishment of protected areas through biodiversity stewardship.

Table 6: Cost comparison for the establishment of contract protected areas through biodiversity stewardship vs state-owned protected areas, in the Western Cape and KwaZulu-Natal

Establishment costs →	Biodiversity stewardship cost/site (ZAR)	Average site size	Biodiversity stewardship cost/ha (ZAR/ha)	Hypothetical cost/ha for state-owned protected area* (ZAR/ha)	Cost ratio for cost/ha
Western Cape (2012/13)	R 196 572	1 397 ha	R 141	R 10 222 (of which price of land is R 10 020)	1:73
KwaZulu-Natal (2013/14)	R 168 523	3 605 ha	R 47	R 20 313 (of which price of land is R 20 100)	1:435

*Including the costs of negotiating the purchase of the property, declaring the property, and the price of the land. Cost is hypothetical as neither CapeNature nor Ezemvelo KZN Wildlife has purchased land for protected area expansion for a considerable time.

The difference in the cost ratio between the two provinces can be explained by a number of factors. The key drivers, discussed further below, are:

- The difference in the average site size between the two provinces,
- The difference in the average land price between the two provinces,
- The difference in staffing resources between the two programmes.

Most of the costs related to biodiversity stewardship are driven by the cost of establishing and managing an individual site, regardless of its size. In other words, the cost to the conservation authority of establishing a relatively large site as a contract protected area through biodiversity stewardship is not significantly different from the cost of establishing a relatively small site. The biodiversity stewardship sites in the Western Cape are, on average, almost a third of the size of the sites in KwaZulu-Natal (approximately 1 400 ha in the Western Cape compared with approximately 3 600 ha in KwaZulu-Natal).¹⁵ However, for the purpose of a comparable financial analysis, the costs were calculated as a cost per hectare. In doing so, a smaller average site size results in a larger cost per hectare. The cost per site between the two provincial biodiversity stewardship programmes shows a far smaller difference between the two provinces, with a cost for CapeNature of around R197 000 and for Ezemvelo of around R158 000 (adjusted to 2013/13 costs).

The average price of land in the biodiversity stewardship areas in KwaZulu-Natal was substantially higher than the price of land in the Western Cape biodiversity stewardship areas, which further increases the difference in the cost ratios for the two provinces. The price of land used in the calculation for the Western Cape was around R10 000, compared to around R20 000 in KwaZulu-Natal.

CapeNature's biodiversity stewardship programme has reached the point in the number of contract protected areas that has required them to bring into their staff complement a full-time legal post. The KwaZulu-Natal provincial biodiversity stewardship programme does not have this function full-time, but rather uses small portion of the time of a legal specialist from within the organisation. This full-time post affects the establishment costs.

The CapeNature tends to allocate more person days to sites than Ezemvelo KZN Wildlife is able to. This does not imply that Ezemvelo KZN Wildlife is more efficient, but rather that they should ideally be allocating more person days to sites, but are unable to do so.

It is worth noting that the average cost to SANParks of negotiating and declaring a site through acquisition of land, excluding the price of the land, is broadly in line with the cost to CapeNature and Ezemvelo of negotiating and declaring a site through biodiversity stewardship. SANParks' average cost per site was just over R230 000 in 2012/13. The average size of sites acquired in that year was just under 1100 ha, giving an average cost per hectare of negotiation and declaration (not including the price of the land) of approximately R213, broadly in line with that for CapeNature where the average site size was similar.

5.2 The cost of ongoing management of protected areas

The cost to the conservation authority of assisting landowners with the management of protected areas established through biodiversity stewardship was obtained from the provincial conservation authorities for the financial year 2012/13 (CapeNature) and 2013/14 (Ezemvelo KZN Wildlife). This

¹⁵ This is due to differences in land uses, the degree of fragmentation of biodiversity priority areas, and property sizes between the two provinces.

was made up largely of staff and operational costs related to managing the relationship with the landowner, providing technical support and auditing the management of the property. As in the case of negotiation and declaration costs, in cases where costs were not captured in the biodiversity stewardship programme budget, but carried by other programme budgets within the organisation, these costs were included to represent as accurate a picture as possible of the full costs carried by the conservation authority. In cases where costs or core functions were carried by NGOs, these costs were also included.

The cost of managing state-owned protected areas was obtained from the same two provincial conservation authorities, CapeNature (2012/13) and Ezemvelo KZN Wildlife (2013/14). These costs focused only on costs directly related to managing the biodiversity and infrastructure (such as roads and fences) of protected areas. Costs related to activities such as ecotourism, community liaison or head office were excluded. Income generated from any of the provincial protected areas was not incorporated into the analysis. In cases where costs were not captured in the conservation authority's budget, but carried by other state entities, these costs were included to represent as accurate a picture as possible of the full costs of managing a protected area. A core assumption in this analysis is that contract protected areas and state-owned protected areas are managed with equal effectiveness.

The cost to the conservation authority of supporting the management of contract protected areas through the biodiversity stewardship programme is considerably less than the cost of managing state-owned protected areas, as shown in Table 7. In the Western Cape, the annual cost to the conservation authority of supporting the management of contract protected areas in the biodiversity stewardship programme is around R45 000 per site or R32 per hectare, four times less than the cost of managing the province's state-owned protected areas. In KwaZulu-Natal, the annual cost to the conservation authority of supporting the management of contract protected areas through the biodiversity stewardship programme is around R84 000 per site or R23 per hectare. This is 17 times less than the cost to Ezemvelo KZN Wildlife of managing the province's state-owned protected areas. While not as large as the cost difference between the two methods for establishing protected areas, the management costs are ongoing, and represent a cost saving every year, far into the future.

Table 7: Cost comparison for the ongoing management of contract protected areas established through biodiversity stewardship vs state-owned protected areas, in the Western Cape and KwaZulu-Natal

Ongoing management costs →	Biodiversity stewardship cost/site/year (ZAR)	Average site size	Biodiversity stewardship cost/ha/year (ZAR/ha)	State-owned protected areas cost/ha/year (ZAR/ha)	Cost ratio for cost/ha/year
Western Cape (2012/13)	R 44 924	1 397 ha	R 32	R 132	1:4
KwaZulu-Natal (2013/14)	R 84 224	3 605 ha	R 23	R 385	1:17

The difference in the cost ratio between the two provinces can be attributed to the site size, as discussed in Section 5.1, as well as the high cost of managing protected areas in KwaZulu-Natal. In KwaZulu-Natal, unlike the Western Cape, many of the protected areas require large game management, which brings with it substantial costs. In addition, anti-poaching activities place a substantial cost burden on the conservation authority in the province. This makes the management of biodiversity in KwaZulu-Natal protected areas almost three times as costly as in the Western Cape. In the case of biodiversity stewardship, this cost is carried by the landowner rather than the state.

5.3 Summary of the cost to the state of contract protected areas through biodiversity stewardship vs state-owned protected areas

Based on the Western Cape and KwaZulu-Natal experience, summarised in Table 8, **establishing a protected area through biodiversity stewardship costs the state between 70 and 400 times less per hectare than land acquisition.** This cost ratio depends heavily on the land price (which makes up by far the bulk of the cost of land acquisition) and the average site size. Land prices in areas where biodiversity stewardship is active in the Western Cape and KZN tend to be high, so these ratios may be somewhat less dramatic in some other provinces, although nevertheless substantial. An analysis of the cost per hectare to SANParks of negotiating land purchase and declaring a state-owned protected area, *excluding the cost of the land itself*, shows that it is broadly in line with the cost per hectare to CapeNature and Ezemvelo of negotiating a biodiversity stewardship agreement and declaring a contract protected area. The dramatic cost saving of using a biodiversity stewardship approach to establish protected areas thus comes primarily from savings on land purchase, rather than from savings on negotiation and declaration costs.

When it comes to ongoing management, the bulk of the cost of managing a contract protected area declared through biodiversity stewardship is covered by the landowner, as the landowner is the management authority for the protected area. Based on the Western Cape and KwaZulu-Natal experience, **the cost to the state of supporting the management of a contract protected area by the landowner is between 4 and 17 times lower per hectare than the cost to the state of managing a state-owned protected area itself.** This is because the biodiversity stewardship approach effectively **leverages significant private sector investment** into biodiversity conservation, by establishing and maintaining partnerships in the landscape. The exact ratio depends on a range of management related factors, and is likely to vary from province to province. Most provinces probably fall within the range represented here by the Western Cape (4:1) and KZN (17:1), and it is unlikely that any province would face a ratio of less than 4:1. This means it is possible to say confidently that the ongoing cost of biodiversity stewardship to the state is at least four times lower than the ongoing cost of managing state-owned protected areas.

Table 8: Summary of cost comparison for protected areas declared through biodiversity stewardship vs state-owned protected areas, based on Western Cape and KwaZulu-Natal provincial conservation authorities

	Contract protected areas declared through biodiversity stewardship	State-owned protected areas	Cost ratio
Establishment (ZAR/ha)	R 47 – R 141	R 10 222 – R 20 313*	1:73 – 1:435
Ongoing management (ZAR/ha/year)	R 23 – R 32	R 132 – R 385	1:4 – 1:17

* Hypothetical cost based on average land price in areas in which biodiversity stewardship is active. Neither CapeNature nor Ezemvelo KZN Wildlife has purchased land for protected area expansion for a considerable time.

While state purchase of protected areas remains an important means of establishing protected areas in South Africa, and under some circumstances it is possible for the state to own and manage protected areas profitably, it is often not possible for conservation authorities facing significant resource limitations to pursue purchase of land to any substantial degree. The biodiversity stewardship approach of securing protected areas provides a sound and vastly more cost effective alternative.

6 Investing in biodiversity stewardship into the future

Given the current trajectory of biodiversity stewardship uptake among landowners, it is fair to believe that, with sufficient resources, biodiversity stewardship programmes could continue to grow substantially over the next decade, if not longer. The major obstacle impeding the growth of biodiversity stewardship is not a lack of landowner willingness, but rather a lack of state resources supporting biodiversity stewardship programmes.

Twenty year protected area targets for South Africa were set out in the National Protected Area Expansion Strategy (NPAES) 2008. While important gains have been made in achieving these targets, including through Nature Reserves and Protected Environments declared through biodiversity stewardship programmes, substantial targets still remain to be met across the country. As of September 2014, an additional 9 632 524 ha were still required to be incorporated into the protected area estate by 2028, in order to meet the 20-year protected area targets in the NPAES 2008.^{16, 17}

Establishing and managing protected areas will always come with some cost. However, the analysis presented in Section 0 shows clearly that biodiversity stewardship is a highly cost effective approach to establishing and managing protected areas, which delivers a suite of socio-economic and ecological benefits. Protected areas established through biodiversity stewardship not only save the state the cost of purchasing land, but also represent an ongoing annual saving in management costs to the state, by leveraging the contributions of private landowners.

What would it take to resource provincial biodiversity stewardship programmes, already established to varying degrees in every province, sufficiently that they would be in a position to meet the bulk of South Africa's protected area targets?

Based on detailed practical understanding of the resources that are required to run a successful and sustainable biodiversity stewardship programme, drawn from the knowledge and experience of provincial conservation authorities to date, the estimated staff requirements for a well-resourced biodiversity stewardship programme are as follows:

- Each biodiversity stewardship programme should be managed by a **programme manager**, with support from a **deputy programme manager** and an **administrative assistant**.
- **Approximately ten stewardship officers** (five senior and five junior), who are responsible for engaging with landowners – both the negotiation and oversight of developing new biodiversity stewardship agreements with landowners, and the maintenance of the contractual obligations once the agreements have been finalised and the sites have been declared.
- The work of the stewardship officers should be supported by several staff who provide the scientific and legal support services that enable the biodiversity stewardship process. These supporting roles include **legal support**, required for:

¹⁶ The National Protected Area Expansion Strategy 2008 was being revised at the time of writing, which may result in amended protected area targets.

¹⁷ Data on protected hectares from DEA and SANBI, September 2014.

- Notary deed support,
- Contract development,
- The application of environmental law.
- **Scientific support** (such as ecologists, zoologists and botanists), is required for the provision of technical expertise for:
 - Site assessments,
 - Development and implementation of management plans,
 - Annual audits.

An adequately resourced provincial biodiversity stewardship programme along the lines described above would require a budget of approximately R9 million per year (in 2013/14 Rands), including staff costs and operational costs. This would provide for a staff complement of a Programme Manager, Deputy Programme Manager, Admin Assistant, five Senior Stewardship Officers, five Junior Stewardship Officers, a legal specialist, and two full-time-equivalent ecologists (in practice the biodiversity stewardship programme would likely share ecologists with other programmes, and might draw on more than two people in this role). This is a generic model, and staff needs will vary across organisations. In particular, the number of stewardship officers responsible for negotiating agreements and maintaining relationships with landowners is expected to vary due to, for example, differences in the size of provinces and the share of national protected area targets for which each province is responsible. The exact requirements of different provincial conservation authorities would need to be worked out in more detail with the provinces concerned, with the assistance of National Treasury and the relevant provincial treasuries.

Using an indicative budget of R9 million per province per year, **the total investment in biodiversity stewardship for nine provinces would be in the order of R80 million per year. Such an investment would enable the state to meet its national targets for expanding land-based protected areas, and to support the ongoing management of those protected areas**, while leveraging significant private investment and securing a range of other benefits. Assuming an average land price of R3 000 per hectare (much lower than the land price in biodiversity stewardship areas in the Western Cape and KwaZulu-Natal), **the alternative of meeting protected area targets through acquisition of land would cost the state over R2 billion per year for the next 14 years (or a total of nearly R29 billion) just for establishment of protected areas, not counting the cost of ongoing management.**¹⁸

Ideally, in addition to adequate resourcing of provincial biodiversity stewardship programmes, **NGO support** to the programmes should continue and grow across the provinces. **DEA and SANBI** should continue to support the implementation of the stewardship programmes, providing technical support on the implementation of policy and legislation and creating an enabling environment for the programmes by ensuring that biodiversity stewardship is integrated in relevant policy, legislation and programmes of work. DEA, the primary regulator and enabler, should continue to coordinate reporting on biodiversity stewardship sites from the provincial programmes, which should be aligned

¹⁸ This is based on the outstanding hectares as of the end of 2014 required to meet the 2028 targets set out in the National Protected Area Expansion Strategy 2008. The revision of the National Protected Area Expansion Strategy 2008, underway at the time of writing, may include a revision of these national protected area targets.

to the reporting on all protected areas and conservation areas by provincial authorities and SANParks, which DEA manages. The biodiversity stewardship programmes should continue to be represented at the Protected Areas Technical Task Team. SANBI's role includes supporting the biodiversity stewardship community of practice, including through convening the Biodiversity Stewardship Technical Working Group and the Land Reform Biodiversity Stewardship Initiative.

7 Recommendations

This section provides six recommendations for maximising the potential of biodiversity stewardship programmes to deliver on the benefits discussed in the previous sections.

7.1 Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year

Biodiversity stewardship programmes have been shown to be a highly cost effective mechanism for achieving protected area targets. What is needed next is high-level commitment to increase funds for the biodiversity stewardship programmes, and an aim to resource each province according to its particular needs. Resources should be allocated both for securing land, and managing the biodiversity stewardship agreements into the long term. Ideally every conservation authority should be supported in developing a biodiversity stewardship business plan, ideally as a component of or complement to its protected area expansion strategy.

Biodiversity stewardship programmes should be able to maintain and support the relationship with landowners into the long term, providing the necessary technical advice, incentives and auditing. Failure to do this not only results in poorly managed protected areas, it may result in the deproclamation of protected areas, and a mistrust of conservation authorities. Ongoing technical support and a sound relationship with the conservation authority have been shown to be critical to the retention of participating landowners, and is considered to be an important incentives (see Section 2.3 and Section 7.4) (Selinske *et al*, in press). Government commitment of resources to the biodiversity stewardship programmes therefore needs to be long term, in the same way that government commitment to state-owned protected areas is long term.

7.2 Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape

NGOs have played and should continue to play a fundamental role in biodiversity stewardship. Not only do NGOs bring additional resources to the biodiversity stewardship programmes, some landowners may prefer working with NGOs than with government officials (Cumming, 2007). It is important that any work by NGOs in support of the biodiversity stewardship programmes take its lead from the strategy and intention of the conservation authority, particularly if protected areas area being negotiated, as discussed in Section 2.2. NGOs should ideally play a complementary role alongside adequately resourced conservation authorities, rather than having to take on core state functions in the absence of sufficient state resources for biodiversity stewardship.

7.3 Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements, which contribute directly to targets in Outcome 7

Land reform biodiversity stewardship sites often have particular needs that are different from biodiversity stewardship sites involving a single landowner. Negotiation, for example, can be far

more complex, as the needs of an entire community must be taken into account. In addition, these communities often do not have significant resources to finance land management or restoration. Particular attention should be given to supporting the creation and ongoing support of land reform biodiversity stewardship sites. The Land Reform Biodiversity Stewardship Initiative should focus specifically on unlocking resources to support biodiversity stewardship sites on communal land.

7.4 Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in

The subject of incentives is vast, and has not been dealt with in any detail in this report. However, it is clear that the biodiversity stewardship programmes would benefit from additional incentives. Incentives are important for both attracting relevant landowners, as well as retaining them within the biodiversity stewardship programmes in the long term.

A recent study in the Western Cape showed that landowners enrolled in CapeNature's biodiversity stewardship programme were more likely to remain in the programme if they received tangible support for land management activities such as clearing invasive alien plants and receiving regular visits by the biodiversity stewardship programme staff (Seliske *et al*, in press) (see Section 2.3). It is important to ensuring that the function of technical support is adequately resourced into the future, which will entail ensuring sufficient staff resources within the biodiversity stewardship programme. This could also be supplemented by strong NGO support.

DEA's Environmental Programmes, such as Working for Water and Working for Wetlands, should prioritise biodiversity stewardship sites. This would not only provide an economic incentive to landowners who would otherwise have to carry the cost of invasive alien clearing and wetland restoration themselves, but it would also ensure that the Environmental Programmes are investing their own resources in areas that are biodiversity priority areas, as well as properties where management agreements already exist and are audited.

The fiscal incentives related to income tax and property rates need to be more effective, and uptake will need to be supported (Cumming, 2013). In the case of the income tax based deductions, the Income Tax Act has recently been amended in order to make the incentives more useful. Communication and training on the new legislation will need to take place, in order to support landowners in utilising the benefits. The effectiveness of the property rates related incentives is reliant on suitable interpretation of the Property Rates Act, which is problematic at this point. This issue should ideally be addressed by the relevant parties, including National Treasury, the Department of Cooperative Governance and Traditional Affairs and DEA.

7.5 Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters

The stewardship programmes have benefitted from growing from smaller pilot projects, and responding to local needs. However, the programmes are also reliant on a certain degree of cohesion and technical support, particularly around legislation, policies and strategies, and technical products such as biodiversity assessments, which is best provided at a national level. At a national

level, standards of practice and operational guidelines can be held and shared. In addition, reporting on biodiversity stewardship and protected area expansion is required from all conservation authorities to DEA. While large staff complements are not required at the national level, there is a need for a clearly designated function within both SANBI and DEA with an in-depth understanding of biodiversity stewardship in order to support the continued growth and implementation of the biodiversity stewardship programmes.

7.6 The community of practice for biodiversity stewardship should be strengthened and expanded

Currently, the Biodiversity Stewardship Technical Working Group plays a role in creating a community of practice to support sharing of experience and lessons, but it is not intended to be a broad forum. The Technical Working Group should continue to meet regularly (see Section 2.2). Ad hoc national learning events for biodiversity stewardship have been held from time to time, which provide for the broader community. Ideally, a broader learning forum should be held once a year, on a regular basis. Learning exchanges between provincial agencies, as well as between participating landowners, should also be encouraged.

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Appendix I: Calculation of past costs for establishing and managing protected areas

For the calculation of past costs, the following applied:

- All costs were calculated as a cost per hectare, for establishing a protected area, and a cost per hectare per year (for ongoing management).
- One base year was used for each provincial analysis, with all costs in that provincial analysis adjusted to that base year. This was done in order to use the financial data the provincial biodiversity stewardship programme manager felt was the best representation of the true costs. For the costs in the Western Cape, this was 2012/13. In KwaZulu-Natal, this was 2013/14. Any adjustments made to costs to allow for inflation were based on the official South African Consumer Price Index according to Stats SA (an inflationary increase of 5.6% from 2012 to 2013).
- All final costs were rounded to the nearest Rand value.

1. Biodiversity stewardship: Establishing and managing protected areas

Information was gathered through a number of one-on-one discussions with the respective programme managers, in person, over the telephone and via email. Supplementary information was provided by the programme managers where necessary. Costs were determined based on an analysis of all the resources required from the organisations, calculated as a cost per hectare for negotiation, and a cost per hectare per year for post-declaration management. The assumption was made that negotiation and declaration took on average one year (although this varies between sites). Final methods and calculations were verified with the respective programme managers.

Some of the methods used to calculate certain costs for the two provincial programmes are different. This was done in order to use the best available information in each province.

‘Stewardship officers’ is the term used for the personnel that engage directly with the landowners, negotiating and facilitating agreements and managing the relationship post declaration. In reality, different provinces have different names for this function.

1.1. Biodiversity stewardship: Establishment of protected areas

1.1.1. Biodiversity stewardship: Establishment of protected areas: CapeNature

Information was provided by the CapeNature biodiversity stewardship programme manager. A substantial amount of the total costs of the CapeNature biodiversity stewardship programme are carried by other sections within CapeNature, and are not reflected in the budget of the biodiversity stewardship programme itself. Therefore, using the annual budget for the Biodiversity Stewardship programme to determine the costs of declaration through biodiversity stewardship was not an option. Rather, the total cost burden to CapeNature for implementing the biodiversity stewardship programme was determined by understanding exactly what resources were used, regardless of which programme budget these resources were supported by, and calculating the cost of this. All costs were obtained for the year 2012/13.

Average site size: Average site size calculated to be 1 397 hectares, based on all biodiversity stewardship protected areas hectareage declared and in negotiation in the province as at 1 May 2014.

Stewardship officers: 17 of CapeNature’s 21 stewardship officers only spend a portion of their time on the biodiversity stewardship programme (the rest of their time is spent on other CapeNature work). The estimated percentage of time each member spends on stewardship was provided by CapeNature, ranging from 5% to 80%. This was used to calculate the number of full-time equivalents. There are two different salary levels for stewardship officers. A weighted average, based on the number of staff at each salary level, was used to calculate an average staff cost. An estimated number of days per site was provided by the programme manager (see Table 9).

Scientific support: Scientific support is provided by either an ecologist or a botanist. An estimated number of days per site was provided by the CapeNature stewardship programme manager (see Table 9).

Table 9: Cost calculation for CapeNature stewardship officer and scientific support: protected area establishment, 2012/13

Component	Annual cost	Days/site	No. of working days/yr	Cost/day	Cost/site	Cost/ha*
Stewardship officer salary 1 (5 full-time equivalents) (salary and ops)	R 344 000.00	42	226	R 1 522.12	R 63 929.20	R 45.76
Stewardship officer salary 2 (two full-time equivalents) (salary and ops)	R 494 000.00	42	226	R 2 185.84	R 91 805.31	R 65.72
Stewardship officer (weighted average) (salary and ops)	R 386 857.14	42	226	R 1 711.76	R 71 893.81	R 51.46
Scientific support (botanist or ecologist) (salary and ops)	R 529 000.00	2	226	R 2 340.71	R 4 681.42	R 3.35

* Average site size 1 397 ha

Programme manager: Estimated 20% of time spent on supporting negotiation and declaration, spread over an estimated six sites a year. This number of sites is based on an average number of sites declared over the three years 2010/11, 2011/12, 2012/13. As protected area declarations tend to be finalised in pulses, an average over three years was thought to be more accurate than using one year (Table 10).

Administrator: The administrator spends 50% of their time on the biodiversity stewardship programme (in a full-time CapeNature post). Of this time dedicated to biodiversity stewardship, an estimated 20% of time is spent on supporting negotiation and declaration, spread over an estimated six sites a year. This number of sites is based on an average number of sites declared over the three years 2010/11, 2011/12, 2012/13. As protected area declarations tend to be finalised in pulses, an average over three years was thought to be accurate than using one year (Table 10).

Internal legal support: This is a full-time post for the biodiversity stewardship programme, managing the legal process for an estimated six sites a year on average. This number of sites is based on an average number of sites declared over the three years 2010/11, 2011/12, 2012/13 (as with the programme manager and administration support) (Table 10). This post is currently funded externally by Table Mountain Fund, but will be taken up by CapeNature in the next year. The cost was included in the analysis in order to provide as accurate a costing of biodiversity stewardship as possible.

Table 10: Cost calculation for CapeNature stewardship programme manager, administrative support and internal legal support: protected area establishment, 2012/13

Component	Total cost	Time allocated	Cost of time	Ave no. sites/yr*	Cost/site	Cost/ha**
Programme manager (salary, and ops for manager and admin)	R 719 276.00	20%	R 143 855.20	6	R 23 975.87	R 17.16
Admin support (salary)	R 72 819.00	20%	R 14 563.80	6	R 2 427.30	R 1.74
Internal legal support (salary and ops)	R 314 000.00	100%	R 314 000.00	6	R 52 333.33	R 37.46

*Average number of sites: Total number of sites (18) over 3 years (2011, 2012, 2013)

** Average site size 1 397 ha

Public participation process for declaration, rezoning and registration of notarial deed: This includes external legal fees, newspaper adverts and surveyor’s diagram. The costs are calculated per site.

Operational costs: Operational costs were included within salary costs.

A summary of costs to establish a protected area through biodiversity stewardship for CapeNature is shown in Table 11 below.

Table 11: Cost calculation for CapeNature stewardship programme: protected area establishment, 2012/13

Component	Cost/site	Cost/ha*
Programme manager (includes ops for manager and admin)	R 23 975.87	R 17.16
Stewardship Officer (salary and ops)**	R 71 893.80	R 51.46
Internal legal support (salary and ops)	R 52 333.33	R 37.46
Scientific support (salary and ops)	R 4 681.42	R 3.35
Admin support (salary)	R 2 427.30	R 1.74
Registration of notarial deed	R 18 760.00	R 13.43
Rezoning	R 1 500.00	R 1.07
Public participation for declaration	R 21 000.00	R 15.03
Total	R 196 571.72	R 140.71

* Average site size 1 397 ha

**Weighted average of two post levels, and full-time equivalents. See Table 9.

1.1.2. Biodiversity stewardship: Establishment of protected areas: Ezemvelo KZN Wildlife

The provincial stewardship programme manager was able to provide an already calculated cost per site for most expenses. All costs were obtained for the year 2013/14.

Average site size: Average site size was calculated to be 3 605 hectares, based on all biodiversity stewardship protected areas hectarage declared and in negotiation in the province as at 1 May 2014.

Staff: Costs provided as a cost per day, and estimated number of days per site in a year. See **Cost adjustment to account for NGO support** below for explanation of some adjustments to the number of days per site.

A number of different staff have been included, some of which are not explained in the main documents. These roles are explained below, in relation to each other:

Stewardship officer: Plays the lead role in establishment of the protected area. The stewardship officer leads the negotiation with the landowner, development of the contract and development of the management plan. Post-declaration, the stewardship officer develops the annual plan of operation, audits the management of the site, and assists with the provision of incentives (such as negotiating with Working for Water).

District Conservation office (DCO): Plays a secondary role in establishment of the protected area (supporting the stewardship officer). Post-proclamation, the DCO leads the management support to the landowner, and holding the long-term relationship with the landowner.

Department of Agriculture technical support: Involves technical support from the Department of Agriculture on issues such as rangeland assessments and burning requirements. This role complements the role of the scientific support, which provides ecology and biodiversity focused support. This support is only provided in the establishment of the protected area, and is not provided post-declaration. While this cost is not covered by the conservation authority, it was still included in order to present an accurate estimation of the cost of the programme.

Internal legal support: Estimated cost per day for the organisation's internal lawyers. Ezemvelo KZN Wildlife's internal lawyers only review documents to determine risks to the organisation.

Operational costs: Provided by Ezemvelo KZN Wildlife as an estimate of the cost per site. Operational costs include telephone, travel and printing costs.

Public participation process for declaration, and registration of notarial deed: This Included external legal fees, newspaper adverts, and surveyor's diagram. Costs calculated per site (unlike CapeNature, Ezemvelo KZN Wildlife does not rezone the property, which carries an additional cost).

Cost adjustment to account for NGO support: In KwaZulu-Natal, nine NGO staff work full-time or part time supporting the provincial biodiversity stewardship programme. This reduces the number of days that certain staff (the programme manager and the stewardship officer) need to spend on the sites. In order to present a more accurate picture of the cost of the biodiversity stewardship programme, the estimated number of days per site for these two functions were calculated as if the NGO support did not exist. In the case of protected area establishment, this adjusted the number of days for the programme manager from five to eight, and the number of days for the

stewardship officer from 25 to 40. The estimated number of days per site for staff was increased, to model the situation of NGOs not playing a role in negotiation and technical support.

Additional notes: Costs vary considerably between sites. For example, sites used for livestock grazing and game farming require rangeland condition assessments, which, depending on the size and complexity of the site, can take a group of eight to ten people one week to complete. A site that is not used for grazing would not require this. The costs provided were based on an estimated average cost. Costs for intention to declare and gazette notices are brought down by including multiple sites in notices in newspapers.

A summary of costs for Ezemvelo KZN Wildlife to establish a protected area through biodiversity stewardship is shown in Table 12 below.

Table 12: Cost calculation for EKZN stewardship programme: protected area establishment, 2013/14

Component	Cost/day	Days/site	Cost/site	Cost/ha*
Programme manager (salary)**	R2 200.00	8	R 17 600.00	R 4.88
Stewardship officer (salary)***	R1 520.00	40	R 60 800.00	R 16.87
District conservation officer (salary)	R1 372.00	2	R 2 744.00	R 0.76
Scientific support (salary)	R1 568.00	3	R 4 704.00	R 1.30
Provincial Department of Agriculture technical support (salary and ops)	R2 100.00	3	R 6 300.00	R 1.75
Admin support (salary)	R675.00	5	R 3 375.00	R 0.94
Operation costs			R 25 000.00	R 6.93
Internal Legal support (salary)	R3 000.00	1	R 3 000.00	R 0.83
Public participation for PA declaration			R 7 500.00	R 2.08
Notice of declaration			R 2 500.00	R 0.69
Survey costs			R 5 000.00	R 1.39
Registration of notarial deed	R10 000.00	3	R 30 000.00	R 8.32
Total			R 168 523.00	R 46.75

* Average site size 3 605 ha

** Adjusted from 5 to 8, see 'Cost adjustment to account for NGO support'

*** Adjusted from 25 to 40, see 'Cost adjustment to account for NGO support'

1.2. Biodiversity stewardship: Protected area management support

Costs to the conservation authority for site management post declaration were calculated as an annual cost per hectare.

1.2.1. Biodiversity stewardship: Protected area management support: CapeNature

Information was provided by the CapeNature biodiversity stewardship programme manager.

Average site size: Average site size calculated to be 1 397 ha, based on all biodiversity stewardship protected areas hectarage declared and in negotiation in the province as at 1 May 2014.

Stewardship officers: 17 of CapeNature’s 21 stewardship officers only spend a portion of their time on the biodiversity stewardship programme (the rest of their time is spent on other CapeNature work). The estimated percentage of time each member spends on stewardship was provided by CapeNature, ranging from 5% to 80%. This was used to calculate the number of full-time equivalents. There are two different salary levels for stewardship officers (referred to as Stewardship Negotiators and Stewardship Facilitators, although the work is essentially the same). A weighted average, based on the number of staff at each salary level, was used to calculate an average staff cost. An estimated number of days per site was provided by the programme manager (Table 13).

Scientific support: Scientific support is provided by either an ecologist or a botanist. An estimated number of days per site was provided by the CapeNature stewardship programme manager (Table 13).

Table 13: Cost calculation for CapeNature stewardship officer and scientific support: protected area management support, 2012/13

Component	Annual cost	Days/site	No. of working days/ yr	Cost/day	Cost/site	Cost/ha*
Stewardship officer salary 1 (5 full-time equivalents) (salary and ops)	R 344 000.00	5	226	R 1 522.12	R 7 610.62	R 5.45
Stewardship officer salary 2 (two full-time equivalents) (salary and ops)	R 494 000.00	5	226	R 2 185.84	R 10 929.20	R 7.82
Stewardship officer (weighted average) (salary and ops)	R 386 857.14	5	226	R 1 711.76	R 8 558.79	R 6.13
Scientific support (botanist or ecologist) (salary and ops)	R 529 000.00	2	226	R 2 340.71	R 4 681.42	R 3.35

* Average site size 1 397 ha

Programme manager: Estimated 80% of time spent on management support, spread over an estimated six sites a year. This number of sites is based on an average number of sites declared over the three years 2010/11, 2011/12, 2012/13. As protected area declarations tend to be finalised in pulses, an average over three years was thought to be more accurate than using one year (Table 14).

Administrator: The administrator spends 50% of time on the biodiversity stewardship programme (full-time CapeNature post). Of this 50%, an estimated 80% of time is spent on management support, spread over an estimated six sites a year. This number of sites is based on an average number of sites declared over the three years 2010/11, 2011/12, 2012/13 (Table 14).

Operational costs: Included within salary costs.

Table 14: Cost calculation for CapeNature stewardship programme manager and administrative support: protected area management support, 2012/13

Component	Total cost	Time allocated	Cost of time	Ave no. sites/yr*	Cost/site	Cost/ha**/yr
Programme manager (salary, and ops for manager and admin)	R 719 276.00	80%	R 575 420.80	20	R 28 771.04	R 20.59
Admin support (salary)	R 72 819.00	80%	R 58 255.20	20	R 2 912.80	R 2.09

*Average number of sites: Total number of sites (18) over 3 years (2011, 2012, 2013)

** Average site size 1 397 ha

A summary of CapeNature's costs are shown in Table 15 below.

Table 15: Cost calculation for CapeNature stewardship programme: protected area management support, 2012/13

Component	Cost/site/yr	Cost/ha*/yr
Programme manager (includes ops for manager and admin)	R 28 771.04	R 20.59
Stewardship Officer (salary and ops)**	R 8 558.79	R 6.13
Scientific support (salary and ops)	R 4 681.42	R 3.35
Admin support (salary)	R 2 912.80	R 2.09
Total	R 44 924.04	R 32.16

* Average site size 1 397 ha

**Weighted average of two post levels, and full-time equivalents. See Table 13

1.2.2. Biodiversity stewardship: Protected area management support: Ezemvelo KZN Wildlife

The Ezemvelo KZN Wildlife biodiversity stewardship programme manager was able to provide an already calculated cost per site for most expenses. These are presented in Table 16 below.

Staff: Costs provided as a cost per day, and estimated number of days per site in a year.

Cost adjustment to account for NGO support: In KwaZulu-Natal, nine NGO staff work full-time or part time supporting the provincial biodiversity stewardship programme. This reduces the number of days that certain staff (the programme manager and the stewardship officer) need to spend on the sites. In order to present a more accurate picture of the cost of the biodiversity stewardship programme, the estimated number of days per site for these two functions were calculated as if the NGO support did not exist. In the case of protected area management support, this adjusted the number of days for the programme manager from two to four, and the number of days for the

stewardship officer from 10 to 15. The estimated number of days per site for staff was increased, to model the situation of NGOs not playing a role in negotiation and technical support.

Operational costs: An estimate of the cost per site. This includes telephone, travel and printing costs. After salaries, travel costs are the highest budgetary item for the stewardship unit.

Incentives/additional management support costs: This involves incentives provided by the conservation authority, such as herbicides for alien invasive plants, signage for nature reserves, and assistance with law enforcement for poaching.

Additional notes: Costs vary based on site size. Some factors affecting individual site costs:

- Small sites still require substantial management support, therefore cost per hectare is higher.
- Land ownership has an impact on costs. Communal sites tend to require more time and therefore higher staff costs than privately owned sites.
- Land use affects cost per hectare, for example intensively grazed sites required veld condition assessments, pre-burn inspections, etc., whereas 'lifestyle' properties tend to require far less staff time.

Table 16: Cost calculation for EKZN stewardship programme: protected area management support, 2013/14

Component	Cost/day	Days/site	Cost/site	Cost/ha*
Programme manager (salary)**	2 200.00	4	R 8 800.00	R 2.44
Stewardship officer (salary)***	1 520.00	15	R 22 800.00	R 6.32
District conservation officer** (salary)	1 372.00	15	R 20 580.00	R 5.71
Scientific support (salary)	1 568.00	8	R 12 544.00	R 3.48
Operations costs			R 7 500.00	R 2.08
Incentives/Additional management support costs (e.g. herbicide assistance, provision of signage and support with law enforcement)			R 12 000.00	R 3.33
Total			R 84 224.00	R 23.36

* Average site size 3 605 ha

** Adjusted from 2 to 4, see 'Cost adjustment to account for NGO support'

*** Adjusted from 10 to 15, see 'Cost adjustment to account for NGO support'

2. Provincial authority: Establishment of protected areas

The cost of acquisition was based on two aspects:

- The cost of negotiating a purchase and declaring the land a protected area
- The price of land

2.1. Negotiating a purchase and declaration costs

As the provincial conservation authorities seldom purchase properties due to budget constraints, the costs of running a unit to purchase property was obtained from SANParks. SANParks has the only unit dedicated to land acquisition which obtains land primarily through purchase. The costs to run this unit were provided by the SANParks Head of Planning and Development. A cost per hectare was calculated based on eight properties that were purchased and declared in the financial year 2012/2013. This cost was adjusted for the 2013/2014 financial year for the KwaZulu-Natal cost comparison by allowing for a 5.6% increase, in line with the official inflation rate (Statistics South Africa).

Staff and operational costs: Calculated based on the number of days spent working on each property purchase. These included programme manager, administration support, negotiator and ecologist.

Costs related to the **declaration of the property, registration of notarial deed** and the **valuation of the property** were based on the actual costs ascribed to each property, and included legal costs.

Average site size: Average site size of the eight properties was 1081.375 ha

The costs to negotiate a purchase and declaration of a property are shown in Table 17.

Table 17: Cost to negotiate a sale and declare a protected area for SANParks, based on eight protected areas established in 2012/13, and adjusted to 2013/14

Component	Cost/day	No. days/site	Cost/site	Cost/ha**
Programme manager (salary, and ops for unit)	R 2 548.00	10.6	R 27 072.50	R 25.04
Admin support	R 485.00	0.5	R 242.50	R 0.22
Negotiator	R 821.00	5.9	R 4 823.38	R 4.46
Ecologist	R 1 162.00	1.6	R 1 815.63	R 1.68
Internal Legal support	R 1 506.00	3.8	R 5 647.50	R 5.22
Valuation of property			R 46 250.00	R 42.77
Declaration of protected area	R 4 000.00		R 4 000.00	R 3.70
Registration of notarial deed	R 4 500.00	26.4	R 128 062.50	R 118.43
Total (2012/13)			R 217 914	R 201.52
Total (adjusted to 2013/14 at 5.6% inflation)				R 212.81

**Average site size: 1081.375 ha

2.2. Price of properties

The land value was calculated by determining the market value of rural land in the same areas that had been prioritised for protected area expansion and biodiversity stewardship in the Western Cape and KwaZulu-Natal. Two different methods were applied in the two provinces, due to the availability of data and conditions related to the targeting of particular agricultural properties, explained below.

2.2.1. Price of properties: Western Cape

The analysis for the Western Cape was data driven. Data was generously provided by the Western Cape Department of Agriculture on all farm sales within the province for the calendar year 2012, broken down into 33 areas. These areas were cross-referenced against the areas in which the provincial biodiversity stewardship programme operates. A total of 20 areas were retained for the analysis. In these areas, 683 property sales were recorded during 2012 transactions. The average cost per hectare was obtained based on the total number of hectares purchased and the total cost of all properties during 2012 (see Table 18). There is a wide range of cost per hectare between different regions, from R1 177/ha to R735 543/ha.

CapeNature is not able to target a particular type of agricultural land-use for conserving biodiversity priority areas in the province (unlike in Ezemvelo KZN Wildlife in KwaZulu-Natal). This is due to the degree of irreversible loss of natural habitat in the province, and the location of high priority remnant patches of biodiversity. For this reason, all farm types were included in this analysis.

Table 18: Cost of properties in biodiversity stewardship areas in the Western Cape, 2012

Area	No. of farms	Total ha	Total transaction value	Cost/ha*
Bredasdorp	29	13 730	R 218 790 284	R 15 935.20
Caledon	47	7 412	R 221 267 855	R 29 852.65
Calitzdorp	12	1 061	R 12 048 000	R 11 355.33
Calvinia	40	101 533	R 119 540 449	R 1 177.36
Cape Town/Peninsula	29	2 437	R 347 691 000	R 142 671.73
Clanwilliam	22	22 072	R 112 085 794	R 5 078.19
Ladismith	43	4 959	R 39 019 300	R 7 868.38
Malmesbury	64	24 663	R 435 042 647	R 17 639.49
Montagu	16	9 852	R 59 975 267	R 6 087.62
Namakwaland	31	63 068	R 102 546 639	R 1 625.97
Oudsthoorn	29	15 629	R 88 938 379	R 5 690.60
Paarl	69	6 222	R 467 446 860	R 75 128.07
Piketberg	46	29 589	R 281 108 500	R 9 500.44
Prince Albert	10	13 276	R 44 351 500	R 3 340.73
Riversdal	60	18 385	R 207 578 993	R 11 290.67
Robertson	32	3 268	R 93 835 550	R 28 713.45
Stellenbosch	29	582	R 428 086 283	R 735 543.44
Swellendam	33	7 324	R 124 879 689	R 17 050.75
Tulbagh	10	706	R 105 429 700	R 149 333.85
Worcester	32	17 592	R 131 253 382	R 7 460.97
Total	683	363 360	R 3 640 916 071	R 10 020.13

* The average cost per hectare is based on the total area and the total costs of all farms purchased within each region in 2012. There is a wide range of cost per hectare between different regions, from R1 177 to R735 543. However, a more detailed analysis could not be calculated to account for this, as individual farm prices and sizes were not available.

2.2.2. Price of properties: Kwazulu-Natal

The analysis for KwaZulu-Natal was expert-knowledge based. Five areas were identified by Ezemvelo KZN Wildlife that had been targeted for biodiversity stewardship in the province. These were:

- Midlands / Nottingham Road
- Zululand / Mkuze
- Utrecht / Paulpietersburg
- Ladysmith
- Richmond

In practice, Ezemvelo KZN Wildlife only focus on rural land within these areas that are used for grazing or game, excluding cultivated land (determined through systematic conservation planning). Telephonic interviews were conducted with estate agents specialising in farm sales in each of the five focus areas. An expert opinion was obtained on the average price of land used for grazing livestock or game in each area, and an average cost across the five areas was calculated (Table 19).

Table 19: Cost of properties in biodiversity stewardship areas in KZN for the year 2014

Area	Cost/ha
Midlands / Nottingham Road	R 17 500
Zululand around Mkuze	R 28 000
Utrecht / Paulpietersburg	R 10 000
Ladysmith	R 15 000
Richmond	R 30 000
Average	R 20 100

3. State protected area management

The cost of protected area management by the state was calculated by obtaining the actual costs of managing protected areas for CapeNature and Ezemvelo KZN Wildlife.

3.1. State protected area management: CapeNature

All costs were provided by the CapeNature Executive Director: Conservation Management. The cost of all biodiversity-related management activities within land-based protected areas was calculated. This included all personnel and operational costs related to reserve operations (e.g. ecological management, wildlife management and disaster management), integrated catchment management (e.g. fire management, erosion and restoration) and fire protection and maintenance of infrastructure. It excluded costs related to tourism, and costs related to managing the organisation as a whole (e.g. head office costs).

Some of the costs to manage these protected areas are borne by the provincial and national department of Public Works, the National Department Environmental Affairs: Natural Resources, and the provincial Expanded Public Works Programme. These costs are related to infrastructure maintenance, such as roads and fences, and invasive alien management. These costs were included, as the intention of this exercise was to determine the cost of managing a state-managed protected area as accurately as possible for comparative purposes, rather than a budget analysis of CapeNature. There was a wide range in cost per hectare between protected areas (from R0/ha to just over R7000/ha).

Costs were provided for the financial year 2013/2014. In order to compare these to the biodiversity stewardship 2012/2013 financial year costs, the cost per hectare was adjusted down for inflation of 5.6%, the annual average inflation rate during 2013 (Statistics South Africa). The total area of the selected protected areas was used to calculate an average cost per hectare of these protected areas. Table 20 presents the cost calculation.

Table 20: Cost of biodiversity management in protected areas in the Western Cape, 2013/14, adjusted to 2012/13

Protected Area management complex*	Extent (ha)	Management cost	Cost / ha
Anysberg Nature Reserve Complex	79 629.40	R 4 064 451.10	R 51.04
Bird Island Nature Reserve Complex	617.65	R 1 269 058.92	R 2 054.66
Cederberg Nature Reserve Complex	79 534.02	R 6 407 565.23	R 80.56
Dassen Island Nature Reserve	230.33	R 1 614 726.06	R 7 010.49
De Hoop Nature Reserve Complex**	34 150.83	R 5 799 789.70	R 169.83
De Mond Nature Reserve Complex	1 601.64	R 1 957 408.26	R 1 222.13
Driftsands Nature Reserve	520.56	R 1 539 357.63	R 2 957.12
Dyer Islands Nature Reserve**	249.00	R 535 140.00	R 2 149.16
Gamkaberg Nature Reserve Complex	32 191.54	R 10 871 291.58	R 337.71
Geelkrans Nature Reserve Complex**	1 263.94	R 1 314 926.34	R 1 040.34
Goukamma Nature Reserve**	2 356.68	R 2 788 434.07	R 1 183.20
Grootvadersbos Nature Reserve Complex	23 489.06	R 4 776 727.69	R 203.36
Grootwinterhoek Nature Reserve	27 512.11	R 1 464 607.03	R 53.23
Hottentots Holland Nature Reserve Complex	48 472.78	R 4 891 715.08	R 100.92
Islands and Rocks Complex	987.71	R 0.00	R 0.00
Kammanassie Nature Reserve	27 056.63	R 2 238 930.06	R 82.75
Keurbooms River Nature Reserve	1 012.03	R 2 524 402.43	R 2 494.39
Knersvlakte Nature Reserve Complex	74 890.13	R 2 002 817.49	R 26.74
Kogelberg Nature Reserve Complex**	24 508.66	R 8 072 208.88	R 329.36
Limietberg Nature Reserve Complex	44 934.08	R 7 109 702.14	R 158.23
Marloth Nature Reserve Complex	14 256.34	R 2 715 815.33	R 190.50
Outeniqua Nature Reserve Complex	42 380.84	R 6 106 927.65	R 144.10
Riverlands Nature Reserve Complex	1 715.78	R 2 695 574.95	R 1 571.05
Robberg Nature Reserve Complex**	185.52	R 213 863.00	R 1 152.78
Rocherpan Nature Reserve**	912.49	R 265 021.37	R 290.44
Salmonsdam Nature Reserve	837.76	R 211 344.00	R 252.27
Swartberg Nature Reserve Complex	131 557.89	R 5 294 912.05	R 40.25
Vrolijkheid Nature Reserve Complex	28 582.66	R 6 591 250.88	R 230.60
Walker Bay Nature Reserve Complex	7 809.11	R 5 257 441.83	R 673.24
Waterval Nature Reserve Complex	32 442.03	R 6 659 256.32	R 205.27
Total	765 889.20	R 107 254 667.07	R 140.04
Adjusted to 2012/13 (5.6% inflation)			R 132.20

*Often made up of a number of protected areas

**Excludes portion of Nature Reserve Complex that is a marine protected area

*** The Islands and Rocks Complex had no budget allocated

3.2 State protected area management: Ezemvelo KZN Wildlife

All costs were provided by Ezemvelo KZN Wildlife Manager: Strategic Planning and Control. Costs from the financial year 2013/14 were used.

The cost of all activities related directly to Ezemvelo KZN Wildlife managed protected areas were included. Costs related to ecotourism, head office and work outside of protected areas were excluded.

The costs and hectares related to the following protected areas were not included:

- Marine protected areas – as management costs per hectare vary substantially between land-based and marine protected areas, and there are no marine biodiversity stewardship protected areas.
- Co-managed protected areas – as a portion of the costs for managing a co-managed protected area is not carried by the state, and would therefore skew the average cost per hectare.
- Protected areas where the tourism costs could not be separated from the total management costs.

The total area of the selected protected areas was used to calculate an average cost per hectare of these protected areas. There was a wide range in cost per hectare between protected areas (from R33.24/ha to R14 361.75/ha). Generally, smaller protected areas had a higher cost per hectare than larger protected areas. The cost calculation is summarized in Table 21 below.

Table 21: Cost of biodiversity management in protected areas in KZN, 2013/14

Protected area	Area (ha)	Management cost*	Cost/ha
Bluff Nature Reserve	45.00	R 626 763.59	R 13 928.08
Chelmsford Nature Reserve	6 012.67	R 3 904 717.44	R 649.42
Coleford Nature Reserve and Bulwer Complex	1 272.00	R 2 265 505.90	R 1 781.06
Portion of eMakhosini-Ophathe Heritage Park: Ophathe Game Reserve	8 825.00	R 9 810 087.10	R 1 111.62
Enseleni Nature Reserve	305.31	R 1 832 584.91	R 6 002.34
Harold Johnson Nature Reserve	104.00	R 1 315 150.26	R 12 645.68
Hluhluwe iMfolozi Park	89 672.68	R 38 666 262.72	R 431.19
Ithala Game Reserve	29 271.39	R 11 356 574.89	R 387.98
Kenneth Stainbank Nature Reserve	211.00	R 3 030 330.09	R 14 361.75
Krantzkloof Nature Reserve	584.00	R 2 380 458.29	R 4 076.13
Mbumbazi Nature Reserve	2 022.94	R 910 306.81	R 449.99
Ndumo Game Reserve	10 117.00	R 7 950 666.97	R 785.87
North Park Nature Reserve	53.00	R 680 894.00	R 12 847.06
Oribi Gorge Nature Reserve	1 745.76	R 2 321 404.44	R 1 329.74
Spioenkop Nature Reserve	7 283.00	R 4 122 040.43	R 565.98
Tembe Elephant Park	30 013.32	R 12 026 999.96	R 400.72
Portions of Ukhahlamba Drakensberg Park	208 175.00	R 41 267 549.53	R 198.23
Umtamvuna Nature Reserve	2 653.75	R 2 964 621.07	R 1 117.14
Vernon Crookes Nature Reserve	2 189.00	R 2 978 452.87	R 1 360.65
Wagendrift Nature Reserve	764.00	R 1 675 661.38	R 2 193.27
Weenen Nature Reserve	4 183.00	R 4 216 055.97	R 1 007.90
Total	405 502.83	R 156 303 088.62	R385.45**

* Budget includes salaries, ops and internal projects, and excludes costs related to tourism

** Average cost per hectare of R385.45 is calculated as the total budget across all included protected areas, divided by the total area of all included protected areas. The cost per hectare of individual protected areas has a wide range, from R33.24/ha to R14 361.75/ha