National Protected Area Expansion Strategy
Resource Document

2009

Department of Environmental Affairs
South African National Biodiversity Institute

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Preface

This Resource Document accompanies South Africa's National Protected Area Expansion Strategy (NPAES) 2008, providing additional technical detail to support aspects of the strategy. The Resource Document is not intended to be a standalone document and should be read together with the strategy, which is available at www.environment.gov.za or http://biodiversityadvisor.sanbi.org, or can be ordered from bookshop@sanbi.org.za.

The Resource Document was developed with the assistance of specialist consultants commissioned by the Department of Environmental Affairs (DEA) (previously the Department of Environmental Affairs and Tourism (DEAT)), through the South African National Biodiversity Institute, as part of the process of developing the NPAES. The process was overseen by a task team of the Ministerial Technical Committee's (MINTECH) Working Group 1 (Biodiversity and Heritage), with input from national and provincial conservation institutions and key national departments. A project team comprising SANBI, South African National Parks and DEAT provided technical oversight to the consultants.

The NPAES was developed during 2007 and 2008, and approved in March 2009.

Note on department names

In July 2009, following general elections in April 2009, changes were made to the structure and names of several government departments. Because the content of this document was developed before those changes, references to national departments in much of the document use names that applied prior to July 2009.

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Acronyms

C.A.P.E.	Cape Action for People and the Environment
CBD	Convention on Biological Diversity
COP	Conference of Parties (to CBD)
DAEA	KwaZulu-Natal Department of Agriculture and Environment Affairs
DALA	Mpumalanga Department of Agriculture and Land Administration
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DEA&DP	Western Cape Department of Environment Affairs and Development Planning
DEDEA	Eastern Cape Department of Economic Development and Environment Affairs
DEDET	Limpopo Department of Economic Development, Environment and Tourism
DLA	Department of Land Affairs
DME	Department of Minerals and Energy
DoA	Department of Agriculture
DoT	Department of Transport
DPLG	Department of Provincial and Local Government
DPW	Department of Public Works
DTEC	Northern Cape Department of Tourism, Environment and Conservation
DTEEA	Free State Department of Tourism, Economic and Environment Affairs
DWAF	Department of Water Affairs and Forestry
ECP	Eastern Cape Parks
EEZ	Exclusive Economic Zone
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EPWP	Expanded Public Works Programme
EWT	Endangered Wildlife Trust
GDACE	Gauteng Department of Agriculture, Conservation and Environment
IUCN	International Union for Conservation of Nature
KZN	KwaZulu-Natal
LTPB/LTB	Limpopo Tourism (and Parks) Board
MCM	Marine and Coastal Management Branch of DEAT/DEA
MEC	Provincial Member of the Executive Council
MDTP	Maloti-Drakensberg Transfrontier Project
MINMEC	Ministerial Forum
MINTECH	Ministerial Technical Committee
MoU	Memorandum of Understanding
MTPA	Mpumalanga Tourism and Parks Agency
NBF	National Biodiversity Framework
NBSAP	National Biodiversity Strategy and Action Plan
NCBCS	Northern Cape Biodiversity Conservation Strategy

NEMA	National Environmental Management Act
NGO	Non-Government Organisation
NPAES	National Protected Area Expansion Strategy
NSBA	National Spatial Biodiversity Assessment
NSLC	National State Land Committee
NWDACE	North West Department of Agriculture, Conservation and Environment
NWPTB	North West Parks and Tourism Board
RLCC	Regional Land Claims Commission
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SKEP	Succulent Karoo Ecosystem Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WWF-SA	World Wide Fund for Nature South Africa

Key Definitions

Protected area

A protected area is an area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition.[1] The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas.

Conservation area

A conservation area is an area of land not formally protected by law but informally protected by the current owners and users and managed at least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas, they are not a strong form of protection and are not considered part of the protected area network.

Biodiversity targets

Biodiversity targets refer to how much of a biodiversity feature (e.g. an ecosystem) should ideally be protected to ensure it will persist. Biodiversity targets should be based on the ecological characteristics of the biodiversity feature concerned. Although they may be refined over time as our scientific knowledge and information improves, they are not "action targets" or political targets that change every few years. The spatial analysis in the NPAES is based on the biodiversity targets set in the NSBA 2004.

Protected area targets

Protected area targets refer to the area of land that should be included in the protected area network by a certain date. They are action targets or political targets that should be updated every few years.

[1] The IUCN defines a protected area as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means. This broad definition includes areas which are not legally protected and which the NPAES defines as conservation areas rather than protected areas.

Protected area targets are a subset of biodiversity targets. In the very long term, we would like our protected area targets to equal or even exceed our biodiversity targets. However, it is not a realistic goal to meet all national biodiversity targets in the protected area network in the next five or fifteen or even twenty years. Protected area targets are useful to focus attention in the medium term on meeting a realistic subset of our biodiversity targets.

Systematic biodiversity planning

Systematic biodiversity planning, also known as systematic conservation planning, identifies important areas for biodiversity conservation based on three principles:

- The principle of representation, or the need to conserve a representative sample of biodiversity pattern, including ecosystems, habitats and species;
- The principle of persistence, or the need to conserve ecological and evolutionary processes that allows biodiversity to persist over time;
- The principle of setting explicit biodiversity targets, where each biodiversity feature has quantitative targets set to maintain viable populations and functioning ecosystems, landscapes and seascapes.

Systematic biodiversity planning encourages efficiency (i.e. achieving biodiversity targets in the smallest area possible) and allows for conflict avoidance (by avoiding meeting biodiversity targets in areas where there are many competing land uses) through including spatial data on a range of socio-economic factors.

Biodiversity stewardship

Landowners/users voluntarily participate in biodiversity conservation by agreeing formally (through a biodiversity stewardship agreement) to conserve their land to (i) protect important ecosystems; (ii) enable sustainable use of natural resources and (iii) effectively manage threats to natural systems and biodiversity. Landowners/users who enter into these agreements are supported by government.

Contract agreements with landowners/users, usually developed through biodiversity stewardship programmes, are identified in the NPAES as a key mechanism for expanding the protected area network.

1. Introduction

What is the NPAES?

The goal of the National Protected Area Expansion Strategy (NPAES) is to achieve cost effective protected area expansion for ecological sustainability and adaptation to climate change. The NPAES sets targets for protected area expansion, provides maps of the most important areas for protected area expansion, and makes recommendations on mechanisms for protected area expansion. It deals with land-based and marine protected areas across all of South Africa's territory, including the marine exclusive economic zone (EEZ) of 200 nautical miles around the mainland and the Prince Edward Islands (see Figure 1).

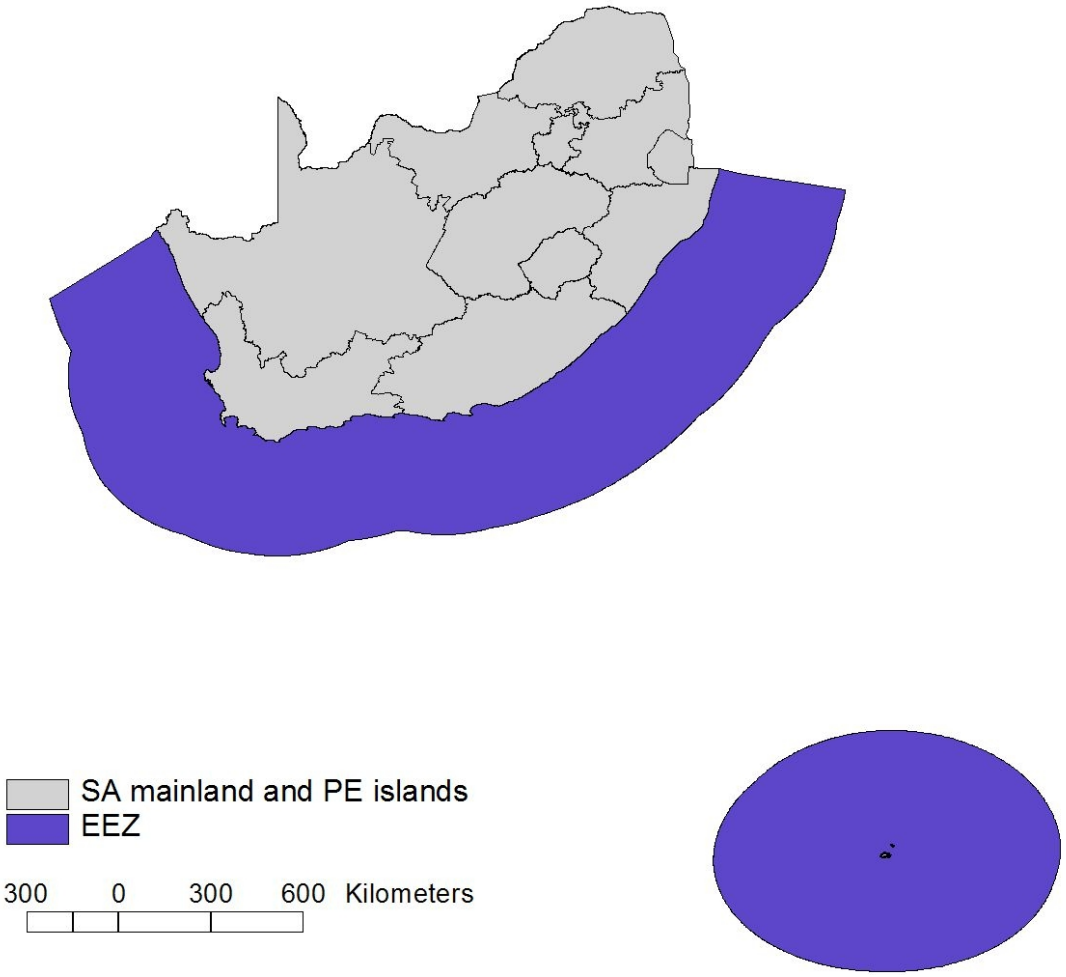

Figure 1: The NPAES deals with all of South Africa's territory, including the mainland EEZ and the Prince Edward Islands EEZ

Why a Resource Document?

In the course of developing the NPAES, large amounts of information relating to protected area expansion in South Africa were gathered. Inclusion of all of this information in the strategy itself would have made for an unwieldy document; however, much of it is valuable especially for those involved in implementing protected area expansion. This Resource Document thus provides additional technical information to support aspects of the NPAES. It does not summarise the NPAES (apart from the protected area targets and focus areas which are provided for ease of reference later in this section), and is not intended to be a standalone document but should be read in conjunction with the strategy.

The intended users of the Resource Document are summarised in Table 1. They are primarily those involved directly in protected area consolidation and expansion, including through biodiversity stewardship programmes.

Table 1: Intended users of the NPAES Resource Document[2]

Agency, department or organisation	Acronym
1. National protected area agencies	
Protected Areas Directorate of DEA	DEA
Marine and Coastal Management Branch of DEA	MCM
South African National Biodiversity Institute	SANBI*
Department of Water Affairs and Forestry (Forestry Branch**)	DWAF
South African National Parks	SANParks
iSimangaliso Wetland Park	
2. Provincial protected area agencies	
CapeNature	
Eastern Cape Parks	ECP
Ezemvelo KwaZulu-Natal Wildlife	EKZNW
Mpumalanga Tourism and Parks Agency	MTPA
North West Parks and Tourism Board	NWPTB
3. Provincial environmental affairs departments	
Eastern Cape Department of Economic Development and Environment Affairs	DEDEA
Free State Department of Tourism, Economic and Environment Affairs	DTEEA
Gauteng Department of Agriculture, Conservation and Environment	GDACE
KwaZulu-Natal Department of Agriculture and Environment Affairs	DAEA
Limpopo Department of Economic Development, Environment and Tourism	DEDET

[2] Some names have changed since the development of this document.

Mpumalanga Department of Agriculture and Land Administration	DALA
North West Department of Agriculture, Conservation and Environment	NWDACE
Northern Cape Department of Tourism, Environment and Conservation	DTEC
Western Cape Department of Environment Affairs and Development Planning	DEA&DP
4. Environmental or conservation management departments/branches of local, district and metropolitan municipalities responsible for local nature reserves	
5. NGOs involved in protected area establishment processes	

Table notes:
* Including bioregional programmes, such as the Cape Programme for People and the Environment (C.A.P.E.), the Succulent Karoo Ecosystem Programme (SKEP) and the Grasslands Programme
** Now located in the Department of Agriculture, Fisheries and Forestry (DAFF)

Definitions of protected areas and conservation areas

Protected areas are areas of land or sea that are formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition.[3]

The Protected Areas Act distinguishes between several categories of protected area:

- Special nature reserves,
- National Parks,
- Nature reserves,
- Protected environments.

It also recognises World Heritage Sites, marine protected areas, specially protected forest areas, and mountain catchment areas. See Section 2 for more detail on protected area categories and types.

The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas.

It is important to differentiate protected areas from **conservation areas**. Conservation areas are areas of land not formally protected by law but informally protected by the current

[3] The IUCN defines a protected area as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means. This broad definition includes areas which are not legally protected and which the NPAES defines as conservation areas rather than protected areas.

owners and users and managed at least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas, they are not a strong form of protection and are not considered part of the protected area network. Conservation areas are not a major focus of the NPAES.

There are also several forms of statutory protection that are not recognised in terms of the Protected Areas Act but nevertheless provide a degree of protection for the areas and sites concerned. These other forms of statutory protection, also not considered part of the protected area network, are listed at the end of Section 2.

Summary of protected area targets and focus areas

The NPAES sets twenty-year targets for land-based and marine protected areas, summarised in Table 2. The summarised targets are built up from more detailed ecosystem-level targets, as discussed further in Section 5. The more detailed targets are crucial for ensuring that protected area expansion does not just provide more protection for already well-protected ecosystems, and they help to determine the geographic focus areas for protected area expansion (see Figure 2).

Table 2: Summary of land-based and marine protected area targets, and areas still required to meet targets

	20-year target	Current protection level*	Addition needed to meet 20-year target	Addition needed in next 5 years
Land-based	12%	6.5% (7.9m ha)	8.8% (10.8m ha)	2.2% (2.7m ha)
Marine inshore**	No-take: 15%	No-take: 9.1% (334km)	No-take: 6% (234km)	No-take: 1.5% (59km)
	Total: 25%	Total: 21.5% (785km)	Total: 9.6% (353km)	Total: 2.4% (88km)
Marine offshore: mainland EEZ	No-take: 15%	No-take: 0.16% (1 671km^2)	No-take: 14.8%(159 111km^2)	No-take: 3.7% (39 887km^2)
	Total: 20%	Total: 0.4% (4 172km^2)	Total: 19.6% (210 205km^2)	Total: 4.9% (52 551km^2)
Marine offshore: Prince Edward Islands EEZ	No-take: 15%	No-take: 0% ***	No-take: 15% (70 032km^2)	No-take: 3.8% (17 508km^2)
	Total: 20%	Total: 0% ****	Total: 20% (93 376km^2)	Total: 5% (23 344km^2)

Table notes:
* An area is considered protected if it falls within a protected area recognised in the Protected Areas Act.
** Inshore marine targets are measured in kilometres of coastline because of the varying distances which inshore MPAs extend from the coastline. Inshore is considered to mean from the high water mark to the 30m depth contour. All inshore MPAs extend at least this far. In future we will move towards using a more accurate area-based measure for inshore MPA targets, but this is not possible with current data.
*** Fishing has been excluded from a 12 nautical mile exclusion zone immediately around the islands (3% of the Prince Edward Islands EEZ) but the area has not been promulgated as an MPA.
**** The intention to declare a marine protected area in the Prince Edward Islands EEZ was published for comment by the Minister of Environment Affairs in the Government Gazette on 8 May 2009. At the time of finalising this document, the process had not been concluded and the protected area had not yet been established.

In the next five years, in order to move a quarter of the way to meeting the twenty-year protected area targets, we need to add 2.7 million hectares to the land-based protected area network, 88km to the inshore marine protected area network (including 59km in no-take zones), 52 500 km^2 to the offshore marine protected area network in South Africa's mainland Exclusive Economic Zone (EEZ), and 23 300 km^2 to the offshore marine protected area network in the Prince Edward Islands EEZ.

In addition to these focus areas, threatened ecosystems identified in the National Spatial Biodiversity Assessment (NSBA) or listed in terms of the National Environmental Management: Biodiversity Act (Act 10 of 2004) (hereafter referred to as the Biodiversity Act) are important for protected area expansion. Threatened ecosystems are often highly fragmented and thus not suitable for the creation or expansion of large protected areas, but contractual protected areas through biodiversity stewardship programmes can play a crucial role in protecting remaining natural habitat in threatened ecosystems.

In the marine environment, priority areas for protected area expansion are based on work done previously for the NSBA 2004 (Lombard et al. 2004) and a biodiversity plan for the Prince Edward Islands EEZ (Lombard et al. 2007), shown in Figure 3. The determination of these priorities is not discussed further in this Resource Document.

Overview of the Resource Document

This Resource Document is structured as follows:

- Section 2 provides information on the policy and legal context for protected area expansion;
- Section 3 provides an overview of the institutional context;
- Section 4 profiles the protected area network as it was in 2008, providing a baseline for the NPAES;
- Section 5 explains the spatial analysis that was undertaken to identify focus areas for land-based protected area expansion;
- Section 6 provides detailed information on mechanisms for protected area expansion;
- Section 7 provides information on sources of finance and financial mechanisms for protected area expansion;
- Section 8 gives broad guidelines for agency-specific implementation plans based in the NPAES.

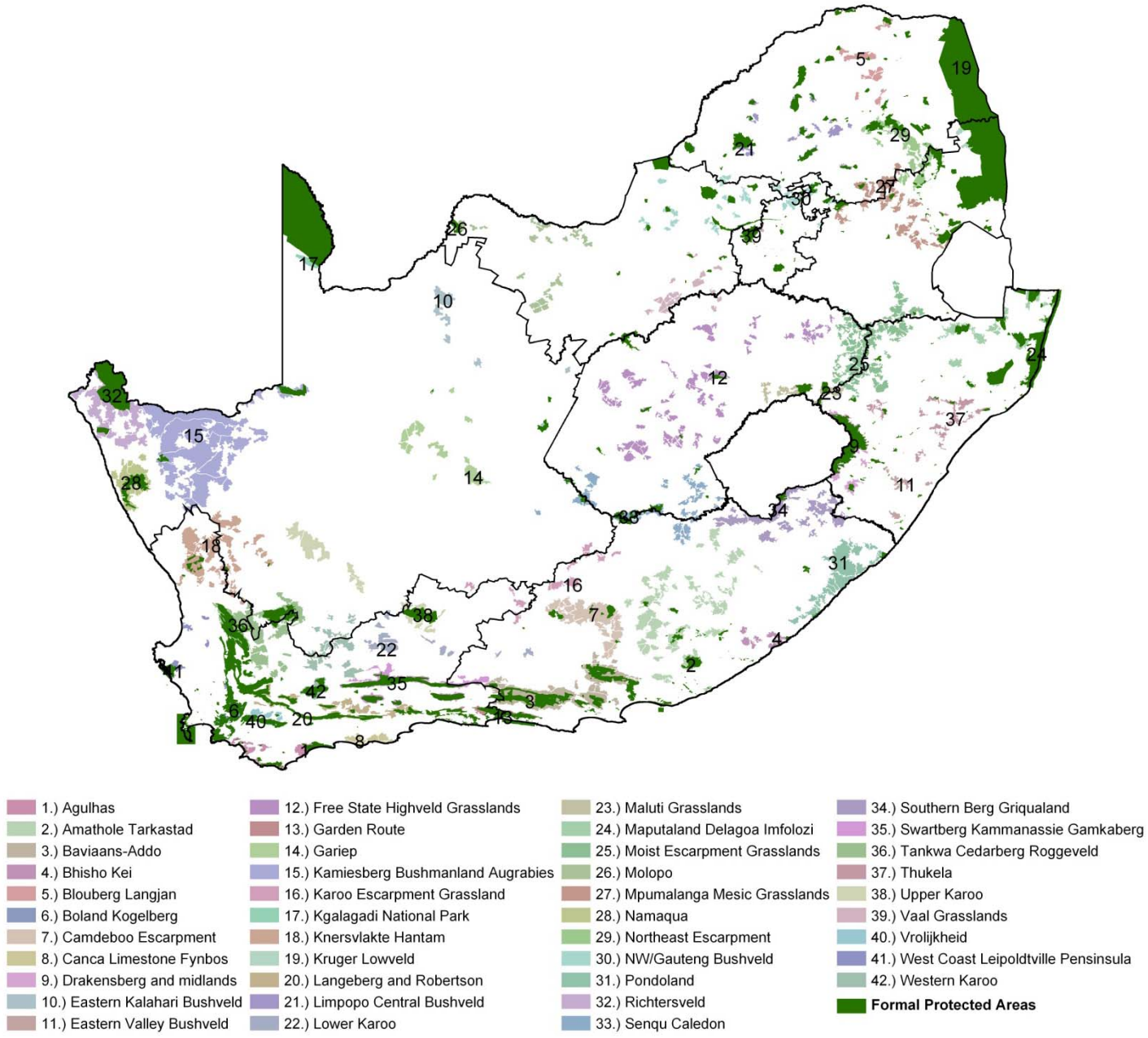

Figure 2: Focus areas for land-based protected area expansion

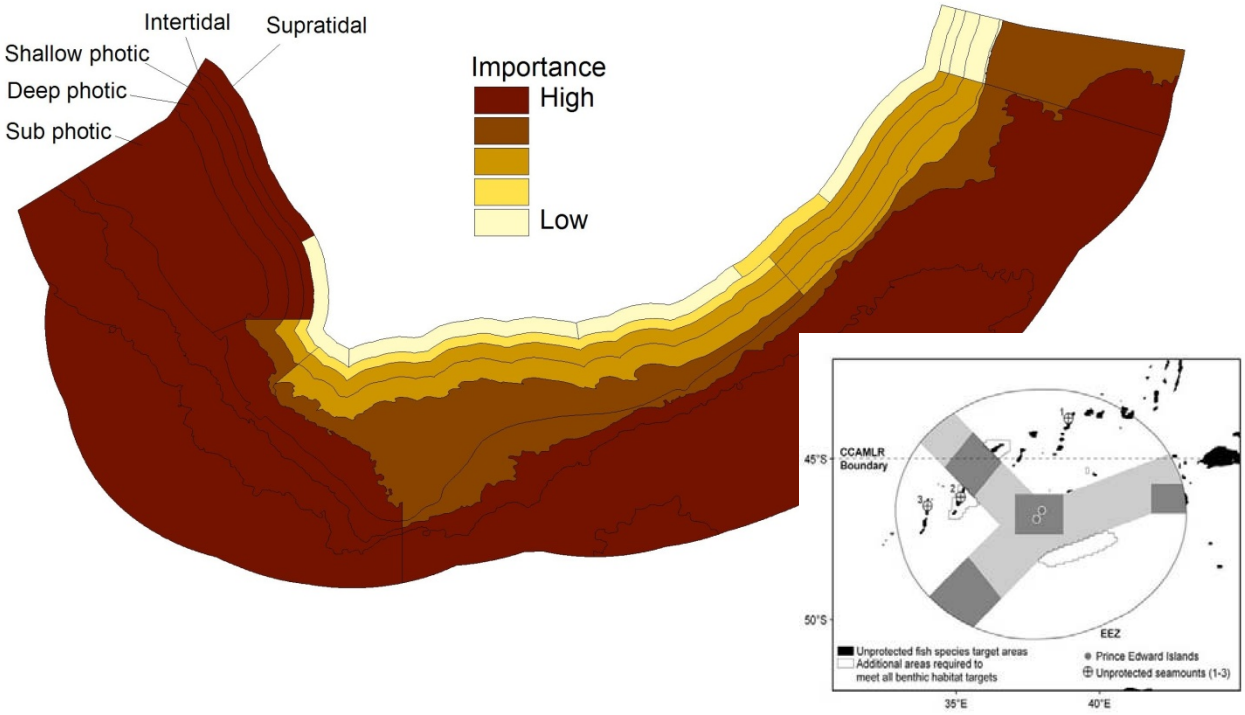

Figure 3: Important biozones for marine protected area expansion as determined in the NSBA 2004 and (inset) a biodiversity planning exercise for the Prince Edward Islands EEZ

2. Policy and legal context[4]

This section provides background on the policy and legal context for protected area expansion, including the various types of protected areas recognised by the Protected Areas Act.

Policy context

The policy context for protected area expansion in South Africa is provided by the following, each of which is discussed briefly below:

- Convention on Biological Diversity (CBD),
- White Paper on Biodiversity (1997),
- Bioregional approach to protected areas (2001),
- National Spatial Biodiversity Assessment (2004),
- National Biodiversity Strategy and Action Plan (2005),
- National Biodiversity Framework (2008).

Convention on Biological Diversity

South Africa is a signatory to the CBD, which requests countries to:

- Establish a system of protected areas to conserve biodiversity;
- Develop guidelines for the selection, establishment and management of protected areas;
- Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species.

The central role of protected areas in implementing the objectives of the CBD has been emphasised repeatedly in decisions of the Conference of the Parties (COP).

The target to achieve “a significant reduction in the current rate of loss of biological diversity” by the year 2010 was agreed by the sixth COP in 2002, and endorsed by the world’s leaders at the World Summit on Sustainable Development the following year.

The COP, at its seventh meeting in 2004, agreed on a programme of work for protected areas which included approaches to ensuring the effective ongoing development of a

[4] Note that pre-July 2009 department names are used in this section.

comprehensive, effectively managed and ecologically representative national and regional protected areas that collectively contribute to achieving the 2010 target.

White Paper on Biodiversity

At a national level, the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997) established South Africa's intent to secure under protection at least 10% of each habitat and ecosystem within the seven biomes.

Bioregional approach to South Africa's protected areas

In 2001, DEAT published "A bioregional approach to South Africa's protected areas" (DEAT, 2001). This strategy document proposed an increase of the protected area estate for terrestrial environments from 6% to 8% and for marine and coastal environments from 5% to 20%. It also envisaged that the protected area network should become fully representative of South Africa's biodiversity.

National Spatial Biodiversity Assessment 2004

The NSBA 2004 (Driver et al. 2005) provides a spatial description of the location of South Africa's threatened and under-protected ecosystems, and identifies broad priority areas for conservation action.

The NSBA is based on the systematic approach to biodiversity planning, which is driven by three principles:

- The principle of representation, or the need to conserve a representative sample of biodiversity pattern, including ecosystems, habitats and species;
- The principle of persistence, or the need to conserve ecological and evolutionary processes that allows biodiversity to persist over time;
- The principle of setting explicit biodiversity targets, where each biodiversity feature has quantitative targets set to maintain viable populations and functioning ecosystems, landscapes and seascapes.

The NSBA delivered some striking results:

- 34% of the country's 440 terrestrial ecosystems are threatened, with 5% critically endangered, 13% endangered and 16% vulnerable;

- 82% of main river ecosystem types are threatened, with 44% critically endangered, 27% endangered and 11% vulnerable;
- 77% of 13 estuary groups (comprising 259 estuaries altogether) are threatened, with 23% critically endangered, 39% endangered and 15% vulnerable;
- 65% of 34 marine biozones are threatened, with 12% critically endangered, 15% endangered and 38% vulnerable.

The NSBA 2004 highlighted that although nearly 6%[5] of South Africa's land surface area is conserved in formal protected areas, the protected area network is biased towards particular ecosystems – it does not conserve a representative sample of biodiversity and excludes some key ecological processes. This helped to provide the basis for the development of the NPAES.

National Biodiversity Strategy and Action Plan

The National Biodiversity Strategy and Action Plan (NBSAP) (DEAT 2005) is a long-term strategy that identifies five strategic objectives. For each strategic objective, the NBSAP identifies outcomes, activities, targets and indicators.

Relevant to the NPAES is Strategic Objective 5: "A network of protected areas and conservation areas conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape".[6] The 15-year (i.e. 2020) target for this strategic objective is: "The protected area network covers 12% of the terrestrial and 20% of the marine environment thereby contributing to representation targets in priority areas".

Within Strategic Objective 5, Outcome 5.2 lays the basis for the NPAES: "The protected area network is secured, expanded and managed to ensure that a representative sample of biodiversity and key ecological processes are conserved".

Activity 5.2.1 of Outcome 5.2 specifically requires that the responsible institutions "Expand, consolidate and/or rationalise the protected area network through a range of implementation tools, focusing on priority areas for representation and persistence of biodiversity".

[5] This figure has subsequently increased to 6.5%.
[6] The NBSAP used the term "conservation areas" to mean both formal protected areas and informal conservation areas as defined in the NPAES. Thus the original wording of Strategic Objective 5 referred just to "conservation areas" and has been modified here to reflect the now agreed definitions of "protected area" and "conservation area" (see Section 1).

National Biodiversity Framework

The drafting of a National Biodiversity Framework (NBF) is an explicit requirement of the Biodiversity Act. The NBF (DEAT 2008) is informed by and draws together key elements from both the NBSAP and the NSBA. The NBF focuses attention on the immediate priorities for the next five years, both spatial and thematic, within each of the Strategic Objectives of the NBSAP. The NBF identifies 33 Priority Actions for the period 2008 to 2012, of which the last five relate to Strategic Objective 5 (see NBSAP above):

29. *Finalise the twenty-year National Protected Area Expansion Strategy*, underpinned by the national biodiversity targets in the NSBA, refined for biomes, provinces and marine biozones;
30. *Implement the first phase of the National Protected Area Expansion Strategy* (in other words the first set of five-year targets);
31. Establish and strengthen provincial stewardship programmes;
32. Strengthen programmes that support the informal conservation area system;
33. Develop and implement a national botanical gardens expansion strategy.

The NPAES contributes directly to achieving Priority Action 29, and indirectly to Priority Actions 30 and 31. The NBF 2012 targets for Priority Action 30 reflect the five-year protected area targets in the NPAES.

Legal context

Various pieces of national legislation allow areas of land or sea in South Africa to be formally designated as protected areas. The different types of protected areas, and their enabling legislation, are briefly discussed below. This brief overview does not deal in detail with the legal context for protected areas. A list of types of conservation areas and areas under other forms of statutory protection is provided at the end of the subsection.

National Environmental Management: Protected Areas Act (Act 57 of 2003)[7]

The Protected Areas Act is the primary statute for the governance, management, regulation and monitoring of protected areas. It seeks to effect the establishment of a representative national network of protected areas covering state, private and communal land. It promotes

[7] Including the National Environmental Management: Protected Areas Amendment Act (Act 31 of 2004).

the use of protected areas, and participation in their management. The Protected Areas Act also provides for the continued existence, governance and functions of South African National Parks (SANParks), and for inter-governmental co-operation concerning protected areas.

Section 10 of the Protected Areas Act calls for the maintenance of a register of protected areas that contains a list of all protected areas, including those declared in terms of other legislation.

The Protected Areas Act recognises the following kinds of protected areas:

- Special nature reserves,
- National Parks and nature reserves;[8]
- Protected environments;
- World Heritage Sites declared in terms of the World Heritage Convention Act (Act 49 of 1999);
- Marine protected areas declared in terms of the Marine Living Resources Act (Act 18 of 1998);
- Specially protected forest areas (including Forest Nature Reserves and Forest Wilderness Areas) declared in terms of the National Forests Act (Act 84 of 1998);
- Mountain Catchment Areas declared in terms of the Mountain Catchment Areas Act (Act 63 of 1970).

Despite recognising all of the above-mentioned protected areas, only the following categories of protected area may be specifically declared in terms of the Protected Areas Act, each with a specific objective, management authority, restrictions and withdrawal conditions, as summarised in Table 3:

- Special nature reserve,
- National Park,
- Nature reserve,
- Protected environment.

[8] Parts of National Parks and nature reserves can be declared as “wilderness areas”.

Table 3: Summary of the legal characteristics of the four protected area types defined in the Protected Areas Act

Special nature reserve	**Objective:** To protect highly sensitive, outstanding ecosystems, species or geological or physical features in the area. To make the area primarily available for scientific research or environmental monitoring. **Management authority:** Designated by the Minister in terms of an approved Management Plan that may include co-management agreements. **Use restrictions:** Strict access restrictions that include aircraft restrictions. No mining. No commercial activities specifically provided for. Additional restrictions may be imposed by management authority. **Withdrawal:** Requires resolution of Parliament.
National Park	**Objective:** To protect an area that is of national or international biodiversity importance; or which contains a viable, representative sample of South Africa's natural systems, scenic areas or cultural heritage sites; or that protects the ecological integrity of one or more ecosystems in the area. **Management authority:** South African National Parks (SANParks) or any other management authority assigned by the Minister. **Use restrictions:** Access restriction. No mining. Aircraft restrictions. Commercial activities subject to certain requirements being met. Additional management authority imposed restrictions. **Withdrawal:** Requires resolution of Parliament, unless landowner withdraws from contractual agreement.
Nature reserve	**Objective:** To protect an area that has significant natural features or biodiversity; that is of scientific, cultural, historical or archaeological interest; that is in need of long-term protection for the maintenance of biodiversity; or for the provision of environmental goods or services. **Management authority:** Management authority designated by the MEC in terms of approved Management Plan. Co-management agreements may be entered into. **Use restrictions:** Access restriction. No mining. Commercial activities subject to certain requirements being met. Additional management authority imposed restrictions. **Withdrawal:** Requires resolution of Parliament or Provincial Legislature, unless landowner withdraws from contractual agreement.
Protected environment	**Objective:** To protect an area or ecosystem that is outside of a special nature reserve, national park, world heritage site or nature reserve and is sensitive to development due to Its biological diversity; natural characteristics; scientific, cultural, historical, archaeological or geological value; scenic and landscape value; or provision of environmental goods and services. **Management authority:** Management authority may be designated by the MEC or Minister. **Use restrictions:** No mining without Minister and Minister of Minerals and Energy's consent. Restrictions may be gazetted. **Withdrawal:** By notice in relevant government (provincial or national) gazette.

National Forests Act (Act 84 of 1998)

The National Forests Act provides for the declaration of a State Forest, or land outside a State Forest (at the request or consent of the registered landowner), as a "Specially Protected Forest Area" in one of the following categories:

- Forest Nature Reserve,
- Forest Wilderness Reserve,
- Any other type of protected area that is "recognised in international law or practice".[9]

Only Chapters 1 and 2 and Section 48 of the Protected Areas Act apply to Specially Protected Forest Areas (this effectively means that norms and standards can be set by the Minister for the administration of these areas and that mining may not be conducted). The other provisions of the Protected Areas Act do not apply to Specially Protected Forest Areas. Where a Specially Protected Forest Area is declared or included in a special nature reserve, National Park or nature reserve, such area will then fall under the protection of the Protected Areas Act, in accordance with an agreement concluded between the Minister and the Minister of Water Affairs and Forestry.

Table 4 briefly characterises the legal nature of a Specially Protected Forest Area.

Table 4: Summary of the legal characteristics of a Specially Protected Forest Area as defined in the National Forests Act

Specially Protected Forest Area	**Objective:** To protect forests and trees of national significance. **Management authority:** The Minister of Water Affairs and Forestry is responsible for the management of protected areas declared in terms of the Act. A management plan and management agreement is not specifically provided for in Act. Management is only with the consent of the landowners. **Use restrictions:** No person may cut, disturb, damage or destroy any forest produce from a protected forest without a permit issued by the Minister. Additional restrictions may be imposed by the Minister. **Withdrawal:** The declaration may not be withdrawn unless the same requirements for public participation procedure have been followed and the withdrawal of the declaration is approved by resolution of Parliament.

[9] This is open to considerable interpretation. It is conceivable that the demarcated indigenous state forests are also considered Specially Protected Forest Areas in terms of the National Forests Act.

World Heritage Convention Act (Act 49 of 1999)

The World Heritage Convention Act provides for the incorporation of the World Heritage Convention into South African law; the enforcement and implementation of the World Heritage Convention in the country; the recognition and establishment of World Heritage Sites; and land matters in related to World Heritage Sites as well as financial matters relating to the proper protection of these sites.

Only Chapters 1 and 2 of the Protected Areas Act apply to World Heritage Sites, unless the World Heritage Site includes a special nature reserve, National Park, nature reserve or protected environment, in which case the Act applies in its entirety to those designated protected areas.

Table 5 briefly characterises the legal nature of a World Heritage Site.

Table 5: Summary of the legal characteristics of a World Heritage Site as defined in the World Heritage Convention Act

World Heritage Site	**Objective:** To protect areas of outstanding natural, historical and cultural value. **Management authority:** The management authority (an existing organ of state or a new body) is appointed by the Minister in terms of an Integrated Management Plan. **Use restrictions:** Access only with written permission of management authority. Aircraft restrictions. Commercial development allowed subject to limits. All development and use subject to approval of management authority. **Withdrawal:** The Act does not make provision for de-proclamation. A World Heritage Site may theoretically be de-proclaimed by majority vote in the National Assembly, but this would be seen as a breach of South Africa's obligations in terms of the World Heritage Convention.

Marine Living Resources Act (Act 18 of 1998)

Section 43 of the Marine Living Resources Act provides for the declaration of a marine protected area. Section 77 of the Act enables the Minister to make regulations to direct the management and protection of marine protected areas. The Act also regulates the control, use and management of all marine living resources within a marine protected area.

Chapters 1 and 2 and Section 48 of the Protected Areas Act apply to marine protected areas. However, the other provisions of the Protected Areas Act do not apply unless the

area is proclaimed as part of a National Park, in which case the Marine Living Resources Act and the Protected Areas Act may apply concurrently.[10]

Table 6 briefly characterises the legal nature of a marine protected area.

Table 6: Summary of the legal characteristics of a marine protected area as defined in the Marine Living Resources Act

Marine protected area	**Objective:** To protect marine fauna and flora and the physical features on which they depend; to facilitate fishery management by protecting spawning stock, allowing stock recovery, enhancing stock abundance in adjacent areas, and providing pristine communities for research; or to diminish any conflict that may arise from competing uses in an area. **Management authority:** MCM. Delegated management authority to DEA or local government or assignment of provisions of the Act to a provincial administration. **Use restrictions:** Strict use restrictions in "restricted zones". Marine resource use restrictions outside restricted zones. No mining. Development controls. Commercial and recreational activities under permit. Additional management authority imposed restrictions. **Withdrawal:** Requires resolution of Parliament.

Mountain Catchment Areas Act (Act 63 of 1970)

The Mountain Catchment Areas Act aims to provide for the conservation, use, management and control of land situated in "Mountain Catchment Areas". Although it is a national statute, its administration has been assigned to provinces with effect from 7 April 1995.

Chapters 1 and 2 of the Protected Areas Act apply to Mountain Catchment Areas. The other provisions of the Protected Areas Act do not apply unless the area is proclaimed as part of a special nature reserve, National Park, nature reserve or protected environment, in which case the Protected Areas Act applies in its entirety for those proclaimed protected areas.

Table 7 briefly characterises the legal nature of a Mountain Catchment Area.

[10] There is considerable uncertainty and differing views on which of these two pieces of legislation prevails in National Parks.

Table 7: Summary of the legal characteristics of a Mountain Catchment Area as defined in the Mountain Catchment Areas Act

Mountain Catchment Area	**Objective:** To conserve land within a defined "Mountain Catchment Area". **Management authority:** Provincial protected area agency. Delegation of management functions to any "department of state". Mountain Catchment Area advisory committee may be established. **Use restrictions:** Access control. Regulations ("directions") may be gazetted by the MEC, including for an area 5km outside the Mountain Catchment Area. Regulation or prohibition of fire. **Withdrawal:** By notice in provincial government gazette.

Relationship between Protected Areas Act and provincial legislation

The management of protected areas is regulated by a wide variety of statutes, at provincial and national level. Section 7 of the Protected Areas Act regulates the interaction of these statutes as follows:

- Where a provision of the Protected Areas Act specifically concerns the management or development of protected areas and there is a conflict with other national legislation, the relevant section of the Protected Areas Act prevails.
- If the Protected Areas Act conflicts with provincial legislation, the conflict must be resolved in terms of Section 146 of the Constitution.
- Where there is a conflict with a municipal by-law, the relevant section of the Protected Areas Act prevails.

The operation of the Protected Areas Act does not affect the implementation of national and provincial legislation when it:

- Regulates matters not covered by the Protected Areas Act,
- Is consistent with the Protected Areas Act,
- Prevails in terms of Section 146 of the Constitution.

Legal procedures for the declaration of protected areas

Special nature reserves, National Parks, nature reserves and protected environments

The Protected Areas Act deals with the manner in which an area may be declared a special nature reserve, National Park, nature reserve or protected environment.

The Minister of Environmental Affairs is responsible for declaring a special nature reserve, National Park or national protected environment by notice in the Government Gazette. The relevant provincial MEC (whose portfolio includes responsibility for provincial protected areas) is responsible for declaring a provincial or local nature reserve or provincial protected environment by notice in the Provincial Gazette.

The Protected Areas Act expressly provides for the declaration of private land provided that:

- In the case of a special nature reserve, National Park or nature reserve, the landowner consents to the declaration in the form of a written agreement entered into with the Minister (special nature reserve or National Park) or the MEC (nature reserve).
- In the case of a protected environment, the landowner has requested or consented to the declaration and has been sent a copy of the proposed notice of declaration.

The declaration process may be initiated by the Minister or the MEC, subject to the following:

- If the land in question is privately owned, the declaration may be initiated by the landowner (e.g. in the form of a request by the landowner to the Minister or the MEC for the land to be declared a nature reserve or protected environment). A request by the owner of private land for his or her (or its) land to be declared a protected area must be considered by the Minister or the MEC.
- If the area consists of, or includes, land owned by the State, the Minister or the MEC may make the declaration only with the agreement of the Cabinet member or MEC responsible for the administration of that land.
- If the area consists of, or includes, land which is held in trust by the State or an organ of state for a community or other beneficiary, the Minister or the MEC may make the declaration only with the concurrence of the trustee and the community involved.

Before the Minister or MEC may issue a notice in the relevant Gazette declaring a special nature reserve, National Park, nature reserve or protected environment, the Minister or MEC must follow:

- The consultative process prescribed in the Act,
- The public participation process prescribed in the Act.

Specially Protected Forest Areas

The National Forests Act deals with the manner in which an area may be declared as a category of Specially Protected Forest Area. The Minister of Water Affairs and Forestry is responsible for declaring any category of Specially Protected Forest Area by notice in the Government Gazette.

The National Forests Act expressly provides for the declaration of:

- A State Forest or part of it.
- Land that has been purchased, or expropriated under Section 49 of the Act.
- Private land outside a State Forest.

The declaration process may be initiated by the Minister, subject to the following:

- In the case of a "trust forest", the Minister must consult with the communities residing on the land adjoining the proposed specially protected forest.
- If the land in question is privately owned, the declaration may only be initiated by the registered owner of the land or with the consent of the landowner.

Before the Minister may issue a notice in the Government Gazette declaring a Specially Protected Forest Area, the Minister must follow:

- The consultative process prescribed in the Act,
- The public participation process prescribed in the Act.

World Heritage Sites

The Minister of Environmental Affairs is responsible for the procedure relating to the nomination of South Africa's heritage sites with exceptional qualities for consideration of inscription on the World Heritage List by the World Heritage Committee. This requires that:

- Places of potential cultural or natural heritage be identified, investigated and included on the national World Heritage Tentative List.
- Once a site is on the Tentative List, a written motivation for consideration as a World Heritage Site is prepared in accordance with the requirements of the Operational Guidelines for the implementation of the World Heritage Convention.

- The nominated place is then independently assessed by the International Council on Monuments and Sites (ICOMOS) and/or IUCN and then recommended for inscription on the World Heritage List by the World Heritage Committee.
- The inscription of the place on the World Heritage List will then make it possible for it to be also proclaimed as a World Heritage Site by notice in the Government Gazette issued in terms of the World Heritage Convention Act.

The Minister may:

- Purchase any property and reserve it for purposes contemplated in the World Heritage Convention Act in relation to World Heritage Sites, if that purpose is in the public interest and with the concurrence of the Minister of Public Works.
- Expropriate land for World Heritage Site purposes, subject to the Expropriation Act (Act 63 of 1975).
- Consolidate land of which the State is the owner and forming part or potentially forming part of a World Heritage Site, subject to Section 40 of the Deeds Registries Act (Act 47 of 1937).
- Register by a notarial deed entered into between the State and owner or owners, a condition over land forming part or potentially forming part of a World Heritage Site to the effect that such land may not be separately alienated, leased or encumbered without the prior written consent of the Minister, and the notarial deed may be accompanied by a sketch plan of such land. This is subject to Section 65 of the Deeds Registries Act.

No specific provisions are provided for in the Act for consultation and public participation.

Marine protected areas

The Marine Living Resources Act deals with the manner in which an area may be declared as a marine protected area. The Minister of Environmental Affairs is responsible for declaring a marine protected area by notice in the Government Gazette.

Where a marine protected area is included in a special nature reserve, National Park or nature reserve, the area must be managed and regulated as part of the special nature reserve, National Park or nature reserve in terms of the Protected Areas Act.

Although not explicitly provided for in the Marine Living Resources Act, the declaration of a marine protected area can include the zonation of the marine protected area into "controlled zones", "restricted zones" and/or "sanctuary zones".

No specific provisions are provided for in the Act for consultation and public participation.

Mountain Catchment Areas

The Mountain Catchment Areas Act deals with the manner in which an area may be declared as a Mountain Catchment Area. The relevant provincial MEC is responsible for declaring, or altering the boundaries of, a Mountain Catchment Area by notice in the Provincial Gazette.

No specific provisions are provided for in the Act for consultation and public participation.

Types of conservation areas and other forms of statutory protection

As explained in Section 1, conservation areas are areas of land not formally protected by lay but informally protected by the current owners and users and managed at least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas, they are not a strong form of protection and are not considered part of the protected area network. There are also several forms of statutory protection that are not recognised in terms of the Protected Areas Act but can provide a degree of protection for the areas and sites concerned. These other forms of statutory protection are also not considered part of the protected area network.

Nevertheless it is useful to summarise the different types of conservation areas and areas under other forms of statutory protection. As discussed in Section 6, they can provide a starting point for expanding the protected area network if they fall within focus areas for protected area expansion or within threatened ecosystems.

Table 8 describes the existing areas under some form of statutory protection (other than the Protected Areas Act) while Table 9 describes existing conservation areas under some form of conservation management or tenure.

Table 8: Areas under some form of statutory protection other than the Protected Areas Act

Type of conservation area	Enabling legislation
National and Provincial Heritage Site	National Heritage Resources Act
"Protected Area"	
Biodiversity management agreement	Biodiversity Act
National Botanical Garden	
Environmental Management Cooperation Agreement	National Environmental Management Act
State Forest (Indigenous State Forest)	National Forests Act
Controlled Forest	
Closed (marine) areas	Marine Living Resources Act
Conservancy (selected areas conservancies only)	Selected provincial legislation
Private Nature Reserve (selected PNRs only)	
Site of Conservation Significance	
Local Authority Nature Reserve	Municipal by-laws

Table 9: Conservation areas under some form of conservation management/tenure

Biosphere Reserve (in terms of UNESCO's Man and the Biosphere Program)
Non-statutory Private Nature Reserve
"Mega-Reserve" initiatives (e.g. Baviaanskloof Mega-Reserve) and biodiversity corridor initiatives (e.g. Greater Cederberg Biodiversity Corridor, Garden Route Initiative)
Natural Heritage Site
Trans-Frontier Conservation Area
Bird Sanctuary
Community Conservation Area
"Headman's Forest"
Voluntary conservation area
Special Management Area
Sectoral (e.g. wine) "partner", "member" or "champion" sites (or equivalent)
Non-statutory Wilderness Areas
Estuary Protected/Conservation Area or Estuary Management Area

3. Institutional context[11]

This section provides an overview of the institutional context for protected area expansion in South Africa. Protected area planning, management and expansion are a concurrent legislative competency of national and provincial government in terms of the Constitution, and there is considerable institutional diversity in the way South Africa's protected areas are managed. Please note that the information in this section was correct at the time the NPAES was developed in 2008; in some cases in it now outdated as a result of departmental restructuring and name changes.

Most of the *National Parks* and some *World Heritage Sites* are currently managed by SANParks. The Protected Areas Act also provides for the assignation of the management authority for a National Park to any "suitable person, organisation or organ of state".

Several existing *marine protected areas* are managed by the Marine and Coastal Management (MCM) branch of DEAT. The Minister typically assigns management authority for marine protected areas to provincial or national protected area agencies (Lemm & Attwood 2004).

The Department of Water Affairs and Forestry (DWAF) is responsible for most of the *Specially Protected Forest Areas* but is in the process of assigning the management authority for these to the relevant national or provincial protected area agencies.

Provincial conservation agencies responsible for protected areas vary in institutional character and structure across the nine provinces. Six provinces have established public entities (agencies or boards) to plan for and manage *nature reserves, protected environments*, *World Heritage Sites* and/or *Mountain Catchment Areas*. The other three provinces include the protected area function as a directorate within a provincial government department that includes other functions, such as economic affairs, environmental affairs, tourism and/or agriculture.

At the local level, several local, district and metropolitan municipalities have established a nature conservation function to administer and manage (local) *nature reserves* within their municipal jurisdiction.

[11] Note that pre-July 2009 department names are used in this section.

The structure of the different organs of state (termed *"protected area agencies"* hereafter), whose core business (in part or in whole) is protected area regulation, planning, management and monitoring, is briefly introduced in the sub-sections below.

National protected area agencies

Department of Environmental Affairs and Tourism

DEAT is the overarching authority responsible for the regulation and management of all marine and terrestrial protected areas. The Marine and Coastal Management Branch (MCM) of DEAT is responsible for the regulation and/or management of marine protected areas. The protected area mandate within DEAT is structured as follows:

Department of Environmental Affairs and Tourism		
Branch	**Chief Directorate**	**Directorate**
Biodiversity and Conservation	Trans-Frontier Conservation and Protected Areas	Trans-Frontier and Conservation Areas
		Protected Areas, Planning and Development
		Protected Areas, Legislation and Compliance
Marine and Coastal Management	Integrated Coastal Management	Resource Integrated Coastal Management and Development
	Monitoring, Control and Surveillance	Protected Areas Legislation Implementation

South African National Parks

SANParks is a statutory authority responsible for the management of the national system of National Parks, including parks that may also form part of declared World Heritage Sites. However, a few national protected areas have a management authority other than SANParks. The direct protected area planning and management functions within SANParks are structured as follows:

South African National Parks
Directorate
Parks
Kruger National Park
People and Conservation
Conservation Services
Tourism and Marketing

Department of Water Affairs and Forestry

DWAF is responsible for the planning, regulation and management of some indigenous state forests and forest nature reserves under its direct control. The management of these areas is however systematically being transferred to other protected area agencies, and it is envisaged that DWAF will, over time, become an overseeing and law enforcement agency without any direct management responsibilities. Most areas have already been transferred, but the process is slow due to the administration and negotiation complexities involved in transferring assets, finances and personnel.[12] The direct mandate for protected area policy, legislation and management within DWAF is structured as follows:

Department of Water Affairs and Forestry		
Branch	**Chief Directorate**	**Directorate**
Regions	Regional Management	Forestry Technical & Information Services
Policy and Regulation	Forestry Policy and Regulation	Forestry Policy
		Forestry Regulation
		Forestry Restructuring

Provincial protected area agencies

Eastern Cape

The planning, regulation and management of protected environments and Mountain Catchment Areas (where these are not located within provincial nature reserves) in the Eastern Cape is a function of the provincial *Department of Economic Development and Environment Affairs* (DEDEA). The planning and management of provincial nature reserves (including World Heritage Sites forming part of these reserves) are the function of the *Eastern Cape Parks* (ECP), a public entity established in terms of the Eastern Cape Parks Board Act (Act 12 of 2003). The direct protected area legislative, policy, planning and management functions within the Eastern Cape government are structured as follows:

[12] Some State forests are difficult to manage due to terrain, their location and other factors, which could be a burden on provincial conservation agencies that already struggle with managing what they have, and DWAF may end up managing these longer than originally envisaged

Eastern Cape	
Department of Economic Development and Environment Affairs	
Chief Directorate	**Directorate**
Environmental Affairs	Biodiversity
Eastern Cape Parks	
Directorate	
Conservation	
Commercialisation	

Free State

The regulation, planning and management of provincial nature reserves (including former Qwaqwa "National Parks") and World Heritage Sites in the Free State are the function of the *Department of Tourism, Environmental and Economic Affairs* (DTEEA). The direct protected area functions within the Free State government are structured as follows:

Free State	
Department of Tourism, Environmental and Economic Affairs	
Chief Directorate	**Directorate**
Environmental Affairs	Conservation

Gauteng

The regulation, planning and management of provincial nature reserves and World Heritage Sites in Gauteng are the function of the *Department of Agriculture, Conservation and Environment (GDACE)*. The direct protected area functions within the Gauteng government are structured as follows:

Gauteng	
Department of Agriculture, Conservation and Environment	
Chief Directorate	**Directorate**
Sustainable Use of the Environment	Nature Conservation
Compliance and Enforcement	Enforcement

KwaZulu-Natal

The regulation, planning and management of protected areas (including provincial nature reserves, Marine protected areas and some World Heritage Sites) in KwaZulu-Natal are the

function of the public entity, *Ezemvelo KZN Wildlife* (EKZNW). Statutory "Local Conservation Boards" also provide for the formal integration of local communities into the management of each of the provincial nature reserves areas in the province. The direct protected area functions within KwaZulu-Natal are structured as follows:

Ezemvelo KZN Wildlife	
Directorate	**Branch**
Biodiversity Conservation	Conservation
	Conservation Planning
Commercial Operations	Ecotourism and Marketing
	Partnerships and Ecotourism

Limpopo

The regulation, planning and management of provincial nature reserves, and other conservation areas in Limpopo, are the function of the *Department of Economic Development, Environment and Tourism* (DEDET).[13] The direct protected area functions within Limpopo are structured as follows:

Department of Economic Development, Environment and Tourism		
Branch	**Chief Directorate**	**Directorate**
Environment	Biodiversity and Natural Resource Management	Protected Areas
		State-owned nature reserves

Mpumalanga

The regulation, planning and management of provincial nature reserves in Mpumalanga are the function of the public entity, *Mpumalanga Tourism & Parks Agency* (MTPA), established in terms of the Mpumalanga Tourism & Parks Agency Act, 2005. The direct protected area functions within Mpumalanga are structured as follows:

[13] A Service Level Agreement is being drafted between DEDET and the Limpopo Tourism and Parks Board (LTPB) for the "outsourcing" of the administration and management of tourism operations in the provincial nature reserves.

Mpumalanga Tourism and Parks Agency	
Directorate	**Branch**
Support Services	Biodiversity Conservation
	Tourism Development
Operations	Information Knowledge Management

North West

The regulation, planning and management of provincial nature reserves (including "Game Reserves", "Bird Sanctuaries", "Mountain Reserves" and former Bophuthatswana "National Parks") and World Heritage Sites in North West are the function of the *North West Parks and Tourism Board* (NWPTB).[14] The direct protected area functions within North West are structured as follows:

North West Tourism and Parks Board	
Directorate	**Division**
Chief Operating Officer	Protected Area Management

Northern Cape

The regulation, planning and management of provincial nature reserves in the Northern Cape are the function of the provincial *Department of Tourism, Environment and Conservation* (DTEC). The direct protected area functions within Northern Cape government are structured as follows:[15]

Department of Tourism, Environment and Conservation	
Directorate	**Sub-Directorate**
Conservation Services	Protected Area Management
	Scientific Services
Tourism	Tourism Development and Training

Western Cape

The planning and management of special nature reserves, provincial nature reserves, World Heritage Sites (where assigned), protected environments and Mountain Catchment Areas in the Western Cape are the function of *CapeNature*, a public entity transformed in terms of the

[14] NWPTB has a number of subsidiaries that may undertake management functions in some provincial nature reserves, which originated from the (Bophuthatswana) National Parks Act (Act 24 of 1987).
[15] Organisational structure under review.

Western Cape Nature Conservation Laws Amendment Act (Act 3 of 2000). The direct protected area functions within the Western Cape are structured as follows:

CapeNature	
Directorate	**Business Unit / Programme**
Operations	Business Units (x8)
	Monitoring and Evaluation
Biodiversity	Scientific Services
	Conservation Stewardship
	Fire Management
	Invasive Alien Species

Municipal protected area agencies

The planning, regulation and management of local nature reserves is a responsibility of some district, local and metropolitan municipalities.[16] Where one or more local nature reserves fall within the jurisdiction of a municipality, the structural responsibilities for their management are structured in a plethora of different ways, which cannot all be shown in this brief overview of the institutional arrangements for protected areas.

Three examples – Buffalo City, City of Cape Town and eThekwini – are shown in the table below to demonstrate the structural variability of the direct protected area function in the municipal organograms:

Buffalo City (local municipality)		
Directorate	**Department**	**Division**
Social Services	Community Services	Integrated Environmental Development
City of Cape Town (metropolitan municipality)		
Directorate	**Department**	**Branch**
Strategy and Planning	Environmental Resource Management	Nature Conservation
eThekwini (metropolitan municipality)		
Deputy Manager	**Unit**	**Division**
Health, Safety and Security	Parks, Recreation, Cemeteries and Culture	Conservation

[16] Because conservation is not a competence of the local sphere of government in terms of the Constitution, conservation is seen as an unfunded mandate by many municipalities. Some municipalities, especially smaller ones with fewer resources, have shed or are shedding their nature conservation departments and staff.

Other protected area bodies

The *iSimangaliso Wetland Park Authority* is a statutory body, established (in terms of the World Heritage Convention Act) to manage the iSimangaliso Wetland Park, a World Heritage Site.

The *Prince Edward Islands Management Committee* was established by DEAT to oversee activities in the Prince Edward Island special nature reserve, and to advise DEAT on its management and conservation.

Robben Island Museum is a declared "Cultural Institution" (in terms of the Cultural Institutions Act, Act 119 of 1998) and is responsible for the management of the Robben Island World Heritage Site on behalf of the Department of Arts and Culture.

The *Vredefort Dome Conservancy* has been assigned the responsibility for the collective management of privately owned land within the larger Vredefort Dome World Heritage Site (the other responsible government agencies are NWPTB and DTEEA).

In several instances, private land has been declared as a protected area with the *private landowner (individual, business, joint venture, or community)* assigned as the responsible management authority, with planning, financial and/or technical support from the relevant protected area agency. As biodiversity stewardship programmes are rolled out across the provinces (see Section 6), this institutional arrangement may become increasingly common for the management of different categories of protected areas.

Key partners in the protected area system

The success of the protected area system is dependent on the maintenance of key partnerships between the various organs of state directly responsible for protected area management (described above), other relevant organs of state, other relevant government-led programmes, major NGOs in the conservation sector, relevant commercial production sectors, and private and communal landowners. These key partners are listed in Table 10 below.

Table 10: Key partners in the planning, establishment and management of the protected area network

1. Organs of state whose core business is not protected area management but who impact directly on how South Africa's protected area network is managed and expanded
South African National Biodiversity Institute (SANBI)
National Department of Agriculture (DoA)
National Department of Land Affairs (DLA)
National Department of Minerals and Energy (DME)
National Department of Public Works (DPW)
National Department of Transport (DoT)
South African National Defence Force (SANDF)
Provincial government (spatial planning and environmental departments)
Municipalities[17] (land-use planning and environmental departments)
2. Government-led programmes
Expanded Public Works Programme
Working for Water
Working for Wetlands
Working on Fire
Working for Tourism
Working for Woodlands
LandCare
CoastCare
Community Based Natural Resource Management
People and Parks
Trans-Frontier Conservation Areas
3. Private and communal landowners
4. Communities involved in land reform programmes
5. Major NGOs in the conservation sector
Birdlife South Africa
Botanical Society of South Africa
Conservation International
Endangered Wildlife Trust
IUCN South Africa
Peace Parks Foundation
Wilderness Foundation
Wildlife and Environment Society of South Africa

[17] The local sphere of government deserves particular mention. While local government does not make all land-use decisions itself, it has a key role to play in ensuring co-ordination and integrated management of natural resources.

WWF-South Africa
Wildlands Trust
6. Commercial production sectors which have an important contribution to make to managing and expanding the protected area network
Forestry (unplanted land)
Mining (un-mined or rehabilitated land)
Game farming
Wildlife tourism and hunting
7. Bioregional programmes
Cape Action for People and the Environment (C.A.P.E.)
Grasslands Programme
Maloti-Drakensberg Transfrontier Project (MDTP)
Subtropical Thicket Ecosystem Programme (STEP)
Succulent Karoo Ecosystem Programme (SKEP)
Wild Coast Programme

Cooperative governance structures for the protected area system

Several inter-governmental structures promote and facilitate co-operation between the different spheres of government in South Africa. Structures of particular relevance to the protected area systems include:

- Ministerial Forums,
- Ministerial Technical Working Groups,

The Ministerial Forums (MINMECs) promote co-operative governance between the national ministers and their respective counterparts at provincial level. The environmental MINMEC comprises the Minister and Director-General of DEAT and the provincial ministers, or Members of Executive Councils (MECs), for Environmental Matters. MINMEC meets three times a year.

The environmental Ministerial Forum is supported by the Ministerial Technical Committee (MINTECH). MINTECH is a forum that facilitates co-ordination between DEA and the provincial environmental departments. It comprises the Director General of DEA, representatives of SANBI and SANParks, and the heads of the provincial departments responsible for environmental management and biodiversity conservation in the relevant province. MINTECH meets three times a year.

Four Technical Working Groups have been established under MINTECH. Working Group 1

focuses on biodiversity and heritage, including protected areas. The Working Groups meet three times a year.

A Protected Area Expansion Strategy Task Team was established within the institutional framework of Working Group 1 to guide the development of the NPAES.

A key recommendation of the NPAES was the revitalisation of the Protected Areas Forum. This is a national forum convened by DEA with representation from protected area agencies, SANBI, relevant national NGOs, and other organisations as required. It has a key role to play in co-ordinating and monitoring the implementation of the NPAES, ensuring that there is alignment of the efforts of the multiple agencies involved, and providing a forum for discussion on challenges and sharing of lessons.

Status of protected area expansion strategies prior to development of the NPAES: National agencies

This section aims to describe the status of protected area expansion planning at the agency level in early 2008, prior to the development of the NPAES. A brief description is given for each national agency's protected area expansion plan, and the information is summarised in Table 11.

South African National Biodiversity Institute

SANBI is responsible for expansion of botanical gardens in South Africa and is developing its strategy to include protected area expansion (Willis 2008). The strategy proposes significant interaction with the bioregional programmes to identify potential and suitable sites for new gardens to ensure they include a large area of relatively undisturbed natural habitat/vegetation representative of at least some of the main vegetation types of each province. The strategy does not include detail on financing or implementation mechanisms.

South African National Parks

SANParks has a draft expansion plan that strives to achieve national representation of the biodiversity, landscapes and associated heritage assets of South Africa and to achieve the previous national protected area targets of 8% of terrestrial areas and 20% of coastline under protection by 2010 (Magome et al. 2007). The plan includes a brief discussion on the mechanisms to expand National Parks. SANParks has a broad-scale systematic biodiversity

planning system to provide the overall national context and the means to properly identify the relative importance of expansion in different parks and to guide detailed planning for new parks. In addition to its national expansion plan, SANParks also has park-specific expansion strategies (some of which are based on fine-scale systematic biodiversity plans) for all parks, which identify key land parcels that are required to meet the specific goals of that park (Knight 2004). Decisions around specific cadastral units are made using a property prioritisation methodology that includes a range of factors such as property conservation value, management value and social impacts. Implementation of the expansion strategy is to be funded from internal resources, an annual DEA grant and partnerships with various donor organisations and other institutions.

Department of Water Affairs and Forestry

DWAF undertook a systematic biodiversity plan for the Forest Biome of South Africa (Berliner 2006). The purpose of the biodiversity plan was, in part, to identify priority forests areas that urgently need to be included within a “forest protected area network”. The systematic biodiversity plan identifies the spatial priority forest areas, but does not describe implementation or finance mechanisms for their incorporation into the protected area network.

Marine and Coastal Management

The 3 656 km long coast and the 200 nautical mile mainland EEZ of South Africa comprises six marine bioregions (Figure 4). The Prince Edward Islands and its EEZ constitute a seventh marine bioregion, the Sub-Antarctic bioregion. Each of these marine bioregions is at a different stage of the planning process, with different authorities and role players being involved in planning for expansion of the marine protected area network. The status of marine protected area expansion planning for each of the marine bioregions is discussed briefly below.

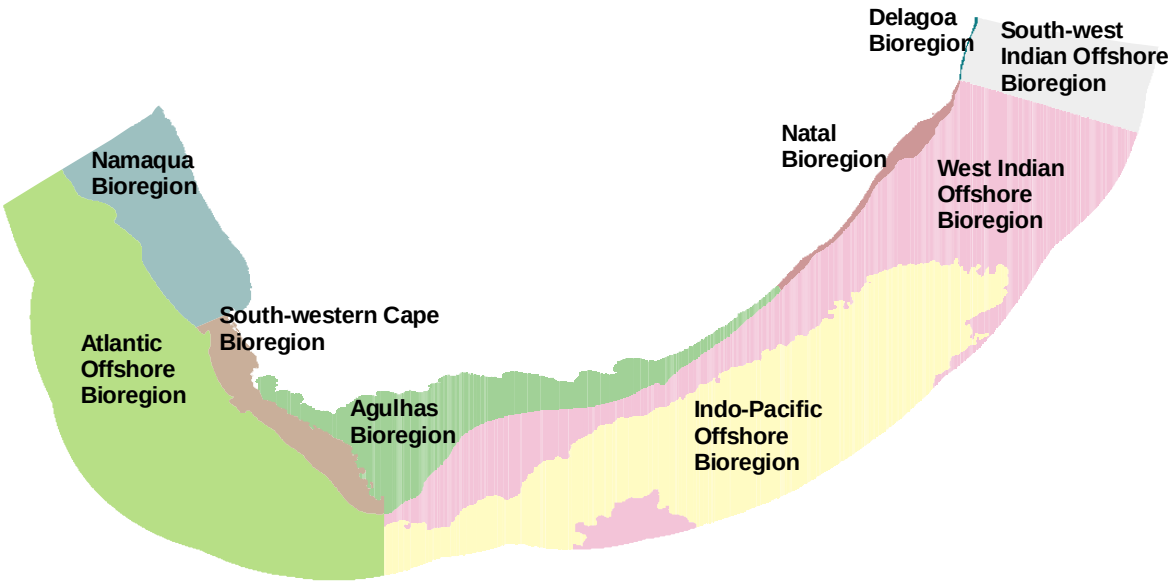

Figure 4: South Africa's marine bioregions (the Sub-Antarctic Bioregion linked to the Prince Edward Islands is not shown)

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Natal and Delagoa Bioregions (extends into Mozambique)

These two bioregions are being considered in a systematic biodiversity planning process termed SEA-Plan, a collaborative planning initiative led by EKZNW and involving DEA and various research institutions (NMMU, ORI, NSB, CMG, CSIR, UCT, SAIAB). The initiative covers the KZN coastline and the KZN component of the EEZ. The results of the plan will feed into future revisions of the NPAES.

Agulhas Bioregion

A systematic biodiversity plan for the inshore region of the Agulhas Bioregion has been completed by WWF-SA with 19 priority areas identified (Clarke & Lombard 2007). The offshore region (30m to EEZ boundary) is being addressed as part of the Offshore Marine Protected area Project described below.

Namaqua and South-Western Cape Bioregions (extends into Namibia)

There are no systematic biodiversity planning initiatives underway in these bioregions, but the offshore region is included in the Offshore Marine Protected Area Project. The Benguela Current Large Marine Ecosystem (BCLME) Programme has collated spatial data to support planning in the region, including the Namaqua and South-Western Cape bioregions.

Sub-Antarctic Bioregion

South Africa is the only country in the Sub-Antarctic bioregion that does not yet have a marine protected area within its EEZ. A systematic biodiversity plan was developed in consultation with stakeholders for the Prince Edward Islands (Lombard et al. 2007), with a proposed protected area design for the Prince Edward Islands EEZ. Based on this proposed design, the Minister of Environmental Affairs published for public comment in May 2009 a draft notice of his intention to declare the Prince Edward Islands Marine Protected Area. At the time of finalising this document the process had not been concluded and the protected area had not yet been established.

Offshore Marine Protected Area Project

Recognising the extremely low levels of protection of offshore areas in South Africa's EEZ, SANBI, MCM and WWF-SA initiated a collaborative Offshore Marine Protected Area project, due to be completed during 2010. Offshore marine protected areas (including the proposed Prince Edward Island Marine Protected Area), will increase the representative protection of South Africa's marine territory to more than just coastal protection, thereby addressing a priority gap identified in the NSBA 2004.

Estuaries

The estuarine regions of the coastline have not yet been planned for in a single estuarine biodiversity plan for the country, but have generally been included within the biodiversity planning initiatives in the coastal provinces: KwaZulu-Natal, Eastern Cape, Western Cape and Northern Cape. The NPAES did not set explicit protected area targets for estuaries. However, two existing sub-national conservation plans for estuaries cover over 80% of South Africa's 270 estuaries and provide targets and priorities for estuarine protected areas.[18] These should be used as the basis for expanding estuarine protected areas in the absence of national targets. Estuaries will receive significant attention in the upcoming NSBA 2010.

Status of protected area expansion strategies prior to development of the NPAES: Provincial agencies

At the time of development of the NPAES, none of the provincial protected area agencies had a complete protected area expansion plan that included both systematic spatial

[18] These are Turpie & Clark's (2007) conservation plan for temperate South African estuaries, done as part of the C.A.P.E. Regional Estuarine Management Programme, and Ezemvelo KZN Wildlife's conservation plan for KZN estuaries (plan completed, report forthcoming)

prioritisation and non-spatial elements such as methods of expansion, financing and institutional arrangements. However, several provinces have an understanding of spatial biodiversity priorities that forms the basis for the expansion of their protected areas. There is considerable work to be done by the provinces to complete their provincial protected area expansion plans based on the NPAES. The following describes the status of each provincial protected area expansion plan at the time the NPAES was being developed. The information is summarised in Table 11.

Ezemvelo KZN Wildlife

EKZNW has a mature systematic biodiversity plan for KwaZulu-Natal and has a protected area expansion plan (Wakelin et al. 2007) based on:

- The provincial conservation plan (KZN C-Plan_v3, 2006),
- The Maputaland Conservation Planning System and Conservation Assessment Plan (Smith & Leader-Williams 2006),
- EKZNW's management structures.

A prioritised list of properties is the core of the expansion plan. However, the current strategy does not include any discussion on the tools or methods that could be used to secure the priority land, or how to finance the expansion plan. There is no dedicated fund for land acquisition, although R2 million has been set aside for negotiating and servicing biodiversity stewardship agreements as part of the KZN Stewardship Programme.

Mpumalanga Tourism and Parks Agency

MTPA does not have a protected area expansion plan.[19] They have a systematic provincial biodiversity plan, the Mpumalanga Biodiversity Conservation Plan, which includes an analysis of the protection levels of habitat types. The provincial biodiversity plan will comprise the spatial foundation of protected area expansion in the province. Although there is a draft biodiversity stewardship policy under review, there is no other formal consideration of the tools, methods and finances for protected area expansion. There is no dedicated fund for land acquisition.

[19] Subsequent to the development of the NPAES, MTPA has developed the Mpumalanga Protected Area Expansion Strategy, based on the spatial analysis in the NPAES and the Mpumalanga Biodiversity Conservation Plan.

North West Parks and Tourism Board

NWPTB has a protected area expansion plan that is based entirely on tourism development and not biodiversity. Although a new protected area expansion plan is being drafted to incorporate biodiversity priorities, these will not be based on a provincial systematic biodiversity plan. Included in the new protected area expansion plan is an assessment of known biodiversity priorities in the province such as the corridor between Pilanesberg, Vaalkop and Borakalalo reserves (Desmet et al. 2006a, 2006b). There is no documented policy on tools and financing of the planned expansions in the existing strategy or the new draft strategy. There is no dedicated fund for land acquisition.

Eastern Cape Parks

ECP does not have a documented protected area expansion plan. One of the spatial products of the recent systematic provincial biodiversity plan, the Eastern Cape Biodiversity Conservation Plan, will be a protected area consolidation and expansion plan. There is an active and financed programme to expand the protected area network in the province, aiming at filling gaps and improving the boundary shape of the network, but this is not informed by the spatial plan or any other systematic methodology. Expansion priorities are largely determined by the specific land cadastres identified for expansion in each protected area's Strategic Management Plan. How these cadastres were identified has not been documented. There is no documented policy on tools and financing of the planned expansions in the existing strategy or the new draft strategy. There is no dedicated fund for land acquisition.

CapeNature

CapeNature's protected area expansion strategy focuses on establishing in-perpetuity or long-term contract protected areas equivalent to provincial nature reserves or National Parks in security and legal status, in top priority areas identified in fine-scale systematic biodiversity plans. This is co-ordinated by a well-developed Biodiversity Stewardship Programme. Implementation is done by a Biodiversity Stewardship Unit and the Conservation Services staff in each of the nine Business Units as one of their key deliverables and by biodiversity corridor initiatives, such as the Greater Cederberg Biodiversity Corridor. Site selection is guided by fine-scale biodiversity plans undertaken through the C.A.P.E. programme, and the NSBA. Other than potential transfer of state-owned forestry land to CapeNature, no land acquisition is planned.

Northern Cape Department of Tourism, Environment and Conservation

DTEC did not have a provincial protected area expansion plan at the time of development of the NPAES, although they had a draft Biodiversity Conservation Strategy that includes a section on protected area expansion. This Northern Cape Biodiversity Conservation Strategy (NCBCS) is based on a spatially explicit biodiversity priorities map derived from the national-scale NSBA. The NCBCS provides some detail on the expansion tools, expansion models, incentives for landowners, funding and key activities required to expand the protected area network, and it prioritises areas listed as “not protected, poorly protected and hardly protected”. Biodiversity stewardship, biodiversity offsets and contractual agreements are seen as the most cost-effective means to a protected area target of 6.5% by 2014, although land purchases will also be investigated using funds from internal and donor sources. The NCBCS does not include specific discussion on finance options or any details on how this plan will be implemented.

Limpopo Economic Development Environment and Tourism, and Limpopo Tourism Board

Limpopo has two related organs of state that are responsible for protected area expansion: DEDET and LTB. Although both have a mandate to expand protected areas, the motive and criteria for doing so differs significantly. DEDET has the mandate for biodiversity protection in the province, including protected area expansion for biodiversity representation, but does not yet have a provincial systematic biodiversity plan to provide the spatial assessment. LTB has the mandate to expand and develop tourism operations in the province and aims to do so by increasing the protected area footprint. LTB has a draft protected area expansion plan and associated development framework (Malan 2007). This plan is not linked to a systematic provincial biodiversity plan, but does identify key properties for priority action. The methodology for this prioritisation is not described, but seems to focus primarily on the economic development aspects of tourism potential. There is no discussion on financing or implementation tools.

Free State Department of Tourism, Environmental and Economic Affairs

DTEEA has a high-level non-spatial protected area expansion plan (DTEEA 2007). DTEEA does not have a systematic provincial biodiversity plan although the protected area expansion plan includes a Strategic Outcome with supporting interventions to address this deficit. There is no discussion on financing or implementation tools.

Gauteng Department of Agriculture, Conservation and Environment

The Directorate of Nature Conservation within GDACE has the mature Gauteng C-Plan (v2), a systematic provincial biodiversity plan that identifies biodiversity priority sites as the basis for protected area expansion (Pfab 2006). Forty priority sites have been identified; however, the small size and highly urban nature of the province does not lend itself to significant expansion of protected areas. GDACE has thus focused on protection outside of the protected area network through a series of strategic partnerships with major landholders. Each priority site has been described in terms of its biodiversity features and importance, with recommendations for specific expansion (Pfab 2006). This strategy does not give any indication of finance options or human resource requirements, and remains largely a spatial prioritisation plan.

Table 11: The status of national and provincial agency protected area expansion plans in early 2008, prior to the development of the NPAES

Protected area agency	*Biodiversity-based protected area expansion plan*	*Protected area gap analysis & systematic biodiversity plan (SBP)*	*Protected area expansion mechanisms*	*Implementation plan*	*Financial plan*	*Institutional plan*	*Monitoring & evaluation plan*
CapeNature	No	No provincial plan, but several fine-scale SBPs	Not explicit; focused on stewardship	No	No	No	No
DEDET / LPT	No	No	No	No	No	No	No
DTEC	Yes	No provincial SBP. Based on NSBA.	Brief description	No	No	No	No
DTEEA	Yes	No	No	No	No	No	No
DWAF	No	SBP completed for the forest biome, but not used in an expansion plan.	No	No	No	No	No
EC Parks	No	Recently released provincial SBP and protected area gap analysis	No	Park-specific expansion plans	No	No	No
EKZNW	Yes	Mature provincial SBP	Brief description	Prioritised list of projects for protected area Expansion	No	No	No
GDACE	Yes	Mature provincial SBP	No	No	No	No	No
MCM	No	Currently based on NSBA. SBP complete for only one bioregion.	No	No, but will be bioregion-specific.	No	No	No
MPTB	No	A provincial SBP was completed in 2006.	Not explicit; focused on stewardship	No	No	No	No
NWPTB	No	No SBP in place although some biodiversity priorities have been identified	No	No	No	No	No
SANParks	Yes	National SBP. Several fine-scale SBPs for specific protected areas	Brief description	Park-specific expansion plans with overall 3-yr plan.	Brief description of national and partner funding mechanisms.	No	No

4. Distribution and profile of the protected area network in 2008

This assessment of the distribution and profile of the protected area network in 2008 provides the baseline against which to assess the implementation of the NPAES.

Limitations of the protected area and conservation area data

There are several limitations in South Africa's protected area and conservation area datasets. Although significant errors in the national protected area spatial data layer used in the NSBA 2004 were corrected as part of the development of the NPAES, this dataset still requires significant improvement.

The current national protected area spatial data layer is estimated to range in accuracy between 75% and 95%, while the accuracy of the conservation area spatial data layer is less than 70% (Holness, pers. comm. 2007).

The NPAES identifies updating and improving spatial information on the distribution of protected areas, linked to the Protected Area Register, as an urgent priority. This includes verifying protected area boundaries, ensuring that all protected areas are mapped, and ensuring that all mapped protected areas have been declared. It is a complex task that involves searching through deeds records. Insufficient resources are currently allocated to this task given the fundamental importance of an accurate spatial layer of protected areas. Improving spatial information on the distribution of conservation areas is also identified as a priority in the NPAES.

Distribution of the national protected network and conservation area network

In 2008 South Africa had approximately 558[20] land-based protected areas, 19 marine protected areas and 232 conservation areas. The land-based protected areas collectively exceeded 7.9 million hectares or 6.5 % of the country and the marine protected areas comprised over 426 000 ha (see Table 12 and Figure 5). These figures are approximations because the protected area spatial layer is recognised to be inaccurate.

[20] This figure differs from the DEAT Protected Area Register due to differences in protected area definitions and inclusion of local nature reserves that are not included on the Register for various reasons.

Table 12: The area and numbers of protected areas and conservation areas compared between key protected area agencies

Province	Protected areas		Conservation areas		% of province in protected areas
	Area (ha)	Number	Area (ha)	Number	
Eastern Cape	415 352	86	242 982	64	2.5%
Free State	141 777	12			1.1%
Gauteng	63 334	30	11 817	6	3.8%
KwaZulu-Natal	808 857	95	9 279	6	8.6%
Limpopo	455 433	70	389 689	11	3.6%
Mpumalanga	209 818	40	93 489	7	2.7%
North West	264 677	22	76 806	5	2.5%
Northern Cape	173 647	10			0.5%
Western Cape	1 422 206	169	117 154	133	11.0%
SANParks	3 951 030	16			3.2% (of SA)
Total land-based	7 906 133	598	**941 215**	**232**	**6.5 (of SA)**
Marine	426 000	19			

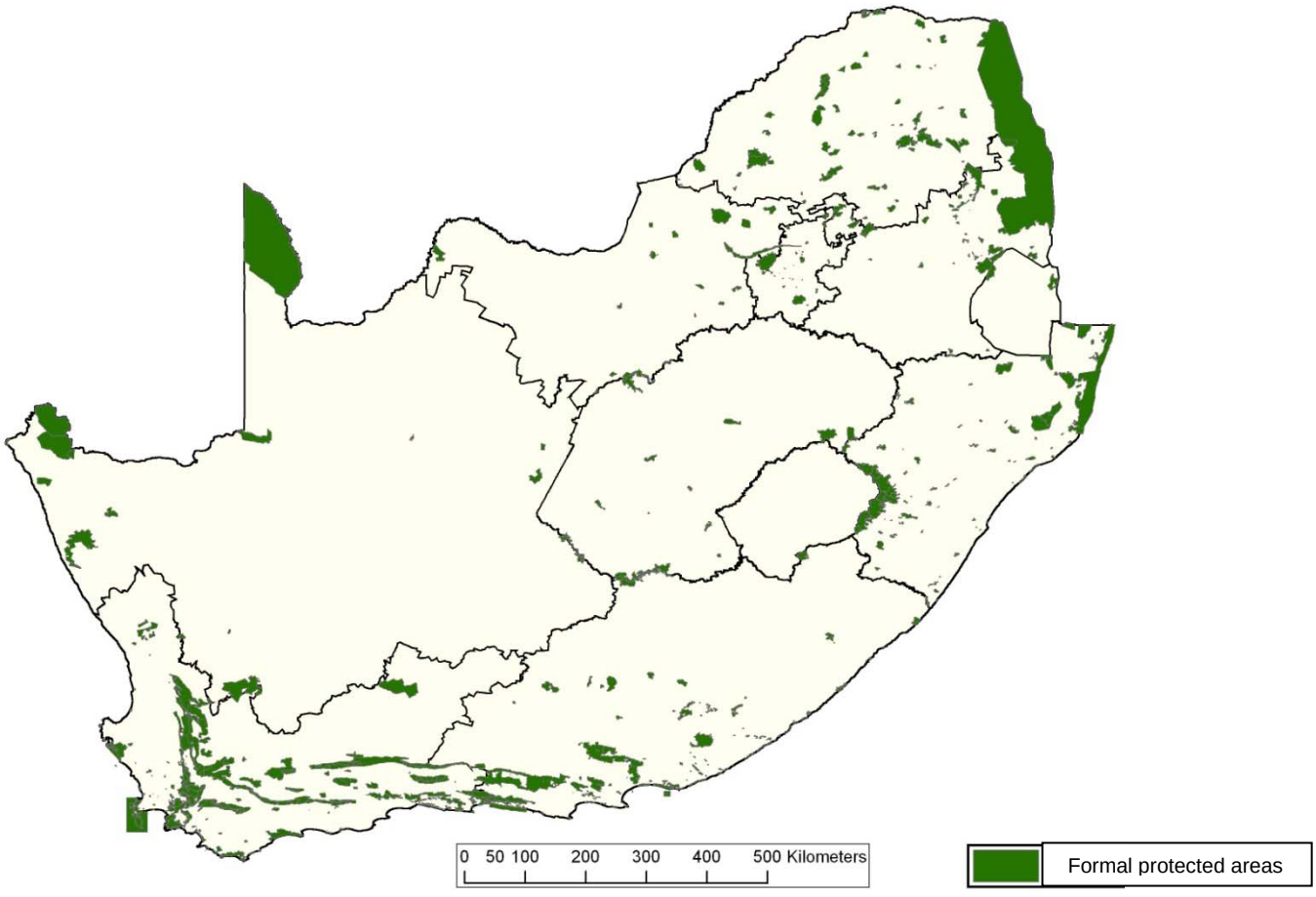

Figure 5: The distribution of land-based and marine protected areas in South Africa in 2008

(Note that many of the marine protected areas and some land-based protected areas are too small to be easily visible at this scale)

The protected areas and conservation areas in South Africa are not equally distributed within size classes, with the majority being between 1 000 and 100 000 ha (see Table 13), only eight larger than 100 000 ha and one larger than 1 000 000 ha (Kruger National Park). Although the representation of biodiversity features such as species and habitats can be achieved in many smaller and isolated areas, the larger scale ecological and evolutionary processes generally require larger areas. Providing for adaptation to climate change will also likely require larger protected areas. Thus it is important to build and maintain a protected area network comprising some very large areas interspersed with many smaller areas. The NPAES thus focuses both on the consolidation and expansion of existing protected areas to increase the number with a large extent, and on the establishment of new protected areas to protect under-represented ecosystems and species.

Table 13: The area and number of land-based protected areas, marine protected areas, and conservation areas in each size class

Size class (ha)	Land-based protected areas		Conservation areas		Marine protected areas		Total	
	Area	Number	Area	Number	Area	Number	Area	Number
0 – 10	131	23	29	4	4	1	164	28
10 – 10^2	3 679	78	2 207	49	420	7	6 306	134
10^2 – 10^3	68 812	154	34 271	79	3 913	13	106 996	246
10^3 – 10^4	683 360	183	286 737	84	45 064	14	1 015 161	281
10^4 – 10^5	3 092 654	106	432 785	17	376 600	13	3 902 039	136
10^5 - 10^6	2 191 330	7	201 857	1		0	2 393 187	8
> 10^6	1 901 885	1	0	0		0	1 901 885	1

Representation of ecosystems in the protected area network

A key measure of success of the protected area network is how well it represents the nation's biodiversity and provides for the persistence of this biodiversity. The systematic biodiversity planning approach strives to build representation and persistence into the design of the protected area network in a proactive, efficient and explicit manner. The explicit goal of systematic biodiversity planning is to identify areas that are required to meet biodiversity targets. A rapid assessment of broad surrogates of biodiversity (such as biomes, vegetation groups and marine bioregions) can demonstrate how well the existing protected area network represents biodiversity in general, and where the spatial gaps are. Importantly, only the protected area network, not the conservation area network, is considered to contribute towards meeting protected area targets. (See Section 5 for an explanation of the difference between biodiversity targets and protected area targets.)

Representation of terrestrial ecosystems

At the highest level of terrestrial biodiversity assessment, the biome, the protected area network in South Africa does not afford sufficient protection to the majority of biomes and marine bioregions (see Table 14). Only four of the 11 biomes (waterbodies, forests, fynbos and desert) have their protected area target secured in the protected area network. The other seven biomes have varying proportions of their protected area target under formal protection, with some biomes, such as the Nama karoo, having a mere 7% of the protected area target (or 1% of the biome) secured. Similarly, only 19 (43%) of the vegetation groups and 141 (34%) of the vegetation types have their protected area target met within the protected area network (see Table 15). Importantly, even those biomes that are well-represented at the biome scale, such as fynbos, are not fully secured because within the biome there are several vegetation groups and types that are not adequately represented.

Table 14: Area protected and percentage of protected area target met by biome

Biome data			Area protected		
Biome	**Biome area (ha)**	**Biome PA target (ha)**	**PAs (ha)**	**% of PA target**	**% of biome**
Waterbodies	67 300	8 800	54 300	614	81
Forests	471 500	108 700	176 200	162	37
Fynbos Biome	8 395 200	1 257 600	1662 600	132	20
Desert Biome	716 400	130 700	159 800	122	22
Savanna Biome	41 266 300	4 233 900	3779 600	89	9
Albany Thicket Biome	2 913 300	303 300	208 000	69	7
Azonal Vegetation	2 898 300	405 800	203 000	50	7
Indian Ocean Coastal Belt	1 428 200	195 700	97 000	50	7
Succulent Karoo Biome	8 328 700	1 025 300	434 700	42	5
Grassland Biome	35 449 300	4 771 500	701 300	15	2
Nama Karoo Biome	24 819 600	2 769 900	180 400	7	1

The fact that most of South Africa's protected areas were proclaimed for ad hoc or opportunistic reasons and that they generally occur where there are few competing land uses, results in a bias towards certain vegetation groups and vegetation types. Fourteen of the 44 vegetation groups and 114 of the 438 vegetation types have their protected area targets exceeded by at least 150% in the protected area network. However, it is important to note that these biases can occur because protected areas are established for valid reasons other than biodiversity representation, e.g. mountain catchments and water security. The NPAES focuses on under-represented ecosystems as well as those required to ensure persistence of biodiversity and adaptation to climate change.

Table 15: Number of vegetation groups and vegetation types for which the protected area target has been met in the protected area network (shown as a proportion of the total number per biome)

Biome	Vegetation groups for which protected area target has been met		Vegetation types for which protected area target has been met	
	Number / total	%	Number / total	%
Albany Thicket Biome	0 / 1	0	3 / 14	21
Azonal Vegetation	2 / 6	33	15 / 34	44
Desert Biome	1 / 2	50	6 / 15	40
Forests	2 / 2	100	8 / 12	67
Fynbos Biome	5 / 12	42	50 / 119	42
Grassland Biome	0 / 4	0	10 / 72	14
Indian Ocean Coastal Belt	0 / 1	0	2 / 3	67
Nama-Karoo Biome	0 / 3	0	1 / 14	7
Savanna Biome	3 / 6	50	29 / 87	33
Succulent Karoo Biome	5 / 6	83	15 / 63	24
Waterbodies	1/1	100	2 / 3	67
Total	**19 / 44**	**43**	**141 / 438**	**32**

Representation of freshwater ecosystems

The following profile of freshwater ecosystem protection levels is derived from a desktop spatial assessment done for the NPAES by the CSIR (Nel et al. 2007). The focus is on river ecosystems only.

Freshwater ecosystems are poorly protected across South Africa, with only 26 of the 222 rivers types having their protected area target met (see Figure 6). River types are defined based on a combination of Level 1 ecoregions, flow variability, and longitudinal zonation (Nel et al. 2007). Seventy-seven river types are not represented at all in protected areas, while a further 87 rivers have less than 30% of their protected area target met.

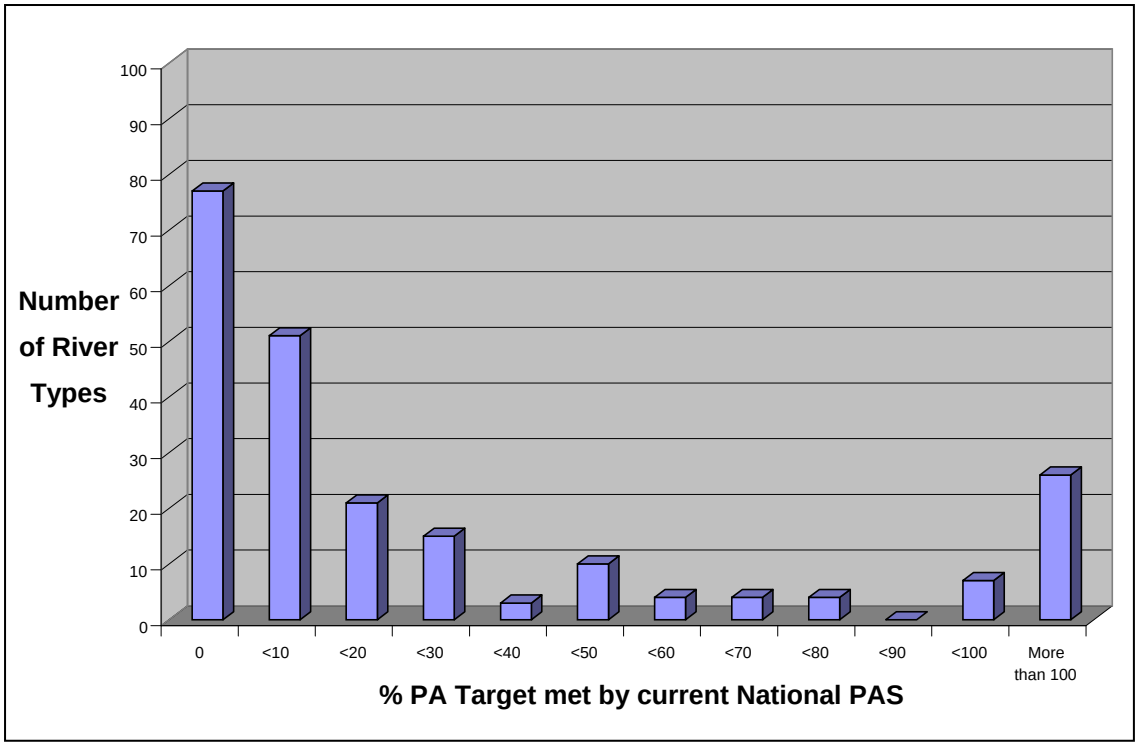

Figure 6: The protection levels of river ecosystems summarised in terms of the % of the protected area target that has been met in formal protected areas

Representation of marine ecosystems

Marine ecosystems were not assessed during the spatial assessment for the NPAES and the data presented below are summarised from the NSBA 2004. Please refer to Lombard et al. (2004) for more detail on the methods and results of the marine assessment.

Marine protected areas were divided into three categories, shown in Table 16, all of which were considered to meet protected area targets.

Table 16: Categories of marine protected areas

Category	Description
1. No-take	No marine living resource extraction is permitted
2. Other	Some extraction is permitted, *e.g.* fishing from the shore
3. Closed areas	The three closed areas near East London

With the exception of the Namaqua bioregion, the coastline appears to be reasonably well protected in marine protected areas. At a national scale, approximately 24% of the South African coastline falls within category 1-3 marine protected areas. However, it is important to note that these are not all “no-take” marine protected areas, and in many cases they are in

fact nodes of exploitation. The marine protected areas are also unevenly distributed among inshore marine bioregions (see Table 17), with Delagoa having 100% protected and Namaqua having zero protection status. There has not yet been an assessment of protection of marine ecosystems at a spatial scale finer than marine bioregions, so even bioregions that appear to be relatively well protected are likely to include under-protected ecosystems.

In contrast to the coastline, South Africa's EEZ is very poorly protected with only 0.41% in marine protected areas and only 0.16% as no-take (see Table 18). Although the addition of the proposed Namaqua marine protected area to the marine protected area estate would almost triple the area of the EEZ under protection, this would still fall far short of the protected area target for the EEZ.

Table 17: Protection of South Africa's inshore marine bioregions in marine protected areas (categories 1-3) measured as the length (km) of coastline (Lombard et al. 2004)

Bioregion	Cat. 1	Cat. 2	Cat. 3	% in MPAs	Total length
Namaqua	0	0	0	0	684
SW Cape	51	163	0	51.0	420
Agulhas	197	78	52	19.2	1 706
Natal	43	100	0	20.6	693
Delagoa	43	110	0	100	153
Total	334	451	52	24.4	3 656

Table 18: Protection of South Africa's EEZ (all offshore bioregions) in marine protected areas (categories 1-3) (Lombard et al. 2004)

	Category 1	Category 2	Category 3	Total
Area (ha)	176 100	250 100	26 100	**107 188 300**
Percentage	0.16	0.23	0.02	**1.4**

5. Spatial analysis of focus areas for protected area expansion

This section provides an overview of the systematic biodiversity planning approach and methods used to conduct the spatial assessment of priorities for protected area expansion. For more detail please refer to Holness et al (in prep).

The purpose of the spatial analysis of priorities for protected area expansion was to identify gaps in the protected area network, to identify where protected area expansion would contribute to meeting national biodiversity targets, and then to prioritise spatially within these areas in order to identify protected area expansion priorities that would result in a more representative and efficient protected area network that also provides for persistence and climate change adaptation. The result of the spatial analysis was the focus areas for protected area expansion shown in Figure 2. The spatial analysis included terrestrial and freshwater components. The marine component is least developed, based only on the analysis done for the NSBA 2004 and a previous biodiversity plan for the Prince Edward Islands EEZ. Estuaries have been incorporated to some extent through the selection of priorities in the freshwater analysis, but there is no explicit estuarine component. The freshwater component is being developed further through the National Freshwater Ecosystem Priority Areas (NFEPA) Project, which will identify a national network of freshwater conservation areas and will be completed in 2011. The marine component is being developed further through the Offshore Marine Protected Area Project, which will design options for an offshore marine protected area network and will be completed in 2010. The estuarine component is being taken further through the NSBA 2010, which will identify an agreed set of national estuarine protected area priorities.

The systematic biodiversity planning approach

Although several approaches can be used to plan for biodiversity conservation, South Africa has adopted the principles and practice of systematic biodiversity planning (often referred to as systematic conservation planning), and indeed is a leader in the development and application of this science. In addition to the principles of representation and persistence and the setting of quantitative biodiversity targets (see Section 2, sub-section on NSBA), systematic biodiversity planning encourages efficiency (i.e. achieving biodiversity targets in the smallest area possible) and allows for conflict avoidance (by avoiding meeting biodiversity targets in areas where there are many competing land uses) through including spatial data on a range of socio-economic factors.

South Africa is one of the first countries to apply systematic biodiversity planning principles across the terrestrial, freshwater and marine environments, as was done in the NSBA 2004. Further, each province is encouraged to produce and maintain a systematic provincial biodiversity plan, with assistance from SANBI. NBF Priority Action 16 states that every province should have a spatial biodiversity plan, based on a systematic biodiversity assessment incorporating both aquatic and terrestrial features, which identifies geographic biodiversity priority areas.

Biodiversity targets and protected area targets

The term "target" is used in two ways in the NPAES: biodiversity target, and protected area target. Each of these terms is explained below. It is important not to confuse the two.

Biodiversity targets refer to how much (defined as an area) of each biodiversity feature should ideally be protected to ensure it will persist. Biodiversity targets should be based on the ecological characteristics of the biodiversity feature concerned. Although they may be refined over time as our scientific knowledge and information improves, they are not "action targets" or political targets that change every few years. The spatial analysis in the NPAES is based on the biodiversity targets set in the NSBA 2004.

The international norm of a flat 10% target was felt to be insufficient in a country as biodiversity-rich as South Africa. The NSBA 2004 set national biodiversity targets for a range of biodiversity features. For example, each national vegetation type has a biodiversity target based on its species-richness. The biodiversity target for the least species-rich vegetation types is 16% of the original area of the vegetation type, and for the most species-rich vegetation types the target is 36% of the original areas of the vegetation type.[21] In the absence of a clear ecological basis for setting biodiversity targets, such as for marine and freshwater aquatic systems, the NSBA 2004 set a generic biodiversity target of 20% of the original extent of the biodiversity feature concerned.

Protected area targets refer to the area of land that should be included in the protected area network by a certain date. They are action targets or political targets that should be updated every few years.

[21] The methodology for setting these biodiversity targets is based on an assessment of species-area curves (Desmet & Cowling, 2004).

What is the relationship between biodiversity targets and protected area targets? **Protected area targets should be a subset of biodiversity targets.** In the very long term, we would like our protected area targets to equal or even exceed our biodiversity targets. However, it is not a realistic goal to meet all national biodiversity targets in the protected area network in the next five or fifteen or even twenty years. Protected area targets are useful to focus attention in the medium term on meeting a realistic subset of our biodiversity targets.

The spatial analysis of priorities for land-based protected area expansion uses the NBSAP 15-year overall protected area target of 12% of total terrestrial surface area as a starting point for developing ecosystem-specific protected area targets. This area is equivalent to approximately 54% of the overall area required to achieve all the biodiversity targets. Therefore in order to efficiently allocate the anticipated protected area expansion across the biodiversity features, a protected area target was established for each vegetation type that equates to 54% of its biodiversity target. In addition, protected area targets were established at the vegetation group and biome level, based on the aggregated targets of their component vegetation types. A 20% target was set for ecological process areas.

Input layers

The systematic biodiversity planning approach used in the spatial analysis of priorities for protected area expansion relied heavily on several key data layers, outlined briefly below:

- Updated protected area data layer;
- Updated transformation and fragmentation layers;
- Biodiversity pattern and ecological process layers:
  - Terrestrial,
  - Freshwater;
- Priorities from other systematic biodiversity plans.

Protected area layer

The protected area spatial layer forms a critical part of the spatial assessment of priorities for protected area expansion. Although time and resources limited the opportunity to fully update the protected area layer compiled for the NSBA 2004, two key deficiencies were addressed:

- The NSBA 2004 protected area spatial layer was updated with the latest data from all the protected area agencies. Changes reflected both new and expanded protected areas, as well as corrections to significant errors in presence/absence and spatial extent of protected areas already in the dataset.
- The classification of protected areas was aligned with the Protected Areas Act. The NSBA classified protected areas as Type 1, 2 or 3 based primarily on their legal security. The spatial analysis for the NPAES includes all formal protected areas declared in terms of the Protected Areas Act, and does away with the division into Types.

Although the layer is an improvement on the NSBA 2004 layer, a more accurate protected area layer is a key priority for provincial protected area expansion programmes, for the NSBA 2010 and for future revisions of the NPAES.

Transformation and fragmentation layer

An important step in the spatial analysis is to be able to restrict the selection of priority areas for protected area expansion to land that has not been irreversibly transformed by human activity such as urban development, cultivation, mining or severe degradation. Furthermore, there are practical management reasons to avoid selecting priority areas where the remaining intact land is so fragmented that it would be impractical or inefficient to manage it as a protected area. These fragmented areas are also likely to have lost elements of biodiversity pattern and are likely to be missing key ecological processes. This requires the development of a transformation layer and a landscape fragmentation layer.

The transformation layer was compiled from several existing national and provincial datasets of various spatial resolutions (see Table 19). Finer scale provincial or other layers took precedence over the broad-scale National Land Cover 2000. The final transformation layer had a resolution of approximately 1 ha pixel size, but should be used with great caution at any scale finer than 1:50 000.

Table 19: Datasets used in the compilation of a transformation layer for the spatial analysis

Database	Fields or data used
National Land Cover 2000	• Natural • Arable farming • Plantation • Urban, including industrial and mined areas • Degraded Areas

Database	Fields or data used
Supplementary data from the 1:50 000 topographic map series	• Dams • Major roads (national, secondary, main etc) with 50m buffer • Railway lines
Provincial and other transformation datasets	• KwaZulu-Natal land cover • Mpumalanga land cover • Garden Route Initiative transformation *Note: some provincial layers, such as Gauteng's, were excluded as they were too fine-scale and technically unmanageable at the national scale.*

The transformation layer was used as the basis for calculating habitat fragmentation by assessing the level of intactness of the area around a particular point. Areas were considered to be fragmented if they were not at least 75% intact at a variety of scales (c. 9, 25, 49, 121 & 529 ha). A second separate filter of fragment size was applied so that only natural areas larger than 50 ha were available for selection in the spatial analysis.

Terrestrial biodiversity pattern

The biodiversity pattern data used in the terrestrial component of the spatial analysis were the 438 national vegetation types from the Vegetation Map of South Africa, Lesotho and Swaziland (Mucina & Rutherford 2006). In addition, these basic units were analysed as aggregated vegetation groups and biomes grouped according to the classification of Mucina & Rutherford (2006). Vegetation types are generally considered useful surrogates for other unmapped biodiversity in the landscape.

Ecological processes

A new ecological processes layer was derived for this assessment. This layer included the following elements, each of which is described briefly below:

- Climate and landscape heterogeneity,
- Coastal processes,
- Habitat heterogeneity,
- Centres of floral endemism,
- River associated movement corridors.

Those areas of the country that have high levels of **climate and landscape heterogeneity** are believed to provide opportunity for species and systems to adapt to climate change. These areas represent important upland-lowland and climatic gradients along which species

will have to move and may include refugia for those species that otherwise may not be able to adapt to rapid environmental change. A series of topographic and climatic indices were combined in the preparation of this layer:

- Topographic heterogeneity (altitude),
- Temperature gradients,
- Precipitation gradients.

The **coastal process layer** was compiled using an inclusive definition of "coastal process areas", including:

- A minimum coastal buffer of 1km,
- Areas that comply with the legal definitions in the National Environmental Management: Integrated Coastal Management Act (Act 24 of 2008),
- Land types associated with coastal geomorphological processes, especially sand dunes,
- Coastal vegetation units as defined in the South African Vegetation Map (Mucina & Rutherford 2006), selected based on their ecological classification and description,
- Additional wetland vegetation types that are adjacent to or intersect the above coastal layers, where these have been mapped.

Areas with high levels of **habitat heterogeneity** were identified using the South African Vegetation Map at three scales: biome, vegetation group and vegetation type. These areas have high levels of floristic diversity and are likely to represent areas of high levels of speciation. The number of biomes, groups or types was calculated for each 49km^2 area. Areas were considered to have high habitat heterogeneity if they contained:

- Three or more biomes,
- Three or more vegetation groups, or
- Four or more vegetation types.

Southern Africa has extremely high levels of floristic diversity and endemism. Most of these endemic species are concentrated in a few relatively small and clearly defined **centres of floral endemism**. At a national scale these centres represent:

- A unique species composition,
- The ecological processes that have caused such high levels of biodiversity,
- The characteristics which allow these high levels of diversity to persist.

The remaining intact areas of the floristic centres of endemism summarised in Regions of Floristic Endemism in Southern Africa were used.

Corridors provide critical ecological linkages between large core patches of intact habitat through hostile matrix areas of transformed habitat. Corridors are seen to be critical for the movement of a variety of animal species in the short term (pollinators, predators), to provide for genetic interchange between spatially separate populations of animals in the medium term, and in the long term are hoped to be important for the migration of plant and other species under conditions of global climate change. One of the most clearly defined corridors, especially in heavily transformed arable agriculture and urbanised landscapes, are those associated with rivers. Importantly, these **river associated movement corridors** also provide upland-lowland linkages on the macro-scale. A corridor layer was created based on second order and larger rivers and a cost surface derived from the transformation and fragmentation layer. A total corridor width of approximately 1km was aimed for in completely transformed landscapes, and 10km in completely natural areas, with the corridors varying in width in response to the level and pattern of transformation.

Freshwater representativeness and persistence

A freshwater representativeness and persistence layer was derived based on the following considerations:

- Representation of freshwater pattern in intact rivers (biodiversity targets were set for representation of river type and endemic fish species),
- Connectivity between representative river sections,
- Free-flowing rivers (rivers with no impoundments or with low levels of impoundments were identified to protect important riverine and estuarine processes),
- Areas where minor expansion of a protected area would capture whole river systems
- River systems supporting priority estuaries.

Priorities from other systematic plans

An updated **ecosystem status layer** based on the approach used in the NSBA 2004 analysis was incorporated. The ecosystem status of each vegetation type was calculated using the proportion of remaining natural habitat per vegetation type:

- Critically Endangered (CR) = at or below the biodiversity target,

- Endangered (EN) = at or below biodiversity target + 15% of original area,
- Vulnerable (VU) = at or below 60% of original area.

Taking cognisance of the considerable systematic biodiversity planning already done in South Africa at a variety of scales, the spatial analysis included the top priority areas identified in **existing systematic biodiversity plans**. This was important because systematic biodiversity plans done at provincial or finer scale are able to draw on much richer data sources than is possible in a national spatial assessment (for example species data or more detailed transformation maps). In addition, this allows better alignment of the national and provincial plans. This layer was used as part of a cost surface to bias the areas selected within the national assessment towards areas favoured by the provincial plans, while still using biodiversity targets that are consistent with national biodiversity targets and applying the principles of systematic biodiversity planning.

Top priorities from the following provincial and other fine-scale plans were used:

- Mpumalanga Biodiversity Conservation Plan (top 20% by area)
- Gauteng C-Plan (top 20% by area)
- KwaZulu-Natal Biodiversity Conservation Plan (top 20% by area)
- Eastern Cape Biodiversity Conservation Plan (top 20% by area)
- Western Cape Interim Assessment (remaining intact areas of threatened ecosystems supplemented by Criterion D ecosystems, approximately 26% by area)
- Leslie Hill Succulent Karoo Systematic Assessment (top 20% by area)
- Grasslands Systematic Assessment (only used in provinces with no systematic assessment, priority biodiversity areas with all non-intact areas removed)
- DWAF Forest Conservation Plan (only used in provinces with no systematic assessment, top two priority categories)

Analysis and integration

A dual systematic biodiversity planning approach was used in the analysis for the NPAES:

- A fine-scale summed irreplaceability approach,
- A coarser scale MARXAN-based analysis.

The reason for the dual approach was to allow the analysis to provide a very fine resolution, while still producing a spatially efficient result taking into account the issues of adjacency and clumping.

Summed irreplaceability approach

A summed irreplaceability approach was undertaken to provide a very fine resolution picture of the importance of different areas for protected area consolidation. The analysis was undertaken in a raster environment, with a resolution of approximately 1ha. This approach examines how necessary each planning unit is in terms of meeting the protected area target for each feature, and then sums these for each planning unit.[22]

The protected area target for each biodiversity feature was compared to the intact area of that feature that was already protected within a formal protected area. Major transformed areas in protected areas, such as dams, were not considered to contribute to meeting biodiversity targets for each feature. Where a protected area target had not yet been met within the current protected area network, the remaining portion of the target was evaluated against the intact natural areas outside the protected area network that are still available for meeting the biodiversity target. The analysis examines the degree to which each available portion of the habitat outside the current protected area network is required in terms of meeting the biodiversity target for that feature. A planning unit would have an irreplaceability of 0 for that feature if it did not contain any of that feature or if the target for that feature has already been met in the existing protected area network. Conversely, if a planning unit is always required in order to meet the biodiversity target for that feature then it will have an irreplaceability of 1.

The irreplaceability values for each planning unit were calculated for:

- Vegetation types,
- Vegetation groups,
- Biomes,
- Terrestrial processes,
- Freshwater.

[22] The analysis was undertaken using the CPlan irreplaceability algorithm for equal sized planning units, although as the analysis was undertaken in a raster planning environment, the actual analysis took place using IDRISI.

The summed irreplaceability of a planning unit was calculated based on its requirement to meet all of the above targets simultaneously.

In order to align the analysis more closely with other national planning processes, the following two layers were processed into a format compatible with the summed irreplaceability values:

- Ecosystem status,
- Priorities from other plans.

These were added to the summed irreplaceability values to provide a composite irreplaceability value for each planning unit.

MARXAN- based analysis

The summed irreplaceability approach provides a useful fine-scale analysis of what an individual area contributes in terms of meeting national protected area targets. However, it does not identify specific priority areas, provide an efficient reserve network or take issues such as adjacency to existing protected areas into account. In order to design an efficient reserve network the widely used MARXAN systematic planning software program was used. Hexagon planning units of 2000 ha were used.

Similar to the summed irreplaceability approach, the program evaluates the targets for each biodiversity feature against the current protected area network and the remaining natural areas available to meet the targets. The analysis was run using the targets for vegetation types, vegetation groups, biomes and terrestrial processes.

MARXAN attempts to produce a least-cost solution that meets the biodiversity targets. These costs are calculated based on three elements:

- Boundary costs,
- Planning unit costs,
- Costs of not meeting targets.

Boundary costs: MARXAN addresses the issues of adjacency and producing clumped priority areas around existing protected areas and rare biodiversity features (rather than a shotgun scatter of individual planning units) by attempting to reduce the boundary cost of the

selected solutions. Conceptually, a group of adjacent planning units will have a shorter external boundary than the same number of spatially separated units. This is important both from a management perspective (in that it identifies consolidated protected areas and priority areas) and an ecological perspective (in that it reduces edge effects and tends to identify larger, connected priority areas that are more likely to persist).

Planning unit costs: A cost surface was prepared to identify the cost of each planning unit:

- The transformation and fragmentation layer was used as the primary input in the cost surface. Planning units with high proportions of transformed areas were given a far higher base cost than degraded or fragmented areas, which in turn had a far higher cost than natural areas.
- The base costs were modified by the freshwater cost surface layer. The costs of remaining natural areas identified within the freshwater analysis were reduced proportionally based on the irreplaceability of the area in terms of meeting freshwater targets.
- The base costs were also modified by the priority areas from other plans layer. The remaining natural areas identified within the priority plans layer had a reduced cost.

The **costs of not meeting targets**: Although MARXAN attempts to meet all targets it may not be efficient or possible to meet all protected area targets in some high cost areas (e.g. fragmented and transformed landscapes). In order to identify the balance between high cost solutions and not meeting all the targets, a cost of not meeting targets is set.

The MARXAN analysis iteratively examines very high numbers of possible protected area network solutions, and examines these against the costs of each of the protected area solutions. It identified an efficient potential protected area network that would meet the majority of terrestrial and ecological process protected area targets, while favouring areas that also meet freshwater biodiversity targets and areas that were identified within other systematic biodiversity plans, while avoiding transformed and fragmented landscapes.

Final integration

The summed irreplaceability and MARXAN-based analyses were combined to produce a composite analysis of **importance for land-based protected area expansion** (see Figure 7 below). Hence areas that were favoured in both of the analyses would be identified as being of very high importance, while areas that were favoured by only one analysis would be of

less importance. The highest values from the final combined importance layer were selected, and those fragments smaller than 5 000 ha were removed. The remaining selected areas of high importance were grouped based on their underlying biodiversity characteristics, their geographical location or their proximity to existing protected areas, to form **focus areas for land-based protected area expansion** (see Figure 8 below). These focus areas, as well as the underlying combined analysis of importance for protected area expansion, form the summary product of the spatial analysis, discussed in more detail below. The existing priorities from the NSBA 2004 marine analysis were used without new analysis as the best available priority areas for marine protected area expansion, pending the outcome of the Offshore Marine Protected Area Project.

Summary of results of the spatial analysis

Focus areas for protected area expansion, and area required to meet protected area targets

As explained above, the spatial analysis identified areas of high importance for meeting protected area targets for biodiversity features, shown in Figure 7. The high importance areas identified in this analysis are important for all forms of protected area activity, including the creation of large state-owned protected areas, contract protected areas, and conservation areas. Within these areas of high importance, large intact and un-fragmented areas suitable for the creation or expansion of large (> 5 000 ha) protected areas were identified, termed focus areas for protected area expansion. These focus areas are shown in Figure 6.

The focus areas for protected area expansion are areas where protected area activity should be focused in order to meet the 20 year protected area targets most efficiently. They have a total terrestrial area of 1 278 200 ha, which represents 9.7% of the total surface area of South Africa, Lesotho and Swaziland,[23] and is equivalent to approximately 1.5 times the current protected area network. However, it is critical to understand that in most cases it is not necessary to protect the entire focus area, as these are areas within which protected area expansion is spatially efficient (in terms of improving the representivity of protected area network and meeting protected area targets) rather than the protected area targets themselves. For example, although large areas of the Desert Biome (51%) fall within the

[23] For ecological and conservation planning considerations relating to connectivity of ecosystems, the spatial assessment was undertaken for South Africa, Lesotho and Swaziland. This in no way intends to imply what these other sovereign nations should undertake in terms of conservation activities.

focus areas, only a further 13.4% of this biome is required in order to meet the protected area targets for the biodiversity features in the region.

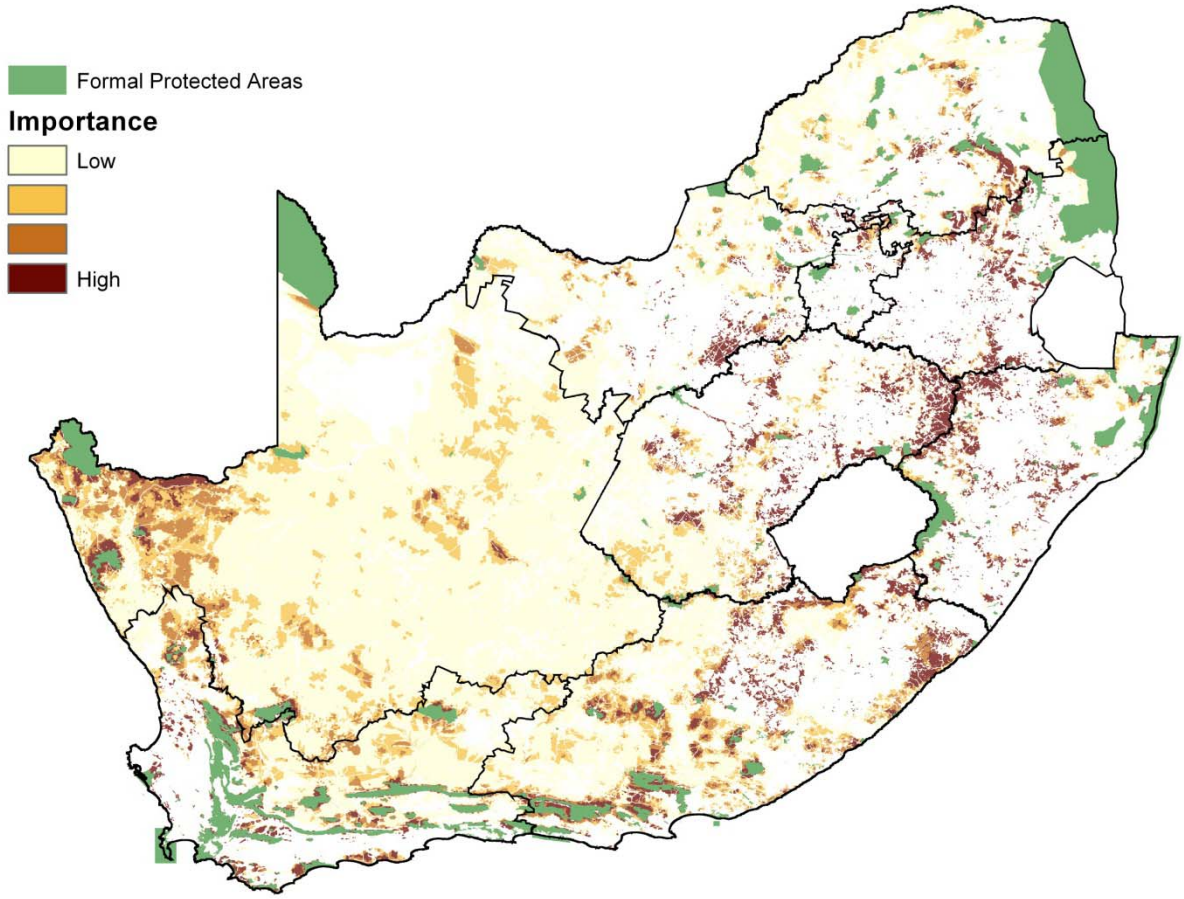

Figure 7: Areas of high importance for land-based protected area expansion (i.e. areas of high value for meeting protected area targets for biodiversity features)

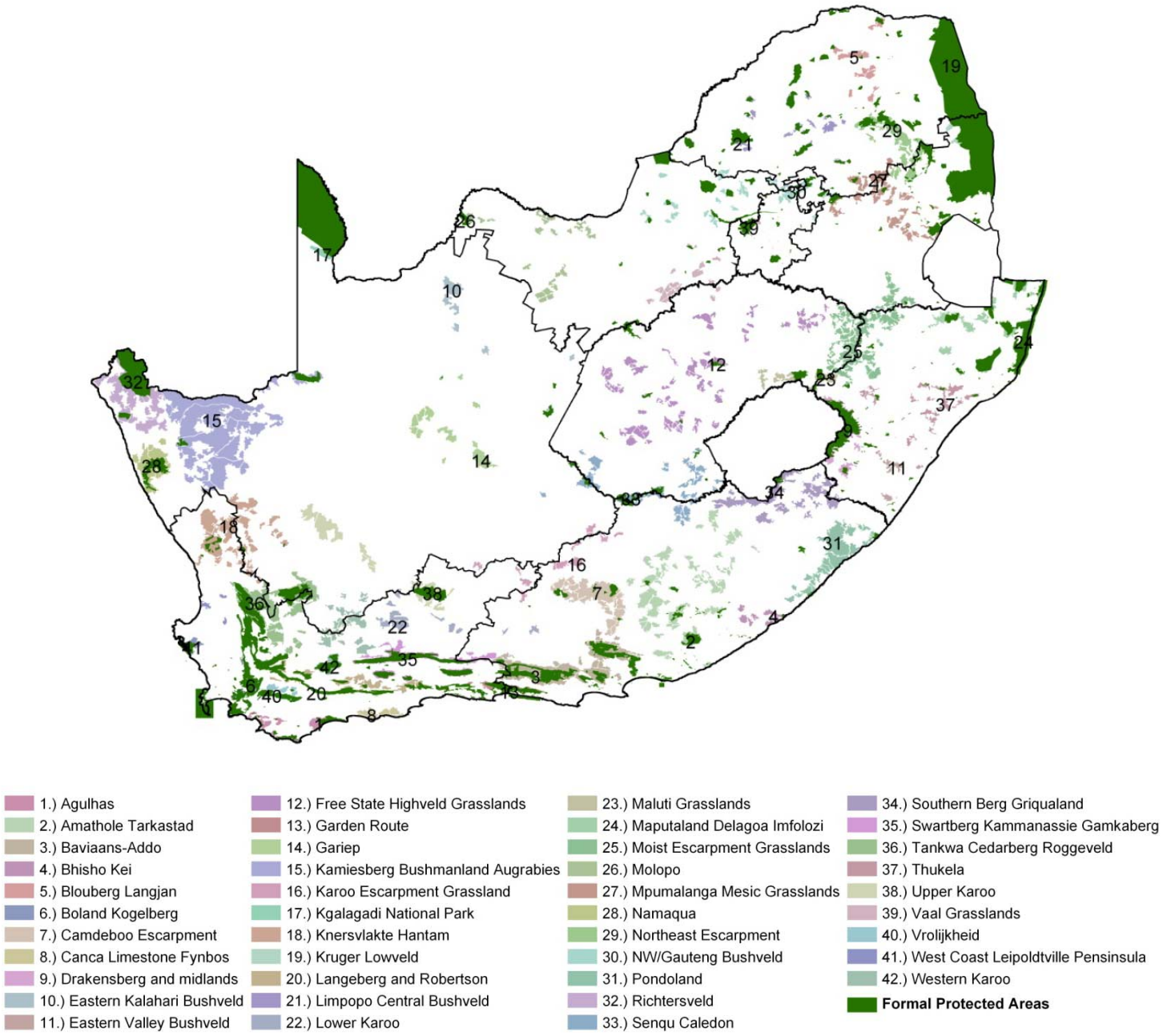

Figure 8: Large, intact and un-fragmented areas suitable for the creation or expansion of large protected areas (a subset of the areas shown in Figure 7)

Table 20 summarises the areas required to meet protected area targets in each province. The areas required range from 5.5% (Limpopo) up to a maximum of 12.2% (Free State) of a province. The five-year protected area targets are calculated as a quarter of the twenty-year targets.

Table 20: Areas required to meet protected area targets by province

Province	Province area (000ha)	20-year PA target (%)	Current protected areas		Still required to meet 20-year veg type targets		Required in the next 5 years	
			000ha	%	000ha	%	000ha	%
Eastern Cape	16 893	12	687	4.1	1 570	9.3	393	2.3
Free State	12 983	13	167	1.3	1 581	12.2	395	3.0
Gauteng	1 655	13	84	5.1	152	9.2	38	2.3
KwaZulu-Natal	9 333	13	731	7.8	842	9.0	211	2.3
Limpopo	12 575	11	1 489	11.8	687	5.5	172	1.4
Mpumalanga	7 649	13	1 168	15.3	632	8.3	158	2.1
North West	10 651	11	199	1.9	991	9.3	248	2.3
Northern Cape	37 289	11	1 582	4.2	3 333	8.9	833	2.2
Western Cape	12 945	13	1 632	12.6	1 004	7.8	251	1.9

Table 21 summarises the areas required to meet targets in each biome. Generally between 1.7 and 13.4% of the different biomes is required (Table 21). The greatest actual areas are required in Grassland, Nama Karoo, Savanna and Succulent Karoo. Two critical points need to be emphasised:

- Firstly, the actual areas which should receive priority attention will need to be defined by detailed planning that takes into account both opportunities and constraints at a local level and should form part of the provincial spatial biodiversity plans as they are developed. This issue is partially addressed below.
- Secondly, the actual area requirements for meeting the protected targets are defined in terms of individual vegetation types, and hence for an efficient and representative reserve network, protected area expansion needs to be appropriately directed to the individual vegetation types which are under-represented rather than to a biome.

Table 21: Areas required to meet protected area targets in each biome[24]

Biome	Biome area* (000ha)	20-year PA target (%)	Current protected areas		Still required to meet 20-year veg type targets		Required in next 5 years	
			000ha	%	000ha	%	000ha	%
Albany thicket	2 913	10	211	7	107	3.7	27	0.9
Azonal vegetation	2 898	14	227	8	282	9.7	71	2.4
Desert	716	18	160	22	96	13.4	24	3.4
Forests	472	23	176	37	8	1.7	2	0.4
Fynbos	8 395	15	1 667	20	669	8.0	167	2.0
Grasslands	35 449	14	753	2	4 249	12.0	1 062	3.0
Indian Ocean coastal belt	1 428	14	97	7	110	7.7	28	1.9
Nama karoo	24 820	11	198	1	2 600	10.5	650	2.6
Savanna	41 266	10	3 803	9	2 442	5.9	610	1.5
Succulent karoo	8 329	12	435	5	715	8.6	179	2.1

Terrestrial and freshwater targets met in focus areas for protected area expansion

Successfully conserving the protected area focus areas would significantly improve the situation in terms of meeting the protected area targets for biodiversity features in South Africa.

In terms of the 438 vegetation types, in addition to the 141 vegetation types which have their protected area targets met in the current protected area network:

- 155 additional vegetation types would have their targets completely met by the focus areas;
- 120 vegetation types that were previously only partly protected or were unprotected would be closer to meeting their targets;
- Within the above totals, 60 previously completely unprotected vegetation types would now have some formal protection, of which 35 would have their protected area targets completely met.

Successfully conserving the focus areas would, however, not affect the status of 12 currently under-protected vegetation types, and ten vegetation types would remain completely unprotected. Four of these ten unprotected vegetation types effectively have no remaining intact areas in un-fragmented landscapes, while the remaining vegetation types are either

[24] Note that the discrepancy in area between Table 20 and Table 21 is due to the fact that the biome table includes areas identified in the assessment that would need to be conserved in South Africa, Swaziland and Lesotho in order to have an effective and representative reserve network throughout the region.

naturally extremely fragmented or have a very limited original extent and occur in a transformed matrix, or have their remaining natural areas occurring within highly fragmented landscapes. Conservation action for these vegetation types is probably best addressed by conservation mechanisms other than protected areas.

In terms of protected area targets for the 44 vegetation groups, in addition to the 18 groups which have their targets met in the current protected area network:

- 17 additional groups would have their targets completely met by the focus areas;
- Nine additional groups that were previously only partly protected would be closer to meeting their targets.

In terms of the 11 biomes, in addition to the four biomes which have their protected area targets met in the current protected area network:

- Six additional biomes would have their targets completely met by the focus areas;
- One biome that was previously only partly protected would be closer to meeting its target (Nama Karoo would move from 6.5% to 73% of its target).

In terms of meeting freshwater targets, conserving the protected area focus areas and the current protected area network would significantly improve the status of protection of the region's freshwater resources. Figure 9 summarises the change in protection level that would be achieved for river ecosystems. Key changes include an increase in the number of well protected river ecosystem types from 26 to 68, in moderately protected river ecosystem types from 19 to 35, and a decrease in the number of unprotected ecosystem types from 77 to 44.

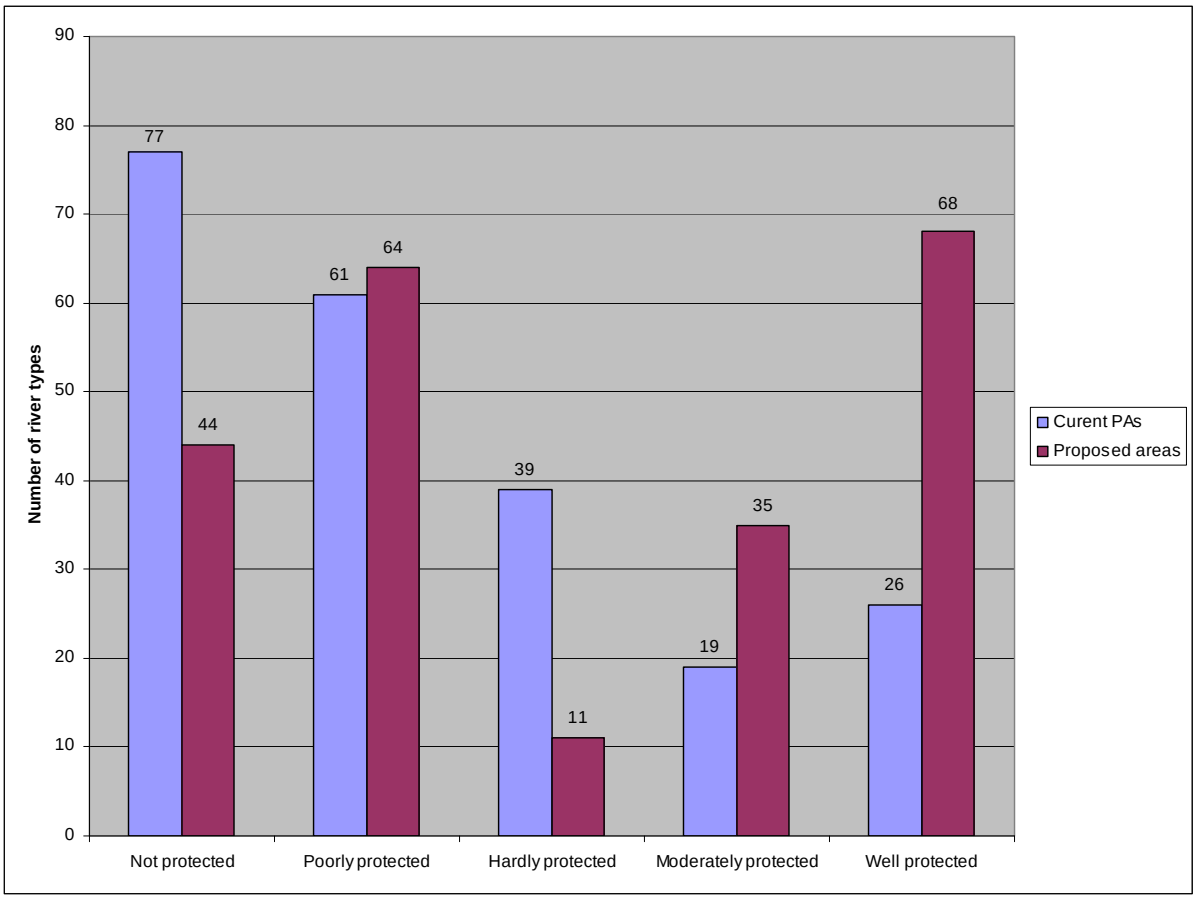

Figure 9: Improvement in the protection level of river ecosystems that would result if the focus areas were conserved

Urgency of protected area activity in different areas

The previous subsections gave an overview of the spatial focus areas that will result in a more representative and resilient protected area network. In time, all of these areas need to be addressed. However, a critical issue is attaining an appropriate balance between focusing protected area expansion on areas where there are good, relatively easy opportunities for protected area creation that would in the long term result in a representative and an efficient network, and focusing on urgently addressing current critical areas where the opportunity to create protected areas is being rapidly lost by the transformation and fragmentation of habitats. This is discussed in more detail in the NPAES. Detailed planning needs to take place to ensure that the appropriate conservation mechanism (protected areas, legislation, land-use planning) is applied in each area to ensure the efficient use of resources.

Broadly, a reasonable approximation of how urgent protected area expansion is in a particular area can be obtained by looking at the irreplaceability of the vegetation types in

that area. Regions where almost all the available intact areas of a particular vegetation type are needed to meet protected area targets have a high irreplaceability and are likely to be areas where protected area expansion is urgently required as there are few remaining options for meeting protected area targets. Conversely areas where there is a great deal of choice in terms of where protected area targets can be met have low irreplaceability and are likely to be of lower urgency. This is only a first approximation, as areas where most transformation occurred a long time ago and have since not had much transformation, would appear to be more urgent than they are based on this analysis, whereas areas that are subject to new or growing transformation threats would appear to be less urgent than is the actual case.

Table 22 shows the level of urgency required in order to meet the protected area targets for each of the vegetation groups. This assessment is based on the average irreplaceability (areas with high irreplaceability are places few remaining suitable areas occur where we can meet our targets) of the individual vegetation types which make up a vegetation group. Critically urgent areas include most Renosterveld areas of the Fynbos Biome, as well as some Grassland groups. Most of the Grassland vegetation groups, along with remaining Lowland Fynbos groups and the Indian Ocean Coastal Belt are seen as very urgent. Conversely, the least urgent areas tend to be in the Nama Karoo and Savanna biomes. These include areas such as Bushmanland.

Table 22: Summary of the level of urgency of protected area expansion by vegetation group[25]

	Vegetation Group			
Biome	Low urgency	Medium urgency	Very urgent	Critically urgent
Albany thicket		• Albany thicket		
Azonal vegetation	• Estuarine vegetation • Eastern Strandveld	• Inland saline vegetation	• Freshwater wetlands	• Alluvial vegetation
Desert	• Gariep Desert		• Southern Namib Desert	
Forest	• Zonal & intrazonal forests • Azonal forests			

[25] The assessment is based on the average irreplaceability of the individual vegetation types that make up a vegetation group. Note that this is summary information, and that actual urgency should be determined at an individual vegetation type level.

	Vegetation Group			
Biome	Low urgency	Medium urgency	Very urgent	Critically urgent
Fynbos	• Western Fynbos-Renosterveld	• Namaqualand Cape Shrublands • Southern Fynbos • Karoo Renosterveld • Northwest Fynbos	• South Strandveld • South Coast Fynbos • Eastern Fynbos-Renosterveld • Southwest Fynbos	• West Strandveld • East Coast Renosterveld • West Coast Renosterveld
Grasslands		• Drakenberg Grassland	• Dry Highveld Grassland • Mesic Highveld Grassland	• Sub-Escarpment Grassland
Indian Ocean coastal belt			• Indian Ocean Coastal Belt	
Nama karoo	• Lower Karoo • Bushmanland	• Upper Karoo		
Savanna	• Kalahari Duneveld • Mopane	• Lowveld • Eastern Kalahari Bushveld	• Central Bushveld	• Sub-Escarpment Savanna
Succulent karoo	• Richtersveld	• Trans-Escarpment Succulent Karoo • Rainshadow Valley Karoo • Namaqualand Sandveld • Namaqualand Hardeveld	• Knersvlakte	

Marine assessment

As explained in Section 1, marine ecosystems were not assessed during the spatial assessment for this NPAES, and the data presented in this document are summarised from the NSBA 2004 and previous work done for the Prince Edward Islands EEZ. Important areas for marine protected area expansion are shown in Figure 3 in Section 1. The areas of greatest importance have been identified as the Namaqualand coast and offshore areas, the Agulhas Bank and the Prince Edwards Islands EEZ.

The marine protected area targets summarised in Table 2 in Section 1 are based on underlying targets for marine bioregions. Table 23 shows protected area targets for inshore marine bioregions, and Table 24 shows offshore marine protected area targets. See the main NPAES document for more discussion on these targets.

Table 23: Protected area targets for inshore marine bioregions

		20-year PA target		Current protected areas				Required to meet 20-year target				Required in next 5 years			
Bioregion	Length	No-take	Total	No-take		Total		No-take		Total		No-take		Total	
	km*	%	%	km	%	km	%	km	%	km	%	km	%	km	%
Namaqua	684	15	25	0	0	0	0	103	15	171	25	26	3.8	43	6.3
SW Cape	420	15	25	51**	12.1	214	51.0	12	2.9	--	--	3	0.7	--	--
Agulhas	1706	15	25	197	11.5	275	16.1	59	3.5	152	8.9	15	0.9	38	2.2
Natal	693	15	25	43	6.2	143	20.6	61	8.8	30	4.4	15	2.2	8	1.1
Delagoa	153	15	25	43	28.1	153	100	--	--	--	--	--	--	--	--
Total	**3656**	**15**	**25**	**334**	**9.1**	**785**	**21.5**	**234**	**6**	**353**	**9.6**	**56**	**1.5**	**88**	**2.4**

Table notes:
* Inshore marine targets are measured in kilometres of coastline because of the varying distances which inshore MPAs extend from the coastline. Inshore is considered to mean from the high water mark to the 30m depth contour. All inshore MPAs extend at least this far. In future we will move towards also using a more accurate area-based measure for inshore MPA targets, but this is not possible with current data.
** This includes the Langebaan Lagoon sanctuary area. Because the Langebaan Lagoon has estuarine characteristics there is not consensus on whether or not the sanctuary area should count towards meeting marine protected area targets.

Table 24: Offshore marine protected area targets

		20-year PA target		Current protected areas				Required to meet 20-year target				Required in next 5 years			
	Area	No-take	Total	No-take		Total		No-take		Total		No-take		Total	
	000km^2	%	%	000 km^2	%	000 km^2	%	000 km^2	%	000 km^2	%	000 km^2	%	000 km^2	%
Mainland EEZ	1 072	15	20	1.7	0.16	4.2	0.4	159	14.8	210	19.6	40	3.7	53	4.9
Prince Edward Islands EEZ	467	15	20	0	0	0	0	70	15	93	20	18	3.8	23	5

6. Mechanisms for protected area expansion: additional information[26]

The NPAES identifies targets for protected areas expansion and areas where expansion efforts should be focused. It then identifies three main mechanisms for protected area expansion: acquisition of land, contract agreements, and declaration of public land. This section provides more detail on these mechanisms, as well as on the option of formalising the protected area status of existing conservation areas. It describes the potential risks associated with each protected area expansion mechanism, and proposes several mitigation measures to reduce the anticipated impact of these risks. It includes a discussion on land reform and protected area expansion.

Table 23 summarises the expansion mechanisms and implementation options available for different land ownership and tenure arrangements. These are discussed in more detail in the sub-sections that follow.

Table 25: Summary of expansion mechanisms for different land ownership and tenure arrangements

Mechanism	Implementation options	Land ownership and tenure
1. Acquisition of land	i) Land donation	Private
	ii) Land purchase	Non-state public land Private land
	iii) Property lease	State (provincial) Private land State (national) under communal tenure
	iv) Land expropriation	Private land
2. Negotiation of contract agreements with landowners	i) Contract nature reserve / contract national park / contract protected environment	Private land State (national) under communal tenure Non-state public land
3. Declaration of public land available for conservation	i) Allocate unvested/unallocated national state land to the protected area agency	State (national)
	ii) Re-allocate national state land from a responsible national organ of state to the protected area agency	State (national)
	iii) Lease national state land under communal tenure to the protected area agency	State (national) Communal tenure

[26] Note that pre-July 2009 department names are used in this section.

Mechanism	Implementation options	Land ownership and tenure
	iv) Dispose of provincial state land to the protected area agency	State (provincial)
	v) Allocate/sell/lease or contract non-state, public land to the protected area agency	Non-state public land (local authorities, public entities, government enterprises)
4. Formalising the protected area status of existing conservation areas	i) Statutory conservation areas	Private land State (national) State (provincial) Non-state public land
	ii) Non-statutory conservation areas	Non-state public land Private land

Acquisition of land

There are several options for acquiring land that should be considered for the expansion of the protected area network:

- Land donations – Although not common, land donations are a highly cost-effective alternative to land purchase and land expropriation, and are characterised by low transaction costs.
- Land purchase – The limited funds available to purchase conservation-worthy land means that this mechanism has limited applicability. Land purchase should be directed toward key strategic properties of significant biodiversity value for incorporation into protected areas of high conservation value. Efforts should be made to secure acquisition funds from external sources, including the corporate sector and relevant NGOs (see Section 7).
- Land leasing – A lease option may be considered in situations where a landowner is not open to selling. The leasing option reduces the high transaction costs associated with purchase, while leasing costs may be offset from income generated from commercial tourism enterprises undertaken on the property.
- Land or rights expropriation – Land or rights expropriation should be used only in exceptional circumstances to acquire properties (refer to suggested approach below) or use rights. In the case of the marine environment, use rights (e.g. mining, fishing) may be expropriated or modified in terms of Section 18 of the Marine Living Resources Act, to enable the establishment of a marine protected area.

The suggested approach to land acquisition is summarised as follows:

- As part of the consultation and negotiation process with targeted landowners, landowners should be encouraged, under certain circumstances, to donate all or part of their land for conservation purposes. These circumstances may include instances where the landowners are concerned with estate planning matters or where land is donated as part of a biodiversity offset agreement. Donated land may be ceded directly to the protected area agency, or ceded to an NGO and/or placed in a Land Trust that will in turn contract it into a protected area (see discussion on contract agreements below). Such a donation may be deemed a declared public benefit activity by the South African Revenue Service (SARS) and the incentive of tax benefits for the donor should be explored (see Section 7).
- Where land is being considered for purchase or leasing:
    - Potential funding sources for land purchase, leasing and ongoing management costs should be identified (see Section 7 for financing options for land acquisition), and linked to the targeted properties.
    - Subject to the availability of funds, the purchase of land should operate on a “willing seller/willing lessee” basis.
    - Legal counsel should be retained to provide ongoing advice on the legal requirements associated with purchase or leasing of the land.
    - In the case of purchase, a title search should be conducted confirming that the proposed seller holds clear title to the target property, free and clear of any adverse claims (including land claims), disputes, liens or other encumbrances.
    - The proposed purchase/lease price and all other transaction costs associated with the land purchase/land lease should be assessed prior to formal negotiation. Where they exist, comparable transactions in the region should also be used to determine the property sale or lease value.
    - Where several properties are being considered in an area, different landowners should be approached in a discrete and co-ordinated way to avoid the artificial inflation of property prices and to reduce the risk of not acquiring some parcels of land.
    - In the case of a property purchase, a condition of the purchase (incorporated into the title deed) should be that it is held in perpetuity for conservation purposes. The entity taking title to the purchased property should be prohibited from selling or otherwise transferring the land if any such transfer would adversely impact the conservation objectives underlying the initial purchase.

    - In the case of a lease, a long-term lease agreement (>25 years) should be negotiated. Where possible, an option of first refusal should also be negotiated in the instance where the owner wishes to sell the property.
    - The land description in all purchase/lease documents, deeds, easements and related documents should be verified against actual land boundaries.
- The option of voluntary expropriation for incorporation into the protected area estate may be pursued with landowners in certain situations such as a deceased estate with no apparent beneficiaries.
- Involuntary expropriation should be avoided wherever possible. However, where expropriation is unavoidable, the land or right to the land may be expropriated only in accordance with the Expropriation Act (Act 63 of 1975), subject to Section 25 of the Constitution. Marine rights holders should be consulted prior to any amendments of rights.
- Subject to the final outcomes of the National Treasury's Environmental Fiscal Reform process, the land transaction costs should be reduced wherever possible by motivating for exemptions on taxes and duties associated with land acquisition for protected area expansion (see Section 7).
- In instances where farm labourers are resident on a property, a resettlement framework should be developed and implemented prior to acquisition to ensure compliance with the Extension of Security of Tenure Act (Act 62 of 1997).

To complement the implementation of these acquisition mechanisms, provincial and national protected area agencies should proactively engage with local government and other government departments about land-use planning in the focus areas for protected area expansion.

Negotiation of contract agreements with landowners

The term "biodiversity stewardship" has been introduced into the South African conservation lexicon in the last few years to describe the formal commitment of landowners to conserve and effectively manage the biodiversity on their land. Biodiversity stewardship programmes have been established in some protected area agencies (e.g. CapeNature, EKZNW) and are being developed in others (e.g. DTEC, MTPA, GDACE) to proactively secure formal stewardship commitments from private (and other) landowners, and to encourage, facilitate and support the implementation of good biodiversity management practices.

A draft national Biodiversity Stewardship Guideline Document has been developed by DEAT, to provide support to provinces establishing biodiversity stewardship programmes. It draws on the valuable experience of the well-established biodiversity stewardship programmes in CapeNature and Ezemvelo KZN Wildlife. The Biodiversity Stewardship Guideline Document provides much more detail than the brief overview below and is the primary reference for those wanting to undertake biodiversity stewardship programmes. DEAT is also in the process of developing a national Biodiversity Stewardship Policy.

Contract agreements through biodiversity stewardship programmes should be pursued not only in the focus areas for protected area expansion, but also in threatened ecosystems identified in the NSBA or listed in terms of the Biodiversity Act, and in priority areas identified in provincial biodiversity plans. Threatened ecosystems are often highly fragmented and thus not suitable for the creation or expansion of large protected areas, but contractual protected areas through biodiversity stewardship programmes can play a crucial role in protecting remaining natural habitat in these ecosystems

Protected area agencies with biodiversity stewardship programmes have developed a model with three broad biodiversity stewardship options or categories which are offered to landowners. These options differ in their level of long-term security for biodiversity. They reflect different levels of conservation value of the land as well as different levels of commitment to biodiversity conservation made by a landowner:

- Conservation areas – a basic, non-binding agreement by the landowner to undertake sustainable land-use epractices on the property and to mitigate any impacts that land-use activities may have on biodiversity.
- Biodiversity agreements – a formal legal agreement to maintain and manage the important biodiversity features of the property. These can take the form of Biodiversity Management Agreements in terms of the Biodiversity Act; alternatively they can be based on contract law.
- Contract protected area – a formal long-term agreement to declare the property, or parts of it, as a protected area in terms of the Protected Areas Act.

Only one biodiversity stewardship category, the contract protected area, is recommended as a mechanism to expand the protected area network. This category includes all contract agreements with landowners that lead to the declaration of the land in question as part of an existing protected area or a new national or provincial protected area, including special nature reserve, National Park, nature reserve, protected environment, and specially

protected forest area. The other two biodiversity stewardship categories are not considered part of protected area network, as they are not recognised in terms of the Protected Areas Act.

The suggested approach to contract agreements with landowners is summarised as follows:

- A key strategy for the expansion of the protected area network can be to incrementally increase the security of the biodiversity stewardship status of land from the conservation area option through to the contract protected area option over time, if the biodiversity value of the land warrants this. Where existing or new biodiversity stewardship sites are located in focus areas for protected area expansion, the protected area agencies should proactively use incentives (refer to Table 25 in Section 8 for examples) to encourage these landowners to upgrade their biodiversity stewardship status to a contract protected area.
- The implementation of the contract protected area category requires considerable investment in relationships and consultation with the landowners. As part of the consultation and negotiation process with targeted landowners, dedicated protected area agency staff need to introduce and explain the detail and implications of the different stewardship options to the landowners.
- It is strongly recommended that, where this does not already exist, protected area agencies establish and build institutional capacity to implement and maintain a biodiversity stewardship programme.
- Where a landowner expresses interest in establishing a contract protected area, the protected area agency staff will assess the conservation value of the land and if appropriate negotiate a contract agreement with the landowner. The templates for these negotiated agreements vary from agency to agency, but the essential elements of the contract agreement include:
    - A description of the management objectives for the property,
    - The obligations and rights of the landowner in respect of the property,
    - The obligations and rights of the protected area agency in respect of the property,
    - The respective responsibilities for costs in respect of the management of the property for conservation purposes,
    - The allocation of income from commercial and other enterprises associated with the property,
    - The governance arrangements for the property,
    - Mechanisms for conflict resolution.

- The management responsibilities of the landowner and the protected area agency should be made clear and unequivocal at the outset. The operational management of the property should be directed by an approved management plan for the protected area that provides for regular monitoring and review of the efficacy of the plan. Operational management arrangements for the property may vary from:
    - Direct responsibility of the protected area agency (e.g. SANParks – contractual national park),
    - Shared responsibility for different functions (e.g. provincial protected area agency undertakes conservation works and landowner manages tourism enterprises),
    - Direct responsibility for conservation works and/or tourism enterprises undertaken by a third party (e.g. concessionaire or full-time contracted service provider),
    - Direct responsibility of the landowner (e.g. provincial nature reserve managed by a private corporation),
    - Or a combination of these.
- Legal counsel should be retained to provide ongoing advice on the legal requirements associated with the contractual negotiations, including drafting the three documents needed to enable declaration of the property as a contract protected area:
    - Agreement to declare a protected area and consent to assign management authority, signed by property owner and Minister/MEC,
    - Notarial deed to record the title deed restrictions on the property, lodged at the deeds office and signed by the notary public and the appearer quod attestor,
    - Contractual management agreement that details the relationship between the landowner and the protected area agency.
- The legal procedural steps, in terms of the relevant statutory legislation, must be followed in the formal process of declaration as a protected area.
- The protected area agency should endeavour to secure an exemption from municipal taxes for the whole/portion of the contracted land and should also seek to support the landowner in the resourcing of incident management (e.g. fire control, problem animal control), rehabilitation (e.g. alien invasive control, game introductions) and conservation works (e.g. fencing). Fiscal incentives are dealt with further in Section 7.

Declaration of public land available for conservation

There are two types of public land: state land and non-state public land. State land is public land held by the national and provincial governments. All state land is vested in either the

national government or a provincial government. State land may, in turn, be allocated in favour of any other national department or provincial authority.

The State is also the "nominal owner" of most, if not all, land under communal tenure. In most instances the Minister of Land Affairs exercises the powers of ownership, subject to the recognition of the rights of the residents.

Non-state public land comprises public land allocated to or owned by:

- Municipalities;
- National or provincial public entities, including agencies, associations, authorities, boards, bureaus, commissions, companies, corporations, foundations, funds, institutes, institutions, organisations, regulators, schemes, Sector Education and Training Authorities, Tribunals and Trusts;
- Government business enterprises.

The approach to the allocation of state land to a national or provincial protected agency for the purposes of proclaiming a protected area differs depending on, firstly, whether the land is vested in national or provincial government, and secondly, the type of state land in question. The suggested approach to the declaration of state land and non-state public land is summarised in Table 23.

Table 26: A summary of the suggested approach to the declaration of public land available for conservation

Unvested/unallocated state land	State land held by national government and allocated to another organ of state	State land held by national government and under communal tenure	Provincial state land	Non-state public land
• Identify unvested/ unallocated state land that falls within focus areas for protected area expansion in each province. • Liaise with the relevant Regional Managers (DPW),	• Identify existing allocated state land that the current responsible organ of state (e.g. SANDF, DWAF, DoA) has agreed can be re-allocated for the purposes of incorporation into the protected area	Generally the approach to communal land is that no land should be negotiated for incorporation into the protected area network until the Communal Land Rights Act (Act 11 of 2004) has come into effect, or land claims have been successfully	• Identify unallocated/allocated provincial state land required for consolidation or expansion of the protected area network in each province. • Liaise with the relevant provincial department	Non-state public land may be incorporated into the protected area estate through either: i) the allocation of land, or ii) land acquisition, or iii) contract agreement. (i) Allocation of land The approach to changing the

Unvested/unallocated state land	State land held by national government and allocated to another organ of state	State land held by national government and under communal tenure	Provincial state land	Non-state public land
Provincial Directors (DLA), Regional Land Claims Commissioner and the provincial General Manager (DoA) about alternative development proposals/land uses for the unvested/unallocated state land identified for incorporation into the protected area network. • Refine the list of unvested/unallocated state land for incorporation into the protected area network, the type of disposal for each property (allocation is recommended in the case of unallocated state land, and vesting in national government in the case of unvested land) and the proposed management authority. • Present a consolidated list of proposed properties to the Provincial State Land Disposal Committee for onward recommendation to the National	network. • Identify the relevant protected area management authority for the affected land. • Liaise with the relevant Regional Managers (DPW), Provincial Directors (DLA), Regional Land Claims Commissioner (DLA) and the provincial General Manager (DoA) about potential alternative development proposals/land uses for the affected state land. • Identify the assets and liabilities associated with the identified allocated state land. • Negotiate an agreement between the current management authority and the proposed protected area agency in respect of the transfer of the assets (e.g. equipment, buildings, staff) and liabilities (e.g. existing use rights, leases,	processed in terms of the Restitution of Land Rights Act (Act 22 of 1994), and land ownership has been (or is in the process of being) transferred to communities (e.g. in form of Community Property Association or Land Trust) or individuals. Thereafter, the biodiversity stewardship options described in the subsection above on contract agreements will guide subsequent discussions and negotiations for the establishment of a protected area. However, in the instance where communal landowners have collaboratively agreed with a specific protected area agency to establish a protected area, the following steps should be adopted: • Only protected area types in which there is <u>no</u> requirement to enter into a notarial deed that is registered against the relevant property's title deeds (e.g. protected environment), should be	responsible for the administration of land about the current and/or proposed land uses for the affected provincial state land. • Identify the relevant protected area management authority for available land. • In agreement with the affected provincial department, submit a formal request for disposal of provincial state land for incorporation into the protected area estate. This request for disposal would generally consider two disposal options: (i) In the case, of provincial public entities or departments: allocation or long-term lease of the land. (ii) In the case of national protected area agencies: sale of the land, long-term lease of the land or revoking of the vesting back to national government, for onward	allocation of land from the local authority, public entity or government business enterprise to a protected area agency is the same as that described in "national or provincial state land allocated to another organ of state" – columns 2 and 3 of this table. (ii) Land acquisition • *Purchase* and *lease* are the key land acquisition mechanisms that should be considered to support the expansion of the protected area network on non-state public land. • The approach to land purchase and leasing of land allocated to or owned by public entities or state business enterprises is generally the same as that described for state land (this table) and for private land in the subsection above on land acquisition. • In the case of municipal land, land may only be disposed of subject to the procedural requirements

Unvested/unallocated state land	State land held by national government and allocated to another organ of state	State land held by national government and under communal tenure	Provincial state land	Non-state public land
State Land Committee and the Minister of Public Works. • The Minister of Public Works then formally allocates the land to the protected area agency.	land claims, loans). • Negotiate an agreement with the affected labour unions in the case of affected staff transfers. Note: State forest land transferred by DWAF may involve a lease agreement. In some cases (e.g. the establishment of a National Park) the State forests have to be de-proclaimed first due to incompatibilities in the legislation governing State forests and National Parks. Assuming that there are no alternative land uses proposed (e.g. redistribution, agricultural projects, resettlement) and that an agreement has been satisfactorily concluded with the existing management agency and the affected labour unions: • The existing management authority prepares a letter to the Deputy Director-General: Asset Management (DPW) indicating its intent to relinquish control	negotiated with communal landowners. This ensures that there are no encumbrances on the property when private ownership is conferred on the community/individual in terms of the implementation of the Communal Land Rights Act or the Restitution of Land Rights Act. • The protected area agency and the representatives of the affected community approach DLA offices to make the land available for the establishment of a protected area (in the form of a "back-to-back" lease agreement). • The protected area agency negotiates a draft lease agreement with the community which describes the rights and responsibilities of the partners to the agreement and the nature of the community benefits to accrue from the establishment of the protected	allocation to the protected area agency. • The protected area agency liaises with any occupants of the land, the affected local municipality, provincial representatives of DLA and provincial representatives of DPW to address any concerns about the proposed designation as a protected area. • The provincial department publishes a notice of the proposed disposal in a newspaper/s circulating in the province, calling on interested parties to submit any representations regarding such disposal. • The provincial department delivers a notice inviting written representations regarding the proposed disposal to: i) any occupants of the land; ii) the affected local municipality; iii) the provincial directors of DPW and DLA; and iv) the Regional	described in Section 90 of the Local Government: Municipal Finance Management Act (2003), the relevant municipal ordinance and any other provincial legislation that may require the prior approval from the Provincial Administration. • The protected area agency should however strive to keep the lease or purchase costs to a nominal amount as the land is being administered for a public good. • Where income may be generated from the land incorporated into the protected area network, the protected area agency may consider entering into a joint venture or benefit-sharing agreement with the municipality/ public entity /government enterprise as an incentive to sell or lease the property.

Unvested/unallocated state land	State land held by national government and allocated to another organ of state	State land held by national government and under communal tenure	Provincial state land	Non-state public land
	of the affected land, with a recommendation (and copy of the negotiated agreement) that the land is allocated to the protected area agency for the purposes of proclamation as a protected area. • After consultation with DLA, DPW formally re-allocates the land to the protected area agency.	area. • DLA facilitates the development of a community/rights holder resolution to establish a protected area, and finalises the negotiation of the terms of the lease agreement. • All forms relevant to the Interim Protection of Land Rights Act (Act 31 of 1996) must be completed and signed by the different parties to the agreement (e.g. Land Rights-holders resolution, Lease Agreement, Agency Agreement). • DLA prepares a submission to the Minister of Land Affairs, with the necessary recommendations. • The Minister formally allocates the land to the protected area agency.	Land Claims Commission. • On consideration of any submissions, the provincial department makes a recommendation to the premier regarding the disposal. • In all instances, the protected area agency agrees to a title deed endorsement (or condition of lease) that provides for the reversion of the affected land back to the province if it is not formally proclaimed and managed as a protected area. • The premier formally allocates the land to the protected area agency.	(iii) Biodiversity stewardship • Wherever possible, public entities and municipalities should be encouraged to incorporate their land into the protected area estate through contract agreements as part of biodiversity stewardship programmes. • The suggested approach to the implementation of contract agreements on land allocated to or owned by the municipality / public entity / government enterprise is the same as that described for private land in the subsection above on contract agreements.

Formalising the protected area status of existing conservation areas

As explained in Section 1, conservation areas are areas that are not formally protected by law but are informally protected by the current owners and users and managed at least partly for biodiversity conservation. There are also areas under some form of statutory protection other than the Protected Areas Act. Because there is no long-term security associated with conservation areas, they are not a strong form of protection and are not considered part of the protected area network. As noted in Section 4, South Africa has a large number of informal conservation areas, although information about their location and distribution is incomplete. Table 8 and Table 9 in Section 2 give more information about different types of conservation areas and areas under other forms of statutory protection.

In cases where these areas fall within focus areas for protected area expansion or within threatened ecosystems, it may be appropriate to formalise their protected area status and incorporate them into the protected area network. Areas that are under some form of statutory protection (e.g. natural areas of National Botanical Gardens, indigenous state forests, closed marine areas, marine exclusion zones, some conservancies, and natural areas surrounding declared heritage sites) could lend themselves to this.

The suggested approach to the incorporation of conservation areas into the protected area network is summarised as follows:

- In the case of indigenous state forests, facilitate the transfer of these forests (including assets, personnel and budgets), on a prioritised basis, to the relevant protected area agencies for declaration of protected areas.
- Map and assess the conservation value of existing conservation areas.
- Formally designate conservation-worthy conservation areas as protected areas (but see risks and risk mitigation measures in Table 24 below).
- Incorporate conservation areas newly designated as protected areas into the National Register of Protected Areas.

Approach to land reform and protected area expansion

As noted in the NPAES, there are opportunities for substantial synergies between land reform and protected area expansion, with opportunities for protected area expansion to support the land reform agenda and the diversification of rural livelihood options, especially in agriculturally marginal areas.

South Africa's land reform comprises three inter-related programmes: land restitution, land tenure reform, and land redistribution.[27]

- Land restitution gives effect to the constitutional provision that people unfairly dispossessed after 1913 are entitled either to restitution of that property or to compensation.
- Land tenure reform is intended is directed towards two distinct objectives. The first is to address the state of land administration in the communal areas of the former "homelands" and "coloured reserves"[28] by way of the Communal Land Rights Act. The second objective is to strengthen the security of tenure of farm dwellers living on commercial farms.
- The land redistribution programme aims to diversify the ownership structure of commercial farmland.

In instances where land within the focus areas for protected area expansion is subject to some form of land reform, the protected area agencies may need to engage proactively with land reform beneficiaries, and other organs of state, to assess the socio-economic feasibility and desirability of conservation/tourism as a viable land use for these properties.

The following mechanisms may be adopted for land under land reform targeted for protected area expansion:

- Back-to back lease agreement between DLA, communal landowner and protected area agency for land under communal tenure, but still in the ownership of DLA (see Table 23),
- Commercial lease agreement for land that has been transferred to a new owner/s (see sub-section above on acquisition of land),
- Contractual agreement for land that has been transferred to a new owner/s (see sub-section above on contract agreements).

The suggested approach to the incorporation into the protected area network of land in the focus areas for protected area expansion which is under some form of land reform, is summarised as follows:

[27] It is estimated that some 25 million hectares is under some form of land reform process (DLA, 2007).
[28] Communal areas make up most of the land in the former homelands. These areas consist of land falling under a variety of colonial and apartheid proclamations, as well as land successively owned by the South African Native Trust, South African Bantu Trust and South African Development Trust. The homeland areas and South African Development Trust land amount to approximately 17 million hectares, including Ingonyama Trust land in KZN, as well as the former "self-governing territories" of KwaZulu, Gazankulu, Lebowa, KaNgwane, KwaNdebele and QwaQwa as well as the former "independent" TBVC states Transkei, Bophuthatswana, Venda and Ciskei.

- Where land is already under some form of conservation or protected area tenure but is still in state or private ownership, DEAT and the relevant protected area agency should wherever possible and practicable seek to negotiate a co-management agreement with the beneficiary/ies, DLA and the Regional Land Claims Commission (RLCC) to retain the conservation or protected area status (in part or in whole) once ownership has been transferred.
- Where land is under communal tenure, but is still in state ownership, DEAT, SANBI and the relevant protected area agency should initiate discussions with local, district and metropolitan municipalities to ensure that the land use indicated in the municipal Integrated Development Plans (IDPs) does not compromise future negotiations to include these properties into the protected area network or conservation area network.
- Where land is still in state ownership and under communal tenure, the relevant protected area agency should engage with the communal landowners to establish the community's interest in establishing a protected area or conservation area. Where an interest is shown, the protected area agency should follow the Interim Protection of Informal Land Rights Act procedures and seek to conclude a back-to-back lease agreement that enables the establishment of a protected area or conservation area. The type of protected area or conservation area should be one in which there is no requirement to enter into a notarial deed that is registered against the relevant property's title deeds.
- Where land is still in private ownership, but subject to restitution processes, the protected area agency should initiate discussions with the current landowner, the RLCC, DLA and the future beneficiary/ies about the feasibility of future incorporation of the land into the protected area network or conservation area network under some form of co-management agreement.
- Where land is in the process of being transferred to the beneficiary/ies, or has been transferred, the protected area agency should proactively initiate a negotiation to lease or contract (or other "softer" biodiversity stewardship options) the property (or portion thereof) into the protected area network or conservation area network.
- Where land is in the process of being transferred to the beneficiary/ies, or has been transferred, but negotiations to incorporate land into the protected area network or conservation area network fail, the relevant protected area agency should provide ongoing extension, technical and professional support (within the institutions budgetary and capacity constraints) to ensure compatible and sustainable land use.

Risks associated with the different protected area expansion mechanisms

The implementation of any of these protected area expansion mechanisms entails several financial, technical, legal, social and political challenges, many of which may be unique to the specific context of each site or landowner. It is not possible to anticipate or describe all of these risks, but there are some generic mitigation measures to minimise the primary risks associated with the adoption of the different mechanisms proposed for the expansion of the protected area network. These are summarised in Table 24.

Table 27: A summary of the generic risks associated with protected area expansion mechanisms, and recommendations for mitigation of these risks

Protected area expansion mechanism	Risk	Risk mitigation
1. Land donation	(i) Donations tax may increase the cost of transaction. (ii) A bequeathed donation may be contested by other beneficiaries in the case of a deceased estate. (iii) Social impacts of land purchase cause tensions with resident farm labourers.	a) As part of the development and implementation of the Treasury's Environmental Fiscal Reform framework, seek to obtain exemptions from taxes and duties linked to acquiring property for incorporation into the protected area network. b) Develop and implement a Resettlement Framework that meets the requirements of the Extension of Security of Tenure Act.
2. Land purchase	(i) Transfer costs may increase the costs of transaction. (ii) Legal and bureaucratic constraints of protected area agencies reduce flexibility and innovation in negotiations for land purchase. (iii) Ongoing land purchases may artificially inflate the property values of land targeted for the protected area network. (iv) Objections to the sale of non-state public land for incorporation into the protected area network may delay the land transaction. (v) Social impacts of land purchase cause tensions with resident farm labourers.	a) As part of the development and implementation of the Treasury's Environmental Fiscal Reform framework, seek to obtain exemptions from taxes and duties linked to acquiring property for incorporation into the protected area network. b) Funding sources for all the costs associated with land purchase should be secured prior to the submission of an offer to purchase. c) Support land purchases by third parties (e.g. public benefit organisations) for onward incorporation into the protected area network through, for example, biodiversity stewardship agreements (such as contract nature reserves). d) Approach different landowners in a co-ordinated way to maximise the ability to purchase properties in the same area within the target price range. e) Develop and implement a Resettlement Framework that meets the requirements of the Extension of Security of Tenure Act.

Protected area expansion mechanism	Risk	Risk mitigation
3. Land lease	(i) Lack of clarity in the Protected Areas Act on the declaration of leased land may preclude its formal declaration[29]. (ii) Social impacts of land purchase cause tensions with resident farm labourers.	a) Obtain formal legal opinion on the declaration status of leased land prior to negotiating any lease agreements. b) Develop and implement a Resettlement Framework that meets the requirements of the Extension of Security of Tenure Act.
4. Land or rights expropriation	(i) Land or rights expropriations may generate bad publicity and/ or result in suspicions of bad faith negotiations with other landowners.	a) Ensure that expropriations constitute a last resort intervention and are only considered in extreme cases. b) Effectively communicate, and aggressively market, the rationale and logic for land or rights expropriation and the processes that preceded it.
5. Contract agreement	(i) Unrealistic expectations/ demands of communal land rights-holders may create a negotiation impasse. (ii) Slow finalisation of the bureaucratic and legal process may result in the landowner having second thoughts. (iii)The protected area agency may not deliver on its contracted commitments to the landowner. (iv) The landowner may not deliver on its contracted commitments in terms of the agreement. (v) The MEC/Minister may not (for a variety of reasons) sign the negotiated contract agreement and assignation of management authority. (vi) Legal flaws in the contract may set back the negotiated outcomes. (vii) Inadequate protected area agency resources are made available to maintain and service contract agreements	a) Maintain flexibility and adaptability in the contractual arrangements to provide for continual change. b) Communicate effectively and continuously with all the key partners in the contractual arrangements. c) Secure upfront commitment to resources and capacity to negotiate the contract and to maintain the negotiated agreements. d) Formalise working agreements with other partner agencies (notably in the instance of the contractually negotiated incentives) to support the maintenance of the contract agreements. e) Budget for concomitant increase in resource allocation to protected area agency's biodiversity stewardship programmes.
6. Allocation of unallocated state land	(i) The DLA, DPW and Provincial State Land Disposal Committees may not support the allocation of state land to a protected area agency in the light of the country's land reform and development priorities. (ii) Un-surveyed boundaries may delay the process and escalate the transaction costs.	a) A formal working agreement (e.g. MoU) should be developed between DEAT, DLA and DPW that describes the criteria for, and processes guiding, the allocation of unallocated state land or the re-allocation of state land to a protected area agency for the purposes of establishing a protected area.

[29] It is likely that a lease agreement would effectively constitute a biodiversity stewardship "contract nature reserve".

Protected area expansion mechanism	Risk	Risk mitigation
7. Re-allocation of state land from another organ of state	(i) The negotiation process for the transfer of assets and liabilities from the current responsible organ of state to the protected area agency could become protracted and issues may remain unresolved. (ii) Relationships with labour unions over staff transfers may become conflictual, leading to delays in land re-allocation. (iii) Un-surveyed, or unclear, boundaries may delay the re-allocation process and escalate the transaction costs. (iv) Alternate development/land use proposals for the land (e.g. land reform) may lead to uncertainties of onward allocation to the protected area agency. (v) Registered land claims on the land may create uncertainty about future ownership/use rights. (ii) The process of transferring land back to DPW for onward allocation may be slow and bureaucratically cumbersome.	a) A formal working agreement between the protected area agency, the affected labour union/s and the affected organ of state should clearly reflect the underlying intent of, and the processes guiding, negotiations. b) A formal working agreement (e.g. MoU) should be developed between DEAT, DLA and DPW that describes the criteria for, and processes guiding, the allocation of unallocated state land or the re-allocation of state land to a protected area agency for the purposes of establishing a protected area. c) Funding should be secured to support the survey of property boundaries.
8. Back-to-back lease agreement of state land under communal tenure	(i) Internal tensions between community members/ representatives may result in failure to secure a community resolution. (ii) Unrealistic expectations of communal land rights-holders may create a negotiation impasse. (iii) Complex negotiated boundaries may increase the costs of boundary surveys. (iii) Successfully negotiated community resolutions and lease agreements could be reneged on (for a variety of reasons) prior to the formal declaration of the protected area.	a) Protected area agencies should adequately educate, capacitate and inform community members and representatives about their rights and responsibilities prior to initiation of negotiations. b) Protected area agencies should then negotiate in good faith and exit negotiation and/or declaration processes when internal tensions arise. c) Negotiated boundaries should be kept simple. c) Funding should be secured to support the survey of property boundaries.

7. Financial tools for protected area expansion: additional information[30]

This section provides information on actual and potential financial tools for protected area expansion. It identifies the main sources of finance for protected area expansion, discusses fiscal incentives for protected area expansion, and looks briefly at funds for protected area expansion.

Sources of financing for protected area expansion

Government funding

Most protected area agencies rely heavily on government funds derived from tax revenue. However, a few protected area agencies (e.g. SANParks, EKZNW) derive a significant portion of their annual operating budget from income from tourism and game sales. Government funding of protected area agencies is typically in the form of an annual appropriation/grant from the national and provincial treasuries, divided into recurrent (operational costs and human resource costs) and capital expenditure components. Finance from the capital component has been used to fund land acquisition by some protected area agencies (e.g. Eastern Cape Parks), while the recurrent component generally covers the operational costs associated with protected area expansion (e.g. CapeNature's biodiversity stewardship programme), primarily in the form of salaries.

In the case of SANParks, DEAT makes a specific annual land grant allocation (e.g. R41m in 2005/6) for the acquisition of land to expand the National Park estate.[31] However, the allocation of government funding to protected area expansion varies considerably between protected area agencies, with most agencies having no dedicated financial commitment to protected area expansion per se. Capital and operational budget allocations for the agencies' protected area management costs also do not necessarily increase in the Medium Term Expenditure Framework (MTEF) with new land acquisitions, with the result that properties incorporated into the protected area network through acquisition may not always be as well managed as intended.

[30] Note that pre-July 2009 department names are used in this section.
[31] This grant is subject to VAT.

Commitment of protected area income streams to finance protected area expansion

In the case of registered public entities (e.g. Marine Living Resources Fund (MLRF)[32] , ECP, EKZNW, MTPA, CapeNature) income streams generated from access to, and use of resources in, protected areas (i.e. entrance, recreation, accommodation, harvesting, goods, services, etc.) may be used to cross-subsidise the activities associated with the expansion of the protected area estate. In the specific case of SANParks, the income from the sale of fauna (i.e. game sales) and flora has been ring-fenced in a dedicated cost centre (termed the National Parks land acquisition fund, standing at R23m in 2007/8) and specifically used to finance strategic land acquisition in the expansion of the National Parks.[33]

NGO, private sector and donor funding

Many opportunities exist for the protected area agencies to develop partnerships with the private sector, national and international NGOs, conservation foundations, conservation trusts and donor agencies to contribute to the expansion of the protected area network. There is a growing trend in South Africa of close collaboration and pooling of resources between the protected area agencies, the private sector and the NGO sector in the expansion of the protected area network (relevant examples include: the collaboration between De Beers Consolidated Mines Ltd., SANParks, National Parks Trust, WWF-SA and Peace Parks Foundation in consolidating the Mapungubwe National Park; the partnership between CapeNature, WWF-SA and the Leslie Hill Succulent Karoo Trust in the expansion of Anysberg Nature Reserve), notably when linked to the socio-economic development and upliftment of rural communities. Similarly, several national and international donor agencies and NGOs (e.g. Global Environment Facility, Conservation International, Critical Ecosystem Partnership Fund, Flora and Fauna International, WWF, Botanical Society of South Africa) have committed resources and capacity to support agency-based biodiversity stewardship programmes in the expansion, and physical linking, of the protected area network and conservation area network. Most of these investments are short- to medium-term and catalytic in nature, with the expectation that the long-term sustainability of these investments lies with the responsible protected area agency and/or contracted landowner and/or community.

[32] The MLRF was established in terms of the Marine Living Resources Act of 1998. In 2001 the Fund became a fully-fledged Public Entity, which meant that it had to comply with the requirements of the Public Finance Management Act (Act 1 of 1999). The MLRF is the main source of funding for operations of MCM. The fund generates its income from levies on fish products, license fees and permits, fines and confiscations, application and harbour fees and transfers from DEAT.

[33] The Park Development Fund has more recently been used to fund activities other than land acquisition and legal costs associated with contract negotiations.

Protected area agencies should continue to develop creative and innovative partnerships with NGOs, the private sector and donor agencies in implementing their protection area expansion implementation plans. Protected area agencies, with support from DEAT, should maintain an enabling legislative and policy framework to facilitate these partnerships.

Securitisation of income streams

Securitisation is defined as a process whereby an asset, debt, obligation or aggregation of these is turned into a marketable security such as a stock or bond. In the case of the establishment of a new protected area or expansion of an existing protected area, the potential exists to aggregate future expected income streams associated with entrance fees, recreational user fees, hotel/lodge development fees, licensing fees or any other income stream that may accrue to a protected area agency from acquisition, declaration and development. Thus, expected future revenues can be sold today as securities to finance land acquisition (and development) by protected area agencies. Buyers of securitised instruments will primarily be financial and developmental institutions (e.g. Development Bank of Southern Africa, Land Bank, Danida Business to Business), as well as various private individuals or other corporate operations (e.g. Old Mutual, Investec). For successful use of securitisation, clearly defined rights to future cash flows (income streams) need to be in place as well as rigorous methodologies for the forecasting of potential future revenue streams. In-depth risk analysis and sensitivity estimation to fluctuations in flows will be required as well as an indication of the proposed use of the securitised funds. SANParks successfully piloted securitization in 2003-4, with a loan from the Industrial Development Corporation. In this instance, the value of wildlife was used as security.

Fiscal incentives that support protected area expansion

A set of fiscal incentives to support expansion of the protected area network has been explored through the Biodiversity and Fiscal Reform Project, a partnership project between the Botanical Society of South Africa, DEAT and National Treasury. Several fiscal incentives that are specifically targeted at achieving government's biodiversity objectives, and which have their own operating mechanisms and means of delivery, have been proposed. They address four complementary areas, each of which is described briefly below:

- Encourage biodiversity stewardship agreements
- Reduce the transaction costs in land acquisition
- Remove disincentives or perverse incentives in property rates

- Better deploy Expanded Public Works Programme (EPWP) spending to incentivise landowners to declare a protected area

Of these four, there have been considerable successes in achieving the first and the third. DEAT has developed a document, “Biodiversity fiscal incentives: a framework on fiscal incentives for biodiversity”, which provides an overview of the available fiscal incentives that relate specifically to biodiversity conservation through custodianship of the land. It is highly recommended that readers of this section also consult the biodiversity fiscal incentives framework document.

Encourage landowners to enter into biodiversity stewardship agreements by making conservation management activities tax deductible

As explained in Section 6, a landowner/rights-holder can enter into a contract agreement with a protected area agency, which involves committing to the implementation of a certified and audited management plan.

Tax based biodiversity incentives were promulgated in the Revenue Laws Amendment Act 60 of 2008, and have been incorporated into the Income Tax Act 58 of 1962. The incentives are effective from the 2009/2010 tax year. This provides a significant boost to protected area expansion by making defined conservation management costs, and in some cases the cost of the land, tax deductible for landowners who have entered into a contract agreement. They depend on the existence of a contract with a specified duration between the landowner and a protected area agency.

Safeguards to avoid abuse of this fiscal incentive include:

- The contractual agreements are audited every year by staff from the relevant protected area agency;
- Only agreed upon actions/expenditure qualify;
- The agreements contain clauses that if the site is destroyed, developed or otherwise loses its biodiversity value due to the willing actions of the landowner, then a pre-determined period of government contributions become immediately re-payable.

Reduce the transaction costs in land acquisition for the purposes of establishing a protected area

It is proposed that DEAT motivate to National Treasury that any land transaction, for the purposes of declaring a protected area, be exempt from transfer duty, estate duty (should it be passed on to the state, or a public benefit organisation), VAT and capital gains tax (should it be sold to anyone willing to adopt the restrictions, management implications and status as a protected area). It should also be free of donations tax (or deductible at accepted market value) if donated to a public benefit organisation for the purposes of declaring a protected area.

Remove perverse incentives in property rates

The Municipal Property Rates Act (Act 6 of 2004) makes provision for the Minister of Finance (National Treasury) to assist in drawing up a framework for all municipal exemptions and rebates. In addition, the Act excludes from property tax "…those parts of a special nature reserve, national park or nature reserve within the meaning of the Protected Areas Act … which are not developed or used for commercial, business, agricultural or residential purposes." This creates an incentive for landowners to assist in landscape protection through formally incorporating their property within the above types of protected areas so as to avoid property tax liability. Importantly, this tax benefit will be withdrawn if the land is subsequently de-proclaimed at the insistence of the landowner or relevant conservation authority, in which case the landowner will be held retrospectively liable for any property tax which would have been due and payable had their land not been so exempted.

However, the Municipal Property Rates Act discriminates against two forms of land use – ecotourism and game farming – which may be compatible with protected area designation, by classifying them as commercial rather than agricultural and thus prescribing higher rates for these uses. This perverse incentive could be mitigated if DEAT and protected area agencies encourage municipalities to cater in their rates policies for judicious exemptions or rebates for private land declared as a protected area.

Deploy EPWP spending to incentivise private landowners to declare a protected area

Many landowners cannot afford the high costs of biodiversity management such as the clearing of invasive plants, fire control and wetland rehabilitation. Nor can they afford the high capital investments required to establish tourism, or comparable, enterprises that could, in time, sustain the maintenance of conservation works.

Matching funds from public works programmes and provincial grant programmes for conservation works, or public works funding for tourism infrastructure development, in privately owned protected areas could be used as an incentive to stimulate landowners to incorporate their land into the protected area network.

Finance mechanisms for protected area expansion

Many protected area agencies and NGOs have as one of their sustainable finance objectives the establishment of a conservation fund which, through the investment of its capital, could generate stable and predictable income flows to finance protected area expansion and management programmes.

Two types of funds are currently used by protected area agencies to co-finance protected area expansion activities:

- **Sinking fund**. In this type of fund a specific amount of money, the capital, is invested, typically in a variety of financial instruments. All the income and dividends earned from the investment, in addition to the capital, are then spent on relevant projects. Examples of sinking funds are the WWF Stewardship Trust and the Leslie Hill Succulent Karoo Trust Fund.
- **Endowment fund**. In an endowment fund the capital is invested in a variety of financial instruments but only the income and dividends are spent on relevant projects. This ensures that the principal of the fund remains untouched and ideally would increase to retain its real value against inflation. An example of an endowment fund is the Table Mountain Fund (WWF-SA).

A further type of fund, the **revolving trust fund**, has been assessed by Owen (2005) as a further potential financing mechanism to support the agencies protected area expansion programmes. In a revolving trust established to finance a protected area expansion programme, the following broad activities would be required:

- An initial pool of funds would be raised to provide a sufficient level of capital to be available to enable land to be purchased.[34]
- A capital amount is used to purchase conservation-worthy land.

[34] An alternate source of capital may be the donation of a property portfolio to the fund for onward selling.

- An agreement is negotiated with the protected area agency for the declaration of the property acquired as a contractual protected area.
- A notarial deed is entered into which records the terms of the agreement, and that those contractual terms will be binding on the landowner's successors-in-title.
- The capital of the fund would then be replenished by selling the land at a price that recovers all costs incurred in purchasing the land, plus the day to day operating costs of the fund (the holding and management costs) and a profit to help fund the next land acquisition[35] .

[35] Where a property has been donated to a conservation body, the funds used to finance its acquisition would have to be replaced by additional donations received from benefactors.

8. Agency-specific implementation plans

The NPAES provides the strategic framework for the development and execution of agency-specific implementation plans for protected area expansion. This section sets out common steps in the development of implementation plans at the protected area agency level, and suggests a generic format for an agency-specific implementation plan.

Using the protected area targets and focus areas identified in the NPAES as a starting point, agency-specific implementation plans should provide more explicit detail on:

- Identification and prioritisation of areas for expansion,
- Preferred expansion mechanisms for these priority areas,
- Suite of incentives used to support the preferred expansion mechanisms,
- Identification and phasing of activities required to support expansion,
- Financing of the expansion programme,
- Monitoring and evaluation of progress.

Each protected area agency's implementation plan, once completed, should be reviewed as part of the strategic review cycle of the agency. The budgeting for the implementation of these protected area expansion plans should, in turn, be integrated into the Medium-Term Expenditure Framework (MTEF) planning cycle.

Common steps in the planning and execution of protected area expansion

Table 26 suggests steps that will broadly guide the planning and execution of protected area expansion in the different protected area agencies.

Table 28: Common steps in the planning and execution of protected area expansion within each protected area agency

Step	Comments
1. Profile land ownership, tenure and use within the focus areas for protected area expansion (see Section 5)	• The product of this step is a more detailed database and map of individual properties within the focus areas for protected area expansion.

Step	Comments
2. Objectively identify and rank priority properties for protected area expansion	• Properties identified in Step 1 may, where feasible and practicable, be evaluated against agreed pre-determined evaluation criteria and ranked in order to provide more useful, meaningful and consistent information for the agency's decision-makers. • Priority may, for example, be given to land that: o Is located in a focus area for protected area expansion, o Has a high risk of being transformed, o Is currently under some form of conservation management (i.e. is a conservation area), o Is publicly owned and available for conservation, o Has the lowest cost (*i.e.* the economic, social and equity implications) and highest returns (conservation, financial, socio-economic and political).
3. Develop a phasing for the incorporation of priority properties into the protected area network	• Wherever practicable, expansion of protected areas should be linked to the capacity of the agency to deliver on the management responsibilities for the newly established/expanded protected areas. • Identify and pursue new financing mechanisms to grow the capacity of the agency to meet the protected area targets identified in the NPAES.
4. Open up channels of direct communication with the targeted landowners and holders of use rights	• The agency will need to develop and maintain a responsive communication and extension system that focuses on building relationships with targeted landowners, and be able to respond to their needs and identify opportunities for voluntary collaboration.
5. Maintain flexibility in the protected area expansion mechanisms and options	• Each protected area agency should pursue an innovative win-win negotiation strategy with the targeted landowners and rights-holders, with a view to obtaining consent to incorporate land into the protected area network. • Where targeted landowners and rights-holders have expressed an interest in pursuing the option of establishing a protected area, the negotiation process should remain flexible to accommodate the idiosyncratic nature of different land-use and management scenarios, but must ensure that final negotiated agreements are generally equitable and comparable with negotiated outcomes with other landowners and rights-holders. • A range of different management and governance arrangements should be considered in the negotiation process. • The protected area agency should consider, whenever possible, using contract agreements, which allow landowners and rights-holders to be incorporated into a protected area without a transfer of title or loss of rights, and which reduce the overwhelming cost of land purchase.
6. Develop incentives for landowners and rights-holders	• Protected area agencies should develop a suite of regulatory, optional and negotiable incentives to encourage landowners and rights-holders to include their land in the protected area network. • Incentives should be aimed at helping landowners and rights-holders to convert land under low production and unprofitable land uses to a more sustainable conservation-based land use. • There are already a large number of incentives in use, and include the following: o Fire management services o Social development or economic investment offsets

Step	Comments
	o Partnerships in nature-based commercial ventures o Technical and professional planning and operations support o Access to marketing resources o Links to planning, development, restoration and operations financing o Clearing of invasive plants o Access to expensive game o Management of sustainable harvesting of natural resources o Legal recognition and support o Land swaps o Employment opportunities o Scientific advice o Lease fees o Extension services o Traversing rights o Tax exemptions o Enforcement support o Fencing supply
7. Aim for the highest level of protection and most cost-effective management and governance	• In negotiations with landowners and rights-holders of targeted properties, the protected area agency should seek to secure the highest level of protection, if the biodiversity value of the property warrants this. • Where formal protected area status cannot be agreed with the landowner and/or rights holder, the protected area agency should explore alternative biodiversity stewardship options ("biodiversity agreement" or "conservation area") with the landowner and rights holder to achieve its conservation objectives. • In time, the protection status may be upgraded to formal protected area when the value of a conservation/nature-based tourism land use has been effectively demonstrated. • Each protected area agency should assess the feasibility (in terms of social, financial and environmental measures) of alternative management and governance models for the priority properties, and seek to secure a model that will ensure the most cost-effective conservation management of the property.
8. Monitor, evaluate and learn lessons from implementation	• Each protected area agency should integrate its protected area expansion programme into its overall monitoring and evaluation system. • A feedback loop for revising the protected area expansion programme, based on lessons learnt, should be developed. • The lessons learnt at the agency level should, in turn, be fed back into the national structures responsible for overseeing the implementation of the national strategy.

Format and content of agency-specific protected area expansion plans

The proposed content of agency-specific implementation plans for protected area expansion is presented in Table 27 below. It must be noted that this format simply provides a guiding framework for protected area agencies and is not prescriptive.

Table 29: Suggested format for an agency-specific implementation plan

Section	Description
Context	(i) An overview of the purpose and structure of the programme. (ii) A brief contextual overview of the agency's responsibility for protected areas, and specifically protected area expansion. (iii) A brief overview of the current protected area estate under the agency's management.
Protected area gap analysis and identification of detailed spatial priorities for expansion	(i) An analysis of the adequacy of the contribution of protected areas under the agency's management to agreed national protected area targets. (ii) Identification of time-bound, and agency-specific, protected area expansion targets for different ecosystems. (iii) An identification and prioritisation (this will include a description of the evaluation criteria used to rank properties) of properties under different protected area expansion scenarios that could meet these protected area expansion targets. (iv) An identification (where known) of the current land ownership, use and tenure of targeted properties.
Protected area expansion mechanisms	(i) An identification and description of the preferred protected area expansion mechanisms adopted by the agency (for different management scenarios). (ii) A description of the suite of incentives adopted by the agency in the roll-out of the expansion mechanisms.
Implementation plan	(i) A phased roll-out of specific activities that will be required to achieve the spatially defined protected area expansion targets.
Financial plan	(i) A description of the financial requirements of the programme (under different management scenarios). (ii) Identification of the financing mechanisms, and any structural requirements, to support programme implementation.
Institutional plan	(i) Identification of the institutional structures for the programme. (ii) Identification of departments/branches/etc. responsible for different aspects of the programme implementation.
Monitoring and evaluation plan	(i) Description of the monitoring and evaluation requirements for the programme.

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