# DRAFT CASE STUDY

# Connectivity Conservation Law through the Eyes of the Greater Cederberg Biodiversity Corridor*

**prepared by**

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## 1. Introduction

While South Africa ranks as the third most biologically diverse country in the world, it is currently hemorrhaging this diverse biological wealth. The most recent assessment of the nation's biological resources highlights that 40% of terrestrial ecosystems, 57% of river ecosystems, 65% of wetland ecosystems, 43% of estuary ecosystems and 58% of coastal and inshore ecosystem types are threatened.[1] Furthermore, increasing numbers of terrestrial, marine and aquatic species are regarded as threatened.[2] These challenges are compounded by the trappings which accompanied South Africa's transition to a constitutional democracy such as the political and budgetary priorities accorded to socio-economic development imperatives, the need to promote rural development amongst impoverished communities, large scale rural land tenure reform and land redistribution, and the creation of a highly fragmented governance regime particularly evident in the environmental sector.

Notwithstanding these challenges, South Africa's conservation authorities have sought to transform the country's regulatory framework during the past two decades to thwart the demise of its rich and diverse biological wealth. While this contemporary legal regime does not include dedicated legislation governing connectivity conservation, it does contain a range of legal tools for promoting the realisation of this concept – legal tools which are scattered across the country's conservation, sustainable use, land-use planning, development control, coastal management and fiscal legislation. These legal tools are complemented by a range of voluntary contractual arrangements and incentive measures. This case study seeks to explore the opportunities provided by, and constraints associated, with the use of these legal tools for promoting connectivity conservation through the lens of the Greater Cederberg Biodiversity Corridor.

## 2. Overview of the Greater Cederberg Biodiversity Corridor

### 2.1 *Origins and Setting*

The origins of the Greater Cederberg Biodiversity Corridor (GCBC) are rooted in the Cape Action for People and the Environment (CAPE), a partnership of government and civil society formed in 2001. CAPE aims to conserve and restore the biodiversity of the Cape Floristic Region and adjacent marine environment, while delivering significant benefits to the people of the region. Comprising 23 signatory partners united around the above common vision, a central aspect of CAPE's strategy is adopting a landscape-level approach to biodiversity conservation, through 'landscape initiatives'. These initiatives take various forms including corridor initiatives, mega-reserves and biosphere reserves. They seek to overcome the constraints associated with traditional conservation and protected area initiatives, and focus on promoting the sustainable management of a mosaic of land uses, where people live and work in harmony with nature and within the natural resource limits of the landscape - inherent in the notion of 'living landscapes'.[3] Central to this approach is the creation of corridors of continuous natural habitat across the living landscape. These corridors seek to conserve species, critical habitats, biological patterns and

[1] Driver A, Sink K, Nel, J, Holness S, Van Niekerk L, Daniels F, Jonas Z, Majiedt P, Harris L & Maze K *National Biodiversity Assessment 2011: An Assessment of South Africa's Biodiversity and Ecosystems. Synthesis Report* (2012) South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria.

[2] See generally on the state of South Africa's biological resources: Department of Environmental Affairs and Tourism *South African Environmental Outlook: A Report on the State of the Environment* (2006) 108-137; Department of Environmental Affairs and Tourism *National Biodiversity Strategy and Action Plan* (2005) 13-17; and *White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity* (1997) (published in GN 1095 *GG* No.18163 dated 28 July 1997) 13-14.

[3] *Greater Cederberg Biodiversity Corridor Planning Phase Report* (2005), 6

ecological processes; and are viewed as important tools in the context of climate change adaptation. The GCBC is one such corridor initiative.

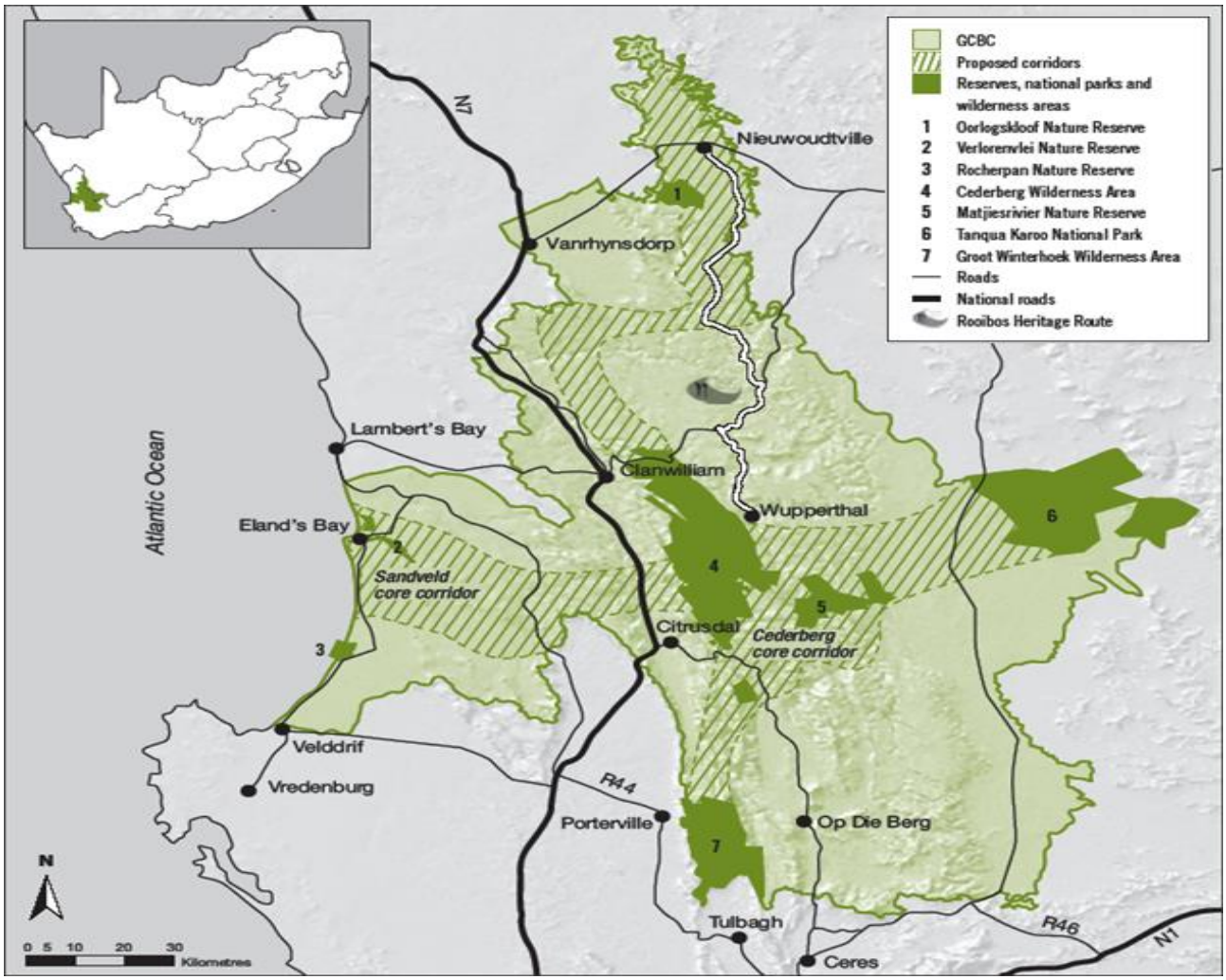


FIG 1: GREATER CEDERBERG BIODIVERSITY CORRIDOR

The GCBC is situated on the south western coast of South Africa and covers an area of 1.8 million hectares stretching approximately 160 km from Nieuwoudtville in the north to the Groot Winterhoek Wilderness Area in the south; and some 200 km from Elandsbaai in the west to the Tankwa Karoo National Park in the east. Incorporating diverse geology, climatic conditions, flora and fauna, it is an area of high biological importance containing two global biodiversity hotspots (the Cape Floral Kingdom and the Succulent Karoo biome).[4] It is characterized by 42 vegetation types and contains three important bird areas, 175 wetlands and several important riverine corridors. The area is also permeated with valuable archeological sites providing evidence of settlement dating back to the Early Stone Age.

Approximately 10% of the area falls within several forms of statutorily prescribed protected areas that are legally and institutionally secure. A further 32% of the land is regulated under less secure forms of protected areas and/or by way of voluntary conservation agreements. Outside of these

[4] For a comprehensive overview of the importance of the area, see: Low A, Mustart A, Van der Merwe H *Greater Cederberg Biodiversity Corridor: Provision of Biodiversity Profiles for Management* (2004) COASTEC.

areas, the predominant land use is stock farming and agriculture (citrus, wine, deciduous fruit, tea and potatoes). These sectors provide employment to about 50% of the area's population. At last available count this population stood at 28 560 inhabitants and the area's population density at 2.5 persons per km□. Approximately 30% of these inhabitants are unemployed and of those who are employed, 78% earn less than R1500/month (less than USD200/month). Outside of the agricultural sector, employment opportunities are limited. According to the last available statistics, approximately 16% of the land within the GCBC has been transformed from its natural state - with the rate of transformation increasing as agriculture expands in the area. As a result, 18 of the 42 vegetation types occurring in the GCBC have been identified as critically endangered, endangered or vulnerable.

## 2.2 *Institutional Arrangements Underpinning the Corridor*

The area falling within the GCBC spans land owned by many different entities (government departments, communities and private landowners); and traverses the administrative boundaries of several municipalities (local government authorities) and two provincial governments (namely the Western Cape and the Northern Cape). The natural resources situated within the GCBC and the activities impacting on these resources are regulated by a diverse array of laws administered by several national, provincial and local authorities.[5] This diversity of institutions clearly posed significant challenges for creating a workable institutional structure to administer the GCBC. CapeNature, the provincial conservation authority in the Western Cape, acts as the implementing agent for, and service provider to, the GCBC. Together with a Project Management Unit (housed within CapeNature), it seeks to ensure that lasting partnerships are built throughout the corridor between all the above relevant stakeholders. A steering committee with representation from 22 organisations (including those mentioned above) meets quarterly to review the progress of CapeNature and the PMU and make decisions to guide their future action.

## 2.3 *Objectives and Strategy of the Corridor*

The vision of the GCBC is to conserve the biodiversity within the area through the sustainable utilization of the area's unique living landscape. The key objectives of the initiative include:

- to provide a framework which will underpin community participation in the management of the GCBC and the natural resources and heritage values that it contains;
- to maintain the diversity of landscapes and habitats within the GCBC and its associated species and ecosystems;
- to support lifestyles and bring benefits to, and contribute to the welfare of local communities, which are in harmony with nature and the preservation of the social and cultural fabric of the communities concerned;
- to help ensure that the associative and non-material values of the GCBC and traditional land-use practices are recognised and respected;
- to contribute at a bio-regional scale to conservation and sustainable development;
- to prevent and eliminate, where necessary, land uses and activities which are inappropriate in scale and/or character;
- to buffer and link provincial and national protected areas;

[5] These include: Department of Environmental Affairs; Department of Water Affairs; Department of Agriculture, Forestry and Fisheries; South African National Parks; South African National Biodiversity Institute; South African National Heritage Resources Agency; CapeNature; Western Cape Heritage Resources Authority; Department of Environmental Affairs and Development Planning (Western Cape); Department of Environmental and Nature Conservation (Northern Cape); West Coast District Municipality; Namakwa District Municipality; Bergriver Local Municipality; Witzenberg Local Municipality; Cederberg Local Municipality; Matzikama Local Municipality; and Hantam Local Municipality.

- to encourage scientific and educational activities which will contribute to the long term well-being of fauna and flora populations of the GCBC and to the development of public support for the environmental protection of the GCBC;
- to provide opportunities for public recreation and tourism of a type and scale that will ensure preservation of the essential qualities of the GCBC; and
- to act as a model of sustainability, both for the benefit of the people and the area, so that lessons can be learnt for wider application.

Five key strategies have been developed to aid in the attainment of these objectives, namely those relating to: expansion; industrial involvement; local economic development and human-well being; awareness; and coordination.[6] It is the first of these, the Expansion Strategy, which is most central to the realm of connectivity conservation. The principle goal of corridor planning, as envisaged by the GCBC, is to maintain and restore connectivity across the landscape, linking land parcels together or enabling them to serve as stepping stones to facilitate the movement of species through the landscape. This is a distinct challenge in South Africa given the country's increasingly sporadic and disjointed land-use patterns which are compounded by the reality that 80% of scarce and threatened ecosystems and habitats are situated on private land. The Expansion Strategy accordingly recognises that the attainment of this goal is dependant on a range of measures, such as: introducing area-wide and landscape planning; identifying prioirity biodiversity sites on privately-owned land parcels; stimulating the creation of additional protected areas through voluntary stewardship agreements; introducing conservation measures governing important sites falling outside these protected areas, creating land-use planning strategies to promote appropriate forms of land use on these sites; and restoring degraded land and resources on key sites.

Following extensive, participatory broad and multi-scale planning, five main corridors have been identified in the GCBC with a view to linking critical biodiversity areas within it. These are founded on two core corridors, namely the Sandveld Core Corridor and Cederberg Core Corridor. The Sandveld Core Corridor runs from Elandsbaai on the West Coast through to the central Cederberg Wilderness Area. This corridor provides an important ecological gradient from the coast to the inner higher lying areas and contains some of the most threatened biodiversity in the GCBC because of unplanned agricultural expansion. The Cederberg Core Corridor is situated to the south east of the Cederberg Wilderness Area and overlaps with one of South Africa's eight world heritage sites, namely the Cape Floral Region Protected Areas. This corridor contains several rare and endangered species as it lies at the interface between the Fynbos and Succulent Karoo biomes. Much of the work over the past few years has focussed on establishing these two core corridors, and has included area-wide planning processes and negotiations with private landowners with a view to incorporating their land into protected areas or under some form of stewardship arrangement. These two core corridors will in the future be complemented by the addition of the: Bokkeveld Corridor (extending northwards from the Cederberg Wilderness Area towards the Oorlogskloof Nature Reserve): Groot Winterhoek Freshwater Corridor (extending southwards from the Cederberg Wilderness Area towards the Grootwinterhoek Wilderness Area) and the Olifantsberg Corridor (extending westwards from the Cederberg Wilderness Area to towards the Sandveld Core Corridor). All three of these latter corridors provide important upland-lowland gradients, traverse important biomes, are home to rich species diversity and provide important potential migration paths for plant and animal species in light of climate change.

The remainder of this case study highlights the broad array of tools inherent in South Africa's contemporary legal framework which have been used, or could be used, to promote the connectivity goals of the GCBC.

[6] For further details on these strategies and the projects that have been implemented to give effect to them, see http://www.cedarbergcorridor.org.za.

## 3. Domestic Laws Facilitating Connectivity Conservation

While South Africa does not have dedicated legislation promoting connectivity conservation, several domestic laws contain legal tools for realising the concept. These legal tools are found inherent in laws permeating many distinct legal sectors, namely: conservation legislation (establishing protected areas; promoting biodiversity planning; and regulating listed ecosystems and species); sustainable use legislation (regulating specific natural resources such as fresh water, natural forests, soil, heritage and marine living resources); land-use planning legislation (governing future spatial planning, zoning and subdivision); development control legislation (providing for environmental impact assessment, strategic environmental assessment and environmental management frameworks); integrated coastal management legislation (regulating planning and development in the coastal zone) and fiscal legislation (governing an array of conservation incentives). The administration of these laws is scattered across the national, provincial and local spheres of government. This legislative scheme is further complemented by several non-statutory schemes that seek to promote connectivity conservation through the use of voluntary contractual arrangements. This scheme is exceptionally broad in its ambit and detailed in its formulation. The delimited scope of this case study only provides an opportunity to briefly reflect on its general operation and utility in promoting connectivity conservation in the context of the GCBC.

### 3.1 *Conservation Legislation*

#### 3.1.1 Establishing Protected Areas

South Africa currently has eleven main national laws[7] and eighteen main provincial laws[8] providing for the designation of over twenty-five different forms of statutory prescribed protected areas. As depicted in Figure 2 below, approximately 10% of the land falling within the GCBC is incorporated within several forms of strictly regulated protected areas including national parks, provincial nature reserves, local authority reserves and marine protected areas. This percentage includes both state and privately owned land. The statutory objectives for establishing these areas are diverse and while not specifically referring to connectivity, are suffciently broadly phrased to promote the conservation of core areas of high conservation value and adjacent areas to act as buffer zones to, or corridors between, these areas. These areas are generally subject to strict regulation with provision being in made in the founding laws for the appointment of management authorities, the preparation of management plans and the strict regulation of activities within them. The majority of these protected areas are managed by government conservation authorities, with their protection being perpetual in nature.

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[7] Relevant national laws include: the National Environmental Management: Protected Areas Act 57 of 2003; National Environmental Management: Biodiversity Act 10 of 2004; World Heritage Convention Act 49 of 1999; National Heritage Resources Act 25 of 1999; National Environmental Management Act 107 of 1998; National Forests Act 84 of 1998; Marine Living Resources Act 18 of 1998; Environment Conservation Act 73 of 1989; Forest Act 122 of 1984; Mountain Catchment Areas Act 63 of 1970, and Sea Birds and Seals Protection Act 46 of 1973. For a comprehensive overview of South Africa's protected areas regime, see further: Paterson AR 'Protected Areas: South Africa' in Lausche B *Guidelines for Protected Areas Legislation* (2011) IUCN Environmental Policy and Law Paper No.81 IUCN Environmental Law Centre Bonn.

[8] Relevant provincial laws include: Nature Conservation Ordinance (Transvaal) 12 of 1983; Nature Conservation Ordinance (Cape) 19 of 1974; Nature Conservation Ordinance (Natal) 15 of 1974; Nature Conservation Ordinance (OFS) 8 of 1969; Transkei Environmental Conservation Decree 9 of 1992; Nature Conservation Act (Ciskei) 10 of 1987; Protected Areas Act (Bophuthatswana) 24 of 1987; Bophuthatswana Nature Conservation Act 3 of 1973; Provincial Parks Board Act (Eastern Cape) 12 of 2003; Limpopo Environmental Management Act 7 of 2003; Limpopo Tourism and Parks Board Act 8 of 2001; Mpumalanga Nature Conservation Act 10 of 1998; Mpumalanga Tourism and Parks Agency Act 5 of 2005; Kwazulu-Natal Nature Conservation Act 29 of 1992; Kwazulu-Natal Nature Conservation Management Act 9 of 1997; Northern Cape Nature Conservation Act 9 of 2009; Eastern Cape Parks and Tourism Act 2 of 2010; and Western Cape Biosphere Reserves Act 16 of 2011.

A further 32% of the land in the GCBC is incorporated in what may be termed less secure forms of protected areas such as: private nature reserves, national heritage sites and mountain catchment areas; or in conservancies (see Figure 3 below). The former are similarly regulated by statute and as their name suggests, the rationale for their creation is diverse and includes biodiversity conservation, heritage protection and fresh water management. They are less formal in the sense that management often falls to private landowners and regulation is less strict, with greater provision being made for regulated access and use. The latter, the conservancies, do not have statutory standing and comprise areas subject to voluntary stewardship agreements concluded between private landowners and provincial conservation authorities (see further part 3.7 below).

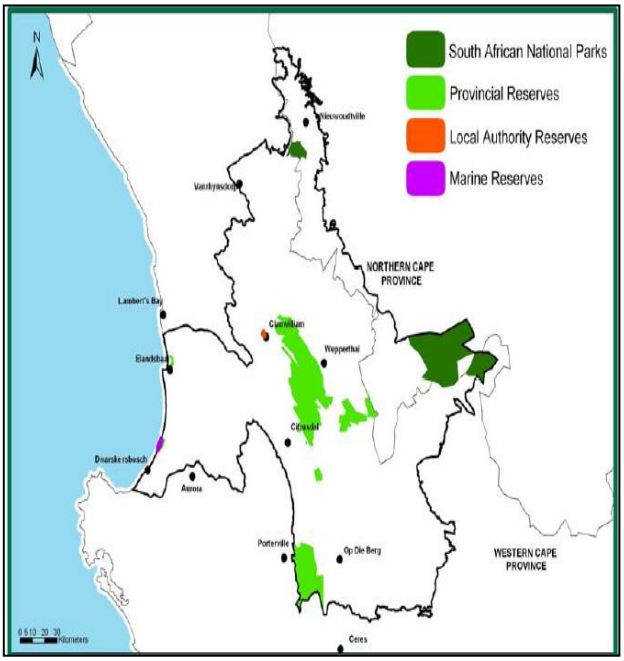


FIG 2: FORMAL PROTECTED AREAS

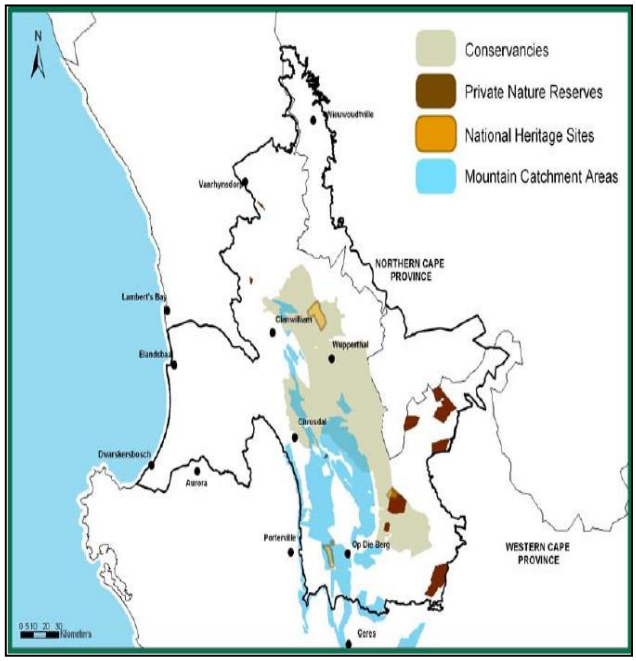


FIG 3: LESS FORMAL PROTECTED AREAS

The diverse array of protected areas and stewardship options has afforded conservation authorities and landowners broad flexibility to tailor diverse conservation solutions to specific contexts or objectives – including promoting connectivity conservation. This is notwithstanding the fact that South Africa's underpinning statutory framework governing protected areas makes no express provision for connectivity conservation. Recent national protected area strategies, such as the *National Protected Areas Expansion Strategy*[9] (2009) and the *Strategy on Buffer Zones for National Parks*[10] (2012) do expressly recognise the value of protected areas in promoting connectivity, maintaining ecological processes and fostering resilience to climate change. They are indicative of the Government's realisation of the need to better integrate protected areas into their surrounding landscapes in an effort to meet biodiversity thresholds for terrestrial and freshwater ecosystems.

[9] Government of South Africa *National Protected Areas Expansion Strategy for South Africa* (2009). The Strategy prescribes an array of targets for ensuring that a representative sample of South Africa's crucial ecosystems are conserved and identifies forty-two large, intact and un-fragmented areas of high conservation value deemed suitable for inclusion in large protected areas.

[10] GN 106 *GG* No. 35020 dated 8 February 2012. The Strategy sets out the Government's plan for establishing and managing buffer zones around the country's national parks to ensure that they are able to meet their objectives.

### 3.1.2 Biodiversity Planning

This comprehensive protected areas regime at play in the GCBC is complemented by several national and provincial laws which provide the underpinning planning framework for informing priority conservation action (including the designation of formal and less formal protected areas) and an array of tools for promoting the realisation of this planning regime. [11] In both senses, these laws provide valuable tools for promoting connectivity conservation, with the most important law being the National Environmental Management: Biodiversity Act (NEMBA).[12] It provides for the adoption of a national biodiversity framework[13] and the declaration of bioregions and associated bioregional plans.[14] These mechanisms, which are applicable in the context of the GCBC, may promote connectivity conservation and therefore require brief elaboration.

NEMBA prescribes that the national environmental Minister must prepare a national biodiversity framework that provides for an integrated, co-ordinated and uniform approach to biodiversity management by organs of state in all spheres of government, non-governmental organisations, the private sector, local communities, other stakeholders and the public.[15] It must also identify priority areas for conservation action and the establishment of protected areas, provide for regional co-operation and may determine norms and standards for provincial and municipal environmental conservation plans. This *National Biodiversity Framework*,[16] complemented by a *National Biodiversity Assessment*[17] and the *National Biodiversity Strategy and Action Plan*[18] (*NBSAP*), was published in 2009. It identifies thirty-three priority actions to be undertaken in the next five years in order to give effect to the strategic objectives highlighted in the *NBSAP*. It therefore provides an important planning framework to promote, inform and co-ordinate the short-term efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity. While not expressly referring to connectivity conservation, several of the priority actions focus on promoting objectives and activities associated with this ideal such as creating ecological corridors and buffers between areas of high conservation value. This statutory planning framework is complemented by several relevant programmes that in the context of the GCBC

[11] See notes 7 and 8 above for a list of these laws.
[12] 10 of 2004.
[13] The national environmental Minister must prescribe a national biodiversity framework which provides for an integrated, coordinated and uniform approach to biodiversity management; and identifies priority areas for conservation action and the establishment of protected areas (s 38 and s 39).
[14] The national environmental Minister or relevant provincial environmental Minister may determine a geographical region as a bioregion and publish a plan for managing the biodiversity within the region (s 40 and s 41).
[15] S 39(1) and (2).
[16] GN 813 *GG* No. 32474 dated 3 August 2009.
[17] *National Biodiversity Assessment* (2012) (note 2). Commissioned by the Department of Environmental Affairs, it contains an assessment of South Africa's biodiversity, socio-economic and political context and provides an overview of key issues, constraints and opportunities relating to it.
[18] Department of Environmental Affairs and Tourism *South Africa's National Biodiversity Strategy and Action Plan* (2005). Commissioned by the erstwhile Department of Environmental Affairs and Tourism, it sets out a comprehensive long-term strategy for the conservation and sustainable use of South Africa's biodiversity and the equitable sharing of benefits derived from this use.

include the *Cape Action Plan for People and the Environment*[19] and the *Succulent Karoo Ecosystems Programme*[20] that further guide and coordinate priority conservation action.

This national planning famework is mimicked at the regional level. The national and provincial environmental Ministers may determine a geographic region as a bioregion and publish a bioregional plan to manage the biodiversity situated within it.[21] The content to be included in such a plan is set out in the Act and must essentially contain measures for the effective management of biodiversity in the region.[22] The national Minister has promulgated *Guidelines Regarding the Determination of Bioregions and the Preparation of and Publication of Bioregional Plans*.[23] These *Guidelines* contain detailed information on how to determine the boundaries of bioregions, the content to be included in a bioregional plan, the process to be followed in determining a bioregion and publishing a bioregional plan, and who shall use the plan. Interestingly, the *Guidelines* specifically recognise the principle of representation and persistence as key characteristics of a systematic biodiversity plan. Furthermore, they state that any such plan must identify a portfolio of critical biodiversity areas required to meet biodiversity pattern and ecological process targets and that these areas should include spatially explicit ecological corridors that need to be managed to ensure connectivity of natural habitat in the landscape. No such bioregions or bioregional plans have been published to date but given their broadly framed nature, they could be used to promote, inform and coordinate connectivity conservation initiatives within the GCBC and beyond. Were any such plans to be developed in relation to the area included in the GCBC, their content would need to be reflected in the strategies underpinning the operation, management and expansion of the GCBC.

The final type of plans provided for in NEMBA are biodiversity management plans. Their preparation may be initiated by a range bodies and must be approved by the national Minister.[24] These plans can be prepared for both listed and non-listed ecosystems and indigenous species warranting special conservation attention. They must be aimed at the long-term survival in nature of the species or ecosystem to which the plan relates; provide for a responsible person, organisation or organ of state to implement the plan; and be consistent with a number of broader planning instruments including the *National Biodiversity Framework*, applicable bioregional plans and relevant integrated development plans (IDPs) prepared by municipalities.[25]

A biodiversity management plan may be fortified by a 'biodiversity management agreement', in that the Minister may enter into such an agreement with stipulated bodies 'regarding the

[19] CAPE is a partnership of government and civil society, aimed at conserving and restoring the biodiversity of the Cape Floristic Region and the adjacent marine environment, while delivering significant benefits for communities living in the region. It has 23 signatory partners (including government departments, municipalities, non-governmental and community-based organizations and conservation agencies). In addition to coordinating and providing strategic direction to conservation functions, it enables donor funding to be channeled into new areas of work and approaches to conservation. The following specific areas of work are targeted: landscape initiatives; conservation stewardship; business and biodiversity; fine-scale planning; catchment management; conservation education; and strengthening institutions. A number of task teams coordinate work in these areas. For further information on CAPE's projects see http://www.capeaction.org.za/.

[20] SKEP is also a partnership of government and civil society, aimed at implementing a 20-year strategy to conserve the sensitive Succulent Karoo Ecosystem. It focuses on the following four strategic areas: increasing local, national and international awareness of the unique inherent biodiversity of the Succulent Karoo; expanding protected areas and improving conservation management; supporting the creation of a matrix of harmonious land uses; and improving institutional coordination. For further information on SKEP see http://www.skep.org/.

[21] S 40(1) and (2).

[22] S 41.

[23] GN 291 *GG* No. 32006 dated 16 March 2009.

[24] S 43(1).

[25] S 45. See part 3.3.1 below for a discussion of these IDPs.

implementation of a biodiversity management plan, or any aspect of it'.[26] These bodies feasibly include government authorities, organisations and private landowners. In order to encourage persons to enter into such agreements, various income tax benefits have recently been introduced in respect of expenditure incurred in implementing them.[27]

The national Minister has promulgated *National Norms and Standards for Biodiversity Management Plans for Species*[28] and *Norms and Standards for Biodiversity Management Plans for Ecosystems*.[29] These Norms and Standards set out the scope, format, approval and implementation process for these plans. Interestingly, the latter set of norms and standards recognise the following forms of ecosystems as warranting inclusion in any such management plan: ecosystems in buffers or corridors linked to protected areas; ecosystems that play an important role in the provision of ecosystem services; and ecosystems likely to be important for ecosystem-based adaptation to climate change. The management objective to be included in these biodiversity management plans could, for example, be to maintain or restore connectivity, or to address under-representation of a particular ecosystem or species in the protected areas system.

Only one final and two draft biodiversity management plan for species[30] have been approved to date. No biodiversity management plans for ecosystems currently exist. No biodiversity management agreements have been concluded to date in respect of these plans and given their novelty, the precise nature of these agreements is yet to be clarified. However, they feasibly provide a further useful legal tool for promoting connectivity conservation objectives and actions in respect of both species and ecosystems by a diverse array of stakeholders both within and outside the borders of protected areas.

What is also important to note is that before adopting or approving any of these three types of plans, the authorities are obliged to follow the intergovernmental and public consultative process laid down in NEMBA.[31] Furthermore, the Act also provides for the co-ordination and alignment of these biodiversity planning instruments with each other and with those prescribed in other environmental and land-use planning laws.[32] This should potentially ensure that issues of connectivity conservation permeate different planning contexts and the decisions informed by them.

### 3.1.3 Listed Ecosystems and Species

Several national[33] and provincial conservation laws[34] provide for the protection of threatened and protected ecosystems and species.[35] This ordinarily involves a two stage process: first, the listing of the relevant ecosystem or species; and secondly, the imposition of a range of restrictions relating to activities which may impact on such species. The most contemporary of these schemes is contained in NEMBA, which specifically provides for the identification of threatened and

[26] S 44.
[27] See part 3.6.2 below for a discussion of these incentives.
[28] GN 214 *GG* No. 31968 dated 2 March 2009.
[29] GN 532 *GG* No. 35486 dated 2 July 2012.
[30] Specifically for cycads (final), Kalerbossie (draft) and black rhino (draft).
[31] S 47 read with s 99 and s 100.
[32] The three 'biodiversity' plans may not be in conflict with each other and with: environmental implementation plans (EIPs) or environmental management plans (EMPs) prescribed in terms of the NEMA; IDPs and spatial development frameworks (SDFs) prescribed in terms of the Local Government: Municipal Systems Act 32 of 2000; and other relevant national or provincial plans (s 48).
[33] These include NEMBA and National Forests Act.
[34] These include the provincial laws listed in note 8 above.
[35] A full discussion of these laws falls outside the purview of this case study. The following discussion is accordingly limited to those ecosystems and species regulated under NEMBA.

protected ecosystems and species[36] and the preparation of biodiversity management plans[37] for those so listed. These two mechanisms may similarly promote connectivity conservation and are both at play in the context of the GCBC.

NEMBA enables the national or relevant provincial environmental Minister to publish a national or provincial list of ecosystems that are threatened and in need of protection.[38] A number of different categories of ecosystems, and their location, may be listed, namely: critically endangered ecosystems; endangered ecosystems; vulnerable ecosystems; and protected ecosystems.[39] Once listed, the authorities may publish a list of processes or activities that pose threats to such ecosystems (called threatening processes).[40] Once so identified, the threatening process is regarded as an activity requiring an environmental authorisation, preceded by an environmental impact assessment.[41] Furthermore, the situation of listed ecosystems must be taken into account by several organs of state in preparing various environmental and land-use plans, including IDPs adopted by municipalities.[42]

A *National List of Threatened Ecosystems* has been published.[43] It contains 225 terrestrial ecosystems situated across South Africa that are critically endangered (53), endangered (64) or vulnerable (108). This list is the first stage of a phased process that will culminate in the national Minister publishing additional lists of threatened ecosystems in the freshwater, estaurine and marine environments. It sets out the rationale and criteria[44] for identifying threatened ecosystems and the implications of listing them. While the primary rationale for listing ecosystems is to reduce the rate of ecosystem and species extinction through proactive management and not apparently to ensure the persistence of landscape-scale ecological processes, it is acknowledged that the latter may be a natural consequence of the former. Several of the listed ecosystems are located within the GCBC,[45] thereby providing a further legal mechanism for further promoting connectivity conservation within and between these listed ecosystems through factoring their existence into relevant planning frameworks and regulating activities which may negatively impact on them.

NEMBA also empowers the national Minister to publish a list of critically endangered species, endangered species, vulnerable species and protected species.[46] Once so listed, no person may

[36] The Minister or relevant provincial Minister may respectively publish lists of national and provincial ecosystems that are threatened and in need of protection (s 52). The Minister may, in addition, publish lists of species that are threatened and in need of protection (s 56).
[37] Any person, organization or organ of state wishing to assist with the conservation of listed ecosystems and species can prepare a biodiversity management plan aimed at ensuring the long-term survival of the listed ecosystem and species (s 43 and s 45). No such plan has yet been submitted for approval.
[38] S 52(1).
[39] S 52(2) and (3). These lists must be reviewed every five years (s 52(4)).
[40] S 53(1). These 'threatening process' are yet to be listed.
[41] S 53(2). The EIA process is regulated under the National Environmental Management Act (107 of 1998) (s 24) read together with the *Environmental Impact Assessment Regulations* (GNR 543-546 *GG* No. 33306 dated 18 June 2010). These threatening processes are expressly listed as identified activities requiring basic assessment under these regulations (identified activity No. 25 in GNR 544).
[42] S 54.
[43] GN 1002 *GG* No. 34809 dated 8 December 2011.
[44] These criteria are: irreversible loss of natural habitat; ecosystem degradation and loss of integrity; rate of loss of natural habitat; limited extent and imminent threat; threatened plant species associations; threatened animal species associations; fragmentation; priority areas for meeting explicit biodiversity targets as defined in a systematic biodiversity plan.
[45] These include: Swartland Shale Renosterveld; CapeVernal Pools; Kouebokkeveld Alluvium Fynbos; Kouebokkeveld Shale Fynbos; Bokkeveld Sandstone Fynbos; Ceres Shale Renosterveld; Hopefield Sand Fynbos; Leipoldville Sand Fynbos; Piketberg Quartz Succulent Shrubland; and Piketberg Sandstone Fynbos.
[46] S 56(1).

carry out a restricted activity[47] involving a specimen of such a species without a permit.[48] In addition, the Minister may prohibit the carrying out of any activity that may negatively impact on the survival of a listed threatened or protected species by notice in the *Government Gazette*.[49] The Minister published a *List of Critically Endangered, Endangered, Vulnerable and Protected Species*[50] and the *Threatened and Protected Species Regulations*[51] (*TOPS Regulations*) regulating the permitting process. Several of the listed species are similarly situated in the GCBC and in so far as this scheme provides for the uniform regulation of activities impacting on species across an entire landscape, it may indirectly promote connectivity conservation.

## 3.2 *Sustainable Use Legislation*

While South Africa's contemporary conservation legislation provides the overarching legal dispensation of most relevance to promoting connectivity conservation in the GCBC, several of the country's sectoral resource use laws may also indirectly aid connectivity conservation. These laws, which are administered by several different government agencies, seek to regulate the use of agricultural resources,[52] fresh water resources,[53] forests[54] and marine living resources.[55] The regulatory tools inherent in these laws are exceedingly diverse and a full discussion of them unfortunately falls outside the purview of this case study. In summary, these laws generally provide for the following types of legal tools: the generation of planning frameworks (at national and regional levels); the prescription of principles and objectives (to guide decision-making); the introduction of permitting schemes (for activities such as using water, clearing land, catching marine living resources and harvesting natural forests); the imposition of directives and control measures (to control alien invasive species, prevent soil erosion, protect wetlands, regulate grazing capacity and prevent wild fires); the provision of subsidy schemes (to facilitate irrigated agricultural development by resource poor farmers); and the establishment of voluntary resource management associations and committees (such as water user associations, soil conservation committees and fire protection associations). While none of these laws directly refer to connectivity, many of the regulatory tools inherent in them may indirectly promote the concept. Several provide for integrated and multi-level planning to inform national and regional priority action. The prescription of overarching principles and objectives promotes consistent decision-making within and between the natural resource sectors. Many of the laws directly regulate several activities that may undermine connectivity. Finally, the laws appear to increasingly recognise the value of coordinated landowner action/participation facilitated through the creation of voluntary associations and committees. This potential could be greatly improved through engraining connectivity as: an essential component of the planning frameworks; one of the key objectives of each of the natural resource laws; an important criterion informing the grant of any permit, directive or control measure; and a fundamental function of any voluntary association/committee.

[47] The term 'restricted activity' is defined very widely in the Act to include almost all activities relating to living specimens or derivatives of listed species, including development activities impacting on these species (s 1).
[48] S 57(1).
[49] S 57(2). In this regard, the Minister has imposed a national moratorium on the trade of individual rhinoceros horns and products and derivatives thereof (GN 148 *GG* No. 31899 dated 13 February 2009).
[50] GNR 151 *GG* No. 29657 dated 23 February 2007, as amended.
[51] GNR 152 *GG* No. 29657 dated 23 February 2007, as amended.
[52] Conservation of Agricultural Resources Act 43 of 1993 (administered by the Department of Agriculture, Forestry and Fisheries).
[53] National Water Act 36 of 1998 (administered by the Department of Water Affairs).
[54] National Forest Act 84 of 1998 and National Veld and Forest Fire Act 101 of 1998 (administered by the Department of Agriculture, Forestry and Fisheries).
[55] Marine Living Resources Act 18 of 1998 (administered by the Department of Agriculture, Forestry and Fisheries).

## 3.3 *Land-Use Planning Legislation*

Complementing this comprehensive sustainable use regime applicable in the GCBC, is a multi-tiered land-use planning regime administered predominantly by municipalities. This regime is relevant to promoting connectivity conservation in two main respects. The first is the manner in which municipalities are compelled to align their relevant future spatial planning with relevant biodiversity planning frameworks. The second is the manner in which specific land-use management tools administered by these authorities can be used to promote conservation connectivity.

### 3.3.1 Future Spatial Planning

Future spatial planning is a key component of South Africa's land-use planning regime and is entrenched in several national[56] and provincial laws.[57] These laws compel municipalities to prepare several overlapping plans to guide future land-use in their municipal area. These plans include integrated development plans (IDPs), spatial development frameworks (SDFs) and structure plans.

All 284 municipalities in South Africa are obliged to prepare IDPs to promote integrated development and management of their municipal area.[58] While their content does not confer and take away land-use rights, they must be taken into account by municipalities in their land-use and development decision-making.[59] These decisions would include township, rezoning and subdivision approvals. When developing these IDPs, the municipalities have to ensure that they are aligned with and incorporate relevant aspects of a broad array of biodiversity plans prepared by conservation authorities, such as the *National Biodiversity Framework*, bioregional plans and biodiversity management plans. Furthermore, municipalities must also take into account the situation of listed ecosystems within their jurisdiction and align their IDPs accordingly. These IDPs must contain a spatial development framework (SDF), which provides guidelines for current and future land-use management in the municipality's jurisdiction. The content of these SDFs must similarly be aligned with the abovementioned biodiversity planning tools and inform relevant land-use and development decisions. The final component of the land-use planning regime that provides for future spatial planning are structure plans, a remnant from South Africa's 'old' planning regime,[60] which generally have the same statutory status as IDPs and SDFs.

Cumulatively, these future spatial planning tools provide significant avenues for connectivity conservation issues to permeate land-use and spatial planning frameworks and decision-making. This potential is however dependant on connectivity conservation imperatives being entrenched in the relevant biodiversity plans, and municipalities having the capacity to then integrate this relevant content into their IDPs, SDFs and structure plans when they are developed or updated. This is where this potential is somewhat limited in the context of South Africa generally and the GCBC in particular, where none of the relevant IDPs, SDFs and structure plans currently make specific reference to connectivity conservation. This can be attributed to two main reasons. First, many of the relevant biodiversity plans are still in their infancy given the contemporary nature of the overarching legislative regime. Secondly, many rural municipalities, including several of those

[56] Local Government Municipal Systems Act 32 of 2000 and Physical Planning Act 125 of 1991.
[57] Kwazulu-Natal Planning and Development Act 5 of 1998; Northern Cape Planning and Development Act 7 of 1998; Land Use Planning Ordinance (Cape) 15 of 1985; Town Planning Ordinance (Natal) 27 of 1949; Town Planning and Townships Ordinance (Transvaal) 25 of 1965; and Townships Ordinance (Free State) 9 of 1969.
[58] Local Government: Municipal Systems Act (s 25 and s 26).
[59] Local Government: Municipal Systems Act (s 35).
[60] The preparation, status and amendment of structure plans is predominantly regulated under the Physical Planning Act 125 of 1991 and the provincial planning legislation (see note 57 above).

whose jurisdictions traverse the GCBC, do not currently have the capacity or resources to attend to such alignment. Both these challenges will hopefully be overcome in the future.

### 3.3.2 Zoning, Environmental Overlays and Subdivision

Land-use planning legislation also contains several legal tools that directly confer or take away land-use rights, most importantly zoning and subdivision. All land falls within the jurisdiction of a particular municipality which is required to accord such land a particular zoning. These zones include open space, agriculture, rural, residential or industrial and are reflected in zoning scheme maps prepared by municipalities. Certain land-use/development rights and restrictions are attached to the different zones. These strictly regulate the types and scale of development that can be undertaken and are contained in zoning scheme regulations prepared by municipalities under provincial planning legislation.[61] Should a landowner wish to undertake a different land-use or alter the rights and restrictions attached to their current zoning, he/she has to apply to the relevant municipality to either rezone the land, or obtain a formal departure from the current restrictions. As discussed above, the development of the zoning scheme and the taking of any rezoning/departure decision must be informed by any relevant future spatial planning framework. Therefore, in so far as the latter entrench connectivity conservation principles, these principles should infiltrate these key zoning tools and decisions. This potential is however currently similarly frustrated in the GCBC by the factors discussed above in the context of future spatial planning.

A second planning tool which is being anticipated by several municipalities for introduction in future revised zoning schemes is the use of environmental overlay zones.[62] An overlay zone enables a municipality to give effect to specific guidelines or goals contained in a SDF or other relevant plan. This is achieved through the imposition of an overlay zone on a particular area – containing a set of land-use restrictions/incentives/requirements which apply in addition to those attached to the area's base zoning. Several forms of overlays are anticipated including those providing for development objectives, strategic incentives and specific management measures. While still being developed, this tool could be used in the future to promote connectivity conservation, in the form of conservation connectivity overlays, providing municipalities with flexible discretion to impose additional nuanced layers of temporary or permanent land-use restrictions and incentives where the circumstances so dictate.

A third planning tool embedded in land-use planning legislation is subdivision. Any person seeking to subdivide land must obtain approval from the relevant municipality[63] and/or from the national agricultural authorities (where rural land is concerned).[64] Subdivision decisions should be informed by the future spatial planning framework entrenched in particularly the IDPs and SDFs and this scheme therefore provides another valuable tool for potentially precluding the fragmentation of consolidated compartments of land of high conservation value or of importance to promoting connectivity conservation. As in the context of zoning, its utility in the GCBC is currently rather limited, as it is the national agricultural authorities (the promoters of agricultural expansion) and not municipalities, which seem to hold greater power in the context of rural land subdivision.

[61] Zoning is regulated under the laws listed in note 57 above.
[62] See for instance the City of Cape Town, *Revised Integrated Zoning Scheme* (Draft 4), dated November 2007.
[63] Subdivision in the urban context is regulated under the laws listed in note 57 above.
[64] Subdivision in the agricultural context is regulated under the Subdivision of Agricultural Land Act 70 of 1970. The old law requires landowners seeking to subdivide agricultural land to obtain approval from the Minister of Agriculture, Forestry and Fisheries to do so.

## 3.4 *Development Control Legislation*

Activities that may negatively impact on the environment are strictly regulated by development control legislation. Inherent in this dispensation are several legal tools of potential relevance to promoting connectivity conservation in the GCBC. These include provision for environmental impact assessment (EIA); strategic environmental assessment (SEA); environmental management frameworks and the designation of critical biodiversity areas.

### 3.4.1 Environmental Impact Assessment

South Africa has developed a comprehensive EIA framework[65] in the past fifteen years to regulate certain types of potentially environmentally harmful activities. This framework is founded on a listing approach whereby national and provincial environmental Ministers may identify certain activities which trigger the need for an environmental authorisation, preceded by some form of EIA. These activities can be listed nationally or in respect of certain areas or provinces only, and certain activities require the development applicant to undertake a full EIA and others a form of basic EIA - a distinction which is determined by the following factors: the size of the activity; the degree of risk; and the certainty of the risk arising. The mandate to consider the EIA and grant the environmental authorisation usually rests with the provincial environmental authority. While once again making no express reference to connectivity, this EIA scheme may promote it as many of the listed activities have potential to undermine connectivity such as: housing developments; industrial activities; agricultural activities; forestry activities; activities that transform undeveloped land; road construction; activities which may impact on threatened/protected species/ecosystems; and developments near watercourses, estuaries or the coast. Furthermore, several of the listed activities specifically refer to a broad range of developments undertaken in areas actively seeking to promote/or of key importance to promoting connectivity conservation such as: protected areas; critical biodiversity areas; ecosystems service areas identified within relevant spatial planning frameworks; areas targeted for protected areas expansion; world heritage sites; biosphere reserves; and buffers around these areas. This EIA scheme therefore provides a tangible legal mechanism to regulate activities that may undermine connectivity initiatives.

### 3.4.2 Strategic Environmental Assessment

For the bulk of the past two decades, SEA had no statutory basis in South Africa and was purely voluntary in nature. However, South Africa's contemporary EIA regime[66] expressly enables national and provincial environmental Ministers to promulgate SEA regulations.[67] These regulations are yet to be promulgated, but once they are they may become of relevance if they recognise and promote connectivity as a mandatory element to be considered in SEAs undertaken for a particular area, project or activity.

### 3.4.3 Environmental Management Frameworks

One specific legal tool inherent in the country's contemporary EIA regime aimed at promoting SEA are environmental management frameworks (EMFs).[68] The nature and purpose of these EMF's vary significantly and can take the form of information documents and/or a map: specifying an area's environmental attributes (sensitivity, extent, significance, interrelationship); detailing the

[65] National Environmental Management Act 107 of 1998 (section 24) read together with the *Environmental Impact Assessment Regulations* (GNR 543-546 *GG* No. 33306 dated 18 June 2010).
[66] Ibid.
[67] S 24(5)(bA)(ii).
[68] GNR 547 *GG* No. 33306 dated 18 June 2010 (Reg 69-72).

conservation status of the area; stating environmental management priorities for the area; identifying potentially harmful activities; identifying potentially undesirable activities; and indicating areas of socio-cultural value. The legal framework enables both the national and provincial environmental Ministers to prepare and approve an EMF, and once so approved, all authorities must take the content of the EMF into account in their administrative decisions impacting on the area in question. These decisions could include the grant of land development approvals, rezoning approvals, subdivision approvals, permits to use and extract natural resources, land clearing permits and decisions about where to establish protected areas. The nature and purpose of these EMFs are framed sufficiently broadly to enable them to be tailored towards promoting connectivity. One such EMF has been adopted in respect of land incorporated within the GCBC.[69] It currently contains no reference to connectivity but as mentioned above it does provide a potential tool for promoting this concept in the future.

### 3.4.4 Critical Biodiversity Areas

One of the most contemporary moves in the context of development control legislation has been the identification of critical biodiversity areas (CBAs) – effectively fine-scale biodiversity planning undertaken by provincial conservation authorities. These plans map the critical biodiversity areas (terrestrial and aquatic) and associated critical ecological support areas and buffers (see Figure 4 below for one example drawn up for the south-western section of the GCBC). As such they are highly relevant in the context of connectivity. These plans have developed in a rather sporadic manner and their status is still rather unclear with some arguing they have no legislative home or binding status; and others that they constitute either a form of bioregional plan or an environmental management framework. Notwithstanding this lack of clarity, they are currently being used as an essential decision-making tool by most spheres of government when considering applications for environmental authorizations, rezoning approvals, subdivision approvals and land clearing permits. As such they provide an important tool for informed decision-making with a view to promoting connectivity conservation.

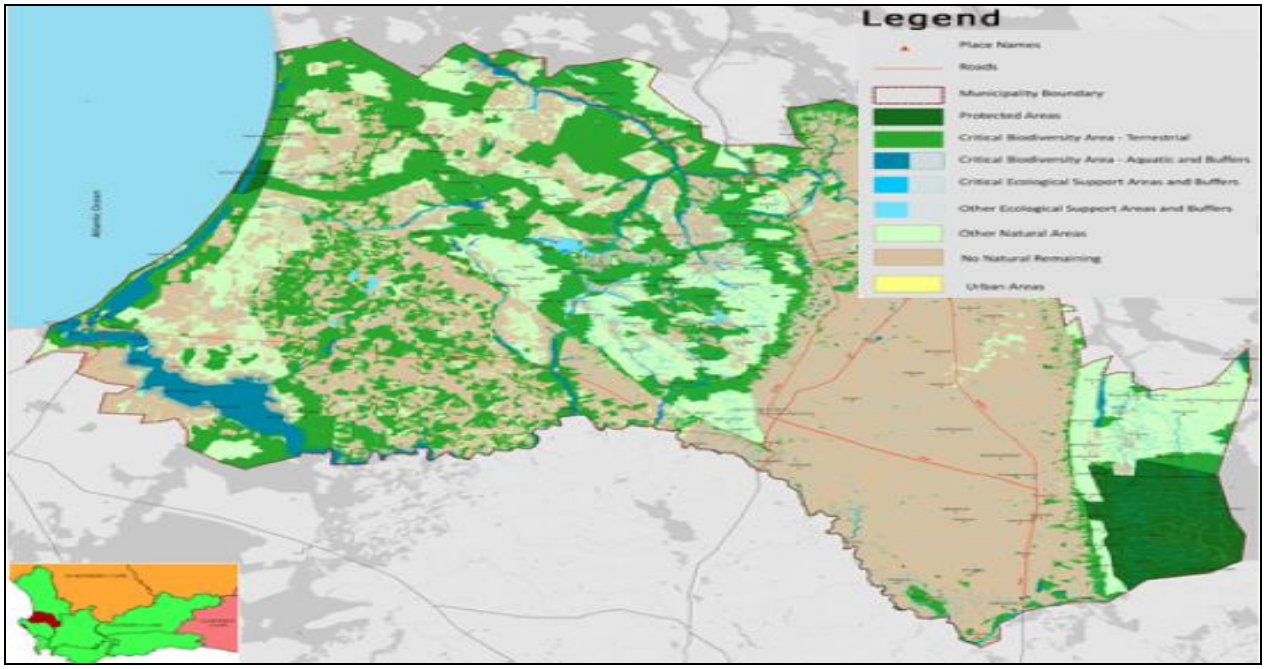


FIG 4: CRITICAL BIODIVERSITY AREA: BERG RIVER MOUTH

[69] *Namaqua Environmental Management Framework* (PN118 *PG* No. 1476 dated 4 November 2012).

## 3.5 *Integrated Coastal Management Legislation*

Given that the western boundary of the GCBC abuts the Indian Ocean, it provides an interesting example for reflecting on the manner in which domestic lawmakers have sought to introduce a regime that promotes connectivity across the terrestrial and marine divide. One of South Africa's most contemporary environmental laws is the National Environmental Management: Integrated Coastal Management Act[70] (NEMICMA). Its express purpose is to: establish a system of integrated coastal and estuarine management, including norms, standards and policies; promote the conservation of the coastal environment; maintain the natural attributes of coastal landscapes and seascapes; ensure that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable; and to control the adverse effects of inappropriate development on the coastal environment. The law defines the coastal zone exceptionally broadly and in its simplest sense it spans from the boundary of South Africa's exclusive economic zone (200 nautical miles off the country's coastline) to one kilometer inland of the high water mark in rural areas and 100 metres inland of the high water mark in urban areas.[71]

Owing to the novelty of the law, many of its legal provisions are not yet fully in effect, but they do hold great potential for promoting connectivity in the regulation of the GCBC's terrestrial and marine interface and therefore do warrant brief consideration in this case study. These provisions relate to coastal management planning; coastal management committees; estuarine management; and regulatory and enforcement mechanisms to govern activities in the coastal zone.

### 3.5.1 Coastal Management Planning

Prior to the advent of NEMICMA, no dedicated planning scheme existed to inform the integrated management of the coastal zone. The Act remedies this by providing for three tiers of plans, namely: a national coastal management programme; provincial coastal management programmes; and municipal coastal management programmes.[72] These programmes must be prepared by the relevant national, provincial and municipal authorities and their respective programmes must contain their coastal management policies, vision and objectives. Each of these programmes must be consistent with the tier above and be reviewed every five years. Furthermore, express provision is made for the content of these programmes to be aligned with other relevant plans such as IDPs, SDFs, the National Biodiversity Framework and the National Estuary Management Protocol (see 3.5.3 below). These programmes are in the process of being developed and given their broad prescribed scope and status as statutory policy, they provide a key opportunity for promoting connectivity in the coastal environment, as they should inform the actions and decisions of all three spheres of Government. It remains to be seen whether this potential will be realised as they will no doubt require extensive capacity and resources to develop.

### 3.5.2 Coastal Management Committees

As the Act provides for series of tiered coastal management programmes, it also provides for a series of tiered coastal management committees, namely national, provincial and local coastal management committees.[73] The composition of these committees includes government representatives (from a diverse array of environmental sectors); community representatives and members of the scientific community. Their functions are very similar and include: promoting

[70] 24 of 2008.
[71] Chapter 2.
[72] Chapter 6.
[73] Chapter 5.

integrated coastal management in the relevant sphere of government and between this sphere and others spheres; providing advice on coastal management issues to relevant decision-makers; facilitating the development of coastal management programmes; promoting coordination; and facilitating the integration of coastal management concerns and objectives into relevant plans such as IDPs, SDFs, policies and plans of organs of state whose activities may adversely impact on the coastal environment. As in the above planning context, these committees are still being established, but once they are, they should promote the attainment of the coastal management objectives identified in the different spheres' coastal management programmes.

### 3.5.3 Estuarine Management

GCBC is home to several important estuaries and wetlands, one of which, Verlorenvlei, is a Ramsar site. Prior to the introduction of NEMICMA, there was no dedicated domestic regime to govern wetlands. NEMICMA has resolved this by mandating the national environmental Minister to prepare a *National Estuarine Management Protocol*.[74] The prescribed content for this *Protocol* includes: a strategic vision and objectives; management standards; procedures or guidelines as to how to manage estuaries and which authorities should undertake such management; and details regarding estuarine management plans which it is anticipated provincial and local government authorities will be required to prepare for estuaries situated in their jurisdiction. NEMICMA prescribes that all estuaries must be managed in a coordinated and efficient manner and in accordance with the *Protocol*. A draft *Protocol*[75] was published in 2012 with one of the central guiding principles being to maintain and/or restore the ecological integrity of South African estuaries by ensuring that the ecological interactions between adjacent estuaries, between estuaries and their catchments, and between estuaries and other ecosystems, are maintained. Once finalised, the *Protocol* and the estuary management plans should go some way towards promoting hydrologic connectivity in the coastal environment.

### 3.5.4 Regulatory and Enforcement Mechanisms

NEMICMA also contains a broad array of tangible legal mechanisms for regulating activities which may negatively impact on the coastal zone. The regulatory mechanisms include: the designation of special management areas (within which activities will be strictly regulated);[76] the prescription of coastal set-back lines (on the seaward boundary of which development will be prohibited or strictly regulated);[77] the prescription of coastal zoning schemes (which will trump existing municipal zoning schemes);[78] and the grant of coastal leases and concessions (to enable people to develop and extract resources in certain parts of the coastal zone).[79] None of these regulatory mechanisms are in operation yet but they provide additional valuable tools for regulating activities in the coastal zone which may negatively impact on connectivity within this sensitive area. One mechanism that is in existence relates back to activities requiring an environmental authorisation under South Africa's main EIA regime (see 3.4.1 above). Where an authority is considering an application of this nature for a listed activity to be undertaken in the coastal zone, it is prohibited from granting it if the activity is likely to damage 'dynamic coastal processes' or is 'contrary to the interests of the whole community'.[80] The latter term is defined to include the interest of human and 'other living organisms that are dependent on the coastal environment'.[81]

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[74] Chapter 4.
[75] GN 336 *GG* No. 35296 dated 4 May 2012.
[76] S 23-24.
[77] S 25.
[78] S 56-57.
[79] S 65-67.
[80] S 63-64.
[81] S 1.

The above are complemented by several enforcement mechanisms that seek to deal with persons whose actions do negatively impact on the coastal environment. These include repair and removal notices (issued to persons who have constructed illegal structures within the coastal zone)[82] and coastal protection notices (issued to persons whose activities are having/are likely to have an adverse effect on the coastal environment).[83] The power to issue these notices spans national, provincial and municipal authorities. Failing to comply with the notice can lead to both a directive being issued and criminal prosecution. Once again, given their novelty, there is little evidence of these enforcement mechanisms being frequently used within the GCBC but this will no doubt change over time.

### 3.6 *Voluntary Contractual Arrangements*

Voluntary contractual arrangements have also grown in prominence in South Africa in the course of the past decade particularly in the context of biodiversity conservation. Their use has been integral to expanding the proportion of land of high conservation value within the protected areas estate. Promoting the intersection betweem the formal and less formal forms of protected areas has been greatly faciltated through several government programmes and projects. One of specific relevance in the context of the GCBC is the CAPE Stewardship Programme, administered by the provincial conservation agency, CapeNature. The Programmes objectives are: to ensure that private and communally-owned areas with high biodiversity value receive secure conservation status and are linked to a network of other conservation areas in the landscape; to ensure that landowners and communities who commit their property to a stewardship option enjoy tangible benefits for their conservation actions; and to expand biodiversity conservation by encouraging commitment to, and the implementation of, good biodiversity management practices on private and communally owned land in such a way that the landowners become empowered decision makers.

The Stewardship Programme generally promotes three main stewardship options which vary with respect to the degree of formal protection, the length of protection and the level of potential benefits accruing to landowners who enter it. These are: contract nature reserves (constituted by legally recognised contracts in respect of private land to protect biodiversity in the long term with the land being generally incorporated into private, local or provincial nature reserves); biodiversity agreements (negotiated legal agreements between the conservation agency and a landowner for conserving biodiversity in the medium term); and conservation areas (flexible options with no defined period of commitment, including conservancies). Several tracts of land within the GCBC have been secured under this Programme (generally that land depicted in Figure 3 as incorprated within private nature reserves and conservancies).

### 3.7 *Incentive-based Mechanisms*

Prescribing a comprehensive regime to promote connectivity conservation is potentially worthless unless adequate resources are set aside to implement it. This is perhaps one of the greatest challenges facing South Africa's conservation regime with other socio-economic priorities receiving increasing budgetary priority. South Africa is yet to develop a payment for ecosystem services scheme or a greenhouse gas emission-trading scheme that allows those who conserve nature to sell offsets to greenhouse gas emitters. One mechanism that is however gaining domestic prominence to overcome the resource hurdle is conservation incentives, in terms of which various property tax and income tax benefits are offered to persons who voluntarily contribute their land for incorporation within several forms of protected areas, share the cost of managing such areas or

[82] S 60.
[83] S 59.

who take conservation action outside of these areas. Several of these incentives are at play in the GCBC.

### 3.7.1 Property Rates Incentives

Under the Local Government: Municipal Property Rates Act,[84] no property tax can be levied on parts of a special nature reserve, national park or nature reserve which are not developed or used for commercial, business, agricultural or residential purposes.[85] This property tax prohibition feasibly encourages private and communal landowners to contract land of high conservation value into these forms of protected areas in order to avoid escalating property tax liabilities. Interestingly, provision is made for retrospectively recouping all property tax that would have been due should the landowner withdraw from any contractual arrangement.[86] The Act furthermore identifies a specific range of categories of property that may be subjected to differential rating, exemptions, rebates and reductions. These categories include protected areas and farms/small-holdings held for non-commercial purposes.[87] Many of South Africa's 284 municipalities (including those whose boundaries span the GCBC) are still in the process of formulating their municipal property tax policies, which will inform the implementation of these property tax benefits. However, the property tax benefits should cumulatively facilitate the inclusion of key private land within the protected area's estate thereby promoting connectivity conservation.[88]

### 3.7.2 Income Tax Incentives

Income tax incentives are similarly granted to landowners who forgo development opportunities on their land in the interests of biodiversity conservation.[89] These incentives, prescribed under the Income Tax Act[90] were only formally implemented in 2009. They generally differentiate according to the degree to which a landowner is willing to voluntarily assume restrictions on his/her land-use rights, the duration of such limitations, and any costs incurred in managing his/her land in the interests of biodiversity conservation.

Three broad distinctions exist. Landowners who agree to contract their land into a national park or nature reserve for a minimum period of 99 years can for the purpose of determining their taxable income, annually deduct 10% of the market value of their land (less the value of any land-use rights retained), and any costs incurred in implementing the management plan for the protected area.[91] Landowners who agree to contract their land into a national park, nature reserve or protected environment for a minimum period of 30 years can, for the purpose of calculating their taxable income, annually deduct any costs incurred in implementing the management plan for the protected area.[92] Finally, landowners who incur conservation and maintenance expenses in implementing the terms of a biodiversity management agreement with a minimum duration of 5 years can deduct these expenses for income tax purposes.[93] Although the latter agreements do

[84] 6 of 2004.
[85] S 17(1)(e).
[86] S 17(2).
[87] S 8 (differential rating) and s 15 (exemptions, reductions and rebates).
[88] For a full discussion of these property tax incentives, see: Paterson A, 'Property Tax: A Friend or Foe to Landscape Protection in South Africa' (2005) 12(2) *South African Journal of Environmental Law and Policy* 97-121, and Paterson A, 'Tax Incentives - Valuable Tools for Biodiversity Conservation in South Africa' (2005) (1) *South African Law Journal* 182-216.
[89] For a comprehensive discussion of these income tax incentives, see: Paterson A, 'Considering Recent Developments in Environmental Fiscal Reform in South Africa' (2009) 16(1) *South African Journal of Environmental Law and Policy* 29-34.
[90] 58 of 1962.
[91] S 37C(5)-(7).
[92] S 37C(4).
[93] S 37C(1)-(3).

not formally constitute protected areas, biodiversity management agreements concluded under the NEMBA provide a very useful tool for creating buffers around, and connectivity corridors between, formally proclaimed protected areas – thereby promoting connectivity conservation.

## 4. A Critical Reflection

What should be evident from the above, is that while South Africa does not have a dedicated law expressly seeking to regulate connectivity conservation, there exists a complex web of laws containing a diverse array of legal tools for promoting the realisation of the concept. Several key lessons can potentially be learned through reflecting on the application of these laws in the context of the GCBC. These relate to: the importance of planning; the value of drawing from a diversity of legal tools; the need to facilitate cooperative governance; and the necessary prerequisite of providing resources, capacity and support.

### *4.1 Planning Imperatives*

One of the successes of the GCBC appears to lie in the comprehensive planning exercise that preceded and informed the area's establishment. This broad and participatory planning process crucially scoped the ecological, climatic, geographic, social, cultural and economic landscape of the area, thereby ensuring that the strategies guiding the management and expansion of the GCBC have a solid scientific footing. This project specific planning is complemented by a broad array of statutory planning instruments spanning conservation, sustainable use, land-use planning, development control and integrated coastal management legislation. While the majority of the laws governing these statutory planning instruments do not specifically refer to connectivity, their scope is fortunately sufficiently broadly framed to potentially advocate the concept. They accordingly hold great potential for providing a comprehensive planning framework to promote connectivity conservation. Owing to the contemporary nature of these laws, many of these planning frameworks are still in the process of being developed and it is therefore too early to comment on whether this potential will be realised. Two further important aspects inherent in this contemporary statutory planning framework are provision for the alignment of the content of these statutory plans with one another and the fact that authorities are compelled to take them into account in their decision-making.

### *4.2 Drawing from a Diversity of Legal Tools*

In addition to planning instruments, the overarching legal framework contains a diverse array of legal tools of relevance to facilitating connectivity conservation in the GCBC. These legal tools feasibly provide for the promotion of connectivity: within and outside of protected areas; in a range of natural resource sectors; between the terrestrial and marine environment; and by a broad range of stakeholders. These statutory tools are complemented by several voluntary contractual arrangements. While the majority of the laws governing the legal tools do not again specifically refer to connectivity, this case study would appear to provide support for the idea that even in the absence of dedicated or express connectivity legislation one can often creatively construct legal solutions to practically promote the concept out of those legal tools that already exist. It provides further support for the idea that drawing from, or providing for, a diverse array of legal tools, complemented by voluntary measures, affords authorities and landowners alike necessary and desirable flexibility to tailor legal solutions best suited to their context. This diversity of legal tools does however have several associated challenges.

### *4.3 Facilitating Cooperative Governance*

One of the most central challenges is how to overcome the potential institutional and legislative fragmentation and duplication this diversity creates. In recognition of these challenges, South Africa has entrenched cooperative governance as a constitutional dictate[94] and introduced several statutory[95] and non-statutory mechanisms[96] specifically aimed at promoting its realisation. These go some way towards alleviating the problem but need to be complemented by site- or project-specific initiatives. The GCBC provides two examples of such initiatives. Firstly, ensuring that the steering committee for the GCBC includes representation from all relevant stakeholders. Secondly, developing a clear set of objectives and strategies to guide priority action in the GCBC.

### *4.4 Providing Resources, Capacity & Support*

A second challenge associated with diversity is ensuring that all relevant stakeholders have the necessary skills, capacity and resources to understand and use the available legal tools for promoting connectivity. Given the novelty and diversity of the relevant legal framework governing these tools, there is still much domestic uncertainty as to the precise nature and status of the legal tools and who has the mandate to administer them. This uncertainty is compounded by the limited capacity and resources of several key stakeholders (crucially provincial and local government authorities) to implement them. As highlighted by several aspects of this case study, these resource and capacity constraints may undermine the potential of many of the available legal tools for promoting connectivity conservation and accordingly need to be addressed. They impact not only on the proactive use of potential tools, but also on the ability of authorities to ensure compliance with existing laws which seek to regulate activities (particularly mining, agriculture and township development) that directly undermine connectivity conservation. One positive trend in this regard is the recent introduction of several tax incentives to encourage landowners to contribute voluntarily to conservation, thereby potentially relieving some of the resource pressures experienced by key government authorities.

[94] Constitution of the Republic of South Africa, 1996 (Chapter 3).
[95] These include: the prescription of a series of national environmental management principles with which all organs of state whose actions may significantly affect the environment must comply; provision for environmental management and implementation plans to promote cooperation between government authorities whose mandates impact on or affect the environment; procedures for fair decision-making and conflict resolution; procedures for integrated environmental management and integrated permitting procedures; provision for mandatory cross-consultation between sectoral authorities and cross-representation key institutions and decision-making bodies; and the creation of cross-sectoral environmental compliance and enforcement institutions.
[96] These include: establishing several intergovernmental environmental advisory committees; and entering into standard operating procedures and service delivery agreements to promote improved environmental governance.