AN OVERVIEW OF THE LEGAL INSTRUMENTS TO CONSERVE BIODIVERSITY IN SOUTH AFRICA WITH PARTICULAR REFERENCE TO THE ESTABLISHMENT AND EXPANSION OF PROTECTED AREAS

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DECLARATION

I, Andrew Craig Blackmore, do hereby declare that, unless specifically indicated to the contrary in this text, this dissertation is my own original work and has not been submitted to any other university in full or partial fulfilment of the academic requirements of any other degree or other qualification.

Signed at Pietermaritzburg on 03 May 2005

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'All the way to here

it means here is something
I have something which you do not have
And you have something which I do not have
And thus we find unity
Because the days of "baas" are past and gone'

Oom Jan*

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* A comment by a community leader regarding the future of the Richtersveld National Park – quoted in Paul Weinberg *Once we were hunters* Mets & Schilt Amsterdam (2000) at 52. The Richtersveld boarding the north Western-Cape (South Africa) and Namibia, was subject to substantial disposition of the indigenous communities of land.

ABSTRACT

In this investigation, a review is undertaken of the newly promulgated and existent legislation pertaining to the conservation of biodiversity, and the establishment of protected areas as the primary means to protect representative samples thereof. This review develops understanding of the various types of protected areas which may be used, in a broad sense, to conserve the country's biodiversity, with special reference being made to the recently promulgated Protected Areas Act. In undertaking this, a detailed discussion of biodiversity, trusteeship and the concept of systematic planning and irreplaceability is generated. Cursory comment and discussion in a socio-political context, in particular regarding land reform, as well as the various international obligations and commitments the country has undertaken, is made.

Despite South Africa being the third most biologically diverse country globally, it is concluded that the conservation of its biodiversity has had a troubled and undirected history. The establishment of protected areas, as a result, has been *ad hoc* and potentially ineffective at a national scale. The source of this observation is linked directly to the absence of a structured and co-ordinated framework that supports the fulfilment of the country's international commitments to conserve biodiversity. The promulgation of the Biodiversity Act and subsequently the Protected Areas Act, has brought into play a significant step forward in developing this co-ordinated framework. The Act clarifies and brings effect to the State's trusteeship as well as providing a platform for the participation of a wider range of role players, especially previously disadvantaged and land dispossessed communities, in conservation and protection of biodiversity. This participation includes conserving biodiversity for economic, social, and cultural reasons. The absence of meaningful incentives for private and communal landowners to voluntarily conserve biodiversity, and the significance of this, is also discussed.

Finally a consideration is given of the secondary aim of this legislation, to simplify the statutes concerning the conservation of biodiversity and particularly those pertaining to protected area establishment. This simplification is only partially achieved as a number of protected areas are still not at all or partially regulated by the Protected Areas Act. This may be a source of confusion and uncertainty.

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CHAPTER 1 : INTRODUCTION

PREAMBLE

South Africa, as many other developing counties, is becoming increasingly focussed on the improvement of the economic and social wellbeing of its citizens. This results in transformation of the natural environment which places an ever increasing pressure on natural resources, and in particular biodiversity. This pressure arises from two domains. The first is the consumptive use of biodiversity and the second is the competition for physical space between development (landscape transformation) and the protection of biodiversity and its services to humanity. Whilst the benefits to humanity of conserving biodiversity have and are being widely debated[1] and are slowly being recognised by various states and state departments as important considerations in landscape planning exercises, the question arises as to the role of the State in conserving biodiversity in the face of other social and economic pressures and the legislative protection afforded to the establishment and expansion of protected areas.

These questions are particularly relevant in South Africa, given the:

a) re-admission of the country into the international community and the many biodiversity conservation obligations the State has assumed through adopting various treaties and conventions,

b) development and adoption of new legislation regulating the conservation planning, use and protection of biodiversity, and

c) realisation of various rights granted to South Africans by way of the Constitution[2] and the Bill of Rights therein.

In addition, the country's land reform programme[3] is a significant consideration when contemplating the establishment and expansion of protected areas as land, and in

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[1] See for example:
Edward B Barbier; Mike Acreman; and Duncan Knowler 'Economic valuation of wetlands: A guide for policy makers and planners' Ramsar Convention Bureau, Gland, Switzerland (1997). Downloaded from http://www.deh.gov.au/coasts/mpa/wpc/benefits/pubs/benefits-mpas.pdf on 22 December 2004.

The Benefits of Marine Protected Areas: A discussion paper prepared for the Vth IUCN World Parks Congress, Durban, South Africa (2003). Downloaded from http://www.deh.gov.au/coasts/mpa/wpc/benefits/#download on 22 December 2004.

Adrian Phillips 'Economic Values of Protected Areas: Guidelines for Protected Area Mangers' World Commission on Protected Areas (WCPA) Best Practice Protected Area Guidelines Series 2 IUCN (1998). Downloaded from http://biodiversityeconomics.org/valuation/topics-34-00.htm on 22 December 2004.

[2] Constitution of the Republic of South Africa Act 108 of 1996.

[3] See generally the. White Paper on Land Policy in South Africa, Department of Land Affairs, Pretoria (1997).

particular its ownership and use, has played a fundamental role in shaping the social, political and economic climate of South Africa. The land policies and legislation that were formulated under the apartheid system led to, *inter alia*, the dispossession of the majority of South African citizens from the land, and their marginalisation into areas that were of low economic and social value.[4] The consequences to the environment were that these areas suffered substantial natural resource degradation.[5] In addition, it resulted in social and economic impoverishment of the displaced and (land) dispossessed sector of the South African population. The property clause of the Constitution[6] guarantees the achievement of a balance between the protection of property rights and the constitutional guarantees of land reform. The balance is currently being achieved through the willing-seller willing-buyer platform,[7] and where this cannot be achieved, the State may expropriate land required in the public purpose or interest. The Bill of Rights expressly recognises that the public interest includes 'the nation's commitment to land reform'.[8]

Whilst it is recognised that land reform would have a significant influence on the establishment and expansion of protected areas, and that there is complexity surrounding the current conflict and mistrust between the historically disenfranchised and impoverished, and the conservation agencies and the 'western' approaches to conservation of the South Africa's diversity,[9] land reform falls outside the brief of this investigation. Cursory comment, however, is made where land reform would have a direct influence on the conservation of biodiversity.

SCOPE OF DISSERTATION

It is understood, as is argued in this investigation, that the legislation pertaining to biodiversity conservation and in particular protected area establishment has been both uncoordinated and complicated. Thus with the promulgation of new national legislation with the express purpose to provide a structured framework for biodiversity conservation it is hoped that this criticism has been addressed.

From the perspective of biodiversity conservation, the primary aim of this dissertation is to provide an evaluation of the current South African legislation, in the context of the province of KwaZulu-Natal, that would directly influence the establishment and expansion of various protected areas.

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[4] Racial segregation was effected in this context by, *inter alia*, the Natives Land Act 27 of 1913; Native Trust and Land Act 18 of 1936; and Group Areas Acts- 41 of 1950; Act 77 of 1957; Act 36 of 1966.

[5] Jan Glazewski Environmental Law in South Africa *Lexisnexis Butterworths* (2000) at 195, 198 and 201-202.

[6] Section 25.

[7] Thus maintaining or facilitating confidence in the land market of South Africa and the commitment for economic growth of the beneficiaries, region and South Africa.

[8] Section 25 (4) of the Constitution.

[9] Thembela Kepe; Rachel Wynberg and William Ellis 'Reconciling Land Reform and Biodiversity Conservation in South Africa: Do the poor stand a chance?' (2002) at 1 (Presented at SAUSUG in 2002).

AN UNDERSTANDING OF THE TERM BIODIVERSITY

Simple definitions of biodiversity hold that biological diversity is a measure of the relative diversity among organisms present in different ecosystems. 'Diversity' here includes diversity within species, among species, and comparative diversity among ecosystems or reference relevés.[10] In these definitions biodiversity is limited to a 'species richness or object count'. For example:

a) Biological diversity is the variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequency. For biological diversity, these items are organized at many levels, ranging from complete ecosystems to the chemical structures that are the molecular basis of heredity. Thus, the term encompasses different ecosystems, species, genes, and their relative abundance.[11] or

b) ... biological diversity... has a variety of meanings. These include: 1) the number of different native species and individuals in a habitat or geographical area; 2) the variety of different habitats within an area; 3) the variety of interactions that occur between different species in a habitat; and 4) the range of genetic variation among individuals within a species.[12]

However, it is clear that these definitions are highly limited in their application. For instance, they do not consider the spatial distribution of biomass, e.g. a gallery forest is substantially different to a forest thicket of similar species composition. These differences, it is argued, are not only limited to biomass as they perform different ecological functions and are subjected to different stresses and disturbances and hence may support different microhabitats or niches. To this end the definition of biodiversity was broadened to encompass functional and structural criteria. Thus the definition of biodiversity must comprise composition, structure, and function. Composition relates to the identity and variety of elements in a collection (e.g. species counts, genetic content, etc). Structure relates to the physical organisation or pattern of a system (e.g. species distribution, biomass arrangement etc). This extends from habitat complexity as measured within communities to the pattern of patches and other elements at a landscape scale. Finally, function involves ecological and evolutionary processes, including gene flow, disturbances, and nutrient cycling.[13] Thus the concept of biodiversity encompasses

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[10] A relevé is a spatial sampling unit used predominantly in vegetation classification and is derived from species area curves. See for example its use and relevance in describing the species richness of the Cape Floral Kingdom in: Serban Proches; Richard M Cowling and Ladislav Mucina 'Species–area curves based on relevé data for the Cape Floristic Region' *South African Journal of Science* 99 (2003) at 474.

[11] US Congress Office of Technology Assessment, Technologies to Maintain Biological Diversity (1987).

[12] Jones and Stokes Associates "Sliding Toward Extinction: The state of California's Natural Heritage California" *Nature Conservancy, Sacramento* (1987). Down loaded from http://ceres.ca.gov/ceres/calweb/biodiversity/def_J&S.html. Date Accessed on 25 March 2004.

[13] In incorporating these concepts, the problems associated with scale are addressed. For instance, the concept of biodiversity may be applied equally to the accumulation and recombination of genetic material (genes and products of genes viz. ribonucleic acid RNA and proteins) to the landscape level e.g. topographic change).

the entire biological hierarchy from molecules to ecosystems and includes entities recognisable at each level.[14] These three pillars that comprise biodiversity are depicted by Reed Noss[15] in Figure 1.

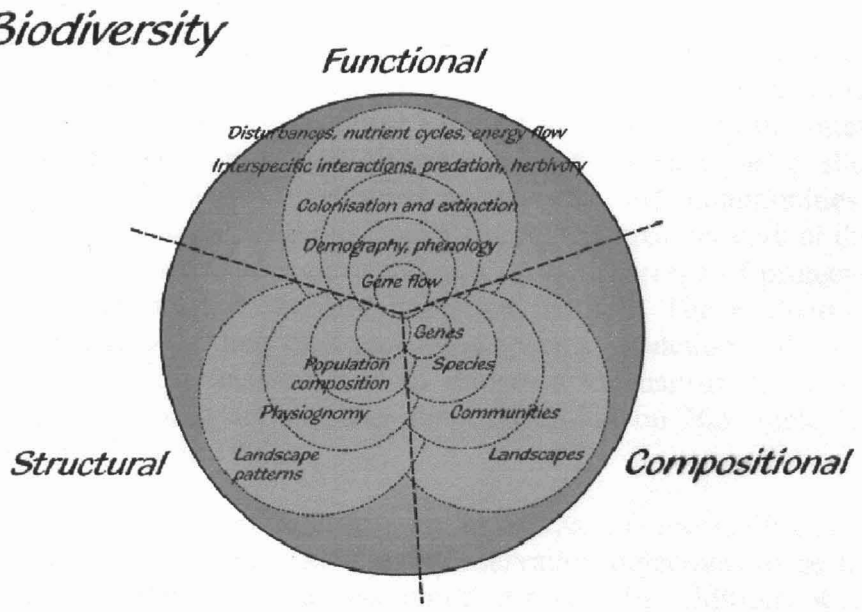

Figure 1: A diagrammatic definition of biodiversity from Noss 1990[16]

The Convention on Biodiversity (CBD)[17] and Biodiversity Act[18] defined biodiversity as:

"The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and also includes diversity within species, between species, and of ecosystems"

In this definition, the processes and pattern have been reduced to 'ecological complexes' therein simplifying the wording. The concept of 'ecological complexes' is intractable in that it creates confusion and uncertainly. This definition, therefore, overlooks the most important products of biodiversity in decision making, and ultimately risks the protection and conservation of the country's biodiversity. Nonetheless, despite the shortcomings of this definition, it now represents South Africa's interpretation of biodiversity on which conservation of biodiversity decisions, in the country, will be made, and is the definition on which this investigation is based.

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[14] CR Margules; RL Pressey and PH Williams 'Representing biodiversity: data and procedures for identifying priority areas for conservation' *J Biosci* 27 (2002) at 310.

[15] Reed Noss 'Indicators for Monitoring Biodiversity: A Hierarchical Approach' *Conservation Biology* 4(4) 355-364 (1990).

[16] *Ibid.*

[17] Article 2 on the Convention of Biological Diversity 5 June 1992. Accessed from the Convention's web site www.biodiv.org/convention on 25 March 2004.

[18] National Environmental Management: Biodiversity Act 10 of 2004.

CHAPTER 2 : CONSERVING BIODIVERSITY

REASONS FOR ESTABLISHING PROTECTED AREAS

There are a variety of methods that can be employed to conserve biodiversity, but establishment of proclaimed protected areas has been shown to be the most effective.[19,20,21] As a means of achieving representative samples of biodiversity, the International Union for the Conservation of Nature (IUCN) has suggested that state parties should set in place a minimum of 10 % of landscapes, ecosystems and communities under formal protection.[22] An evaluation of the effective[23] protected area network at the Rio Summit[24] indicated that there persisted significant gaps in the coverage of protected area systems for threatened species and globally important habitats. The evaluation also raised a significant concern regarding the accelerated species extinction and habitat loss.[25] As a means to highlight this concern and to initiate a mechanism to address this loss of biodiversity, the summit set in place the Convention on Biological Diversity (CBD) which came into force in 1992.

The CBD was considered a landmark in terms of reconciling environment and development, as it views environmental conservation objectives to be inseparable from the need for development and economic growth. In addition, it recognises that conservation as well as the loss of biodiversity is a "common concern" of all humankind. The 6th Conference of the Parties of the Convention on Biological Diversity agreed that in order to bring effect to this common concern, a target needed to be set in place to achieve *"a significant reduction in the current rate of loss of biological diversity by the year 2010."*[26,27] To achieve this it must recognised that the 10 % target set in place by the

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[19] See discussion on the definition of biodiversity on page 3.

[20] CR Margules and RL Pressey Systematic conservation planning *Nature* 405 (2000) at 243.

[21] Liam Wagner and Hugh Possingham Marine Reserve Design and Optimal Inter-Reserve Distance Spacing. http://www.maths.uq.edu.au/~ldw/marinepaper.pdf Accessed on 18 November 2004.

[22] IUCN set the first target for the protection of biodiversity, by agreeing (recommendation 16) at the 1992 World Parks Congress in Caracas, Venezuela, that protected areas should cover a minimum of a conservative 10 per cent of each biome by 2000. This decision was supported by recommendation 19.38 "Targets for Protected Area Systems" at the Buenos Aires IUCN General Assembly in 1997, which urged all governments to set in place mechanisms to achieve this target. In achieving this target, the IUCN encouraged governments to give priority to protecting the best examples of their major ecosystem types."

[23] Here, a distinction is made between a protected area that is being managed to achieve the conservation of biodiversity and those which exist on paper and where there is little or no management intervention to effect the intentions of the proclamation. See page 41.

[24] United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro during June 1992.

[25] This observation was highlighted further at the Vth World Parks Congress 7-17 September 2003, Durban, South Africa Recommendation (See WPC Recommendation 4 - www.seafriends.org.nz/issues/cons/iucnpas.htm#04. Date Accessed 27 July 2004).

[26] Decision VI/26 of the Convention.

IUCN is not based on empirical data as biodiversity is not evenly distributed at any of the hierarchical levels.[28] This target was, thus, set in place to serve as a simple and unambiguous statement of intent and a preliminary objective for state parties to achieve.

Whilst there are many threats to biodiversity, habitat transformation and loss presents the single greatest threat to South Africa's[29,30] and global biodiversity. This transformation within the terrestrial environments includes cultivation, grazing, urban and rural development, commercial afforestation, deforestation, mining, dams and alien plant invasion. The most serious threats to marine biodiversity are fishing operations,[31] chemical pollution and eutrophication,[32] alteration of physical habitat,[33] invasions of exotic species,[34]and global climate change.

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[27] This decision was later endorsed by the world's leaders at the World Summit on Sustainable Development (WSSD) in September 2002.

[28] Viz. at a habitat, community, bioregion, country or global level.

[29] Susie Brownlie and Rachel Wynberg 'The Integration of Biodiversity into National Environmental Assessment Procedures - National Case Studies: South Africa' *UNDP/UNEP/GEF Biodiversity Planning Support Programme* (2000) at 5 and 6.

[30] Rachel Wynberg 'A decade of biodiversity conservation and use in South Africa: tracking progress from the Rio Earth Summit to the Johannesburg World Summit on Sustainable Development' *South African Journal of Science* 98 (2002) at 235 and 237.

[31] Over fishing is a significant threat to world fisheries. In 1995 the FAO estimated that some 70% of the major fish stocks they *assessed* were overexploited or in danger of being so – particularly the high value fisheries. Harvesting of aquatic resources may also affect biodiversity by reducing population levels and through poor practices (e.g. seabed trawling) that can destroy habitats. Pressures come from both commercial and recreational fishing and harvesting.*

* Information sources from the United Nations Environment Programme (UNEP) web page on marine pollution, http://www.unep.ch/ Accessed on 19 November 2004.

[32] Eighty percent of marine and coastal pollution originates on land in the form of municipal, industrial and agricultural wastes and run-off. The pollution is comprised of sewage and waste water, persistent organic pollutants (including pesticides), heavy metals, oils, nutrients and sediments*. Marine species are susceptible to water-borne pollutants,‡ particularly sewage and agricultural and stormwater run-off. Of the pressures resulting from development, pollution is arguably one of the most serious threats to biodiversity**. While the effects of oil spills are well publicised, globally they are estimated to contribute only 12.5% of total oil entering the marine environment; the majority comes from sewage and stormwater (36.3%) and operational discharges from shipping such as fuelling in port (32.7%).*

* Information sources from the United Nations Environment Programme (UNEP) web page on marine pollution, http://www.unep.ch/ Accessed on 19 November 2004.

‡ LP Zann 'Our Sea, Our Future Major Findings of the State of the Marine Environment Report for Australia' *Great Barrier Reef Marine Park Authority for DEST Ocean Rescue 2000 Program* (1995) at 5.

** MD Young; N Cunningham J Elix; J Lambert; B Howard; P Grabosky and E McCrone 'Reimbursing the Future: An Evaluation of Motivational, Voluntary, Price-Based, Property-Right and Regulatory Incentives for the Conservation of Biodiversity' *Department of the Environment Sport and Territories, Canberra* (1996) at 11.

[33] Coastal development often entails dredging of bottom sediments for the creation of ports or to create new land surfaces (land reclaiming); sand mining, construction of jetties and beach "improvements" to attract tourists alter wave action and destabilises the shoreline. Estuaries are often the focus of development (i.e. marinas) which results in the degradation or loss of their nursery function thereby contributing to the depletion of marine fish stocks.

[34] Thousands of marine animal, plant and algae species are transported out of their native range. Species can be introduced to non-native environments accidentally or deliberately. Introductions and transfer of non-native marine species to their non-native environment mainly occurs through the transport and discharge of ballast water, and to a lesser extent by transport of fouling organisms on hulls or through aquaculture. Deliberate introductions occur through the import and release of fish and bivalves for

It is, therefore, argued that the establishment of an effective network of protected areas that would reduce the rate of loss of biodiversity, must be based on a sound understanding of the patterns of distribution of species, habitats, ecosystems and ecological processes across all scales,[35] as well as an understanding of the pressures and driving forces behind habitat loss and species extinction.

As the landscape is transformed, the natural areas that support biodiversity become increasingly fragmented resulting in increased numbers of islands or patches. The continued transformation of the landscape results in a point where various thresholds are being reached and transgressed, resulting in greater isolation and decreased size of the fragments and this ultimately leads to habitat and concomitant species loss.[36,37] These fragments then become the focus for the establishment of a protected area. The debate is therefore, moved onto which fragments should be targeted as a priority and what size should the protected area be to achieve the desired outcome.

Prior to the promulgation of the National Environmental Management: Biodiversity Act[38] in 2004, biodiversity in South Africa did not have a national framework to facilitate the international commitments discussed above.[39] The protection of the natural terrestrial environment has always been predominantly a provincial competence.[40,41] This competence together with pressure from NGOs and a growing awareness of the diverse and unique biological resources of the country,[42] enabled provincial nature conservation

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commercial purposes in new locations. These alien species often displace the native organisms through predation or competition.

[35] Recommendation of the 4 V[th] World Parks Congress *op cit.* 1-32.

[36] Here loss would refer to a reduction in the number of the biodiversity elements and would include the extinction (irrevocable loss) of species or habitats or both.

[37] See discussion on thresholds on page 25.

[38] Act 10 of 2004.

[39] South Africa ratified the convention on 2 November 1995 and undertook to bring both the recommendations of the Rio Summit and the CBD into domestic law.

[40] The indifference to conserving the biodiversity dates back to the constitution developed for establishment of the Union of South Africa (31 May 1910). During the establishment of the provinces that comprised the Republic of South Africa and the provincial governments, conservation of the natural resources was deemed an exclusive provincial competence. Following the establishment of the National Parks Board (1926), and prior to and after the abolishment of apartheid in 1994, the Nationalist Government (and subsequently the Transition Government) realised that, in order for the country to participate in the world conservation arena, nature conservation would need to be at least a national competence. See James Currey 'Africa since 1935' Volume VIII of the *UNESCO General History of Africa* (1999) at 108.

[41] Nature conservation, in terms of the Constitution of the Republic of South Africa Act 108 of 1996, is now considered a dual national and provincial competence. Marine resources are, however, an exclusive national competence.

[42] Impetus for this was related to the opinion that South Africa ranked as the third most biologically diverse country in the world,[*,**] containing between 250 000 and 1 000 000 species, many of which occur nowhere else. In the case of plants alone, some 18 000 vascular plant species occur in the country, of which 80% are endemic.[**] South Africa's marine life is also diverse, partly as a result of the extreme contrast between the water masses on the East and West Coast. Three water masses – the cold Benguela current, the warm Agulhas current, and oceanic water – make the region one of the most oceanographically heterogeneous in the world. In the case of animals, over 11 000 species have been described from the marine environment around South Africa, and some 17-30% of these are endemic to the area.[‡] South African seaweeds are also extremely diverse: about 800 species have been recorded, demonstrating high levels of endemism.[†]

legislation to be established for, *inter alia*, the establishment of protected areas and the conservation of biodiversity within each of the provinces. Superimposed on this system, was the establishment of the National Parks Board and their mandate to proclaim 'National Parks' throughout South Africa, excluding the province of KwaZulu-Natal.[43,44,45] In the absence of an overarching and co-ordinating framework, the establishment of terrestrial protected areas was unco-ordinated, as well as indiscriminate[46] and undirected,[47,48] and was not incorporated into sectoral plans and

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* White Paper on the Conservation of Biodiversity N/1095 Government Gazette No 18163 dated 28 July 1997).

** P Goldblatt 'An analysis of the flora of southern Africa: its characteristics, relationships and origins' *Annals of the Missouri Botanical Garden* 65 at 369 (1978).

‡ MJ Gibbons '*Protista and Animalia'*. In: *Marine Biodiversity Status Report for South Africa.* Edited by BD Durham and JC Pauw National Research Foundation Pretoria (2000) at 32.

† JJ Bolton and RJ Anderson 'Marine vegetation'. In: *Vegetation of Southern Africa.* Edited by RM Cowling; DM Richardson and SM Pierce. Cambridge University Press Cape Town (1997) at 68.

[43] Under the National Parks Act 57 of 1976 which limited the jurisdiction of the conservation agency to those protected areas proclaimed under this Act.

[44] The establishment of the Natal Game and Fish preservation Board established the province's competence and thus precluded the National Park Act from establishing a National Park within the Province.

[45] Prior to the democratic election in South Africa, no fewer than 17 government departments had a primary responsibility for the conservation of biodiversity, and many of these were regulated by diverse and conflicting legislation.*

* See generally Republic of South Africa President's Council (1991). *Report of the Three Committees of the President's Council on A National Environmental Management System.* Government Printer, Cape Town.

[46] Driven by parochial initiatives. For example, the establishment of various dams in South Africa required that a 'purchase zone' surrounding the water surface be procured. The purchase zone together with the water surface area of many of the dams was transferred to the various conservation agencies for their management and proclamation, whilst the water body remained under the administration of the Department of Water Affairs and Forestry. Prior to the establishment of the dams, the biodiversity value of the selected area would predominantly occur in the valley or gorge in which the dam was established. These topographic features, together with their diverse habitats, are few in the landscape and hence have a high irreplaceability index. The surrounding areas comprising of the purchase zone would be of significantly lower conservation value as these areas are predominantly common in the landscape and characteristically are uniform in topology and thus have a limited number of habitats. The purchase area, therefore, would have a low replaceability index and hence would be of low conservation value. Examples of this would include Sterkfontein, Spionkop, Midmar, and Jozini dams.

[47] Protected areas not being located in priority areas, or were proclaimed for reasons other than their principle biodiversity values. For example, Ndumu Game Reserve located on the Mozambican border with KwaZulu-Natal was originally proclaimed (April 1941) for the conservation of the then abundant and regionally common hippopotamus. However, this protected area's value lies in it rich and diverse avifauna and particularly those associated with the wetland complex of the Phongolo floodplain. Of the species 305 recorded for Ndumu Game Reserve, 35 are included in the South African Red Data Book.*

Of the 120 wetland associated species recorded, the following nineteen are Red Data waterbirds were recorded: White pelican (rare), Pinkbacked pelican (rare), Rufous-bellied heron (rare),Whitebacked night heron (indeterminate), Little bittern (rare), White stork (rare), Black stork (indeterminate), Woolynecked stork (rare), Openbill stork (rare), Saddlebilled stork (rare), Yellowbill stork (rare), Greater flamingo (indeterminate), Lesser flamingo (indeterminate), Pygmy goose (rare), African finfoot (indeterminate) Lesser jacana (rare), Whitecrowned plover (rare), Redwinged pratincole (rare) and Caspian tern (rare).**

* See RK Brooke 'South African Red Data Book - Birds. South African National Scientific Programmes Report No. 97' *Council for Scientific and Industrial Research, Pretoria, South Africa* (1984).

programmes. As a result, these plans did not achieve a satisfactory conservation plan for South Africa's terrestrial biodiversity.[49] Thus, in order to provide a national framework to facilitate the implementation of the international commitments, the Biodiversity Act,[50] under National Environmental Management Act[51] (NEMA), was promulgated.

Paralleled to the conservation of terrestrial biodiversity in South Africa, the marine environment has been as unstructured and undirected at both a local and global scale. To date it is estimated that 4 116 marine protected areas covering over 1.6 million square kilometres have been proclaimed internationally. This, however, represents less than 0.5 % of the seas and oceans.[52,53] Many of these marine protected areas (MPAs)[54] are small and many offer only limited levels of protection and do not necessarily make a measurable contribution to the wellbeing of the marine environment, let alone make a contribution to the burgeoning society that is dependent on the resources and environmental services provided by the marine environment.[55]

In South Africa, less than 1% of the marine environment has been formally protected. This country has, in terms of the United Nations Law of the Sea Convention, territorial sovereignty over 3000 km of coastline of up to 12 nautical miles offshore, and controls the exploitation of natural resources up to 200 nautical miles to sea from the coastline. This area, the Exclusive Economic Zone (EEZ), includes the area around the Prince

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** Adapted from South African Wetlands Programme, Ndumo Game Reserve South Africa, 'Information sheet for the site designated to the List of Wetlands of International Importance in terms of the Convention on Wetlands of International Importance especially as Waterfowl Habitat', http://www.ngo.grida.no/soesa/nsoer/resource/wetland/ndumo_ris.htm accessed July 2004. As a result, Ndumu Game Reserve qualified as a RAMSAR site and was listed as such on 21 January 1977 (See http://www.wetlands.org/RDB/Ramsar_Dir/SouthAfrica/ZA014D02.doc accessed 14 July 2004).

[48] In addition to the provincial conservation agencies, the South African National Parks Board was set in place to, inter *alia*, proclaim and manage protected areas throughout South Africa.

[49] Prior to the democratisation in South Africa, no fewer than 17 government departments had a primary responsibility for nature conservation, and many of these had divergent and sometimes conflicting laws.

[50] National Environmental Management: Biodiversity Act 10 of 2004.

[51] Act 107 of 1998.

[52] *UN List of Protected Areas Information Site.* IUCN World Parks Congress Durban South Africa http://www.iucn.org/wpc2003/english/news/daybyday/unlist.htm Date accessed 14 July 2004

[53] This figure is substantially less than the IUCN's recommendation that at least 10 % of the natural biota should be under formal protection. It has subsequently been argued that no less than 20% of all biogeographic regions and habitats should be formally protected to meet both biodiversity and human needs. See - Plan Development Team The potential of marine fishery reserves for reef management in the US South Atlantic. *National Oceanic and Atmospheric Administration Technical Memorandum NMFS-261. Contribution* CRD/89-90/04 (1990).

[54] A marine protected area (MPA) is a geographically defined area especially dedicated to the protection and maintenance of marine biodiversity, and of natural and associated cultural resources, and managed through legal or other effective means. MPAs include marine parks, nature reserves and locally managed marine areas that protect reefs, seagrass beds, shipwrecks, archaeological sites, tidal lagoons, mudflats, saltmarshes, mangroves, rock platforms, underwater areas on the coast and the seabed in deep water, as well as open water including the water column.

[55] See similar arguments in Callum M Roberts; George Branch; Rodrigo H Bustamante; Juan Carlos Castilla; Jenifer Dugan; Benjamin S Halpern; Kevin D Lafferty; Heather Leslie; Jane Lubchenco; Deborah Mcardle; Mary Ruckelshaus and Robert R. Warner 'Application of Ecological Criteria In Selecting Marine Reserves and Developing Reserve Networks' *Ecological Applications* 13(1) Supplement (2003).

Edward Islands, and covers an area approximately 1.3 million square kilometres in extent. To date, South Africa has proclaimed between 53 and 57 MPAs.[56] In the light of ever-increasing requests for the proclamation of MPAs in areas that are either biologically underrepresented or have high conservation value, and in the absence of a national strategy for the establishment of MPAs, it is construed that there are insufficient MPAs to conserve the South African marine biodiversity. Despite being exclusively a national competence,[57] protection of the marine environment also appears to have been uncoordinated and undirected,[58] and has paralleled the pattern in the terrestrial environment. This notion is supported by the findings of the Marine Reserve Task Group[59] which led to the development of 'COMPARE' (Criteria and Objectives for Marine Protected Area Evaluation)[60] to assist with the evaluation of candidate MPAs against those established to avoid duplication or redundancy.

Critics of South Africa's natural conservation strategy have suggested that this country's excellent record[61] of conserving various elements of biodiversity occurred more by default than by grand design,[62] driven by individuals within conservation agencies and by non-government organisations.

Similarly at the provincial level, the protected areas established, do not make up a network that includes representative examples of the provincial biodiversity. For example, 87 (76%) of the 115 landscapes in KwaZulu-Natal are under protected.[63] All thirteen endemic and near endemic communities in the province are under protected, with

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[56] This data is sourced from http://www.environment.gov.za/. The text at this site indicated that there are 57 MPAs while the table (Table 4.5) indicates a total of 53.

[57] Schedule 3 of the Constitution of the Republic of South Africa Act 108 of 1996.

[58] Andrew Blackmore (*in prep.*) The Protection of the South African Coastline with special reference to Marine Protected Areas. In this paper, similar arguments are shown to apply the conservation of cultural, geological and palaeontological phenomena, and the author concludes that for marine biodiversity to be adequately and effectively conserved, collaboration and facilitation is needed between these disciplines.

[59] See PAR Hockey and GM Branch 'Criteria, Objectives and Methodology for Evaluating Marine Protected Areas in South Africa' Report of the Marine Reserves Task Group: Part 6. In Towards a New Policy and Marine Protected Areas for South Africa South African Coastal Network for *Coastal and Oceanographic Research Occasional Report* 2 (1997) at 98.

[60] Ideally, this system would best follow a GAP analysis, similar to that undertaken in KwaZulu-Natal by Ezemvelo KZN Wildlife which is currently being co-ordinated by Marine and Coastal Management (Dr Jean Harris *pers. com.* Ecological Advice Co-ordinator Ezemvelo KZN Wildlife. December 2004). A system such as COMPARE would prove an important tool to assess the contribution non-biodiversity related protected areas in the marine and coastal environment have to biodiversity conservation. See below.

[61] Guy R Preston; William R Siegfried and Rachael P Wynberg 'Attitudes and policies of the directors of South African nature conservation departments towards the protection of biological diversity' *S Afr J Wildl Res* 25(3) (1993) at 77.

[62] W.R Siegfried Preservation of species in southern African nature reserves. In: *Biotic Diversity in Southern Africa: Concepts and Conservation* BJ Huntley (Editor) Oxford University Press, Cape Town (1989) at 186.

[63] Using the preliminary IUCN guideline (discussed in note 22 above), that 10 % of these landscapes should be formally protected within an established protected area.

approximately 3 % occurring within the protected area network of the province (Figure 2 and Figure 3).[64]

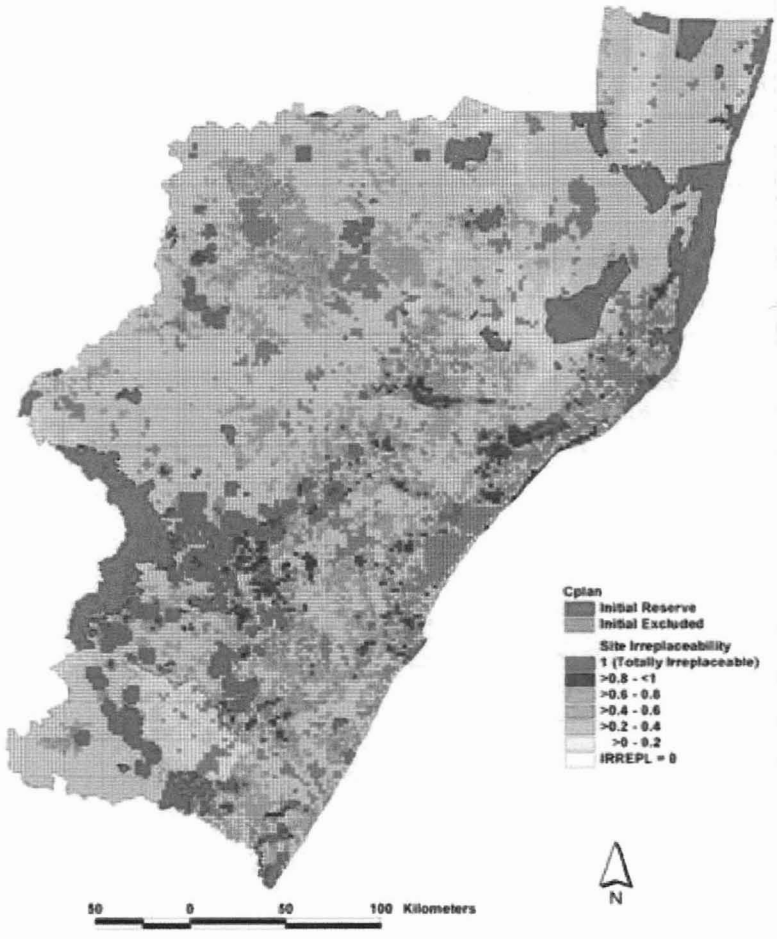

Figure 2: Map depicting conservation importance as an 'irreplaceability index' for KwaZulu-Natal on 24 October 2002.

The spatial projection of replaceability index for KwaZulu-Natal (Figure 2) publicises a substantial amount of irreplaceable biodiversity that occurs between the proclaimed protected areas. In so doing it highlights, by way of an example, the need for a co-ordinated biodiversity conservation framework. The replaceability index is derived from a systematic conservation planning[65] approach. This provides planners with numerous

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[64] Peter Goodman 'How Comprehensive is KZNs Protected Area Network?' Ezemvelo KZN Wildlife internal report to the KwaZulu-Natal Nature Conservation Board (2004).

[65] Systematic conservation planning is a 'minimum set' procedure that aims to represent chosen biodiversity features as conservation goals.*

* Albert S van Jaarsveld; Guy F Midgley; Robert J Scholes and Belinda Reyers 'Conservation Management in a Changing World' AIACC Working Paper No. 1 (2003) at 2. www.aiaccproject.org Accessed on 19 November 2004.

options for achieving these conservation goals (flexibility) and for prioritising areas of high conservation value (irreplaceability). Irreplaceability is a measure assigned to an area which reflects the importance for conservation in terms a set of conservation targets. Irreplaceability is, therefore, the likelihood that a given site will need to be protected to achieve the specified set of targets, or conversely the extent to which options for achieving these targets are reduced if the site is not protected. Systematic conservation, using indices of irreplaceability, enables the conservation planner to set explicit biodiversity conservation goals which may be translated into quantitative operational targets. It thus provides an evaluation of the extent to which these conservation goals have been met in the existing protected area network, and guides the location of new or the expansion of existing protected areas.[66,67]

SECURING OF IMPORTANT BIODIVERSITY ELEMENTS

The establishment of a systematic conservation framework forms the focus of the National Environmental Management: Biodiversity Act,[68] which ensures the protection and persistence of species and ecosystems that are considered important at a national level.[69] The Act was reduced out of South Africa's White Paper on biodiversity conservation[70] which sets in place six main goals and supporting objectives that follow the themes of the Convention on Biodiversity (Table 1).

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[66] C R Margules and RL Pressey 'Systematic conservation planning' *Nature* 405 (2000) at 243.

[67] It must be recognised that this process is iterative. As sites/areas/habitats are lost, the irreplaceability index of surrogates increases. Thus the process or strategy of conserving irreplaceable sites on the landscape is on going as the landscape is transformed directly through the actions of mankind* or indirectly through climate change**

* See Rachael Wynberg *op cit* at 235.

** Albert S van Jaarsveld; Guy F Midgley; Robert J Scholes and Belinda Reyers *op cit* at 5.

[68] Act 10 of 2004. Hereon referred to as the Biodiversity Act.

[69] Preamble to the National Environmental Management: Biodiversity Act 10 of 2004.

[70] White Paper on the Conservation of Biodiversity N/1095 Government Gazette No 18163 dated 28 July 1997.

Table: 1 Goals and Priorities of the 1997 Biodiversity White Paper.[71]

Goals

1. Conserve the diversity of landscapes, ecosystems, habitats, communities, populations, species and genes in South Africa.
2. Use biological resources sustainably and minimize adverse impacts on biological diversity.
3. Ensure that benefits derived from the use and development of South Africa's genetic resources serve national interests.
4. Expand the human capacity to conserve biodiversity, to manage its use, and to address factors threatening it.
5. Create conditions and incentives that support the conservation and sustainable use of biodiversity.
6. Promote the conservation and sustainable use of biodiversity at the international level.

Priorities

1. Develop an action plan through which detailed implementation strategies can be developed.
2. Obtain a political commitment from all relevant ministers and senior provincial representatives towards achieving the objectives of the policy (such as through approved sectoral plans and budgets for relevant central and provincial departments and institutions).
3. Address concerns relating to the fragmentation amongst nature conservation agencies.
4. Secure necessary funding for implementation.
5. Strengthen and rationalize South Africa's protected-area system.
6. Establish legal and administrative mechanisms to control access to South Africa's genetic resources.
7. Institute a national biodiversity education and awareness plan.
8. Participate in the development of an international Biosafety Protocol and instituting appropriate measures for biosafety.

The Biodiversity Act's biodiversity conservation framework is based on a hierarchical approach that ranges from the national perspective to a specific site (habitat or community) level. It stands to reason that, given that the majority of the protected areas were proclaimed in an absence of a defendable understanding of the spatial distribution of biodiversity and that other non-biodiversity orientated factors influenced the placing of the protected area boundaries,[72] important biodiversity elements would be excluded from the protected areas. This notion is supported by an evaluation of the conservation value of the Maputaland Region of northern KwaZulu-Natal (Figure 3a) where a substantial amount of significantly important or irreplaceable biodiversity elements abut onto or

[71] Adapted from Rachel Wynberg *op cit* at 235.

[72] For example cadastral farm, municipal, provincial and international boundaries, natural features such as river courses and watersheds, etc.

occur within close proximity to the protected areas.[73] The important or irreplaceable biodiversity elements within either the land- or seascape would include areas of high conservation value in terms of biophysical assets or it would support ecological processes, which would:

a. contain indigenous plant or animal communities that are either poorly conserved within the Park or have a high regional or national conservation value,

b. contain habitats or landscapes that are important for the conservation of the province's or South Africa's flora or fauna,

c. contain geological or geohydrological features worthy of increased conservation protection, or

d. complement or facilitate the re-establishment of extinct flora or fauna, or natural processes within the landscape that have been adversely impacted upon by post-industrial man

A similar argument holds at the provincial scale where substantial amounts of the province's biodiversity is not or is poorly protected by the current distribution of proclaimed protected areas (Figure 3b).

These areas should be considered for inclusion into the existing protected area networks,[74] inclusion in 'biodiversity friendly projects'[75] or be subject to a management agreement that recognises biodiversity conservation as a primary goal.[76]

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[73] In this figure, the protected areas comprise of - Greater St Lucia Wetland Park, Hlatikulu Forest Reserve, Makasa Game Reserve Manguzi Forest Nature Reserve, Mkhuze Game Reserve, Ndumu Game Reserve, Pongolapoort Nature Reserve, Sileza Nature Reserve, Tembe Elephant Park and the Ubombo Mountain Nature Reserve.

[74] Through purchase, appropriation or by means of negotiated contractual agreements.

[75] Robert Smith 'An initial guide for the conservation planning in Maputaland, South Africa' http://www.mosaic-conservation.org/maputaland. (August 2004). Accessed on 12 July 2004.

[76] CR Margules; RL Pressey and PH Williams 'Representing biodiversity: data and procedures for identifying priority areas for conservation' *J Biosci* 27 (2002) at 309.

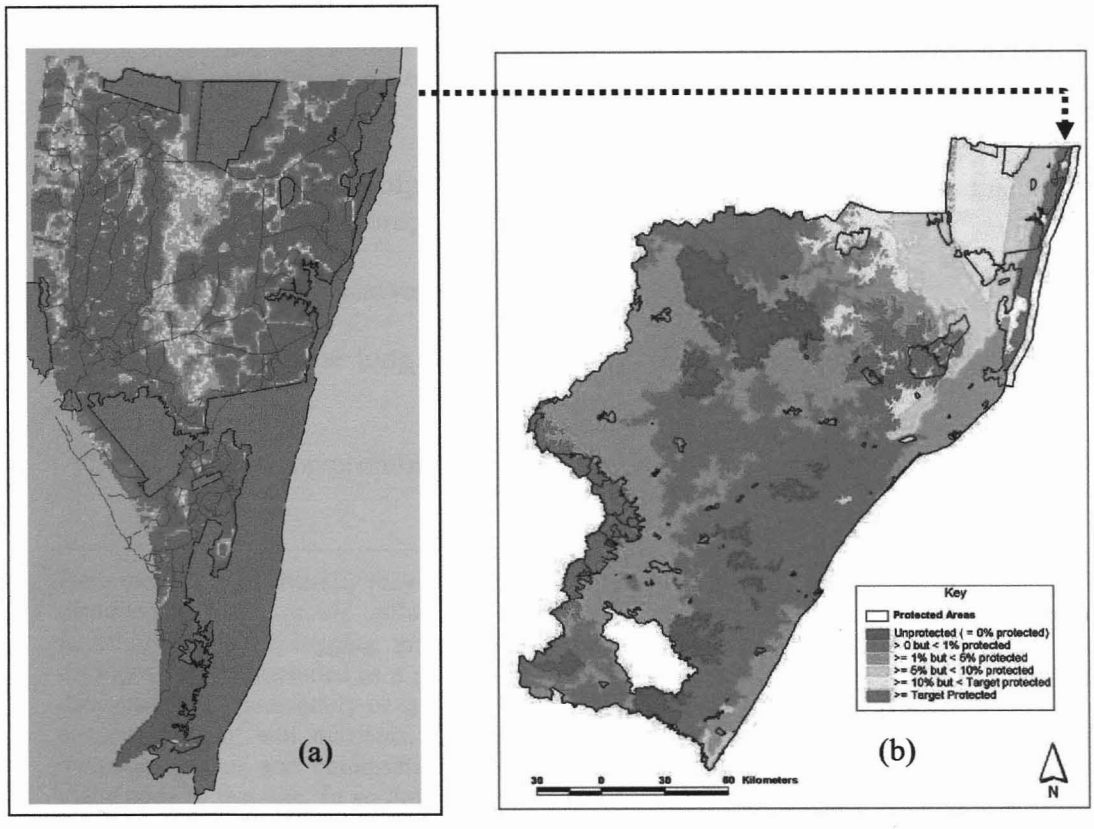

Figure 3: Conservation significance of biodiversity of the Maputaland Region of KwaZulu-Natal (a)[77] and the location of unconserved biodiversity elements in relation to protected areas of KwaZulu-Natal (b).[78]

Whilst the focus of this investigation relates directly to biodiversity conservation, consideration must be given to other attributes and values that occur within the conservable landscape and are embraced by important role players, cultures and communities.

The South African landscape, and in particular KwaZulu-Natal, has been imbued by the intimate relationship between its people and the natural environment. The legacy of this relationship has been indelibly imprinted onto the topography of the landscape, and the culture of its people through language, religious expression, rights and rituals, and indigenous knowledge systems. The establishment of a protected area for the conservation of biodiversity, therefore, would naturally encompass a sample of this

[77] RJ Smith; PS Goodman; WS Matthews and N Leader-Williams (in prep) 'Systematic conservation land-use planning: a review of perceived problems and actual benefits, illustrated with a case study from Maputaland, South Africa.'

[78] Peter Goodman (unpublished work) 'How Comprehensive is KZNs Protected Area Network?' Presentation to Ezemvelo KZN Wildlife for the establishment of conservation targets for KwaZulu-Natal.

legacy and vice versa. Given that biodiversity is a primary resource that underpins and promotes the wellbeing of humankind, the distribution of cultural phenomena would be highly correlated and auto-correlated[79] with the distribution of biodiversity within the land- and seascape. It stands to reason, therefore, that the protection and conservation of biodiversity may be augmented through the protection and conservation of cultural heritage.[80]

Inclusion of land that has high historical or cultural value into the expansion of protected area models would therefore;

a. facilitate the conservation of that history or culture,

b. conserve, in the long term, sedentary artefacts relating to the region's history or culture, or

c. consolidate or promote the historical or cultural value of the expanded protected area,

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[79] Here increased biodiversity may be as a consequence of humans activities. Many ecological systems are disturbance driven or are influenced by disturbances of various kinds, such as fires, windstorms, landslides, flooding, logging, grazing, burrowing animals and outbreaks of pathogens.* Anthropogenic activities may be included as a primary source of disturbance and landscape heterogeneity and hence a determinant of biodiversity or species richness. For example an ephemeral settlement may result in the concentration of soil nutrients, particularly phosphorous and nitrogen, which would promote both increased vigour and colonisation of the site by other faunal and floral species which would not indigenous to that site. In so doing, the settlement, once vacated, would have created new habitats and niches (an area of habitat providing the conditions necessary for an organism or species to survive). Thus the historical and prehistory activities of humankind would have altered the distribution, composition and structure of biodiversity within a landscape.**

The IUCN recognised the correlation between the activities of humankind and the predominance of biodiversity by defining a protected area category as a means to conserve these areas, a Category V protected area. Which is described as 'areas of land, coast and seas as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.'‡

* Peter S White and Anke Jentsch 'The Search for Generality in Studies of Disturbance and Ecosystem Dynamics' *Progress in Botany* 62 Springer-Verlag Berlin Heidelberg (2001) at 400.

** See AC Blackmore; MT Mentis and RJ Scholes 'The origin and extent of nutrient-enriched patches within a nutrient-poor savanna in South Afric'a (1991) at 119. In Patricia Werner (Editor) *Savanna Ecology and Management: Australian Perspectives and Intercontinental Comparisons*. Blackwell Scientific Publications. Oxford.

‡ IUCN Protected Area Categories http://www.unep-wcmc.org/protected_areas/categories/~main. Accessed on 6 January 2005.

[80] Cultural heritage encompasses material culture, in the form of objects, structures, sites and landscapes, as well as living (or expressive) culture as evidenced in forms such as music, crafts, performing arts, literature, oral tradition and language. The emphasis is on cultural continuity from the past, through the present and into the future, with the recognition that culture is organic and evolving. Extracted from Cultural Heritage and Development Action Network: Working Group Meeting: The World Bank, Washington D.C. (1998). Cited in Andrew Blackmore (in prep) Who is subservient to whom: South African Cultural Legislation and others v South African Criminal Legislation? A case study to determine the role cultural heritage legislation could and should play in tragic recent history by safeguarding potentially significant living cultural heritage at note 2.

and may enable the inclusion of important biodiversity elements requiring strict conservation or protection, into the protected area.

However, either the establishment of a new or the expansion of an existent protected area cannot be seen in isolation of the needs of neighbouring rural communities in terms of promoting rural capacity building and greater awareness of the biodiversity value of the protected area. The expansion of the protected area may include land that would:

a. Make a measurable contribution, through direct intervention or facilitation, to the development and upliftment of impoverished neighbouring communities;

b. Facilitate a greater long-term understanding and involvement of neighbouring communities in the conservation of the biophysical and cultural assets and the associated tourism values; or

c. Facilitate a greater long-term understanding and involvement of neighbouring communities in the economic, social and cultural development of the protected area.

By increasing the size of the protected area to include areas of important biological and cultural assets, the net and desired result would be the promotion or consolidation of the economic and social stability of the protected area and surrounding areas. In order to achieve the aim of affording greater protection of biodiversity and the expansion of the exiting protected areas for this purpose, land that increases the;

a. attractiveness of the protected area as multi-experience destination to both South African and international tourism markets,

b. competitiveness of the protected area with other major tourism destinations,

c. economic interdependence between the various sections within the protected area,[81] or

d. economic and social wellbeing of the areas neighbouring the protected area,

should be considered as a primary source of motivation for the expansion. In considering the social and economic wellbeing of communities neighbouring the protected area and

[81] By providing a variety of experiences within the protected area, the promotion of one destination may facilitate the promotion and economic growth of another. For example, establishment of thematically styled camps and accommodation creates the opportunity to establish the style of the camp as a unique and enjoyable experience. This encourages either tourists to return at a future date, and select a alternate camp, or to allow 'camp hopping' as a means to extend their stay. The expansion of the protected area may facilitate the inclusion of a feature, on which a camp may be styled (e.g. Anglo-Boer war battlefield), thereby increasing the thematic variety of potential tourism destinations.

the economic stability of the protected area,[82] increased revenue potential may also be considered as a primary motivation for including land into the protected area. Thus land that will increase revenue potential by;

a. increasing the financial viability (in terms of occupancy rates, gate takings, curio sales etc) of a section of the protected area, or of the protected area as a whole,

b. creating the opportunity to develop commercial ventures (e.g. hunting, tourism lodges, etc),

c. creating the opportunity to derive commercial benefit from goodwill generated by the conservation agency's marketing of the protected area, or

d. significantly subsidising current conservation management and monitoring activities.

should be considered for inclusion into the protected area network.

Finally, areas may be considered for inclusion into a protected area if they have no additional value other than increasing the security of the conservation assets by;

a. decreasing the utilisation pressure on the core conservation area,

b. increasing the security of vulnerable assets by establishing buffer areas, or

c. complementing or facilitating appropriate zonation[83] within the core conservation area.

or may form an important link for the expansion of contractual protected areas thereby serving as critical components for the incorporation of land that is of high biodiversity value.

In order for these areas to be included into the existing protected areas, the ownership and current (and intended) use of candidate land would need to be

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[82] The operation and management of public protected areas are funded through a grant from the State. The position assumed by the South African government is to see that the protected areas become self sufficient. The conservation grants, therefore, have been diminished through direct budget cuts or through erosion due to inflation. The grants, therefore, are being more aptly described as 'government subsidies'.

[83] Zonation is a tool used to identify the areas within which various activities may take place and to ensure that the activities (and hence the zonation) are compatible with the aim and vision for the establishment of the protected area and in harmony with the biophysical constraints. Typically, a zonation plan for a protected area would include Wilderness, Primitive, Semi-Primitive, and Rural. See BJ Corcoran; R Porter and AC Blackmore 'uKhahlamba-Drakensberg Park World Heritage Site: Draft Zonation Plan' (2003) Internal report to the KZN Nature Conservation Board at 8.

determined, and for those areas that are privately owned, the following options to secure a conservation servitude would need to be considered.

- Purchase;[84]
- Appropriation;[85]
- Private promulgation;[86] and
- Contractual or partnership agreements.[87]

The issue of land, and the potential change of its use and ownership, for the conservation of important biodiversity elements that are poorly conserved elswhere, brings into play the social and political context of biodiversity and its conservation. In addition, land, economic growth and the role the South African government, its people,[88] and land reform is highlighted. These spheres legitimise their foundation in the Constitution[89] which is tabled as the cornerstone of South African law. Of particular relevance, is Section 24 of the Bill of Rights within the Constitution which sets in place the environmental right clause. This clause guarantees 'everyone the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.'[90]

This right places a constitutional duty on the State (and all spheres of government therein), industry and business, and on all South Africans to take reasonable steps, in their current functions as well as future plans, to prevent environmental degradation, promote conservation and ensure sustainable development. The National Environmental Management Act (NEMA)[91] defines the environment as the surroundings within which humans exist and that are made up of the land, water and atmosphere of the earth, micro-organisms, plant and animal life and the interrelationships among and between them (the

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[84] Following a willing buyer / seller model.

[85] Following a willing buyer and reluctant seller model.

[86] This would include setting in place a private nature reserve (or equivalent), registering a conservation servitude through a notorietal deed, or restricting use by means of a protected environment (see Section 9 of the National Environmental Management: Protected Areas Act 57 2003).

[87] Where the State and landowners form a negotiated agreement.

[88] Particularly those who have been previously dispossessed or disadvantaged by the Nationalist government's racial laws.

[89] Constitution of the Republic of South Africa Act 108 of 1996.

[90] The notion that natural resources belong to an entire community of people who share rights of access and use dates back to Roman Law. Under Roman law the concept of '*res communes*', the air, running water, the sea and the seashore were common to all. Private use of the resources was recognised, but such use did not confer a right of ownership upon the resource owner. Furthermore, the resource users' access to the resource was conditional upon his or her not damaging the resource and not impeding the access of other users to it.*

* See JA Chiappinelli 'The right to a clean and safe environment: A case for a constitutional amendment recognising public rights in common resources' *Buffalo Law Review* 40(2) (1992) at 570.

[91] Act 107 of 1998.

biodiversity)[92] and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.[93] It is, therefore, arguable that biodiversity is a fundamental component of the environment, and that the State has a fundamental obligation to conserve biodiversity in order to safeguard the environmental right. The question arises as to the nature of the obligation, in that it is questioned whether this obligation is extended to biodiversity in general, or whether it applies to core or representative samples therein.[94]

INTERNATIONAL CONVENTIONS

The nature of the obligation to conserve biodiversity is embodied in the adoption of international conventions and treaties and their incorporation into domestic legislation. Of relevance to the conservation of the natural heritage (ranging from the species to the biome level) are the following conventions that South Africa has adopted.

- International Convention for the Regulation of Whaling (IWC).[95]
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).[96]

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[92] As defined in Reed Noss 'Indicators for Monitoring Biodiversity: A Hierarchical Approach' *Conservation Biology* 4(4) 355-364 1990, namely: '*The natural variety of life in all its forms, levels and* combinations, *together with the environmental conditions necessary for survival. Biodiversity includes: regional diversity, ecosystem diversity, species diversity and genetic diversity.*'

[93] See section 1 of the National Environmental Management Act 107 of 1998.

[94] In accordance, for example with the IUCN guidelines. See note 63.

[95] South Africa ratified the whaling convention on 10 November 1948 and ceased whaling in 1975. The protection of whales within South African coastal waters is enforced under the regulation of Marine Living Resources Act 18 of 1998. See the South African Department of Foreign Affairs web site http://www.dfa.gov.za/foreign/Multilateral/inter/iwc.htm and the following popular sites www.oceanlaw.net/texts/iwc.htm and www.ourworld.compuserve.com/homepages/iwcoffice/Convention.htm. A summary of the regulation of whaling is as follows:
For many centuries whaling was regulated by availability of whales and the demand for whale products. By 1946 it was apparent that the whale populations were being depleted. In order to address this concern, an international convention was held in Washington, D.C. and resulted in the formation of the International Whaling Commission (IWC), a voluntary association of 15 whaling nations. At the annual London commission meeting in 1949, it was agreed to regulate whaling by (1) setting geographical limitations, (2) establishing annual quotas and banning the hunting of certain species such as the arctic-right and blue whales, (3) establishing rules for safeguarding immature whales and females with suckling calves, and (4) limiting the operations of factory ships and whaling stations. Despite these regulations, the whale numbers continued to decline resulting in the IWC setting lower quotas. In 1979, pressed by scientists and environmentalists who warned of the continuing threat to the great whales, the commission voted for a worldwide moratorium on the use of factory ships, except for hunting minke. Japan, however, continued to hunt minke whales under auspices of scientific research. In the early 1980s the quota set for all species together was 14,500; hunting of sperm whales, in particular, was virtually banned. By then, almost all member nations had given up whaling, except for the Union of Soviet Socialist Republics, which terminated all whaling operations after the 1987 season; Iceland, which suspended whaling operations in 1989; and Japan, which formally ended commercial whaling but continued to hunt whales for what were described as scientific purposes. After suspending commercial whaling in 1988, Norway announced in 1992 that it would resume commercial whaling.

- Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).[97]

- Convention on Biological Diversity (CBD).[98]

- Bonn Convention - Convention on the Conservation of Migratory Species of Wild Animals (CMS).[99]

By acceding to and ratifying the conventions, the State has made a public and international declaration to conserve and use sustainably the natural assets that are indigenous to South Africa.[100] This declaration has been further entrenched through the development of the White Papers on the conservation of South Africa's biological resources, namely the:

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[96] Signed by South Africa on 3 March 1973 and subsequently ratified on 15 July 1975. This convention is aimed at protecting endangered species where the endangerment was either as a result of, or being promoted by international trade. To address this, CITES sets in place various trade control measures and monitoring of the status of those species listed in the appendices of the convention.

[97] South Africa acceded to this convention in September 1980, and ratified it in 1982 The convention sets in place an agreement to manage and regulate the exploitation of Antarctic marine living resources. A South African scientist is currently chairman of the Scientific Committee. South Africa is one of only four nations with undisputed sovereignty in the convention area.

[98] Signed by South Africa during June 1993 and subsequently ratified on 2 November 1995. The aim of the CBD is to effect international co-operation in the conservation of biological diversity and to promote the sustainable use of living natural resources at a global scale. It also aims to bring about the sharing of the benefits arising from the utilisation of natural resources. http://www.biodiv.org Date accessed 15 September 2004.

[99] South Africa acceded to the convention during December 1991. This Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) aims to conserve terrestrial, marine and avian migratory species throughout their range. It is an intergovernmental treaty, concluded under the aegis of the United Nations Environment Programme, concerned with the conservation of wildlife and habitats on a global scale. Since the Convention's entry into force, its membership has grown steadily to include 86 (as of 1 June 2004) Parties from Africa, Central and South America, Asia, Europe and Oceania.

Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each state joining the Convention, CMS promotes concerted action among the Range States of many of these species.

This convention was organised in response to the need for nations to cooperate in the conservation of faunal species that migrate across their borders. These include terrestrial mammals, reptiles, marine species and birds. Special attention is paid to endangered species. South Africa is a major partner in this convention as it is the terminus for many of the migratory species, including the Palaeoarctic (birds) and the Antarctic species (whales and birds).

[100] Here South Africa is defined, for example in Section 4(1) of the National Environmental Management: Biodiversity Act 10 of 2004, as the Republic of South Africa 'including its territorial waters, exclusive economic zone and continental shelf described in the Maritime Zones Act, 1994 (Act No. 15 of 1994); and the Prince Edward Islands referred to in the Prince Edward Islands Act, 1948 (Act No. 43 of 1948).'

- White Paper for Sustainable Coastal Development in South Africa,[101] and
- White Paper on the Conservation of Biodiversity.[102]

In both these policy papers, strong emphasis was placed on the guiding principles of conservation and sustainable use of biodiversity.[103] In so doing, it entrenches the philosophy that biodiversity, i.e. genes, species, communities,[104] ecosystem processes, and natural landscapes,[105] are the concern of the State. However, the adoption of a principle or philosophy does not necessarily make the State the accountable and responsible agent for conserving core biodiversity areas that are representative of the various sub-components of biodiversity.[106]

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[101] The White Paper for Sustainable Coastal Development in South Africa (2000) Department of Environmental Affairs and Tourism Cape Town.

[102] White Paper on the Conservation of Biodiversity N/1095 Government Gazette No 18163 dated 28 July 1997. See note 70.

[103] See for example Section 2.4 of the White Paper on the Conservation of Biodiversity and Section 2 of the White Paper for Sustainable Coastal Development in South Africa.

[104] Plant and Animal.

[105] See the characterisation of biodiversity on page 3.

[106] Hereon referred to as 'core biodiversity elements'.

CHAPTER 3 : LEGAL FRAMEWORK

ENVIRONMENTAL CONSERVATION LEGISLATION

In South Africa, the National Environmental Management Act (NEMA) provides the framework for the implementation of the national environmental policy in accordance with the CBD. The development of the Act resulted from extensive consultation[107] through the Consultative National Environmental Policy (Connep) process. The Act was set in place to provide for:

'co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; to provide for the prohibition, restriction or control of activities which are likely to have a detrimental effect on the environment; and to provide for matters connected therewith." [108]

Whilst the preamble to NEMA reinforces the environmental right within the Bill of Rights, the Act is silent with respect to explicit obligations of the State regarding the conservation of core biodiversity elements. The approach of this legislation is to set in place a framework for environmental law reform to provide for co-operative environmental governance, This occurs through a series of principles relating to the procedures for the State's decision-making on the environment and the institutions of state which are to make those decisions. It covers:

- Land, planning and development;
- Pollution control and waste management; and
- Natural and cultural resources, use and conservation.

NEMA sets in place a range of principles that serve as a general framework for environmental planning, guidelines according to which the State must exercise its environmental functions, and a guide to the interpretation of NEMA itself and of any other law relating to the environment. The most important principles within NEMA that apply to the conservation of core biodiversity elements and the State's role therein are:

I. Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.[109]

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[107] That included both the public and private sector and spanned three years.
[108] Long title as amended by National Environmental Management Amendment Act 56 of 2002.
[109] Section 2(2) of Act 107 of 1998.

This principle introduces the environmental right[110] and ensures that the need to conserve biodiversity does not supersede or depreciate the quality of life for South Africans. Whilst land reform in South Africa remains a priority, the conservation and protection of biodiversity will compete directly with the land reform programme and the people's needs therein. The debate hinges on addressing immediate and substantial plights by sacrificing natural elements versus securing, in many cases, intangible environmental services which are unlikely to address the specific needs of the people in the short, medium or long term,[111] and preventing the extinction of species whose functional role in the environment and contribution to people's wellbeing is unknown.

II. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.[112]

The dilemma introduced in I above, is partially addressed in this principle in that the development and use of South Africa's natural landscape, and the biodiversity therein, must recognise the value of complete and functional natural systems and that disturbance, including loss of biodiversity elements, should be primarily avoided. When this cannot be achieved, through applying, *inter alia,* Principle 2(2) (See I above), an intervention would be required to ameliorate the impacts of the disturbance such that the resultant impacts are insignificant. Insignificance here would be a level at which the resultant impacts would be absorbed by the natural capacity of the system.

III. That the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource.[113]

Although the above principle was primarily set in place to apply to minerals[114] which would require consultation with the Minister of Minerals and Energy

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[110] Section 24 of the Constitution of the Republic of South Africa Act 108 of 1996.

[111] For example, the expansion and upgrading of the Thokozani Informal Settlement near Albert Falls, KwaZulu-Natal (EIA 3704) posed a threat to a number of locally endemic millipede species, including the *Spinotarsus debilis* (Odontopygidae) and *Doratogomus peregrinus*. The holotype of the latter species was collected from this population. The significance of this is that the population which gave rise to its taxonomic description would be lost. Given that these species, together with snails earthworms and centipedes, have limited powers of dispersal, they are subject to high rates of allopatric and sympatric speciation. The loss of this population would be termed highly significant from a taxonomic perspective in that future verification of the endemic status would be rendered unachievable. In addition, and significantly, the limited range of these species as a result of their dispersal habit, renders them highly vulnerable to small scale development. Thus the potential extinction of the endemic population of millipede needed to be weighed up against the provision of adequate housing. The declining, by the State, of the application would, in the absence of feasible alternatives, deny the Thokozani community their Constitutional right 'to have access to adequate housing' (Section 26 of the Constitution of South Africa) and would be in conflict with the Constitutional Court judgement on *Government of the Republic of South Africa v Grootboom and others*.

[112] Section 2(4)(a)(*i*) of Act 107 of 1998.

[113] Section 2(4)(a)(*v*) *op cit.*

[114] Section 2 of the Mineral And Petroleum Resources Development Act 28 of 2002 defined minerals as: "any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subjected to a geological process, and includes sand, stone,

Affairs before any mineral rights are expropriated, it is equally applicable to biodiversity resources particularly those which are approaching extinction through use or land transformation. Here it is argued that, in the absence of an intervention to reverse the loss of the biodiversity element, and if the populations or abundance of this element are not managed to a point above the sustainability threshold (loosely defined in Section 4(a)(*vi*) of the Act, the biodiversity element would be considered a 'non-renewable' resource. Under these circumstances, this principle of NEMA would apply. The characterisation of threatened biodiversity elements as non-renewable resources is new and is only recently being considered for limited biological elements and products, for example the harvesting of coral.[115]

IV. The development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised.[116]

Integrity of ecological systems is safeguarded by two sets of thresholds. The first is commonly known as a Threshold of Potential Concern (TPC),[117] whilst the second is characterised as a Limit to Acceptable Change (LAC). TPC's are specified limits of ecological change which should not be capriciously exceeded. They are typically set as 'management thresholds' and are set well above the LAC (Figure 4) and may be based on:

· The availability of both scientific data and subjective policy criteria;

· A degree of professional judgement;

· An understanding of processes, systems and cycles;

· Identification of specific resources within the system; and

· An understanding of the extent or significance of environmental impacts on a system.[118]

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rock, gravel, clay, soil and any mineral occurring in residue stockpiles or in residue deposits, but excludes- (a) water, other than water taken from land or sea for the extraction of any mineral from such water; (b) petroleum; or (c) peat."

[115] See for example Terms of Reference IUCN Working Group on Extractive Industries and Biodiversity (WGEIB) footnote 1. http://www.iucn.org/themes/business/mining/Working%20Group%20EIB%20-%20TORs%20-%20final.pdf accessed on 21 September 2004.

[116] Section 2(4)a)(*vi*) *op cit.*

[117] See for example:
Ian Whyte; Harry Biggs; Angela Gaylard and Leo Braack 'A Proposed New Policy for the Management of the Elephant Population of the Kruger National Park' http://www.parks-sa.co.za/conservation/scientific_services/Elephant_management/em_completeelemgmtplan.html Accessed on 21 September 2004,
and
Kevin Rogers and Regina Bestbier 'Development of a protocol for the definition of the desired state of riverine systems in South Africa' Department of Environment Affairs Report (1997) at iix.

[118] L Godfrey and C Todd 'Defining thresholds for freshwater sustainability indicators within the context of South African water resource management' Presentation to the 2nd WARFA/Waternet Symposium: Integrated Water Resources Management: Theory, Practice, Cases; Cape Town (2001) at 2.

In the absence of the above, TPCs may be arbitrarily set following conservative reasoning.[119]

The value of setting TPC's lies in the fact that it is recognised that biological systems (e.g. a species, population, habitat, etc) are dynamic and are likely to change with time and management, and thus, given the uncertainty or absence of empirical information, the TPCs should be subject to revision if approached.

The LAC is the threshold that, once exceeded, would result in deterioration of that system.[120] For example, a LAC for a species would be the minimum number required to ensure a viable population and below which the species would spiral into extinction. Thus once the limit is approached the species or system would be considered to be 'highly threatened'.

The integrity of a biological or ecological system would thus be ensured, in fulfilment of this principle, by remaining above the LAC. However, the LAC is often unknown and is complexed by stochasticy of the natural dynamics of the environment. It is for this reason, that the Precautionary or Risk Adverse Principle is evoked by setting robust TPCs.

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[119] Ian Whyte *et al op cit.*

[120] Or alternatively the point, beyond which, the ecosystem will not be able to recover to its natural equilibrium state or desired equilibrium[*,**] and would include species composition (including local extinction) and structure change (e.g. movement from a forest to grassland). The change in state may, thus, result in a change in the ecological, social and economic values of the system.

[*] DJ Roux; PL Kempster; CJ Kleynhans HR van Vliet and HH du Preez 'Integrating stressor and response monitoring into a resource-based water-quality assessment framework' *Environmental Ma*nagement 23(1) (1999) at 25.

[**] L Godfrey and C Todd *op cit* at 2.

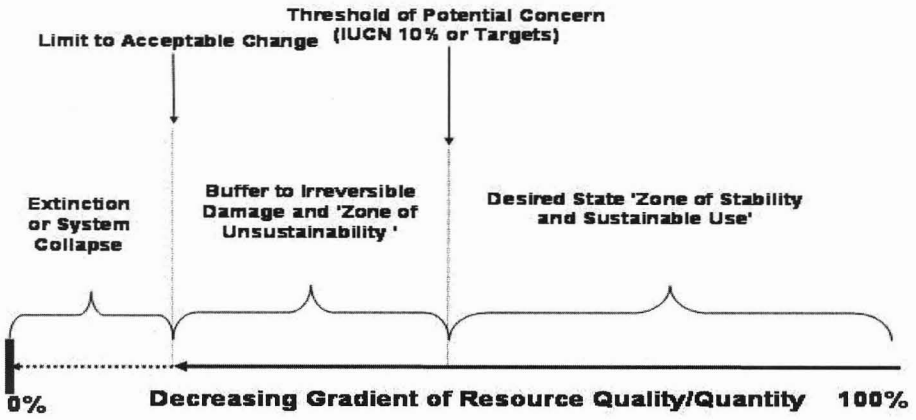

Figure 4: A diagrammatic characterisation of the relationship between Thresholds of Potential Concern (TPC) and Limits of Acceptable Change (LAC).

V. That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.[121]

This introduces the Precautionary Principle[122] to environmental decision making. Within this context it takes into consideration that the benefits of biodiversity (e.g. genetic resources, medicinal products, environmental services, etc) may not be understood at a functional level. This includes uncertainty that may arise through unmeasured cumulative impacts, chance circumstances or episodic events and the complex inter- and intra- relationship between species and the environment. Under these circumstances it may not be possible to determine either the short or long term impact of an activity on the natural environment, or its contribution to cumulative impacts. Likewise, the understanding, technology, or methodology may be such that the impacts (short or long term) may not be in place to predict the Limit to Acceptable Change (see Figure 4). An example of this scenario is demonstrated in the demise of the Seventy-Four (*Polysteganus undulosus*). The Seventy-Four was a desired (commercial and recreational) pelagic fish species. By mid 1960s, the species was considered to be commercially extinct in the South African waters. This led to the species being excluded from all fishing

[121] Section 2(4)(a)(*vii*) *op cit.*

[122] A principle dictating that, where there is threat of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the Precautionary Principle, public and private decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and an assessment of the risk-weighted consequences of various options.

activities.[123] The method used, however, – 'Catch per unit effort' and other measurements of the species' population health had previously indicated that the harvesting of the species was sustainable.[124]

A similar argument applies to the establishment and expansion of protected areas, in that whilst the benefits of this action for biodiversity conservation may be easily seen and measured at a local and landscape level, there may be significant direct and indirect impacts on other aspects of the broader environment that may not be plainly evident. It is for this reason, that the establishment and expansion of a protected area may be considered a 'change in landuse' and as such would be considered a 'listed activity' in terms of the regulations[125] to Section 21 of the Environment Conservation Act.[126] Under these circumstances, this activity could only commence following authorisation being granted by the Minister. The authorisation would only be issued following consideration of 'reports concerning the impact of the proposed activity and of alternative proposed activities on the environment.'[127] Thus the environmental impact assessment process would ensure that a risk adverse or cautious approach is applied to the decision making by highlighting issues of concern and potential tradeoffs to be considered.

VI. That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied. [128]

With this principle, NEMA introduces into South African environmental jurisprudence the concept of 'cause and effect' in environmental decision making. Duty of care entails an understanding of the potential consequences of various actions, and should these prove to have a significant negative (undesirable) impact on either the environment or on people's wellbeing, avoidance of them. The avoidance may not necessarily be limited to preventing the activity from occurring, but may involve various mitigatory interventions to reduce the significance of the impacts on the environment.[129] Importantly, this principle ensures that there should be no net loss in the quality of the environment as a result of this development, and that the decision makers empower themselves to have the necessary foresight in order to deal with issues in advance.

As with the risk adverse principle, this principle would rely heavily on an inventory of the potential negative impacts and an assessment of the consequences of the proposed activity would have on the environment. In

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[123] See Ezemvelo KZN Wildlife's Sea Fishing Regulations http://www.kznwildlife.com/seafish_regs.htm. Accessed on 28 September 2004.

[124] Dr Jean Harris (October 2004). Personal Communication.

[125] Regulations in terms of GN. R. 1183 of 5 September 1997 as amended by GN. R. 670 of 10 May 2002.

[126] Act 73 of 1989.

[127] Section 22(2) *op cit.*

[128] Section 2(4)(a)(*viii*) of Act 107 of 1998 .

[129] In addition, should the benefits to the people of South Africa significantly outweigh the consequences of the impacts and are seen to be highly desirable in the interests of all South Africans, the principle may be overridden. These decisions, given that they may lead to irreversible species and habitat loss, should be subject to open and transparent review.

addition, an assessment of the significance of each impact and an evaluation of the mitigatory measures available, would be required.

Prior to all environmental decision making, the negative impacts on both the environment and on people's environmental rights need to be known, and appropriate mechanisms put in place to prevent the impacts from manifesting themselves.

VII. The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.[130]

In the doctrine of the public trust, the State is the trustee of the environmental resources, which means it is to conserve and manage in the service of all South African citizens, and the global public, those elements that have an international value.[131] In so doing, the State has a duty to conserve and protect the public's right to utilise these natural resources. The cornerstone of the doctrine rests on the authority of the State to exercise, in its capacity as sovereign, continuous control over the natural resources which are subject to the trust.[132] The obligation of

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[130] Section 2(4)(o) *op cit.*

[131] The public trust doctrine has its roots in the "Institutes of Justinian," the body of Roman civil law that was put together by the Roman Emperor Justinian's top legal scholars in 530 A.D. One of these laws stated that running water, the sea, and consequently the shores of the sea were common to all mankind. Therefore, no one was forbidden from approaching the seashores. England, in adopting much of the Roman law, recognized waters and shores as public in nature. As commerce became more important, so did the public's interest in the shores. Eventually, the shores came to be recognized as property owned by the King in trust for the public.* Thus the doctrine has historically been interpreted as providing that title to tidal and navigable waters, the lands beneath them, and the living resources inhabiting those waters are held in trust by the State for the benefit of the State's citizens. This interpretation has, however, been extended to include all natural elements (including biodiversity), and in particular within South African common law and lately within environmental jurisprudence.

* Extracted from http://law.utoledo.edu/LIGL/public_trust_doctrine.htm. Accessed on 23 November 2004.

[132] This doctrine was set in place as the environment, and components thereof, are not afforded the status of a jural person. Christopher D. Stone* argued that 'we [should] give legal rights to forest, oceans, rivers and other [...] natural objects in the environment [...] indeed to the natural environment as a whole.' While awaiting the decision of the United States Supreme Court in the Walt Disney-Sequoia National Forest matter, Stone lamented, 'if I could get the courts thinking about the park itself as a jural person [...] the notion of nature having rights would make a significant [...] difference.' Recognising that the legislation regulating the use of natural resources is anthropogenic in focus and that the environment may not achieve this desired status, Stone goes on to say that man should be entrusted with stewardship of the earth as guardian of those who are unable to speak and voice their needs, and it is this trusteeship which is the core of the State's and society's responsibility towards nature.'

Stone tables the solution in terms of granting rights to the environment by assigning guardianship at least to those elements that are critically endangered in terms of the following argument.

'It is not inevitable, nor is it wise, that natural objects have no rights to seek redress in their own behalf. It is no answer to say that streams and forests cannot have standing because streams and forests cannot speak [...] one ought, I think, to handle the legal problems of natural objects as one does the problems of legal incompetents'**

'public trust' invested in the State should, thus, be expressed through the country's legal and policy frameworks, strategies and action plans. These should include the organisational arrangements for following up on policies and plans and monitoring performance. Thus public trust should govern the rules of and participants in decision making.

In terms of this Act (NEMA), the public trust doctrine forms the platform for the principle for sustainable development[133] and introduces the concept that natural resources are to be utilised in a manner that clearly benefits the people of South Africa. Thus the policies, plans, decision making and the decisions themselves are obliged, where there is to be irreparable loss to biodiversity,[134] to separate exclusive benefit of individuals or a minority group from clear (measurable) and significant benefits to the people of South Africa. The accrual of benefits to all South Africans relates to the fulfilment of the environmental right[135] in that the natural environment is to be protected for the benefit of present and future generations.

Since the public trust doctrine is established in South African statute law, it is automatically extended to all environmental legislation that governs this country.[136] This includes the National Environmental Management: Biodiversity Act[137] which affirms unequivocally the State's trusteeship of biodiversity in that in order for the State to fulfil its obligations it must:

(a) manage, conserve and sustain South Africa's biodiversity and its components and genetic resources; and

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A natural object, like any incompetent person, is unable to represent (take care of) itself in matters that may lead to it being impacted upon, and is likely to be taken advantage of (in this case, by developers). The State (in terms of Head of Departments, lawyers etc) and other trustees and custodians are assigned to speak for corporations, universities, minors, incompetents, unborn children, etc. The question arises why guardianship cannot be extended to the environment. This consideration may be achievable elsewhere (e.g. California),‡ but South Africa has established an anthropogenic approach to the environment in terms of the environmental right. The position was further entrenched by NEMA's anthropogenic principle which guides the interpretation and implementation of environmental legislation and decision making in South Africa.

* Christopher D Stone 'Should Trees Have Standing? Towards Legal Rights for Natural Objects' *Southern California Law Review* (1974).

** Matthew Alan Cahn and Rory O'Brien (Editors). 'Thinking About the Environment: Readings on Politics, Property and the Physical World.' *Armonk*, NY: M.E. Sharpe (1996) at 221.

‡ Kathleen Lynn Nolan 'Should Trees Have Standing? by Christopher Stone: An Article Review' (1997) http://www.tamucc.edu/~whatley/padm5370/read12c.htm. Accessed 30 September 2004

[133] Section 3 *op cit.*

[134] Which would include damage to or loss of sensitive sites (see note 143), loss of function and environmental services, significant habitat loss, local or global species and habitat extinction, loss of cultural or scientific value, etc.

[135] Section 24 of the Constitution. See note110.

[136] In fulfilment of Section 2(1)(*e*) of NEMA *op cit*, in that NEMA is to 'guide the interpretation [of] any other law concerned with the protection or management of the environment'.

[137] Act 10 of 2004. Hereon referred to as the Biodiversity Act.

(b) implement this Act to achieve the progressive realisation of those rights.[138]

In addition to trusteeship, NEMA introduces the concept of 'custodianship' and the State being the custodian of the public trust doctrine[139] in terms of the 'duty of care' for the environment.[140] By introducing the obligation of custodianship, the State has reinforced the notion that the obligations enshrined in trusteeship cannot be transferred or relinquished.[141] Thus the responsibility for the protection of core biodiversity elements (the trust property) remains vested with the State for the benefit of the people of South Africa (the beneficiary). The application of the trusteeship may not necessarily be uniform or equal to all South Africans. NEMA makes provision for the country's apartheid past to be redressed by bringing into play the principle housed in Section 2(4)(*d*), namely:

'Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.'

The nature of protected areas in South Africa, and particularly KwaZulu-Natal, are that they are located in remote rural areas (See Figure 5). Given this remoteness, protected areas and the tourism associated enterprises therein[142] naturally make a significant contribution to the economic and social wellbeing of those impoverished communities that surround these areas.

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[138] Section 3 (*a*) and (*b*) *op cit.*

[139] See Section 28(5)(*e*) *op cit.*

[140] See Section 30(6)(d) and

[141] The concept of the inability of the State to relinquish custodianship or trusteeship of the natural environment has been established and challenged in common law. For example, in the State of Illinois, the ability of the State to relinquish its trusteeship was challenged in the Supreme Court in the case of *Illinois Central Railroad v. Illinois,* 146 U.S. 387, 453, 13 S.Ct. 110 (1892).* In this case, the Court decided that the Illinois Legislature did not have the power to transfer title of the shore and lakebed of Lake Michigan and that the State had the obligation to preserve the resources subject to the trust for use by the public.

* See http://caselaw.lp.findlaw.com/cgi-bin/getcase.pl?court=usandvol=101andinvol=814. Accessed on 28 September 2004.

[142] The establishment of ecotourism facilities within protected areas of KwaZulu-Natal, under the KwaZulu-Natal Nature Conservation Management Act 9 of 1997, is a primary function of the KwaZulu-Natal Nature Conservation Board (see Section 5(1) (*a*)(iii)).

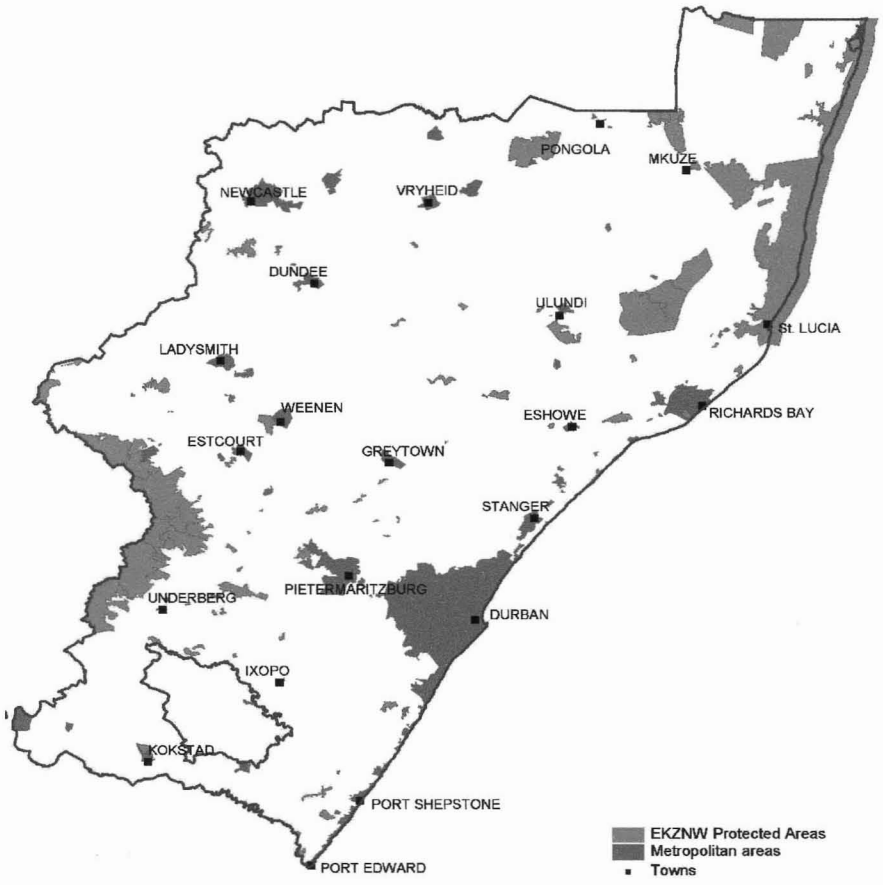

Figure 5: Distribution of protected areas within KwaZulu-Natal indicating their remoteness from significant economic centres.

However, the establishment and expansion of the protected areas have and may deny communities access to ancestral land and natural resources. The establishment and the expansion of existing protected areas would thus need to be in agreement with the country's land reform program.

VIII. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.[143]

This principle provides recognition of the realisation that the environment, and in particular certain elements therein,

- provide critical environmental services,

- are sensitive to disturbance associated with their exploitation, and

[143] Section 2(4)(r) of NEMA.

- have been severely impacted upon through either their utilisation or development or both, which has led to them becoming threatened or facing irreversible damage.

By setting in place this principle, the State recognises that:

a) it should be identifying and defining the threats that these systems are subject to so that the management (including remediation of the existing) of impacts is complemented by both current decision making and planning through co-operative governance.[144]

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[144] Sections 11 to 16 of NEMA, in accordance with the co-operative governance provided for in the Constitution (Chapter 3). Chapter 3 of NEMA makes provision for procedures for co-operative governance and management plans. The Environmental Implementation (Section 11(1)) and Management (Section 11(2)) Plans were set in place as the vehicles to ensure co-operative governance between organs of state that may affect or are involved with the management of the environment respectively.

The principle aim of the plans is to set in place an inter-departmental framework for the application of NEMA by the State. The KwaZulu-Natal Provincial Government Environmental Implementation Plan* sets in place the detail prescribing the application of NEMA for the province and the co-operative governance process. In terms of the environmental principles, this plan is silent on their interpretation and uniform and consistent application of NEMA by the various organs of state. It also fails to establish and embrace the link between the conservation of biodiversity (and the concomitant provision of environmental services) and the health and wellbeing of South Africans (see S 5.3 – Priority functions and programmes of KZN).

Provision for the establishment of the National Environmental Advisory Forum** (Section 3 of NEMA) was made in order to monitor and inform the Minister of the application of and compliance to the environmental principles and governance and specifically the setting and achievement of objectives and priorities for any matter concerning environmental management and governance.
The creation of the Committee for Environmental Co-ordination (Section 7), which brings national, provincial and local tiers of government involved in environmental management together, gives concrete form to the mentioned co-operative governance. The Implementation and Management Plans are submitted to the Committee for Environmental Co-ordination (CEC), an inter-departmental committee, for approval and adoption and to promote the integration and coordination of environmental functions by national and provincial government departments. As such, it is an important and powerful body. Although the previous CEC was ineffective, the preference for a CEC instead of an independent 'Environmental Protection Agency' is seen to be a significant demonstration of government's commitment to the effective coordination of environmental activities from all relevant departments. Throughout the entire Connep process, intense lobbying was undertaken by environmental non-governmental organisations (NGOs) and community-based organisations for the establishment of an independent environmental agency similar to the United States Environmental Protection Agency (EPA). This need arose out of concerns that the State plays both player and referee and that the environment would not receive the necessary considerations and safeguards by the various governmental decision making bodies.

* Provincial Government Gazette No 862/6276 23 July 2004.

** Nominations for the establishment of this committee were called for on 09 June 2003. See the Green Clippings website www.greenclippings.co.za. Accessed on 05 October 2004.

b) decisions of the past have been detrimental to the environment and have recognisably and unduly impacted on specific systems (e.g. wetlands) either directly or cumulatively,[145,146]

c) the past, current and future decisions have and may, either directly or cumulatively, force natural systems beyond either the TPC[147] or to a point approaching the LAC of which irreversible damage may take place. This principle, therefore, represents an eleventh-hour or benighted[148] safeguard for the protection or conservation of core biodiversity elements.

d) sensitive, vulnerable and heavily impacted systems require active management in order to restore their ecological integrity to a point where the use is sustainable or to prevent further degradation and to ensure that proposed development, landuse or land transformation initiatives do not either further the degradation or conflict with local, provincial/bioregional or national management or conservation framework[149] objectives.

It is argued that, in addition to the generic examples of vulnerable and sensitive systems provided for in this principle, core biodiversity elements should be considered in this light. Likewise, the establishment of a protected area makes explicit that the various values therein, be they biodiversity, cultural, social or economic in origin, are sensitive and vulnerable to resource use by humans and development pressure. The management of these areas would need to be in accordance with the bioregional and biodiversity management plans[150] set in place under the auspices of the Biodiversity Act. In addition, should these areas attain formal protection, they would require a management plan[151] to ensure that these values are conserved with time.

Thus the establishment and expansion of protected areas would have a significant impact on the decision making environment that may surround (spatially) that site. This activity must, therefore, take into consideration the social, economic and

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[145] Proposed regulations* under section 24(5) of NEMA bring into consideration cumulative impacts when considering development or land transformation applications that may have a detrimental impact on the environment.

* GN R764 and 765 in *GG* 26503 of 25 June 2004 at 10.

[146] Alison Todes 'Regional Planning and Sustainability: Reshaping Development through Integrated Development Plans in the Ugu District of South Africa' Paper presented to the Regional Studies Association Conference, Reinventing Regions in the Global Economy Pisa, 12-15th April (2003) at 14. Accessed on 05 October 2004 www.regional-studies-assoc.ac.uk/events/pisa03/todes.pdf.

[147] See Figure 4 above. Viz. a system has either measurably or visually been degraded thereby evoking concern for the wellbeing of the environment and the loss of associated environmental services or criticism of the authorities that granted the permission that led to the degradation.

[148] Unless TPC's have been set (see Figure 4 above), the reliance on this principle may be problematic as the measurable or noticeable consequences of an environmental degradation lag significantly the decision or cumulative decisions made. Thus a system may be pushed beyond the LAC before the problem is identified by the permit granting authority and remedial action is taken.

[149] See for example the provisions in Section 38 of the Biodiversity Act.

[150] See Section 42 and 43 respectively.

[151] In accordance with Part 1 of the National Environmental Management: Protected Areas Act 57 2003.

political context of the receiving environment and in particular South Africa's land reform, land management and development programmes.

Whilst NEMA is to be applied to all decision making pertaining to the broader environment, the conservation of the natural environment is detailed in two subservient Acts, namely the:

- National Environmental Management: Biodiversity Act 10 of 2004 , and
- National Environmental Management: Protected Areas Act 57 of 2003

These are discussed below.

BIODIVERSITY CONSERVATION LEGISLATION

The Biodiversity Act sets in place a national framework for the conservation of biodiversity and its sustainable use, and to ensure fair and equitable use of indigenous genetic resources. The framework established by the Act includes Biodiversity Planning and Monitoring,[152] Threatened or Protected Ecosystems and Species,[153] Species and Organisms posing Potential Threats to Biodiversity,[154] Bioprospecting, Access and Benefit Sharing,[155] and Permitting.[156] Of these, the Biodiversity Planning and Monitoring chapter is relevant to the establishment and expansion of protected areas.

BIODIVERSITY PLANNING AND MONITORING

As discussed above,[157] South Africa has not previously had a national strategy for the conservation of biodiversity. This has resulted in an *ad hoc* and un-coordinated approach to protected area establishment with the net result being large gaps in the network of protected areas and a significant proportion of the country's biodiversity not being formally protected.

As a means to identify the gaps and to direct and prioritise the establishment of protected areas, the Biodiversity Act makes provision for:

- Integrated and co-ordinated biodiversity planning,[158]
- monitoring the conservation status of various components of South Africa's biodiversity'[159] and

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[152] Chapter 3 of Act 10 of 2004.
[153] Chapter 4 *op cit.*
[154] Chapter 5 *op cit.*
[155] Chapter 6 *op cit.*
[156] Chapter 7 *op cit.*
[157] See page 9.
[158] Section 37(*a*) *op cit.*
[159] Section 37(*b*) *op cit.*

- biodiversity research.[160]

These provisions are crucial for the establishment of the national biodiversity framework in that it approaches biodiversity conservation in a co-ordinated, structured and divisive manner extending from the national to the site level.[161] The major product of the framework is the identification of 'priority areas for the conservation action and the establishment of protected areas'.[162] The Protected Areas Act is the legal mechanism to establish these areas. The framework, including the candidate protected areas, must be adopted by the Minister within three years of commencement of this Act.[163] In addition, the Minister must 'monitor the implementation of the framework'[164] in its current or revised form.[165] The monitoring of the implementation of the framework in respect to establishing the necessary protected areas, would involve matters relating to:

A. Securing the land and Compensation,
B. Identifying the proclamation category,
C. Administering the proclamation, and
D. Securing and Administering the protected areas estate budget

This sequence of events is discussed below.

A. Securing the land and Compensation

The land may be under single or multiple private ownership, may fall within a development zone or landuse that is incompatible with the conservation of biodiversity, and would need to be secured. The securing of this land would be beyond the limitation of various rights that would render the development[166]

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[160] Section 37(*c*) *op cit.*

[161] The approach followed in Chapter 3 of the Act, is the divisive assignment or classification of entities into distinct classes or groups as opposed to setting in place arbitrary decisions (e.g. provincial boundaries). Each class is in turn divided into progressively smaller classes until a single biodiversity unit (e.g. vegetation type, species, threatened community, etc) is related.

Whilst this approach is robust for those entities given in the example, and the technique has been extensively tested in ecological science since the advent of the modern computer,* it is extremely weak for classifying linear systems that traverse two of more classes. As a result, the national biodiversity framework currently being developed** does not adequately include linear systems such as rivers and riparian habitats and communities.

* See generally Hugh G Gauch Jr 'Multivariate analysis in community ecology' Cambridge University (1986).

** See National Biodiversity Strategy and Action Plan on http://www.environment.gov.za. Accessed on 27 October 2004.

[162] Section 39(*c*) *op cit.*

[163] Section 38(1)(*a*) *op cit.* The Biodiversity Act commenced on 1 September 2004.

[164] Section 38(1)(*b*) *op cit.*

[165] Section 38(1)(*d*) *op cit.*

[166] In terms of requesting authority to undertake a listed activity identified under Section 21 of the Environmental Conservation Act which may have a substantial detrimental effect on the environment.

sustainable. The deprivation of various development rights in order to safeguard important elements of biodiversity is not, as a rule, compensable.[167,168]

In the absence of a voluntary proclamation,[169] the securing of the land to establish a protected area may result in development and other use rights being permanently removed. This would lead to the legal owner of the property being not able to use or enjoy the property in any meaningful way. Within this scenario, the land may be purchased following a 'willing buyer: willing seller' or expropriation model. The willing buyer: willing seller route would depend on whether the purchase price reflects the market value of the property. Should there be parity between the proposed purchase price and the market value, i.e. the purchase price is deemed reasonable by the State, the sale of the property would proceed. Should the purchase price be significantly greater than the market value, or the owner is unwilling to sell the property, the State would consider expropriation.

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[167] Nicholas Smith 'A Critical Analysis of The Regulation / Takings Dichotomy in South African Law' The Town and Regional Planning Commission Report (2001) Annex B at 3.

[168] The White Paper on the Conservation of Biodiversity* considered instituting a financial incentive mechanism (Goal 5) for landowners to conserve biodiversity on their properties N/1095 Government Gazette No 18163 dated 28 July 1997. However, this component of the White Paper was omitted from the Act. The Municipal Rates Act,** however, does make provision for the exemption and the granting of rebates from municipal rates for areas formally set aside for conservation of biodiversity in that:-

'A municipality may not levy a rate on those parts of a special nature reserve, national park or nature reserve within the meaning of the Protected Areas Act, or of a national botanical garden within the meaning of the National Environmental Management: Biodiversity Act, 2004, which are not developed or used for commercial, business, agricultural or residential purposes' (Section 17 (*e*)).

Thus, only those components of the property that contribute to the conservation of biodiversity will be exempt from the municipal rates. Thus it would be in the landowners interest to limit the spatial extent of the development and land transformation and proclaim the remainder in terms of the Protected Areas Act. Should the landowner deproclaim the area, the entire property would be rated in accordance with Section 17(2)(*b*), namely:

'If the property in respect of which the declaration is withdrawn is privately owned, the owner, upon withdrawal of the declaration, becomes liable to the municipality concerned for any rates that [...] would have been payable on the property during the period commencing from the effective date of the current valuation roll of the municipality.'

In addition, a landowner may qualify for rate exemption by formally zoning the property into developable and non-developable areas. Should it be argued that the latter area has, as a result of this exercise, a market value that is lower than the amount determined by the municipality, then that section of the property may be exempt from being rated (Section 17(2)(*e*). In this case, the biodiversity in this area would enjoy indirect protection for as long as this condition holds.

* White Paper on the Conservation of Biodiversity N/1095 Government Gazette No 18163 dated 28 July 1997.

** Local Government: Municipal Property Rates Act 6 of 2004, Hereon referred to as the Municipal Property Rates Act.

[169] See page 54.

Prior to the enactment of the Constitution of the Republic of South Africa, the extent to which the State could legitimately place restrictions upon the use of ownership rights without constituting an expropriation of those rights, was unclear.[170] The inclusion of the property clause[171] into the Constitution brings into consideration a distinction between deprivation of property and expropriation, in that:

> 'No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property.[172]
>
> Property may be expropriated only in terms of law of general application -[173]
>
> (a) for a public purpose or in the public interest;[174] and
>
> (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed to by those affected or decided or approved by a court.'[175]

Given that the areas earmarked in the framework are fundamental to the conservation of South Africa's biodiversity and that the candidate protected areas would form part of the national network of protected areas, and given that the process followed was structured and hence defendable, the expropriation of the land would not be considered 'arbitrary' and would be in South Africa's (the public) best interest. The process, therefore, would be compliant with the Constitution.

The expropriation would be required to follow the procedures provided for in the Expropriation Act.[176] The compensation for the expropriation is determined in accordance with Section 12 of this Act, namely:

'The amount of compensation to be paid in terms of this Act to an owner in respect of property expropriated in terms of this Act, or in respect of the taking, in terms of this Act, of a right to use property, shall not [...] exceed-

> (a) in the case of any property other than a right, excepting a registered right to minerals, the aggregate of-

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[170] Smith *op cit* at 5.
[171] Section 25.
[172] Section 25(1).
[173] Section 25(2).
[174] Section 25(2)(*a*).
[175] Section 25(2)(*b*).
[176] Act 63 of 1975.

(i) the amount which the property would have realized if sold on the date of notice in the open market by a willing seller to a willing buyer; and

(ii) an amount to make good any actual financial loss caused by the expropriation; and[177]

(b) in the case of a right, excepting a registered right to minerals, an amount to make good any actual financial loss caused by the expropriation or the taking of the right.'[178]

Determining the market value of a property may be particularly problematic as evaluations are based primarily on agricultural and fixed asset models and may not reflect the true value of the property. Under such circumstances, the landowner may choose to invoke the Section 11 amendment, and in particular amendment (*bb*), of the Expropriation Amendment Act,[179] namely:

'Provided that where the property expropriated is of such nature that there is no open market, compensation, therefore, may be determined-

(*aa*) on the basis of the amount it would cost to replace the improvements on the property expropriated, having regard to the depreciation thereof for any reason, as determined on the date of notice; or

(*bb*) in any other suitable manner.'[180]

Should a property contain critical biodiversity elements that necessitates its formal protection, the property should be seen to have a higher value than equivalent property that lacks these natural values. Thus the landowner, while sourcing information from the disciplines of natural resources, resource-economics and systems ecology, may value the property significantly higher than surrounding or equivalent areas. Arguments for a greater land value may be based on a higher species count,[181] species turn-over,[182] or number of ecotones[183] on the property.

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[177] Section 12(1)(*a*)(i) and (ii).
[178] Section 12(1)(*b*)(i) and (ii).
[179] Act 45 of 1992.
[180] Section 12(*aa*) and (*bb*).
[181] *In situ* (alpha diversity) number of species. The property may for various reasons (climatic, topographic, geological, etc) be a centre for a high species count when compared to surrounding areas.
[182] The property may have steep climatic or edaphic gradients and hence has a high species turnover across these gradients with a low *alpha* diversity at any one point, but a high diversity index at the property or landscape scale (viz. *gamma* diversity).
[183] A sensitive transition area between two adjacent ecological communities, which typically has a higher diversity and greater and wider range of functional attributes.

B. Identifying the proclamation category[184]

The protected area category is dictated by the purpose for establishing the protected area. It importance lies in:

a) Determining the responsible agent for the management of the protected area.[185]

The capacity of the responsible agent or management authority for the protected area is seen to be a crucial component to ensure that the area is managed in order to meet the purpose for which it was proclaimed.[186] Internationally, and specifically in developing countries, many areas have been set aside for biodiversity conservation but are not managed as such.[187,188]

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[184] See Section 9 of the Protected Areas Act.

[185] For example, a national park (under the Section 2A of the National Parks Act 57 of 1976) would be assigned to the National Parks Board for administration and management, whereas a protected area proclaimed under Section 3 of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997 would be assigned to the KwaZulu-Natal Conservation Board for administration and management. Administration of marine protected areas proclaimed under the Marine Living Resources Act 18 of 1998 would be the Department of Environmental Affairs and Tourism: Branch Marine and Coastal Management or may be assigned to either a provincial (e.g. KwaZulu-Natal Conservation Board for KwaZulu-Natal) or national (National Parks Board) conservation authority by this Department. In terms of a world heritage site, both marine and terrestrial areas may be assigned, by the Minister, to an existing organ of state (Section 8) or to a new authority (Section 9) established for this purpose under the World Heritage Convention Act 49 of 1999. On enactment of the National Environmental Management: Protected Areas Amendment Bill GG No 25052 of 3 June 2003 (Heron referred to as the 'Protected Areas Amendment Bill') and the commencement of the Protected Areas Act this will no longer be the *motus operandi*. Assignment will be at the discretion of the Minister.

[186] Section 17 of the Protected Areas Act defines the purpose of protected areas within South Africa, namely:

> *(a) to protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas;*
> *(b) to preserve the ecological integrity of those areas;*
> *(c) to conserve biodiversity in those areas;*
> *(d) to protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;*
> *(e) to protect South Africa's threatened or rare species;*
> *(f) to protect an area which is vulnerable or ecologically sensitive;*
> *(g) to assist in ensuring the sustained supply of environmental goods and services;*
> *(h) to provide for the sustainable use of natural and biological resources;*
> *(i) to create or augment destinations for nature-based tourism;*
> *(j) to manage the interrelationship between natural environmental biodiversity, human settlement and economic development;*
> *(k) generally, to contribute to human, social, cultural, spiritual and economic development; or*
> *(l) to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.*

[187] See Parks in Peril website http://parksinperil.org/ Accessed on 09 November 2004.

[188] Jon Paul Rodríguez; and Kathryn M Rodríguez-Clark 'Even "paper parks" are important' *Trends in Ecology and Evolution* Vol.16 No.1 (2001) at 17.

These protected areas are typically known as 'paper parks'. The contributing factor for protected areas becoming paper parks is a combination of the lack of sufficient budget (see below) and insufficient capacity of the management authority.

Within South African legislation, the explicit valuation of the capacity and, hence, the desirability of the candidate management authority is limited to the World Heritage Convention Act (Section 7)[189] and the Protected Areas Act (Section 33(2)).[190] In terms of this consultation, commenting parties would be in a position to raise concerns regarding the candidate management authority's ability to undertake effective management of the protected area. The Minister would be obliged to consider and be advised by the concerns raised. In terms of fulfilling the onus of trusteeship,[191] the Minister may address the concerns by either selecting an alternative authority or putting in place ameliorative measures to capacitate the candidate authority within a reasonable timeframe. This process would fulfil the requirement that a 'suitable person, organisation or organ of state'[192] be assigned the management responsibility.

For the proclamation of protected areas in the absence of the Protected Areas Act, the capacity of the authority is inferred in the policies of, or the legislation governing the conservation authority. For example:

'Powers, duties and functions of the Board are to [inter alia] ensure the proper, efficient and effective management of the Conservation Service'[193]

In this case the KwaZulu-Natal Nature Conservation Board would need to ensure that the Service (the management body)[194] has sufficient capacity to

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[189] *Viz.* 'The Minister of Environmental Affairs must consult with the Minister of Arts, Culture, Science and Technology and with interested parties before acting in terms of section 8 [appointing an existing organ of state] or 9 [establishment of a new authority], in which consultation, in the case of interested parties, may be in the form of public hearings and must include consultation with representatives from the relevant affected-

(a) provinces;
(b) local governments;
(c) cultural authorities;
(d) nature conservation authorities;
(e) heritage authorities; and
(f) other organs of state.'

[190] The publication contemplated [...] must-

(a) invite members of the public and the persons referred to in subsection (1) (b), if applicable, to submit to the Minister or MEC written representations on or objections to the proposed notice within 60 days from the date of publication in the Gazette; and

(b) contain sufficient information to enable members of the public to submit meaningful representations or objections, and must include a clear indication of the area that will be affected by the declaration.

[191] See page 29.

[192] See Section 38(1)(*a and b*) and 38(2)(*a and b*) of the Protected Areas Act.

[193] Section 5(1)(*b*) of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997.

expand the protected estate under its control, prior to the public consultation phase.[195]

On commencement of the Protected Areas Act on 1 November 2004,[196,197] the Minister was limited to five protected area categories, namely;[198]

- special nature reserves, *national parks*[199] nature reserves (including wilderness areas) and protected environments;
- *marine protected areas*[200]
- world heritage sites;[201]
- specially protected forest areas, forest nature reserves and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act 84 of 1998); and

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[194] See Section 23 *op cit.*

[195] The establishment of a protected area would involve a change in landuse and, in terms of the Regulations* to Section 21 of the Environment Conservation Act 73 of 1989, this activity, therefore, would require the Environmental Impact Assessment process to be followed. This process would include a public consultation phase.

* GN. R. 1182 GG18261 of 5 September 1997 as amended by GN R 1355 of 17 October 1997, GN R 448 of 27 March 1998 and GN No. R670 of 10 May 2002.

[196] Act 57 of 2003.

[197] As part of the process to establish a national framework for the conservation of biodiversity in South Africa, the establishment and management of protected areas has been simplified, regularised and co-ordinated by the Protected Areas Act. Prior to the promulgation of this Act, protected areas may have been** proclaimed under a myriad of legislation. Although the ultimate aim was to conserve biodiversity, the process followed varied greatly between the various statutes. In addition, the incorporation of all protected areas under one Act, and hence one organ of state (i.e. the Department of Environmental Affairs and Tourism), enables a single database of protected areas to be formed. This Department, in terms of the National Biodiversity Institute and the Minister, therefore, would be in a position to compile a national register of protected areas and in so doing be in a position to monitor and direct the conservation of South Africa's biodiversity.†

** At the time of drafting this document, the Protected Areas Act had not been commenced as the consultative and cabinet adoption process for the exclusive national competence (i.e. National Parks and Marine protected areas) had not been completed. These components will be brought into the Act by enactment of the Protected Areas Amendment Bill.

† See Section 10 of the Protected Areas Act 57 of 2003 and Section 11(1)(*a*)(ii) of the Biodiversity Act 10 of 2004.

[198] Section 9 *op cit.*

[199] Proposed amendment in terms of Section 2 of the National Environmental Management: Protected Areas Amendment Bill. GG 2052 of 3 June 2003.

[200] *Ibid.*

[201] World heritage sites differ significantly from other types of protected areas in South Africa in that they can only be proclaimed under the World Heritage Convention Act or the Protected Areas Act once the site has been inscribed onto the World Heritage List by the World Heritage Committee. For all other protected areas, the Minister has the mandate to set the category and the type.

- mountain catchment areas declared in terms of the Mountain Catchment Areas Act,1970 (Act 63 of 1970).

These categories of protected areas are not directly compatible with the IUCN categories.[202] Recommendation 17 of the 4th Word Parks Congress[203] called for a system of six categories of protected areas based upon management objectives.[204] This was followed by Resolution 19.4 of the IUCN General

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[202] The IUCN categories are as follows:

Category Ia: Strict nature reserve/wilderness protection area managed mainly for science or wilderness protection - an area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring;

Category Ib: Wilderness area: protected area managed mainly for wilderness protection - large area of unmodified or slightly modified land and/or sea, retaining its natural characteristics and influence, without permanent or significant habitation, which is protected and managed to preserve its natural condition.

Category II: National park: protected area managed mainly for ecosystem protection and recreation - natural area of land and/or sea designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

Category III: Natural monument: protected area managed mainly for conservation of specific natural features - area containing specific natural or natural/cultural feature(s) of outstanding or unique value because of their inherent rarity, representativeness or aesthetic qualities or cultural significance.

Category IV: Habitat/Species Management Area: protected area managed mainly for conservation through management intervention - area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats to meet the requirements of specific species;

Category V: Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation or recreation - area of land, with coast or sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Category VI: Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural resources - area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while also providing a sustainable flow of natural products and services to meet community needs.

See http://www.iucn.org accessed on 09 November 2004.

[203] Held in Caracas, Venezuela during February 1992.

[204] This condition set by the IUCN is appropriate for protected areas set in place to conserve principally biodiversity elements and is supported by the provision to ensure that 'the management authority manage the [protected area] exclusively for the purpose for which it was declared' (Section 40(1)(*a*)). A significant shortfall of the IUCN categories (see Table 1 in note 206) lies in that they do not consider the inextricable relationship between biodiversity, geology and geomorphology and cultural heritage (see note 79, and arguments on page 16). For example, the conservation of a historical cultural site (e.g. Anglo-Boer War battlefield) may require that the landscape be managed to a near fixed state equivalent to the period in which the battle was fought. It is conceivable that this cultural landscape may be making a significant contribution to the conservation of biodiversity at a local, national and

Assembly in Buenos Aires[205] which endorsed the system developed at Caracas and urged all governments to consider the relevance of the categories system to national legislation.[206] This resolution was reaffirmed in the Recommendation 5.19 of the 4th World Parks Congress held in Durban during 2003 in which state parties were requested to, *inter alia,*

> *Re-affirm the value to conservation of the 1994 system of protected area management categories, and in particular that an objectives-*

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international scale. Thus the restriction of the categories to strict biodiversity features may not be appropriate in an African context.

The Protected Areas Act, in terms of Section 23(2), does consider a wider range of attributes, other than strict biodiversity conservation, that may warrant the establishment of a protected area. These are;

- scientific values,
- cultural, historical or archaeological values,
- provision of environmental goods and services,
- sustainable flow of natural products and services to meet the needs of a local community,
- continuation of such traditional consumptive uses as are sustainable, and
- nature-based recreation and tourism opportunities.

[205] January 1994.

[206] KwaZulu-Natal identified the value of the IUCN categories and the need for a common currency in protected area characterisation and understanding, and proposed various amendments to the KwaZulu-Natal Nature Conservation Management Act 9 of 1997 to accommodate the Buenos Aires resolution (see Table 1 below). In anticipation of the Protected Areas Act, however, and with the uncertainty as to whether this legislation would incorporate the IUCN categories, the commencement of these amendments, on recommendation of the KwaZulu-Natal Nature Conservation Board, was purposefully withheld by the MEC.

Table 2: Proposed Classification of protected areas for KwaZulu-Natal as per Schedule 3 of the KwaZulu-Natal Nature Conservation Management Amendment Act 5 of 1999.

CATEGORY	DESCRIPTION	KWAZULU-NATAL PROTECTED AREA DESIGNATION
Category 1	Scientific Reserves and Wilderness Areas	Scientific Reserve Wilderness Area
Category 2	National Parks and Equivalent Reserves	Provincial Park Game Reserve Nature Reserve
Category 3	Natural Monuments and Areas of Cultural Significance	Natural Heritage Site Site of Conservation Significance Sanctuary
Category 4	Habitat and Wildlife Management Areas	Private Nature Reserve Local Authority Nature Reserve
Category 5	Protected Land/seascapes	Protected Landscape Protected Natural Environment
Category 6	Sustainable Use Area	Conservancy Biosphere Reserve Commercial Game Ranch Community Conservation Area Controlled Hunting Area

based approach should remain the essential foundation of a protected areas category system, and that no fundamental changes are required in the current list of six categories and their definitions;[207]

The aim of the IUCN categories, other than developing a common currency, was to assist member states:

- *in determining appropriate activities in protected areas (e.g., in respect of mining and protected areas);*
- *in establishing relevant criteria to assess management effectiveness;*
- *in advocacy in relation to protected areas;*
- *as the basis for national protected area legislation and policy, and international agreements; and*
- *as a tool in bioregional planning.*[208]

In so doing, the IUCN have started to set in place a platform for a process to identify paper parks or protected areas that are not being managed to a level which would ensure that the, *inter alia*, biodiversity values are being conserved with time. In addition, this information would form the basis for a global gap analysis which is undertaken by UNEP World Conservation Monitoring Centre working in collaboration with the IUCN World Commission on Protected Areas. The information would be provided principally by the member states to the Congress and the Convention on Biological Diversity.

By developing an alternative set of protected area categories, South Africa may be introducing a degree of confusion in terms of the interpretation of country's protected areas in the global arena. This is further complexed by the National Parks Board traditionally proclaiming national parks under the National Parks Act[209,210] in that not all proclaimed 'national parks'[211] would qualify as a IUCN Category II: National park. A similar argument may be tabled in respect to the marine protected areas.[212,213] Thus South Africa's

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[207] *WPC* RECOMMENDATION IUCN Motion 19 Protected Area Management Categories http://www.iucn.org/themes/wcpa/wpc2003/pdfs/outputs/recommendations/r19.pdf at 1.

[208] *Ibid.*

[209] Act 57 of 1976.

[210] For example the Section 1 of the National Parks Act defined 'park' or 'the parks' as a national park or the national parks established by or in terms of section 2, 2A, 2B or 2C of the Act.

[211] For example, the Bontebok National Park was primarily established for the conservation of Bontebok (*Damaliscus dorcas*) an allopatric variant of the widely distributed Blesbok.

[212] See Section 43 of the Marine Living Resources Act 18 of 1998.

contribution to global conservation may be underrepresented through various omissions or may introduce inaccuracies into the World Database on Protected Areas. This would decrease its predictive capabilities[214] and the monitoring of the achievement of the 10 % target of representative samples of

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The establishment of marine protected areas falls into two broad categories, namely No-take areas and Multiple or Restricted use areas. No-take Areas, or 'Sanctuary Areas' in South Africa, are protected areas where the extraction of any marine life is prohibited. These restrictions apply equally to commercial, recreational and traditional fishing or collection of biota. These areas are aimed directly at addressing issues and impacts related to consumptive exploitation (harvesting) of marine resources. No-take areas are established for a variety of reasons. For example:

- Protection of representative samples of biological diversity;
- Protection of endangered species or habitats;
- Protection of critical sites for reproduction and growth of species;
- Protection of sites with minimal direct human stress to maximise their resilience or self-repair from other stresses such as increased ocean temperature;
- Settlement and growth areas providing spill-over recruitment to fished stocks in adjacent areas;
- Focal points for education about the nature of marine ecosystems and human interactions with them;
- Sites for nature-based recreation and tourism; and
- Undisturbed control or reference sites serving as a baseline for scientific research and for design and evaluation of management of other areas.*

Multiple or Restricted Use Areas aim to incorporate and harmonise a number of consumptive and non-consumptive uses. In so doing, providing a platform to address a wide range of marine resource and habitat management dilemmas.** Multiple use MPAs may incorporate a no-take MPA as a core area to a structured special and temporal‡ zoning system that provides for protective and permissive management regimes. The zoning is typically based on a relationship between the accommodation of various impacts (sport or recreational fishing) and the ability of the environment to absorb such impacts. In so doing, those areas that are considered to be ecologically or culturally critical or sensitive, are excluded from use. In addition, zoning may help to prevent conflict between several types of use of the marine environment, such as fishing and other forms of recreation and tourism.

* Andrew Blackmore (in prep) 'The Protection of the South African Coastline with special reference to Marine Protected Areas.'

** T Agardy 'Advances in marine conservation; the role of marine protected areas.' *Trends in Ecology and Evolution* 7 (1994) at 267.

‡ P Ticco 'A comparative analysis of multiple-use coastal and ocean management techniques in marine protected areas Coastal Zone 2 at 2218.' In Proceedings of the Eighth Symposium on Coastal and Ocean Management (1993) New Orleans, Louisiana. Edited by O.T. Magoon et al.

[213] There is uncertainty whether the South Africa's protected areas will be 're-categorised' into the five kinds of protected areas provided for in the Protected Areas Act. No provision for this has been made in the Act. Should this take place, and provided that the IUCN category descriptions are used as guidelines for this exercise, there may be a significant improvement in the alignment of the two systems with respect to the terrestrial areas.

[214] Currently, it is estimated that 34 036 protected areas have not been assigned IUCN categories. This relates to approximately 3.6 million km^2 and therefore represents a significant proportion of the global conservation estate. Thus, this observation may significantly under-represent the efforts that have been made by many countries to establish protected areas. See S Chape; S Blyth; L Fish; P Fox and M Spalding (compilers) (2003). *2003* United Nations List of Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK and UNEP-WCMC, Cambridge United Kingdom at 2.

global biodiversity being formally protected and conserved.[215] Section 10 of the Protected Areas Act makes provision for the register of protected areas in South Africa and that the Minister may augment the register with any other information deemed necessary. It is unknown whether the IUCN categories will be a requirement for an inclusion into the register. Likewise, Section 25 makes provision for the Minister to prescribe a 'uniform system' of specific types of nature reserves.

b) That it determines the consultative and legal process that is required to be followed.

In terms of the consultation, there are potentially two processes that are to be followed. The first concerns a potential change in land use. The second is stipulated in the statute regulating the proclamation process. As mentioned in note 195, the proclamation of any protected area, other than the establishment of a protected natural environment (PNE),[216] would constitute a change in landuse. In terms of the provisions of the Regulations[217] regarding activities identified under Section 21(1) of the Environment Conservation Act,[218] the proclamation of a protected area would be required to follow the Environmental Impact Assessment process as specified in these Regulations (Figure 6).
The application for the establishment of a protected area procedure includes a process whereby the stakeholders[219] are given reasonable opportunity to raise concerns or issues (i.e. to scope the project)[220]. Once the scope of the environmental investigation has been determined and recorded in the Scoping Report, the specialist technical environmental investigations are conducted during the impact assessment phase (
Figure 6). Their findings are consolidated into an "Environmental Impact Report" for comment by stakeholders.

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[215] See Page 5 above.

[216] See Section 16 of the Environment Conservation Act 73 of 1989.
The establishment of a PNE is effectively a restriction on certain land transforming/development rights and hence is not a change in landuse.

[217] GN R 1183 of 5 September 1997.

[218] Act 73 of 1989 as amended.

[219] Stakeholders are those individuals, groups, communities, organisations, associations or authorities whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with the establishment of the protected area (or its expansion) and the consequences of this activity. The term therefore includes the proponent, authorities and all interested and affected parties (IandAPs).*

* See 'Public Participation Guidelines for Stakeholders in the Mining Industry.' First Edition. Coordinated by the Consultative Forum on Mining and the Environment. Published by the Chamber of Mines of South Africa, Marshalltown. (2002) at 1.

[220] An environmental or other assessment commences by "scoping" the issues at hand, that is, determining the scope of the assessments or investigations that will be required. The scope of the assessment is determined in consultation with the authorities, the project proponent, other stakeholders, and the technical environmental specialists.

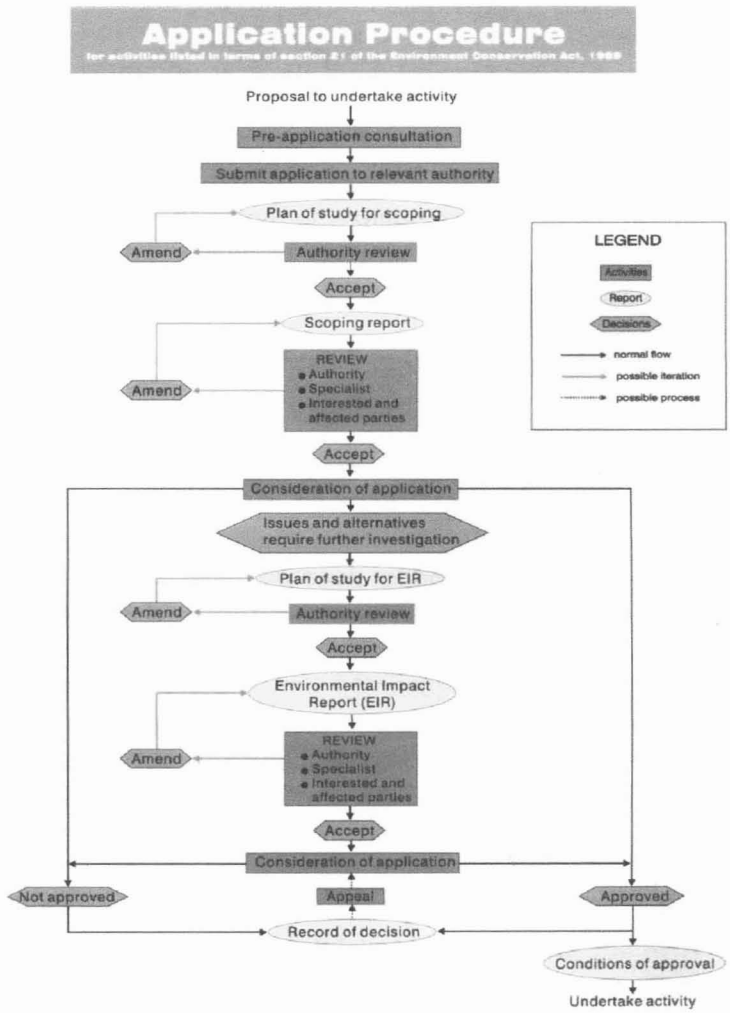

Figure 6: Application procedure to undertake a listed activity in terms of the Regulations to Section 21 of the Environment Conservation Act.[221]

The second process, the proclamation process, is specified by the statute regulating the proclamation. This process varies significantly between statutes and with the various kinds of protected areas and ranges from - consultation with the Portfolio Committee, affected landowners and the holders of real rights thereon, and the tribal authority,[222] to a comprehensive consultative process as prescribed in Part 5 of the Protected Areas Act. The consultation process is to be tailored to match the context of the receiving environment of the candidate protected area, and must fulfil a set of minimum requirements which include:

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[221] Department of Environmental Affairs and Tourism EIA Regulations. Implementation of Sections 21 22 and 26 of the Environment Conservation Act: Guideline Document (1998) at 18.

[222] See Section 3(3) of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997.

- Consultation with all organs of state in accordance with the principles of co-operative governance set out in Chapter 3 of the Constitution,[223] at national, provincial and municipal levels.

- Consultation with all lawful occupiers with a right to land in any part of the area affected.[224]

- Consultation with the general public by means of advertisements in at least two national newspapers distributed in the area in which the candidate protected area is situated,[225] as well as through various notices in the national or provincial Gazette.

c) That certain activities may need to be suspended or terminated prior to or on proclamation.

The parcel of land earmarked for protection may be subject to various activities that would be deemed incompatible with the purpose of the declaration. Under these circumstances, the activities may need to be partly or wholly suspended. The approach taken by the various legislation is varied and ranges from the tacit fulfilment of the purpose of the protected area by means of the discretionary powers of the management authority and the adoption of the management plan, to the Minister suspending all activities,[226] including those directly associated with conservation management.[227] For example, in the case of marine protected areas and wilderness areas within State Forests, the approach is to establish a no-take or wilderness/sanctuary area as the baseline and then allow the reinstatement of various uses which would be compatible with the purpose for the establishment of the protected area. An understanding of purpose and protected area category is, therefore, fundamental in determining what activities will and will not be permissible once a candidate protected area is proclaimed.

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[223] See Sections 31(a)and(b) and 32(a)and(b).

[224] See Sections 31(c) and 32(c). In addition, rights of labour tenants provided for in the Land Reform (Labour Tenants) Act 3 of 1996 would need to be considered.

[225] Section 33.

[226] See for example:

- Section 43(2) of the Marine Living Resources Act 18 of 1998 in that '[n]o person shall in any marine protected area, without permission [...]:
  (a) fish or attempt to fish;
  (b) take or destroy any fauna and flora other than fish;
  (c) dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter, or in any way disturb, alter or destroy the natural environment;
  (d) construct or erect any building or other structure on or over any land or water within such a marine protected area; or
  (e) carry on any activity which may adversely impact on the ecosystems of that area.'
- Section 10(1) of the National Forests Act 84 of 1989 in that '[n]o person may cut, disturb, damage or destroy any forest produce in, or remove or receive any forest produce from, a protected area.'

[227] Section 43(3) allows the Minister, after consultation with his or her advisory forum, to reinstate management activities where it is required for the proper management of the marine protected area.

d) Assigning or ensuring that there is sufficient budget and that the management authority has sufficient capacity to ensure that the protected area is managed to meet the objective for which its is proclaimed.

The securing of the parcel of land for the establishment of a protected area and the subsequent management thereof would result in;

- expenditure of public funds,
- establishment of state assets in terms of the land and other assets thereon,
- various liabilities, and
- additional conservation management and administration responsibilities.

It is incumbent on the accounting officer, in fulfilment of Section 38(1) of the Public Finance Management Act[228] to ensure that the delegation of the management of the expanded protected area network is accompanied by sufficient funds. In this context, sufficient funds would be that which would enable the conservation agency to meet the objective for which the protected area was proclaimed, without having to draw on resources already required to effectively manage existing protected areas. The Minister, therefore, would be required to secure the necessary funds from treasury and authorise their virement. In order to ensure that adequate funds are secured, the Minister may call on the candidate management authority to compile a business plan and operational budget, in accordance with Section 31 of the Public Finance Management Act.

C. Administering the proclamation

In this context, the Minister would need to govern, and actively manage the process leading to the proclamation. This management would involve ensuring that the various legal requirements have been fulfilled (i.e. public and organs of state consultation), and that the government officials undertaking administrative functions do so in an efficient and effective manner.[229]

D. Securing and Administering the protected areas estate budget

Given the previous uncoordinated approach to protected area establishment in South Africa,[230] it is likely that the current conservation estate includes a degree of redundancy or duplication.[231,232] Under these circumstances, it would be

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[228] Act 1 of 1999.
[229] See preamble to the Promotion of Administrative Justice Act 3 of 2000.
[230] See arguments on page 8.
[231] By increasing the number of protected areas without a concomitant or proportionate increase in the representativeness of the protected area network.
[232] For example, is there redundancy in conserving key biodiversity elements in Hluhluwe Game Reserve, Mkhuze Game Reserve, Itala Game Reserve and Kruger National Park?

incumbent on the National Minister, in terms of the obligations housed in establishing the national biodiversity framework and monitoring its effectiveness,[233,234] to rationalise the protected areas in terms of their effective contribution to securing South Africa's biodiversity estate. This rationalisation would thus ensure that the national budget assigned to conserve the country's biodiversity would be used in a responsible, effective, efficient and transparent manner. By not undertaking the rationalisation process, this expenditure may be considered fruitless and wasteful expenditure in terms of the Public Finance Management Act.[235]

The question arises as to the future of those protected areas that are considered redundant in terms of securing the country's biodiversity estate. Prior to considering withdrawal of their operational budgets, the value of these protected areas needs to be gauged against attributes other than those that are directly associated with conserving representative samples of species, habitats and ecosystems. For example the:

- supply of environmental goods and services;[236]
- provision of the sustainable use of natural and biological resources;[237]
- creation or augmentation of destinations for nature-based tourism;[238]
- contribution towards the management of the interrelationship between natural environmental biodiversity, human settlement and economic development;[239]
- contribution to human, social, cultural, spiritual and economic development;[240]
- contribution towards the rehabilitation and the restoration of degraded ecosystems;[241] or
- contribution the protected area brings to its region's economic and social stability,[242] eradication of poverty and its ultimate contribution to the provincial growth and development strategy.[243]

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[233] See Section 28 of the Biodiversity Act.

[234] In addition this action would be in keeping with the commitments of South Africa to the Convention on Biological Diversity, in that the statistics used in reporting on the formal conservation of representative samples of the country's biodiversity.

[235] See for example Section 32(1)(*d*).

[236] Section 17(g) of the Protected Areas Act.

[237] Section 17(h) *op cit.*

[238] Section 17(i) *op cit.*

[239] Section 17(j) *op cit.*

[240] Section 17(k) *op cit.*

[241] Section 17(l) *op cit.*

[242] See arguments on page 31.

[243] See Provincial Growth and Development Strategy (KwaZulu-Natal). 2004 Summit Document at 4. and the amendments to the Draft Framework for the Provincial Growth and Development Strategy (KwaZulu-Natal) at 7. These amendments include the monitoring of the status of biodiversity in the province as a core component of the strategic framework for 'Build a people focussed and effective, efficient government' module, and the beneficiation of natural resources and the strengthening of

Thus, should the protected area or the parcel of land to be included into the protected area, make a measurable contribution to any one of these categories or those discussed on page 17 (and thereafter), and should this contribution be sufficiently significant to warrant the State's investment (in terms of the conservation budget) therein, sufficient argument would hold to retain the protected area as a national asset.

Many of the benefits that protected areas may bring to the South African economy have not, however, been fully quantified. Their value, therefore, is not well understood.[244] It is the absence of this understanding that gives rise to the arguments that conservation, and protected areas, should be self funding and should not place a financial burden on the State, particularly in the light of a perception that protected areas and nature conservation are reserved for the white, middle-class and elite,[245] and are not relevant to the urgent needs of the country for development and social justice and addressing pressing social needs. For example:

- Crime,
- Poverty,
- Education,
- HIV/Aids
- Homeless (and particularly homeless children), etc

The securing of sufficient budget for the effective management of the conservation estate in South Africa has been a long and protracted debate and a major concern for the ten conservation agencies in the country, that administer eleven national and nine provincial statutes.[246] Given the co-ordinated, and

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ecosystems services as core components of the strategic framework for the 'Build the Economy' module. In this, the government has recognised the dependence between health and wellbeing of people and poverty alleviation.

[244] See generally J Hanks and CAM Attwell *Financing Africa's Protected Areas* Vth World Parks Congress: Sustainable Finance Stream Durban, South Africa (2003). Down loaded from http://www.conservationfinance.org/WPC/WPC_documents/Overview_PanA_Hanks_v1.pdf on 4 February 2005.

[245] Rachel Wynberg 'A decade of biodiversity conservation and use in South Africa: tracking progress from the Rio Earth Summit to the Johannesburg World Summit on Sustainable Development' *SA J Sci* 98 (2002) at 234.

[246] Department of Environmental Affairs and Tourism (2001). '*A Bioregional Approach to Protected Areas' 2001/*2002. Pretoria. Quoted in Rachael Weinberg *op cit* at 237.

Currently, the number of statues regulating the establishment and management of protected areas for the conservation of biodiversity and cultural heritage, total in excess of twelve and three, respectively (Table 3).

strategic function of the Biodiversity Act and the Protected Areas Act, the Minister would need to ensure that there is sufficient budget to fulfil this legislation. The options available to the Minister are as follows:

a) Increase the fiscal budget to meet the shortfalls,[247]
b) Reduce the number of and streamline the conservation agencies,[248]
c) Enable efficient and effective public participation in protected area matters, and
d) To explore public-private partnerships. [249]

Table 3: A list of the statutes that directly regulate the protection of biodiversity and cultural heritage.

Statute	Biodiversity	Cultural
• National Environmental Management: Protected Areas Act 57 of 2003	✓	
• National Environmental Management: Biodiversity Act 10 of 2004	✓	
• (*Environment Conservation Act 73 of 1989*)*	✓	
• Lake Areas Development Act 39 of 1975	✓	
• Marine Living Resources Act 18 of 1998	✓	
• Mountain Catchment Areas Act 63 of 1970	✓	
• National Forest Act Forest Amendment Act 53 of 1991	✓	
• National Forests Act 84 of 1989	✓	
• National Parks Act 57 of 1976	✓	
• Sea Birds and Seals Protection Act 46 of 1973	✓	
• Various Provincial Acts, e.g. KwaZulu-Natal Nature Conservation Management Act 9 of 1997	✓	
• Various provincial ordinances	✓	
• National Heritage Resources Act 25 of 1999		✓
• Provincial Heritage Acts, e.g. KwaZulu-Natal Heritage Act 10 of 1997		✓
• World Heritage Convention Act 49 of 1999	✓	✓
Total	**12**	**3**

* Those Sections that make provision for the establishment of the protected areas have been repealed by the Protected Areas Act.

[247] For example, The accumulated deficit for Ezemvelo KZN Wildlife at the end of the 2000 / 2001 financial year increased to R135,803,422 (US$15,976,800), and was followed with 471 staff retrenchments. By 2003 the depreciation deficit had mounted to over R170 million (US$20 million) (Dr George Hughes, pers. com.) quoted in Hanks *op cit* at 8.

[248] The Kumleben Investigation,* was commissioned in 1998 to investigate institutional arrangements for nature conservation in South Africa. The report, although extensive yielded few results.** The status quo, thus remains.

* ME Kumleben SS Sangweni and JA Ledger Board of Investigation into the Institutional Arrangements for Nature Conservation in South Africa Department of Environmental Affairs and Tourism, Pretoria. (1998).

** Rachel Wynberg *op cit* at 237.

[249] The establishment of public-private partnerships (PPPs) as a means to reduce the financial burden on the State or increase value or service provided with no net increase in cost to the State. A PPP is defined as

CHAPTER 4 : PROTECTED AREA ESTABLISHMENT

LEGAL CONTEXT AND TYPES OF PROTECTED AREAS

As discussed above,[250] there are at least twelve statutes that regulate the conservation of biodiversity and make provision for a variety of protected areas in South Africa. These, however, exclude those that are voluntary protected areas. Given that the establishment of voluntary protected areas is a common practice amongst private landowners and that the international significance of an area is raised and considered in land transformation applications and impact assessments, these areas are included as part of the suit of protected areas reviewed in this evaluation.

Voluntary Protected Areas

Voluntary protection of biodiversity by private landowners in South Africa and in particularly KwaZulu-Natal, has made a marked contribution to the protected area network and conservation of important biodiversity elements.[251] Once an area has been voluntarily protected by the landowner or owners, and has been formalised through an

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'*A contractual arrangement between a public sector entity whereby the private sector forms a departmental function in accordance with an output-based specification for a specified, significant period of time in return for benefit, which is normally in the form of financial remuneration. It furthermore involves a substantial transfer of all forms of project life cycle risk to the private sector. The public sector retains a significant role in the partnership project either as the main purchaser of the services provided or as the main enabler.*'*

The Public Finance Management Act 1 of 1999 through various regulations, and in particular the Treasury Regulations,** regulate the use of State assets by private entities. PPPs may be established to expand the protected area to include private or communally owned land and where intervening fences are removed, or as a means to establish or transfer various service management or commercial partnerships currently undertaken by the State to the private sector. One important criterion for the establishment of a PPP is that the contracts are to be of long duration as a means to ensure their viability (e.g. 25 years).‡ For example, establishment of an extended protected area by the State dropping fences with one or more private landowners may entail substantial costs to the either the State or the private landowners or both. (e.g. game introductions, game proof fencing, game dispersing across the boundary, etc). The re-erection of the fence line through disagreement or short tenure of the contract may result in, *inter alia*, financial loss to the State. This loss may be in terms of expected revenue or loss of assets/investments or through the re-establishment of the fenced boundary as in the case of *Kate's Hope Game Farm (Pty) LTD* v *Terblanchehoek Game Farm (Pty) LTD* 1998 (1) SA 235 (SCA)

* National Treasury Public – Private Partnerships: A manual for South Africa's national and provincial government departments (2001) at 3.

** Regulations to Section 16 of the Public Finance Management Act 1 of 1999. GG 21249 R. 6822 of 31 May 2000.

‡ PPP Manual *op cit* at 5.

[250] See Table 3 in note 246.

[251] John Malan and Maritz Wahl 'South African Natural Heritage Programme: Annual Report 1996/1997.' Department of Environmental Affaires and Tourism. Pretoria (1996) at 7.

accreditation or certification process,[252] it automatically assumes additional values to equivalent areas elsewhere. For example, the granting of authority to undertake a listed activity[253] that may compromise the voluntary protected area would need to consider the impact and ensure that it was appropriately mitigated. Thus the protected area, may assume an equivalent status to those protected areas provided for in Section 9 of the Protected Areas Act. The weakness or vulnerability of these protected areas / programmes lies in the discretion of the landowner to withdraw the voluntary status.[254] In order for a landowner to go beyond a benevolent or personal-wellbeing motivation for the establishment of a voluntary protected area, there needs to be in place incentive measures or the necessary economic instruments. There is a vast array of possible incentive measures that may be considered. These include ownership and use rights, tradeable resource shares, tradeable development rights, and reductions in pollution taxes, royalties and resource taxes, impact fees, access fees, financial subsidies and soft loans, environmental management and rehabilitation funds, resource damage liability, environmental performance tax relief, and deposit refund schemes.[255,256,257]

Whilst the Municipal Property Rates Act[258] makes clear provision for the exemption of a formal protected area,[259] the Act is silent on providing rate exemptions for voluntary protection of biodiversity. In addition, the Act enables the municipality to grant exemptions, rebates or reductions in rates for, *inter alia*, 'owners of agricultural properties who are *bona fide* farmers.'[260] Given that a significant proportion of South Africa's biodiversity occurs on either farm or communal land, and that a substantial proportion of conservable biodiversity would occur on viable agricultural land, the Act may be seen to be in opposition to the rewarding of landowners for voluntary efforts to

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[252] This is to ensure that the establishment of a voluntary protected area is not used as a means to oppose, prevent or hinder, *coûte que coûte*, the development of the landscape.

[253] See note 125.

[254] The common law in relation to voluntary protected areas has not been, but should be, explored. For example, by establishing a voluntary protected area, the landowner has made a clear statement that that portion of the landscape will be protected, as a protected area, for an indefinite period of time. Thus a neighbouring landowner may have a reasonable expectation that the viewscape provided by a voluntary protected area would remain intact for an indefinite period of time. Should this argument hold, the neighbour may be able to invoke the supreme court ruling in the *Paola* v *Jeeva N.O and others*[*] to protect that viewscape, provided that the neighbour is able to demonstrate that value has been attached to the viewscape.

[*] *Gregory Joseph Paola v Jaivadan Jeeva N.O, Tarulata Jeeva N.O and North and South Central Local Council*, Case number 475/2002 (SCA).

[255] Frank Vorhies Incentives for Biodi*versity*. Paper presentation to the IUCN Workshop on Incentives for Biodiversity: Sharing Experiences Montreal, Canada (1996).
See http://biodiversityeconomics.org/pdf/960830-13.pdf at 1.

[256] See generally Mark A Botha Conservation Options for Farmers and Private Landowners. The Botanical Society of South Africa, Cape Conservation Unit, Report 01/2001. (2001). http://www.nbi.ac.za/consfarm/pub/bsccush.htm Accessed on 24 November 2004.

[257] RM Cowling; RL Pressey; M. Rouget; A.T. Lombard 'A conservation plan for a global biodiversity hotspot— the Cape Floristic Region' *South Africa Biological Conservation* 112 (2003) at 209, 210 and 211.

[258] Local Government: Municipal Property Rates Act 6 of 2004. This Act is yet to be granted a commencement date.

[259] See note 168.

[260] Section 15(2)(f) *op cit*.

conserve biodiversity. The Act does, however, allow the municipality to include these programmes into the categories of landuse which may be granted rate exemption, reductions or rebates[261] provided that it may be argued that voluntary protected areas qualify as one of the 33 categories in Section 8. The nature of these categories, however, appears to be unattributable to voluntary protected areas. Internationally, there is a growing awareness of the value of public: private partnerships to conserve natural heritage and the contribution of voluntary efforts to the health and wellbeing of people. This awareness has lead to a number of governments and other organisations providing subsidies to encourage landowners to set in place voluntary protected areas or to adopt environmentally friendlier landuse practices. Examples include the European Union's umbrella "agri-environmental subsidies," to subsidize conservation of heathlands in South Wales[262] and the U.S. Department of Agriculture's Wildlife Habitat Incentives Program (WHIP)[263] and the Sustainable Agriculture Research and Education Program (SAREP)[264] which subsidise natural habitat protection and soil restoration. The essence of these strategies is to make biodiversity conservation a competitive form of landuse in areas where it should be conserved in order for the country to meet its biodiversity conservation targets.

The voluntary programmes, in South Africa, to which a landowner may subscribe are given in Table 4 and are discussed below.

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[261] Section 15 *op cit.*

[262] This subsidy has been set in place to effectively reverse the impacts of past agricultural subsidies which encouraged the conversion of heathlands to farm land. See the Organisation for Economic Co-operation and Development's http://www.oecd.org . Accessed on 24 November 2004.

[263] United States Department of Agriculture, Natural Resource Conservation Service website at http://www.nrcs.usda.gov/programs/whip/ . Accessed on 24 November 2004.

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program that encourages creation of high quality wildlife habitats that support wildlife populations of National, State, Tribal, and local significance. Through WHIP, the Natural Resources Conservation Service (NRCS) provides technical and financial assistance to landowners and others to develop upland, wetland, riparian, and aquatic habitat areas on their property. Persons interested in entering into a cost-share agreement with the U.S. Department of Agriculture (USDA) to develop wildlife habitat may file an application at any time. Participants voluntarily limit future use of the land for a period of time, but retain private ownership.*

* United States Department of Agriculture, Natural Resource Conservation Service Wildlife Habitat Incentives Program Fact Sheet (2004) at 1. WHIPFct.pdf http://www.nrcs.usda.gov Downloaded on 24 November 2004.

[264] SAREP provides, *inter alia*, incentives for farmers to conserve natural resources and biodiversity by setting in place a system of grants to lessen the impacts of agriculture on natural systems. See Sustainable Agriculture Research and Education Program website http://www.sarep.ucdavis.edu/about/index.htm. Accessed on 24 November 2004.

Table 4: Voluntary Programmes a landowner may subscribe to, in order to conserve important biodiversity.

Type of Protected Area	Administering Body	Accreditation / Recognition
Natural Heritage Sites[265]	Department of Environmental Affairs and Tourism	State President of South Africa previously a patron of the programme. Certificate issued to landowner under signature of the President.
Conservancies	Provincial Conservation Agency	Registration with the provincial conservation agency
Sites of Conservation Significance	Ezemvelo KZN Wildlife	Limited to the KwaZulu-Natal. Awarded by the patron, the Premier of the province
Commercial Game Farms / Reserves	Landowner Game Farmers Association	*Ibid*

Natural Heritage Sites

The South African Natural Heritage programme was set in place in 1984 to recognise the voluntary protection of significant features of South Africa's natural heritage, which include:

- Viable areas of special plant communities.
- Examples of aquatic habitats.
- Habitats of threatened species.
- Outstanding natural features.[266]

The programme is administered by the Department of Environmental Affairs and Tourism to encourage the voluntary protection of natural areas in private ownership. The State President is the patron of the programme and certifies a candidate site on recommendation by the provincial conservation agency[267] and the Department of Environmental Affairs and Tourism. The landowner and site would receive a certificate signed by the State President, a bronze plaque as well as various road signage depicting the site. Should the landowner wish to withdraw from the programme, a 60 day written notice must be submitted to the Department. In the event of the qualifying features being lost from the site, the Department may choose to deregister a site.

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[265] At the time of drafting this section, the granting of a Natural Heritage Site status had been suspended by Department of Environmental Affaires and Tourism and is currently under review as it may represent a product of the apartheid system. It is therefore likely to undergo at least a name change.

[266] See Christelle du Preez 'South African Heritage Programme: Sites open to the public' Department of Environmental Affairs and Tourism (2000).

[267] The provincial conservation agency would be required to undertake a detailed site evaluation to determine whether the candidate qualifies for this status.

Conservancies

Conservancies are a voluntary co-operative between two or more landowners in order to conserve and enhance[268] important biodiversity elements on their properties. In order to qualify the landowners need to conserve natural and indigenous elements of biodiversity within a predefined area, adopt a constitution for this purpose, employ compatible landuse practices on those areas abutting the natural environment to be conserved and be registered with the provincial conservation agency. The primary benefit of establishing a conservancy is the establishment of an element of cohesion between multiple landowners through conferring a sense of identity,[269] thus augmenting other co-operative activities that have been established amongst the landowners, e.g. neighbourhood- or farm-watch. A secondary benefit is increased yield or reduced land management costs of the individual land units as a result of the landscape being managed as a single integrated unit.[270]

Sites of Conservation Significance

Not all locally or regionally important areas would qualify as a National Heritage site. These areas would be assessed and registered with the provincial agency[271] as a 'Site of Conservation Significance' (SOCS). SOCS would thus be good examples of particular habitats that would include woodland and forest patches, wetlands, localities of rare or endangered species or important concentrations of mammals or plants.[272] Candidate sites may be in either private of public ownership and registration may only take place on consent of the landowner. Other than self satisfaction of participating in a national conservation programme, on registration the landowner would receive a certificate endorsed by the Premier as the patron (for KwaZulu-Natal) for the programme as well as conservation management advice. Once registered, the landowner would be obliged to give an undertaking to conserve the values on which the SOCS was conferred and to allow the provincial conservation agency to inspect the site on an annual basis. Should the landowner choose to discontinue the listing of the site, a courtesy 60 day written notice of this intent, together with the certificate would be requested by the conservation agency.

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[268] Enhancement may include, for example, establishment of larger, or re-establishment of locally extinct, populations of wildlife as a result of the co-operative management between the landowners. See arguments on page 103.

[269] A 'brand' is developed through the communal naming of the conservancy as well as through the goodwill generated by the organisation. On registration, the conservancy receives various entrance and road signage depicting the conservancies name and the guinea fowl logo which has been used as a national brand for conservancies. Each conservancy would be a member of a Provincial Conservancy Association that co-operates nationally and internationally.

[270] Conservancies, given that the conservation practice is superimposed over other potentially divergent landuse practices, are generally not commonly managed by one central entity.

[271] This competence is limited to provincial conservation agencies as the jurisdiction of the National Parks Board is limited, in term of the National Parks Board Act, to those areas proclaimed under this Act.

[272] Michael Cohen 'Sites of Conservation Significance Programme' Department of Environmental Affairs Information Booklet (1989) at 5.

It is incumbent on the provincial conservation agency to identify sites and to seek their listing in order to ensure that this programme complements the strategy to bring critical biodiversity elements into formal protection. On evaluation of the SOCS programme for KwaZulu-Natal, this has not been effectively undertaken and the programme has been largely left to the private individuals and companies nominating areas on their properties for SOCS listing.[273] As a result, the distribution of sites is poorly correlated with the distribution of irreplaceable biodiversity elements in the province. In addition, the recent decrease in emphasis on conservation extension in this province has resulted in many of the SOCS becoming 'paper sites' in that they are no longer in existence or have lost their conservation value through mismanagement (e.g. alien plant invasion) or disturbance resulting in the conservation element being displaced (e.g. nest abandonment). This has resulted in the database and the evaluation of the contribution of SOCS to regional and provincial conservation being in disarray.

Commercial Game Farms / Reserves

Over the past thirty years, commercial 'game farming' has become a competitive, and in a number of areas, a superior landuse to other farming activities such as cattle ranching. The financial returns to the landowner are vested in a combination of protein[274] and animal[275] production, increased property value, hunting or tourism. In northern KwaZulu-Natal and eastern Mpumalanga, for example, the establishment of game farms has increased significantly (superseding the proclamation of protected areas) over the last thirty years and have progressively out competed beef production (Figure 7).

[273] Personal observation using the Ezemvelo KZN Wildlife SOCS Database.

[274] The correct complement of indigenous game, at an appropriate stocking density, would make maximal use of the woody, forb and grass components of the landscape, whereas cattle would be limited to the herbaceous components, and depending on the soils, rainfall and season, may need feed augmentation (e.g. saltlicks, lucerne pellets, etc). In addition, domestic animals may be susceptible to indigenous diseases which game would have a natural immunity. Thus in certain circumstances, game would be a more efficient producer of protein.

[275] Animal production, here, referrers principally to the sale of live animals for re-introduction or hunting elsewhere.

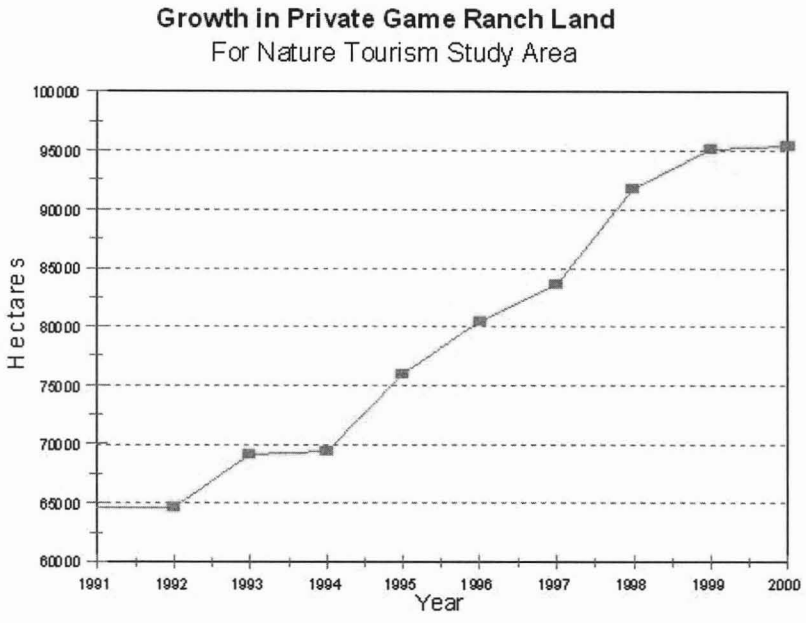

Figure 7: Growth of area of private game farms in northern KwaZulu-Natal, South Africa.[276]

The establishment of a commercial game farm or reserve[277] requires that it be registered with or permitted by the provincial conservation agency. The permitting would require that certain minimum standards be met. For KwaZulu-Natal, the property would need to be in excess of 400 ha, unless specific exemption is granted, and comply with various other requirements as determined by the KwaZulu-Natal Nature Conservation Board.[278] The additional requirements would include ensuring the fencing is in accordance with the minimum requirements set, by the Board, for the species of game farmed[279] on the property, holding pens, etc. On qualification/registration, the Board would issue an annual renewable licence enabling the landowner to operate a game farm / reserve.

Unlike formally protected areas, the management of the commercial game reserve would be at the discretion of the landowner. The management of the land, and the game thereon, would need to be in accordance with those provisions that regulate farm land in terms of the Conservation of Agricultural Resources Act,[280] in that the potential of the land is to be retained by:

- Combating and preventing soil erosion.
- Preventing the degrading or destruction of water resources.
- Protection of vegetation.
- Combating colonisation of the property by weeds or invader plants.[281]

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[276] BM James and G Creemer 'Technical Report on Accommodation' Database Report to the World Bank Research Project on Nature Tourism and Conservation (2000) at 15.

[277] The terms 'reserve' and 'farm' are equivalent and are used interchangeably in the literature.

[278] Section 27 of the Natal Ordinance 15 of 1974 (Game regulations) Provincial Notice 451 of 30 August 1979 in terms of section 58 of the Nature Conservation Ordinance 15 of 1974.

[279] See Section 28(3)(*a*) *op cit.*

[280] Act 43 of 1983.

[281] Section 3 *op cit.*

Thus the stocking rates, be they fixed or allowed to settle on a dynamic ecological carrying capacity, would need to be such, together with land/vegetation management (e.g. burning), to ensure that the potential of the land and the natural assets thereon remain unchallenged. Should it be deemed necessary, the executive officer (designated officials in the Department of Agriculture) may issue a directive to order the landowner (user) to comply with a particular control measure.[282] This measure may not be in keeping with the objectives for the establishment of the commercial game reserve. Thus the landowner would need to manage the area sustainably. In so doing, the commercial game reserve would conserve the ecological integrity of the system and hence make a significant contribution to the conservation of South Africa's biodiversity.

Outside of a 'put-and-take system',[283] 400 ha, is considered to be an extremely small area to ensure commercial and ecological viability. It is, therefore, common for landowners to amalgamate their properties into one large entity. The amalgamation of the properties would:

a) Increase the animal productivity (i.e. larger herds, greater number of offspring).

b) Increase the resilience of the animal species to disease and inbreeding ailments.

c) Allow for greater diversity of species and the introduction of large (e.g. elephant, buffalo, etc) or charismatic (black rhino, wild dog, etc) animals which would not be possible on smaller land holdings.

d) Benefits (a) and (b) would enable the expansion of, or the establishment of, the existing hunting industry, as well as enable the establishment of non-consumptive tourism ventures.

It is common place that the facilities provided in commercial game reserves employ a high number of staff in order to provide the upmarket service that characterises the hunting and private game farm industry. Within this industry, it is common practice for one job to be created for every three to eight tourists.[284] For upmarket tourism facilities, this figure could rise to two to three permanent jobs per tourist.[285] Thus private game

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[282] Section 4 *op cit.*

[283] A 'put-and-take' system is an arrangement where animals are introduced solely for hunting. Under this system, the huntable animals are not expected to survive lengthy periods and exist in a natural manner (e.g. establishing home ranges). However, the animal would have sufficient area for flight and would be considered able to escape a hunting event. Under these circumstances, the successful hunt would require a high degree of skill. The extreme of this concept is considered the 'canned hunts' where the animal does not have an opportunity of flight and the hunt is limited to an 'aim and shoot' approach requiring little or no skill.

[284] Information sources from Ezemvelo KZN Wildlife's Visitor Statistics Database and Tourism KwaZulu-Natal.

[285] Mr Tony Adams *pers. com.* Conservation Corporation Africa, commenting on the number of people employed in Phinda Game Reserve on 17 August 2002.

reserves, as does protected areas in general, make a significant contribution to the economic stability of remote rural areas.

Outside of ensuring that the game, and in particular potentially dangerous game,[286] are sufficiently secured within the confines of the game reserve, the fencing and the registration provides an added legal protection to the animal. The Game Theft Act[287] does away with the *res nullius* status of wildlife in that:

> 'a person who keeps or holds game or on behalf of whom game is kept or held on land that is sufficiently enclosed [...], shall not lose ownership of that game if the game escapes from such enclosed land'[288]

The property may only be considered 'sufficiently enclosed' if deemed to be so, in terms of a certificate (permit) issued by the provincial conservation agency, on behalf of the Premier of the province.[289,290] In this Act game is defined as 'all game kept or held for commercial or hunting purposes, and includes the meat, skin, carcass or any portion of the carcass of that game.[291]

The permit application to establish a commercial game reserve in KwaZulu-Natal, will require a list of the species intended to be managed on the property[292] as well as a list of those persons who are considered *bona fide* full-time employees who would be undertaking the hunting activity.[293] Thus, by registering the property as a commercial game reserve, the owner automatically establishes ownership of those species listed and gains a blanket permit for hunting of all listed species.[294] This, together with the capital investment in terms of purchasing the property and the establishment of the tourism and hunting facilities, would naturally confer a medium to long term protection of the biodiversity. Should the operation prove unsuccessful, or there be a change in heart, the owner may elect not to renew the permits granted by the provincial authority and to return to another farming activity or apply for permission for a change in landuse.

International Registered / Listed Areas

There are a number types of internationally recognised protected areas that do not have explicit recognition in South Africa's legislation. Whilst these areas may not have formal

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[286] The standard fencing, in the absence of dangerous game, for a private game reserve is 1.8 m high Bonox. For lion and elephant, this fence is to be augmented with a minimum of three offset electric strands.

[287] Act 105 of 1991.

[288] Section 2(1)(*a*) *op cit.*

[289] Section 2(2) *op cit.*

[290] See note 271.

[291] Section 1 *op cit.*

[292] Certain species, of wildlife (e.g. duiker, steenbok, etc) are self regulating and thus do not require specific management. Many of these species are also common in the natural landscape and thus escapees would be indistinguishable from the background population. Ownership of the escaped animals thus would not be established.

[293] Section 28(1) of the Natal Ordinance 15 of 1974.

[294] By not registering, the owner would need to apply for a hunting permit for each species and hunting event and for each staff member involved in the hunts.

status in terms of the Protected Areas Act, their identification, as with voluntary sites above, results in a greater awareness of their conservation need and South Africa's obligations to conserve these areas as a means to uphold the various international conventions the county has ratified. Many of these protected area categories require that the site be listed with the secretariat of the respective convention. This listing may only be sought by the national minister of Environmental Affairs, having consulted with ministers of other interested or affected organs of state. Thus the officials involved in the bureaucratic decision making that may threaten the site, would be obliged to consider and uphold its protected status. This protection may not hold for those sites that do not require registration or listing e.g. Bonn Sites. Under the latter circumstances, the site may be incorrectly perceived to have lower significance or status than those sites requiring registration.

The Biodiversity Act does, however, set in place the framework for areas of national and international importance to be conserved. These sites could be protected through the development and adoption of the bioregional plans,[295] biodiversity management plans,[296] or the specific conservation of threatened or protected ecosystems and species.[297] In terms of the latter, either the national minister or provincial MEC is required to publish a list of important ecosystems that are, *inter alia*:

> (a) critically endangered ecosystems, being ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation;[298]
>
> (b) endangered ecosystems, being ecosystems that have undergone degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems;[299]
>
> (c) vulnerable ecosystems, being ecosystems that have a high risk of undergoing significant degradation of ecological structure, function or composition as a result of human intervention, although they are not critically endangered ecosystems or endangered ecosystems;[300] and
>
> (d) protected ecosystems, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed in terms of paragraphs (a), (b) or (c).[301]

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[295] Section 41 of the Biodiversity Act 10 of 2004.
[296] Section 43 *op cit.*
[297] Chapter 4 *op cit.*
[298] Section 52(2)(*a*).
[299] Section 52(2)(*b*).
[300] Section 52(2)(*c*).
[301] Section 52(2)(*d*).

Thus in order to ensure the protection of important sites, they would need to be published in either a national or provincial gazette.

The categories of international protected areas are listed in Table 5 and discussed below.

Table 5 Areas protected due to their International Importance.

Type of Protected Area	Convention or International Agreement	Statutory Protection	Administration and Management
Biosphere Reserve	UNESCO Man and Biosphere	Protected Areas Act for the core area. No protection for buffer or transitional areas. [Category 6 Sustainable Use Areas – Proposed KwaZulu-Natal protected areas][302] May become a specific type of nature reserve in terms of Section 25 of the Protected Areas Act	DEAT, Conservation authority and Private / Communal Landowners
Ramsar site	The Convention on Wetlands of International Importance, especially as Water Fowl Habitat	Previously not catered for in South Africa's domestic legislation, although proposed to be included in the draft Wetland Conservation Act.[303] Implicit reference to Ramsar wetlands in Section 52(2) of Biodiversity Act and Section 17 of the Protected Areas Act.	DEAT, Conservation Authorities and Private / Communal Landowners
Bonn or CMS Site	Convention on the Conservation of Migratory Species of Wild Animals	*Ibid*	DEAT, Conservation Authorities and Private/ Communal Landowners.
Particularly sensitive sea areas	International Convention for the Prevention of Pollution from Ships (MARPOL)	Various maritime legislation aimed at preventing pollution of marine resources	Marine and Coastal Management and Ezemvelo KZN Wildlife in terms of KwaZulu-Natal coastline
Transfrontier Protected Areas or Peace Parks			DEAT and conservation authorities.

A. Biosphere Reserve

Biosphere reserves are terrestrial and marine areas under multiple ownership where the landowners co-operate to reconcile the conservation of biodiversity with its sustainable use. Provided that various criteria are met, biosphere reserves are internationally recognised and may be nominated by the Department of Environmental Affairs and

[302] Schedule 3 of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997.
[303] Quoted in Table 2 in Chapter 3 of the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity N/1095 Government Gazette No 18163 (1997).

Tourism to the UNESCO 'Man and Biosphere' (MAB) World Network of Biosphere Reserves for registration. The World Network was formally constituted[304] to oversee the registration and the periodic monitoring of registered biosphere reserves. The primary focus of the MAB programme is the conservation and monitoring of biodiversity and ecosystem processes, the sustainable management of natural resources at the ecosystem and landscape levels and the integration of the socio-cultural and ethical dimensions into land development. The general criteria for an area to qualify for designation as a Biosphere Reserve include the following in order for an area to qualify for designation as a MaB Biosphere Reserve.

- Constitute a mosaic of ecological systems representative of major biogeographical regions, including a gradation of human interventions.
- Be of significance for the conservation of biodiversity.
- Provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.
- Be able to provide all three functions of a biosphere reserve, namely:

  a) A conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation;

  b) A development function - to foster economic and human development which is socio-culturally and ecologically sustainable;

  c) A logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.

- Provide these functions through appropriate zonation, namely one or more legally protected core areas, buffer zones and transition areas.
- Provisions should be made for mechanisms to manage human activities in the buffer zones, a management policy or plan for the area as a Biosphere Reserve, a designated authority or mechanism to implement this policy or plan and programmes for research, monitoring, education and training.[305]

In order to fulfil these functions, biosphere reserves are to be organized into three interrelated zones, known as the core area, the buffer zone and the transition area. The core area is to be under legal protection in terms of provisions within the Protected Areas Act (see below). This area must be sufficiently large to meet its conservation objectives and be a representative sample of the landscape. The core area within the biosphere reserve may not necessarily be limited to a single protected area but may comprise of

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[304] The World Network was constituted by the Statutory Framework, which was formed at the International Conference on biosphere reserves held in Seville, Spain in March 1995. The Statuary Framework sets the qualification criteria for biosphere reserves. See Servile Strategy for Biosphere Reserves http://www.mabnet.org/publications/seville/seville.html. Accessed on 14 January 2005.

[305] UNESCO man and the biosphere programme (MaB) www.unesco.org/mab. Accessed on 11 January 2005.

multiple protected areas in order to achieve the required representivity in the landscape or to bring added protection to regionally or nationally important biodiversity elements.

The buffer zone (or zones) is to be clearly delineated and must encompass the core area. Activities within this zone are to be limited to those which complement the objectives of the core area and include tourism and recreational facilities.

The transitional area is an area for a transition, radiating out from the buffer area, of landuse from agricultural to industrial activities. In this zone, landowners must make an undertaking to co-operate and sustainably develop and manage the natural resources within the reserve. It is this zone, together with the tourism and recreational entities, which would make an economic and social contribution to regional development. In addition the transitional area, within the context of the biosphere reserve, forms an important platform for the development of social and economic co-operation between contrasting land management and ownership cultures. Thus, the biosphere reserve model is conceptually, an ideal model that may be considered (a) for proactive rural land use planning and integrated landuse management and (b) to resolve the conflict between the need to conserve the country's natural landscapes and biodiversity therein and the need for development and land transformation.

In order to establish a biosphere reserve, the landowners may elect to take advantage of an existing protected area and hence create the opportunity to exploit the existing goodwill that may have already been generated by the protected area,[306] or they may elect to establish and proclaim a new core area. Under both scenarios, a number of distinct advantages for the contributing private and communal landowners, as well as the State, emerge, namely:

a) The biosphere reserve co-operative arrangement would compliment the establishment and execution of the co-operative management of the protected area and thus may introduce a greater role to be played by neighbouring communities into the management of the protected area as well as the surrounding landscape.

b) A supportive environment for the resolution of conflicts associated with land reform. Provided that there is agreement on the objectives of the biosphere reserve, the development of the biosphere reserve may reduce conflict between opposing parties.[307]

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[306] For instance many of the protected areas in KwaZulu-Natal were proclaimed at the turn of the previous century, or have been elevated to a highly prestigious status through their contribution to conserving charismatic species (e.g. Hluhluwe iMfolozi Park being instrumental in preventing both the black and white rhinoceros from becoming extinct), being listed as World Heritage Sites (i.e. Greater St Lucia Wetland Park and uKhahlamba-Drakensberg Park), or simply being associated with the branding and marketing of the conservation agency.

[307] A similar observation was made during the establishment of the Tonle Sap Biosphere Reserve in Cambodia.*

* See Mok Mareth; Neou Bonheur and Benjamin Downs Lane 'Biodiversity Conservation and Social Justice in the Tonle Sap Watershed: The Tonle Sap Biosphere Reserve.' Paper presented to the International Conference on Biodiversity and Society (2001) www.earthscape.org/r1/cbs01/cbs01a13aa.html#conclusion. Accessed on 12 December 2004.

c) A sustainable and supportive environment that would be conducive for various land reform programmes to achieve long term sustainability through the interchange of information and education by role players in the biosphere reserve.[308]

There are, however, several drawbacks in South Africa, which hamper the establishment and operation of the biosphere reserve. Of these, the absence of legal instruments to empower the biosphere reserve is seen to be paramount. It is commonplace for biosphere reserves to tend towards large tracks of land[309] and as a result they often fall within two or more local and district municipalities and may include a number of towns (e.g. Kogelberg biosphere reserve).[310] Thus, in addition to the management authority,[311] the biosphere reserve would be subject to a number of other 'management' authorities in terms of the municipalities and conservation authorities.[312] On review of the various statutes regulating municipalities, there is little to no provision for the municipalities to relinquish or delegate their authority to an independent body. In addition, there are few legal instruments to empower the management authority to manage the biosphere reserve. These are limited to the various agreements which are required to be in place for the establishment of the reserve and its listing with UNESCO.

It is the establishment of these regulating agreements amongst the various landowners and other role players has proved to be the most problematic.[313] It is common place for these regulatory agreements to become all encompassing to address a wide range of concerns and thus becoming ineffective, or a *laissez faire* approach is adopted for controversial matters. As the candidate biosphere reserve is managed towards a commitment or operational phase, the drivers or the management authority are faced

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[308] One major concern for land reform is the loss in land management capacity on transition from the current landowner to the new. Various state departments are obliged to provide support for this process, however, this support is severely hampered by the limited capacity of the state departments.* Resettled farming communities, in South Africa, have been particularly neglected by the state**

* Land reform in southern Africa IRIN Web Special on land reform in Southern Africa. United Nations Integrated Regional Information Networks (IRIN) and the Coordination of Humanitarian Affairs (OCHA). http://www.irinnews.org Accessed on 13 December 2004.

** Sam Kariuki and Lucien Van Der Walt 'Land Reform In South Africa: Still Waiting' *Southern Africa Report Archive* 15 (3) (2000) at 19.

[309] South Africa has 4 registered UNESCO MAB Biosphere Reserves, namely:

Kogelberg	103 629 ha
Kruger to Canyons	2 474 700 ha
Waterberg	414 571 ha
Cape West Coast	378 240 ha

See UNESCO man and the biosphere programme (MaB) www.unesco.org/mab. Accessed on 11 January 2005.

[310] This is the first South African biosphere reserve to be registered and covers 103,629 hectares. Kogelberg Biosphere Reserve is situated in the Western Cape Province of South Africa and extends from Gordon's Bay to Kleinmond, and includes three administrative authorities, namely Cape Nature Conservation and Hangklip and Kleinmond Municipalities.

[311] Given the size and complexity, a number of biosphere reserves have elected to establish either a non-profit managerial company (e.g. Kogelberg) or a trust (e.g. Kruger to Canyons Biosphere Reserve Trust)

[312] Particularly when provincial boundaries are traversed

[313] Personal observation from the establishment and disbanding of the Pongola Biosphere Reserve, and the Weenen and Greater St Lucia Biosphere Reserves.

with, at times, intractable problems to resolve. These problems often require a strong and unambiguous legal framework for their resolution. The outcomes are potentially three fold. The first is the disbandment of the co-operation between landowners. The second is the exclusion of the landowners and role players that are most difficult to accommodate in the co-operation agreements. The third is to limit the co-operation between landowners to a loose association to justify the use of the term 'biosphere reserve' in the area's description, without the intent to qualify for a UNESCO MAB registration.

Ramsar Sites

The Ramsar Convention,[314] makes provision for the inclusion in the List of Wetlands of International Importance (the "Ramsar List") of wetlands considered to be of international importance. The selection should be based on the wetland's significance in terms of ecology, botany, zoology, limnology, or hydrology.[315] Further to this, the Conference of Parties to the convention developed a set of criteria to enable state parties or private landowners to identify candidate wetlands (Table 6). Whilst South Africa is obliged to identify and nominate sites for listing, this process can only take place with consent of the landowner. Many landowners that have potential wetlands of international importance on their properties are reluctant to allow their site to be listed for fear of prejudicing future use of the wetland and surrounding areas.[316]

The reluctance of landowners to nominate wetlands for Ramsar listing is a universal problem. In recognition of this, the Ramsar Small Grants Fund was established as a mechanism to primarily assist developing countries in implementing the Convention and

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[314] The Convention on Wetlands of International Importance, especially Water Fowl Habitat was signed and ratified by South Africa on 12 March 1975.

[315] The Ramsar Info Pack : Criteria for Identifying Wetlands of International Importance http://www.ramsar.org/about_infopack_5e.htm. Accessed on 14 December 2004

[316] An example of this are the wetlands and surround, and including, the Richard Bay estuary and harbour. These wetlands and surrounding hydromorphic grasslands support the highest number of South African red data species in the country.[*] In terms of this, and the observation that this wetland system is an important breeding and stop-over point for migratory bird species, the area would qualify as a Ramsar site on a number of criteria listed in Table 6. The recognition of the conservation value of this system is not new and was identified as a candidate site for conservation and Ramsar listing in the mid 1980's.[**] The apparent reluctance of the uMhlathuze Municipality to support the nomination to have the wetland system registered as a Ramsar site was due to the area had been earmarked for and partially developed as an industrial development zone (IDZ). The planning of the IDZ did not take into consideration the requirements of the natural environment.[†] As a result, the need to conserve these critically threatened natural elements is currently being perceived as a threat to the development of the remainder of the IDZ and the city as a whole.[‡]

[*] Tim O'Connor KZ282 Identification and Prioritisation of Red Data Book Species and other conservation worthy species. Report to the Environmental Planning Unit of the City of uMhlatuze, Richards Bay (2003) at 2.

[**] Roger Porter (December 2004) Personal Communication.

[†] T O'Connor *op cit* at 29.

[‡] The O'Connor study was commissioned by the municipality to assess whether the concerns tabled by Ezemvelo KZN Wildlife and other concerned parties regarding the development of the IDZ had merit.

to enable the conservation and wise use of wetland resources.[317] The successful applicant, having applied via the Administrative Authority (the Ramsar implementing agency - DEAT) would receive approximately US$ 32 000 (~ R 183 000) to ensure the appropriate management and wise use of the wetland.

For all listed Ramsar sites, the Administrative Authority, in conjunction with the landowner and conservation agency, would be required to compile a four yearly report on the status of the sites. In addition, should the ecological character of a site be threatened or undermined as a result of technological developments, pollution or other human interference, the Administrative Authority would be obliged to motivate that the site be listed on the Montreux Record.[318,319] In terms of the agreement on ratification of the Convention, South Africa would need to undertake remedial steps to remove the threat and rehabilitate the site until the natural ecological process are restored.

Until the promulgation of the Biodiversity and the Protected Areas Acts, Ramsar sites did not enjoy protection in terms of the various protected area statutes. There is a significant correlation between the Ramsar identification criteria (Table 6) and the categories of ecosystems that are threatened and need of protection listed in Section 52 of the Biodiversity Act[320] and the purposes for establishing a protected area.[321] Naturally, on proclamation, the Ramsar site would need to be proclaimed in terms of one of the five kinds of protected areas provided for in Section 9 of the Protected Areas Act.[322]

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[317] The Ramsar Small Grants Fund for Wetland Conservation and Wise Use (SGF). http://www.ramsar.org/key_sgf_index.htm . Accessed on 14 December 2004.

[318] The Ramsar Info Pack: The Montreux Record and the Ramsar Advisory Missions. http://www.ramsar.org/about_infopack_6e.htm. Accessed on 14 December 2004.

[319] To date, South Africa have two sites listed on the Montraux Record, namely:

- Blesbokspruit, designated 02/10/86, Gauteng, 1,858 ha, Montreux Record 06/05/96
- Orange River Mouth, designated 28/06/91, Northern Cape, 2,000 ha, Montreux Record 26/09/95

[320] See page 63 above.

[321] See note 186.

[322] See Table 11 on page 78.

Table 6: List of criteria to identify wetlands of international importance.[323]

Group A of the Criteria. Sites containing representative, rare or unique wetland types
Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
Group B of the Criteria. Sites of international importance for conserving biological diversity
(Criteria based on species and ecological communities)
Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.
Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.
Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.
(Specific criteria based on waterbirds)
Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.
Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.
(Specific criteria based on fish)
Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.
Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Bonn Sites

South Africa acceded to the Bonn Convention - Convention on the Conservation of Migratory Species of Wild Animals (CMS) in December 1991. This convention requires contributing state parties to conserve and protect animals (terrestrial mammals, reptiles, marine species and birds) that migrate across their borders with particular attention being

[323] As adopted by the 7th meeting of the Conference of the Contracting Parties in 1999. *Ibid.*

paid to endangered or threatened species.[324] South Africa being both a terrestrial terminus for many of the land and coastal migratory species and a route for migration to and from Antarctica including the Palaearctic and Antarctic species (whales and birds), is a major role-player in this convention. The aims of the convention are to conserve terrestrial, marine and avian migratory species throughout their natural range. It is an intergovernmental treaty, concluded under the auspices of the United Nations Environment Programme (UNEP) Unlike the Ramsar convention, Bonn sites do not have to be registered with the convention's secretariat. The secretariat does, however, maintain lists that form the core of the convention, namely:

- Migratory species threatened with extinction (Appendix I of the convention)[325]
- Migratory species that need or would significantly benefit from international co-operation (Appendix II of the convention)[326]

The expectations of the state parties, of the convention, are threefold. The first is to set in place various mechanisms to protect the threatened species, and their habitats, listed in Appendix I of the convention. Where necessary, the state party is expected to rehabilitate and restore those habitats that have been negatively impacted upon and to remove, or mitigate the impacts of obstacles that may hinder the migration of the species.

The second is to conclude, with the support of the secretariat, transboundary agreements for the conservation and management of individual or a group of species listed on Appendix II. These agreements may range from binding treaties to less formal instruments, such as Memoranda of Understanding. These agreements may facilitate tailored and structured action plans that include the formulation of joint research, monitoring activities and the harmonisation of legislation.

The third expectation of the state party, in terms of the Administrative Authority (DEAT) is to nominate additional species that warrant listing in either Appendix I or II in terms of CMS Resolution 1.5. Upon the recommendation of the Scientific Council, the Conference of the Parties (COP) would then decide whether to adopt the proposed listing in accordance with Article XI.

In South Africa, the convention is not fully understood by government departments, conservation agencies and other decision makers as well as within the private sector. This has resulted in few terrestrial sites being identified as CMS site.[327] This observation is

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[324] Department of Environmental Affairs: International Conventions And Agreements Signed by South Africa on Environmental Issues http://www.environment.gov.za/Enviro-Info/env/intro.htm. Accessed on 14 December 2004.

[325] See Convention on Migratory Species http://www.cms.int/documents/appendix/cms_app1.htm. Accessed on 14 December 2004.

[326] See Convention on Migratory Species http://www.cms.int/documents/appendix/cms_app2.htm. Accessed on 14 December 2004.

[327] There is currently a proposal to develop transboundary strategic measures that would be necessary to conserve the network of critical wetland areas on which migratory waterbirds depend throughout the African / Eurasian flyway. Two sites in South Africa have been identified as important terminuses in this project (Wakkerstroom and Seekoeivlei) which link to Haapsalu-Noarootsi Bays (Silma NR),

particularly striking, problematic for conserving biodiversity given that landscapes, and particularly within KwaZulu-Natal, are being transformed at an increasing rate[328] and the preponderance of irreplaceable areas (Figure 2). The net result of the landscape transformation is a reduction in the size and number of habitats used for breeding or migration stopover points resulting in these becoming less functional and further apart. This undoubtedly would place additional stress on migratory species thereby increasing their vulnerability and threatened status. For the marine environment, two initiatives have been set in place to develop and adopt Memoranda of Understanding for threatened marine species, namely: the conservation of marine turtles along the Atlantic coast of Africa,[329] and seabirds in South Africa and Namibia.[330]

Countries that accede to the convention are not required to undertake mandatory auditing or status reporting on either the candidate or previously identified sites. This, together with a marginal understanding of the long and short-term ecological significance of individual sites, renders the sites vulnerable to short-term-gain decision making and their eventual loss from the system. As with Ramsar sites, CMS sites may gain substantially more protection with the enactment of the Biodiversity and Protected Areas Acts. Bonn or CMS sites may now be conferred protection in terms of Section 52 of the Biodiversity Act[331] and the purposes for establishing a protected area.[332] It would be incumbent on the South African National Biodiversity Institute,[333] in conjunction with the various conservation agencies, to identify CMS sites and make provision for their formal protection in terms of the provisions in the Protected Areas Act.

Particularly sensitive sea areas

A particularly sensitive sea area (PSSA) is defined as 'an area that needs special protection through action by the International Maritime Organisation (IMO) because of

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Estonia; Biharugra's Fishponds, Hungary; Nemunas Delta, Lithuania; Banc d'Arguin, Mauritania; Kokorou and Namga wetlands, Niger; Hadejia-Nguru wetlands, Nigeria; Saloum-Niumi, Senegal/The Gambia; Dar es Salaam wetlands, Tanzania; and Lake Burdur, Turkey. The initiative will draw on the principles set in place by the convention and is expected to generate a definition of the network of critical wetland areas used by migratory waterbirds and a definition of the wetland areas in the network requiring protection. Once complete, the project would provide technical advice for the designation of new Ramsar sites. *

* See Enhancing Conservation of the Critical Network of Wetlands Required by Migratory Waterbirds on the African/Eurasian Flyways proposal to the Global Environment Facility (GEF) for project funding. http://www.wetlands.org/projects/AEWA/GEF_summary.htm. Accessed on 15 December 2004.

[328] Personal query of the Ezemvelo KZN Wildlife and Department of Agriculture and Environmental Affairs – Environmental Directorate Listed Activity Application Databases. Accessed on 12 January 2005.

[329] 'Memorandum of Understanding (MoU) concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa' adopted at the Côte d'Ivoire conference of parties in May 1999. http://www.panda.org.za/prev_marine_projects.htm Accessed on 15 December 2004.

[330] Groundwork for an MOU for seabirds in SA and Namibia (ZA 5039) http://www.panda.org.za/prev_marine_projects.htm Accessed on 15 December 2004.

[331] See page 63 above.

[332] See note 186.

[333] In terms of their functions listed in Section 11 of the Biodiversity Act.

its significance for recognized ecological, socio-economic or scientific reasons and because it may be vulnerable to damage by international shipping'.[334]

Protective measures to be adopted by the management authority for the PSSA would include the following options:[335]

1. to designate an area as a Special Area in accordance with Annexes I, II or V of MARPOL 73/78[336] and/or as a SO_x Emission Control Area under Annex VI of MARPOL 73/78; or application of special discharge restriction to ships operating in a PSSA;

2. to adopt ships' routeing and reporting systems near or in the area, under the SOLAS Convention[337] and in accordance with the General Provisions on Ships' Routeing and the Guidelines for Ship Reporting Systems;[338] and

3. to develop other measures, such as compulsory pilotage schemes or vessel traffic management systems, aiming at protecting specific sea areas against environmental damage from ships.

The designation of a PSSA offers four principal benefits: The first provides global recognition of the special significance of the designated area through identification of PSSA on international charts. The second informs mariners of the importance of assuming caution when navigating through or near a PSSA. The third, is the opportunity for coastal states to adopt additional protective measures to address various threats and risks associated with international shipping in their territorial waters. The fourth, enables the coastal country the opportunity to strengthen domestic legislation to address threats to the marine resources imposed by the maritime community.

In addition to the above mentioned benefits, the PSSA creates the opportunity to establish effective marine transfrontier protected areas (see below). The role of the IMO in the establishment of the PSSA would provide a sound platform for the harmonisation of legislation across borders of multiple sovereign states.

There is, currently, no provision for the enforcement of a PSSA within South African environmental legislation. The country may elect to bring additional amendments to the

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[334] IMO Assembly Resolution A.927(22) *Guidelines for the designation of special areas under MARPOL 73/78* and *guidelines for the identification and designation of particularly sensitive sea areas*" at Annex 2 Paragraph 1.2. See IMO website http://www.imo.org/home.asp. Accessed on 14 January 2006.

[335] Extracted from the first meeting of the *Helsinki Commission Helcom Response* 1/2002 Szczecin Poland (2002) at 3. Downloaded from Commissions website http://www.sea-search.net/international-mechanisms/helcom.htm on 14 January 2006.

[336] International Convention for the Prevention of Pollution from Ships.

[337] International Convention for the Safety of Life at Sea.

[338] This option is particularly important as it sets in place a system of informing the management authority on the movement and activities of vessels within or in the immediate vicinity of PSSAs. This would confer greater control and regulation to the management authority. For this to be effective, however, the management authority would require the capacity, in terms of trained personnel, monitoring technology (e.g. radar, satellite tracking, etc), and enforcement mechanisms (e.g. powers of arrest) and equipment (e.g. appropriate watercraft) to undertake this task.

Marine Living Resources Act within which marine protected areas are proclaimed,[339] or to take advantage of the various tried and tested domestic maritime statutes (e.g. Maritime Zones Act,[340] Merchant Shipping Act,[341] and Marine Pollution Act).[342] The latter approach may prove effective in limiting the impact of ship derived pollution on marine resources but may not address other threats to critical biodiversity elements.[343]

Transfrontier Conservation

It is common for political boundaries to be placed independently of the ecological confines that regulate the natural environment. Thus, the distribution of natural resources and their threats, may, traverse these boundaries. This argument was succinctly expressed by Dr Pallo Jordan[344] in his opening address to the 1997 Cape Town meeting on Transboundary Protected areas:

> *"The rivers of Southern Africa are shared by more than one country. Our mountain ranges do not end abruptly because some 19th century politician drew a line on a map. The winds, the oceans, the rain and atmospheric currents do not recognise political frontiers. The earth's environment is the common property of all humanity and creation and what takes place in one country affects not only its neighbours, but many others well beyond its borders."*[345]

With this understanding, abutting countries have common concerns pertaining to, *inter alia*, the protection and use of natural resources at this political interface.[346] On identification of this common concern the matter of 'sovereignty' surfaces. In order to safeguard these resources, there needs to be a common vision between the countries, as well as agreed objectives that would regulate the use and protection of the resources. On realising that a country is managing or contributing to the management of a common resource, that country may not assume absolute sovereignty over that resource. Likewise, the active co-management of a resource would elicit concerns regarding the potential challenging of sovereignty of a state through the limitation of rights and practices.[347]

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[339] See marine protected areas on page 80.

[340] Act 15 of 1994.

[341] Act 57 of 1951.

[342] Act 2 of 1986.

[343] At the April 2003 Marine Environment Protection Committee of the International Maritime Organisation, the South African government undertook, *inter alia*, to develop Particularly Sensitive Sea Areas under the International Maritime Organisation to minimise the impacts of shipping disasters on its marine areas. In anticipation of this commitment, Marine and Coastal Management commissioned a study to determine the feasibility of establishing a PSSA along the South Africa coastline to a certain depth off the continental shelf. The outcome of this investigation is yet to be published.

[344] The then South African Minister of Environmental Affairs and Tourism.

[345] Quoted in Trevor Sandwith, Clare Shine, Lawrence Hamilton and David Shepard Transboundary Protected Areas for Peace and Co-operation. World Commission on Protected Areas. Best Practice Protected Area Guidelines Series 7 (2001) at vii.

[346] Sue Derwent, Roger Porter and Trevor Sandwith. Maluti-Drakensberg Transfrontier Conservation and Development Programme. Ezemvelo KZN Wildlife (2003) at 5.

[347] For example, a resource (e.g. water) may have been unsustainably used in the catchment of one country which may negatively impact on the downstream country to use of that resource. Under this scenario, the upstream country (in line with the Convention on the Protection and Use of Transboundary Watercourses and International Lakes- see http://www.unece.org/env/water accessed on 23 December

The transboundary or transfrontier initiatives[348] to conserve biodiversity are predominantly in two forms, namely: the establishment of a 'protected area' or 'conservation area'. A transfrontier protected area (TPA) or Peace Park[349] is a protected area that spans across boundaries of multiple countries and where the political borders within the park are abolished. This includes removal of all forms of physical boundaries, such as fences, allowing free migration of animals and humans within the area. A boundary around the area may however be maintained to prevent unauthorised border crossing as well as to serve as a management strategy to secure the protected area. The TPA is primarily focussed on conserving traditional animal migration patterns,[350] establishing a tourism destination and reinforcing the economic development associated with protected area development and rural capacity building[351]

A Transfrontier Conservation Area (TFCA) may be a consolidated protected area managed by one or more management authorities in accordance with one management plan, or may be a fragmented series of areas forming a conservation area. The conservation area may be subject to a range of complementary management strategies in which different component areas have different forms of conservation status, such as private game reserves, communal natural resource management areas, hunting concession areas, etc. Fences, major roads and highways, railway lines or other barriers may separate the various components of the TFCA. Nonetheless, the transboundary components would need to abut onto each other and the complex managed for long-term sustainable use of natural resources. Under this scenario, free movement of animals between the different components of the TFCA may not be achievable or desirable.

Once a commitment between two or more countries is made to establish a transfrontier conservation initiative, each country undertakes to:

2004) would need to ensure that the river is a fully functional system with reasonable amounts or water when it crosses the international boundary.

[348] There is no internationally accepted or legally preferred choice of term, given that each initiative will vary greatly from country to country and will be influenced by particular constrains of the initiative. For the purpose of ease these terms are and may be used interchangeably or exclusively to facilitate a common understanding amongst the role-players. This dissertation uses the "Transboundary Protected Area" – the option which, in the author's opinion, offers the least chance of misunderstanding.

[349] The Peace Parks Foundation was set up by the WWF and Dr Anton Rupert in February 1997 to encourage and facilitate the establishment of transfrontier protected areas.

[350] Whilst many of the TFCAs have used an argument to re-establish animal migrations, that were interrupted by the establishment of an impermeable barrier on the international boundary or unsustainable removal of migratory species or both, as part of the motivation for the park's establishment, there is no evidence that migratory routes would naturally re-establish themselves. In the absence of evidence to indicate that migration would be a natural consequence of re-introducing game,* conservation of existing functional migratory routes should be a priority for the placement of TFCAs.

* For example Mozambican Limpopo (TFCA) Park has been earmarked for introduction of 1045 animals from South Africa (see Press release on http://www.afrol.com/News2002/moz006_sa_wildlife.htm Accessed on 20 December 2004) and the Gaza-Kruger-Gonarezhou Transfrontier Park (see http://www.environment.gov.za/Documents/Documents/GreatLimpopoTP/background_GKG.htm accessed on 20 December 2004).

[351] See arguments on page 17 above.

a) Interpret its domestic legislation in a manner which would facilitate the establishment of the TFCA and support its operation;

b) Harmonise or align legislation and administrative structures between the collaborating countries;

c) Set in place bilateral and multilateral agreements with collaborating states. The agreements may take on a variety of forms. For example,

- Treaty or Protocol,
- Joint arrangement (including Memoranda of Understanding and other informal arrangements) for management,
- Joint arrangement for enforcement, and
- Public / Private, Private contracts or joint ventures.

d) Set in place mechanisms that facilitate the settling of disputes through appropriate interpretation of the negotiated agreements, domestic legislation and international law.[352]

The harmonising or alignment of domestic legislation and the administrative structures is one of, if not the most significant challenge for transboundary initiatives. Whilst this challenge is evident in most of these initiatives both locally and internationally,[353] there is little guidance to assist collaborating parties and officials with integrating, co-ordinating, or operating within the different national and provincial legal, administrative and judicial structures of the countries involved. Nonetheless this process would require a thorough in-depth examination of the relevant laws, policies, regulatory documents, and administrative institutions in all sectors potentially affecting or affected by the initiative.

The TPA may be considered relatively simple in this regard as it is focussed primarily on the protection of biodiversity and the natural land- or seascapes within its confines. Thus the legislation that would need to be aligned or harmonised across the international boundary would be limited to those regulating conservation management and law enforcement. For example, the movement of law enforcement officials across the international boundary to arrest a suspected poacher, arsonist etc. For the TFCAs (and

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[352] International laws relevant to transboundary initiatives and their objectives are: Agreement on Sanitary and Phytosanitary Standards (SPS), Agreement on Technical Barriers to Trade (TBT), Convention Concerning the Protection of the World Cultural and Natural Heritage (the "World Heritage Convention"), Convention on Biological Diversity (CBD), Convention on Migratory Species (CMS), Convention on Trade in Endangered Species of Fauna and Flora (CITES), Convention on Wetlands of International Importance (Ramsar), Trade-related Intellectual Property system (TRIPs), UN Convention on Law of the Sea (UNCLOS), UN Convention to Combat Desertification (CCD), and the UN Framework Convention on Climate Change (FCCC).

[353] Tomme Young 'Political and Institutional Arrangements for the Development of TBCA International Environmental Law as Support and Assistance for the Creation of TBCA's' ITTO/IUCN International Workshop on Increasing the Effectiveness of Transboundary Conservation Areas in Tropical Forests (2003) at 2.
http://www.tbpa.net/workshops/ITTO/Thailand_2002/Conference%20Proceedings/Written%20papers/TommeYoung.pdf down loaded on 23 December 2004.

PSSAs), this process is substantially more complex. As stated above, the focus of the TFCA is not limited to the conservation or protection of biodiversity within a limited, defined area. The TFCA embraces a broader concept of land use management and hence the harmonisation and alignment process would involve a significantly wider set of legislation,[354] covering a greater range of administrative authorities at the national, provincial and municipal levels. This is further complexed by the various departments and ministries not being aligned across the international boundary in terms of their portfolios.

Whilst the national and international benefits that may be derived from establishing a TFCA or TPA may be extensive,[355] these initiatives have proved to be extremely costly in both time and money and, significantly, cost more than the establishment of a new (single-jurisdiction) protected area.[356] Thus, should the primarily goal be to conserve biodiversity, a cost benefit analysis, in the context of limited funds for biodiversity conservation and the national strategy, must be undertaken.[357]

Legislated Protected Areas

As discussed above, the motivation for establishing a protected area which leads to the protection of biodiversity may be far ranging.[358] National legislation makes provision for the establishment of the protected areas in three separate broad categories, namely:

a) biodiversity conservation;
b) cultural heritage protection; and
c) mixed heritage protection

The types of protected areas in each of these categories and their consequence for biodiversity conservation are tabled (Table 7) and discussed below.

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[354] For example that cover:
- Economic policy
- Immigration and customs and exercise
- Security
- Agriculture
- Veterinary control
- Etc.

[355] See generally
Trevor Sandwith Clare Shine Lawrence Hamilton and David Shepard Transboundary Protected Areas for Peace and Co-operation. World Commission on Protected Areas. Best Practice Protected Area Guidelines Series 7 (2001), and
Sue Derwent Roger Porter and Trevor Sandwith. Maluti-Drakensberg Transfrontier Conservation and Development Programme. Ezemvelo KZN Wildlife (2003).

[356] Young *op cit* at 1.

[357] See arguments allocation of resources to conservation of key biodiversity elements on page 50

[358] See arguments on page 16 onwards.

Table 7 Consolidated list of Protected Areas in Terms of the Protected Areas Act.

Type of Protected Area	Role of the Protected Areas Act	Regulatory Legislation	Administration
State Forest, Forest nature reserve, Forest wilderness area, or Internationally recognised protected area category	Type of protected area provided for in Section 9	Protected Areas Act, National Forests Act 84 of 1998	DWAF or conservation authority under delegation or assignment.
Lake area	*ditto.*	Lake Areas Development Act 39 of 1975[359]	National Parks Board[360]
Marine reserve	*ditto.*	Marine Living Resources Act 18 of 1998	DEAT: Marine and Coastal Management; Delegation or assignment to provincial conservation agencies or National Parks Board
Most South African islands	None	Sea Birds and Seals Protection Act 46 of 1973	DEAT: delegated to provinces in respect of sea birds
Mountain catchment area	Type of protected area provided for in Section 9	Mountain Catchment Areas Act 63 of 1970	Provincial Assignment
National botanical garden	None	Biodiversity Act 10 of 2004[361]	National Botanical Institute
National park	Type of protected area provided for in Section 9	Currently the National Parks Act 57 of 1976[362]	National Parks Board. Assignment of newly declared protected areas will be determined by the Minister[363]
Protected (natural)[364] environment	Protected Areas Act	Protected Areas Act, previously Environment Conservation Act 73 of 1989	Assigned to provinces
Provincial nature reserves	Protected Areas Act or Provincial ordinances / Acts[365]	Various provincial ordinances / Acts[366]	Nine provincial administrations, numerous local authorities, private landowners etc.
Special nature reserve		Protected Areas Act, previously Environment Conservation Act 73 of 1989	DEAT Assigned to competent authority by the Minister
[Cultural] Protected Area	• National Heritage Resources Act 25 of 1999 • KwaZulu-Natal Heritage Act 10 of 1997	Heritage legislation or Protected Areas Act	National or provincial heritage agency

[359] To be repealed by the Protected Areas Amendment Bill.* Regulation will be in terms of the Protected Areas Act and the National Parks Act 57 of 1976.

* National Environment Management: Protected Areas Amendment Bill GG 25052 of 3 June 2003 (Protected Areas Amendment Bill).

[360] On promulgation of the Protected Areas Amendment Bill, lake areas will be categorised as national parks and the assignment of newly established areas will be determined by the Minister.

[361] Previously regulated in terms of the Forest Amendment Act 53 of 1991.

[362] On promulgation of the Protected Areas Amendment Bill would be managed in terms of the provisions in the Protected Areas Act.

[363] This may be a suitable person, organisation or organ of state. Section 14 of the Protected Areas Amendment Bill.

[364] In the Environment Conservation Act 73 of 1989, this type of protected area was known as a Protected Natural Environment. In the Protected Areas Act, however, it as been termed a 'Protected Environment' to allow for inclusion of other attributed not directly related to biodiversity conservation.

[365] The Protected Areas Act would apply to those provincial protected areas that form part of the national network of protected areas. Those provincial protected areas that are considered to be either a duplication or redundant would continue to fall under the provincial legislation they were proclaimed under.

[366] Until various regulations to the Protected Areas Act are drafted and promulgated.

Natural Heritage Protection

Until the commencement of the Protected Areas Act, the formal protection of South Africa's biodiversity is regulated through twelve separate pieces of legislation.[367] The purpose of the Protected Areas Act, other than bringing into being the provisions of the Biodiversity Act, is to consolidate the establishment of proclaimed areas under one piece of national legalisation (see Table 3)[368] whilst retaining their original characterisation.

1. Forest Protected Areas

The National Forest Act[369] recognised that 'natural forests and woodlands form an important part of that environment and need to be conserved and developed according to the principles of sustainable management'.[370] The purpose of the Act was, *inter alia*, to 'provide special measures for the protection of certain forests' which necessitated bringing into formal protection natural forest and forest/woodland/ grassland mosaics.[371] The Act makes provision for establishment of a State Forest, or a specially protected area.[372] The latter, in terms of this Act, is further subdivided into

- Forest nature reserve, [373]
- Forest wilderness area,[374] or
- Any other type of protected area which is recognised in international law or practice.[375]

The Protected Areas Act includes the forest nature reserve and the forest wilderness area in terms of its consolidation.[376] It is uncertain whether the 'specially protected forest area'[377] in the Protected Areas Act equates to the establishment of a State Forest in terms of Section 8(1)(*a*) of the National Forests Act or the 'any other type of protected area' mentioned above or in Section 8(2) of the Act. In the absence of an alternative, and the statement in Section 9(*d*) associating these categories with previous declarations in terms of the National Forest Act, it is assumed that the 'specially protected forest area' refers to either the State Forest or the 'any other type of protected area'.

The establishment of a 'specially protected forest' 'forest nature reserve' or a 'forest wilderness area' would subject the management authority to the provisions provided for in both the National Forest and the Protected Areas Acts as the protected area components of the National Forest Act have not been repealed by the Protected Areas Act.

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[367] Table 3 in note 246.
[368] See arguments on page 42 onwards.
[369] Act 84 of 1989. Hereon referred to as the National Forests Act.
[370] Preamble to the Act.
[371] Section 7(2) *op cit.*
[372] Section 8(1) *op cit.*
[373] Section 8(1)(*c*)(i) *op cit.*
[374] Section 8(1)(*c*)(ii) *op cit.*
[375] Section 8(1)(*c*)(iii) *op cit.*
[376] See Section 9(*d*) of the Protected Areas Act.
[377] *Ibid.*

2. Lake Areas

In terms of the Lake Areas Development Act,[378] the national Minister may

'declare any land comprising or adjoining a tidal lagoon, a tidal river or any part thereof, or any other land comprising or adjoining a natural lake or a river or any part thereof, which is within the immediate vicinity of a tidal lagoon or a tidal river, to be a lake area under a name to be assigned to it in that notice.'[379]

In the absence of consultation, and in keeping with concurrent competence of nature conservation,[380] with the provincial Minister, establishment of a Lake Area may only take place on land that is directly administered by a national department.[381] In addition, the Act makes provision for a Lake Areas Development Board[382] to administer this type of protected area. To date, this type of Board has not been established and the Lake Area protected areas proclaimed in terms of this Act are administered by the National Parks Board. It is for this reason that KwaZulu-Natal does not have this type of protected area in the province.[383] It is uncertain why the KwaZulu-Natal Nature Conservation Board has not been able to assume the role of a Lake Areas Development Board for this province, given that the objects and powers of the two boards are strikingly similar,[384] and the differences are less or equivalent in significance when compared to that of the National Parks Board.[385]

Nonetheless on commencement of the Protected Areas Amendment Act, the Lake Areas Development Act will be repealed in its entirety.[386] Lake areas currently proclaimed will be considered as 'national parks'.

3. Marine Protected Areas

The concept of the marine environment having significantly more internal interconnectedness than ecological links with the terrestrial environment, led to the justification to retain the marine protected areas (MPAs) separate from the terrestrial protected areas. The Marine Living Resources Act[387] does, however, include mention of terrestrial areas[388] which may suggest that this Act may be used to establish protected areas that traverse the high watermark. Given the strong marine focus of the Act, this interpretation would be tenuous and would only be invoked where there are significant linkages and benefits (from a marine and the objectives of the Act's perspective) to include terrestrial elements within the proclamation. The Protected Areas Act includes

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[378] Act 39 of 1975.
[379] Section 2(1)(*a*).
[380] See note 41.
[381] Section 2(1).
[382] Section 3.
[383] See note 44.
[384] See, *inter alia*, Section 11 of the Lake Areas Development Act 39 of 1975 and Section 5 of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997.
[385] See National Parks Act 57 of 1976.
[386] See Section 90 of the Protected Areas Amendment Bill.
[387] Act 18 of 1998
[388] For example Section 43(2)(*d*).

MPAs as one of the kinds of protected areas in Section 9. Other than enabling the Minister to co-ordinate the establishment and management of MPAs in relation to the national biodiversity framework,[389] the Act enables an abutting marine and terrestrial protected area to be managed by one authority.[390]

The establishment of a MPA would full into two broad categories, namely No-take areas or Multiple or Restricted use areas, and would apply equally to the four types of protected areas discussed above.

No-take Areas

No-take Areas, or 'Sanctuary Areas'[391] in South Africa, are protected areas where the extraction of any marine life is prohibited. These restrictions apply equally to commercial, recreational and traditional fishing or collection of biota. These areas are aimed directly at addressing issues and impacts related to consumptive exploitation (harvesting) of marine resources. No-take areas are established for a variety of reasons, namely

- Protection of representative samples of biological diversity;
- Protection of endangered species or habitats;
- Protection of critical sites for reproduction and growth of species;
- Protection of sites with minimal direct human stress to maximise their resilience or self-repair from other stresses such as increased ocean temperature;
- Settlement and growth areas providing spill-over recruitment to fished stocks in adjacent areas;
- Focal points for education about the nature of marine ecosystems and human interactions with them;
- Sites for nature-based recreation and tourism; and
- Undisturbed control or reference sites serving as a baseline for scientific research and for design and evaluation of management of other areas.

Multiple or Restricted Use Areas

Multiple or Restricted Use Areas aim to incorporate and harmonise a number of consumptive and non-consumptive uses. In so doing, they provide a platform to address a wide range of marine resource and habitat management dilemmas.[392] Multiple use MPAs may incorporate a no-take MPA as a core area to a structured

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[389] See page 36.

[390] Section 38(4) of the Protected Areas Act.

[391] A Wilderness Area would be the terrestrial equivalent. The wilderness category, in terms of the IUCN definitions, makes provision for a Class 1 Wilderness or a "no-intrusion" areas, where all access (other than *bono fide* research that requires a non intrusion control, and emergency management to protect this status) is prohibited in order to protect sensitive resources such as breeding sites for seabirds or marine mammals.

[392] T Agardy 'Advances in marine conservation; the role of marine protected areas.' *Trends in Ecology and Evolution* 7 (1994) at 267.

special and temporal[393] zoning system that provides for protective and permissive management regimes. The zoning is typically based on a relationship between the accommodation of various impacts (sport or recreational fishing) and the ability of the environment to absorb such impacts. In so doing, those areas that are considered to be ecologically or culturally critical or sensitive, are excluded from use. In addition, zoning may help to prevent conflict between several types of use of the marine environment, such as recreation and tourism.

Marine and coastal matters (other than heritage matters) fall principally in the domain of the Department of Environmental Affairs and Tourism (DEAT) who are responsible for, *inter alia*, policy formulation, biodiversity protection, offshore resource management and research. The management of these activities is undertaken by the Marine and Coastal Management (MCM) Chief Directorate. MCM has two primary functions, (a) to administer and enforce the Marine Living Resources Act[394] and (b) to advise the Minister on scientific matters relating to the fishing industry and coastal management. The latter includes the proclamation of MPAs and their management. A third function of MCM is to ensure that other relevant legislation that pertains to the environment[395] is enforced.

As discussed above,[396] 'sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries [and] wetlands [...] require specific attention in management and planning processes, especially where they are subject to significant human resource usage and development pressure'.[397] NEMA is silent on the nature of the 'attention' that is to be awarded to the coastal and marine environment other than making provision for various environmental implementation plans which are prepared by the national departments identified in the Act.[398] It is a requirement of these plans to demonstrate how the principles in NEMA are to be given effect. To date, there is uncertainty whether these plans, in particular involving the natural environment, have been drafted. The marine and coastal environment would form one of South Africa's bioregions and would require a co-ordinated strategic hierarchy of management plans[399] which would provide the conceptual and philosophical or thematic conservation framework as well as identify the priorities and associated activities for the effective conservation of the marine resources.

Whilst it is understood that the terrestrial areas abut the marine, gaps remain. These gaps, for example, manifest themselves in the little protection afforded to estuaries or the co-ordinated and integrated development (or protection) of the coastal zone. For KwaZulu-

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[393] P Ticco 'A comparative analysis of multiple-use coastal and ocean management techniques in marine protected areas Coastal Zone 2' at 2218. In OT Magoon (Editor) Proceedings of the Eighth Symposium on Coastal and Ocean Management (1993) New Orleans, Louisiana (1993).

[394] Act 18 of 1998.

[395] Of which DEAT is a lead agent.

[396] See page 32.

[397] Section 2(4)(r) of Nema.

[398] See Section 13 and 14 *op cit.*

[399] Bioregional and biodiversity management plans in accordance with Sections 38 and 40 of the Biodiversity Act.

Natal, a draft policy[400] has been published for comment on the management of the coastal zone. This policy, whilst making sound provision, does not adequately embrace formal conservation or protection of coastal resources and the linkages between the terrestrial and marine environments.

In terms of Section 4 of the Protected Areas Amendment Bill, MPAs are excluded from the provisions of the Protected Areas Act other than those catered for in Chapter 1 (Interpretation of the Act), Chapter 2 (System of Protected Areas) and Section 48 (prospecting and mining). Thus MPAs would not be subject to, *inter alia*, an equivalent management plan unless it abuts onto a terrestrial protected area. In so doing, the drafters of the legislation have reinforced the unnatural division between marine and terrestrial protected areas. Whether this division is significant remains to be seen.

4. South African Islands

The Sea Birds and Seals Protection Act[401] was promulgated to, *inter alia*, protect the South African rocks and islands as a means to control the capture and killing of sea birds and seals and to regulate the collection of bird and seal guano, and bird eggs and feathers. The Act achieves the conservation of seals and sea birds by prohibiting any access onto the islands by anyone[402] unless permitted by the Minister.[403]

The harvesting of the animals or their products would require a formal application for either an exemption[404] from the provisions in the Act or for a permit.[405] The Minster may grant a permit subject to various conditions that would ensure the sustainability of the use.[406] For purposes of, *inter alia*, scientific investigation, experiment or research in connection with sea birds or seals, the Minister may grant an exemption to those persons or institutions seeking to undertake such activities.[407]

The Act, thus, provides a significant level of protection to all fauna and flora that may occur on these islands. A significant shortfall of the Act is that it does not protect the marine habitats on which the sea birds and seals depend. The feeding grounds may be subject to intense fishing which would place nutritional pressure on seal and sea bird populations, thereby reducing their fitness and fecundity, and bringing these species into conflict with the fisheries. This conflict results in unauthorised culling of the animals at sea, or greater pressure being placed on the Minister to decrease the stocking rates on the islands. A third consequence of the limiting of the fish stocks within the feeding grounds of the seals and birds is an increase in inter-specific competition. Under these circumstances, the seals are seen to be superior competitors thereby increasing the

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[400] Department of Agriculture and Environmental Affairs. Draft KwaZulu-Natal Coastal Management Policy. Provincial Gazette for KwaZulu-Natal 11 of 23 September 2004.
[401] Act 46 of 1973.
[402] Section 3(*a*).
[403] Section 3.
[404] Section 6.
[405] Section 4.
[406] Section 4(2) and (3).
[407] Section 6(1).

pressure on the sea bird populations. It is primarily due to this consequence that the Act is currently being revised and a national policy for seabirds and shorebirds being drafted by the Department of Environmental Affairs and Tourism.[408]

5. Mountain Catchment Areas

The Mountain Catchment Areas Act (MCAA)[409] provides for the conservation, use, management and control of land situated within mountain catchment areas.[410] The mountainous areas of South Africa are considered a critical natural asset particularly as water catchment areas for the country. In addition, mountainous areas are typically areas of high biodiversity given that they span large geographic, climatic, geomorphological and altitudinal ranges. It is common for these areas to support a high number of endemic species and many mountain ranges are internationally recognised as centres of endemism. South Africa has two sets of mountainous areas, namely, the Cape Fold Region and the Mountains of the Great Escarpment, especially of the Eastern seaboard. The latter includes the Drakensberg Mountains which abuts onto Lesotho. It is assumed that these areas would be the primary focus of the MCAA, however, there are many other less extensive mountain ranges existing throughout South Africa. There are no clear definitions, within the South African jurisprudence, of a "mountain" other than that of "mountain catchment area" in terms of the MCAA.[411,412] This area is simply described as an area defined and declared by the Minister of Environmental Affairs by notice in the gazette to be a mountain catchment area.[413] This definition fails to describe the characteristics of either a mountain or the associated catchments which may result in inconsistency in interpretation. The advantage of such a definition lies in that the Minister would be obliged to define clearly both the area as well as those characteristics (landscape values) which are to be conserved.

In the absence of the Protected Areas Act, the overall purpose of the MCAA is to ensure the continued production of clear, pure water within the proclaimed mountain catchment. To achieve this, the Act focussed primarily on maintaining a reasonably mature (indigenous)[414] vegetation cover. Thus, a mountain catchment area, at a superficial level, would qualify as a protected area. The maintenance of indigenous vegetation cover may not necessarily be sufficient to ensure the conservation of specialist or sensitive flora (e.g. endemics) or fauna. The inclusion of this category of protected area into Section 9 of the Protected Areas Act ensures that biodiversity within the catchment is appropriately

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[408] See List of South African Policy Documents (1994-2005). http://www.lib.uct.ac.za/govpubs/PolicyList2004.htm. Accessed on 10 January 2005.

[409] Act 63 of 1970.

[410] Long title of the Act.

[411] Section 1 and 2 *op cit.*

[412] A mountain is a landform that extends above the surrounding terrain in a limited area.*

* Chambers Dictionary (1996).

[413] Section 2 *op cit.*

[414] This is not explicit in the Act. However, the incorporation of the term 'conservation' into the long title and the understanding that alien vegetation is a major consumer of water (hence the Working for Water programmes in catchment areas), indicated that the object of the Act is to ensure that the indigenous vegetation cover is retained.

managed, and hence conserved, to achieve the objects of the MCAA. This management would extend beyond the implementation of fire protection plans.[415]

As is the situation with the other categories of protected areas, the establishment of a mountain catchment area would impose various limitations on the landowners and land managers within the defined area. The mountain catchment area differs significantly from the other protected areas in that the MCAA makes provision for compensation in respect to patrimonial loss caused by landowners or occupiers complying with various directives issued by the Minister on proclamation of the protected area.[416] This provision is due to the fact that the proclamation of a mountain catchment area does not require a voluntary commitment of the landowner and may be imposed by the Minister. The production of clear, uncontaminated water by action of biodiversity (ecosystem services) is seen to be in the country's best interest and is critical for the wellbeing of its citizens. Thus any significant wetland that functions as, or is part of a local or regional catchment or headwater area, that is not located on the coastal plain, may be considered for protection under this Act.

6. National Botanical Gardens

Section 33 of the Biodiversity Act makes provision for the establishment of national botanical gardens.[417] As with the other type of protected areas (excluding the mountain catchment area) provided for in Section 9 of the Protected Areas Act, the Minister of Environmental Affairs may declare a national botanical garden by means of Government Gazette on consultation with the relevant Minister or private landowner.[418]

Botanical gardens are generally considered as a place where a wide variety of indigenous plants are cultivated for threatened plant recovery, scientific, educational, and ornamental purposes and often include a botanical library, herbaria, and greenhouses. Many South African botanical gardens include relatively large pristine areas.[419] These areas are often superlative examples of the biome in which they occur. However, these would not be considered as part of the national network of protected areas[420] as they would not be registered as a protected area in terms of Section 10 of the Protected Areas Act. Under these circumstances it would be, thus, advisable to proclaim these botanical gardens as a protected area in terms of the Protected Areas Act to ensure that they are subject to an

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[415] Section 8 of Act 63 of 1970. The MCAA views fire as the primary tool for the management and conservation of the catchment.

[416] Section 4 *op cit.*

[417] Previously this was under the Forest Act 122 of 1984.

[418] Section 33(1) and (2).

[419] For example, Kirstenbosch National Botanical Garden includes 528 ha of fynbos flora and forest, Harold Porter National Botanical Garden includes 190.5 ha of fynbos and Karoo Desert National Botanical Garden includes 144 ha of Namaqualand flora.

In contrast, KwaZulu-Natal's smallest protected areas include Beachwood Mangroves Nature Reserve (76 ha), Bluff Nature Reserve (45 ha), Doreen Clark Nature Reserve (5 ha), and Sileza Nature Reserve (15 ha) and hence are smaller or of equivalent size to the botanical gardens. It is on this reasoning that the botanical gardens may be argued to be protected areas.

[420] See discussion on page 36.

appropriate management plan and this plan seeks to achieve the purpose for which the area was set aside for protection.

7. Special Nature Reserves, Wilderness Areas and Protected Environments

In terms of Section 9(*a*) of the Protected Areas Act, this is a 'catchall' category of protected areas in that it caters for all the protected areas that are not specifically regulated by other national statutes. Thus, those protected areas that were promulgated under provincial legislation would be incorporated into this category. The Act makes provision for the incorporation of nature reserves (and any other type of reserve that can be defined as a nature reserve)[421] and protected natural environments[422] to be regarded as nature reserves and protected environments respectively.[423] In addition, the 'special nature reserves' previously proclaimed under Section 18 of the Environment Conservation Act[424] would be regarded as 'special nature reserves' in terms of the Protected Areas Act.[425] Special nature reserves or nature reserves proclaimed under the National Forests Act,[426] in terms of Section 15(2) of the Protected Areas Act, would be considered these types of protected areas in the Protected Areas Act. Thus these areas, unlike the specially protected forests, forest nature reserves and forest wilderness areas,[427] are to be managed in accordance with the provisions of the Protected Areas Act.[428]

Special Nature Reserves and Wilderness Areas

In South Africa, special nature reserves[429] and wilderness areas[430] have the highest conservation status of all protected areas. These areas are defined as a natural place of exceptional scenic beauty or sensitive ecosystems, species, geological or physical

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[421] For example a 'game reserve'. There are currently six protected areas in KwaZulu-Natal that were proclaimed as game reserves under the Nature Conservation Ordinance 15 of 1974.

[422] As defined in Section 17 of the Environment Conservation Act 73 of 1989.

[423] Section 12 of the Protected Areas Act.

[424] Act 73 of 1989.

[425] Section 18(4) of the Protected Areas Act.

[426] Act 84 of 1989.

[427] Declared under Section 8 of the National Forests Act.

[428] Section 15(2) of the Protected Areas Act.

[429] This type of protected area is equivalent to the IUCN's Category Ia protected area - Strict Nature Reserve: Protected Area managed mainly for science. This area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.*

* IUCN Protected Area Categories http://www.unep-wcmc.org/protected_areas/categories/~main. Accessed on 06 January 2005.

[430] The wilderness area is equivalent to IUCN's Category Ib protected area -Wilderness Area: Protected Area managed mainly for wilderness protection. This is a large area of unmodified or slightly modified land and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition. *

* IUCN Protected Area Categories http://www.unep-wcmc.org/protected_areas/categories/~main. Accessed on 06 January 2005.

features,[431] that deserves the highest possible protection. The sensitivity of a special nature reserves and wildernesses to the impacts associated with post industrial man[432] often requires these areas to be a core area of a larger protected area or to be buffered. The buffering of a special nature reserve or wilderness area may be achieved by means of establishing a nature reserve or a protected environment surrounding the special nature reserve or wilderness area.

The primary reason for the proclamation of special nature reserve is to establish benchmark areas against which impacts of post industrial man may be measured through research and monitoring.[433] Thus access to these areas would be restricted to, other than that required for official management and security purposes, persons undertaking *bona fide* research that requires such areas as the control or point of reference[434] or a person recording a news event that occurred in the reserve or an educational or scientific programme.[435] The Act does not allow, however, 'any person [having been granted exemption of the access restrictions by the management authority] desiring to view the special nature reserve on account of its special nature or characteristics' access to the protected area, as was originally provided for in Section 18 of the Environment Conservation Act. This exclusion would have been set in place to prevent the development of a tourism industry on the boundaries of special nature reserves. Given this, it is unlikely that tourism use of the area may be achieved through the setting of the norms and standards[436] prescribed by the Minister, through the co-management agreements,[437] or through the management plan. Thus the special nature reserves, and the superlative beauty therein, would be unavailable for viewing by the general public.

There are few areas in South Africa that would qualify as a special nature reserve (e.g. Marion Island, Antarctica)[438] and it is unlikely that other areas, particularly terrestrial, would be identified for proclamation.

Wilderness areas, although proclaimed as a type of nature reserve or part thereof,[439] are subject to similar access constraints as the special nature reserve. The primary difference

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[431] Section 18(2) *op cit.*

[432] This is on an understanding that anthropogenic modification of the landscape is one of the determinants of structure and species composition of natural areas, in that human kind have colonised and abandoned the earth surface for extensive periods and, as a result, many ecosystems have evolved in response to this impact (e.g. man's use of fire). A distinction is, however, drawn between this type of impact and that caused by modern man. The latter often results in habitat loss, local or global species extinction, and loss in ecosystem function and vitality. In addition, land transformation associated with the activities of modern man significantly degrades the sense of place or the naturalness of the environment through negatively impacting on the aesthetics.

[433] Section 18(2)(*b*) *op cit.*

[434] Section 45(3)(*a*) and (*b*) *op cit.*

[435] Section 45(3)(*c*) *op cit.*

[436] Section 11 *op cit.*

[437] Section 42 *op cit.*

[438] It is questioned whether Antarctica qualifies as a 'special nature reserve' as many of the research facilities and associated waste products have not been removed and have been allowed to sink into the icecap. Thus components of the area have been permanently contaminated by the activities of industrial man, in so doing undermining the protected status of this continent.

[439] Section 26(1) *op cit.*

being that the wilderness area may be[440] subject to low impact and low density tourism. In keeping with this, tourism access may only be by means of non-mechanised methods. The aim of such constraints is to allow reasonable access whilst strictly conserving the sense of solitude.[441,442] Thus wilderness areas would need to be of sufficient size or particular topography (e.g. deep gorge) in to ensure that, *inter alia*, noise and visual intrusions are excluded or are effectively buffered.

To achieve this, it is common place for wilderness areas to be defined through either proclamation or zonation within existing protected areas. A second option, particularly when an protected area has not been developed, is to re-proclaim the protected area as a wilderness area and to establish various protected area partnerships with neighbouring private and communal landowners. The advantage of this is that the tourism development would be located outside of the current protected area, thus potentially bringing greater benefits to the neighbouring landowners.

Protected Environments

Protected environments, defined in Section 28 of the Protected Areas Act, are potentially the most useful type of protected area to conserve both natural and cultural[443] heritage. The strength of the protected environment lies in its flexibility in restricting those landuse activities that may threaten the land-, coastal- or seascape to be conserved. The protected environment also enables the State and private and communal landowners to co-operate and 'take collective action to conserve biodiversity' and to establish legal status for this combined action.[444] It, therefore, enables landowners to conserve and enhance the products of particular or critical entities within the landscape without having to forego on ownership or other rights associated with this type of protected area. It may be used for expansive areas of multiple determinants where there is uncertainty in terms of the sensitivities[445] of the system, or where acute control measures are required. Thus the protected environment would serve as a platform on which conservation partnerships may be built, thereby reducing the conflict and mistrust that has been generated between previously disenfranchised and farming communities[446] or the perception that the legal protection of the landscape is reserved for the white elite who are able to afford the personal costs associated with the establishment of protected areas.[447]

From a conservation perspective, the value in a protected environment lies in its flexibility. As mentioned it may be used to protect an environment (threatened or sensitive habitat, cultural or aesthetic area, labile or sensitive geological or topographic feature, etc)[448] that is required to be conserved in terms of the national biodiversity

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[440] If granted by the Minister – Section 26(1)(*c*) *op cit.*
[441] See note 432.
[442] See paralleled arguments to conserve natural landscapes as part of conserving living heritage below.
[443] See page 93 below.
[444] Section 28(2)(*b*) of the Protected Areas Act.
[445] Where the capacity of the system to absorb the impacts is limited.
[446] See note 9.
[447] See Rachel Wynberg (2002) *op cit* at 234.
[448] See Section 28(2)(*c*) *op cit.*

framework discussed above.[449] The protected environment may also be used to protect existing protected area through buffering a special nature reserve, world heritage site, nature reserve[450] or national park.[451] The buffering may be directed at the biodiversity level in that it may be used to reduce the contrast over the boundary, thereby reducing both the political and social pressure[452] on the protected area or ensuring a compatible landuse. Finally, the protected environment may be used to safeguard components of habitat's or ecosystem's outputs which are vital for sustaining specialised habitats within the protected area. The buffering may also be directed at maintaining or protecting the sense of place, spiritual values or sense of solitude, by limiting visual impacts (buildings, lights, etc) manifested inside the protected area.

8. National Parks and Nature Reserves

The Protected Areas Act makes provision for the establishment of a nature reserve,[453] and the Amendment Bill makes provision for the incorporation of national parks into the Act. There is little to differentiate between the two categories.[454] Conceptually and in accordance with the IUCN Category II,[455] national parks are likely to be large protected

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[449] See page 36.

[450] Section 28(2)(*a*) *op cit.*

[451] Section 8(a)(a) of the Protected Areas Amendment Bill.

[452] The use of parochial* and scientifically directed and adaptive conservation management techniques within the protected areas, and the absence of structured land management support in these communities from, *inter alia*, the extension service of the Department of Agriculture and the Conservation service,** has resulted in a sharp contrast between the value and abundance of natural resources in and outside of the protected area. The diminished abundance of natural resources outside of the protected areas has led to significant political and social conflict between neighbouring communities and the conservation agency.

* Here conservation agencies were focussed on predominantly large, charismatic and threatened game (e.g. black and white rhino, elephant, etc) and did not consider the social impacts that the protected area may have on the neighbouring communities, or the cultural values (e.g. graves of ancestors, spiritual areas, etc) that may have been encompassed within the protected area.

** During the 1970's and 1980's, for example, the then Natal Parks Board set in place an effective extension service in terms of the Farm Game and Conservation Extension Officers. These highly trained and skilled staff provided a land management service to predominately white landowner's to establish private game farms or to establish conservancies to ensure those areas not transformed by farming were retained and managed in a near natural state, for the betterment of conservation of predominantly game and significant plant communities and habitats.‡ It was only during the 1990's that the conservation agencies of KwaZulu-Natal looked to the rural black communities to form conservation partnerships by introducing 'community conservation reserves / areas'.

‡ See for example, Simon Metcalfe 'Natural Resources Tenure in the Context of Sustainable Use' Report to the Southern African Sustainable Use Specialist Group (2002) at 10.

[453] Section 9(*a*) *op cit.*

[454] On a political front, national parks have traditionally been proclaimed by the National Parks Board and the provincial conservation agencies have traditionally exercised their provincial legislation. See note 43.

[455] National Park is a protected area managed mainly for ecosystem conservation and recreation in that it is designated to

- protect the ecological integrity of one or more ecosystems for this and future generations:
- exclude exploitation or occupation inimical to the purposes of designation of the area: and

areas and would be considered to be of greater conservation status than the nature reserve. The Protected Areas Act, however, does not make provision for a hierarchy of protected areas as all listed in Section 9 contribute to the national protected area network.[456]

The national park category in the Protected Areas Amendment Bill embraces the IUCN definition in that one or more ecosystems are to be included within the bounds of the proclamation.[457,458] The nature reserve is limited to conserving, *inter alia*, significant natural features. This may include one or more ecosystems but is more likely to be applied to conserving components of ecosystems in terms of priority habitats, range of species or natural features,[459,460] and these protected areas are to complement the system of national parks.[461] Another difference between the two protected areas is that the national park would have minimal harvesting of the natural resources[462] whereas the nature reserve may provide for the 'flow of natural products and services to meet the needs of a local community" and the continuation of such traditional consumptive uses as are sustainable.[463,464]

In terms of establishment of new or the expansion of existing protected areas, the possibilities of a complete ecosystem being available for protection in the terrestrial environs are small. Many of the ecosystems have already been subjected to various degrees of development in terms of roads, towns, cities, etc. For example, the Cape floral kingdom and the Natal Midlands. Both systems are considered of international

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- provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible*.

* IUCN Protected Area Categories http://www.unep-wcmc.org/protected_areas/categories/~main. Accessed on 06 January 2005.

[456] Had there been a hierarchy of protected areas, it would leave the provincial conservation bodies vulnerable to the National Parks Board 'cherry picking' the largest and most productive protected areas for their administration and management. Sixty-seven percent of the protected areas in KwaZulu-Natal may become a national park under the administration of the National Parks Board.

[457] Section 21(2)(a)(ii).

[458] Many of the current national parks e.g. Bontebok National Park (see note 211) would not qualify as a national park in terms of the provisions of the Protected Areas Act. These protected areas would, thus become nature reserves. Likewise there are many nature /game reserves that conserve one or more ecosystems, particularly in KwaZulu-Natal e.g. (Itala Game Reserve and Hluhluwe iMfolozi Park and particularly the two World Heritage Sites) which are likely to become national parks.

[459] Section 2(b) of the Protected Areas Act.

[460] These may be significant at the local, regional, national or international level.

[461] Section 7(*a*) of the Protected Areas Amendment Bill.

[462] Section 20(2)(*b*) *op cit.*

[463] Section 23(2)(*c*) and (*d*) of the Protected Areas Act.

[464] Thus the nature reserve, as defined in the Protected Areas Act, would equate to the IUCN Category IV protected area (Habitat/Species Management Area - which would be to conserve habitats and/or to meet the requirements of specific species) and a Category VI protected area (Managed Resource Protected Areas)- which is managed mainly for the sustainable use of natural ecosystems and to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.*

* IUCN Protected Area Categories http://www.unep-wcmc.org/protected_areas/categories/~main. Accessed on 06 January 2005.

importance, are highly threatened and irreplaceable. Using these two areas as an example, the establishment of new national parks or the expansion and amalgamation of existing nature reserves to form a national park would need to consider incorporating these developed areas by means of zonation. Here the zones would need to indicate what activities may take place in different sections of the area, and the conservation objectives of those sections.[465] The national park, under these circumstances, may span a number of local and district municipalities and hence would form a platform for co-operation of the area and the integration of various sectoral plans and integrated development plans.[466] It would also form the basis for co-operative management by local communities and individuals, as well as organs of state in accordance with the provisions of co-operative management of protected areas in the Protected Areas Act.[467]

Cultural Heritage Protection

As has been discussed earlier, the land- and coastalscape has become an integral part of the cultures of South Africans. This relationship is not only based on sedentary artefacts such as archaeological phenomena, historical buildings, memorials etc, but includes the metaphysical phenomena such as sense of place or the visual fabric of a cultural entity or practice. In this, it is commonplace for each plant and animal species, type of soil and viewscape to have a corresponding linguistic expression, a category of knowledge, a practical use, a religious meaning, a role in ritual, and an individual or collective vitality.[468] It is for this reason that it would be inappropriate not to consider the contribution that cultural heritage conservation may make to biodiversity conservation.

1. Cultural Protected Areas

In terms of the National Heritage Resources Act[469] and the KwaZulu-Natal Heritage Act[470], the Minister or MEC may declare a Protected Area.[471] This option provides for the establishment of an area surrounding the national heritage site (i.e. a buffer)[472] as well as regulations for the specific management and safekeeping of the site.[473] Whereas the primary focus of the protected area is to conserve or protect the physical artefacts of cultural heritage, biodiversity surrounding the site would be naturally conserved. Given the relationship that may exist between the occurrence of biodiversity and humankind's activities,[474] significant biodiversity elements may be included into the protected area. This haphazard approach, and the current application of cultural heritage legislation, can only augment the more formal conservation of biodiversity as discussed above.

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[465] Section 41(2)(g) *op cit.*
[466] See brief discussion on page 94.
[467] See Section 42.
[468] VM Toledo 'La Diversidad Biologica de Mexico' (1998). Quoted in Earl Joseph and Dick Parris 'Visions of Change: Social Ecology and South African National Parks.' Development Communication Corporation (2000) at 18.
[469] Act 25 of 1999.
[470] Act 10 of 1997.
[471] Section 28 op cit.
[472] Section 28(1)(a) op cit.
[473] 28(5) op cit.
[474] See note 80.

Both the heritage legislation and the Protected Areas Act make provision for the conservation of 'cultural landscapes' that could be defined under living heritage.[475] These landscapes could be easily extended to include natural landscapes in that it is, *inter alia*, a fundamental component to the 'holistic approach to nature'[476] to which a sense of wellbeing, awe, mystique and mystery, etc are attached by people and societies. Internationally, this is not a new phenomenon. Large areas have been set aside for living cultural heritage as a means of protecting core components of indigenous people's culture, for example the reservation system in Canada and the United States, and the aboriginal native title and land rights programme in Australia. In South Africa, the conservation of natural environment as a cultural or living heritage land- and seascape has been poorly developed with the legislation being primarily focussed on archaeology and the built environments.[477] The conservation of natural viewscapes, thus, remains a major challenge for the South African Heritage Resources Agency in that it 'must identify those places with qualities so exceptional that they are of special national significance in terms of the heritage assessment criteria [to which living heritage may be attached][478] [...] and must investigate the desirability of their declaration as national heritage sites.'[479] The concern of establishing a biodiversity focussed protected area under this Act may result in a 'fixed frame' or 'desired state' approach to protected area management. This approach, which may achieve a static state that would be reflective of period in time to which the living heritage is assigned, may be undesirable in the long term. Firstly, the term 'living heritage' includes an element of dynamics in that it updates itself according to the growth of the culture.[480] Secondly, the spatial and temporal arrangement of biodiversity would be a natural consequence of a dynamic, and often complex, management (including non-management) system which is typical of the African landscapes and the practices of the indigenous peoples therein. The fixed frame approach may result in the loss of vigour and species and ultimately a loss in the viewscape character.

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[475] '[L]iving heritage means the intangible aspects of inherited culture, and may include- cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships.'*

* Section 2 (*a*) to (*h*) of the National Heritage Resources Act 25 of 1999.

[476] Section 2 *op cit*.

[477] Andrew Blackmore (In Prep) 'Who is subservient to whom: South African Cultural Legislation and others v South African Criminal Legislation? A case study to determine the role cultural heritage legislation could and should play in tragic recent history by safeguarding potentially significant living cultural heritage.'

[478] Section 3(2)(*b*) *op cit*.

[479] Section 27 *op cit*.

[480] Thus living heritage refers to places and objects on the landscape that are closely associated with a continuing traditional way of life. These places, to which oral traditions are attached, typically include sacred forests, mountains, rocks, caves, pools and rivers or places where an important event took place. The associated cultural landscape, therefore, retains an active social role, which may assume powerful reverence, religious, artistic or cultural associations of the natural element rather than material cultural evidence. The latter may be insignificant or even absent. As such the living heritage is dynamic and may change, or transform at regular intervals and even be lost.*

* Andrew Blackmore (In Prep) *op cit* at *fn 58*.

Section 28 of the Protected Areas Act may be used to declare a natural viewscape (landscape or 'coastalscape')[481] as a protected environment. The criteria for the establishment of a protected environment would include any area which is sensitive to development due to its, *inter alia*, natural characteristics[482,483] or scientific, cultural, historical, archaeological[484] or geological value, or scenic and landscape value.[485] Thus the proclamation of a protected environment would necessitate the purpose of the protected area being clearly defined in accordance with Section 17 of the Act. The purpose would thus need to complement both the cultural heritage and biodiversity conservation requirements. As a result the natural dynamics of the system may be retained over time.

The advantage of the protected environment is that it is not constrained to one aspect or dimension of conservation management and may play an important role in closing the gap between marine and terrestrial environments. In this case, one protected area may be proclaimed under one piece of legislation. Whereas, the alternative would be to establish terrestrial and marine protected areas independently with common boundaries, and to appoint a single management authority to manage the combined area as an integrated protected area.[486] In addition the use of a protected environment may assist private individuals and communities[487] with the tools to safeguard land- and coastalscapes that are seen to be integral to their heritage.

Mixed Protected Areas

As discussed above,[488] various components of the land-, coastal- and seascape may contain both important biodiversity and cultural heritage.[489] Prior to the proclamation of the Protected Areas Act, the World Heritage Convention Act[490,491] was the only South African statute that made provision for the establishment of a protected area that

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[481] For the purpose of this argument, the coastalscape is defined as the interface between the marine and the terrestrial system comprising of predominantly the frontal dune and sandy/rocky beach system.

[482] Section 28(2)(*c*)(*ii*).

[483] Here 'natural' would mean 'produced by or according to nature, to the natural world or human nature; provided by or based on nature; not miraculous or supernatural; not the work of humans, not artificial; not interfered with by humans'*

* Chambers Dictionary

[484] Section 28(2)(*c*)(*iii*).

[485] Section 28(2)(*c*)(*vi*).

[486] See Section 38 of the Protected Areas Act.

[487] Here this term includes indigenous communities, organised groups and fellowships and transcends political and racial categories.

[488] See page 16.

[489] A prime example of this in KwaZulu-Natal would be the uKhahlamba-Drakensberg Park which contains a vast number of endemic species as well as the world's finest examples of rock-art paintings. The presence of these phenomena led to this protected area being inscribed as the 23rd mixed World Heritage Site.* Examples of a mixed cultural and natural heritage site within the marine- and coastalscapes would include traditional harvesting areas, and ancient wrecks on or abutting coral reefs.

* See generally Sue Derwent Roger Porter and Trevor Sandwith. Maluti-Drakensberg Transfrontier Conservation and Development Programme. Ezemvelo KZN Wildlife (2003).

[490] Act 49 of 1999.

[491] See World Heritage Sites below.

conserved both cultural and natural heritage with equivalent status.[492] Thus, for regionally and nationally important cultural and natural heritage, joint protection could only be established through a joint proclamation of the protected area under both the relevant biodiversity conservation and cultural heritage legislation. Thus the protected area is at risk of being managed by two authorities under two separate management plans. Integration of activities may be achieved through an administrative level of management agreement, e.g. Memoranda of Understanding.

Other than making provision for the establishment of a protected environment for the conservation of a natural land- or coastalscape as a means to conserve a component of living heritage, the Protected Areas Act does not make provision to reinforce the intimate relationship between the biodiversity and components of cultural heritage. The Act thus does not bring simplification of protected areas in this arena. The World Heritage Convention Act, however, does make provision for the harmonisation of the cultural and biodiversity plans into one management plan and this plan can be integrated into sub-regional and regional sectoral plans (e.g. the Municipal Integrated Development Plans) in terms of the Local Government: Municipal Systems Act.[493,494]

World Heritage Sites

The most profound statement for the conservation of heritage was the establishment of the Convention Concerning the Protection of the World Cultural and Natural Heritage. This Convention was the product of the 17th session of the General Conference of the United Nations Educational, Scientific and Cultural Organisation meeting held in Paris in 1972. The Convention makes provision for the establishment of the World Heritage Committee to consider nominations and inscription onto the World Heritage List.[495] The Committee is assisted by two non-governmental organisations ICOMOS[496] and ICCROM.

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[492] Whilst the management authority is obliged to conserve and protect the cultural heritage that may occur within the protected area, the conservation of biodiversity often takes precedence. For example, it is common for a protected area which was established for the conservation of biodiversity to have an extensive inventory (species lists) and monitoring (annual game counts) and have little information on the archaeology or living heritage.*

* Personal observation of many South African protected areas.

[493] Act 32 Of 2000.

[494] A similar provision is made for in Section 33 of the KwaZulu-Natal Planning and Development Act 5 of 1998. Regulations to this Act have not been promulgated. The concept of the IDPs took hold in Schedule 2 of the Local Government Transition Act 209 of 1993.

[495] To date, 754 properties have been inscribed and of these 582 are cultural, 149 are natural and 23 are mixed (both cultural and natural) properties in 129 State Parties. In addition, the Committee maintains the list on World Heritage in Danger, on which 35 Properties have been listed in accordance with Article 11 (4) of the Convention. See the World Heritage website http://whc.unesco.org. Accessed on 21 April 2005.

[496] The Committee is assisted by two non-governmental organisations International Council on Monument Sites (ICOMOS) and International Centre for the Study for the Preservation and Restoration of Cultural Property (ICCROM). Both provide the Committee with expert review of the nomination and undertake the site inspections to verify the global significance of the natural and cultural heritage. In 1991, ICOMOS established the 'ICOMOS - International Committee on the Underwater Cultural Heritage' to assist in the adjudication of submerged heritage.

For inscription of a cultural site, one or more of the following broad criteria need to be fulfilled:[497]

(i) represent a masterpiece of human creative genius; or

(ii) exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design; or

(iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared; or

(iv) be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history; or

(v) be an outstanding example of a traditional human settlement or land-use which is representative of a culture (or cultures), especially when it has become vulnerable under the impact of irreversible change; or

(vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance (the Committee considers that this criterion should justify inclusion in the List only in exceptional circumstances and in conjunction with other criteria cultural or natural);

The most distinguishing feature of a World Heritage Site when compared to the other kinds of protected areas is that the power to define such a site does not lie with the Minister. This type of protected area can only be established once the World Heritage Committee has inscribed the site onto the World Heritage list. It is at this point, that the Minister would be obliged to establish and proclaim the protected area in terms of the World Heritage Convention Act. Once South Africa ratified the convention on 10 July 1997, the onus lies with the Minister of Environmental Affairs to nominate candidate sites for consideration by the Committee.[498] On nomination of the candidate site, it is automatically protected by the World Heritage Convention Act in terms of the provisions vested in Section 1(*xxiv*) of the Act. Should the committee not inscribe the site, the Minister (or by resolution of Parliament) may declare the candidate site as a 'Special Heritage Site' which is regulated and managed under this Act,[499] or the Minister may proclaim the area as a protected area in terms of Section 9 of the Protected Areas Act.

Another distinguishing feature of a World Heritage Site (and a Special Heritage Site and Special Nature Reserve) is that the proclamation of these protected areas includes the 'air space above the reserve or site to a level of 2500 feet above the highest point of the reserve or site'.[500] It is unfortunate that this restriction does not apply to all protected

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[497] See Article 1 of the Convention.
[498] Section 6.
[499] Section 1(*xxiv*)(*b*).
[500] Section 47(1) of the Protected Areas Act.

areas, and in particular those that include an element of sense of place to the array of conservation objectives (e.g. wilderness) or would be protecting elements that would be sensitive to disturbances associated with low flying aircraft. Section 47(5) does, however, allow for the Minister, with the agreement of the Minister of Aviation, to 'prescribe further reasonable restrictions on flying over protected areas.' Whilst this section is specifically written for special nature reserves and world heritage sites, the subsections generality infers that it may apply to all protected areas.[501]

The establishment of a protected area that conserves species, habitats and ecological processes, automatically tends to be an environment that preceded modern man. Thus a person experiencing such an environment may perceive the noise emanating from low flying aircraft as an intrusion into that natural space. In terms of biodiversity conservation, low flying aircraft may disrupt bird breeding, animal movements, increase stress amongst certain animal species, or may be a source of poaching (e.g. for rhino horn and elephant tusks) or unauthorised access to the protected area (i.e. wilderness areas). Based on this reasoning. it is assumed that the Section 47(5) of the Protected Areas Act may be applied to all protected areas that are sufficiently large to have effectively conserved the solitude discussed above.

[501] Alternatively, it may be argued that this provision may be additional restrictions other than the 2 500 feet restriction for special nature reserves or world heritage sites.

CHAPTER 5 : CONSERVATION PARTNERSHIPS

SPATIAL CONTEXT FOR THE EXPANSION OF EXISTING PROTECTED AREAS

Once a formal protected area has been established to conserve critical biodiversity elements or ecosystem services, and there remains a need to expand the protected area to include other important biodiversity elements (see Figure 3) or cultural, social, economic or functional values discussed above[502] and in the absence of additional arguments to establish other state managed protected areas (e.g. cultural protected areas),[503] the option of partnerships with private and communal landowners should not be overlooked. The nature of this partnership would be a function of the type, nature and flow of benefits and the status of the candidate land. The expansion of the protected area may involve including different types of landowner ship (Figure 8) in order to achieve the conservation goal. Thus, the model used to incorporate land must be sufficiently robust for this exercise to take place.

Until recently, legislation regulating protected areas and their management did not make provision for the establishment of partnerships between the conservation agency and neighbouring communities. Other than the dropping of fences between a private game farm and a protected area and the unfenced boundary being managed through a contract agreement, most partnerships have been focused on community conservation areas. These areas have often been separate from the proclaimed areas and have drawn on the conservation agency's expertise to establish, manage, introduce starter populations of game and establish various tourism ventures. Many of the community conservation reserves, by their nature are remote, small and well off tourism routes. Thus these areas, particularly in KwaZulu-Natal, were not sustainable and often collapsed.[504] Until land claims were lodged against protected areas, neighbouring communities did not play a major role in conservation decision making. Once land claims were registered following the 1994 elections, community participation in managing protected areas increased exponentially.[505]

The land claims, and their potential threat to the existence of protected areas, resulted in greater support for including local communities and their indigenous knowledge systems in the decision and management structures of these areas. To this end, the KwaZulu-Natal

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[502] See arguments on page 16 onwards.

[503] In terms of Section 28 of the National Heritage Resources Act 25 of 1999. This option provides for the establishment of an area surrounding the National Heritage Site (i.e. a buffer - Section 28(1)(a)) as well as regulations for the specific management and safekeeping of the site (Section 28(5)).

[504] Personal observation of the Community Conservation Areas within KwaZulu-Natal from 1990 to present in the employ of Ezemvelo KZN Wildlife.

[505] Rachael Wynberg *op cit* at 238.

Nature Conservation Board introduced the concept of Local Boards to advise on and direct the management of the protected areas in KwaZulu-Natal.[506]

The value local communities may bring to conservation management and the importance of recognising their contributions as a means of incorporating indigenous knowledge systems into conservation management and biodiversity conservation, and in keeping with international best practice trends,[507] is recognised in the Protected Area Act through provision of 'Co-management Agreements'.[508] The aim of the co-management agreements is to provide a mechanism for the legitimate importation of expertise into the management of the protected area, as well as empowering the conservation agency to form partnerships particularly in relation to those matters that involve the use and management of state assets (e.g. game).

[506] See Section 27 of the KwaZulu-Natal Nature Conservation Management Act 9 of 1997.
[507] For example Article 10 of the Convention on Biological Diversity and World Parks Congress Recommendation 5.25. See WPC themes on http://www.iucn.org. Accessed on 14 November 2004.
[508] Section 42.

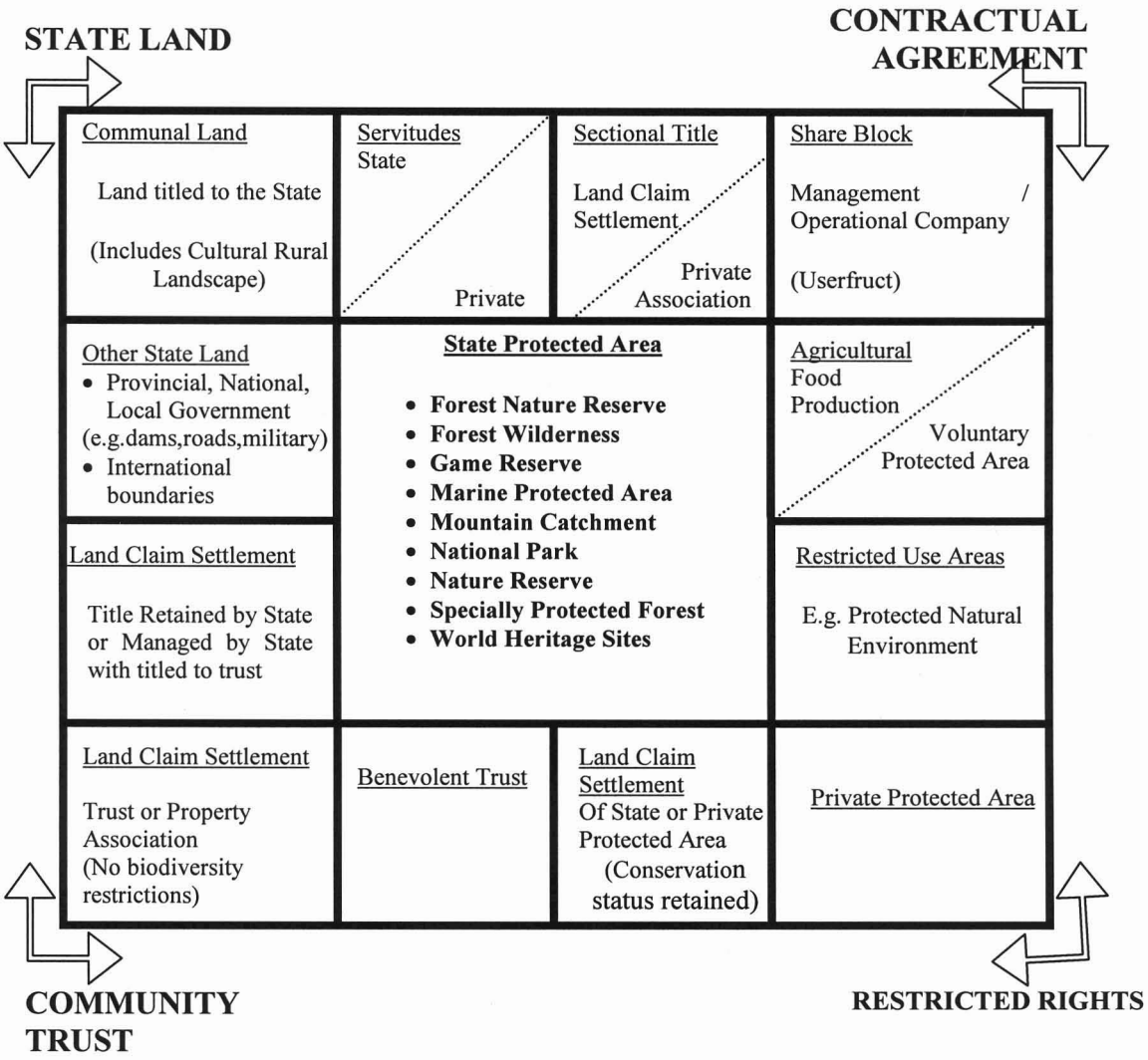

Figure 8: A schematic representation of the possible land categories that a protected area may abut onto or be in close proximity to.

The Local Boards, in KwaZulu-Natal, together with the co-management agreements form an important platform for the expansion of the protected area network on two fronts.

The first is that the management authority is obliged[509] to form meaningful partnerships within the existing protected area. This internal partnership would form the platform for the expansion of the protected area. Within this scenario, it is likely that there would be an overlap between the expertise or zone of influence of those members of the community with whom a partnership is established and those important elements or

[509] The establishment of the Local Board and the co-management agreement is at the discretion of the Minister. This discretion relates to the reasons why this partnership cannot be put in place or why it should be discontinued. Should the Local Board or co-management agreement undermine the effective attainment of the management objectives of the protected area, the Minister may dispense with the Board or terminate the co-management agreements. See Section 25(1) and Section 42(4) of the KwaZulu-Natal Nature Conservation Management Act and the Protected Areas Act respectively.

candidate areas proposed to be incorporated into the protected area. Should this not be the case, the co-management structure or the Local Board may be extended, to include the necessary expertise that would facilitate this process, in that the

'management authority may enter into an agreement with another organ of state, a local community, an individual or other party for-

(i) the co-management of the area by the parties; or
(ii) the regulation of human activities that affect the environment in the area.'[510,511]

Secondly, the inclusion of land into the protected area with agreement of the landowner as well as those who have real rights therein would bring with it various potential role-players to be considered for inclusion onto the Local Board or the co-management structure. Under both circumstances, the management authority may not be in the position to assume additional management or financial burdens[512] and would seek to establish alternative management arrangements through partnership agreements with the landowner or owners. The nature of the land to be incorporated would determine how it is incorporated. There are a number of constraints that if not met or mitigated against, would prevent the land from being included into and functioning as part of the protected area. These are discussed briefly below:

a) Duration of the agreement is insufficient to promote stability.

The aim of expanding the protected area is primarily to provide long term protection for biodiversity assets that are currently poorly conserved or to provide long term economic and social benefits.[513] Likewise, from a tourism investment perspective, it would be appropriate to ensure that the tenure of the expanded protected area would exceed that of capital loan agreements thereby ensuring reasonable profits to investors and developers as well as job security for those employed in the management of that portion of the protected area and the tourism industry therein.

The withdrawal of declaration or the exclusion of an area from the expanded protected area is generally at the discretion of the Minister[514] in that he or she may do so by means of a notice in a Government Gazette and a notification lodged with the Registrar of Deeds.[515] Whilst this

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[510] Section 42(*a*) *op cit.*

[511] The term 'area' is used independently of the term 'protected area' in a number of instances they are used interchangeably. The use of the term in Section 28(2) to describe the protected area and the buffer zone for the protection of a special nature reserve, world heritage site or nature reserve, suggests that it refers to a larger proportion of the landscape than just the proclaimed area.

[512] See argument on the regulation of the use and assignment of public funds for unfunded projects on page 50.

[513] See arguments on page 16 onwards.

[514] See for example Section 29 of the Protected Areas Act and Section 3(b) of the KwaZulu-Natal Nature Conservation Management Act

[515] See for example Section 36(1) of the Protected Areas Act.

process may be a protracted process, it may not present itself as a disincentive for landowners to retain their properties as part of the protected area. Should the argument be reasonable and lie outside of the jurisdiction of the Minister's portfolio,[516] he or she would be obliged to grant the landowner's request.

Thus the inclusion of private or communal land into a protected area should be accompanied by an agreement with the management authority that would confer long term stability on the relationship.

b) Land to be incorporated is of an equivalent standard or condition to the protected area.

The incorporation of the land into the protected area should not be such that the inclusion would either directly or indirectly undermine the protected area. Thus, in order to retain or improve the protected area's status, the candidate land should be of an equivalent status to the protected area in order to facilitate its inclusion.

Thus a set of standards should be developed against which the candidate land may be evaluated. These standards would include implementation of a management plan. The attainment of standards would ensure that compatibility across the boundary[517] and that integrity (i.e. presence and densities of alien organisms,[518] soil erosion, etc) of the candidate land is assured at the time of the merger.

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[516] For example, should the reason for the deproclamation be related to the management of the protected area or the performance of the state officials, the Minister may elect to intervene thereby addressing the need to deproclaim.

[517] The achievement of various states of the natural environment may be achieved by various management techniques that range from an 'engineered or gardened' solution to facilitating natural process and natural process based management. For example the managers of the candidate land may be able to raise the carrying capacity (and hence the tourist encounter rates) of various species by setting in place salt-licks, artificial watering points, supplemental feeding, mowing grasslands etc. at a high cost. The protected area may manage the vegetation by means of fire management through point source ignition and use of keystone species (e.g. elephant) and wildlife through the introduction of predators or the use of a predator simulation animal off-take techniques. The latter gives rise to a highly dynamic, natural process driven system, with potentially lower carrying capacities at a significantly lower cost to the managing authority.

The merging of these parcels of land would necessitate the harmonisation of the management techniques used.

[518] Alien organisms include both floral and faunal components. For example, a number of game farms within KwaZulu-Natal have black wildebeest (*Connochartes gnou*) which are not indigenous to this province. This species is highly likely to interbreed with the common or blue wildebeest (*Connochartes taurinus*).* In order for the game farm to be incorporated into the protected area, the black wildebeest population would need to be removed.

* Richard Despard Estes 'The behaviour guide to African mammals' Russel Friedman Books Halfway House (1995) at 150 and 156.

Whilst many of the statutes currently regulate the establishment and management of protected areas (See Table 3), the content of the management plans is only specified by the Protected Areas Act[519] and to a lesser extent the World Heritage Convention Act.[520] The content of the management plans are critical for a number of reasons. The first is to ensure that the protected area is managed for the purpose for which it was declared.[521] Once the protected area management plan is complete, in terms of these two statutes, it would need to be adopted by the Minister.[522,523] Thus the Minister would once again be in a position to ensure that the proclamation of the protected area would not result in duplication or redundancy[524] and that the protected area was being managed for the purpose for which it was declared.[525] In addition, the Protected Areas Act makes provision for the minimum content of the management plan and includes:

(a) the terms and conditions of any applicable biodiversity management plan;

(b) a co-ordinated policy framework;

(c) such planning measures, controls and performance criteria as may be prescribed;

(d) a programme for the implementation of the plan and its costing;

(e) procedures for public participation, including participation by the owner (if applicable), any local community or other interested party;

(f) where appropriate, the implementation of community-based natural resource management; and

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[519] See Section 41.
[520] See Section 24.
[521] See Section 41(a) of the Protected Areas Act and Section 23 of the World Heritage Convention Act.
[522] See Section 41(4) of the Protected Areas Act and Section 25(1) of the World Heritage Convention Act.
[523] Not all of the legislation regulating the establishment and management of protected areas require that the management plan be adopted by the Minister. For example, the KwaZulu-Natal Nature Conservation Management Act allows for the adoption of the plan by the Board on recommendation of the Local Board for the protected area concerned (Section 5(3)(*b*)). Adoption of protected areas under national legislation generally requires that the management plan be adopted by the National Minister, for example section 11 of the National Forest Act, and, the via the Consultative Advisory Form, Section 6(*a*)(iii) of the Marine Living Resources Act.
[524] See argument on page 10, and bearing in mind that the establishment or expansion of a protected area may bring into play benefits, other than those related to biodiversity conservation, which may justify the action (see arguments on page 16 onwards).
[525] See arguments on the requirement to rationalise protected areas on page 16 in forming the co-ordinated protected area network.

(g) a zoning of the area indicating what activities may take place in different sections of the area, and the conservation objectives of those sections.[526]

By specifying these minimum criteria for the management plan, the Minister, where appropriate, may be in a position to;

(i) determine the resources (budget, capacity of the management authority, etc) that are required for effective management of the protected area,

(ii) ensure that there is consistency in policy and action within and, importantly, between protected areas and different management authorities,

(iii) ensure that the protected area is being managed in an efficient and effective manner which may influence the Minister's assignment or review of the assignment of the protected area to a management authority,[527] and

(iv) ensure that the development and zonation is in harmony with and supportive of the regional, provincial and national growth and development strategies as well as being compatible with the municipal integrated development plans.[528]

The compliance of the candidate land with these criteria would enable the two management plans for the two areas to be merged into one document, thereby enabling the areas to be managed as a unit. Once the management of the two areas has been harmonised, focus may then be placed on the intervening fences.

Should the candidate protected area bring into play additional habitat that would increase the resilience of the protected area or various species therein (e.g. additional grazing that would allow for the establishment of locally extinct species or enhancement of existing populations), then it would be feasible that intervening fences between the two properties would need to be removed and that there would be bi-directional movement of game. Naturally matters relating to ownership of the game or certain game species[529] would need to be resolved prior to the removal of the fences.

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[526] Section 41(2).

[527] Sections 38 of the Protected Areas Act enables the Minister or MEC to assign the protected area to an appropriate authority. Section 44 enables the Minister to review the assignment in such cases where it can be seen the management authority has not achieved an acceptable standard in relation to various performance indicators defined in Section 43 of the Act.

[528] See brief discussion on page 94.

[529] One of the landowners, in particular the State, may elect to retain ownership of uncommon, endangered, large, charismatic or specifically purchased species in terms of arguments relating to trusteeship (i.e. in

c) Reluctance or inability of the candidate landowner to establish or endorse agreements that are seen to be critical for the protected area achieving the purpose for which it was proclaimed.

The incorporation of the candidate land would lead to its proclamation. This process would require the consent of the landowner. Should the landowner be reluctant for this process to take place, the Minister would not be in a position to grant the proclamation.[530]

Likewise, should the landowner not be in a position to enter into various agreements which would enable the formation of the extended protected area or safeguard other landowner's rights and interests, incorporation into the protected area may not take place.

d) Non-cessation of practices or activities on the private land which conflict with the purpose of the initial declaration, management protocols or may undermine the security of the protected area.

Contractual arrangements for or intentions by the landowner to continue with various activities which would be considered incompatible with the purpose of incorporating the land into the protected area, would prevent the incorporation into the protected area.

e) The landowner retains the right to make and execute decisions/activities that conflict directly with purpose of incorporation of the candidate land or the purpose for the establishment of the protected area.

This situation would be identified on review of the management plan or on its implementation. It is understood that the incorporation and the subsequent declaration of the candidate land would be under consent of the landowner. This situation may only arise with a change in heart of the landowner or when the landowner was not fully understanding of the constraints of the declaration, and incorporation of his or her property into a protected area. Should this scenario arise, the Minister may need to make representation or evoke legal proceedings against the landowner, or withdraw the declaration of the private land.

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the case of black rhino or wild dogs), investment, etc. For these species, agreements would need to be entered into with the landowners to respect the ownership of these species irrespective of their spatial occurrence in the expanded protected area. In the absence of these agreements, the common law pertaining to game ownership would apply in that by dropping a fence, the protected area would not longer be enclosed and would no longer confine the game (see Section 2 of the Game Theft Act 105 of 1991). Thus game moving from one property to next would become the property of that landowner into whose property it moved. The game residing on state land have been inventoried through census techniques and would need to be secured in fulfilment of the regulations to Section 76 of the Public Finance Management Act 1 of 1999.

[530] Consent of the landowner, by means of a written agreement, is a prerequisite for the declaration of a protected area (see for example Section 23(3) of the Protected Areas Act).

f) Inclusion of land may result in irresolvable conflict or conflict of interest between the landowner and other protected area members.

The aims and objectives of landowners may not necessarily be aligned, and in some cases may be diametrically opposed (e.g. hunting vs. non-hunting on moral or ethical grounds). Under these circumstances it is likely that irresolvable conflict between the contributing parties may arise which may necessitate a landowner being excluded in order to establish or expand the protected area.

g) Development or inclusion of the candidate area would result in a financial or administrative/management demand that cannot be met by the protected area.

This type of conflict generally relates to the concept and development implementation plan being compiled at the parochial scale of the candidate property with little cognisance taken of an undeveloped or un-debated future plan. The placement of these developments may be inappropriate at the larger scale[531] or incompatible with the purpose of expanding the protected area.[532] Under these circumstances it may be expedient for the management authority to purchase the property and to remove the tourism assets in order to manage the two properties as a unit.

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[531] For example, the development (roads, lodges, etc) may be placed in the most strategic areas in order to maximise the attractiveness of the area to potential clients. The property developer may, therefore, place an access road to the tourism development along the property boundary in order to reduce the impact on the broader property. The access road may serve as a firebreak in fulfilment of the duty of care to prevent veld fires traversing property boundaries.* At a landscape scale the access road may be sufficient to safeguard various assets on the candidate land.

* See Section 13 of the National Veld and Forests Act 101 of 1998, which reads as

'*An owner who is obliged to prepare and maintain a firebreak must ensure that, with due regard to the weather, climate, terrain and vegetation of the area-*

(a) it is wide enough and long enough to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring land;
(b) it does not cause soil erosion; and
(c) *it is reasonably free of inflammable material capable of carrying a veldfire across it'.*

[532] For example the operation of the continued operation of a trading store or the release of dangerous game may present a significant risk to the development.

CHAPTER 6 : CONCLUSION

It is concluded that, the new legislation does bring in a much-needed structured framework for the conservation of biodiversity within South Africa. Standardisation of the types of protected areas and the circumstances they may be proclaimed under provides a greater flexibility for provincial and national conservation agencies. This enables the conservation authorities to proclaim new and reclassify existing protected areas using more appropriate categories. This observation is particularly applicable to the national parks category which was retained for exclusive use by the National Parks Board. The absence of a hierarchy of protected areas, set in place by the Protected Areas Act, ensures that all protected areas contribute equally to the national network of protected areas and ultimately the national framework for the conservation of biodiversity.

There has been a simplification of the legislation regulating the proclamation and management of protected areas. However, this simplification fell short in two ways. The first by the exclusion of marine and forest protected areas from the bulk of the provisions of the Protected Areas Act, and secondly by the observation that the Protected Areas Act does not consider the full suit of protected areas that may be proclaimed in South Africa. Thus, under certain circumstances, the Protected Areas Act may bring additional confusion where clarity is required.

Both the Biodiversity and Protected Areas Acts bring into South African jurisprudence an appropriate characterisation of the State's trusteeship of biodiversity and a practical implementation framework to bring effect to this role. This mandate may be frustrated by the county's land reform program. It is, however, concluded that the provisions in both Acts, and principally the Protected Areas Act, are used to conserve biodiversity by way of delivering tangible benefits in terms of tourism revenue, rural capacity building and upliftment, greater provision of critical environmental services and natural products, or greater protection to fundamental cultural heritage phenomena. The balance between the need to transform the land and its conservation would be achieved. It is, however, realised that this may not be sufficient to consistently safeguard critical biodiversity elements in the country. In this, the absence of meaningful incentives for private and communal landowners to secure and conserve biodiversity on their land is seen to be a significant shortcoming of the State bringing effect to its trusteeship.

In summary, therefore, the new biodiversity conservation legislation brings a significant and profound step towards conserving South Africa's biodiversity, but there are a number of shortcomings that require revision.

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