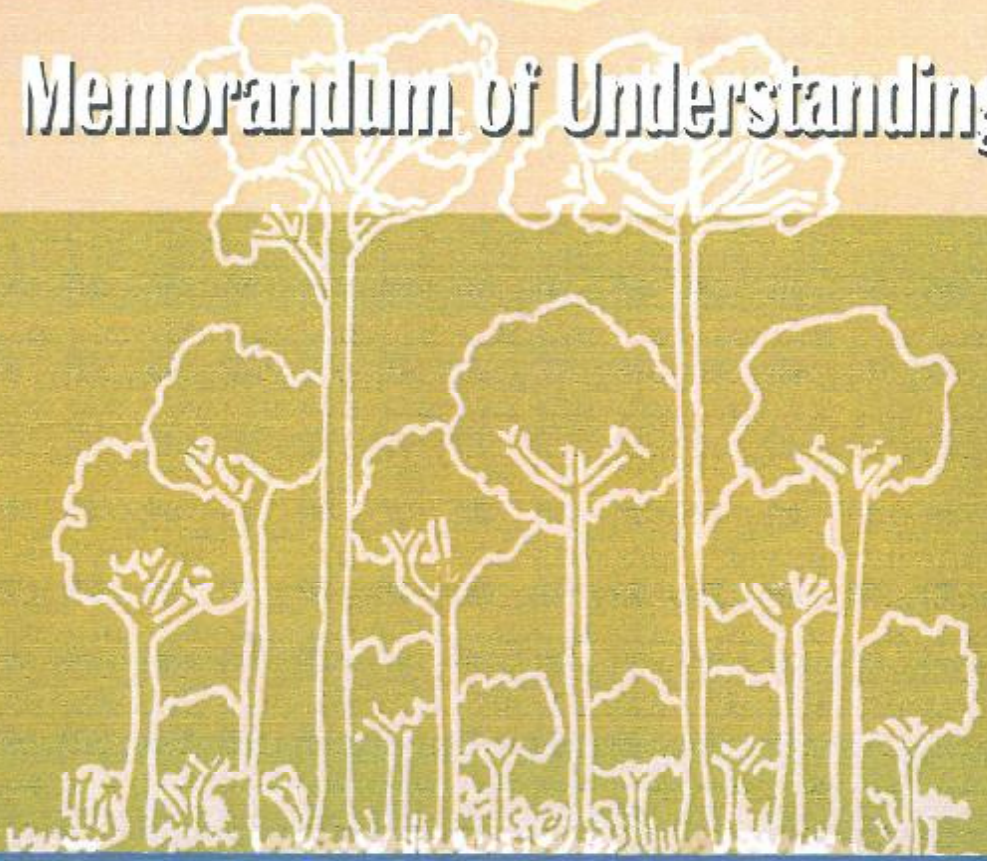
Memorandum of Understanding



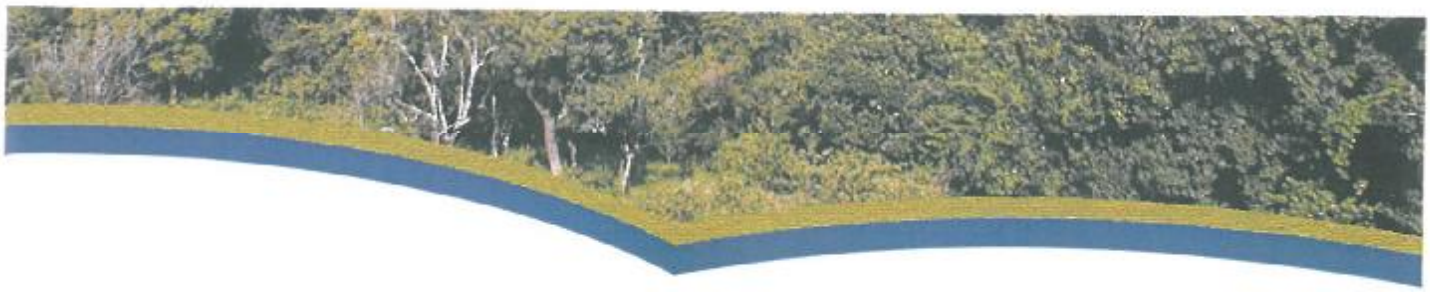
Policy Principles and Guidelines for Co-Operative Control of Development Affecting Natural Forests in KwaZulu-Natal

Department of Water Affairs and Forestry
The Department of Agriculture and Environmental Affairs
and Ezemvelo KwaZulu-Natal Wildlife

water & forestry

Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA

KZN Agriculture and Environmental Affairs



Contents

MEMORANDUM OF UNDERSTANDING 1

APPPENDIX A: POLICY PRINCIPLES AND GUIDELINES FOR CO-OPERATIVE CONTROL OF DEVELOPMENT AFFECTING NATURAL FORESTS IN KWAZULU-NATAL

1 INTRODUCTION 6

2 AIM 8

3 POLICY PRINCIPLES 9

4 GENERIC GUIDELINES 11

5 DEFINITIONS 18

Box 1: National Perspective 7

Box 2: The Listing of Threatened and Protected Forest Ecosystems 17

Figure 1: Indigenous Forest Types of South Africa 7

MEMORANDUM OF UNDERSTANDING

Regarding

The Implementation of Co-operative Policy Principles and Guidelines for Control of Development Affecting Natural Forests in KwaZulu-Natal

Between

Department of Water Affairs and Forestry - (DWAF)

Herein represented by Ms Pam Yako

In her capacity as Director-General, duly authorised

And

KwaZulu-Natal Department of Agriculture and Environmental Affairs (DAEA)

Herein represented by Mr Siddiq Adam

In his capacity as Acting Head of Department, duly authorised

And

Ezemvelo KwaZulu-Natal Wildlife (EKZNW)

Herein represented by Dr Bandile Mkhize

In his capacity as Chief Executive Officer, duly authorised

PREAMBLE

Where-as:

The Parties here record their willingness to accept the policy principles and guidelines in Appendix A of this Memorandum of Understanding (MoU) and to co-operate with one another in their implementation to ensure the conservation of natural forests and achievement of sustainable development in KwaZulu-Natal;

And whereas DWAF is mandated to conserve and protect indigenous forests in terms of the National Forests Act,1998 (Act No 84 of 1998);

And whereas EKZNW is mandated to conserve and protect biodiversity within the Province in terms of the National Environmental Management Biodiversity Act, 2004 (Act No 10 of 2004), the National Environmental Management Protected Areas Act, 2003 (Act No 57 of 2003), KwaZulu-Natal Nature Conservation Management Act,1997 (Act No 9 of 1997) and the Nature Conservation Ordinance 15 of 1974;

And whereas the DAEA is delegated certain functions in terms of the National Environmental Management Act,1998 (Act No 107 of 1998) and the regulations pertaining thereto;

And whereas the conservation of natural forests is a common concern to the parties to this agreement;

And whereas an absence of strategic co-operation between the parties with respect to decisions taken on natural forests risks such decisions being in conflict with national or provincial strategic conservation planning processes and the National Forests Act of 1998.

1 MUTUAL UNDERSTANDING

1.1 The Parties agree to jointly apply the policy principles and guidelines in Appendix A of this memorandum in all decisions relating to development that affect natural forests.

1.2 The Parties hereby recognise that the remaining natural forests in KwaZulu-Natal require special attention as habitats of high conservation value. This includes but is not limited to natural forests' biodiversity, rarity, important ecological functions and supply of goods and services).

1.3 The Parties recognise that the principles and guidelines contained in Appendix A conform with the integrated conservation and planning requirements of national, provincial and local legislation and mandates (and in particular with the principles of the National Environmental Management Act, 1998 (Act No 107 of 1998) and National Forests Act, 1998 (Act No 84 of 1998), and serve to reinforce the co-operative implementation of these legislation and mandates.

1.4 The Parties agree to be transparent in their application of the principles and guidelines in their decision-making, and to keep all interested and affected parties informed at all times.

1.5 The Parties agree that they shall engage proactively and expeditiously with each other on any matter that may concern the conservation of natural forests.

1.6 The Parties hereby accept this Memorandum of Understanding as an instrument of the co operative governance requirements of the Constitution of the RSA, 1996 (Act No108 of 1996) and the Intergovernmental Relations Framework Act, 2000 (Act No13 of 2000), which requires organs of state to co-operate in mutual trust and good faith by:

i) fostering friendly relations;

ii) assisting and supporting one another;

iii) informing one another of, and consulting one another on, matters of common interest;

iv) co-ordinating their actions and legislation with one another;

v) adhering to agreed procedures; and

vi) avoiding legal proceedings against one another.

1.7 The Parties agree that, in terms of an Exemption, Basic Assessment or Scoping and Environmental Impact Assessment, DAEA will direct the applicant to engage with both DWAF and EKZNW to address any matter relevant to their respective mandates prior to submission of the application to DAEA for a decision. The parties also agree that DAEA will not accept any application where this process has not been adequately followed by the applicant.

1.8 The Parties agree that DAEA shall engage proactively with both the DWAF and EKZNW on any matter that may concern natural forests.

1.9 The Parties agree that conservation of indigenous forest may be achieved, *inter alia*, through balanced and informed decision making.

1.10 The DAEA agrees that the final decision on any application that may impact on an indigenous forest shall take into account all relevant comments made by either DWAF or EKZNW.

2 PURPOSE

2.1 To assist the parties in implementing a collaborative and coordinated process in the control of development affecting natural forests.

2.2 To demonstrate a commitment between the parties to develop and apply consistent and complementary policies on control of development affecting natural forests.

2.3 To foster the co-operative implementation of the policy principles and guidelines (attached in Appendix A) aimed at protecting the remaining forests as ecologically important and rare habitats within the framework of national, provincial and local legislation, mandates and conservation planning.

2.4 To create a better understanding and integration of forest conservation needs in the planning processes.

2.5 To create a platform of co-operation that will enable the parties to jointly address threats to the integrity of natural forests within KwaZulu-Natal.

3 BACKGROUND

Natural forest is the smallest biome in South Africa with the highest plant diversity per hectare (see Appendix A). Apart from their high biodiversity these forests fulfill a variety of important ecological functions, are an important part of the landscape that attract tourism and development, and provide a livelihood to many rural people using a variety of forest resources. Some of the 26 national forest types are under severe threat, including from inter alia piecemeal development that threatens to fragment the remaining forests even further. The coastal belt of KwaZulu-Natal has undergone a rapid transformation in the past decade, and new development may destroy most of the few remaining dune and coastal forests outside the conservation areas if urgent steps are not taken to keep these intact.

A number of government bodies have overlapping mandates that affect the protection of natural forests. DWAF is the lead agent for the conservation of forests at national level. In terms of the National Forests Act, 1998 (Act No 84 of 1998) as amended all forests are protected, and no forest trees may be felled, damaged or removed without a licence. DWAF's national strategic conservation planning for the forest biome is done within the framework of the National Biodiversity Strategy and Action Plan (NBSAP) of the South African National Biodiversity Institute. The DWAF manages many State forests, but the management of most of these has already been assigned or delegated to other conservation agencies.

EKZNW is responsible for the conservation of forests within the province, and DWAF has to cooperate with the province and ensure that its own conservation planning is compatible with the provincial biodiversity plans. Both DWAF and EKZNW are entitled to submit comment to DAEA on any environmental impact assessments lodged with the DAEA in terms of the provisions of Chapter 5 of the National Environmental Management Act, 1998 (Act No 107 of 1998). These assessments sometimes involve natural forests.

In 2006 DWAF and EKZNW (also assisted by environmental experts from the eThekwini Municipality) formed a working group to develop a common understanding and to improve cooperation in the evaluation of environmental impact assessments whenever natural forests are affected. The DAEA joined this working group in 2007, which was by then busy drafting a guideline document titled *Policy Principles and Guidelines for Co-operative Control of Development Affecting Natural Forests in KwaZulu-Natal*. This working group then decided that the implementation of the guidelines by these three authorities must be strengthened through a Memorandum of Understanding (to be signed at CEO or DG level), which was jointly developed by the working group and scrutinized by the legal services of the parties involved.

4 GENERAL ARRANGEMENTS

4.1 The DAEA will notify the DWAF regional office in KwaZulu-Natal (both forestry and water chief directorates) and EKZNW of any applications it receives relating to environmental impact procedures or development that could affect natural forests. Likewise, DWAF and EKZNW will notify the DAEA and each other of any applications or development activities (authorised or unauthorised) that may affect natural forests, and which are relevant to their mandates

relating to environmental impact assessment or conservation. Each of the Parties will indicate contact persons, to whom all requests, correspondence or documents can be directed.

4.2 Each Party will apply the principles and guidelines in its own assessments of EIAS and development applications. Before comments are forwarded to the DAEA on cases affecting natural forests, DWAF and EKZNW will consult each other, and attempt to align their comments and positions. Should the DAEA differ with the written comments submitted by either DWAF or EKZNW, they must consult with these parties and seek consensus prior to drafting the environmental authorization.

4.3 Should the DAEA not concur with the comments submitted, the DAEA shall call a meeting of both parties to attempt to resolve the issue.

4.4 Where differences of opinion on the interpretation or application of the principles or guidelines arise, every reasonable effort must be made to resolve the differences.

4.5 Notwithstanding the provisions of 4.2 and 4.3 herein above, the Parties reserve the right to appeal or withhold licences if necessary.

4.6 Parties to the Memorandum of Understanding must ensure that the policy principles and guidelines are applied equally to all proponents of development and land transformation, and to all stakeholders and decision-makers.

4.7 The Parties may undertake, either individually or jointly, an assessment of the threats to natural forests, and shall co-operate to address and remove the threat as identified as a priority by DWAF and EKZNW.

4.8 In the event of any dispute arising from this agreement, the Parties shall make every effort to settle such dispute amicably.

4.9 If the dispute can not be settled amicably by or between the Parties, such dispute shall be elevated to the Senior Management or Executive of the Parties or their duly designated representatives for mediation.

4.10 Should the dispute, despite such mediation, remain unresolved for a period of thirty (30) days after being so referred, either Party may declare such dispute a formal intergovernmental dispute by notifying the other Party of such declaration in writing, in which event the Parties will follow the procedure outlined in section 42 of the Intergovernmental Relations Framework Act, 2005.

4.11 This document contains the entire Understanding between the Parties and no Party shall be bound by any undertakings related to the Memorandum of Understanding, or representations, warranties, promises or the like, not recorded herein.

4.12 No alteration, cancellation, variation of/or addition hereto shall be of any force and/or effect unless reduced to writing and signed by all Parties to this Memorandum of Understanding or their duly authorized representatives.

4.13 It is the intention to expand this Memorandum of Understanding in future to include local authorities and other relevant national and provincial bodies.

SIGNED on behalf of the Department of Water Affairs and Forestry at Pretoria

on 15/12/ 2008

WITNESSES

1

2

SIGNED on behalf of the KwaZulu-Natal Department of Agriculture and Environmental Affairs at

CEDARA on 27-02-2009 2008

WITNESSES

1

2

SIGNED on behalf of Ezemvelo KwaZulu-Natal Wildlife at PIETERMARITZBURG

on 25-02-09 2008

WITNESSES

1

2

APPENDIX A: POLICY PRINCIPLES AND GUIDELINES FOR CO-OPERATIVE CONTROL OF DEVELOPMENT AFFECTING NATURAL FORESTS IN KWAZULU-NATAL

1 Introduction

Eleven national forest types occur in KwaZulu Natal, including four azonal types that occur in small or linear locations, like riverine forests and mangrove forest. There are a variety of threats to the forests, causing loss or deterioration of forest habitats and consequently loss of biodiversity as well. Some forest types and forest patches are under greater threat than others. During the past century, the KwaZulu-Natal Coastal Forest and KwaZulu-Natal Dune Forest types have been under most pressure due to the expansion of farmland (especially sugarcane lands) and to development. These are the very same forest types under greatest pressure from coastal development currently. This pressure, both from legal and illegal developments, is cause for great concern from a forest conservation perspective.

The various conservation planning programmes of the Department of Water Affairs and Forestry (DWAF) and Ezemvelo KwaZulu-Natal Wildlife (EKZNW) recognise these forests (particularly the coastal ones) as of great conservation significance, especially due to their exceptional biodiversity and ecosystem services, their dynamic nature and sensitivity to disturbance. It was further recognised that the conflict between development pressure and conservation needs requires urgent action. Environmental officers in some municipalities, such as the Ethekwini Metropolitan Municipality, are likewise concerned.

During 2006 and 2007 officials from DWAF, EKZNW, Department of Agriculture and Environmental Affairs (DAEA) and Ethekwini Municipality met on several occasions with the express purpose of initiating a process to develop policy principles and guidelines that will promote better co-operative control over development affecting natural forests throughout the province. This was to be followed by a wider process involving relevant stakeholders. It was agreed that the principles and guidelines must form the basis for future decisions taken by the relevant authorities at all levels of government. As such, the policy would aid the proper implementation of existing legislation, especially the National Forests Act No 84 of 1998. The guidelines are therefore an expression of how current overlapping mandates have to be exercised in this regard, in a co-operative manner. It also serves to inform, and to dispel uncertainties about what position can and must be taken regarding any decisions on development that may affect natural forests. Such uncertainties, and the lack of co-operation or communication between the various authorities involved, have often led to poor decisions being made, to the detriment of forest conservation. If we are to protect the remaining forests, the current modus operandi has to change, and the strong existing legislation must be used to effect that protection.

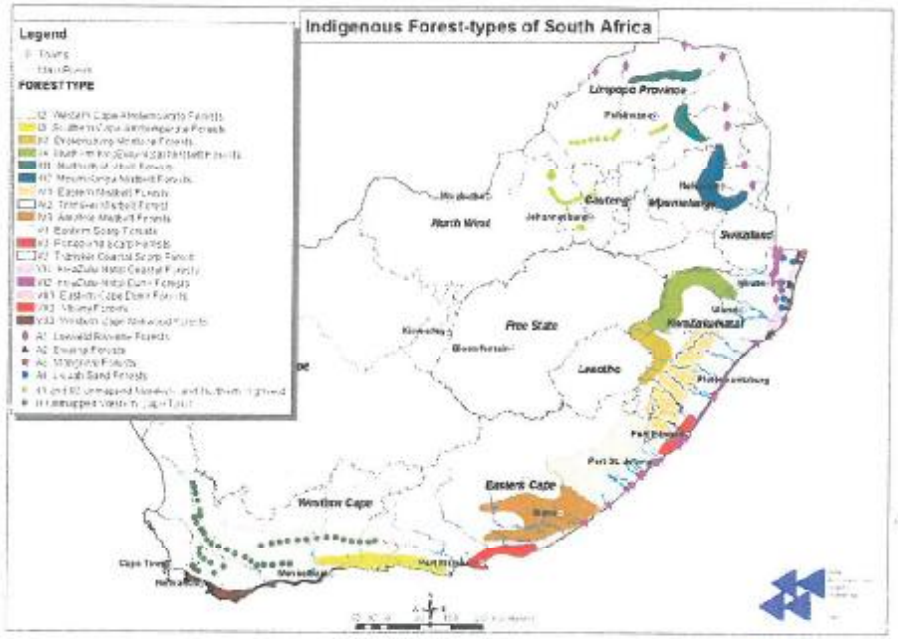
The National Forests Act of 1998 (as amended) provides the strongest and most comprehensive legislation and mandate for the protection of all natural forests in South Africa. The principles of the Act in Section 3 state clearly that "*...natural forests may not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits*". This prescribes that no development affecting forests may be allowed unless "exceptional circumstances" can be proven. Section 7 of the Act prohibits the cutting, disturbance, destruction or removal of any indigenous living or dead tree in a forest without a licence, while Section 15 places a similar prohibition on protected tree species listed under the Act, some of which are also forest species.

The systematic conservation planning process undertaken by DWAF sets conservation targets for each forest type (percentage of each forest type to be included in protected areas – current and future) and identifies priority forest patches which should make up those percentages. This process is currently under review in co-operation with the South African National Biodiversity Institute (SANBI), which also involves the identification of threatened forest ecosystems (forest types and patches) to be listed under the National Environmental Management Biodiversity Act No 10 of 2004 (NEMBA). Criteria were developed and tested for that purpose through a multi-stakeholder working group.

Forest types and forest patches qualifying as critically endangered or endangered according to these criteria will be listed as threatened ecosystems. Once listed, all these forest areas have to be taken into account in the Integrated Development Plans (IDPs) of local authorities, and any intended activities resulting in the loss of any amount of land area of these listed forests areas will then require at least a basic assessment under the new Environmental Impact Assessment Regulations (No R 385, R386 and R387) of 21 April 2006. In terms of the National Forests Act of 1998 all natural forests are important for conservation from a national perspective (see Box1), but those listed under NEMBA (Critically Endangered and Endangered) must receive highest priority for protection, whether in the planning of new conservation areas, or control of development and land use change.

The policy principles and guidelines outlined here are in keeping with national and provincial legislation relating to development control and the protection of forests, especially the National Forests Act No. 84 of 1998, the National Environmental Management Act No. 107 of 1998 and the KwaZulu-Natal Nature Conservation Management Act No. 9 of 1997. Consequently, the principles and guidelines are also in line with the mandates of the relevant public agencies, most notably the Department of Environmental Affairs and Tourism, Department of Water Affairs and Forestry, Department of Agriculture and Environment Affairs and Ezemvelo KwaZulu-Natal Wildlife. These mandates are also linked to international obligations, such as compliance with the Convention on Biodiversity, which South Africa ratified in 1995.

Figure 1



* Please note that two new forest types have been discovered in the Kruger National Park (Dry Ironwood Forest and Nwambyia Sand Forest) since the above map was published.

BOX 1: NATIONAL PERSPECTIVE

The natural forests of South Africa are the smallest of its seven biomes, covering less than 500 000 hectares (much less than one percent) of its land surface. Yet this biome has the highest diversity of plant species per unit area (418 species per ha compared to 98 species per ha for the Fynbos). Natural forest can therefore make an important contribution towards reaching national biodiversity conservation targets in prioritising areas for protection, and this is recognised in the conservation planning programmes of the Department of Water Affairs and Forestry (DWAF), South African National Biodiversity Institute, Ezemvelo KwaZulu Natal Wildlife and other national and provincial conservation agencies.

These forests also play important roles in the environment as carbon sinks, in the functioning of water catchments, erosion control and providing resources on which the survival of many rural households depend. The forests and their settings are known for their beauty, and offer increasing potential for ecotourism, and non-consumptive livelihood opportunities for the poor. It is furthermore the most fragmented biome, consisting of more than 16 000 forest patches above the size of 2 ha of which the majority is less than 10ha in size (which greatly increases its vulnerability to human-induced impacts). These patches occur scattered in the high rainfall areas of the eastern parts of the country, from the northern border with Zimbabwe to the Cape Peninsula. These areas also happen to be the most densely populated, and the weight of human activities such as coastal development and harvesting of resources for commercial and subsistence use, place the forests under serious threat. That is why the National Forests Act, 1998, provides for the protection of the total natural forest biome.

Natural forests have been categorised into 24 national forests types in a comprehensive study done by the CSIR for DWAF from 2002 to 2003 (two more forest types were identified since then). Each of these forest types has a unique forest structure and combination of fauna and flora, determined by site conditions such as height above sea level, rainfall, topography etc. They can therefore serve as indicators or surrogates of biodiversity (in other words, because each forest type has its own unique habitat conditions and diversity of species, protecting representative samples of all forest types will aid in protecting as many forest species as possible). Yet there is variation even within these national forest types, which could be refined by identifying forest sub-types. Such sub-types have been identified for a few forest types, and form the basis for management prescriptions. DWAF is currently refining its national forest conservation planning by identifying forest sub-types, which in the end will form the basis for a refined scale of conservation planning

2 Aim

The aim of the policy principles and guidelines are:

2.1 To ensure the effective protection and sustainability of natural forests through proper control over development and land use change affecting forests in KwaZulu-Natal in a co-operative manner, by public agencies at all levels of government mandated to exercise such control;

2.2 The effective implementation of current environmental legislation pertaining to development affecting natural forests and associated ecosystems in KwaZulu-Natal;

2.3 To serve as the basis for co-operative decision-making and ensure a uniform approach by decision-makers to the control of development affecting forests.

These principles should not be considered in isolation from each other, but as an interrelated whole. The principles and guidelines apply equally to all decision-makers and all proponents of land use change or development, and to all circumstances where development affect natural forests.

3 Policy Principles

All decisions taken by public agencies on the control of development affecting natural forests in KwaZulu-Natal should adhere to these principles. The principles apply not only to activities and development within forests, but also adjacent to forests, as these may affect forests and their eco-tone habitats.

3.1 The principles for sustainable forest management in the National Forests Act of 1998 (NFA) must be upheld, including:

- Natural forests must not be destroyed[1] save in exceptional circumstances;
- Forests must be developed and managed so as to:
  - conserve biological diversity, ecosystems and habitats;
  - sustain the potential yield of their economic, social and environmental benefits;
  - promote their health and vitality;
  - conserve natural resources, especially soil and water;
  - conserve heritage resources and promote aesthetic, cultural and spiritual values;

3.2 Application of the NFA principle that natural forests may not be destroyed save in exceptional circumstances must be applied in a strict and conservative manner, aimed at protecting forests as a rare and sensitive biome[2]. Exceptional circumstance must be proven (refer to criterium 4.3 (d) p18). The application of this principle must be even stricter for forest types listed as endangered or critically endangered;

3.3 Applicants are accountable for the potential impacts and activities being undertaken as well as managing the impacts;

3.4 Decision-makers are accountable for decisions that may impact on forests;

3.5 Decisions on the control of any development affecting forests, must be taken in a co-operative manner, through proper consultation with the relevant authorities at all levels of government with the mandate or jurisdiction relating to that particular development or forest;

3.6 The viewpoints of all stakeholders on a development proposal must be considered in decision-making, and the applicant should be encouraged to explore suggested alternatives and try to achieve a workable solution that would not compromise any of these principles;

3.7 In terms of the NFA all forests are protected and no trees (dead or alive) may be cut, damaged or removed without a licence from DWAF (or a delegated authority). If not satisfied that proper consideration has been given to the protection of a forest, DWAF has the legal right to refuse a licence, even if authorisation for development has been granted by another sphere of government.

3.8 In all decisions, the precautionary principle will be upheld, implying that no significant uncertainties or risks must be incurred in the decision-making (According to the National Environment Management Act No 107 of 1998 sustainable development requires 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..."*).

3.9 Authorities responsible for decisions relating to the approval of activities affecting forests, must try to ensure that proper and transparent public participation processes are undertaken as part of the Environmental Impact Assessment (EIA) and planning processes, in accordance with the prescriptions of the relevant EIA and planning legislation;

3.10 The potential impacts of development or land use change must be considered pro-actively as early in the proposed activity's planning stages as practicable and before irrevocable decisions are made by the proponent/developer or relevant authority;

3.11 The onus to prove exceptional circumstances and that no uncertainties or risks to the forest will ensue, lies with the developer;

3.12 Investments made and costs incurred by a developer or land owner can not be taken into account in deciding whether a development should be allowed or not. Investments are made at own risk;

3.13 Where national, provincial and local government conservation targets, ratings or priorities for forest patches or national forest types or sub-types differ, the highest conservation or priority rating will prevail;

3.14 The mandates of the relevant authorities determine their jurisdiction areas for trusteeship of the natural forests, and decisions affecting forests are taken on behalf of all citizens within these national, provincial and local jurisdiction areas, requiring great care and responsibility on the part of these authorities;

3.15 Maintaining natural forests in a good state and the rehabilitation of degraded forests must be promoted;

3.16 The appropriate levels and types of access and use of natural forests must be in keeping with the environmental potential, sensitivity and carrying capacity of the various forests.

3.17 The levels of environmental significance, conservation value, functional value (ecosystem goods and services), sensitivity or threatened ecosystem status must be taken into account in all decisions affecting natural forests, with priority given to the protection of forest types and forest patches listed as threatened ecosystems.

3.18 Where natural forest is contained within a mosaic of other veld types that are associated with it (or which form important eco-tone habitats that contribute to diversity and ecosystem functioning), the forest must not be regarded in isolation. In such cases a landscape approach must be taken with an attempt to protect the forests together with the surrounding veld types. This approach recognises that forests are in dynamic equilibrium with the landscapes around them, and that forest margins must be protected and managed in buffer areas. Natural corridors linking forests and other habitats must be retained as far as possible. Due consideration must be given to the minimum width of corridors and buffer zones and the minimum size requirements of natural habitats to enable fully functional ecosystems to be retained.

3.19 If development affecting forests but proven to be of an exceptional nature is allowed, strict control must be exercised through a proper management plan (addressing the construction and operational phases of development) acceptable to the authorities involved. Before such development is considered however, it must be proven that no feasible alternatives are available (e.g. alternative sites or routes).

3.20 If development affecting a natural forest can be proven to be of an exceptional nature, off-set agreements must be considered to compensate for loss, depending on the threatened ecosystem status of the forest type or forest patch affected. Such off-set agreements must be acceptable to the conservation agencies with relevant mandates or jurisdiction over the forests affected.

3.21 Retaining or promoting controlled public access to forests must be a prime consideration in all decisions relating to land use change.

3.22 The rehabilitation and expansion of natural forests can be promoted where necessary or feasible, but not at the expense of other endangered habitats of an equal or higher threatened ecosystem status.

[1]Forest destruction here refers to any action that may cause the loss of a forest ecosystem, whether a whole forest or only part of it, or whether in a mature or developing stage, in favour of a new land use.
[2]Destroying a forest constitutes any action that would lead to the immediate or gradual killing of trees and associated plant and animal life, and the forest topsoil, in favour of a new land use, in a whole forest (directly or indirectly), or in a part of such a forest, irrespective of whether it is a mature established forest, or a new forest or a new part of a forest which may be in the process of establishment or expansion for reasons such as exclusion of fire.

4 Generic Guidelines

4.1 Introduction

The generic guidelines are aimed at facilitating the practical implementation of the policy principles in planning and decision-making processes. Mandates, procedures, concepts and definitions relevant to these principles are dealt with here in more detail. These are kept as concisely as possible for ease of use, while further reference material is contained in the appendices.

4.2 Mandates and Procedures

a) Legislative Mandates Affecting Development Control in Forests

ORGANISATION	LEGISLATION	RELEVANT MANDATE
The Department of Water Affairs and Forestry	1) National Forests Act No 84 of 1998 as amended.	Branch: Forestry Lead agent for the protection of natural forests. Controls cutting of forest trees or protected trees through licences (can refuse a licence or subject it to conditions – even if environmental authorisation has been given). Strategic national forest conservation planning by DWAF as well as inputs in EIA processes, have an influence on development control.
The Department of Agriculture and Environmental Affairs of KwaZulu Natal	EIA Regulations R385, R386 and R387 of 2006 under the National Environmental Management Act No 107 of 1998.	Chief Directorate: Operational Support Services To review all basic assessment and environmental impact reports and issue or refuse environmental authorisation, with or without conditions.
The National Department of Agriculture	Conservation of Agricultural Resources Act No 43 of 1983.	Reviews licence applications for agricultural uses, including the making of agricultural fields.
Ezemvelo KwaZulu-Natal Wildlife	KwaZulu-Natal Nature Conservation Amendment Management Act No 5 of 1999.	Lead agent for nature conservation in KZN. Manages forests in protected areas. Protects listed fauna and flora species (also in forests). Strategic provincial forest conservation planning such as forest type conservation targets, as well as inputs in EIA processes, have an influence on development control.
Department of Local Government and Traditional Affairs	Development Facilitation Act No 1526 of 1995 (DFA).	Reviews applications for new development in terms of the DFA and approves or refuses development.

Department of Environmental Affairs and Tourism	National Environmental Management Act No 107 of 1998.	Issues and administers environmental legislation and policies to facilitate coordinated environmental management, including coastal management. Also responsible for ensuring compliance with environmental management principles and procedures, national law enforcement and arbitration, as well as final say on environmental authorisations where development impacts may be inter-provincial or international. Also handles all World Heritage Site applications.
South African National Biodiversity Institute	National Environmental Management Biodiversity Act No 10 of 2004.	Coordinates biodiversity conservation planning for all biomes within the framework of the National Biodiversity Strategy and Action Plan. This includes the listing of threatened ecosystems under the NEM Biodiversity Act.
South African National Parks	National Parks Act No 57 of 1976 as amended.	Manages National Parks and regulates all activities within these parks.
District Municipalities	Municipal Systems Act No 32 of 2000.	Guide strategic land use planning at district municipal level.
Local Municipalities	Municipal Systems Act No 32 of 2000.	Do strategic land use planning within local municipal areas. Control land use and development – review applications for land use change and development.
Traditional Authorities	Traditional Leadership and Governance Framework Act No 41 of 2003.	Can issue a Permission to Occupy (PTO) and also issue licences (eg. for cutting protected trees) – a dual system that needs to be aligned with other legislation.

4.3 Technical and Legal Development Control Issues

a) Applying the Definition of Natural Forest

To implement the National Forests Act and these guidelines, the correct identification of natural forests is of crucial importance. For this purpose the definition of 'Natural Forest' as described under Definitions (page 18) must be used. To distinguish between natural forest, thicket and woodland may in some instances be difficult to the lay person, and the guidelines in Appendix B can be used to aid the distinction between these different biomes. Dense woodland or thicket can at a glance appear similar to natural forest, but can be identified correctly at closer inspection. Being able to identify and define the natural forests in an area, has a direct bearing on the restrictions applicable to land use and development. Use must be made of appropriate forest experts where any uncertainties exist.

The questions to ask are:

- Is this a vegetation community dominated by indigenous trees whose crowns are largely contiguous (crown cover must be 75% or more)?
- Does the vegetation community grow in multiple layers (at least a herb layer, shrub layer and a canopy layer of trees with touching crowns–see Appendix A)?
- Are the majority of these tree and shrub species typical forest tree and shrub species (indicator species for one of the national forest types)?
- Can it be identified as one of the defined national forest types (see 'National Forest Types in Appendix C - look at forest structure and indicator species)?

These criteria are not watertight, and some exceptions may apply to forest types such as mangrove forest, riverine forest, sand forest and dune forest types. The scrub forms and pioneer regrowth phase of other forest types may also lack layers. All natural forests, however, will fit into one of the national forest types, will have more or less closed canopies, and will have plant and animal species generally associated with one or more of the forest types.

Other issues to consider is that :

- Pioneer forest vegetation in a dominantly natural habitat with a clear potential to become fully grown natural forest if left undisturbed, must also be considered as forest. This may be regrowth of forest in an area where forest was previously removed, or expansion of forest as a result of factors such as exclusion of fire.

- The canopy height of indigenous forests can vary between 2 and 30m. Below 6m it could be called a scrub forest. Any national forest type can have forest parts or forest patches that vary from each other in forest structure and species composition, depending on site specific characteristics such as slope, aspect, micro-climate, soils etc. Thus the Southern Afrotemperate forest was divided into 6 forest sub-types, from Very Dry Scrub Forest through Moist High Forest to Very Wet Scrub Forest, with the canopy height varying between 6m and 30m.

Questions often asked are:

- At what area size will a group of closed canopy trees be considered a forest? – This is not an easily answered question, and each case has to be taken on merit. Very small patches could be border-line cases, for which scientific arguments have to be put forward where controversy arises. Patches above half a hectare in size should not be the subject of dispute.
- Can new pioneer stands of forest (where forest did not occur in the recent past, but expanded for reasons such as exclusion of fire), or disturbed forest which may not resemble forest after the disturbance, be regarded as forest? Yes – for more information see the next section.

b) Forest Gaps, Margins and Mosaics

Natural forests are dynamic ecosystems. Inside a forest gaps may appear where canopy trees die or fall over, with varying stages of recovery. The forest margins are usually populated by hardy fast-growing pioneer tree species which can recover rapidly after fire, grazing or other disturbances. Disturbances that re-occur too often, can disrupt the processes of recovery and lead to decline in forest areas. Forest patches are often kept in check and shaped by natural forces such as climate and fire. When natural or human-induced changes occur such as climate change or exclusion of fire (the latter through surrounding land use changes), forest patches may change in structure and species composition, and may decrease or expand. Any areas where forests occurred and have been disturbed, or where forests are expanding, with evidence of new forest seedlings establishing or recovery of the canopy (irrespective of the stage of recovery or expansion), must be considered as forest, and the National Forests Act as well as these guidelines will apply to those areas.

The nature and tempo of recovery processes in forest gaps, margins and other forest areas disturbed by natural or human-induced processes may vary between forest types, and depending on the type, duration and frequency of disturbance. Recovery could take decades, or in some cases more than a century. The ecotones and vegetation types surrounding forest patches must be kept intact as a vital part of maintaining the forest habitat and its fauna and flora (some animal species for example require a variety of habitat types). Retaining a landscape with mosaic of forests and other vegetation types ensures optimal functioning of the ecosystem, and the more the inroads made on the habitats surrounding forests, the more the forest patches are marginalized and the greater the pressure and likelihood of deterioration of the ecosystem and loss of species.

Invader plant species often populate disturbed forest areas (almost never the intact parts), but can be managed and controlled over time, and must never be an excuse for allowing land use change or development that could be detrimental to a forest. That could set a dangerous precedent, and tempt other land owners to deliberately allow such disturbance for their own gain. Under the Conservation of Agricultural Resources Act (No 43 of 1983) land owners are under obligation to eradicate and control declared invasive species on their land. Development (a permanent transformation of forest) is generally more detrimental to forest ecosystems and biodiversity than invader plant species.

Any decisions on land use or development that will affect natural forests must be taken with the utmost care (precautionary principle) and with due consideration for:

- Keeping the dynamic forest processes intact;
- Preventing disturbance to forest ecosystems, fauna and flora;
- Keeping forest margins and surrounding mosaics of habitats in place as far as possible (inter alia through sufficient buffer zones, corridors and protected areas);
- Not allowing disturbance caused by poor land management to be used as a motivating factor for land use change that transforms forest.

c) Land Use Guidance from Threat Status of Forests(also see Box 2)

No new land uses that will significantly impact on forest habitats (including residential development, capital infrastructure projects and agriculture), must be considered in or near any of the forest types. Where limited building and infrastructure development of an eco-tourist nature is allowed in forest types with ratings below the status of endangered, it must be ensured that these are placed in the least sensitive parts of the forest (preferably disturbed parts that can be rehabilitated). Very exceptional cases, involving capital projects that can be proven to be of national or provincial strategic importance, may have to be referred to the relevant top management or ministers of relevant decision-making authorities. Should such projects be approved, then off-set agreements must be reached that will result in a net replacement of the habitat lost.

THREAT STATUS RATING OF FOREST TYPE OR FOREST PATCH	GUIDELINES Activities indicated below are the maximum allowable, but with due consideration of the sensitivity of the sites within a forest, occurrence of rare species etc.	OFF-SET AGREEMENTS
Critically Endangered	No activities or development must be considered that will destroy forest; Only low-impact eco-tourist facilities like boardwalks and bird-hides, but no buildings, infrastructure or bush camps.	No, except if proven to be of national or provincial strategic importance, with no feasible alternatives.
Endangered	No activities or development must be considered that will destroy forest; Low-impact eco-tourist facilities like boardwalks and bird-hides, and small bush-camps, but no buildings and infrastructure.	No, except if proven to be of national or provincial strategic importance, with no feasible alternatives.
Vulnerable and Lower	Low-impact eco-tourist facilities like boardwalks and bird-hides, and small bush-camps. Very limited building and infrastructure development of an eco-tourist nature, such as limited numbers of chalets. These should be placed outside forests as far as possible, with forest margins intact.	Can be considered for the above, and for limited building and infrastructure of an eco-tourist nature.

The above land use guidelines for the various threatened status ratings of forests must be used as benchmark to determine whether a proposed land use will significantly transform a forest or not. The number of people or vehicles (if allowed) and the footprint of bush-camps and other structures and transformed areas, must be limited.

d) What Constitutes Exceptional Circumstances?

The National Forests Act of 1998 states clearly that "*...natural forests may not be destroyed save in exceptional circumstances where, in the opinion of the Minister, a proposed new land use is preferable in terms of its economic, social or environmental benefits*". This does not mean that all such issues have to be referred to the Minister of Water Affairs and Forestry for a decision, but implies that mandated officials can apply the principle in decision-making, within the framework of policy and legal interpretation.

The term "exceptional circumstance" indicates situations that are unusual or rare.

In this case it refers to capital projects of national and provincial strategic importance. Where forests are affected by such projects, it must first be proven beyond doubt that these are in the strategic national or provincial interest, and secondly that no feasible alternative is available (such as an alternative site or route). If unavoidable, an off set agreement must be reached to compensate for the loss, and all feasible mitigation measures must be taken to minimise the impact.

Land uses which transform natural habitat and which are not of national or provincial strategic importance (including residential development and agriculture), and are not of national or provincial strategic importance, do not constitute exceptional circumstances. What then, could be considered of national strategic importance? Examples are:

- Vital infrastructure such as a road constructed between Ugie and Umtata in the Eastern Cape which cuts through Langeni forest, and will give a direct link between an important capital town and growth nodes in the interior which are important suppliers and markets of goods. This will cut out long detours and stimulate economic growth and tourism. The impact of the road on the forest was greatly lowered by a reduction of the road design speed. The widening of the N2 road through a portion of the Tsitsikamma forest to accommodate increasingly heavy traffic could also be seen as an issue of strategic importance, but this is considered a less clearcut case by some sectors of the public. Other exceptional cases may include military installations of strategic defense importance, such as early warning radar stations on Mariepskop in the Drakensberg (Mpumalanga) and Hanglip on the Soutpansberg (Limpopo Province). These have some infrastructure, including service roads, that affect forests.

Where environmental authorisation is given for development, strict conditions must be set

for appropriate mitigation measures, subject to an approved environmental management plan, to be overseen by an appropriately qualified environmental manager, and to be monitored by the relevant government bodies. In addition, an appropriate off-set agreement must be reached to benefit conservation in the immediate area. Existing ownership of property in itself does not constitute an exception.

e) Land Use and Development Guidance

- **Strategic Planning :**

Signatories/parties to the Memorandum of Understanding must promote the pro-active identification and earmarking of natural forests for protection as natural open space (private or public), "Green Wedges" or conservation areas in strategic plans of local and district municipalities such as the Integrated Development Plans, Structure Plans and Environmental Management Plans. Thus the plans should support the National Forests Act and National Environmental Management Act (where incompatible land uses have been assigned to forest areas, this legislation is compromised). Protection of forests in these plans must then be upheld in all decision-making affecting land use change and development.

- **Environmental Impact Assessment :**

Environmental Impact Assessment procedures must take cognisance of the requirements of all plans and legislation affording protection to natural forests, including the National Forests Act as well as these principles and guidelines and the Memorandum of Understanding they underpin. The impacts of the proposed land use or development on any natural forests must be comprehensively investigated, including impacts on the buffer areas, the forest fauna and flora, and the forest ecosystem and dynamics. Such impact assessment must also consider the national and provincial conservation importance and planning for the forest types and individual forest patches involved (especially if these are listed as threatened ecosystems under the NEM Biodiversity Act), as well as the wider strategic status quo of the forest types (including threats). In case of the latter, the legal requirement is that a basic assessment be done for any extent of the natural vegetation removed (the EIA Regulations R385 of 2006 under the National Environmental Management Act No 107 of 1998 requires a basic assessment for removal of natural vegetation above 3 hectares, but this threshold falls away for listed threatened ecosystems).

No environmental authorisation should be given to land uses that will significantly transform forests, save in proven exceptional cases of national or provincial strategic importance where no alternatives are available. A full environmental impact assessment should be required, with an investigation of feasible mitigation measures and off-set possibilities.

- **Development Planning :**

As with environmental impact assessment procedures, no development authorisation should be given to land uses that will significantly transform forests, save in proven exceptional cases of national or provincial strategic importance where no alternatives are available. Where low-impact eco-tourist facilities (not the same as low density residential "eco-estates") and activities are authorized, these must be placed in the least sensitive parts of the forest, and care must be taken to limit the impacts. Development footprints must be limited, building or structure design and colour must blend with the forest, forest canopies must be kept intact, structures should be placed on stilts, and heavily used walkways should be placed on boardwalks to prevent soil compaction (see the concept of a development footprint in Appendix D). In coastal and dune forest areas the positioning of pathways and structures must be such to prevent wind blowouts and the exposure of vegetation to salt spray.

Development that will transform forests significantly but proven to be of a national or provincial strategic importance could be authorized if there is no feasible alternative. Mitigation measures must be applied to limit impacts and off-set agreements should be reached that will result in a nett ecological gain of the habitat type lost (see description of off-set agreement under definitions).

Proposed land uses or development that meet the requirements of the land use guidelines set for the various threatened status ratings of the forests, still require careful design and placement to minimise impacts. The most sensitive parts of forests have to be avoided. Significant structures such as chalets should be placed outside forests with buffer areas to keep forest margins intact. The size of buffer areas could vary according to circumstances, but should not be less than 20m. In exceptional cases structures could be placed in disturbed areas within forests that are not part of the natural disturbance regime. Proper investigation by appropriately qualified experts are necessary.

[3] Natural Forests can have up to five layers which usually include a ground layer (herbaceous stratum), shrub layer and canopy layer, but can include intermediate trees below the canopy and emergent trees above the canopy. There may be cases of natural forests with poorly distinguished layering or only a canopy layer. The occurrence of a herbaceous layer in dune forests may, for example, depend on the density of the canopy. Mangrove forest as a rule has only one irregular canopy layer

f) Expert Investigation

Investigations by appropriately qualified environmental practitioners and supporting experts (forest scientists, ecologists, botanists etc.) are necessary for any land use or development proposals affecting natural forests. The type of experts needed will be dictated by circumstances. Such experts must be independent and objective, and may not have any personal interest or gains from the proposed land use or development. Where uncertainties arise about the findings of a consultant, a second opinion could be sought, or the report could be subjected to peer review (by other suitably qualified experts), especially if there are substantial concerns by stakeholders about the findings of consultants.

Secondary and accumulative impacts must also be addressed in all investigations.

g) Forest Rehabilitation

Where destruction of forest took place whether through legal or illegal action, rehabilitation of such areas must be a prime mitigation consideration. Experience with rehabilitation (e.g. the mined dune areas of Richards Bay Minerals) indicates that:

- The rates of recovery of forest types may differ, and the rate of recovery could also depend on the scale and intensity of disturbance;
- Recovery may take many decades, and in cases of large scale disturbance it may not be possible to achieve the re-creation of the previous environmental conditions or biodiversity that existed within a human lifetime (forests are dynamic ecosystems which developed over paleontological time-spans, and even more recent coastal dune forests are often the result of inter-active natural processes over centuries);
- Rehabilitation or re-establishment of forests must not be seen as a quick fix or excuse for allowing the destruction of forest in favour of a new land use or development;
- Forest rehabilitation or creation requires very specific conditions, not the least of which is the extremely slow process of pedogenesis or topsoil development,and therefore is a very complex and specialised field requiring inputs of experts;
- Attempts to create forests where they did not exist before are very seldom successful;
- Forest rehabilitation or establishment should focus on the interplanting of trees and/or establishing of pioneer species and allowing a forest to mature gradually through the processes of plant succession;
- The tree species should be carefully selected and planted in the right site conditions for each species, and must be species that occur locally in that particular forest type;
- Smaller vegetation (herbs, shrubs and seedlings) can be removed in the path of development and maintained in a nursery off-site for re-establishment in the rehabilitation phase (usually infrastructure projects of national or provincial strategic importance).

h) Off-set Agreements

Where an off-set agreement becomes necessary to compensate for a nett loss in biodiversity, the agency that will be responsible for this loss has to reach an agreement with the conservation agencies with the mandates or jurisdiction over the relevant forest or forests, including DWAF and the relevant provincial conservation agency. The off-set agreement proposal to be agreed must include the following in writing:

- A description of the off-set to be achieved;
- Description of the sites involved, their suitability and their preparation (where the off-set involves the creation or rehabilitation of forest on other sites);
- Techniques to be employed;
- Description of the phases;
- Funding mechanism and cost-breakdowns;
- Specialists involved;
- Process to involve the main stakeholders (signatories of the agreement);
- Monitoring of compliance;
- Penalties for non-compliance.

BOX 2: THE LISTING OF THREATENED AND PROTECTED FOREST ECOSYSTEMS

In 2005 the SA National Biodiversity Institute initiated a process to identify threatened and protected ecosystems. The National Environmental Management Biodiversity Act No 10 of 2004 (NEMBA) determines that "threatened ecosystems" listed under this Act must be taken into account in Integrated Development Plans of local authorities, and that a basic assessment is required for the transformation of any amount of natural vegetation of such listed ecosystems. This imposes stricter control over activities that may affect these ecosystems both in forward planning and development control (the EIA Regulations R385, R386 and R387 of 2006 under the National Environmental Management Act No 107 of 1998 only requires a basic assessment for removal of more than 3 hectares of natural vegetation, apart from other listed activities). The Act also makes provision for the establishment of "bioregional plans", which contain measures for the effective management of biodiversity and the components of biodiversity in the region. Listed threatened ecosystems will be reflected in these plans as part of the "critical biodiversity areas" to be accounted for in planning and conservation, and monitored. The Act makes provision for a second category of "protected ecosystems" which are under threat, but not in immediate danger. Such ecosystems have to be monitored and will also be reflected in bioregional plans.

The process started with a national workshop with stakeholders where it was decided to develop one set of criteria for identifying threatened or protected ecosystems for terrestrial biomes, but to develop a separate set for the forest biome and the riverine and marine systems due to their uniqueness. A working group was established to develop these criteria for forests, and workshops were held with stakeholders with the aim of identifying forest types and forest patches to be listed as threatened and protected ecosystems.

The criteria developed have thresholds to determine whether forest types or individual forest patches would be listed as Critically Endangered (CE); Endangered (E) or Vulnerable (VU). Only forest types and forest patches determined to be Critically Endangered or Endangered are listed as threatened ecosystems, while those determined to be Vulnerable are listed as protected ecosystems.

The Criteria developed are:

A1. Irreversible habitat loss; A2. Ecosystem degradation & loss of integrity; B. Rate of loss of natural habitat; C. Limited original extent & imminent threat; D. Threatened species associations; E. High Conservation value forest patches under imminent threat

The following forest types are listed as threatened forest ecosystems:

ENDANGERED CATEGORY

KwaZulu-Natal Coastal Forest
Mangrove Forest
Western Cape Milkwood Forest

VULNERABLE CATEGORY

Low Escarpment Mistbelt Forest
Lowveld Riverine Forest
Eastern Scarp Forest
Pondoland Scarp Forest
Swamp Forest
Transkei Coastal Scarp Forest

Several forest patches or clusters occur in ecosystem areas also listed as endangered, and this has to be checked with the South African National Biodiversity Institute. These patches are not necessarily part of one of the forest types listed as endangered or vulnerable. For more information search the website www.sanbi.org

Definitions

i) Biodiversity (biological diversity):	The species richness (variety of species) of fauna and flora in a habitat type, genetic variety within and among species, and variety of ecosystems or habitat types. Biodiversity is considered as a prime conservation aim, and requires sound functioning ecosystems and the protection of sufficient areas of each habitat type.
ii) Destruction:	This could mean any action that will cause the loss of forest habitat or part of it, including actions with direct impacts such as the cutting of forest trees, or indirect impacts such as the alteration of estuarine water flow which could lead to the decline of mangrove forest.
iii) Development:	Any action that will permanently transform or dominate forest habitat (and surrounding habitats) for purpose of land use change (including the making of agricultural lands and urban land use, excluding open space and conservation uses in and around urban areas).
iv) Ecosystem:	A dynamic system of plant, animal and micro organism communities and their non-living environment interacting as a functional unit. Forest ecosystems are characterized by a predominance of trees, and by the fauna, flora and ecological cycles (energy, water, carbon and nutrients) with which they are closely associated.
v) Eco-tone:	A transitional zone in which one type of ecosystem or habitat tends to merge with another type of ecosystem or habitat (for e.g. forest margin between a forest and grassland). These transitional zones usually contain a mix of species from both ecosystems or habitats, and the species diversity as a consequence are often higher there than in the two adjoining habitats (called the "edge effect").
vi) Forest Structure :	The relative height and number of layers that a forest attain.
vii) Forest Type :	Forests that are similar in structure and composition of plant and animals species can be grouped into a forest type, and can be distinguished from other forest types that are different in structure and/or species composition. The national forest type classification categorizes the South African forests into 24 forest types, while two more national forest types have recently been identified. Forests belonging to a national forest type can also be divided or categorized into forest sub-types, which is a further refined classification on the basis of forest structure and species composition.
viii) Forest Margin :	Natural forests are fringed by belts of hardy pioneer plants that can recover or regenerate rapidly after being damaged by fire or grazing, provided that such destructive events do not occur too frequently. These margins are transitional zones (ecotones) between forests and the surrounding veld types (usually grassland, fynbos or woodland) that protect the forest from fire and the drying effects from the sun.
ix) Natural Forest (Indigenous Forest) :	The definition of "natural forest" in the National Forests Act of 1998 (NFA) Section 2(1)(xx) is as follows: 'A natural forest means a group of indigenous trees • whose crowns are largely contiguous • or which have been declared by the Minister to be a natural forest under section 7(2)'

ix) Natural Forest (Indigenous Forest) :	This definition should be read in conjunction with Section 2(1)(x) which states that 'Forest' includes: • A natural forest, a woodland and a plantation • The forest produce in it; and • The ecosystems which it makes up. The legal definition has to be supported by a technical definition, as demonstrated by a court case in the Umzimkulu magisterial district, relating to the illegal felling of Yellowwood (Podocarpus latifolius) and other species in the Gongogongo forest. From scientific definitions (also see Appendix B) we can define natural forest as: • A generally multi-layered vegetation unit[4] • Dominated by trees[5] that are largely evergreen or semi-deciduous • The combined tree strata have overlapping crowns, and crown cover is >75% • Grasses in the herbaceous stratum (if present) are generally rare • Fire does not normally play a major role in forest function and dynamics except at the fringes • The species of all plant growth forms must be typical of natural forest (check for indicator species)[6] • The forest must be one of the national forest types
x) Off-set agreement:	An agreement to initiate conservation actions to compensate for the residual unavoidable harm to ecosystems and biodiversity caused by projects, usually to ensure that there is no nett loss to biodiversity. Agreements on off-sets have to be reached on a case by case basis by the parties involved.
xi) Sustainable Development:	The integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations. The National Environmental Management Act states inter alia that sustainable development requires the avoidance, mitigation and remediation of disturbance of ecosystems and loss of biodiversity, as well as a precautionary approach.

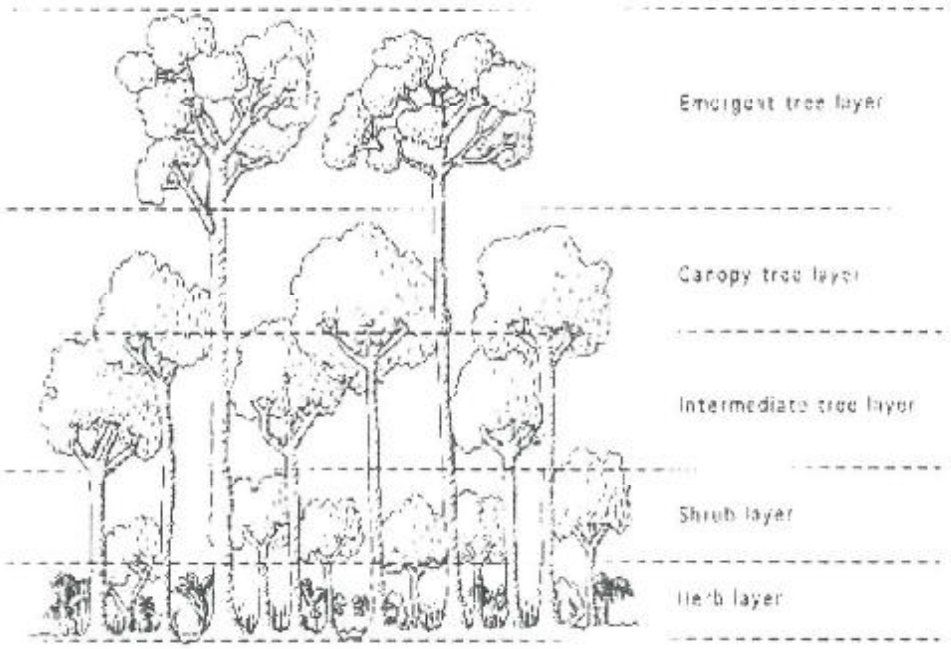
[4] Number of layers is not a criterion. See appendix A.

[5] The definition of tree applied here is as follows: *"a woody plant, self-supporting with a diameter at breast height (DBH) greater than 10 mm and a height greater than 3 m (single-stemmed), and if multi-stemmed, then a height greater than 5 m"*. This is the potential height that the species can commonly reach, even though they may occur in the form of a low shrub under extreme conditions such as the fore-dune.

[6] The species of all growth forms

- Must be typical of a natural forest habitat
- Use species listed for defined forest types of National Forest Type Classification as guide (Von Maltitz et al 2003)

Appendices



A) PROFILE OF NATURAL FOREST

- Natural forest may have some or all of following layers or strata present:
- Ground or herbaceous layer (or layers) containing herbs, and/or ferns and/or woody seedlings;
- Shrub layer (or layers) ;
- Loosely defined intermediate layer(s) of trees below canopy;
- Canopy layer formed by more-or-less contiguous crowns of canopy trees;
- Emergent tree layer (one, two or several trees per hectare) above general canopy.

B) COMPARISON BETWEEN THE CHARACTERISTICS OF NATURAL FOREST, WOODLAND AND THICKET

Attribute	Natural Forest	Woodland	Thicket
CANOPY (Tree crowns)	largely contiguous	broken, trees separated from each other at varying distances	largely contiguous
LAYERING (Strata)	two or more (canopy, herbaceous and shrub/sapling in between)	two or more (canopy, herbaceous and shrub/sapling in between	absent
GRASSES	absent	present, dominant in herbaceous stratum	absent, except in glades (openings)
FIRE	absent	present (fire adapted ecology)	absent
SEASONAL EFFECTS	evergreen	deciduous	evergreen
TREE COMPONENT	dominant	dominant	rare
WOODY ELEMENT	dominant (trees)	wood and grass share dominance	dominant (dense shrubs/ dwarfed trees)

Key:

Sharing attributes: Green

Not sharing attributes: Blue

ANALYSIS:

- All three vegetation types are woody (forests)
- Only two attributes are common to both natural forest and woodland
- No attributes are common to both woodland and thicket
- Most attributes are shared by, or common to, natural forest and thicket
- Woodland is more different from both natural forest and thicket, than natural forest and thicket from each other
- The conclusion is that there is a closer relationship between natural forest and thicket, than between either of these and woodland.
- It may be that thicket is a xerophytic form of forest

C) NATIONAL FOREST TYPES

Major forest groups and forest types belonging to them

I: SOUTHERN AFROTEMPERATE FOREST GROUP (VEGMAP CODE FOz I)
I1: Western Cape Talus Forests (VEGMAP CODE FOz I1) I2: Western Cape Afrotemperate Forests (VEGMAP CODE FOz I2) I3: Southern Cape Afrotemperate Forests (VEGMAP CODE FOz I3)
II: NORTHERN AFROTEMPERATE FOREST GROUP (VEGMAP CODE FOz II)
II1: Marekele Afromontane Forests (VEGMAP CODE FOz II1) II2: Northern Highveld Forests (VEGMAP CODE FOz II2) II3: Drakensberg Montane Forests (VEGMAP CODE FOz II3) II4: Low Escarpment Mistbelt Forests (VEGMAP CODE FOz II4)
III: SOUTHERN MISTBELT FOREST GROUP (VEGMAP CODE FOz III)
III1: Eastern Mistbelt Forests (VEGMAP CODE FOz III1) III2: Transkei Mistbelt Forests (VEGMAP CODE FOz III2) III3: Amatole Mistbelt Forests (VEGMAP CODE FOz III3)
IV: NORTHERN MISTBELT FOREST GROUP (VEGMAP CODE FOz IV)
IV1: Northern Mistbelt Forests (VEGMAP CODE FOz IV1) IV2: Mpumalanga Mistbelt Forests (VEGMAP CODE FOz IV2)
V: SCARP FOREST GROUP (VEGMAP CODE FOz V)
V1: Eastern Scarp Forests (VEGMAP CODE FOz V1) V2: Pondoland Scarp Forests (VEGMAP CODE FOz V2) V3: Transkei Coastal Scarp Forests (VEGMAP CODE FOz V3) (previously Transkei Coastal Forests)
VI: SOUTHERN COASTAL FOREST GROUP (VEGMAP CODE FOz VI)
VI1: Eastern Cape Dune Forests (VEGMAP CODE FOz VI1) VI2: Albany Coastal Forests (VEGMAP CODE FOz VI2) VI3: Western Cape Milkwood Forests (VEGMAP CODE FOz VI3)
VII: NORTHERN COASTAL FOREST GROUP (VEGMAP CODE FOz VII)
VII1: KwaZulu-Natal Coastal Forests (VEGMAP CODE FOz VII1) VII2: KwaZulu-Natal Dune Forests (VEGMAP CODE FOz VII2)
VIII: TROPICAL DRY FOREST GROUP (VEGMAP CODE FOz VIII)
VIII1: Licuati Sand Forests (VEGMAP CODE FOz VIII1) VIII2: Nwambyia Sand Forests (VEGMAP CODE FOz VIII2) – New Forest Type VIII3: Ironwood Dry Forests (VEGMAP CODE FOz VIII3) - New forest type
A: AZONAL FOREST TYPES
A1: Lowveld Riverine Forests (VEGMAP CODE FOa 1) A2: Swamp Forests (VEGMAP CODE FOa 2) A3: Mangrove Forests (VEGMAP CODE FOa 3)

FROM:

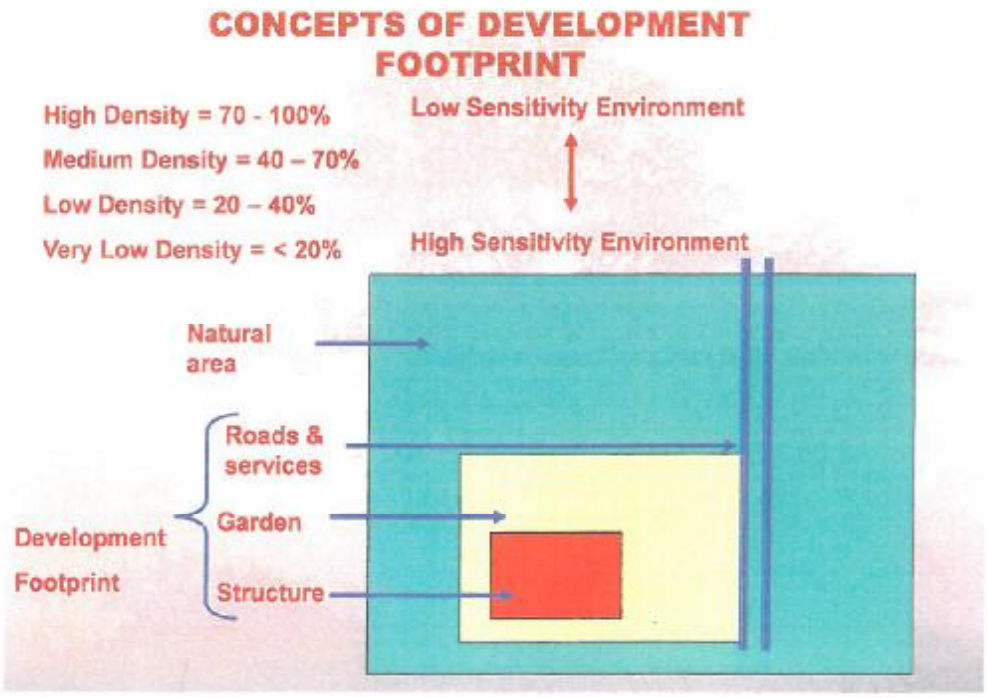
VON MALTITZ, G., MUCINA, L., GELDENHUYS, C., LAWES, M., EELEY, H., ADIE, H., VINK, D., FLEMMING, G. & BAILEY, C. (2003). *Classification System for South African Indigenous Forests. An objective classification for the Department of Water Affairs and Forestry.* Environmentek Report ENV-P-C 2003-017, CSIR, Pretoria. 275 pp.

MUCINA, L. & RUTHERFORD, M.C. (eds.) (2006). The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

D) LAND USE AND DEVELOPMENT DESIGN CONCEPTS

All natural forests are considered high sensitivity environments. No development may be allowed except limited eco-tourist facilities as specified in the guidelines for the various forest threatened status ratings. Where development of an eco-tourist nature or development proven to be of exceptional national or provincial strategic importance is allowed, the development footprint must be restricted. Building structures must usually be placed outside the forest with a sufficient buffer area to keep the forest margin intact (usually more than 20m). Where building structures are erected inside a forest, these must be built on stilts and fitted into disturbed areas as far as possible, may not protrude above the canopy (canopy must remain intact), and may not have gardens. Any paved areas and services must be kept to a minimum. Avoid placing cables underground or through the canopy, but these can be fixed to small poles about a metre above ground. Building structures must be in natural colours that blend with the surrounding environment.

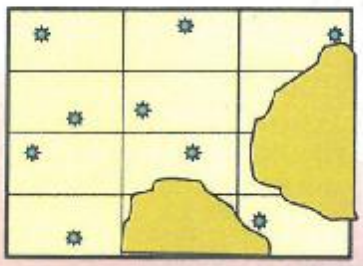
Figure 1



CONCEPTS OF LOW-DENSITY DEVELOPMENT

GRID LAYOUT

- Private properties cover whole area
- No trust land



CLUSTER LAYOUT

- Private properties grouped
- Large trust land

Cluster layouts for development generally offer better opportunities to minimise environmental impacts. Houses can be clustered together in less sensitive environments and high conservation value ecosystems such as natural forests can be protected on land held in trust by the land owners or set aside for conservation and low-impact outdoor recreation activities. Cluster layouts can reduce the length, cost and impacts of roads and services considerable.