
GOVERNMENT NOTICE

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

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NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT NO. 10 OF 2004)

NATIONAL LIST OF ECOSYSTEMS THAT ARE THREATENED AND IN NEED OF PROTECTION

I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby publish, in terms of section 52(1)(a) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), a national list of ecosystems that are threatened and in need of protection, in the Schedule hereto.



BOMO EDITH EDNA MOLEWA
MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

SCHEDULE

Threatened Terrestrial Ecosystems in South Africa

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Acronyms

| | |
|--------------|--|
| BGIS | Biodiversity GIS (http://bgis.sanbi.org) |
| BMP-E | Biodiversity management plans for ecosystems |
| BMP-S | Biodiversity management plans for species |
| CR | Critically endangered |
| DAFF | Department of Agriculture, Forestry and Fisheries |
| DEA | Department of Environmental Affairs |
| DWA | Department of Water Affairs |
| DWAF | Department of Water Affairs and Forestry |
| EIA | Environmental Impact Assessment |
| EIP | Environmental Implementation Plan |
| EMF | Environmental Management Framework |
| EMP | Environmental Management Plan |
| EN | Endangered |
| IDP | Integrated Development Plan |
| IUCN | International Union for Conservation of Nature |
| NBA | National Biodiversity Assessment |
| NEMA | National Environmental Management Act |
| NLC | National Land Cover |
| NSBA | National Spatial Biodiversity Assessment |
| SANBI | South African National Biodiversity Institute |
| SDF | Spatial Development Framework |
| SEA | Strategic Environmental Assessment |
| TOPS | Threatened or Protected Species |
| VU | Vulnerable |

Executive Summary

This document contains the first national list of threatened terrestrial ecosystems and provides supporting information to accompany the list, including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed terrestrial ecosystems. It also includes individual maps and detailed information for each listed ecosystem. **This document, together with spatial data for listed ecosystems, can be accessed on SANBI's Biodiversity GIS (BGIS) website (<http://bgis.sanbi.org>).**

References are not provided in this executive summary, but can be found in footnotes in the main document.

The National Environmental Management: Biodiversity Act (Act 10 of 2004) provides for listing of threatened or protected ecosystems in one of the following categories:

- **critically endangered (CR) 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;
- **endangered (EN) 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;
- **vulnerable (VU) 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;
- **protected ecosystems**, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed as critically endangered, endangered or vulnerable

All stakeholders agreed early on that a **phased approach** should be taken to listing ecosystems, given the complexity of the process. The **first list of ecosystems consists of threatened ecosystems in the terrestrial environment**; future phases will deal with threatened ecosystems in the freshwater, estuarine and marine environments, and with protected

ecosystems in all environments. According to the Biodiversity Act, published lists of ecosystems must be reviewed at least every five years.

At the request of the Department of Environmental Affairs (DEA), SANBI has led the process of identifying threatened ecosystems to be listed, working in close collaboration with DEA, provincial conservation authorities, the Branch: Forestry previously of the Department of Water Affairs and Forestry (DWAF) now located in the Department of Agriculture, Fisheries and Forestry (DAFF), and relevant experts. **All listed ecosystems have been identified based on carefully developed and consistently applied national criteria.** There has been strong emphasis on the use of best available science as well as on the realities of implementation, to ensure that the list of threatened ecosystems is both scientifically rigorous and implementable.

The Biodiversity Act allows the Minister or an MEC to list ecosystems. The current list consists of national threatened terrestrial ecosystems identified based on national criteria, and is thus listed by the Minister. A province may develop additional provincial criteria and identify additional ecosystems to be listed by the MEC. However, to avoid confusion this is discouraged until the process of listing national ecosystems has been well established.

The National Spatial Biodiversity Assessment (NSBA) 2004 included early attempts to identify threatened ecosystems. However, the identification of threatened terrestrial ecosystems for the current phase of listing has been much more detailed and comprehensive, using additional criteria and data. This means that the **list of threatened terrestrial ecosystems presented here supersedes the information regarding terrestrial ecosystem status in the NSBA 2004.** When the National Biodiversity Assessment (NBA) 2011 is published, it will be aligned and consistent with this published list of threatened terrestrial ecosystems.

Why list ecosystems?

The White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity (1997) noted that little attention had historically been paid to protection of ecosystems outside protected areas. This laid the basis for the Biodiversity Act to introduce a suite of new legal tools for biodiversity conservation outside protected areas, including listing of threatened or protected ecosystems, listing of threatened or protected species, bioregional plans, biodiversity management plans for ecosystems or species, and biodiversity management agreements.

The **purpose of listing threatened ecosystems** is primarily to reduce the rate of ecosystem and species extinction. This includes preventing further degradation and loss of structure, function and composition of threatened ecosystems. The **purpose of listing protected ecosystems** is primarily to preserve witness sites of exceptionally high conservation value. For both threatened and protected ecosystems, the purpose includes enabling or facilitating proactive management of these ecosystems. It is likely that ecosystem listing will also play a symbolic and awareness-raising role; however, this is not the primary purpose of listing ecosystems.

The purpose of listing threatened or protected ecosystems is *not* to ensure the persistence of landscape-scale ecological processes or to ensure the provision of ecosystem services, even though listing ecosystems may contribute towards these important goals.

Bioregional plans published in terms of the Biodiversity Act identify critical biodiversity areas, which will include landscape-scale ecological features (such as ecological corridors and important catchments) which are crucial for biodiversity conservation but which will not be protected through listing of threatened or protected ecosystems. *A Guideline Regarding the Determination of Bioregions and the Preparation and Publication of Bioregional Plans* was gazetted in March 2009.

Biodiversity management plans will be a useful tool for active management of threatened ecosystems. Norms and standards for biodiversity management plans for ecosystems are in the process of being developed.

How were listed ecosystems identified?

As a starting point, several **principles** were established for identifying threatened or protected ecosystems:

- The approach must be explicit and repeatable;
- The approach must be target-driven¹ and systematic, especially for threatened ecosystems;

¹ Biodiversity targets, also known as biodiversity thresholds, are explicit quantitative targets that tell us how much of an ecosystem (or other biodiversity feature) needs to be conserved in order to meet our biodiversity goals of representation and persistence. Biodiversity targets are expressed as, for example, numbers of hectares of an ecosystem.

- The approach must follow the same logic as the IUCN approach to listing threatened species, whereby a number of criteria are developed and an ecosystem is listed based on its highest ranking criterion;
- The identification of ecosystems to be listed must be based on scientifically credible, practical and simple criteria, which must translate into spatially explicit identification of the ecosystems concerned.

In deciding on the appropriate **spatial scale** for identifying threatened or protected ecosystems, it was important to consider the purpose and rationale for listing ecosystems as well as the legal implications. These two considerations combined require that **listed ecosystems be defined at the local rather than the regional scale**. For the current phase of listing, threatened terrestrial ecosystems have been delineated based on one of the following: the South African Vegetation Map, national forest types recognised by DAFF, priority areas identified in a provincial systematic biodiversity plan, or high irreplaceability forests patches or clusters systematically identified by DAFF. For future phases of listing, ecosystems may be identified at a finer spatial scale than these units, but will not be identified at a broader spatial scale than these units.

The development of **criteria** for identifying threatened terrestrial ecosystems was done through extensive engagement and consultation with provincial conservation authorities, the Branch: Forestry previously of DWAF and now located in DAFF, and relevant experts, and was based on best available science. The criteria and thresholds for critically endangered, endangered and vulnerable ecosystems are summarised in Table 1 and explained in more detail in the main document. If an ecosystem meets any one of the criteria, it should be listed. If an ecosystem meets more than one criterion, it should be listed based on its highest ranking criterion. For example, if an ecosystem meets the threshold for vulnerable on one criterion and the threshold for endangered on another criterion, it should be listed as endangered.

Table 1: Criteria used to identify threatened terrestrial ecosystems, with thresholds for critically endangered (CR), endangered (EN) and vulnerable (VU) ecosystems

| Criterion | CR | EN | VU |
|---|--|--|--|
| A1: Irreversible loss of natural habitat | Remaining natural habitat \leq biodiversity target | Remaining natural habitat \leq (biodiversity target + 15%) | Remaining natural habitat \leq 60% of original area of ecosystem |
| A2: Ecosystem degradation and loss of integrity* | \geq 60% of ecosystem significantly degraded | \geq 40% of ecosystem significantly degraded | \geq 20% of ecosystem significantly degraded |
| B: Rate of loss of natural habitat** | | | |
| C: Limited extent and imminent threat* | -- | Ecosystem extent \leq 3 000ha, and imminent threat | Ecosystem extent \leq 6 000ha, and imminent threat |
| D1: Threatened plant species associations | \geq 80 threatened Red Data List plant species | \geq 60 threatened Red Data List plant species | \geq 40 threatened Red Data List plant species |
| D2: Threatened animal species associations** | | | |
| E: Fragmentation** | | | |
| F: Priority areas for meeting explicit biodiversity targets as defined in a systematic biodiversity plan | Very high irreplaceability and high threat | Very high irreplaceability and medium threat | Very high irreplaceability and low threat |

* Because of data constraints, Criteria A2 and C have been applied to forests but not to other vegetation types.

** Because of data constraints, Criteria B and D2 are dormant at this stage and thresholds have not been set for these criteria. Further testing of Criterion E is needed to determine whether it is a workable criterion for terrestrial ecosystems.

What are the Implications of listing an ecosystem?

There are four main types of implications of listing an ecosystem:

- Planning related implications, linked to the requirement in the Biodiversity Act for listed ecosystems to be taken into account in municipal IDPs and SDFs;
- Environmental authorisation implications, in terms of NEMA and EIA regulations;
- Proactive management implications, in terms of the Biodiversity Act;
- Monitoring and reporting implications, in terms of the Biodiversity Act.

The **environmental authorisation implications** are summarised here. The other implications are discussed in the main document.

The Environmental Impact Assessment (EIA) Regulations include three lists of activities that require environmental authorisation:

- Listing Notice 1: activities that require a basic assessment (R544 of 2010),
- Listing Notice 2: activities that require scoping and environmental impact report (EIR) (R545 of 2010),
- Listing Notice 3: activities that require a basic assessment in specific identified geographical areas only (R546 of 2010).

Activity 12 in Listing Notice 3 relates to the clearance of 300m² or more of vegetation, which will trigger a basic assessment within any critically endangered or endangered ecosystem listed in terms of S52 of the Biodiversity Act. This means **any development that involves loss of natural habitat in a listed critically endangered or endangered ecosystem is likely to require at least a basic assessment** in terms of the EIA regulations.

It is important to note that **while the original extent of each listed ecosystem has been mapped, a basic assessment report in terms of the EIA regulations is triggered only in remaining natural habitat within each ecosystem** and not in portions of the ecosystem where natural habitat has already been irreversibly lost.

Summary statistics and maps of listed ecosystems

As shown in Table 2, remaining natural areas in threatened terrestrial ecosystems make up 9.5% of the country, with critically endangered and endangered ecosystems together accounting for 2.7% and vulnerable ecosystems a further 6.8%. The table shows how the ecosystems are distributed by province, and gives approximate areas. The area figures refer to the remaining natural habitat in listed ecosystems, not their original extent. Figure 1 and Figure 2 show the original and remaining extent of the ecosystems respectively.

Table 2: Summary statistics for listed ecosystems

| | CR | | EN | | VU | | TOTAL | |
|---------------------|------------|------------|--------------|------------|--------------|------------|---------------|------------|
| | 000 ha | % | 000 ha | % | 000 ha | % | 000 ha | % |
| Eastern Cape | 4 | 0.0 | 51 | 0.3 | 588 | 3.5 | 643 | 3.8 |
| Free State | 2 | 0.0 | 383 | 3.0 | 1 049 | 8.1 | 1 433 | 11.0 |
| Gauteng | 99 | 6.0 | 95 | 5.8 | 189 | 11.4 | 384 | 23.2 |
| KZN | 224 | 2.4 | 464 | 5.0 | 1 164 | 12.5 | 1 852 | 19.9 |
| Limpopo | 9 | 0.1 | 123 | 1.0 | 536 | 4.3 | 668 | 5.3 |
| Mpumalanga | 6 | 0.1 | 634 | 8.3 | 2 226 | 29.1 | 2 866 | 37.5 |
| Northern Cape | | | 35 | 0.1 | 109 | 0.3 | 144 | 0.4 |
| North West | 186 | 1.8 | 452 | 4.3 | 1 309 | 12.3 | 1 947 | 18.3 |
| Western Cape | 374 | 2.9 | 154 | 1.2 | 1 083 | 8.4 | 1 611 | 12.5 |
| South Africa | 903 | 0.7 | 2 392 | 2.0 | 8 252 | 6.8 | 11 547 | 9.5 |

Table notes:

- Area figures refer to remaining natural area. They have been rounded to nearest thousand hectares so totals may not add up exactly.
- A blank cell indicates that no ecosystems were identified. A zero indicates that one or more ecosystems have been identified but that their total remaining area is less than 1 000ha.

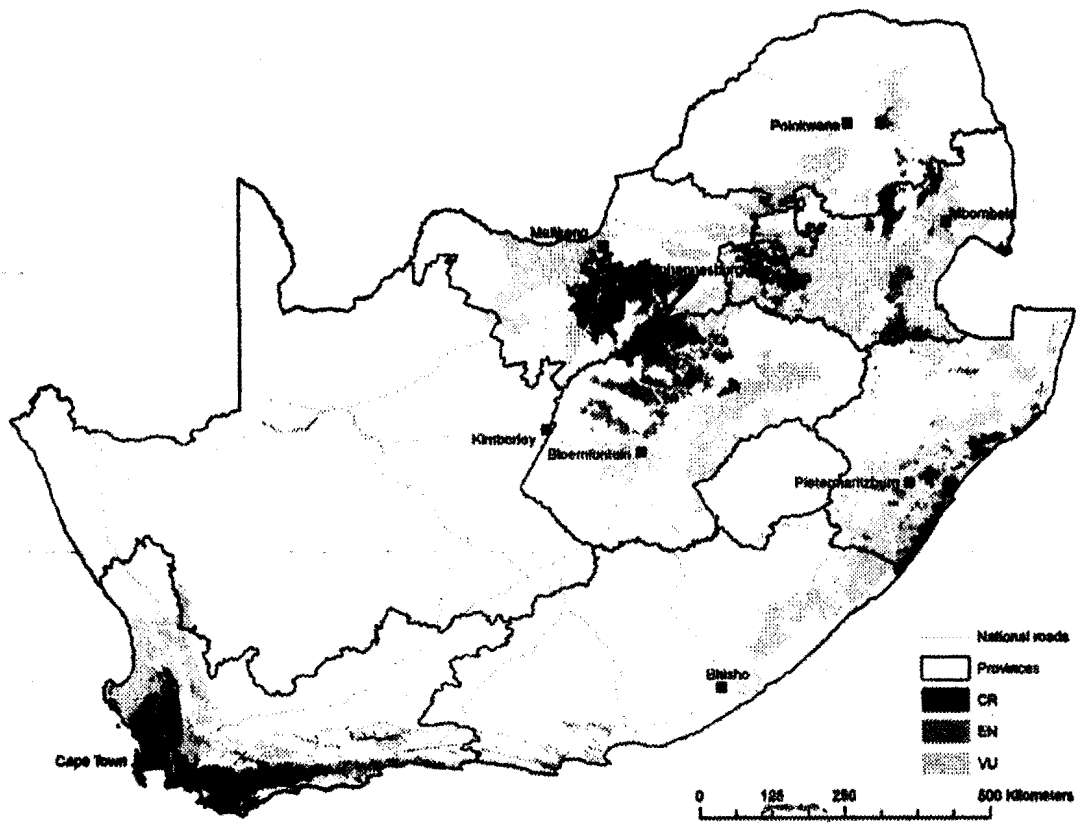


Figure 1: Map of listed ecosystems, showing original extent of ecosystems

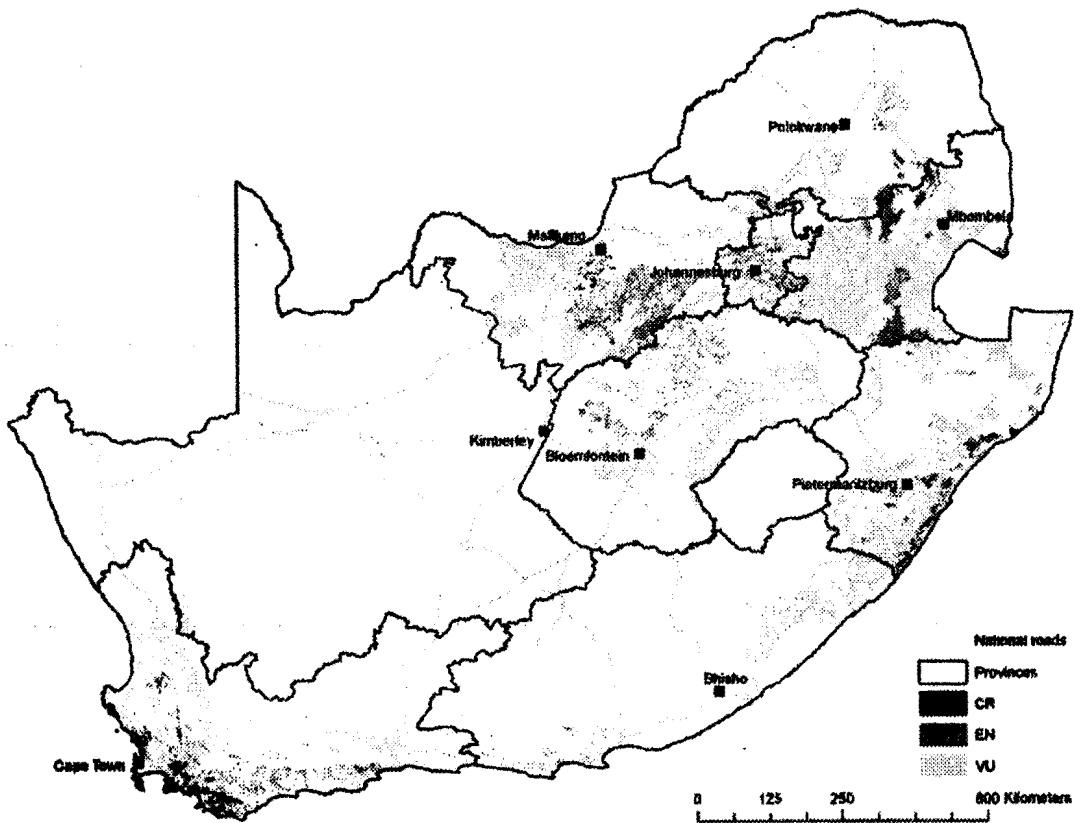


Figure 2: Map of listed ecosystems, showing remaining extent of ecosystems

1 Introduction

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (hereafter referred to as the Biodiversity Act) provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The Department of Environmental Affairs (DEA) requested the South African National Biodiversity Institute (SANBI) to assist in the process of listing threatened or protected ecosystems.

The listing of threatened or protected ecosystems will take place across all environments including terrestrial, freshwater, estuarine and marine. However, all stakeholders have agreed that it makes sense to take a phased approach to listing of ecosystems, given the complexity of the task. The first list of ecosystems consists of **threatened ecosystems in the terrestrial environment**; future phases will deal with threatened ecosystems in the freshwater, estuarine and marine environments, and with protected ecosystems in all environments.² Once these lists have been published they will be reviewed at least every five years as required in the Biodiversity Act.

SANBI has led the process of identifying threatened ecosystems to be listed, working in close collaboration with DEA, provincial conservation authorities, the Branch: Forestry previously of the Department of Water Affairs and Forestry (DWAF) now located in the Department of Agriculture, Fisheries and Forestry (DAFF), and relevant experts. All listed threatened ecosystems have been identified based on carefully developed and consistently applied national criteria. There has been strong emphasis on the use of best available science as well as on the realities of implementation, to ensure that the list of threatened ecosystems is both scientifically rigorous and implementable.

The Biodiversity Act allows for the Minister or an MEC to list threatened or protected ecosystems. The current phase of listing ecosystems includes national listed ecosystems only. All ecosystems listed have been identified according to national criteria and are ecosystems of national significance. Provinces may choose to develop further provincial criteria and to identify additional ecosystems for provincial lists; however, for practical implementation-related reasons

² The exception to this is some azonal (e.g. wetland and alluvial) vegetation types identified in the South African Vegetation Map which have been included in the current phase. These azonal vegetation types represent transitions between the terrestrial and freshwater environments. See Section 4.2 for more on how ecosystems were defined.

this is discouraged until the national listing process is well established (i.e. until ecosystems from all environments, terrestrial and aquatic, have been listed and the lists reviewed at least once). The National Spatial Biodiversity Assessment (NSBA) 2004³ included early attempts to identify threatened ecosystems. However, the identification of threatened terrestrial ecosystems for the current phase of listing has been much more detailed and comprehensive, using additional criteria and data. This means that, once finalised and published in terms of the Biodiversity Act, **the list of threatened terrestrial ecosystems presented here will supersede the information regarding terrestrial ecosystem status in the NSBA 2004.** When the National Biodiversity Assessment (NBA) 2011 is published, it will be aligned and consistent with this published list of threatened terrestrial ecosystems.

This document contains the first national list of threatened terrestrial ecosystems, provides supporting information to accompany the list, and includes individual maps and detailed information for each listed ecosystem. It is structured as follows:

- Section 2 explains the **purpose and rationale** for listing threatened or protected ecosystems,
- Section 3 gives an overview of the relevant sections of the **Biodiversity Act and other legislation** with links to the listing of threatened or protected ecosystems,
- Section 4 explains the principles established and the approach taken to listing ecosystems including the **criteria** developed for identifying threatened ecosystems,
- Section 5 deals with the **implications** of listing a threatened ecosystem,
- Section 6 gives **summary information** on the list of threatened terrestrial ecosystems,
- Section 7 provides **individual maps and descriptions** for each listed ecosystem,
- Section 7 gives **contact details** for further information.

This document, together with spatial data for listed ecosystems, can be accessed on SANBI's Biodiversity GIS (BGIS) website (<http://bgis.sanbi.org>).

³ Driver, A., Maze, K., Rouget, M., Lombard, A.T., Nel, J., Turpie, J.K., Cowling, R.M., Desmet, P., Goodman, P., Harris, J., Jonas, Z., Reyers, B., Sink, K. & Strauss, T. 2005. National Spatial Biodiversity Assessment 2004: Priorities for Biodiversity Conservation in South Africa. *Strelitzia* 17. South African National Biodiversity Institute, Pretoria.

2 Purpose and rationale for listing ecosystems

2.1 Purpose of listing ecosystems

The purpose of listing **threatened ecosystems** is primarily to reduce the rate of ecosystem and species extinction. This includes preventing further degradation and loss of structure, function and composition of threatened ecosystems. The purpose of listing **protected ecosystems** is primarily to preserve witness sites of exceptionally high conservation value. For both threatened and protected ecosystems, the purpose includes enabling or facilitating proactive management of these ecosystems. It is likely that ecosystem listing will also play a symbolic and awareness-raising role; however, this is not the primary purpose of listing ecosystems.

The purpose of listing threatened or protected ecosystems is *not* to ensure the persistence of landscape-scale ecological processes or to ensure the provision of ecosystem services, even though listing ecosystems may contribute towards these important goals. Bioregional plans published in terms of Section 40 of the Biodiversity Act provide maps of critical biodiversity areas, including areas important for the persistence of landscape-scale ecological processes. See Section 3.1.3 of this document for more on bioregional plans and the relationship between threatened ecosystems and critical biodiversity areas.

2.2 Rationale for listing ecosystems

In order to conserve biodiversity effectively, we need to:

- Conserve a **representative sample** of all components of biodiversity (genes, species, ecosystems), which is known as the principle of representation;
- Ensure the continued functioning of **ecological and evolutionary processes** that allow biodiversity to persist over time, which is known as the principle of persistence.

Systematic biodiversity planning (also referred to as systematic conservation planning) is a spatial planning approach, widely used and well developed in South Africa, which identifies geographic priority areas required to achieve these representation and persistence goals.

Broadly speaking, there are two main strategies for ensuring that the geographic priority areas identified in systematic biodiversity plans remain in a well managed natural state:

- Strategy 1: Consolidation and expansion of the protected area network;
- Strategy 2: Integrated management aimed at conservation of critical biodiversity areas outside the protected area network.

The protected area network, for various historical reasons, is biased towards certain ecosystems (such as savanna and mountain fynbos ecosystems) and does a poor job of protecting other ecosystems (such as succulent karoo, grasslands, fynbos lowlands, Nama karoo, almost all freshwater ecosystems, estuaries, and offshore marine ecosystems).

This makes the second strategy all the more important for ecosystems that are poorly protected by the protected area network. These ecosystems often occur in production landscapes where options for formal protection through the protected area network are reduced. Yet, as the White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity (White Paper on Biodiversity, 1997) notes, **little attention has historically been paid to the protection of ecosystems outside protected areas**. The White Paper thus helped set the scene for listing of threatened or protected ecosystems even though it does not refer to them directly. Its Policy Objective 1.2 is especially relevant: maintain and strengthen existing arrangements to conserve South Africa's indigenous biodiversity, both inside and outside of protected areas.

In the discussion of this policy objective, the White Paper notes: "South Africa has a substantial body of law to conserve biodiversity, especially within protected areas and for several plant and vertebrate species. However, *past approaches to biodiversity conservation have not given adequate attention to the conservation of landscapes and ecosystems outside of protected areas...*" (emphasis added).

The White Paper commits government to achieving Policy Objective 1.2 through collaborating with interested and affected parties to:

- Conserve important components of biodiversity through a variety of mechanisms such as legislation, planning controls, guidelines, and protected area designations, giving priority to components of biodiversity requiring urgent protective measures;

- *Introduce legal measures and incentives to conserve important ecosystems, habitats, and landscapes outside of protected areas*, including rangelands and their associated vegetation and indigenous wildlife resources.

According to the White Paper, important components of biodiversity include ecosystems and habitats that:

- contain high diversity,
- contain large numbers of endemic or threatened species,
- are relatively pristine,
- are important nursery or spawning areas,
- are under particular threat,
- are important for endangered or migratory species,
- adjoin conserved ecosystems and habitats,
- are of social, economic, cultural or scientific importance, or
- are unique, representative of or associated with key evolutionary, biological or other life-supporting processes.

In response to the historical lack of attention highlighted in the White Paper to conserving biodiversity outside the protected area network, the Biodiversity Act introduced several new legal tools, including listing of threatened or protected ecosystems. It is important to note that listing threatened or protected ecosystems is just one tool to achieve conservation objectives. Others include:

- Publishing bioregional plans,
- Listing threatened or protected species and accompanying regulations,
- Biodiversity management plans for ecosystems or species,
- Biodiversity management agreements
- Invasive alien species regulations.

Systematic biodiversity planning is an important element in the implementation of several of these tools. It provides the basis for bioregional plans published in terms of the Biodiversity Act (see Section 3.1.3) and for protected area expansion strategies (including the National Protected Area Expansion Strategy led by DEA and approved in March 2009), and assists with the identification of threatened ecosystems (see Section 4.3).

3 Relevant sections of the Biodiversity Act and other legislation

The Biodiversity Act establishes the framework for listing threatened or protected ecosystems, drawing on policy objectives established in the White Paper on Biodiversity. As noted, the Biodiversity Act also provides for several related tools, including bioregional plans, biodiversity management plans, biodiversity management agreements and listed species.

Several other pieces of legislation have direct or indirect links with the Biodiversity Act's provisions on listed ecosystems. Legislation with direct links to listed ecosystems includes:

- National Environmental Management Act (Act 107 of 1998, as amended) (NEMA),
- NEMA Environmental Impact Assessment Regulations (EIA Regulations),
- NEMA Environmental Management Framework Regulations (EMF Regulations).

Legislation with indirect links to listed ecosystems includes:

- National Environmental Management: Protected Areas Act (Act 57 of 2003),
- National Forests Act (Act 84 of 1998),
- National Water Act (Act 36 of 1998),
- Marine Living Resources Act (Act 18 of 1998),
- Integrated Coastal Management Act (Act 24 of 2008),
- National Heritage Resources Act (Act 25 of 1999).

This section briefly summarises the relevant sections of the Biodiversity Act and discusses links with other legislation.

3.1 Biodiversity Act

This section summarises the Biodiversity Act's provisions on listing of ecosystems, and looks at other relevant aspects of the Biodiversity Act dealing with:

- Listing of species,
- Bioregional plans,
- Biodiversity management plans and biodiversity management agreements,
- Regulations,

- Norms and standards,
- Consultation and public participation.

The full text of the relevant sections of the Biodiversity Act is available in Appendix A.

3.1.1 Listing of threatened or protected ecosystems

Sections 52 to 55 of the Biodiversity Act deal directly with listing threatened or protected ecosystems. The Minister may publish a national list of ecosystems that are threatened and in need of protection, and an MEC may publish a provincial list of such ecosystems with the concurrence of the Minister.⁴

The following categories of ecosystems may be listed:

- **critically endangered (CR) 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;
- **endangered (EN) 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;
- **vulnerable (VU) 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;
- **protected ecosystems**, being ecosystems that are of high conservation value or of high national or provincial importance, although they are not listed as critically endangered, endangered or vulnerable.⁵

According to the Act:

- The location of each ecosystem on the list must be described "in sufficient detail".
- The Minister (or MEC) must review the published list of ecosystems at least every five years.

⁴ As noted in Section 1, the current phase of listing ecosystems includes national listed ecosystems only.

⁵ As noted in Section 1, in the current phase of listing criteria for identifying protected ecosystems have not been developed and protected ecosystems have not been listed.

- The Minister may identify any process or activity in a listed ecosystem as a threatening process. Note that in the current phase of listing, threatening processes have not been identified.
- An organ of state that must prepare an environmental implementation or environmental management plan (EIP or EMP) in terms of Chapter 3 of NEMA (i.e. all national departments and provinces), and a municipality that must adopt an integrated development plan (IDP) in terms of the Municipal Systems Act (Act 32 of 2000), must take into account the need for the protection of listed ecosystems (see Section 5 for more on the implications of this important provision).

3.1.2 How do threatened ecosystems relate to threatened species?

The Biodiversity Act also provides for listing threatened or protected species (Sections 56-57). Lists of threatened or protected species with accompanying regulations were gazetted in February 2007 and amended in December 2007, January 2008 and February 2009.⁶

Only species threatened by restricted activities as defined in the Biodiversity Act have been included in the lists of threatened or protected species. The Biodiversity Act defines restricted activities as:

- hunting, catching, capturing or killing any living specimen;
- gathering, collecting or plucking any specimen;
- picking parts of, or cutting, chopping off, uprooting, damaging or destroying, any specimen;
- importing or exporting any specimen;
- having in possession or exercising physical control over any specimen;
- growing, breeding or in any other way propagating any specimen or causing it to multiply;
- conveying, moving or otherwise translocating any specimen;
- selling or otherwise trading in, buying, receiving, giving, donating or accepting as a gift, or in any way acquiring or disposing of any specimen.

⁶ Threatened or Protected Species Regulations R.152 (Government Gazette No. 29657, 23 February 2007); Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected Species R.151 (Government Gazette No. 29657, 23 February 2007); Threatened or Protected Species Amendment Regulations R.1188 (Government Gazette No. 30568, 14 December 2007); Amendment of Critically Endangered, Endangered, Vulnerable and Protected Species Lists R.1187 (Government Gazette No. 30568, 14 December 2007); Threatened or Protected Species Amendment Regulations R.69 (Government Gazette No. 30703, 28 January 2008); Threatened or Protected Species Amendment Regulations R.209 (Government Gazette No. 31962, 27 February 2009); Threatened or Protected Species Second Amendment Regulations R.210 (Government Gazette No. 31963, 27 February 2009).

This list of restricted activities does *not* include destruction of the habitat of a species, which is the main driver of loss of terrestrial species. Many species are threatened only by habitat loss; however, these species have not been listed in terms of the Biodiversity Act. Partly for this reason Criterion D: Threatened Species Associations was developed for listing ecosystems (see Section 4.3 of this document). This criterion identifies ecosystems containing high numbers of threatened species. However, it will not be possible to protect all species threatened by habitat loss via the ecosystem listing process, partly because knowledge of the locations of these species is incomplete.

3.1.3 Bioregional plans

The Biodiversity Act allows for the publishing of bioregional plans. The purpose of a bioregional plan is to provide a map of critical biodiversity areas with accompanying land-use planning and decision-making guidelines, to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact on biodiversity. Bioregional plans are intended to feed into multi-sectoral planning and assessment processes such as Environmental Management Frameworks (EMFs), Spatial Development Frameworks (SDFs), IDPs, Strategic Environmental Assessments (SEAs) and Environmental Impact Assessments (EIAs).

A published bioregional plan is a spatial plan showing terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecological processes. These areas are referred to as critical biodiversity areas, and should remain in a natural or near-natural state. A bioregional plan may also identify ecological support areas which support the ecological functioning of critical biodiversity areas and/or deliver ecosystem services, and which should remain in at least an ecologically functional state. A bioregional plan must include guidelines for avoiding loss or degradation of natural habitat in critical biodiversity areas and ecological support areas. **Critically endangered ecosystems will always form a subset of critical biodiversity areas**, in regions for which bioregional plans have been published.

A Guideline Regarding the Determination of Bioregions and the Preparation and Publication of Bioregional Plans was gazetted in March 2009.⁷ Several bioregional plans are in the process of being developed.

3.1.4 Biodiversity management plans and biodiversity management agreements

Sections 43 to 46 of the Biodiversity Act deal with biodiversity management plans and biodiversity management agreements. Any person, organisation or organ of state can develop a draft biodiversity management plan and submit it to the Minister for approval, for:

- a listed ecosystem,
- an ecosystem which is not listed but which does warrant special conservation attention.

Biodiversity management plans can also be developed for species.

Before approving and publishing a draft biodiversity management plan, the Minister must identify a suitable person, organisation or organ of state willing to be responsible for the implementation of the plan, determine the manner of implementation of the plan, and assign responsibility for the implementation of the plan to the identified person, organisation or organ of state.

The Minister may enter into a biodiversity management agreement with the identified person, organisation or organ of state, or any other suitable person, organisation or organ of state, regarding the implementation of a biodiversity management plan.

A biodiversity management plan must be aimed at ensuring the long-term survival in nature of the species or ecosystem to which the plan relates, and must provide for the responsible person, organisation or organ of state to monitor and report on progress with implementation of the plan.

The Minister must review a published biodiversity management plan at least every five years, and assess compliance with the plan and the extent to which its objectives are being met.

National Norms and Standards for the Development of Biodiversity Management Plans for Species (BMP-S) have been developed by DEA and were gazetted in March 2009.⁸

⁷ Guideline Regarding the Determination of Bioregions and the Preparation and Publication of Bioregional Plans (Government Gazette No.32006, 16 March 2009).

Norms and standards for biodiversity management plans for ecosystems (BMP-E) are in the process of being developed.

3.1.5 Regulations

Section 97 of the Biodiversity Act deals with regulations. The Minister may make regulations relating to minimising the threat to the ecological integrity of a listed ecosystem. The Minister may also make regulations relating to the monitoring of compliance with and enforcement of norms and standards referred to in Section 9 of the Biodiversity Act (see Section 3.1.6).

3.1.6 Norms and standards

Section 9 of the Biodiversity Act deals with norms and standards. The Minister may issue norms and standards for the achievement of any of the objectives of the Act, including restriction of activities which impact on biodiversity and its components. Norms and standards may apply nationwide, in a specific area only, or to a specific category of biodiversity only. The Minister may set indicators to measure compliance with the norms and standards.

3.1.7 Consultation and public participation

Sections 99 and 100 of the Biodiversity Act deal with consultation and public participation. Before exercising the powers discussed above, the Minister must consult all Cabinet members whose areas of responsibility may be affected, consult the MEC for Environmental Affairs of each province that may be affected, and allow for public participation.

Public participation requirements are as follows: The Minister must give notice of the proposed exercise of the power in the Gazette, and in at least one newspaper distributed nationally or distributed in a particular area if only that area is affected. The notice must invite members of the public to submit written representations on, or objections to, the proposed exercise of the power within 30 days, and must contain sufficient information to enable members of the public to

⁶ Norms and Standards for the Development of Biodiversity Management Plans for Species R.214 (Government Gazette No. 31968, 3 March 2009).

submit meaningful representations or objections. The Minister may in appropriate circumstances allow oral representations or objections. The Minister must give due consideration to all representations or objections received or presented before exercising the power.

3.2 Other legislation with direct links to threatened ecosystems

3.2.1 NEMA

The full text of the relevant sections of NEMA is available in Appendix B.

Section 24 of NEMA, which has been amended several times, deals with environmental authorisations. Subsections 24(2) and (3) allow the Minister or MEC to identify geographical areas, based on environmental attributes and as specified in spatial development tools that have been adopted by the competent authority, in which specified activities may not commence without environmental authorisation or in which specified activities may be excluded from environmental authorisation. The Minister or MEC may compile information and maps that specify the attributes of the environment in particular geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes which must be taken into account by every competent authority.

Before identifying an activity or geographical area in terms of Subsection 24(2), the Minister or MEC must publish a notice in the Gazette:

- specifying, through description, a map or any other appropriate manner, the activity or area that it is proposing to list,
- inviting interested parties to submit written comments on the proposed listing within a specified period,
- giving the competent authorities and the date on which the list comes into effect.

In terms of Subsection 53(2) of the Biodiversity Act, **a listed ecosystem is identified as a geographical area in terms of Subsection 24(2) of NEMA**. Also in terms of Subsection 53(2) of the Biodiversity Act, a threatening process in a listed ecosystem becomes a specified activity in terms of Subsection 24(2) of NEMA.

3.2.2 NEMA EIA Regulations

The current EIA Regulations (R543, R544, R545, R546 of 2010)⁹ were promulgated in June 2010 and came into effect on 2 August 2010. They are intended to streamline the environmental authorisation process for developers and for competent authorities (usually provincial environmental affairs departments on behalf of MECs for the environment).

The EIA Regulations include three lists of activities that require environmental authorisation:

- Listing Notice 1: activities that require a basic assessment (R544 of 2010),
- Listing Notice 2: activities that require scoping and environmental impact report (EIR) (R545 of 2010),
- Listing Notice 3: activities that require a basic assessment in specific identified geographical areas only (R546 of 2010).

The list of threatened ecosystems is directly relevant to Activity 12 in Listing Notice 3. Activity 12 relates to the clearance of 300m² or more of vegetation, which will trigger a basic assessment in the following geographical areas:

- within **any critically endangered or endangered ecosystem listed in terms of Section 52 of the Biodiversity Act**, or prior to the publication of such a list within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004,
- within critical biodiversity areas identified in bioregional plans,
- within the littoral active zone or 100m inland from the high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line in urban areas.

A basic assessment in terms of Listing Notice 3 is triggered only in those parts of critically endangered and endangered ecosystems where natural habitat remains.

DEA and some provincial environmental affairs departments have developed guidelines on the interpretation of listed activities, which should be consulted for more detail.

⁹ Government Gazette No. 33306, 18 June 2010, as corrected on 30 July 2010 (R660 of 2010) and 10 December 2010 (R1159 of 2010).

3.2.3 NEMA EMF Regulations

NEMA Section 24(3) provides the basis for the development of Environmental Management Frameworks, for which regulations have been published (R547 of 2010). An EMF is an environmental planning tool that specifies areas where certain land uses are most compatible or incompatible with environmental opportunities and constraints in the landscape. **Listed ecosystems should be incorporated into EMFs**, with restrictions on any loss of natural habitat in critically endangered or endangered ecosystems.

3.3 Other legislation with indirect links to threatened ecosystems

3.3.1 Protected Areas Act

The National Environmental Management: Protected Areas Act (2003) (hereafter referred to as the Protected Areas Act) defines four main categories of protected areas:

- Special nature reserves (can be declared only by the Minister)
- National Parks (can be declared only by the Minister)
- Nature reserves (can be declared by the Minister or MEC)
- Protected environments (can be declared by the Minister or MEC)

Any of these four categories of protected area can be declared on privately owned land, at the request or with the consent of the landowner(s).

The Protected Areas Act also recognises world heritage sites, marine protected areas, specially protected forest areas, and mountain catchment areas, all of which are declared in terms of other Acts.

Protected ecosystems in terms of the Biodiversity Act are *not* intended to be equivalent to any of these categories of protected areas. Listing of ecosystems is intended to complement the Protected Areas Act. There is no substitutability between the protected area categories and the listing categories.

However, there is potential overlap between the rationale for declaration of protected environments and listing threatened ecosystems. A protected environment can be declared "to protect the area if the area is sensitive to development" or "to protect a specific ecosystem outside a special nature reserve, world heritage site or nature reserve" (Subsection 28(2)).

In some cases, listed ecosystems may occur inside protected areas. It is important from the point of view of developing protected area management plans to know if there are ecosystems inside protected areas that are threatened, so that these ecosystems can be appropriately managed.

3.3.2 National Forests Act

In terms of the National Forests Act (1998), trees in all indigenous forests are protected, and some indigenous forests are declared specially protected forest areas.

Chapter 3 of the National Forests Act deals with special measures to protect forests and trees.

- Part 1 (Section 7) prohibits the destruction of indigenous trees in any natural forest without a licence. The Minister can declare a group of indigenous trees to be a forest even if their crowns are not largely contiguous, based on scientific advice that the trees make up a forest.
- Part 2 (Sections 8-11) allows the Minister to declare certain forests specially protected forest areas.
 - A state forest or part of it can be declared a specially protected forest area
 - Land can be purchased or expropriated and declared a specially protected forest area
 - At the request of or with the consent of a landowner outside a state forest, the Minister can declare a specially protected forest area.
- Specially protected forest areas must fall into one of the following categories: forest nature reserve, forest wilderness area, any other type of protected area which is recognised in international law or practice
- Part 3 (Sections 12-16) allows the Minister to declare a tree, a group of trees, a woodland, or a species of tree as protected
- Part 4 (Sections 17-18) gives the Minister powers to intervene urgently to prevent deforestation and to rehabilitate deforested areas

The process of declaring a specially protected forest area, protected woodland or a protected group of trees is considerably more onerous than the process of listing a threatened or protected ecosystem. The Biodiversity Act can therefore complement the National Forests Act in this regard.

3.3.3 National Water Act

The National Water Act (1998) defines a water resource as a watercourse (including wetlands), surface water, estuary or aquifer. The Act places strong emphasis on sustainable use of water resources, and its purpose includes "protecting aquatic and associated ecosystems and their biological diversity" (Subsection 2(g)).

Chapter 3 deals with protection of water resources, and establishes a series of measures for achieving this, including:

- A classification system for water resources (Part 1, Section 12);
- Resource quality objectives, which depend on the class of the water resource (Part 2, Sections 13-15);
- The Reserve (Part 3, Sections 16-18). The ecological reserve is the water required to protect the aquatic ecosystems of the water resource, and varies depending on the class of the water resource.

The implementation of the National Water Act is supported by the National Water Resource Strategy and the Water Resource Classification System. It includes the establishment of Catchment Management Agencies and the development of Catchment Management Strategies.

The listing of threatened or protected inland water ecosystems should complement the objectives of the National Water Act by highlighting aquatic ecosystems that require special attention from an ecological point of view. Listed freshwater and estuarine ecosystems should feed into the water resource classification process and the development of Catchment Management Strategies.

3.3.4 Marine Living Resources Act

Chapter 4 (Section 43) of the Marine Living Resources Act (1998) allows for the declaration of marine protected areas, which are recognised by the Protected Areas Act. Other spatial tools in the Act include the declaration of fisheries management areas (Section 15), priority fishing areas (Section 17) and subsistence fishing zones (Section 19).

As with terrestrial protected areas declared in terms of the Protected Areas Act, marine protected areas and listed marine ecosystems should complement each other. Also as with terrestrial protected areas, a listed marine ecosystem could occur within a marine protected area, highlighting the need for appropriate management of the ecosystem within the protected area.

3.3.5 Integrated Coastal Management Act

The aims of the Integrated Coastal Management Act (2008) include establishing a system of integrated coastal and estuarine management in order to promote the conservation of the coastal environment, maintaining the natural attributes of coastal landscape and seascape, and ensuring that development and the use of natural resources within the coastal zone is socially and economically justifiable and ecologically sustainable.

Chapter 2 considers the coastal zone including the composition of the coastal protection zone (Section 16), the declaration of special management areas (Section 23), and the establishment of coastal set-back lines (Section 25), all of which should consider and include listed threatened or protected ecosystems.

Chapter 4 deals with estuaries and states that all estuaries must be managed in a co-ordinated and efficient manner and in accordance with a national estuarine management protocol to be prescribed by the Minister. This chapter also allows for the development of estuarine management plans. Listed estuarine ecosystems should be taken into account in the development of the national estuarine management protocol as well as in estuarine management plans.

Chapter 6 provides for the preparation and adoption of a national coastal management programme by the Minister (Section 44) for managing the coastal zone; the preparation and adoption of a provincial coastal management programme by the MEC of each coastal province (Section 46); and the preparation and adoption of a coastal management programme for the coastal zone in coastal municipalities (Section 48). Section 56 provides for coastal planning schemes. Coastal management programmes and coastal planning schemes should take listed threatened or protected ecosystems into account.

Chapter 7 refers to the protection of the coastal environment with Part 2 (Section 62) referring to the regulation of the coastal zone and Part 3 (Sections 63-64) referring to environmental authorisations for coastal activities. Again, these should take listed threatened or protected ecosystems into account.

3.3.6 National Heritage Resources Act

According to the National Heritage Resources Act (1999), the national heritage estate may include "landscapes and natural features of cultural significance" (Section 3). There are three grades of heritage resources, corresponding more or less to heritage resources of national, provincial and local significance (Section 7). Chapter 2 of the Act allows for the declaration of national and provincial heritage sites (Section 27), protected areas surrounding national or provincial heritage sites (Section 28), and heritage areas in town and regional planning schemes or other spatial plans (Section 31). An inventory of the national heritage estate must be compiled (Section 39); however, maps of spatial heritage resources do not seem to be required as part of this inventory.

It may be useful in subsequent phases of the ecosystem listing process to explore potential links between listed protected ecosystems in terms of the Biodiversity Act, and heritage sites, protected areas and heritage areas identified in terms of the National Heritage Resources Act.

4 Principles and criteria for identifying threatened ecosystems

From the outset of the process of listing threatened ecosystems, it was clear that a systematic, rigorous process was required to identify threatened or protected ecosystems for listing. There needed to be a clear set of criteria based on best available science, rather than a haphazard or unscientific approach.

As a starting point, SANBI researched similar processes in other countries. Not many countries have attempted something similar, with Australia the most similar. Most of the relevant initiatives are international, not linked to national legislation, and attempt to identify sites or regions of biodiversity importance rather than threatened ecosystems. Most focus on terrestrial environments only. Nevertheless, valuable lessons for South Africa included the following:

- criteria must be scientifically credible, practical and simple;
- different thresholds may be required for different environments;
- the most appropriate scale for mapping ecosystems depends on a range of factors including the nature of the ecosystems and the available data.

Sets of principles and criteria were then developed through a series of workshops with relevant stakeholders and experts (see Appendix C for a list of workshops held and organisations involved). In particular, the following provincial conservation authorities played a major role: CapeNature, Ezemvelo KwaZulu-Natal Wildlife, Gauteng Department of Agriculture, Conservation and Environment (GDACE), and Mpumalanga Tourism and Parks Agency (MTPA).

This section sets out the principles and criteria for identifying listed ecosystems, and briefly discusses how listed ecosystems have been defined and delineated.

4.1 Principles for identifying threatened or protected ecosystems

A set of principles was established to guide the approach to identifying threatened or protected ecosystems for listing:

- The approach must be explicit and repeatable;

- The approach must be target-driven¹⁰ and systematic, especially for threatened ecosystems;
- The approach must follow the same logic as the IUCN approach to listing threatened species, whereby a number of criteria are developed and an ecosystem is listed based on its highest ranking criterion;
- The identification of ecosystems to be listed must be based on scientifically credible, practical and simple criteria, and must translate into spatially explicit identification of ecosystems.

These principles apply across all the environments (terrestrial, freshwater, estuarine and marine) even when the criteria and thresholds differ across the environments. Taking these principles into account, the following three-stage process was established to list ecosystems:

- Develop, test and refine criteria for identifying threatened or protected ecosystems;
- Identify threatened or protected ecosystems based on those criteria;
- List threatened or protected ecosystems.

4.2 How have listed ecosystems been defined?

4.2.1 At what spatial scale have ecosystems been defined?

The Biodiversity Act defines an ecosystem as a dynamic complex of animal, plant and micro-organism communities and their non-living environment interacting as a functional unit. This definition can be sensibly applied at a range of spatial scales, from very small (e.g. a small forest patch, a tidal pool, a rotting log) to very large (e.g. a primary catchment, the savannah biome).

In deciding on the appropriate spatial scale for listing threatened or protected ecosystems, it was important to consider the purpose and rationale for listing ecosystems as well as the legal implications. As discussed in Section 2.1, the purpose of listing threatened ecosystems is in the first instance to reduce the rate of ecosystem and species extinction, rather than to ensure the persistence of landscape-scale ecological processes or to ensure the provision of ecosystem services. As discussed in Section 3.2.2, loss of natural habitat in a critically endangered or

¹⁰ Biodiversity targets, also known as biodiversity thresholds, are explicit quantitative targets that tell us how much of an ecosystem (or other biodiversity feature) needs to be conserved in order to meet our biodiversity goals of representation and persistence (see Section 2.2). Biodiversity targets are expressed as, for example, numbers of hectares of an ecosystem.

endangered ecosystem triggers a basic assessment report in terms of the NEMA EIA regulations. These two considerations combined require that **listed ecosystems be defined at the local rather than the regional scale.**

4.2.2 How have ecosystems been delineated?

For the current phase of listing, threatened terrestrial ecosystems have been delineated based on one of the following: the South African Vegetation Map¹¹, national forest types recognised by DAFF^{12,13}, priority areas identified in a provincial systematic biodiversity plan¹⁴, or high irreplaceability forests patches or clusters systematically identified by DAFF.¹⁵ For future phases of listing and revision of lists, ecosystems may be identified at a finer spatial scale than these units, but will not be identified at a broader spatial scale than these units.

It is important to note that **while the original extent of each listed ecosystem has been mapped, a basic assessment report in terms of the EIA regulations is only triggered in remaining natural habitat within each ecosystem** and not in portions of the ecosystem where natural habitat has already been irreversibly lost.

¹¹ Mucina, L. & Rutherford, M.C. (eds). 2006. The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.

¹² Von Maltitz, G., Mucina, L., Geldenhuys, C., Lawes, M., Eeley, H., Adie, H., Vink, D., Flemming, G. and 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.

¹³ The South African Vegetation Map identifies eight forest groups and four national forest types. DAFF recognises 26 national forest types, including the four national forest types identified in the South African Vegetation Map, and a further 22 national forest types which make up the eight forest groups identified in the South African Vegetation Map. For the purpose of listing ecosystems, DAFF's 26 national forest types have been used rather than the forest groups from the South African Vegetation Map.

¹⁴ Provincial plans used in the current phase of listing were: Gauteng C-Plan V2 (2006), Mpumalanga Biodiversity Conservation Plan (2007), and KwaZulu-Natal Terrestrial Conservation Plan (C-Plan) V4 (2007). Ecosystems were named based on location and distinguishing features, not necessarily the associated vegetation types.

¹⁵ Berliner, D. 2005. Systematic conservation plan for the forest biome of South Africa: Approach, methods and results of the selection of priority forests for conservation action. Department of Water Affairs and Forestry, Pretoria. The National Forest Inventory did not include complete spatial data for all forest patches and clusters when the systematic biodiversity plan for the forest biome was undertaken. DWAF has subsequently identified and mapped some additional forest patches and clusters which are considered highly irreplaceable.

4.3 Criteria for identifying threatened ecosystems

The development of scientifically credible, practical and simple criteria was the starting point for identifying listed ecosystems. A rigorous process of developing and testing criteria for threatened terrestrial ecosystems was followed, involving extensive expert engagement and consultation. See Appendix C for a list of workshops held and organisations represented.

As mentioned in Section 4.1, the decision was made to use the same logic as is used in the IUCN Red Listing process for species. If an ecosystem meets any one of the criteria, it should be listed. If an ecosystem meets more than one criterion, it should be listed based on its highest ranking criterion. For example, if an ecosystem meets the threshold for vulnerable (VU) on one criterion and the threshold for endangered (EN) on another criterion, it should be listed as endangered.

As discussed, a phased approach is being taken to listing ecosystems because of the complexity of the process, with the first phase focusing on threatened terrestrial ecosystems. Six criteria were developed to identify threatened terrestrial ecosystems. Of these six criteria, four (A, C, D and F) have been used in the current phase of listing and the remaining two (B and E) are dormant owing to lack of data. Table 1 summarises the six criteria and the thresholds for the four active criteria. Each criterion is explained in more detail below.

Table 1: Criteria used to identify threatened terrestrial ecosystems, with thresholds for critically endangered (CR), endangered (EN) and vulnerable (VU) ecosystems

| Criterion | CR | EN | VU |
|---|--|--|--|
| A1: Irreversible loss of natural habitat | Remaining natural habitat \leq biodiversity target | Remaining natural habitat \leq (biodiversity target + 15%) | Remaining natural habitat \leq 60% of original area of ecosystem |
| A2: Ecosystem degradation and loss of integrity* | \geq 60% of ecosystem significantly degraded | \geq 40% of ecosystem significantly degraded | \geq 20% of ecosystem significantly degraded |
| B: Rate of loss of natural habitat** | | | |
| C: Limited extent and imminent threat* | -- | Ecosystem extent \leq 3 000ha, and imminent threat | Ecosystem extent \leq 6 000ha, and imminent threat |
| D1: Threatened plant species associations | \geq 80 threatened Red Data List plant species | \geq 60 threatened Red Data List plant species | \geq 40 threatened Red Data List plant species |
| D2: Threatened animal species associations** | | | |
| E: Fragmentation** | | | |
| F: Priority areas for meeting explicit biodiversity targets as defined in a systematic biodiversity plan | Very high irreplaceability and high threat | Very high irreplaceability and medium threat | Very high irreplaceability and low threat |

* Because of data constraints, Criteria A2 and C have been applied to forests but not to other vegetation types.

** Because of data constraints, Criteria B and D2 are dormant at this stage and thresholds have not been set for these criteria. Further testing of Criterion E is needed to determine whether it is a workable criterion for terrestrial ecosystems. Criterion E may be applied in future to most terrestrial ecosystems, but will not be applied to forest ecosystems as the forest biome is naturally fragmented.

Criterion A1: Irreversible loss of natural habitat

This criterion identifies ecosystems that have undergone loss of natural habitat, impacting on their structure, function and composition. Loss of natural habitat includes outright loss, for example the removal of natural habitat for cultivation, building of infrastructure, mining etc., as well as severe degradation. For this purpose, habitat is considered severely degraded if it would be unable to recover to a natural or near-natural state following the removal of the cause of the degradation (e.g. invasive aliens, over-grazing), even after very long time periods.

For the current phase of listing, Criterion A1 has been applied to ecosystems defined as national vegetation types in the South African Vegetation Map¹⁶ or as national forest types recognised by DAFF. The thresholds for this criterion are based on the biodiversity targets developed in the National Spatial Biodiversity Assessment (NSBA) 2004. The biodiversity target for a vegetation type is the proportion of the original extent of the vegetation type required to conserve the majority of species associated with that vegetation type.^{17,18} It is expressed either as a percentage of the original extent of the vegetation type or in hectares. Biodiversity targets for national vegetation types range from 16% to 36%, with higher targets for more species rich vegetation types. For example, a species rich vegetation type with an original extent of 10 000ha could have a biodiversity target of 30% or 3 000ha.

An ecosystem is categorised as critically endangered if the extent of remaining natural habitat in the ecosystem is less than or equal to its biodiversity target. This threshold indicates a loss of species and change in species composition within the ecosystem. For example, a 10 000ha ecosystem with a biodiversity target of 30% would be categorised as critically endangered if 3 000ha or less of the ecosystem remained in a natural state (or conversely if more than 7 000ha of the original extent of the ecosystem had been lost). An ecosystem is categorised as endangered if the extent of remaining natural habitat in the ecosystem is less or equal to than its biodiversity target plus 15%. This threshold provides a buffer for critically endangered ecosystems. For example, the 10 000ha ecosystem with a biodiversity target of 30% would be categorised as endangered if 4 500ha (45%) or less of the ecosystem remained in a natural state. An ecosystem is categorised as vulnerable if the extent of remaining natural habitat in the ecosystem is less than or equal to 60% of the original extent of the ecosystem. This threshold indicates a loss of ecosystem functioning. For example, a 10 000ha ecosystem would be categorised as vulnerable if 6 000ha or less of the ecosystem remained in a natural state. Note that while the Criterion A thresholds for critically endangered and endangered ecosystems vary depending on the biodiversity target for the ecosystem, the threshold for vulnerable ecosystems is independent of the biodiversity target.

¹⁶ For future phases, it may make sense to apply this criterion to recognised vegetation sub-types as well as to national vegetation types. However, an agreed method for identifying vegetation sub-types and a process for recognising them would be pre-requisites for this.

¹⁷ Biodiversity targets are calculated based on the species-area curve method (Desmet, P. & Cowling, R. 2004. Using the species-area relationship to set baseline targets for conservation. *Ecology and Society* 9(2))

¹⁸ The systematic biodiversity plan for the forest biome included targets for national forest types. However, these targets were not set using the species-area curve method developed in the NSBA 2004. For the purpose of listing ecosystems, the biodiversity targets for national forest types were revised using the species-area curve method.

The spatial analysis for this criterion used the best available land cover data. For Free State, Limpopo, North West and Northern Cape the best available land cover data was provided by combining the National Land Cover (NLC) 2000 and the NLC 1996. Eastern Cape, Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape had land cover data layers that improved on the NLC 2000 and NLC 1996. These improved data layers were clipped into the combined NLC 2000 and NLC 1996 to make a new "mosaic" national land cover layer that represented the best available land cover data for the country. Land cover categories that were considered to represent outright loss of natural habitat were cultivated areas, forestry plantations, mines and quarries, and urban or built-up areas. Information on severe degradation was included where available; however, degradation has to date been poorly mapped in South Africa, and distinctions between moderate and severe degradation are usually not made in available spatial information.

Criterion A2: Ecosystem degradation and loss of integrity

This criterion identifies ecosystems that are significantly degraded. For the purpose of ecosystem listing, significant degradation is defined as significant changes to the structure, function or composition of the ecosystem that would take several decades to recover if the cause of the degradation was removed.

Consistent national data on degradation in national vegetation types is not available, and definitions of degradation and methods for assessing the extent and degree of degradation have not been widely agreed on or standardised. This meant it was not possible to apply Criterion A2 to national vegetation types in the current phase of listing. However, for forest ecosystems there is sufficient agreement on definitions of degradation and approaches for assessing degradation to apply Criterion A2 to national forest types. Criterion A2 was thus applied only to forest ecosystems.

An expert assessment of the extent of degradation in national forest types was conducted.

Forest ecosystems were assessed using the following three factors:

- Condition of the forest ecosystem including:
 - Canopy condition,
 - Forest margin condition (including fire),
 - Understorey condition (including invasive species, overgrazing and cattle trampling);

- Loss of natural habitat in the matrix (i.e. in the surrounding non-forest landscape);
- Over-harvesting of particular species using a harvesting pressure index.

Thresholds for critically endangered, endangered and vulnerable ecosystems were determined by the proportion of the forest ecosystem that was significantly degraded. If more than 60% of the ecosystem was significantly degraded the ecosystem was categorised as critically endangered, if more than 40% was significantly degraded it was categorised as endangered, and if more than 20% was significantly degraded it was categorised as vulnerable. These thresholds are slightly higher than for Criterion A1 to allow for the fact that the forest biome in South Africa is naturally rare and fragmented relative to other biomes.

Criterion B: Rate of loss of natural habitat

This criterion identifies ecosystems that have not yet lost a large amount of natural habitat but are experiencing unusually high rates of habitat loss. Criterion B is dormant for the current phase of listing as the data needed to operationalise the criterion is not available.

Criterion C: Limited extent and imminent threat

This criterion identifies ecosystems of small geographic extent that are faced with an imminent threat. The intention is to identify small ecosystems or ecosystems with very little remaining natural habitat that could be entirely destroyed by a few developments (for example, a small coastal vegetation type in an area with significant coastal development pressures).

Ecosystems cannot be listed as critically endangered using this criterion because an ecosystem of limited extent has not necessarily *already* undergone severe degradation of ecological structure, function or composition as a result of human intervention (as is required by the definition in the Biodiversity Act of a critically endangered ecosystem). An ecosystem can be listed as endangered if it is less than 3 000 hectares in size and as vulnerable if it is less than 6 000 hectares in size. However, it can only be listed if there is a high degree of imminent threat associated with the ecosystem.

Criterion C was applied to national forest types. Imminent threat was based on the assessment of development pressure (including urban, industrial, mining) done as part of DAFF's systematic biodiversity plan for the forest biome.

Criterion D: Threatened species associations

This criterion identifies ecosystems that contain a high number of threatened species, indicating that the ecosystem itself is threatened even if it has not been identified as threatened under the other criteria (for example because of data limitations associated with the other criteria). Further, as discussed in Section 3.1.2, threatened species listed in terms of the Biodiversity Act include only those species threatened by restricted activities as defined in the Biodiversity Act. These restricted activities do not include habitat loss, yet habitat loss is one of the key threats facing most species that are classified as threatened in Red Lists. Criterion D thus also helps to protect species threatened by habitat loss.

Criterion D is split into two sub-criteria: Criterion D1: Threatened plant species associations; and Criterion D2: Threatened animal species associations. In the current phase of listing only Criterion D1 has been applied. Criterion D2 will remain dormant until further data is available and further work has been done to operationalise the criterion.¹⁹ The thresholds for Criterion D2 will differ from those set for Criterion D1.

Criterion D1: Threatened plant species associations

An ecosystem is categorised as critically endangered if 80 or more threatened Red Data List plant species (as assessed by the Red List of South African Plants²⁰) are associated with the ecosystem, endangered if 60 or more threatened Red Data List plant species are associated with the ecosystem, and vulnerable ecosystems if 40 or more threatened Red Data List plant species are associated with the ecosystem.

Threatened Red Data List plant species include the IUCN Red Data List categories of critically endangered (CR), endangered (EN), vulnerable (VU), extinct (EX), and extinct in the wild (EW). They do not include plant species listed under the category Vulnerable D2 (VU D2), which

¹⁹ Good data on how many animals are threatened in South Africa is lacking for many taxonomic groups. For relatively well understood and charismatic groups such as large mammals and birds there is reasonable data, but it is not straightforward to link these animals with particular ecosystems at the local scale. For example, does one include only those ecosystems in which the animals are or were resident, or also ecosystems in which they are or were present episodically? Substantial work would be needed to establish the implications of using current vs historical ranges of threatened animal species for the purpose of identifying threatened ecosystems. There are many ecosystems in South Africa from which previously widespread but now threatened species (such as rhinos, elephants, wild dogs, cheetahs, and vultures) have been lost. Using historical distributions would create many data challenges; using only current distributions could create a perverse incentive to eliminate threatened animals from ecosystems in order to prevent the ecosystems from being listed. These and other issues need to be resolved before Criterion D2 can be operationalised.

²⁰ Raimondo, D., Von Staden, L., Foden, W., Victor, J.E., Helme, N.A., Turner, R.C., Kamundi, D.A. & Manyama, P.A. (eds). 2009. Red List of South African Plants. *Strelitzia* 25, South African National Biodiversity Institute, Pretoria.

identifies species with a restricted area of occupancy (i.e. species that are naturally rare). In order to determine the number of threatened plant species associated with an ecosystem, both specimen records and observation records were used. Criterion D1 was applied to national vegetation types and national forest types.

Of all the ecosystems in South Africa, only fynbos ecosystems meet the high thresholds set for Criterion D1. This highlights both the exceptional diversity of the fynbos biome and the extent to which it is under pressure.

Criterion E: Habitat fragmentation

This criterion identifies ecosystems which have been compromised by habitat fragmentation. Initial testing was done on this criterion but due to the complexity of measuring fragmentation, which is heavily scale dependent, and of determining its effects on ecosystems, additional research and testing is required before Criterion E can be operationalised. It has been agreed that it does not make sense to apply Criterion E to forest ecosystems because of the naturally fragmented nature of the forest biome.

Criterion F: Priority areas for meeting explicit biodiversity targets as defined by a systematic biodiversity plan

This criterion allows for the very detailed biodiversity information used in systematic biodiversity plans to be drawn on in the ecosystem listing process. For the current phase of listing only provincial biodiversity plans were considered, as well as DAFF's systematic biodiversity plan for the forest biome.²¹ Systematic provincial biodiversity plans for Gauteng, Mpumalanga and KwaZulu-Natal were used (see Section 4.2.2). These provincial plans have been undertaken according to well-established systematic biodiversity planning principles, at a fine enough scale and with sufficient consistency between them to provide a strong basis for identifying national threatened ecosystems.²²

²¹ A number of systematic biodiversity plans have been done at local and regional scales in various parts of the country. SANBI's recommendation is that even in future phases of ecosystem listing only systematic biodiversity plans that are recognised by provincial conservation authorities or by relevant national departments such as DAFF should be used to identify threatened ecosystems using Criterion F.

²² Some other provinces had recently completed or were in the process of developing provincial systematic biodiversity plans. The Eastern Cape Biodiversity Conservation Plan and the North West Biodiversity Conservation Assessment were not completed in time to be included in this process, and may be at too broad a spatial scale to provide the basis for identifying ecosystems using Criterion F. Further testing would be required to determine this.

A three-step methodology was used to identify ecosystems using Criterion F:

- Step 1: Identify clusters of very high irreplaceability planning units from the systematic biodiversity plan
- Step 2: Delineate ecosystems using ecological, topographical and/or geological features
- Step 3: Assess the threat value (high, medium or low) for each ecosystem based on data included in the systematic biodiversity planning process, to categorise as critically endangered, endangered or vulnerable respectively

4.4 How do listed threatened ecosystems relate to ecosystem status in the National Spatial Biodiversity Assessment 2004?

The NSBA 2004 was the first national spatial assessment of South Africa's terrestrial and aquatic biodiversity. It identified broad biodiversity priority areas for conservation action, and as mentioned in Section 1 included early attempts to identify threatened ecosystems in the terrestrial, river, estuarine and marine environments. An assessment of ecosystem threat status categorised ecosystems as critically endangered (CR), endangered (EN), vulnerable (VU) or least threatened (LT).

The methodology used to assess ecosystem threat status in the NSBA 2004 used only Criterion A1, and the thresholds for endangered and vulnerable ecosystems were different from those used for ecosystem listing. Available data on loss of natural habitat has improved since the NSBA 2004 was undertaken, and further criteria for identifying threatened ecosystems have been developed. **This means that the terrestrial ecosystem status results in the NSBA 2004 are superceded by this more detailed, comprehensive analysis.** The National Biodiversity Assessment (NBA) 2011 incorporates a spatial assessment as well as other non-spatial elements. When the NBA 2011 is published, it will be aligned and consistent with this published list of threatened terrestrial ecosystems, and will supercede the NSBA 2004 with respect to the assessment of ecosystem threat status of aquatic ecosystems.

5 Implications of listing threatened ecosystems

This section briefly discusses the implications of listing threatened ecosystems. Four main types of implications have been identified:

- Planning related implications, linked to IDPs and SDFs;
- Environmental authorisation implications, in terms of NEMA and EIA regulations;
- Proactive management implications, in terms of the Biodiversity Act;
- Monitoring and reporting implications, in terms of the Biodiversity Act.

5.1 Planning related Implications

According to Section 54 of the Biodiversity Act, the need for protection of listed ecosystems must be taken into account in municipal Integrated Development Plans (IDPs) and by implication in Spatial Development Frameworks (SDFs).²³

IDPs can take listed ecosystems into account by, for example:

- Identifying IDP projects or local economic development projects with biodiversity benefits, linked to management of threatened ecosystems (such as clearing of invasive aliens through Working for Water, or other forms of rehabilitation e.g. through Working for Wetlands, LandCare, CoastCare);
- Prioritising threatened ecosystems in the development of invasive species control and eradication plans (these are required of municipalities in terms of Subsection 76(2) of the Biodiversity Act, for any land under a municipality's control, and should form part of the IDP);
- Exploring options to formally protect and manage municipal land that supports threatened ecosystems;
- Ensuring that development projects identified by the IDP, especially those with large footprints, avoid conflict with or negative impacts on threatened ecosystems.

SDFs should take listed ecosystems into account by:

- Including a map of listed ecosystems and their accompanying descriptions;

²³ The Municipal Systems Act (Act 32 of 2000) requires that an IDP must include a spatial component, the SDF. In practice, IDPs and SDFs are usually compiled separately by separate sets of consultants.

- Ensuring that listed ecosystems are reflected in the final integrated map of spatial planning categories or zones;
- Applying appropriately restrictive land-use guidelines to listed ecosystems, so that further loss and degradation of natural habitat in these ecosystems is avoided.

Zoning schemes or land-use management schemes should ultimately be consistent with and give effect to Spatial Development Frameworks, and should include appropriately restrictive zoning categories for ecologically important areas such as threatened ecosystems.

An important starting point is for municipalities to be aware of listed ecosystems that fall within their jurisdiction. To this end, SANBI and DEA have embarked on a project to develop municipal biodiversity summaries, which will provide basic information on important biodiversity features per district municipality, initially in pilot provinces and later in all provinces. Municipal biodiversity summaries will be available on SANBI's Biodiversity GIS (BGIS) website (<http://bgis.sanbi.org>), which already serves substantial amounts of spatial biodiversity information to municipalities, consultants and others.

The need for protection of listed ecosystems should also be taken into account in provincial growth and development strategies and provincial spatial development frameworks, which provide the provincial context for district and local IDPs and SDFs.

5.2 Environmental authorisation implications

As discussed in Section 3.2.2, the EIA Regulations include three lists of activities that require environmental authorisation:

- Listing Notice 1: activities that require a basic assessment (R544 of 2010),
- Listing Notice 2: activities that require scoping and environmental impact report (EIR) (R545 of 2010),
- Listing Notice 3: activities that require a basic assessment in specific identified geographical areas only (R546 of 2010).

Activity 12 in Listing Notice 3 relates to the clearance of 300m² of more of vegetation, which will trigger a basic assessment within any critically endangered or endangered ecosystem listed in terms of S52 of the Biodiversity Act. This means **any development that involves loss of natural habitat in a listed critically endangered or endangered ecosystem is likely to require at least a basic assessment** in terms of the EIA regulations.

In addition, if any other development that requires environmental authorisation impacts on a threatened ecosystem, that impact should be avoided, minimised, mitigated and/or offset as appropriate.

In determining the significance of impact on biodiversity in an EIA process, loss of natural habitat in a critically endangered or endangered ecosystem should be ranked as highly significant.

To establish whether a site falls within or contains part of a threatened ecosystem, go to SANBI's BGIS website (<http://bgis.sanbi.org>) where a shapefile of listed ecosystems is available. BGIS also provides a land-use decision support (LUDS) tool, which can be used to locate your site and to determine whether the site falls within or contains part of a threatened ecosystem (or other biodiversity priority area). If the site does fall within a listed ecosystem, it is important to ground-truth the presence of indigenous vegetation of the ecosystem in question, preferably with an ecologist who knows the area. Spatial data on the location of ecosystems and on land cover is always subject to errors of scale, and land cover data is never 100% up to date.

As discussed in Section 3.2.2, NEMA also provides for the development of EMFs. **Listed ecosystems should be incorporated into EMFs**, with restrictions on any loss of natural habitat in critically endangered or endangered ecosystems.

5.3 Proactive biodiversity management implications

Listing of ecosystems allows for considerable focus of proactive management actions on these ecosystems to protect or rehabilitate them.

In terms of the Biodiversity Act:

- A Biodiversity Management Plan can be developed and published for a listed ecosystem. The Minister must identify an implementing agent for the management plan in order for it to be published, and must assess implementation of the plan every five years. A Biodiversity Management Plan could also be developed for a portion of a listed ecosystem or for a group of listed ecosystems. As noted in Section 3.1.4, norms and standards for Biodiversity Management Plans for ecosystems are in the process of being developed.
- The Minister can enter into a Biodiversity Management Agreement with the implementing agent of a Biodiversity Management Plan.

Other proactive management actions that could be applied to listed ecosystems include the following:

- Regulation and control of invasive alien species could be prioritised in listed ecosystems
- Rehabilitation programmes such as Working for Wetlands could prioritise listed ecosystems
- Provincial biodiversity stewardship programmes could prioritise listed ecosystems for contract protected areas in terms of the Protected Areas Act or for other biodiversity stewardship agreements
- Protected area management plans could pay particular attention to the need for careful management of threatened ecosystems within protected areas.

5.4 Monitoring and reporting implications

The functions of SANBI, set out in Section 11 of the Biodiversity Act, include monitoring and reporting regularly to the Minister on the conservation status of all listed species and listed ecosystems.

In terms of Section 49 of the Biodiversity Act, which deals with monitoring the status of biodiversity in the country, the Minister must designate monitoring mechanisms and set indicators to determine the conservation status of various components of South Africa's biodiversity, as well as any negative and positive trends affecting their conservation status. The Minister must report annually to parliament on these indicators and make the information publicly available.

SANBI has developed a National Biodiversity Monitoring and Reporting Framework, together with headline indicators, to provide an effective mechanism for reporting on the state of South Africa's biodiversity, including co-ordinating and aligning the biodiversity monitoring and reporting efforts of many organisations and individuals. The National Biodiversity Monitoring and Reporting Framework has a component that deals with the state of ecosystems, with headline indicators on the number and extent of threatened ecosystems (CR, EN and VU) in terrestrial and aquatic environments.

We recommend that provinces and municipalities developing State of Environment Reports align their biodiversity indicators as far as possible with those in the National Biodiversity Monitoring and Reporting Framework, and include indicators on the number and remaining area of threatened ecosystems, and the extent of further loss or degradation of threatened ecosystems.

6 Summary of listed ecosystems

This section provides summary information on the terrestrial ecosystems listed in the current phase of listing. Detailed information on each of the ecosystems follows in Section 7.

As shown in Table 2, remaining natural areas in threatened terrestrial ecosystems make up 9.5% of the country, with critically endangered and endangered ecosystems together accounting for 2.7% and vulnerable ecosystems a further 6.8%. The table shows how the ecosystems are distributed by province. The area figures refer to the remaining natural habitat in listed ecosystems, not their original extent. Much natural habitat has already been lost in most threatened ecosystems, so the remaining extent is much smaller than the original extent. Figure 1 and Figure 2 show the original and remaining extent of the ecosystems respectively.

Table 3 gives a summary list of all the ecosystems. The table is organised by category of threatened ecosystem (CR, EN and VU) and within each category the ecosystems are given in alphabetical order. Table 4 gives a summary list of all the ecosystems organised by province. Where a listed ecosystem is shared by more than one province this is indicated in the table.

Table 2: Summary statistics for listed ecosystems

| | CR | | EN | | VU | | TOTAL | |
|---------------------|------------|------------|--------------|------------|--------------|------------|---------------|------------|
| | 000 ha | % | 000 ha | % | 000 ha | % | 000 ha | % |
| Eastern Cape | 4 | 0.0 | 51 | 0.3 | 588 | 3.5 | 643 | 3.8 |
| Free State | 2 | 0.0 | 383 | 3.0 | 1 049 | 8.1 | 1 433 | 11.0 |
| Gauteng | 99 | 6.0 | 95 | 5.8 | 189 | 11.4 | 384 | 23.2 |
| KZN | 224 | 2.4 | 464 | 5.0 | 1 164 | 12.5 | 1 852 | 19.9 |
| Limpopo | 9 | 0.1 | 123 | 1.0 | 536 | 4.3 | 668 | 5.3 |
| Mpumalanga | 6 | 0.1 | 634 | 8.3 | 2 226 | 29.1 | 2 866 | 37.5 |
| Northern Cape | | | 35 | 0.1 | 109 | 0.3 | 144 | 0.4 |
| North West | 186 | 1.8 | 452 | 4.3 | 1 309 | 12.3 | 1 947 | 18.3 |
| Western Cape | 374 | 2.9 | 154 | 1.2 | 1 083 | 8.4 | 1 611 | 12.5 |
| South Africa | 903 | 0.7 | 2 392 | 2.0 | 8 252 | 6.8 | 11 547 | 9.5 |

Table notes:

- Area figures refer to remaining natural area. They have been rounded to nearest thousand hectares so totals may not add up exactly.
- A blank cell indicates that no ecosystems were identified. A zero indicates that one or more ecosystems have been identified but that their total remaining area is less than 1 000ha.

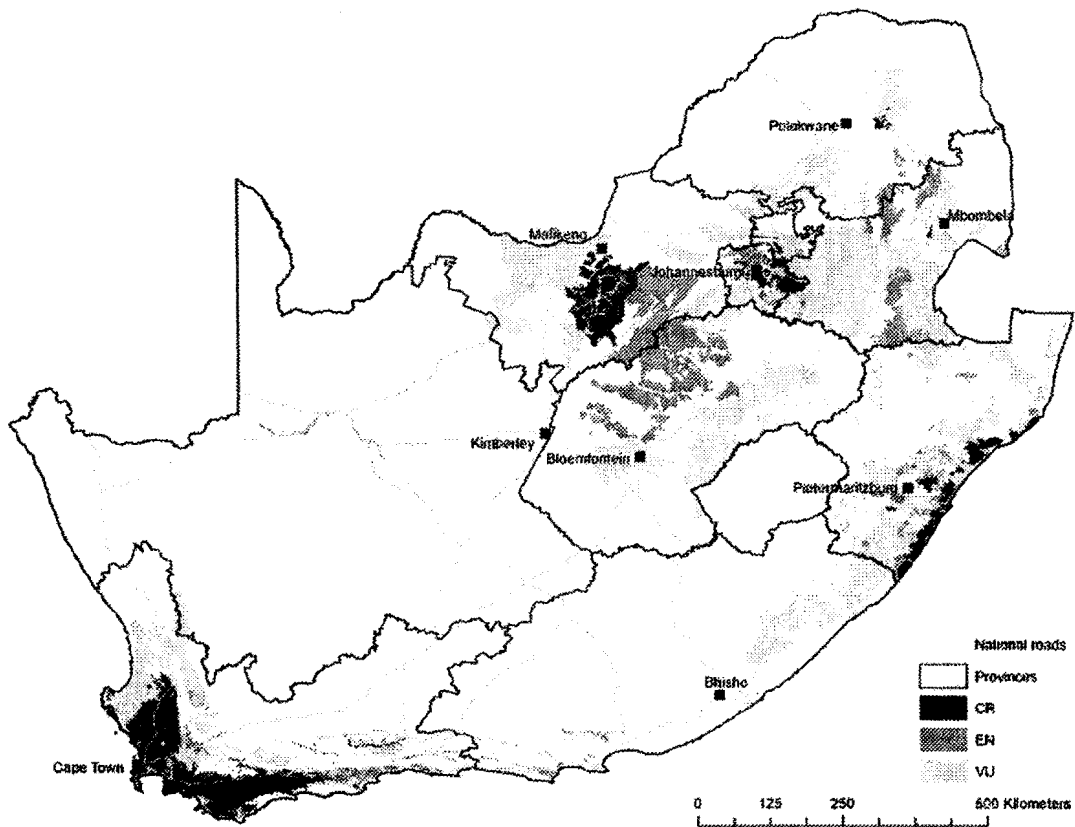


Figure 1: Map of listed ecosystems, showing original extent of ecosystems

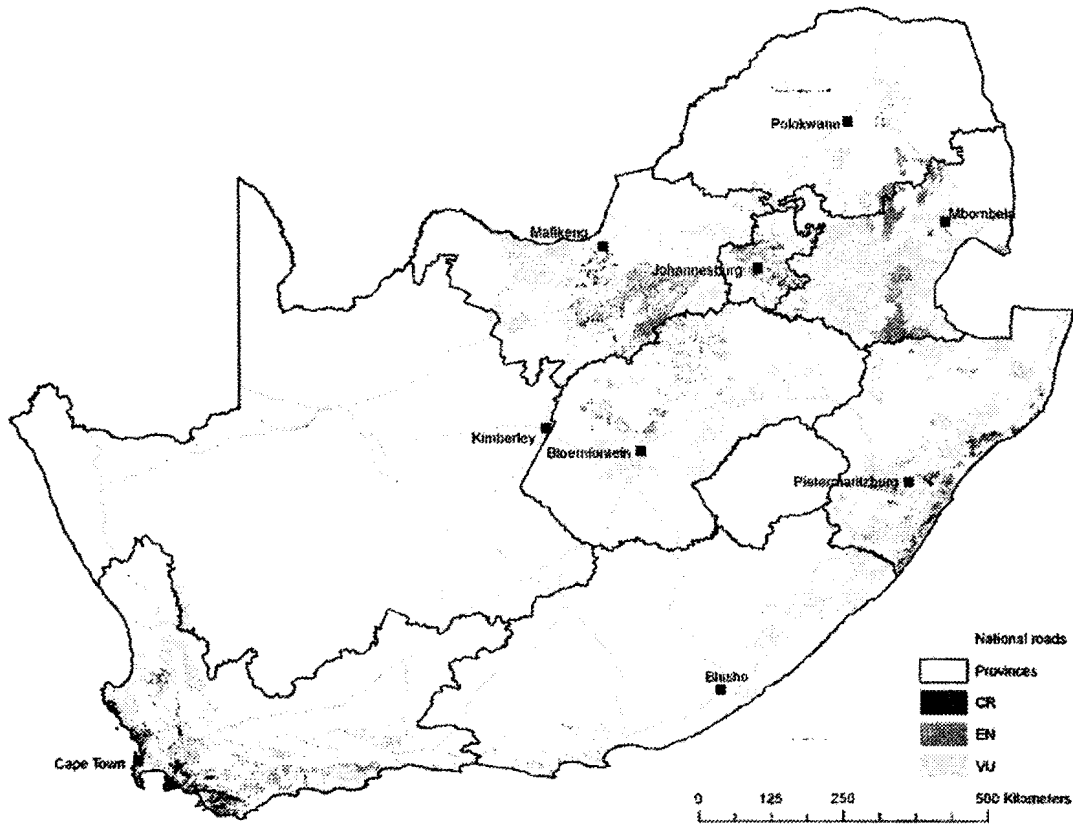


Figure 2: Map of listed ecosystems, showing remaining extent of ecosystems

Table 3: Summary of listed ecosystems, including reference numbers, divided into critically endangered, endangered and vulnerable ecosystems

| No. | Ecosystem | Biome | Province | Criterion |
|-----------------------------------|--|--|---------------|-----------|
| Critically Endangered (CR) | | | | |
| 1 | Atlantis Sand Fynbos (FFd 4) | Fynbos | Western Cape | D1 |
| 2 | Blesbokspruit Highveld Grassland (GP 1) | Grassland/Savanna/Wetland | Gauteng | F |
| 3 | Blinkwater Valley (KZN 1) | Grassland/Savanna | KwaZulu-Natal | F |
| 4 | Boesmanspruit Highveld Grassland (GP 2) | Grassland/Wetland | Gauteng | F |
| 5 | Bronberg Mountain Bushveld (GP 3) | Grassland/Savanna | Gauteng | F |
| 6 | Cape Flats Sand Fynbos (FFd 5) | Fynbos | Western Cape | A1 & D1 |
| 7 | Cape Lowland Alluvial Vegetation (AZa 2) | Azonal | Western Cape | A1 |
| 8 | Central Rûens Shale Renosterveld (FRs 12) | Fynbos | Western Cape | A1 |
| 9 | Durban Metropole North Coast Grassland (KZN 2) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 10 | Eastern Rûens Shale Renosterveld (FRs 13) | Fynbos | Western Cape | A1 |
| 11 | Elgin Shale Fynbos (FFh 6) | Fynbos | Western Cape | A1 |
| 12 | Elim Ferricrete Fynbos (FFf 1) | Fynbos | Western Cape | A1 |
| 13 | Entumeni Valley (KZN 3) | Indian Ocean Coastal Belt/Savanna/Forest | KwaZulu-Natal | F |
| 14 | Eshowe Mtunzini Hilly Grasslands (KZN 4) | Indian Ocean Coastal Belt/Savanna/Forest | KwaZulu-Natal | F |
| 15 | Glen Austin Pan (GP 4) | Grassland | Gauteng | F |
| 16 | Highover Nature Reserve and Roselands Farm Surrounds (KZN 5) | Grassland/Savanna/Forest | KwaZulu-Natal | F |
| 17 | Interior North Coast Grasslands (KZN 6) | Indian Ocean Coastal Belt/Savanna/Forest | KwaZulu-Natal | F |
| 18 | Interior South Coast Grasslands (KZN 7) | Indian Ocean Coastal Belt/Savanna/Forest | KwaZulu-Natal | F |
| 19 | Kaapsehoop Quartzite Grasslands (MP 1) | Grassland/Forest | Mpumalanga | F |
| 20 | Klipriver Highveld Grassland (GP 5) | Grassland/Savanna/Wetland | Gauteng | F |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|--|--|------------------------------|-----------|
| 21 | Knysna Sand Fynbos (FFd 10) | Fynbos | Western Cape | A1 |
| 22 | Kogelberg Sandstone Fynbos (FFs 11) | Fynbos | Western Cape | D1 |
| 23 | Kwambonambi Dune Forest (KZN 8) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 24 | Kwambonambi Hygrophilous Grasslands (KZN 9) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 25 | Langkloof Shale Renosterveld (FRs 17) | Fynbos | Western Cape Eastern Cape | A1 |
| 26 | Lourensford Alluvium Fynbos (FFa 4) | Fynbos | Western Cape | A1 |
| 27 | Magaliesberg Pretoria Mountain Bushveld (GP 6) | Grassland/Savanna | Gauteng | F |
| 28 | Margate Pondoland-Ugu Sourveld (KZN 10) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 29 | Mlazi Gorge (KZN 11) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 30 | Muscadel Riviere (AZi 8) | Azonal | Western Cape | A1 |
| 31 | New Hanover Plateau (KZN 12) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 32 | Ngoye Scarp Forests and Grasslands (KZN 13) | Indian Ocean Coastal Belt/ Savanna/Forest | KwaZulu-Natal | F |
| 33 | North Coast Dune Forest (KZN 14) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 34 | North Coast Forest Collective (KZN 15) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 35 | Northern Coastal Grasslands (KZN 16) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 36 | Oakland and Townhill Ridge (KZN 17) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 37 | Overberg Sandstone Fynbos (FFs 12) | Fynbos | Western Cape | D1 |
| 38 | Peninsula Granite Fynbos (FFg 3) | Fynbos | Western Cape | A1 |
| 39 | Peninsula Shale Renosterveld (FRs 10) | Fynbos | Western Cape | A1 |
| 40 | Rietvleiriver Highveld Grassland (GP 7) | Grassland/Wetlands | Gauteng | F |
| 41 | Roodepoort Reef Mountain Bushveld (GP 8) | Grassland/Savanna | Gauteng | F |
| 42 | Rûens Silcrete Renosterveld (FRc 2) | Fynbos | Western Cape | A1 |
| 43 | Southern Coastal Grasslands (KZN 18) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 44 | Swartland Alluvium Fynbos (FFa 3) | Fynbos | Western Cape | A1 |
| 45 | Swartland Granite Renosterveld (FRg 2) | Fynbos | Western Cape | A1 & D1 |

| No. | Ecosystem | Biome | Province | Criterion |
|------------------------|---|--|-------------------------------|-----------|
| 46 | Swartland Shale Renosterveld (FRs 9) | Fynbos | Western Cape | A1 & D1 |
| 47 | Swartland Silcrete Renosterveld (FRc 1) | Fynbos | Western Cape | A1 |
| 48 | Umvoti Valley Complex (KZN 19) | Indian Ocean Coastal Belt/ Savanna/Forest | KwaZulu-Natal | F |
| 49 | Western Highveld Sandy Grassland (Gh 14) | Grassland | North West | A1 |
| 50 | Western Rûens Shale Renosterveld (FRs 11) | Fynbos | Western Cape | A1 |
| 51 | Wilge Mountain Bushveld (GP 9) | Grassland/Savanna | Gauteng | F |
| 52 | Witwatersberg Pretoria Mountain Bushveld (GP 10) | Grassland/Savanna | Gauteng | F |
| 53 | Woodbush Granite Grassland (Gm 25) | Grassland | Limpopo | A1 |
| Endangered (EN) | | | | |
| 54 | Agulhas Sand Fynbos (FFd 7) | Fynbos | Western Cape | A1 |
| 55 | Albany Alluvial Vegetation (AZa 6) | Azonal | Eastern Cape | A1 |
| 56 | Bazini Forest Complex (KZN 20) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 57 | Bivane Montane Grassland (KZN 21) | Grassland | KwaZulu-Natal | F |
| 58 | Blouberg Forest (FOR 1) | Forest | Limpopo | F |
| 59 | Blyde Quartzite Grasslands (MP 2) | Grassland/Forest | Mpumalanga | F |
| 60 | Brakfontein Reef Bushveld (GP 11) | Grassland/Savanna | Gauteng | F |
| 61 | Breede Alluvium Fynbos (FFa 2) | Fynbos | Western Cape | A1 |
| 62 | Bronkhorstspruit Highveld Grassland (GP 12) | Savanna/Grassland/ Wetland | Gauteng | F |
| 63 | Cape Flats Dune Strandveld (FS 6) | Fynbos | Western Cape | D1 |
| 64 | Cape Vernal Pools (AZf 2) | Azonal | Western Cape Northern Cape | A1 |
| 65 | Chrissiesmeer Panveld (MP 3) | Grassland/Wetland | Mpumalanga | F |
| 66 | Cumberland Crest (KZN 22) | Savanna | KwaZulu-Natal | F |
| 67 | Deneysville Highveld Grassland (GP 13) | Grassland/Savanna | Gauteng | F |
| 68 | Dukuduku/St Lucia Grasslands and Forests (KZN 23) | Indian Ocean Coastal Belt/Forest | KwaZulu-Natal | F |
| 69 | Dullstroom Plateau Grasslands (MP 4) | Grassland/Forest | Mpumalanga | F |
| 70 | Egoli Granite Grassland (Gm 10) | Grassland | Gauteng | A1 |
| 71 | Fort Metcalf Grasslands (KZN 24) | Grassland | KwaZulu-Natal | F |
| 72 | Garden Route Granite Fynbos (FFg 5) | Fynbos | Western Cape | A1 |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|---|---|-------------------------------|-----------|
| 73 | Gqunu Forest (KZN 25) | Grassland/Forest | KwaZulu-Natal | F |
| 74 | Greyton Shale Fynbos (FFh 7) | Fynbos | Western Cape | A1 |
| 75 | Greytown North Grasslands (KZN 26) | Grassland | KwaZulu-Natal | F |
| 76 | Groot Brak Dune Strandveld (FS 9) | Fynbos | Western Cape | A1 |
| 77 | Hangkilp Sand Fynbos (FFd 6) | Fynbos | Western Cape | A1 |
| 78 | Hlabeni State Forest (KZN 27) | Grassland/Forest | KwaZulu-Natal | F |
| 79 | Hlabisa Forest Complex (FOR 2) | Forest | KwaZulu-Natal | F |
| 80 | Humansdorp Shale Renosterveld (FRs 19) | Fynbos | Eastern Cape | A1 |
| 81 | Impendle Highlands (KZN 28) | Grassland/Forest | KwaZulu-Natal | F |
| 82 | Karkloof Forest Collective (KZN 29) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 83 | Kobonqaba Forest Complex (FOR 3) | Forest | Eastern Cape | F |
| 84 | Kouebokkeveld Alluvium Fynbos (FFa 1) | Fynbos | Western Cape | A1 |
| 85 | Kraanspoort Mountain Bushveld (GP 14) | Grassland/Savanna | Gauteng | F |
| 86 | KwaZulu-Natal Coastal Forest (FOz VII1) | Forest | KwaZulu-Natal | A2 |
| 87 | KwaZulu-Natal Sandstone Sourveld (SVs 5) | Savanna | KwaZulu-Natal | A1 |
| 88 | Loskop Grasslands (KZN 30) | Grassland | KwaZulu-Natal | F |
| 89 | Lower Gariep Alluvial Vegetation (AZa 3) | Azonal | Northern Cape | A1 |
| 90 | Malmani Karstlands (MP 5) | Grassland/Savanna/ Forest | Mpumalanga Limpopo | F |
| 91 | Mananga-Lebombo Thornveld (MP 6) | Savanna/Forest | Mpumalanga | F |
| 92 | Mangrove Forest (FOa 3) | Forest | KwaZulu-Natal Eastern Cape | C |
| 93 | Mapungubwe/Greefswald Riverine Forest (FOR 4) | Forest | Limpopo | F |
| 94 | Mauchesburg Alpine Grasslands (MP 7) | Grassland/Forest | Mpumalanga | F |
| 95 | Mossel Bay Shale Renosterveld (FRs 14) | Fynbos | Western Cape | A1 |
| 96 | Mount Thesiger Forest Complex (FOR 5) | Forest | Eastern Cape | F |
| 97 | Ngome Mistbelt Grassland and Forest (KZN 31) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 98 | Noordkaap Greenstone Bushveld (MP 8) | Savanna | Mpumalanga | F |
| 99 | Ntimbankulu Forest (FOR 6) | Forest | KwaZulu-Natal | F |
| 100 | Ntunjambili Valley Complex (KZN 32) | Savanna/Grassland | KwaZulu-Natal | F |
| 101 | Oribi-Port Edward Pondoland-Ugu Sourveld (KZN 33) | Indian Ocean Coastal Belt/ Savanna/Forest | KwaZulu-Natal | F |

| No. | Ecosystem | Biome | Province | Criterion |
|------------------------|---|------------------------------|-----------------------------|-----------|
| 102 | Peninsula Sandstone Fynbos (FFs 9) | Fynbos | Western Cape | D1 |
| 103 | Pietermaritzburg South (KZN 34) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 104 | Potberg Ferricrete Fynbos (FFf 2) | Fynbos | Western Cape | A1 |
| 105 | Qudeni Mountain Mistbelt Forest and Grassland (KZN 35) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 106 | Saldanha Granite Strandveld (FS 2) | Fynbos | Western Cape | A1 |
| 107 | Sekhukhune Mountainlands (MP 9) | Grassland/Savanna | Mpumalanga Limpopo | F |
| 108 | Sekhukhune Norite Bushveld (LP 1) | Savanna | Limpopo | F |
| 109 | Sihleza (KZN 36) | Grassland/Forest | KwaZulu-Natal | F |
| 110 | Southern Weza State Forest (KZN 37) | Grassland/Forest | KwaZulu-Natal | F |
| 111 | Stoffberg Mountainlands (MP 10) | Grassland | Mpumalanga | F |
| 112 | Tsakane Clay Grassland (Gm 9) | Grassland | Gauteng Mpumalanga | A1 |
| 113 | Umgeni Valley Bushveld (KZN 38) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 114 | Vaal-Vet Sandy Grassland (Gh 10) | Grassland | North West Free State | A1 |
| 115 | Wakkerstroom/Luneburg Grasslands (MP 11) | Grassland/Forest | Mpumalanga KwaZulu-Natal | F |
| 116 | Western Cape Milkwood Forest (FOz VI3) | Forest | Western Cape | C |
| 117 | Witwatersberg Skeerpoort Mountain Bushveld (GP 15) | Grassland/Savanna | Gauteng | F |
| Vulnerable (VU) | | | | |
| 118 | Agulhas Limestone Fynbos (FFI 1) | Fynbos | Western Cape | D1 |
| 119 | Albertinia Sand Fynbos (FFd 9) | Fynbos | Western Cape | A1 |
| 120 | Algoa Sandstone Fynbos (FFs 29) | Fynbos | Eastern Cape | A1 |
| 121 | Badplaas Mountainlands (MP 12) | Grassland/Savanna/ Forest | Mpumalanga | F |
| 122 | Barberton Mountainlands (MP 13) | Grassland/Savanna/ Forest | Mpumalanga | F |
| 123 | Beinn Mheadmon Mountain Grasslands (KZN 39) | Grassland | KwaZulu-Natal | F |
| 124 | Bivane Sour Grassveld and Bushveld (KZN 40) | Grassland/Savanna | KwaZulu-Natal | F |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|---|--|---|-----------|
| 125 | Black Rhino Range (KZN 41) | Indian Ocean Coastal Belt/ Savanna/Forest | KwaZulu-Natal | F |
| 126 | Bloemfontein Dry Grassland (Gh 5) | Grassland | Free State | A1 |
| 127 | Bokkeveld Sandstone Fynbos (FFs 1) | Fynbos | Western Cape Northern Cape | D1 |
| 128 | Boland Granite Fynbos (FFg 2) | Fynbos | Western Cape | D1 |
| 129 | Boschhoek Forests (KZN 42) | Grassland/Forest | KwaZulu-Natal | F |
| 130 | Boschhoek Plateau (KZN 43) | Grassland/Forest | KwaZulu-Natal | F |
| 131 | Breede Alluvium Renosterveld (FRa 1) | Fynbos | Western Cape | A1 |
| 132 | Breede Sand Fynbos (FFd 8) | Fynbos | Western Cape | A1 |
| 133 | Bushmans Nek/Garden Castle Lowlands (KZN 44) | Grassland | KwaZulu-Natal | F |
| 134 | Cape Winelands Shale Fynbos (FFh 5) | Fynbos | Western Cape | A1 |
| 135 | Cederberg Sandstone Fynbos (FFs 4) | Fynbos | Western Cape | D1 |
| 136 | Ceres Shale Renosterveld (FRs 4) | Fynbos | Western Cape | A1 |
| 137 | Chelmsford Grasslands (KZN 45) | Grassland | KwaZulu-Natal | F |
| 138 | Chelmsford North Grasslands (KZN 46) | Grassland/Savanna | KwaZulu-Natal | F |
| 139 | Croc Gorge Granite Mountainlands (MP 14) | Savanna/Forest | Mpumalanga | F |
| 140 | Drakensberg Foothill Wattled Crane Habitat (KZN 47) | Grassland/Forest | KwaZulu-Natal | F |
| 141 | Easingwold Grasslands (KZN 48) | Grassland/Forest | KwaZulu-Natal | F |
| 142 | Eastern Coastal Shale Band Vegetation (FFb 6) | Fynbos | Western Cape Eastern Cape | A1 |
| 143 | Eastern Creighton and Donnybrook (KZN 49) | Grassland/Savanna | KwaZulu-Natal | F |
| 144 | Eastern Free State Clay Grassland (Gm 3) | Grassland | Free State | A1 |
| 145 | Eastern Highveld Grassland (Gm 12) | Grassland | Mpumalanga Gauteng | A1 |
| 146 | Eastern Little Karoo (SKv 11) | Succulent Karoo | Western Cape | A1 |
| 147 | Eastern Scarp Forest (FOz V1) | Forest | KwaZulu-Natal | A2 |
| 148 | Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | Northern Cape Eastern Cape Free State North West Gauteng Mpumalanga KwaZulu-Natal | A1 |
| 149 | Eastlands (KZN 50) | Grassland/Savanna | KwaZulu-Natal | F |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|---|------------------------------|------------------------------|-----------|
| 150 | Elandshoek Summit Grasslands (MP 15) | Grassland | Mpumalanga | F |
| 151 | Elandshoogte Mountainlands (MP 16) | Grassland/Savanna/ Forest | Mpumalanga | F |
| 152 | eMondlo Sandy Moist Grassland (KZN 51) | Grassland | KwaZulu-Natal | F |
| 153 | Fort Nottingham Lowland Grasslands (KZN 52) | Grassland/Forest | KwaZulu-Natal | F |
| 154 | Garden Route Shale Fynbos (FFb 9) | Fynbos | Western Cape Eastern Cape | A1 |
| 155 | Glen Cairn Valley (KZN 53) | Grassland/Savanna | KwaZulu-Natal | F |
| 156 | Gold Cliff Farm Surrounds (KZN 54) | Grassland/Savanna | KwaZulu-Natal | F |
| 157 | Harding East (KZN 55) | Savanna | KwaZulu-Natal | F |
| 158 | Harding West (KZN 56) | Grassland | KwaZulu-Natal | F |
| 159 | Hawequas Sandstone Fynbos (FFs 10) | Fynbos | Western Cape | D1 |
| 160 | Himeville Lowlands and Ridge (KZN 57) | Grassland | KwaZulu-Natal | F |
| 161 | Hluhluwe Scarp Forest (KZN 58) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 162 | Hopefield Sand Fynbos (FFd 3) | Fynbos | Western Cape | A1 & D1 |
| 163 | Imfolosi Savanna and Sourveld ((KZN 59) | Grassland/Savanna | KwaZulu-Natal | F |
| 164 | Impendle Lowland Grasslands (KZN 60) | Grassland/Forest | KwaZulu-Natal | F |
| 165 | Ixopo Surrounds (KZN 61) | Grassland/Savanna | KwaZulu-Natal | F |
| 166 | Kaalrug Mountainlands (MP 17) | Grassland/Savanna/ Forest | Mpumalanga | F |
| 167 | Kango Limestone Renosterveld (FRI 1) | Fynbos | Western Cape | A1 |
| 168 | KaNgwane Montane Grassland (Gm 16) | Grassland | Mpumalanga KwaZulu-Natal | A1 |
| 169 | Kouebokkeveld Shale Fynbos (FFh 1) | Fynbos | Western Cape | A1 |
| 170 | Kromberg Plateau (KZN 62) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 171 | KwaMncane North Plateau (KZN 63) | Grassland/Forest | KwaZulu-Natal | F |
| 172 | KwaZulu-Natal Coastal Belt (CB 3) | Indian Ocean Coastal Belt | KwaZulu-Natal | A1 |
| 173 | Lebombo Scarp Forest (KZN 64) | Grassland/Savanna/ Forest | KwaZulu-Natal | F |
| 174 | Lebombo Summit Sourveld (SVI 17) | Savanna | Mpumalanga KwaZulu-Natal | A1 |
| 175 | Legogote Sour Bushveld (SVI 9) | Savanna | Limpopo Mpumalanga | A1 |
| 176 | Leipoldtville Sand Fynbos (FFd 2) | Fynbos | Western Cape | A1 & D1 |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|---|------------------------------|--|-----------|
| 177 | Loskop Mountainlands (MP 18) | Grassland/Savanna | Mpumalanga | F |
| 178 | Louwsberg Mistbelt Grassland (KZN 65) | Grassland/Forest | KwaZulu-Natal | F |
| 179 | Low Escarpment Mistbelt Forest (FOz II4) | Forest | Mpumalanga KwaZulu-Natal | A2 |
| 180 | Lowveld Riverine Forest (FOa 1) | Forest | Mpumalanga KwaZulu-Natal Limpopo | A2 |
| 181 | Mafikeng Bushveld (SVk 1) | Savanna | North West | A1 |
| 182 | Magaliesberg Hekpoort Mountain Bushveld (GP 16) | Grassland/Savanna/ Forest | Gauteng | F |
| 183 | Majuba Mistbelt Forest and Moist Grassland (KZN 66) | Grassland/Forest | KwaZulu-Natal | F |
| 184 | Maputaland Wooded Grassland (CB 2) | Indian Ocean Coastal Belt | KwaZulu-Natal | A1 |
| 185 | Marikana Thornveld (SVcb 6) | Savanna | North West Gauteng | A1 |
| 186 | Marwaqa (KZN 67) | Grassland/Forest | KwaZulu-Natal | F |
| 187 | Michaelhouse Grasslands (KZN 68) | Grassland/Forest | KwaZulu-Natal | F |
| 188 | Midlands Mistbelt Grassland (Gs 9) | Grassland | KwaZulu-Natal Eastern Cape | A1 |
| 189 | Midmar Valley (KZN 69) | Grassland | KwaZulu-Natal | F |
| 190 | Montagu Shale Renosterveld (FRs 7) | Fynbos | Western Cape | A1 |
| 191 | Mount Gilboa Plateau (KZN 70) | Grassland/Forest | KwaZulu-Natal | F |
| 192 | Mount MacDonald Ridge and Wetlands (KZN 71) | Grassland | KwaZulu-Natal | F |
| 193 | Mthatha Moist Grassland (Gs 14) | Grassland | Eastern Cape | A1 |
| 194 | Namib Seashore Vegetation (AZd 1) | Azonal | Northern Cape | A1 |
| 195 | New Amalfi Wetlands (KZN 72) | Grassland | KwaZulu-Natal | F |
| 196 | Ngongoni Veld (SVs 4) | Savanna | KwaZulu-Natal Eastern Cape | A1 |
| 197 | Nieuwoudtville Shale Renosterveld (FRs 2) | Fynbos | Northern Cape | A1 |
| 198 | Nkandla Forests and Grasslands (KZN 73) | Grassland/Forest | KwaZulu-Natal | F |
| 199 | Nkunzi/Sundays River Grasslands (KZN 74) | Grassland/Forest | KwaZulu-Natal | F |
| 200 | Northern Escarpment Dolomite Grassland (Gm 22) | Grassland | Mpumalanga | A1 |
| 201 | Northern Qudeni Mistbelt Grasslands (KZN 75) | Grassland | KwaZulu-Natal | F |

| No. | Ecosystem | Biome | Province | Criterion |
|------------|---|--|---|------------------|
| 202 | Ntsikeni Vlei (KZN 76) | Grassland/Forest | KwaZulu-Natal | F |
| 203 | Oakspring Valley (KZN 77) | Grassland | KwaZulu-Natal | F |
| 204 | Paulpietersburg Moist Grassland (Gm 15) | Grassland | Mpumalanga KwaZulu-Natal | A1 |
| 205 | Piketberg Quartz Succulent Shrubland (SKk 8) | Succulent Karoo | Western Cape | A1 |
| 206 | Piketberg Sandstone Fynbos (FFs 6) | Fynbos | Western Cape | D1 |
| 207 | Pondoland Scarp Forest (FOz V2) | Forest | KwaZulu-Natal Eastern Cape | A2 |
| 208 | Pudsey/Otterburn Wetlands (KZN 78) | Grassland | KwaZulu-Natal | F |
| 209 | Rand Highveld Grassland (Gm 11) | Grassland | Gauteng North West Free State Mpumalanga | A1 |
| 210 | Saldanha Flats Strandveld (FS 3) | Fynbos | Western Cape | A1 |
| 211 | Schweizer-Reneke Bushveld (SVk 3) | Savanna | North West | A1 |
| 212 | Sherwood Forest Collective (KZN 79) | Grassland/Forest | KwaZulu-Natal | F |
| 213 | Soweto Highveld Grassland (Gm 8) | Grassland | Gauteng/Free State/North West/ Mpumalanga | A1 |
| 214 | Springbokvlakte Thornveld (SVcb 15) | Savanna | Limpopo Gauteng Mpumalanga North West | A1 |
| 215 | Swamp Forest (FOa 2) | Forest | KwaZulu-Natal Eastern Cape | A2 & C |
| 216 | Swartberg/Franklin Vlei/Kokstad Ridge and Wetlands (KZN 80) | Grassland/Forest | KwaZulu-Natal | F |
| 217 | Swartland Alluvium Renosterveld (FRa 2) | Fynbos | Western Cape | A1 |
| 218 | Swellendam Silcrete Fynbos (FFc 1) | Fynbos | Western Cape | A1 |
| 219 | Transkei Coastal Forest (FOz V3) | Forest | Eastern Cape | A2 |
| 220 | Tzaneen Sour Bushveld (SVI 8) | Savanna | Limpopo Mpumalanga | A1 |
| 221 | Umvoti Vlei and Surrounds (KZN 81) | Grassland/Indian Ocean Coastal Belt | KwaZulu-Natal | F |
| 222 | Uyskop Valley (KZN 82) | Grassland | KwaZulu-Natal | F |
| 223 | Vaalkop Headlands (KZN 83) | Grassland/Savanna | KwaZulu-Natal | F |

| No. | Ecosystem | Biome | Province | Criterion |
|-----|--|-------------------|--------------------------|-----------|
| 224 | Vredefort Dome Granite Grassland (Gh 11) | Grassland | Free State North West | A1 |
| 225 | Warley Commons (KZN 84) | Grassland/Savanna | KwaZulu-Natal | F |

Table 4: Summary of listed ecosystems by province

| Ecosystem | Biome | Criterion | Shared with |
|---|-----------|-----------|---|
| Eastern Cape Province | | | |
| Critically endangered | | | |
| Langkloof Shale Renosterveld (FRs 17) | Fynbos | A1 | Western Cape |
| Endangered | | | |
| Albany Alluvial Vegetation (AZa 6) | Azonal | A1 | |
| Humansdorp Shale Renosterveld (FRs 19) | Fynbos | A1 | |
| Kobonqaba Forest Complex (FOR 3) | Forest | F | |
| Mangrove Forest (FOa 3) | Forest | C | KwaZulu-Natal |
| Mount Thesiger Forest Complex (FOR 5) | Forest | F | |
| Vulnerable | | | |
| Algoa Sandstone Fynbos (FFs 29) | Fynbos | A1 | |
| Eastern Coastal Shale Band Vegetation (FFb 6) | Fynbos | A1 | Western Cape |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Free State North West Gauteng Mpumalanga KwaZulu-Natal |
| Garden Route Shale Fynbos (FFb 9) | Fynbos | A1 | Western Cape |
| Midlands Mistbelt Grassland (Gs 9) | Grassland | A1 | KwaZulu-Natal |
| Mthatha Moist Grassland (Gs 14) | Grassland | A1 | |
| Ngongoni Veld (SVs 4) | Savanna | A1 | KwaZulu-Natal |
| Pondoland Scarp Forest (FOz V2) | Forest | A2 | KwaZulu-Natal |
| Transkei Coastal Forest (FOz V3) | Forest | A2 | |
| Swamp Forest (FOa 2) | Forest | A2 & C | KwaZulu-Natal |

| Ecosystem | Biome | Criterion | Shared with |
|--|---------------------------|------------------|---|
| Free State Province | | | |
| Endangered | | | |
| Vaal-Vet Sandy Grassland (Gh 10) | Grassland | A1 | North West |
| Vulnerable | | | |
| Bloemfontein Dry Grassland (Gh 5) | Grassland | A1 | |
| Eastern Free State Clay Grassland (Gm 3) | Grassland | A1 | |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Eastern Cape North West Gauteng Mpumalanga KwaZulu-Natal |
| Rand Highveld Grassland (Gm 11) | Grassland | A1 | Gauteng North West Mpumalanga |
| Soweto Highveld Grassland (Gm 8) | Grassland | A1 | Gauteng Mpumalanga North West |
| Vredefort Dome Granite Grassland (Gh 11) | Grassland | A1 | North West |
| Gauteng Province | | | |
| Critically endangered | | | |
| Blesbokspruit Highveld Grassland (GP 1) | Grassland/Savanna/Wetland | F | |
| Boesmanspruit Highveld Grassland (GP 2) | Grassland/Wetland | F | |
| Bronberg Mountain Bushveld (GP 3) | Grassland/Savanna | F | |
| Glen Austin Pan (GP 4) | Grassland | F | |
| Klipriver Highveld Grassland (GP 5) | Grassland/Savanna/Wetland | F | |
| Magaliesberg Pretoria Mountain Bushveld (GP 6) | Grassland/Savanna | F | |
| Rietvleiriver Highveld Grassland (GP 7) | Grassland/Wetlands | F | |
| Roodepoort Reef Mountain Bushveld (GP 8) | Grassland/Savanna | F | |
| Wilge Mountain Bushveld (GP 9) | Grassland/Savanna | F | |
| Witwatersberg Pretoria Mountain Bushveld (GP 10) | Grassland/Savanna | F | |

| Ecosystem | Biome | Criterion | Shared with |
|--|--|------------------|--|
| Endangered | | | |
| Brakfontein Reef Bushveld (GP 11) | Grassland/Savanna | F | |
| Bronkhorstspuit Highveld Grassland (GP 12) | Savanna/Grassland/Wetland | F | |
| Deneysville Highveld Grassland (GP 13) | Grassland/Savanna | F | |
| Egoli Granite Grassland (Gm 10) | Grassland | A1 | |
| Kraanspoort Mountain Bushveld (GP 14) | Grassland/Savanna | F | |
| Tsakane Clay Grassland (Gm 9) | Grassland | A1 | Mpumalanga |
| Witwatersberg Skeerpoort Mountain Bushveld (GP 15) | Grassland/Savanna | F | |
| Vulnerable | | | |
| Eastern Highveld Grassland (Gm 12) | Grassland | A1 | Mpumalanga |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Eastern Cape Free State North West Mpumalanga KwaZulu-Natal |
| Magaliesberg Hekpoort Mountain Bushveld (GP 16) | Grassland/Savanna/Forest | F | |
| Marikana Thornveld (SVcb 6) | Savanna | A1 | North West |
| Rand Highveld Grassland (Gm 11) | Grassland | A1 | North West Free State Mpumalanga |
| Soweto Highveld Grassland (Gm 8) | Grassland | A1 | Free State Mpumalanga North West |
| Springbokvlakte Thornveld (SVcb 15) | Savanna | A1 | Limpopo Mpumalanga North West |
| KwaZulu-Natal Province | | | |
| Critically endangered | | | |
| Blinkwater Valley (KZN 1) | Grassland/Savanna | F | |
| Durban Metropole North Coast Grassland (KZN 2) | Indian Ocean Coastal Belt/Forest | F | |
| Entumeni Valley (KZN 3) | Indian Ocean Coastal Belt/Savanna/Forest | F | |

| Ecosystem | Biome | Criterion | Shared with |
|--|--|------------------|--------------------|
| Eshowe Mtunzini Hilly Grasslands (KZN 4) | Indian Ocean Coastal Belt/ Savanna/Forest | F | |
| Highover Nature Reserve and Roselands Farm Surrounds (KZN 5) | Grassland/Savanna/ Forest | F | |
| Interior North Coast Grasslands (KZN 6) | Indian Ocean Coastal Belt/ Savanna/Forest | F | |
| Interior South Coast Grasslands (KZN 7) | Indian Ocean Coastal Belt/ Savanna/Forest | F | |
| Kwambonambi Dune Forest (KZN 8) | Indian Ocean Coastal Belt/Forest | F | |
| Kwambonambi Hygrophilous Grasslands (KZN 9) | Indian Ocean Coastal Belt/Forest | F | |
| Margate Pondoland-Ugu Sourveld (KZN 10) | Indian Ocean Coastal Belt/Forest | F | |
| Mlazi Gorge (KZN 11) | Indian Ocean Coastal Belt/Forest | F | |
| New Hanover Plateau (KZN 12) | Grassland/Savanna/ Forest | F | |
| Ngoye Scarp Forests and Grasslands (KZN 13) | Indian Ocean Coastal Belt/ Savanna/Forest | F | |
| North Coast Dune Forest (KZN 14) | Indian Ocean Coastal Belt/Forest | F | |
| North Coast Forest Collective (KZN 15) | Indian Ocean Coastal Belt/Forest | F | |
| Northern Coastal Grasslands (KZN 16) | Indian Ocean Coastal Belt/Forest | F | |
| Oakland and Townhill Ridge (KZN 17) | Grassland/Savanna/ Forest | F | |
| Southern Coastal Grasslands (KZN 18) | Indian Ocean Coastal Belt/Forest | F | |
| Umvoti Valley Complex (KZN 19) | Indian Ocean Coastal Belt/ Savanna/Forest | F | |
| Endangered | | | |
| Bazini Forest Complex (KZN 20) | Grassland/Savanna/ Forest | F | |
| Bivane Montane Grassland (KZN 21) | Grassland | F | |
| Cumberland Crest (KZN 22) | Savanna | F | |

| Ecosystem | Biome | Criterion | Shared with |
|--|--|------------------|--------------------|
| Dukuduku/St Lucia Grasslands and Forests (KZN 23) | Indian Ocean Coastal Belt/Forest | F | |
| Fort Metcalf Grasslands (KZN 24) | Grassland | F | |
| Gqunu Forest (KZN 25) | Grassland/Forest | F | |
| Greytown North Grasslands (KZN 26) | Grassland | F | |
| Hlabeni State Forest (KZN 27) | Grassland/Forest | F | |
| Hlabisa Forest Complex (FOR 2) | Forest | F | |
| Impendle Highlands (KZN 28) | Grassland/Forest | F | |
| Karkloof Forest Collective (KZN 29) | Grassland/Savanna/Forest | F | |
| KwaZulu-Natal Coastal Forest (FOz VII1) | Forest | A2 | |
| KwaZulu-Natal Sandstone Sourveld (SVs 5) | Savanna | A1 | |
| Loskop Grasslands (KZN 30) | Grassland | F | |
| Mangrove Forest (FOa 3) | Forest | C | Eastern Cape |
| Ngome Mistbelt Grassland and Forest (KZN 31) | Grassland/Savanna/Forest | F | |
| Ntimbankulu Forest (FOR 6) | Forest | F | |
| Ntunjambili Valley Complex (KZN 32) | Savanna/Grassland | F | |
| Oribi-Port Edward Pondoland-Ugu Sourveld (KZN 33) | Indian Ocean Coastal Belt/Savanna/Forest | F | |
| Pietermaritzburg South (KZN 34) | Grassland/Savanna/Forest | F | |
| Qudeni Mountain Mistbelt Forest and Grassland (KZN 35) | Grassland/Savanna/Forest | F | |
| Sihleza (KZN 36) | Grassland/Forest | F | |
| Southern Weza State Forest (KZN 37) | Grassland/Forest | F | |
| Umgeni Valley Bushveld (KZN 38) | Grassland/Savanna/Forest | F | |
| Wakkerstroom/Luneburg Grasslands (MP 11) | Grassland/Forest | F | Mpumalanga |
| Vulnerable | | | |
| Beinn Mheadmon Mountain Grasslands (KZN 39) | Grassland | F | |
| Bivane Sour Grassveld and Bushveld (KZN 40) | Grassland/Savanna | F | |
| Black Rhino Range (KZN 41) | Indian Ocean Coastal Belt/Savanna/Forest | F | |

| Ecosystem | Biome | Criterion | Shared with |
|---|------------------------------|------------------|--|
| Boschhoek Forests (KZN 42) | Grassland/Forest | F | |
| Boschhoek Plateau (KZN 43) | Grassland/Forest | F | |
| Bushmans Nek/Garden Castle Lowlands (KZN 44) | Grassland | F | |
| Chelmsford Grasslands (KZN 45) | Grassland | F | |
| Chelmsford North Grasslands (KZN 46) | Grassland/Savanna | F | |
| Drakensberg Foothill Wattled Crane Habitat (KZN 47) | Grassland/Forest | F | |
| Easingwold Grasslands (KZN 48) | Grassland/Forest | F | |
| Eastern Creighton and Donnybrook (KZN 49) | Grassland/Savanna | F | |
| Eastern Scarp Forest (FOz V1) | Forest | A2 | |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Eastern Cape Free State North West Gauteng Mpumalanga |
| Eastlands (KZN 50) | Grassland/Savanna | F | |
| eMondlo Sandy Moist Grassland (KZN 51) | Grassland | F | |
| Fort Nottingham Lowland Grasslands (KZN 52) | Grassland/Forest | F | |
| Glen Cairn Valley (KZN 53) | Grassland/Savanna | F | |
| Gold Cliff Farm Surrounds (KZN 54) | Grassland/Savanna | F | |
| Harding East (KZN 55) | Savanna | F | |
| Harding West (KZN 56) | Grassland | F | |
| Himeville Lowlands and Ridge (KZN 57) | Grassland | F | |
| Hluhluwe Scarp Forest (KZN 58) | Grassland/Savanna/ Forest | F | |
| Imfolosi Savanna and Sourveld (KZN 59) | Grassland/Savanna | F | |
| Impendle Lowland Grasslands (KZN 60) | Grassland/Forest | F | |
| Ixopo Surrounds (KZN 61) | Grassland/Savanna | F | |
| KaNgwane Montane Grassland (Gm 16) | Grassland | A1 | Mpumalanga |
| Kromberg Plateau (KZN 62) | Grassland/Savanna/ Forest | F | |
| KwaMncane North Plateau (KZN 63) | Grassland/Forest | F | |

| Ecosystem | Biome | Criterion | Shared with |
|---|---------------------------|------------------|-----------------------|
| KwaZulu-Natal Coastal Belt (CB 3) | Indian Ocean Coastal Belt | A1 | |
| Lebombo Scarp Forest (KZN 64) | Grassland/Savanna/Forest | F | |
| Lebombo Summit Sourveld (SVI 17) | Savanna | A1 | Mpumalanga |
| Louwsberg Mistbelt Grassland (KZN 65) | Grassland/Forest | F | |
| Low Escarpment Mistbelt Forest (FOz 114) | Forest | A2 | Mpumalanga |
| Lowveld Riverine Forest (FOa 1) | Forest | A2 | Mpumalanga Limpopo |
| Majuba Mistbelt Forest and Moist Grassland (KZN 66) | Grassland/Forest | F | |
| Maputaland Wooded Grassland (CB 2) | Indian Ocean Coastal Belt | A1 | |
| Marwaqa (KZN 67) | Grassland/Forest | F | |
| Michaelhouse Grasslands (KZN 68) | Grassland/Forest | F | |
| Midlands Mistbelt Grassland (Gs 9) | Grassland | A1 | Eastern Cape |
| Midmar Valley (KZN 69) | Grassland | F | |
| Mount Gilboa Plateau (KZN 70) | Grassland/Forest | F | |
| Mount MacDonald Ridge and Wetlands (KZN 71) | Grassland | F | |
| New Amalfi Wetlands (KZN 72) | Grassland | F | |
| Ngongoni Veld (SVs 4) | Savanna | A1 | Eastern Cape |
| Nkandla Forests and Grasslands (KZN 73) | Grassland/Forest | F | |
| Nkunzi/Sundays River Grasslands (KZN 74) | Grassland/Forest | F | |
| Northern Qudeni Mistbelt Grasslands (KZN 75) | Grassland | F | |
| Ntsikeni Vlei (KZN 76) | Grassland/Forest | F | |
| Oakspring Valley (KZN 77) | Grassland | F | |
| Paulpietersburg Moist Grassland (Gm 15) | Grassland | A1 | Mpumalanga |
| Pondoland Scarp Forest (FOz V2) | Forest | A2 | Eastern Cape |
| Pudsey/Otterburn Wetlands (KZN 78) | Grassland | F | |
| Sherwood Forest Collective (KZN 79) | Grassland/Forest | F | |
| Swamp Forest (FOa 2) | Forest | A2 & C | Eastern Cape |
| Swartberg/Franklin Vlei/Kokstad Ridge and Wetlands (KZN 80) | Grassland/Forest | E | |

| Ecosystem | Biome | Criterion | Shared with |
|---|-------------------------------------|------------------|-------------------------------------|
| Umvoti Vlei and Surrounds (KZN 81) | Grassland/Indian Ocean Coastal Belt | F | |
| Uyskop Valley (KZN 82) | Grassland | F | |
| Vaalkop Headlands (KZN 83) | Grassland/Savanna | F | |
| Warley Commons (KZN 84) | Grassland/Savanna | F | |
| | | | |
| Limpopo Province | | | |
| Critically endangered | | | |
| Woodbush Granite Grassland (Gm 25) | Grassland | A1 | |
| Endangered | | | |
| Blouberg Forest (FOR 1) | Forest | F | |
| Malmani Karstlands (MP 5) | Grassland/Savanna/Forest | F | Mpumalanga |
| Mapungubwe/Greefswald Riverine Forest (FOR 4) | Forest | F | |
| Sekhukhune Mountainlands (MP 9) | Grassland/Savanna | F | Mpumalanga |
| Sekhukhune Norite Bushveld (LP 1) | Savanna | F | |
| Vulnerable | | | |
| Legogote Sour Bushveld (SVI 9) | Savanna | A1 | Mpumalanga |
| Lowveld Riverine Forest (FOa 1) | Forest | A2 | Mpumalanga KwaZulu-Natal |
| Springbokvlakte Thornveld (SVcb 15) | Savanna | A1 | Gauteng Mpumalanga North West |
| Tzaneen Sour Bushveld (SVI 8) | Savanna | A1 | Mpumalanga |
| | | | |
| Mpumalanga Province | | | |
| Critically endangered | | | |
| Kaapsehoop Quartzite Grasslands (MP 1) | Grassland/Forest | F | |
| Endangered | | | |
| Blyde Quartzite Grasslands (MP 2) | Grassland/Forest | F | |
| Chrissiesmeer Panveld (MP 3) | Grassland/Wetland | F | |
| Dullstroom Plateau Grasslands (MP 4) | Grassland/Forest | F | |
| Malmani Karstlands (MP 5) | Grassland/Savanna/Forest | F | Limpopo |
| Mananga-Lebombo Thornveld (MP 6) | Savanna/Forest | F | |
| Mauchesburg Alpine Grasslands (MP 7) | Grassland/Forest | F | |

| Ecosystem | Biome | Criterion | Shared with |
|--|------------------------------|------------------|---|
| Noordkaap Greenstone Bushveld (MP 8) | Savanna | F | |
| Sekhukhune Mountainlands (MP 9) | Grassland/Savanna | F | Limpopo |
| Stoffberg Mountainlands (MP 10) | Grassland | F | |
| Tsakane Clay Grassland (Gm 9) | Grassland | A1 | Gauteng |
| Wakkerstroom/Luneburg Grasslands (MP11) | Grassland/Forest | F | KwaZulu-Natal |
| Vulnerable | | | |
| Badplaas Mountainlands (MP 12) | Grassland/Savanna/ Forest | F | |
| Barberton Mountainlands (MP 13) | Grassland/Savanna/ Forest | F | |
| Croc Gorge Granite Mountainlands (MP 14) | Savanna/Forest | F | |
| Eastern Highveld Grassland (Gm 12) | Grassland | A1 | Gauteng |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Eastern Cape Free State North West Gauteng KwaZulu-Natal |
| Elandshoek Summit Grasslands (MP 15) | Grassland | F | |
| Elandshoogte Mountainlands (MP 16) | Grassland/Savanna/ Forest | F | |
| Kaalrug Mountainlands (MP 17) | Grassland/Savanna/ Forest | F | |
| KaNgwane Montane Grassland (Gm 16) | Grassland | A1 | KwaZulu-Natal |
| Lebombo Summit Sourveld (SVI 17) | Savanna | A1 | KwaZulu-Natal |
| Legogote Sour Bushveld (SVI 9) | Savanna | A1 | Limpopo |
| Loskop Mountainlands (MP 18) | Grassland/Savanna | F | |
| Low Escarpment Mistbelt Forest (FOz II4) | Forest | A2 | KwaZulu-Natal |
| Lowveld Riverine Forest (FOa 1) | Forest | A2 | KwaZulu-Natal Limpopo |
| Northern Escarpment Dolomite Grassland (Gm 22) | Grassland | A1 | |
| Paulpietersburg Moist Grassland (Gm 15) | Grassland | A1 | KwaZulu-Natal |
| Rand Highveld Grassland (Gm 11) | Grassland | A1 | Gauteng North West Free State |

| Ecosystem | Biome | Criterion | Shared with |
|---|--------------|------------------|---|
| Soweto Highveld Grassland (Gm 8) | Grassland | A1 | Gauteng Free State North West |
| Springbokvlakte Thornveld (SVcb 15) | Savanna | A1 | Limpopo Gauteng North West |
| Tzaneen Sour Bushveld (SVI 8) | Savanna | A1 | Limpopo |
| North West Province | | | |
| Critically endangered | | | |
| Western Highveld Sandy Grassland (Gh 14) | Grassland | A1 | |
| Endangered | | | |
| Vaal-Vet Sandy Grassland (Gh 10) | Grassland | A1 | Free State |
| Vulnerable | | | |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Northern Cape Eastern Cape Free State Gauteng Mpumalanga KwaZulu-Natal |
| Mafikeng Bushveld (SVk 1) | Savanna | A1 | |
| Marikana Thornveld (SVcb 6) | Savanna | A1 | Gauteng |
| Rand Highveld Grassland (Gm 11) | Grassland | A1 | Gauteng Free State Mpumalanga |
| Schweizer-Reneke Bushveld (SVk 3) | Savanna | A1 | |
| Soweto Highveld Grassland (Gm 8) | Grassland | A1 | Free State Mpumalanga Gauteng |
| Springbokvlakte Thornveld (SVcb 15) | Savanna | A1 | Limpopo Gauteng Mpumalanga |
| Vredefort Dome Granite Grassland (Gh 11) | Grassland | A1 | Free State |
| Northern Cape Province | | | |
| Endangered | | | |
| Cape Vernal Pools (AZf 2) | Azonal | A1 | Western Cape |
| Lower Gariep Alluvial Vegetation (AZa 3) | Azonal | A1 | |

| Ecosystem | Biome | Criterion | Shared with |
|---|--------------|------------------|--|
| Vulnerable | | | |
| Bokkeveld Sandstone Fynbos (FFs 1) | Fynbos | D1 | Western Cape |
| Eastern Temperate Freshwater Wetlands (Azf 3) | Azonal | A1 | Eastern Cape Free State North West Gauteng Mpumalanga KwaZulu-Natal |
| Namib Seashore Vegetation (AZd 1) | Azonal | A1 | |
| Nieuwoudtville Shale Renosterveld (FRs 2) | Fynbos | A1 | |
| Western Cape Province | | | |
| Critically endangered | | | |
| Atlantis Sand Fynbos (FFd 4) | Fynbos | D1 | |
| Cape Flats Sand Fynbos (FFd 5) | Fynbos | A1 & D1 | |
| Cape Lowland Alluvial Vegetation (AZa 2) | Azonal | A1 | |
| Central Rûens Shale Renosterveld (FRs 12) | Fynbos | A1 | |
| Eastern Rûens Shale Renosterveld (FRs 13) | Fynbos | A1 | |
| Elgin Shale Fynbos (FFh 6) | Fynbos | A1 | |
| Elim Ferricrete Fynbos (FFf 1) | Fynbos | A1 | |
| Knysna Sand Fynbos (FFd 10) | Fynbos | A1 | |
| Kogelberg Sandstone Fynbos (FFs 11) | Fynbos | D1 | |
| Langkloof Shale Renosterveld (FRs 17) | Fynbos | A1 | Eastern Cape |
| Lourensford Alluvium Fynbos (FFa 4) | Fynbos | A1 | |
| Muscadel Riviere (AZI 8) | Azonal | A1 | |
| Overberg Sandstone Fynbos (FFs 12) | Fynbos | D1 | |
| Peninsula Granite Fynbos (FFg 3) | Fynbos | A1 | |
| Peninsula Shale Renosterveld (FRs 10) | Fynbos | A1 | |
| Rûens Silcrete Renosterveld (FRc 2) | Fynbos | A1 | |
| Swartland Alluvium Fynbos (FFa 3) | Fynbos | A1 | |
| Swartland Granite Renosterveld (FRg 2) | Fynbos | A1 & D1 | |
| Swartland Shale Renosterveld (FRs 9) | Fynbos | A1 & D1 | |
| Swartland Silcrete Renosterveld (FRc 1) | Fynbos | A1 | |
| Western Rûens Shale Renosterveld (FRs 11) | Fynbos | A1 | |

| Ecosystem | Biome | Criterion | Shared with |
|---|-----------------|------------------|--------------------|
| Endangered | | | |
| Agulhas Sand Fynbos (FFd 7) | Fynbos | A1 | |
| Breede Alluvium Fynbos (FFa 2) | Fynbos | A1 | |
| Cape Flats Dune Strandveld (FS 6) | Fynbos | D1 | |
| Cape Vernal Pools (AZf 2) | Azonal | A1 | Northern Cape |
| Garden Route Granite Fynbos (FFg 5) | Fynbos | A1 | |
| Greyton Shale Fynbos (FFh 7) | Fynbos | A1 | |
| Groot Brak Dune Strandveld (FS 9) | Fynbos | A1 | |
| Hangklip Sand Fynbos (FFd 6) | Fynbos | A1 | |
| Kouebokkeveld Alluvium Fynbos (FFa 1) | Fynbos | A1 | |
| Mossel Bay Shale Renosterveld (FRs 14) | Fynbos | A1 | |
| Peninsula Sandstone Fynbos (FFs 9) | Fynbos | D1 | |
| Potberg Ferricrete Fynbos (FFf 2) | Fynbos | A1 | |
| Saldanha Granite Strandveld (FS 2) | Fynbos | A1 | |
| Western Cape Milkwood Forest (FOz VI3) | Forest | C | |
| Vulnerable | | | |
| Agulhas Limestone Fynbos (FFi 1) | Fynbos | D1 | |
| Albertinia Sand Fynbos (FFd 9) | Fynbos | A1 | |
| Bokkeveld Sandstone Fynbos (FFs 1) | Fynbos | D1 | Northern Cape |
| Boland Granite Fynbos (FFg 2) | Fynbos | D1 | |
| Breede Alluvium Renosterveld (FRa 1) | Fynbos | A1 | |
| Breede Sand Fynbos (FFd 8) | Fynbos | A1 | |
| Cape Winelands Shale Fynbos (FFh 5) | Fynbos | A1 | |
| Cederberg Sandstone Fynbos (FFs 4) | Fynbos | D1 | |
| Ceres Shale Renosterveld (FRs 4) | Fynbos | A1 | |
| Eastern Coastal Shale Band Vegetation (FFb 6) | Fynbos | A1 | Eastern Cape |
| Eastern Little Karoo (SKv 11) | Succulent Karoo | A1 | |
| Garden Route Shale Fynbos (FFb 9) | Fynbos | A1 | Eastern Cape |
| Hawequas Sandstone Fynbos (FFs 10) | Fynbos | D1 | |
| Hopefield Sand Fynbos (FFd 3) | Fynbos | A1 & D1 | |
| Kango Limestone Renosterveld (FRI 1) | Fynbos | A1 | |
| Kouebokkeveld Shale Fynbos (FFh 1) | Fynbos | A1 | |
| Leipoldtville Sand Fynbos (FFd 2) | Fynbos | A1 & D1 | |
| Montagu Shale Renosterveld (FRs 7) | Fynbos | A1 | |

| Ecosystem | Biome | Criterion | Shared with |
|--|-----------------|------------------|--------------------|
| Piketberg Quartz Succulent Shrubland (SKk 8) | Succulent Karoo | A1 | |
| Piketberg Sandstone Fynbos (FFs 6) | Fynbos | D1 | |
| Saldanha Flats Strandveld (FS 3) | Fynbos | A1 | |
| Swartland Alluvium Renosterveld (FRa 2) | Fynbos | A1 | |
| Swellendam Silcrete Fynbos (FFc 1) | Fynbos | A1 | |

7 Descriptions and maps of individual listed ecosystems

7.1 Explanation of descriptions

For each ecosystem, the following information is given: its **name**, **reference number**, the **criterion** or criteria under which the ecosystem is listed, and the **biome(s)**, **province(s)** and **municipality(ies)** in which the ecosystem falls. Where possible the **original area** of the ecosystem is provided (for forest ecosystems this data is not available) together with the percentage of **natural area remaining** of the ecosystem and the proportion of the ecosystem **protected** (expressed as a percentage of the ecosystem's original area).

If data is available the known number of **species of special concern** is provided including threatened Red List plant (EX, EW, CR, EN and VU, excluding VU D2) and animal species; Orange Listed plant and animal species²⁴; and endemic plant and animal species. However the species of special concern listed for each ecosystem are not comprehensive and names of species threatened by collection or trade have not been included.

The **geographical location** and a **brief description** are provided for each ecosystem. **Other information**, such as the names of protected areas in which parts of the ecosystem are protected, is provided where possible.

Finally references are provided for further information. For ecosystems listed under Criterion A1, A2, C and D1 the National Vegetation Map²⁵ and the classification system for South African forests²⁶ was used to obtain the information relating to the geographical location and the description. For ecosystems listed under Criterion F the information was obtained from the relevant provincial systematic biodiversity plans, namely the Mpumalanga Biodiversity Conservation Plan (2007), the Gauteng C-Plan V2 (2006), and the KwaZulu-Natal Terrestrial

²⁴ Victor, J. & Keith, M. The Orange List: a safety net for biodiversity in South Africa. *South African Journal of Science* 100: 139 – 141. Orange-listed species were used in the Gauteng C-Plan V2 (2006) and are referred to in the descriptions of individual ecosystems identified using Criterion F in Gauteng.

²⁵ Mucina, L. & Rutherford, M.C. (eds). 2006. The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.

²⁶ Von Maltitz, G., Mucina, L., Geldenhuys, C., Lawes, M., Eeley, H., Adie, H., Vink, D., Flemming, G. and 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.

Conservation Plan (C-Plan) V4 (2007); the National Forest Inventory²⁷ and the forest systematic conservation plan²⁸.

²⁷ Department of Water Affairs and Forestry. National Forest Inventory.

²⁸ Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished report for the Department of Water Affairs and Forestry.

7.2 Critically Endangered (CR) ecosystems

1. Atlantis Sand Fynbos (FFd 4)

| | |
|--|--|
| Reference number | FFd 4 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Swartland LM and Drakenstein LM |
| Original area of ecosystem | 70 000 ha |
| Remaining natural area of ecosystem (%) | 51% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 84 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 6 endemic plant species |

Geographical location

Rondeberg to Blouberg on the West Coast coastal flats; along the Groen River on the eastern side of the Dassenberg-Darling Hills through Riverlands to the area between Atlantis and Kalbaskraal, also between Klipheuwel and the Paardeberg with outliers west of the Berg River and east and north of Riebeek-Kasteel between Hermon and Heuningberg.

Description

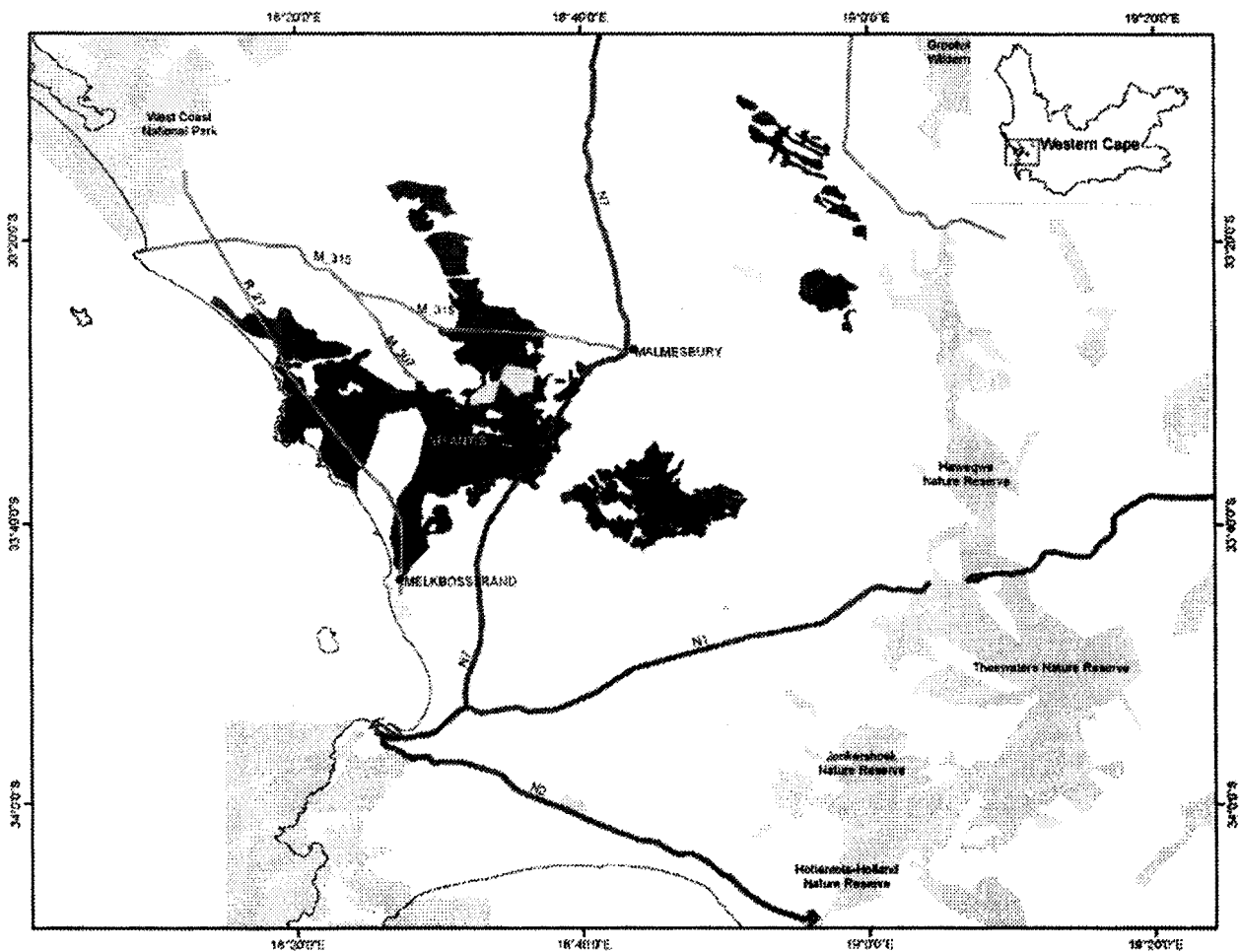
Moderately undulating to flat sand plains with a dense, moderately tall, ericoid shrubland dotted with emergent, tall sclerophyllous shrubs and an open, short restioid stratum. Restioid and proteoid fynbos are dominant, with asteraceous fynbos and patches of ericaceous fynbos in seepages. Boundaries are edaphically determined; and within sand fynbos are delimited by endemic species, and loss of species compared to south. At least six endemic species and 84 Red Data List plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in Riverlands Nature Reserve, Paardenberg and the Pella Research Site. The Pella portion of the Riverlands area was well studied in the 1980s and potentially is a long-term monitoring site.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 139. South African National Biodiversity Institute, Pretoria.



Location of Atlantis Sand Fynbos showing original area of ecosystem

2. Blesbokspruit Highveld Grassland (GP 1)

| | |
|--|--|
| Reference number | GP 1 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Wetland |
| Province | Gauteng |
| Municipalities | Ekurhuleni MM, Kungwini LM, Lesedi LM and Midvaal LM |
| Original area of ecosystem | 94 000 ha |
| Remaining natural area of ecosystem (%) | 85% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 26 threatened or endemic plant and animal species including those listed below |

Geographical location

East Rand of Gauteng including Endicott, Springs, and Benoni (2628BC, 2628AD, and 2628AB respectively). Ecosystem delineated by the Blesbokspruit and its tributaries together with associated wetlands and pans.

Description

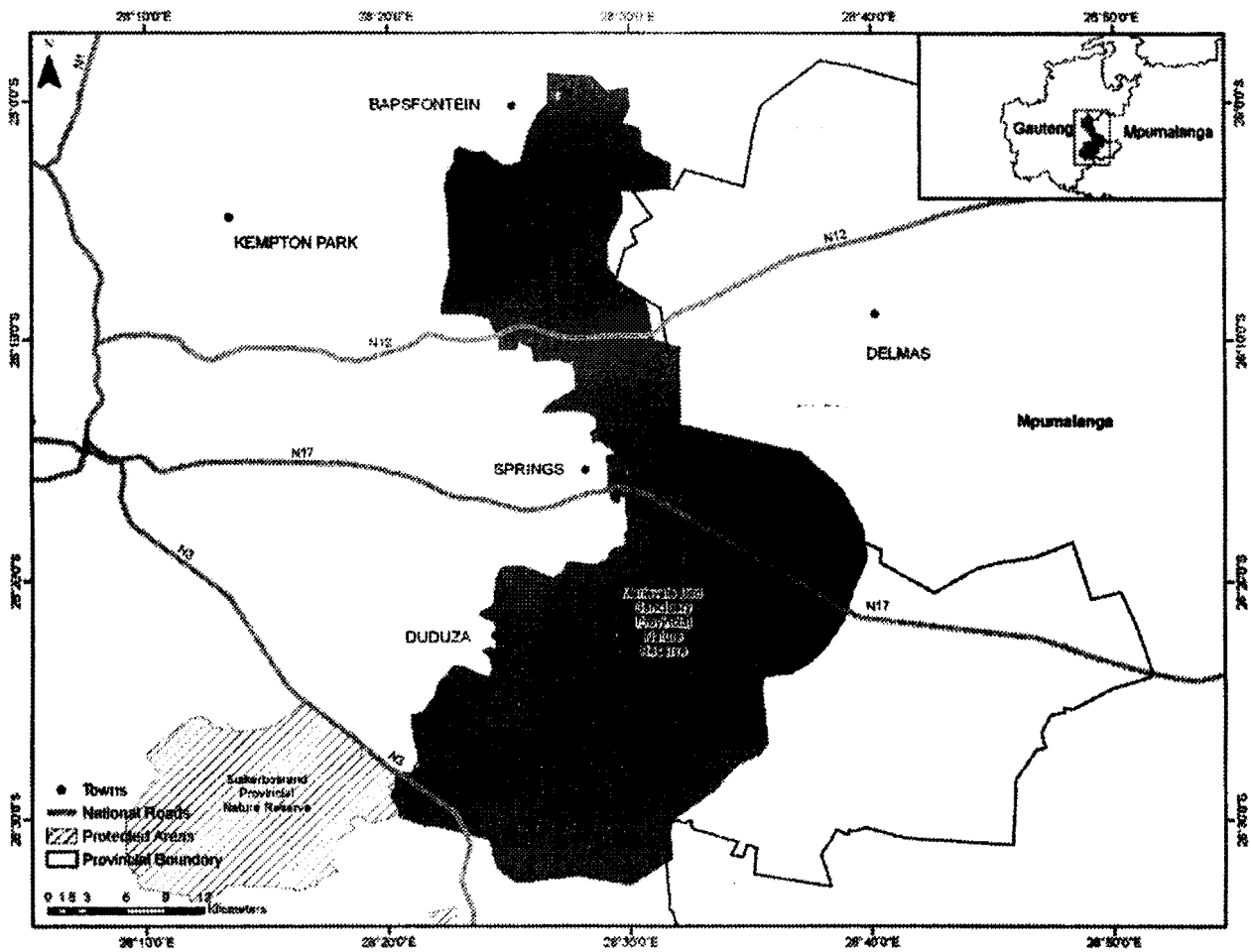
Key biodiversity features include Red or Orange Listed plants for example *Delosperma leendertziae* and *Khadia beswicki*; Red or Orange Listed mammals for example the Spotted-necked Otter and Brown Hyena; Red or Orange Listed birds for example the African Grass-Owl, Greater Flamingo, Lesser Flamingo, African Marsh-Harrier, Secretarybird, Yellow-billed Stork, Caspian Tern, Melodious Lark, Lesser Kestrel, White-bellied Korhaan, and Corncrake; Red or Orange Listed amphibians for example the Giant Bullfrog; Red or Orange Listed or priority invertebrates for example the Heidelberg Copper Butterfly, and the Golden Starburst Baboon Spider; and seven vegetation types including Andesite Mountain Bushveld, Eastern Highveld Grassland, Eastern Temperate Freshwater Wetlands, Gold Reef Mountain Bushveld, Rand Highveld Grassland, Soweto Highveld Grassland and Tsakane Clay Grassland. River, wetlands and pans in the ecosystem include the Blesbokspruit, Klein-Blesbokspruit, Verdrietlaagte, Karringmelkpan, Riet Pan, Spaarwater Pan, University Pan, Varkfontein Pan, and various other unnamed wetlands and pans.

Other Information

Approximately 1% of the ecosystem is protected in the Marlevale Bird Sanctuary.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Blesbokspruit Highveld Grassland showing original area of ecosystem

3. Blinkwater Valley (KZN 1)

| | |
|--|--|
| Reference number | KZN 1 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | uMshwathi LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 8% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 2 threatened or endemic plant or animal species including those listed below |

Geographical location

Albert Falls (2930AD). Ecosystem restricted mainly to one valley bottom. Ecosystem delineated by the Karkloof Forest Collective threatened ecosystem (KZN 29) in the west. The northern and eastern boundaries delineated by the lowermost contour of the surrounding slopes, whilst the southern boundary follows a common contour from the east to west boundaries.

Description

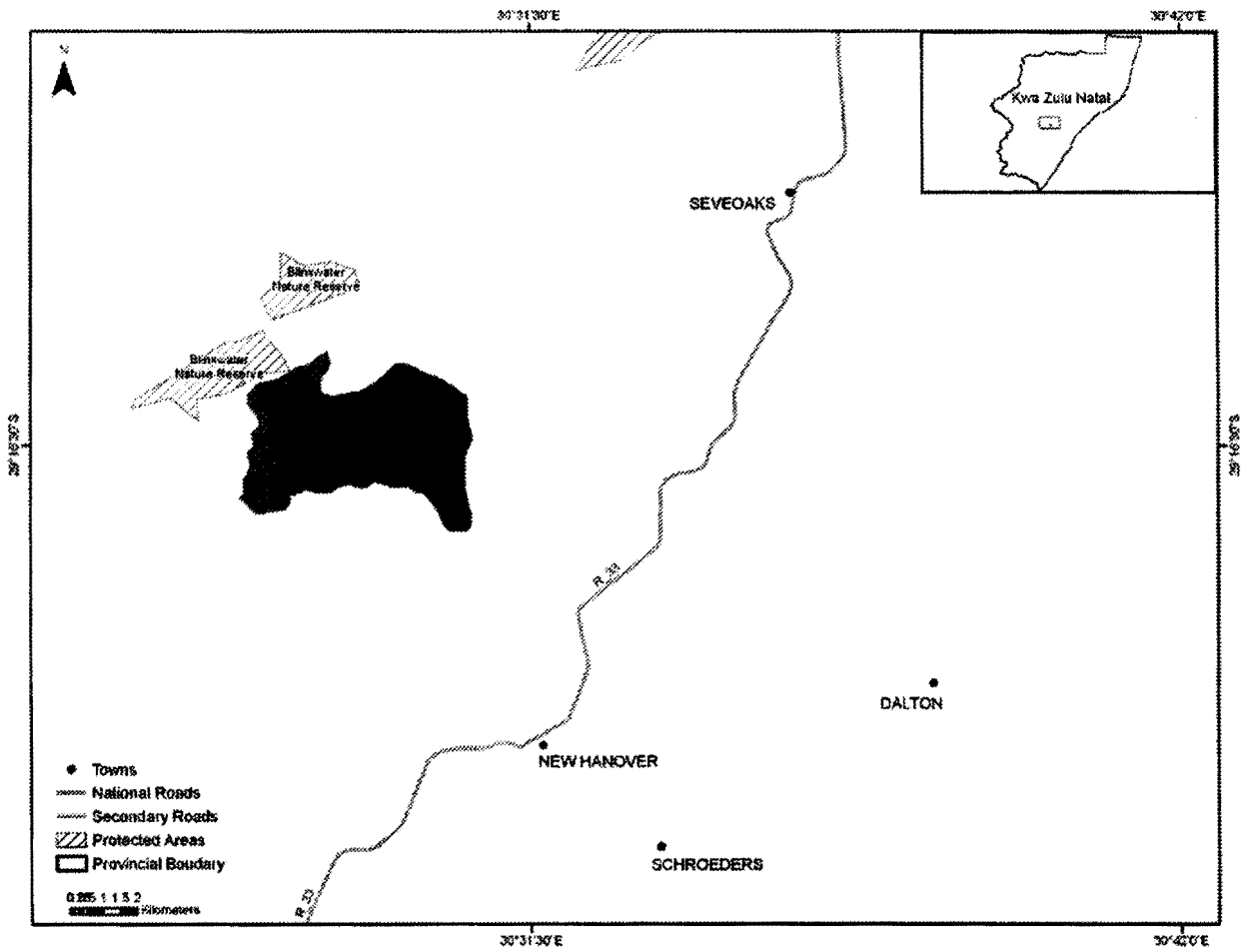
Key biodiversity features include one bird species, the Wattled Crane; one millipede species, *Doratogonus montanus*; one plant species, *Senecio exuberans*; and two vegetation types including Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Blinkwater Valley showing original area of ecosystem

4. Boesmanspruit Highveld Grassland (GP 2)

| | |
|--|--|
| Reference number | GP 2 |
| Listed under Criterion | F |
| Biome | Grassland and Wetland |
| Province | Gauteng |
| Municipality | Lesedi LM |
| Original area of ecosystem | 42 000 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 14 threatened or endemic plant and animal species including those listed below |

Geographical location

East Rand of Gauteng, including Endicott and Leslie (2628BC and 2628 BD respectively). Ecosystem delineated by the Boesmanspruit and its tributaries together with associated wetlands and pans and the quaternary catchment.

Description

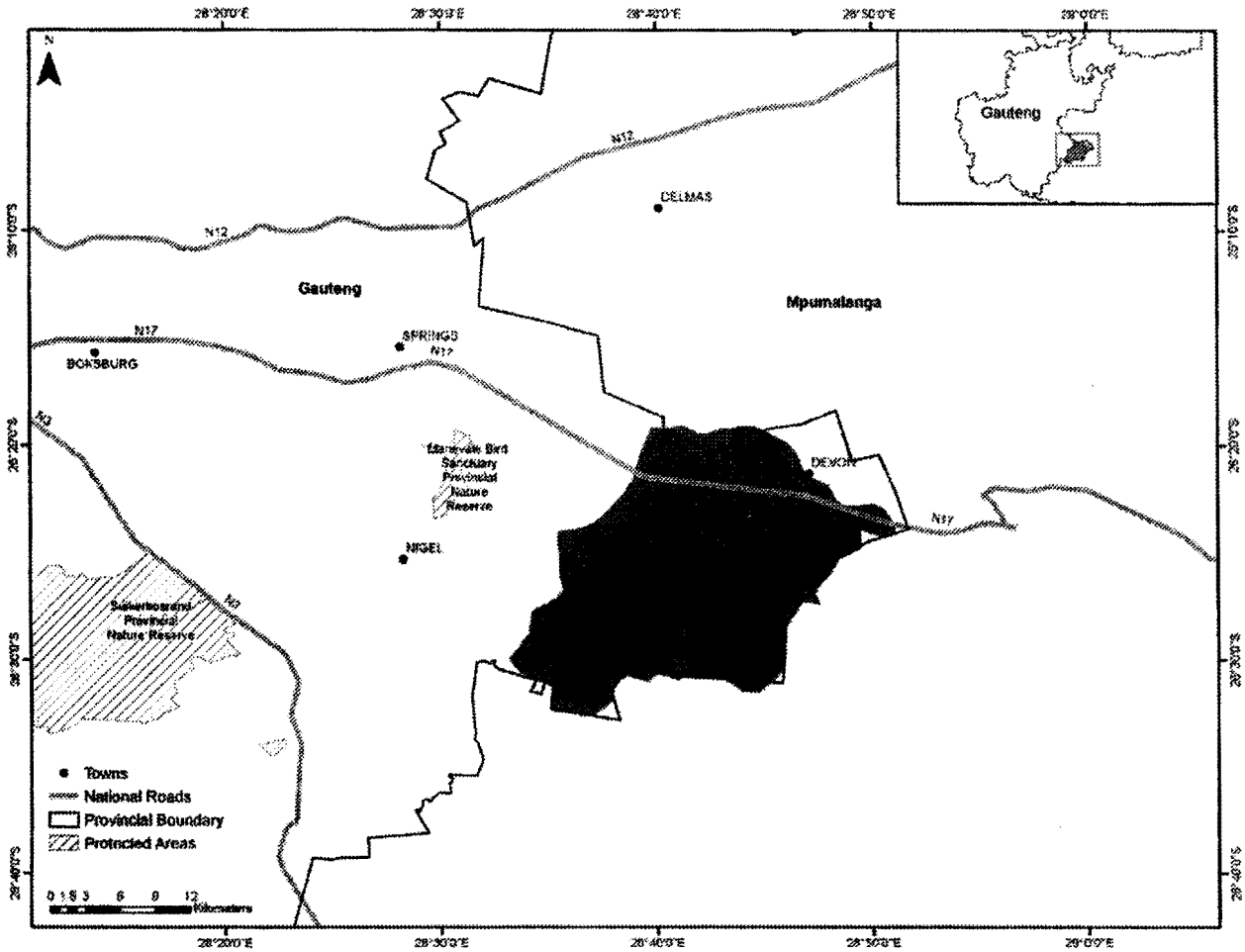
Key biodiversity features include Red or Orange Listed plants for example *Nerine gracilis* and *Kniphofia typhoides*; Red or Orange Listed birds for example Secretarybird, African Grass-Owl, Greater Flamingo, Black-Winged Pratincole, Black Stork and Blue Crane; Red or Orange Listed amphibians for example the Giant Bullfrog; and two vegetation types including Eastern Temperate Freshwater Wetlands and Soweto Highveld Grassland. Rivers, wetlands and pans in the ecosystem include the Suikerbosrantrivier, Boesmanspruit, Die Leeufontein, Klippan, Skilpadpan and various other unnamed wetlands and pans.

Other information

The ecosystem is not protected.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Boesmanspruit Highveld Grassland showing original area of ecosystem

5. Bronberg Mountain Bushveld (GP 3)

| | |
|--|--|
| Reference number | GP 3 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipalities | Kungwini LM and City of Tshwane MM |
| Original area of ecosystem | 13 000 ha |
| Remaining natural area of ecosystem (%) | 91% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 19 threatened or endemic plant and animal species including those listed below |

Geographical location

South-east of Pretoria including Rietvleidam (2528CD). Ecosystem delineated by the Bronberg ridge with associated koppies, drainage lines and rivers.

Description

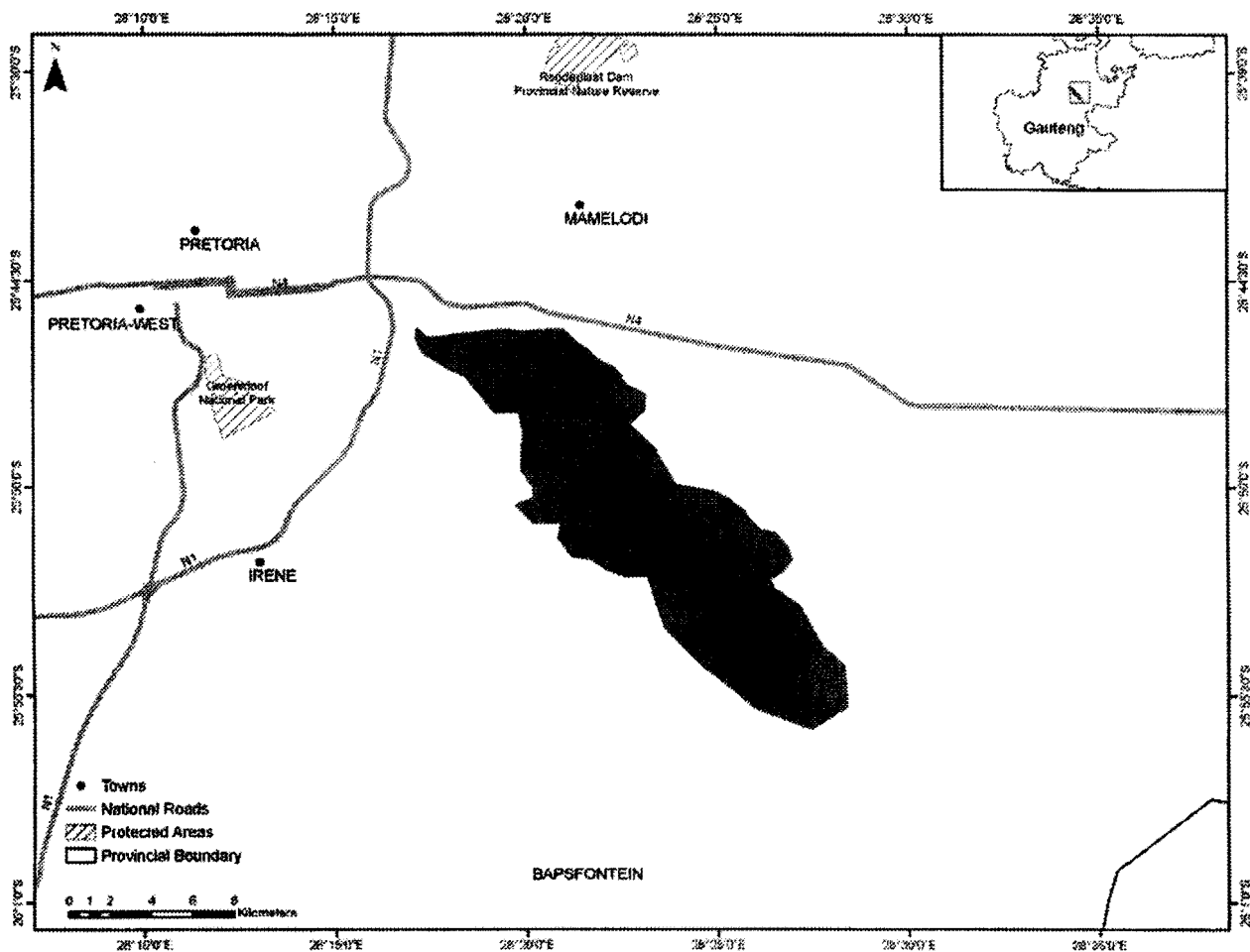
Key biodiversity features include Red or Orange Listed plants, for example *Bowiea volubilis* subsp. *volubilis* and *Ceropegia decidua* subsp. *pretoriensis*; Red or Orange Listed mammals for example Juliana's Golden Mole, and Spotted-necked Otter; Red or Orange Listed birds for example Secretarybird; Red or Orange Listed or priority invertebrates for example Gunning's Rock Scorpion; and three vegetation types including Andesite Mountain Bushveld, Marikana Thornveld and Rand Highveld Grassland. Rivers and wetlands in the ecosystem include the Moretele River, Pienaars River, Swawelpoortspruit and various unnamed wetlands.

Other information

Approximately 1% of the ecosystem is protected in the Faerie Glen Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Bronberg Mountain Bushveld showing original area of ecosystem

6. Cape Flats Sand Fynbos (FFd 5)

| | |
|--|---|
| Reference number | FFd 5 |
| Listed under criteria | A1 and D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Drakenstein LM and Stellenbosch LM |
| Original area of ecosystem | 54 000 ha |
| Remaining natural area of ecosystem (%) | 16% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 95 Red Listed plant species (EX, EW, CR, EN & VU excl VU D2) and 16 endemic plant species |

Geographical location

Cape Flats from Blouberg and Koeberg Hills west of the Tygerberg Hills to Lakeside and Pelican Park in the south near False Bay, from Bellville and Durbanville to Klapmuts and Joostenberg Hill in the east, and to the southwest of the Bottelary Hills to Macassar and Firgrove in the south.

Description

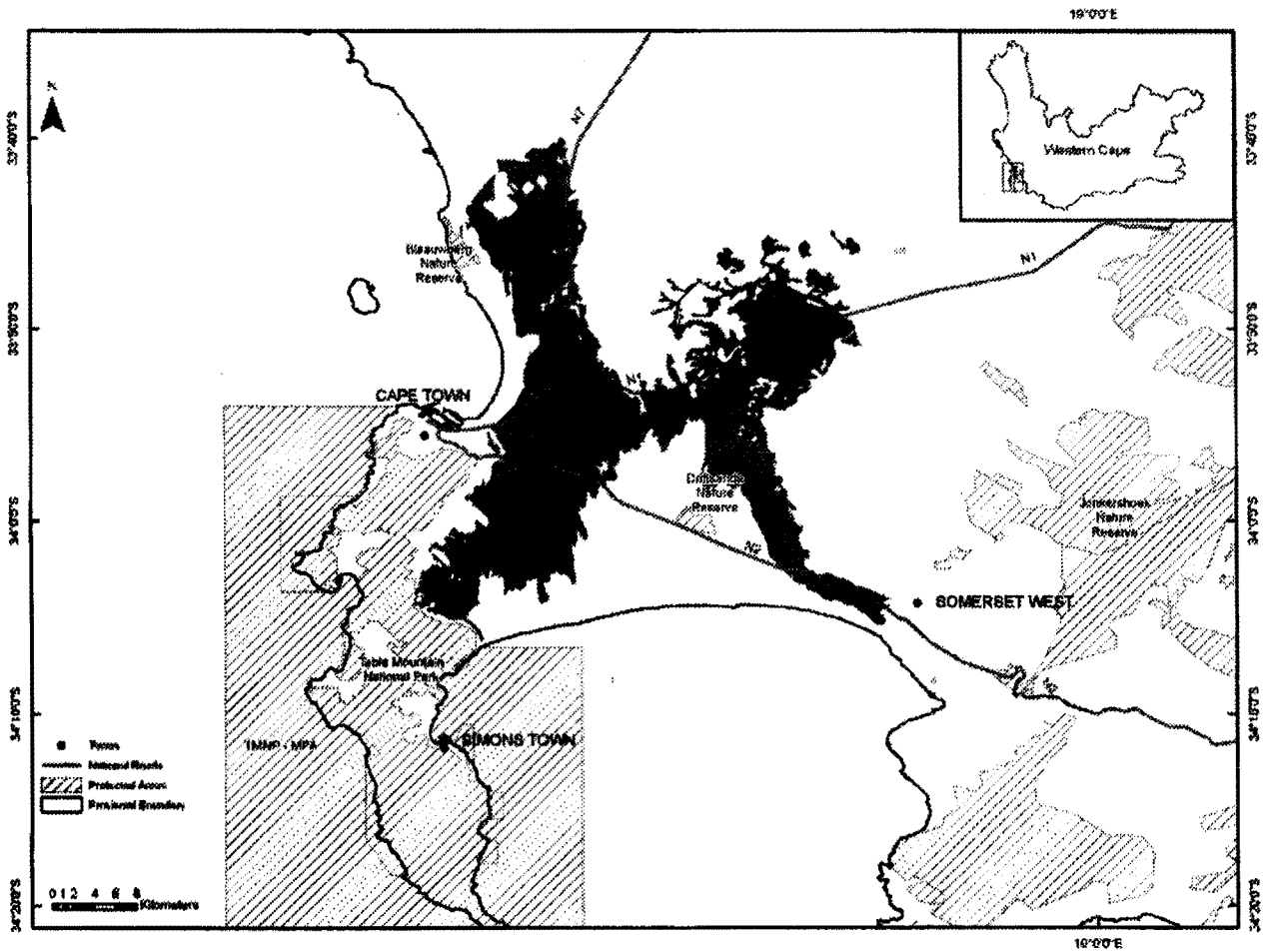
Moderately undulating and flat plains, with dense, moderately tall, ericoid shrubland containing scattered emergent tall shrubs. Proteoid and restioid fynbos are dominant, with asteraceous and ericaceous fynbos occurring in drier and wetter areas, respectively. Boundaries are edaphically determined; and within sand fynbos are delimited by endemic species. At least 16 endemic plant species with four extinct in the wild and 95 Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in the Table Mountain National Park and in some private conservation areas. Identified in several core conservation sites in the City of Cape Town biodiversity plan.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 139-140. South African National Biodiversity Institute, Pretoria.



Location of Cape Flats Sand Fynbos showing original area of ecosystem

7. Cape Lowland Alluvial Vegetation (Aza 2)

| | |
|--|--|
| Reference number | Aza 2 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Western Cape |
| Municipalities | Breede River/Winelands LM, Theewaterskloof LM, Swellendam LM, Hessequa LM, Mossel Bay LM, George LM and Plettenberg Bay LM |
| Original area of ecosystem | 36 000 ha |
| Remaining natural area of ecosystem (%) | 33% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 10 Red Listed plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Vegetation of broad alluvia of middle and lower stretches of rivers of the Western Cape such as the upper Olifants, Berg, Eerste, Lourens, Palmiet, Bot, Klein, Breede, Goekoe, Gouritz, Hartebeeskuil, Klein Brak, Groot Brak, Keurbooms and a number of small tributaries of the above-mentioned water courses.

Description

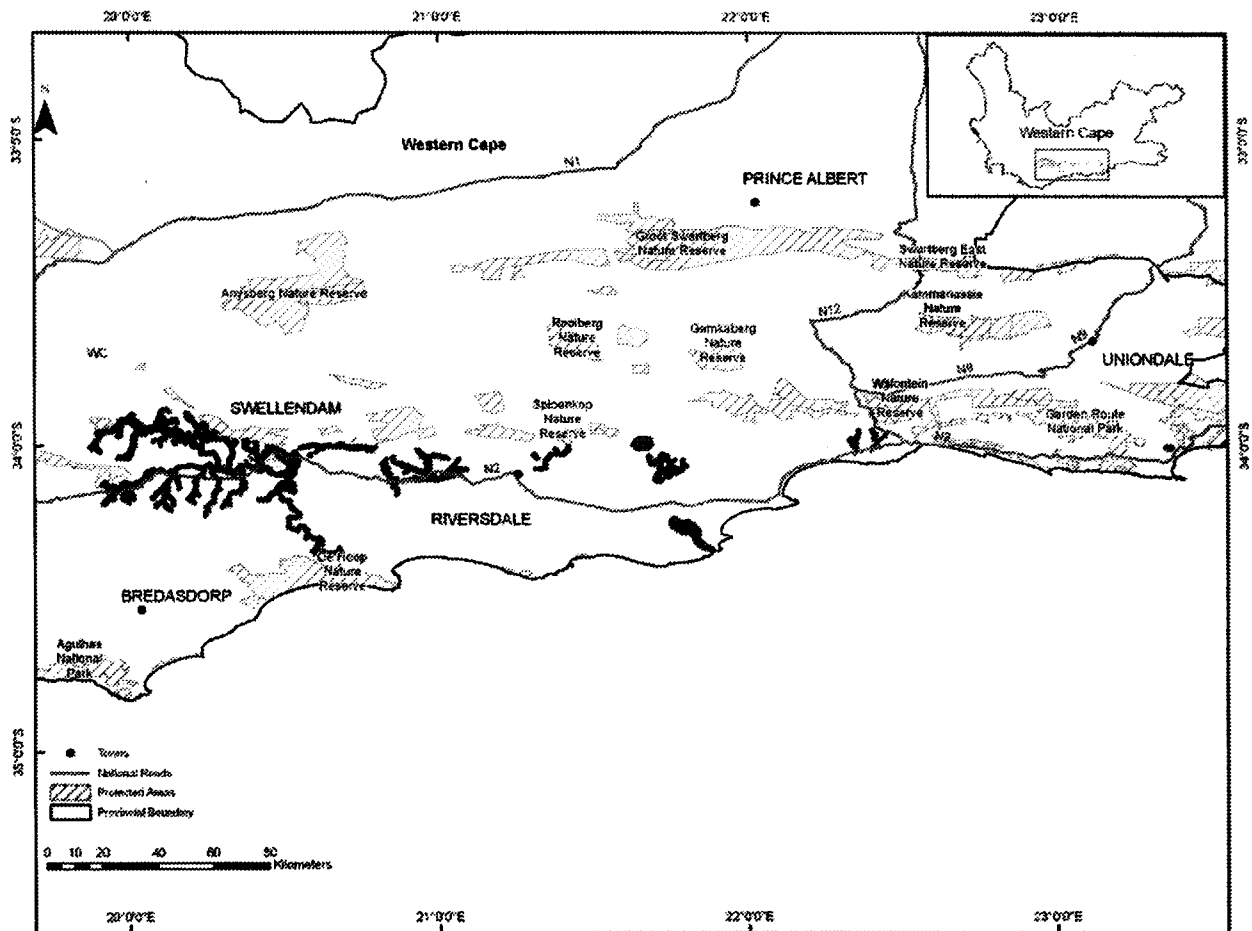
Flat landscape with slow-flowing (in places meandering) lowland rivers fringed on banks by extensive tall reeds dominated by *Phragmites australis* and *Typha capensis* as well as by flooded grasslands and herblands and tall riparian thickets (gallery forests) with *Salix mucronata* subsp. *capensis* on the river terraces. At least ten Red Data List plant species occur in the ecosystem.

Other information

Approximately 1% of the ecosystem is protected in the Bontebok National Park, Verlorenvlei (a Ramsar site), Broomvlei and Marloth Nature Reserves or privately protected in Wadrif.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland*. *Strelitzia* 19: 637-638. South African National Biodiversity Institute, Pretoria.



Location of Cape Lowland Alluvial Vegetation showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

8. Central Rûens Shale Renosterveld (FRs 12)

| | |
|--|---|
| Reference number | FRs 12 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede River/Winelands LM, Theewaterskloof LM, Cape Agulhas LM, Swellendam LM and WCDMA03 |
| Original area of ecosystem | 201 000 ha |
| Remaining natural area of ecosystem (%) | 9% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 42 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 8 endemic plant species |

Geographical distribution

Central parts of the Rûens region (Overberg) from Greyton and Stormsvlei (and Bromberg) to Napier and Bredasdorp and centred on Klipdale and Protem; also on the coastal flats southeast of Bredasdorp towards Arniston. Fragmented outliers are found on the southern part of the Agulhas Plain between Soetendalsvlei and Waskraalsvlei.

Description

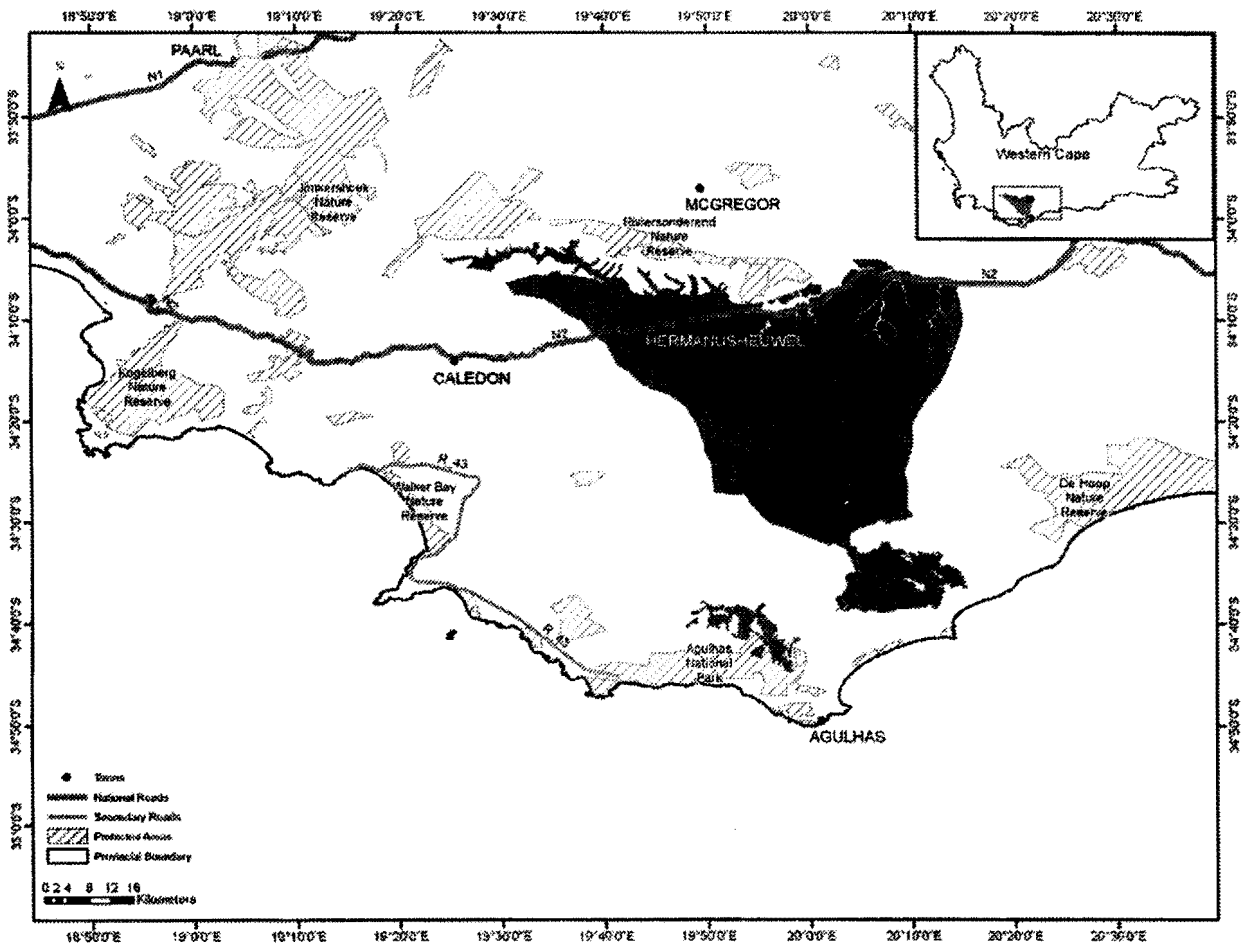
Moderately undulating plains and pans. Vegetation is open to medium dense cupressoid and small-leaved, low to moderately tall grassy shrubland, usually dominated by renosterbos. It is distinguished from the Eastern Rûens Shale Renosterveld by the absence of *Aloe ferox*. Shrubby Asteraceae increase as grazing reduces the palatable grassy component (mostly *Hyparrhenia hirta*) and subsequent erosion results. Heuweltjies not conspicuous, except in the south of the area. South of Bredasdorp this ecosystem is restricted and replaced by Elim Ferricrete Fynbos (FFf 1) in wetter areas. Boundaries are edaphically determined; and within south coast renosterveld are delimited by endemic species and turnover of key dominant species. At least eight endemic plant species and 42 Red Data List plant species occur in the ecosystem.

Other information

Small patches (< 1%) of the ecosystem are protected in the Agulhas National Park.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 184-185. South African National Biodiversity Institute, Pretoria.



Location of Central Rûens Shale Renosterveld showing original area of ecosystem

9. Durban Metropole North Coast Grassland (KZN 2)

| | |
|--|---|
| Reference number | KZN 2 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipality | eThekweni MM |
| Original area of ecosystem | 41 000 ha |
| Remaining natural area of ecosystem (%) | 4% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 7 threatened or endemic plant and animal species including those listed below |

Geographical location

Inanda (2930DB), Verulam (2931CA) and Durban (2930DD). Ecosystem confined to the North Coast Grasslands. It is delineated by the Northern Coastal Grasslands threatened ecosystem (KZN 16) in the east; the KwaZulu-Natal Sandstone Sourveld threatened ecosystem (SVs 5) in the west; the Interior North Coast Grasslands threatened ecosystem (KZN 6) in the north; and the Mlazi Gorge threatened ecosystem (KZN 11) in the south.

Description

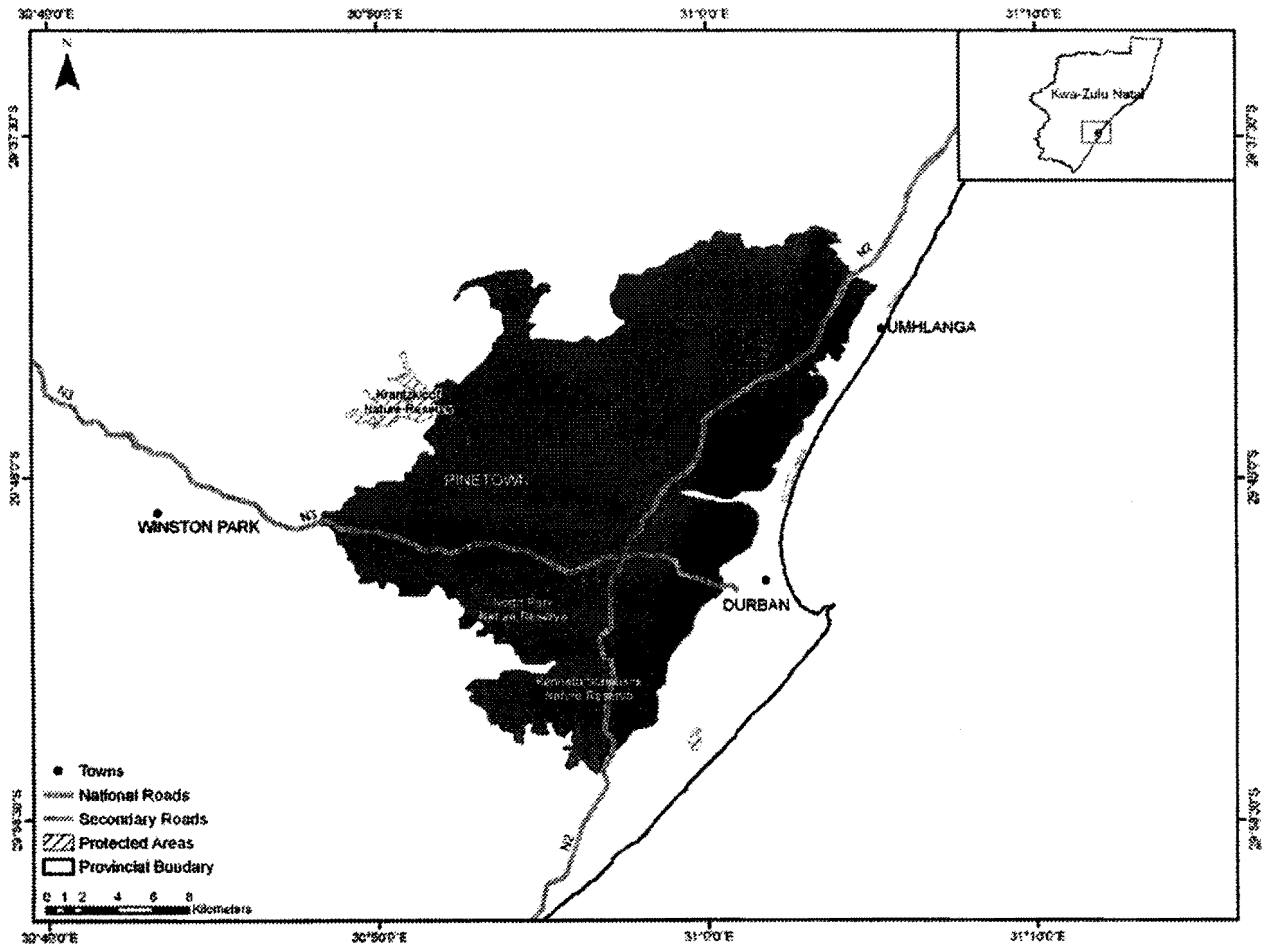
Key biodiversity features include one amphibian species, *Hyperolius pickersgilli*; three millipede species including *Centrobolus anulatus*, *Doratogonus cristulatus* and *Doratogonus infragilis*; one plant species, *Kniphofia pauciflora*; two reptile species including *Bradypodion melanocephalum* and *Scelotes inornatus*; and two vegetation types including KwaZulu-Natal Coastal Forest and KwaZulu-Natal Coastal Belt.

Other information

Less than 1% of the ecosystem is protected in the North Park Nature Reserve, Kenneth Stainbank Nature Reserve and Krantzklouf Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Durban Metropole North Coast Grassland showing original area of ecosystem

10. Eastern Rûens Shale Renosterveld (FRs 13)

| | |
|--|---|
| Reference number | FRs 13 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede River/WinelandsLM, Cape Agulhas LM, Swellendam LM, Hessequa LM and WCDMA03 |
| Original area of ecosystem | 277 000 ha |
| Remaining natural area of ecosystem (%) | 14% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 49 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 15 endemic plant species |

Geographical location

Eastern Rûens (Overberg) from Bredasdorp (Patryskraal) and the area of the Breede River near Swellendam, between the coastal limestone (and sandstone) belt in the south and the southern foothills of the Langeberg, encompassing the areas in the vicinity of Malgas and Heidelberg, to the Goukou River at Riversdale.

Description

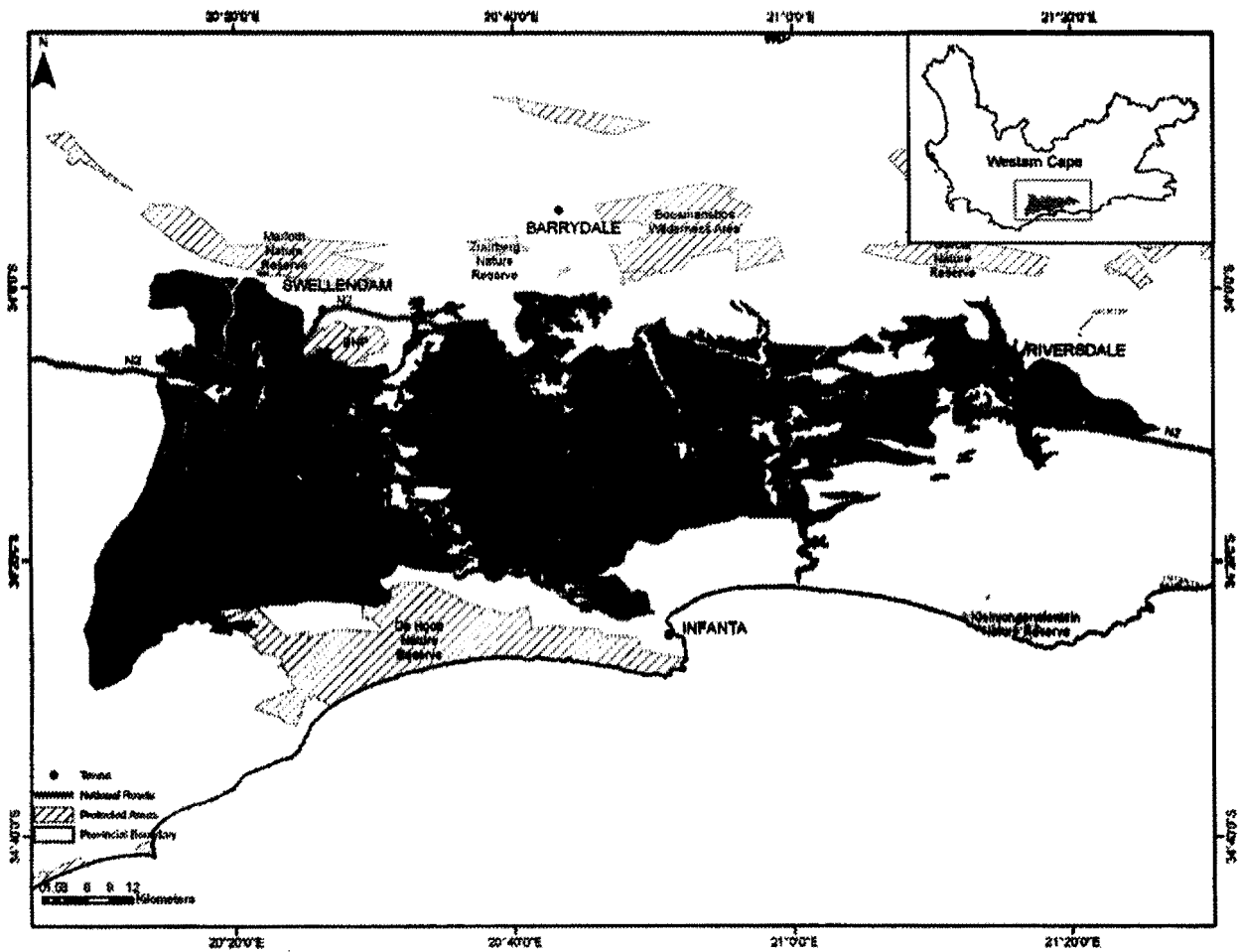
Moderately undulating hills and plains supporting cupressoid and small-leaved, low to moderately tall grassy shrubland, dominated by renosterbos. The southern limits are often covered by a thin layer of calcrete. Boundaries are edaphically determined; and within south coast renosterveld are delimited by endemic species and turnover of key dominant species. At least 15 endemic plant species and 49 Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in the Bontebok National Park, De Hoop and Werner Frehse Nature Reserves and in the private Grootvadersbosch Conservancy.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 185-186. South African National Biodiversity Institute, Pretoria.



Location of Eastern Rûens Shale Renosterveld showing original area of ecosystem

11. Elgin Shale Fynbos (FFh 6)

| | |
|--|--|
| Reference number | FFh 6 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Drakenstein LM, Breede Valley LM, Theewaterskloof LM and Overstrand LM |
| Original area of ecosystem | 28 000 ha |
| Remaining natural area of ecosystem (%) | 24% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 19 Red Data plant species (EX, EW, CR, EN & VU, excl VU D2) and 2 endemic plant species |

Geographical location

Elgin Basin east of Grabouw and Villiersdorp Basin around Vyeboom, with pockets to the north at the uppermost part of Stettynskloof, Kaaimansgat and Rooihogte Pass, and at the Steenbras Dam to the west.

Description

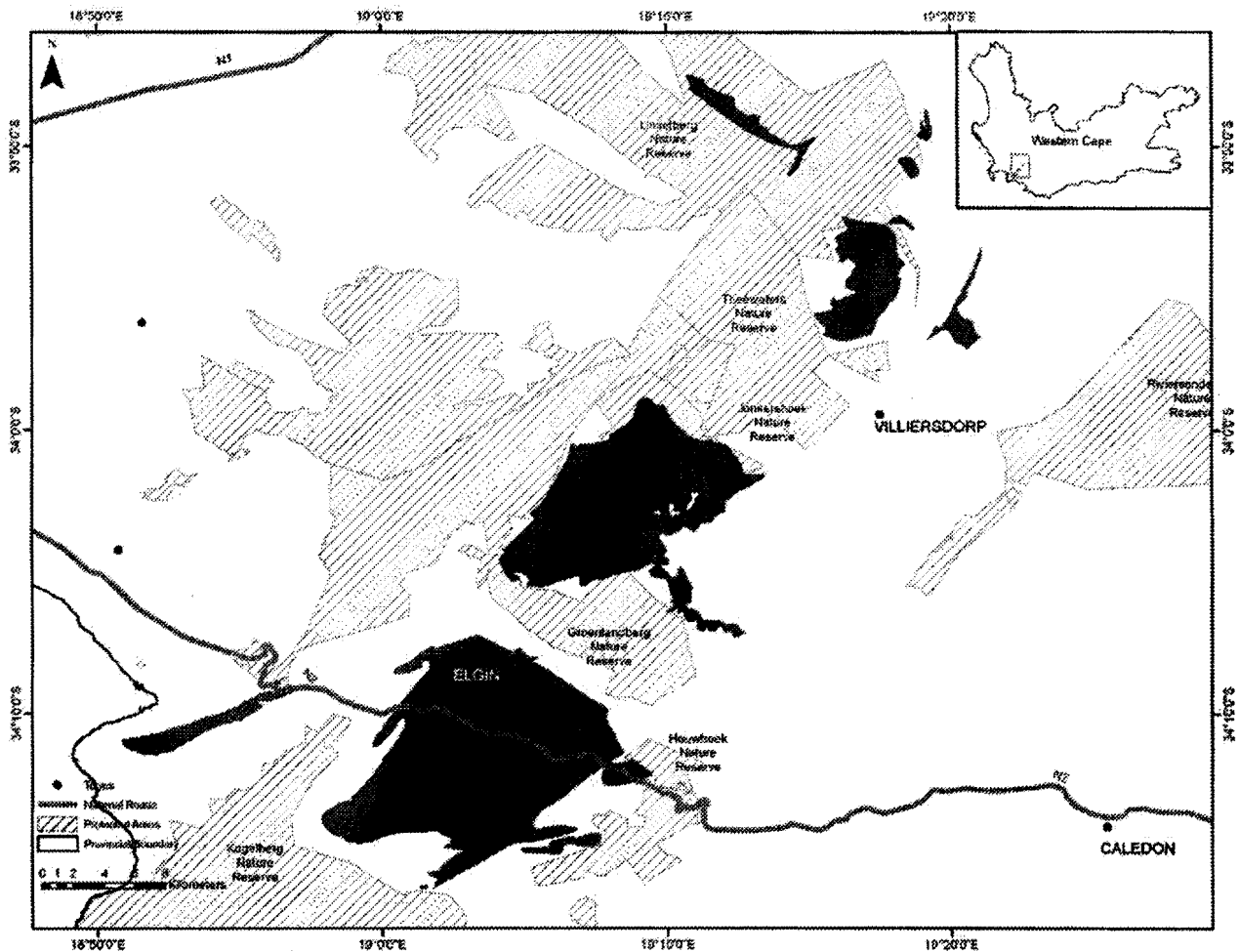
Undulating hills and moderately undulating plains and steep slopes of adjacent mountains. An open to medium dense tall proteoid shrubland over a matrix of moderately tall and dense evergreen shrubs, dominated by proteoid, asteraceous and closed-scrub fynbos, and ericaceous fynbos in the wetter facies. Boundaries are edaphically determined. At least two endemic plant species and 19 Red Data List plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in the Tweewaters and Limietberg Nature Reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 150. South African National Biodiversity Institute, Pretoria.



Location of Elgin Shale Fynbos showing original area of ecosystem

12. Elim Ferricrete Fynbos (FFf 1)

| | |
|--|---|
| Reference number | FFf 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Theewaterskloof LM, Overstrand LM, Cape Agulhas LM and WCDMA03 |
| Original area of ecosystem | 67 000 ha |
| Remaining natural area of ecosystem (%) | 29% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 72 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 29 endemic plant species |

Geographical location

Extensive areas between the Bot River Valley, Hemel en Aarde Valley, Stanford environs, Salmonsdam and Baardskeerdersbos, with the most extensive parts around Elim on the Agulhas Plain spanning the area from Soetmuisberg in the north to Buffeljags and the Soetanysberg in the south. Outliers found on the northern slopes of the mountains adjacent to those of the Rûens around Napier and at Perdekamp north of Arniston.

Description

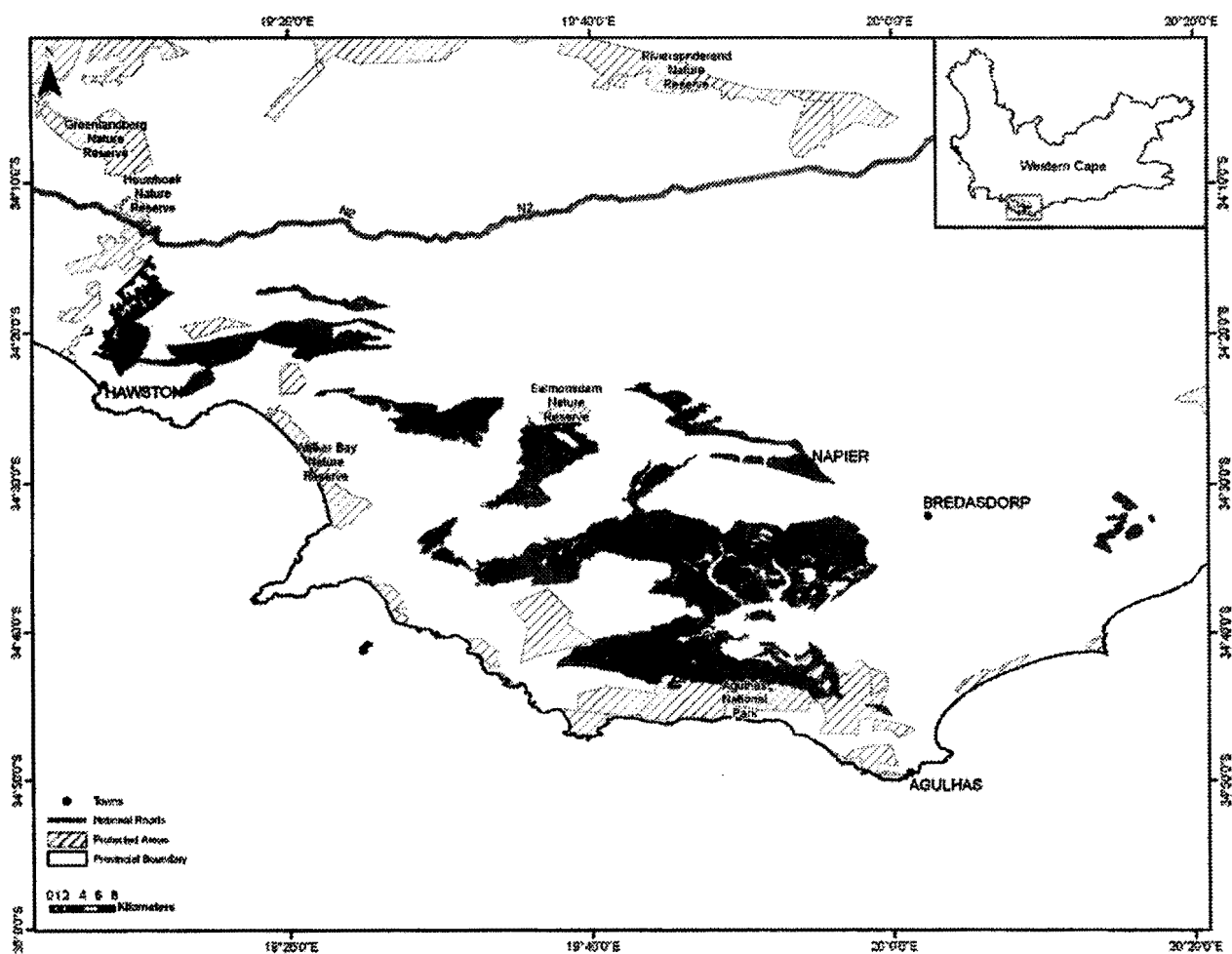
Undulating hills and plains covered with open to closed dwarf shrubland with occasional scattered tall shrubs. It is a diverse ecosystem, with all structural fynbos types present, but with extensive areas of asteraceous fynbos dominated by low proteoid elements. To differentiate mesotrophic asteraceous from mesotrophic proteoid fynbos the following proteoid types are recognised: *Leucadendron elimense*, *L. laxum*, *L. modestum*, *L. stelligerum* and *L. teretifolium*. When degraded, this ecosystem becomes dominated by *Elytropappus rhinocerotis*. On transitions to deep sandy soils, *Protea repens* may be dominant, and these transitional communities are often much richer in species than associated Overberg Sandstone Fynbos (FFs 12). At least 29 endemic plant species and 72 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 5% of the ecosystem is protected in the Agulhas National Park and additional small patches are found in the Oude Bosch Private Nature Reserve.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 159-160. South African National Biodiversity Institute, Pretoria.



Location of Elfm Ferricrete Fynbos showing original area of ecosystem

13. Entumeni Valley (KZN 3)

| | |
|--|---|
| Reference number | KZN 3 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipality | uMlalazi LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 37% |
| Proportion of ecosystem protected | 11% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Eshowe (2831CD). Ecosystem incorporates Eastern Scarp Forest and surrounding lowland grasslands. It is confined to a valley with boundaries delineated by the crests of this valley.

Description

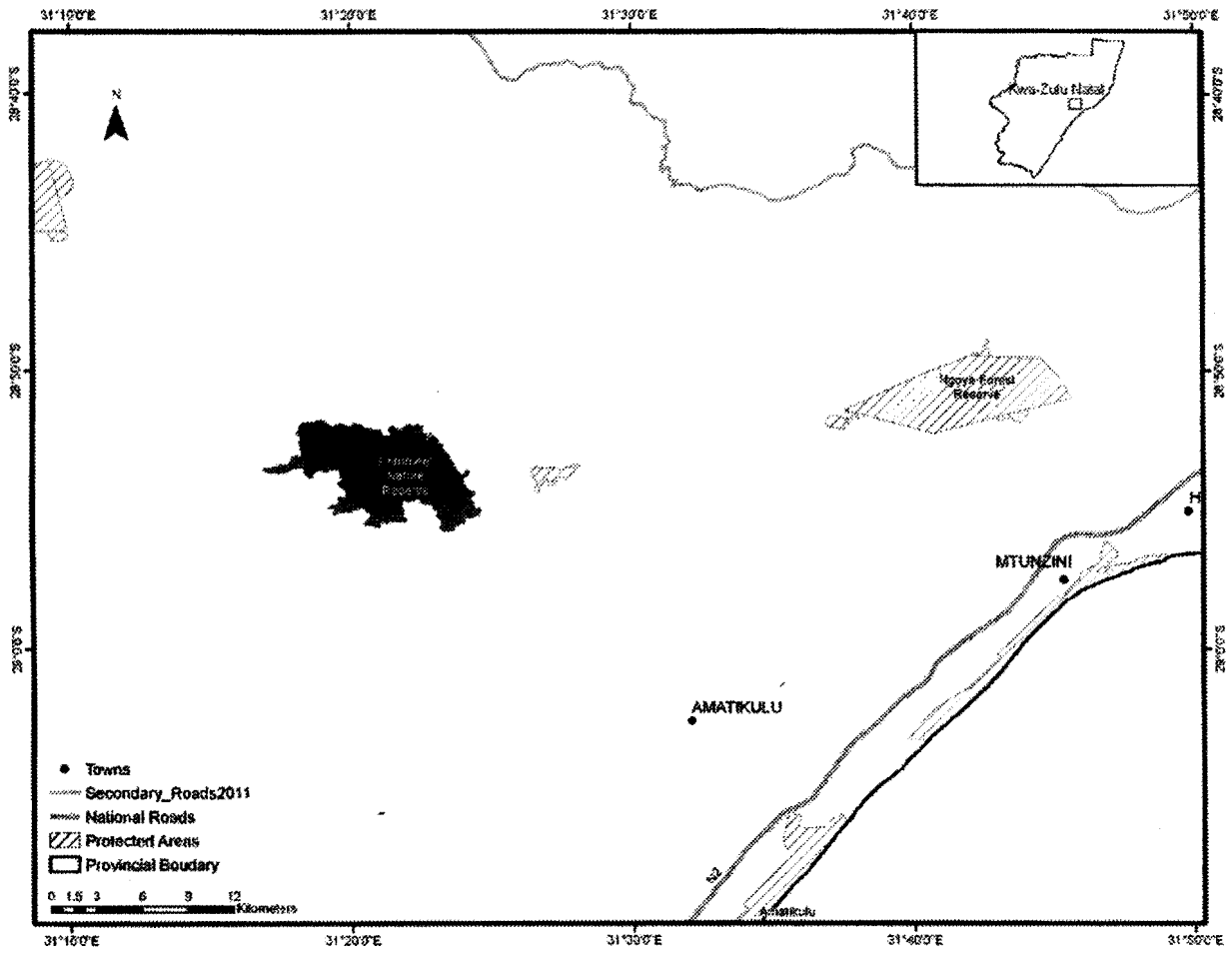
Key biodiversity features include four millipede species including *Allawrencius complex*, *Centrobolus bifidus*, *Centrobolus fulgidus* and *Doratogonus natalensis*; one plant species, *Helichrysum woodii*; one reptile species, *Bradypodion caeruleogula*; and three vegetation types Eastern Scarp Forest, Ngongoni Veld and KwaZulu-Natal Coastal Belt.

Other information

Approximately 11% of the ecosystem is protected in the Entumeni Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Entumeni Valley showing original area of ecosystem

14. Eshowe Mtunzini Hilly Grasslands (KZN 4)

| | |
|--|---|
| Reference number | KZN 4 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMhlathuze LM, uMlalazi LM, eNdongakusuka LM, KwaDukuza LM, Ndwedwe LM and Maphumulo LM |
| Original area of ecosystem | 117 000 ha |
| Remaining natural area of ecosystem (%) | 7% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 13 threatened or endemic plant or animal species including those listed below |

Geographical location

Eshowe (2831CD), Blackburn (2831DC), Felixton (2831DD), Mapumulo (2931AA), Tugela (2931AB) and Gingindlovu (2931BA). Ecosystem is primarily restricted to the KwaZulu-Natal Coastal Belt. It is topographically constrained to hilly regions with boundaries delineated by a combination of river valleys and ridges. In the north the boundary is delineated by a combination of river valleys and the boundaries of the Entumeni Valley and Ngoye Scarp Forests and Grasslands threatened ecosystems (KZN 3 and KZN 13 respectively).

Description

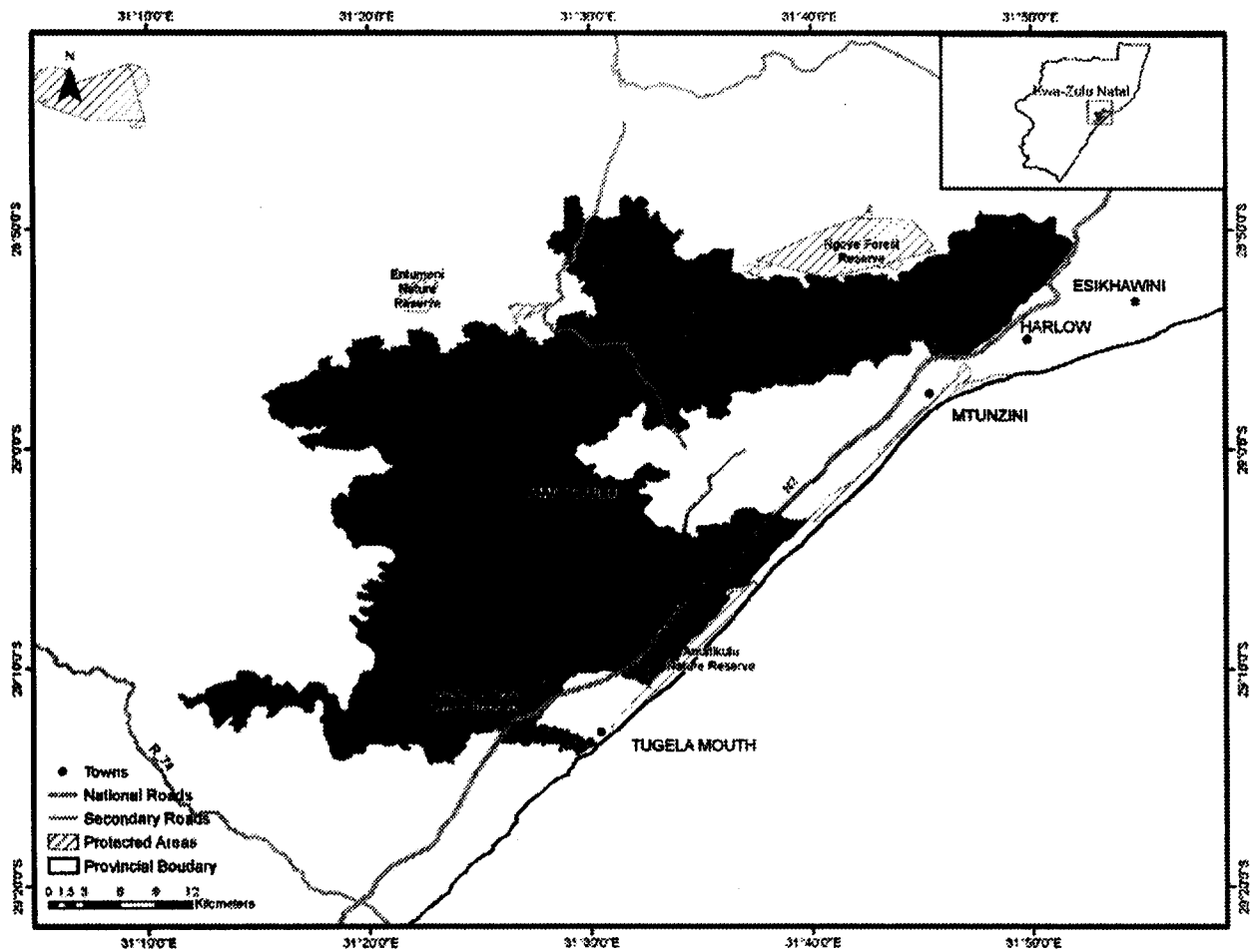
Key biodiversity features include one amphibian species, *Hyperolius pickersgilli*; one bird species, Green Barbet; three millipede species including *Centrobolus anulatus*, *Doratogonus montanus* and *Doratogonus natalensis*; five plant species for example *Helichrysum woodii*, *Kniphofia leucocephala*, *Kniphofia littoralis*, *Kniphofia pauciflora*; two reptile species including *Bradypodion melanocephalum* and *Scelotes inornatus*; and six vegetation types including Nongongi Veld, Eastern Valley Bushveld, KwaZulu-Natal Coastal Forest, Maputuland Coastal Belt, KwaZulu-Natal Coastal Belt and Zululand Lowveld.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.

Other Information

Less than 1% of the ecosystem is protected in the Harold Johnson Nature Reserve and the Amatikulu Nature Reserve.



Location of Eshowe Mtunzini Hilly Grasslands showing original area of ecosystem

15. Glen Austin Pan (GP 4)

| | |
|--|---|
| Reference number | GP 4 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | Gauteng |
| Municipalities | City of Johannesburg MM and Ekurhuleni MM |
| Original area of ecosystem | 500 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Northern parts of Johannesburg including Centurion (2528CC). Ecosystem delineated by pans and associated terrestrial habitat.

Description

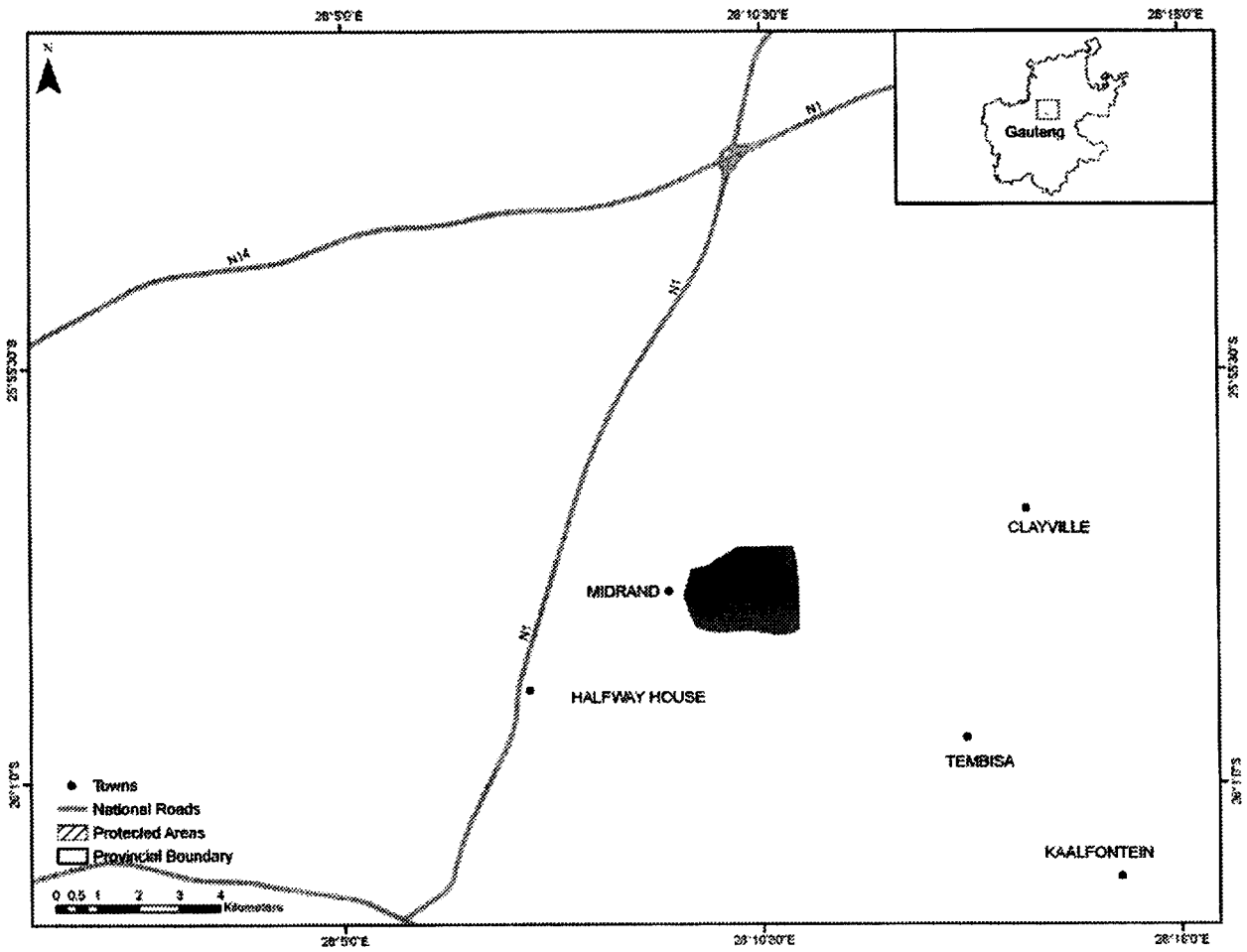
Key biodiversity features include Red or Orange Listed amphibians for example the Giant Bullfrog; and Red or Orange Listed or priority invertebrates for example the Marsh sylph; one vegetation type, the Egoli Granite Grassland; and the Olifantspruit, Glen Austin Pan, and Sedge Pan.

Other information

Approximately 4% of the ecosystem is protected in the Glen Austin Bird Sanctuary.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Glen Austin Pan showing original area of ecosystem

16. Highover Nature Reserve and Roselands Farm Surrounds (KZN 5)

| | |
|--|--|
| Reference number | KZN 5 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Richmond LM and Ingwe LM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 55% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 9 threatened or endemic plant or animal species including those listed below |

Geographical location

Byrne (2930CC). Ecosystem delineated by prominent plateau and ridge features. In the north the boundary is delineated by the Kwamatakane River and bisected by the Umkomaas River. The ecosystem includes forest patches, for example Soada, Pateni and Moyeni forest patches.

Description

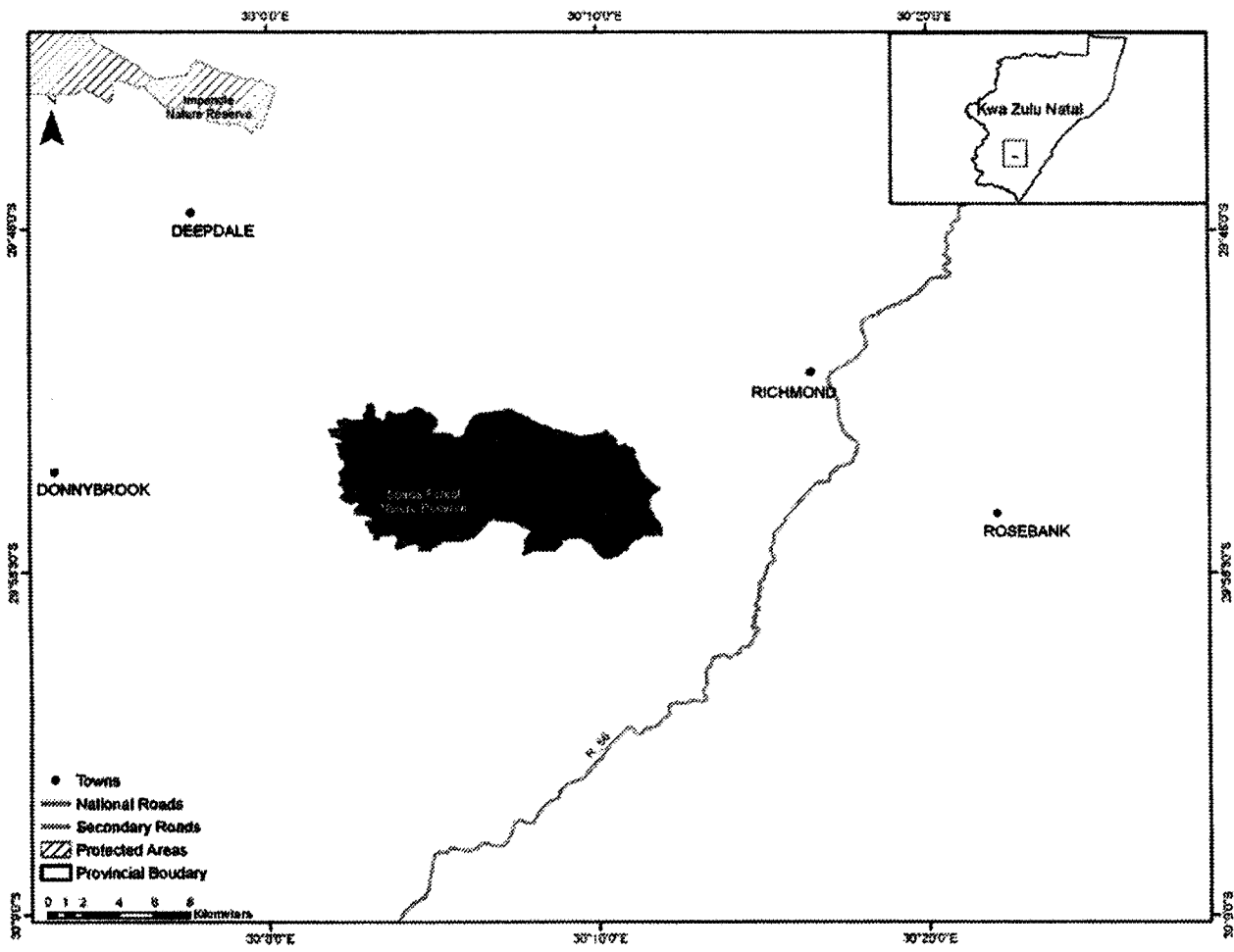
Key biodiversity features include one bird species, the Blue Swallow; six millipede species including *Centrobolus rubricollis*, *Doratogonus avius*, *Doratogonus hoffmani*, *Doratogonus infragilis*, *Doratogonus montanus* and *Doratogonus natalensis*; two plant species for example *Senecio exuberans*; and four vegetation types including Eastern Mistbelt Forest, Eastern Valley Bushveld, Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

Approximately 5% of the ecosystem is protected in the Soada Forest Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Highover Nature Reserve and Roselands Farm surrounds showing original area of ecosystem

17. Interior North Coast Grasslands (KZN 6)

| | |
|--|--|
| Reference number | KZN 6 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eThekwinini MM, KwaDukuza LM and Ndwedwe LM |
| Original area of ecosystem | 36 000 ha |
| Remaining natural area of ecosystem (%) | 8% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 8 threatened or endemic plant or animal species including those listed below |

Geographical location

Inanda (2930DB) and Verulam (2931CA). Ecosystem located primarily within the KwaZulu-Natal Coastal Belt. Ecosystem delineated in the west and north by the KwaZulu-Natal Sandstone Sourveld threatened ecosystem (SVs 5) and in the south and east by ridge lines and river channels.

Description

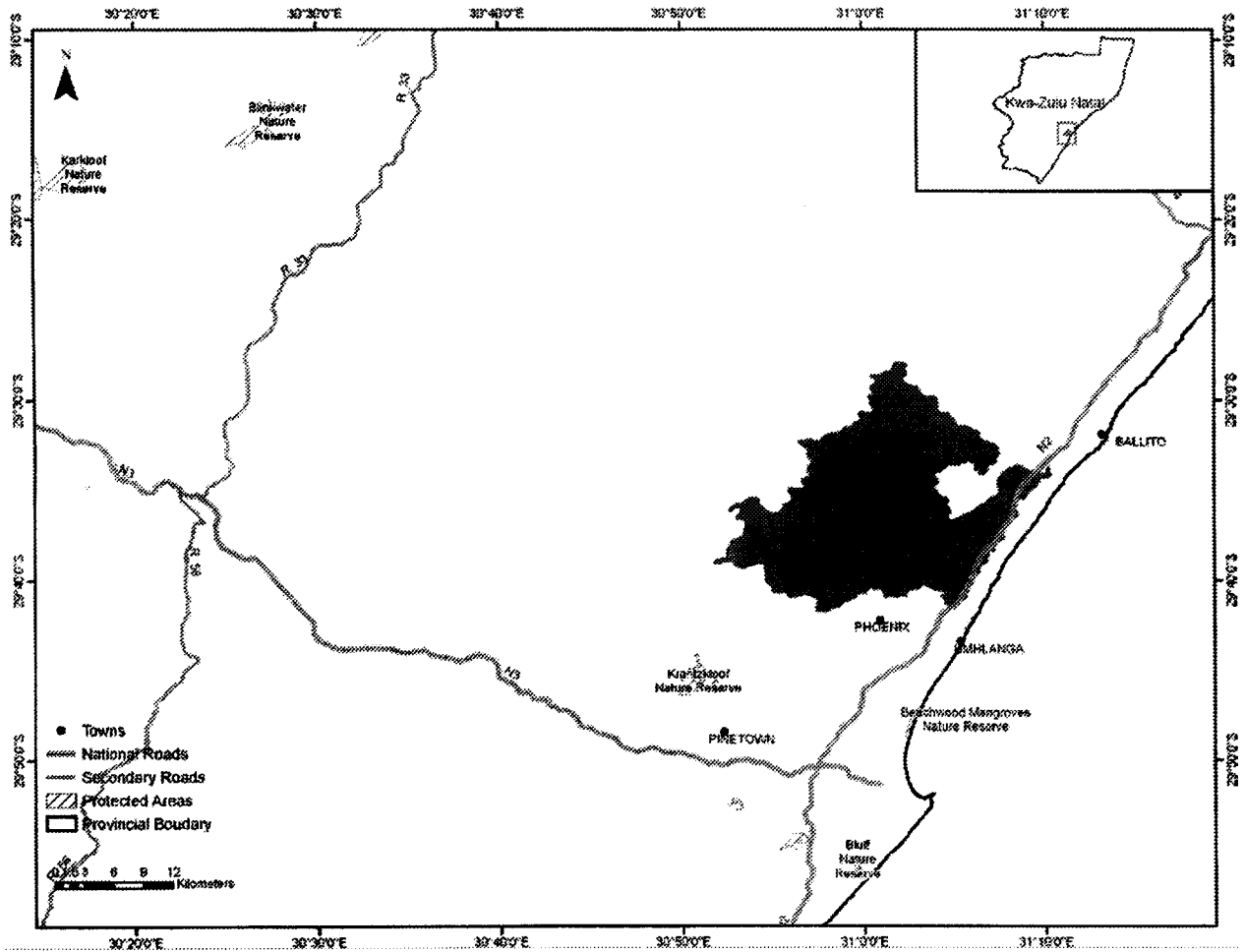
Key biodiversity features include one amphibian species, *Hyperolius pickersgilli*; two millipede species including *Centrobolus anulatus* and *Doratogonus rubipodus*; two plant species including *Helichrysum woodii* and *Kniphofia pauciflora*; three reptile species including *Bradypodion caeruleogula*, *Bradypodion melanocephalum* and *Scelotes inornatus*; and three vegetation types including Eastern Scarp Forest, KwaZulu-Natal Sandstone Sourveld, KwaZulu-Natal Coastal Belt.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Interior North Coast Grasslands showing original area of ecosystem

18. Interior South Coast Grasslands (KZN 7)

| | |
|--|---|
| Reference number | KZN 7 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eThekweni MM, Vulamehlo LM, Umdoni LM, Umzumbe LM, Ezingoleni LM, Hibiscus Coast LM |
| Original area of ecosystem | 148 000 ha |
| Remaining natural area of ecosystem (%) | 9% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 24 threatened or endemic plant and animal species including those listed below |

Geographical location

Durban (2930DD), Dududu (3030BA), Umkomaas (3030BB), Scottburgh (3030BC), Jolivet (3030AD), Port Shepstone (3030CB), Hibberdene (3030DA), Izingolweni (3030CC), Margate (3030CD), Port Edward (3130AA). Ecosystem restricted to and delineated by the KwaZulu-Natal Coastal Belt, with the eastern boundary being delineated by the Southern Coastal Grassland threatened ecosystem (KZN 18).

Description

Key biodiversity features include three millipede species including *Centrobolus anulatus*, *Doratogonus infragilis* and *Doratogonus montanus*; seventeen plant species for example *Begonia rudatisii*, *Crassula streyi*, *Craterostigma nanum* var *nanum*, *Diaphananthe millarii*, *Eugenia simii*, *Helichrysum woodii*, *Huernia hystrix parvula*, *Kniphofia pauciflora*, *Kniphofia rooperi*, *Phylica natalensis*, *Plectranthus ernstii*, *Rhynchochalyx lawsoniodes*, *Streptocarpus primulifolius*, *Watsonia confusa*, *Watsonia inclinata*; four reptile species including *Bradypodion angustiarum*, *Bradypodion caeruleogula*, *Bradypodion melanocephalum* and *Bradypodion wezae*; and six vegetation types including KwaZulu-Natal Coastal Forest, KwaZulu-Natal

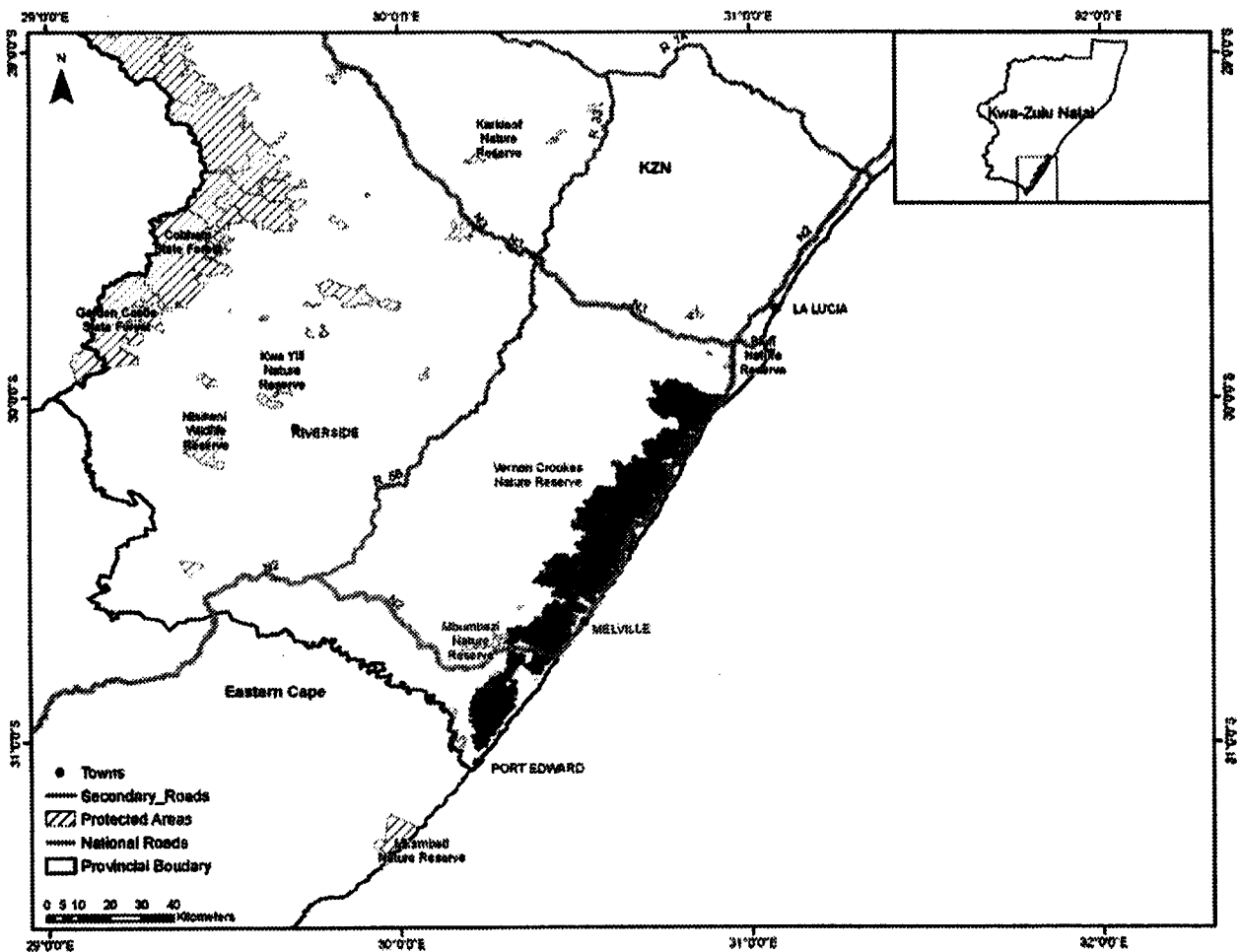
Sandstone Sourveld, Ngongoni Veld, KwaZulu-Natal Coastal Belt, Pondoland Scarp Forest, Pondoland-Ugu Sandstone Coastal Sourveld.

Other information

Approximately 2% of the ecosystem is protected in Oribi Gorge Nature Reserve, Vernon Crookes Nature Reserve and Mbumbazi Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Interior South Coast Grassland showing original area of ecosystem

19. Kaapsehoop Quartzite Grasslands (MP 1)

| | |
|--|--|
| Reference number | MP 1 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | Mpumalanga |
| Municipalities | Mbombela LM and Umjindi LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 50% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 15 threatened or endemic plant and animal species including those listed below |

Geographical location

Quartzite and dolomite mixed grassland occurring along grassland summit at Kaapsehoop (2530DA and 2530DB). Ecosystem delineated by Blue Swallow nesting and feeding areas and landtypes.

Description

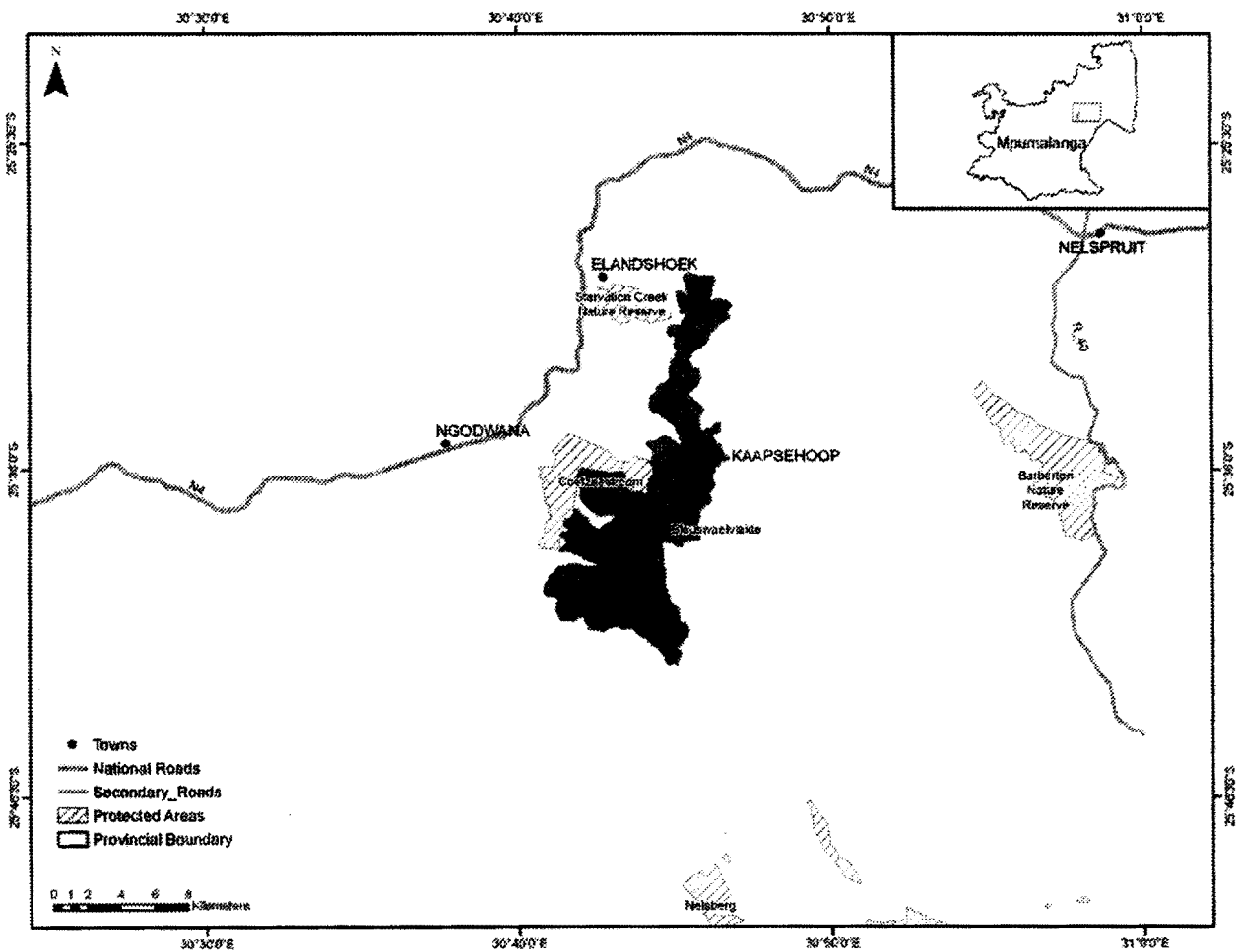
Key biodiversity features include four mammal species including Rough-haired Golden Mole, Meester's Golden Mole, Natal Long-fingered Bat and Swinny's Horseshoe Bat; six bird species for example Blue Swallow, Wattled Crane, Striped Flufftail, Southern Ground Hornbill, Blue Crane and Grey Crowned Crane; one reptile species, *Bradypodion transvaalense*; four plant species for example *Curtisia dentata*, *Calanthe sylvatica* and *Cryptocarya transvaalensis*; and four vegetation types including Northern Escarpment Quartzite Sourveld, Northern Escarpment Dolomite Grassland, Mpumalanga Afromontane Forest and Dry Afromontane Forest. The ecosystem includes part of the Wolkberg Centre of Plant Endemism; it contains important sub-catchments; provides an escarpment corridor; is important for grassland and forest processes and contains caves.

Other information

Approximately 6% of the ecosystem is protected in the Blouswaelvlakte Primary Conservation Area and the Coetzeestroom Primary Conservation Area.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Kaapsehoop Quartzite Grasslands showing original area of ecosystem

20. Klipriver Highveld Grassland (GP 5)

| | |
|--|---|
| Reference number | GP 5 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Wetland |
| Province | Gauteng |
| Municipalities | Ekurhuleni MM, City of Johannesburg MM, Lesedi LM, Midvaal LM, Mogale City LM and Westonarea LM |
| Original area of ecosystem | 89 000 ha |
| Remaining natural area of ecosystem (%) | 62% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 25 threatened or endemic plant and animal species including those listed below |

Geographical location

Johannesburg south including Grasmere, Alberton, and Springs (2627BD, 2628AC, 2628AD respectively). Ecosystem delineated by the Klipriver and associated wetlands and non-perennial rivers, together with the Klipriviersberg ridge system and associated drainage lines.

Description

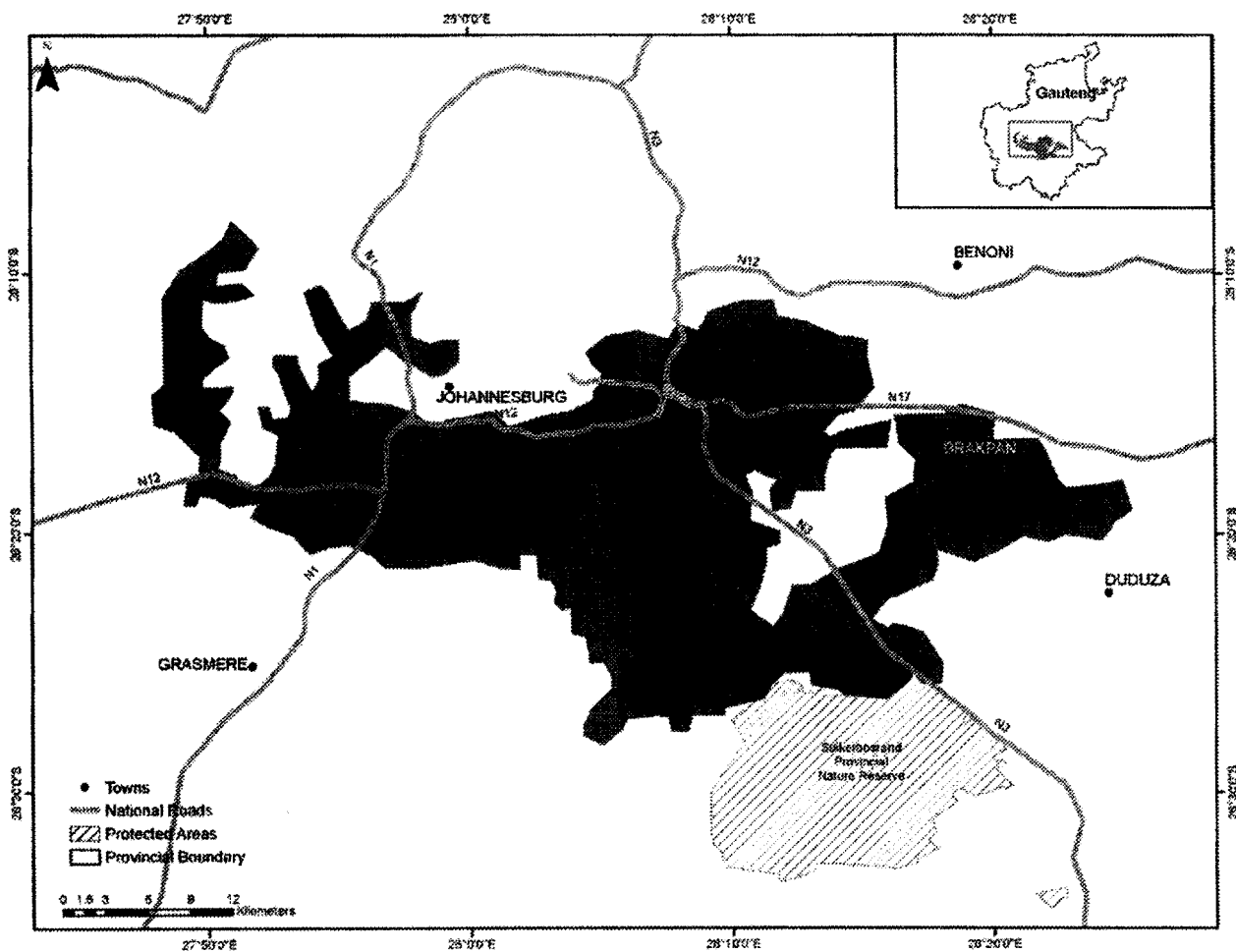
Key biodiversity features include Red or Orange Listed plants for example *Cineraria longipes*, *Delosperma purpureum*, *Delosperma leendertziae*, and *Trachyandra erythrorrhiza*; Red or Orange Listed birds for example African Marsh-Harrier, African Grass-Owl, Greater Flamingo, and Melodious Lark; Red or Orange Listed or priority invertebrates for example the Roodepoort Copper Butterfly, Marsh sylph, *Orachrysops mijburghii*, and Golden Starburst Baboon Spider; and six vegetation types including Andesite Mountain Bushveld, Carletonville Dolomite Grassland, Eastern Temperate Freshwater Wetlands, Gauteng Shale Mountain Bushveld, Soweto Highveld Grassland and Tsakane Clay Grassland. A number of rivers, wetlands and pans are key features in the ecosystem including the Angelo Pan, Blesboklaagte, Bloubospruit, Elsburgspruit, Hugenote Spruit, Kliprivier, Natalspruit, Rietspruit, Withokspruit, and various other unnamed wetlands and pans.

Other Information

Approximately 1% of the ecosystem is protected in the Klipriviersberg Nature Reserve and Rondebult Bird Sanctuary.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Klipriver Highveld Grassland showing original area of ecosystem

21. Knysna Sand Fynbos (FFd 10)

| | |
|--|---|
| Reference number | FFd 10 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | George LM, Plettenberg Bay LM and Knysna LM |
| Original area of ecosystem | 15 000 ha |
| Remaining natural area of ecosystem (17%) | 17% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 3 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Garden Route coastal flats from Wilderness, generally to the north of the system of lakes, several patches around the Knysna Lagoon, with more isolated patches eastwards to the Robberg peninsula near Plettenberg Bay.

Description

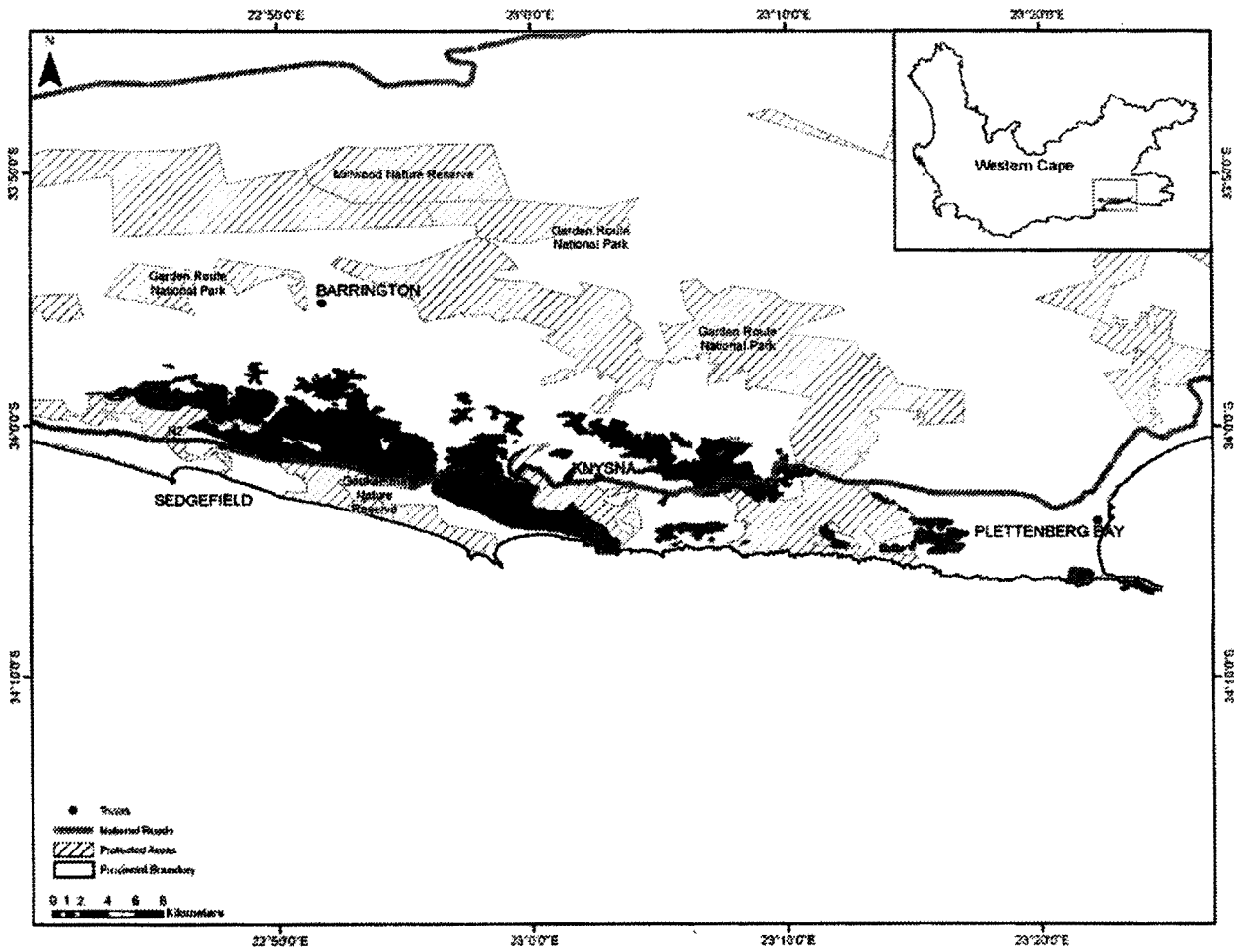
Undulating hills and moderately undulating plains covered with a dense, moderately tall, microphyllous shrubland, dominated by species more typical of sandstone fynbos. At least three Red Data List plant species occur in the ecosystem.

Other information

Patches of the ecosystem are protected in the Garden Route National Park and a further 2% is found in several private nature reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 144. South African National Biodiversity Institute, Pretoria.



Location of Knysna Sand Forest showing original area of ecosystem

22. Kogelberg Sandstone Fynbos (FFs 11)

| | |
|--|---|
| Reference number | FFs 11 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Drakenstein LM, Stellenbosch LM, Theewaterskloof LM and Overstrand LM |
| Original area of ecosystem | 92 000 ha |
| Remaining natural area of ecosystem (%) | 88% |
| Proportion of ecosystem protected | 58% of original area |
| Known number of species of special concern | 99 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 176 endemic plant species |

Geographical location

From Franschhoek, Groot-Drakensteinberge and Simonsberg (near Stellenbosch) in the north passing southwards between Gordon's Bay and the Bot River to Cape Hanglip and Kleinmond in the south including the Jonkershoek, Stellenbosch, Franschhoek, Groenland, Hottentots Holland, Kogelberg and Palmietberge Mountains.

Description

High mountains with steep to gentle slopes, and undulating plains and hills of varied aspect. General appearance of vegetation low, closed shrubland with scattered emergent tall shrubs. Proteoid, ericaceous and restioid fynbos dominate, while asteraceous fynbos is rare. Patches of Cape thicket are common in the northern areas; in the south similar habitats are occupied by scrub fynbos. Numerous seeps and seasonally saturated mountain-plateau wetlands (locally called 'suurvlakte') are very common and support restioid and ericaceous (dominated by Bruniaceae) fynbos. Boundaries are edaphically determined; and within sandstone fynbos by centres of endemism and species turnover. At least 176 endemic plant species and 99 Red Data List plant species occur in the ecosystem. This comprises three distinct subcentres of endemism

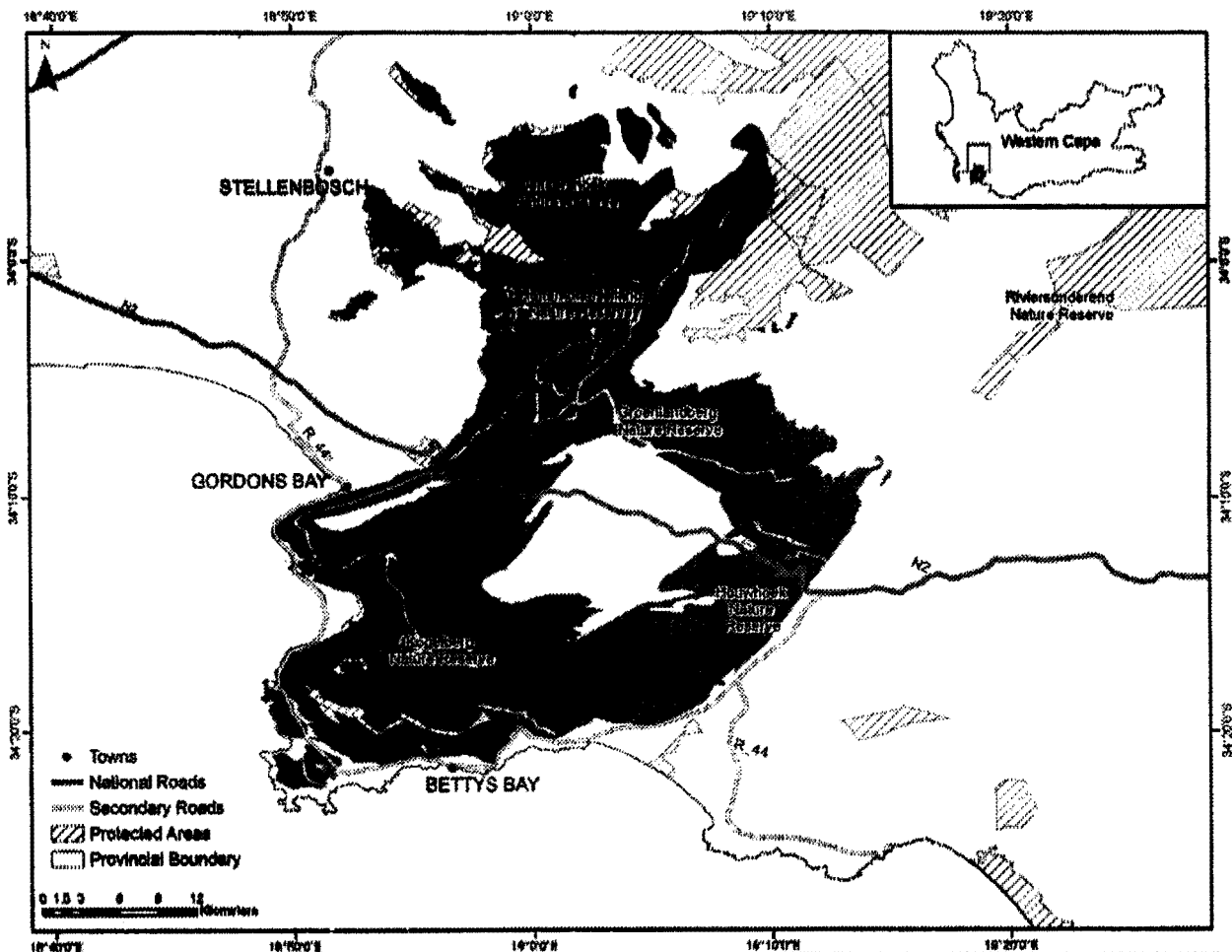
(Kogelberg, Hottentots-Holland and Groenlandberg). This ecosystem forms the heart of the Cape Flora with many exceptional plant species.

Other Information

The ecosystem is well protected with approximately 58% in the Hottentots Holland, and Groenlandberg Nature Reserves and the Kogelberg Biosphere Reserve (including Kogelberg and Kleinmond Nature Reserves). However, many Red Data List plant species occur only outside of the reserves.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 109-111. South African National Biodiversity Institute, Pretoria.



Location of Kogelberg Sandstone Fynbos showing original area of ecosystem

23. Kwambonambi Dune Forest (KZN 8)

| | |
|--|---|
| Reference number | KZN 8 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Mbonambi LM, uMhlathuze LM and KZDMA27 |
| Original area of ecosystem | 7 000 ha |
| Remaining natural area of ecosystem (%) | 50% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Richards Bay (2832CC), KwaMbonambi (2832CA), Cape St Lucia (2832CB) and St Lucia Estuary (2832AD). Ecosystem extends from Richards Bay in the south to the isiMangaliso Wetland Park in the north and includes the dune forest on the primary dunes in this region.

Description

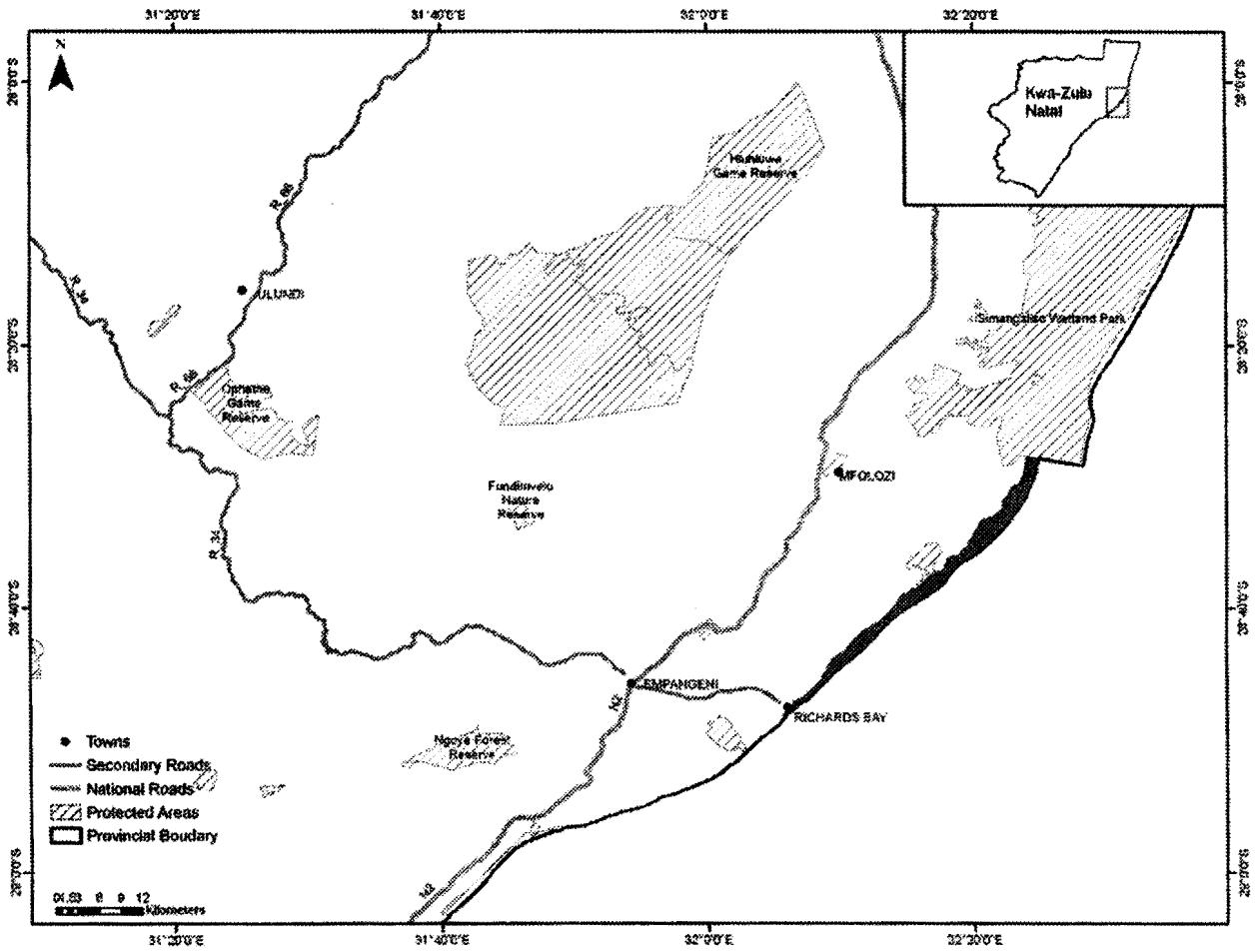
Key biodiversity features include four millipede species including *Centrobolus fulgidus*, *Centrobolus richardi*, *Centrobolus rugulosus* and *Doratogonus zuluensis*; one plant species, *Kniphofia leucocephala*; and six vegetation types including KwaZulu-Natal Coastal Forest, KwaZulu-Natal Dune Forest, Mangrove Forest, Maputaland Wooded Grassland, Maputaland Coastal Belt and Swamp Forest.

Other information

Less than 1% of the ecosystem is protected in the Nhlabane Nature Reserve and isiMangaliso Wetland Park.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Kwambonambi Dune Forest showing original area of ecosystem

24. Kwambonambi Hygrophilous Grasslands (KZN 9)

| | |
|--|---|
| Reference number | KZN 9 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Mtubatuba LM, Mbonambi LM, uMhlatuze LM and KZDMA27 |
| Original area of ecosystem | 34 000 ha |
| Remaining natural area of ecosystem (%) | 21% |
| Proportion of ecosystem protected | 8% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Richards Bay (2832CC), KwaMbonambi (2832CA), Cape St Lucia (2832CB), St Lucia Estuary (2832AD), Empangeni (2831DB), Felixton (2831DD). Ecosystem lies inland but adjacent to Kwambonambi Dune Forest threatened ecosystem (KZN 8). It incorporates the hygrophilous grasslands behind the primary dune system as well as swamp forest. It includes the Richards Bay surrounds up to the lower Umfolosi Flats.

Description

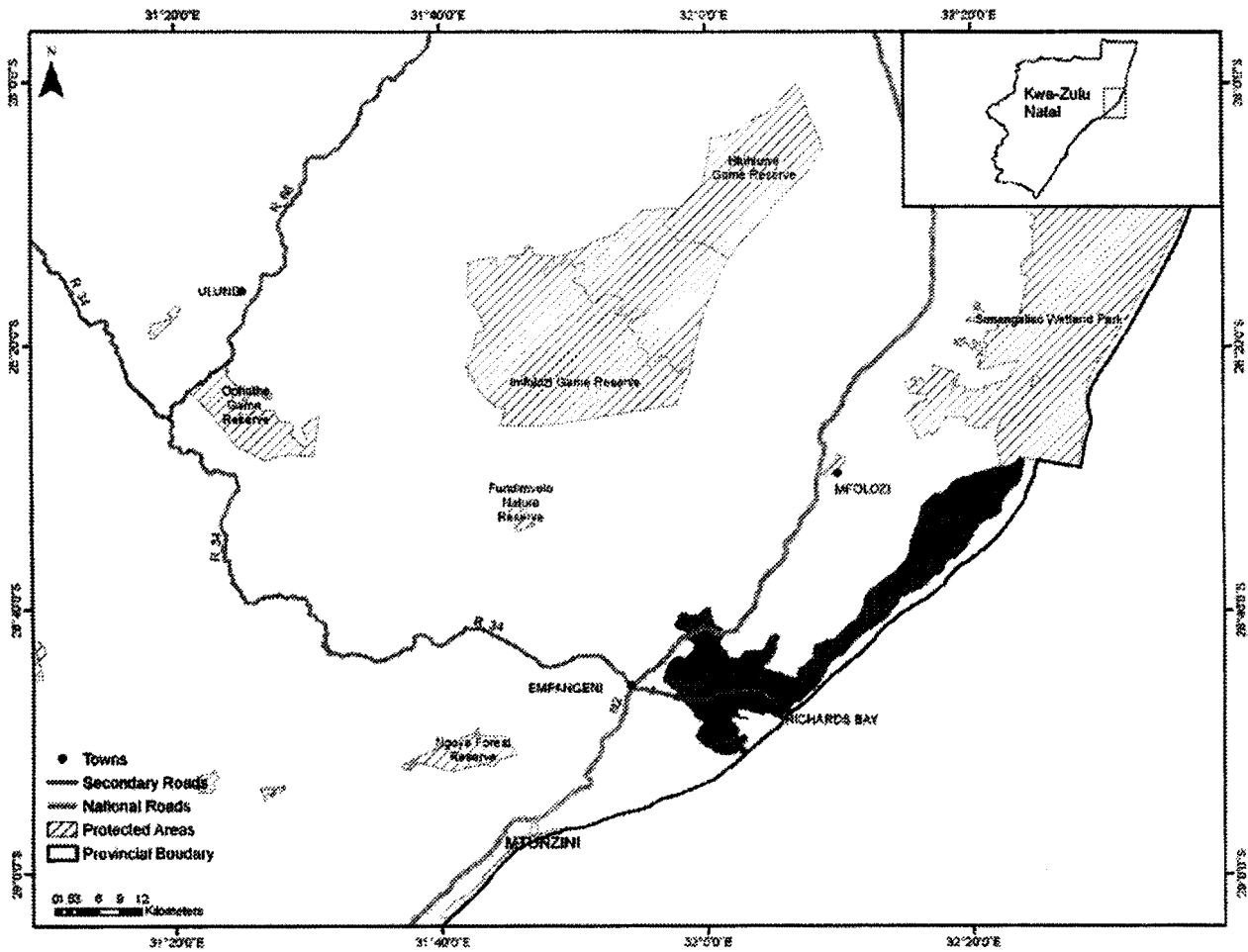
Key biodiversity features include one amphibian species, *Hyperolius pickersgilli*; four millipede species including *Centrobolus fulgidus*, *Centrobolus richardi*, *Centrobolus rugulosus* and *Doratogonus zuluensis*; one plant species, *Kniphofia leucocephala*; and six vegetation types including KwaZulu-Natal Coastal Forest, KwaZulu-Natal Dune Forest, Mangrove Forest, Maputaland Wooded Grassland, Maputaland Coastal Belt and Swamp Forest.

Other Information

Approximately 8% of the ecosystem is protected in the Enseleni Nature Reserve, Richards Bay Game Reserve, Nhlabane Nature Reserve and isiMangaliso Wetland Park.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Kwambonambi Hygrophilous Grasslands showing original area of ecosystem

25. Langkloof Shale Renosterveld (FRs 17)

| | |
|--|---|
| Reference number | FRs 17 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape and Eastern Cape |
| Municipalities | Kou-Kamma LM, George LM, Plettenberg Bay LM and WCDMA04 |
| Original area of ecosystem | 21 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

Narrow belt from Herold on the northern side of the Outeniqua Mountains to Kykoe, then descending along the upper reaches of the Keurbooms River Valley, south of the Prince Alfred Pass, to Vleittjie se Berg; In the Langkloof Valley from Harmonie via Avontuur to Haarlem and further from Krakeelrivier via Joubertina and Kareedouw to Sallie laagte. Small outlier at Brandhoek northeast of Joubertina.

Description

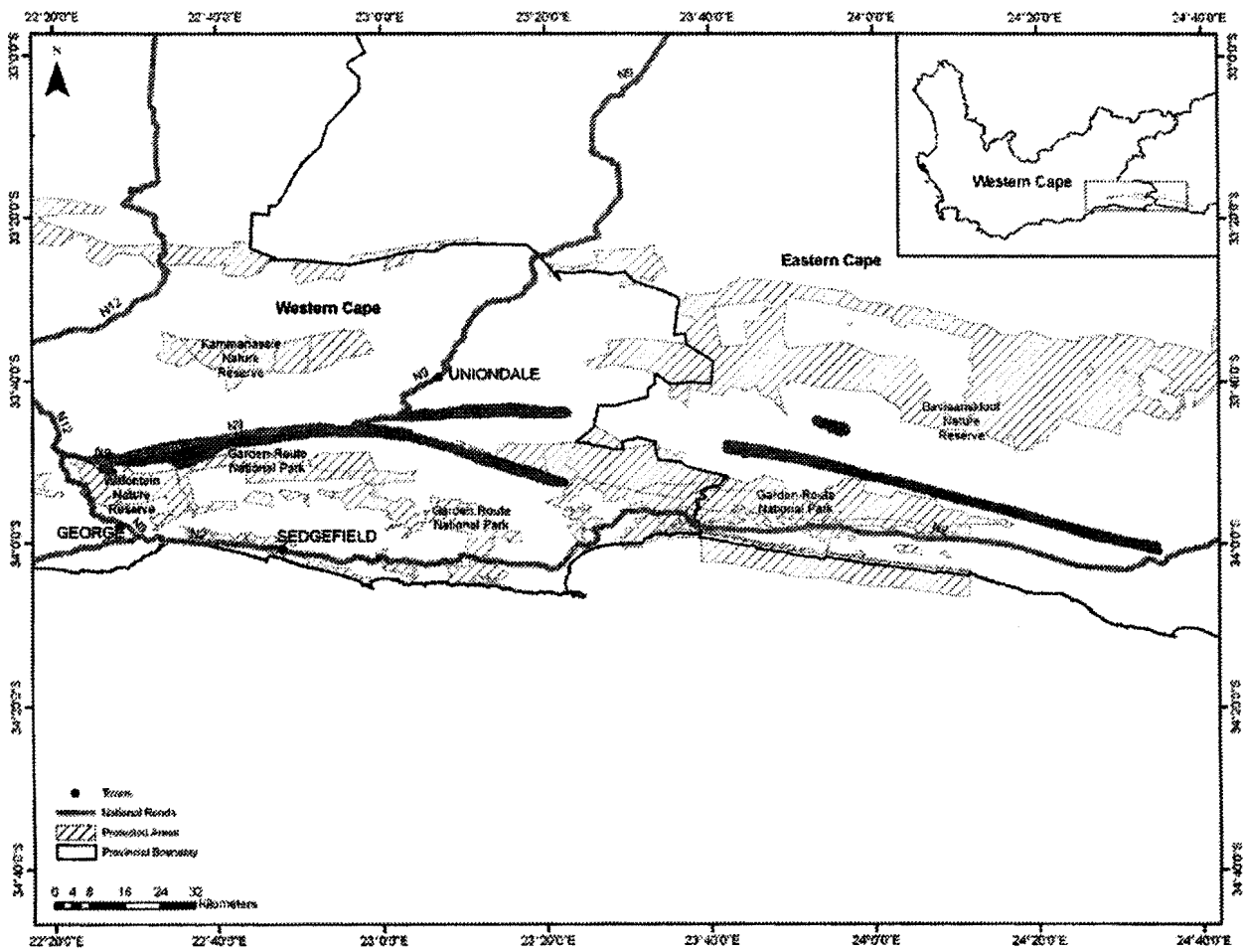
Intermontane valleys and lower slopes with low, medium dense graminoid, dense cupressoid-leaved shrubland, dominated by renosterbos and surrounded by fynbos. At least one endemic plant species occurs in the ecosystem.

Other information

The ecosystem is not protected.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 188. South African National Biodiversity Institute, Pretoria.



Location of Langkloof Shale Renosterveld showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

26. Lourensford Alluvium Fynbos (FFa 4)

| | |
|--|--|
| Reference number | FFa 4 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipality | City of Cape Town MM |
| Original area of ecosystem | 6 000 ha |
| Remaining natural area of ecosystem (%) | 9% |
| Proportion of ecosystem protected | 3% of original area |
| Known number of species of special concern | 21 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Low-lying areas between Firgrove, Gordon's Bay including much of the Stand and Somerset West, extending up the Lourens River Valley to the sawmill above and Lourensford Estate.

Description

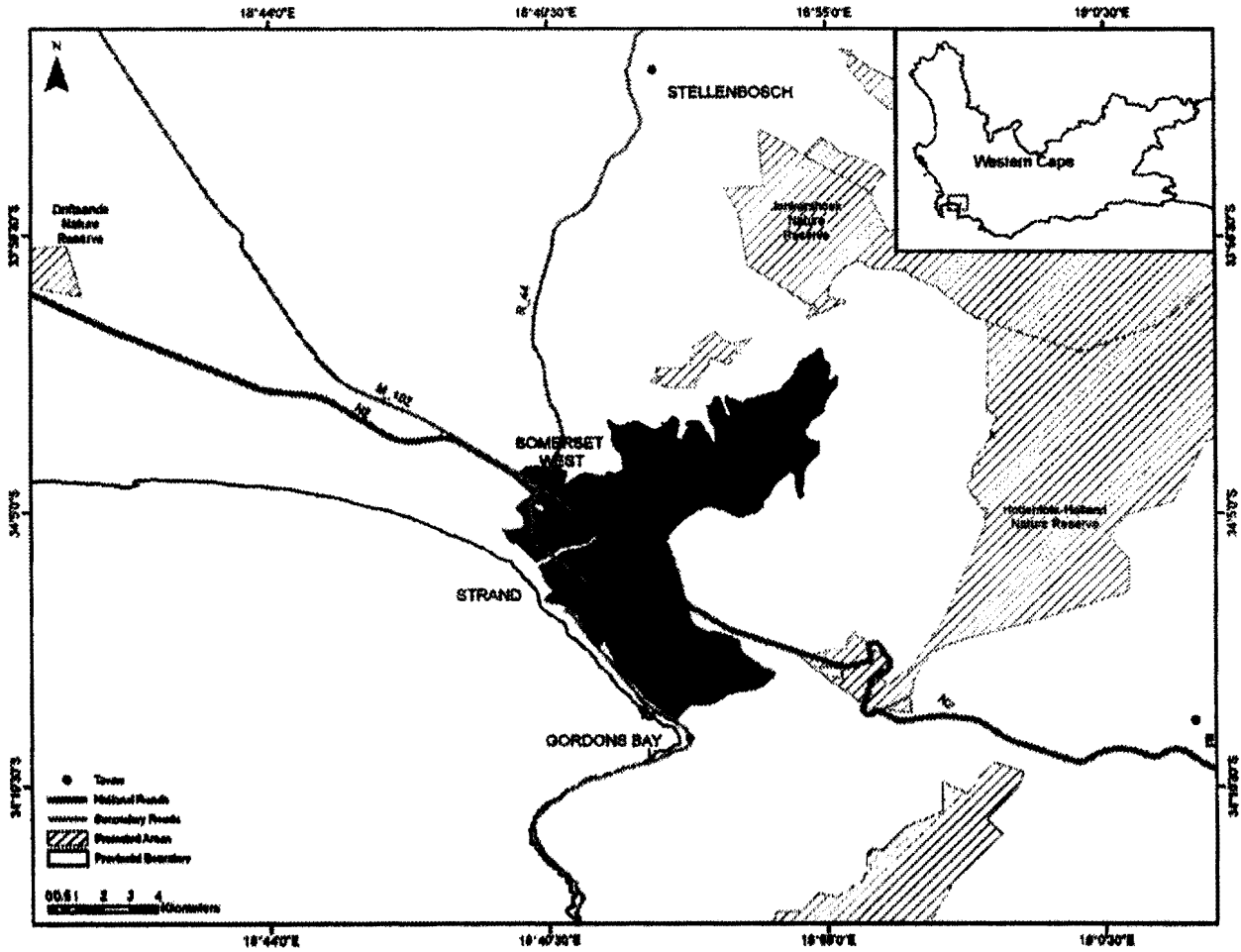
Low-lying plains supporting low, medium dense shrubland with short graminoid understorey. Restioid and asteraceous fynbos are dominant, although there is some evidence that proteoid fynbos might once have been dominant. Some remnants are exceptionally rich in geophytes. Boundaries are edaphically determined. At least 21 Red Data List plant species occur in the ecosystem. There are no known endemic species.

Other information

Approximately 3% of the ecosystem is protected in the Helderberg and Harmony Flats Nature Reserves, with a further 22% found in the Lourens River (protected natural area).

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 165. South African National Biodiversity Institute, Pretoria.



Location of Lourensford Alluvium Fynbos showing original area of ecosystem

27. Magaliesberg Pretoria Mountain Bushveld (GP 6)

| | |
|--|--|
| Reference number | GP 6 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipalities | Nokeng Tsa Taemane LM and City of Tshwane MM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 84% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 18 threatened or endemic plant and animal species including those listed below |

Geographical location

Pretoria north including Pretoria and Silverton (2528CA and 2528CB respectively). Ecosystem delineated by the Magaliesberg ridge system and associated koppies.

Description

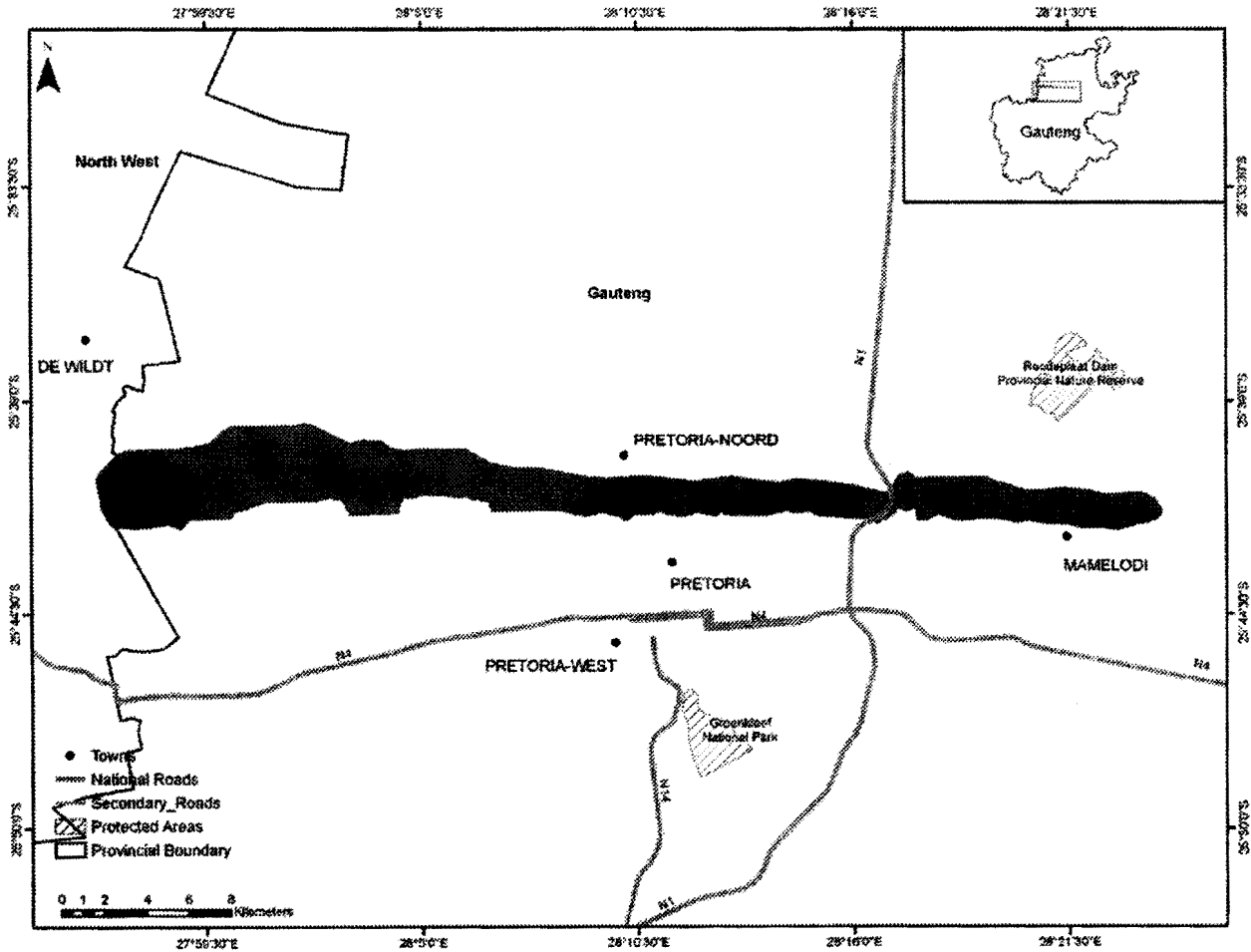
Key biodiversity features include Red or Orange Listed plants for example *Aloe peglerae* and *Delosperma leendertziae*; Red or Orange Listed mammals for example the Short-eared Trident Bat; Red or Orange Listed reptiles for example the Southern African Python; Red or Orange Listed or priority invertebrates including Stobbia's Fruit Chafer and Gunning's Rock Scorpion; and four vegetation types including Gold Reef Mountain Bushveld, Marikana Thornveld, Moot Plains Bushveld, Rand Highveld Grassland. Rivers in the ecosystem include the Apies River, Hartbeesspruit, Moretele River, Pienaars River, and Sand River.

Other information

Approximately 1% of the ecosystem is protected in the Wonderboom Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Magaliesberg Pretoria Mountain Bushveld showing original area of ecosystem

28. Margate Pondoland-Ugu Sourveld (KZN 10)

| | |
|--|---|
| Reference number | KZN 10 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ezingoleni LM and Hibiscus Coast LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 5% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 10 threatened or endemic plant or animal species including those listed below |

Geographical location

Margate (3030CD) and Port Shepstone (3030CB). Ecosystem delineated primarily by the vegetation boundaries of the predominant vegetation type found within the ecosystem, namely the Pondoland-Ugu Sandstone Coastal Sourveld.

Description

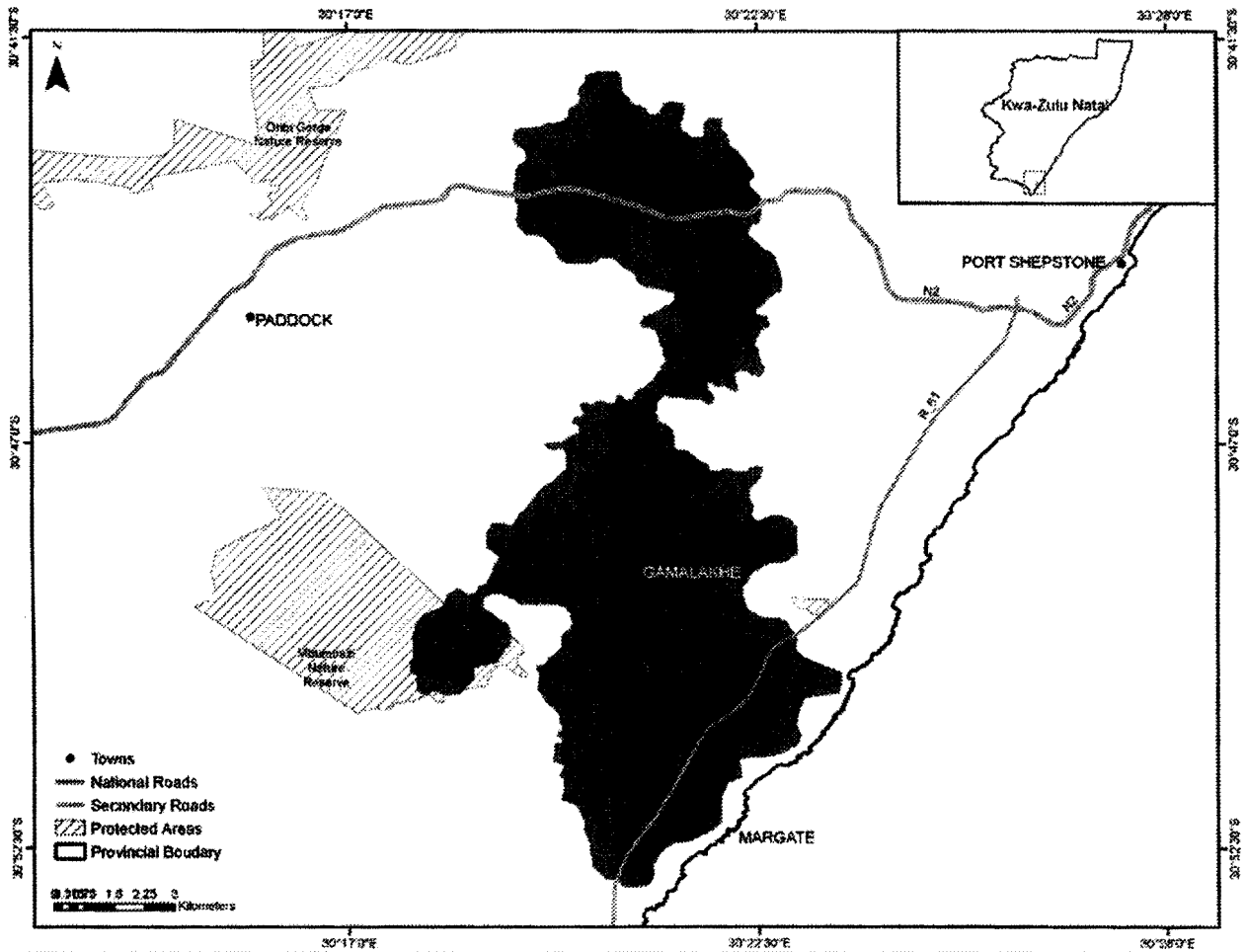
Key biodiversity features include three millipede species including *Centrobolus anulatus*, *Doratogonus fragilis*, *Doratogonus montanus*; seven plant species for example *Eugenia simii*, *Huernia hystrix parvula*, *Kniphofia rooperi*, *Phylica natalensis*, *Watsonia confusa*, and *Watsonia inclinata*; two reptile species including *Bradypodion angustiarum* and *Bradypodion melanocephalum*; and four vegetation types including KwaZulu-Natal Coastal Forest, Pondoland Scarp Forest, Pondoland-Ugu Sandstone Coastal Sourveld and KwaZulu-Natal Coastal Belt.

Other Information

Approximately 4% of the ecosystem is protected in the Mbumbazi Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Margate Pondoland-Ugu Sourveld showing original area of ecosystem

29. Mlazi Gorge (KZN 11)

| | |
|--|---|
| Reference number | KZN 11 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipality | eThekweni MM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 2% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Durban (2930DD). Ecosystem encompasses the Mlazi River gorge and is delineated by the channel and contours of the gorge.

Description

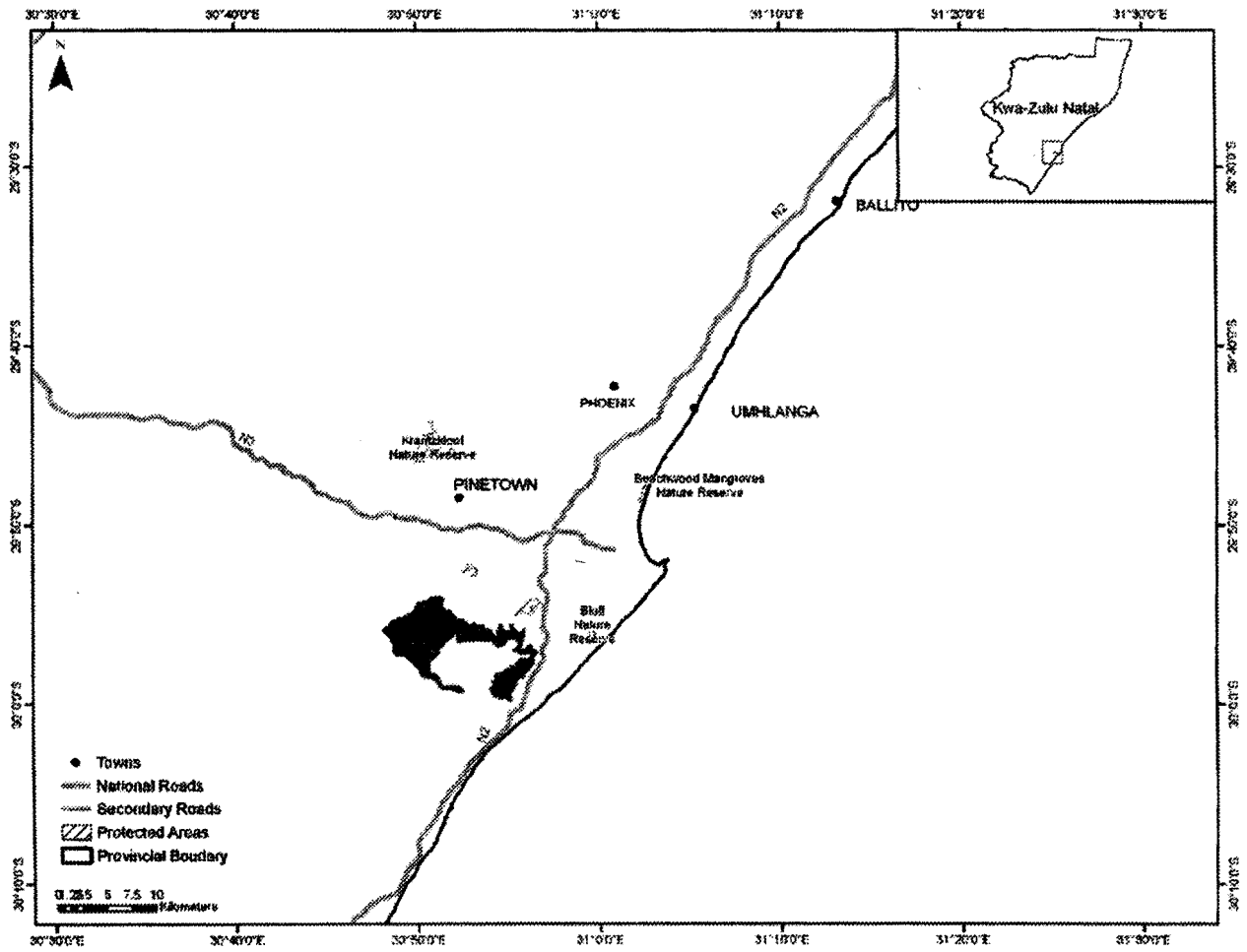
Key biodiversity features include one amphibian, *Hyperollus pickersgilli*; one millipede, *Centrobolus anulatus*; two plant species including *Diaphananthe millarii* and *Kniphofia pauciflora*; two reptile species including *Bradypodion caeruleogula* and *Bradypodion melanocephalum*; and two vegetation types including KwaZulu-Natal Coastal Forest and KwaZulu-Natal Coastal Belt.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Mlazi Gorge showing original area of ecosystem

30. Muscadel Riviere (Azi 8)

| | |
|--|---|
| Reference number | Azi 8 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Western Cape |
| Municipalities | Breede River/Winelands LM, Kannaland LM and Oudtshoorn LM |
| Original area of ecosystem | 42 000 ha |
| Remaining natural area of ecosystem (%) | 15% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 3 Red Listed plant species (EX, EW, CR, EN & VU excl VU D2) and 2 endemic plant species |

Geographical location

River alluvia of the lower Breede River (between Worcester and Bonnievale) as well as those embedded within the western Little Karoo (Montagu area) and eastern Little Karoo (the rivers draining the basin around Oudtshoorn).

Description

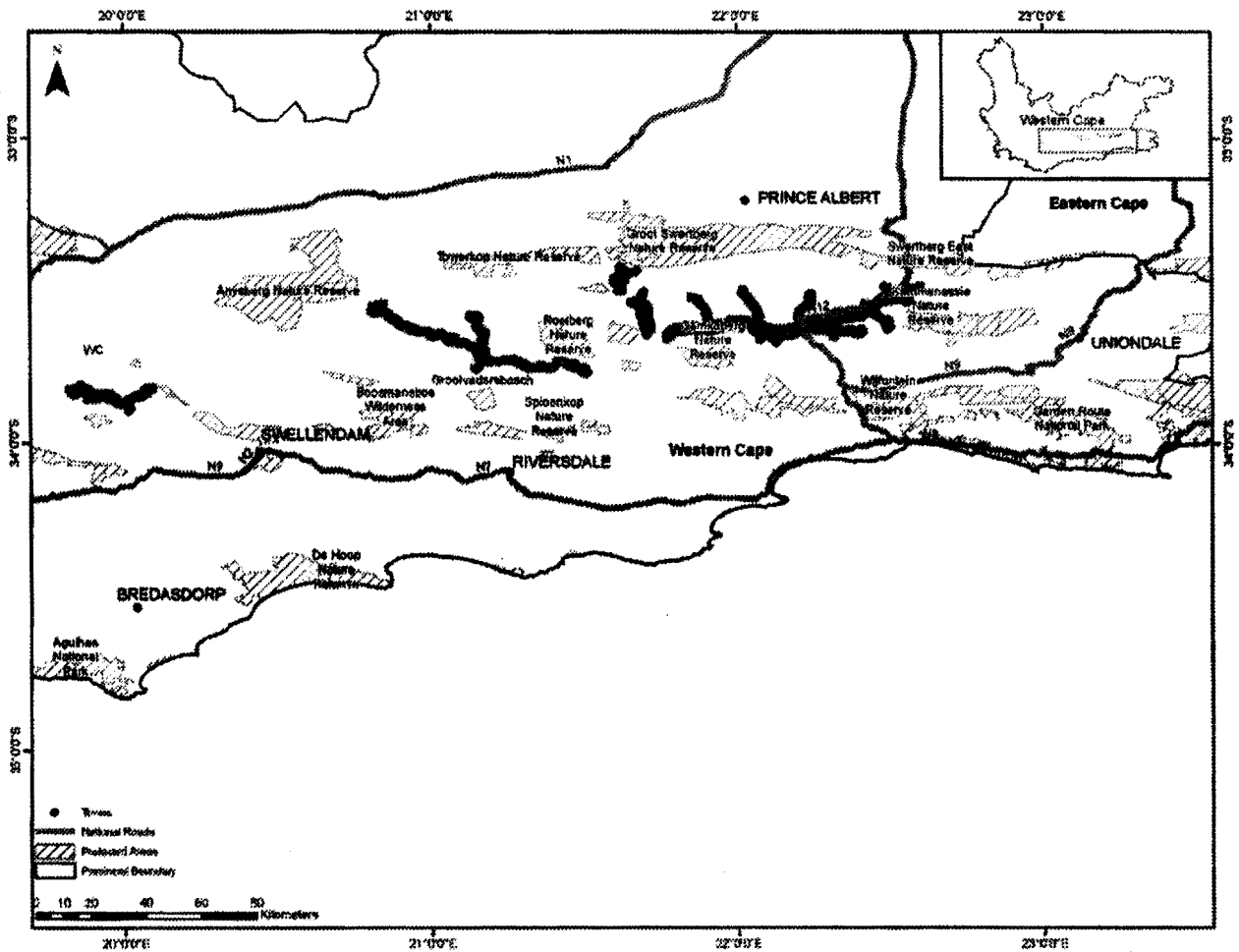
Flat, in places very broad alluvia originally supporting a complex of riverine thickets dominated by *Acacia karroo* and accompanying succulent gannabos (*Salsola* species) and low vygie shrublands. Today the typical landscape view of these alluvia is dominated by extensive vineyards and orchards, with a narrow alley of alien woody species (*Eucalyptus* species, *Salix babylonica*) fringing the riverbanks. At least two endemic plant species and three Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in the Vrolijkheid Nature Reserve near McGregor and Kammanassie Nature Reserve as well as on private land, for example Greylands and Die Poort).

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland*. *Strelitzia* 19: 648-649. South African National Biodiversity Institute, Pretoria.



Location of Muscadel Riviere showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

31. New Hanover Plateau (KZN12)

| | |
|--|---|
| Reference number | KZN12 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eThekweni MM, uMshwathi LM, Mkhambathini LM and Ndwedwe LM |
| Original area of ecosystem | 41 000ha |
| Remaining natural area of ecosystem (%) | 15% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

New Hanover (2930BC), Noodsberg (2930BD) and Cato Ridge (2930DA). Ecosystem delineated by the Maloti River in the east; river channels (Umgeni and Nqeku Rivers) in the south; the Umgeni Valley Bushveld and Cumberland Crest threatened ecosystems (KZN 38 and KZN 22 respectively) in the west; and the contour line capturing all south draining river systems in the north.

Description

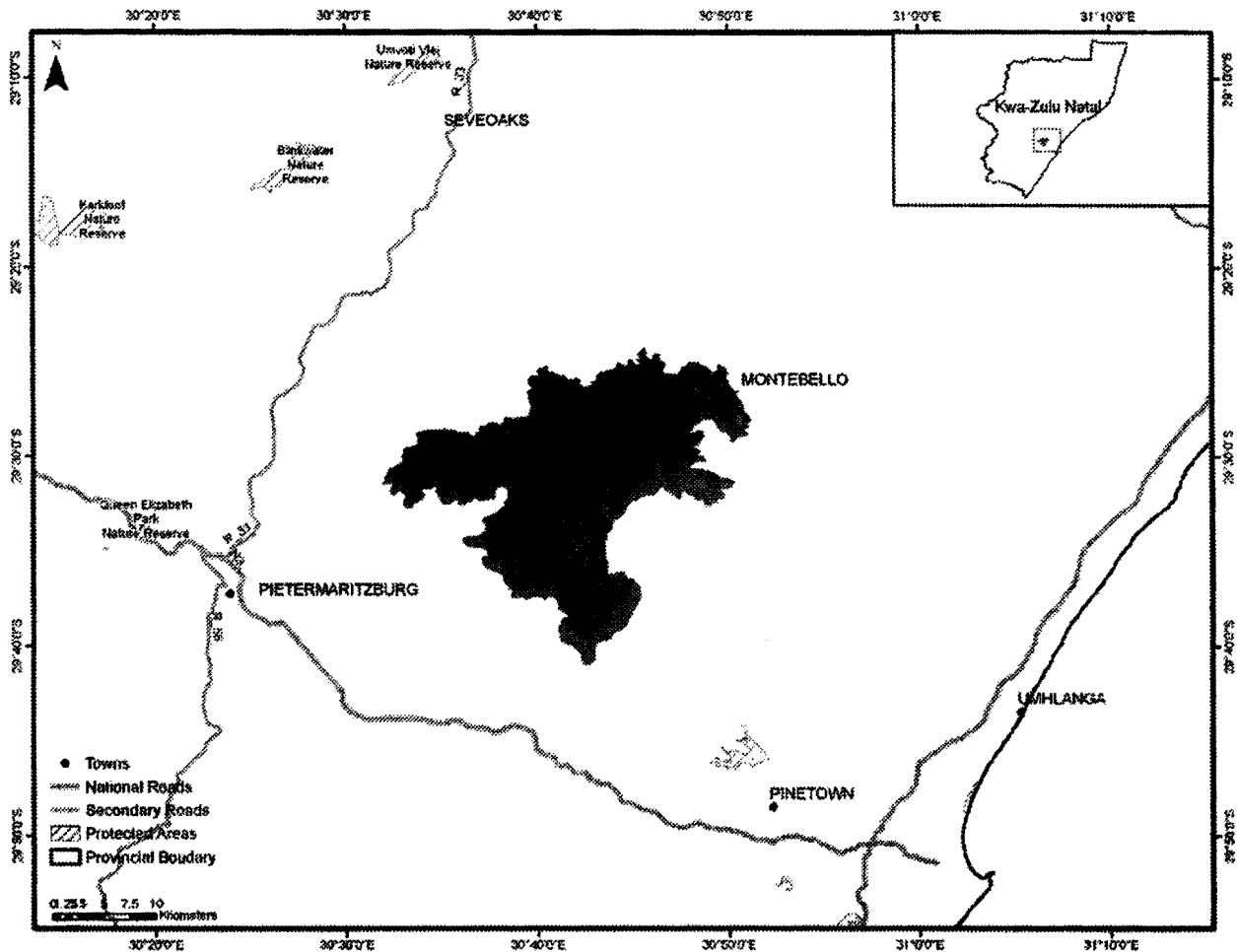
Key biodiversity features include one millipede, *Doratogonus rubipodus*; four plant species including *Ceropegia rudatisii*, *Diaphanathe millarii*, *Helichrysum woodii*, and *Senecio exuberans*; and five vegetation types including Ngongoni Veld, Eastern Scarp Forest, Eastern Valley Bushveld, KwaZulu-Natal Sandstone Sourveld, Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of New Hanover Plateau showing original area of ecosystem

32. Ngoye Scarp Forests and Grasslands (KZN 13)

| | |
|--|--|
| Reference number | KZN 13 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMhlathuze LM and uMlalazi LM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 62% |
| Proportion of ecosystem protected | 42% of original area |
| Known number of species of special concern | 13 threatened or endemic plant and animal species including those listed below |

Geographical location

Blackburn (2831DC) and Felixton (2831DD). Ecosystem incorporates Eastern Scarp Forest and surrounding lowland grasslands. It is confined primarily to the ridge bounded by the Ntuzze River in the south and the Mhlatuzana River in the north.

Description

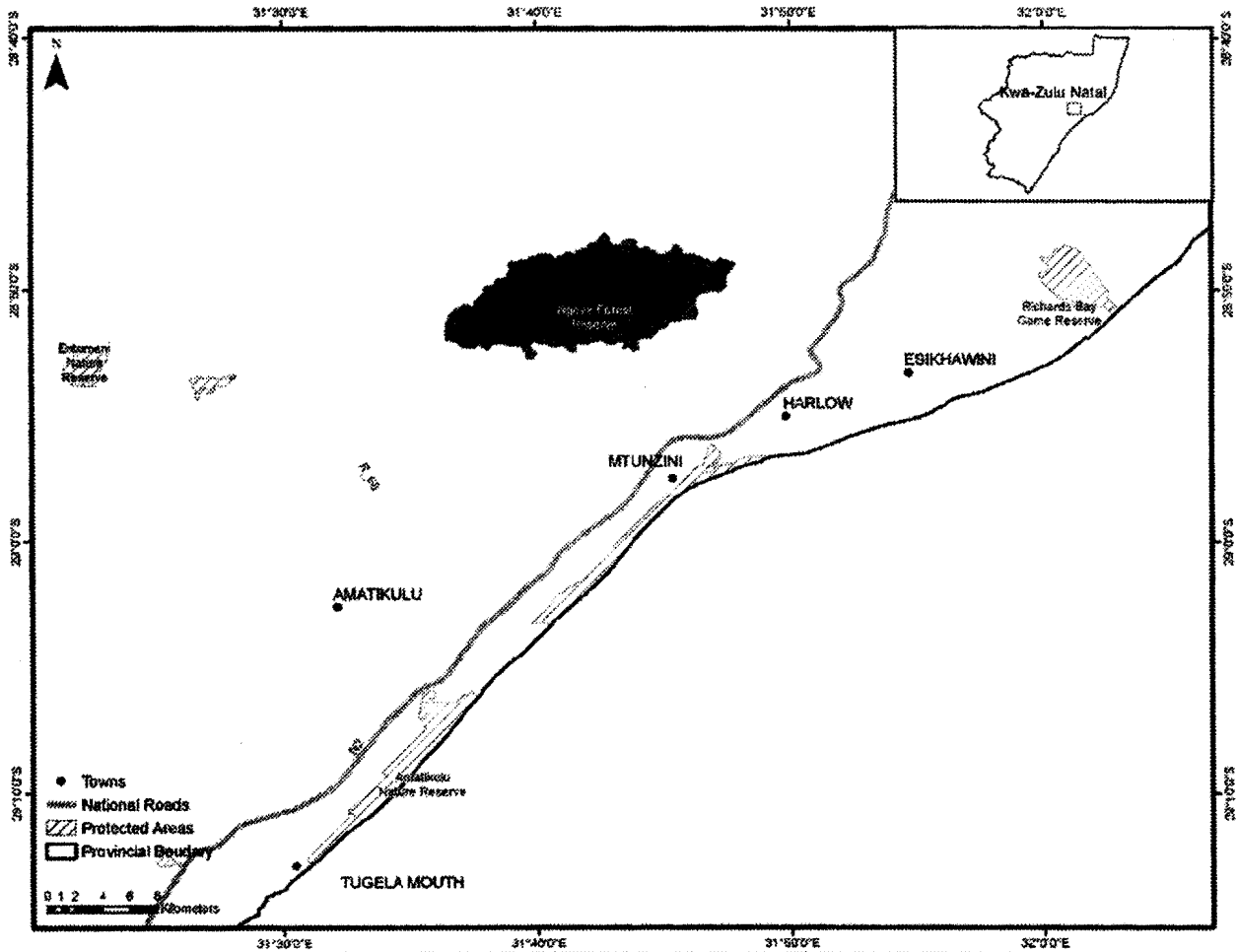
Key biodiversity features include one bird species, the Green Barbet; three millipede species including *Allawrencius complex*, *Centrobolus fulgidus*, *Centrobolus rugulosus* and *Doratogonus natalensis*; seven plant species for example *Bolusiella maudiae*, *Dahlgrenoden natalense*, *Kniphofia leucocephala*, *Kniphofia littoralis*, *Kniphofia pauciflora* and *Streptocarpus wendlandii*; one reptile species, *Bradypodion caeruleogula*; and four vegetation types including Eastern Scarp Forest, Maputuland Coastal Belt, KwaZulu-Natal Coastal Belt and Zululand Lowveld.

Other information

Approximately 42% of the ecosystem is protected in the Impeleshu Forest Reserve, Ezigwayini Forest Reserve, Dengweni Forest Reserve and Ngoye Forest Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Ngoye Scarp Forests and Grasslands showing original area of ecosystem

33. North Coast Dune Forest (KZN 14)

| | |
|--|---|
| Reference number | KZN 14 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMhlatuze LM and uMlalazi LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 53% |
| Proportion of ecosystem protected | 29% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Felixton (2831DD), Blackburn (2831DC), Gingindlovu (2931BA). Ecosystem delineated by the primary dunes and the known forest patches along the coast.

Description

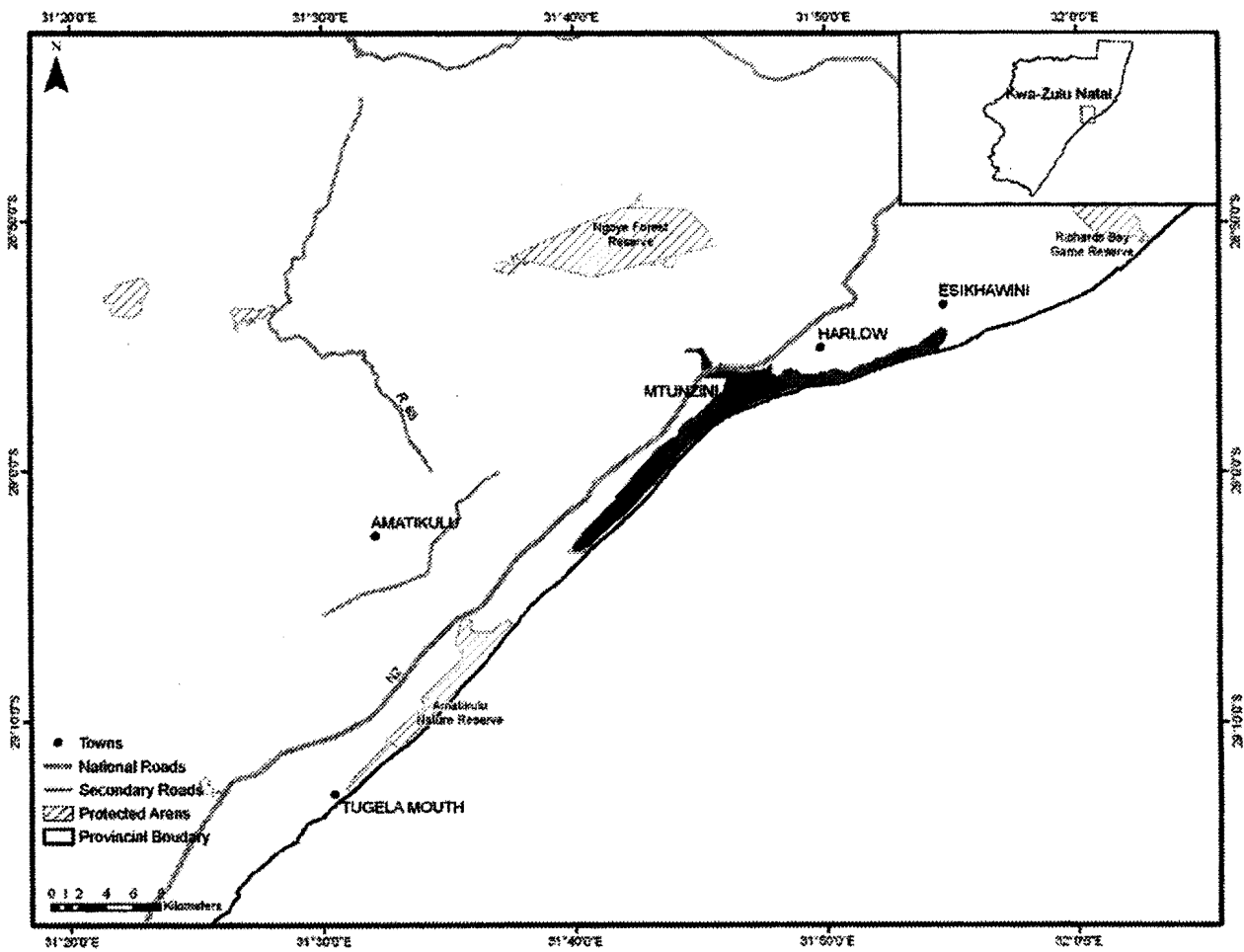
Key biodiversity features include two species of millipede including *Centrobolus fulgidus* and *Centrobolus richardi*; one plant species; and three vegetation types including KwaZulu-Natal Dune Forest, Mangrove Forest and Maputoland Coastal Belt.

Other information

Approximately 29% of the ecosystem is protected in the Umlalazi Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of North Coast Dune Forest showing original area of ecosystem

34. North Coast Forest Collective (KZN 15)

| | |
|--|---|
| Reference number | KZN 15 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eNdondakusuka LM and KwaDukuza LM |
| Original area of ecosystem | 300 ha |
| Remaining natural area of ecosystem (%) | 78% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic animal species including those listed below |

Geographical location

Tugela (2931AB) and KwaDukuza (2931AD). Ecosystem delineated by the extent of the forest.

Description

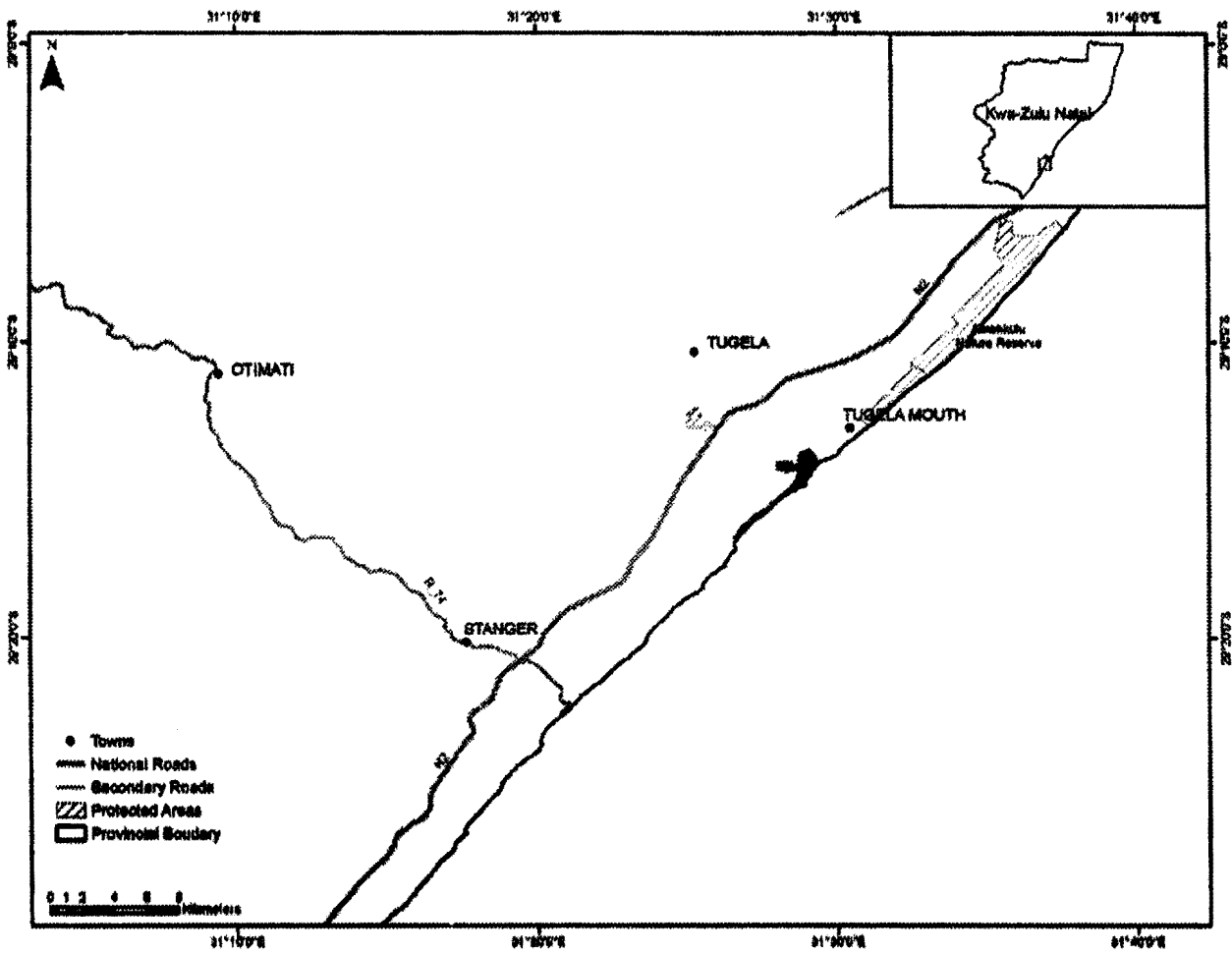
Key biodiversity features include one millipede, *Centrobolus anulatus*; two reptile species including *Bradypodion melanocephalum* and *Scelotes inornatus*; and three vegetation types including KwaZulu-Natal Coastal Forest, KwaZulu-Natal Dune Forest and Maputuland Coastal Belt.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of North Coast Forest Collective showing original area of ecosystem

35. Northern Coastal Grasslands (KZN 16)

| | |
|--|--|
| Reference number | KZN 16 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eThekweni MM and KwaDukuza LM |
| Original area of ecosystem | 24 000 ha |
| Remaining natural area of ecosystem (%) | 12% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 6 threatened or endemic plant or animal species including those listed below |

Geographical location

KwaDukuza (2931AD), Verulam (2931CA) and Durban (2930DD). Ecosystem delineated by the Indian Ocean in the east, inland to within 1 km of the coast and running parallel to the coast following an approximate altitude of up to 150m.

Description

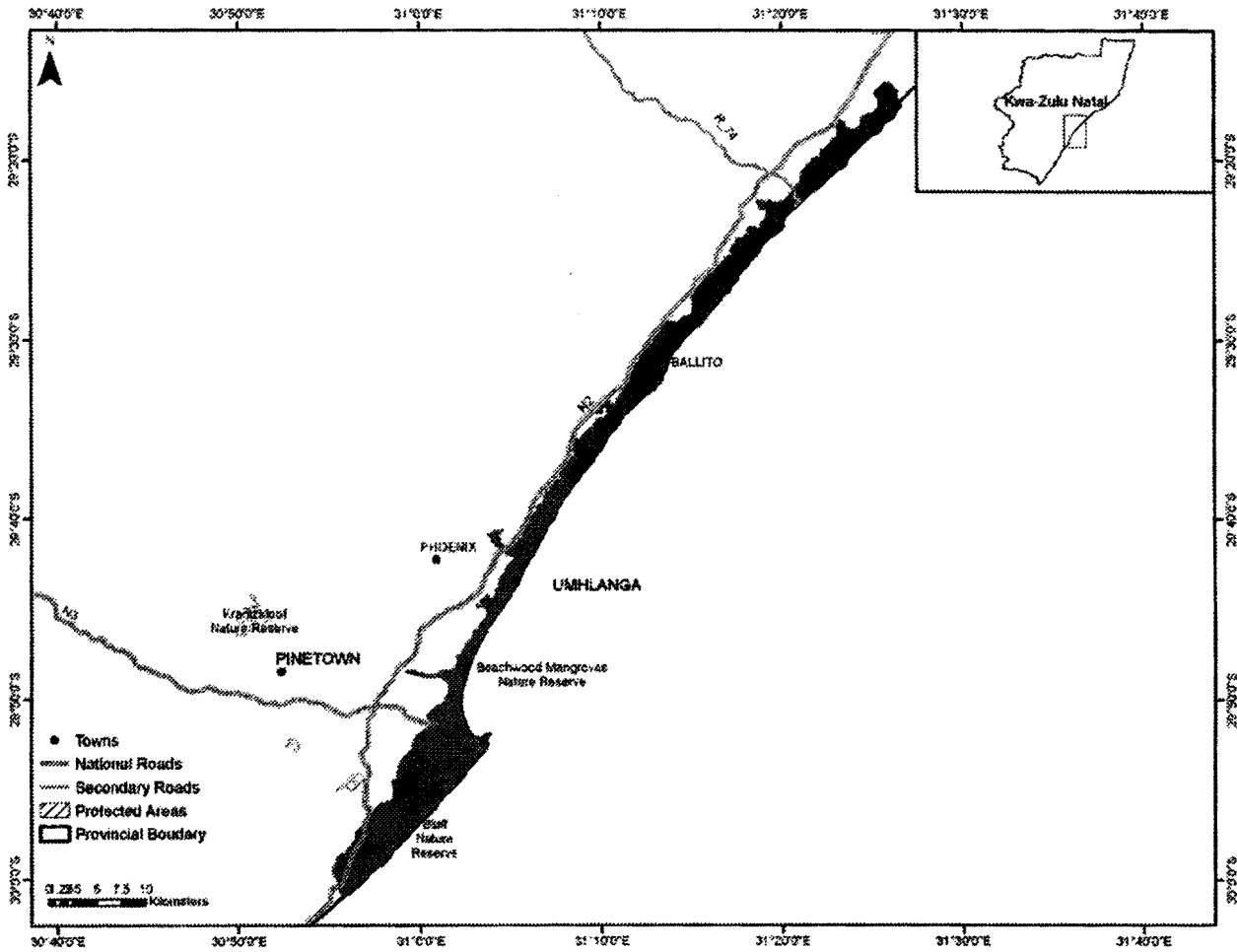
Key biodiversity features include two millipede species including *Centrobolus anulatus* and *Doratogonus cristulatus*; two plant species including *Kniphofia littoralis* and *Kniphofia pauciflora*; two reptile species including *Bradypodion melanocephalum* and *Scelotes inornatus*; and six vegetation types including KwaZulu-Natal Dune Forest, Mangrove Forest, Maputuland Coastal Belt and KwaZulu-Natal Coastal Belt.

Other information

Less than 1% of the ecosystem is protected in Bluff Nature Reserve, Beachwood Mangroves Nature Reserve and Umhlanga Lagoon Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Northern Coastal Grasslands showing original area of ecosystem

36. Oakland and Townhill Ridge (KZN 17)

| | |
|--|--|
| Reference number | KZN 17 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMshwathi LM, uMngeni LM and The Msunduzi LM |
| Original area of ecosystem | 2 000ha |
| Remaining natural area of ecosystem (%) | 13% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 11 threatened or endemic plant and animal species including those listed below |

Geographical location

Pietermaritzburg (2930CB). Ecosystem delineated by the ridge from Town Hill in the west; by a combination of contours and the boundary of the Midlands Mistbelt Grassland in the south and east; by the contours that reflected the slight crest of the mountains towards a northerly aspect in the north; and by the eastern boundary of the Ferncliff Forest in the east.

Description

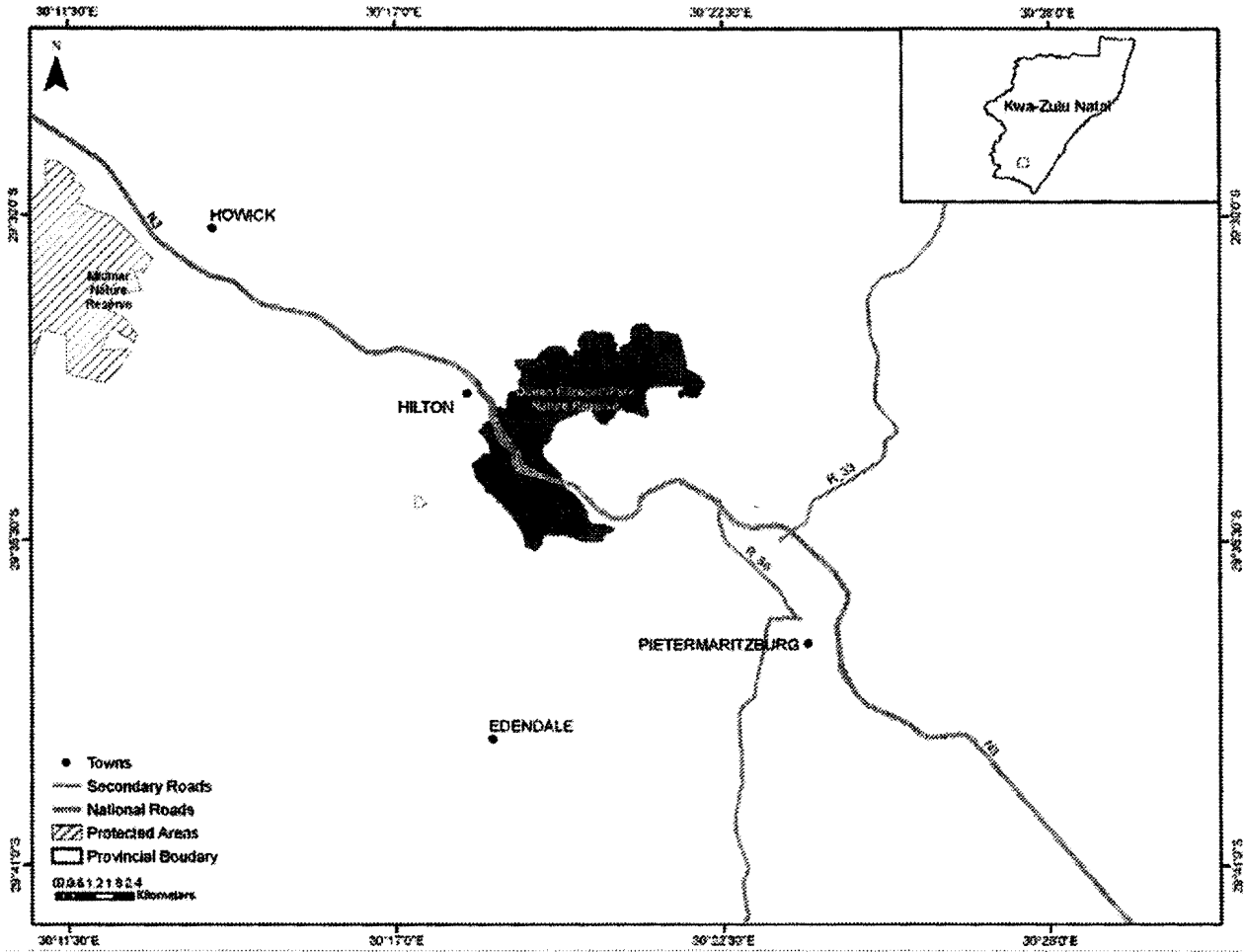
Key biodiversity features include eight millipede species including *Centrobolus decoratus*, *Centrobolus lawrencei*, *Centrobolus rubricollis*, *Doratogonus avius*, *Doratogonus cristulatus*, *Doratogonus hoffmani*, *Doratogonus natalensis* and *Doratogonus peregrinus*; two plant species including *Gerbera aurantiaca*, *Senecio exuberans*; one reptile, *Bradypodion bourquini*; and three vegetation types including Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

Approximately 5% of the ecosystem is protected in the Queen Elizabeth Park Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Oakland and Townhill Ridge showing original area of ecosystem

37. Overberg Sandstone Fynbos (FFs 12)

| | |
|--|---|
| Reference number | FFs 12 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Theewaterskloof LM, Overstrand LM and Cape Agulhas LM |
| Original area of ecosystem | 117 000 ha |
| Remaining natural area of ecosystem (%) | 86% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 105 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 114 endemic plant species |

Geographical location

Spread irregularly from Bot River and Hawston in the northwest to the Soetanyberg and Bredasdorp in the southeast, including the Caledon Swartberg, Babilonstoring, Kleinrivier and Bredasdorp Mountains and Agulhas hills such as Franskraal se Berge and Buffeljachtsberg.

Description

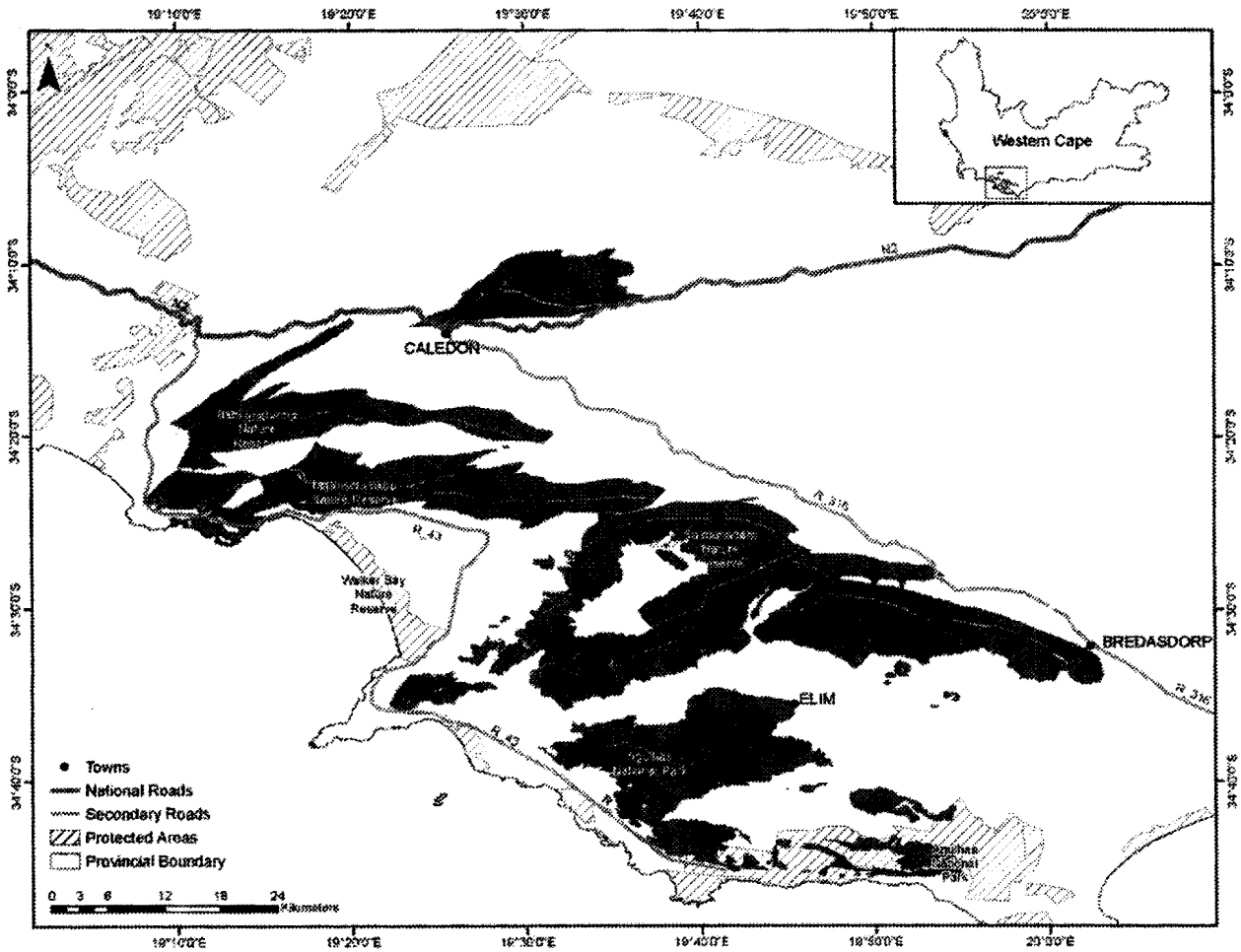
Low mountains, undulating hills and moderately undulating plains supporting moderately tall, dense restioid, ericoid-leaved and proteoid shrublands. Structurally these are mainly proteoid and ericaceous fynbos, with restioid fynbos also occurring locally. Boundaries are edaphically determined; and within sandstone fynbos are delimited by centres of endemism and species turnover. At least 114 endemic plant species and 105 Red Data List plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in the Agulhas National Park, Fernkloof, Babilonstoring, Heuningberg, Maanschynkop, Salmonsdam and Caledon Nature Reserves. Additional areas are found in private conservation areas.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 112-113. South African National Biodiversity Institute, Pretoria.



Location of Overberg Sandstone Fynbos showing original area of ecosystem

38. Peninsula Granite Fynbos (FFg 3)

| | |
|--|--|
| Reference number | FFg 3 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipality | City of Cape Town MM |
| Original area of ecosystem | 9 000 ha |
| Remaining natural area of ecosystem (%) | 35% |
| Proportion of ecosystem protected | 33% of original area |
| Known number of species of special concern | 25 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 9 endemic plant species |

Geographical location

Lower slopes on the Cape Peninsula from Lion's Head to Smitswinkel Bay almost completely surrounding Table Mountain, Karbonkelberg and Constantiaberg through to the Kalk Bay Mountains. South of the Fish Hoek gap, it is limited to the eastern (False Bay) side of the Peninsula from Simon's Bay to Smitswinkel Bay, with a few small patches between Fish Hoek and Ocean View.

Description

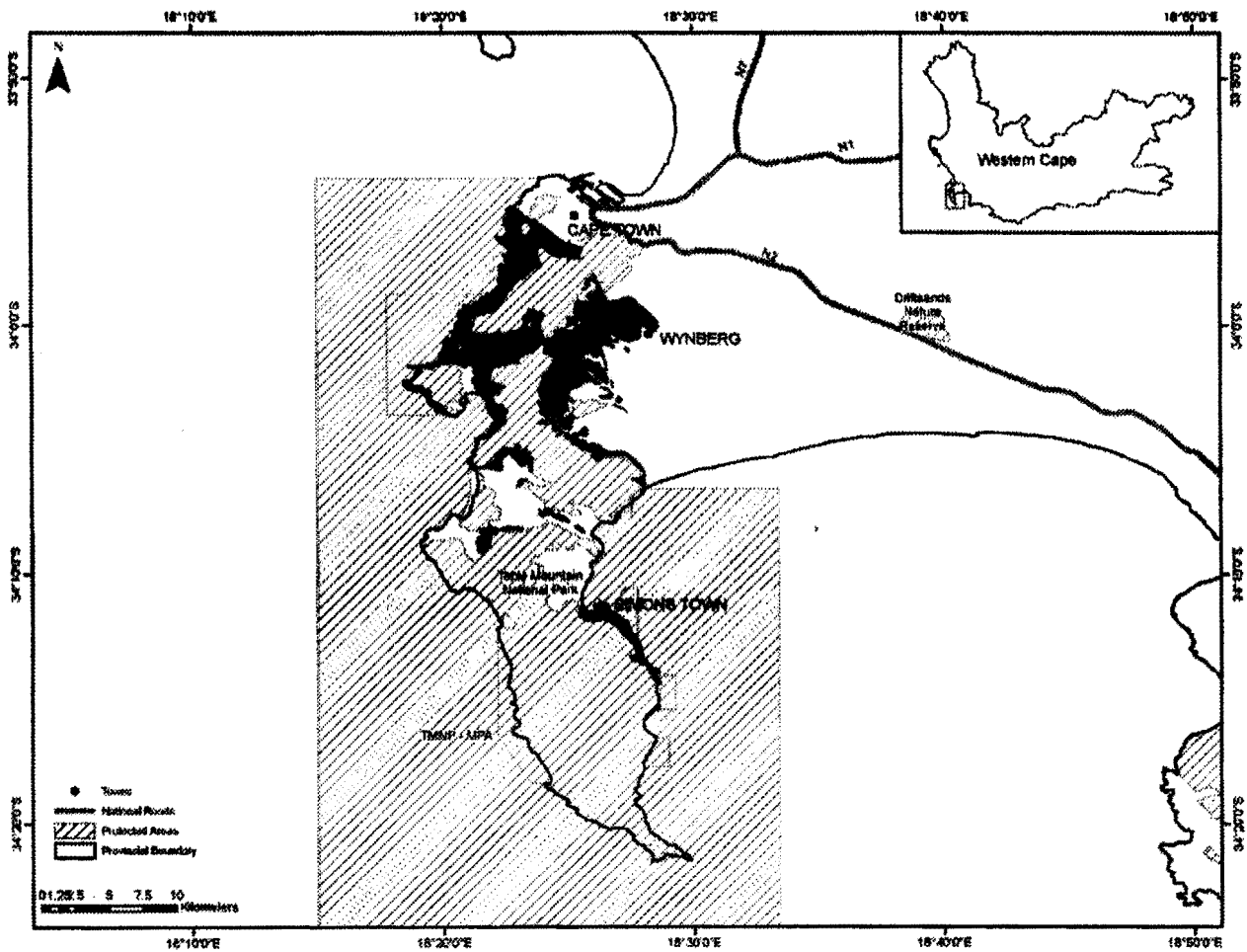
Steep to gentle slopes below the sandstone mountain slopes, and undulating hills on the western edge of the Cape Flats. Medium dense to open trees in tall, dense proteoid shrubland. A diverse type, dominated by asteraceous and proteoid fynbos, but with patches of *Restio* and ericaceous fynbos in wetter areas. Waboomveld is extensive in the north and heavily encroached by afrotemperate forest in places. South of Hout Bay, the dwarf form of *Protea nitida* is dominant, so that there are no emergent proteoids. Groves of Silver Trees (*Leucadendron argenteum*) occur on the wetter slopes. At least nine endemic plant species and 25 Red Data List plant species occur in the ecosystem.

Other information

Approximately 33% of the ecosystem is protected in the Table Mountain National Park as well as on the premises of the Kirstenbosch National Botanical Garden.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19: 168.* South African National Biodiversity Institute, Pretoria.



Location of Peninsula Granite Fynbos showing original area of ecosystem

39. Peninsula Shale Renosterveld (FRs 10)

| | |
|--|--|
| Reference number | FRs 10 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipality | City of Cape Town MM |
| Original area of ecosystem | 3 000 ha |
| Remaining natural area of ecosystem (%) | 19% |
| Proportion of ecosystem protected | 19% of original area |
| Known number of species of special concern | 8 Red Data List plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Signal Hill and on the lower northern slopes of Table Mountain and Devil's Peak; approximately centred on the city bowl of Cape Town.

Description

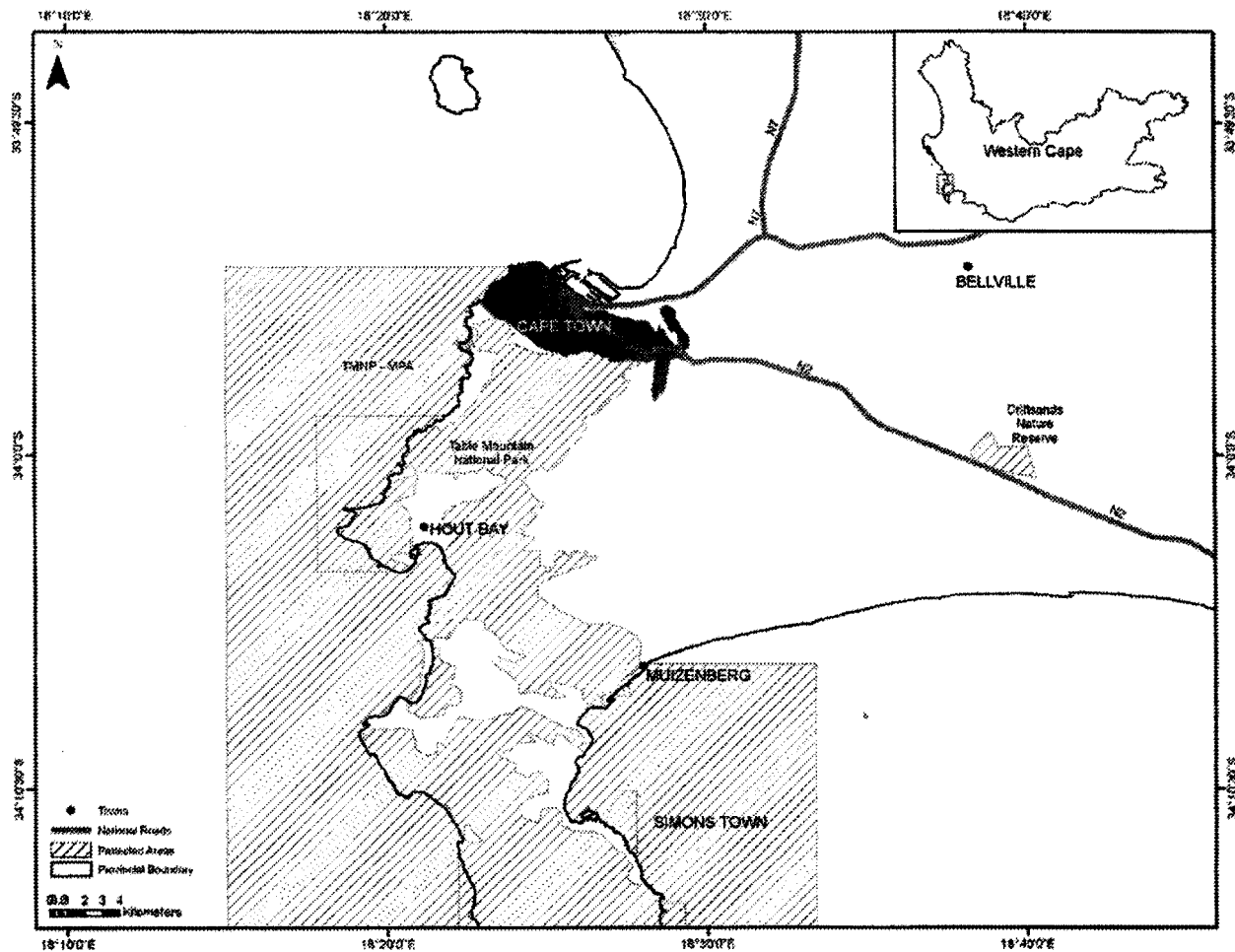
Gentle to steep lower slopes with tall, open shrubland and grassland, typically with renosterbos not appearing very prominent. This vegetation is very grassy due to frequent fires and lack of grazing. On south-facing slopes and upper slopes the ecosystem merges into fynbos. The early seral stages are dominated by *Asparagus capensis*, *Hyparrhenia hirta*, *Haemanthus sanguineus*, various *Oxalis* species and resprouting *Rhus lucida*, after which tussock grasses, shrubs and ferns emerge. After only 12 months the reseeding species start to become more obvious. Boundaries are edaphically determined; and within west coast renosterveld are delimited by species turnover. At least eight Red Data List plant species occur in the ecosystem. No endemic species are known. An endemic *Peripatus*, the Lions Head Velvetworm, is extinct.

Other information

Approximately 19% of the ecosystem is protected in the Table Mountain National Park.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 183. South African National Biodiversity Institute, Pretoria.



Location of Peninsula Shale Renosterveld showing original area of ecosystem

40. Rietvleiriver Highveld Grassland (GP 7)

| | |
|--|--|
| Reference number | GP 7 |
| Listed under Criterion | F |
| Biome | Grassland and Wetland |
| Province | Gauteng |
| Municipalities | Ekurhuleni MM, City of Johannesburg MM, Kungwini LM and City of Tshwane MM |
| Original area of ecosystem | 40 000 ha |
| Remaining natural area of ecosystem (%) | 85% |
| Proportion of ecosystem protected | 11% of original area |
| Known number of species of special concern | 25 threatened or endemic plant and animal species included those listed below |

Geographical location

East of Pretoria and Johannesburg including Rietveldam and Benoni (2528CD and 2628AB respectively). Ecosystem delineated by the Rietvleiriver and associated tributaries and wetlands.

Description

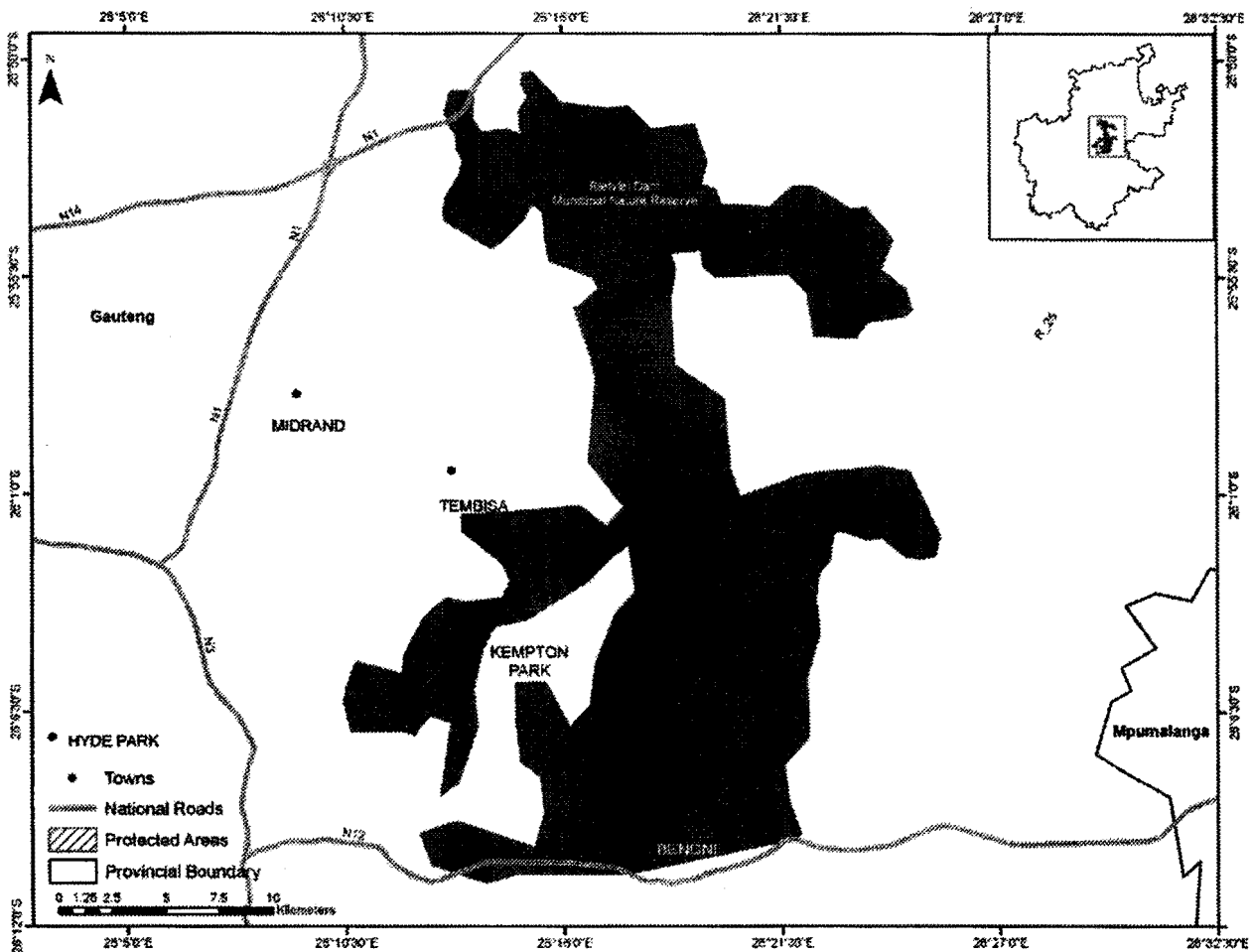
Key biodiversity features include Red or Orange Listed plants for example *Melolobium subspicatum*, *Habenaria mossii*, *Habenaria bicolor*, *Trachyandra erythrorrhiza* and *Kniphofia typhoides*; Red or Orange Listed mammals for example Serval, Spotted-necked Otter and Schreiber's Long-fingered Bat; Red or Orange Listed birds for example Lesser Flamingo, Greater Flamingo, Secretarybird, Blue Korhaan, African Grass-Owl, Lanner Falcon and Greater Painted-Snipe; Red or Orange Listed amphibians for example the Giant Bullfrog; Red or Orange Listed or priority invertebrates for example Marsh Sylph and Front-eyed Trapdoor Spider; and six vegetation types including Carletonville Dolomite Grassland, Eastern Highveld Grassland, Eastern Temperate Freshwater Wetlands, Egoli Granite Grassland, Rand Highveld Grassland, Soweto Highveld Grassland. A number of rivers, pans and wetlands including the Olifantspruit, Rietvleiriver, Sesmyspruit, Birchacres Pan, Blaauwpan, Bonaero Park Pan, Buks Williams Park Pan, Bullfrog Pan, Carlos Rolfe, Denel Pan, Grootvlei, Rietvlei, Sandpan, and various other unnamed pans and wetlands are key features in the ecosystem.

Other information

Approximately 11% of the ecosystem is protected in the Rietvlei Dam Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Rietvleiriver Highveld Grassland showing original area of ecosystem

41. Roodepoort Reef Mountain Bushveld (GP 8)

| | |
|--|---|
| Reference number | GP 8 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipalities | City of Johannesburg MM, Mogale City LM and Cradle of Humankind World Heritage Site |
| Original area of ecosystem | 14 000 ha |
| Remaining natural area of ecosystem (%) | 71% |
| Proportion of ecosystem protected | 12% of original area |
| Known number of species of special concern | 20 threatened or endemic plants and animal species including those listed below |

Geographical location

West Rand of Gauteng including Roodepoort and Randfontein (2627BB and 2627BA respectively). Ecosystem delineated by the Roodepoort and Krugersdorp ridge system and associated kopples.

Description

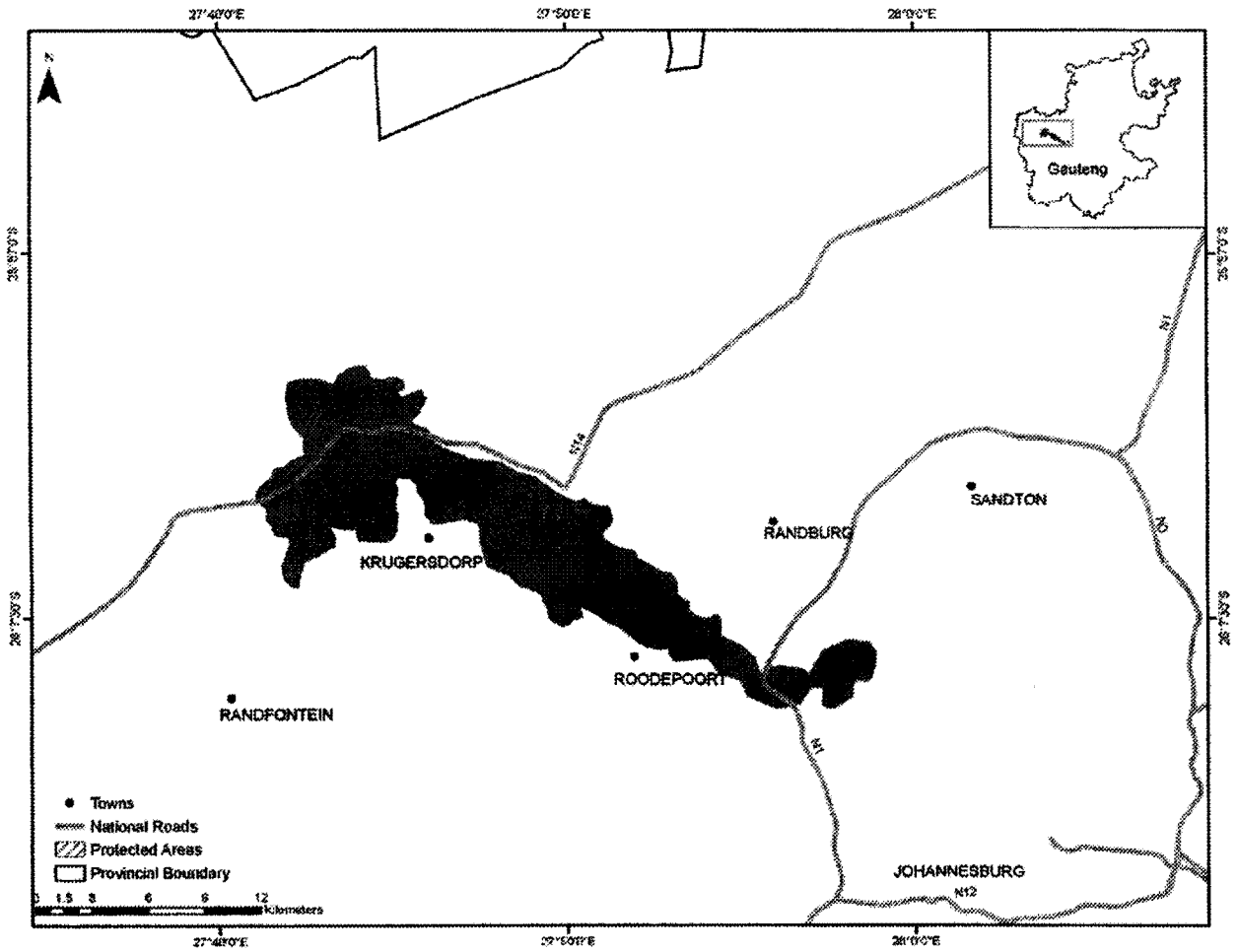
Key biodiversity features include Red or Orange Listed plants for example *Melolobium subspicatum*, *Aloe peglerae* and *Delosperma leendertziae*; Red or Orange Listed mammals for example Geoffry's Horseshoe Bat, Temminck's Hairy Bat and Schreiber's Long-fingered Bat; Red or Orange Listed birds for example Half-collared Kingfisher; Red or Orange Listed or priority invertebrates for example Marsh Sylph, Roodepoort Copper Butterfly, Stobbia's Fruit Chafer, Gunning's Rock Scorpion and Golden Starburst Baboon Spider; and five vegetation types including Andesite Mountain Bushveld, Carletonville Dolomite Grassland, Egoli Granite Grassland, Gold Reef Mountain Bushveld and Soweto Highveld Grassland. The Bloubankspruit, Klein Jukskei River, Muldersdrif se Loop, and Rietspruit are key rivers in the ecosystem.

Other information

Approximately 12% of the ecosystem is protected within the Krugersdorp Nature Reserve, Walter Sisulu Botanical Gardens and Ruimsig Entomological Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Roodeport Reef Mountain Bushveld showing original area of ecosystem

42. Rûens Silcrete Renosterveld (FRc 2)

| | |
|--|---|
| Reference number | FRc 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Theewaterskloof LM, Overstrand LM, Cape Agulhas LM, Swellendam LM and Hessequa LM |
| Original area of ecosystem | 21 000 ha |
| Remaining natural area of ecosystem (%) | 14% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 26 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 13 endemic plant species |

Geographical location

Rûens coastal forelands from Riviersonderend to Riversdale, with isolated outliers westwards to Bot River. A highly fragmented ecosystem by nature of its tendency to occur on the well-dissected, old African surface. Particularly common along the lower Breede River south of Buffeljagsrivier to Malgas and south of Heidelberg and Riversdale.

Description

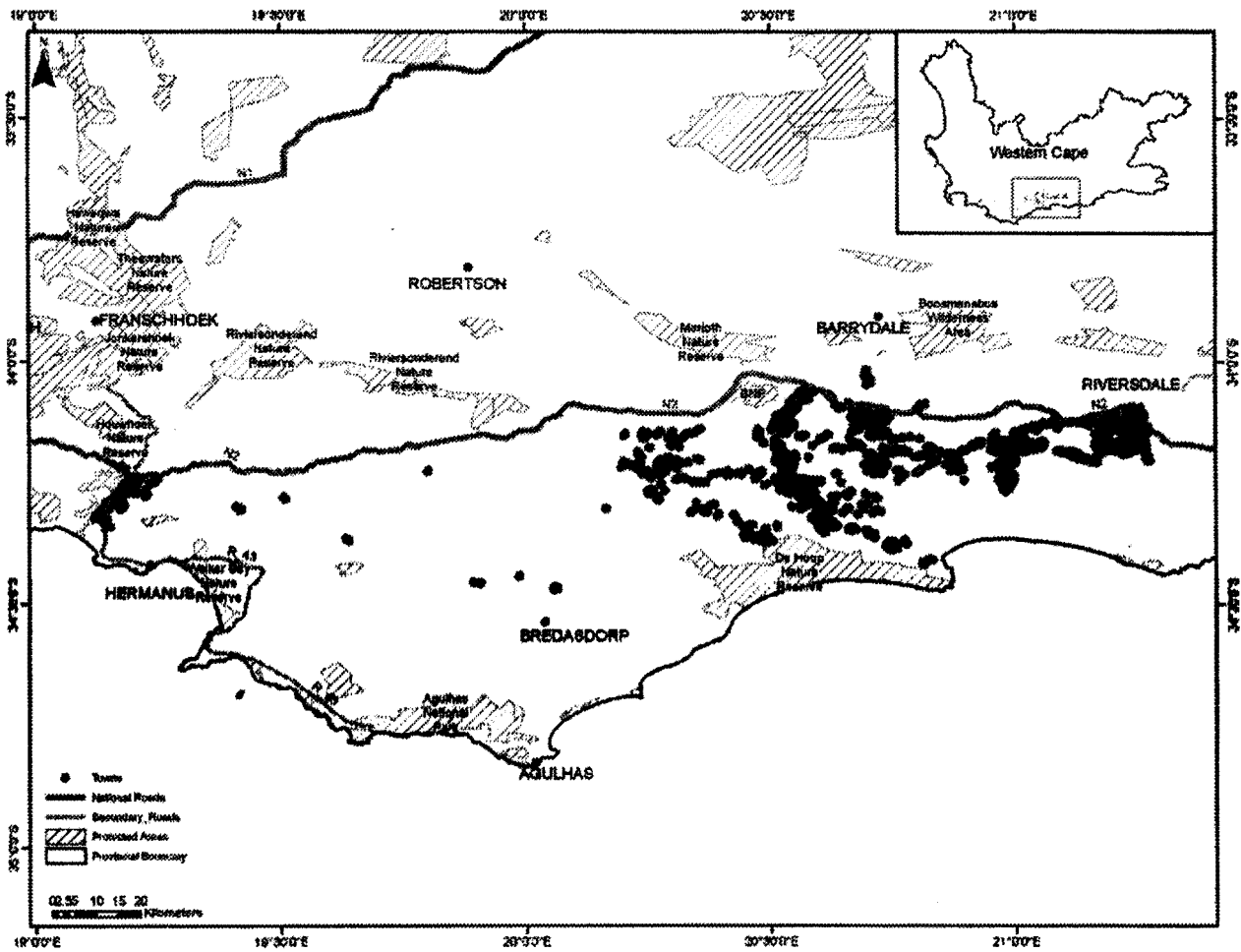
Highly fragmented patches on the summits and highlands of undulating hills and plains, larger patches often associated with drainage systems. These isolated habitats support open, low, cupressoid and small-leaved, low to moderately tall shrubland characterized by many succulents and usually dominated by renosterbos. Boundaries are edaphically determined. At least 13 endemic plant species and 26 Red Data List plant species occur in the ecosystem.

Other information

Very small patches of the ecosystem are protected in the Werner Frehse Nature Reserve.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19: 196-197.* South African National Biodiversity Institute, Pretoria.



Location of Rûens Silcrete Renosterveld showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

43. Southern Coastal Grasslands (KZN 18)

| | |
|--|---|
| Reference number | KZN 18 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | eThekweni MM, Vulamehlo LM, Umdoni LM Umzumbe LM and Hibiscus Coast LM |
| Original area of ecosystem | 23 000 ha |
| Remaining natural area of ecosystem (%) | 6% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Umkomaas (3030BB), Scottburgh (3030BC), Hibberdene (3030DA), Port Shepstone (3030CB), Margate (3030CD) and Port Edward (3130AA). Ecosystem delineated by the Indian Ocean in the east, inland to within 1 km of the coast and running parallel to the coast following an approximate altitude of up to 150m. It includes small coastal forest and shrub patches that encroach inland up the estuaries.

Description

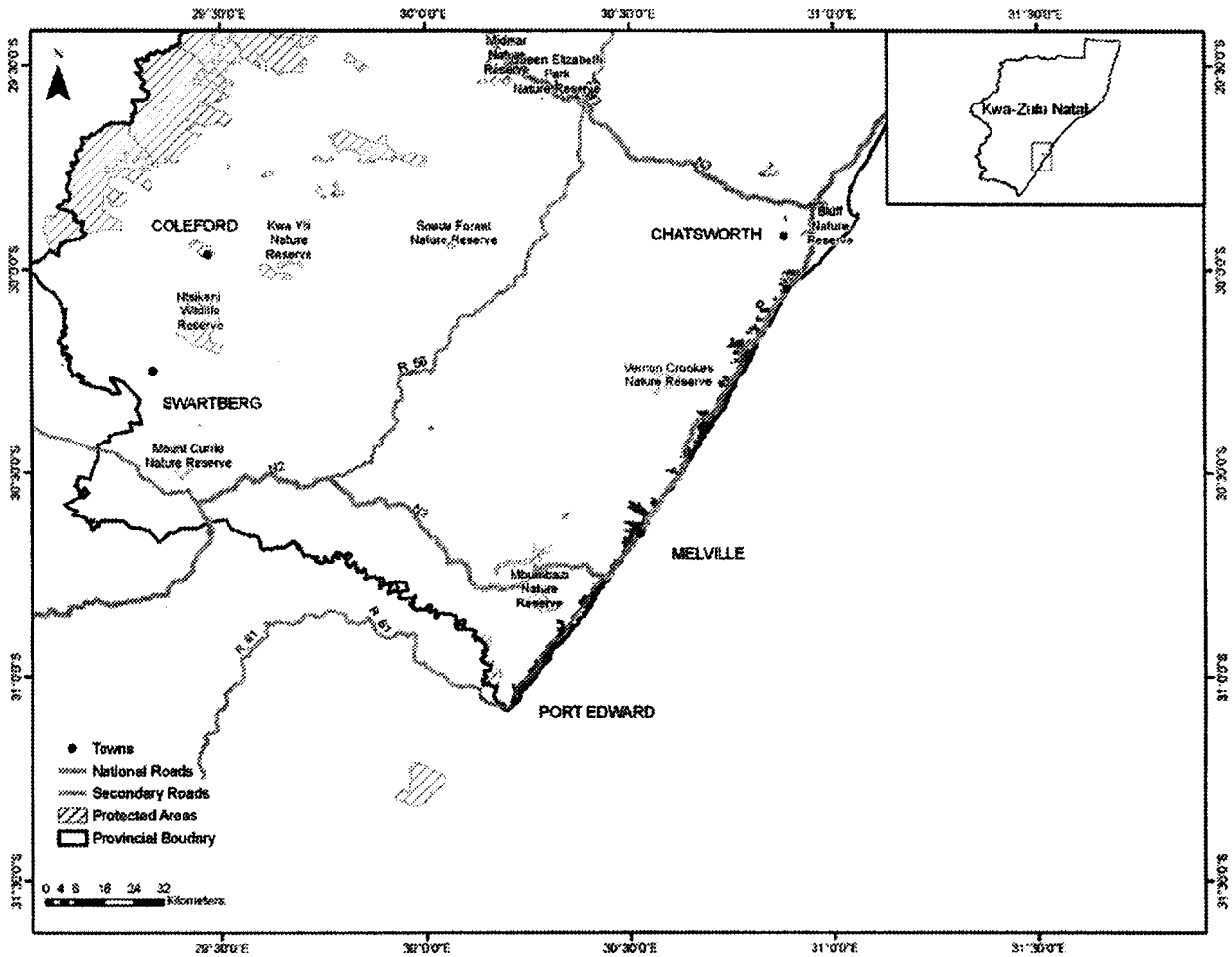
Key biodiversity features include one amphibian, *Hyperolius pickersgilli*; two millipede species including *Centrobolus anulatus* and *Doratogonus fragilis*; three plant species for example *Kniphofia rooperi* and *Phylica natalensis*; three reptile species for example *Bradypodion caeruleogula*, *Bradypodion melanocephalum* and *Bradypodion wezae*; and five vegetation types including KwaZulu-Natal Coastal Forest, KwaZulu-Natal Dune Forest, Pondoland Scarp Forest, Pondoland-Ugu Sandstone Coastal Sourveld, KwaZulu-Natal Coastal Belt.

Other information

Less than 1% of the ecosystem is protected in the Skyline Nature Reserve, Trafalgar Marine Reserve and Mpenjati Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Southern Coastal Grasslands showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

44. Swartland Alluvium Fynbos (FFa 3)

| | |
|--|--|
| Reference number | FFa 3 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Bergrivier LM, Swartland LM, Witzenberg LM, Drakenstein LM and Stellenbosch LM |
| Original area of ecosystem | 47 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 57 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 13 endemic plant species |

Geographical location

Swartland lowlands at west-facing piedmonts of the Groot Winterhoekberge near Porterville, Saronberg, Elandskloofberge to the Limietberge near Wellington; and broad valley bottoms of the Paarl, Drakenstein, Franschhoek and Banhoek Valleys, with some extensions west of Paarl Mountains and to Klipmuts.

Description

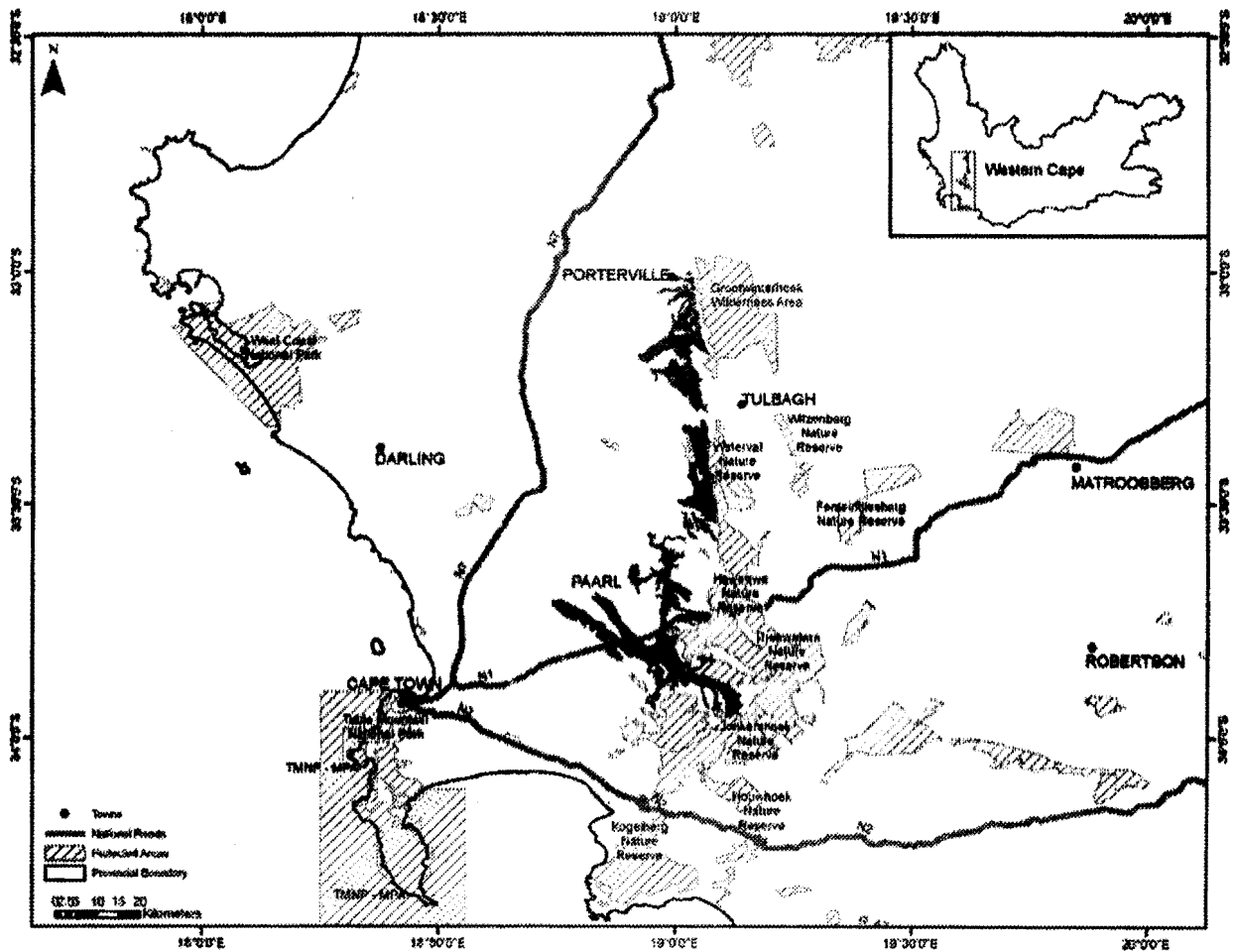
Moderately undulating plains, adjacent mountains and in river basins. The vegetation is a matrix of low, evergreen shrubland with emergent sparse, moderately tall shrubs and a conspicuous graminoid layer. Proteoid, restioid and asteraceous fynbos types are dominant, with closed-scrub fynbos common along the river courses. Ericaceous and restioid fynbos found in seeps. Boundaries are edaphically determined. At least 13 endemic plant species and 57 Red Data List plant species occur in the ecosystem.

Other information

Approximately 2% of the ecosystem is protected in the Waterval Nature Reserve, Winterhoek (mountain catchment area) with a further 7% is found in private reserves such as Elandskloof, Langerug and Wiesenhof Wildpark.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 164. South African National Biodiversity Institute, Pretoria.



Location of Swartland Alluvium Fynbos showing original area of ecosystem

45. Swartland Granite Renosterveld (FRg 2)

| | |
|--|--|
| Reference number | FRg 2 |
| Listed under criteria | A1 and D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Swartland LM, Drakenstein LM and Stellenbosch LM |
| Original area of ecosystem | 95 000 ha |
| Remaining natural area of ecosystem (%) | 15% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 123 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 27 endemic plant species |

Geographical location

Discrete areas in the Swartland and Boland with the largest patch centred on Darling from Ratelberg in the north to Dassenberg near Mamre and Pella; several centred on Malmesbury from Darmstadt in the north to the lower slopes of the Perdeberg; east of Wellington from Micha to Valencia, lower surrounds of Paarl Mountain; Joostenberg, Muldersvlei, Bottelaryberg, Papegaaiberg (Stellenbosch West), to Firgrove and northern Somerset West. It is replaced by granite fynbos in wetter upslope areas.

Description

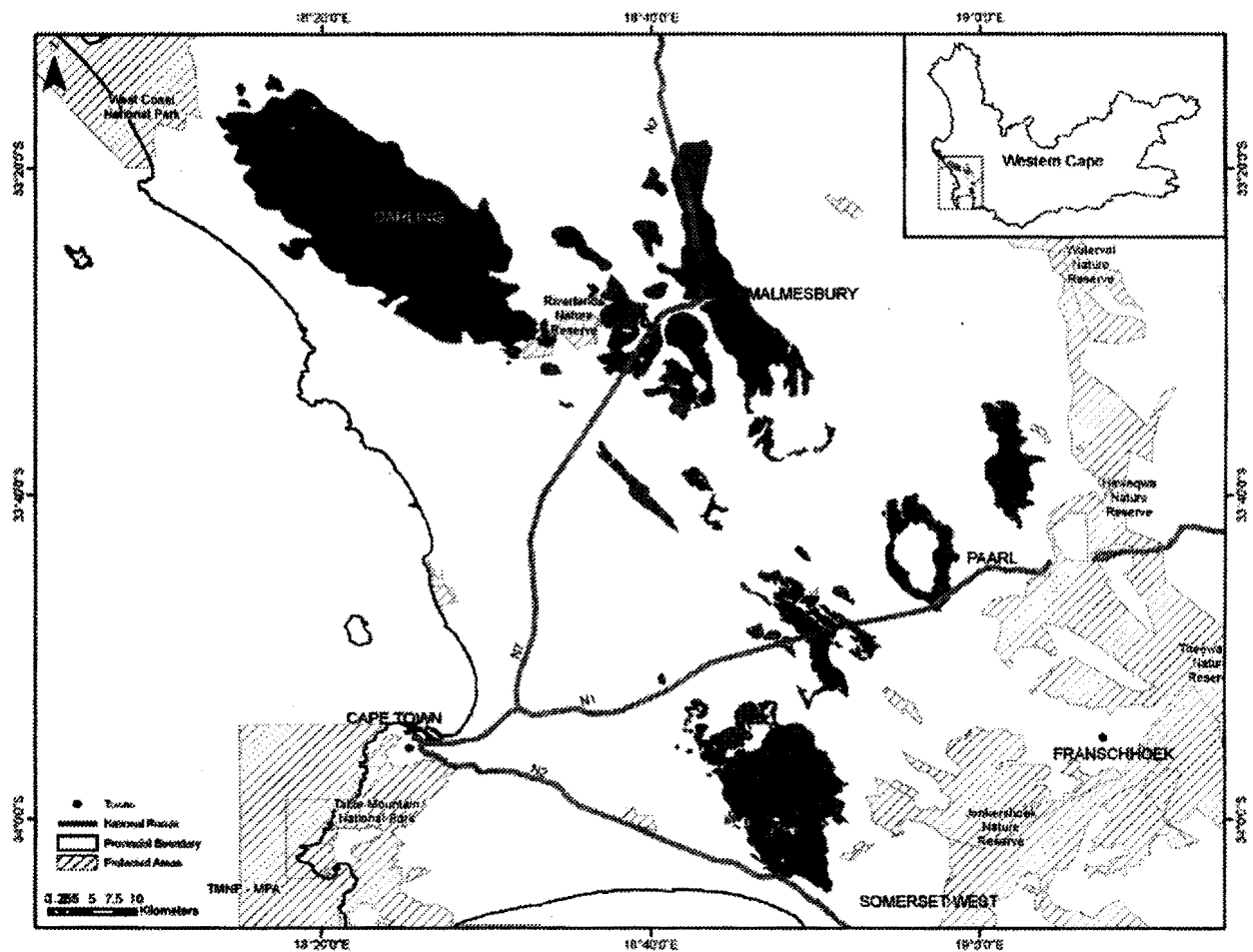
Moderate foot slopes and undulating plains supporting a mosaic of grasslands/herblands and medium dense, microphyllous shrublands dominated by renosterbos. Groups of small trees and tall shrubs are associated with heuweltjies and rock outcrops. Boundaries are edaphically determined. At least 27 endemic plant species and 123 Red Data List plant species occur in the ecosystem.

Other Information

Only very small portions of the ecosystem are protected in the Paarl Mountain Nature Reserve and Pella Research Site. An additional 2% is found in the Paardenberg, Tienie Versveld Flower Reserve near Darling and the Duthie Nature Reserve in Stellenbosch.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 190-191. South African National Biodiversity Institute, Pretoria.



Location of Swartland Granite Renosterveld showing original area of ecosystem

46. Swartland Shale Renosterveld (FRs 9)

| | |
|--|---|
| Reference number | FRs 9 |
| Listed under criteria | A1 and D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Cederberg LM, Bergrivier LM, Saldanha Bay LM, Swartland LM, Witzenberg LM, Drakenstein LM and Stellenbosch LM |
| Original area of ecosystem | 495 000 ha |
| Remaining natural area of ecosystem (%) | 8% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 151 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 35 endemic plant species |

Geographical location

Large, generally continuous areas of the Swartland and the Boland on the West Coast lowlands, from Het Kruls in the north, southwards between the Piketberg and Olfantsrivierberge, widening appreciably in the region around Moorreesburg between Gouda and Hopefield, and encompassing Riebeek-Kasteel, Klipheuwel, Philadelphia, Durbanville, Stellenbosch to the south and Sir Lowry's Pass Village near Gordon's Bay.

Description

Moderately undulating plains and valleys supporting low to moderately tall leptophyllous shrubland of varying canopy cover as well as low, open shrubland dominated by renosterbos. Heuweltjies are a very prominent local feature of the environment, forming 'hummockveld' near Piketberg and giving the Tygerberg Hills their name. Stunted trees and thicket are often associated with the heuweltjies. Disturbed areas are dominated by *Athanasia trifurcata* and *Otholobium hirtum*. Patches of *Cynodon dactylon* 'grazing lawns' also occur in abundance. Boundaries are edaphically determined; and within west coast renosterveld are delimited by

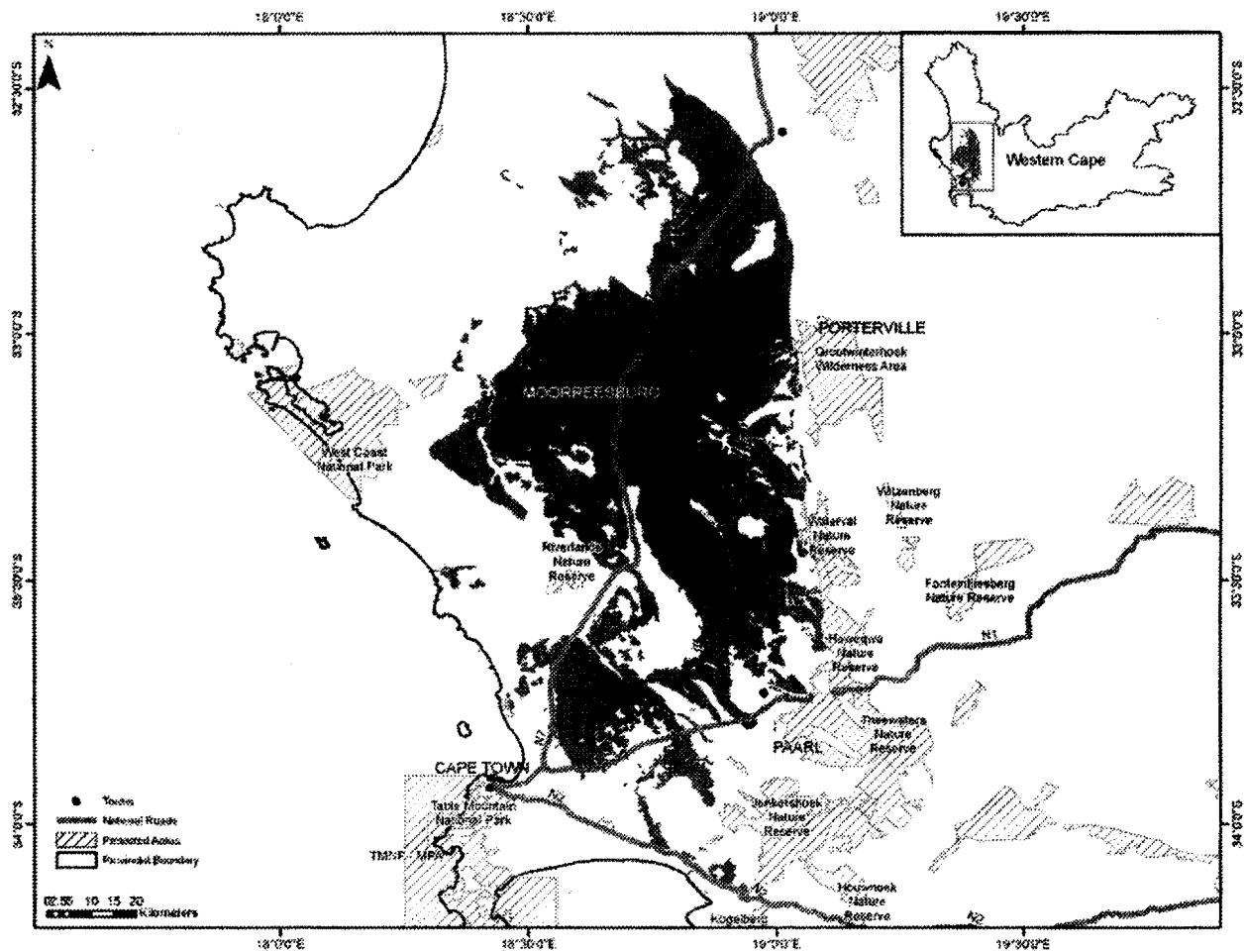
endemic species. At least 35 endemic plant species and 151 Red Data List plant species occur in the ecosystem.

Other information

Only a few patches of the ecosystem are protected.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 181-183. South African National Biodiversity Institute, Pretoria.



Location of Swartland Shale Renosterveld showing original area of ecosystem

47. Swartland Silcrete Renosterveld (FRc 1)

| | |
|--|--|
| Reference number | FRc 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Bergrivier LM, Saldanha Bay LM, Swartland LM, Drakenstein LM and Stellenbosch LM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 8% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 16 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 4 endemic plant species |

Geographical location

A highly fragmented ecosystem, scattered in the form of small patches throughout the Swartland from near Firgrove and Kuils River in the south to Eendekuil to Piketberg in the north. The largest patch is at Oupas between Moorreesburg and Mamre.

Description

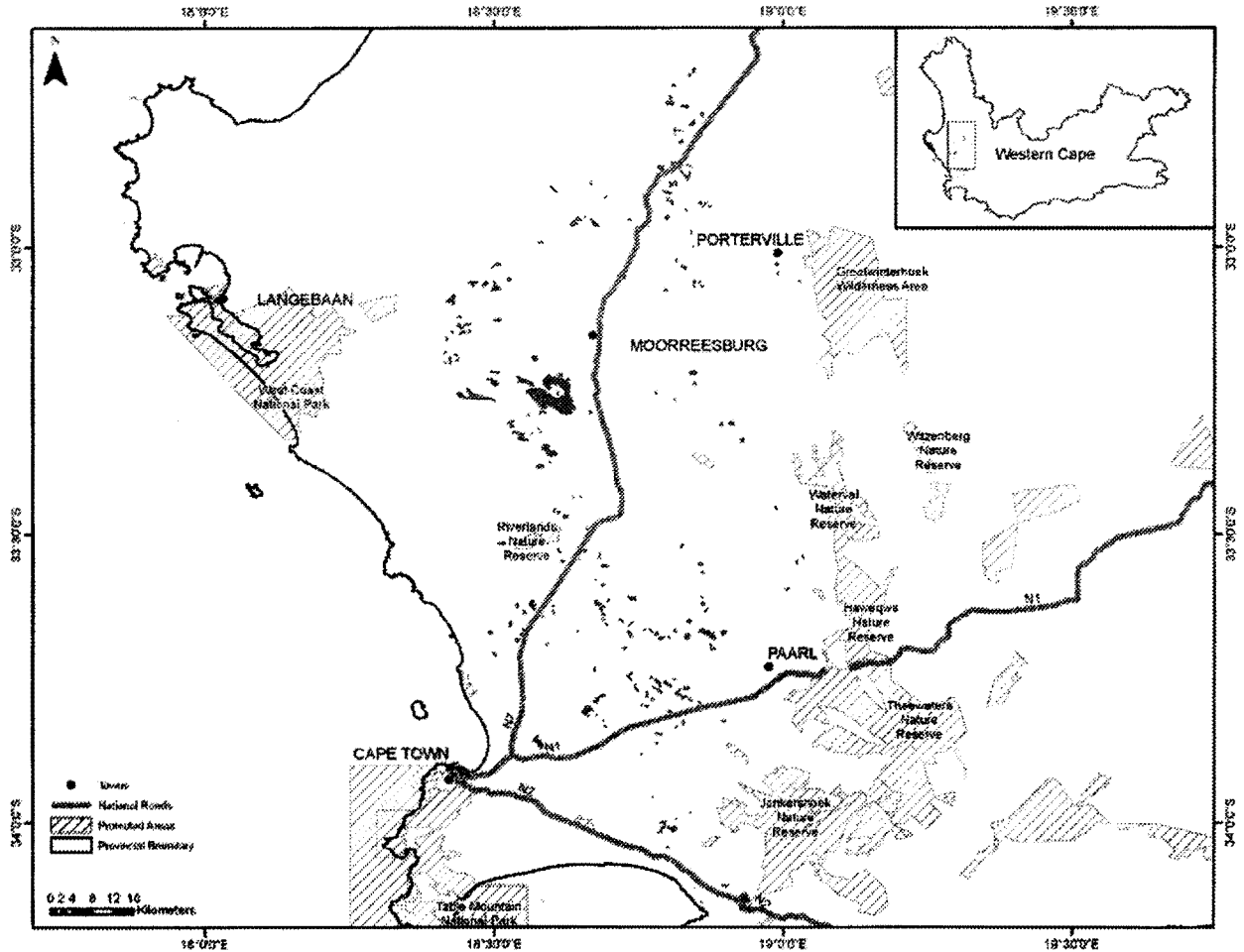
Moderately undulating lowlands, often on elevated areas. An open, low, cupressoid- and small-leaved, low to moderately tall shrubland with many succulents, dominated by renosterbos. Boundaries are edaphically determined. At least four endemic plant species and 16 Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in the Pella Research Site, Paardenberg and Elandsberg Nature Reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 195-196. South African National Biodiversity Institute, Pretoria.



Location of Swartland Silcrete Renosterveld showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

48. Umvoti Valley Complex (KZN 19)

| | |
|--|--|
| Reference number | KZN 19 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | KwaDukuza LM, Ndwedwe LM and Maphumulo LM |
| Original area of ecosystem | 13 000 ha |
| Remaining natural area of ecosystem (%) | 19% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 10 threatened or endemic plant and animal species including those listed below |

Geographical location

Shakas Kraal (2931AC). Ecosystem delineated by the crest contour of the valley.

Description

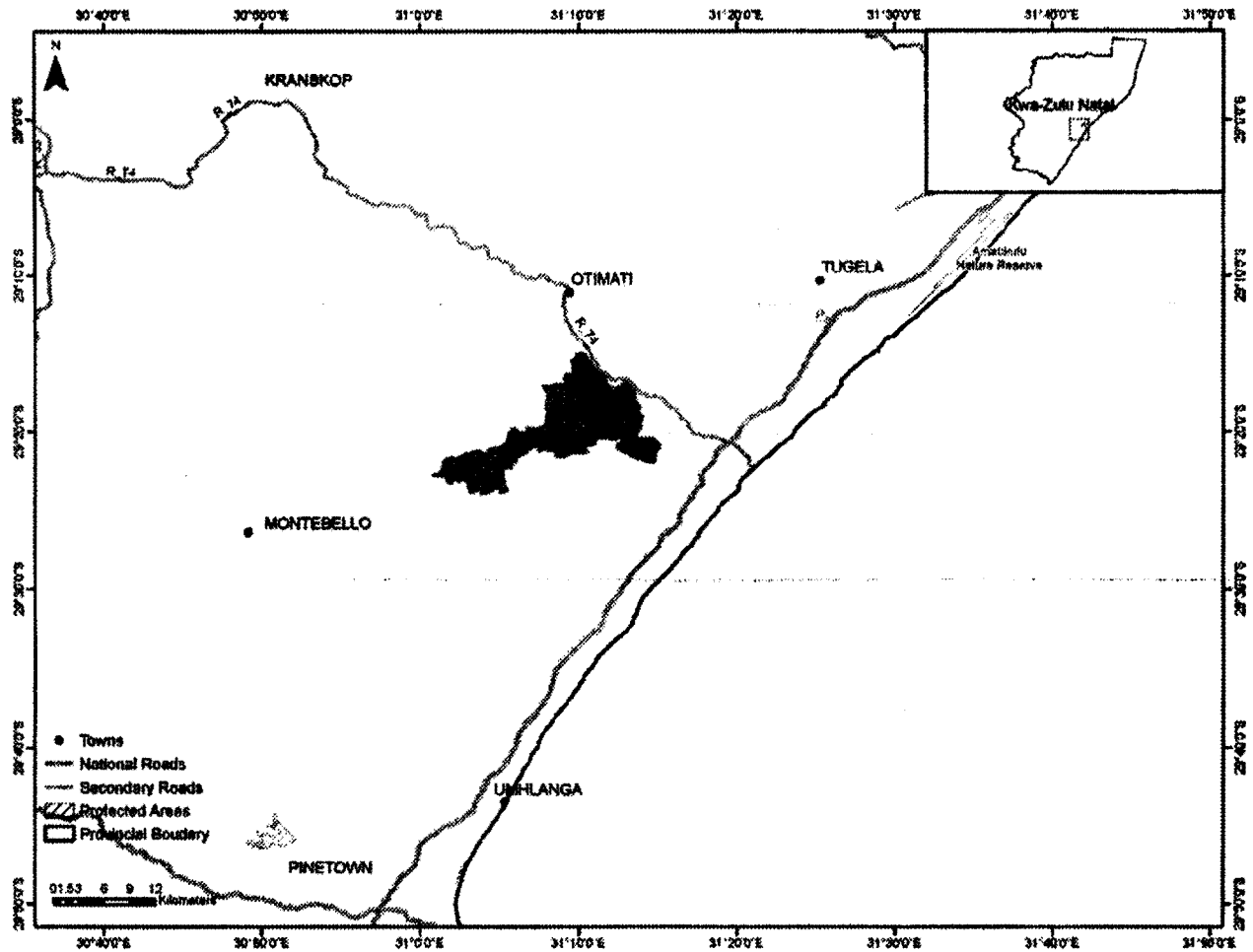
Key biodiversity features include one amphibian, *Hyperolius pickersgilli*; three millipede species *Centrobolus anulatus*, *Centrobolus fulgidus* and *Doratogonus natalensis*; four plant species for example *Ceropegia rudatisii*, *Helichrysum woodii*, *Kniphofia pauciflora*; two reptile species including *Bradypodion caeruleogula* and *Bradypodion melanocephalum*; and five vegetation types including Eastern Scarp Forest, Eastern Valley Bushveld, Ngongoni Veld, KwaZulu-Natal Coastal Belt.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Umvoti Valley Complex showing original area of ecosystem

49. Western Highveld Sandy Grassland (Gh 14)

| | |
|--|---|
| Reference number | Gh 14 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | North West |
| Municipalities | Ratlou LM, Tswaing LM, Mafikeng LM, Ditsobotla LM, Naledi LM, Mamusa LM, Lekwa-Teemane LM and Maquassi Hills LM |
| Original area of ecosystem | 858 000 ha |
| Remaining natural area of ecosystem (%) | 22% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 5 endemic plant species |

Geographical location

From Mafikeng to Schweizer-Reneke in the south and from Broedersput and Kameel in the west to Lichtenburg and Ottosdal in the east.

Description

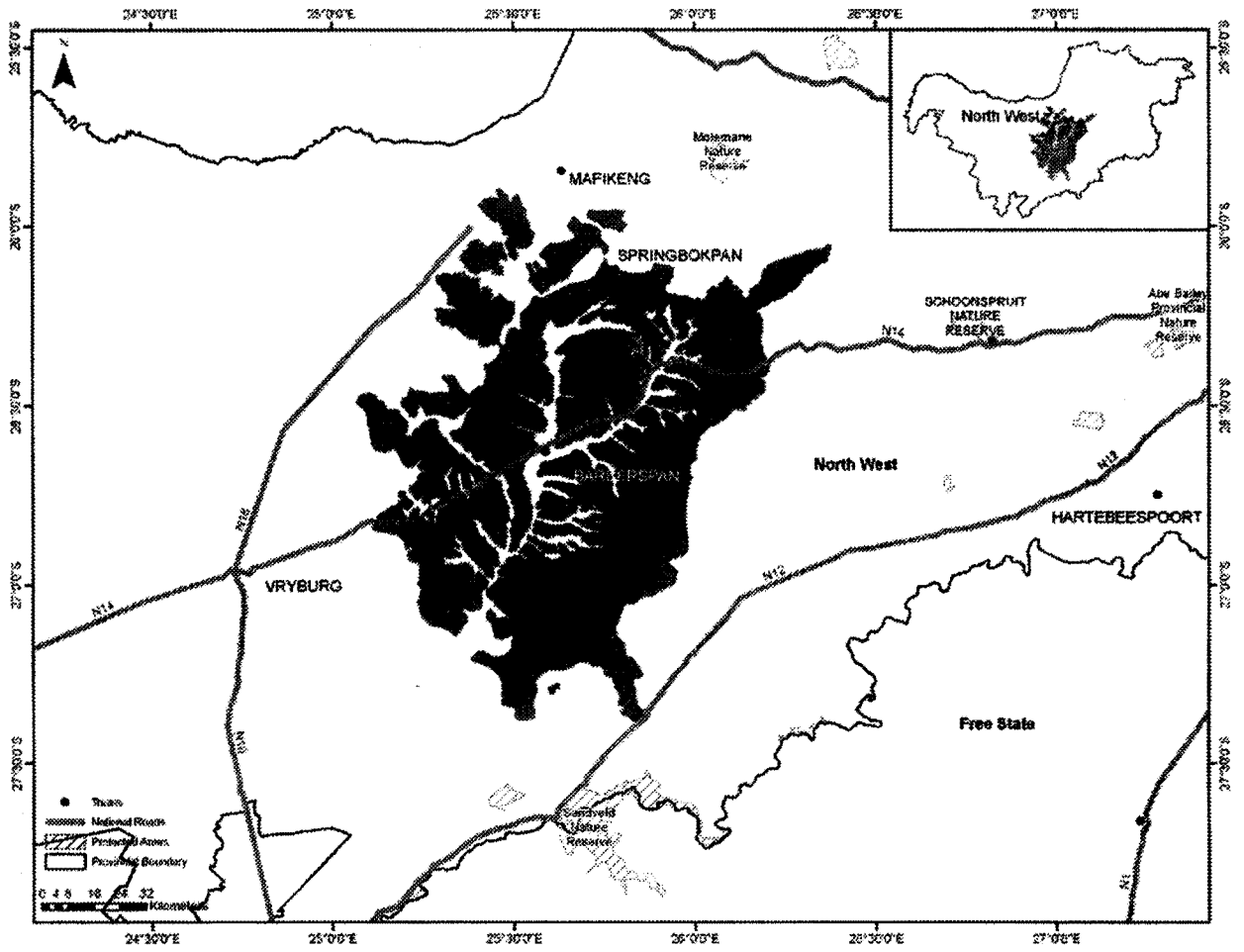
Flat to gently undulating plains with short, dry grassland, with some woody species occurring in bush clumps.

Other information

Only a very small portion of the ecosystem is protected in the Barberspan Nature Reserve.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 387-388. South African National Biodiversity Institute, Pretoria.



Location of Western Highveld Sandy Grassland showing original area of ecosystem

50. Western Rûens Shale Renosterveld (FRs 11)

| | |
|--|---|
| Reference number | FRs 11 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede Valley LM, Theewaterskloof LM, Overstrand LM and Cape Agulhas LM |
| Original area of ecosystem | 119 000 ha |
| Remaining natural area of ecosystem (%) | 13% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 52 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 14 endemic plant species |

Geographical location

Western parts of the Rûens region (Overberg) from Bot River and Villiersdorp eastwards, surrounding the Caledon Swartberg, and approximately to a line between Napier and Genadendal.

Description

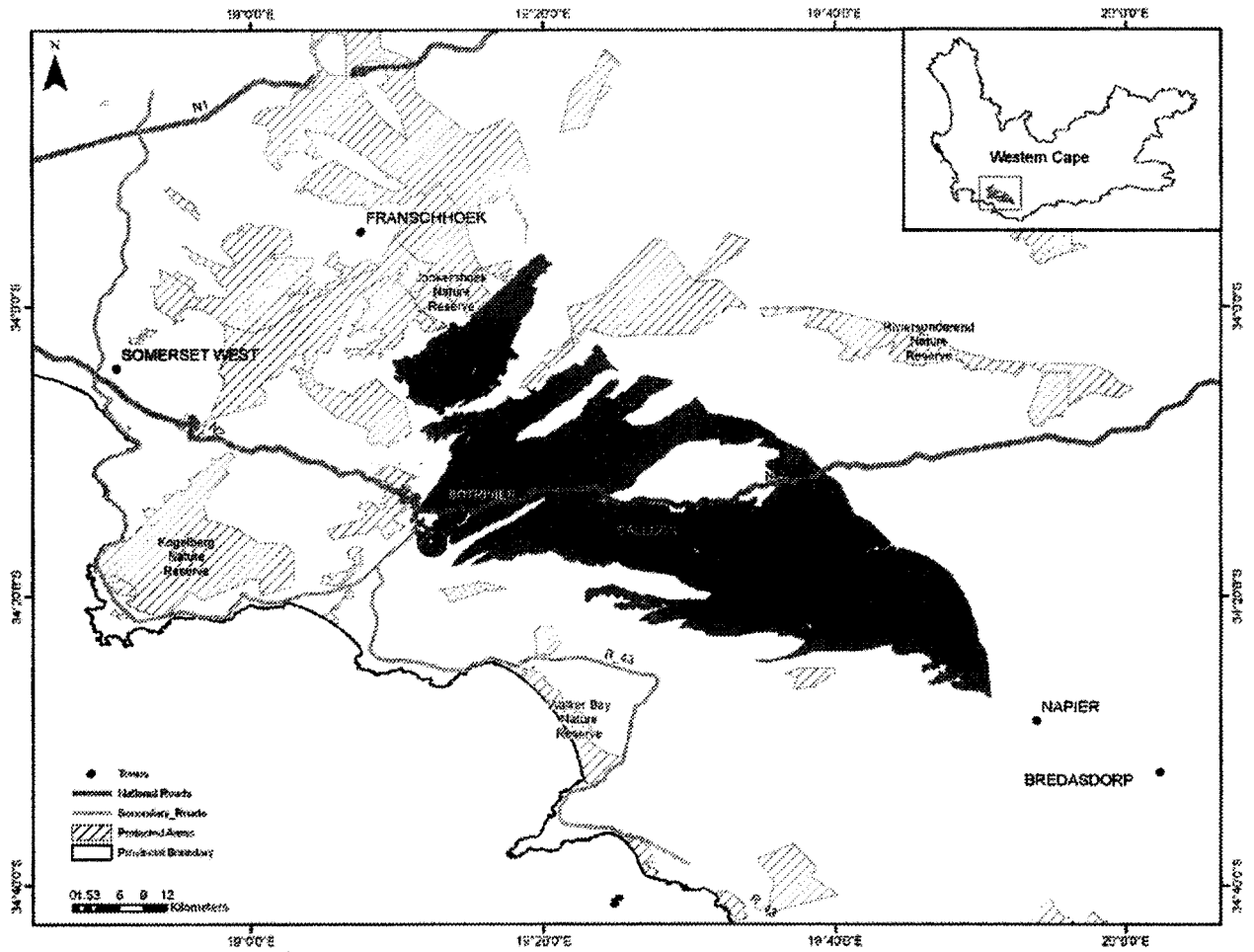
Moderately undulating plains, today mostly stripped of natural vegetation and where preserved, supporting an open to medium dense, cupressoid and small-leaved, low to moderately tall grassy shrubland dominated by renosterbos. Heuweltjies not conspicuous. The ecosystem is distinguished by the absence of *Hermannia flammea* and rare occurrence of *Aloe ferox* and *Acacia karroo*. Shrubby Asteraceae increase as grazing reduces the palatable grass component (mostly *Hyparrhenia hirta*), resulting in subsequent erosion. Boundaries are edaphically determined; and within south coast renosterveld are delimited by endemic species and turnover of key dominant species. At least 14 endemic plant species and 52 Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected, however approximately 1% is found in the Witdraal Private Nature Reserve.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 184. South African National Biodiversity Institute, Pretoria.



Location of Western Rûens Shale Renosterveld showing original area of ecosystem

51. Wilge Mountain Bushveld (GP 9)

| | |
|--|--|
| Reference number | GP 9 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipality | Kungwini LM |
| Original area of ecosystem | 6 000 ha |
| Remaining natural area of ecosystem | 99% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 6 threatened or endemic plant or animal species including those listed below |

Geographical location

The north-eastern parts of Gauteng including Balmoral and Vaalplaas (2528DD and 2528DB respectively). Ecosystem delineated by the ridges and kloofs associated with the Wilge River and its tributaries.

Description

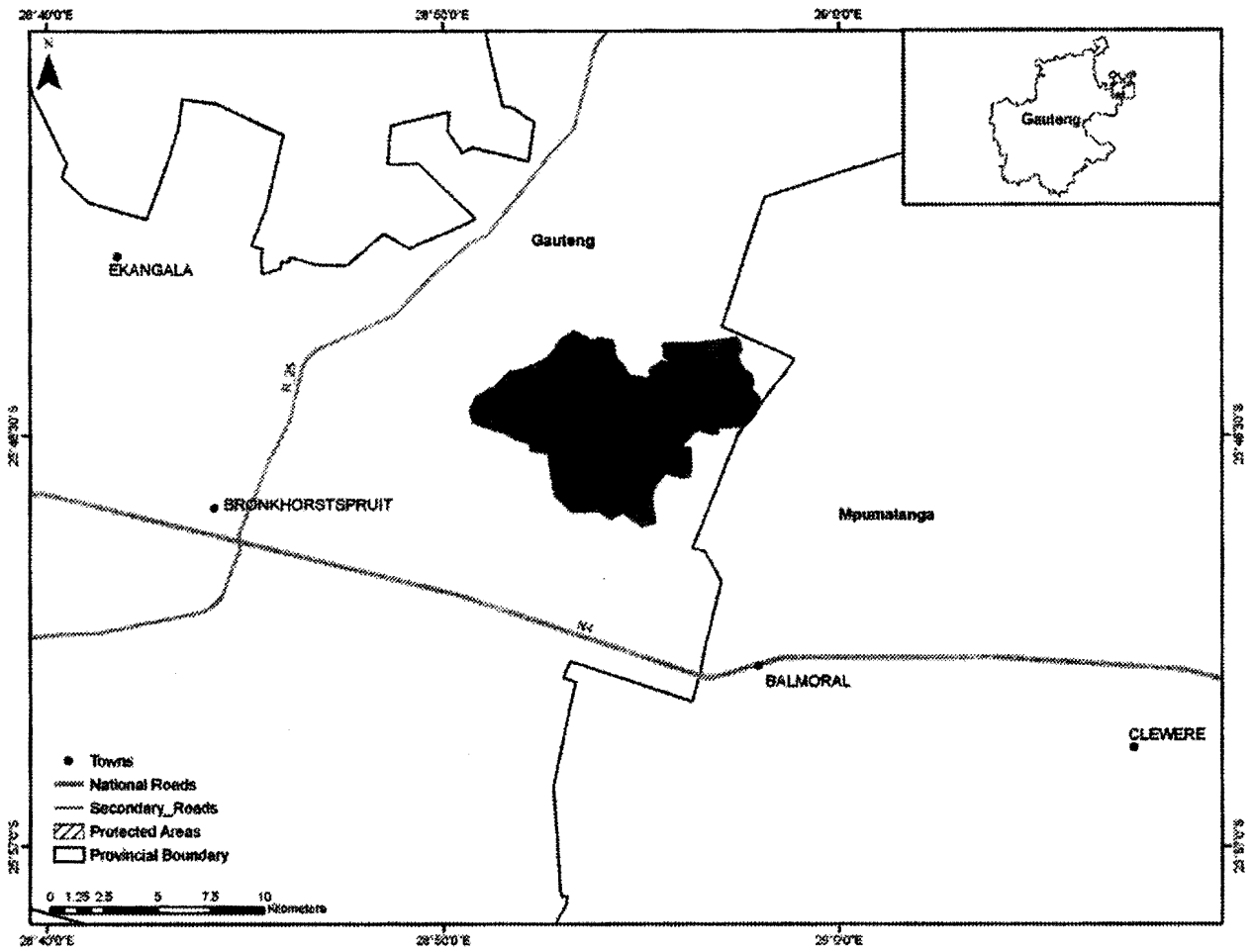
Key biodiversity features include Red or Orange Listed or priority invertebrates, for example Brinck's Fruit Chafer; two vegetation types including Loskop Mountain Bushveld and Rand Highveld Grassland; two rivers, the Driefonteinspruit and the Wilgerivier.

Other Information

Approximately 5% of the ecosystem is protected in the Rhenosterpoort Private Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Wilge Mountain Bushveld showing original area of ecosystem

52. Witwatersberg Pretoria Mountain Bushveld (GP 10)

| | |
|--|--|
| Reference number | GP 10 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipality | City of Tshwane MM |
| Original area of ecosystem | 19 000 ha |
| Remaining natural area of ecosystem (%) | 74% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 22 threatened or endemic plant and animal species including those listed below |

Geographical location

Pretoria west including Centurion (2528CC). Ecosystem delineated by the Witwatersberg ridge system and associated koppies, rivers and drainage lines.

Description

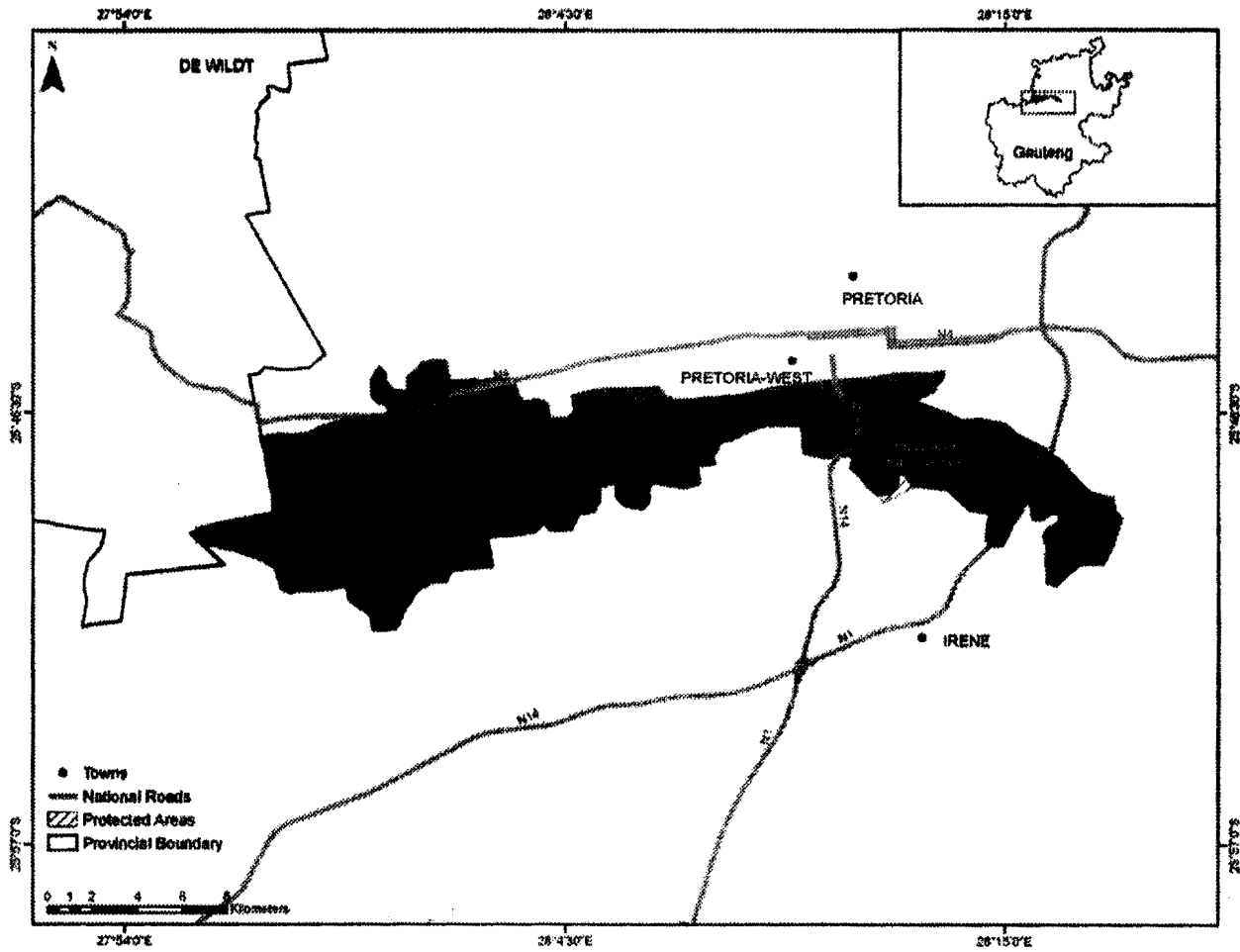
Key biodiversity features include Red or Orange Listed plants, for example, *Melolobium subspicatum*, *Delosperma gautengense*, *Holothrix randii*; Red or Orange Listed mammals, for example, Schreiber's Long-fingered Bat; Red or Orange Listed birds, for example White-backed Night-Heron and African Finfoot; Red or Orange Listed reptiles for example the Striped Harlequin Snake; Red or Orange Listed or priority invertebrates, for example Pretoria Lesser Baboon Spider, Purse Web Trapdoor Spider, Front-eyed Trapdoor Spider, Gunning's Rock Scorpion, Golden Starburst Baboon Spider, and Stobbia's Fruit Chafer; and five vegetation including the Andesite Mountain Bushveld, Carletonville Dolomite Grassland, Gauteng Shale Mountain Bushveld, Marikana Thornveld and Rand Highveld Grassland. The Apies River, Hennops River, Moganwe, Swartbooispruit, Walkerspruit, Waterkloofspruit, and unnamed wetlands are also key features of the ecosystem.

Other information

Approximately 2% of the ecosystem is protected in the Groenkloof Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Witwatersberg Pretoria Mountain Bushveld showing original area of ecosystem

53. Woodbush Granite Grassland (Gm 25)

| | |
|--|---|
| Reference number | Gm 25 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Limpopo |
| Municipalities | Greater Letaba LM, Greater Tzaneen LM, Polokwane LM and Lepele-Nkumpi LM |
| Original area of ecosystem | 34 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 endemic plant species |

Geographical location

Occurs on the Woodbush Plateau and its outliers, to the north of the Wolkberg, on the Groot Letaba watershed west of Duiwelskloof, Tzaneen and Lenyenye.

Description

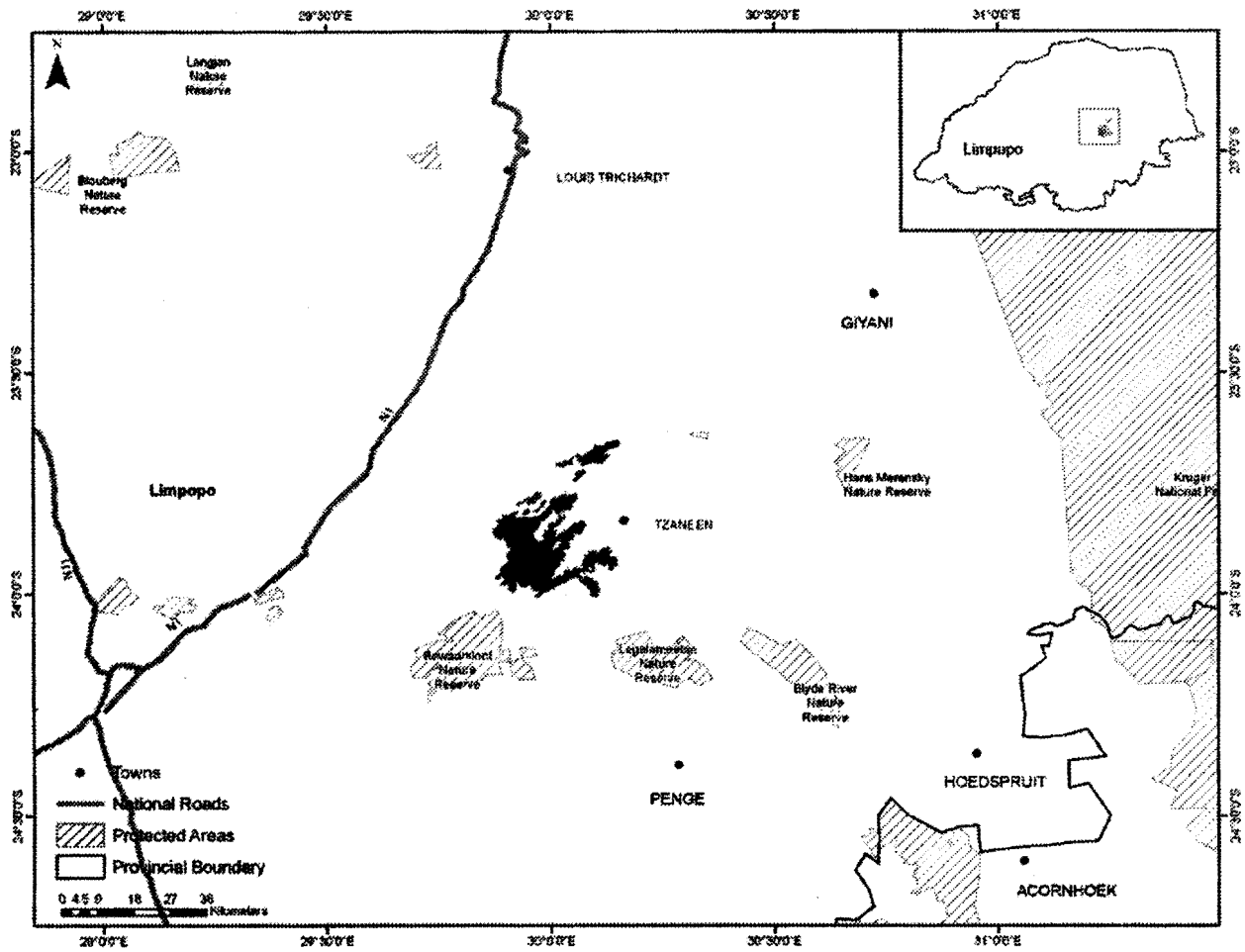
Mountainous plateau covered by grassland, showing increased low-shrub density on steep south- and east-facing slopes. At least four endemic plant species occur in the ecosystem.

Other Information

The ecosystem is not protected.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* **19**: 412-413. South African National Biodiversity Institute, Pretoria.



Location of Woodbush Granite Grassland showing original area of ecosystem

7.3 Endangered (EN) ecosystems

54. Agulhas Sand Fynbos (FFd 7)

| | |
|--|---|
| Reference number | FFd 7 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Overstrand LM and Cape Agulhas LM |
| Original area of ecosystem | 23 000 ha |
| Remaining natural area of ecosystem (%) | 35% |
| Proportion of ecosystem protected | 7% of original area |
| Known number of species of special concern | 40 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 10 endemic plant species |

Geographical location

Very fragmented patches on the Agulhas forelands from around the lower Uilkraalsrivier near Gansbaai, Hagelkraai, flats west of the Soetanyberg, small patches east of Ellim to the largest patch northwest of Struisbaai, west of Arniston and south of Bredasdorp, with unmapped patches to Hermanus in the west, and De Hoop Vlei in the east.

Description

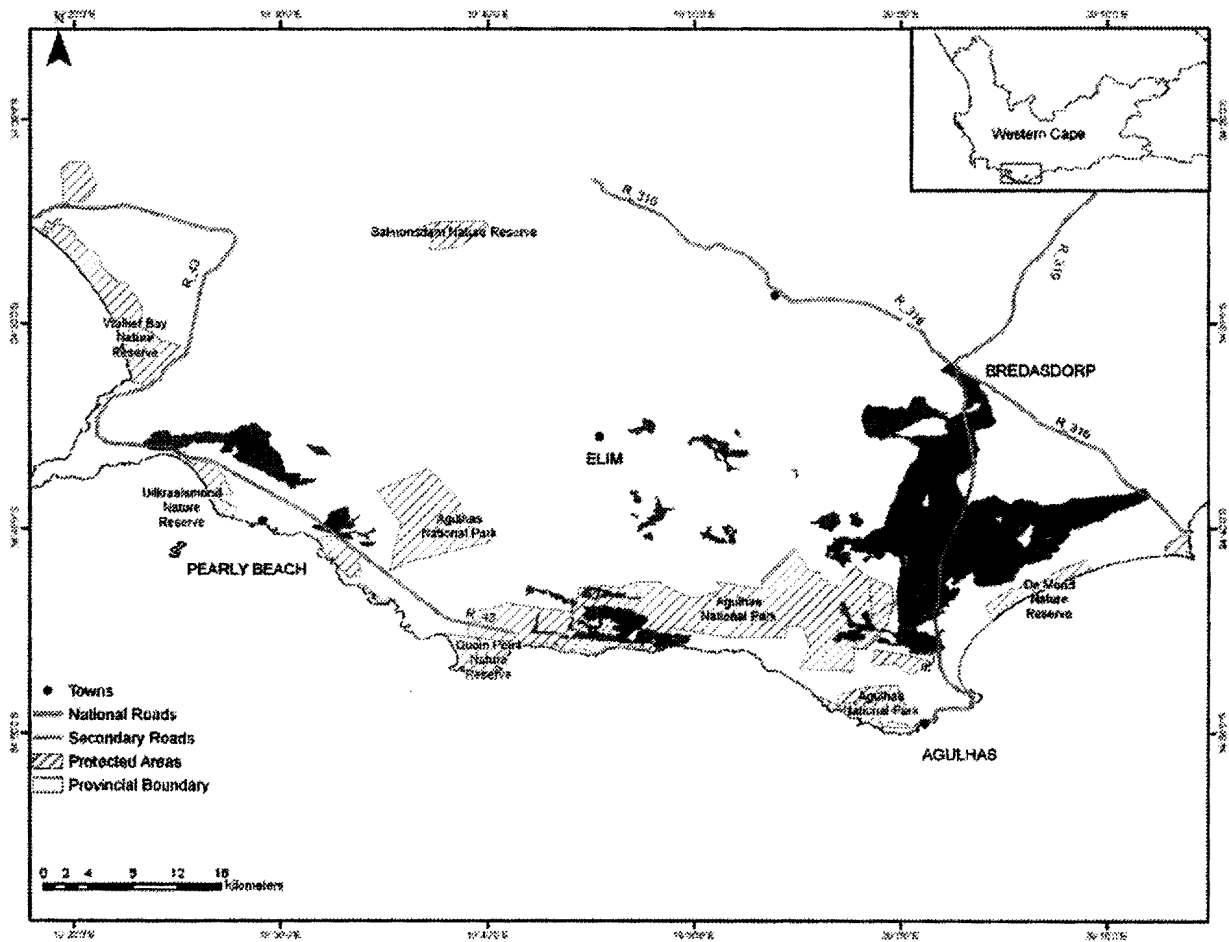
Low-lying coastal plains supporting dense moderately tall, ericoid shrubland or tall, medium dense shrubland, with some emergent tall shrubs. Communities of this fynbos ecosystem are structurally defined either as restloid or proteoid fynbos. At least 10 endemic plant species and 40 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 7% of the ecosystem is protected in the Agulhas National Park, with a further 1% found in private conservation areas such as Brandfontein, Groot Hagelkraal, Heunings River and Andrewsfield.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 142. South African National Biodiversity Institute, Pretoria.



Location of Agulhas Sand Fynbos showing original area of ecosystem

55. Albany Alluvial Vegetation (Aza 6)

| | |
|--|---|
| Reference number | Aza 6 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Eastern Cape |
| Municipalities | Makana LM, Sunday's River Valley LM, Baviaans LM, Kouga LM, Nelson Mandela Bay MM and ECDMA10 |
| Original area of ecosystem | 58 000 ha |
| Remaining natural area of ecosystem (%) | 47% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 2 endemic plant species |

Geographical location

Between East London and Cape St Francis on wide floodplains (usually close to the coast where the topography becomes flatter) of the large rivers for example the Sundays, Swartkops, Coega, Gamtoos, Baviaanskloof and Great Fish River. This alluvial ecosystem is embedded within the Albany Thicket Biome.

Description

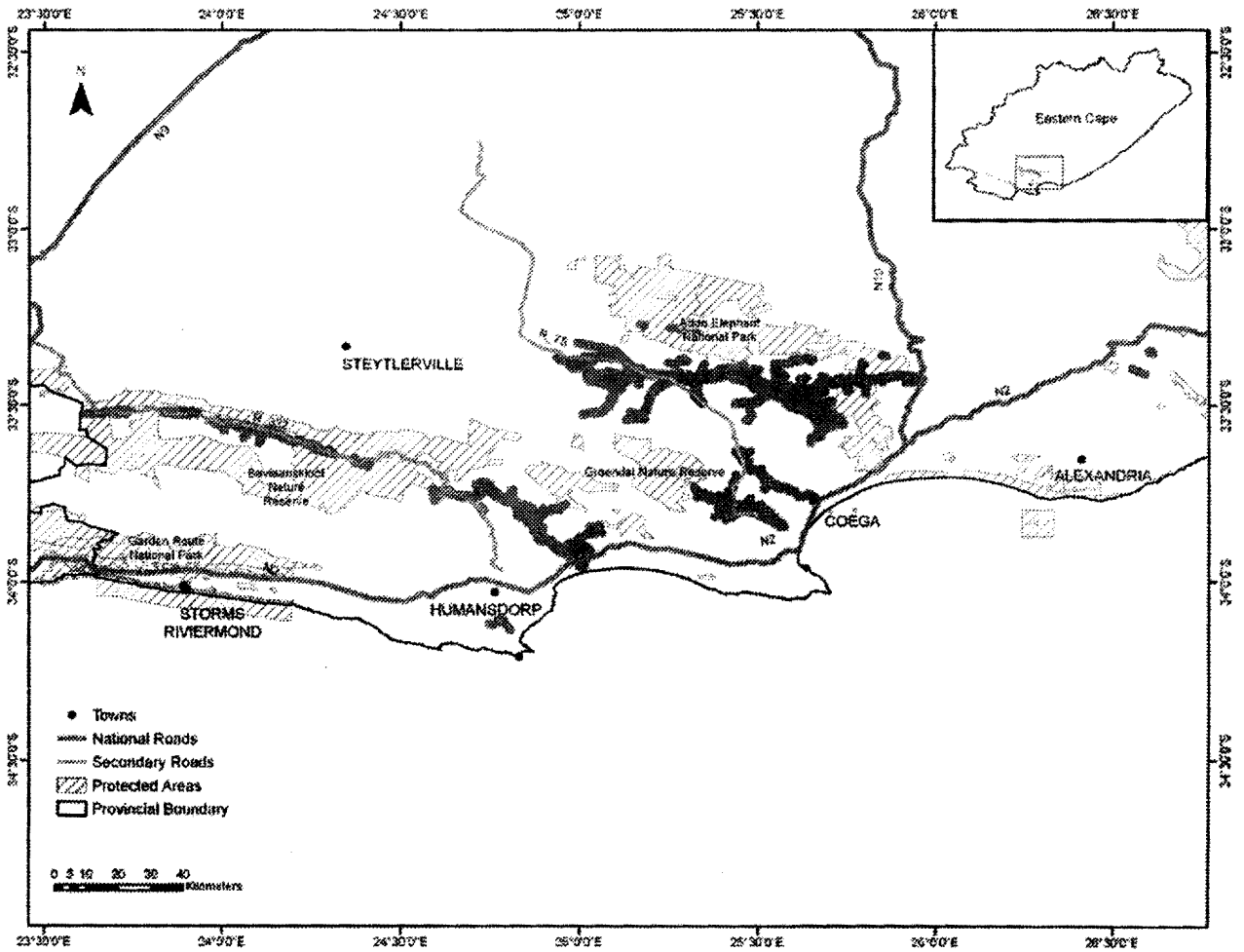
Two major types of vegetation pattern are observed in these zones, namely riverine thicket and thornveld (*Acacia natalitia*). The riverine thicket tends to occur in the narrow floodplain zones in regions close to the coast or further inland, whereas the thornveld occurs on the wide floodplains further inland. At least two endemic plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in the Greater Addo Elephant National Park, Baviaanskloof Wilderness Area, Loerie Dam, Springs, Swartkops Valley and Yellowwoods Nature Reserves and the Double Drift Reserve Complex. A further 2% is found in eight private conservation areas.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 640-641. South African National Biodiversity Institute, Pretoria.



Location of Albany Alluvial Vegetation showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

56. Bazini Forest Complex (KZN 20)

| | |
|--|---|
| Reference number | KZN 20 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipality | UMuziwabantu LM |
| Original area of ecosystem | 1 000 ha |
| Remaining natural area of ecosystem (%) | 39% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 2 threatened or endemic animal species including those listed below |

Geographical location

Weza (3029DA). Ecosystem encompasses the valley within which the forest patches occur. Ecosystem delineated by contours in the east and south and by a ridge line in the west.

Description

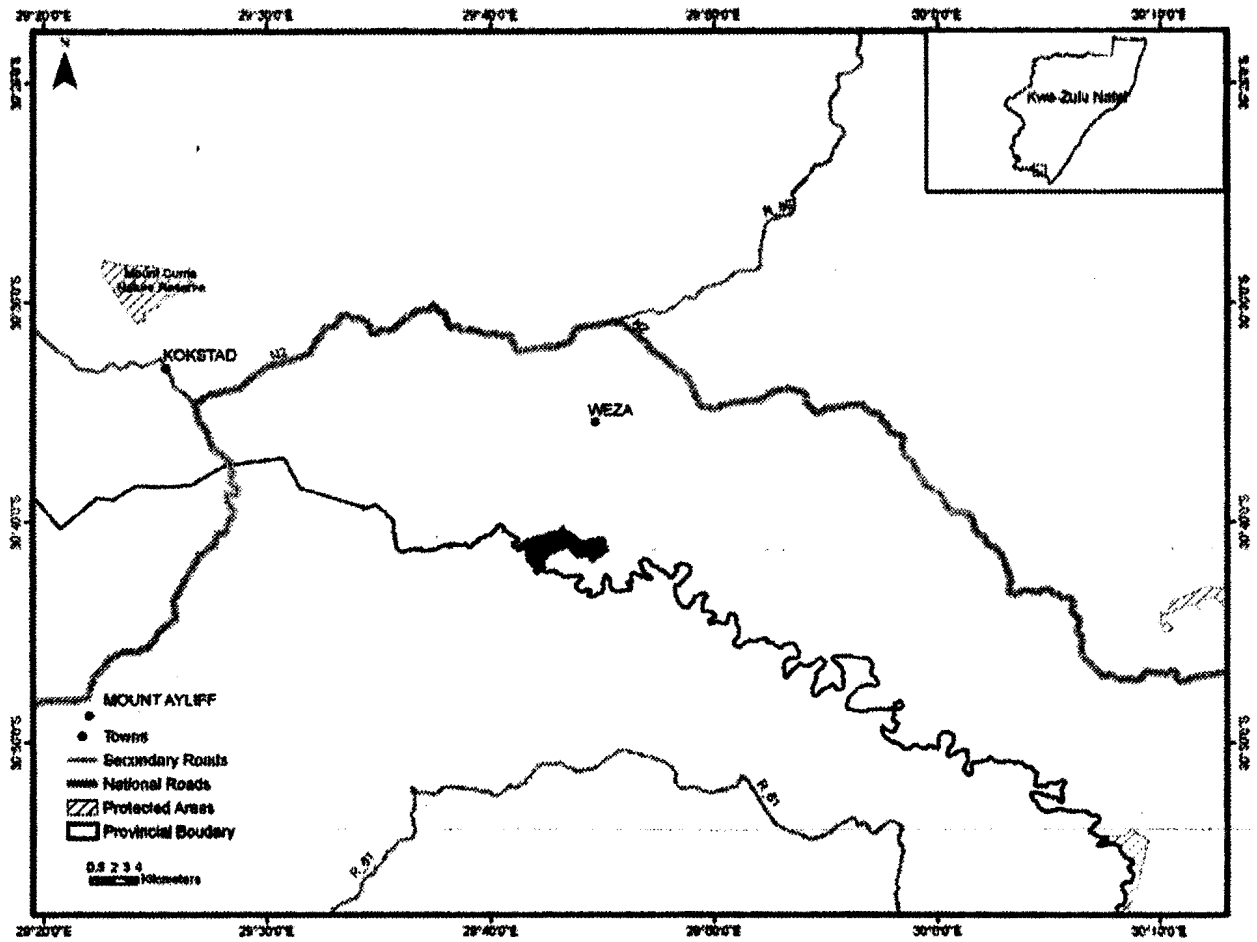
Key biodiversity features include two millipede species including *Allawrencius verrucosus* and *Doratogonus montanus*; and three vegetation types Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Bazini Forest Complex showing original area of ecosystem

57. Bivane Montane Grassland (KZN 21)

| | |
|--|--|
| Reference number | KZN 21 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Utrecht LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 70% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic animal species including those listed below |

Geographical location

Vredehof (2730AD) and Utrecht (2730CB). Ecosystem delineated by the Bivane River in the north and the east; the Diepkloofspruit River in the south; and a contour in the west.

Description

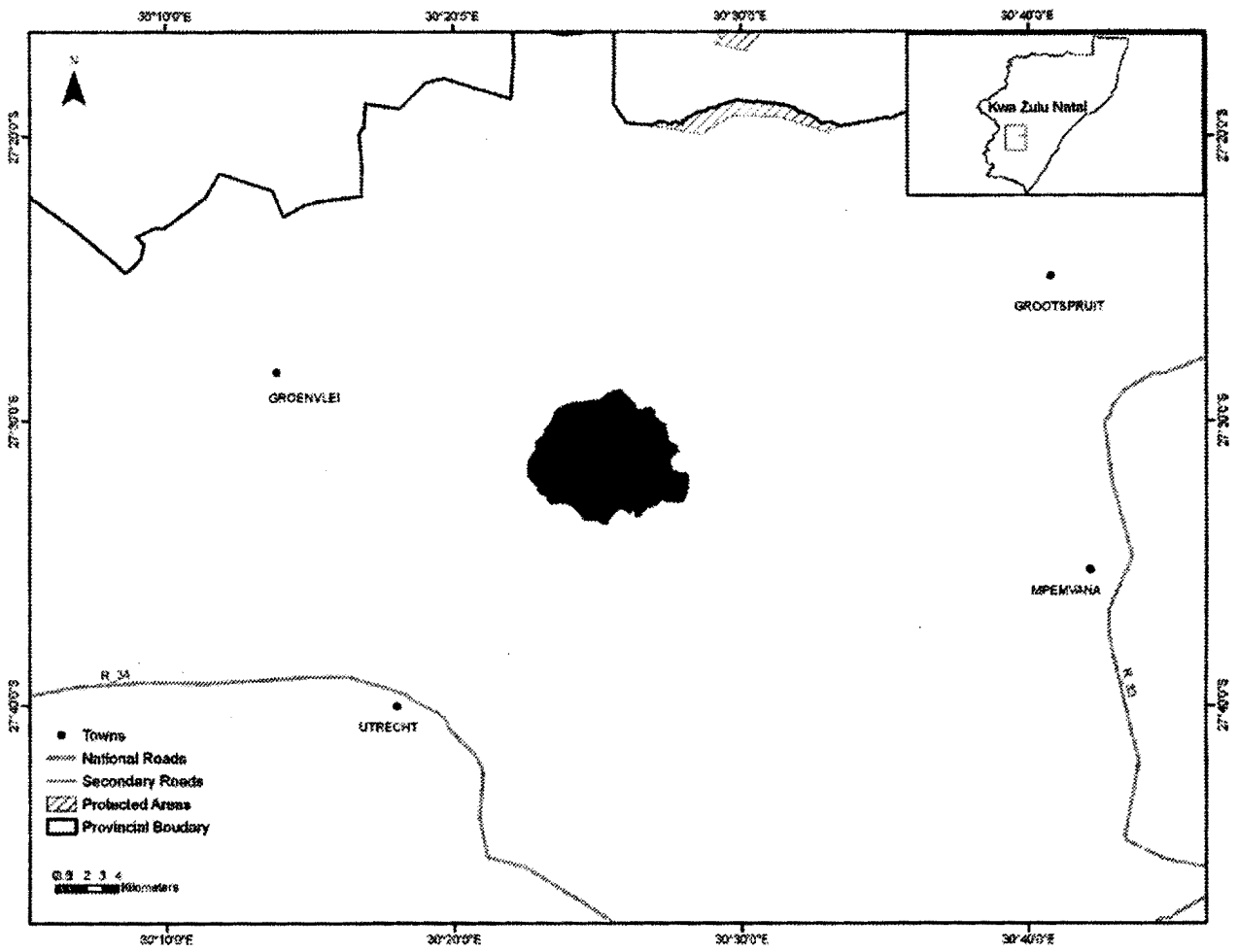
Key biodiversity features include one bird species, the Wattled Crane; two plant species including *Kniphofia albescens* and *Selago longicalyx*; and one vegetation type, Wakkerstroom Montane Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Bivane Montane Grassland showing original area of ecosystem

58. Blouberg Forest (FOR 1)

| | |
|--|---|
| Reference number | FOR 1 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | Limpopo |
| Municipality | Blouberg LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 120 ha |
| Proportion of ecosystem protected | 33% of remaining area |
| Known number of species of special concern | 7 Red Data plant species, 9 Red Data bird species and 2 Red Data mammal species |

Geographical location

On the slopes of the Blouberg Mountain in north-western part of Limpopo (2328BB). The ecosystem includes the following forest patches: 19117, 19119, 19120 and 19121.

Description

Unique high forest form (15-30m tall) of Northern Mistbelt Forest, dominated by *Xymalos monospora* and *Podocarpus falcatus* as emergents. High forest biodiversity of more than 300 plant species including seven Red Data List plant species; more than 200 bird species including nine Red Data List bird species in the forest and its ecotones; and two Red Data List mammal species.

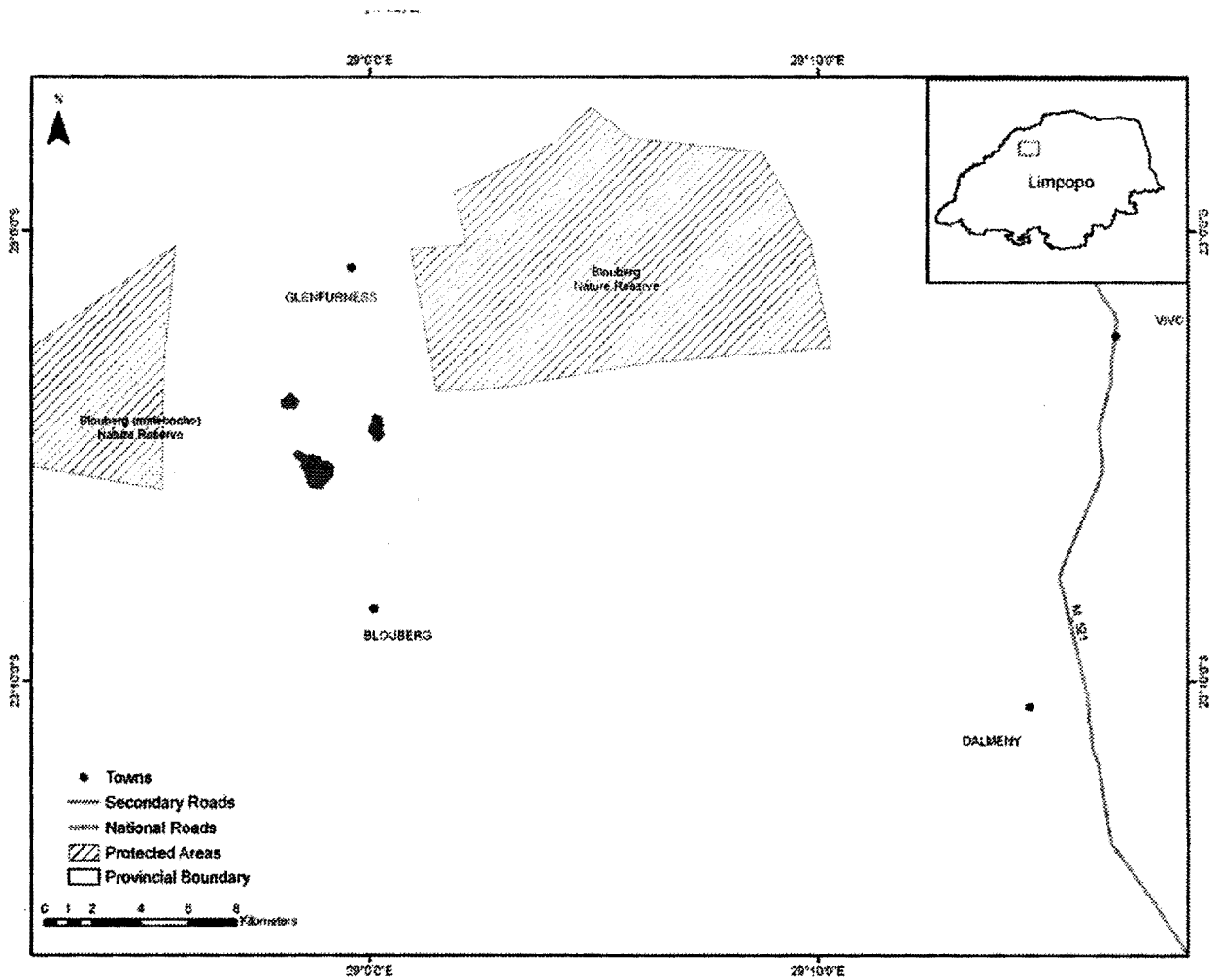
Other information

Approximately a third of the ecosystem is protected.

References

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry. Department of Water Affairs and Forestry. National Forest Inventory.

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.



Location of Blouberg Forest

59. Blyde Quartzite Grasslands (MP 2)

| | |
|--|--|
| Reference number | MP 2 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | Mpumalanga |
| Municipalities | Thaba Chweu LM and Bushbuckridge LM |
| Original area of ecosystem | 33 000 ha |
| Remaining natural area of ecosystem (%) | 63% |
| Proportion of ecosystem protected | 51% of original area |
| Known number of species of special concern | 28 threatened or endemic plant and animal species including those listed below |

Geographical location

Along the Blyde escarpment from Sabie in the south to Mariepskop in the north (2430DB and 2430DD). Ecosystem delineated by landtypes and soil depth GIS coverage to identify and map the Black Reef quartzites on the first (and lower) escarpment up from the Lowveld.

Description

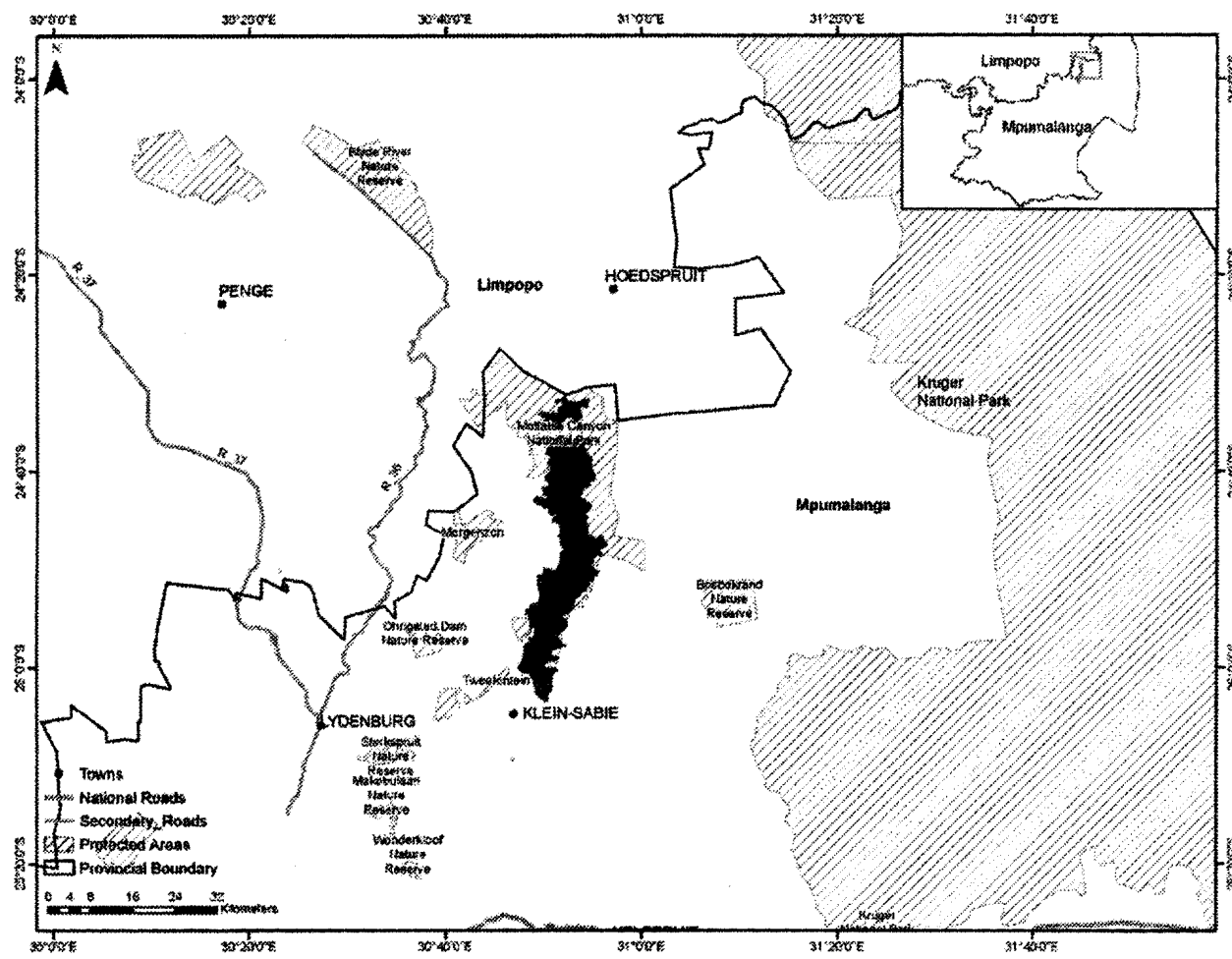
Key biodiversity features include four mammal species including Rough-haired Golden Mole, Meester's Golden Mole, Short-eared Trident Bat and Natal Long-fingered Bat; three reptile species for example *Bradypodion transvaalense* and *Platysaurus wilhelmi*; five bird species including Blue Swallow, Striped Flufftail, Blue Crane, Wattled Crane and Southern Ground Hornbill; sixteen plant species for example *Cineraria hederifolia*, *Crocasmia mathewsiana*, *Erica rivularis*, *Gladiolus saxatilis*, *Schizochilus crenulatus* and *Streptocarpus decipiens*; and five vegetation types including Northern Escarpment Quartzite Sourveld, Northern Escarpment Dolomite Grassland, Northern Escarpment Afromontane Fynbos, Mpumalanga Afromontane Forest and Subtropical Afromontane Forest. The ecosystem includes part of the Wolkberg Centre of Endemism; it is an escarpment corridor; and contains important caves and forest patches.

Other Information

Approximately 51% of the ecosystem is protected in the Blyde River Canyon National Park.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Blyde Quartzite Grasslands showing original area of ecosystem

60. Brakfontein Reef Bushveld (GP 11)

| | |
|--|---|
| Reference number | GP 11 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | Gauteng |
| Municipality | Midvaal LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 100% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

South of Johannesburg including Meyerton (2628CA). Ecosystem delineated by ridge system, koppies and drainage lines.

Description

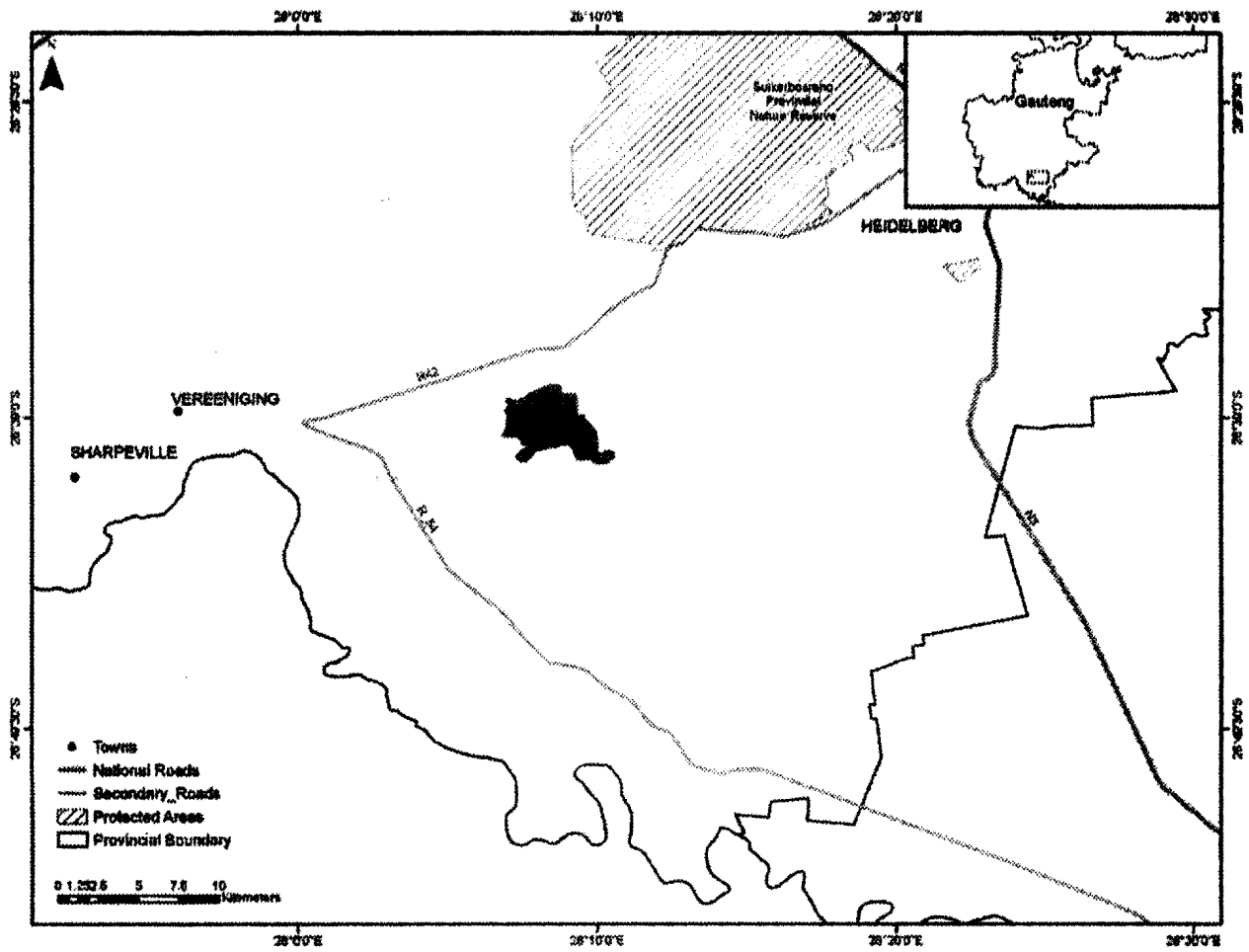
Key biodiversity features include Red or Orange Listed plants for example *Cineraria longipes*; two vegetation types including Gold Reef Mountain Bushveld and Soweto Highveld Grassland; and the Suikerbosrantrivier.

Other information

The ecosystem is not protected.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Brakfontein Reef Bushveld showing original area of ecosystem

61. Breede Alluvium Fynbos (FFa 2)

| | |
|--|---|
| Reference number | FFa 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Witzenberg LM and Breede Valley LM |
| Original area of ecosystem | 51 000 ha |
| Remaining natural area of ecosystem (%) | 43% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 52 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 21 endemic plant species |

Geographical location

Upper Breede River Valley flats from Tulbagh to the Brandvlei Dam near Worcester including the Slanghoek and Brandwag Valleys, and extending to the Hex River Valley.

Description

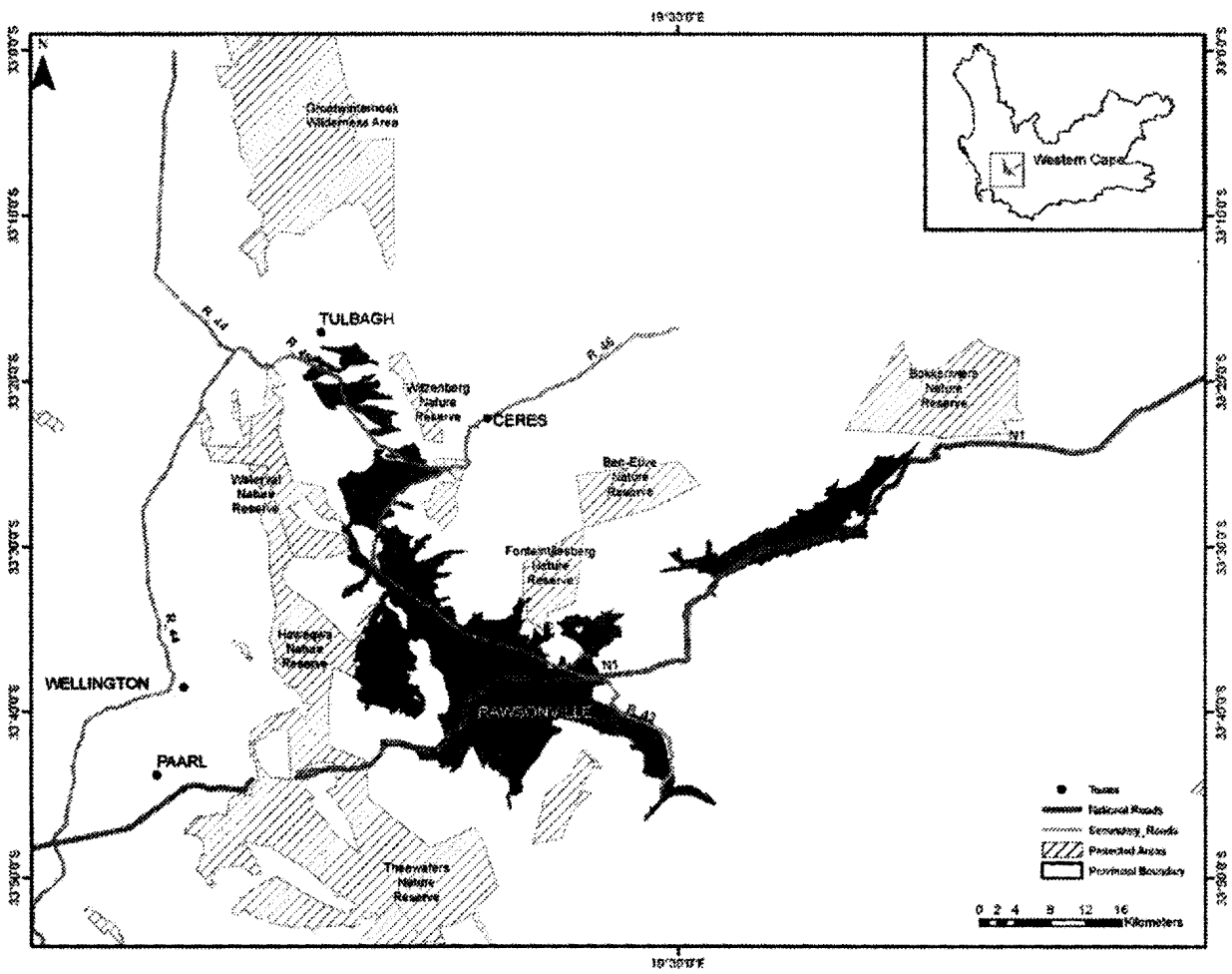
Slightly undulating plains and adjacent high mountains, with numerous alluvial fans and streams. Open emergent tall proteoids in a moderately tall shrub matrix with a graminoid understorey. Asteraceous and proteoid fynbos are dominant, with localised restioid fynbos and ericaceous fynbos. At least 21 endemic plant species and 51 Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in Fonteintjiesberg and Limietberg Nature Reserves, Matroosberg and Hawequas (both mountain catchment areas) as well as in the private Quaggas Berg.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 163-164. South African National Biodiversity Institute, Pretoria.



Location of Breede Alluvium Fynbos showing original area of ecosystem

62. Bronkhorstspuit Highveld Grassland (GP 12)

| | |
|--|--|
| Reference number | GP 12 |
| Listed under Criterion | F |
| Biome | Savanna, Grassland and Wetland |
| Province | Gauteng |
| Municipality | Kungwini LM |
| Original area of ecosystem | 13 000 ha |
| Remaining natural area of ecosystem (%) | 95% |
| Proportion of ecosystem protected | 7% of original area |
| Known number of species of special concern | 10 threatened or endemic plant and animal species including those listed below |

Geographical location

East of Pretoria including Bronkhorstspuit (2528DC). Ecosystem delineated by ridge and associated rivers, wetlands and drainage lines.

Description

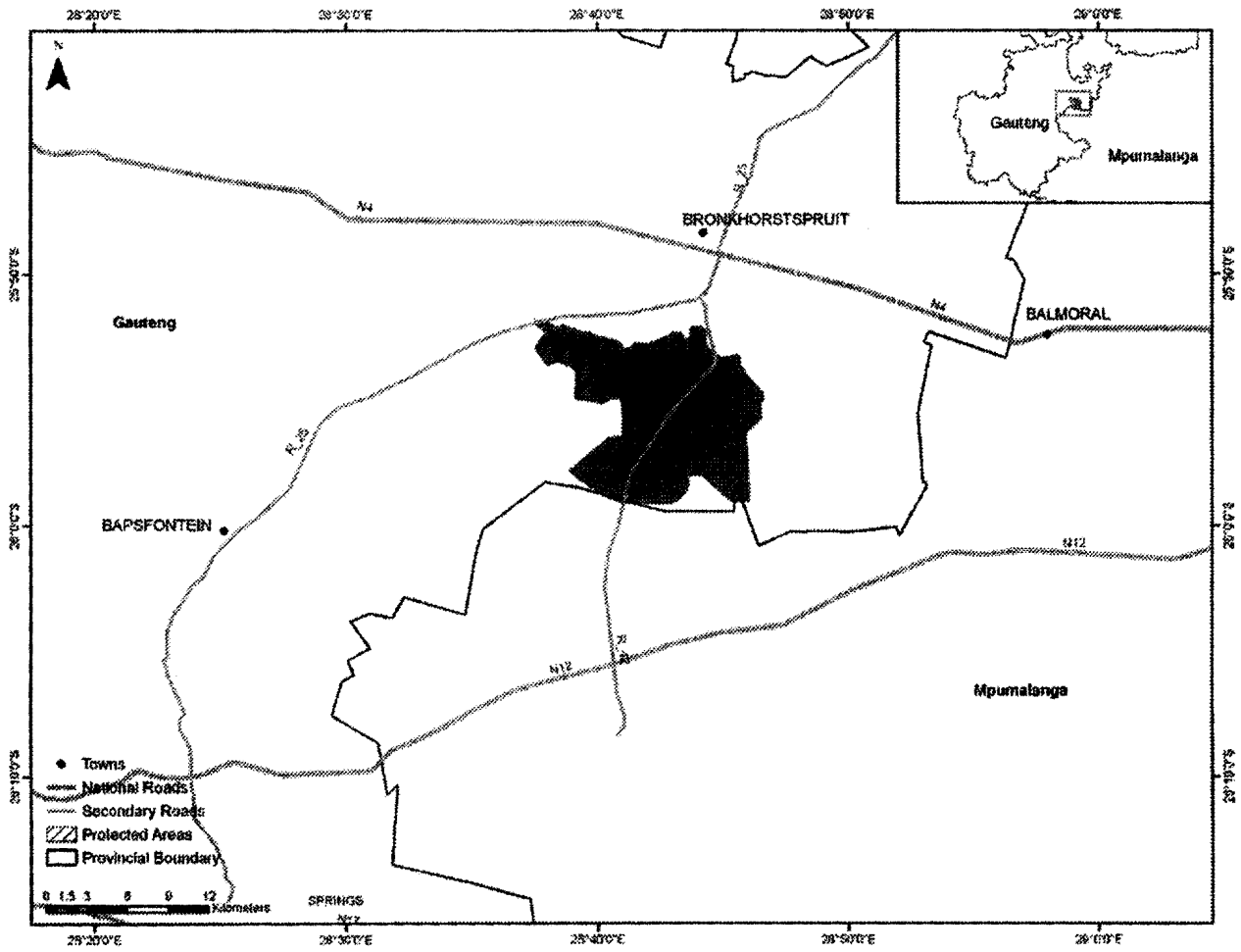
Key biodiversity features include Red or Orange Listed plants for example *Delosperma leendertziae*; Red or Orange Listed birds for example Greater Flamingo, African Grass-Owl and Secretarybird; Red or Orange Listed amphibians for example the Giant Bullfrog; and four vegetation types including Eastern Highveld Grassland, Eastern Temperate Freshwater Wetlands, Gold Reef Mountain Bushveld and Rand Highveld Grassland. The Bronkhorstspuit, Ossspuit, Tweefonteinspruit, Hollander Pan, and various unnamed wetlands and pans are key features of the ecosystem.

Other information

Approximately 7% of the ecosystem is protected in the Bronkhorstspuit Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Bronkhorstspuit Highveld Grassland showing original area of ecosystem

63. Cape Flats Dune Strandveld (FS 6)

| | |
|--|--|
| Reference number | FS 6 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM and Swartland LM |
| Original area of ecosystem | 42 000 ha |
| Remaining natural area of ecosystem (%) | 43% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 66 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 1 endemic plant species |

Geographical location

Ecosystem occurs as four discontinuous regions, the largest patch spans the south coast of False Bay (between Gordon's Bay and Muizenberg) and penetrates deep into the Cape Flats as a broad wedge as far north as Bellville, the other patch spans Silverstroomstrand and Table Bay (Cape Town) and includes the Atlantis dune plume, the third region is a series of small patches covering coastal dune pockets on the Cape Peninsula, while the last patch is situated on Robben Island.

Description

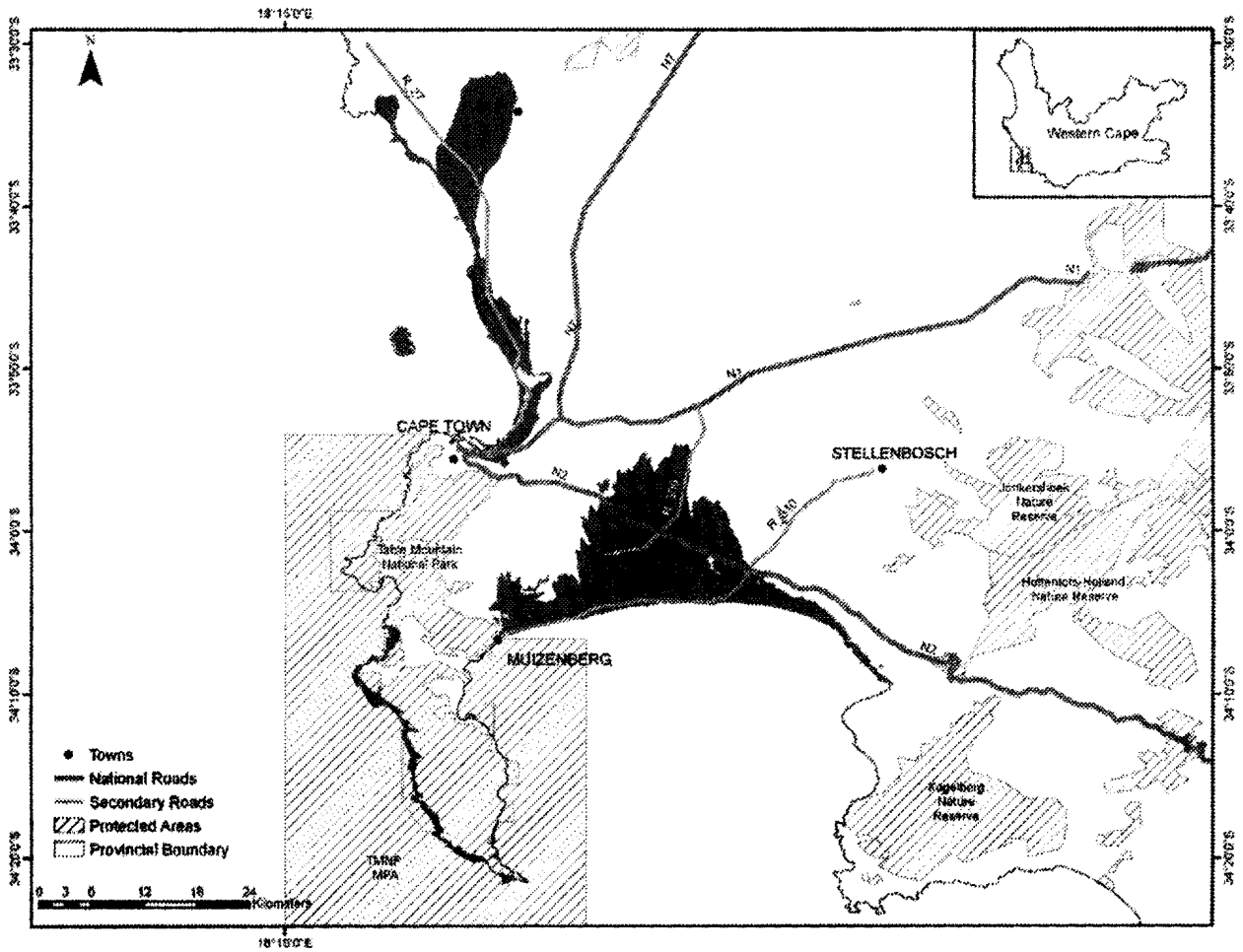
Flat to slightly undulating (dune fields) landscape covered by tall, evergreen, hard-leaved shrubland with abundant grasses and annual herbs in gaps. At least one endemic plant species and 66 Red Data List plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in the Table Mountain National Park, Blouberg, Driftsands, Wolfgat and Raapenberg Nature Reserves as well as in Rondevlei and Zandvlei Bird Sanctuaries. About 4% of the ecosystem is found in private nature reserves for example Blaauw Mountain, Koeberg, Lourens River, Rietvlei and Somchem.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 203. South African National Biodiversity Institute, Pretoria.



Location of Cape Flats Dune Strandveld showing original area of ecosystem

64. Cape Vernal Pools (Azf 2)

| | |
|--|---|
| Reference number | Azf 2 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Western Cape and Northern Cape |
| Municipalities | Hantam LM, Matzikama LM, Bergrivier LM and Saldanha Bay LM |
| Original area of ecosystem | 20 ha |
| Remaining natural area of ecosystem (%) | 32% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 9 endemic plant species |

Geographical location

Cape Peninsula, Cape Flats and West Coast (especially between Hopefield and Piketberg) as far north as the surrounds of Vanrhynsdorp and Nieuwoudtville. This azonal ecosystem is embedded within some shale renosterveld and sand fynbos ecosystems of the Fynbos Biome.

Description

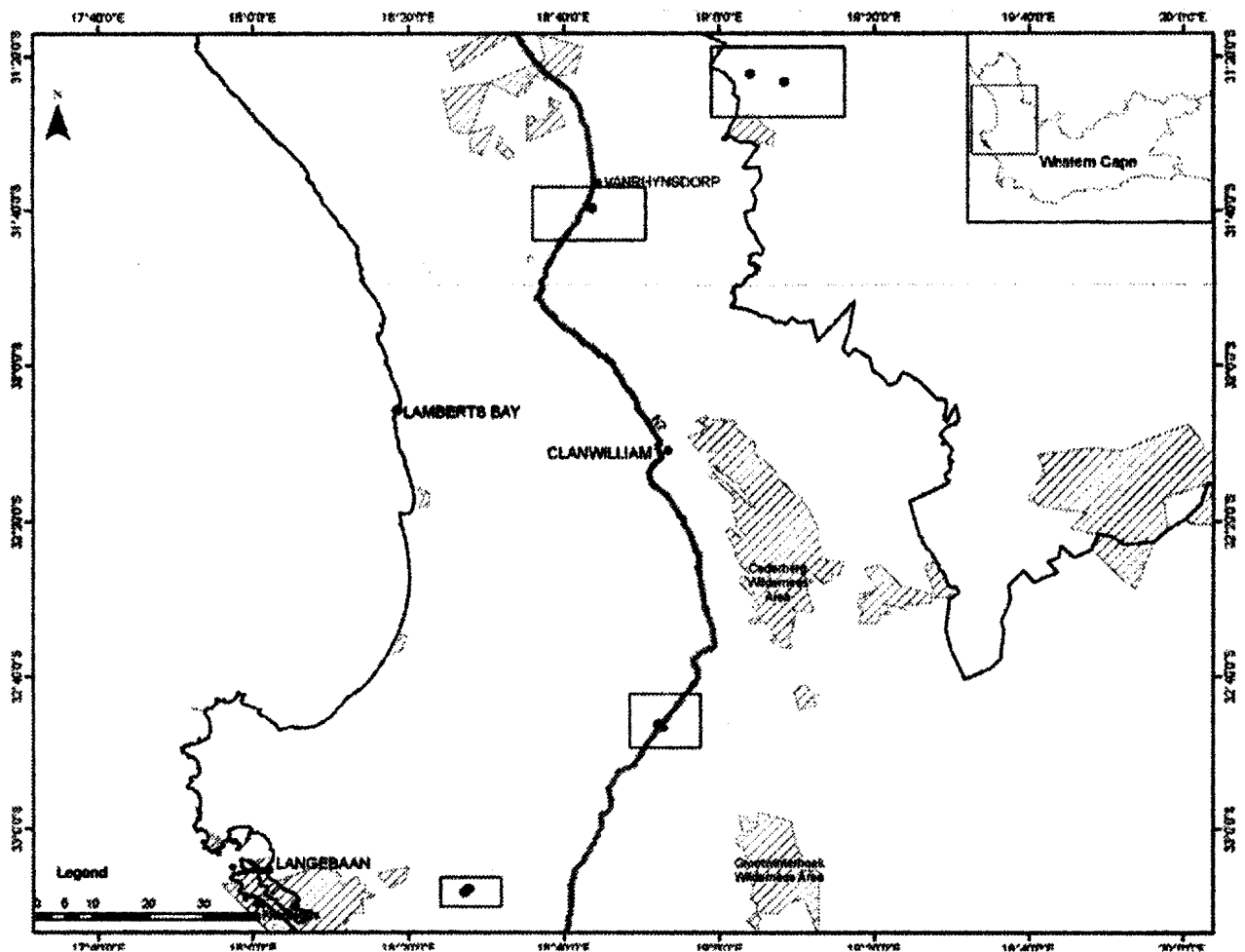
The vegetation is distinctly zoned, with fringing species that occupy waterlogged soils surrounding the pools plus specialised aquatics that are rooted in the mud but often have floating stems or leaves. The zone of fringing species which grow in water up to 2 cm deep, comprises a band up to 2 m wide of various small annuals, typically species of *Crassula* (e.g. *C. vaillantii* and *C. natans*) and of *Cotula* (e.g. *C. coronopifolia*) along with several small geophytes, such as species of *Trachyandra*. The small aquatic *Limosella* with floating leaves is also found in this zone. Later in the season as the margins dry out, larger bulbs such as *Ornithogalum thyrsooides* predominate. The specialised aquatics grow in waters deeper than 2 cm although seldom more than 10 cm and typically include a combination of one or two species with floating stems, such as *Oxalis natans*, *O. disticha* or *Cadiscus aquaticus* plus one or two geophytes, especially *Romulea aquatica*, *R. multisulcata*, *Onixotis stricta* and *Lachenalia bachmannii*. At least nine endemic plant species and six Red Data List plant species occur in the ecosystem.

Other Information

The ecosystem is not protected.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland*. *Strelitzia* 19: 631-632. South African National Biodiversity Institute, Pretoria.



Location of Cape Vernal Pools showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

65. Chrissiesmeer Panveld (MP 3)

| | |
|--|---|
| Reference number | MP 3 |
| Listed under Criterion | F |
| Biome | Grassland and Wetland |
| Province | Mpumalanga |
| Municipalities | Albert Luthuli LM, Msukaligwa LM and Pixley Ka Seme LM |
| Original area of ecosystem | 156 000 ha |
| Remaining natural area of ecosystem (%) | 72% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 12 threatened or endemic plant and animal species including those listed below |

Geographical location

Situated between the towns of Chrissiesmeer, Ermelo and Sheepmoor (2630AA, 2630AB, 2630AC, 2630AD and 2630CA). Ecosystem occurs along the highveld panlands and includes critical areas for protecting birds and grassland plant species. It incorporates the Chrissiesmeer lakes district area and important sub-catchments and is delineated by these important sub-catchments and the presence of lakes.

Description

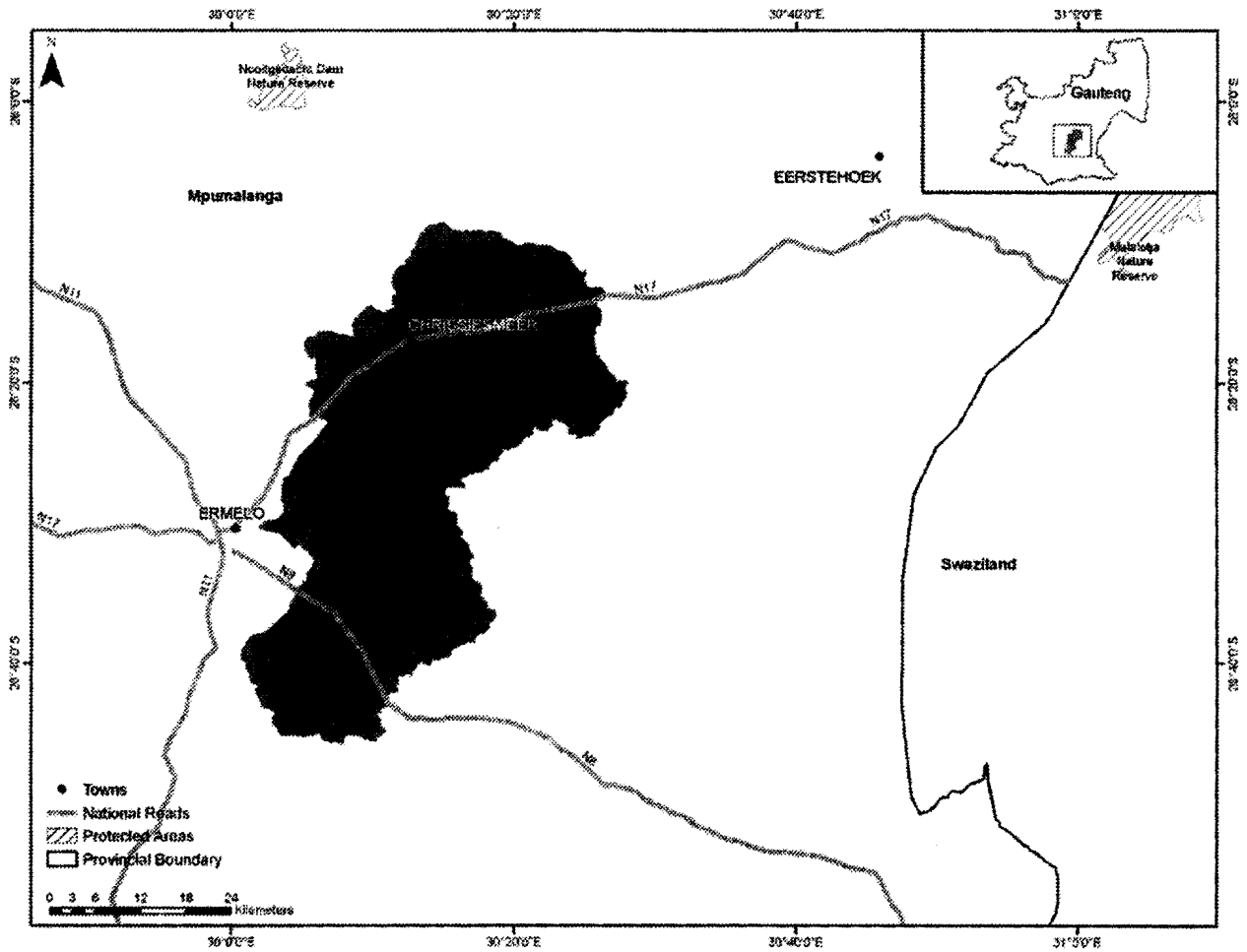
Key biodiversity features include three mammal species including Rough-haired Golden Mole, Cape Molerat and Oribi; seven bird species for example Blue Crane, Wattle Crane, Grey Crowned Crane, Rudd's Lark, Botha's Lark, Blue Korhaan and Yellowbreasted Pipit; two plant species, *Alepidea amatymbica* var. *amatymbica* and *Eucomis Montana*; and three vegetation types including Eastern Highveld Grassland, Eastern Temperate Freshwater Wetlands and Wakkerstroom Montane Grassland. The ecosystem includes important sub-catchments; provides an ecological corridor; and is important for grassland processes.

Other Information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Chrissiesmeer Panveld showing original area of ecosystem

66. Cumberland Crest (KZN 22)

| | |
|--|---|
| Reference number | KZN 22 |
| Listed under Criterion | F |
| Biome | Savanna |
| Province | KwaZulu-Natal |
| Municipality | uMshwathi LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

New Hanover (2930BC). Ecosystem delineated by the Umgeni River in the west; Windy Hill Ridge in the south; and by contours defining the Nhlambamasoka River valley basin in the north and east.

Description

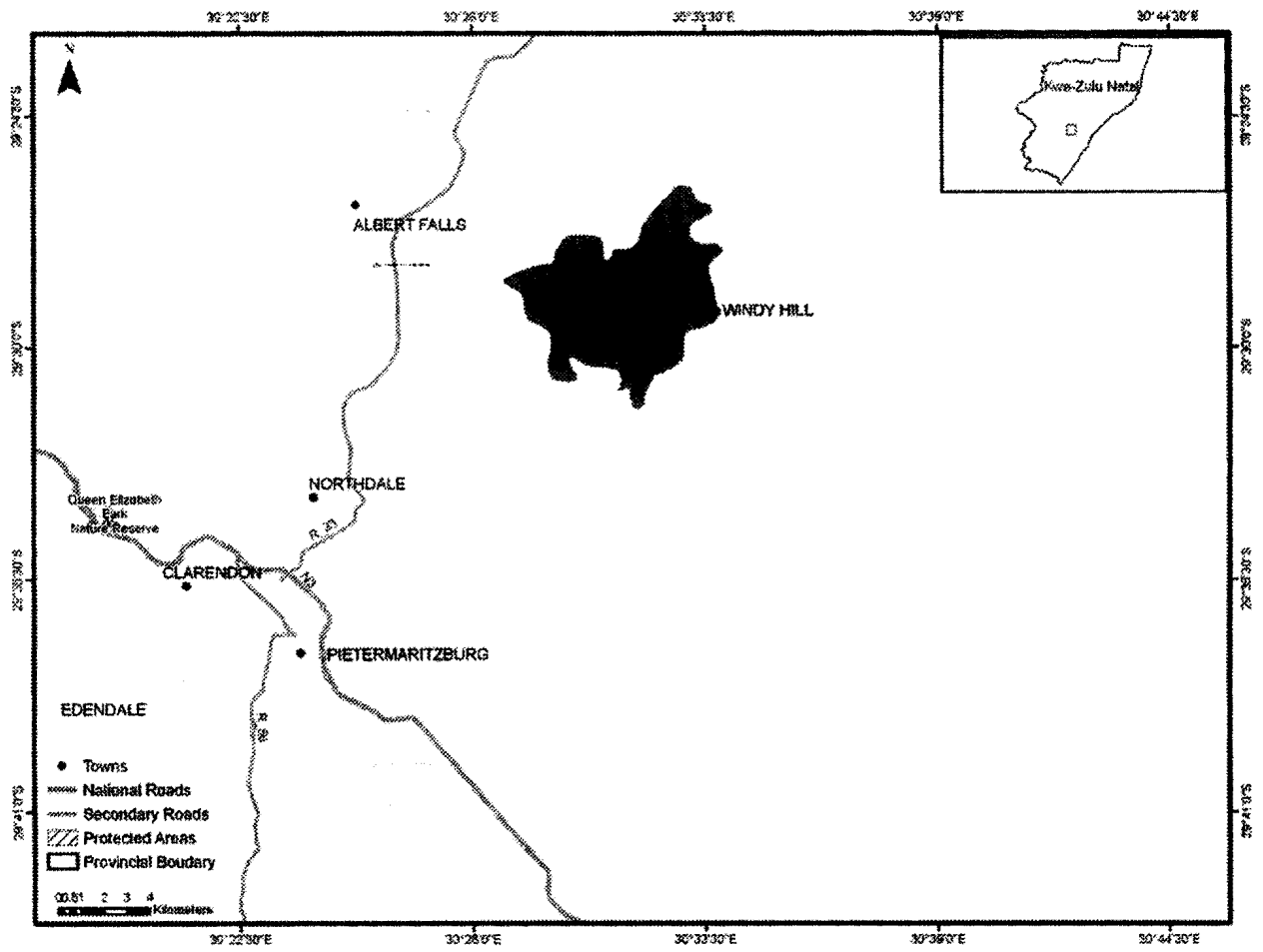
Key biodiversity features include one millipede species, *Doratogonus cristulatus*; three plant species including *Acalypha angustata*, *Helichrysum woodii* and *Senecio exuberans*; and three vegetation types including Ngongoni Veld, KwaZulu-Natal Hinterland Thornveld and KwaZulu-Natal Sandstone Sourveld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Cumberland Crest showing original area of ecosystem

67. Deneysville Highveld Grassland (GP 13)

| | |
|--|---|
| Reference number | GP 13 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipality | Midvaal LM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 88% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Gauteng south including Deneysville (2628CC). Ecosystem delineated by the Vaal Dam and associated terrestrial habitat.

Description

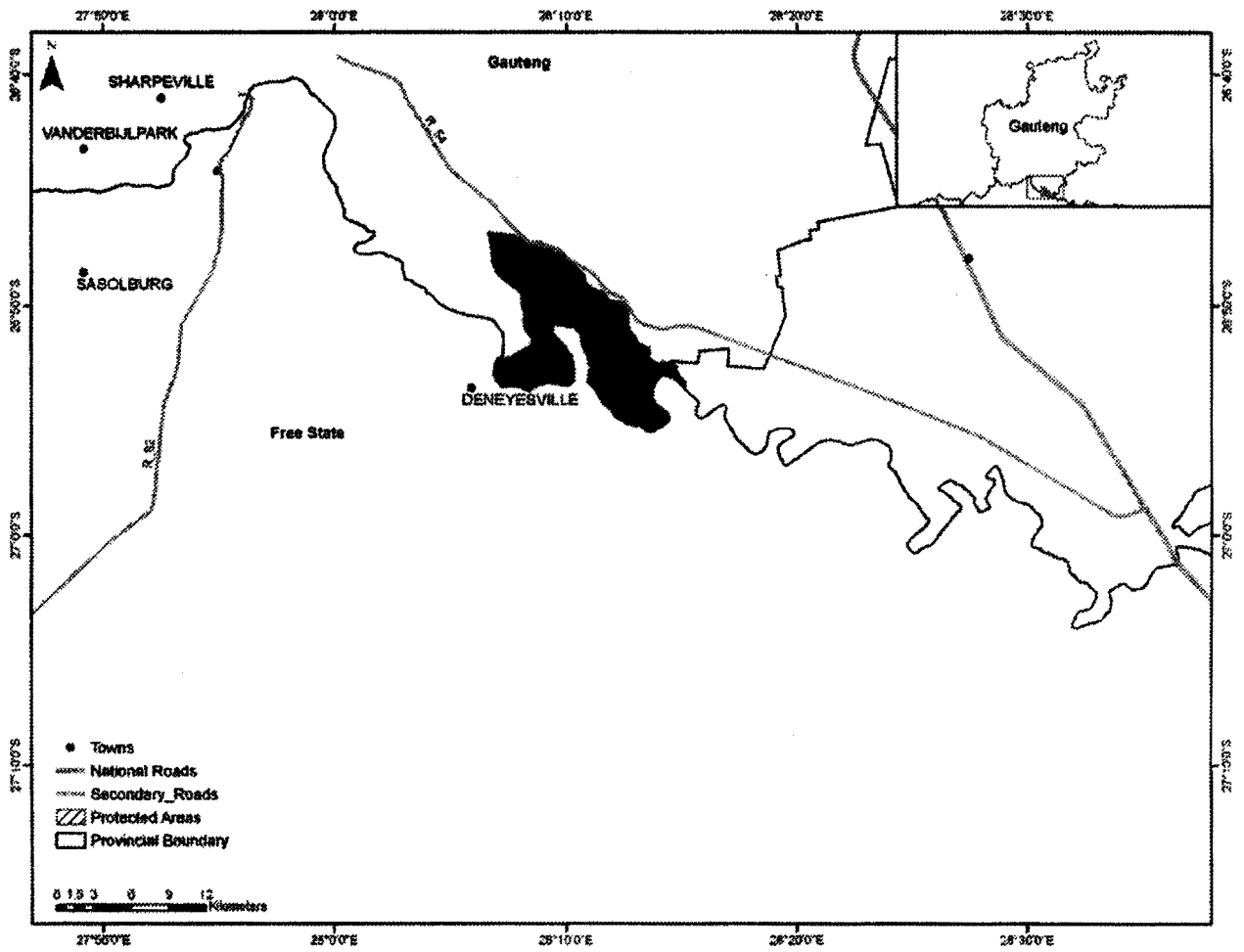
Key biodiversity features include Red or Orange Listed birds for example Lesser Kestrel, African Grass-Owl, Melodious Lark and Caspian Tern; Red or Orange Listed amphibians for example Giant Bullfrog; and four vegetation types including Andesite Mountain Bushveld, Frankfort Highveld Grassland, Soweto Highveld Grassland and Tsakane Clay Grassland. The Vaalrivier is a key feature of the ecosystem.

Other Information

The ecosystem is not protected.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Deneyesville Highveld Grassland showing original area of ecosystem

68. Dukuduku/St Lucia Grasslands and Forests (KZN 23)

| | |
|--|---|
| Reference number | KZN 23 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Mtubatuba LM and KZDMA2 |
| Original area of ecosystem | 12 000 ha |
| Remaining natural area of ecosystem (%) | 52% |
| Proportion of ecosystem protected | 64% of original area |
| Known number of species of special concern | 3 threatened or endemic animal species including those listed below |

Geographical location

St Lucia Estuary (2832AD). Ecosystem consists primarily of coastal forest and its associated grasslands. Ecosystem delineated by the Mfolosi River in the south and incorporates Dukuduku Forest and part of the isiMangaliso Wetland Park. Matubatuba lies on the south western boundary of the ecosystem.

Description

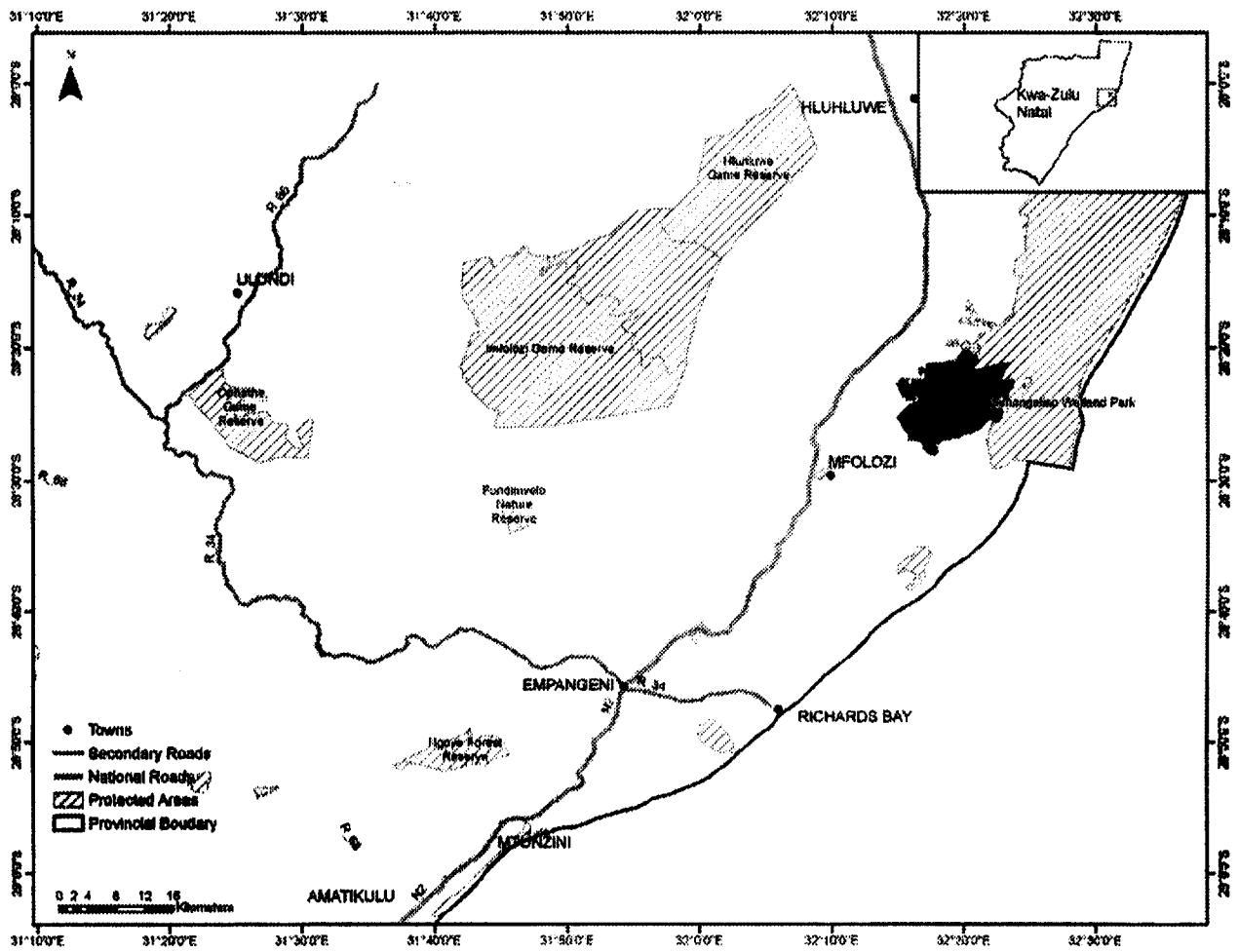
Key biodiversity features include two millipede species including *Centrobolus richardi* and *Centrobolus rugulosus*; one reptile species, *Lycophidion pygmaeum*; and three vegetation types including KwaZulu-Natal Coastal Forest, Maputaland Wooded Grassland and Maputaland Coastal Belt.

Other information

Approximately 64% of the ecosystem is protected in isiMangaliso Wetland Park.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Dukuduku/St Lucia Grasslands and Forest showing original area of ecosystem

69. Dullstroom Plateau Grasslands (MP 4)

| | |
|--|--|
| Reference number | MP 4 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | Mpumalanga |
| Municipalities | Highlands LM and Thaba Chweu LM |
| Original area of ecosystem | 114 000 ha |
| Remaining natural area of ecosystem (%) | 85% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 33 threatened or endemic plant and animal species including those listed below |

Geographical location

Grassland plateau occurring between Die Berg in the north and Belfast in the south (2530AA, 2530AC, 2530AD, and 2530CA). Ecosystem delineated by breeding and feeding habitat for cranes and Rudd's Lark. Ecosystem redefined using geology and landtypes.

Description

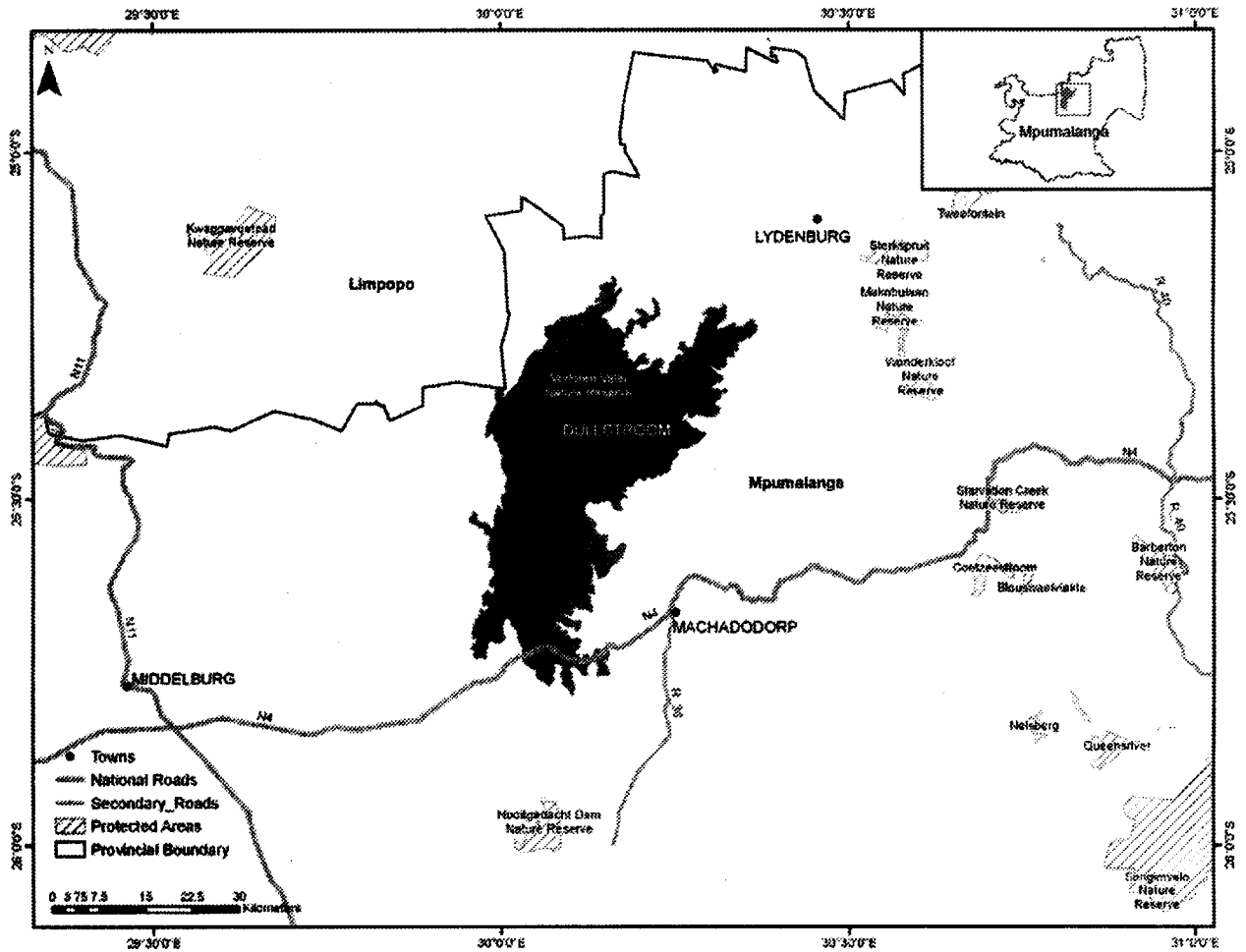
Key biodiversity features include five mammal species for example Robust Golden Mole, Rough-haired Golden Mole, Cape Molerat, Oribi and Welwitch's Hairy Bat; eight bird species including Blue Crane, Wattle Crane, Grey Crowned Crane, Blue Korhaan, Southern Bald Ibis, White-winged Flufftail, Yellowbreasted Pipit and Rudd's Lark; one amphibian, *Bufo gariensis nubicolus*; twenty plant species for example *Eucomis vandermerwei*, *Gladiolus cataractarum*, *Gladiolus malvinus*, *Nerine gracilis*, *Streptocarpus denticulatus* and *Watsonia occulta*; and two vegetation types including the Steenkampsberg Montane Grassland and Dry Afromontane Forest. The ecosystem forms part of the Lydenburg Centre of Plant Endemism; includes important sub-catchments; provides an escarpment corridor; contains important caves, pans and wetlands; and is important for grassland and forest processes.

Other Information

Approximately 5% of the ecosystem is protected in the Verloren Valei Nature Reserve.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Dullstroom Plateau Grasslands showing original area of ecosystem

70. Egoli Granite Grassland (Gm 10)

| | |
|--|---|
| Reference number | Gm 10 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Gauteng |
| Municipalities | Ekurhuleni MM, City of Johannesburg MM, City of Tshwane MM, Mogale City LM and West Rand LM |
| Original area of ecosystem | 109 000 ha |
| Remaining natural area of ecosystem (%) | 38% |
| Proportion of ecosystem protected | 3% of original area |
| Known number of species of special concern | |

Geographical location

Johannesburg Dome extending in the region between northern Johannesburg in the south, and from near Lanseria Airport and Centurion (south of Pretoria) to the north, westwards to about Muldersdrif and eastwards to Tembisa.

Description

Moderately undulating plains and low hills supporting tall, usually *Hyparrhenia hirta*-dominated grassland, with some woody species on rocky outcrops or rock sheets. The rocky habitats show a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small trees.

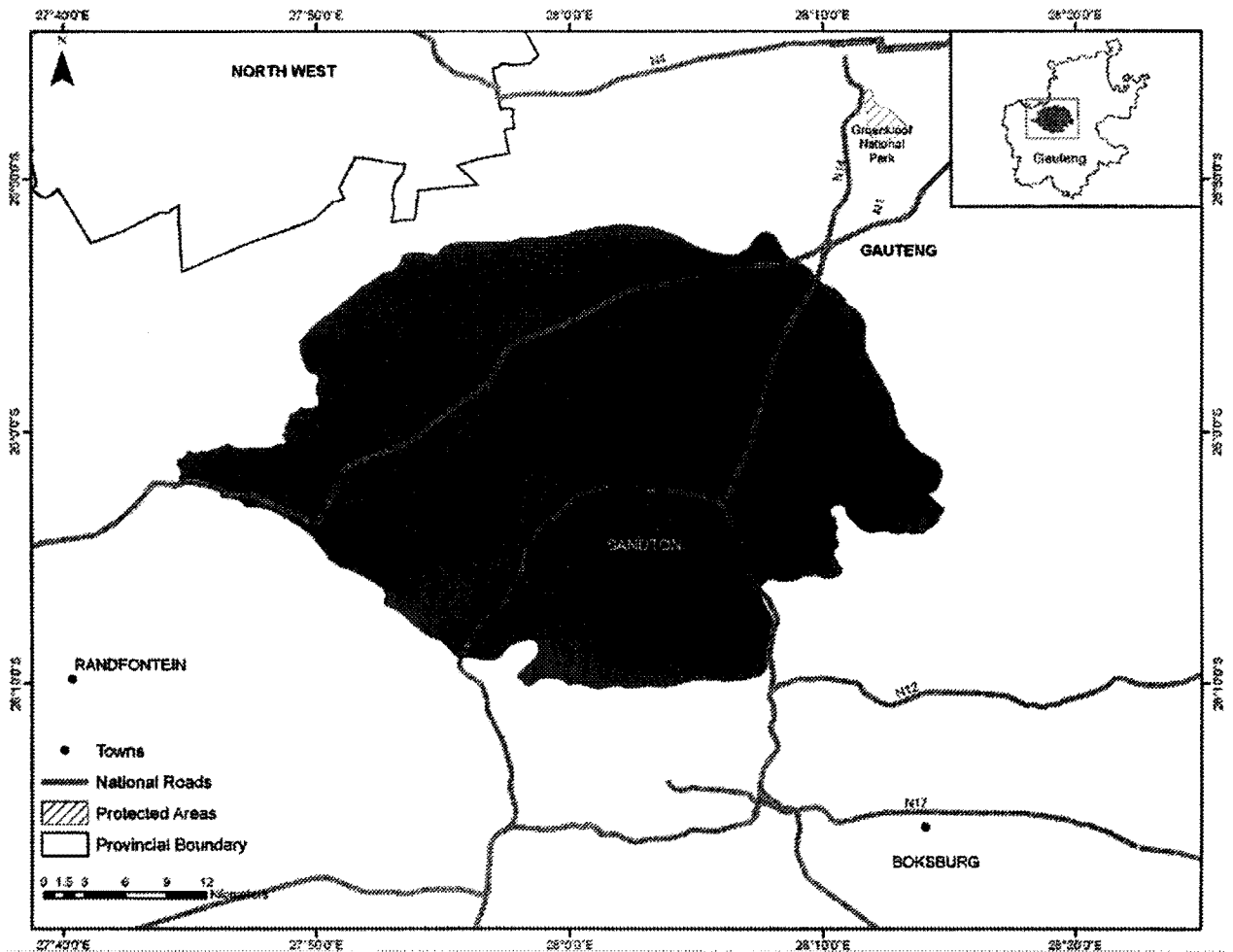
Other information

Approximately 3% of the ecosystem is protected in Diepsloot and Melville Koppies Nature Reserves.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M.,

Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 398-399. South African National Biodiversity Institute, Pretoria.



Location of Egoli Granite Grassland showing original area of ecosystem

71. Fort Metcalf Grasslands (KZN 24)

| | |
|--|---|
| Reference number | KZN 24 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Newcastle LM |
| Original area of ecosystem | 200 ha |
| Remaining natural area of ecosystem (%) | 80% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

Newcastle (2729DD). Ecosystem delineated by the iNcibitwane River in the south and by district roads in the north and north east.

Description

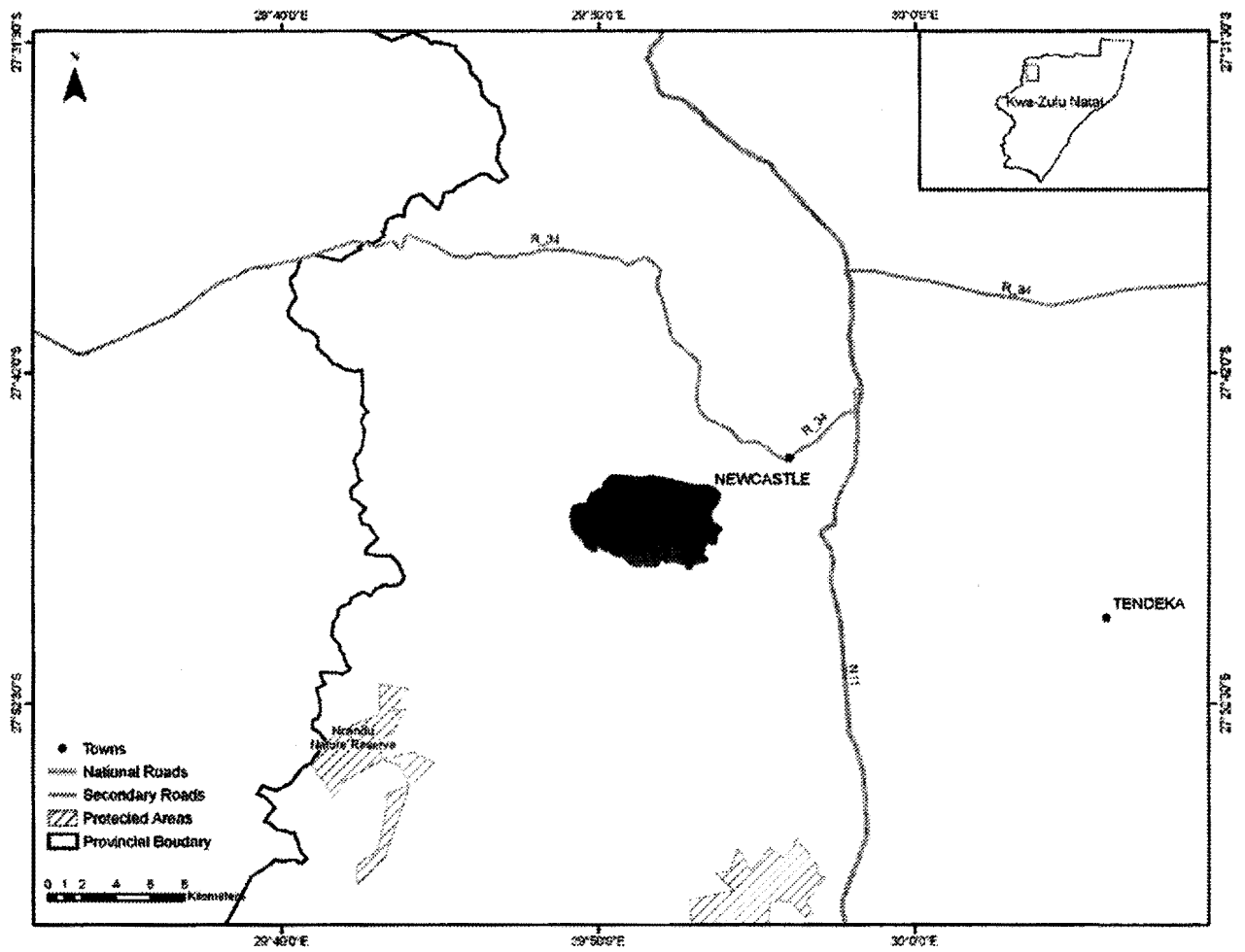
Key biodiversity features include one bird species, White-winged Flufftail; one mammal species, Oribi; two plant species *Kniphofia breviflora* and *Selago longicalyx*; and two vegetation types including Low Escarpment Moist Grassland and Northern KwaZulu-Natal Moist Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Fort Metcalf Grasslands showing original area of ecosystem

72. Garden Route Granite Fynbos (FFg 5)

| | |
|--|---|
| Reference number | FFg 5 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Mossel Bay LM, George LM and Knysna LM |
| Original area of ecosystem | 43 000 ha |
| Remaining natural area of ecosystem (%) | 30% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 4 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Garden Route in three main blocks south of the Outeniqua Mountains on the coastal plain from Botterberg west of Brandwaghoogte (south of Robinson Pass) to Groot Brak River; the largest block from Groot Brak River to Woodfield near the Wilderness (with a few strips along the coast from Bothastrand to the Wilderness); lastly, north of the lakes from Woodville to Hoogekraal Pass, west of Karatara.

Description

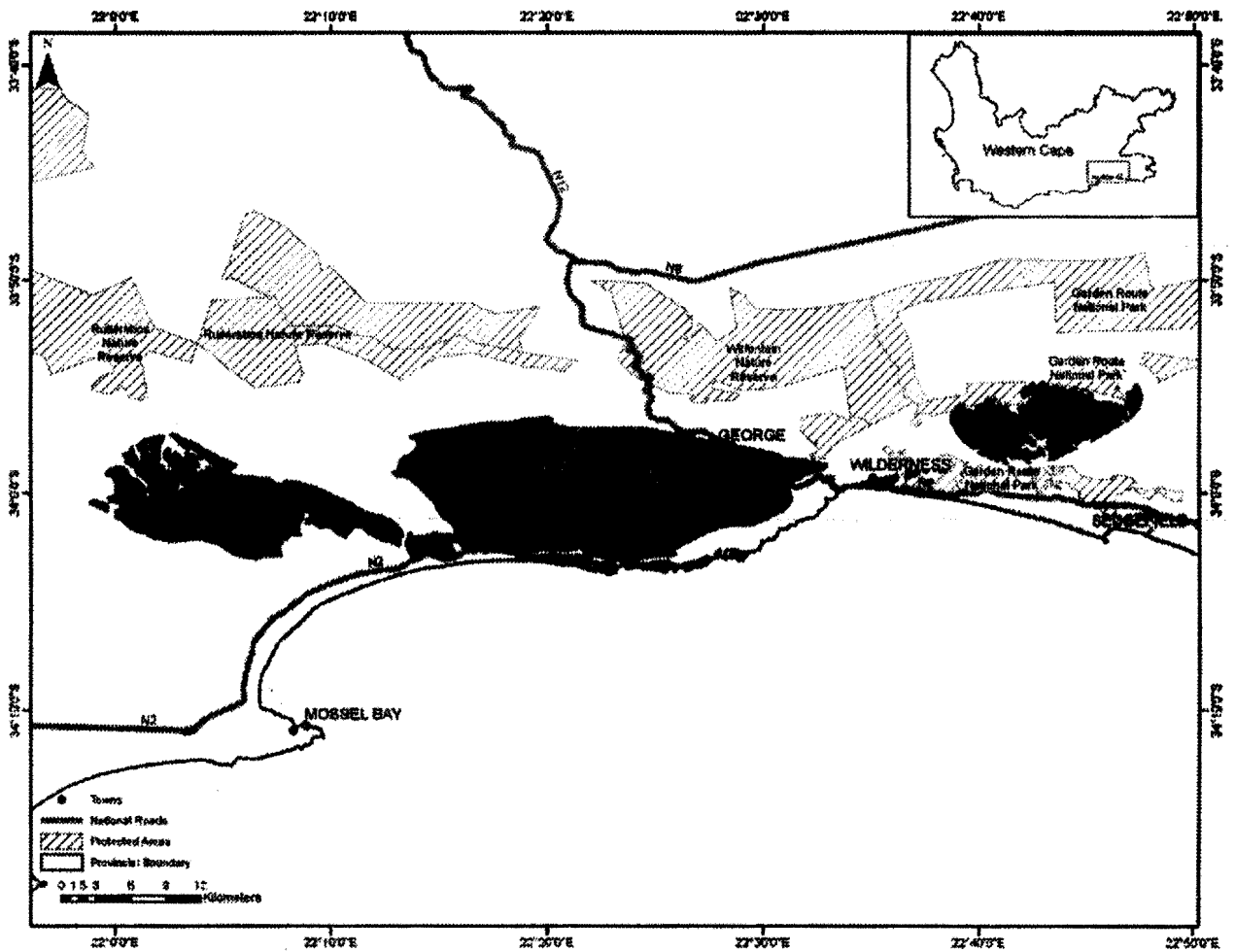
Moderately undulating plains and undulating hills on the coastal forelands. Dense proteoid and ericoid shrubby grassland. Proteoid and graminoid fynbos are dominant with ericaceous fynbos in seeps. In the west, most remnants of this ecosystem are dominated by proteas. Eastwards graminoid and ericaceous fynbos are dominant on the flat plateaus, with proteas confined to the steep slopes. At least four Red Data List plant species occur in the ecosystem.

Other information

Approximately 1% is protected in the Garden Route National Park.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 170. South African National Biodiversity Institute, Pretoria.



Location of Garden Route Granite Fynbos showing original area of ecosystem

73. Gqunu Forest (KZN 25)

| | |
|--|---|
| Reference number | KZN 25 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ingwe LM and Ubuhlebezwe LM |
| Original area of ecosystem | 600 ha |
| Remaining natural area of ecosystem (%) | 78% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 8 threatened or endemic animal species including those listed below |

Geographical location

Byrne (2930CC) and Ixopo (3030AA). Ecosystem delineated by the forest boundaries.

Description

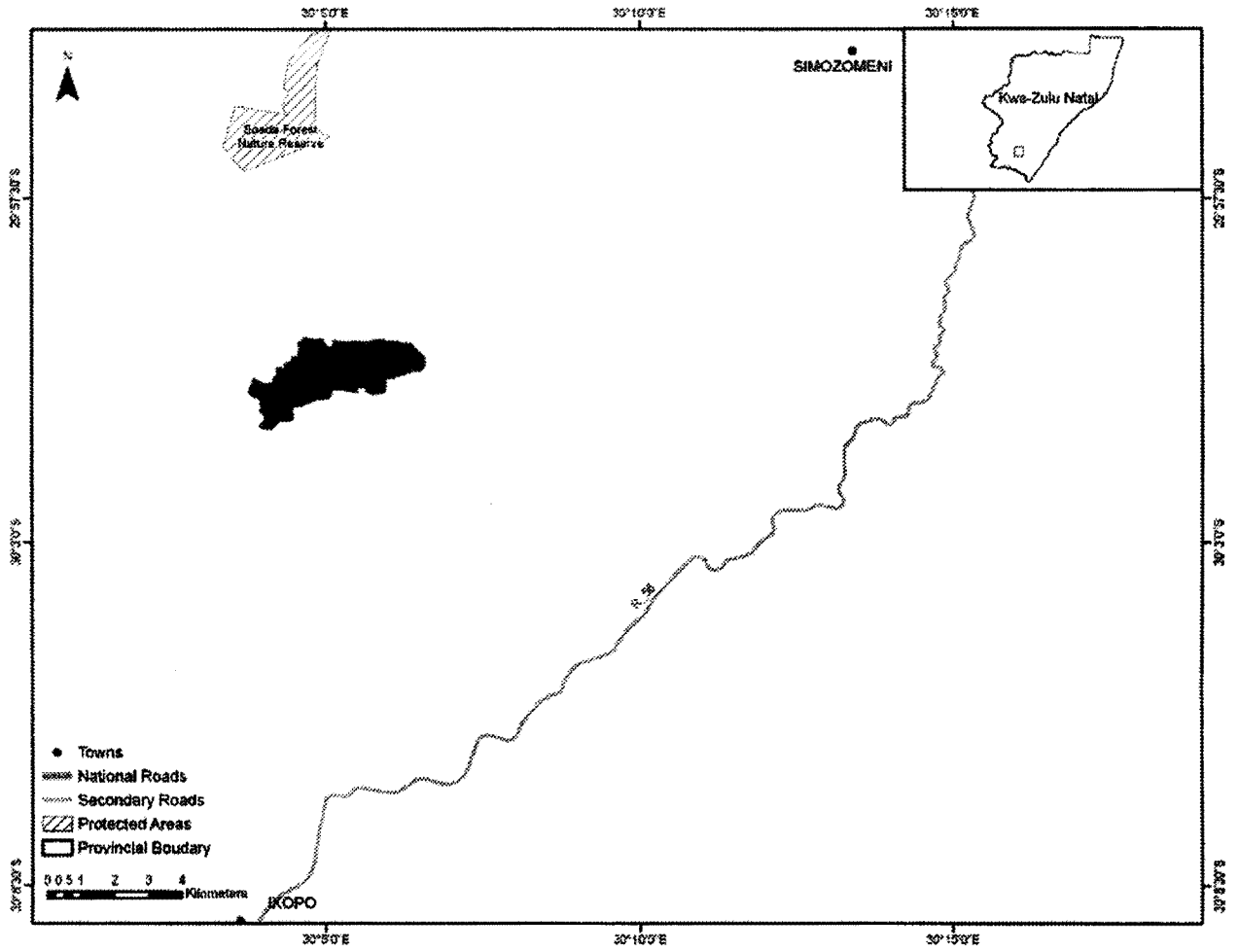
Key biodiversity include seven millipede species including *Centrobolus decoratus*, *Centrobolus lawrencei*, *Doratogonus avius*, *Doratogonus hoffmani*, *Doratogonus montanus*, *Doratogonus natalensis* and *Centrobolus rubricollis*; one amphibian species, *Arthroleptella ngongoniensis*; and two vegetation types including the Midlands Mistbelt Grassland and Eastern Mistbelt Forest.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Gqunu Forest showing original area of ecosystem

74. Greyton Shale Fynbos (Ffh 7)

| | |
|--|--|
| Reference number | FFh 7 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Theewaterskloof LM and Swellendam LM |
| Original area of ecosystem | 27 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 25 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 6 endemic plant species |

Geographical location

South of Riviersonderend and Caledon Swartberg Mountains on higher-altitude shales from Theewaterskloof Dam to Stormsvlei, including the Bergfontein and Spitskop hills north of Caledon.

Description

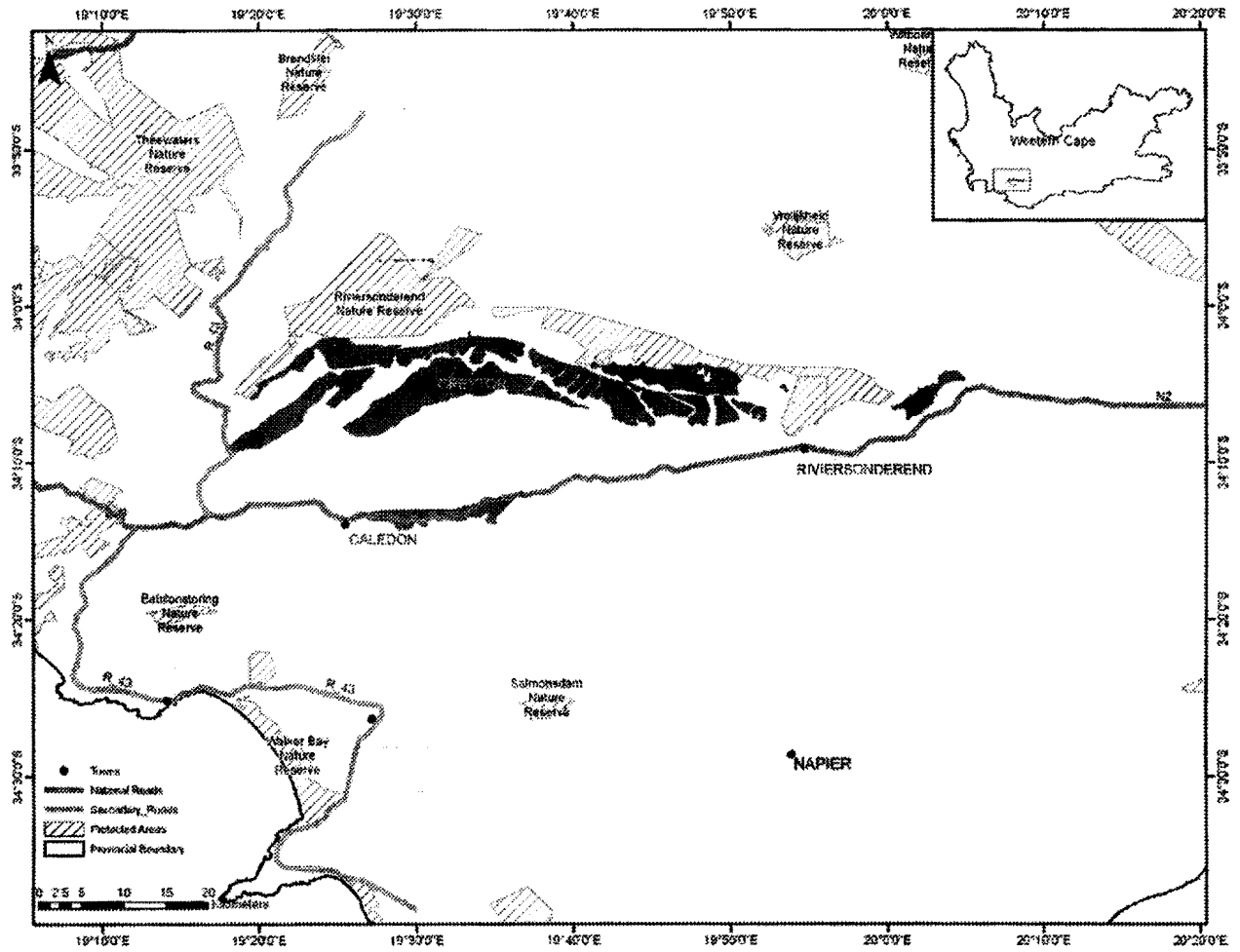
Moderately undulating plains and steep slopes of adjacent mountains. The vegetation is a moderately tall and dense shrubland, predominantly proteoid and asteraceous fynbos, with some graminoid fynbos. At least six endemic plant species and 25 Red Data List plant species occur in the ecosystem.

Other information

Approximately 1% of the ecosystem is protected in the Riviersonderend Nature Reserve with an additional 6% found in a private conservation area of the same name.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 150-151. South African National Biodiversity Institute, Pretoria.



Location of Greyton Shale Fynbos showing original area of ecosystem

75. Greytown North Grasslands (KZN 26)

| | |
|--|---|
| Reference number | KZN 26 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Umvoti LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 16% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Greytown (2930BA). Ecosystem confined to the plateau above Greytown, extending down the slope southwards towards Greytown. Ecosystem delineated by contours.

Description

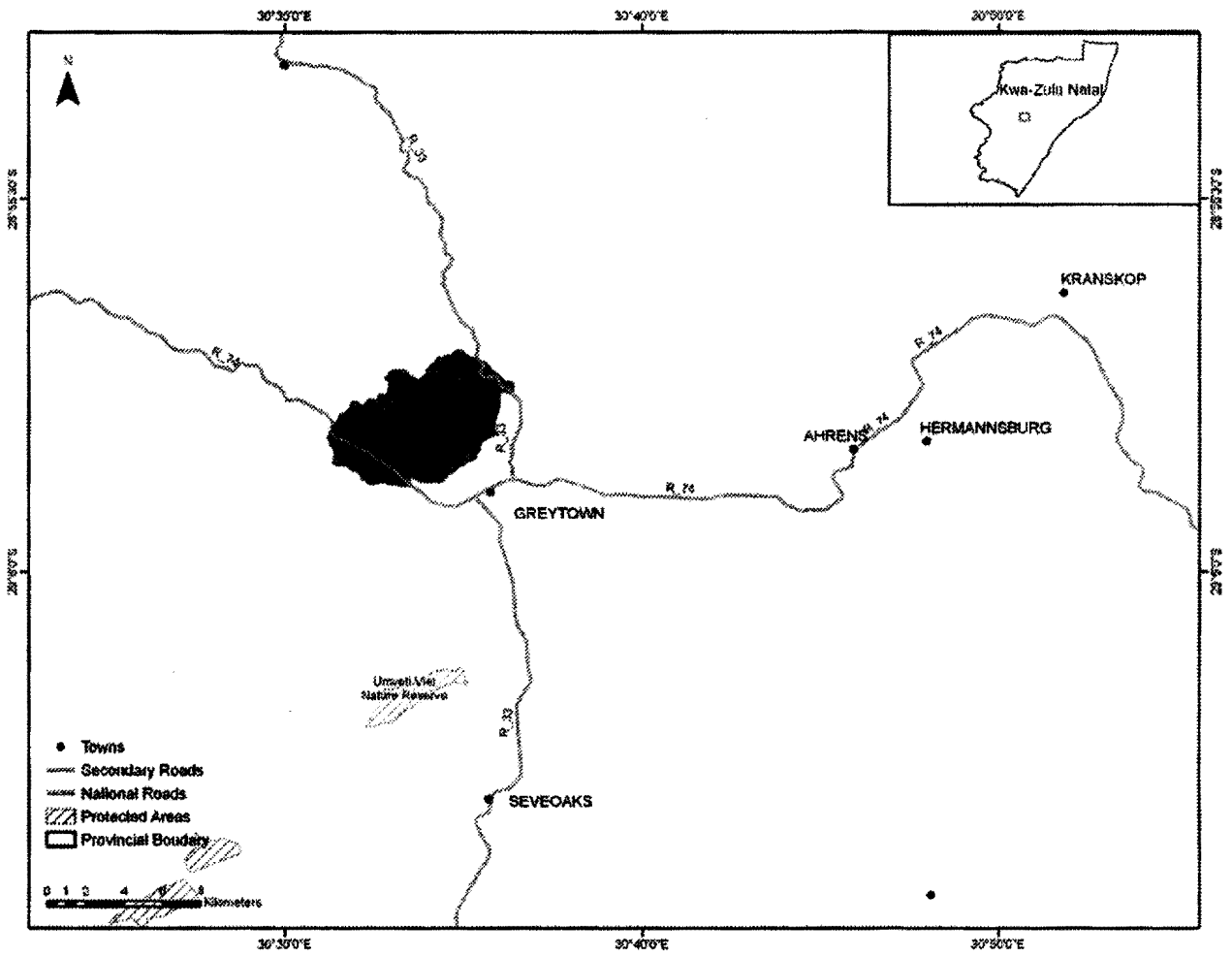
Key biodiversity features include one millipede species, *Doratogonus montanus*; three plant species including *Gerbera aurantiaca*, *Senecio exuberans* and *Watsonia canaliculata*; one reptile species, *Bradypodion tilburyi*; and one vegetation type, Midlands Mistbelt Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Greytown North Grasslands showing original area of ecosystem

76. Groot Brak Dune Strandveld (FS 9)

| | |
|--|---|
| Reference number | FS 9 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Hessequa LM, Mossel Bay LM and George LM |
| Original area of ecosystem | 20 000 ha |
| Remaining natural area of ecosystem (%) | 52% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Coastal stretches between the mouth of the Gouritz River as far east as Victoria Bay near Wilderness, with by far the largest area covering the flats north of Mossel Bay (along the lower reaches of the Groot Brak, Klein Brak and Hartenbos Rivers) and extending up to 17 km from the coast.

Description

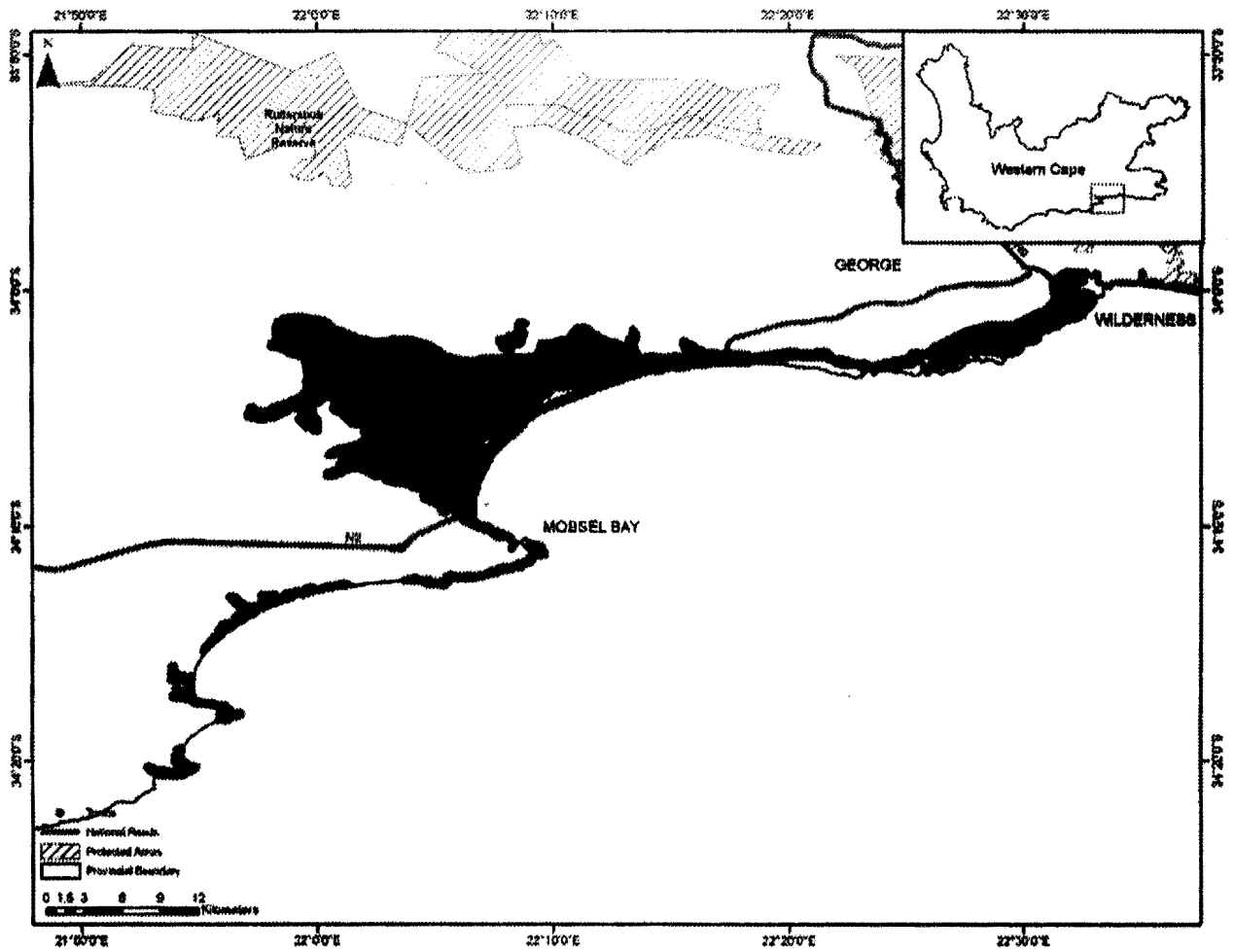
Flat, undulating landscapes (stabilised dunes) and steep coastal slopes, covered by dense and tall (up to 3 m), spiny, sclerophyllous scrub with gaps supporting shrublands with ericoids or succulent-leaved shrubs. The graminoid layer is sparse and short. At least six Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected, however about 1% is found in private reserves for example George, Kanon, Blydskap and Kwelanga.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 206-207. South African National Biodiversity Institute, Pretoria.



Location of Groot Brak Dune Strandveld showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

77. Hangklip Sand Fynbos (FFd 6)

| | |
|--|--|
| Reference number | FFd 6 |
| Listed under criteria | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM and Overstrand LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | 20% of original area |
| Known number of species of special concern | 32 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 5 endemic plant species |

Geographical location

Cape Peninsula on old dune fields at Hout Bay, in the Fish Hoek gap (between Fish Hoek and Noordhoek) and on Smith's Farm (Cape Point Nature Reserve). Further on it occurs on the coastal flats from Rooiels and Cape Hangklip to Hermanus and it is well developed at the Bot River estuary.

Description

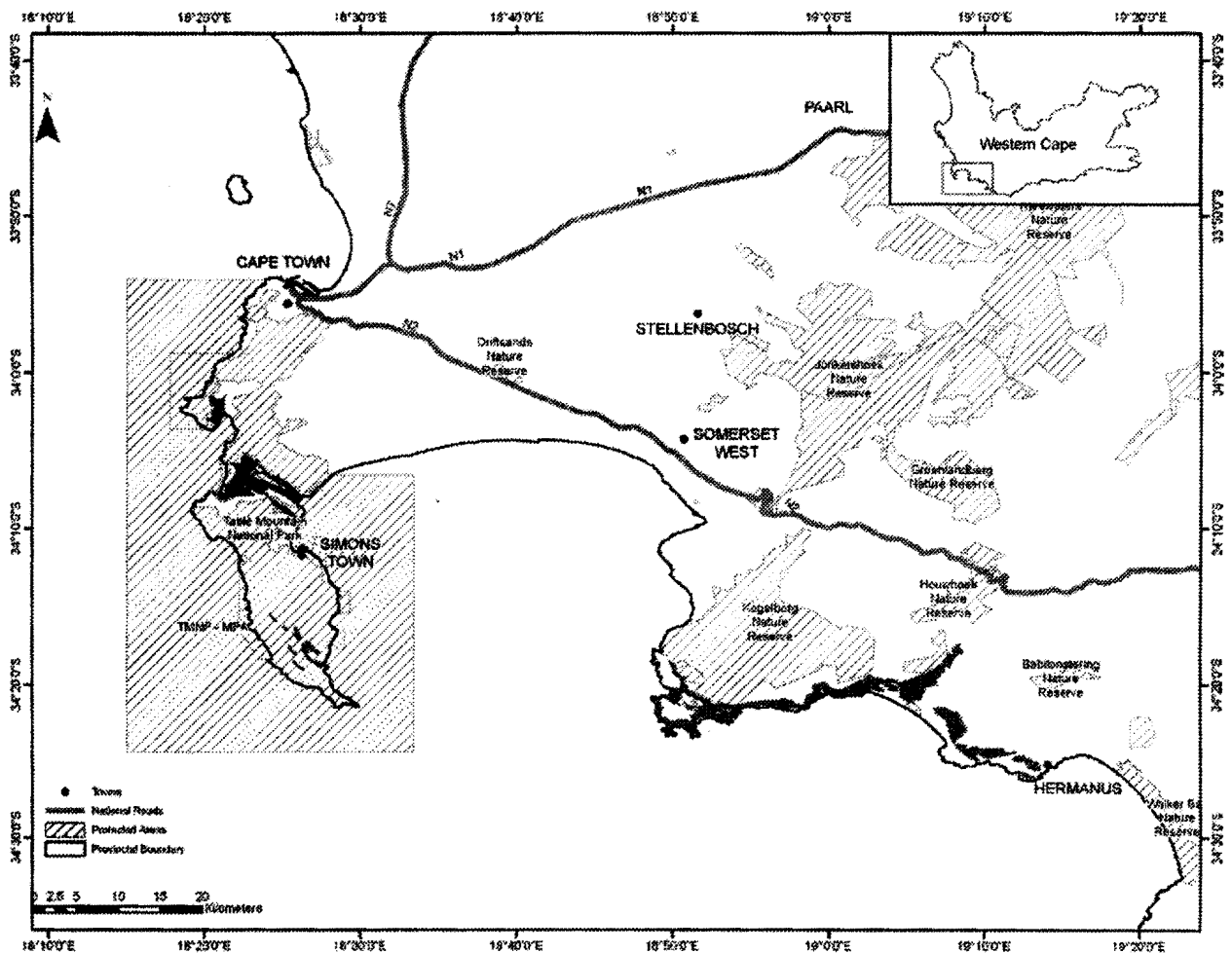
Sand dunes and sandy bottomlands supporting moderately tall, dense ericoid shrubland. Emergent, tall shrubs in places. Proteoid, ericaceous and restioid fynbos are dominant, with some asteraceous fynbos also present. On the coastal fringe this ecosystem borders on strandveld. The deep soils of the coastal plains are replaced by shallow soils on mountain slopes on the northern edge. Hangklip Sand Fynbos occurs mainly on old dunes, but the high rainfall and leaching allows many typical sandstone fynbos species to occur on older deposits as well, so that this ecosystem is not as floristically distinct as other sandstone fynbos ecosystems. At least five endemic plant species and 32 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 20% of the ecosystem is protected in the Table Mountain National Park and Kogelberg Biosphere Reserve, with an additional 3% found in private conservation areas such as Sea Farm and Hoek-van-die-Berg.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 141. South African National Biodiversity Institute, Pretoria.



Location of Hangklip Sand Fynbos showing original area of ecosystem

78. Hlabeni State Forest (KZN 27)

| | |
|--|---|
| Reference number | KZN 27 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | Ingwe LM |
| Original area of ecosystem | 500 ha |
| Remaining natural area of ecosystem (%) | 88% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 7 threatened or endemic animal species including those listed below |

Geographical location

Pevensey (2929DC). Ecosystem delineated by the forest and thicket boundary.

Description

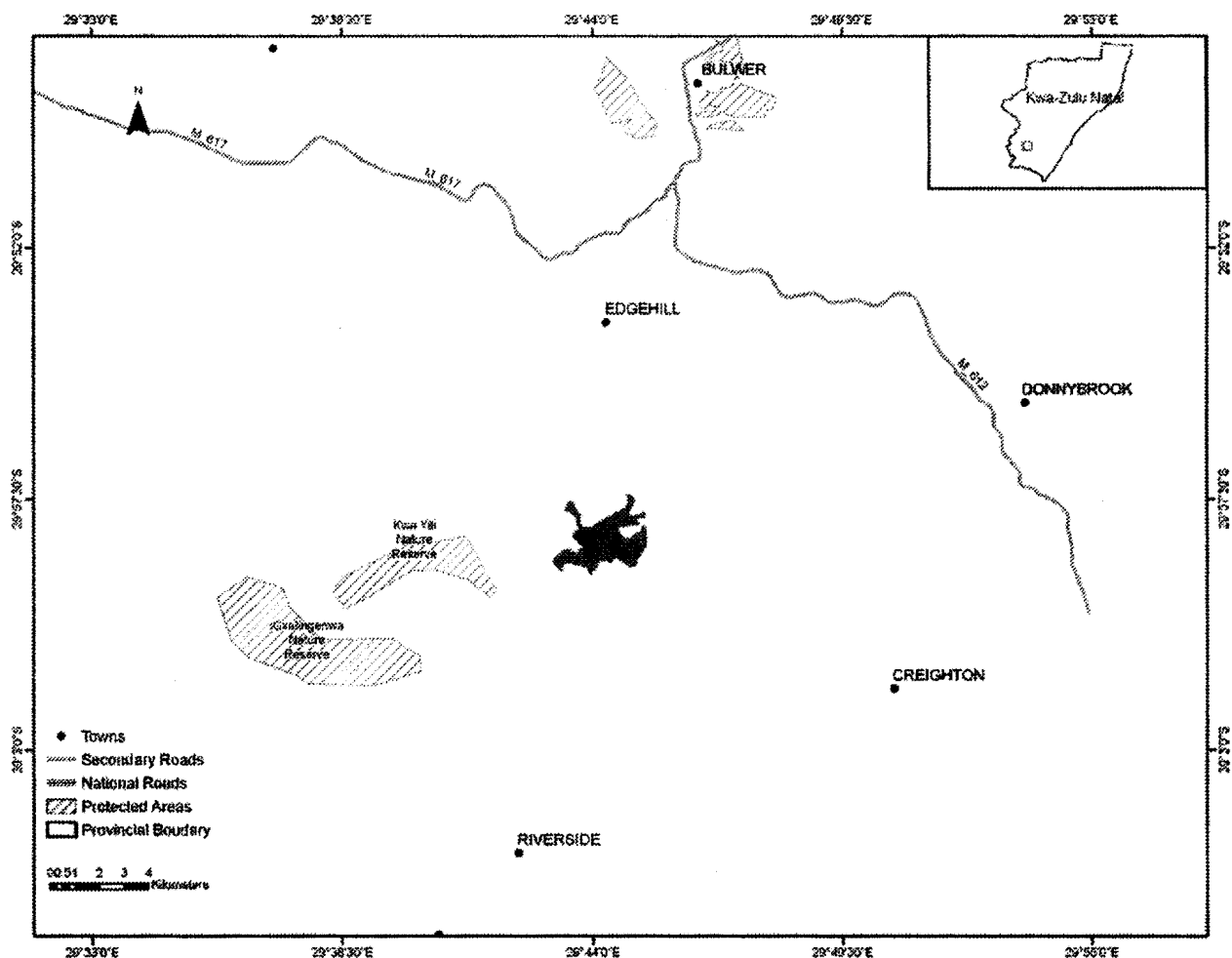
Key biodiversity features include six millipede species including *Centrobolus decoratus*, *Doratogonus hoffmani*, *Doratogonus montanus* and *Doratogonus natalensis*, *Centrobolus tricolor*, *Centrobolus rubricollis*; one reptile species, *Bradypodion thamnobates*; and two vegetation types including Eastern Mistbelt Forest and Drakensberg Foothill Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Hlabeni State Forest showing original area of ecosystem

79. Hlabisa Forest Complex (FOR 2)

| | |
|--|---|
| Reference number | FOR 2 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | KwaZulu-Natal |
| Municipality | Hlabisa LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 400 ha |
| Proportion of ecosystem protected | 0% of remaining area |
| Known number of species of special concern | 9 Red Data plant species, two Red Data mammal species and 1 endemic plant species |

Geographical location

Near Mtunzini in northern KwaZulu-Natal (2831BB). The ecosystem includes the following forest patches: 5889 and 5892.

Description

High forest with distinct strata, relatively open under the canopy. Contains unique plant communities including sub-types not found in other Eastern Scarp Forests. The ecosystem contains more than 100 woody plant species, it is the geographical limit for several rare plant species, contains at least nine Red Data List plant species and one endemic tree species. Two Red Data List mammal species and several Red Data List bird species are known to occur in the forest.

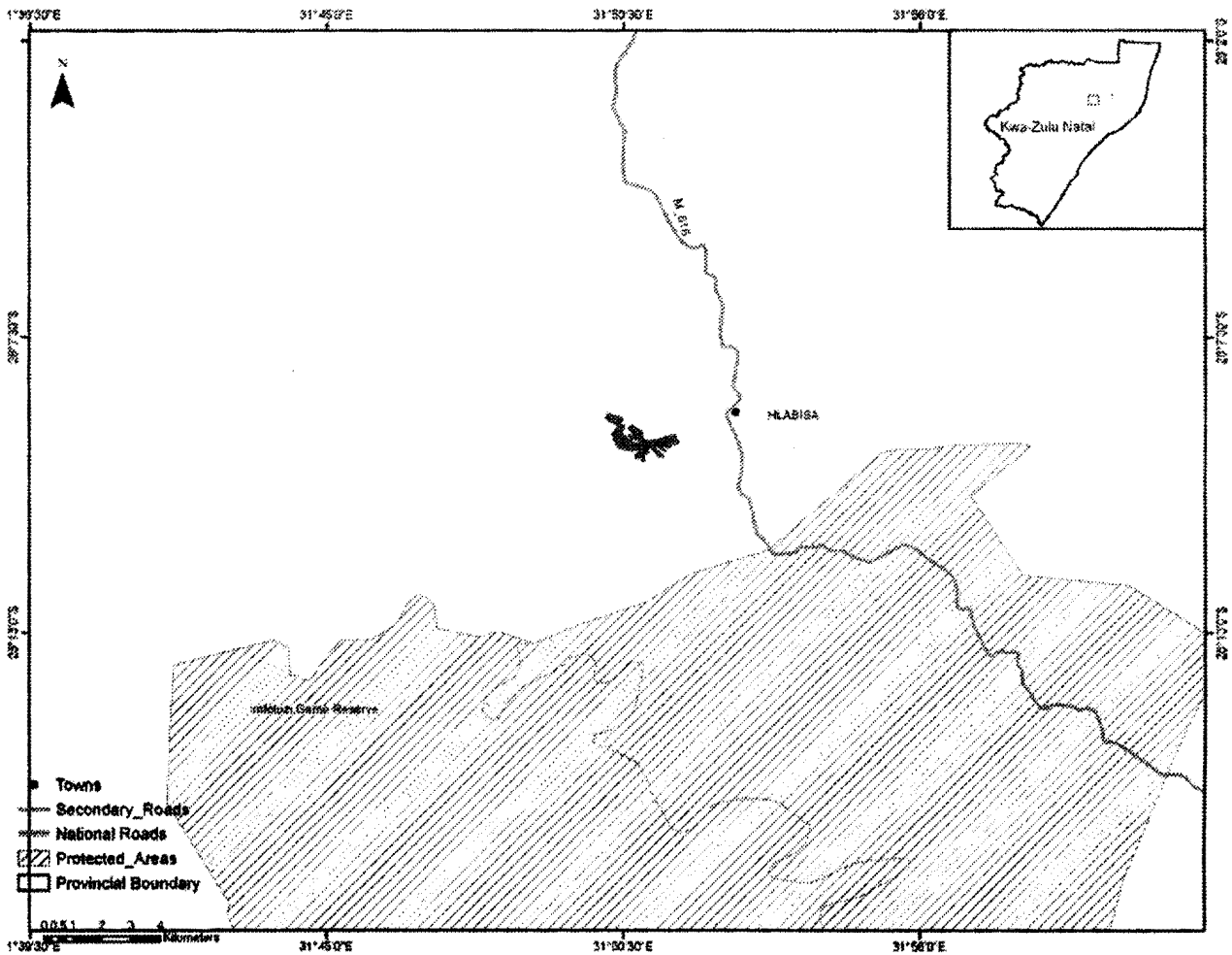
Other information

This ecosystem is not protected.

References

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry. Department of Water Affairs and Forestry. National Forest Inventory.

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.



Location of Hlabisa Forest Complex

80. Humansdorp Shale Renosterveld (FRs 19)

| | |
|--|---|
| Reference number | FRs 19 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Eastern Cape |
| Municipalities | Baviaans LM, Kouga LM, Kou-Kamma LM and Nelson Mandela Bay LM |
| Original area of ecosystem | 37 000 ha |
| Remaining natural area of ecosystem (%) | 35% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 endemic plant species |

Geographical location

Three swathes occur: from Jeffreys Bay and Marina Glades near the coast inland past Humansdorp to the lower reaches of the Dieprivier near Two Streams; the Mondplaas/Mondhoek area near the mouth of the Gamtoos River stretching inland in a series of patches south of the Gamtoos River to west of Patensie; between thicket and fynbos types from Burghley Hills to Rocklands and the Dell to Nooitgedacht southwest of Uitenhage. Coastal forelands from Humansdorp to Port Elizabeth.

Description

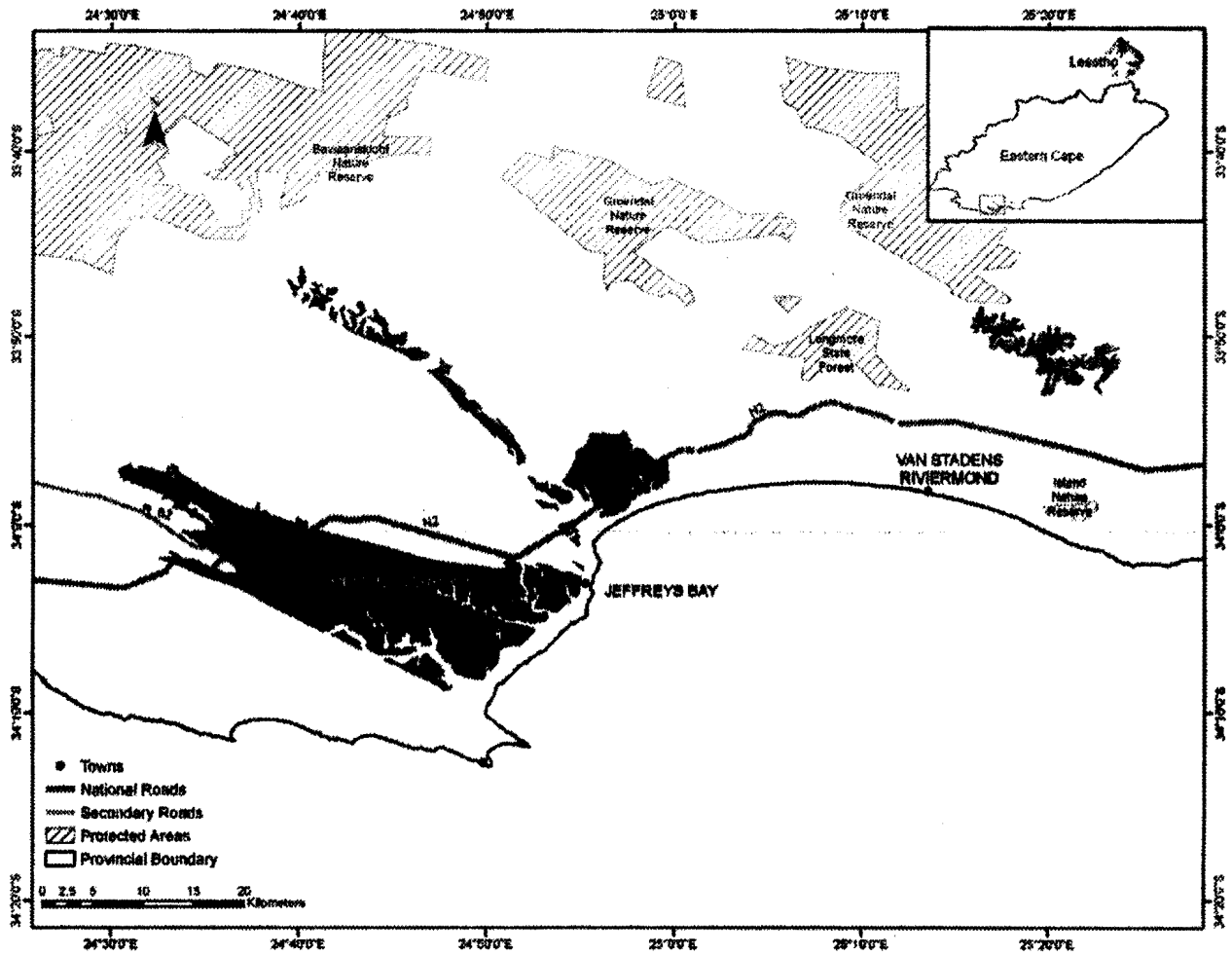
Moderately undulating plains and undulating hills supporting vegetation composed of low, medium dense graminoid, dense cupressoid-leaved shrubland, dominated by renosterbos. There are both grassland and shrubland forms of the renosterveld present, probably depending on grazing and fire regimes. In wetter areas (> 550 mm) it grades into Loerie Conglomerate Fynbos. Thicket patches are common on termitaria (heuweltjies are absent) and in fire-safe enclaves, especially in the east. It is dominated by *Aspalathus nivea* in the post-fire, early seral stages. At least six endemic plant species occur in the ecosystem.

Other information

The ecosystem is not protected, but approximately 6% is found on private game farms (Thaba Manzi and Lombardini Game Farms).

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 188-189. South African National Biodiversity Institute, Pretoria.



Location of Humansdorp Shale Renosterveld showing original area of ecosystem

81. Impendle Highlands (KZN 28)

| | |
|--|--|
| Reference number | KZN 28 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Impendle LM and Ingwe LM |
| Original area of ecosystem | 17 000 ha |
| Remaining natural area of ecosystem (%) | 64% |
| Proportion of ecosystem protected | 50% of original area |
| Known number of species of special concern | 11 threatened or endemic animal species including those listed below |

Geographical location

Impendle (2929DB). Ecosystem delineated by the Umkomaas River and the Impendle Nature Reserve boundary in the south and west; along the valley in the east; and by contour lines bounding the plateau edge in the north.

Description

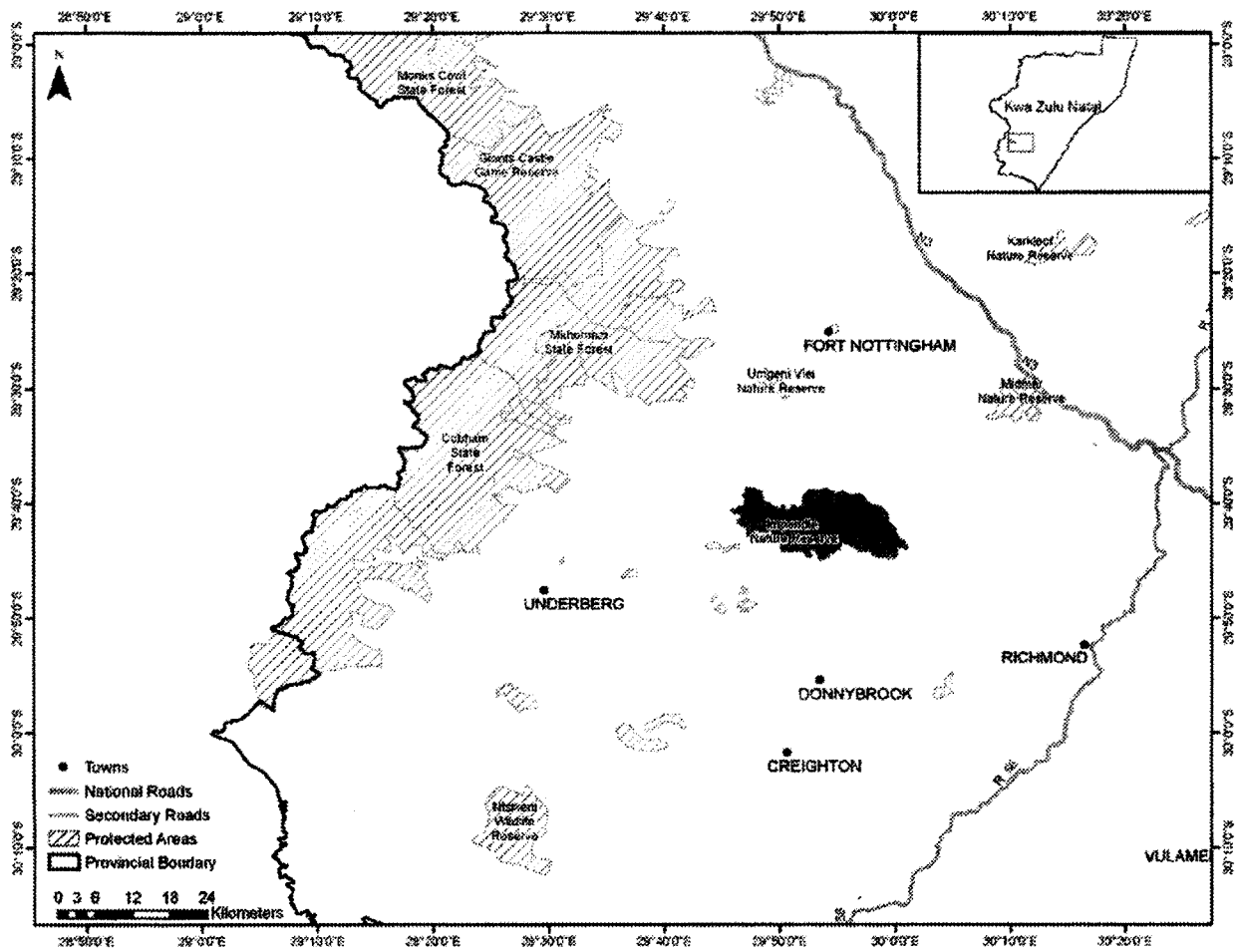
Key biodiversity features include one amphibian species, *Afrivalus spinifrons intermedius*; two bird species including Blue Swallow and Wattled Crane; three millipede species including *Centrobolus rubricollis*, *Centrobolus tricolour* and *Doratogonus montanus*; three plant species for example *Hesperantha woodii* and *Kniphofia buchananii*; two reptile species including *Bradypodion bourquini* and *Bradypodion thamnobates*; and four vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

Approximately 50% of the ecosystem is protected in the Impendle Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Impendle Highlands showing original area of ecosystem

82. Karkloof Forest Collective (KZN 29)

| | |
|--|--|
| Reference number | KZN 29 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMshwathi LM, uMngeni LM, Mooi Mpfana LM and Umvoti LM |
| Original area of ecosystem | 12 000 ha |
| Remaining natural area of ecosystem (%) | 65% |
| Proportion of ecosystem protected | 14% of original area |
| Known number of species of special concern | 15 threatened or endemic plant and animal species including those listed below |

Geographical location

Howick (2930AC), Albert Falls (2930AD) and Mount Alida (2930AB). The ecosystem represents a collection of Eastern Mistbelt Forests which lie within Midlands Mistbelt Grassland and which are generally south facing. Ecosystem delineated, in the north, by the northern extent of the Midlands Mistbelt Grassland and the contour defining the crest of the slope along which the forests are located; by the contour defining the base of the same slope in the south; and by the extent of the forests and generally a 'narrowing' and eventual petering out of the slope in the east and west.

Description

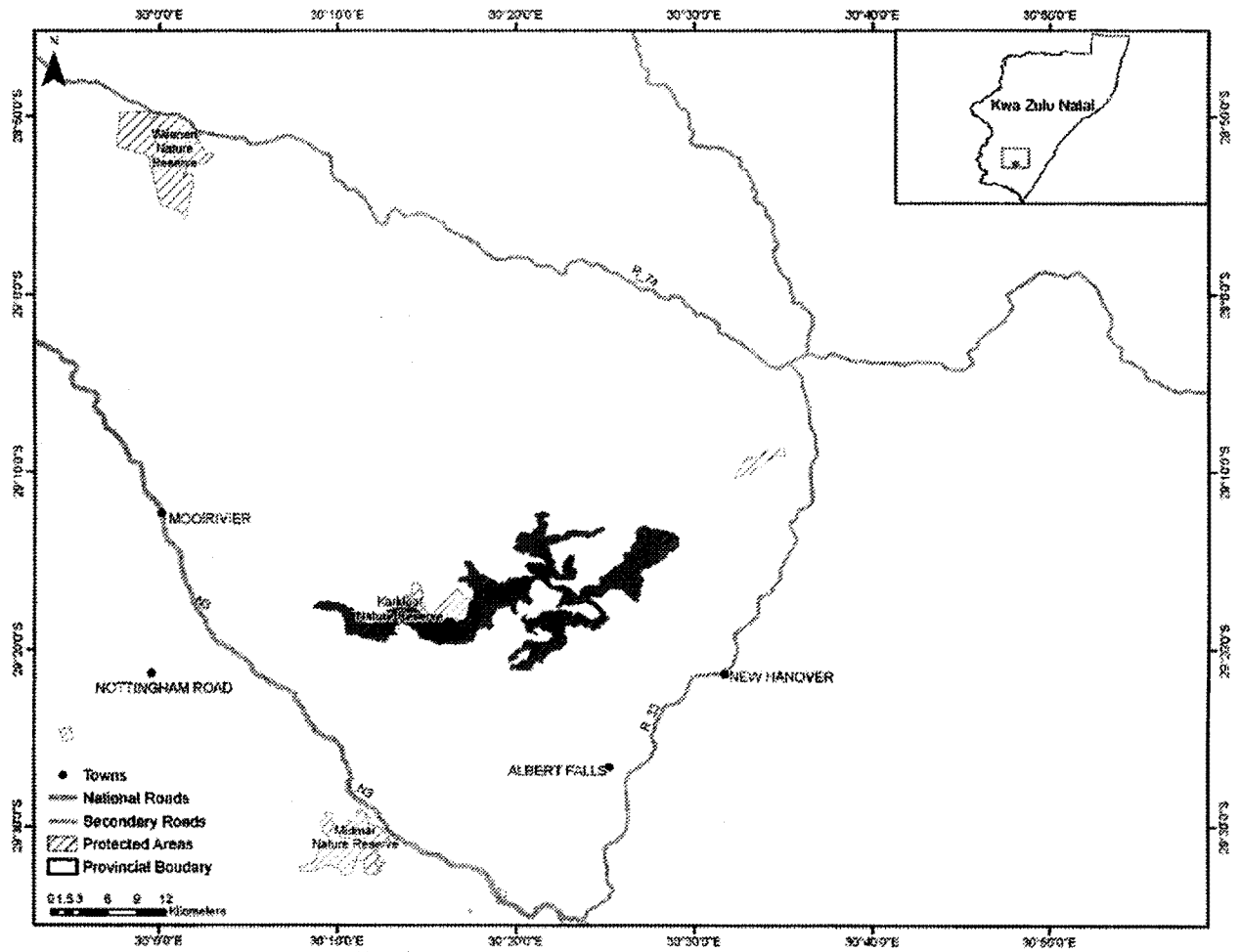
Key biodiversity features include two bird species including Blue Swallow and Wattled Crane; one mammal species, Oribi; eight millipede species including *Centrobolus decoratus*, *Centrobolus lawrencei*, *Centrobolus rubricollis*, *Centrobolus tricolour*, *Doratogonus avius*, *Doratogonus hoffmani*, *Doratogonus montanus* and *Doratogonus natalensis*; six plant species including *Geranium natalense*, *Gerbera aurantiaca*, *Kniphofia buchananii*, *Plectranthus rehmannii*, *Senecio exuberans* and *Watsonia canaliculata*; one reptile species, *Bradypodion thamnobates*; and four vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

Approximately 14% of the ecosystem is protected in the Blinkwater Nature Reserve and the Karkloof Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Karkloof Forest Collective showing original area of ecosystem

83. Kobonqaba Forest Complex (Nxaxo, Ntlaboya & Kobonqaba Forests) (FOR 3)

| | |
|--|---|
| Reference number | FOR 3 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | Eastern Cape |
| Municipality | Mnquma LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 504 ha |
| Proportion of ecosystem protected | 0% of remaining area |
| Known number of species of special concern | 8 Red Data bird species and 2 Red Data mammal species |

Geographical location

Ecosystem found in the Matiwane district of the Eastern Cape (3228DA). It is situated at the Kobonqaba River estuary on the coast near Wavecrest and occurs on the primary dunes and along the estuary. The ecosystem includes the following forest patches: 8545, 8546, 8547, 8579, 8580, 8581, 8538, 8540, 8541, 8543, 8672, 8531, 8532, 8533 and 8542.

Description

Unique and relatively diverse dune forests with a canopy height of 8-10m and dominated by tree species such as *Sideroxylon inerme* and *Dovyalis rotundifolia*. More than 50 plant species have been recorded. The forests and surrounding ecotone have a very high diversity of birdlife, with more than 180 species recorded, including 8 Red Data bird species. Two Red Data mammal species occur in the ecosystem.

Other information

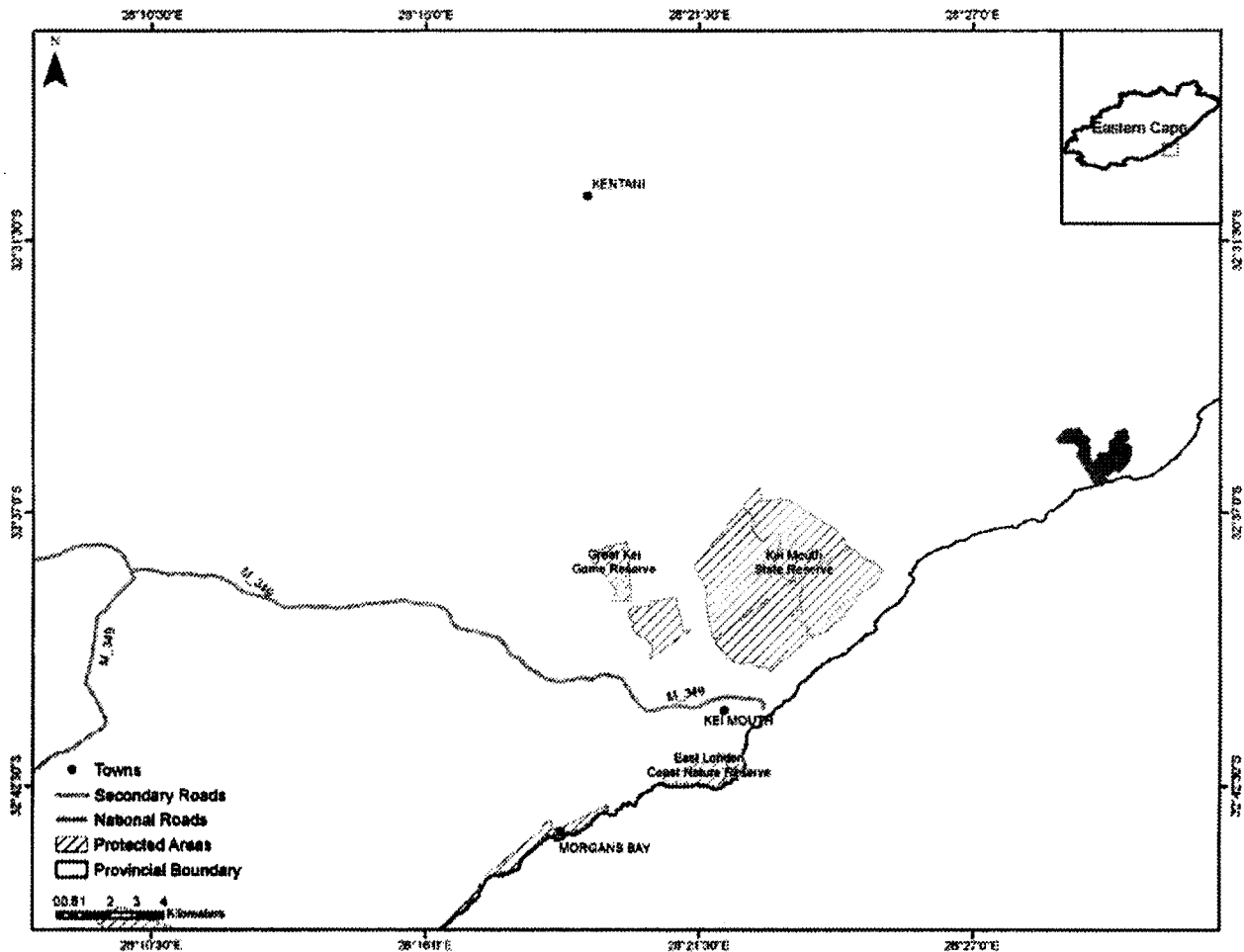
The ecosystem is not protected.

References

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry.

Department of Water Affairs and Forestry. National Forest Inventory.

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.



Location of Kobonqaba Forest Complex (Nxaxo, Ntlaboya & Kobonqaba Forests) (area of ecosystem enlarged for visibility at this scale)

84. Kouebokkeveld Alluvium Fynbos (FFa 1)

| | |
|--|---|
| Reference number | FFa 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Witzenberg LM and WCDMA02 |
| Original area of ecosystem | 18 000 ha |
| Remaining natural area of ecosystem (%) | 33% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Fringes of the northern Koue Bokkeveld valleys from Op Die Berg (north of Ceres) northwards to Tandfontein and eastwards to Excelsior, extending to the Blinkberg Pass and Winkelhaak. Smaller unmapped patches are also found at north-facing entrances to valleys of the Hex River Mountains.

Description

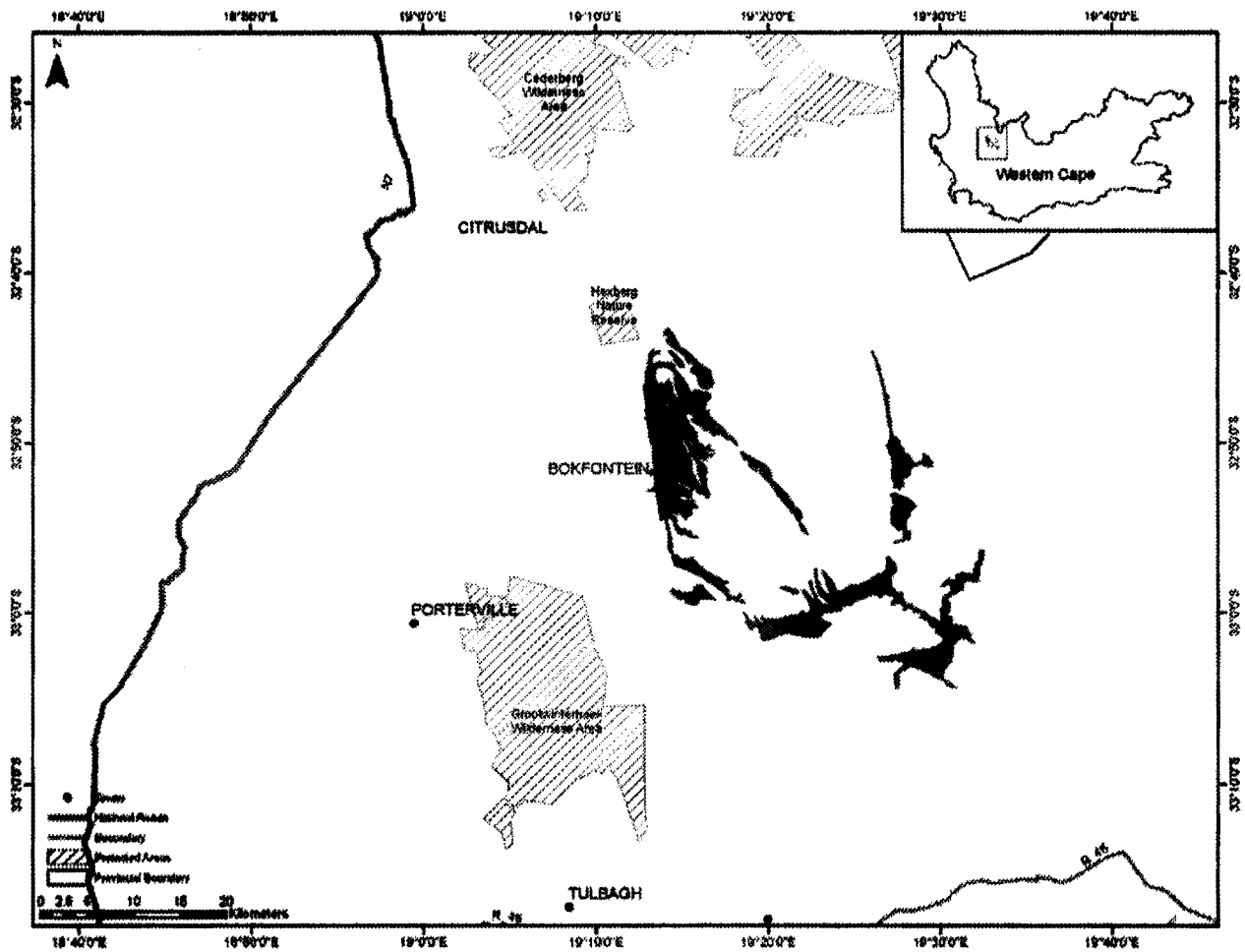
Slightly undulating plains in mountain valleys where alluvium has accumulated alongside rivers and as alluvial fans. Vegetation is emergent proteoids in a low medium dense grassy shrubland, structurally primarily asteraceous and proteoid fynbos, with prominent ericaceous fynbos in numerous seeps. At least four Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected, however approximately 1% is found in the Koue Bokkeveld mountain catchment area.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 163. South African National Biodiversity Institute, Pretoria.



Location of Kouebokkeveld Alluvium Fynbos showing original area of ecosystem

85. Kraanspoort Mountain Bushveld (GP 14)

| | |
|--|--|
| Reference number | GP 14 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Gauteng |
| Municipality | Kungwini LM |
| Original area of ecosystem | 13 000 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 8% of original area |
| Known number of species of special concern | 7 threatened or endemic plant or animal species including those listed below |

Geographical location

North-eastern parts of Gauteng including Vaalplaats and Mackmaar (2528DB and 2529CA respectively). Ecosystem delineated by ridges and kloofs associated with the Wilge River and its tributaries.

Description

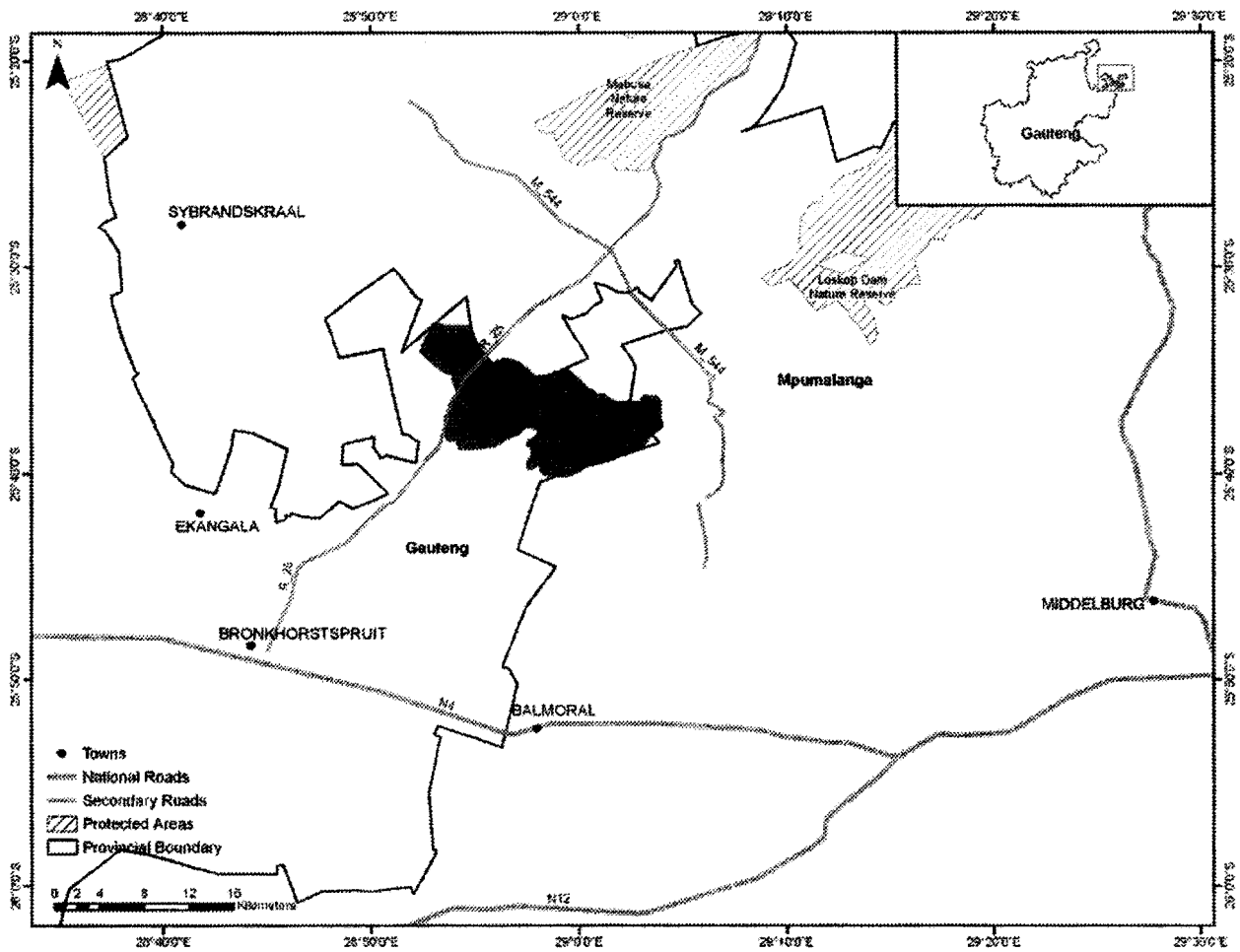
Key biodiversity features include Red or Orange Listed birds for example Blue Crane; three vegetation types including Central Sandy Bushveld, Loskop Mountain Bushveld and Rand Highveld Grassland; and the Grootspuit, Jan Balie se Loop, Wilgerivier, and various unnamed wetlands.

Other information

Approximately 8% of the ecosystem is protected in the Ezemvelo Private Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Kranspoort Mountain Bushveld showing original area of ecosystem

86. KwaZulu-Natal Coastal Forest (FOz VII1)

| | |
|--|---|
| Reference number | FOz VII1 |
| Listed under Criterion | A2 |
| Biome | Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ethekwini MM, Umhlabuyalingana LM, Hlabisa LM, Mtubatuba LM, Mbonambi LM, uMhlatuze LM, eNdongakusuka LM and KZNDMA27 |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 21 000 ha |
| Proportion of ecosystem protected | 61% of remaining area |
| Known number of species of special concern | 1 endemic plant species and 1 endemic mammal species |

Geographical location

Forest occurs in small patches on the rolling plains of the landward side of the dune cordon along the KwaZulu-Natal coast, from Southern Natal to beyond the Mozambique border.

Description

Medium to tall, species rich forest ecosystem closely associated with the flat to rolling topography of the coastal lowlands of KwaZulu-Natal. The ecosystem occurs as small-sized patches in the immediate hinterland of coastal dunes or on free-draining deep sands of the Maputaland coastal plain. Many tropical species reach their southern most distribution along the affected range. In places, where in a stage of regeneration, these forests have the appearance of "thickets". The shrub layer is well-developed, dense and rich in subtropical elements. Lianas and climbers are a common sight, emphasizing the tropical appearance of the forest structure. No distinct herb layer can be distinguished in the south but in the north this might be well-developed and usually dominated by *Isoglossa woodii*. KwaZulu-Natal Coastal Forests have a high biodiversity value relative to other forest ecosystems. Key biodiversity features include an endemic mammal, the Zulu Golden Mole (*Amblystomus iris*), and at least one endemic plant species. Rare plant species also occur here. The fact that these forests are very species rich,

coupled with their course grain, disturbance driven ecology, means that large tracts must be protected in order to conserve the full range of species.

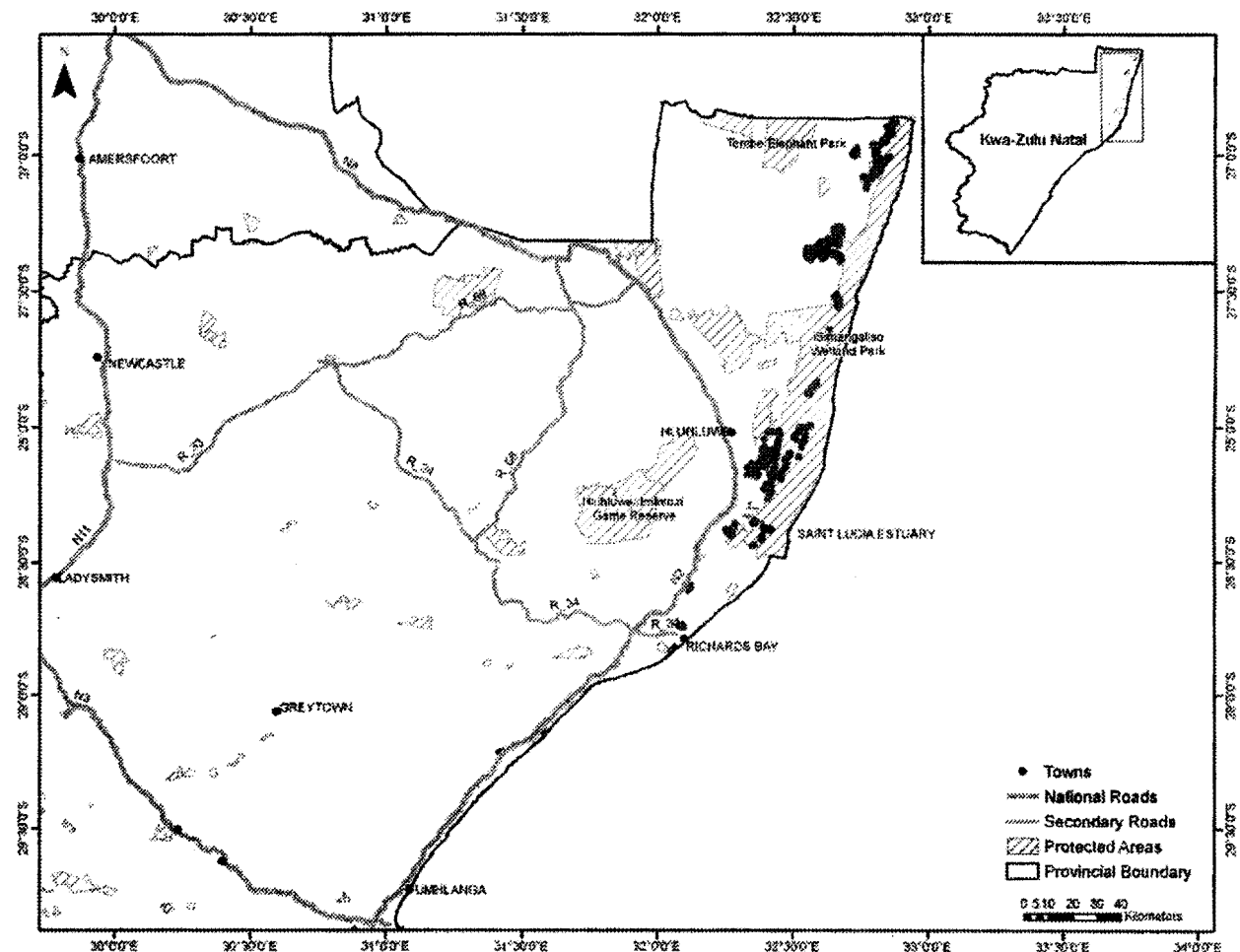
Other information

Approximately 61% of the ecosystem is protected.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 604-605. South African National Biodiversity Institute, Pretoria.

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.



Location of KwaZulu-Natal Coastal Forest (area of ecosystem enlarged for visibility at this scale)

87. KwaZulu-Natal Sandstone Sourveld (SVs 5)

| | |
|--|--|
| Reference number | SVs 5 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Province | KwaZulu-Natal |
| Municipalities | Ethekwini MM, Vulamehlo LM, Umzumbe LM, uMshwathi LM, Mkhambathini LM, Richmond LM, Umvoti LM, Ndwedwe LM, Maphumulo LM and Ubuhlebezwe LM |
| Original area of ecosystem | 135 000 ha |
| Remaining natural area of ecosystem (%) | 28% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 12 endemic plant species |

Geographical location

Elevated coastal inland sandstone plateaus from Mapumulo near Kranskop in the north to St Faiths near Port Shepstone in the south (including Noodsberg, Hillcrest, Kloof, Table Mountain, Inanda, Stony Hill, Umbumbulu, Mid-Ilovo, Dumisa and Highflats).

Description

Short, species-rich grassland with scattered low shrubs and geophytic suffrutices. Proteaceae trees and shrubs for example *Protea*, *Leucospermum* and *Faurea* can be locally common. The dominating landscape features are flat (or rolling) plateau tops and steep slopes commonly forming table mountains. At least 12 endemic plant species occur in this ecosystem.

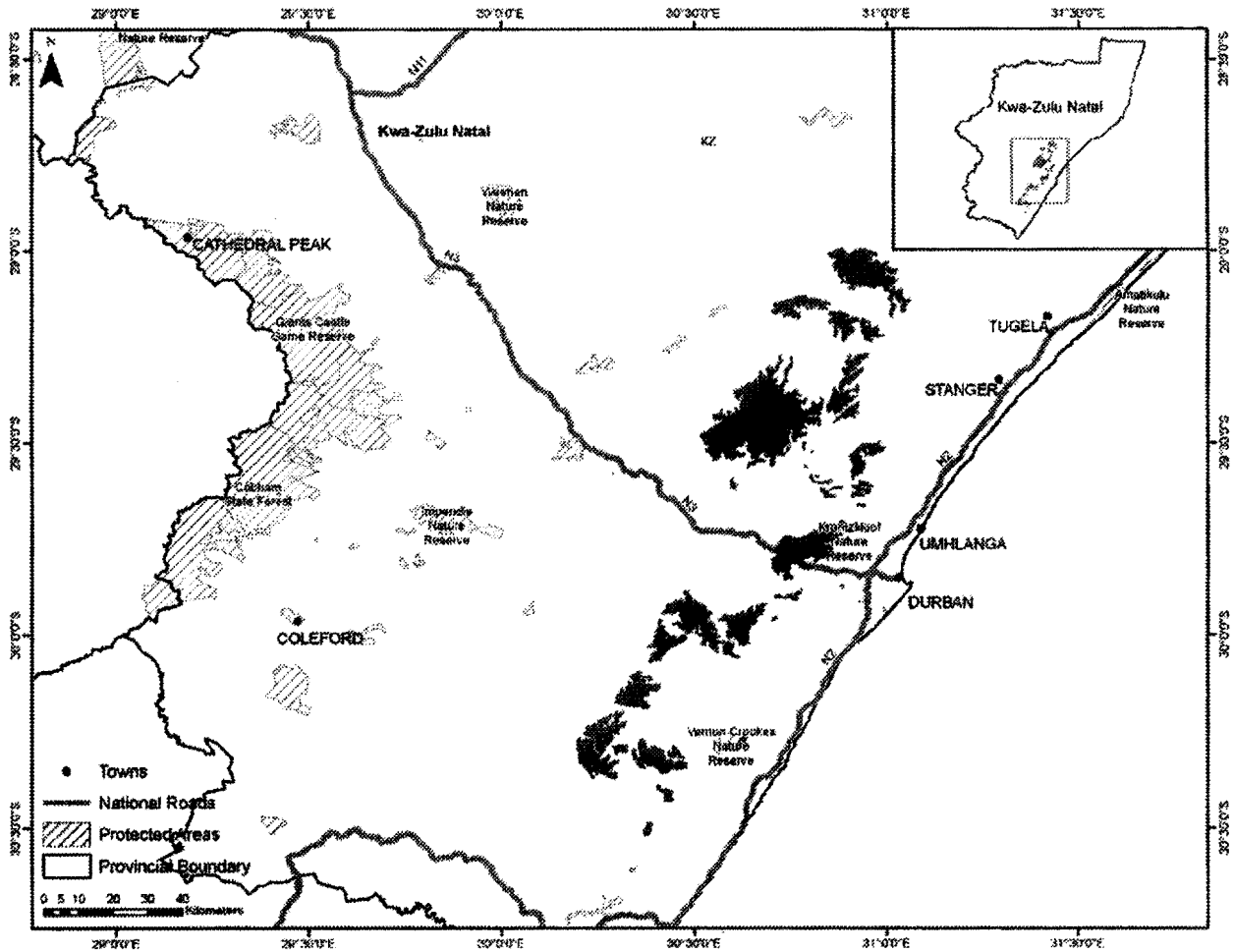
Other information

Less than 1% of the ecosystem is protected in the Krantzkloof and Vernon Crookes Nature Reserves.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F.,

Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 511-512. South African National Biodiversity Institute, Pretoria.



Location of KwaZulu-Natal Sandstone Sourveld showing original area of ecosystem

88. Loskop Grasslands (KZN 30)

| | |
|--|---|
| Reference number | KZN 30 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | uMshwathi LM and uMngeni LM |
| Original area of ecosystem | 7 000 ha |
| Remaining natural area of ecosystem (%) | 11% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 7 threatened or endemic animal species including those listed below |

Geographical location

Howick (2930AC) and Albert Falls (2930AD). Ecosystem forms part of a valley basin and is delineated in the west by Boschhoek Plateau threatened ecosystem (KZN 43) and in the north by the Karkloof Forest Collective threatened ecosystem (KZN 29). In the south it is delineated by the contours demarcating the base of the hills in the south. Loskop Hill which is roughly located at the centre of the ecosystem, although prominent, is the only hill present.

Description

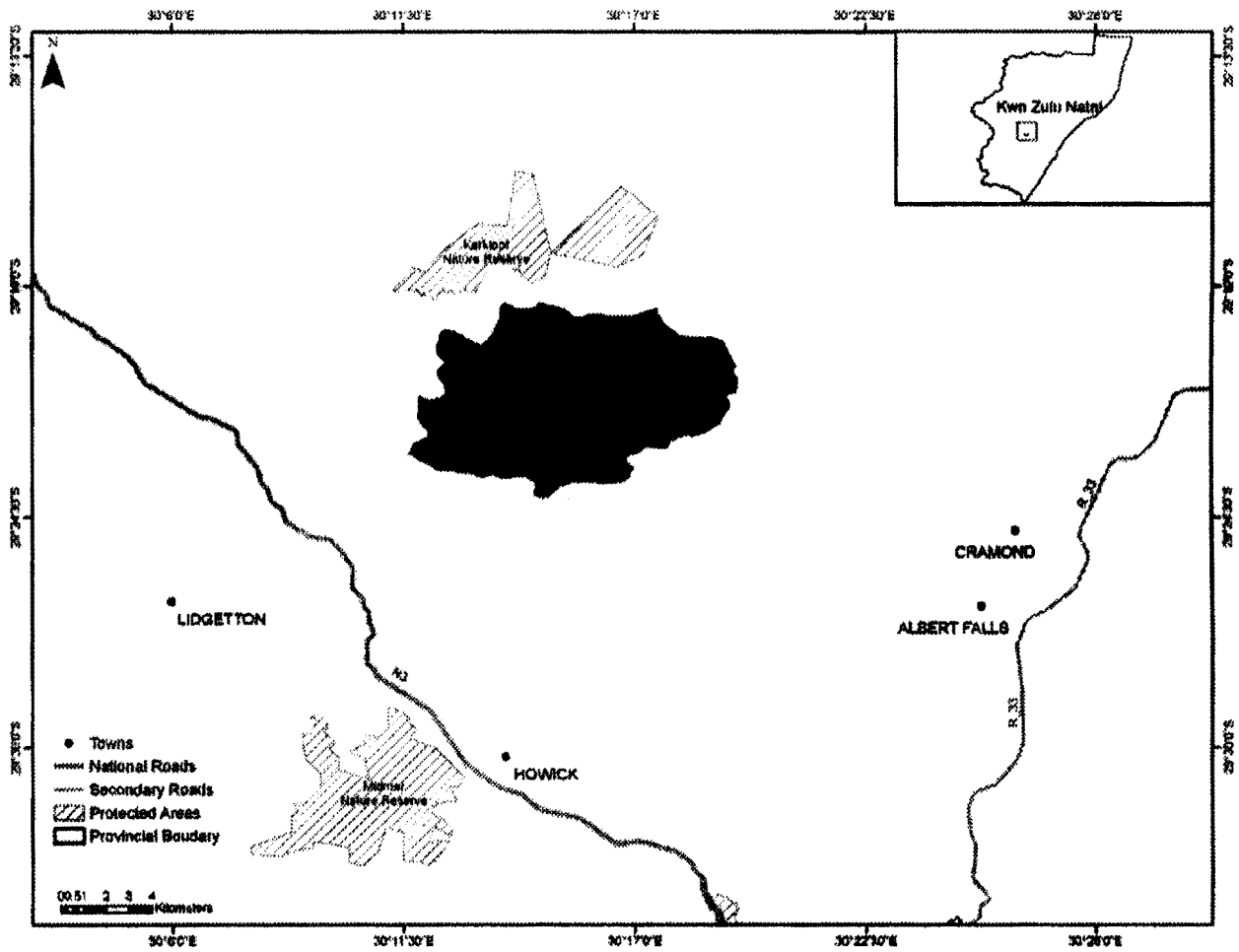
Key biodiversity features include one bird species, the Wattled Crane; one millipede species, *Doratogonus montanus*; four plant species including *Gerbera aurantiaca*, *Plectranthus rehmannii*, *Senecio exuberans* and *Watsonia canaliculata*; one reptile species, *Bradypodion thamnobates*; and one vegetation type, Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Looskop Grasslands showing original area of ecosystem

89. Lower Gariep Alluvial Vegetation (AZa 3)

| | |
|--|--|
| Reference number | AZa 3 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Northern Cape |
| Municipalities | Richtersveld LM, Nama Khoi LM, KhΓi-Ma LM, Siyathemba LM, Kai !Garib LM, //Khara Hais LM, !Kheis LM, NCDMA07 and NCDMA08 |
| Original area of ecosystem | 75 000 ha |
| Remaining natural area of ecosystem (%) | 47% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 11 endemic plant species |

Geographical location

Broad alluvium (floodplains and islands) of the Orange (Gariep) River between Groblershoop and the mouth into the Atlantic Ocean at Oranjemund (Namibia). This river stretch is embedded within Desert (Oranjemund to roughly Pofadder) and Nama-Karoo (further upstream as far as Groblershoop).

Description

Flat alluvial terraces and riverine islands supporting a complex of riparian thickets (dominated by *Ziziphus mucronata*, *Euclea pseudebenus* and *Tamarix usneoides*), reed beds with *Phragmites australis* as well as flooded grasslands and herblands populating sand banks and terraces within and along the river. At least 11 endemic plant species occur in the ecosystem.

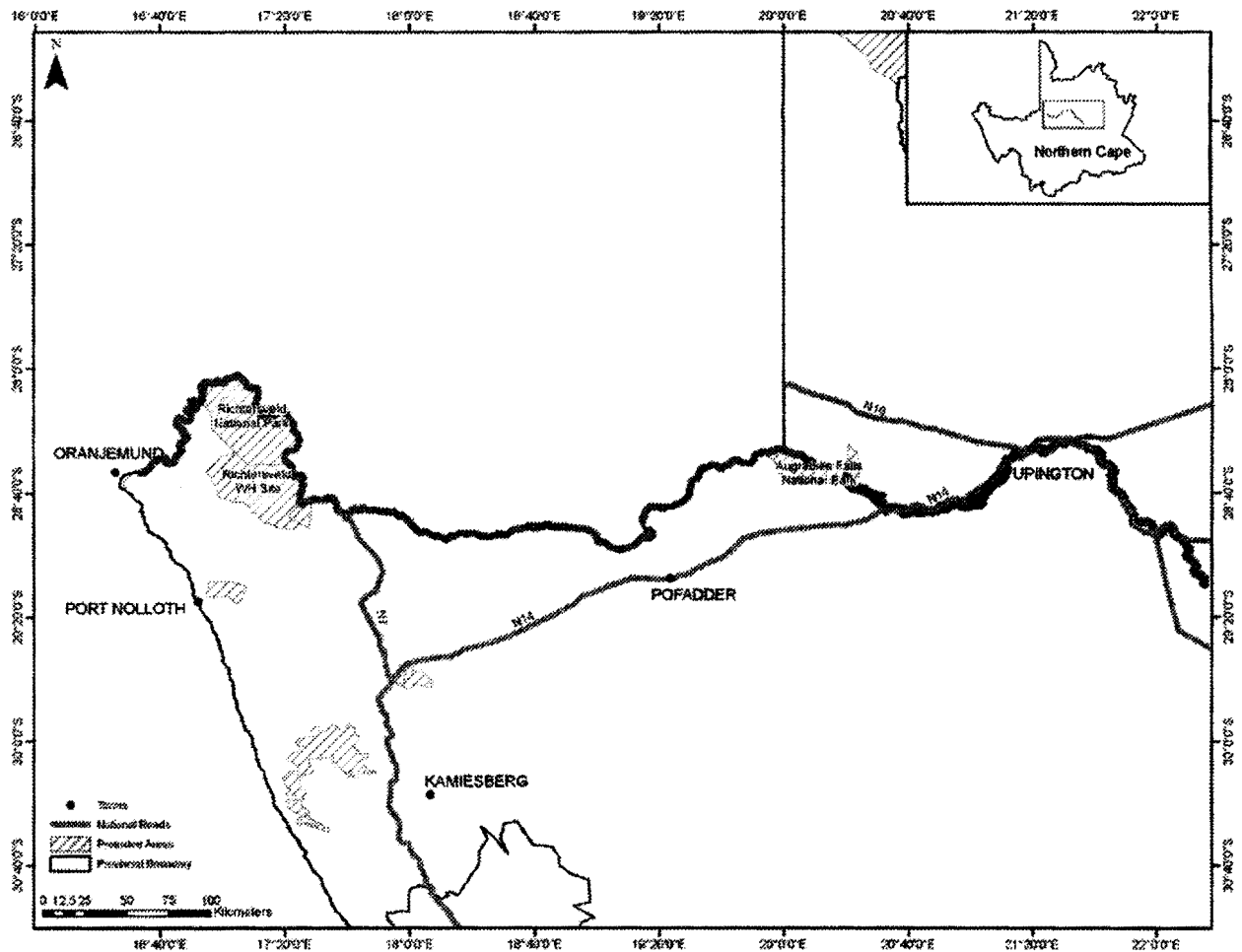
Other information

Approximately 6% of the ecosystem is protected in the Richtersveld National Park and Augrabies Falls National Park.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J.,

Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 638-639. South African National Biodiversity Institute, Pretoria.



Location of Lower Gariep Alluvial Vegetation showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

90. Malmani Karstlands (MP 5)

| | |
|--|--|
| Reference number | MP 5 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Provinces | Mpumalanga and Limpopo |
| Municipalities | Thaba Chweu LM and Greater Tubatse LM |
| Original area of ecosystem | 66 000 ha |
| Remaining natural area of ecosystem (%) | 71% |
| Proportion of ecosystem protected | 9% of original area |
| Known number of species of special concern | 23 threatened or endemic plant and animal species including those listed below |

Geographical location

From Abel Erasmus Pass in the north to just south of Pilgrim's Rest (2430BC, 2430DA, 2430DB, 2430DC, 2430DD and 2530BA). Ecosystem delineated by mountainous karstlands of the Malmani subgroup, together with presence of karstland endemic taxa and threatened species. Landtypes were used to re-define the boundaries.

Description

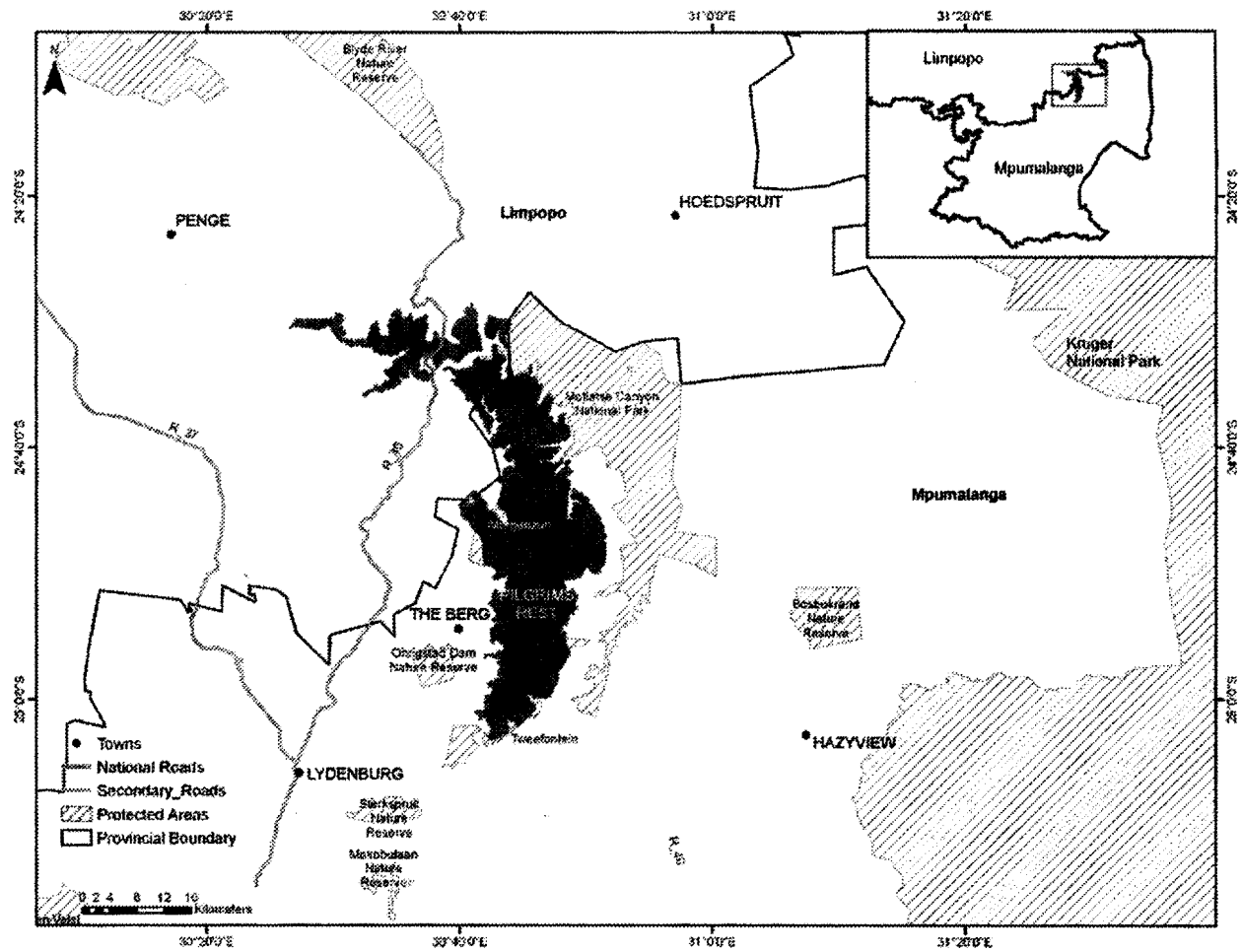
Key biodiversity features include five mammal species including Rough-haired Golden Mole, Meester's Golden Mole, Short-eared Trident Bat, Natal Long-fingered Bat and Oribi; six bird species including Blue Crane, Blue Swallow, Grey Crowned Crane, Striped Flufftail, Southern Ground Hornbill and Wattled Crane; three reptile species for example *Bradypodion transvaalense* and *Lamprophis swazicus*; nine plant species for example *Aloe fouriei*, *Gladiolus vernus*, *Gladiolus macneillii*, *Ocotea kenyensis* and *Warburgia salutaris*; and seven vegetation types including Northern Escarpment Dolomite Grassland, Pong Dolomite Mountain Bushveld, Ohrigstad Mountain Bushveld, Long Tom Pass Montane Grassland, Lydenburg Thornveld, Mpumalanga Afromontane Forest and Northern Escarpment Quartzite Sourveld. The ecosystem includes part of the Wolkberg Centre of Endemism; it provides an escarpment corridor; contains important caves; and is important for grassland and forest processes.

Other information

Approximately 9% of the ecosystem is protected in the Blyde River Canyon National Park, Morgenzon Primary Conservation Area and Tweefontein Primary Conservation Area.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Malmani Karstlands showing original area of ecosystem

91. Mananga-Lebombo Thornveld (MP 6)

| | |
|--|---|
| Reference number | MP 6 |
| Listed under Criterion | F |
| Biome | Savanna and Forest |
| Province | Mpumalanga |
| Municipality | Nkomazi LM |
| Original area of ecosystem | 41 000 ha |
| Remaining natural area of ecosystem (%) | 72 % |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

South eastern corner of Mpumalanga province (2531DB, 2531DC and 2531DD). Dry clay flats on northern end of Southern Lebombo Sourveld. Ecosystem delineated using landtypes and topography.

Description

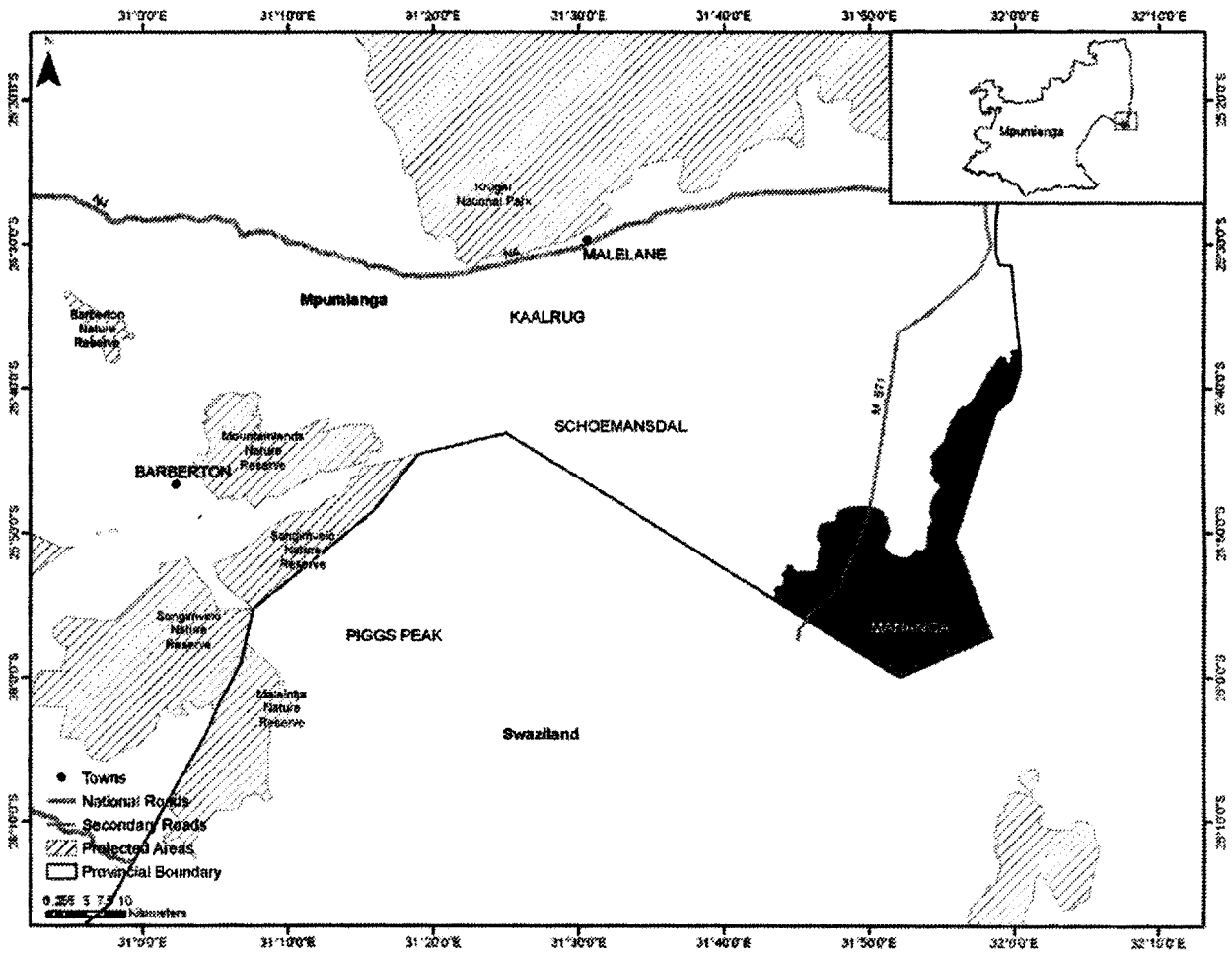
Key biodiversity features include two bird species, the Saddle-billed Stork and the Southern Ground Hornbill; one amphibian, the Whistling Rain Frog; two reptile species including *Aspedilaps scutatus intermedius* and *Cordylus warreni warreni*; three plant species for example *Orbea paradoxa*; and five vegetation types including Lebombo Summit Sourveld, Southern Lebombo Bushveld, Sweet Arid Basalt Lowveld, Zululand Lowveld and Maputaland Scarp Forest. The ecosystem includes important sub-catchments and provides an ecological corridor.

Other information

Approximately 1% of the ecosystem is protected by the Mawewe Cattle/Game Project.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Mananga-Lebombo Thornveld showing original area of ecosystem

92. Mangrove Forest (FOa 3)

| | |
|--|--|
| Reference number | FOa 3 |
| Listed under Criterion | C |
| Biome | Forest |
| Provinces | KwaZulu-Natal and Eastern Cape |
| Municipalities | Port St Johns LM, Mtubatuba LM, Mbonambi LM, uMhlatuze LM and KZNDMA27 |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 2 000 ha |
| Proportion of ecosystem protected | 73% of remaining area |
| Known number of species of special concern | |

Geographical location

Occur in tidal saline wetlands in bays and estuaries along the Indian Ocean from the Kosi Bay lagoon system (26° S) in the north to the Nahoon River (33° S) in the south.

Description

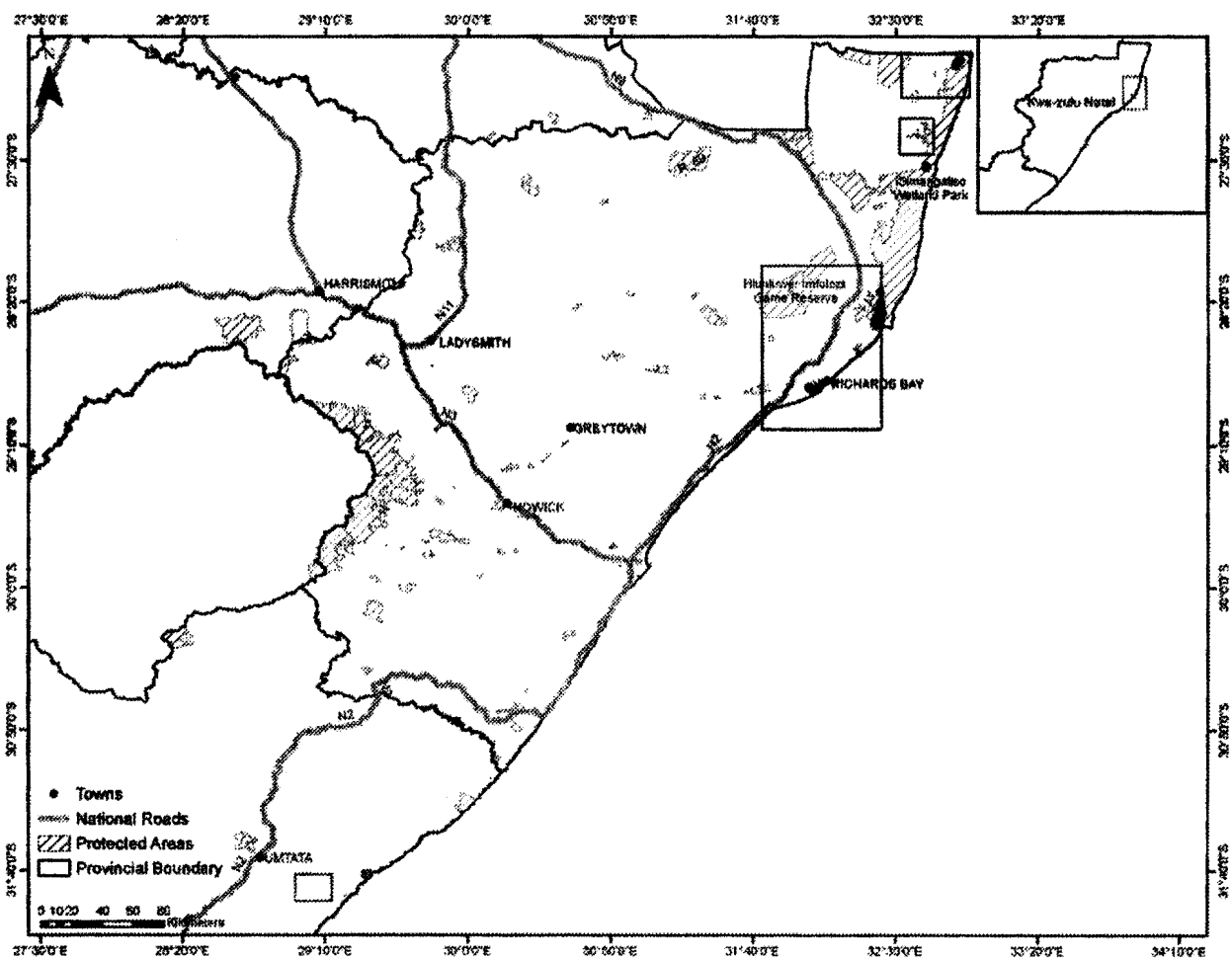
Low-grown forest or tall shrubbery growing in the shallow, sheltered tidal areas along the eastern coastline. Characteristic animals include mudskippers, fiddler crabs and mangrove snails. Due to extreme ecological conditions resulting from a combination of stress (for example high salinity and anoxia) and disturbance (for example repeated flooding), as well as due to the extreme southernmost distribution of this tropical vegetation, the mangroves in South Africa are species poor with only seven typical mangrove species, a fraction of the species richness found in tropical regions. Usually one or two species dominate the stands. The mangroves are nevertheless productive ecosystems and important as spawning areas for a variety of fish species.

Other information

Approximately 73% of the ecosystem is protected in isiMangaliso Wetland Park, Richards Bay, Beachwood Mangroves and Umlalazi Nature Reserves. Much of the original extent of mangroves has been lost in South Africa.

References

- Mucina, L. & Geldenhuys, C.J. 2006. Afrotropical, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 608-609. South African National Biodiversity Institute, Pretoria.
- 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.



Location of Mangrove Forest (area of ecosystem enlarged for visibility at this scale)

93. Mapungubwe/Greefswald Riverine Forest (FOR 4)

| | |
|--|---|
| Reference number | FOR 4 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | Limpopo |
| Municipality | Musina LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 4 270 ha |
| Proportion of ecosystem protected | 100% |
| Known number of species of special concern | 3 Red Data bird species and 1 Red Data mammal species |

Geographical location

Within the Mapungubwe National Park along the Limpopo River at its confluence with the Shashe River on the border with Botswana and Zimbabwe, and along streams feeding into the river. The ecosystem includes the following forest patch: 20564.

Description

Lowveld Riverine Forest with relatively high biodiversity. Tall gallery forests fringing the Limpopo River and tributaries, surrounded by savanna woodland. Dominated by typical riverine forest species such as *Ficus sycamorus* and *Acacia xanthophloea*, and a number of species typical of woodlands such as *Schotia brachepetala*. The ecosystem is important for a variety of forest and woodland fauna, including Elephant (*Loxodonta africana*) and Black Rhino. As the most extensive riverine forest along the Limpopo west of the Kruger National Park, the forest serves as an important migratory route for certain fauna species. Bird life is varied and includes three Red Data List bird species. One Red Data List mammal species also occurs in the ecosystem.

Other information

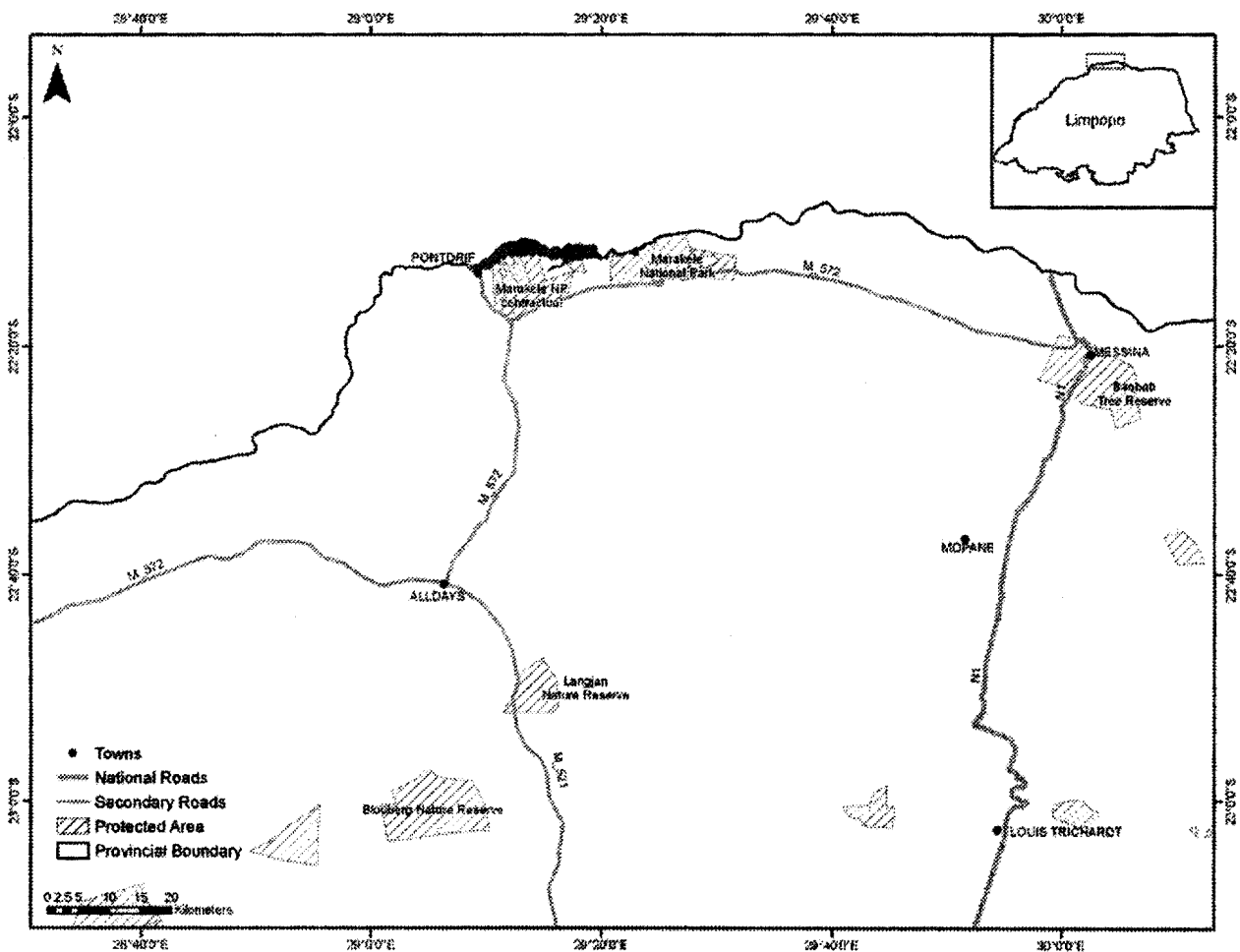
The ecosystem is protected in the Mapungubwe National Park.

References

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry. Department of Water Affairs and Forestry. National Forest Inventory.

O'Connor, T. & Associates. 2005. Transformation of a Riparian Forest to Open Woodland on Greefswald, Mapungubwe National Park. Report prepared for De Beers Consolidated Mines.

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.



Location of Mapungubwe/Greefswald Riverine Forest

94. Mauchiesburg Alpine Grasslands (MP 7)

| | |
|--|--|
| Reference number | MP 7 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | Mpumalanga |
| Municipality | Thaba Chweu LM |
| Original area of ecosystem | 42 000 ha |
| Remaining natural area of ecosystem (%) | 84% |
| Proportion of ecosystem protected | 46% of original area |
| Known number of species of special concern | 48 threatened or endemic plant and animal species including those listed below |

Geographical location

Long Tom Pass escarpment (2430DC, 2530BA and 2530BB). High altitude grasslands occurring on the second and higher escarpment (two escarpments up from the Lowveld) on the Pretoria Group geological formation. Landtypes and species distributions used to delineate ecosystem boundaries.

Description

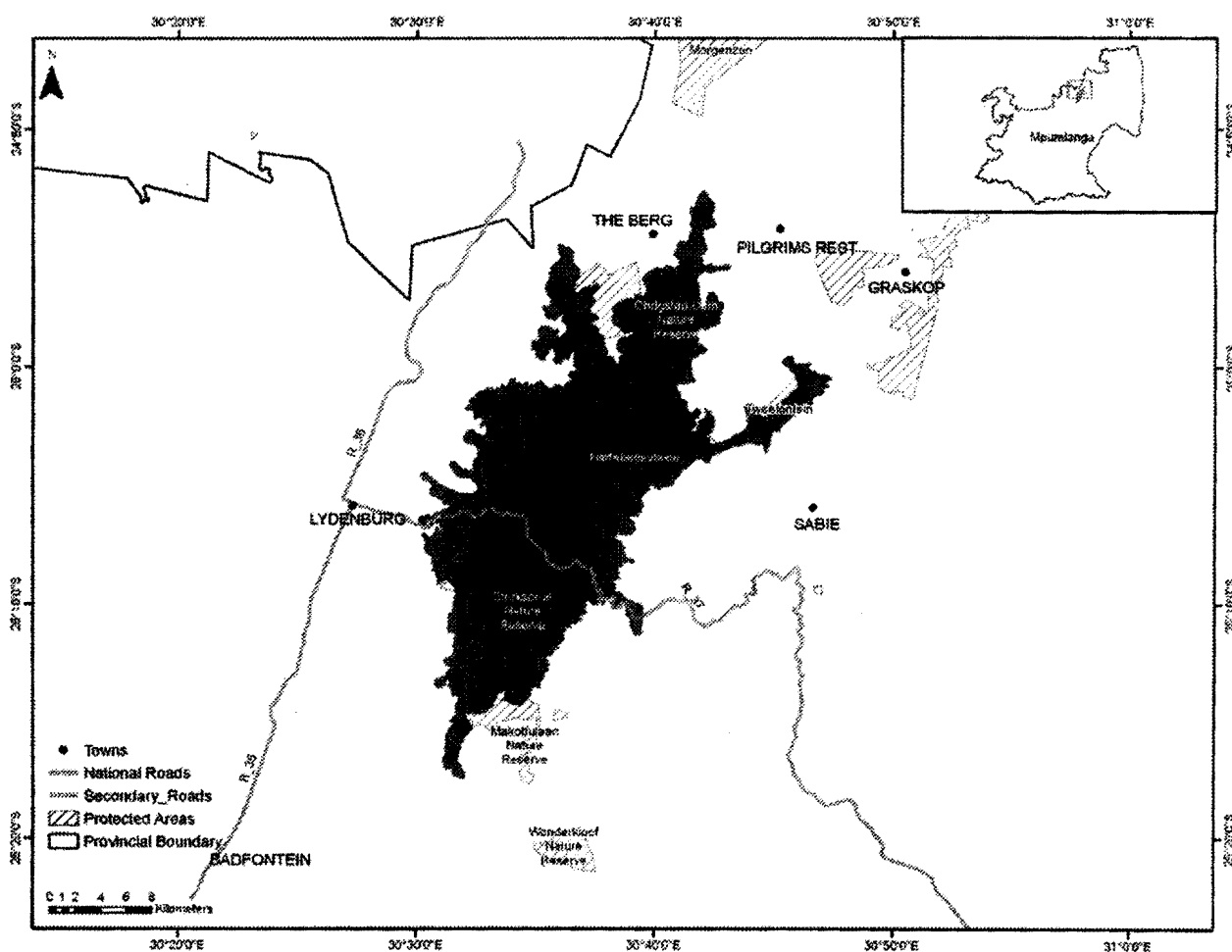
Key biodiversity features include three mammal species including Rough-haired Golden Mole, Meester's Golden Mole and Oribi; five bird species including Blue Swallow, Blue Crane, Grey Crowned Crane, Striped Flufftail and Wattled Crane; one amphibian, *Bufo gariensis nubicolus*; two reptile species including *Bradypodion transvaalense* and *Lamprophis swazicus*; thirty-seven plant species for example *Aloe modesta*, *Gladiolus appendiculatus*, *Hesperantha saxicola*, *Ledebouria mokobulaanensis* and *Moraea robusta*; and four vegetation types including Long Tom Pass Montane Grassland, Lydenburg Thornveld, Northern Escarpment Dolomite Grassland and Mpumalanga Afromontane Forest. The ecosystem includes part of the Lydenburg Centre of Plant Endemism; it includes important sub-catchments, provides an escarpment corridor; and is important for grassland and forest processes.

Other information

Approximately 46% of the ecosystem is protected in the Gustav Klingbiel Nature Reserve, Hartebeesvlakte Primary Conservation Area, Makobulaan Nature Reserve, Mount Anderson Catchment Nature Reserve, Mount Anderson Nature Reserve, Ohrigstad Dam Nature Reserve, Sterkspruit Nature Reserve and Tweefontein Primary Conservation Area.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Mauchesburg Alpine Grasslands showing original area of ecosystem

95. Mossel Bay Shale Renosterveld (FRs 14)

| | |
|--|---|
| Reference number | FRs 14 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Hessequa LM and Mossel Bay LM |
| Original area of ecosystem | 80 000 ha |
| Remaining natural area of ecosystem (%) | 41% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 21 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 10 endemic plant species |

Geographical location

Coastal plains and valleys from the Kruisrivier near Riversdale to Botterberg, west of the Robinson Pass, centred on the Gouritz River and bordered by mountains (Langeberg, Outeniqua) to the north and the N2 road to the south, except for a few small patches further south (south of Cooper).

Description

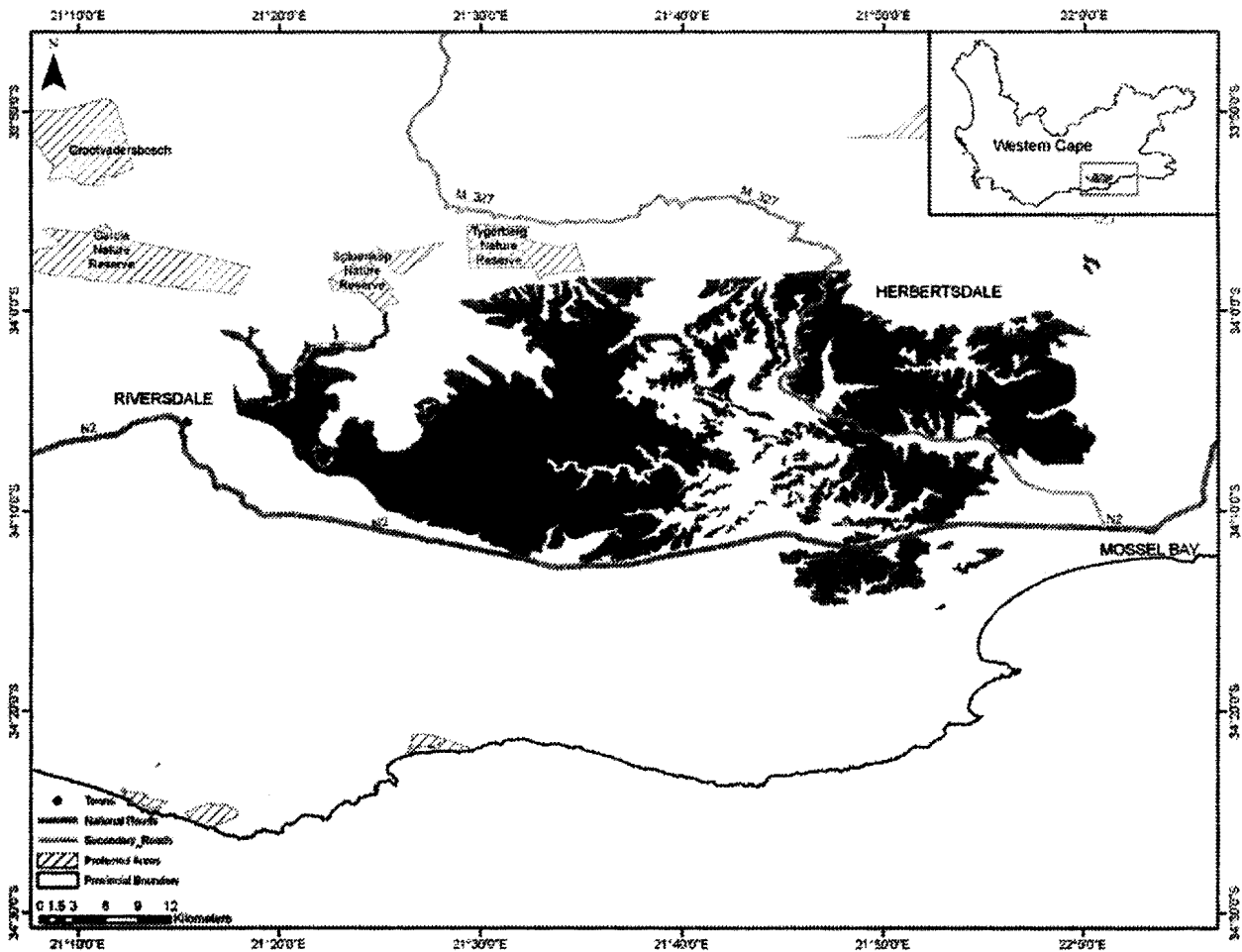
Undulating hills and tablelands, steeply dissected by rivers. The vegetation of the area is mainly a medium dense, medium tall cupressoid-leaved shrubland dominated by renosterbos, dotted by sparse, tall shrubs. Thicket patches and thicket elements are common, possibly because the landscape is more rugged than in the case of the Rûens shale renosterveld ecosystems, and therefore less prone to fire. Fire-safe habitats, such as steep slopes, gullies and termitaria have thicket clumps, dominated by *Euclea undulata*, *Putterlickia pyracantha* and *Rhus lucida*. Steep north-facing slopes have succulent thicket elements. The southern reaches may be covered with a calcrete layer bearing South Coast limestone fynbos elements. At least 10 endemic plant species and 21 Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected, however small patches are found in Langeberg-oos mountain catchment area.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 186. South African National Biodiversity Institute, Pretoria.



Location of Mossel Bay Shale Renosterveld showing original area of ecosystem

96. Mount Thesiger Forest Complex (FOR 5)

| | |
|--|-----------------------|
| Reference number | FOR 5 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | Eastern Cape |
| Municipality | Port St Johns LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 500 ha |
| Proportion of ecosystem protected | 10% of remaining area |
| Known number of species of special concern | |

Geographical location

Forest complex adjoining Port St Johns in the Matiwane District around Mount Thesiger, north and south of the Mzimvubu River in Eastern Cape (3129DA). The ecosystem includes the following forest patches: 8721, 8722, 8723, 8724, 8725, 8726, 8727, 8728, 8729, 8730, 8731, 8732, 8733, 8734, 8735, 8736, 8768, 8774, 8797, 8920, 8921, 8943, 8944, 8945, 8946, 8947, 8951, 8952, 8984, 8986, 9000, 9001, 9002, 9003, 9004, 9005, 9006, 9032, 9033, 9034, 9035, 9036, 9037, 9038, 9095, 9096, 9097, 9189, 9190, 9191, 9192, 9193, 9194, 9195, 9214, 9215, 9251, 9285, 9289, 9290, 9291, 9292, 9293, 9294, 9295, 9296, 9297, 9306, 9307, 9308, 9314, 9315, 9317, 9318, 9319, 9321, 9322, 9327, 9332, 9350, 17996, 17997, 18000, 18016, 18017, 18021, 18028, 18035, 18037, 18044, 18045, 18047, 18048, 18049, 18056, 18059 and 18068.

Description

The ecosystem falls within the Transkei Coastal Scarp Forest. This forest complex is among the most diverse in terms of woody plant species with 137 species recorded. Mount Thesiger is also diverse in orchids with 32 orchid species recorded. The socio-economic value of the ecosystem is also high.

Other information

Approximately 10% of the ecosystem is protected and about half of the ecosystem falls in a State forest.

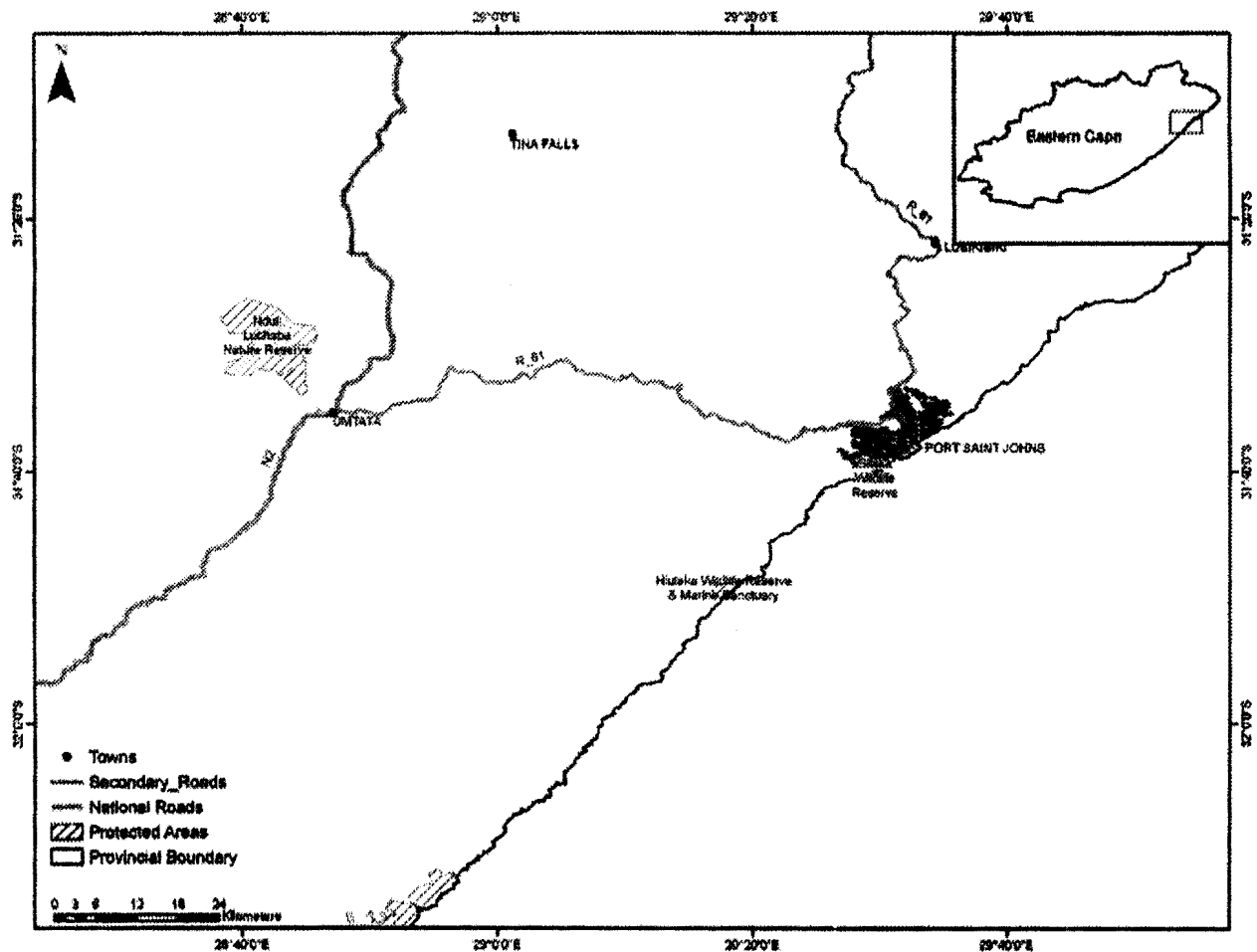
References

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry.

Cawe, S. G. & Geldenhuys, C.G. 2007. Resource status and population dynamics of target species in natural forests of the Port St Johns Forest Estate: A basis for sustainable resource use. Report for the Department of Water Affairs and Forestry.

Department of Water Affairs and Forestry. National Forest Inventory.

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.



Location of Mount Theisiger Forest Complex

97. Ngome Mistbelt Grassland and Forest (KZN 31)

| | |
|--|---|
| Reference number | KZN 31 |
| Listed under Criterion | F |
| Biome | Savanna, Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | Abaqulusi LM |
| Original area of ecosystem | 24 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Gluckstadt (2731CC) and Ngome (2731CD). Ecosystem delineated by the Northern Zululand Mistbelt Grassland and the Low Escarpment Mistbelt Forest.

Description

Key biodiversity features include one bird species, the Blue Swallow; six millipede species including *Centrobolus decoratus*, *Centrobolus rubricollis*, *Doratogonus avius*, *Doratogonus hoffmani*, *Doratogonus montanus*, *Doratogonus natalensis*; two plant species including *Brachystelma ngomense* and *Helichrysum ingomense*; and five vegetation types including Northern KwaZulu-Natal Moist Grassland, Low Escarpment Mistbelt Forest, Northern Zululand Mistbelt Grassland, Northern Zululand Sourveld and Paulpietersburg Moist Grassland. The forest portion of the ecosystem consists of a tall layered forest of between 15 – 25m with a canopy layer dominated by *Syzygium gerrardii*; a well-developed seedling and sapling stratum and understory tree stratum; and a well-developed herb layer in the wet parts of the forest. Eighty-six tree and shrub species and 19 epiphytic orchid species have been recorded.

Other information

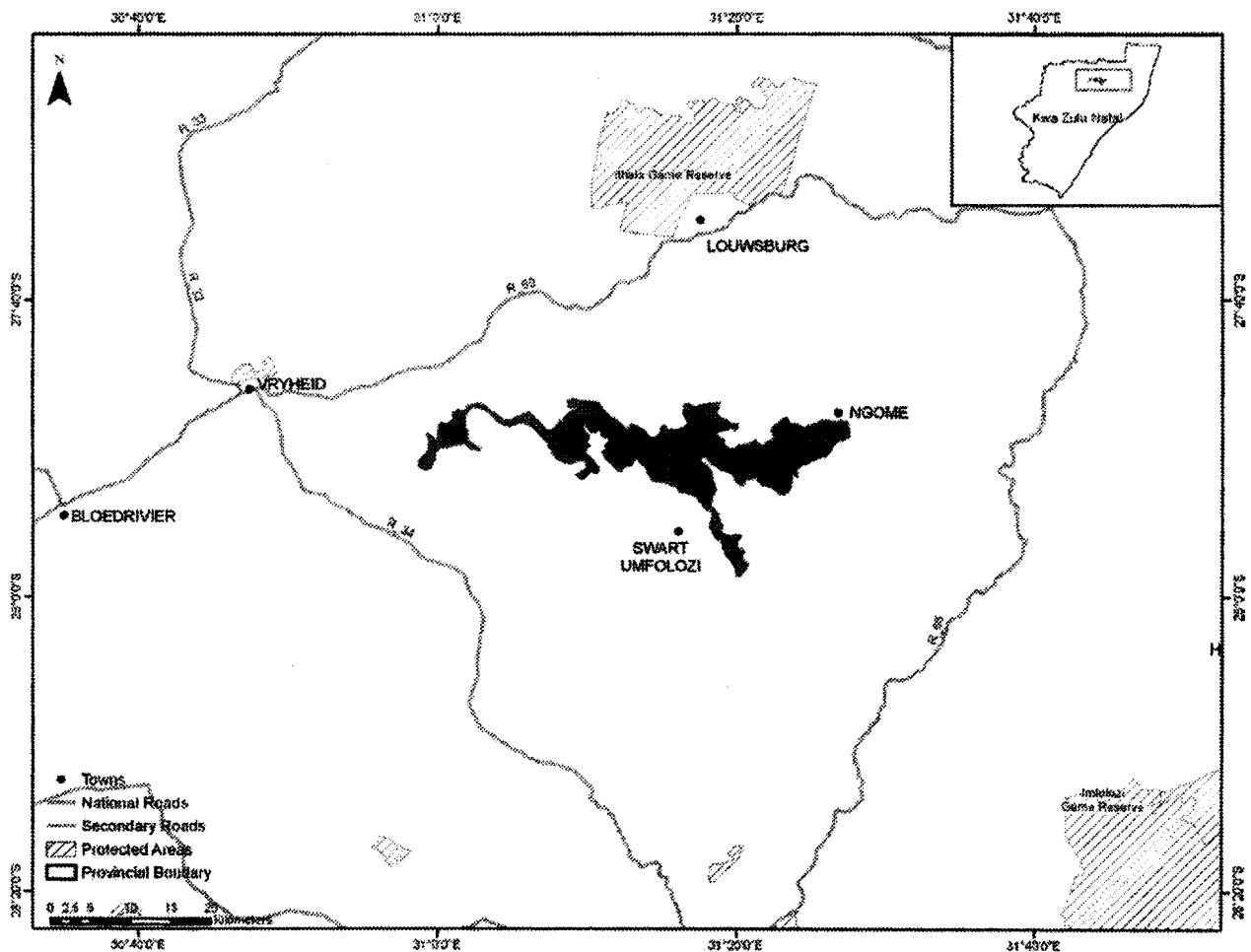
The ecosystem is not protected.

Reference

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry.

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.

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.



Location of Ngome Mistbelt Grassland and Forest showing original area of ecosystem

98. Noordkaap Greenstone Bushveld (MP 8)

| | |
|--|---|
| Reference number | MP 8 |
| Listed under Criterion | F |
| Biome | Savanna |
| Province | Mpumalanga |
| Municipalities | Mbombela LM and Umjindi LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 98% |
| Proportion of ecosystem protected | 23% of original area |
| Known number of species of special concern | 10 threatened or endemic plant or animal species including those listed below |

Geographical location

Hills between Noordkaap settlement and Barberton Nature Reserve (2531DB and 2531CA). Hilly terrain comprised of ultramafic rocks and greenstone. Landtypes, serpentine outcrops and serpentine endemic plant species used to delineate the ecosystem.

Description

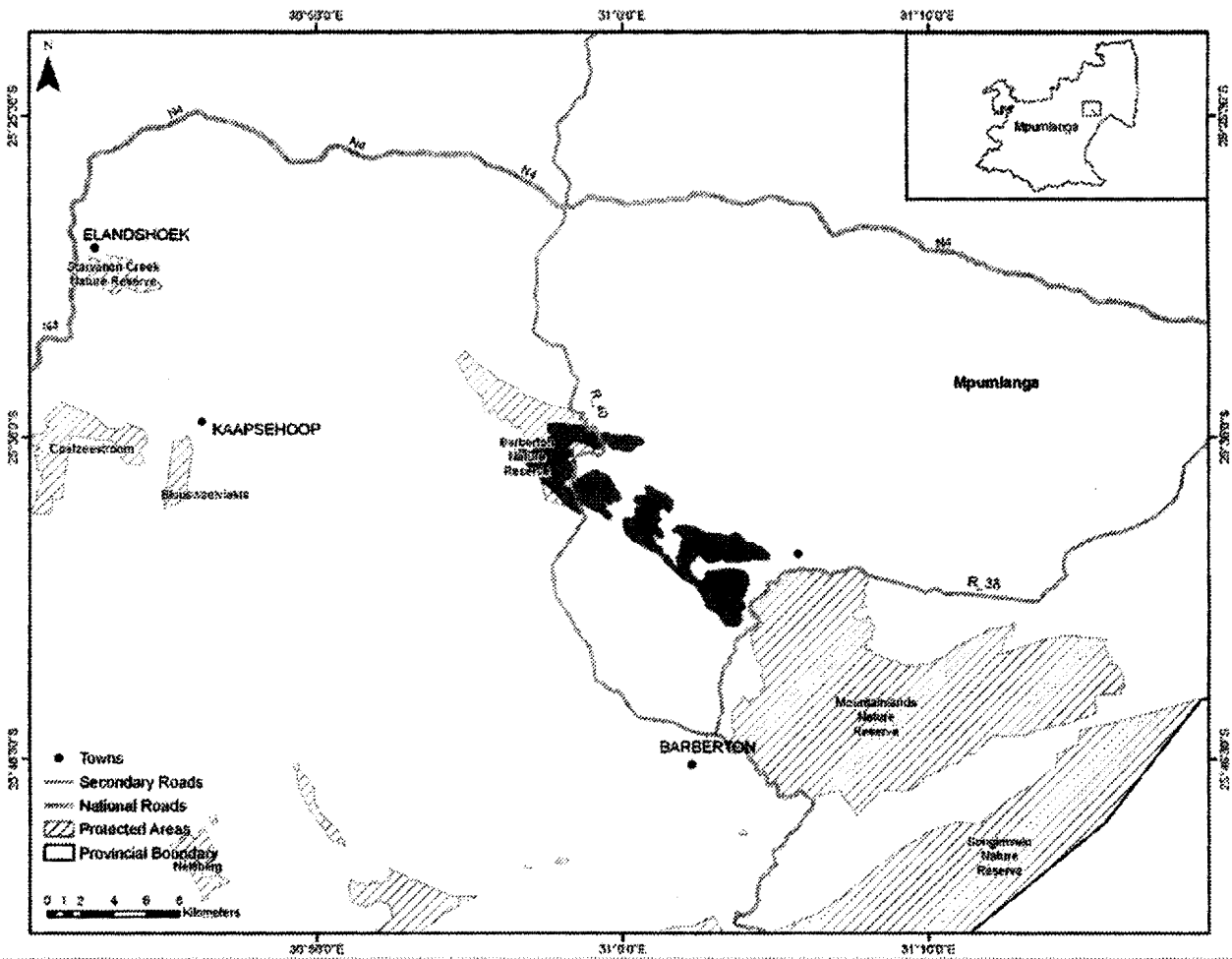
Key biodiversity features include two butterfly species including *Lepidochrysops swanepoeli* and *Lepidochrysops jefferyi*; three bird species including Saddle-backed Stork, Southern Ground Hornbill and Striped Flufftail; three reptile species including *Aspedilaps scutatus intermedius*, *Cordylus warreni barbertonensis* and *Platysaurus wilhelmi*; two plant species including *Gladiolus serpenticola* and *Protea curvata*; and three vegetation types including Barberton Serpentine Sourveld, Granite Lowveld and Legogote Sour Bushveld. The ecosystem includes part of the Barberton Centre of Endemism.

Other information

Approximately 23% of the ecosystem is protected in the Barberton Nature Reserve.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Noordkaap Greenstone Bushveld showing original area of ecosystem

99. Ntimbankulu Forest (FOR 6)

| | |
|--|---|
| Reference number | FOR 6 |
| Listed under Criterion | F |
| Biome | Forest |
| Province | KwaZulu-Natal |
| Municipality | Umzumbe LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 500 ha |
| Proportion of ecosystem protected | 0% of remaining area |
| Known number of species of special concern | 2 Red Data mammal species and 10 rare and endemic plant species |

Geographical location

Near Port Shepston in southern KwaZulu-Natal (3030CB).

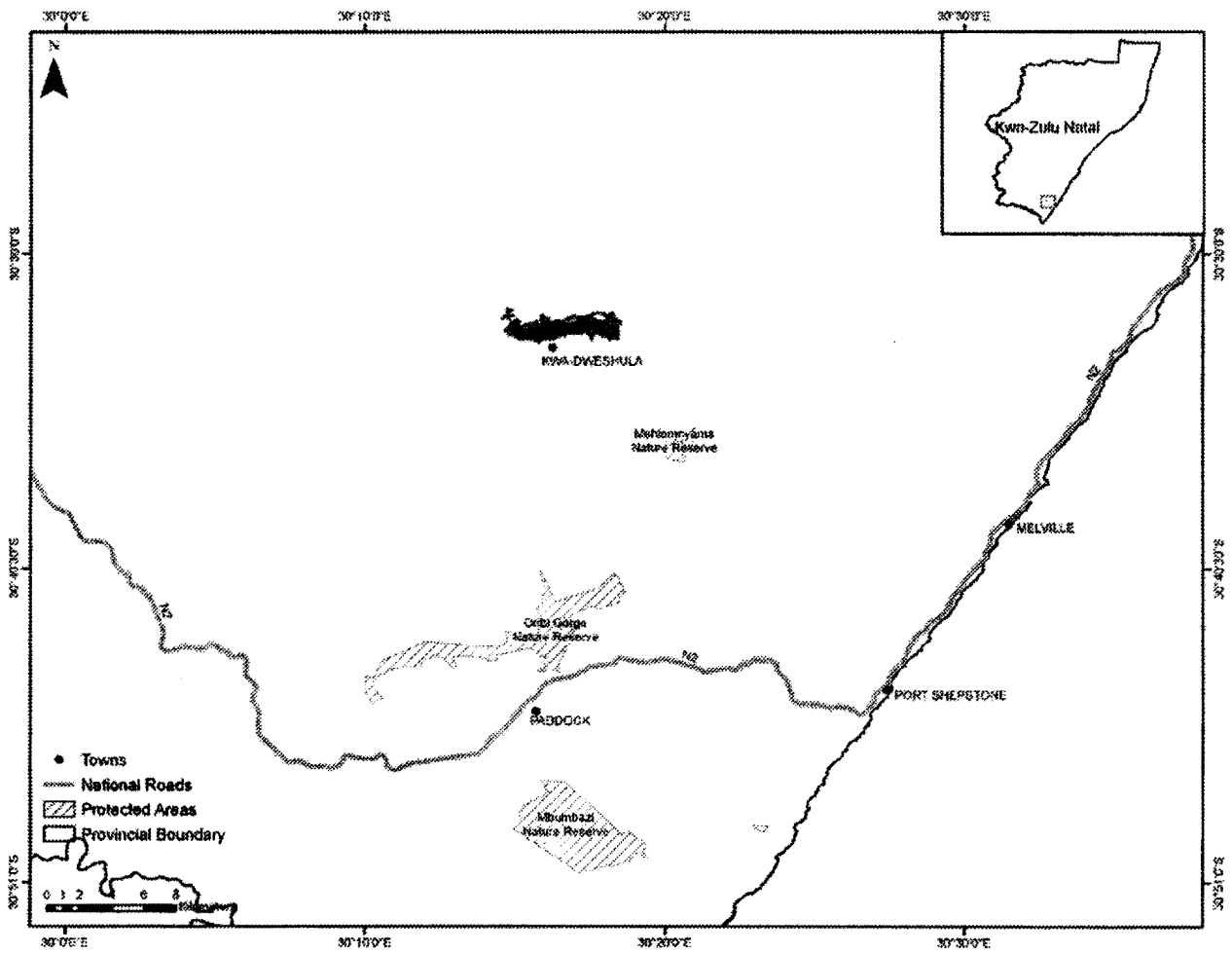
Description

This ecosystem falls within the Eastern Scarp Forest. High forest with distinct strata, relatively open under the canopy. Ecosystem has relatively high biodiversity with more than 120 woody plant species and ten rare and endemic plant species for example *Rhus rudatisii* and *Stachys rudatisii*. Two Red Data mammal species occur in the ecosystem.

Reference

Berliner, D., van der Merwe, I.J., Benn, D. & Rouget, M. 2006. Systematic conservation planning for the Forest Biome of South Africa: Approach, methods and results used for the selection of priority forests. Unpublished Report for the Department of Water Affairs and Forestry. Department of Water Affairs and Forestry. National Forest Inventory.

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.



Location of Ntimbankulu Forest

100. Ntunjamblli Valley Complex (KZN 32)

| | |
|--|---|
| Reference number | KZN 32 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Umvoti LM and Maphumulo LM |
| Original area of ecosystem | 900 ha |
| Remaining natural area of ecosystem (%) | 53% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

Kranskop (2830DD). Ecosystem delineated by the upper reaches of the valleys containing scarp forest.

Description

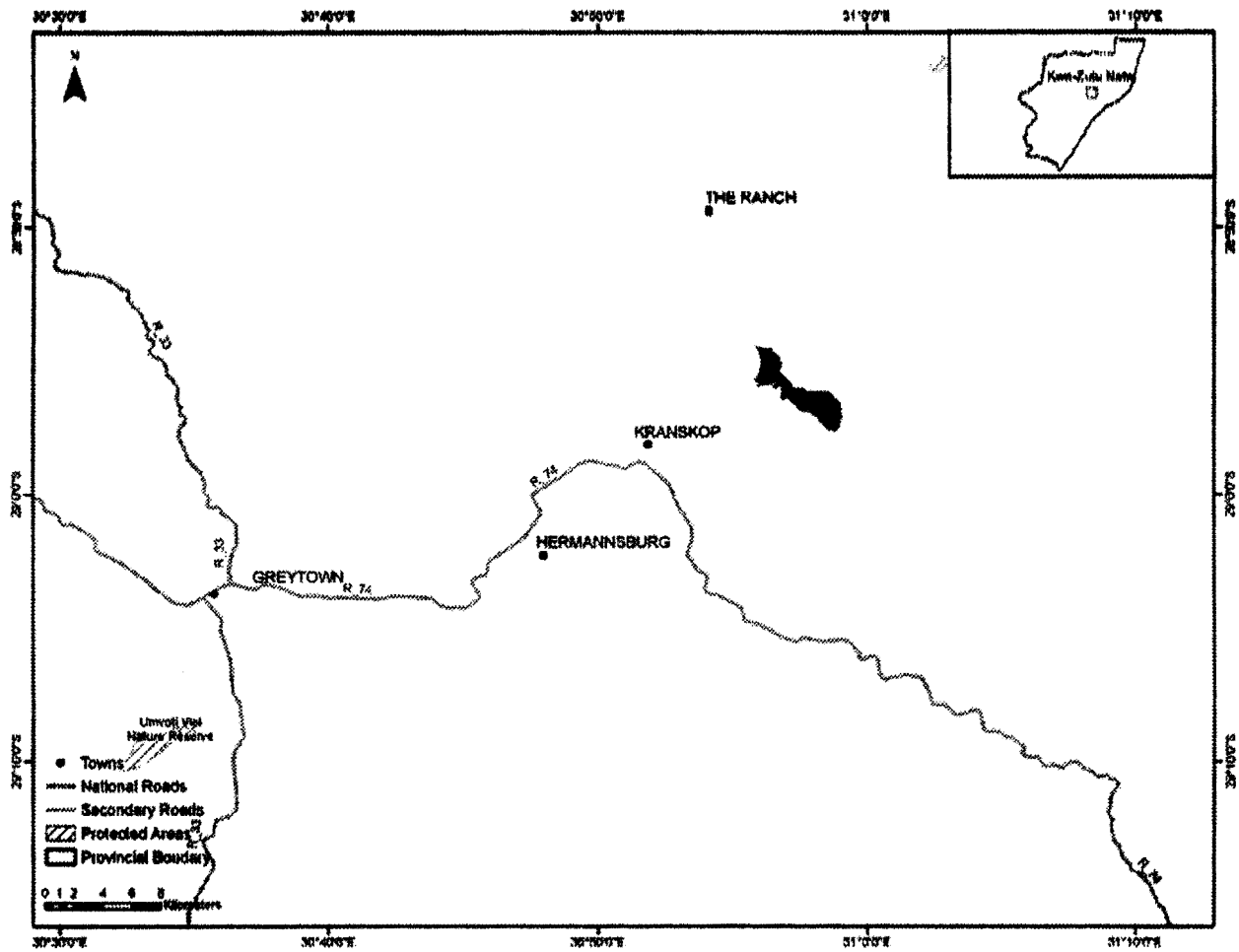
Key biodiversity features include three millipede species including *Allawrencius complex*, *Centrobolus fulgidus*, and *Doratogonus natalensis*; one plant species including *Senecio exuberans*; and three vegetation types including Eastern Scarp Forest, Eastern Valley Bushveld, Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Ntunjambili Valley Complex showing original area of ecosystem

101. Oribi-Port Edward Pondoland-Ugu Sourveld (KZN 33)

| | |
|--|--|
| Reference number | KZN 33 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ezingoleni LM and Hibiscus Coast LM |
| Original area of ecosystem | 41 000 ha |
| Remaining natural area of ecosystem (%) | 29% |
| Proportion of ecosystem protected | 12% of original area |
| Known number of species of special concern | 23 threatened or endemic plant and animal species including those listed below |

Geographical location

St. Faith's (3030CA), Port Shepstone (3030CB), Izingolweni (3030CC), Margate (3030CD), Port Edward (3130AA). Ecosystem delineated by the boundaries of Pondoland-Ugu Sandstone Coastal Sourveld. Western boundary further refined using the Mtamvuna River, whilst eastern boundary delineated by the Interior South Coast Grasslands threatened ecosystem (KZN 7).

Description

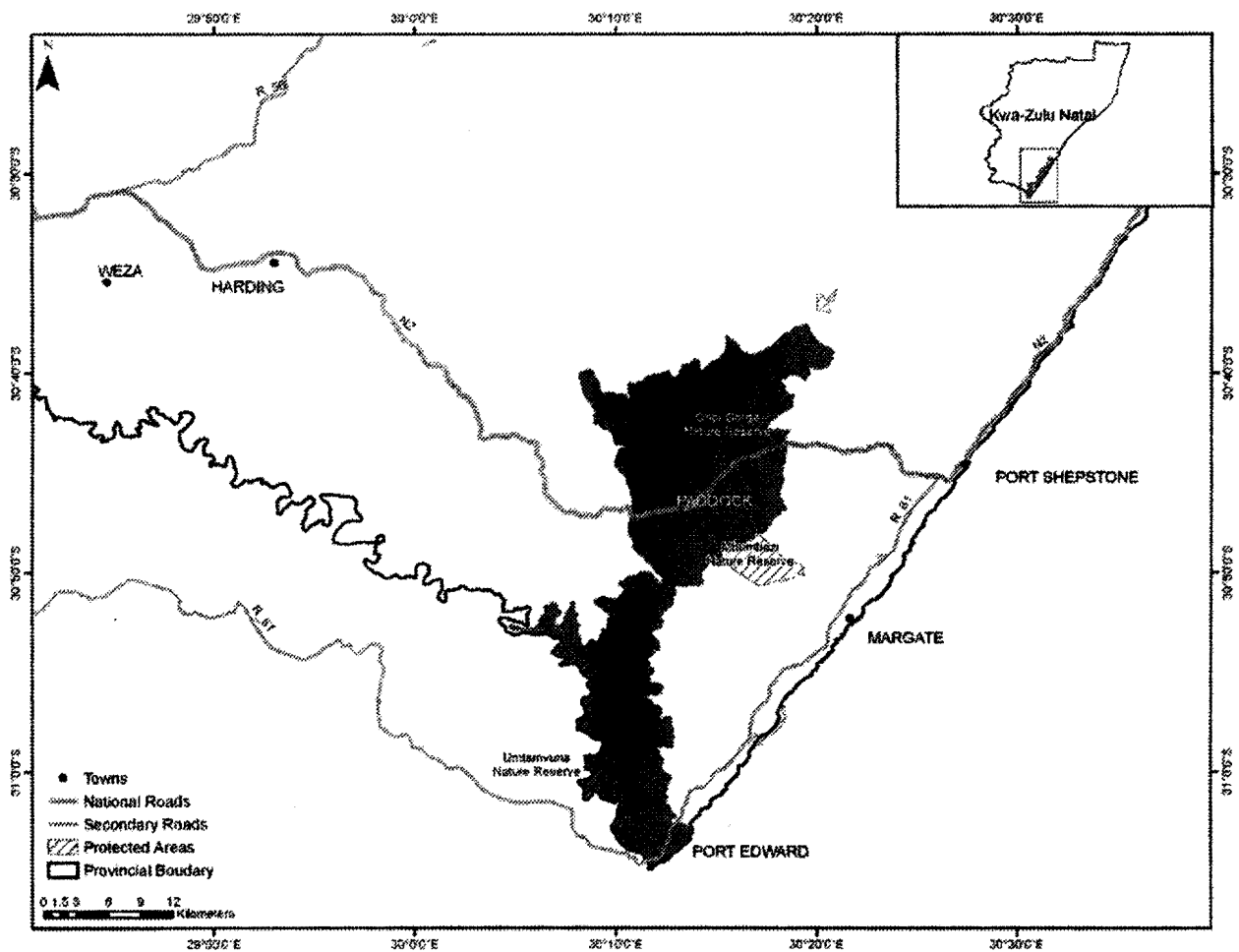
Key biodiversity features include one mammal species, Oribi; two millipede species including *Doratogonus fragilis* and *Doratogonus montanus*; eighteen plant species for example *Catha abbotti*, *Crassula streyi*, *Craterostigma nanum* var *nanum*, *Dahlgrenoden natalense*, *Diaphanathe millarii*, *Eugenia simii*, *Huernia hystrix parvula*, *Kniphofia rooperi*, *Phylica natalensis*, *Plectranthus ernstii*, *Pseudosalacia streyi*, *Rhynchochelyx lawsoniodes*, *Streptocarpus primulifolius*, *Watsonia confusa* and *Watsonia inclinata*; two reptile species including *Bradypodion angustiarum* and *Bradypodion wezae*; and six vegetation types including Ngongoni Veld, Eastern Valley Bushveld, KwaZulu-Natal Coastal Forest, Pondoland Scarp Forest, Pondoland-Ugu Sandstone Coastal Sourveld and KwaZulu-Natal Coastal Belt.

Other information

Approximately 12% of the ecosystem is protected in the Oribi Gorge Nature Reserve, Mbumbazi Nature Reserve and Umtamvuna Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Oribi-Port Edward Pondoland-Ugu Sourveld showing original area of ecosystem

102. Peninsula Sandstone Fynbos (FFs 9)

| | |
|--|--|
| Reference number | FFs 9 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipality | City of Cape Town MM |
| Original area of ecosystem | 23 000 ha |
| Remaining natural area of ecosystem (%) | 91% |
| Proportion of ecosystem protected | 90% of original area |
| Known number of species of special concern | 66 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 140 endemic plant species |

Geographical location

Confined to the Cape Peninsula, from the top of Lion's Head and Table Mountain (Cape Town) to Cape Point and Cape of Good Hope and including Constantiaberg and Swartkopsberge.

Description

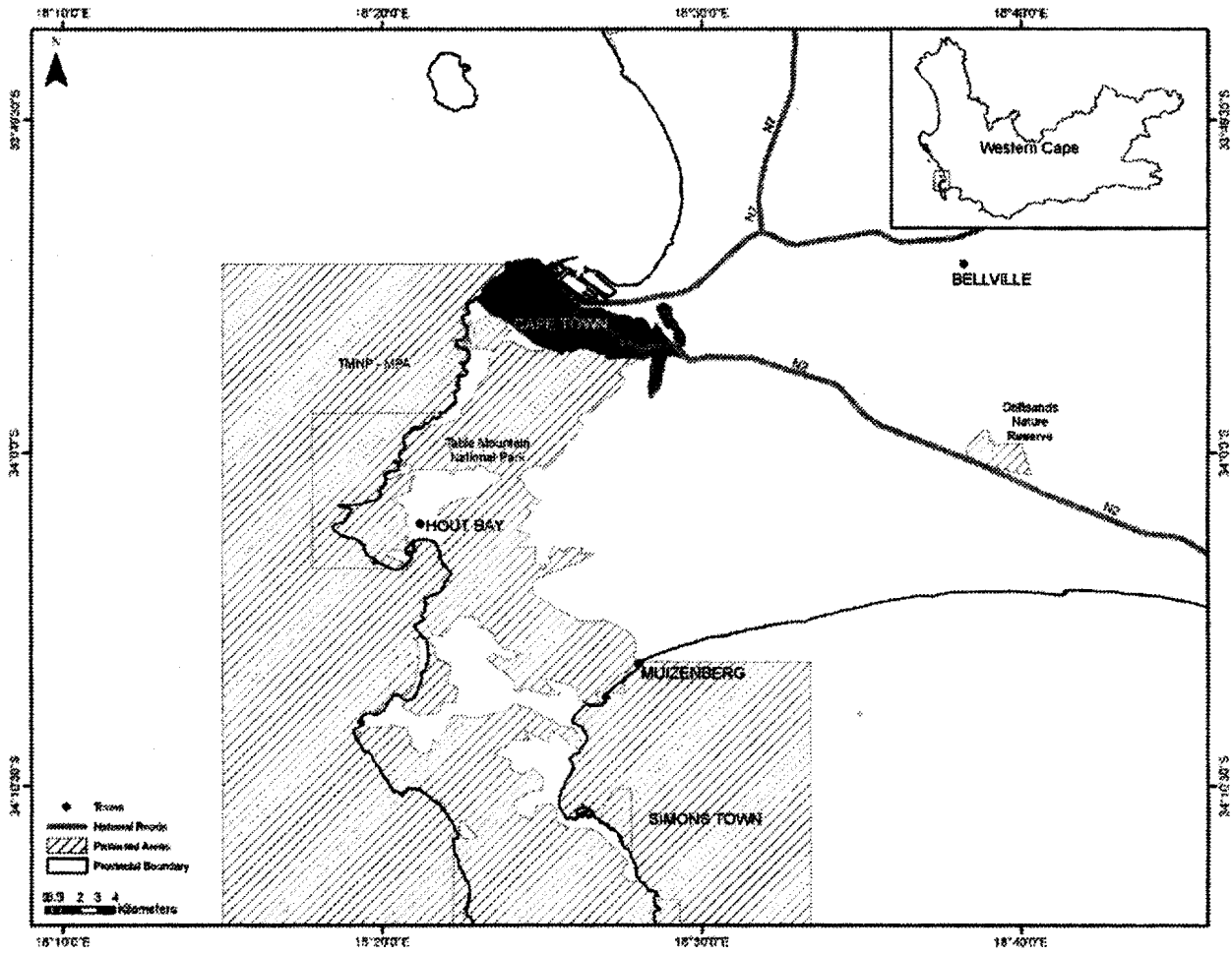
Gentle to steep slopes, with cliffs in the north, over a 50 km long peninsula. Vegetation is a medium dense, tall proteoid shrubland over a dense moderately tall, ericoid-leaved shrubland; mainly proteoid, ericaceous and restioid fynbos, with some asteraceous fynbos. At least 140 endemic plant species and 66 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 90% of the ecosystem is protected in the Table Mountain National Park.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 107-108. South African National Biodiversity Institute, Pretoria.



Location of Peninsula Sandstone Fynbos showing original area of ecosystem

103. Pietermaritzburg South (KZN 34)

| | |
|--|--|
| Reference number | KZN 34 |
| Listed under Criterion | F |
| Biome | Savanna, Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | The Msunduzi LM, Richmond LM and Ingwe LM |
| Original area of ecosystem | 23 000 ha |
| Remaining natural area of ecosystem (%) | 37% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 19 threatened or endemic plant and animal species including those listed below |

Geographical location

Byrne (2930CC). Ecosystem delineated by prominent plateau, river and ridge features. Southern and eastern boundaries delineated by the contours located at the base of the prominent mountains within the region. Northern boundary delineated by the contours along the crest on the mountains; and western boundary delineated by a river channel.

Description

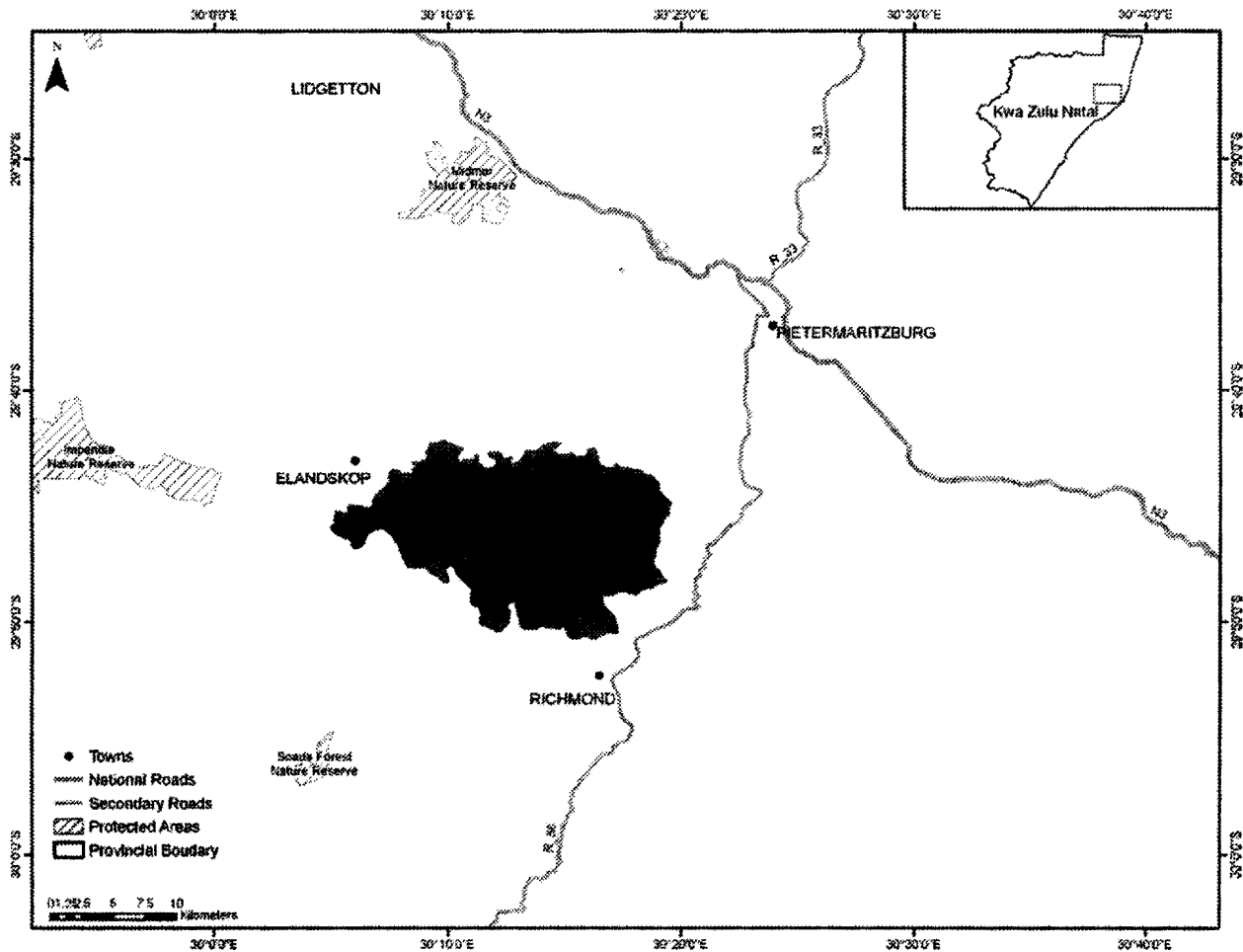
Key biodiversity features include two amphibian species, including *Arthroleptella ngongoniensis* and *Leptopelis xenodactylus*; one bird species, the Blue Swallow; one mammal species, the Oripi; eight millipede species including *Centrobolus decoratus*, *Centrobolus lawrencei*, *Centrobolus tricolor*, *Doratogonus avius*, *Doratogonus cristulatus*, *Doratogonus hoffmani*, *Doratogonus montanus* and *Doratogonus natalensis*; six plant species including *Dierama reynoldsii*, *Geranium natalense*, *Gerbera aurantiaca*, *Hesperantha woodii*, *Plectranthus rehmannii* and *Senecio exuberans*; one reptile species, *Bradypodion bourquini*; and four vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Pietermaritzburg South showing original area of ecosystem

104. Potberg Ferricrete Fynbos (FFf 2)

| | |
|--|--|
| Reference number | FFf 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Swellendam LM and WCDMA03 |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 55% |
| Proportion of ecosystem protected | 6% of original area |
| Known number of species of special concern | 17 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 1 endemic plant species |

Geographical location

Northern and western lowermost slopes of Potberg Mountain from Potberg to Poortsrivier and bordered on the north by the Breede River from Diepkloof eastwards.

Description

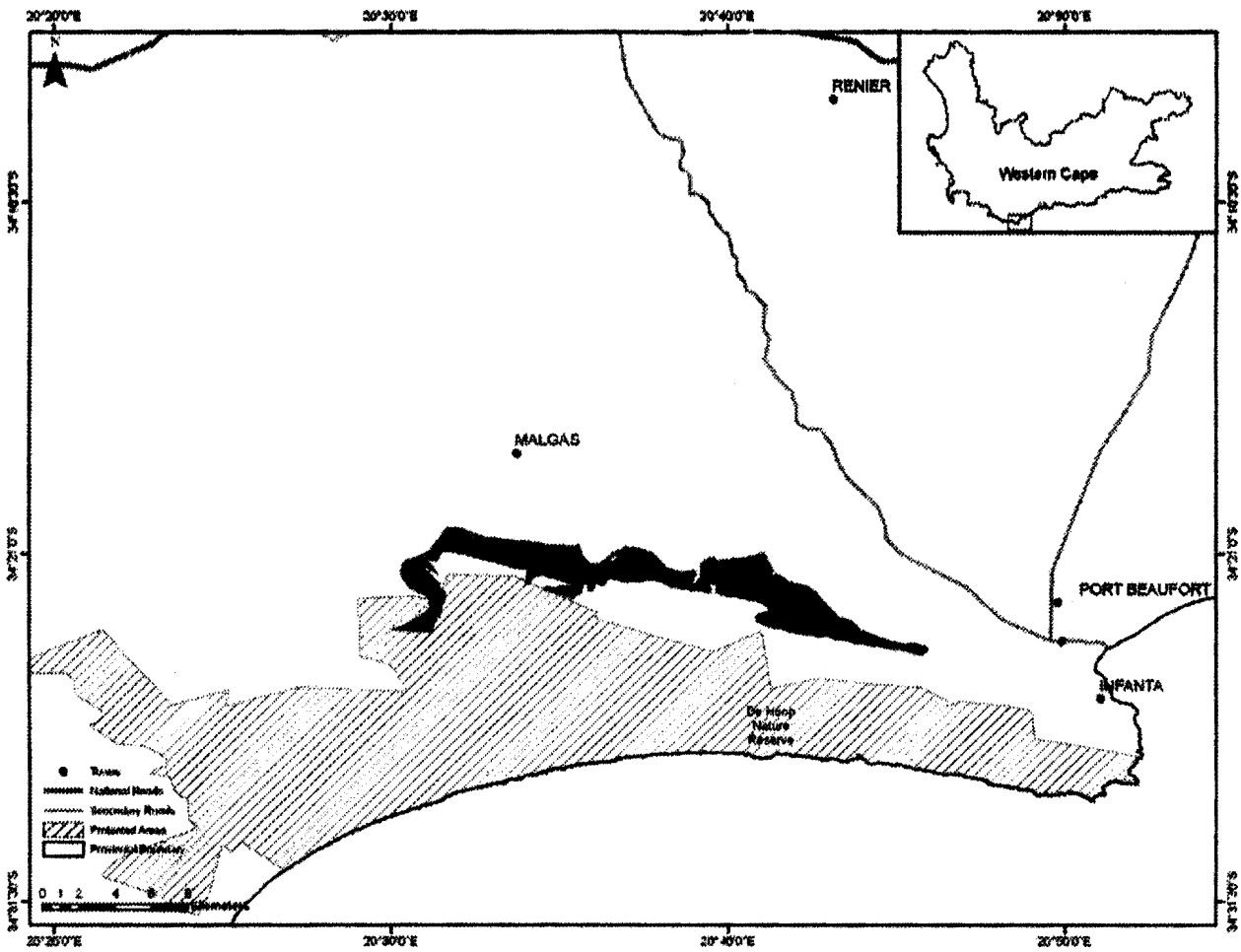
Slight slopes and moderately undulating plains perched on the northern slopes below Potberg. A medium tall evergreen shrubland. Asteraceous and proteoid fynbos are dominant, with localised stands of restioid fynbos. At least one endemic plant species and 17 Red Data List plant species occur in the ecosystem.

Other information

Approximately 6% of the ecosystem is protected in De Hoop Nature Reserve.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 160. South African National Biodiversity Institute, Pretoria.



Location of Potberg Ferricrete Fynbos showing original area of ecosystem

105. Qudeni Mountain Mistbelt Forest and Grassland (KZN 35)

| | |
|--|---|
| Reference number | KZN 35 |
| Listed under Criterion | F |
| Biome | Grassland, Forest and Savanna |
| Province | KwaZulu-Natal |
| Municipalities | Nquthu LM and Nkandla LM |
| Original area of ecosystem | 4000 ha |
| Remaining natural area of ecosystem (%) | 70% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Collessie (2830DA) and Qudeni (2830DB). Ecosystem lies to the west of the Qudeni Forest Reserve and includes the mistbelt grasslands and forests on Qudeni Mountain. Ecosystem delineated topographically.

Description

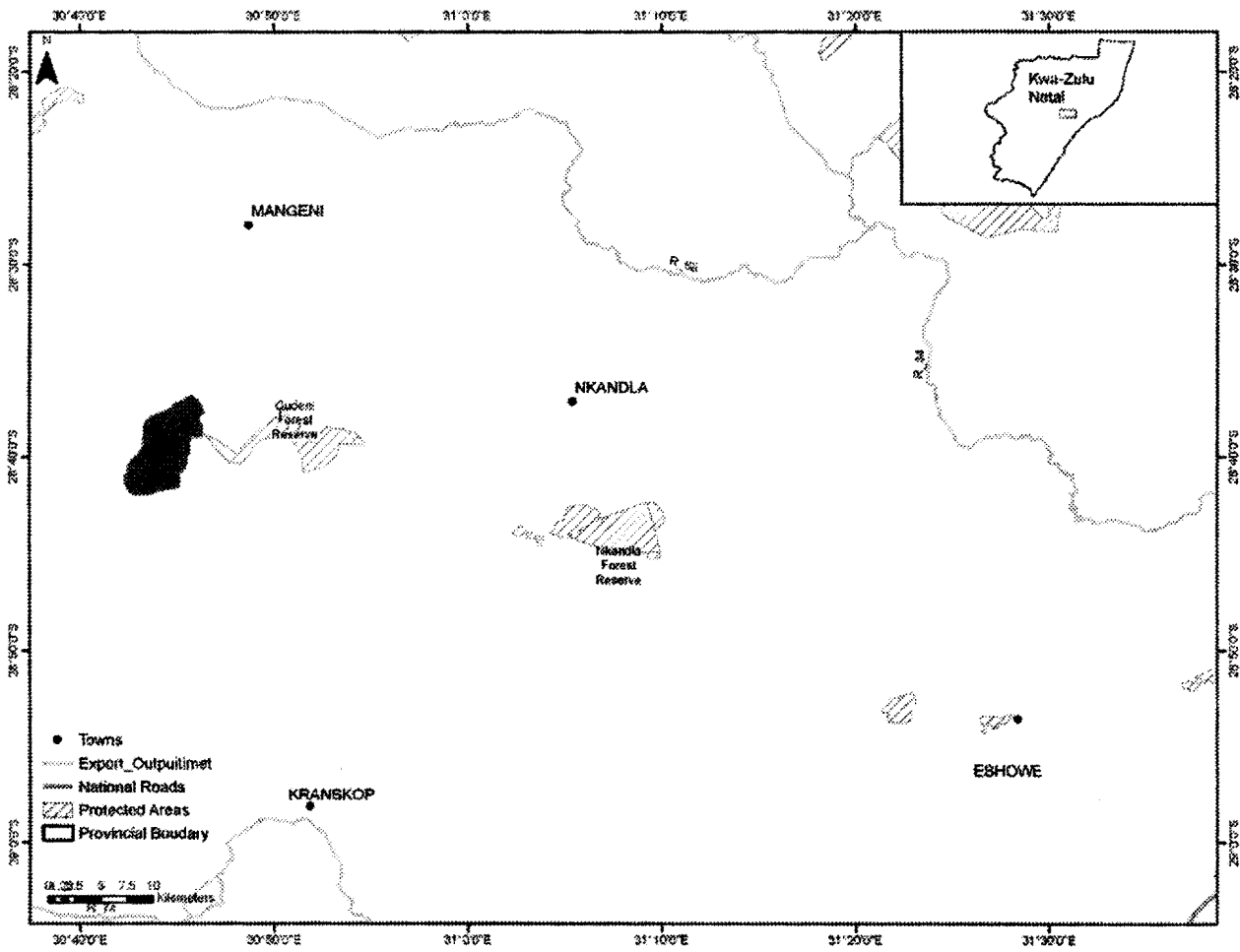
Key biodiversity features include three millipede species, *Allawrencius nodulosus*, *Allawrencius triordinatus* and *Doratogonus natalensis*; one plant species, *Acalypha entumenica*; two reptile species including *Bradypodion nemorale* and *Bradypodion tilburyi*; and five vegetation types Eastern Mistbelt Forest, Midlands Mistbelt Grassland, Ngongoni Veld, Northern KwaZulu-Natal Moist Grassland and Thukela Valley Bushveld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Qudeni Mountain Mistbelt Forest and Grassland showing original area of ecosystem

106. Saldanha Granite Strandveld (FS 2)

| | |
|--|---|
| Reference number | FS 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Saldanha Bay LM and WCDMA01 |
| Original area of ecosystem | 23 000 ha |
| Remaining natural area of ecosystem (%) | 37% |
| Proportion of ecosystem protected | 10% of original area |
| Known number of species of special concern | 45 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 15 endemic plant species |

Geographical location

On the West Coast, granite domes from Vredenburg to St Helena Bay and many points along the coast including Paternoster and Saldanha's North Head; also around Langebaan town and at Postberg on the Langebaan Peninsula.

Description

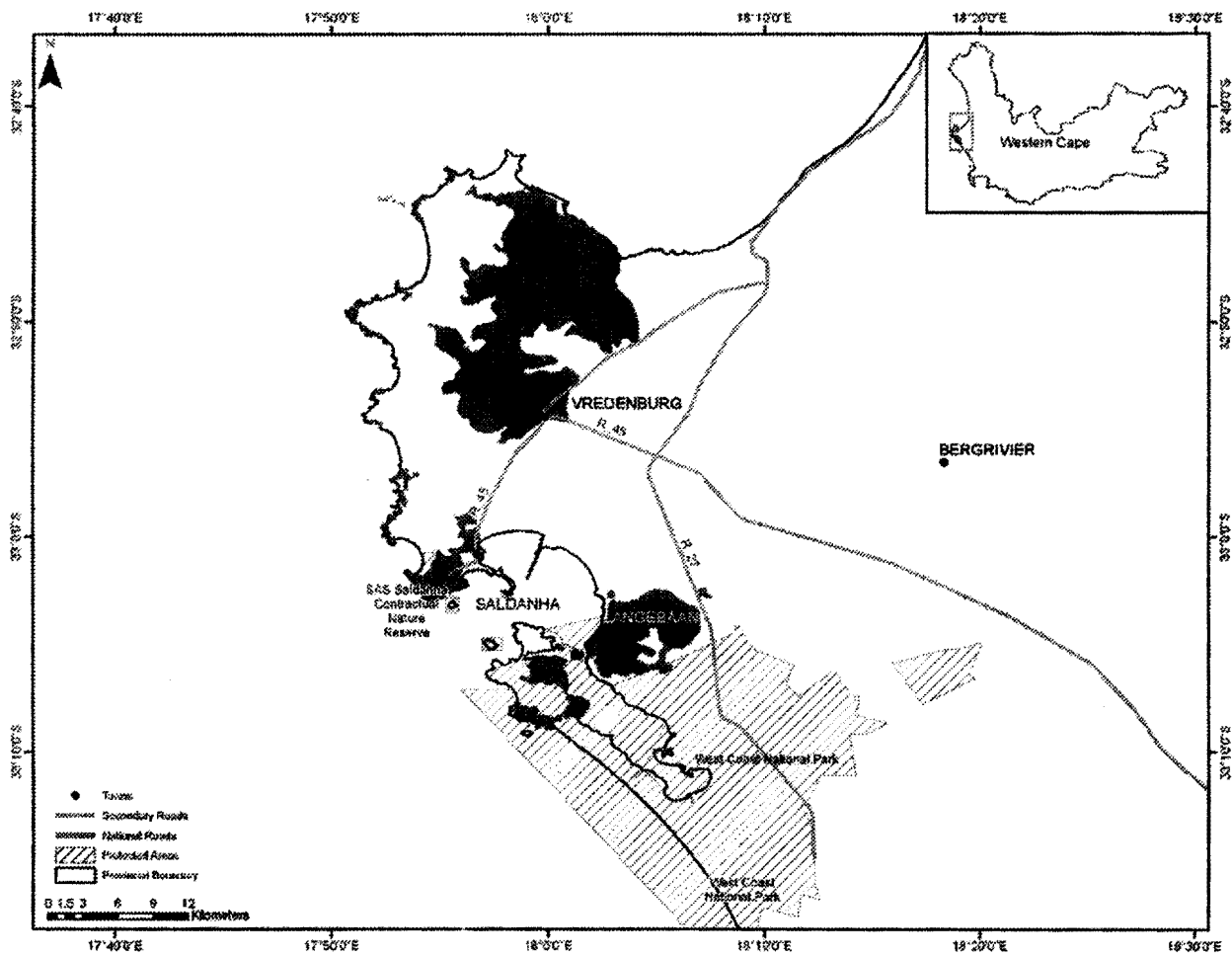
Rounded forms of granite sheets and smooth forms at their feet dominate the landscapes of this ecosystem. Low to medium shrubland, containing some succulent elements, alternates with grassy and herb-rich spots supporting a rich geophyte flora. At least 15 endemic plant species and 45 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 10% of the ecosystem is protected in the West Coast National Park, SAS Saldanha and Columbine Nature Reserves, and a small portion is found in private reserves such as West Point, Groot Paternoster and Swartriet.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 199. South African National Biodiversity Institute, Pretoria.



Location of Saldanha Granite Strandveld showing original area of ecosystem

107. Sekhukhune Mountainlands (MP 9)

| | |
|--|--|
| Reference number | MP 9 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Provinces | Mpumalanga and Limpopo |
| Municipalities | Highlands LM, Thaba Chweu LM, Greater Groblersdal LM, and Greater Tubatse LM |
| Original area of ecosystem | 121 000 ha |
| Remaining natural area of ecosystem (%) | 94% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 29 threatened or endemic plant and animal species including those listed below |

Geographical location

Between Roossenekal, Die Berg, and towards Steelpoort (2429DD, 2430CC, 2430CD, 2529BB, 2530AA, 2529BD and 2530AC). High-lying norite mountainlands occurring in Sekhukhuneland Centre of Endemism. Landtypes, altitude and species distribution ranges delineate the ecosystem boundary.

Description

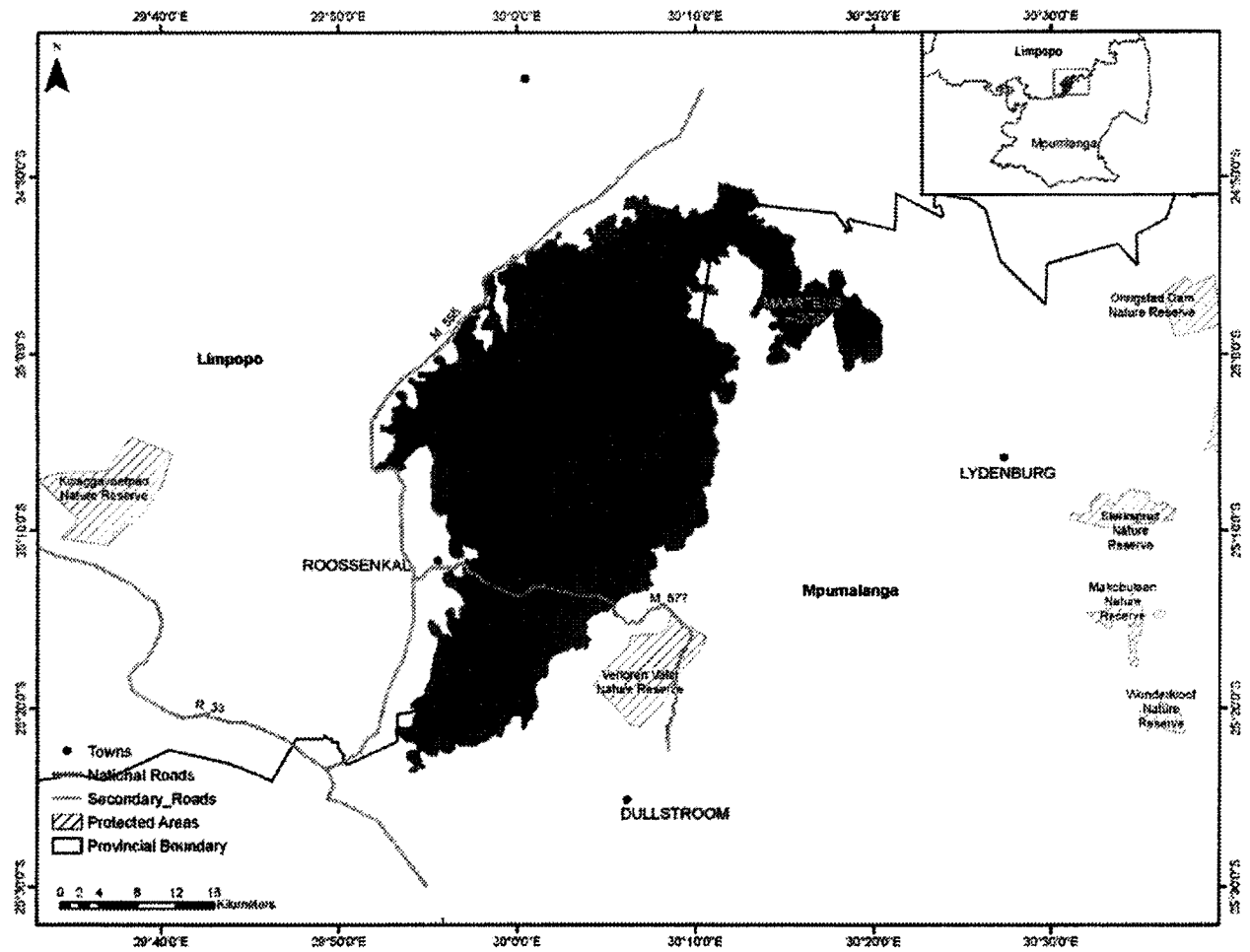
Key biodiversity features include two mammal species including Juliana's Golden Mole and Gunning's Golden Mole; eight bird species including Blue Crane, Blue Korhaan and Cape Vulture, Grey Crowned Crane, Rudd's Lark, Southern Ground Hornbill, Wattled Crane, Yellowbreasted Pipit; nineteen plant species for example *Aloe furei*, *Gladiolus rufomarginatus*, *Lydenburgia cassinioides*, *Resnova megaphylla*, *Scilla natalensis* and *Zantedeschia pentlandii*; and five vegetation types including Sekhukhune Montane Grassland, Sekhukhune Mountain Bushveld, Steenkampsberg Montane Grassland, Lydenburg Thornveld and Ohrigstad Mountain Bushveld. The ecosystem forms part of the Sekhukhuneland Centre of Endemism; it includes important subcatchments, pans and wetlands and is important for grassland processes.

Other information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Sekhukune Mountainlands showing original area of ecosystem

108. Sekhukune Norite Bushveld (LP 1)

| | |
|--|---|
| Reference number | LP 1 |
| Listed under Criterion | F |
| Biome | Savanna |
| Province | Limpopo (area previously part of Mpumalanga) |
| Municipality | Greater Tubatse LM (100% of ecosystem) |
| Original area of ecosystem | 38 000 ha |
| Remaining natural area of ecosystem (%) | 92% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Three polygons delineated, occurring between Burgersfort, Motlolo, and Penge (2430AC, 2430AD, 2430CA, 2430CB and 2430CD). Low-lying norite bushveld with patches of quartzite delineated using landtypes, altitude and plant distribution ranges.

Description

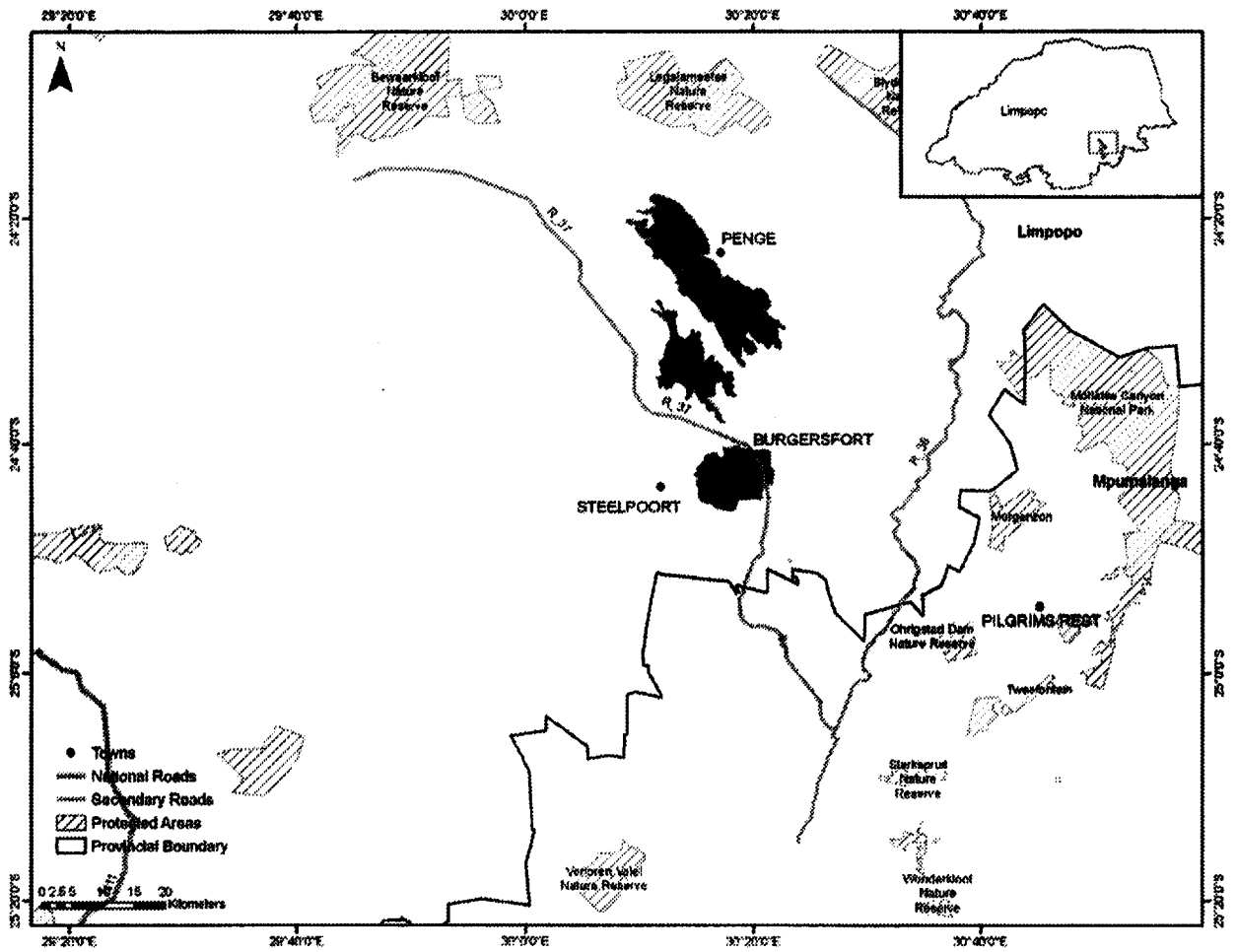
Key biodiversity features include one mammal species, Meester's Golden Mole; two bird species, the Saddle-billed Stork and Southern Ground Hornbill; six plant species for example *Asparagus clareae*, *Asparagus lynnetaeae*, *Ceropegia distincta*, *Rhus batophylla* and *Schotia latifolia*; and three vegetation types including Ohrigstad Mountain Bushveld, Sekhukune Mountain Bushveld and Sekhukune Plains Bushveld. The ecosystem includes part of the Sekhukuneland Centre of Endemism; it includes important sub-catchments and provides an ecological corridor.

Other information

The ecosystem is not protected.

Reference

Lötter, M.C. 2006. Mpumalanga Biodiversity Conservation Plan. Mpumalanga Tourism and Parks Agency, Nelspruit.



Location of Sekhukune North Bushveld showing original area of ecosystem

109. Sihleza (KZN 36)

| | |
|--|---|
| Reference number | KZN 36 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | UMuziwabantu LM and Umzimkhulu LM |
| Original area of ecosystem | 14 000 ha |
| Remaining natural area of ecosystem (%) | 33% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic animal species including those listed below |

Geographical location

Glengarry (3029BC) and Weza (3029DA). Ecosystem delineated by contours associated with the surrounding steep sided mountains.

Description

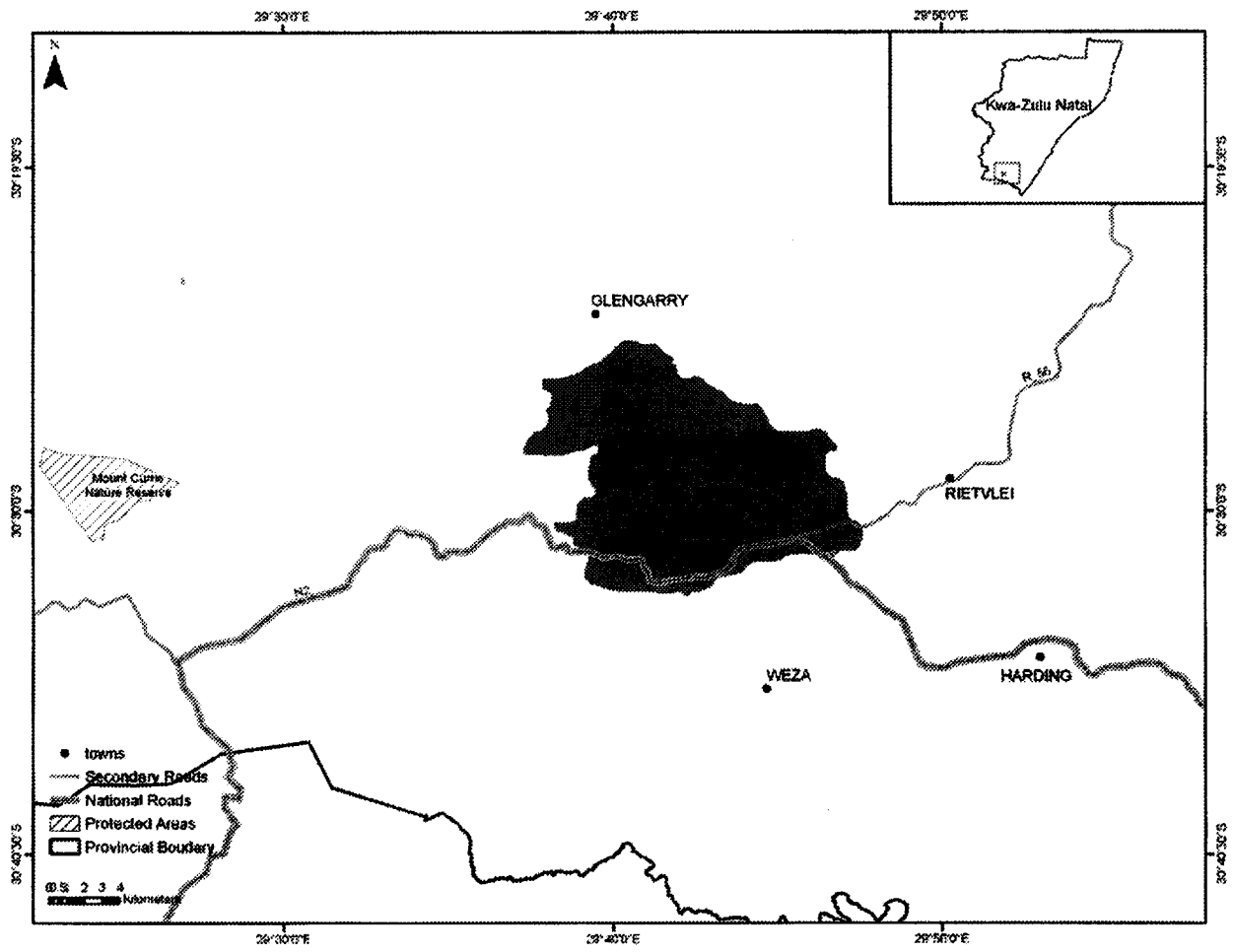
Key biodiversity features include one amphibian species, *Arthroleptella ngongoniensis*; two millipede species including *Allawrencius verrucosus* and *Doratogonus montanus*; and three vegetation types Ngongoni Veld, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Sihleza showing original area of ecosystem

110. Southern Weza State Forest (KZN 37)

| | |
|--|---|
| Reference number | KZN 37 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | UMuziwabantu LM and Greater Kokstad LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 66% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic animal species including those listed below |

Geographical location

Weza (3029DA). Ecosystem delineated by the Weza State Forest on the west (using the ridge line) and on the east; and by the river on the south. Ecosystem includes forest patches and the connecting grassland patches.

Description

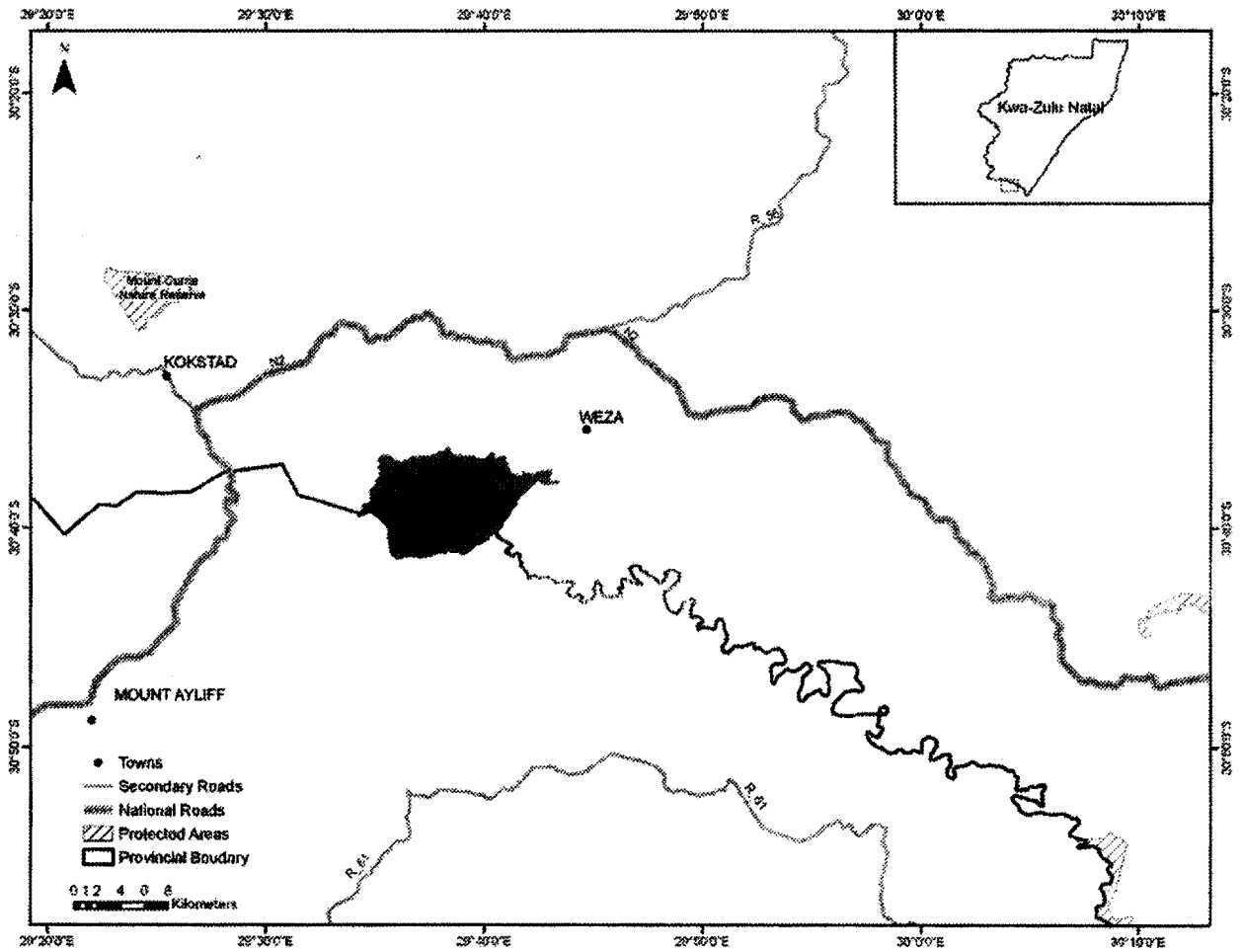
Key biodiversity features include one amphibian species, *Arthroleptella ngongoniensis*; two millipede species including *Allawrencius verrucosus* and *Doratogonus montanus*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Southern Weza State Forest showing original area of ecosystem

111. Stoffberg Mountainlands (MP 10)

| | |
|--|--|
| Reference number | MP 10 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | Mpumalanga |
| Municipalities | Steve Tshwete LM and Highlands LM |
| Original area of ecosystem | 25 000 ha |
| Remaining natural area of ecosystem (%) | 46% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant or animal species including those listed below |

Geographical location

Small, highveld sandstone escarpment between Stoffberg and Wonderhoek (2529BC, 2529BD, 2529DA and 2529DB). Ecosystem delineated by topography, landtypes and species distributions.

Distribution

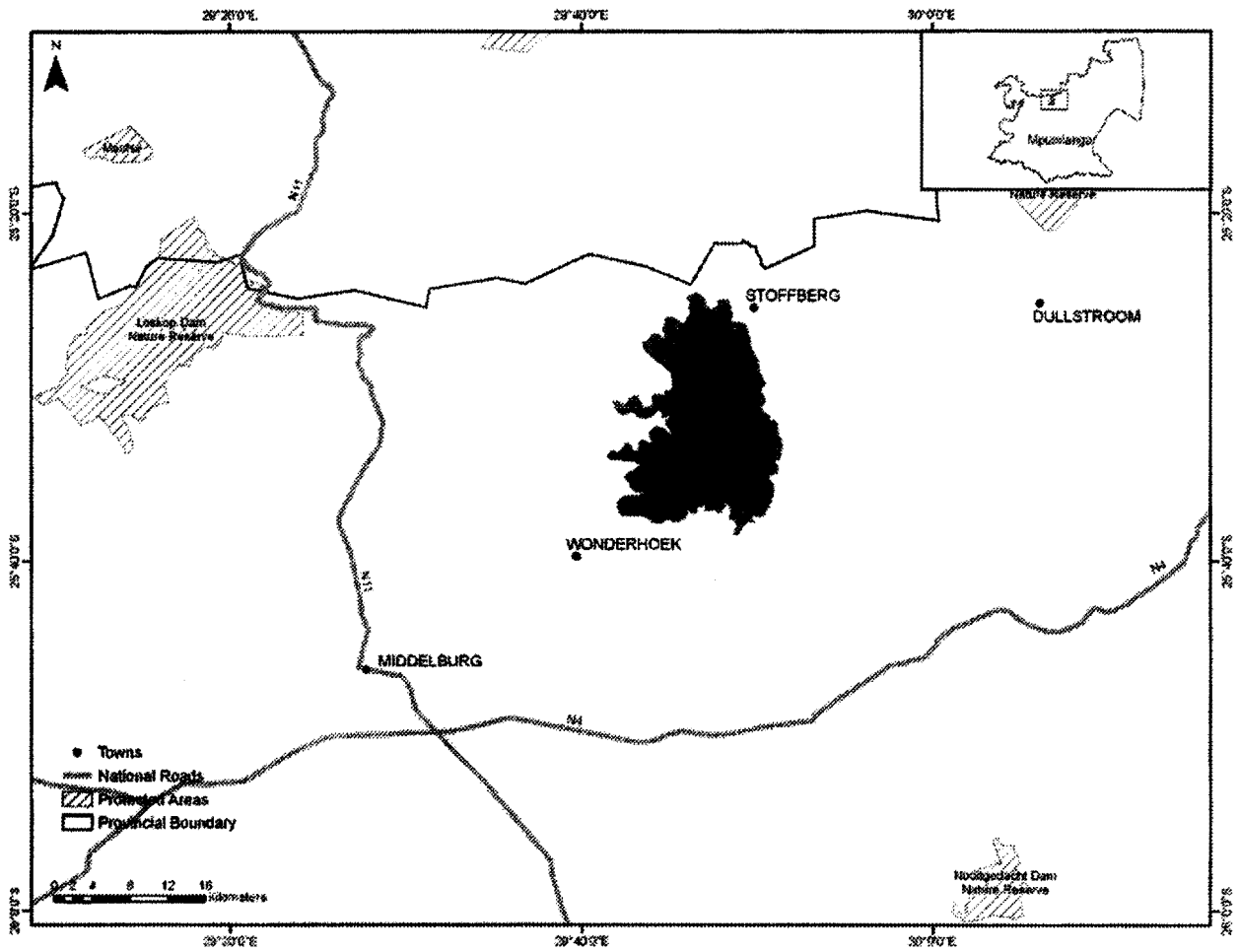
Key biodiversity features include two butterfly species including *Aloeides rossouwi* and *Dingana fraterna*; six bird species including Blue Crane, Grey Crowned Crane, Blue Korhaan, Rudd's Lark, Wattled Crane and Yellowbreasted Pipit; one plant species, *Eucomis autumnalis*; and one vegetation type, the Rand Highveld Grassland. The ecosystem includes important sub-catchments; is an escarpment corridor; and is important for grassland processes.

Other information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Stoffberg Mountainlands showing original area of ecosystem

112. Tsakane Clay Grassland (Gm 9)

| | |
|--|---|
| Reference number | Gm 9 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Gauteng and Mpumalanga |
| Municipalities | Ekurhuleni MM, City of Johannesburg MM, Midvaal LM, Lesedi LM and Dipaleseng LM |
| Original area of ecosystem | 128 000 ha |
| Remaining natural area of ecosystem (%) | 39% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | |

Geographical location

In patches extending in a narrow band from Soweto to Springs, broadening southwards to Nigel and from there towards Vereeniging, as well as north of the Vaal Dam and between Balfour and Standerton (including Willemsdal).

Description

Flat to slightly undulating plains and low hills. Vegetation is short, dense grassland dominated by a mixture of common highveld grasses such as *Themeda triandra*, *Heteropogon contortus*, *Elionurus muticus* and a number of *Eragrostis* species. Most prominent forbs are of the families Asteraceae, Rubiaceae, Malvaceae, Lamiaceae and Fabaceae. Disturbance leads to an increase in the abundance of the grasses *Hyparrhenia hirta* and *Eragrostis chloromelas*.

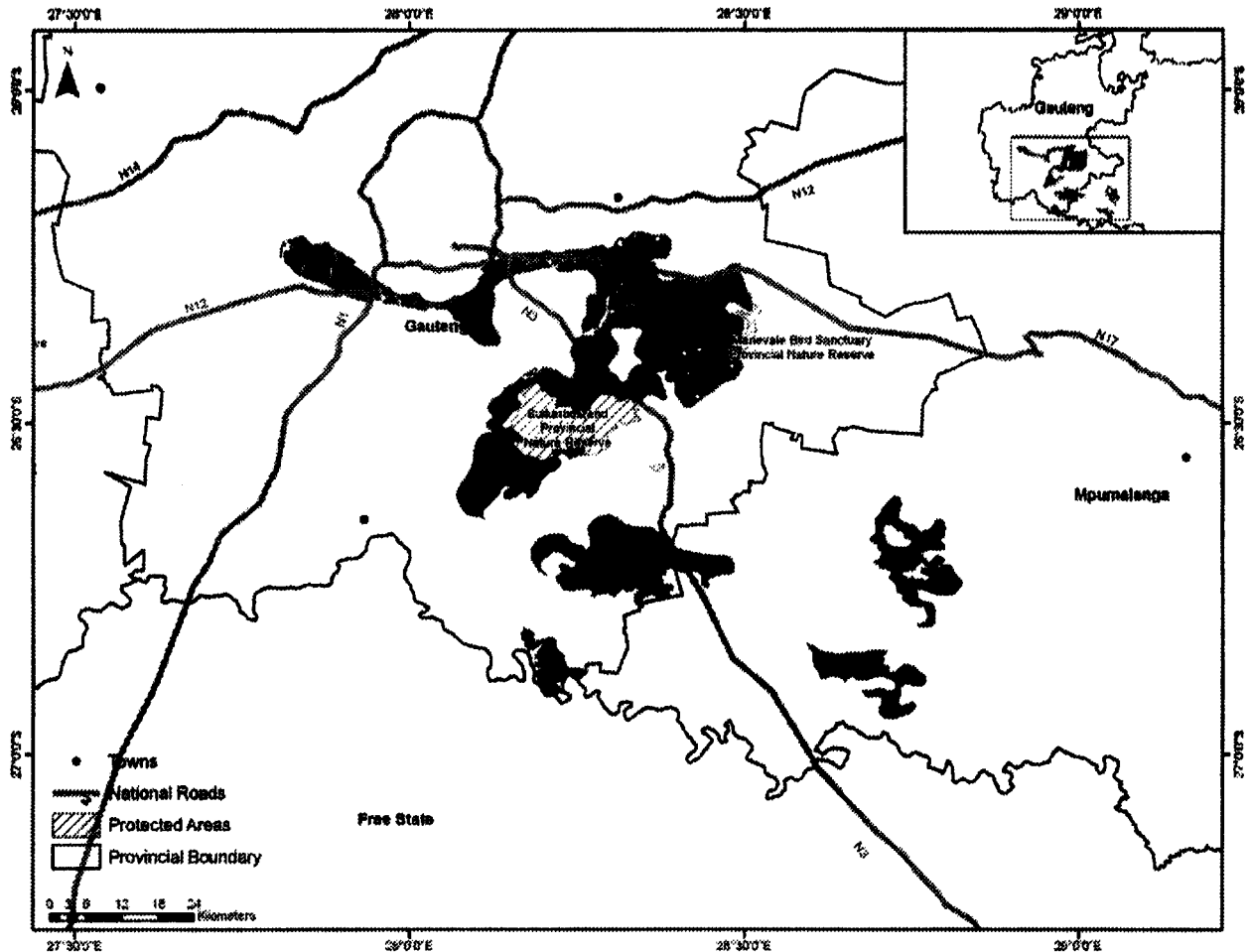
Other information

Approximately 2% of the ecosystem is protected in Suikerbosrand, Olifantsvlei, Klipriviersberg and Marievale Nature Reserves.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M.,

Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 397-298. South African National Biodiversity Institute, Pretoria.



Location of Tsakane Clay Grassland showing original area of ecosystem

113. Umgeni Valley Bushveld (KZN 38)

| | |
|--|---|
| Reference number | KZN 38 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMshwathi LM and Mkhambathini LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 66% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Cato Ridge (2930DA). Ecosystem situated on the west facing slope of the Umgeni Valley, delineated by the river and the crest of the slope.

Description

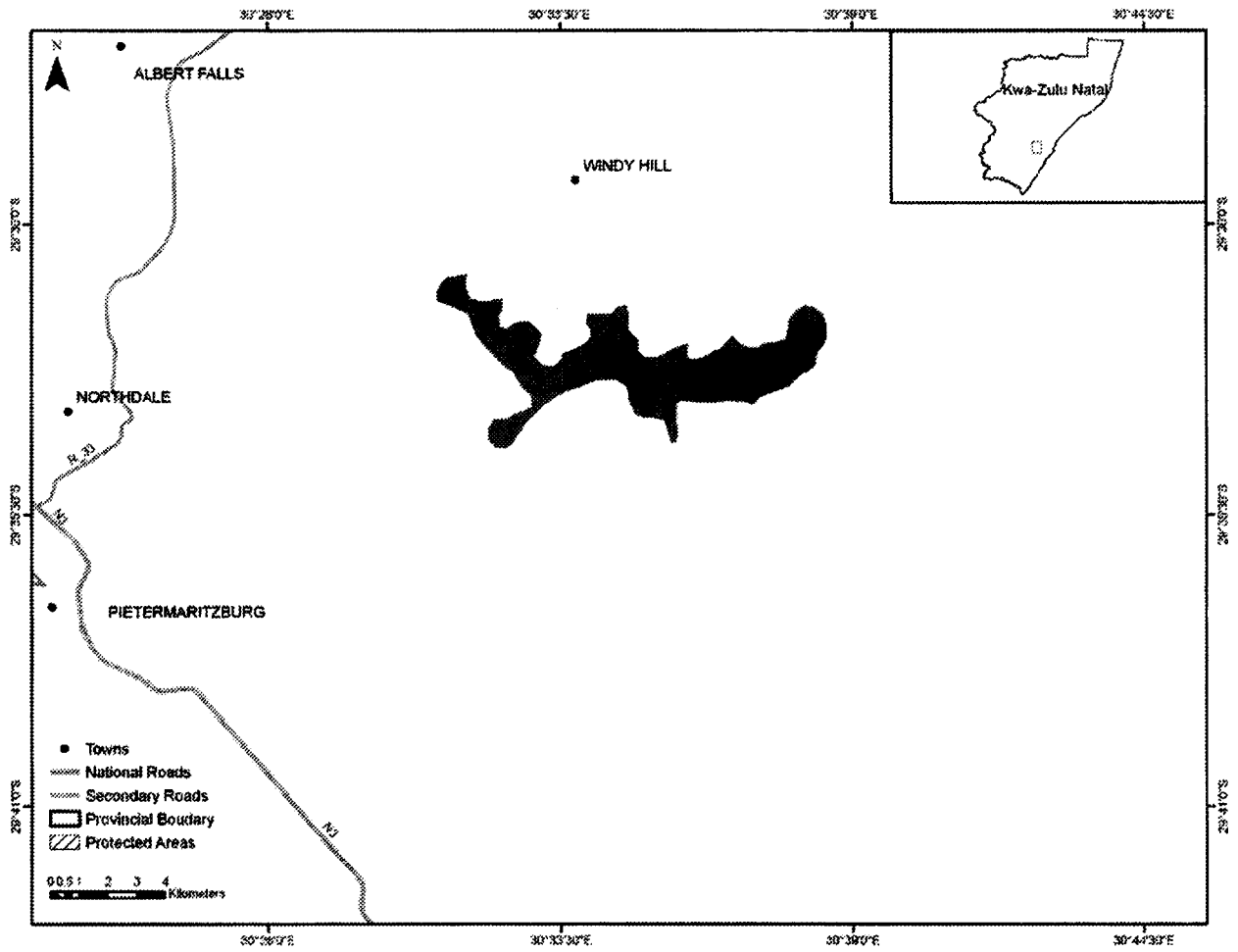
Key biodiversity features include one millipede, *Doratogonus cristulatus*; four plant species including *Ceropegia rudatisii*, *Diaphanante millarii*, *Helichrysum woodii* and *Senecio exubera*; and four vegetation types including Ngongoni Veld, Eastern Scarp Forest, Eastern Valley Bushveld and KwaZulu-Natal Sandstone Sourveld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Umgeni Valley Bushveld showing original area of ecosystem

114. Vaal-Vet Sandy Grassland (Gh 10)

| | |
|--|--|
| Reference number | Gh 10 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Free State and North West |
| Municipalities | Mangaung LM, Masilonyana LM, Tokologo LM, Tswelopele LM, Matjhabeng LM, Nala LM, Setsoto LM, Nketoana LM, Moqhaka LM, Ngwathe LM, Tswaing LM, Ditsobotla LM, Lekwa-Teemane LM, Ventersdorp LM, Potchefstroom LM, Matlosana LM and Maquassi Hills |
| Original area of ecosystem | 2 274 000 ha |
| Remaining natural area of ecosystem (%) | 36% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

South of Lichtenburg and Ventersdorp, stretching southwards to Klerksdorp, Leeudoringstad, Bothaville and to the Brandfort area north of Bloemfontein.

Description

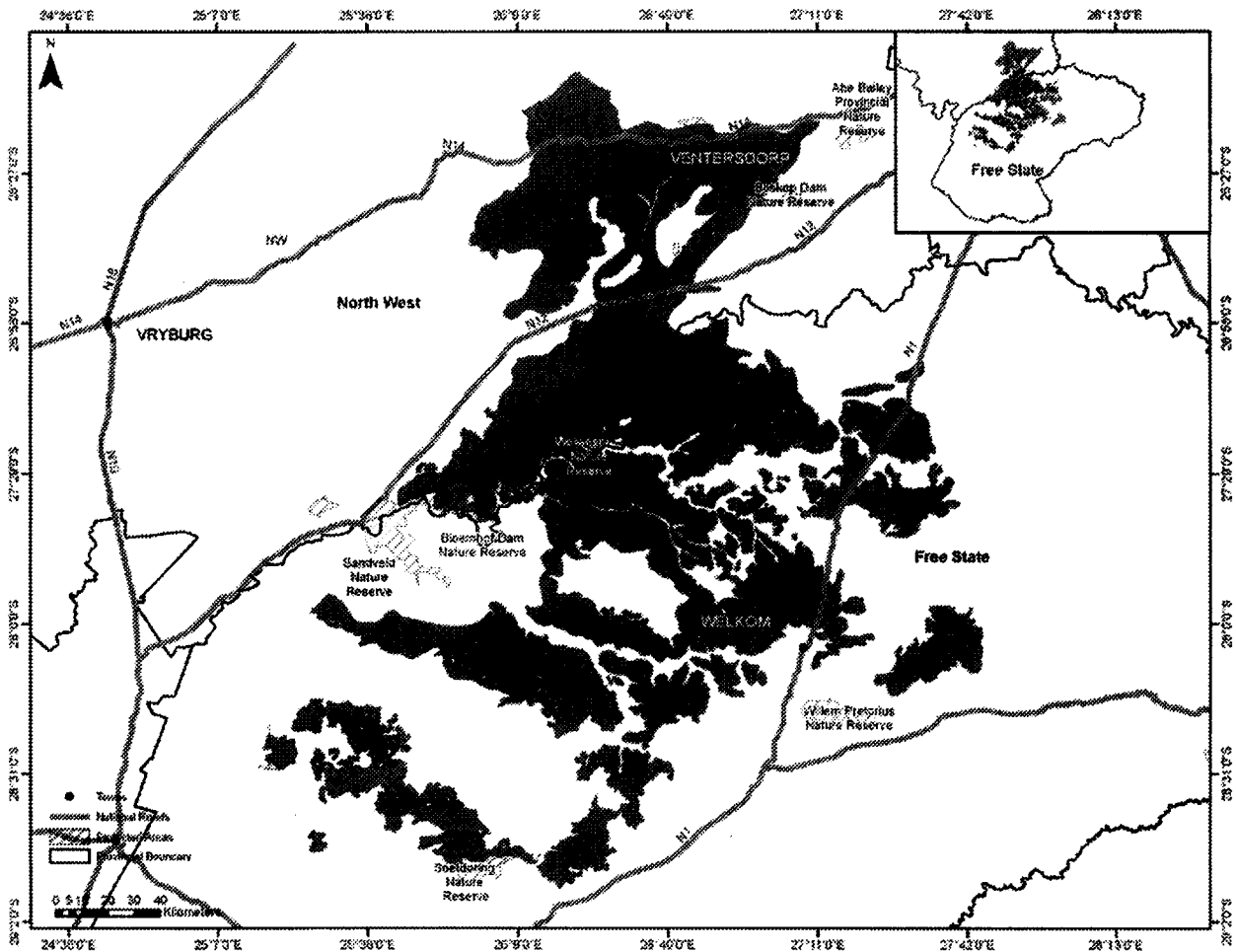
Plains-dominated landscape with some scattered, slightly irregular undulating plains and hills. Mainly low-tussock grasslands with an abundant karroid element. Dominance of *Themeda triandra* is an important feature of this vegetation ecosystem. Locally low cover of *T. triandra* and the associated increase in *Elionurus muticus*, *Cymbopogon pospischilii* and *Aristida congesta* is attributed to heavy grazing and/or erratic rainfall. At least one endemic plant species occurs in the ecosystem.

Other Information

Less than 1% of the ecosystem is protected in the Bloemhof Dam, Schoonspruit, Sandveld, Faan Mountains, Wolwespruit and Soetdoring Nature Reserves.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 384-385. South African National Biodiversity Institute, Pretoria.



Location of Vaal-Vet Sandy Grassland showing original area of ecosystem

115. Wakkerstroom/Luneburg Grasslands (MP 11)

| | |
|--|--|
| Reference number | MP 11 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Provinces | Mpumalanga and KwaZulu-Natal |
| Municipalities | Utrecht LM, eDumbe LM, Msukaligwa LM, Mkhondo LM and Pixley Ka Seme LM |
| Original area of ecosystem | 255 000 ha |
| Remaining natural area of ecosystem (%) | 90% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 38 threatened or endemic plant and animal species including those listed below |

Geographical location

Between Luneburg, Volksrust and Sheepmoor (2630CC, 2630CD, 2729BB, 2730AA, 2730AB, 2730BA, 2730BB, 2729BD, 2730AC, 2730AD, 2730BC, and 2730BD). Escarpment and mountainlands comprised of grassland and forest patches utilised as critical habitat for a variety of threatened birds, mammals and plants species. Ecosystem delineated by landscape, topography and underlying landtypes.

Description

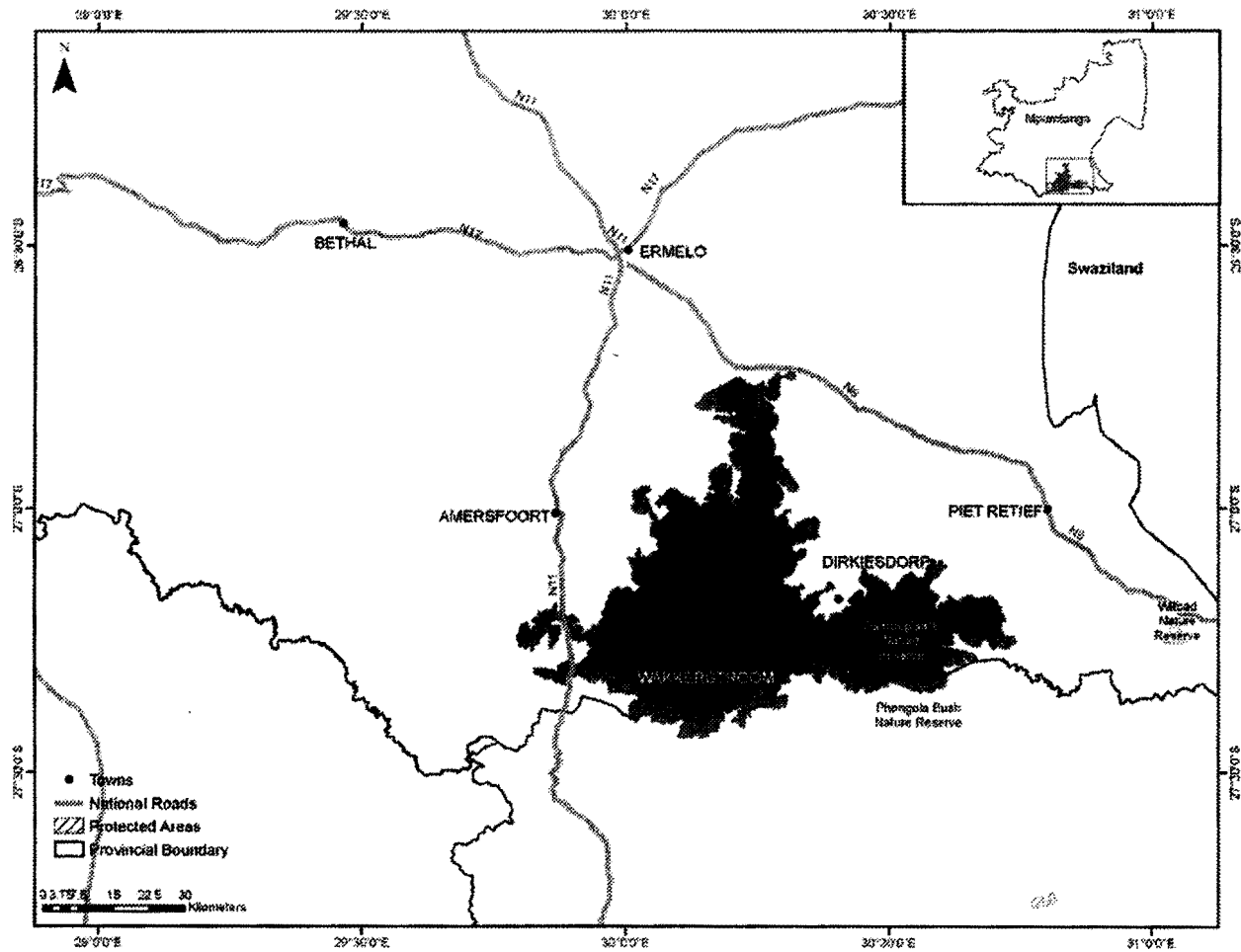
Key biodiversity features include three mammal species including Rough-haired Golden Mole, Cape Molerat and Oribi; three butterfly species including *Aloeides merces*, *Aloeides titei* and *Dingana alaedeus*; 10 bird species including Blue Crane, Blue Korhaan, Botha's Lark, Grey Crowned Crane, Rudd's Lark, Southern Bald Ibis, Southern Ground Hornbill, Striped Flufftail and Wattle Crane; one amphibian, *Bufo garipeensis nubicolus*; one reptile, *Cordylus giganteus*; twenty plant species for example *Aloe modesta*, *Disa maculomarronina*, *Gladiolus appendiculatus*, *Nerine gracilis*, *Nerine platypetala*, *Protea subvestita* and *Scilla natalensis*; and three vegetation types including Low Escarpment Mistsbelt Forest, Paulpietersburg Moist Grassland, and Wakkerstroom Montane Grassland. The ecosystem includes important sub-catchments, pans and wetlands; it is an escarpment corridor; and is important for grassland and forest processes.

Other information

Approximately 2% of the ecosystem is protected in the Paardeplaats Nature Reserve, Wakkerstroom Wetland Nature Reserve and Phongola Bush Nature Reserve,

References

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.
 Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Wakerstroom/Luneburg Grasslands showing original area of ecosystem

116. Western Cape Milkwood Forest (FOz VI3)

| | |
|--|---|
| Reference number | FOz VI3 |
| Listed under Criterion | C |
| Biome | Forest |
| Province | Western Cape |
| Municipalities | Cape Agulhas LM, City of Cape Town MM, Hessequa LM and Overstrand LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 2 000 ha |
| Proportion of ecosystem protected | 2% of remaining area |
| Known number of species of special concern | |

Geographical location

Near the coast from the Groenvlei forest (Goukamma Nature Reserve), the Stanford-Hermanus area, to parts on the eastern and western side of the Cape Peninsula.

Description

Generally low forest with trees with large stems and widely spreading crowns. The stands are often dominated by *Sideroxylon inerme*, and/or *Celtis africana* and/or *Apodytes dimidiata*. The understorey is either open or a shrub layer with diverse species, including soft shrubs of the Acanthaceae. The forest type is floristically impoverished but has dominant subtropical elements.

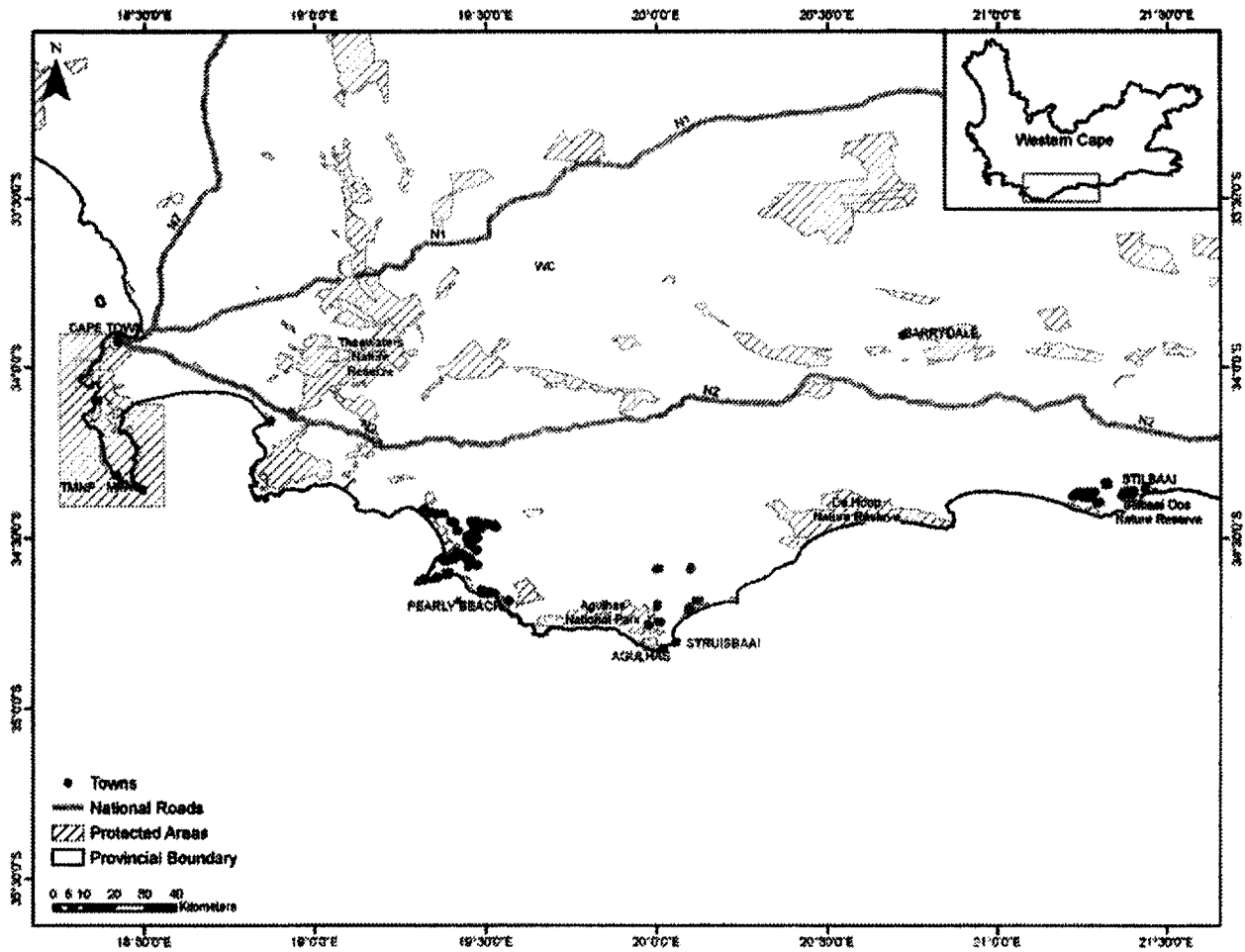
Other information

Approximately 2% of the ecosystem is protected in Goukamma Nature Reserve, Wilderness National Park, De Hoop, De Mond and Walker Bay Nature Reserves.

References

Mucina, L. & Geidenhuys, C.J. 2006. Afrotropical, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 603-604. South African National Biodiversity Institute, Pretoria.

Von Maltitz, G., Mucina, L., Geldenhuys, C., Lawes, M., Eeley, H., Adle, 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.



Location of Western Cape Milkwood Forest (area of ecosystem enlarged for visibility at this scale)

117. Witwatersberg Skeerpoort Mountain Bushveld (GP 15)

| | |
|--|---|
| Reference number | GP 15 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | Gauteng |
| Municipalities | Mogale City LM, City of Tshwane MM and Cradle of Humankind World Heritage Site |
| Original area of ecosystem | 41 000 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 23 threatened or endemic plant or animal species including those listed below |

Geographical location

West Rand of Gauteng including Hekpoort and Broederstroom (2527DC and 2527DD respectively). Ecosystem delineated by the Witwatersberg ridge system, associated rivers and drainage lines and the A21G quaternary catchment.

Description

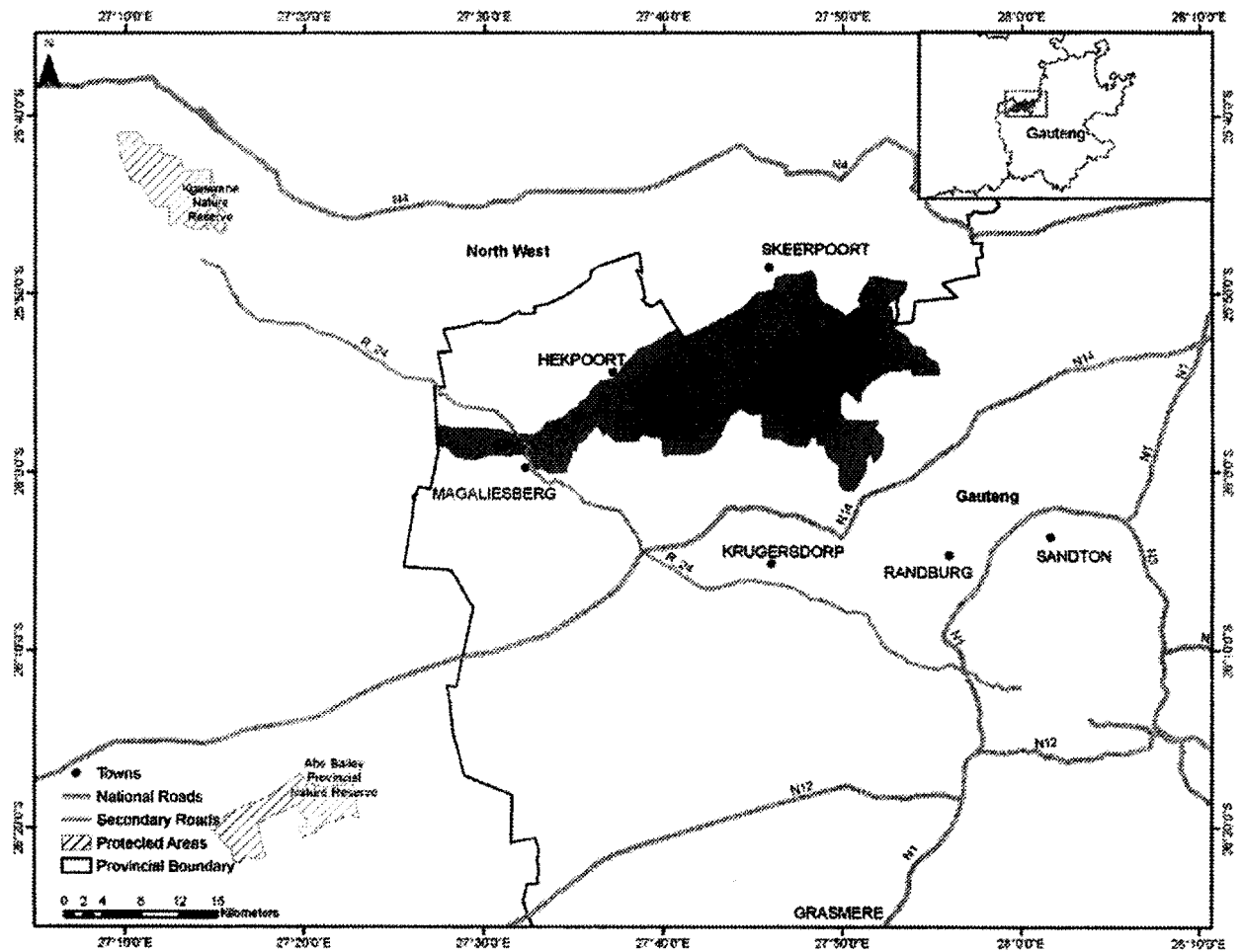
Key biodiversity features include Red or Orange Listed plants for example *Aloe peglerae*, *Bowiea volubilis* subsp. *volubilis*, *Habenaria mossii*, *Melolobium subspicatum*, *Delosperma leendertziae* and *Holothrix randii*; Red or Orange Listed mammals for example Brown Hyena, Schreiber's Long-fingered Bat, Geoffry's Horseshoe Bat and Temminck's Hairy Bat; Red or Orange Listed birds for example Cape Vulture, Blue Crane, White-bellied Korhaan, Secretarybird and African Finfoot; Red or Orange Listed or priority invertebrates for example Stobbia's Fruit Chafer, Gunning's Rock Scorpion and Golden Starburst Baboon Spider; and six vegetation types including Andesite Mountain Bushveld, Carletonville Dolomite Grassland, Egoli Granite Grassland, Gauteng Shale Mountain Bushveld, Gold Reef Mountain Bushveld and Moot Plains Bushveld. The Bloubankspruit, Crocodile River, Doringspruit, Grootvleispruit, Hekpoortspruit, Jackal Stream, Jukskeispruit, Kleinvleispruit, Leeuspruit, Magalies River, Muldersdrif se Loop, Skeerpoort, Snake Stream, Sterkwatersloop, Witwatersrandspruit and various unnamed wetlands are key features of the ecosystem.

Other Information

Approximately 1% of the ecosystem is protected in Plovers Lake Nature Reserve.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Witwatersberg Skeeperpoort Mountain Bushveld showing original area of ecosystem

7.4 Vulnerable (VU) ecosystems

118. Agulhas Limestone Fynbos (FFI 1)

| | |
|--|---|
| Reference number | FFI 1 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Overstrand LM and Cape Agulhas LM |
| Original area of ecosystem | 29 000 ha |
| Remaining natural area of ecosystem (%) | 64% |
| Proportion of ecosystem protected | 8% of original area |
| Known number of species of special concern | 49 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 47 endemic plant species |

Geographical location

Agulhas Plain from the vicinity of Hermanus to Bredasdorp and Struisbaai. The largest expanses of limestone are found between the Klein River Lagoon and Grootbos, around Hagelkraal, Heuningrug and Soetanyberg. Some unmapped outliers occur at Hangklip, Macassar (False Bay) and Buffels Bay (Cape Peninsula). The most southerly patch of the ecosystem extends to within 300 m of the southern tip of Africa.

Description

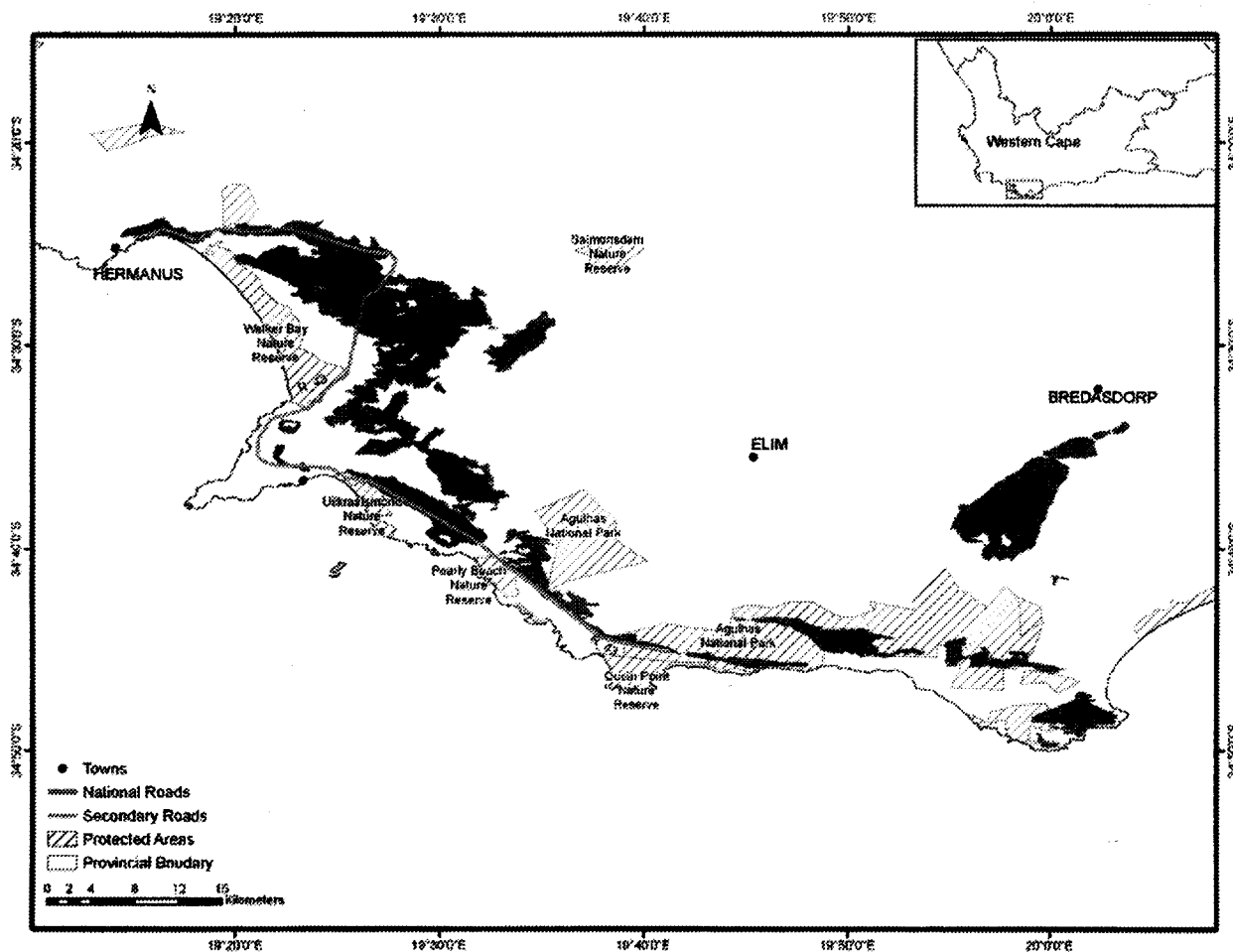
Low hills in plains, fragmented on the coastal margin of the Agulhas coastal forelands. Mainly on the plains, but with significant patches at higher altitudes such as on Soetanyberg. Moderately dense, low shrublands contain tall, emergent proteoids. Structurally it is mainly asteraceous and proteoid fynbos, with restioid fynbos in sandy areas and on limestone pavements. Wetter areas, such as waterlogged bottomlands, are dominated by *Leucadendron linifolium* restioid fynbos, grading to Agulhas Sand Fynbos where sands become deeper. At least 47 endemic plant species and 49 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 8% of the ecosystem is protected in the Agulhas National Park, with small patches also in Kogelberg Biosphere Reserve, Table Mountain National Park and Wolfgat Nature Reserve. A further 4% is found in private conservation areas such as Groot Hagekraal and Oude Bosch.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 171-172. South African National Biodiversity Institute, Pretoria.



Location of Agulhas Limestone Fynbos showing original area of ecosystem

119. *Albertinia* Sand Fynbos (FFd 9)

| | |
|--|---|
| Reference number | FFd 9 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Swellendam LM, Hessequa LM, Mossel Bay LM and WCDMA03 |
| Original area of ecosystem | 71 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 36 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 24 endemic plant species |

Geographical location

Generally longitudinally east-west-trending patches on the coastal plain from Potberg in the west to the Gouritz River in the east. Also found from Kleinberg to west of Mossel Bay, with isolated unmapped outliers near Groot Brak River and between Potberg and De Hoop Vlei. The patches of this ecosystem almost always border a limestone fynbos ecosystem. When enclosed by limestone, it is often found in depressions which can be extensive, for example the Wankoe south of Riversdale and Canca se Leegte south of *Albertinia*.

Description

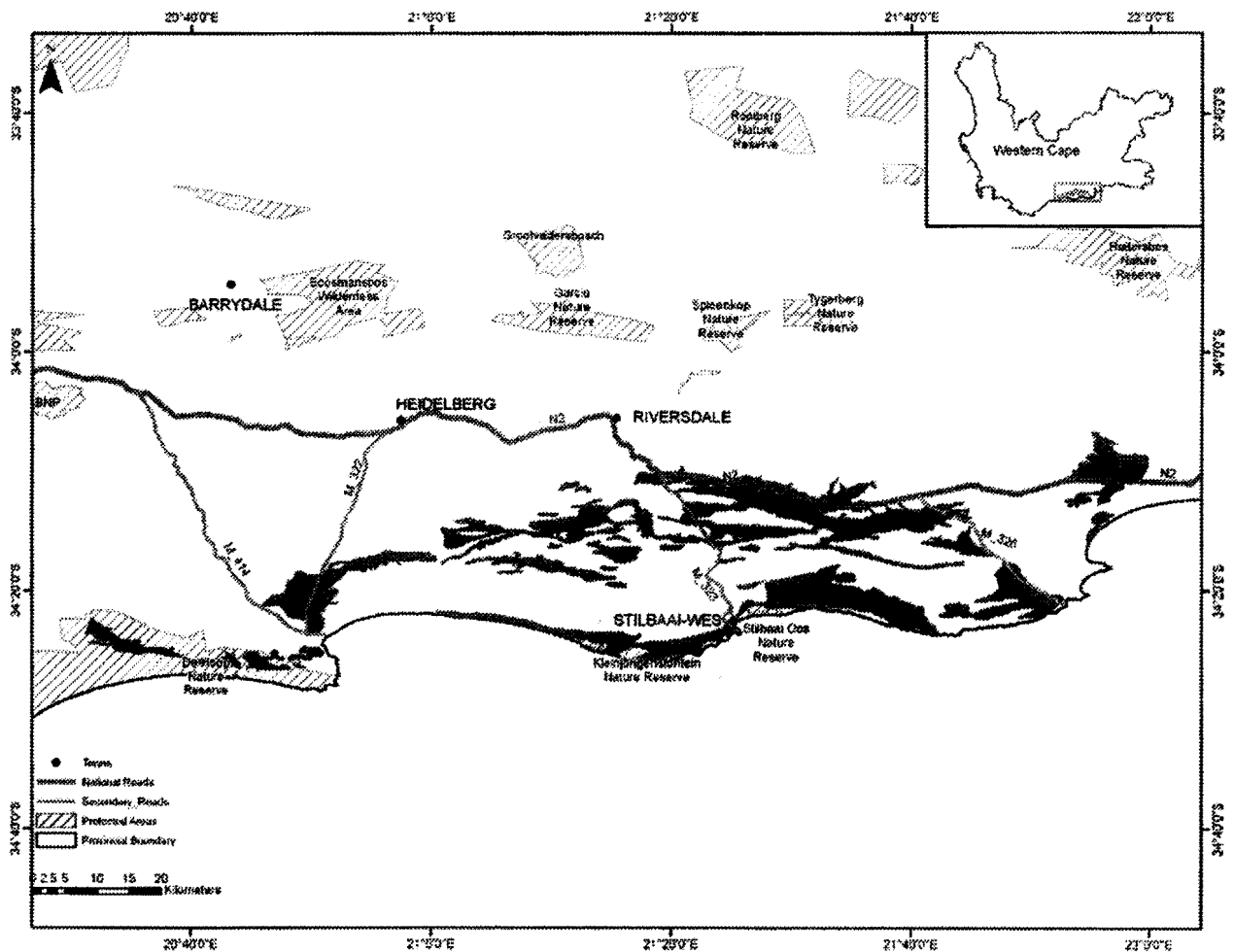
Plains and undulating hills with numerous dune slacks forming the most extensive area of sand fynbos within the limestone fynbos area and occupying most of the depressions, valleys and lower slopes. Vegetation is characterised by medium tall (1.5–2 m tall) open shrub layer, together with a dense stratum of 1–1.2 m tall shrubs and hemicryptophytes. It is structurally predominantly proteoid fynbos, but with extensive restioid fynbos in the watercourses and coastal edges. At least 24 endemic plant species and 36 Red Data List plant species occur in the ecosystem.

Other information

Approximately 5% of the ecosystem is protected in De Hoop, Pauline Bohnen, Geelkrans, Kleinjongensfontein, Skulpiesbaai and Blomboschfontein Nature Reserves, with an additional 2% found in private conservation areas for example Rein's Coastal (Gouriqua) Nature Reserve, Die Duine.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 143-144. South African National Biodiversity Institute, Pretoria.



Location of Albertinia Sand Fynbos showing original area of ecosystem

120. Algoa Sandstone Fynbos (FFs 29)

| | |
|--|------------------------------------|
| Reference number | FFs 29 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Eastern Cape |
| Municipalities | Kouga LM and Nelson Mandela Bay LM |
| Original area of ecosystem | 34 000 ha |
| Remaining natural area of ecosystem (%) | 42% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 4 endemic plant species |

Geographical location

Coastal flats at Port Elizabeth from Van Stadens River in the west to Southdene-Summerstrand in the east, located mostly some kilometres from the coast and close to the coast at only Maitland River Mouth and urbanised Summerstrand.

Description

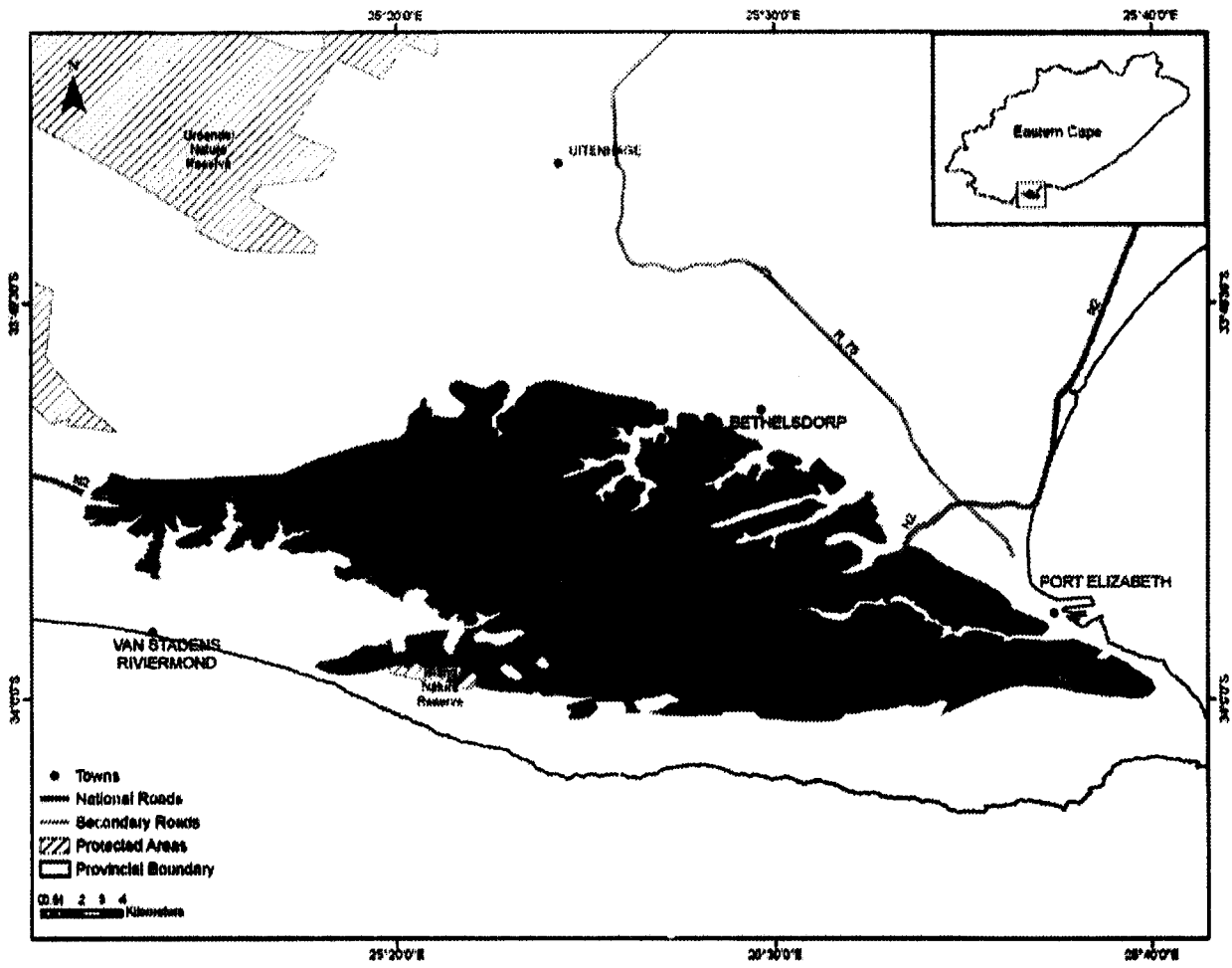
Flat to slightly undulating plain supporting grassy shrubland (mainly graminoid fynbos). Grasses become dominant especially in wet habitats. In the south this fynbos ecosystem borders on Albany Coastal Belt and Algoa Dune Strandveld and forms transitional mosaics with both. It also borders on patches of Southern Coastal Forest in this area. At least 4 endemic plant species occur in this ecosystem.

Other information

Approximately 2% of the ecosystem protected in the Van Stadens Wild Flower Reserve, The Island Nature Reserve as well as in several private nature reserves.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 127. South African National Biodiversity Institute, Pretoria.



Location of Algoa Sandstone Fynbos showing original area of ecosystem

121. Badplaas Mountainlands (MP 12)

| | |
|--|--|
| Reference number | MP 12 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | Mpumalanga |
| Municipality | Albert Luthuli LM |
| Original area of ecosystem | 14 000 ha |
| Remaining natural are of ecosystem (%) | 91% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 11 threatened or endemic plant and animal species including those listed below |

Geographical location

Five kilometres north-west of Badplaas (2530CD and 2530DC). Large untransformed montane grassland with isolated forest patches. Ecosystem delineated by landscape and landtypes together with geographical features.

Description

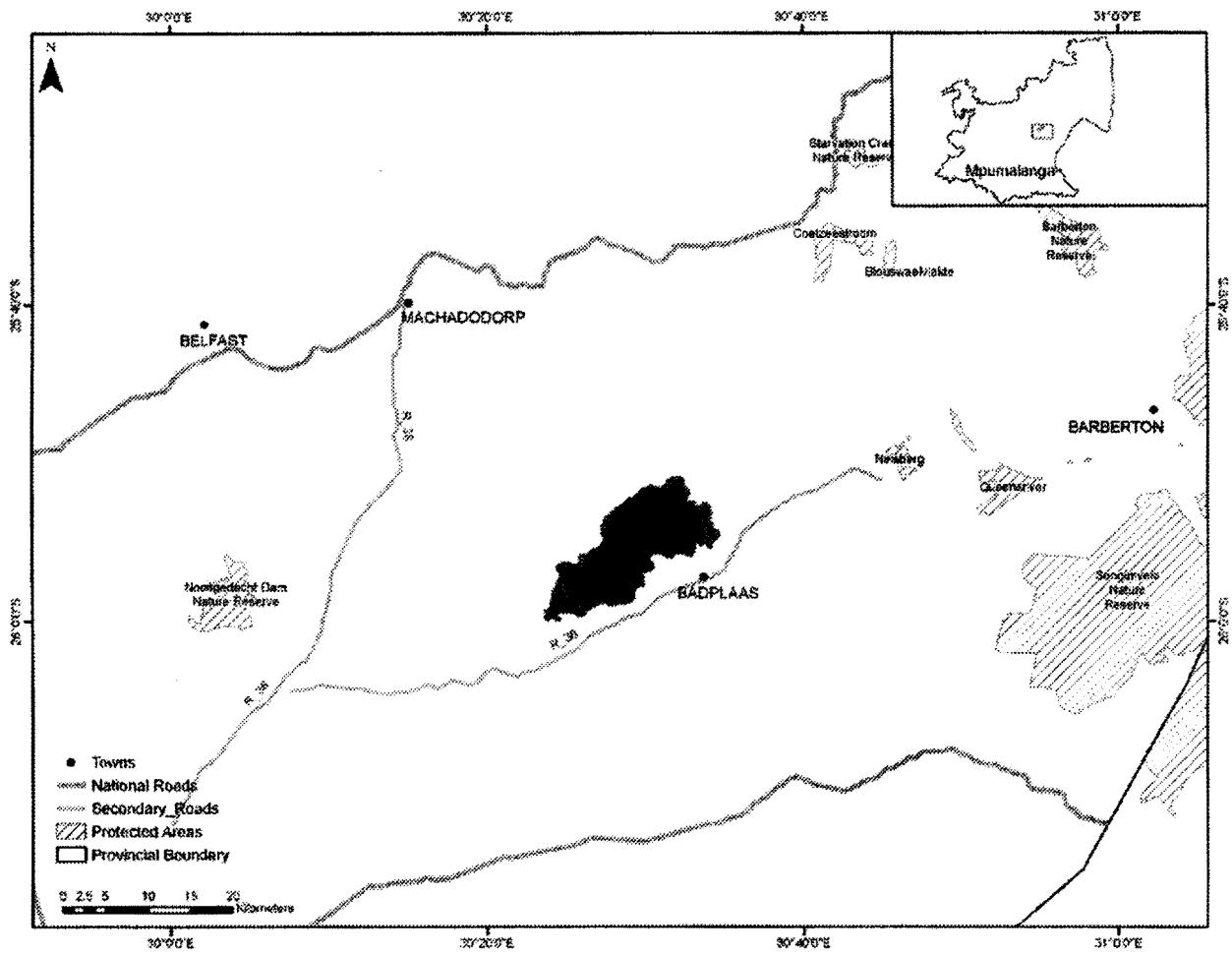
Key biodiversity features include five mammal species including Rough-haired Golden Mole, Meester's Golden Mole, Natal Long-fingered Bat, Peak-saddle Horseshoe Bat and Oribi; seven bird species including Blue Crane, Grey Crowned Crane, Rudd's Lark, Southern Ground Hornbill, Striped Flufftail, Wattle Crane and Yellowbreasted Pipit; and three vegetation types including KaNgwane Montane Grassland, Barberton Serpentine Sourveld and Dry Afromantane Forest. The ecosystem includes important sub-catchments; it provides an ecological corridor; and is important for forest and grassland processes.

Other information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Badplaas Mountainlands showing original area of ecosystem

122. Barberton Mountainlands (MP 13)

| | |
|--|--|
| Reference number | MP 13 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | Mpumalanga |
| Municipalities | Albert Luthuli LM, Umjindi LM and Nkomazi LM |
| Original area of ecosystem | 70 000 ha |
| Remaining natural area of ecosystem (%) | 80% |
| Proportion of ecosystem protected | 52% of original area |
| Known number of species of special concern | 37 threatened or endemic plant and animal species including those listed below |

Geographical location

Mountain range immediately south and east of Barberton (2530DD and 2531CC). Ecosystem delineated by the moist landscape and ancient Barberton Sequence geological formation (and resulting landtypes). Ecosystem boundary refined using climate and species distributions.

Description

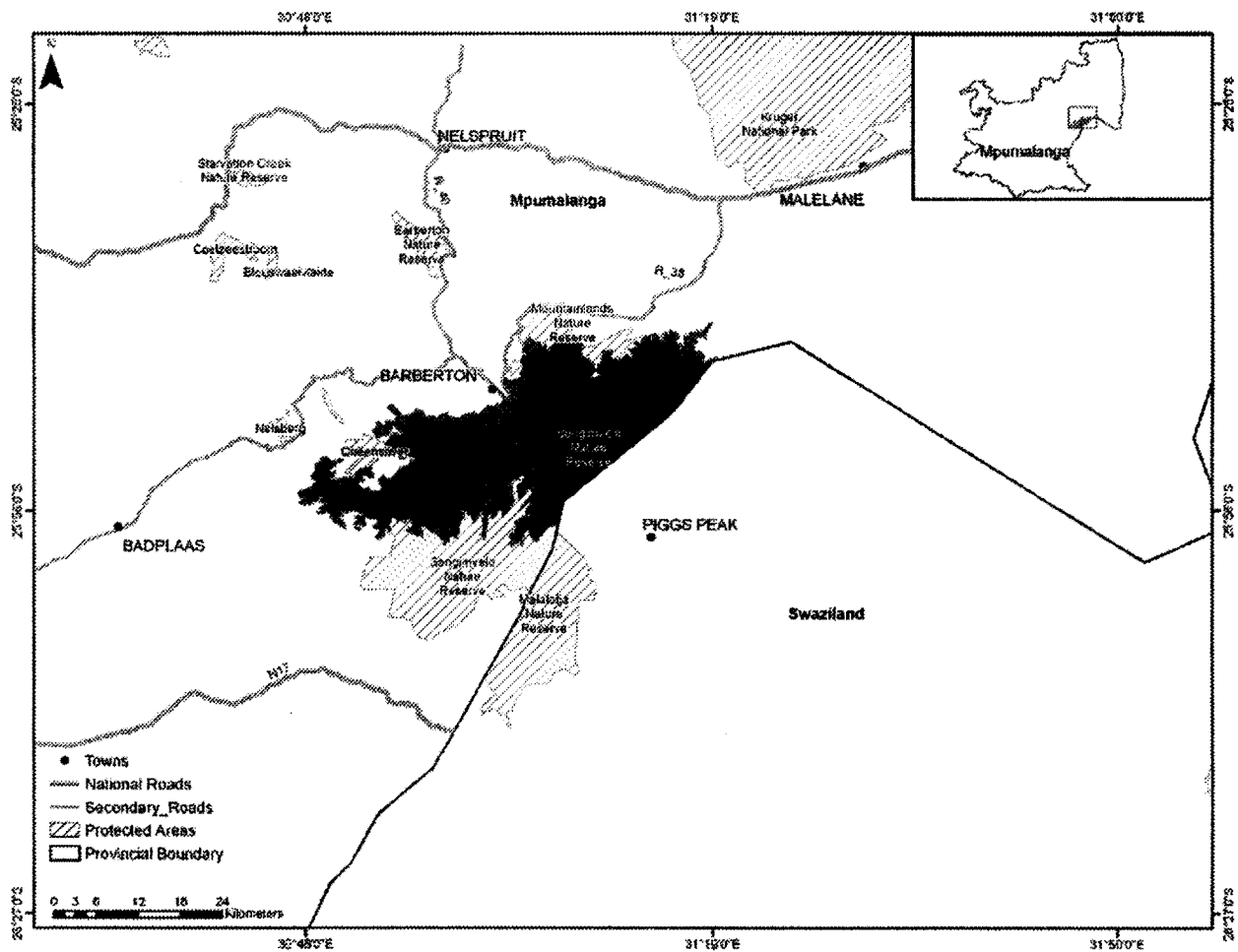
Key biodiversity features include one mammal species, Rough-haired Golden Mole; two butterfly species including *Lepidochrysops jefferyi* and *Lepidochrysops swanepoeli*; seven bird species including Blue Crane, Blue Swallow, Grey Crowned Crane, Saddle-billed Stork, Southern Ground Hornbill, Striped Flufftail and Yellowbreasted Pipit; four reptile species including *Aspedilaps scutatus intermedius*, *Bradypodion transvaalense*, *Cordylus warreni barbertonensis* and *Lamprophis swazicus*; twenty-three plant species for example *Aloe craebii*, *Aloe modesta*, *Haworthia limifolia* var. *limifolia*, *Leucospermum gerrardii*, *Rhus pygmaea* and *Streptocarpus pogonites* and *Warburgia salutaris*; and five vegetation types including Barberton Montane Grassland, Barberton Serpentine Sourveld, Kaalrug Mountain Bushveld, Barberton Scarp Forest and Maputaland Scarp Forest. The ecosystem includes part of the Barberton Centre of Endemism; it includes important sub-catchments; provides an escarpment corridor; and is important for grassland and forest processes.

Other information

Approximately 52% of the ecosystem is protected in the Barberton Mountainlands Nature Reserve, Barberton Municipal Nature Reserve, Cynthia Letty Nature Reserve, Ida Doyer Nature Reserve, Nkomazi Wilderness, Queensriver Primary Conservation Area, Songimvelo Nature Reserve, Tinie Louw Nature Reserve and Thorncroft Nature Reserve.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Barberton Mountainlands showing original area of ecosystem

123. Beinn Mheadmon Mountain Grasslands (KZN 39)

| | |
|--|---|
| Reference number | KZN 39 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM and Impendle LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 13 threatened or endemic plant species including those listed below |

Geographical location

Merrivale (2930CA). Ecosystem delineated by ridges, predominantly in the Midlands Mistbelt Grassland. Ecosystem abuts the Drakensberg Foothill Wattled Crane Habitat threatened ecosystem (KZN 47).

Description

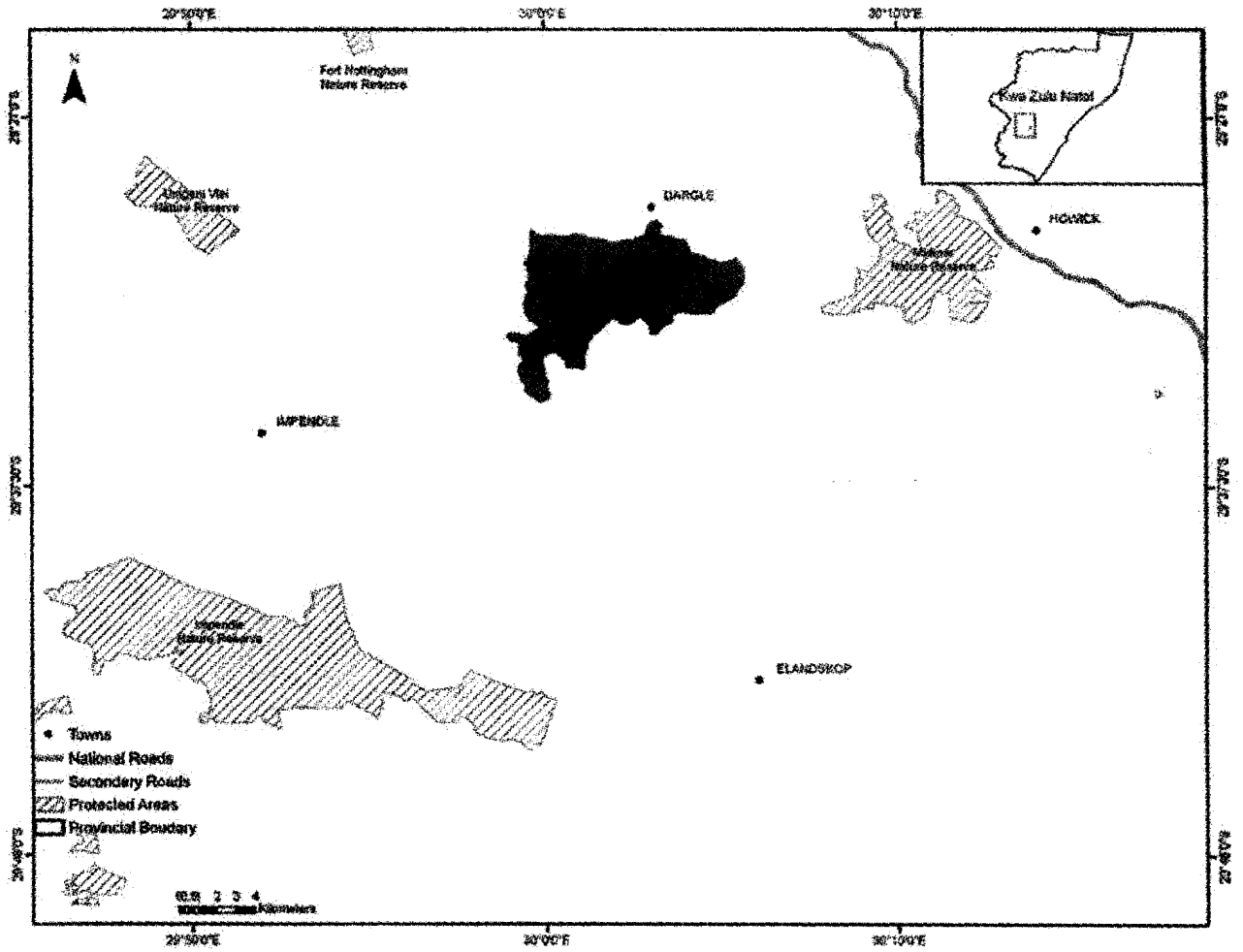
Key biodiversity features include one amphibian species, *Afrivalus spinifrons intermedius*; two bird species including Blue Swallow and Wattled Crane; three millipede species including *Centrobolus tricolor*, *Doratogonus cristulatus*, and *Doratogonus montanus*; five plant species including *Geranium natalense*, *Hesperantha woodii*, *Kniphofia buchananii*, *Plectranthus rehmannii* and *Senecio exuberans*; two reptile species including *Bradypodion bourquini* and *Bradypodion thamnobates*; and two vegetation types including Drakensberg Foothill Moist Grassland and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Beinn Mheadmon Mountain Grasslands showing original area of ecosystem

124. Bivane Sour Grassveld and Bushveld (KZN 40)

| | |
|--|---------------------------------------|
| Reference number | KZN 40 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | KwaZulu-Natal |
| Municipalities | eDumbe LM and UPhongolo LM |
| Original area of ecosystem | 3 000 ha |
| Remaining natural area of ecosystem (%) | 74% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 1 threatened or endemic plant species |

Geographical location

Coronation (2731CA). Ecosystem associated with the rocky habitat along streams required by *Eugenia simii*.

Description

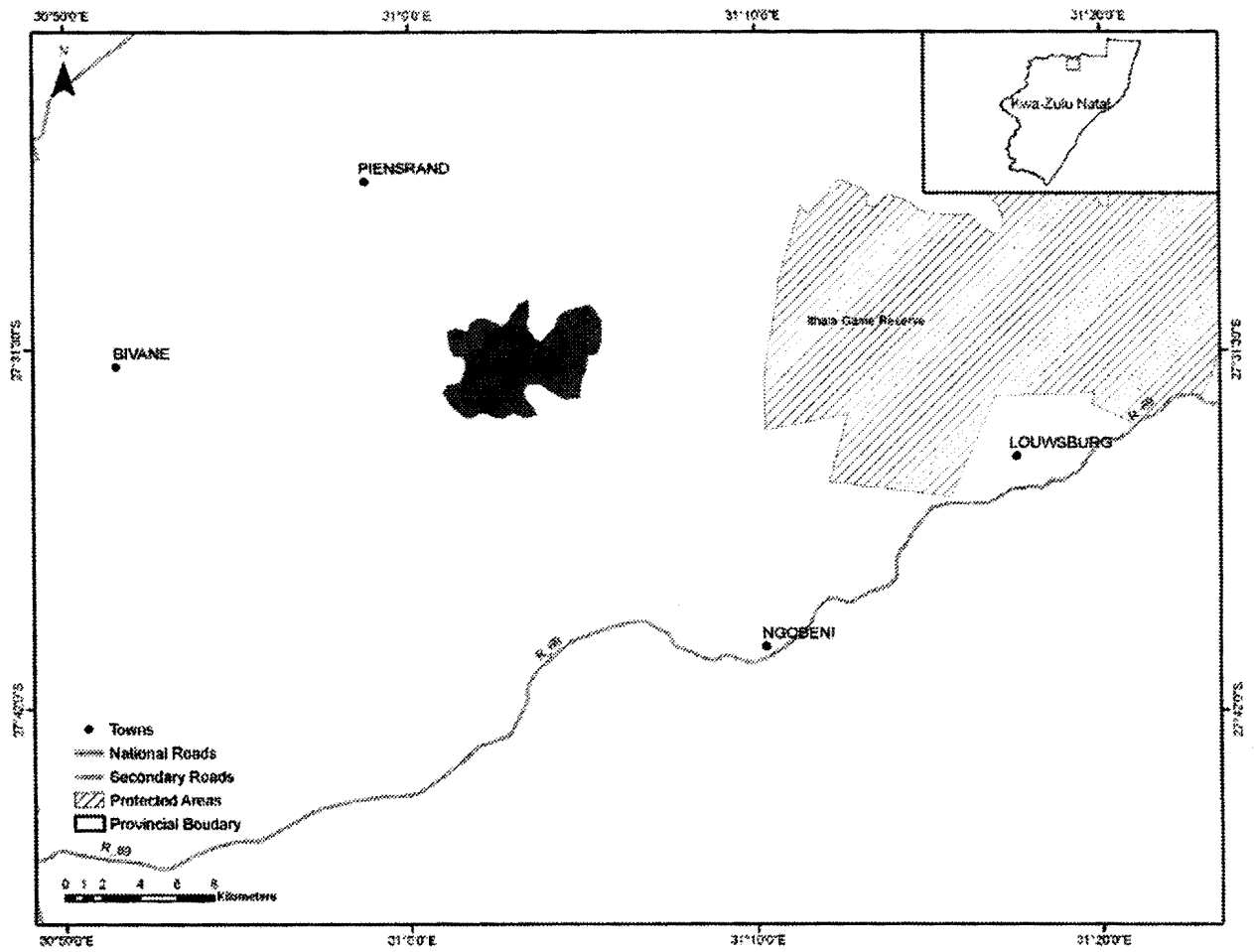
Key biodiversity features include one plant species, *Eugenia simii*; and two vegetation types Ithala Quartzite Sourveld and Swaziland Sour Bushveld .

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Bivane Sour Grassveld and Bushveld showing original area of ecosystem

125. Black Rhino Range (KZN 41)

| | |
|--|--|
| Reference number | KZN 41 |
| Listed under Criterion | F |
| Biome | Indian Ocean Coastal Belt, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipalities | UPhongolo LM, Nongoma LM, Jozini LM, The Big Five False Bay LM, Hlabisa LM and KZDMA27 |
| Original area of ecosystem | 199 000 ha |
| Remaining natural area of ecosystem (%) | 82% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

Golela (2731BD), Pongola (2731BC), Magudu (2731DA), Nkonkoni (2731DB), Ubombo (2732CA), Mhlosinga (2732CC), Ngxongwane (2731DD), Kuleni (2732CD). Ecosystem delineated according to the areas identified for the black rhino range expansion project. Ecosystem delineated by the Pongolapoort Dam and Lebombo Mountains in the east and by the Phongola River in the north. The south eastern extent of the ecosystem is delineated by sandy soils of the Tembe Sandy Bushveld.

Description

Key biodiversity features include two mammal species including Black Rhino and Wild Dog; two bird species including the Whiteheaded Vulture and the Lappetfaced Vulture, one millipede species, *Doratogonus natalensis*; two plant species including *Albizia suluensis* and *Pachycarpus lebomboensis*; one reptile species, *Bradypodion setaroi*; and sixteen vegetation types including Delagoa Lowveld, Eastern Scarp Forest, Granite Lowveld, Ithala Quartzite Sourveld, Lebombo Summit Sourveld, Licuati Sand Forest, Lowveld Riverine Forest, Makatini Clay Thicket, Maputuland Coastal Belt, Northern Zululand Sourveld, Southern Lebombo Bushveld, Sweet Arid

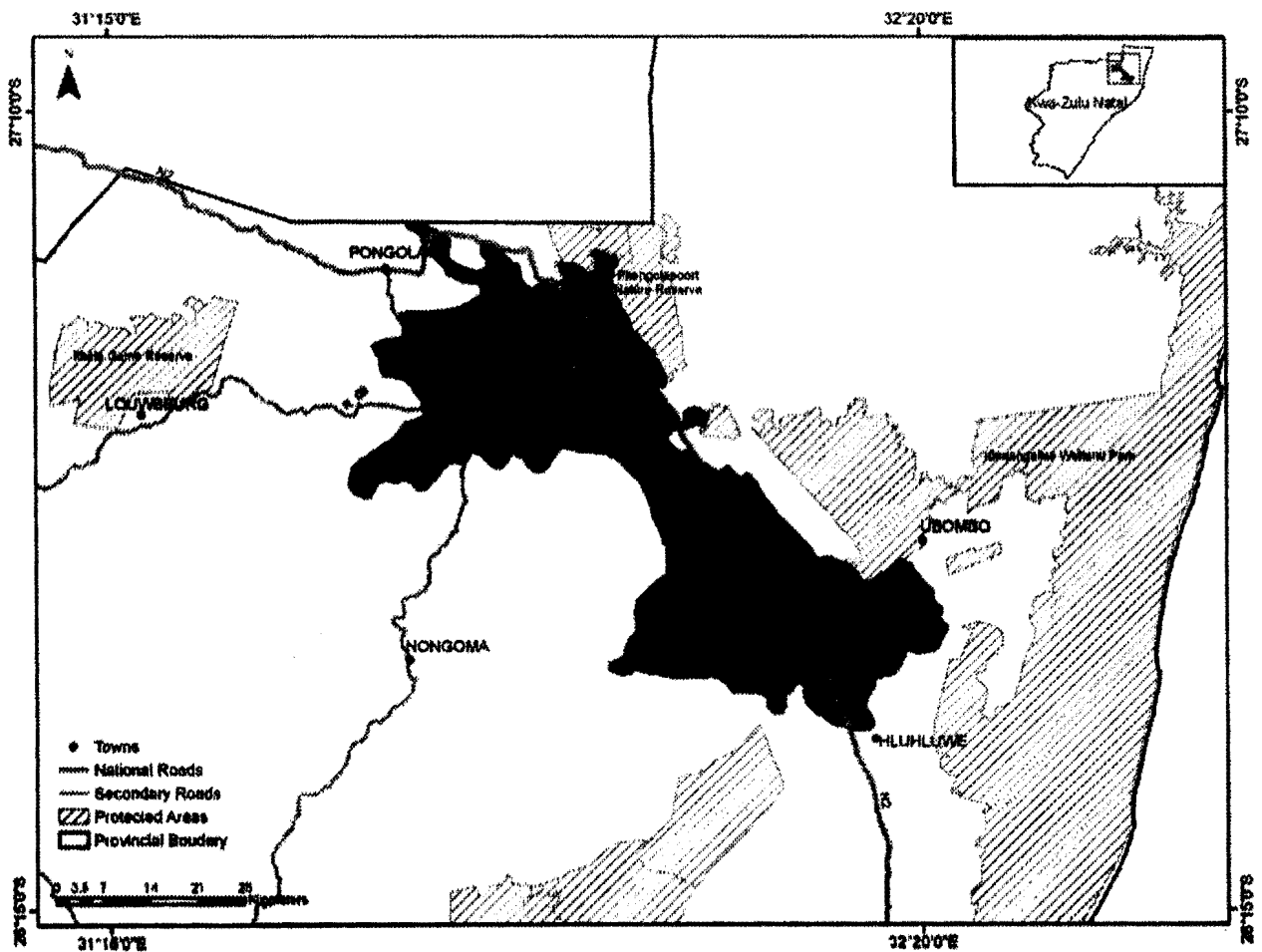
Basalt Lowveld, Tembe Sandy Bushveld, Western Maputaland Clay Bushveld and Zululand Lowveld.

Other Information

Approximately 1% of the ecosystem is protected in the Ubombo Mountain Nature Reserve, Phongolapooft Nature Reserve and isiMangaliso Wetland Park.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Black Rhino Range showing original area of ecosystem

126. Bloemfontein Dry Grassland (Gh 5)

| | |
|--|--|
| Reference number | Gh 5 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Free State |
| Municipalities | Letsemeng LM, Kopanong LM, Naledi LM and Mangaung LM |
| Original area of ecosystem | 492 000 ha |
| Remaining natural area of ecosystem (%) | 58% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

South-central part of the province, with Bloemfontein more or less centrally situated in the ecosystem. Extending from Petrusburg in the west to the Rustfontein Dam in the east and from Reddersburg in the south to the Soetdoring Nature Reserve in the north.

Description

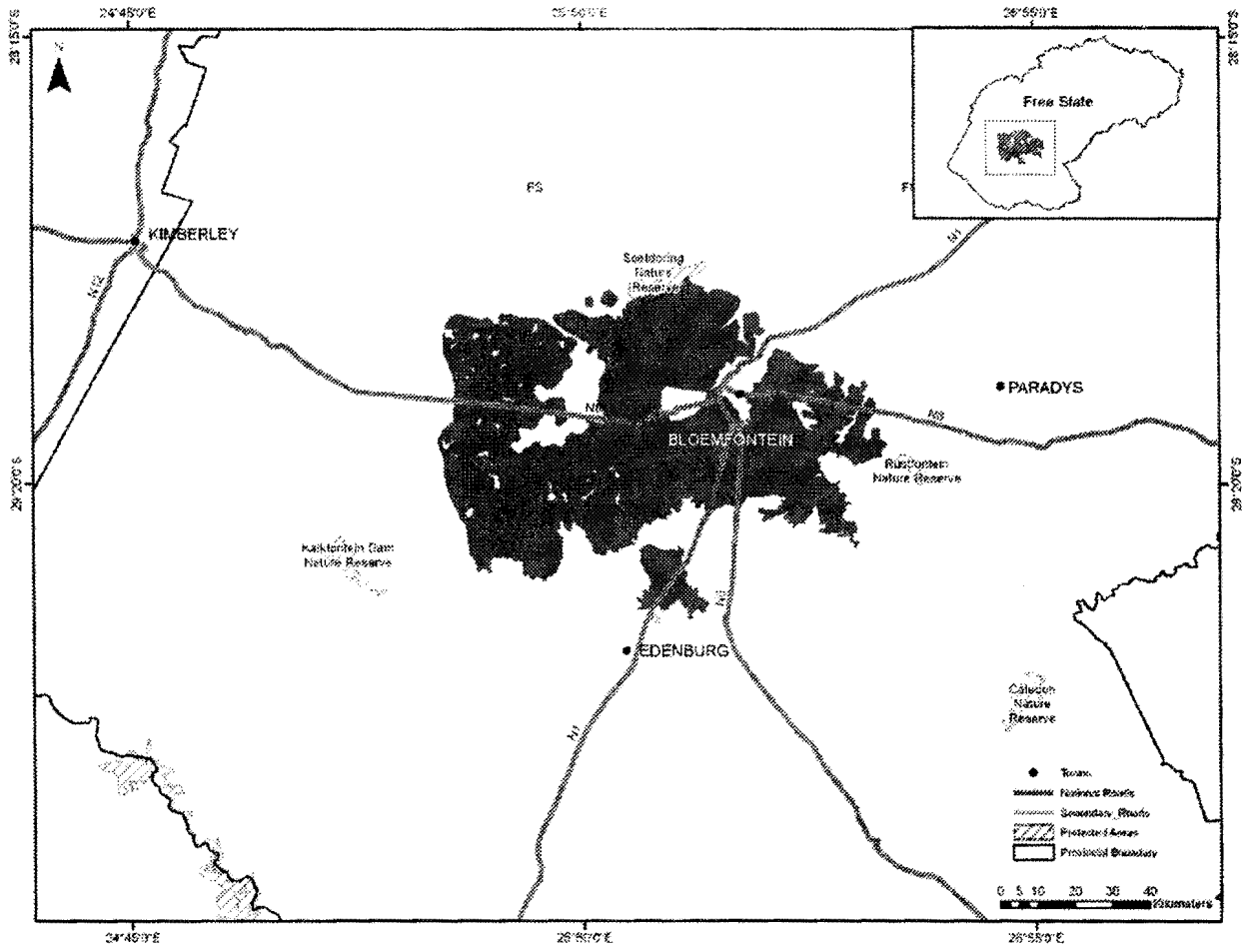
Slightly undulating bottomland landscape covered with tall, dense grassland alternating with patches of karroid scrub occurring especially over calcrete. At least one endemic plant species occurs in the ecosystem.

Other information

Only a small portion of the ecosystem is protected in the Soetdoring Nature Reserve.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds): *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 381. South African National Biodiversity Institute, Pretoria.



Location of Bloemfontein Dry Grassland showing original area of ecosystem

127. Bokkeveld Sandstone Fynbos (FFs 1)

| | |
|--|--|
| Reference number | FFs 1 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Northern Cape and Western Cape |
| Municipalities | Hantam LM, Matzikama LM and Cederberg LM |
| Original area of ecosystem | 136 000 ha |
| Remaining natural area of ecosystem (%) | 84% |
| Proportion of ecosystem protected | 3% of original area |
| Known number of species of special concern | 58 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 101 endemic plant species |

Geographical location

From the Bokkeveld Escarpment in the north along the Kobee and Matsikamma Mountains to the Gifberge between the Doring (Hantams) River (north of Nieuwoudtville) to the Doring (Tankwa) River (south of Klawer).

Description

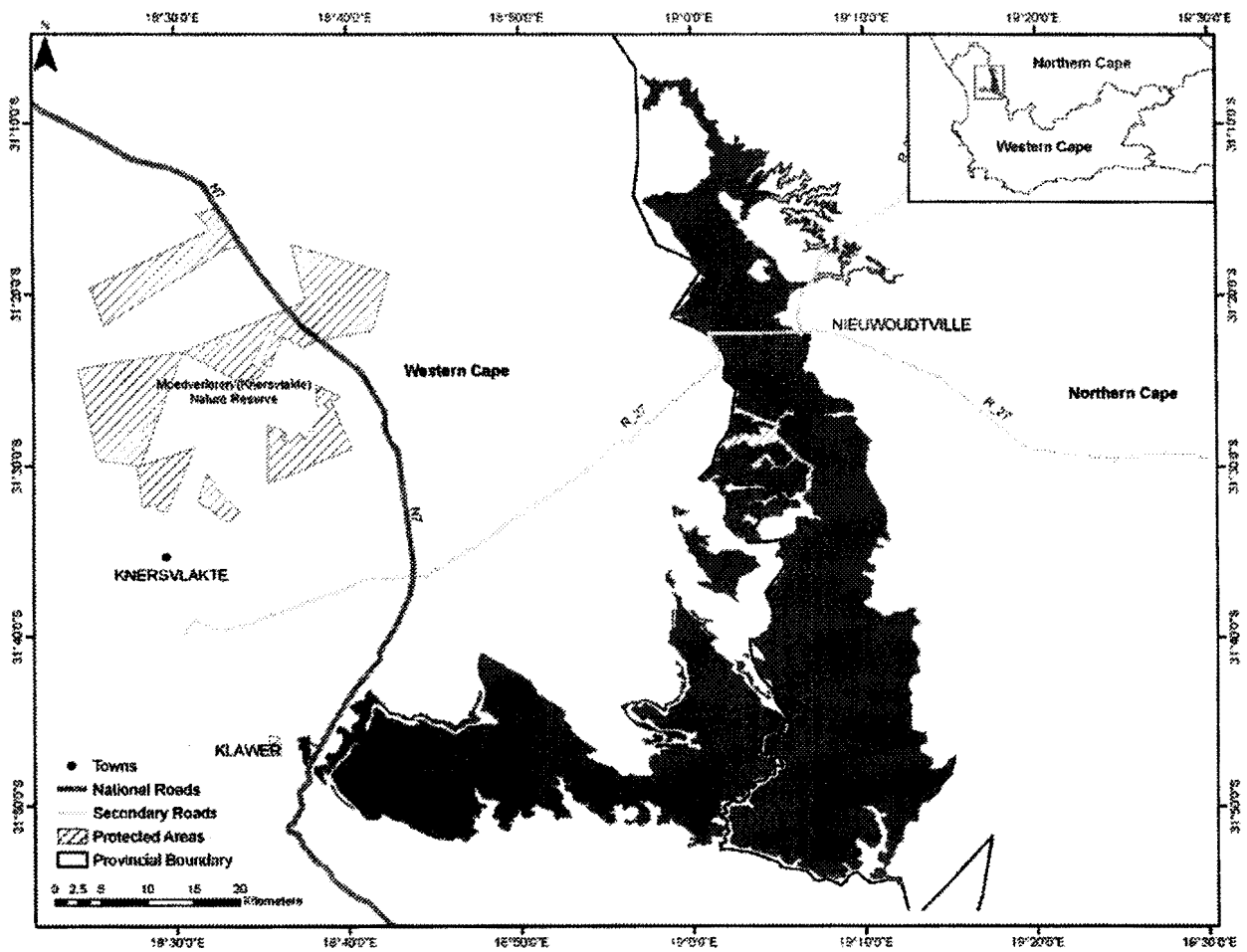
A flat tableland, on the Bokkeveld Escarpment, elsewhere gently sloping to the east and south, without any faulting or folding in the sandstone beds. Major exposures of sandstone are at the edge of the Escarpment and where younger sediments have been removed. Topography resulting from rivers cutting through the resistant sandstone, forming deep gorges (such as Oorlogskloof) in an otherwise flat sandstone landscape. Although the shale bands of the Cedarberg Formation are largely absent, rugged 'Cederberg' landscape is formed on the eastern edge, where shale outcrops with flat-topped hills occur (and support outliers of Bokkeveld Sandstone Fynbos on their summits). Vegetation mainly closed restiolands in deeper moister sands with low, sparse shrubs that become denser with decreased restioid dominance in drier areas. Restioid, proteoid and asteraceous fynbos predominate; some waboomveld found as well. At least 101 endemic plant species and 58 Red Data List plant species occur in the ecosystem.

Other information

Approximately 3% of the ecosystem is protected in the Oorlogskloof Nature Reserve.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19: 99-100.* South African National Biodiversity Institute, Pretoria.



Location of Bokkeveld Sandstone Fynbos showing original area of ecosystem

128. Boland Granite Fynbos (FFg 2)

| | |
|--|--|
| Reference number | FFg 2 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Swartland LM, Drakenstein LM, Stellenbosch LM, Breede Valley LM and Theewaterskloof LM |
| Original area of ecosystem | 50 000 ha |
| Remaining natural area of ecosystem (%) | 62% |
| Proportion of ecosystem protected | 14% of original area |
| Known number of species of special concern | 56 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 23 endemic plant species |

Geographical location

Upper slopes and summits of Paardeberg and Paarl Mountain as well as the lower slopes of mountains spanning the Groenberg and Hawequasberge (western foothills near Wellington); Pniel (Simonsberg, Groot Drakenstein Mountains and Klapmutskop); Franschhoek (Middelberg, Dassenberg, Skerpheuwel and Middagkransberg); Stellenbosch (Jonkershoek Valley and northern side of the Helderberg); the lower south- and west-facing slopes of Haelkop and the Hottentots Holland Mountains; and the free-standing Skapenberg. It also occurs in the Du Toitskloof and Wemmershoek Valleys, Kaaimansgat and lower Stettynskloof, with outcrops on the Bottelary Hills and Kanonkop (near Pella).

Description

Moderately undulating plains and hills, varying from extensive deep soils, to localised deep soils between large granite domes and sheets. A fairly dense, 1–2 m tall closed shrubland with occasional low, gnarled trees dotted through the landscape. A diverse type, dominated by scrub, asteraceous and proteoid fynbos (with *Protea repens*, *P. burchelli*, *P. laurifolia* with *Leucadendron rubrum* and *L. daphnoides* as dominants on drier slopes; *Leucospermum grandiflorum* or *L. guenzii* dominant in seepage areas; and *P. neriifolia* and *Leucadendron sessile* on moist slopes), but with patches of restioid and ericaceous fynbos in wetter areas.

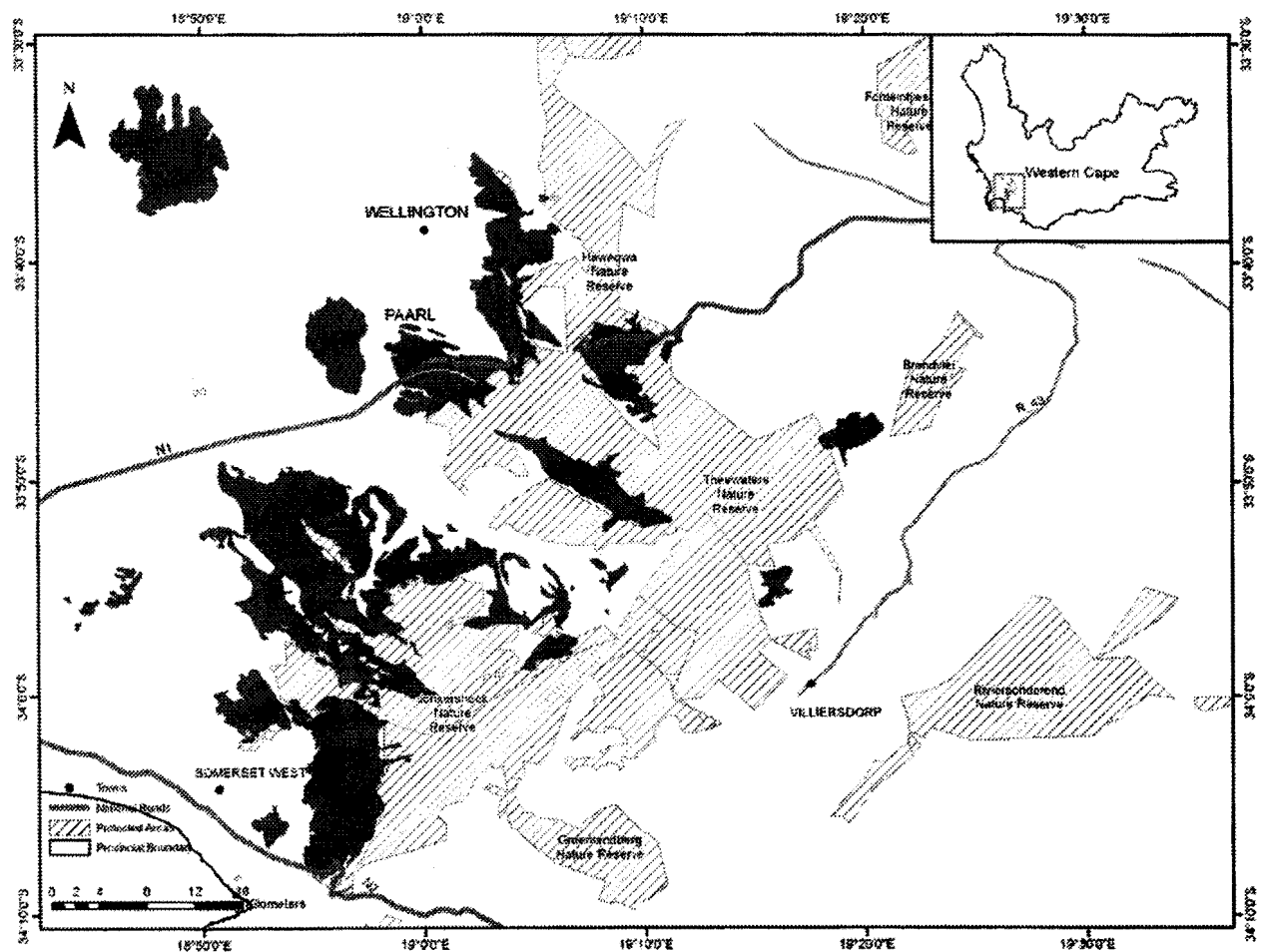
Waboomveld is very typical and very extensive within the ecosystem. At least 23 endemic plant species and 56 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 14% of the ecosystem is protected in the Hawequas, Hottentots Holland and Paarl Mountain Nature Reserves, with a further 34% found in Hawequas, Hottentots Holland mountain catchment areas and Helderberg and Paardenberg Nature Reserves.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 167-168. South African National Biodiversity Institute, Pretoria.



Location of Boland Granite Fynbos showing original area of ecosystem

129. Boschhoek Forests (KZN 42)

| | |
|--|---|
| Reference number | KZN 42 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | uMngeni LM |
| Original area of ecosystem | 1 000 ha |
| Remaining natural area of ecosystem (%) | 30% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant species including those listed below |

Geographical location

Howick (2930AC). Ecosystem consists of a collection of westerly facing Eastern Mistbelt Forests. Ecosystem delineated by the boundary of the Drakensberg Foothill Wattled Crane Habitat threatened ecosystem (KZN 47) in the north; by the contour delineating the crest of the west facing slope in the east; and by the contour delineating the base of the same westerly facing slope in the west.

Description

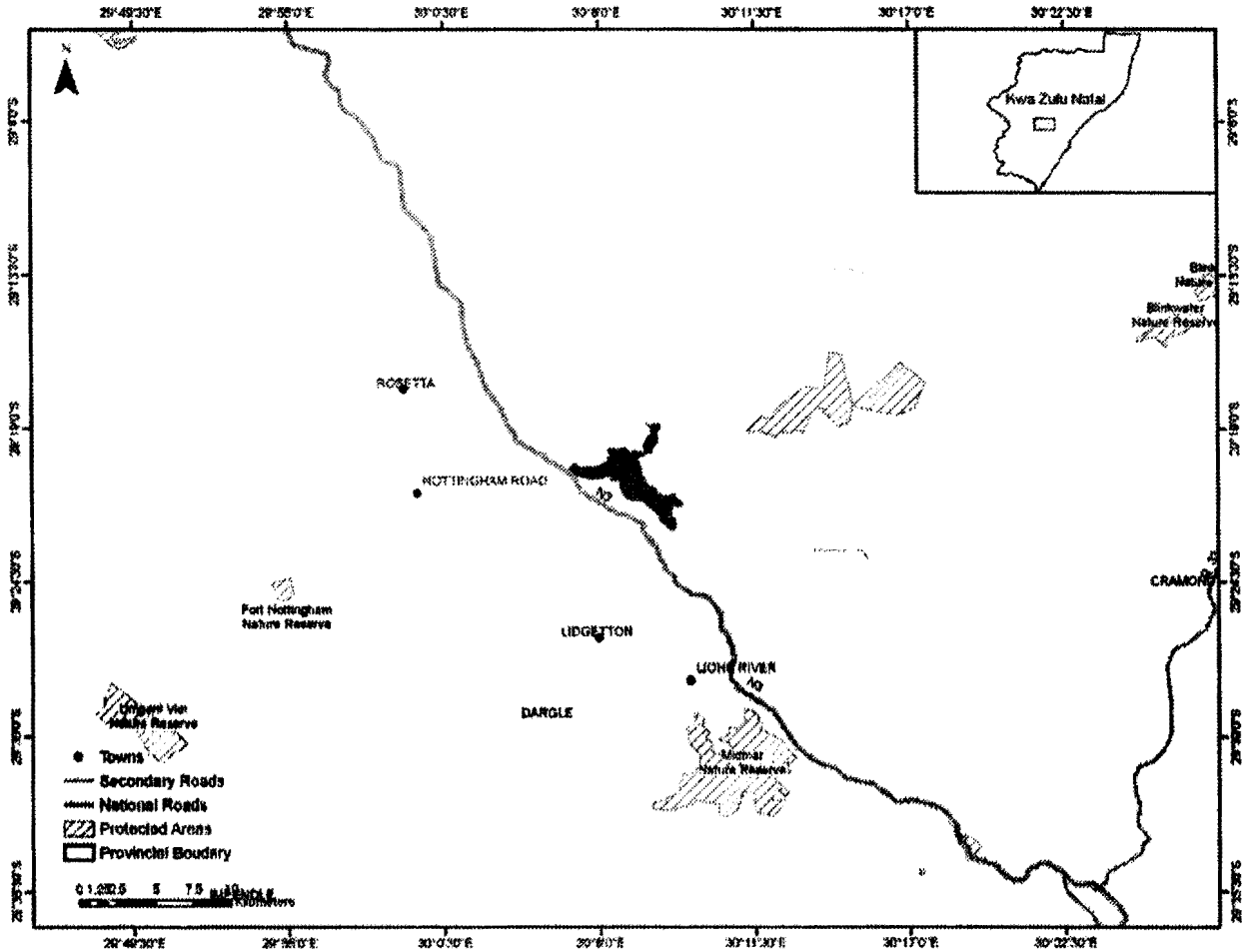
Key biodiversity features include one bird species, the Wattled Crane, three millipede species including *Centrobolus tricolor*, *Doratogonus hoffmani* and *Doratogonus montanus*; four plant species including *Geranium natalense*, *Kniphofia brachystachya*, *Kniphofia buchananii* and *Plectranthus rehmannii*; one reptile species, *Bradypodion thamnobates* and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Boschhoek Forests showing original area of ecosystem

130. Boschhoek Plateau (KZN 43)

| | |
|--|---|
| Reference number | KZN 43 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | uMngeni LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 94% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 11 threatened or endemic plant species including those listed below |

Geographical location

Howick (2930AC). Ecosystem situated to the east of Boschhoek Forest threatened ecosystem (KZN 42) and occurs along the plateau on top of the ridge which extends into the Midlands Mistbelt Grassland lowlands. Southern boundary delineated by the change in gradient at the base of the ridge; the eastern boundary delineated, using contours as a guide, by the crest of the same plateau. Some Eastern Mistbelt Forest patches, to the north of the plateau, are also included.

Description

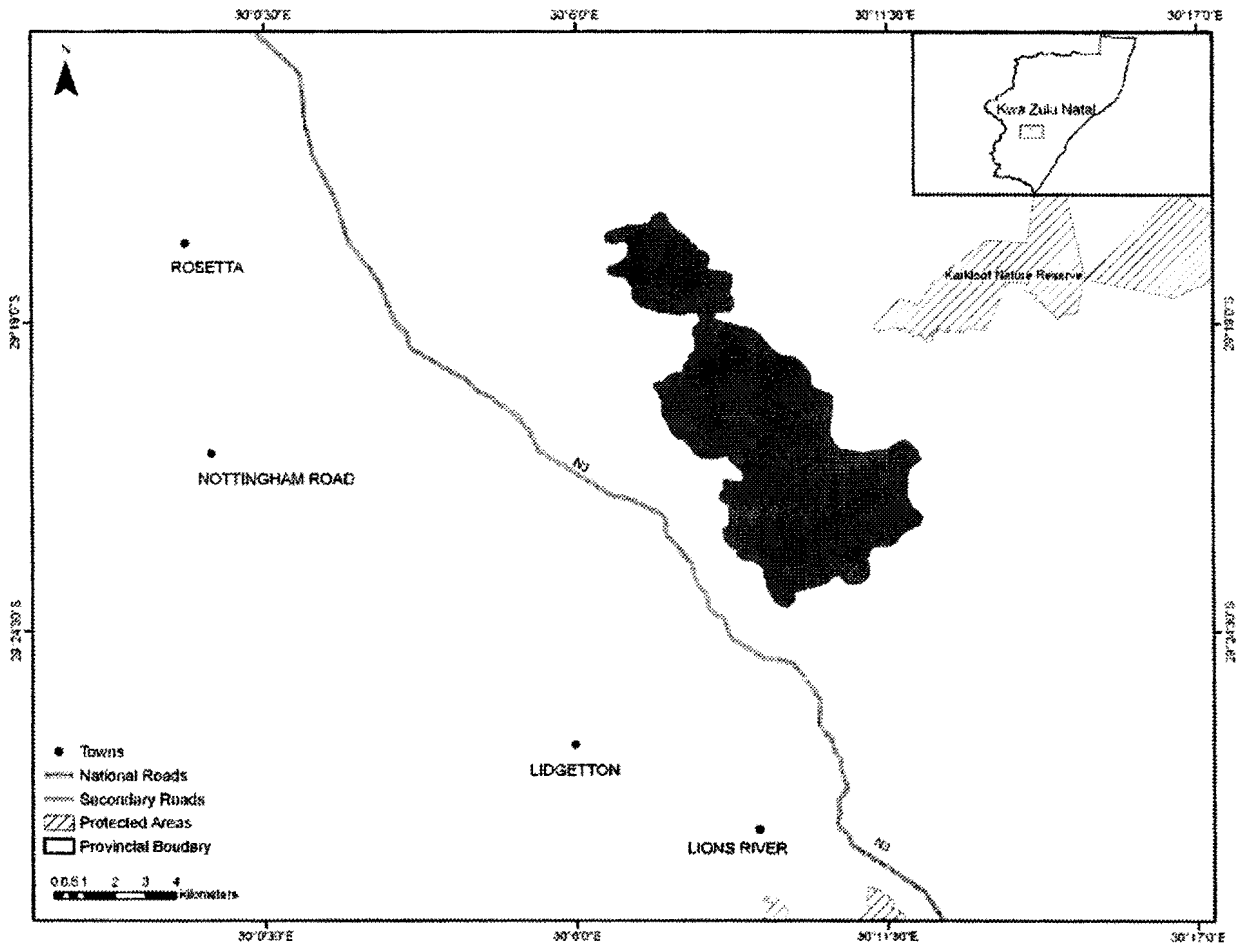
Key biodiversity features include one bird species, the Wattled Crane; one mammal species, the Oribi; three millipede species including *Centrobolus tricolor*, *Doratogonus cristulatus* and *Doratogonus montanus*; four plant species including *Kniphofia brachystachya*, *Kniphofia buchananii*, *Plectranthus rehmannii* and *Senecio exuberans*; two reptile species including *Bradypodion bourquini* and *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Boschhoek Plateau showing original area of ecosystem

131. Breede Alluvium Renosterveld (FRa 1)

| | |
|--|--|
| Reference number | FRa 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede Valley LM and Breede River/Winelands LM |
| Original area of ecosystem | 50 000 ha |
| Remaining natural area of ecosystem (%) | 50% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 10 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 2 endemic plant species |

Geographical location

Breede River, broad areas and narrow bands on valley bottomlands from Worcester to Ashton including the largest patch from Worcester to Nuy and Toontjiesrivier, and the belt in the vicinity of the Breede River also with many of its tributaries such as the Doringrivier south of Kwaggaskloof, Poesienetsrivier, Vinkrivier and Keisersrivier.

Description

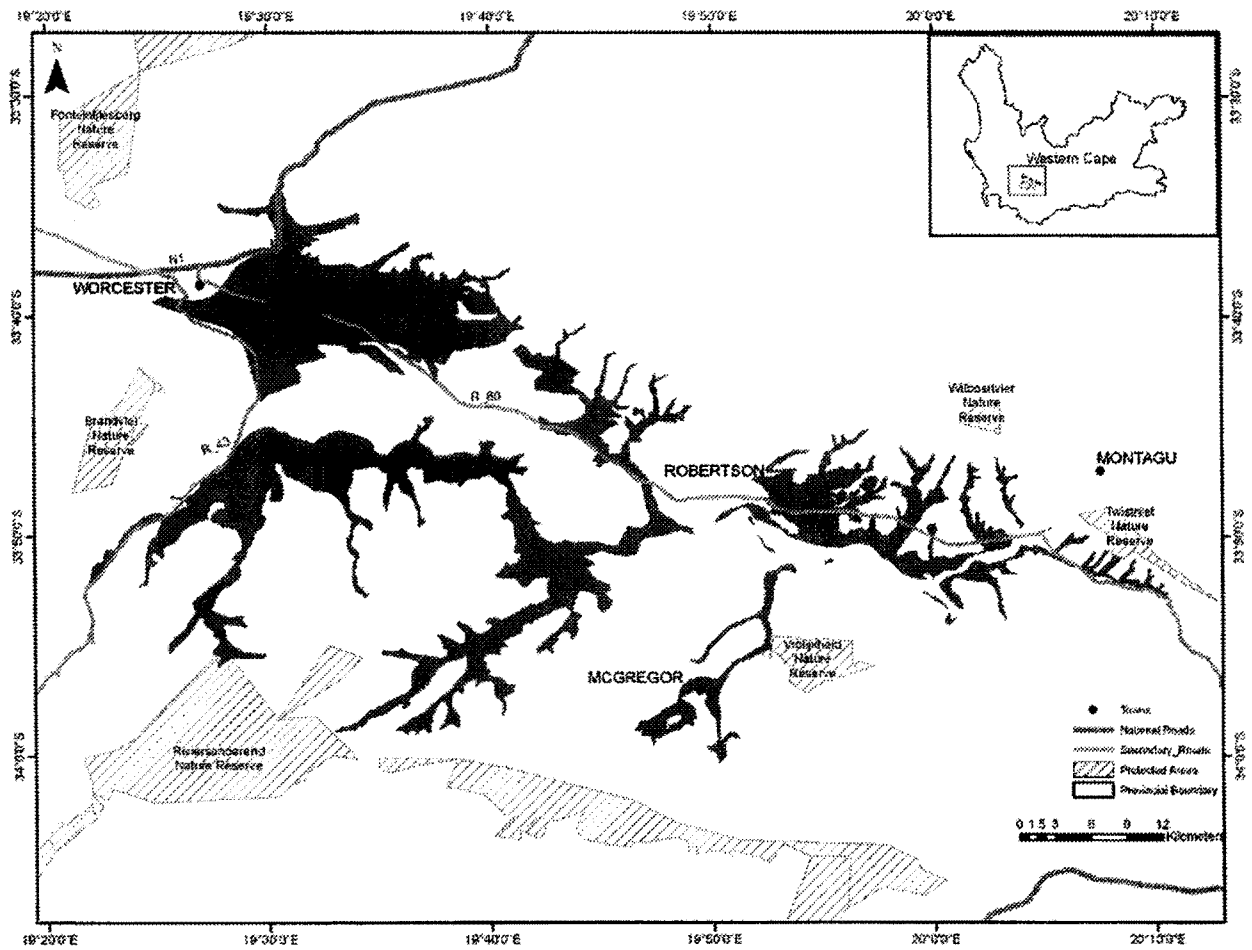
Flat alluvial fans and valley bottoms supporting short grassy cupressoid-leaved shrubland usually dominated by renosterbos. At least two endemic plant species and 10 Red Data List plant species occur in the ecosystem.

Other information

Small patches of the ecosystem are protected in the Vrolijkheid and Riviersonderend Nature Reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 194. South African National Biodiversity Institute, Pretoria.



Location of Breede Alluvium Renosterveld showing original area of ecosystem

132. Breede Sand Fynbos (FFd 8)

| | |
|--|---|
| Reference number | FFd 8 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede Valley LM and Breede River/Winelands LM |
| Original area of ecosystem | 9 000 ha |
| Remaining natural area of ecosystem (%) | 48% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 1 endemic plant species |

Geographical location

Small patches usually in close proximity to the Breede River from the Brandvlei Dam to near Robertson.

Description

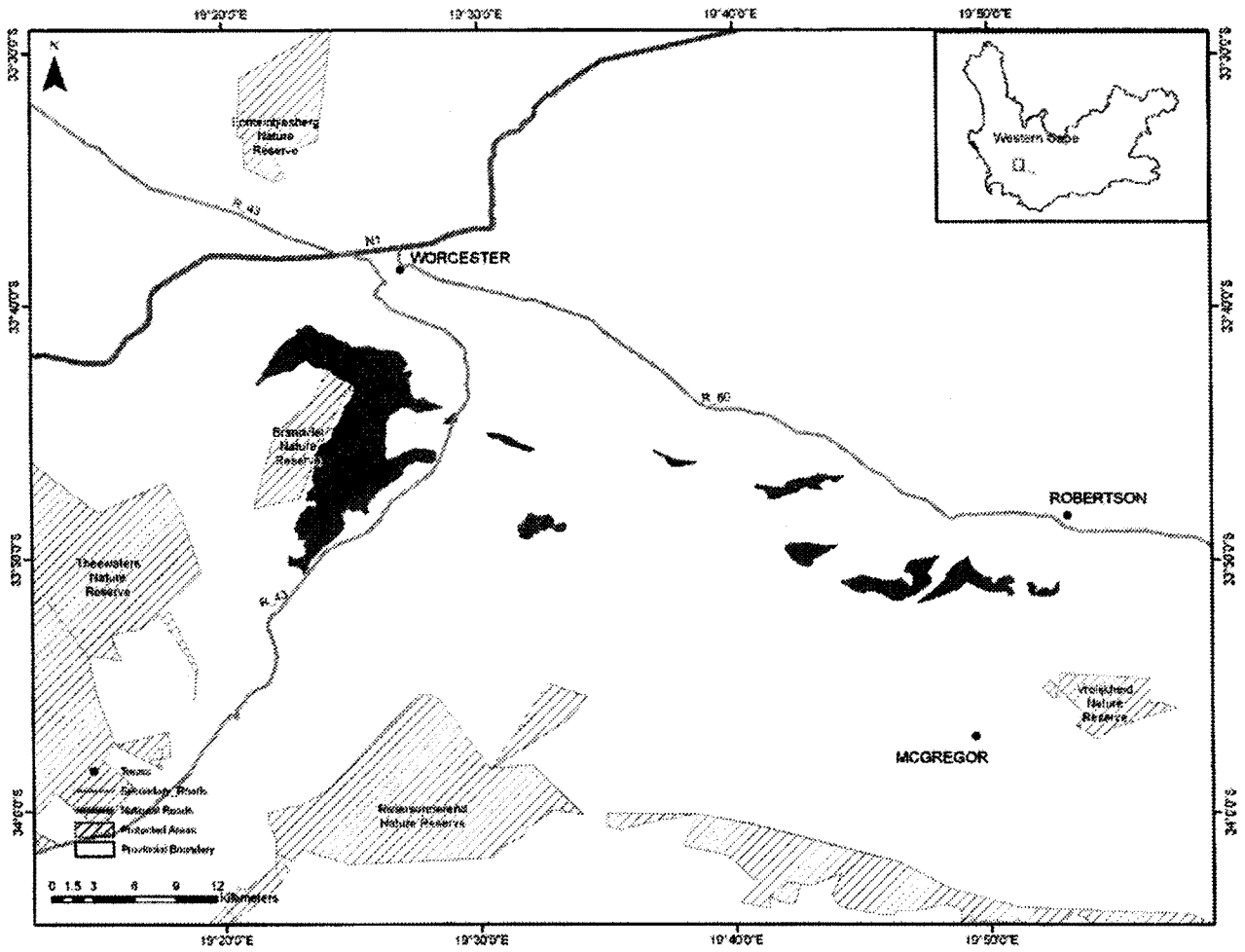
Very fragmented, occurring as dune plumes and dune seas in the valley bottoms primarily south of the Breede River, and extending up the sides of adjacent hills. Vegetation is an open proteoid tall shrubland combined with an open to medium dense restioid herbland in undergrowth. Proteoid and restioid fynbos are dominant, with some asteraceous fynbos also found. At least one endemic plant species and three Red Data List plant species occur in the ecosystem.

Other Information

The ecosystem is not protected but 2% is found in the Hawequas and Quaggas Berg Private Nature Reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 142-143. South African National Biodiversity Institute, Pretoria.



Location of Breede Sand Fynbos showing original area of ecosystem

133. Bushmans Nek/Garden Castle Lowlands (KZN 44)

| | |
|--|---|
| Reference number | KZN 44 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Kwa Sani LM and KZDMA43 |
| Original area of ecosystem | 16 000 ha |
| Remaining natural area of ecosystem (%) | 62% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 10 threatened or endemic plant species including those listed below |

Geographical location

Underberg (2929CD). Ecosystem includes lowlands and wetlands associated with crane nesting sites. Ecosystem delineated using topography and the boundaries refined by excluding peripheral plantations and urban settlements. Cultivated fields, which are important habitat for crane foraging, and manmade impoundments, which have associated wetlands important for flufftails are included.

Description

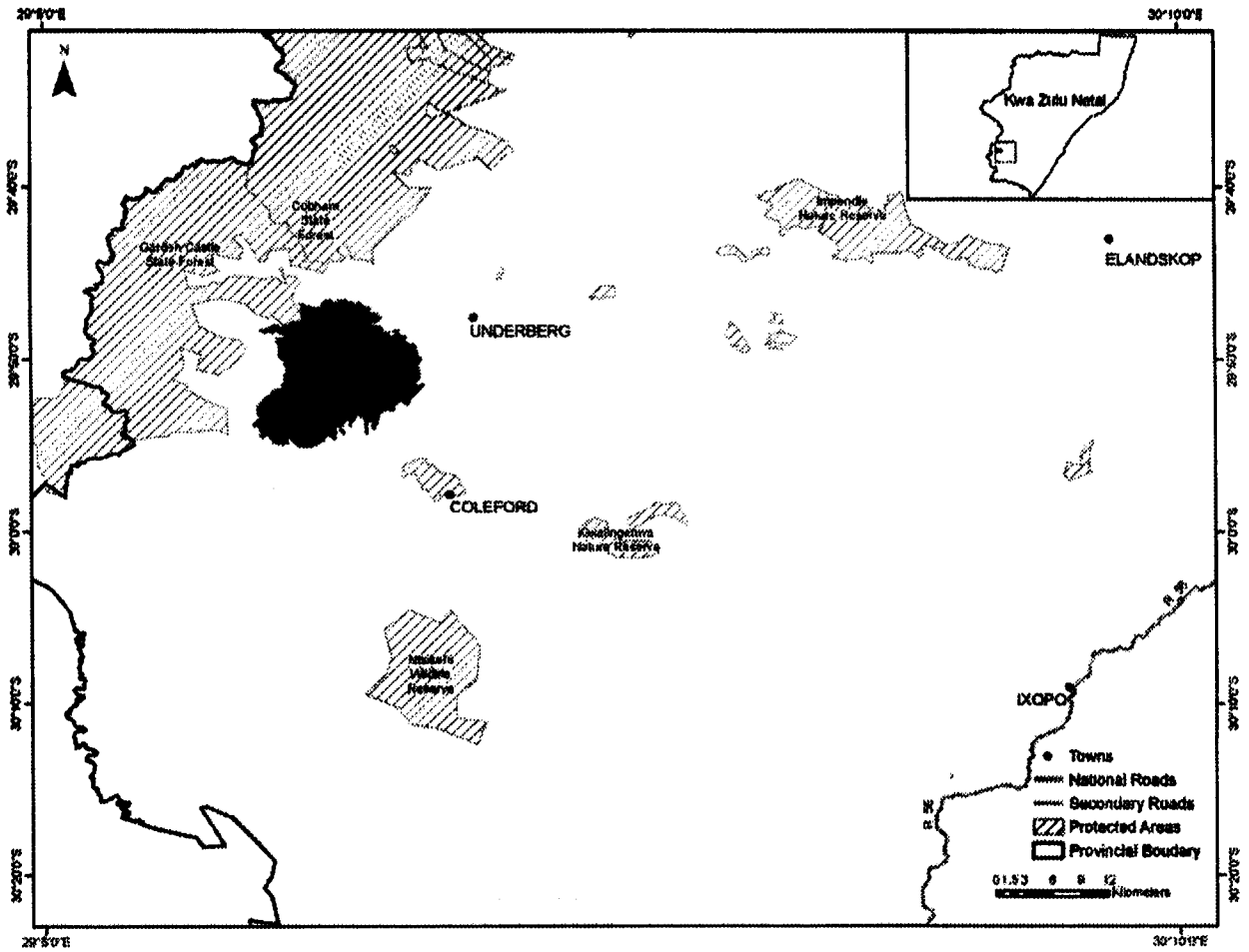
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*; two bird species including Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two millipede species including *Centrobolus tricolour* and *Doratogonus montanus*; three plants species including *Hesperantha woodii*, *Kniphofia brachystachya* and *Kniphofia breviflora*; one reptile species, *Bradypodion thamnobates*; and two vegetation types including Southern Drakensberg Highland Grassland and Drakensberg Foothill Moist Grassland.

Other information

About 1% of the ecosystem is protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Bushmans Nek/Garden Castle Lowlands showing original area of ecosystem

134. Cape Winelands Shale Fynbos (FFh 5)

| | |
|--|--|
| Reference number | FFh 5 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Drakenstein LM, Stellenbosch LM and Overstrand LM |
| Original area of ecosystem | 9 000 ha |
| Remaining natural area of ecosystem (%) | 54% |
| Proportion of ecosystem protected | 25% of original area |
| Known number of species of special concern | 18 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 1 endemic plant species |

Geographical location

Higher hills and lower mountain slopes in the Stellenbosch and Somerset West areas, in patches from Blousteen on Clarence Drive at Koeëlbaai to south of Elsenberg and within the Jonkershoek Valley, with pockets on the Cape Peninsula at Devils Peak; the Tygerberg Hills on Kanonkop; Groenberg near Wellington; and the upper Franschhoek Valley.

Description

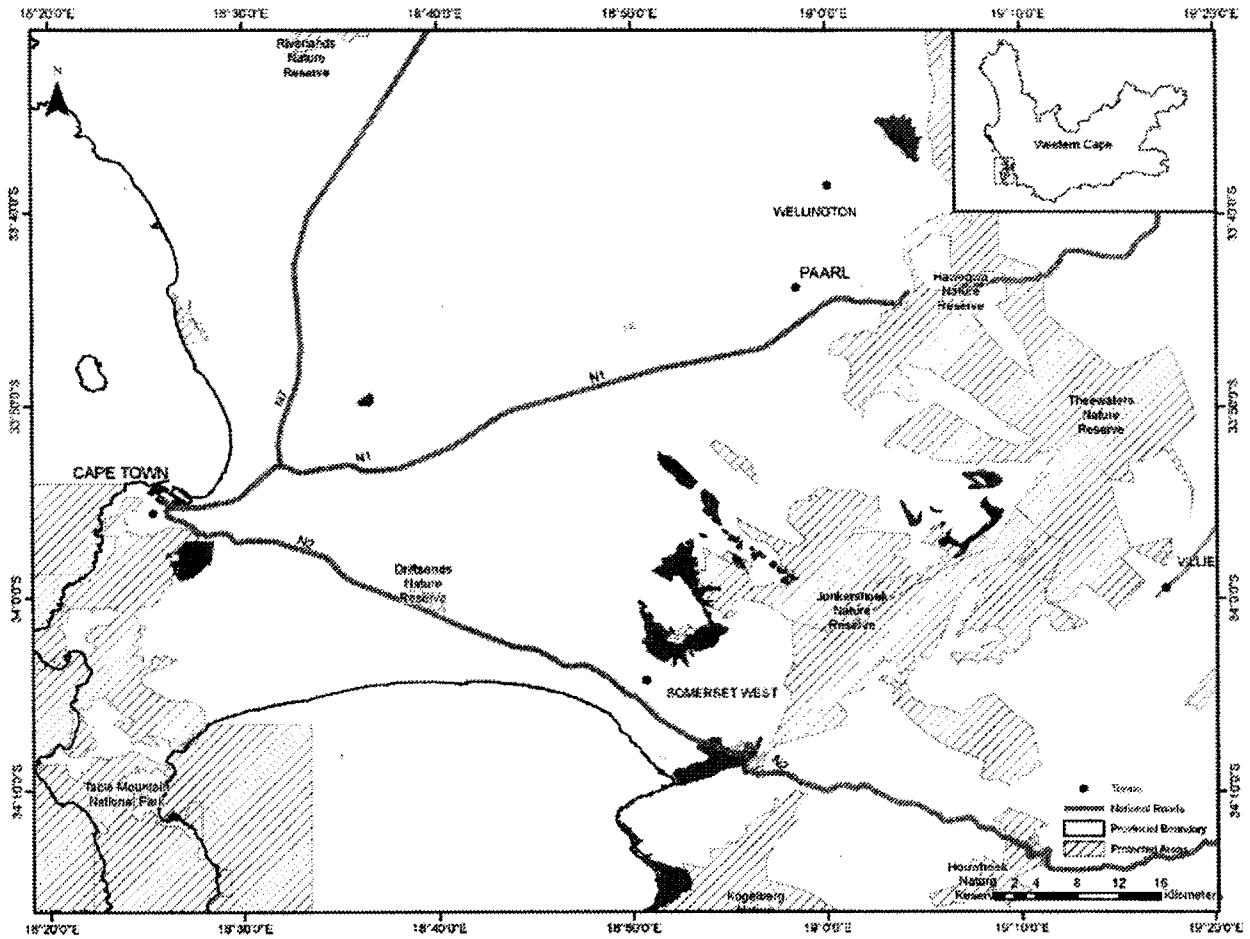
Moderately undulating plains and steep slopes against the mountains. Vegetation is a moderately tall and dense shrubland dominated by proteoid and closed-scrub fynbos in structural terms. At least one endemic plant species and 18 Red Data List plant species occur in the ecosystem.

Other information

Approximately 25% of the ecosystem is protected in the Table Mountain National Park, Helderberg and Hottentots Holland Nature Reserves. An additional 25% is found in mountain catchment areas for example Hottentots Holland and Hawequas.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 149-150. South African National Biodiversity Institute, Pretoria.



Location of Cape Winelands Shale Fynbos showing original area of ecosystem

135. Cederberg Sandstone Fynbos (FFs 4)

| | |
|--|--|
| Reference number | FFs 4 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Cederberg LM, Bergrivier LM, Witzenberg LM, WCDMA01 and WCDMA02 |
| Original area of ecosystem | 245 000 ha |
| Remaining natural area of ecosystem (%) | 83% |
| Proportion of ecosystem protected | 17% of original area |
| Known number of species of special concern | 47 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 195 endemic plant species |

Geographical location

Mountains and rocky flats south of the Doring River from the Nardousberge through the Cederberg Mountains including the Pakhuisberge, Krakadouberge, Middelberg, Sneeu koppe, Tafelberg, Sneeu berg (but excluding the uppermost parts of the last-mentioned three), Breëkkransberge and Sandfontein Peaks, and terminating on the Skurweberg (excluding the summit area of Sneeu kop). Also included are the higher peaks (for example, Engelsman se Berg, Swartberg and Maanberg) west of the Olifants River Valley. Substantial sections of the western parts of the central and northern Cederberg are excluded from the ecosystem.

Description

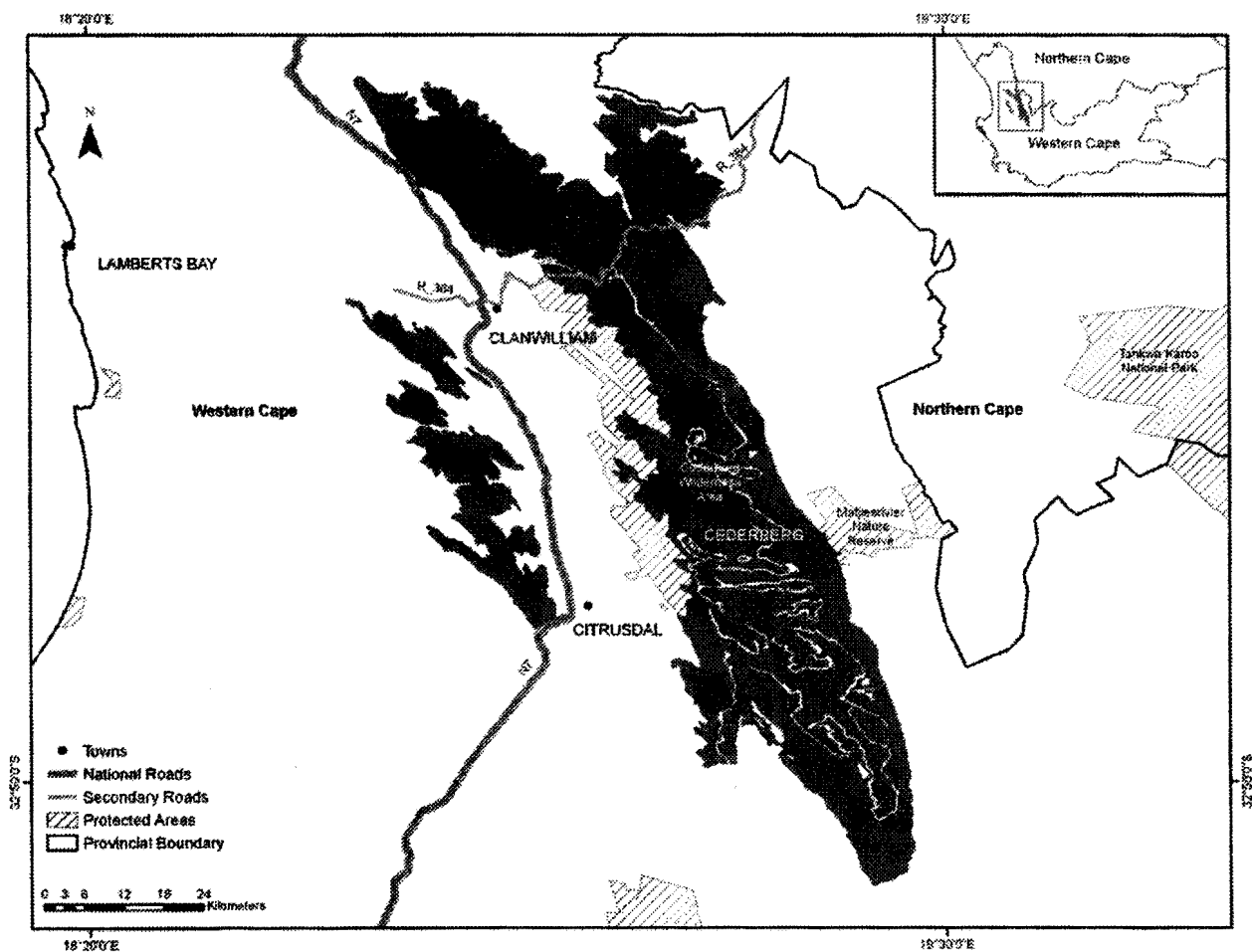
Flat to gently east- or north-sloping tableland, with steeper west-facing slopes (only upper parts in the ecosystem); rugged and dominated by rocky outcrops with gullies and flats of deep sand. Isolated mountain peaks occur and a more dissected mountainous terrain occurs in the west. Vegetation consists of closed restiolands on deeper moister sands with low, sparse shrubs that become denser and Restionaceae less dominant in the drier areas. Structurally it is predominantly asteraceous, restioid and proteoid fynbos. North of Pakhuis Pass towards the Doring River this grades through asteraceous fynbos to Doringrivier Quartzite Karoo. At least 195 endemic plant species and 47 Red Data List plant species occur in the ecosystem.

Other information

Approximately 17% of the ecosystem is protected in the Cederberg Wilderness Area, with 29% found in private reserves such as Sederberg and Koue Bokkeveld.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 101-103. South African National Biodiversity Institute, Pretoria.



Location of Cederberg Sandstone Fynbos showing original area of ecosystem

136. Ceres Shale Renosterveld (FRs 4)

| | |
|--|---|
| Reference number | FRs 4 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Witzenberg LM and WCDMA02 |
| Original area of ecosystem | 49 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 7 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 3 endemic plant species |

Geographical location

Warm Bokkeveld Valley at Ceres and Laastedrift to the east; Cederberg from Matjiesrivier to Koue Bokkeveld at Blinkberg Pass; and the Odessa area north of Gydoberg and Baviaanshoek.

Description

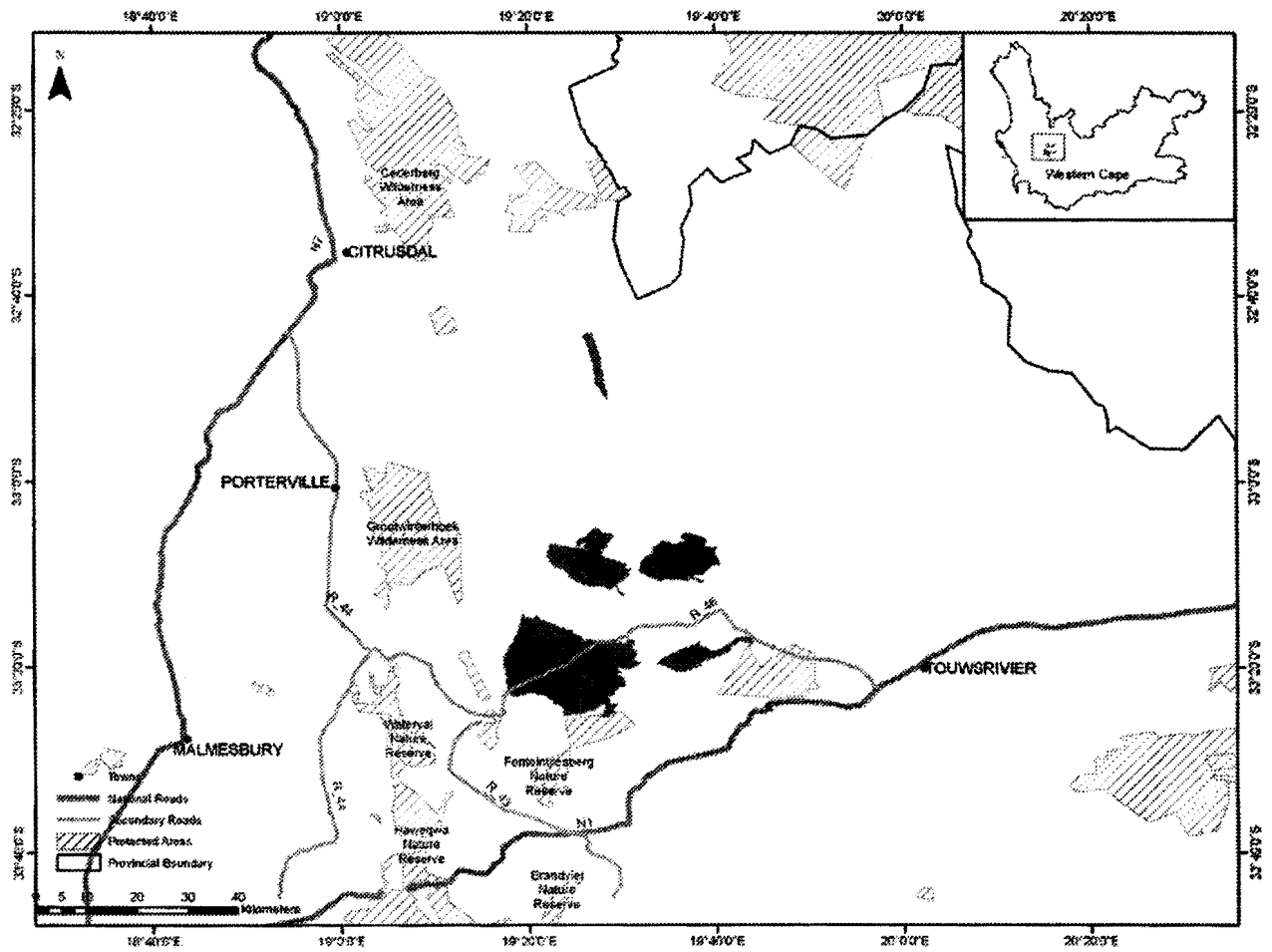
Moderately undulating plains and lower mountain slopes supporting medium tall cupressoid-leaved shrubland dominated by renosterbos. Heuweltjies are prominent in places. At least three endemic plant species and seven Red Data List plant species occur in the ecosystem.

Other Information

A few patches of the ecosystem are protected in the Ben Etive Nature Reserve; an additional 1% is found in the Koue Bokkeveld (mountain catchment area) and the Matroosberg Private Nature Reserve.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 177-178. South African National Biodiversity Institute, Pretoria.



Location of Ceres Shale Renosterveld showing original area of ecosystem

137. Chelmsford Grasslands (KZN 45)

| | |
|--|---|
| Reference number | KZN 45 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Newcastle LM and Dannhauser LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 69% |
| Proportion of ecosystem protected | 72% of original area |
| Known number of species of special concern | 2 threatened or endemic plant and animal species including those listed below |

Geographical location

Fort Mistake (2829BB) and Newcastle (2729DD). Ecosystem delineated using the boundary of the Chelmsford Nature Reserve as well as the surrounding grasslands which provides suitable habitat for Oribi.

Description

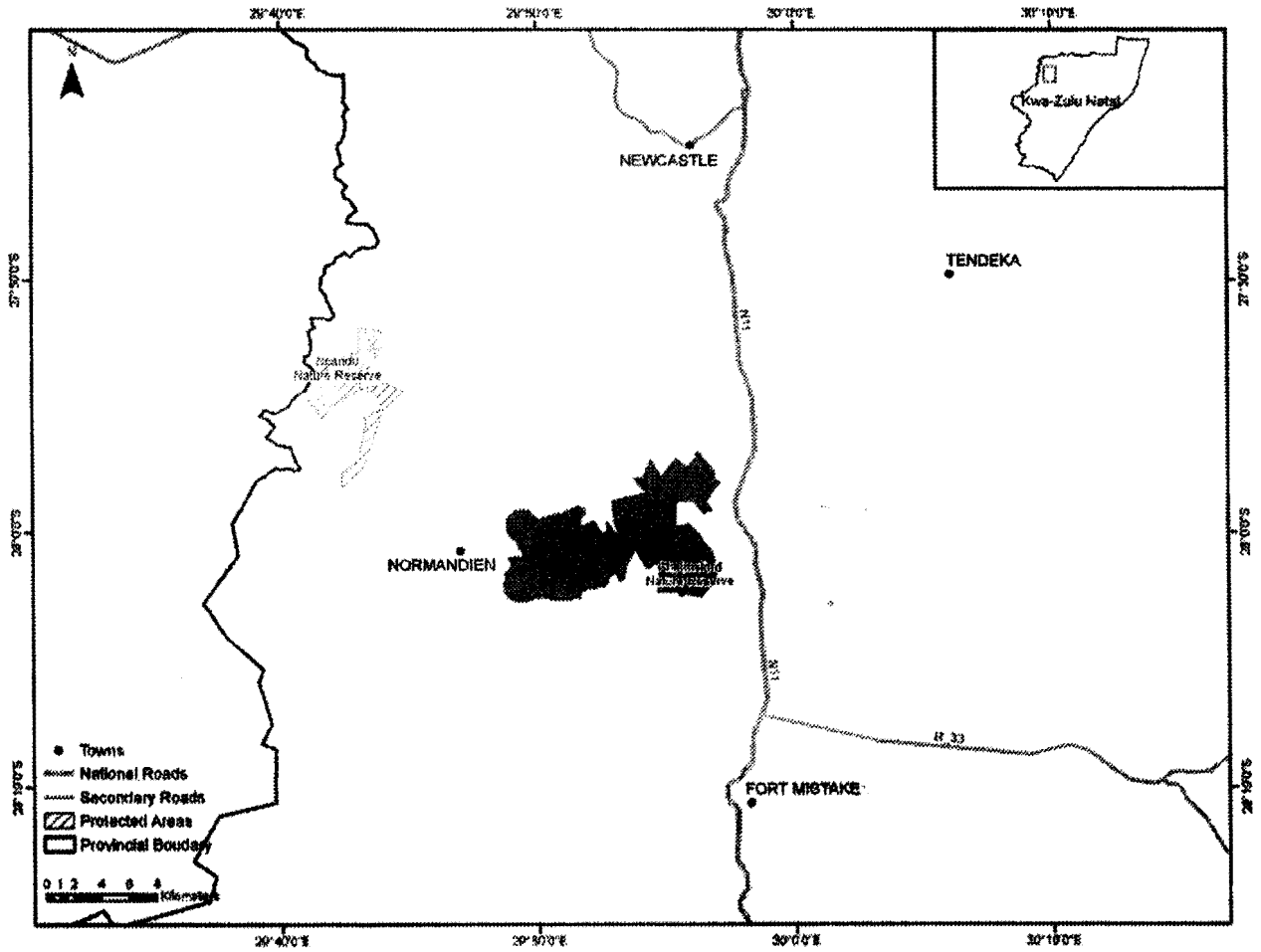
Key biodiversity features include one mammal species, Oribi; one plant species, *Kniphofia breviflora*; and one vegetation type, Northern KwaZulu-Natal Moist Grassland.

Other information

Approximately 72% of the ecosystem is protected in the Chelmsford Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Chelmsford Grasslands showing original area of ecosystem

138. Chelmsford North Grasslands (KZN 46)

| | |
|--|---|
| Reference number | KZN 46 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | KwaZulu-Natal |
| Municipality | Newcastle LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Newcastle (2729DD). Ecosystem delineated by the Hartebeesbult wetlands in the south and the Mbazo wetlands in the north.

Description

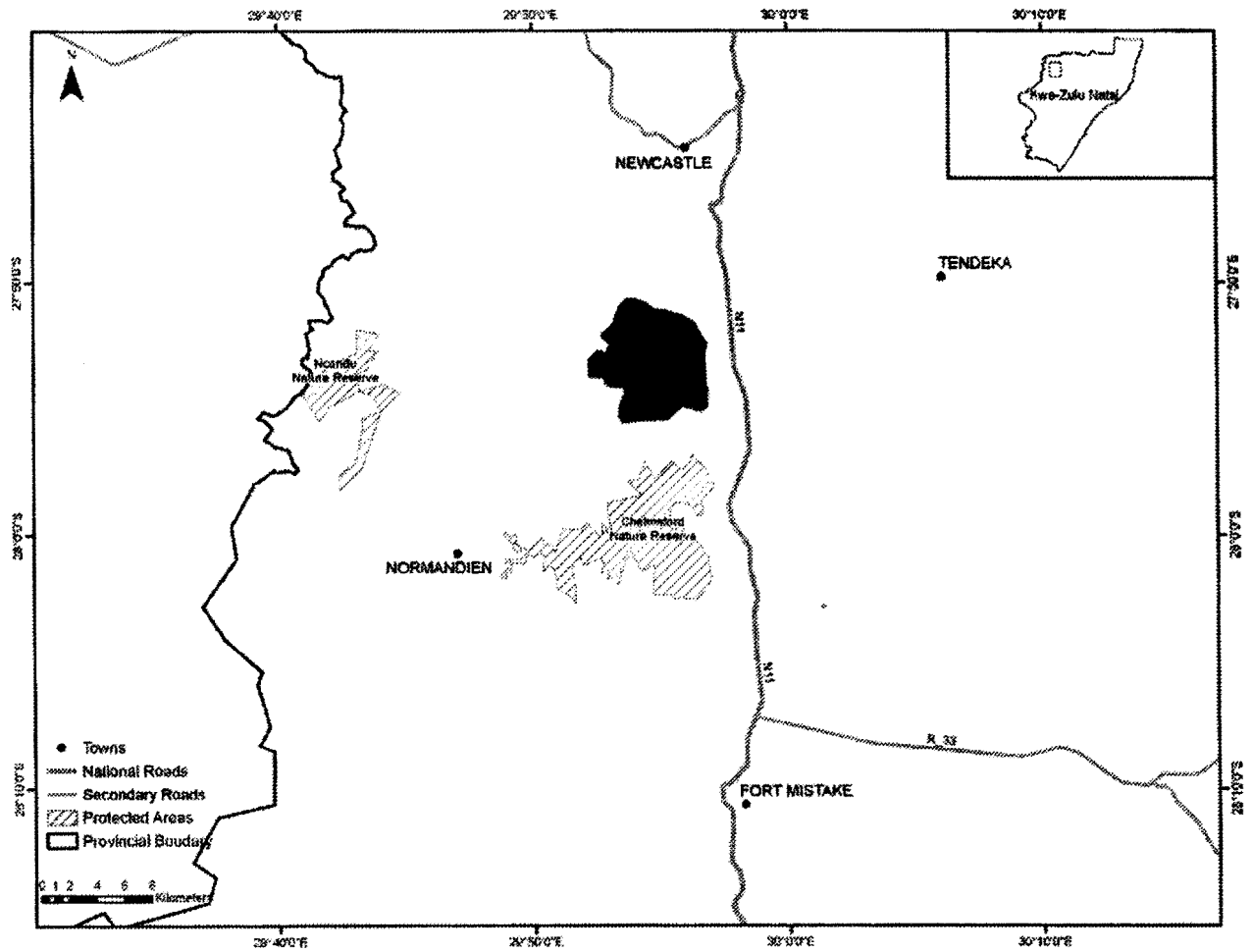
Key biodiversity features include one bird species, White-winged Flufftail; one mammal species, Oribi; one plant species, *Kniphofia breviflora*; and two vegetation types including KwaZulu-Natal Highland Thornveld and Northern KwaZulu-Natal Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Chelmsford North Grasslands showing original area of ecosystem

139. Croc Gorge Granite Mountainlands (MP 14)

| | |
|--|--|
| Reference number | MP 14 |
| Listed under Criterion | F |
| Biome | Savanna and Forest |
| Province | Mpumalanga |
| Municipalities | Mbombela LM and Nkomazi LM |
| Original area of ecosystem | 9 000 ha |
| Remaining natural area of ecosystem (%) | 96% |
| Proportion of ecosystem protected | 23% of original area |
| Known number of species of special concern | 12 threatened or endemic plant and animal species including those listed below |

Geographical location

Granite boulder gorge situated along the Crocodile River between Nelspruit and Kaapmuiden (2531AC, 2531 AD, 2531CA and 2531CB). Ecosystem delineated by the mountain tops and steep valley slopes.

Description

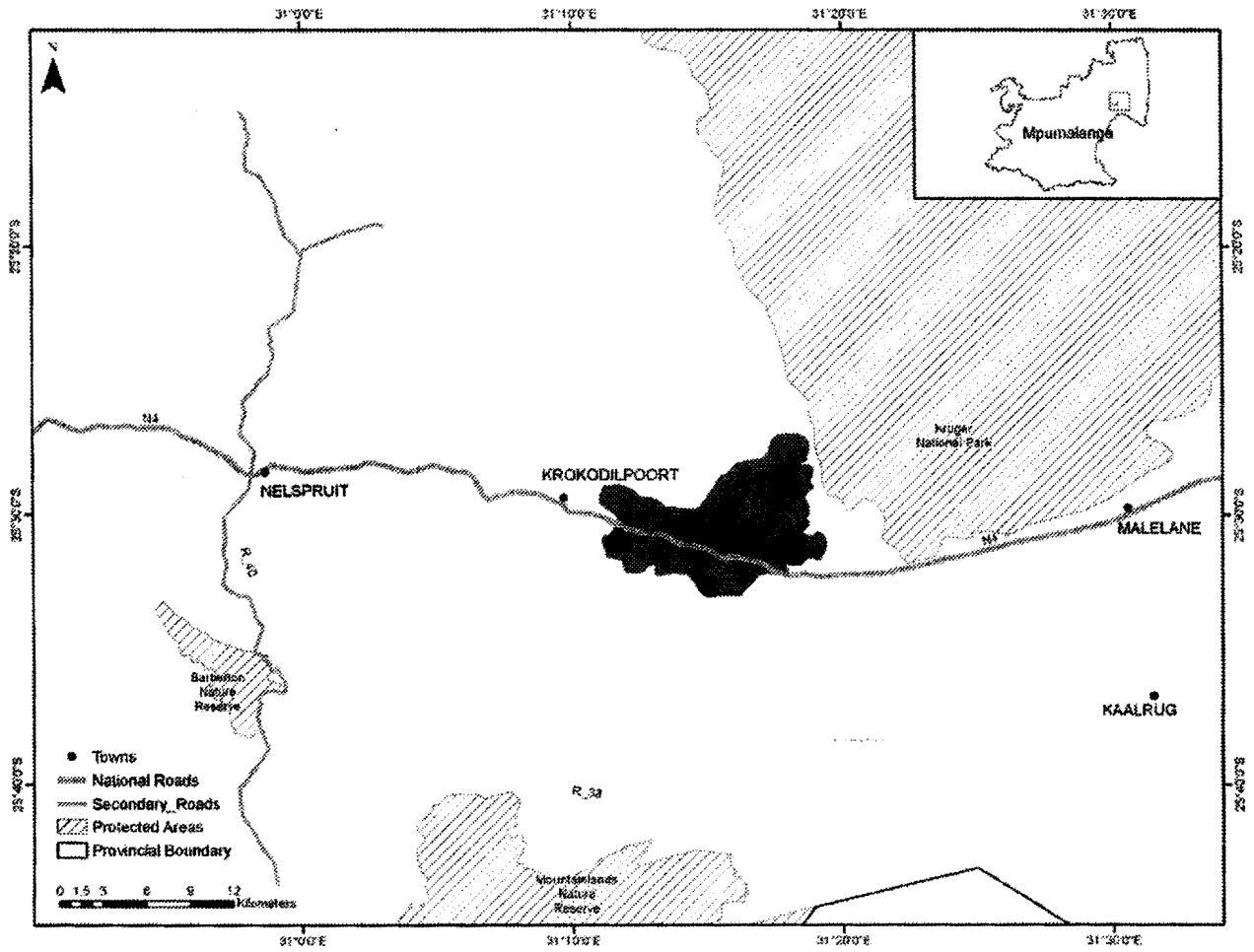
Key biodiversity features include two mammal species including Juliana's Golden Mole and Meester's Golden Mole; two bird species including Saddle-billed Stork and Southern Ground Hornbill; four reptile species including *Afroedura haackei*, *Aspedilaps scutatus intermedius*, *Cordylus warreni barbertonensis* and *Platysaurus wilhelmi*; four plant species including *Acampe praemorsa*, *Acridocarpus natalitius* var. *natalitius*, *Siphonochilus aethiopicus* and *Streptocarpus fasciatus*; and three vegetation types including Croc Gorge Mountain Bushveld, Malelane Mountain Bushveld and Dry Scarp Forest. The ecosystem provides an escarpment corridor and has important forest patches.

Other information

Approximately 23% of the ecosystem is protected in the Methethomusha Nature Reserve.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Croc Gorge Granite Mountainlands showing original area of ecosystem

140. Drakensberg Foothill Wattled Crane Habitat (KZN 47)

| | |
|--|--|
| Reference number | KZN 47 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM, Mooi Mpfana LM, Impendle LM, Umtshezi LM, Imbabazane LM, KZDMA22 and KZDMA43 |
| Original area of ecosystem | 117 000 ha |
| Remaining natural area of ecosystem (%) | 58% |
| Proportion of ecosystem protected | 3% of original area |
| Known number of species of special concern | 15 threatened or endemic plant species including those listed below |

Geographical location

Ntabamhlope (2929BA), Estcourt (2929DB), Kamberg (2929BC), Nottingham Road (2929BD), Himeville (2929DA), Impendle (2929DB) and Howick (2930AC). Ecosystem predominantly confined to the Drakensberg Foothill Moist Grassland. Ecosystem delineated, in the south, by the boundary of the Drakensberg Foothill Moist Grassland ecosystem together with contours defining the upper plateau of this ecosystem; in the east, by contours defining the Drakensberg Foothill Moist Grassland ecosystem but excluding Eastern Mistbelt Forest patches; in the west, by the base of the Northern Drakensberg Highland Grassland ecosystem together with the contours following the base of the ridges; and in the north, by the plateau using the contours as guidance but excluding Eastern Mistbelt Forest patches.

Description

Key biodiversity features include one amphibian species, *Afrivalus spinifrons intermedius*; two bird species including Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor*, *Doratogonus montanus*; seven plant species for example *Geranium natalense*, *Hesperantha woodii*, *Kniphofia albomontana*, *Kniphofia brachystachya*, *Kniphofia breviflora* and *Kniphofia buchananii*; two reptile species including *Bradypodion thamnobates* and *Montaspis gilvomaculata*; and nine vegetation types

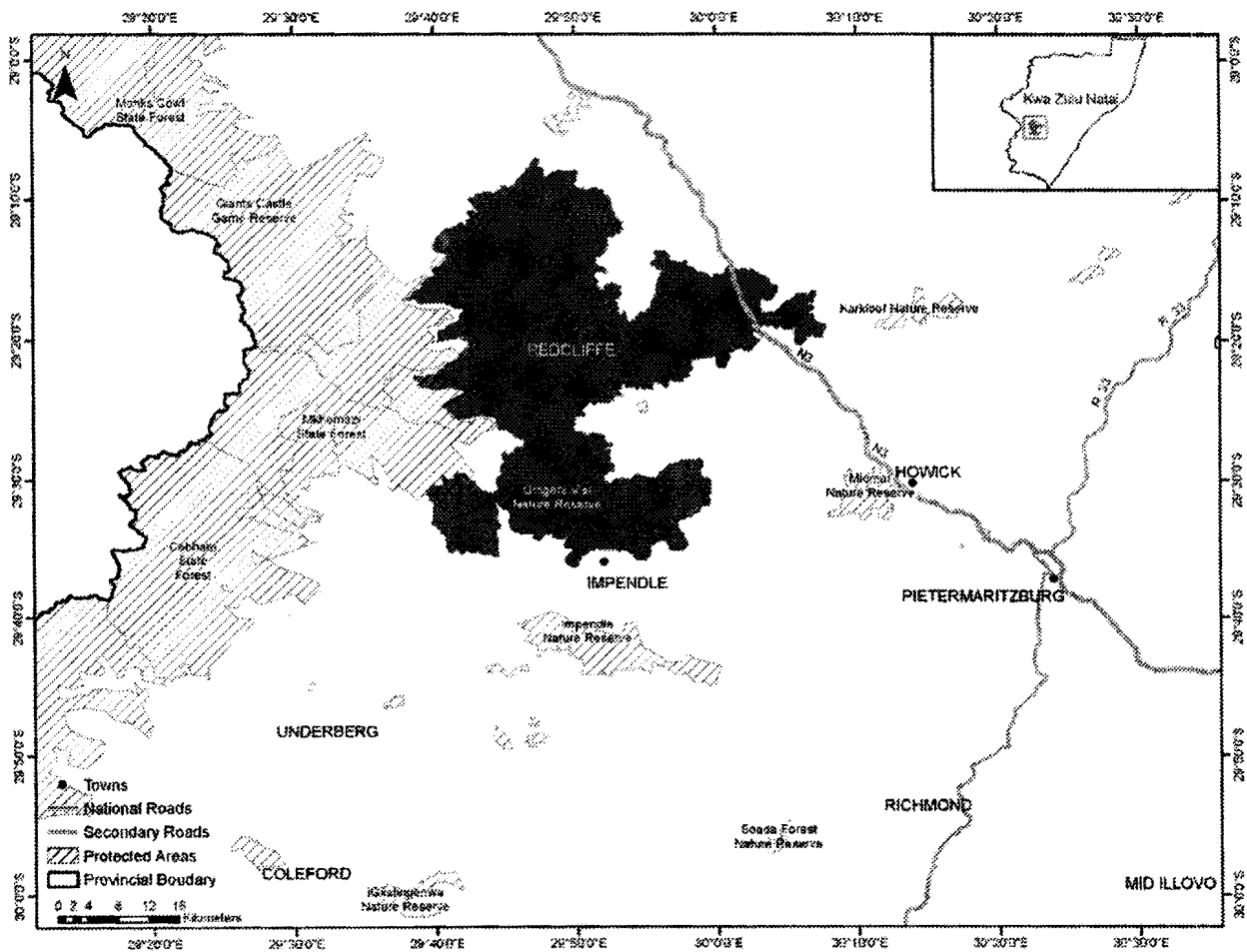
including Drakensberg Foothill Moist Grassland, Drakensberg Montane Forest, Eastern Mistbelt Forest, Midlands Mistbelt Grassland, Mooi River Highland Grassland, Northern Drakensberg Highland Grassland, Northern KwaZulu-Natal Moist Grassland, Southern Drakensberg Highland Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

Approximately 3% of the ecosystem is protected in the Umgeni Vlei Nature Reserve, Highmoor State Forest, Kamberg Nature Reserve and Mkhomazi State Forest.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Drakensberg Foothill Wattled Crane Habitat showing original area of ecosystem

141. Easingwold Grasslands (KZN 48)

| | |
|--|---|
| Reference number | KZN 48 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | uMngeni LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 38% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 10 threatened or endemic plant species including those listed below |

Geographical location

Howick (2930AC). Ecosystem confined to the Drakensberg Foothill Moist Grassland but also includes all Eastern Mistbelt Forests lying within the Drakensberg Foothill Moist Grassland. Forests lying within the adjacent Midlands Mistbelt Grassland are not included. Ecosystem delineated by the Drakensberg Foothill Wattled Crane Habitat threatened ecosystem (KZN 47) in the north; and by the Michaelhouse Grasslands threatened ecosystem (KZN 68) together with the Drakensberg Foothill Moist Grassland ecosystem in the south.

Description

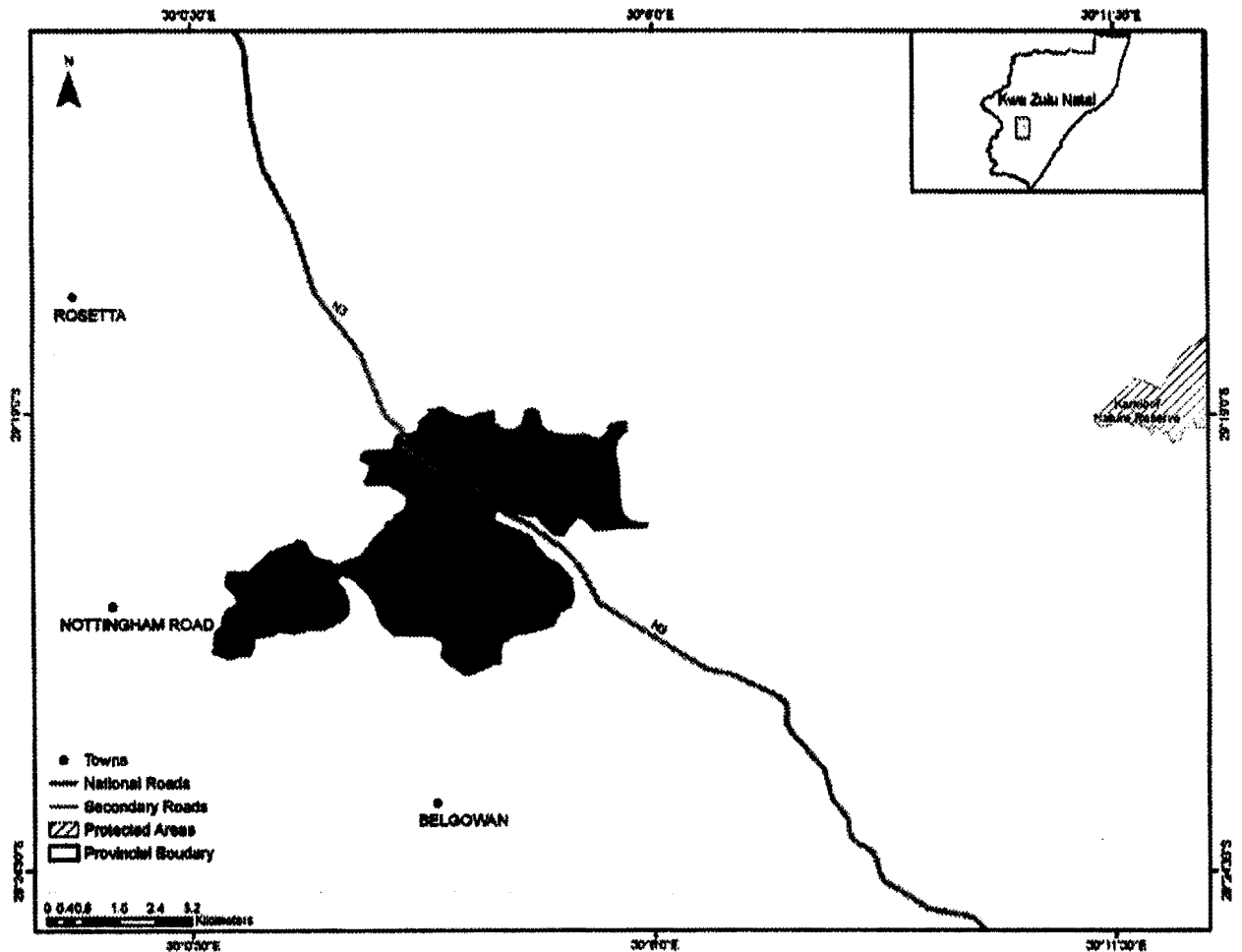
Key biodiversity features include one bird species, the Wattled Crane, one mammal species, the Oribi, three millipede species including *Centrobolus tricolor*, *Doratogonus hoffmani* and *Doratogonus montanus*; five plant species including *Geranium natalense*, *Kniphofia brachystachya*, *Kniphofia breviflora*, *Kniphofia buchananii* and *Plectranthus rehmannii*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Easingwold Grasslands Lowlands showing original area of ecosystem

142. Eastern Coastal Shale Band Vegetation (FFb 6)

| | |
|--|---|
| Reference number | FFb 6 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Provinces | Western Cape and Eastern Cape |
| Municipalities | Kouga LM, Kou-Kamma LM, George LM, Plettenberg Bay LM, Knysna LM, ECDMA10 and WCDMA04 |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 44% |
| Proportion of ecosystem protected | 16% of original area |
| Known number of species of special concern | |

Geographical location

Shale bands in the eastern Outeniqua (often also bearing forest patches), Langkloof, Tsitsikamma and Kareedouw Mountains and along the southern Cape coastal plains to around Oyster Bay with the most seaward belt reaching the coast at, for example, Clinton's Bank south of Bloukrans Pass.

Description

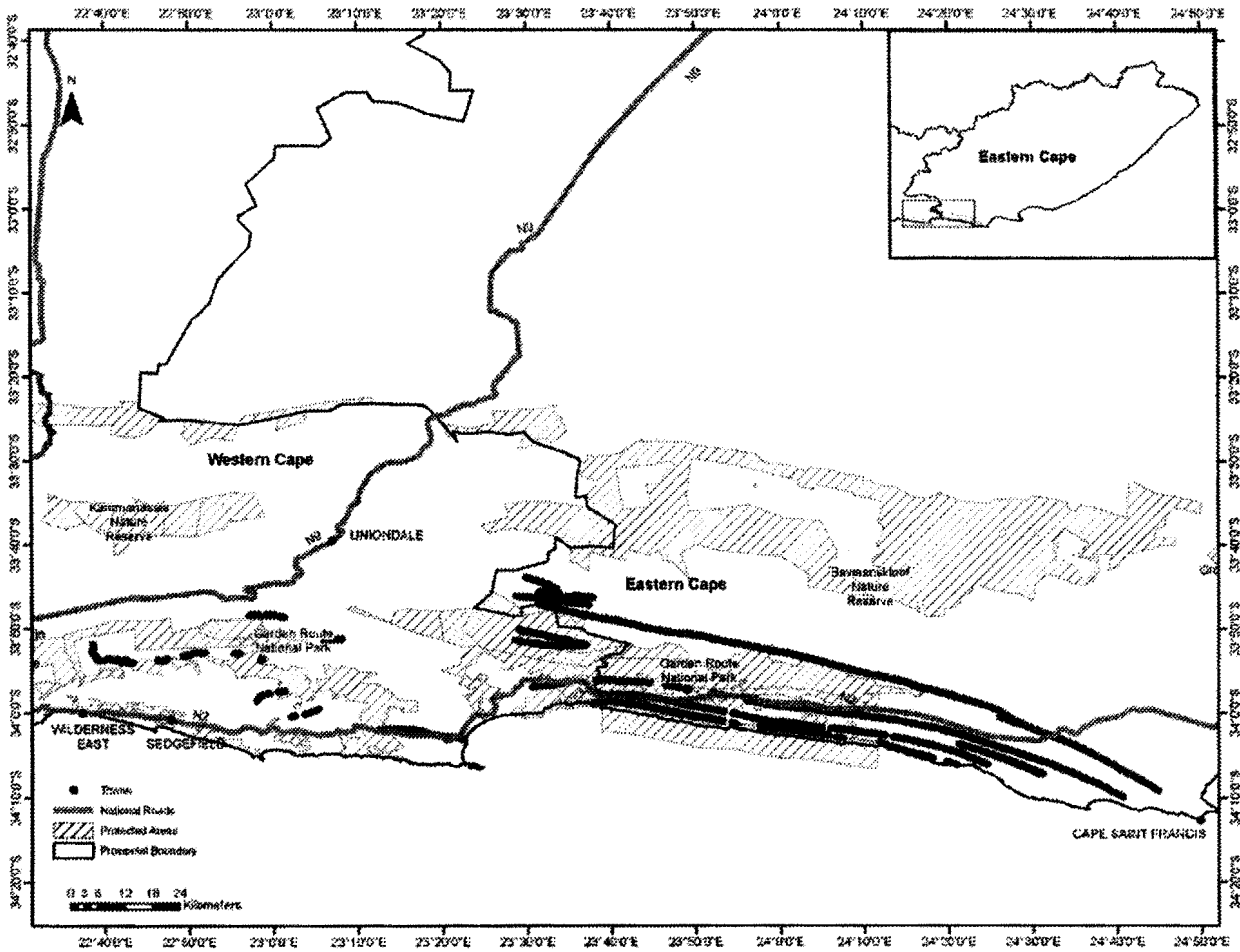
Shale bands form narrow 80-200m; linear, smooth and flat landscape features and supports various shrublands, ranging from thicket to renosterveld and fynbos at higher altitudes. Fynbos includes all structural types, quite often grassy in character.

Other information

Approximately 16% of the ecosystem is protected in the Garden Route National Park (including Tsitsikamma National Park), Koomans Bush State Reserve as well as in Lottering Forest Reserve, Plaatbos Nature Reserve, Kwaaibrand and Langebosch Forest Reserves and is also found in several private conservation areas.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 158. South African National Biodiversity Institute, Pretoria.



Location of Eastern Coastal Shale Band Vegetation showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

143. Eastern Creighton and Donnybrook (KZN 49)

| | |
|--|---|
| Reference number | KZN 49 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Ingwe LM |
| Original area of ecosystem | 20 000 ha |
| Remaining natural area of ecosystem (%) | 26% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Creighton (3029BB), Donnybrook (2929DD) and Byrne (2930CC). Ecosystem delineated by contours, following river channels and ridge lines. Ecosystem shares a boundary, along a river, with the Ixopo Surrounds threatened ecosystem (KZN 61).

Description

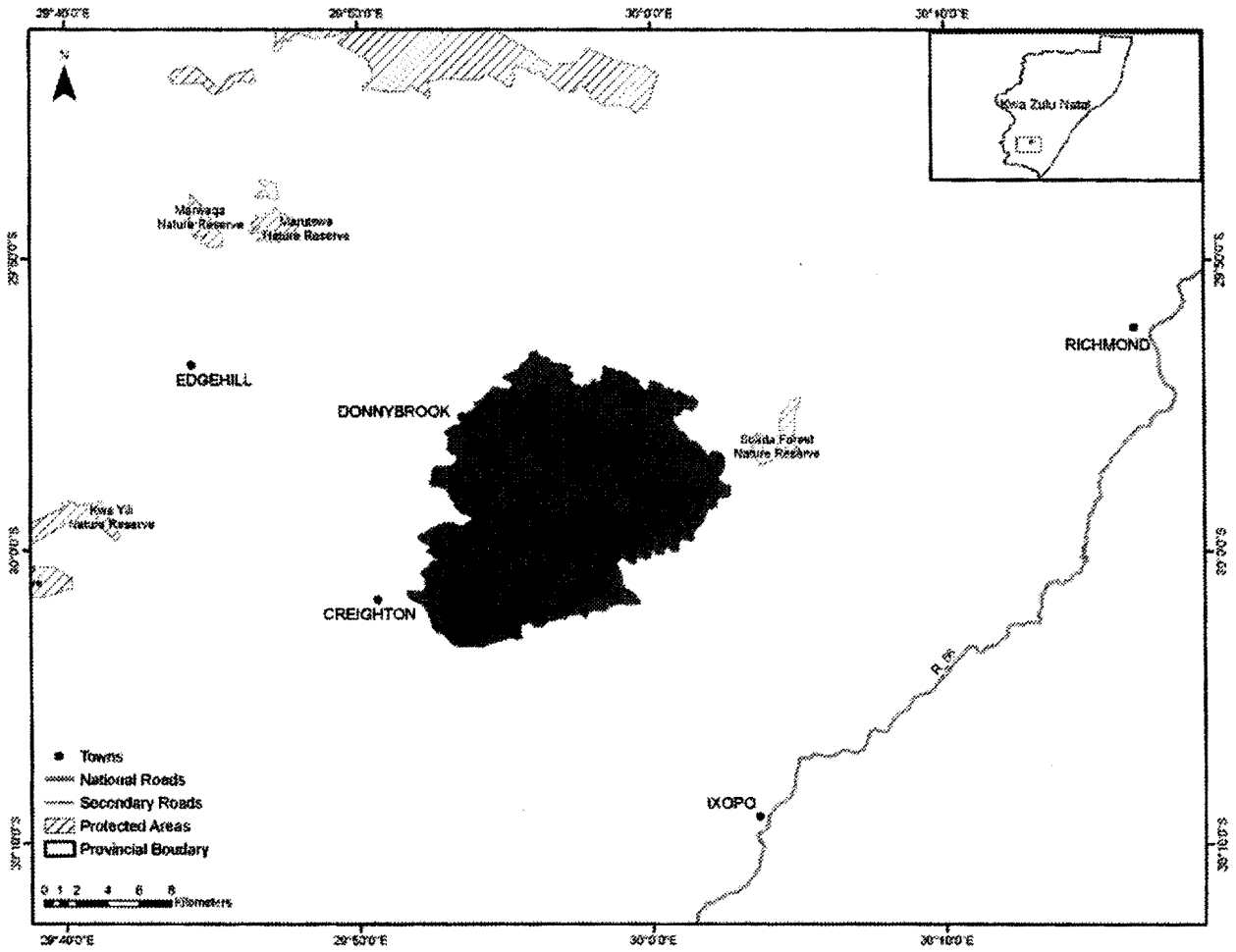
Key biodiversity features include two amphibian species including *Afrivalus spinifrons intermedius* and *Arthroleptella ngongoniensis*; one bird species, the Blue Swallow; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; two reptile species including *Bradypodion thamnobates* and *Scelotes bourquini*; two plant species and three vegetation types including the Eastern Valley Bushveld, Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Eastern Creighton and Donnybrook showing original area of ecosystem

144. Eastern Free State Clay Grassland (Gm 3)

| | |
|--|--|
| Reference number | Gm 3 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Free State |
| Municipalities | Mohokare LM, Naledi LM, Mangaung LM, Mantsopa LM, Masilonyana LM, Setsoto LM, Dihlabeng LM, Nketoana LM, Maluti a Phofung LM, Phumelela LM, Moqhaka LM, Ngwathe LM and Mafube LM |
| Original area of ecosystem | 1 401 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | |

Geographical location

Low-lying areas of the eastern regions of the province, covering the vicinities of Wepener (south), Petrus Steyn (north), Excelsior and east of Winburg (west) and Warden (east) and a thin extension between Maseru (Lesotho) and Fouriesburg.

Description

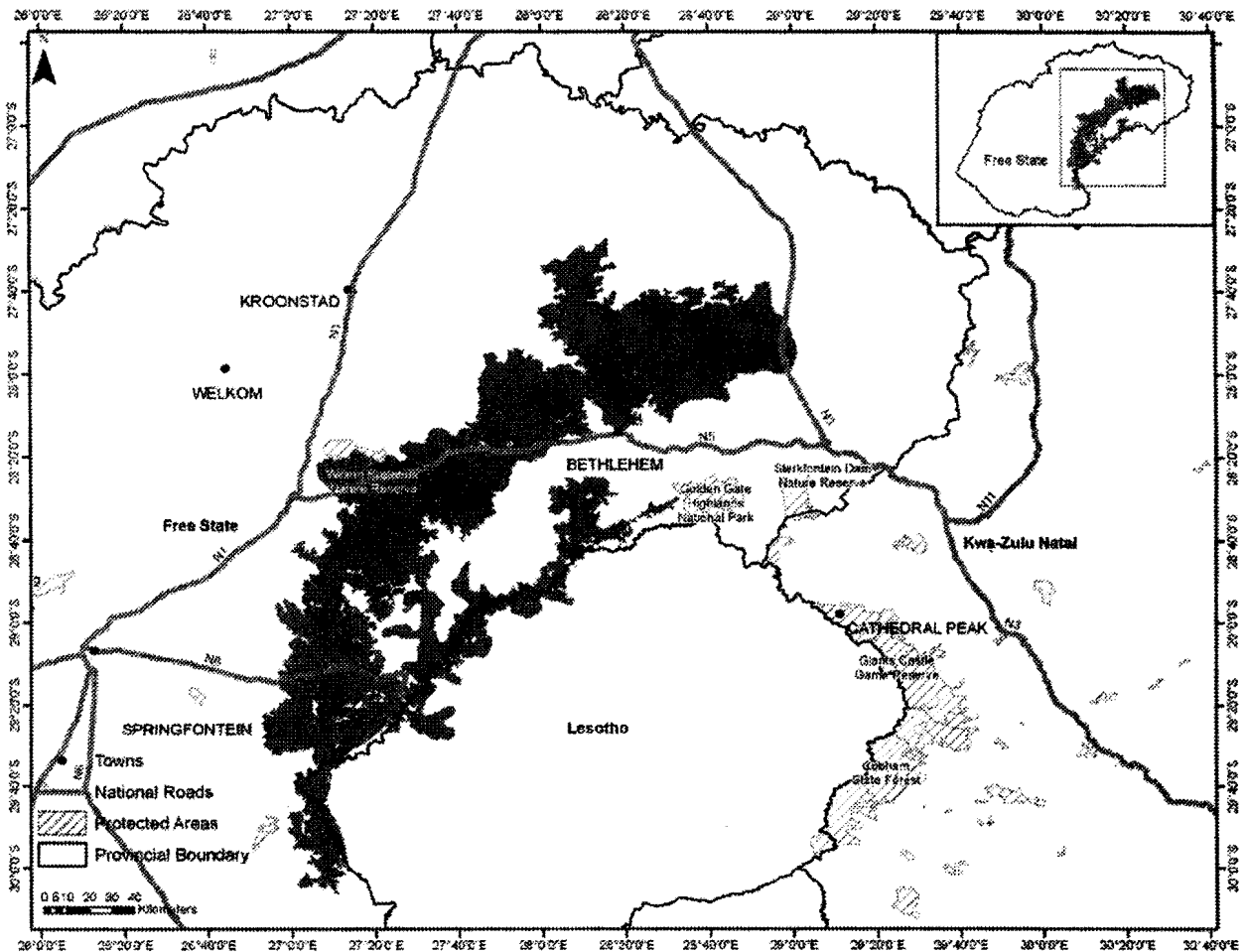
Flat to gently rolling land surfaces covered with grassland dominated by *Eragrostis curvula*, *Themeda triandra*, *Cymbopogon pospischilii*, *Eragrostis plana*, *Setaria sphacelata*, *Elionurus muticus* and *Aristida congesta*. Overgrazing in certain areas and selective grazing of the grassland create a patchy appearance, with dominant and diagnostic species associated with small to large patches of a few hectares in diameter. A wide range of grazing regimes on the macro-scale and within grazing units in the area on the micro-scale, create this fragmentation.

Other Information

Only a small portion of the ecosystem is protected in Willem Pretorius Nature Reserve.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 393. South African National Biodiversity Institute, Pretoria.



Location of Eastern Free State Clay Grassland showing original area of ecosystem

145. Eastern Highveld Grassland (Gm 12)

| | |
|--|---|
| Reference number | Gm 12 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Mpumalanga and Gauteng |
| Municipalities | Ekurhuleni MM, Lesedi LM, Kungwini LM, Albert Luthuli LM, Msukaligwa LM, Mkhondo LM, Seme LM, Govan Mbeki LM, Delmas LM, Emalahleni LM, Steve Tshwete LM and Highlands LM |
| Original area of ecosystem | 1 267 000 ha |
| Remaining natural area of ecosystem (%) | 55% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | |

Geographical location

Plains between Belfast in the east and the eastern side of Johannesburg in the west and extending southwards to Bethal, Ermelo and west of Piet Retief.

Description

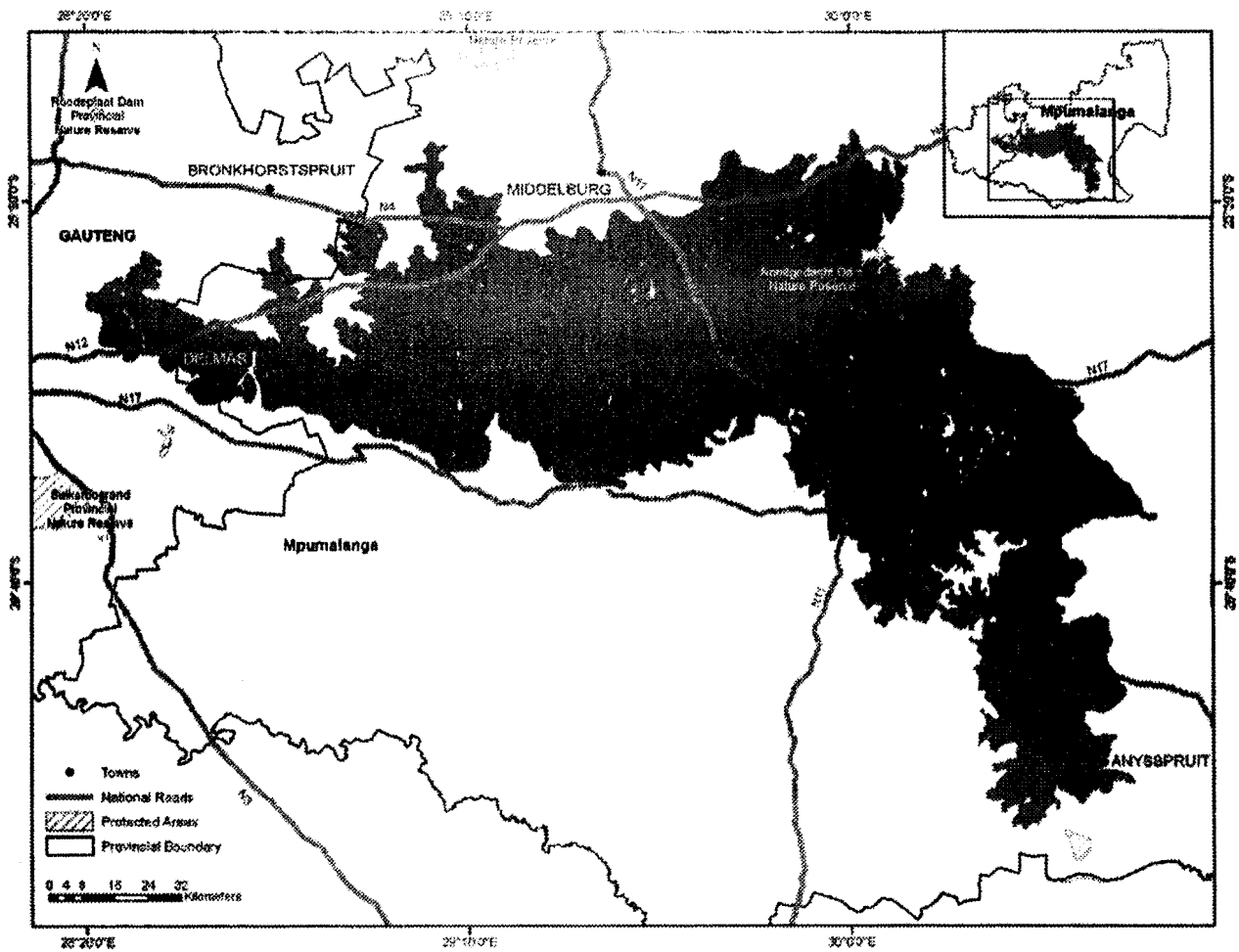
Slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is short dense grassland dominated by the usual highveld grass composition, for example *Aristida*, *Digitaria*, *Eragrostis*, *Themeda* and *Tristachya*, with small, scattered rocky outcrops of wiry, sour grasses and some woody species, for example *Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp *lycioi-des*, *Parinari capensis*, *Protea caffra*, *P. welwitschii* and *Rhus magalismsontanum*.

Other information

Only a very small fraction of the ecosystem is protected in Nooitgedacht Dam Nature Reserve and Jericho Dam Nature Reserves. The ecosystem is also found in private reserves for example Holkranse, Kransbank and Morgenstond.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 400-401. South African National Biodiversity Institute, Pretoria.



Location of Eastern Highveld Grassland showing original area of ecosystem

146. Eastern Little Karoo (SKv 11)

| | |
|--|---|
| Reference number | SKv 11 |
| Listed under Criterion | A1 |
| Biome | Succulent Karoo |
| Province | Western Cape |
| Municipalities | Kannaland LM, Oudtshoorn LM and WCDMA04 |
| Original area of ecosystem | 156 000 ha |
| Remaining natural area of ecosystem (%) | 56% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 18 endemic plant species |

Geographical location

Eastern basin of the Little Karoo from Calitzdorp in the west as far as Oudtshoorn in the east. The ecosystem continues in a series of narrow belts (alternating with the Willowmore Gwarrieveld ecosystem from the surrounds of Dysselsdorp as far west as the N2 road). A narrow belt of the Eastern Little Karoo fringes the southern flanks of the Kammanassie Mountains along the Kammanassie River as far west as Uniondale.

Description

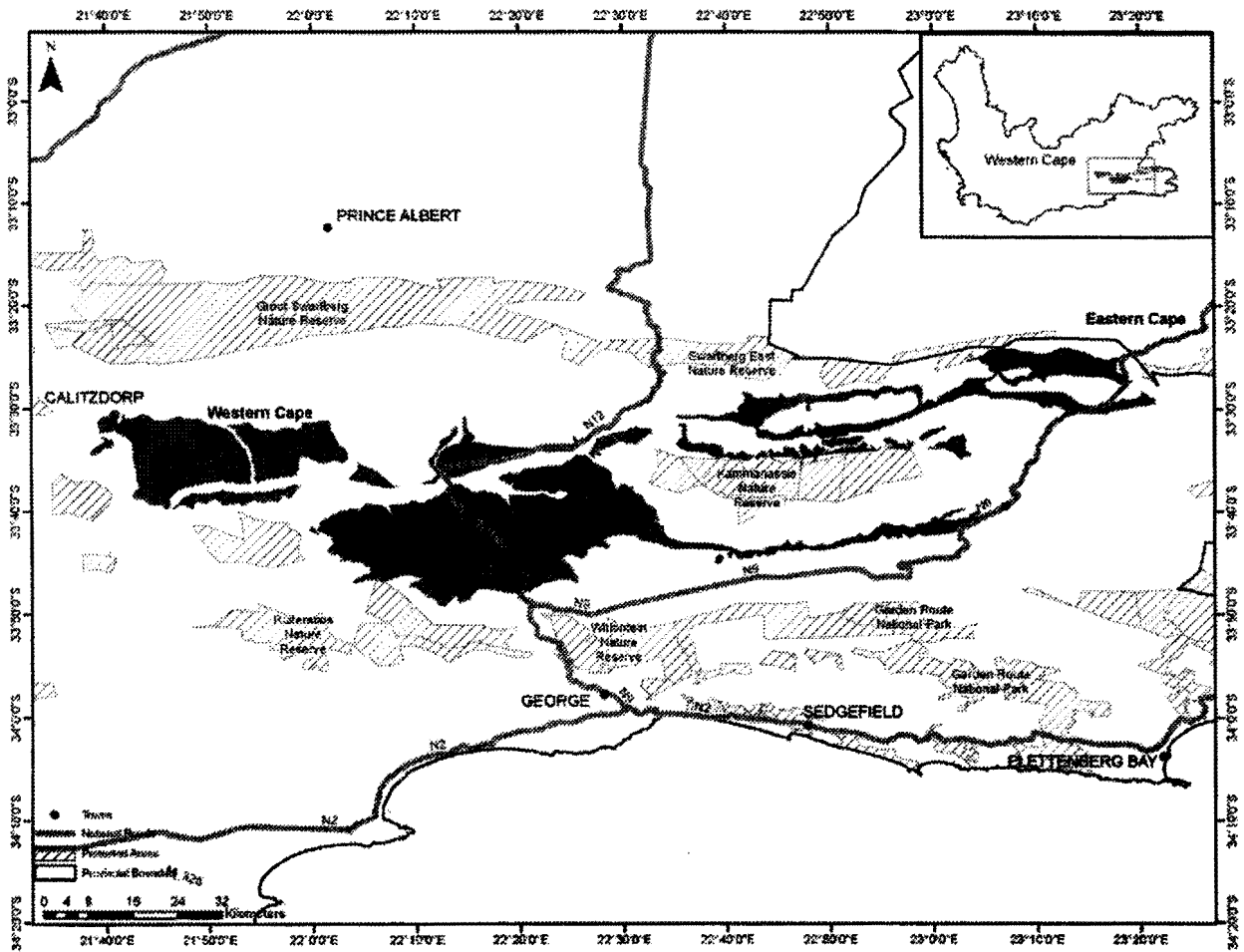
Irregularly flat plains and undulating piedmont hills covered by dense succulent shrubland dominated by Aizoaceae for example *Ruschia* and *Drosanthemum*; Crassulaceae for example *Cotyledon*, *Crassula* and *Tylecodon*; and nonsucculent, mainly shrubs such as *Nymania*, *Pteronia* and *Rhus*. The spring displays of annual and geophyte flora are spectacular in years with good rain. At least 18 endemic plant species occur in the ecosystem.

Other information

Only very small portions of the ecosystem are protected in the Kammanassie and Swartberg East Nature Reserves. The ecosystem is also found in some private reserves for example Ortmansgat and Greylands.

Reference

Mucina, L., Jürgens, N., le Roux, A., Rutherford, M.C., Schmiedel, U., Esler, K.J., Powrie, L.W., Desmet, P.G. & Milton, S.J. 2006. Succulent Karoo Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 291-292. South African National Biodiversity Institute, Pretoria.



Location of Eastern Little Karoo showing original area of ecosystem

147. Eastern Scarp Forest (FOz V1)

| | |
|--|---|
| Reference number | FOz V1 |
| Listed under Criterion | A2 |
| Biome | Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ethekwini MM, Hlabisa LM, Jozini LM, Maphumulo LM, Mbombela LM, Mbonambi LM, Mkhambathini LM, Ndwedwe LM, Nkandla LM, Nkomazi LM, Nongoma LM, Ntambanana LM, The Big 5 False Bay LM, Ubuhlebezwe LM, Ulundi LM, Umjindi LM, uMlalazi LM, uMshwathi LM, Umvoti LM, Umzumbe LM, Uphongolo LM, Vulamehlo LM & KZNDMA27 |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 34 000 ha |
| Proportion of ecosystem protected | 25% of remaining area |
| Known number of species of special concern | 2 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Located on the coastal scarp from northern KwaZulu-Natal (Lebombo Mountains) to southern KwaZulu-Natal (0 to 1300 m). Also northward through Swaziland and into southern Mpumalanga. Patches occur in coastal gorges in southern KwaZulu-Natal. Very fragmented, and found among hilly topography along the coastal scarp ridge. Situated mainly on seaward or east-facing slopes at intermediate altitudes, between 100 m to 1000 m, often on watersheds and also on the tops of massifs (e.g. Ongoye).

Description

Medium to high forest (15-25 m) comprising at least three distinct strata, including a well-developed seedling and sapling stratum, understorey tree stratum, and a poorly developed herb layer. Underneath the canopy the forest is relatively open and trees are mostly single stemmed. This ecosystem is very important in terms of its biodiversity and shares many genera with East

African lowland forests. Some elements of Pondoland Scarp Forest, Eastern Mistbelt Forest, KwaZulu-Natal Coastal Forest are all found in the Eastern Scarp Forest. At least two Red Data plant species occur in the ecosystem.

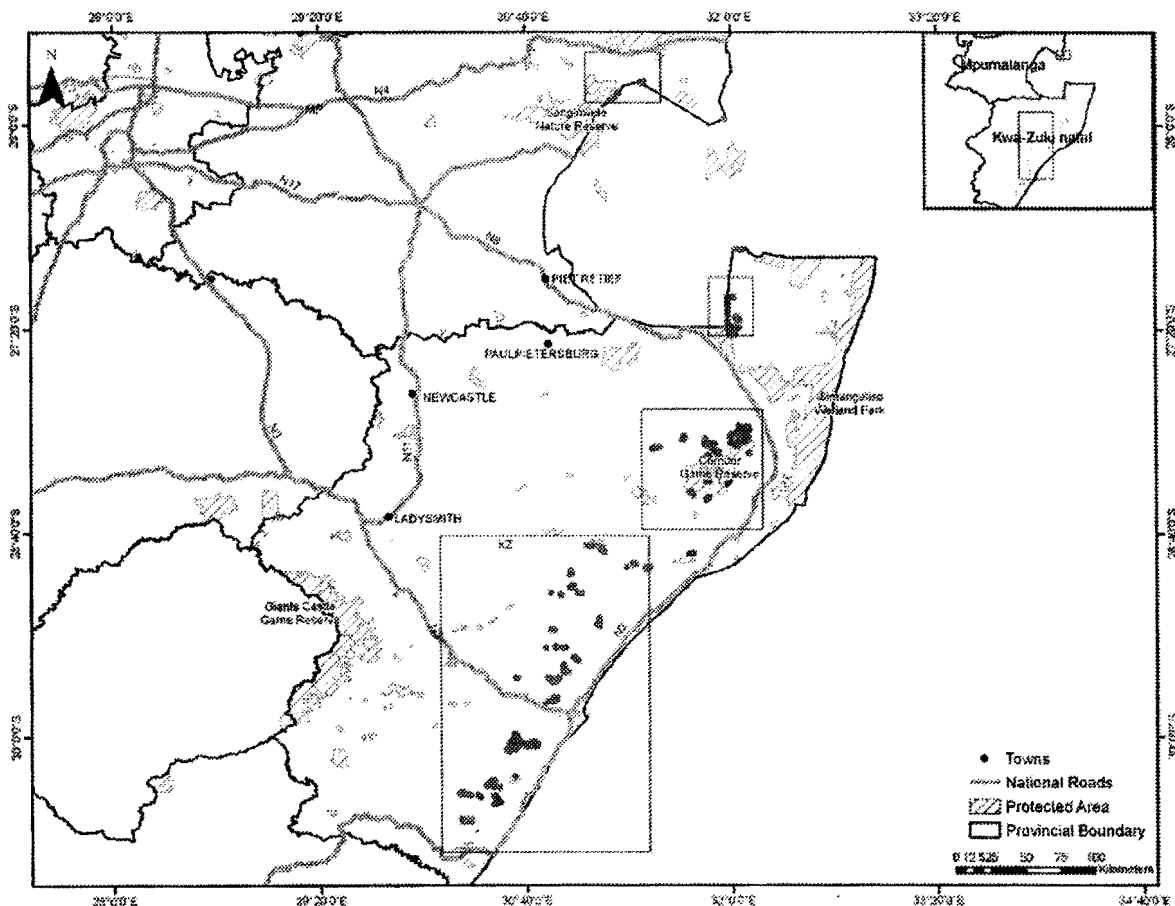
Other information

Approximately 25% of the ecosystem is protected.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 602-603. South African National Biodiversity Institute, Pretoria.

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.*



Location of Eastern Scarp Forest (area of ecosystem enlarged for visibility at this scale)

148. Eastern Temperature Freshwater Wetlands (Azf 3)

| | |
|---|---|
| Reference number | Azf 3 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Provinces | Northern Cape, Eastern Cape, Free State, North West, Gauteng, Mpumalanga and KwaZulu-Natal |
| Municipalities | Blue Crane Route LM, Nkonkobe LM, Inxuba Yethemba LM, Tsoiwana LM, Lukanji LM, Sakhisizwe LM, Elundini LM, Maletswai LM, King Sabata Dalindyebo LM, Matatiele LM, Ekurhuleni MM, Mantsopa LM, Setsoto LM, Dihlabeng LM, Nketoana LM, Maluti a Phofung LM, Phumelela LM, Ngwathe LM, Metsimaholo LM, Mafube LM, Midvaal LM, Lesedi LM, Kungwini LM, Mogale City LM, Randfontein LM, Westonaria LM, City of Johannesburg MM, Mooi Mpofana LM, Emnambithi/ Ladysmith LM, Umtshezi LM, Okhahlamba LM, Endumeni LM, Nqutu LM, Msinga LM, Newcastle LM, Utrecht LM, Dannhauser LM, Abaqulusi LM, Greater Kokstad LM, Ubuhlebezwe LM, Albert Luthuli LM, Msukaligwa LM, Mkhondo LM, Seme LM, Lekwa LM, Dipaleseng LM, Govan Mbeki LM, Delmas LM, Emalahleni LM, Steve Tshwete LM, Highlands LM, Rustenburg LM, Kgetlengrivier LM, Ventersdorp LM and Merafong City LM |
| Original area of ecosystem | 56 000 ha |
| Remaining natural area of ecosystem (%) | 56% |
| Proportion of ecosystem protected | 5% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

Around water bodies with stagnant water (lakes, pans, periodically flooded vleis, edges of calmly flowing rivers) and embedded within the Grassland Biome.

Description

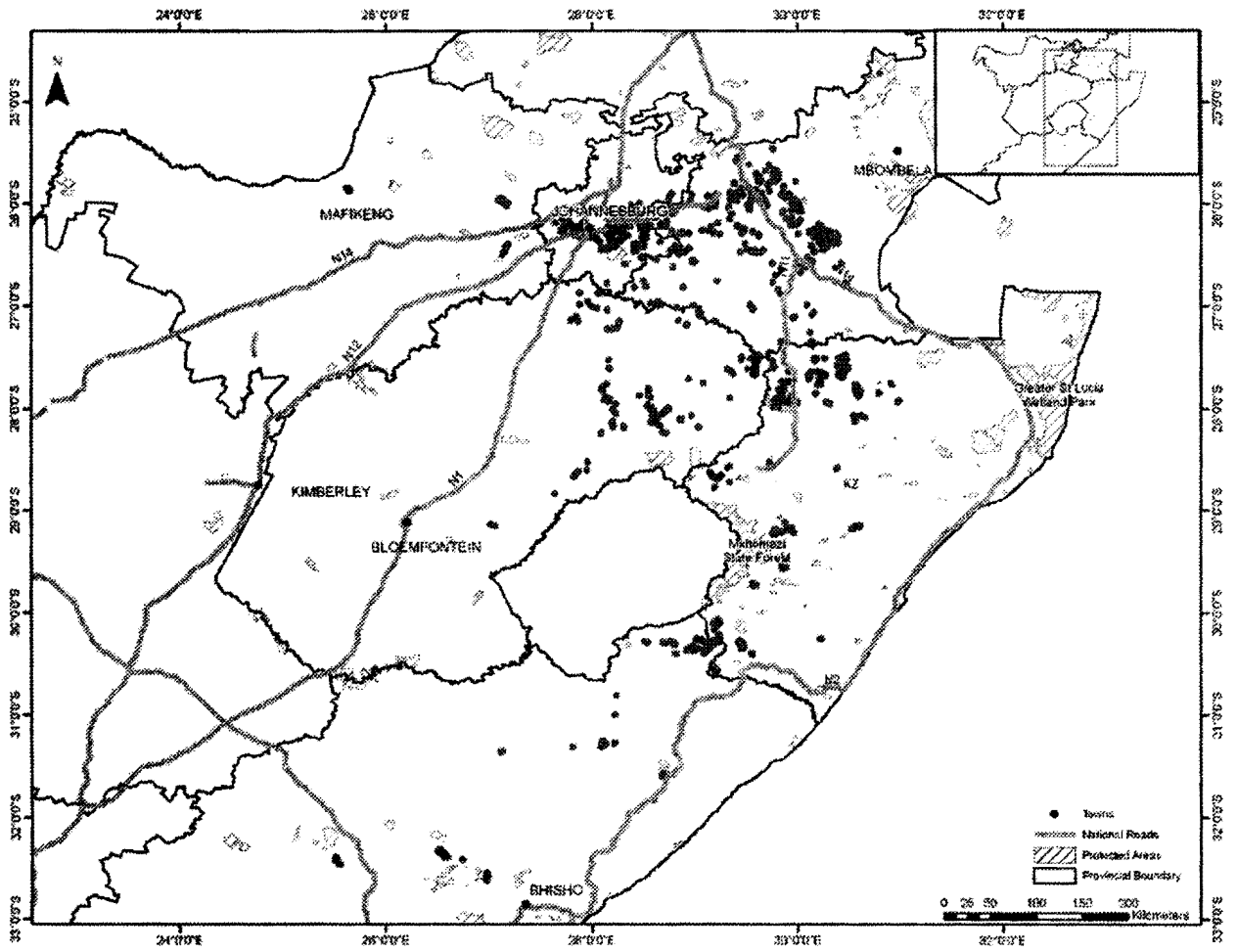
Flat landscape or shallow depressions filled with (temporary) water bodies supporting zoned systems of aquatic and hygrophilous vegetation of temporarily flooded grasslands and ephemeral herblands. At least one endemic plant species occurs in the ecosystem.

Other information

About 5% of the ecosystem is protected in the Blesbokspruit (a Ramsar site), Hogsback, Marievale, Olifantsvlei, Seekoeivlei (a Ramsar site), Wakkerstroom Wetland, Umgeni Vlei, Umvoti Vlei and Pamula Park Nature Reserves. It is also found in private nature reserves such as the Korsman Bird Sanctuary and Langfontein.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* **19**: 632-633. South African National Biodiversity Institute, Pretoria.



Location of Eastern Temperate Freshwater Wetlands showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

149. Eastlands (KZN 50)

| | |
|--|--|
| Reference number | KZN 50 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Umzimkhulu LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 31% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 1 threatened or endemic animal species |

Geographical location

Harding (3029DB). Ecosystem encompasses the valley containing all current and historical blue swallow sites in the area.

Description

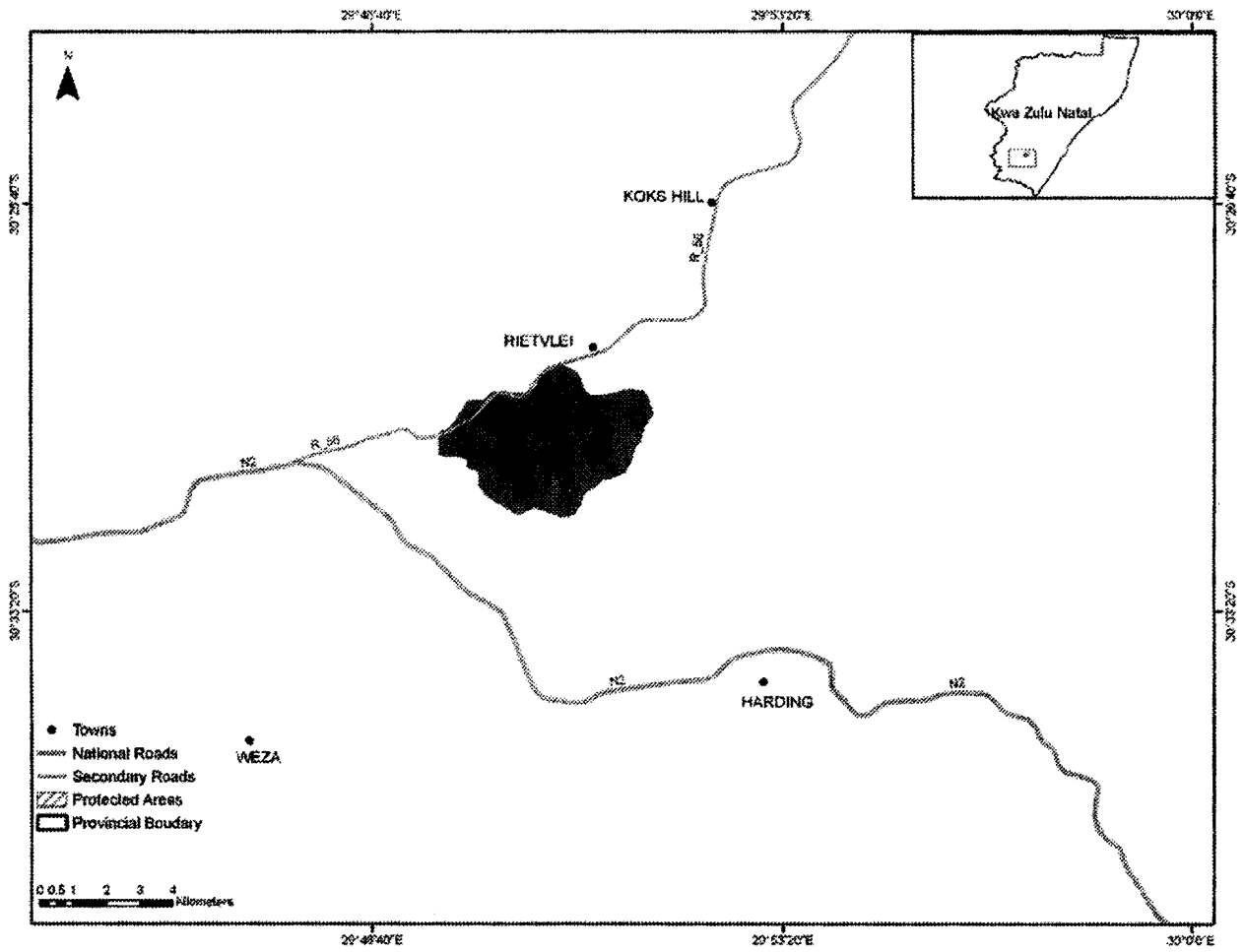
Key biodiversity features include one bird species, the Blue Swallow; and two vegetation types including Midlands Mistbelt Grassland and Ngongoni Veld.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Eastlands showing original area of ecosystem

150. Elandshoek Summit Grasslands (MP 15)

| | |
|--|--|
| Reference number | MP 15 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | Mpumalanga |
| Municipalities | Albert Luthuli LM and Highlands LM |
| Original area of ecosystem | 15 000 ha |
| Remaining natural area of ecosystem (%) | 83% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 12 threatened or endemic plant and animal species including those listed below |

Geographical location

Ten kilometres south east of Waterval Boven (2530CB and 2530CD). Ecosystem consists of a plateau grassland delineated using altitude (above 1800m) and landtype.

Description

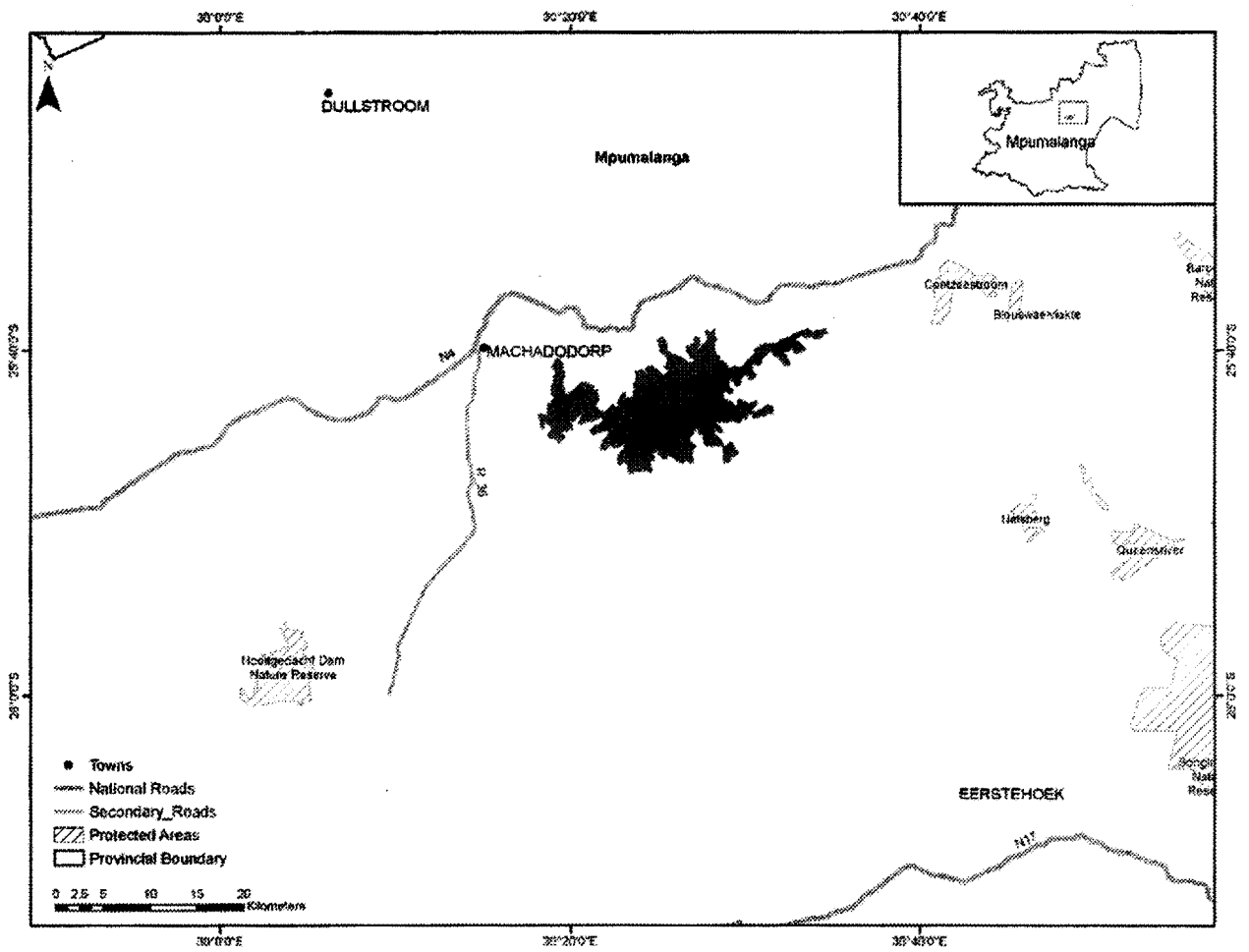
Key biodiversity features include three mammal species including Robust Golden Mole, Rough-haired Golden Mole and Oribi; six bird species including Blue Crane, Grey Crowned Crane, Rudd's Lark, Striped Flufftail, Wattle Crane and Yellowbreasted Pipit; one amphibian, *Bufo garipeensis nubicolus*; two plant species including *Streptocarpus denticulatus* and *Streptocarpus grandis* subsp. *grandis*; and one vegetation type, Steenkampsberg Montane Grassland. The ecosystem is part of the Lydenburg Centre of Endemism; it includes important sub-catchments; it provides an escarpment corridor; and is important for grassland processes.

Other information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Elandshoek Summit Grasslands showing original area of ecosystem

151. Elandshoogte Mountainlands (MP 16)

| | |
|--|--|
| Reference number | MP 16 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | Mpumalanga |
| Municipalities | Highlands LM and Mbombela LM |
| Original area of ecosystem | 17 000 ha |
| Remaining natural area of ecosystem (%) | 73% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 24 threatened or endemic plant and animal species including those listed below |

Geographical location

Centred around the Elandshoogte plantation (2530AD, 2530BC, 2530CB, and 2530DA). Ecosystem delineated by the mountain summit and north-facing mountain slopes, topography and landtypes.

Description

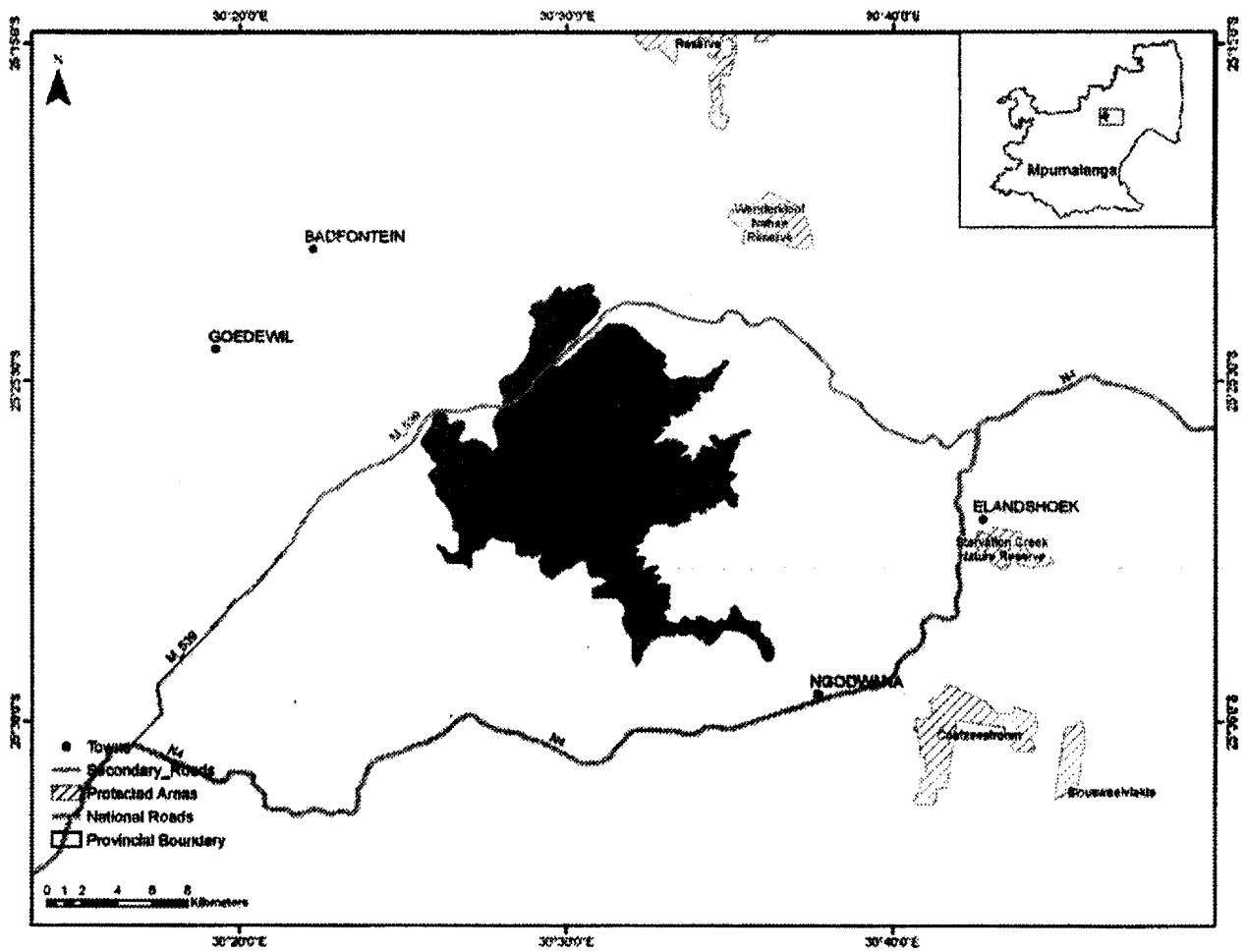
Key biodiversity features include two mammal species including Rough-haired Golden Mole and Meester's Golden Mole; eight bird species including Blue Swallow, Blue Crane, Grey Crowned Crane, Rudd's Lark, Southern Ground Hornbill, Striped Flufftail, Wattled Crane and Yellowbreasted Pipit; one amphibian, *Bufo garipeensis nubicolus*; three reptile species including *Bradypodion transvaalense*, *Lamprophis swazicus* and *Platysaurus wilhelmi*; ten plant species for example *Gladiolus vernus*, *Helichrysum ephelos*, *Helichrysum lesliei* and *Satyrium microrrhynchum*; and three vegetation types including Steenkampsberg Montane Grassland, Legogote Sour Bushveld and Dry Afromantane Forest. The ecosystem includes part of the Lydenburg Centre of Endemism; it includes important sub-catchments; it provides an escarpment corridor; and is important for grassland processes.

Other information

The ecosystem is not protected

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Elandshoogte Mountainlands showing original area of ecosystem

152. eMondlo Sandy Moist Grassland (KZN 51)

| | |
|--|--|
| Reference number | KZN 51 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Nquthu LM and Abaqulusi LM |
| Original area of ecosystem | 22 000 ha |
| Remaining natural area of ecosystem (%) | 63% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 1 threatened or endemic animal species |

Geographical location

eMondlo (2730DC) and Vryheid (2730DD). Ecosystem delineated by the Nkana and Mondlo Hills in the south.

Description

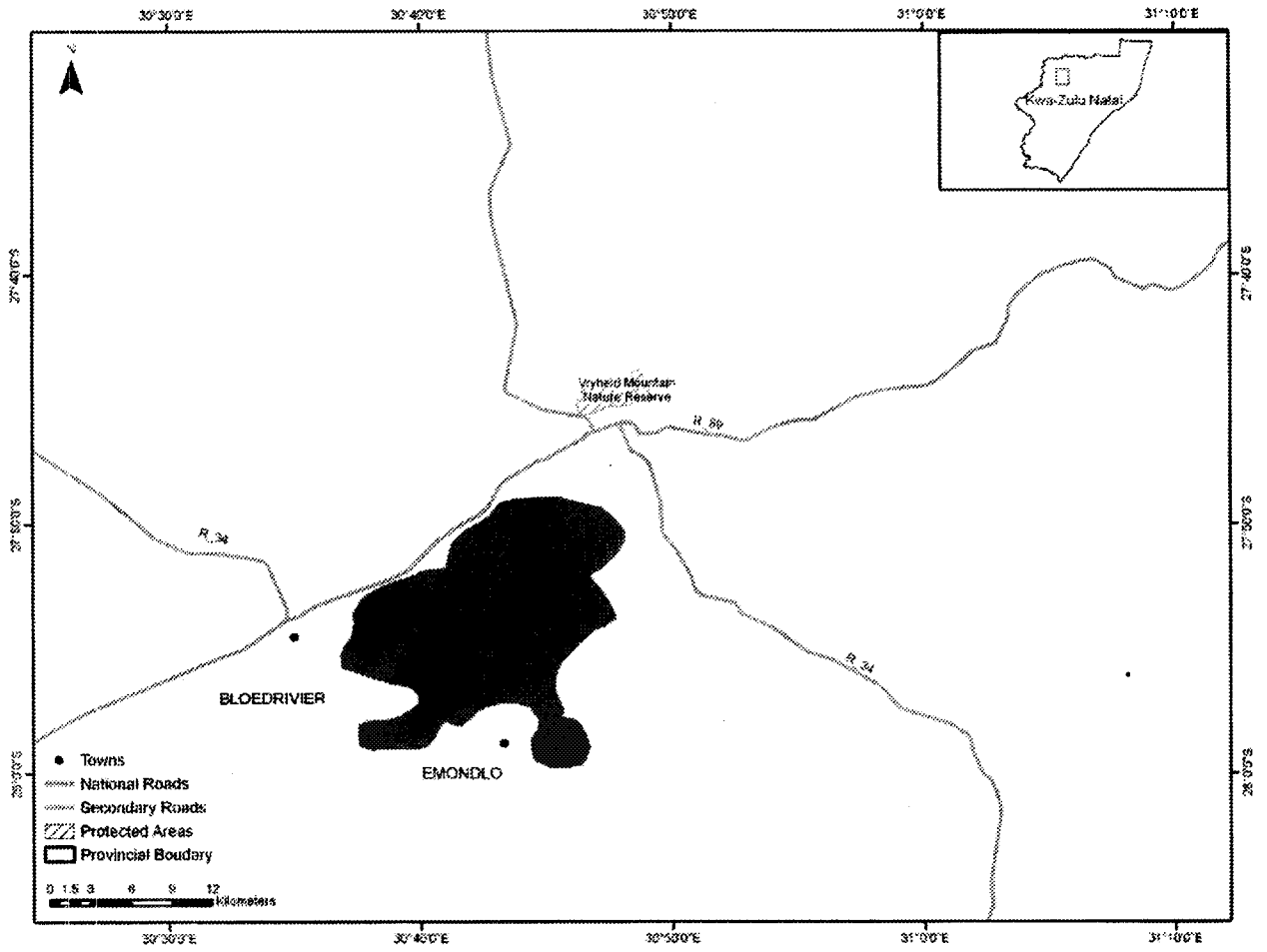
Key biodiversity features include one mammal species, Oribi; and three vegetation types including Northern KwaZulu-Natal Moist Grassland, Incombe Sandy Grassland and Paulpietersburg Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of eMondlo Sandy Moist Grassland showing original area of ecosystem

153. Fort Nottingham Lowland Grasslands (KZN 52)

| | |
|--|--|
| Reference number | KZN 52 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM and Impendle LM |
| Original area of ecosystem | 20 000 ha |
| Remaining natural area of ecosystem (%) | 50% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 15 threatened or endemic plant and animal species including those listed below |

Geographical location

Nottingham Road (2929BD). Ecosystem restricted to the Drakensberg Foothill Moist Grassland and includes the Eastern Mistbelt Forest patches that occur within this ecosystem. It lies in the valley bounded by the Drakensberg Foothill Wattled Crane Habitat threatened ecosystems (KZN 47) in the north-west and the south. Ecosystem delineated by the Midlands Mistbelt Grassland in the east. The Eastern Mistbelt Forest patches associated with the Midlands Mistbelt Grassland are not included.

Description

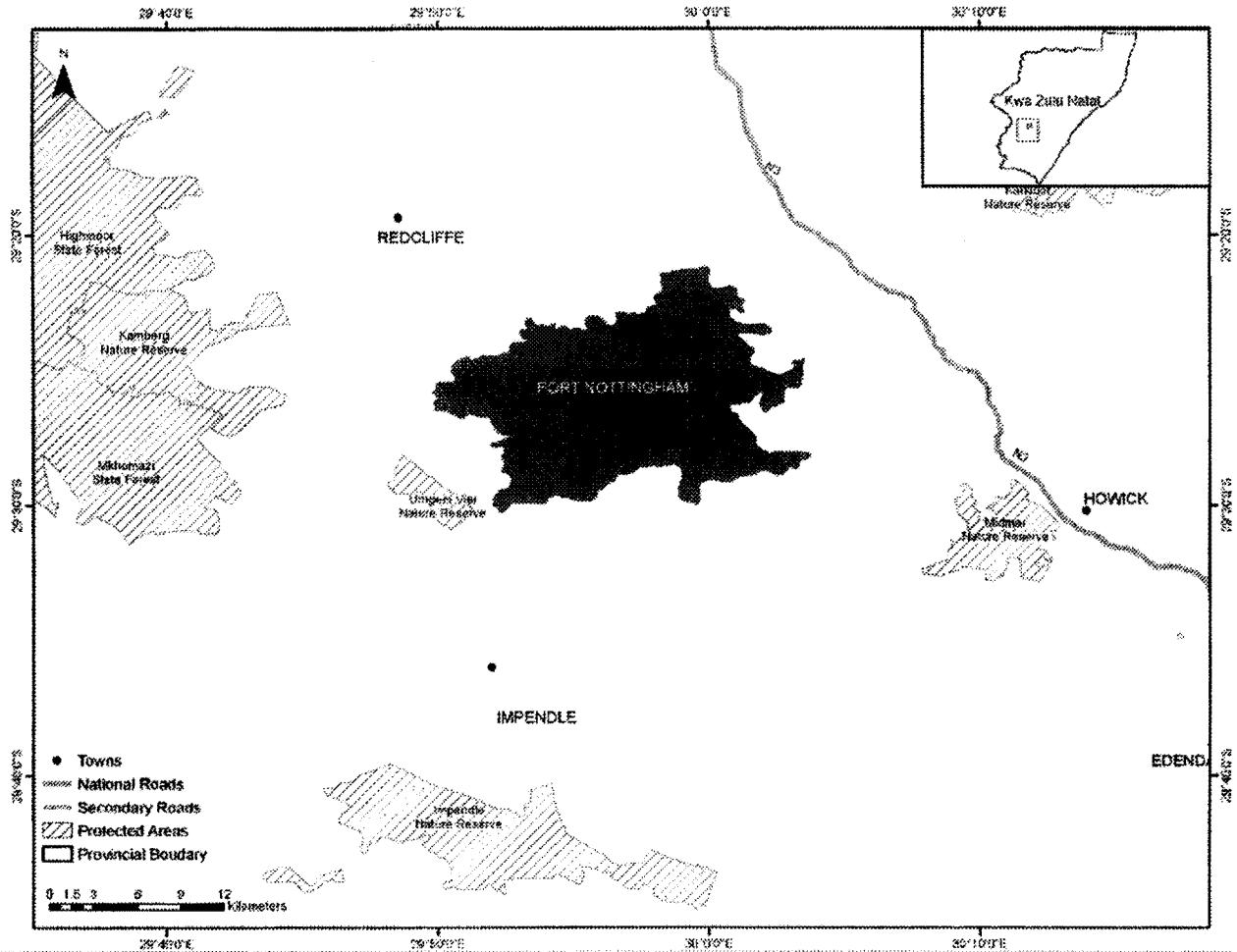
Key biodiversity features include one amphibian, *Afrivalus spinifrons intermedius*; two bird species including the Wattled Crane and the White-winged Flufftail, one mammal species, the Oribi; five millipede species including *Centrobolus decoratus*, *Centrobolus rubricollis*, *Centrobolus tricolor*, *Doratogonus hoffmani*, and *Doratogonus montanus*; six plant species including *Geranium natalense*, *Hesperantha woodii*, *Kniphofia brachystachya*, *Kniphofia breviflora*, *Kniphofia buchananii* and *Plectranthus rehmannii*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other Information

Less than 1% of the ecosystem is protected in the Fort Nottingham Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Fort Nottingham Lowland Grasslands showing original area of ecosystem

154. Garden Route Shale Fynbos (FFh 9)

| | |
|--|---|
| Reference number | FFh 9 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Provinces | Western Cape and Eastern Cape |
| Municipalities | Kouga LM, Kou-Kamma LM, Hessequa LM, Mossel Bay LM, George LM, Plettenberg Bay LM and Knysna LM |
| Original area of ecosystem | 57 000 ha |
| Remaining natural area of ecosystem (%) | 44% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 8 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 3 endemic plant species |

Geographical location

Patches along the coastal foothills of the Langeberg at Grootberg (northeast of Heidelberg), the Outeniqua Mountains from Cloete's Pass via the Groot Brak River Valley, Hoekwil, Karatara, Barrington and Knysna to Plettenberg Bay. Patches from the Bloukrans Pass along coastal platform shale bands south of the Tsitsikamma Mountains via Kleinbos and Fynboshoek to south of both Clarkson and the Kareedouw Mountains.

Description

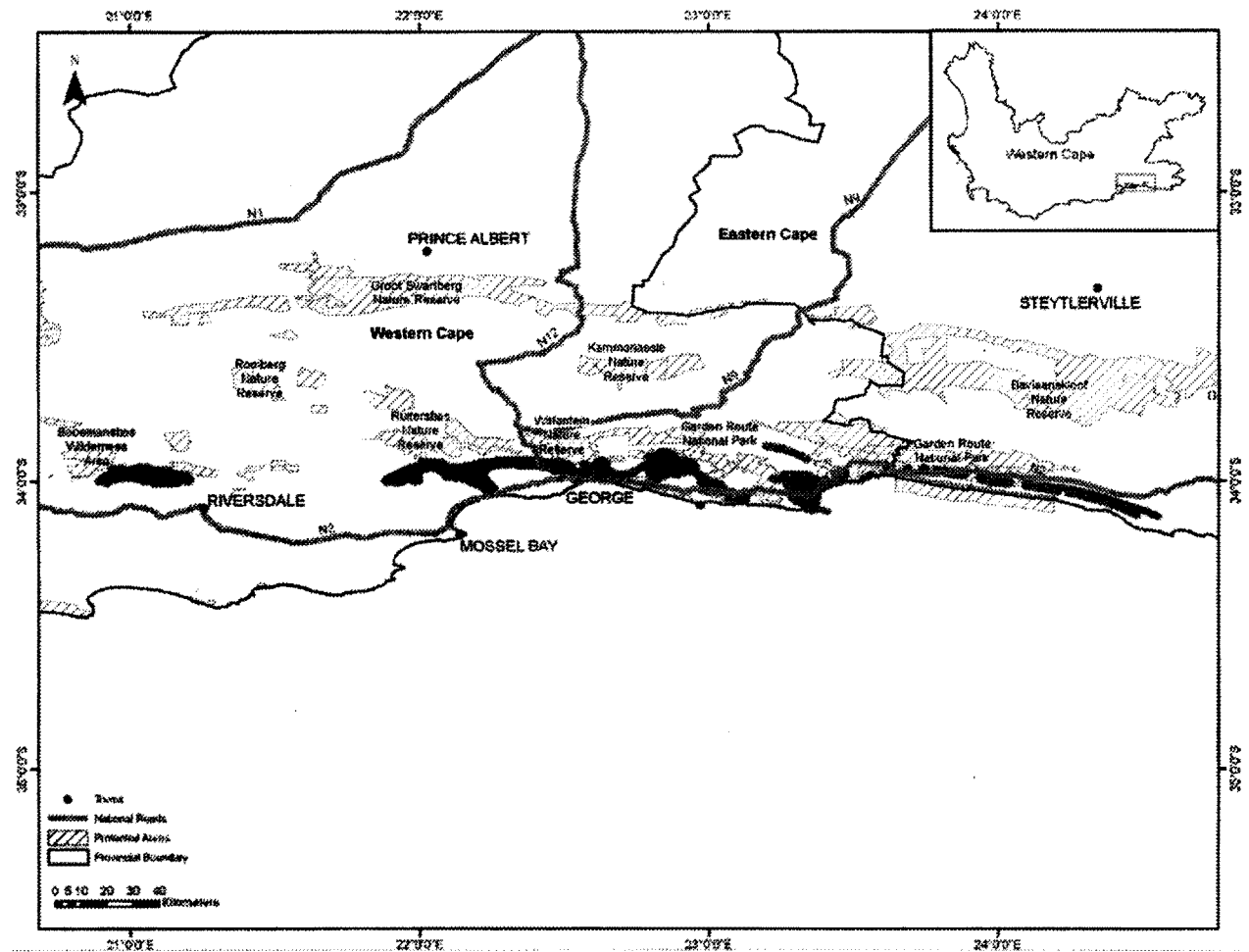
Undulating hills and moderately undulating plains on the coastal forelands. Structurally it consists of tall, dense proteoid and ericaceous fynbos in wetter areas, and graminoid fynbos (or shrubby grassland) in drier areas. Fynbos appears confined to flatter more extensive landscapes that are exposed to frequent fires. Most of the shales are covered with afrotemperate forest. Fairly wide belts of *Virgilia oroboides* occur on the interface between fynbos and forest. Fire-safe habitats nearer the coast have small clumps of thicket, and valley floors have scrub forest. At least three endemic plant species and eight Red Data List plant occur in the ecosystem.

Other information

Approximately 4% of the ecosystem is protected in the Garden Route National Park and a further 1% in Boosmansbos Wilderness Area. A further 3% is found in other (mainly private) conservation areas such as the Robbe Hoek Forest Reserve.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 152. South African National Biodiversity Institute, Pretoria.



Location of Garden Route Shale Fynbos showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

155. Glen Cairn Valley (KZN 53)

| | |
|--|---|
| Reference number | KZN 53 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Richmond LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 39% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Byrne (2930CC). Ecosystem includes the entire valley basin and is delineated by the prominent plateau, river and ridge features.

Description

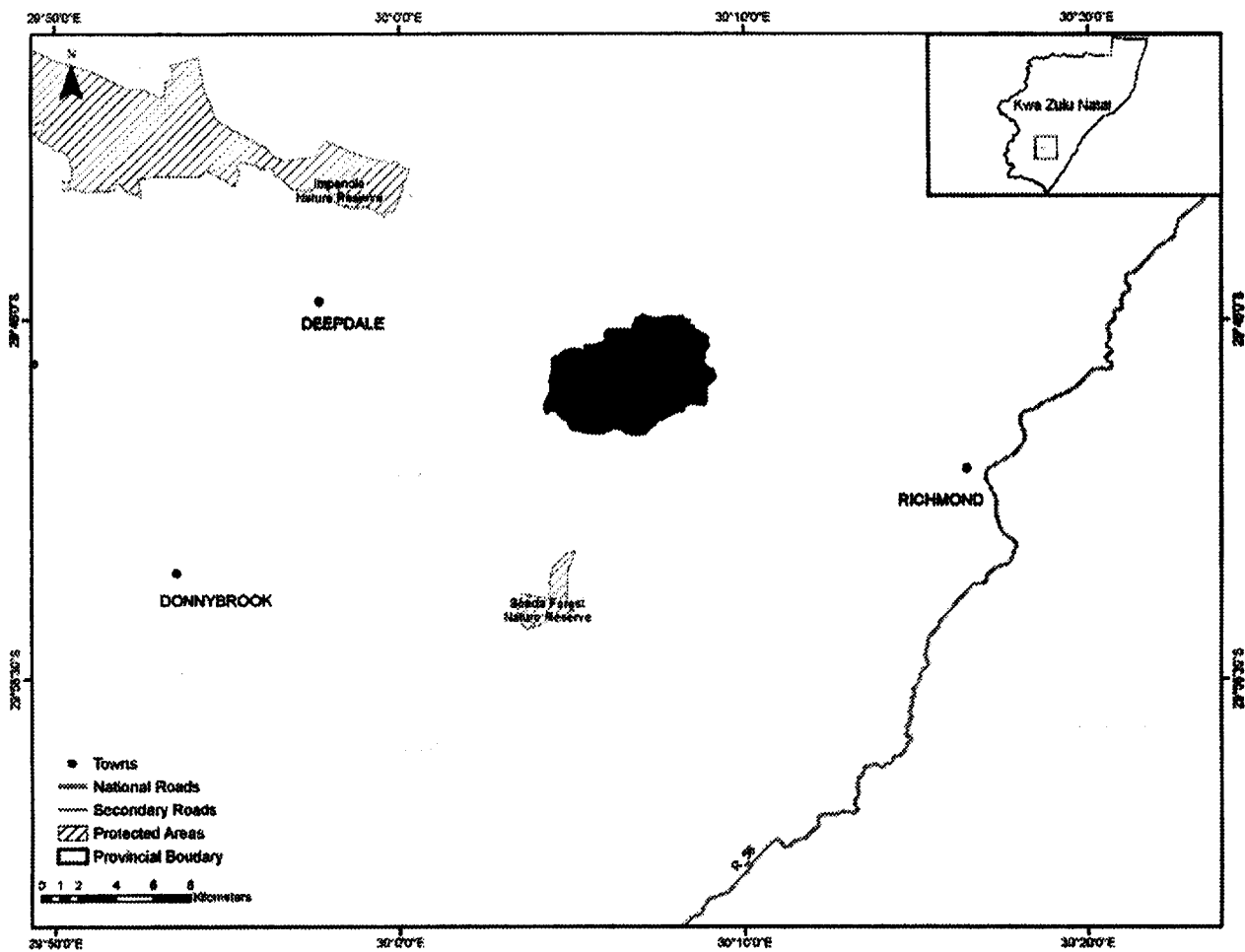
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*, one bird species, the Blue Swallow; one millipede species, *Doratogonus montanus*; two plant species for example *Senecio exuberans*; and three vegetation types including Eastern Valley Bushveld, Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Glen Cairn Valley showing original area of ecosystem

156. Gold Cliff Farm Surrounds (KZN 54)

| | |
|--|---|
| Reference number | KZN 54 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Ubuhlebezwe LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 32% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

Ixopo (3030AA). Ecosystem delineated by a combination of ridge lines and river valleys.

Description

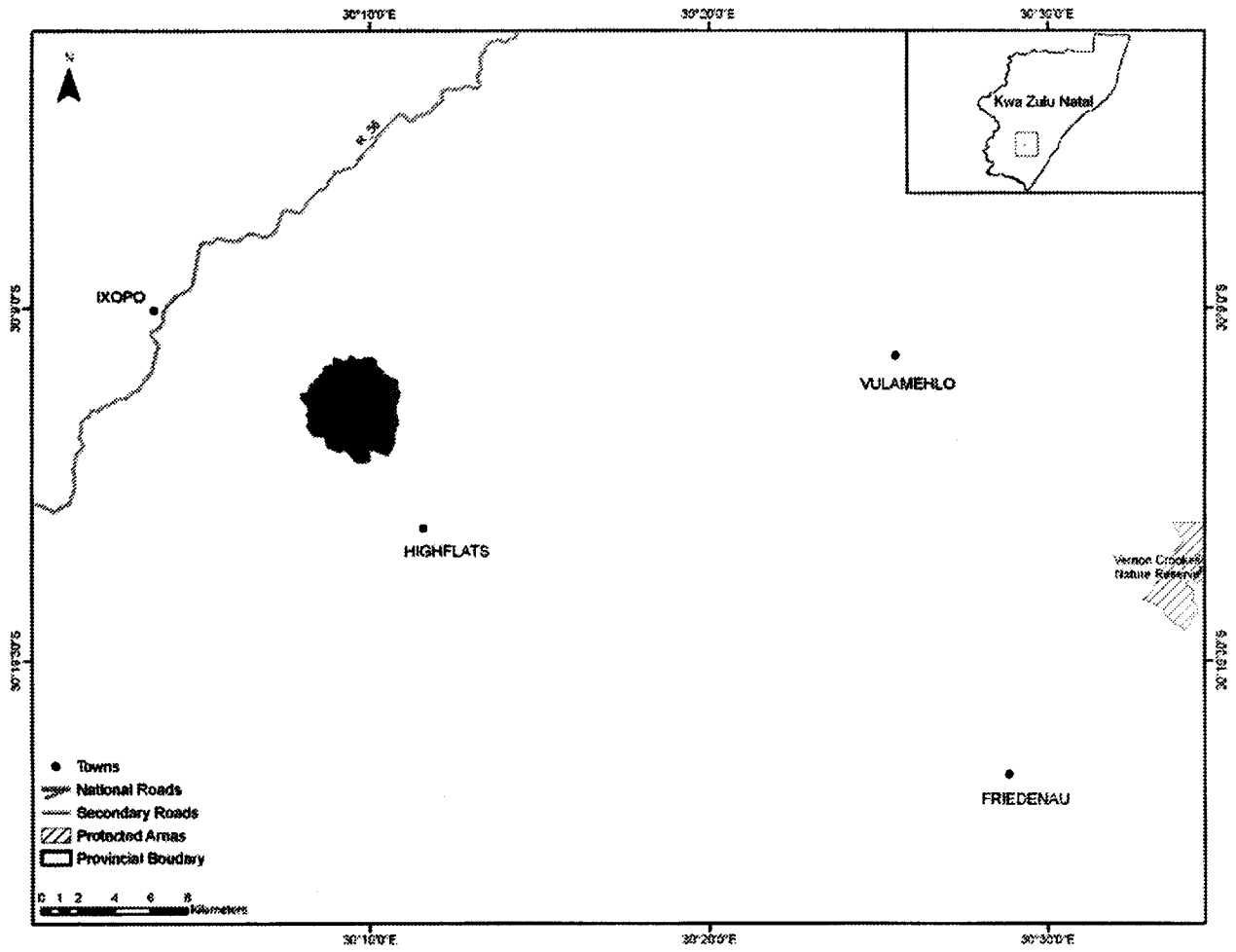
Key biodiversity features include one bird species, the Blue Swallow; one mammal species, the Oribi; one millipede species, *Doratogonus montanus*; one plant species and three vegetation types including Ngongoni Veld, Eastern Valley Bushveld and Midlands Mistbelt Grasslands.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Gold Cliff Farm Surrounds showing original area of ecosystem

157. Harding East (KZN 55)

| | |
|--|---|
| Reference number | KZN 55 |
| Listed under Criterion | F |
| Biome | Savanna |
| Province | KwaZulu-Natal |
| Municipalities | UMuziwabantu LM and Umzimkhulu LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 21% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

Harding (3029DB). Ecosystem delineated by ridge lines to capture the valley features.

Description

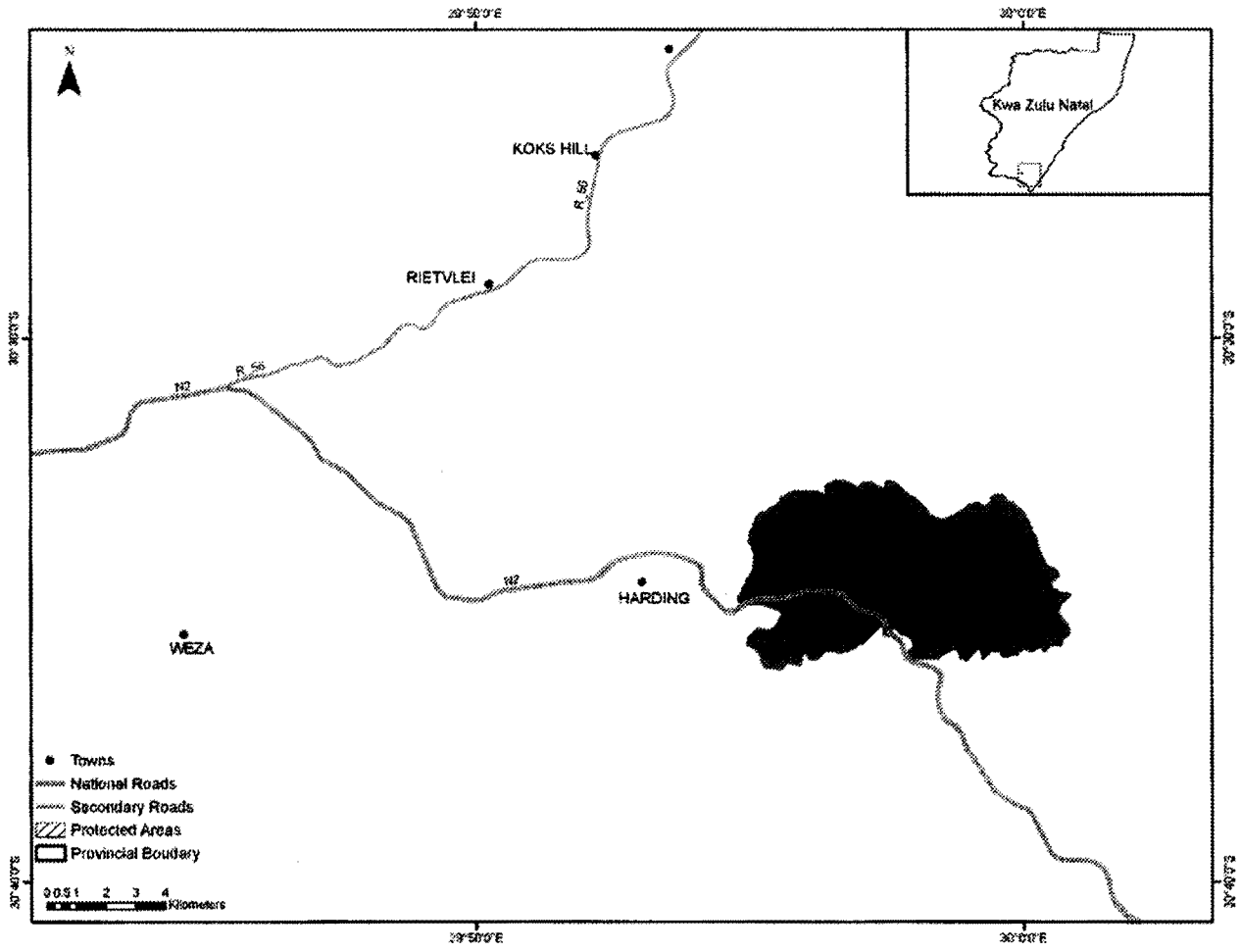
Key biodiversity features include one bird species, the Blue Swallow; one millipede species, *Doratogonus montanus*; two plant species for example *Dierama reynoldsii*; and one vegetation type, Ngongoni Veld.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Harding East showing original area of ecosystem

158. Harding West (KZN 56)

| | |
|--|---|
| Reference number | KZN 56 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | UMuziwabantu LM |
| Original area of ecosystem | 3 000 ha |
| Remaining natural area of ecosystem (%) | 14% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic animal species including those listed below |

Geographical location

Harding (3029DB). Ecosystem encompasses the valley and natural grasslands that include all current and historical blue swallow sites in the area.

Description

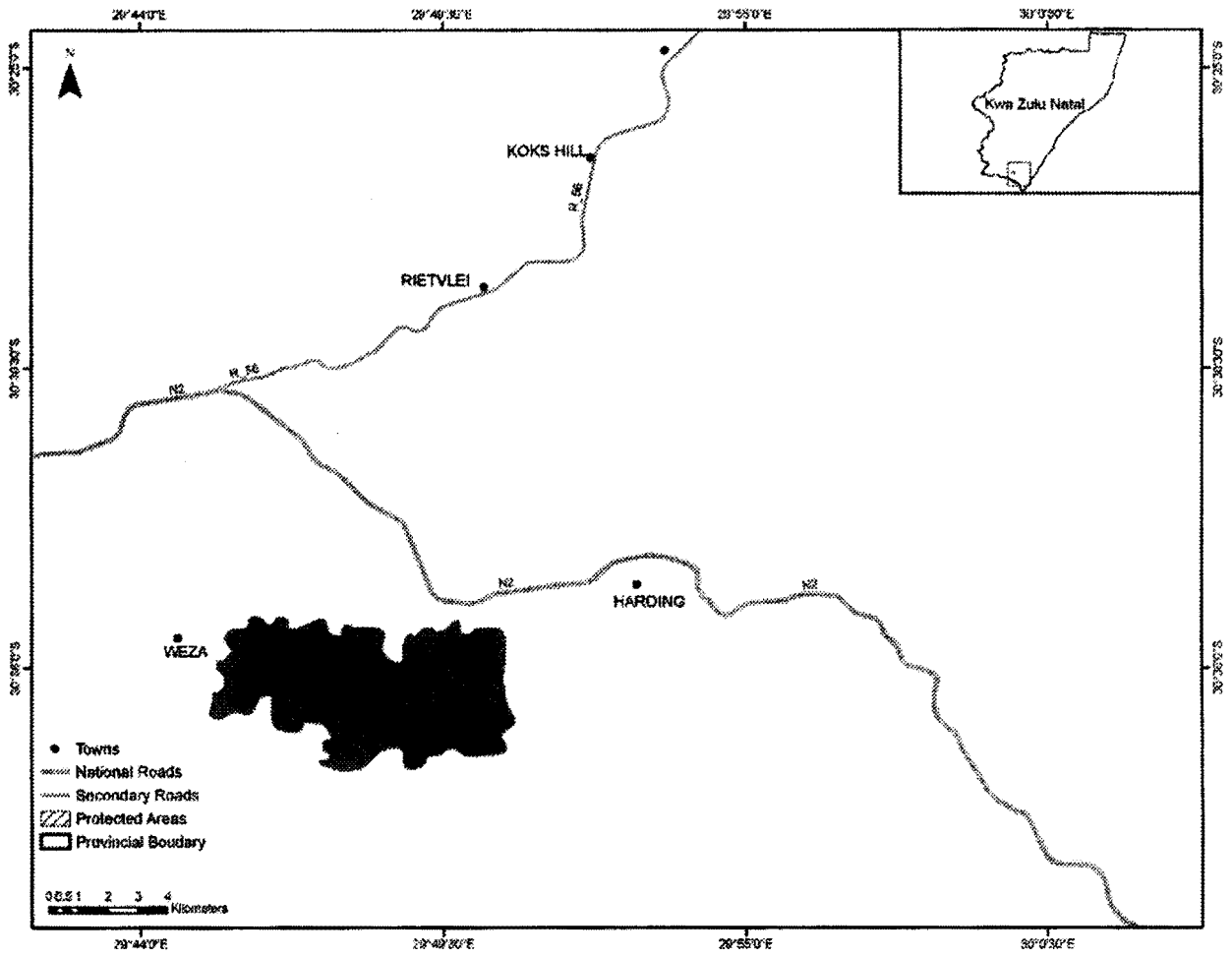
Key biodiversity features include one amphibian species, *Arthroleptella ngongoniensis*, one bird species, the Blue Swallow; one millipede species, *Doratogonus montanus*; one reptile species, *Bradypodion wezae*; and one vegetation types, Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Harding West showing original area of ecosystem

159. Hawequas Sandstone Fynbos (FFs 10)

| | |
|--|---|
| Reference number | FFs 10 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Swartland LM, Witzenberg LM, Drakenstein LM, Stellenbosch LM, Breede Valley LM and Theewaterskloof LM |
| Original area of ecosystem | 105 000 ha |
| Remaining natural area of ecosystem (%) | 97% |
| Proportion of ecosystem protected | 50% of original area |
| Known number of species of special concern | 42 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 85 endemic plant species |

Geographical location

Between the Nuwekloof Pass near Gouda in the north to Franschhoek Pass near Franschhoek including the Elandskloof, Hawequas, Slanghoek, Klein-Drakenstein, Wemmershoek, Du Toitskloof and Stettyns Mountains.

Description

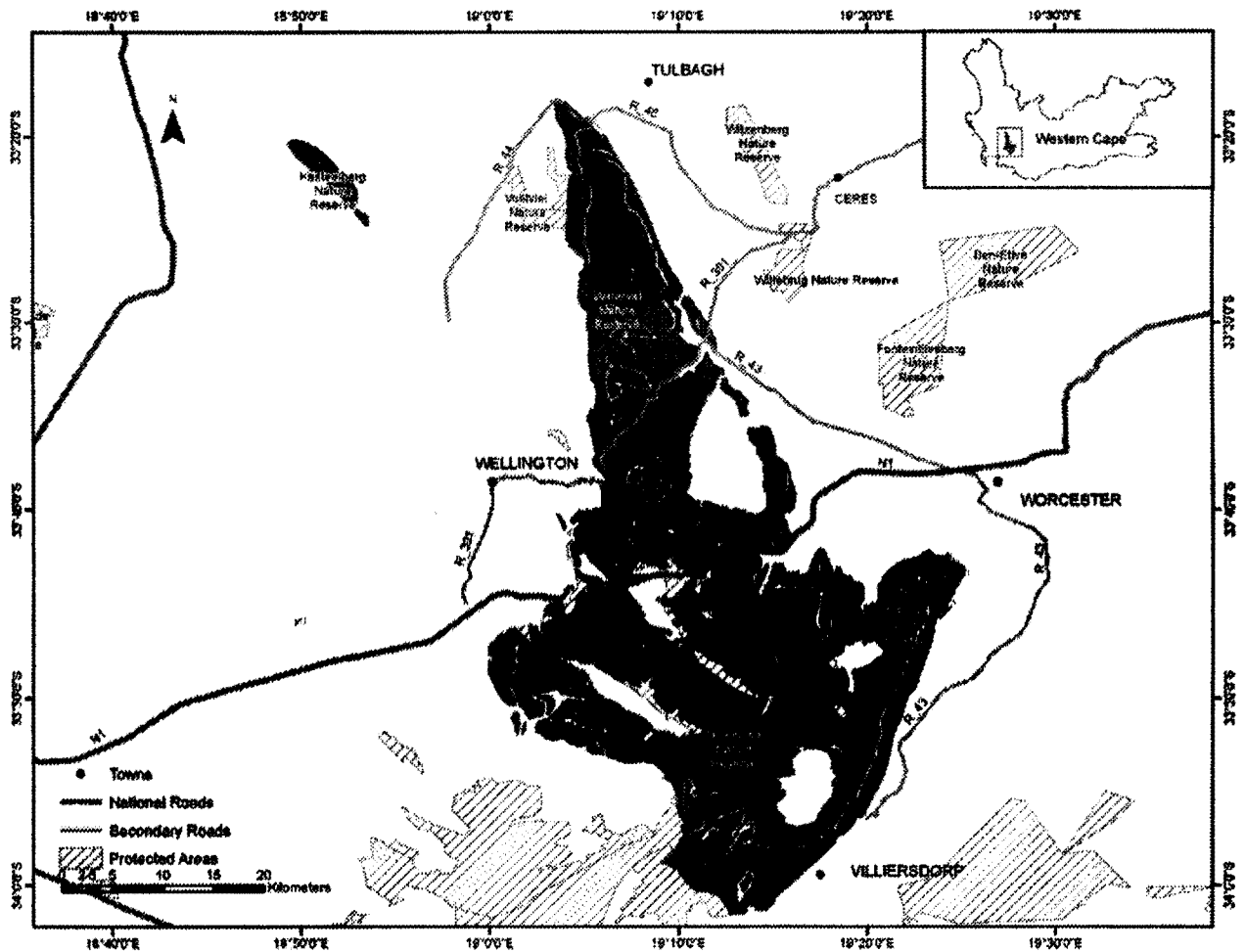
Mountains with slopes of various steepness, flanks of intermontane valleys and upland plateaus. A band of Cedarberg Shale Formation forms a prominent step at high altitude. Vegetation forms a low closed shrubland dotted with emergent tall shrubs; mainly proteoid, restioid and asteraceous fynbos with much waboomveld at lower altitudes; ericaceous fynbos at higher altitudes; and abundant Cape thickets (especially in the north of the ecosystem) on cliffs and very steep rocky (scree) slopes. At least 85 endemic plant species and 42 Red Data List plant species occur in the ecosystem.

Other information

More than half of the ecosystem is protected in the Limietberg, Theewaters and Waterval Nature Reserves, with an additional 36% found in the Hawequas Mountain Catchment Area.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 108-109. South African National Biodiversity Institute, Pretoria.



Location of Hawequas Sandstone Fynbos showing original area of ecosystem

160. Himeville Lowlands and Ridge (KZN 57)

| | |
|--|--|
| Reference number | KZN 57 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Kwa Sani LM and KZDMA43 |
| Original area of ecosystem | 11 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 10 threatened or endemic plant and animal species including those listed below |

Geographical location

Sani Pass (2929CB) and Himeville (2929DA). Ecosystem includes lowlands and wetlands associated with crane nesting sites. Ecosystem delineated using topography and refined by excluding peripheral plantations and urban settlements. It includes cultivated fields, which are important habitats for crane foraging, and manmade impoundments, which have associated wetlands important for flufftails.

Description

Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*, two bird species including Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; three plant species including *Hesperantha woodii*, *Kniphofia brachystachya* and *Kniphofia breviflora*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Mooi River Highland Grassland and Southern Drakensberg Highland Grassland.

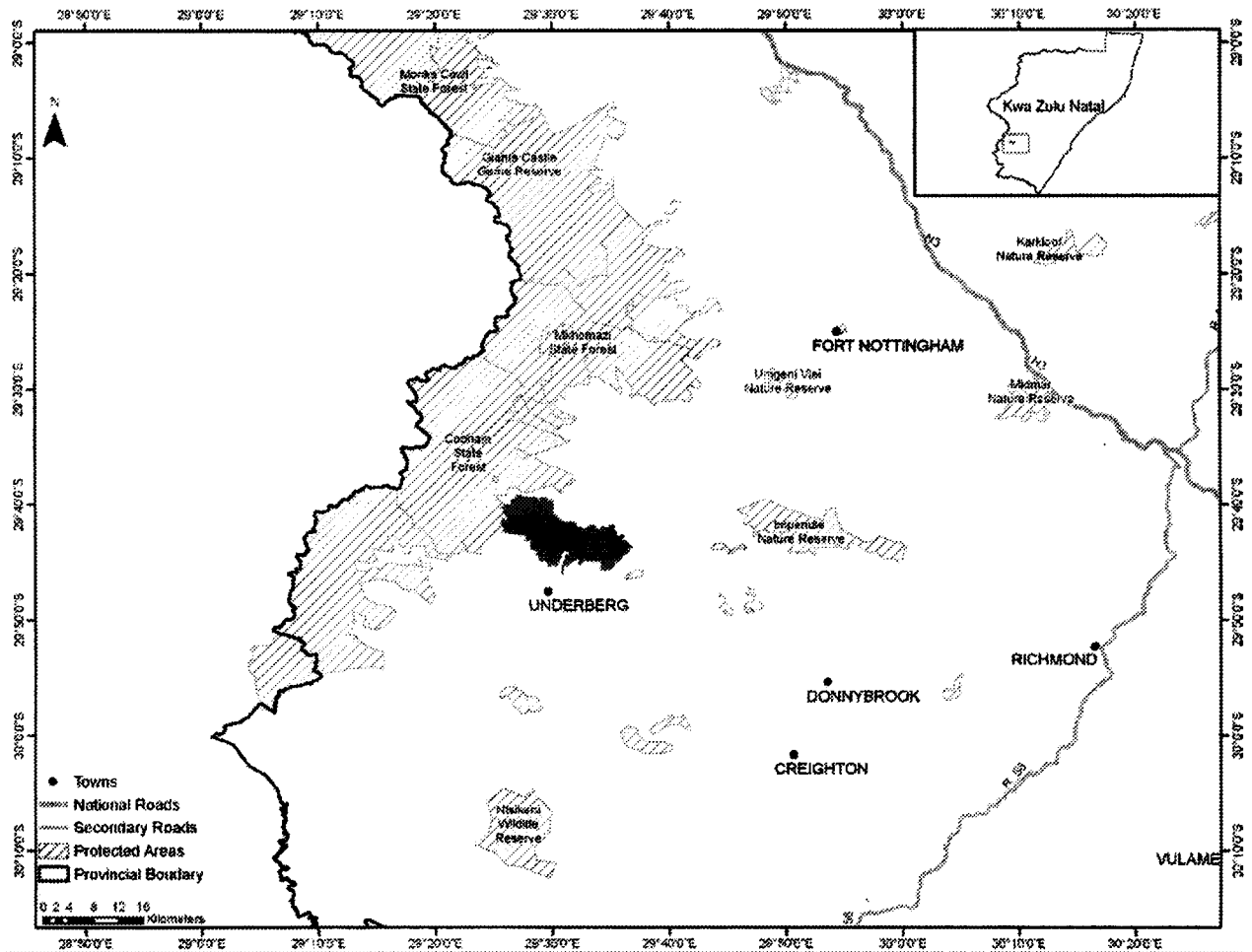
Other information

About 4% of the ecosystem is protected in the Himeville Nature Reserve and Cobham State Forest.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4.

Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Himeville Lowlands and Ridge showing original area of ecosystem

161. Hluhluwe Scarp Forest (KZN 58)

| | |
|--|---|
| Reference number | KZN 58 |
| Listed under Criterion | F |
| Biome | Savanna, Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Hlabisa LM and KZDMA27 |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 94% |
| Proportion of ecosystem protected | 87% of original area |
| Known number of species of special concern | 7 threatened or endemic plant and animal species including those listed below |

Geographical location

Ntondweni (2832AA). Ecosystem delineated by the scarp forest in Hluhluwe Game Reserve and adjacent areas.

Description

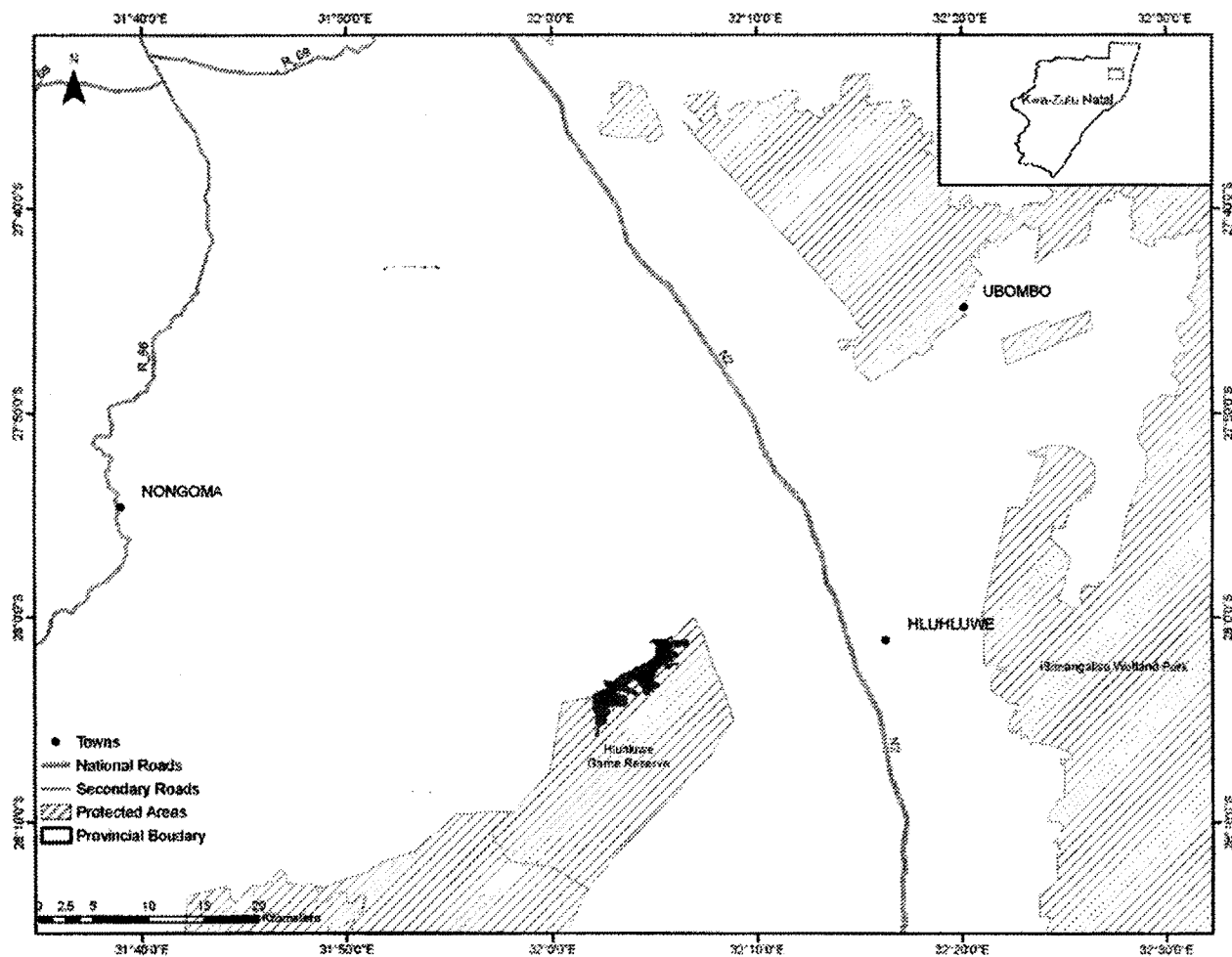
Key biodiversity features include six millipede species including *Allawrencius complex*, *Allawrencius gladiator*, *Allawrencius nodulosus*, *Centrobolus fulgidus*, *Centrobolus rugulosus* and *Doratogonus hoffmani*; one plant species, *Albizia suluensis*; and three vegetation types including Eastern Scarp Forest, Northern Zululand Sourveld and Zululand Lowveld.

Other information

Approximately 87% of the ecosystem is protected in the Hluhluwe Game Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Hluhluwe Scarp Forest showing original area of ecosystem

162. Hopefield Sand Fynbos (FFd 3)

| | |
|--|--|
| Reference number | FFd 3 |
| Listed under criteria | A1 and D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Bergrivier LM, Saldanha Bay LM, Swartland LM and WCDMA01 |
| Original area of ecosystem | 180 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 45 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 5 endemic plant species |

Geographical location

West Coast lowlands from Aurora to Rondeberg, just south of Yzerfontein, with an outlier in the Strandveld at Kleinberg north of Langebaanweg.

Description

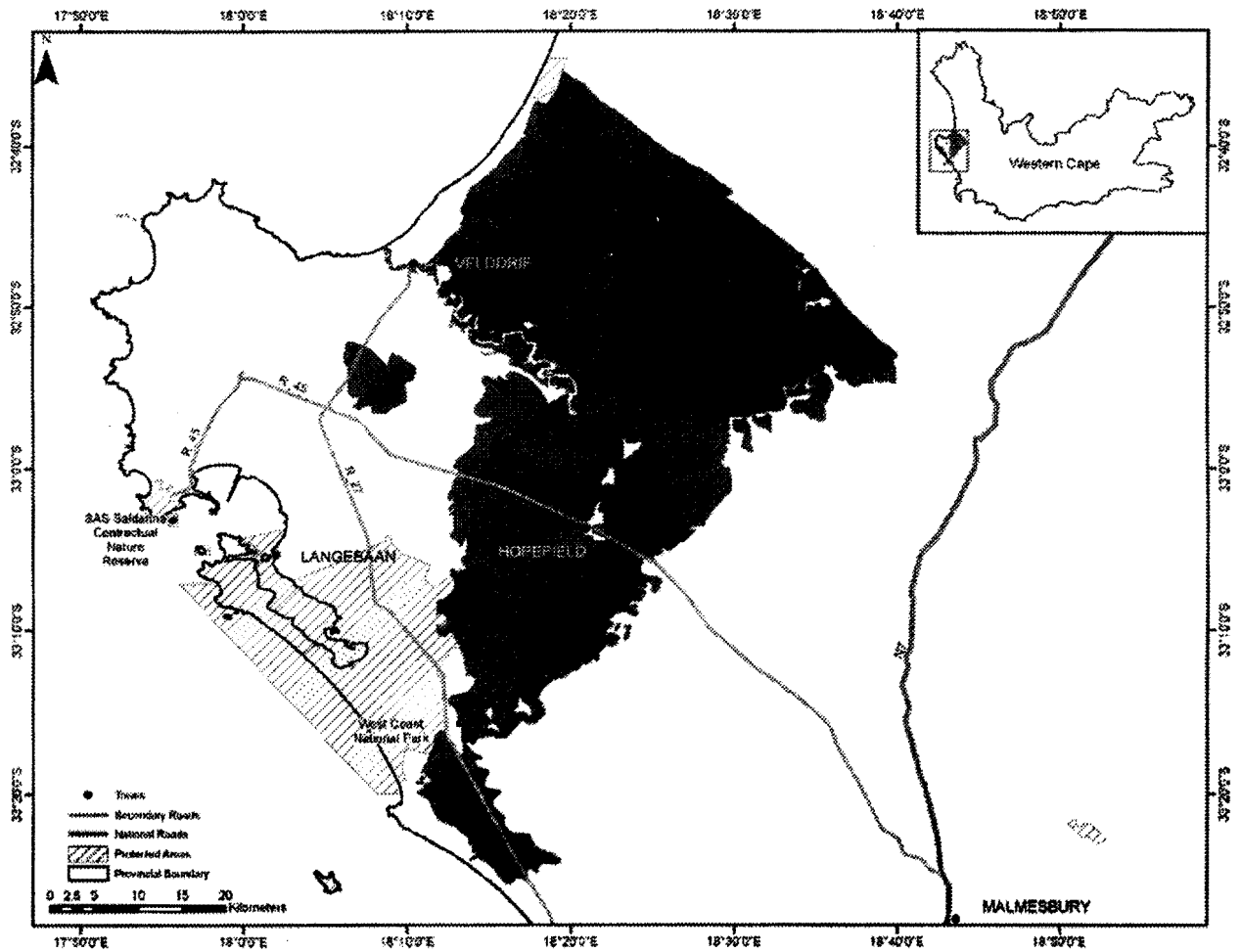
Coastal sand plains, flat to undulating, and also including localised inland dune fields. Vegetation is a moderately tall, ericoid-leaved shrubland with dense herbaceous stratum of aphyllous hemicryptophytes. This is mostly asteraceous and restioid fynbos, although proteoid fynbos is extensive and ericaceous fynbos occurs in seeps and along watercourses. Hopefield Sand Fynbos has all three typical fynbos elements, but with a paucity (in species richness and density) of Ericaceae. The ecosystem is most diverse in the Hopefield area, where extensive stands of *Leucadendron foedum*, *Leucospermum rodolentum* and *Serruria fucifolia* are dominant. At least five endemic plant species and 45 Red Data List plant species occur in the ecosystem.

Other information

A very small portion is protected in the West Coast National Park, with an additional 2% found in Hopefield and Jakkalsfontein Nature Reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 138. South African National Biodiversity Institute, Pretoria.



Location of Hopefield Sand Fynbos showing original area of ecosystem

163. Imfolosi Savanna and Sourveld (KZN 59)

| | |
|--|---|
| Reference number | KZN 59 |
| Listed under Criterion | F |
| Biome | Savanna and Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Nongoma LM, Ulundi LM, Ntambanana LM, Mthonjaneni LM and KZDMA27 |
| Original area of ecosystem | 63 000 ha |
| Remaining natural area of ecosystem (%) | 72% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Hlabisa (2831BB), Maphophoma (2831BA), Ntiningwe (2831BC), Mfolozi (2831BD), Nkwalini (2831DA), Empangeni (2831DB). Ecosystem consists of savanna and sourveld identified for the Black Rhino Range Expansion Programme and is a neighbour to Imfolosi Game Reserve on the north, west and south of the reserve. It incorporates the Fundimvelo Nature Reserve.

Description

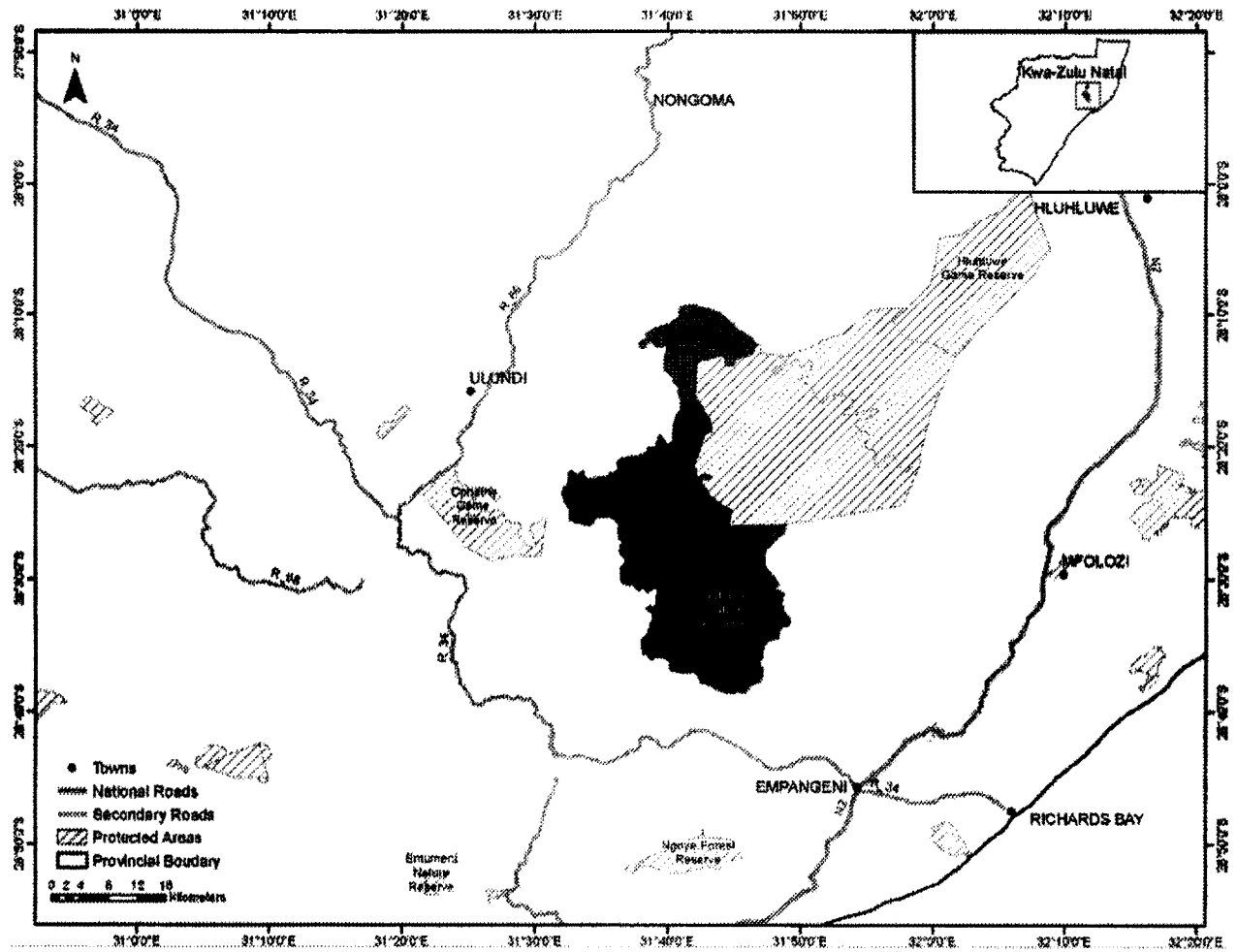
Key biodiversity features include two mammal species including Black Rhino and Wild Dog; two bird species including Whiteheaded Vulture and Lappetfaced Vulture; one millipede species, *Doratogonus natalensis*; two plant species *Diospyros glandulifera* and *Helichrysum woodii*; and three vegetation types including Ngongoni Veld, Northern Zululand Sourveld and Zululand Lowveld.

Other information

Approximately 2% of the ecosystem is protected in the Imfolozi Game Reserve and Fundimvelo Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Imfolosi Savanna and Sourveld showing original area of ecosystem

164. Impendle Lowland Grasslands (KZN 60)

| | |
|--|--|
| Reference number | KZN 60 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM, Impendle LM and Ingwe LM |
| Original area of ecosystem | 11 200 ha |
| Remaining natural area of ecosystem (%) | 72% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 14 threatened or endemic plant and animal species including those listed below |

Geographical location

Impendle (2929DB) and Merrivale (2930CA). Ecosystem lies in the valley between the Drakensberg Foothill Wattled Crane Habitat threatened ecosystem (KZN 47), the Impendle Highlands threatened ecosystem (KZN 28), the KwaMncane North Plateau threatened ecosystem (KZN 63) and the Beinn Mheadmon Mountain Grassland threatened ecosystem (KZN 39). Ecosystem is restricted to the Drakensberg Foothill Moist Grasslands but does include Eastern Mistbelt Forest patches.

Description

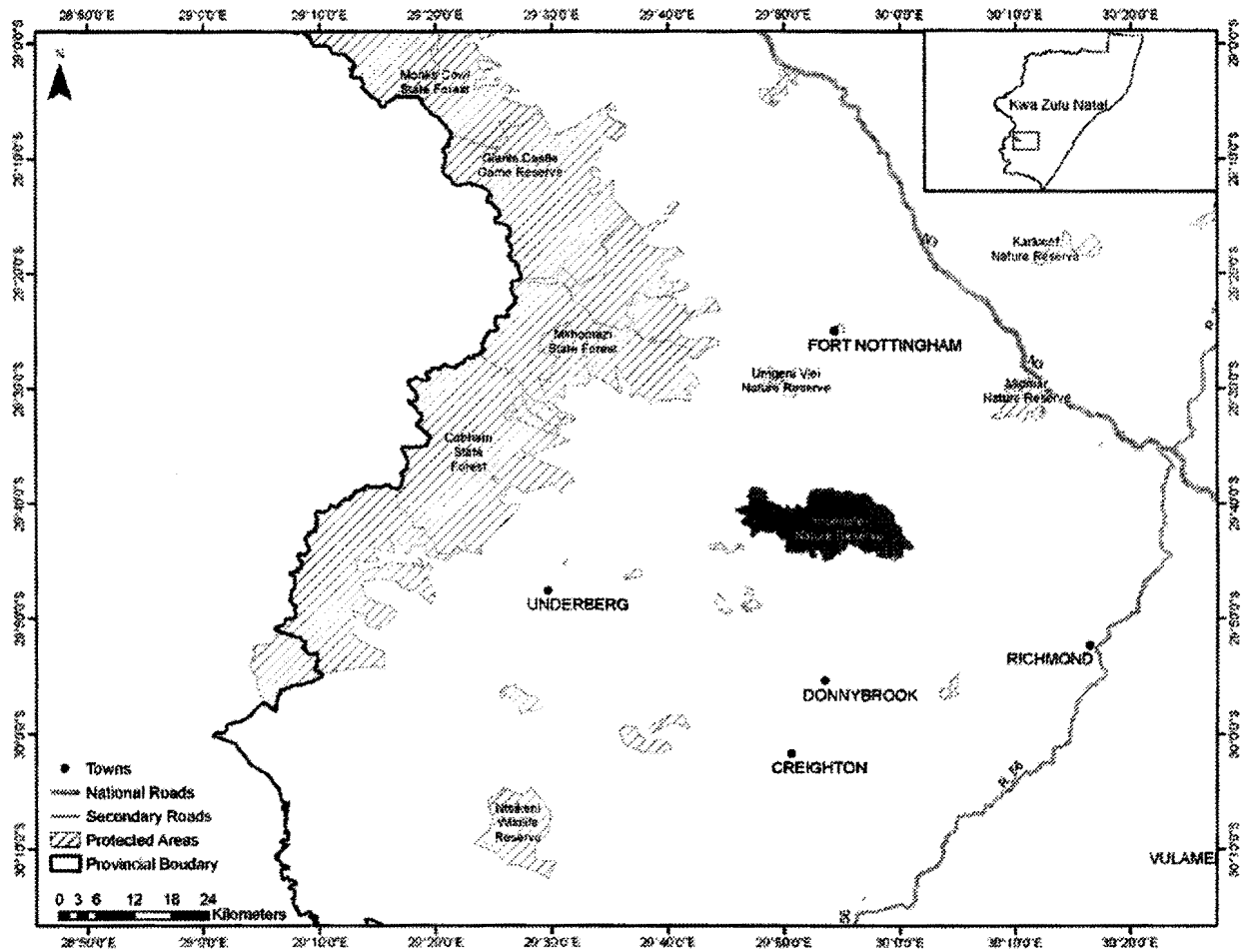
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*; two bird species including Blue Swallow and Wattled Crane; one mammal species, the Oribi; six millipede species including *Centrobolus decoratus*, *Centrobolus rubricollis*, *Centrobolus tricolor*, *Doratogonus hoffmani*, *Doratogonus montanus* and *Doratogonus natalensis*; three plant species for example *Geranium natalense* and *Hesperantha woodii*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Impendle Lowlands Grasslands showing original area of ecosystem

165. Ixopo Surrounds (KZN 61)

| | |
|--|---|
| Reference number | KZN 61 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipalities | Ingwe LM and Ubuhlebezwe LM |
| Original area of ecosystem | 27 000 ha |
| Remaining natural area of ecosystem (%) | 15% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

Ixopo (3030AA) and Creighton (3029BB). Ecosystem delineated by contour lines, following river channels and ridge lines. It shares a boundary, delineated by a river, with the Eastern Creighton and Donnybrook threatened ecosystem (KZN 49)

Description

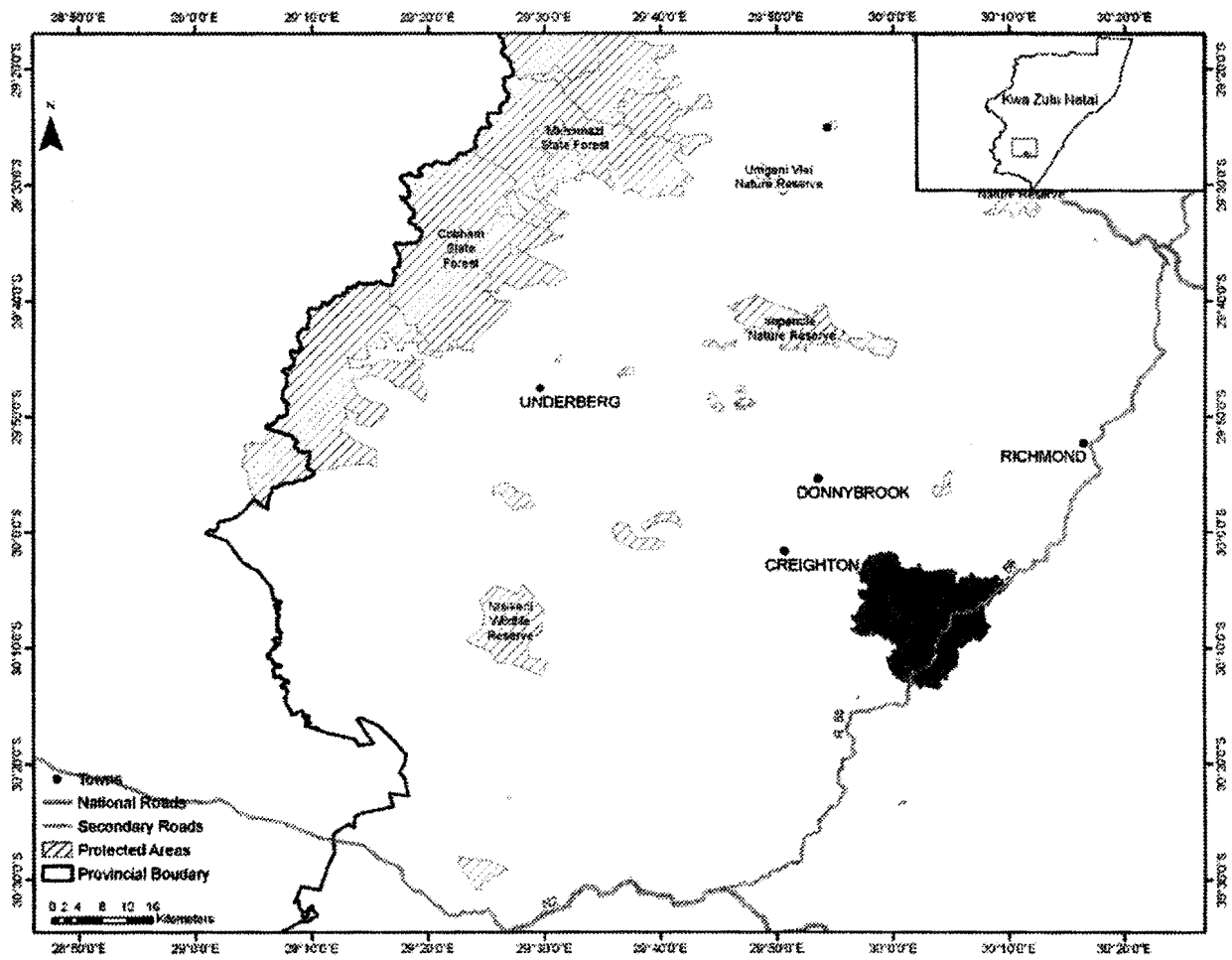
Key biodiversity features include one amphibian species, *Arthroleptella ngongoniensis*; two bird species including Blue Swallow and Wattled Crane; two millipede species including *Doratogonus montanus* and *Doratogonus natalensis*; three plant species for example *Senecio exuberans*; and four vegetation types including Ngongoni Veld, KwaZulu-Natal Hinterland Thornveld, Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Ixopo Surrounds showing original area of ecosystem

166. Kaalrug Mountainlands (MP 17)

| | |
|--|--|
| Reference number | MP 17 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | Mpumalanga |
| Municipality | Nkomazi LM |
| Original area of ecosystem | 25 000 ha |
| Remaining natural area of ecosystem (%) | 86% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 12 threatened or endemic plant and animal species including those listed below |

Geographical location

Mountain range between Kaalrug and Kappmuiden (2531BC, 2531CB, and 2531DA). Ecosystem is delineated by the drier, north-eastern end of the ancient Barberton Sequence. Landtypes were used to redefine the boundaries.

Description

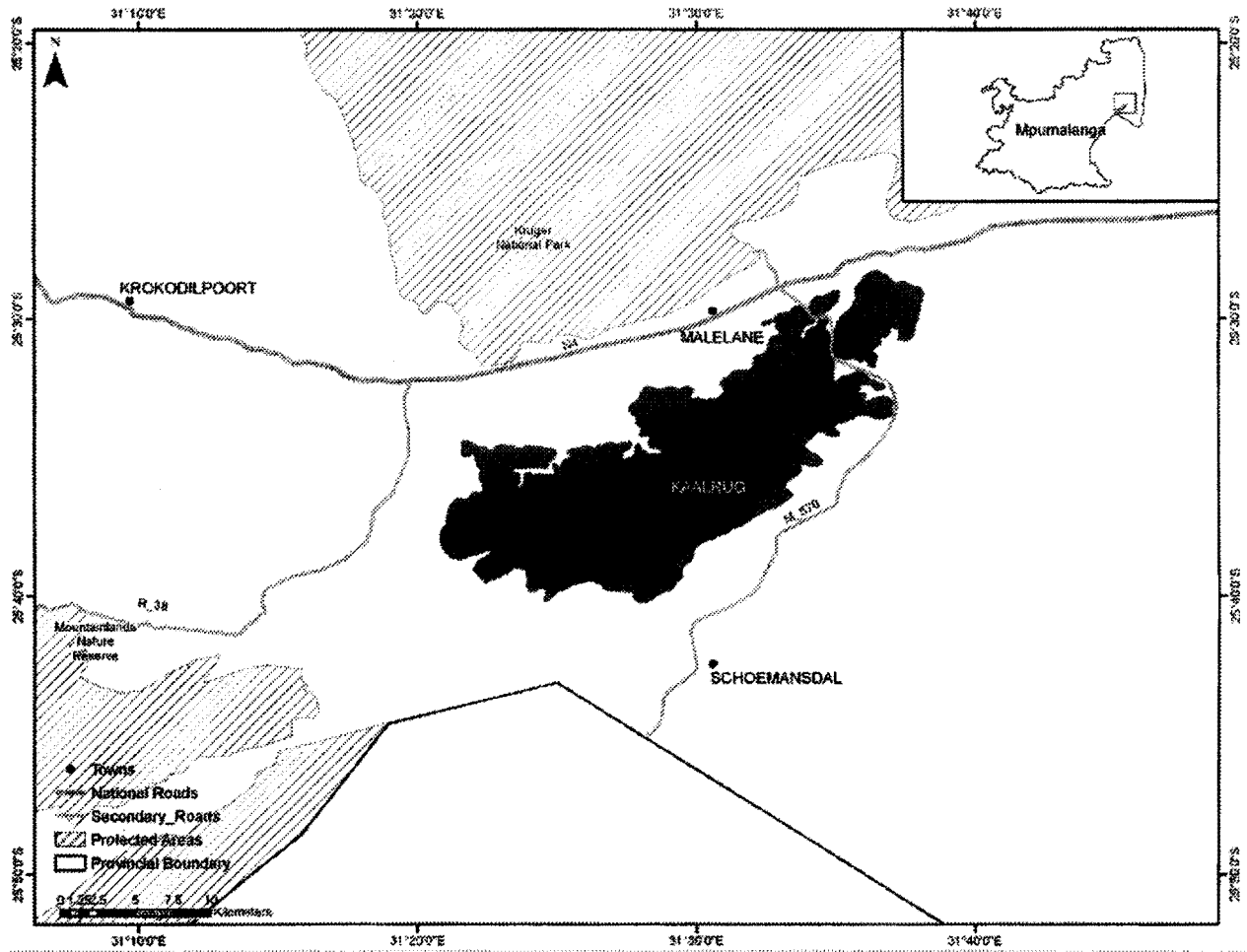
Key biodiversity features includes two mammal species including Short-eared Trident Bat and Natal Long-fingered Bat; three bird species including Saddle-billed Stork, Southern Ground Hornbill and Striped Flufftail; three reptile species including *Aspedilaps scutatus intermedius*, *Bradypodion transvaalense* and *Cordylus warreni barbertonensis*; four plant species including *Boophane disticha*, *Haworthia glaucophylla*, *Haworthia limifolia* var. *arcane* and *Warburgia salutaris*; and five vegetation types including Barberton Montane Grassland, Barberton Serpentine Sourveld; Kaalrug Mountain Bushveld, Granite Lowveld and Maputaland Scarp Forest. The ecosystem includes part of the Barberton Centre of Endemism. The ecosystem includes important sub-catchments; it provides an escarpment corridor; and is important for forest processes.

Other information

The ecosystem is not protected.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Kaalrug Mountainlands showing original area of ecosystem

167. Kango Limestone Renosterveld (FRI 1)

| | |
|--|---|
| Reference number | FRI 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Kannaland LM and Oudtshoorn LM |
| Original area of ecosystem | 50 000 ha |
| Remaining natural area of ecosystem (%) | 51% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 6 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 6 endemic plant species |

Geographical location

Northeastern regions of the Little Karoo, south of the Groot Swartberg from near Gamkapoort; north of Calitzdorp eastwards including Matjiesrivier and the Cango Caves area; with another band extending from upper Schoemanspoort and De Rust to north of the Stompdrift Dam.

Description

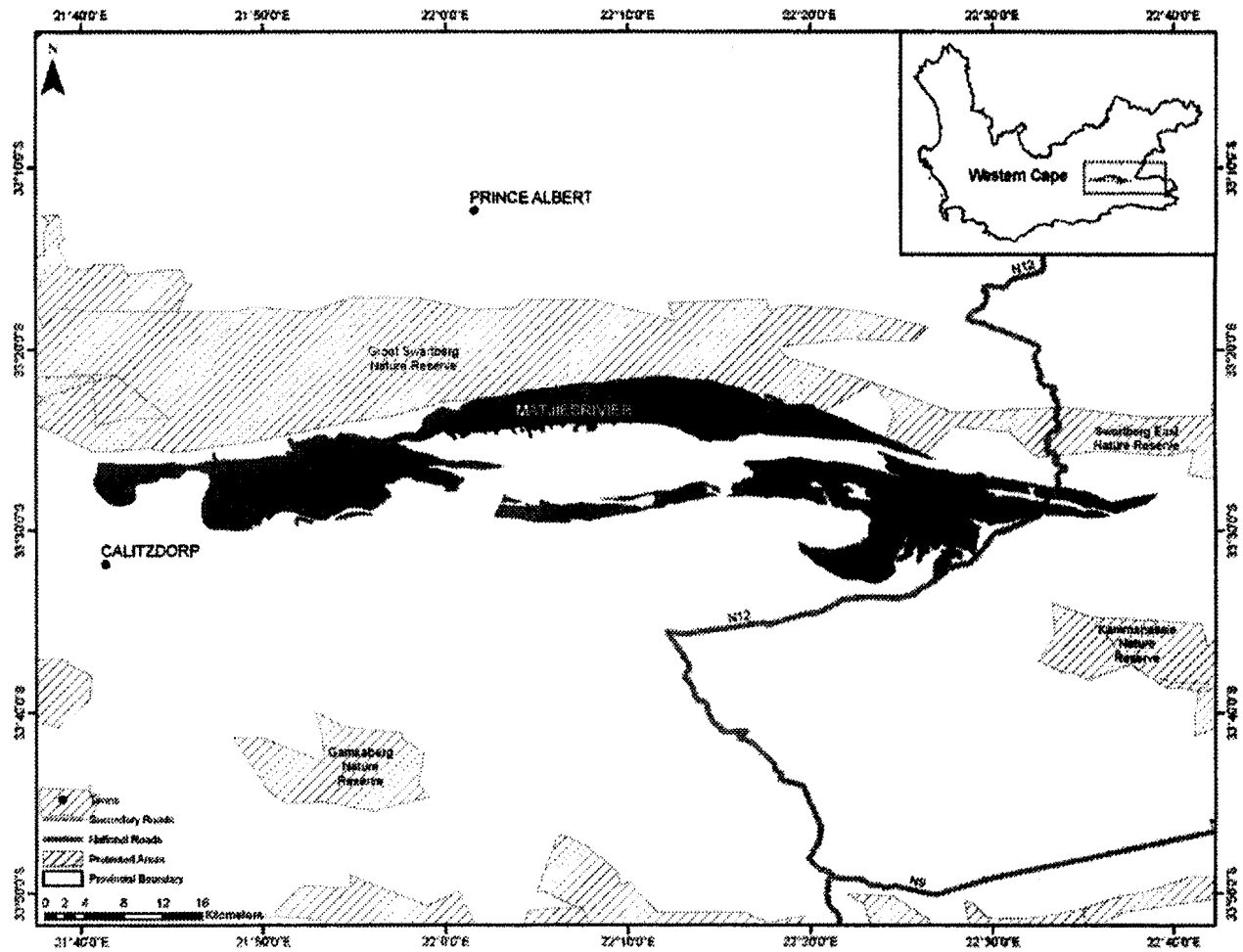
Low mountains and steep hills, supporting low, medium dense graminoid and medium to tall, dense, cupressoid-leaved shrubland, dominated by renosterbos and *Dodonaea*. The upper and wetter slopes are dominated by *Dodonaea viscosa* var. *angustifolia*, which although it is the visual signature of this ecosystem, extends onto neighbouring fynbos ecosystems. Frequent burning leads to a *Themeda* grassland. The early post-fire stages are characterised by a high diversity of herbaceous species, on limestone *Hermannia holosericea* is dominant in the early seral stages. A feature of the ecosystem is the marked lack of geophytes (only *Hypoxis villosa*). At least six endemic plant species and six Red Data List plant species occur in the ecosystem.

Other information

A very small portion of the ecosystem is protected in Groot Swartberg and Rietvlei.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 197. South African National Biodiversity Institute, Pretoria.



Location of Kango Limestone Renosterveld showing original area of ecosystem

168. KaNgwane Montane Grassland (Gm 16)

| | |
|--|--|
| Reference number | Gm 16 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Mpumalanga and KwaZulu-Natal |
| Municipalities | eDumbe LM, UPhongolo LM, Albert Luthuli LM, Msukaligwa LM, Mkhondo LM and Highlands LM |
| Original area of ecosystem | 612 000 ha |
| Remaining natural area of ecosystem (%) | 59% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 4 endemic plant species |

Geographical location

Occurs along the gentle slopes of the Escarpment, from the Phongolo Valley in the south, northwards to the Usutu Valley and to the uppermost Lomati Valley near Carolina, including the western grassland areas of Swaziland.

Description

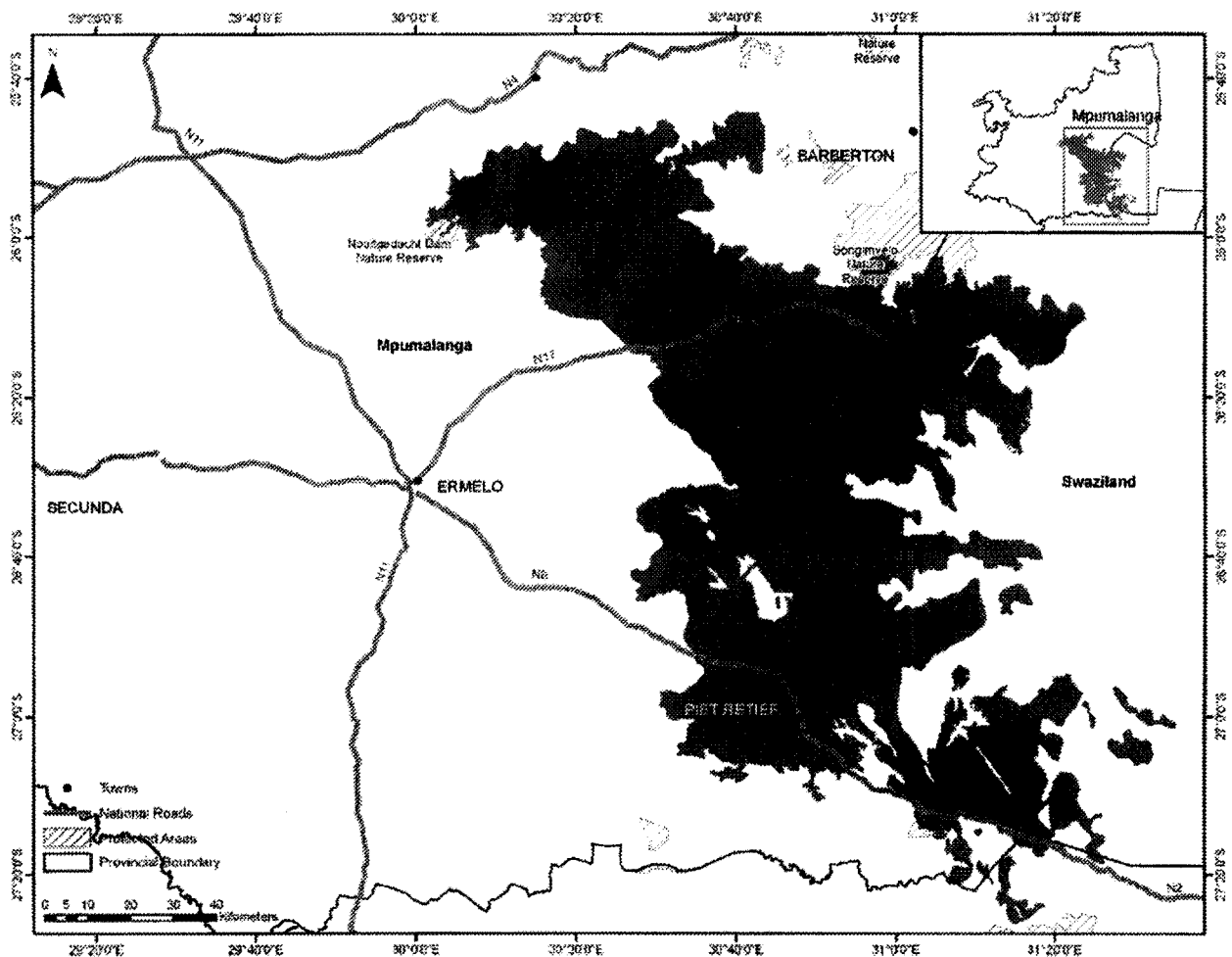
Largely comprised of undulating hills and plains that occur on the eastern edge of the Escarpment. The ecosystem is transitional between the Highveld and Escarpment and contains elements of both. The vegetation structure is comprised of a short closed grassland layer with many forbs, and a few scattered shrubs on the rocky outcrops. At least four endemic plant species occur in the ecosystem.

Other information

Less than 1% of the ecosystem is protected in the Malalotja Nature Reserve, Nooitgedacht Dam Nature Reserve and Songimvelo Nature Reserve. Small patches are found in a number of private conservation areas.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 403-404. South African National Biodiversity Institute, Pretoria.



Location of KaNgwane Montane Grassland showing original area of ecosystem

169. Kouebokkeveld Shale Fynbos (FFh 1)

| | |
|--|---|
| Reference number | FFh 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Witzenberg LM and WCDMA02 |
| Original area of ecosystem | 43 000 ha |
| Remaining natural area of ecosystem (%) | 52% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 5 endemic plant species |

Geographical location

Koue Bokkeveld Valley from Waboomrivier and Rosendal (Koue Bokkeveld) to Gydo Pass (north of Ceres); edge of the Warm Bokkeveld from Gydo Pass along the lower slopes of the Gydoberg and Waboomberg to the upland plateau with Klondyke and Muilbergsvlakte; and Agter Witzenberg valleys, from Rosendal (Swartruggens) to Wakkerstroom.

Description

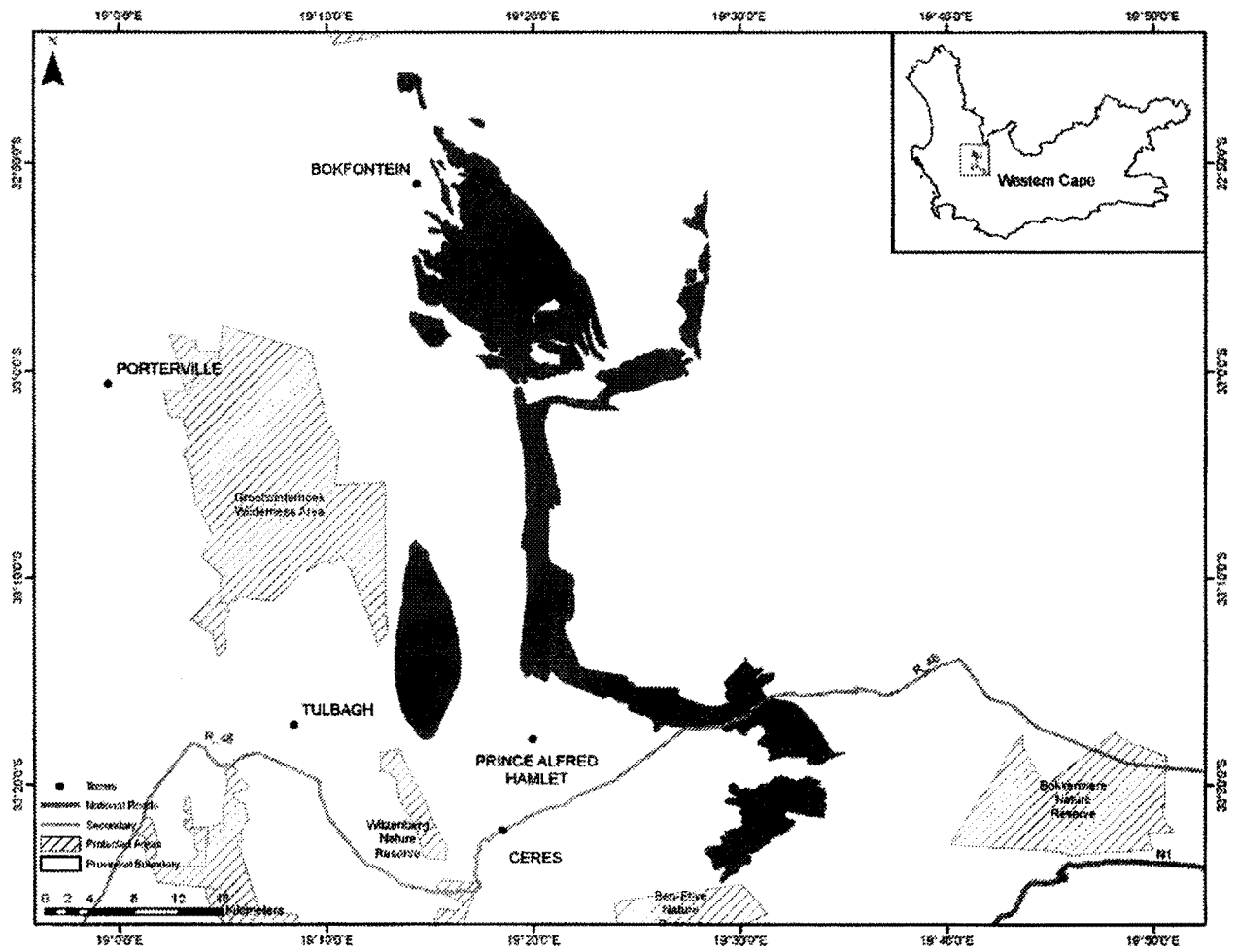
Slightly undulating plains and steep slopes in valleys between high mountains, supporting mainly moderately tall and dense proteoid shrubland. Asteraceous, proteoid and waboomveld fynbos shrublands are dominant, with fynbos restiolands occurring in the bottomlands. At least five endemic plant species and nine Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected, but almost 20% is found in the Koue Bokkeveld (mountain catchment area) and private nature reserves such as Wakkerstroom and Opdrag.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 146-147. South African National Biodiversity Institute, Pretoria.



Location of Kouebokkeveld Shale Fynbos showing original area of ecosystem

170. Kromberg Plateau (KZN 62)

| | |
|--|---|
| Reference number | KZN 62 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipality | Umvoti LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 41% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Nadi (2830DC). Located principally on the Kromberg Plateau. Ecosystem delineated based on contours indicating the mid-slope position of the surrounding slopes.

Description

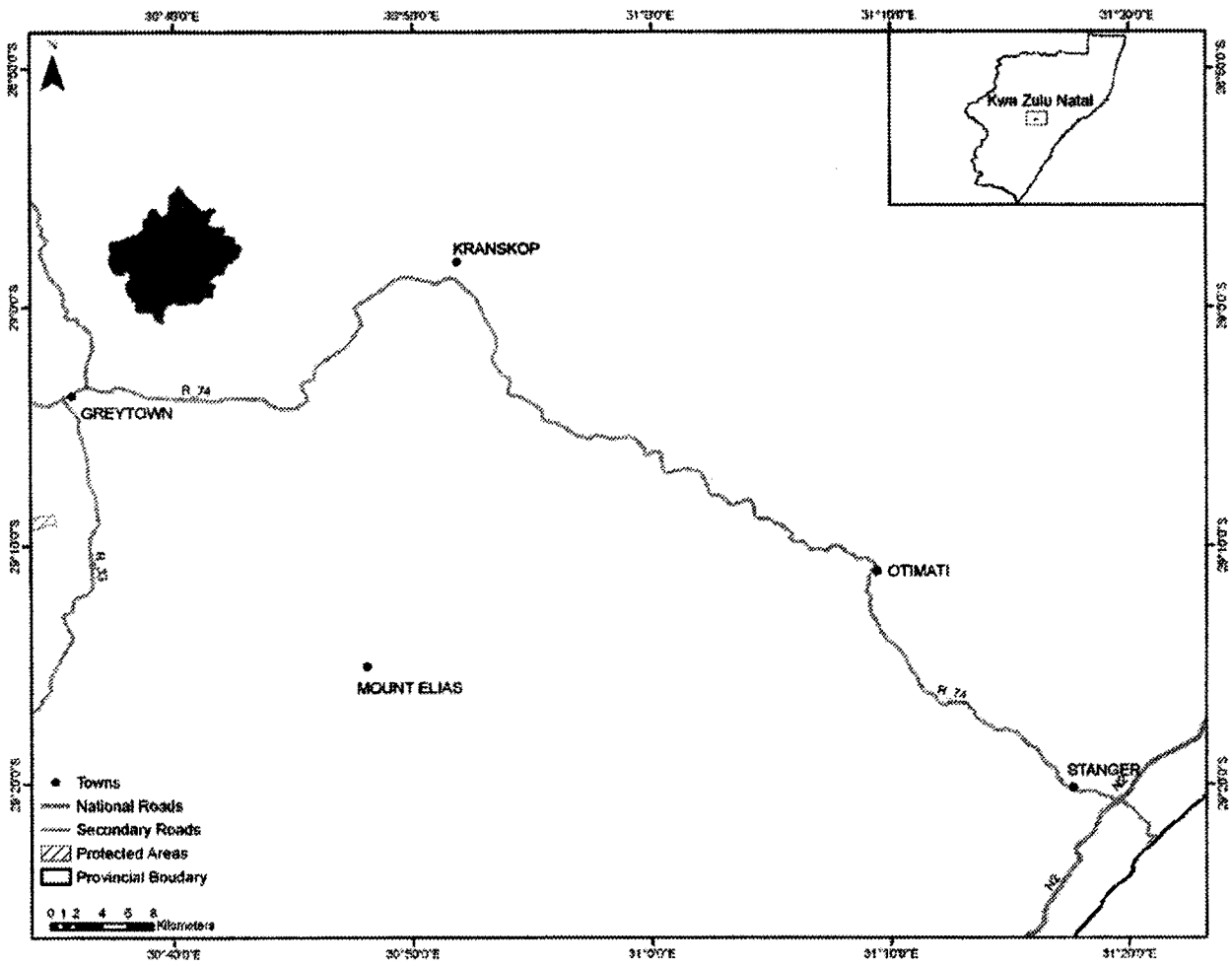
Key biodiversity features include one bird species, the Wattled Crane; two millipede species including *Doratogonus montanus* and *Doratogonus natalensis*; two plant species including *Geranium natalense* and *Senecio exuberans*; one reptile species including *Bradypodion tilburyi*; and three vegetation types including Eastern Mistbelt Forest, Midlands Mistbelt Grassland and Thukela Thornveld.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Kromberg Plateau showing original area of ecosystem

171. KwaMncane North Plateau (KZN 63)

| | |
|--|---|
| Reference number | KZN 63 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Impendle LM and The Msunduzi LM |
| Original area of ecosystem | 7 000 ha |
| Remaining natural area of ecosystem (%) | 26% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 9 threatened or endemic plant and animal species including those listed below |

Geographical location

Merrivale (2930CA). Ecosystem delineated by the crest of the slope, with the southern boundary of the ecosystem extending down the slope.

Description

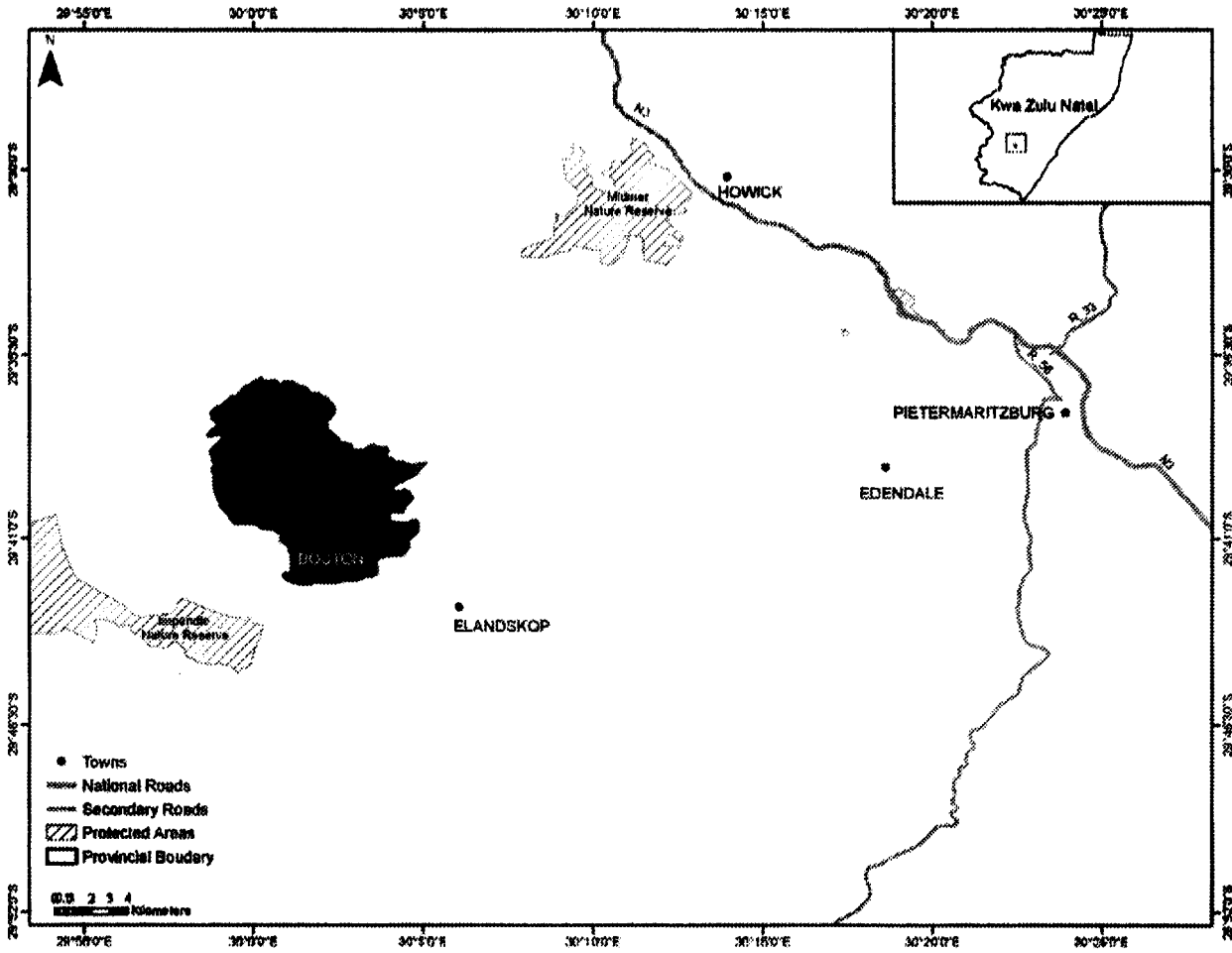
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; three plant species including *Hesperantha woodii*, *Kniphofia buchananii* and *Senecio exuberans*; two reptile species including *Bradypodion bourquini* and *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of KwaMncane North Plateau showing original area of ecosystem

172. KwaZulu-Natal Coastal Belt (CB 3)

| | |
|--|---|
| Reference number | CB 3 |
| Listed under Criterion | A1 |
| Biome | Indian Ocean Coastal Belt |
| Province | KwaZulu-Natal |
| Municipalities | Ethekwini MM, Vulamehlo LM, Umdoni LM, Umzumbe LM, Ezingoleni LM, Hibiscus Coast LM, Mkhambathini LM, uMhlathuze LM, uMlalazi LM, eNdongakusuka LM, KwaDukuza LM, Ndwedwe LM and Maphumulo LM |
| Original area of ecosystem | 633 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 3 endemic plant species |

Geographical location

Long, and in places broad, coastal strip along the KwaZulu-Natal coast from near Mtunzini in the north, past Durban to Margate and just short of Port Edward in the south.

Description

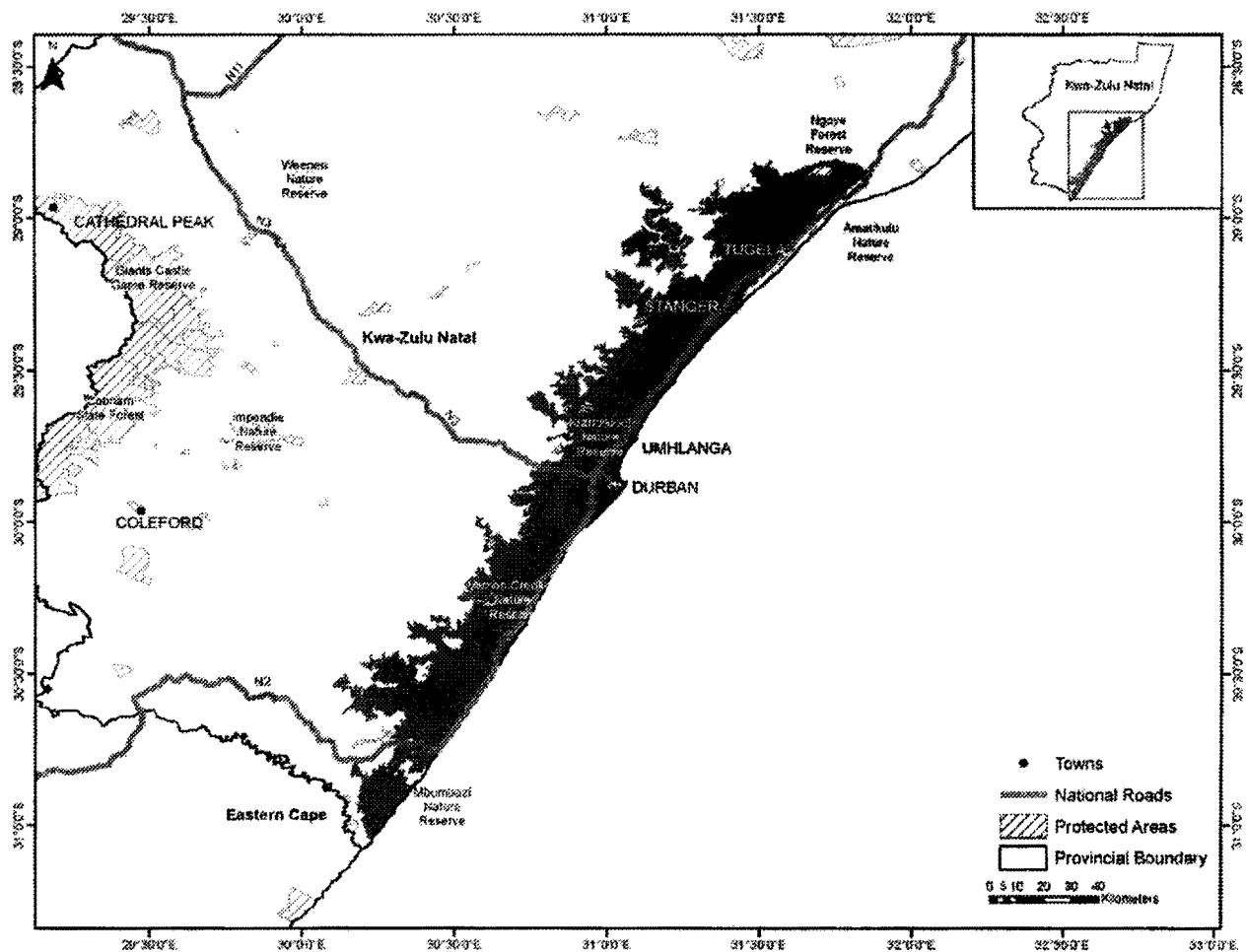
Highly dissected undulating coastal plains which presumably used to be covered to a great extent with various types of subtropical coastal forest. Some primary grassland dominated by *Themeda triandra* still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu-Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary *Aristida* grasslands, thickets and patches of coastal thornveld. At least three endemic plant species occur in the ecosystem.

Other information

Only a very small part of the ecosystem is protected in Ngoye, Mbumbazi and Vernon Crookes Nature Reserves.

Reference

Mucina, L., Scott-Shaw, R., Rutherford, M.C., Camp, K.G.T., Matthews, W.S., Powrie, L.W. & Hoare, D.B. 2006. Indian Ocean Coastal Belt. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 578-579. South African National Biodiversity Institute, Pretoria.



Location of KwaZulu-Natal Coastal Belt showing original area of ecosystem

173. Lebombo Scarp Forest (KZN 64)

| | |
|--|---|
| Reference number | KZN 64 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | KwaZulu-Natal |
| Municipality | Jozini LM |
| Original area of ecosystem | 1 000 ha |
| Remaining natural area of ecosystem (%) | 92% |
| Proportion of ecosystem protected | 86% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

2732AC. Ecosystem includes the Hlatikulu Forest Reserve and extends southwards to include scarp forest outside of the reserve.

Description

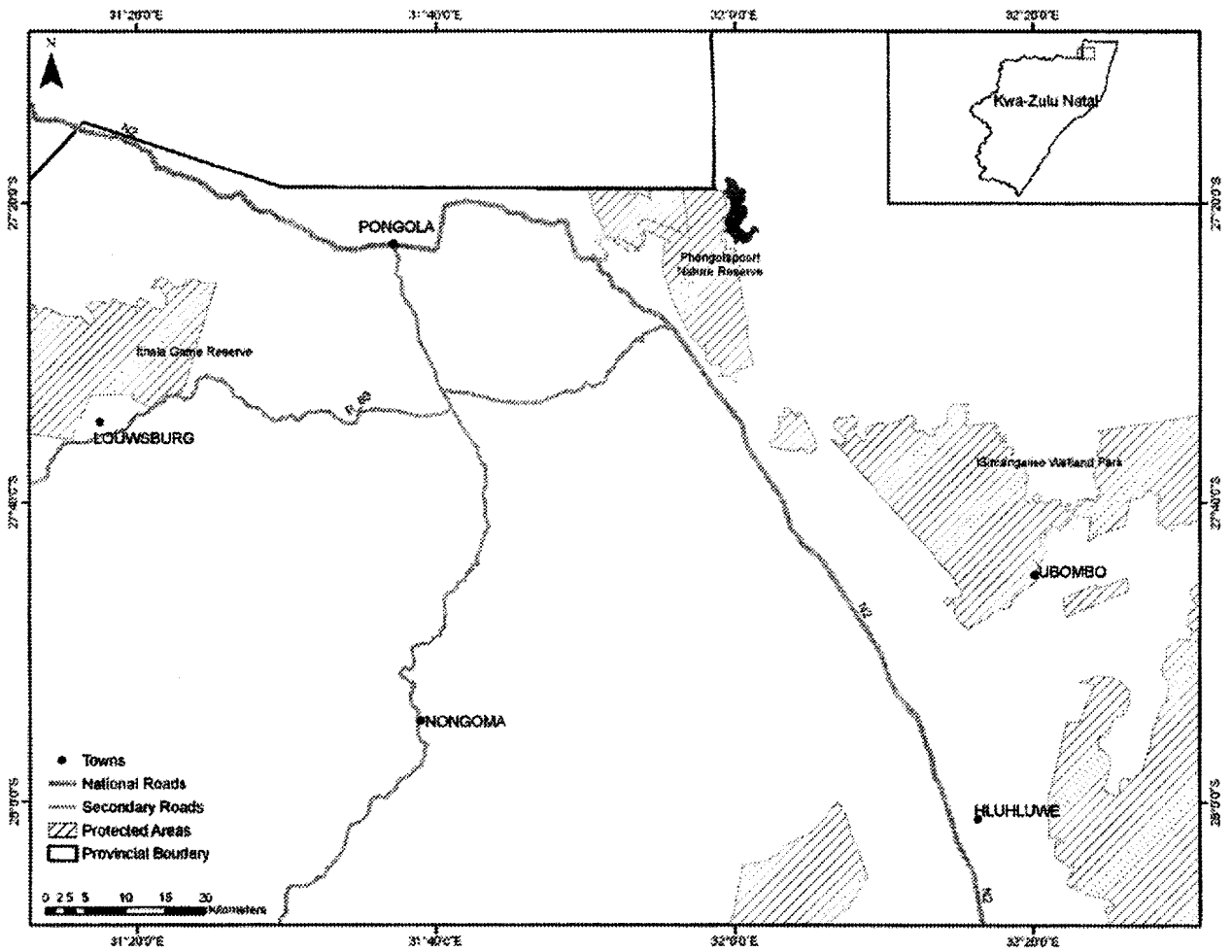
Key biodiversity features include two millipede species, *Centrobolus rugulosus* and *Doratogonus major*, one plant species, *Pachycarpus lebomboensis*; and three vegetation types including Eastern Scarp Forest, Lebombo Summit Sourveld and Southern Lebombo Bushveld.

Other Information

Approximately 86% of the ecosystem is protected in the Hlatikulu Forest Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Lebombo Scarp Forest showing original area of ecosystem

174. Lebombo Summit Sourveld (SVI 17)

| | |
|--|--|
| Reference number | SVI 17 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | KwaZulu-Natal and Mpumalanga |
| Municipalities | UPhongolo LM, Jozini LM, KZNDMA27 and Nkomazi LM |
| Original area of ecosystem | 12 000 ha |
| Remaining natural area of ecosystem (%) | 55% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 2 endemic plant species |

Geographical location

Localised high points on the crest of the Lebombo Mountains from Mbuzini (Mpumalanga) in the north to the Ubombo area immediately north of Mkuze River Gorge in the south. Also occurs in Mozambique in a very limited area north of Namaacha.

Description

Ridge plateaus and adjacent slightly sloping flanks covered with open, tall, sour, wiry grasslands, often dotted with low bushes and solitary savanna trees. At least two endemic plant species occur in this ecosystem.

Other information

Approximately 4% of the ecosystem is protected in the Mananga Cycad Colony, Ubombo Mountain, Phongolapoort and Hlatikulu Nature Reserves. A very small portion is also found in the private Masibekela Wetland Reserve.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward,

175. Legogote Sour Bushveld (SVI 9)

| | |
|--|--|
| Reference number | SVI 9 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | Mpumalanga and Limpopo |
| Municipalities | Maruleng LM, Highlands LM, Thaba Chweu LM, Mbombela LM, Umjindi LM, Bushbuckridge LM and MPDMA32 |
| Original area of ecosystem | 354 000 ha |
| Remaining natural area of ecosystem (%) | 53% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

Lower eastern slopes and hills of the northeastern escarpment from Mariepskop in the north through White River to the Nelspruit area extending westwards up the valleys of the Crocodile, Elands and Houtbosloop Rivers and terminating in the south in the Barberton area.

Description

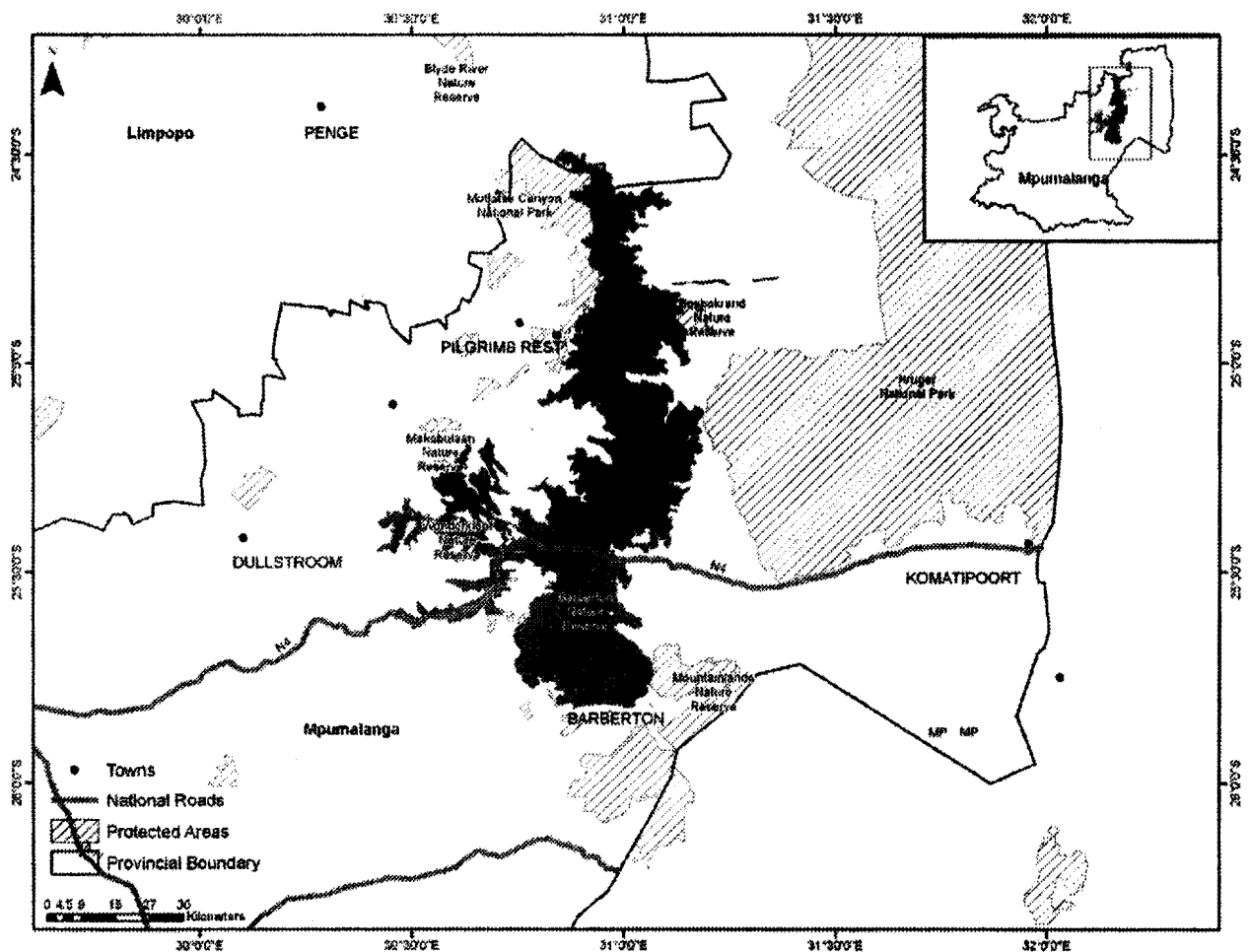
Gently to moderately sloping upper pediment slopes with dense woodland including many medium to large shrubs often dominated by *Parinari curatellifolia* and *Bauhinia galpinii* with *Hyperthelia dissoluta* and *Panicum maximum* in the undergrowth. Short thicket dominated by *Acacia ataxacantha* occurs on less rocky sites. Exposed granite outcrops have low vegetation cover, typically with *Englerophytum magalismontanum*, *Aloe petricola* and *Myrothamnus flabellifolia*. At least one endemic plant species occurs in the ecosystem.

Other information

Approximately 2% of the ecosystem protected mainly in the Bosbokrand and Barberton Nature Reserves and a further 2% is found in private reserves including the Mbesan and Kaapsehoop Reserves and Mondi Cycad Reserve.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 496-497. South African National Biodiversity Institute, Pretoria.



Location of Legogote Sour Bushveld showing original area of ecosystem

176. Leipoldtville Sand Fynbos (FFd 2)

| | |
|--|---|
| Reference number | FFd 2 |
| Listed under criteria | A1 and D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Matzikama LM, Cederberg LM, Bergrivier LM and WCDMA01 |
| Original area of ecosystem | 276 000 ha |
| Remaining natural area of ecosystem (%) | 47% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 45 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 33 endemic plant species |

Geographical location

On the coastal plains on either side of the Olifants River to Aurora and extending inland to the foot of the Graafwater Mountains and Piketberg. It also occurs in the Olifants River Valley from the Bulshoek Dam to The Baths (Keerom), with a gap between Klaver Vlei and Sandkop. Outliers are found scattered in the Swartveld from Het Kruis to the vicinity of Porterville.

Description

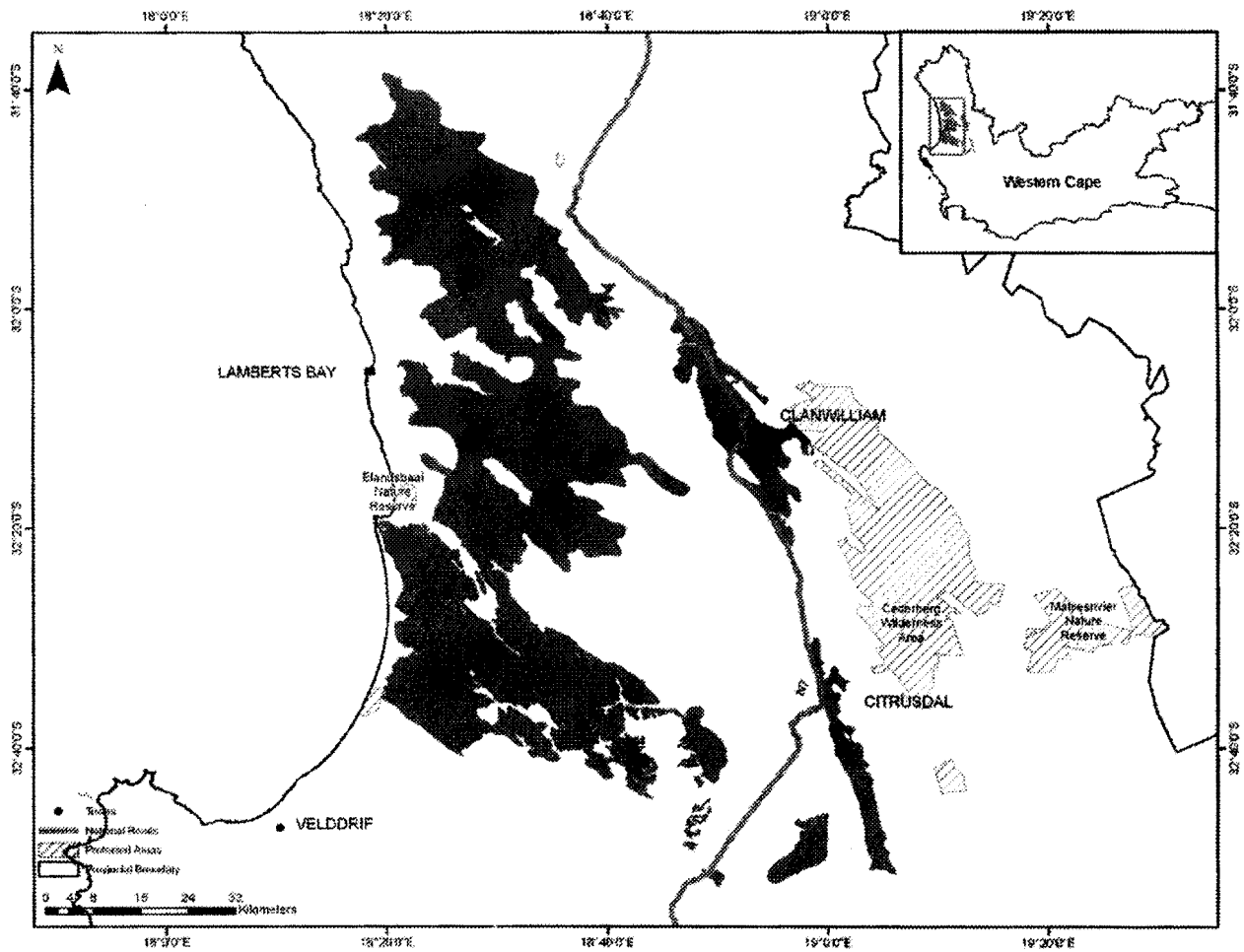
Plains, slightly rolling in places, covered with shrublands with an upper open stratum of emergent, 2–3 m tall shrubs in clumps. The vegetation matrix is formed by fairly dense, 1–1.2 m tall restiolands, with numerous medium tall to low shrubs scattered in between. Understorey with a conspicuous winter to spring herbaceous complement of annuals and geophytes occurs in years with good rain. Structurally, these are mainly restioid and asteraceous fynbos types, with localised patches of proteoid fynbos also present. This is a dry form of sand fynbos, lacking Ericaceae and with proteoid elements relatively rare. Sward communities, associated with grazing, are dominated by *Aizoon canariense* and *Tribolium echinatum*. At its northern (arid) boundary the sand fynbos structure becomes very diffuse and is progressively replaced by strandveld. At least 33 endemic plant species and 45 Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 137-138. South African National Biodiversity Institute, Pretoria.



Location of Leipoldtville Sand Fynbos showing original area of ecosystem

177. Loskop Mountainlands (MP 18)

| | |
|--|---|
| Reference number | MP 18 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | Mpumalanga |
| Municipalities | Emalahleni LM, Steve Tshwete LM and Thembisile LM |
| Original area of ecosystem | 46 000 ha |
| Remaining natural area of ecosystem (%) | 93% |
| Proportion of ecosystem protected | 3% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

Directly south-west of Loskop Dam Nature Reserve (2529AD, 2529CA, 2529CB and 2529CD). Rugged sandstone mountain bushveld delineated using landtypes, critical supporting catchments and the presence of important plant species.

Description

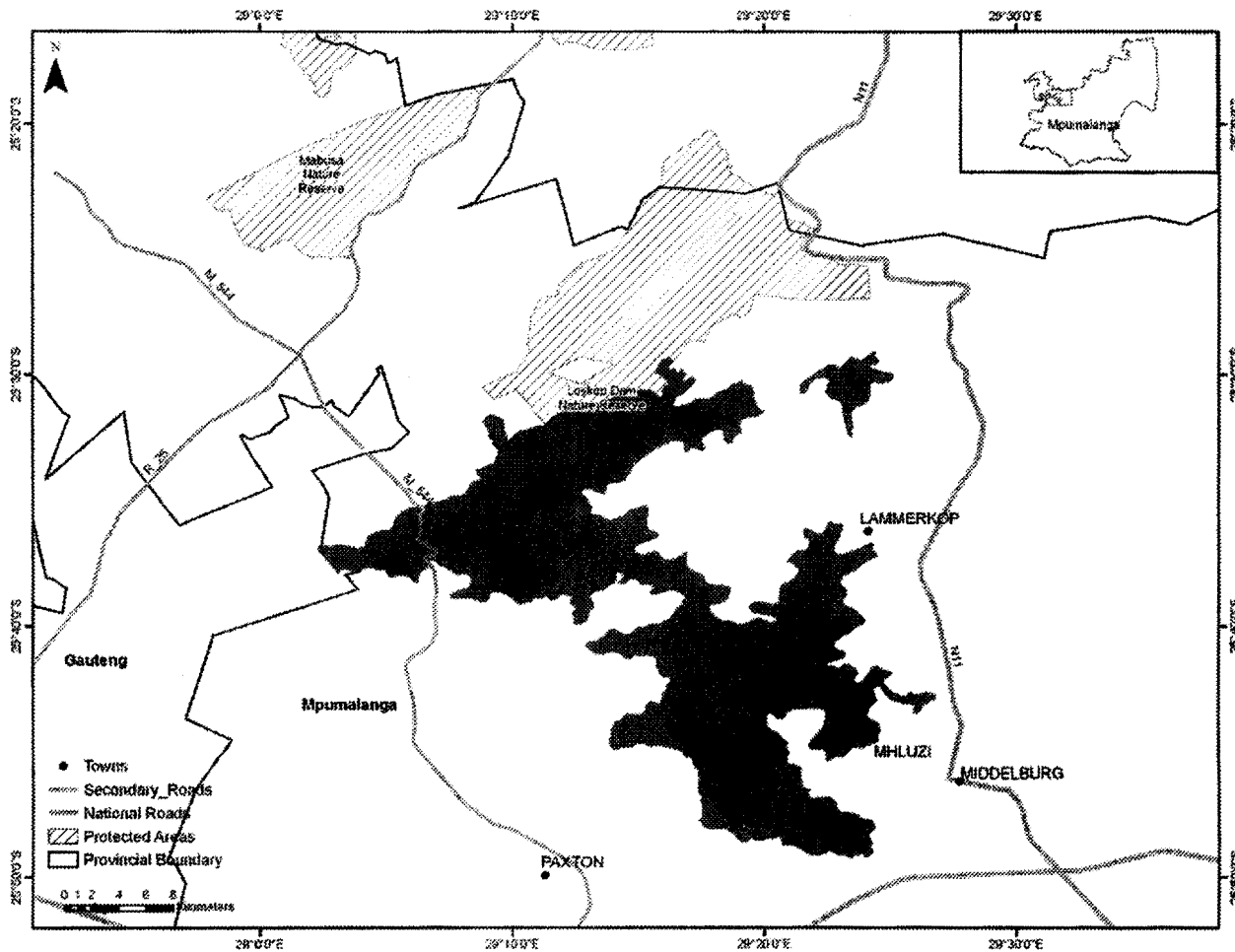
Key biodiversity features include three bird species including Blue Korhaan, Southern Ground Hornbill and Wattled Crane; one amphibian, *Pyxicephalus adspersus*; four plant species for example *Elephantorrhiza obliqua* var. *glabra* and *Frithia humilis*; and two vegetation types including Loskop Mountain Bushveld and Rand Highveld Grassland. The ecosystem includes important sub-catchments; it is an important escarpment corridor; and is important for grassland processes.

Other information

Approximately 3% of the ecosystem is protected in the Loskop Dam Nature Reserve.

Reference

Mpumalanga Tourism and Parks Agency & Department of Agriculture and Land Administration. 2007. Mpumalanga Biodiversity Conservation Handbook.



Location of Loskop Mountainlands showing original area of ecosystem

178. Louwsberg Mistbelt Grassland (KZN 65)

| | |
|--|---|
| Reference number | KZN 65 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | UPhongolo LM and Abaqulusi LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 35% |
| Proportion of ecosystem protected | 7% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Louwsberg (2731CB). Ecosystem delineated by the Northern Zululand Mistbelt Grassland.

Description

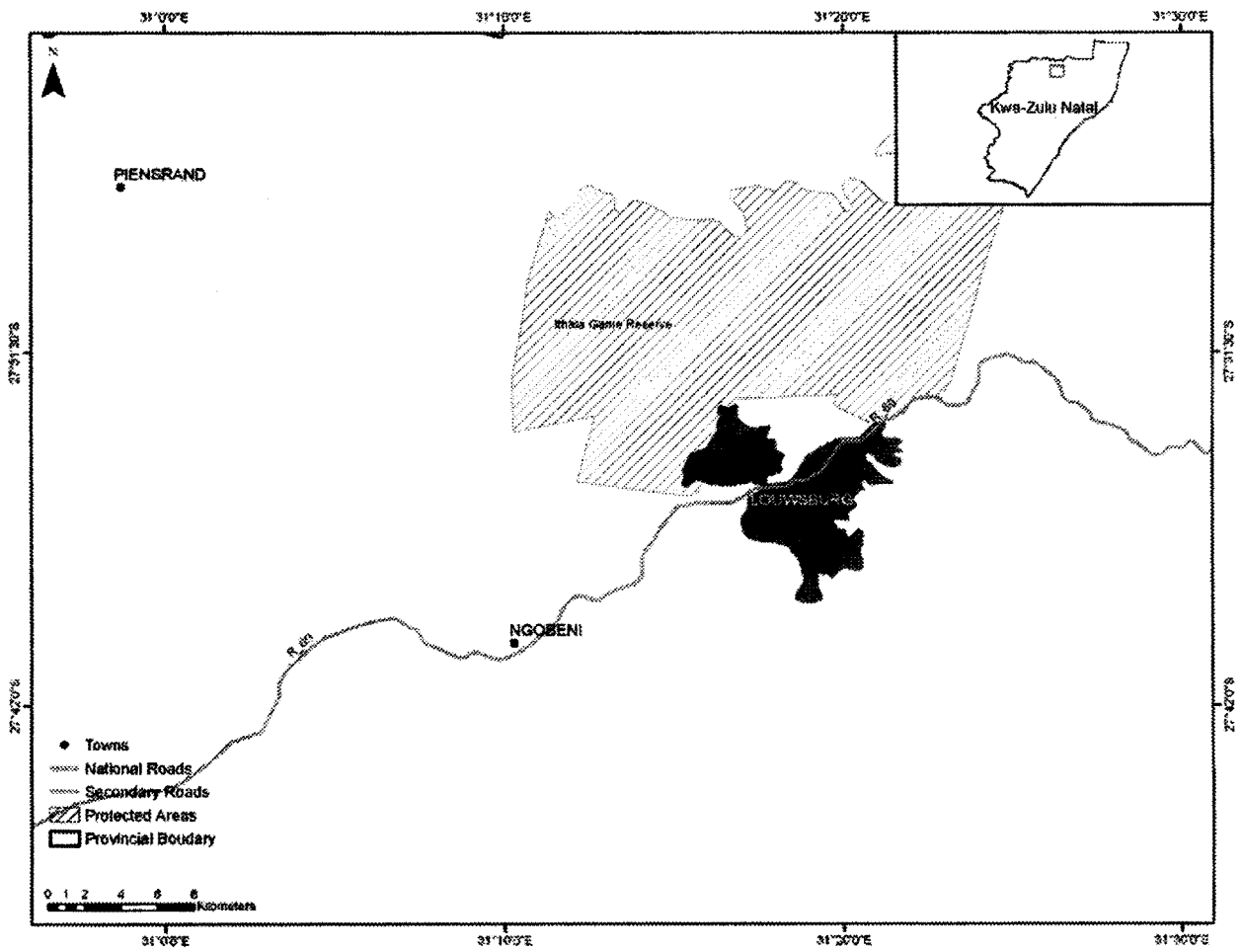
Key biodiversity features include one millipede species, *Doratogonus natalensis*; two plant species including *Brachystelma ngomense* and *Helichrysum ingomense*; and three vegetation types including Eastern Mistbelt Forest, Northern Zululand Mistbelt Grassland and Paulpietersburg Moist Grassland.

Other information

Approximately 7% of the ecosystem is protected in the Ithala Game Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Louwsberg Mistbelt Grassland showing original area of ecosystem

179. Low Escarpment Mistbelt Forest (FOz II4)

| | |
|--|---|
| Reference number | FOz II4 |
| Listed under Criterion | A2 |
| Biome | Forest |
| Provinces | Mpumalanga and KwaZulu-Natal |
| Municipalities | Maluti a Phofung LM, Phumelela LM, Emnambithi/Ladysmith LM, Okhahlamba LM, Endumeni LM, Newcastle LM, Utrecht LM, Dannhauser LM, eDumbe LM, Abaqulusi LM, Ulundi LM, Mkhondo LM and Seme LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 5 000 ha |
| Proportion of ecosystem protected | 15% of remaining area |
| Known number of species of special concern | |

Geographical location

Low Escarpment Mistbelt Forests (previously the Northern KwaZulu-Natal Mistbelt Forests or Eastern Midlands Forests) are found along the low Drakensberg escarpment between Van Rheenen's Pass (near Harrismith) and Piet Retief as well as in southern Mpumalanga and northern KwaZulu-Natal (Vryheid region). The ecosystem forms a widely scattered archipelago of isolated forest patches.

Description

High, multi-layered forest (approximately 15–20 m tall), comprising two layers of trees, a full, dense understorey and a very well developed herb layer. Species are predominantly single stemmed. These forests show a mix of coarse grain, canopy gap or disturbance driven dynamics and fine-grained, regeneration characteristics. These forests are usually dominated by tall-grown trees such as *Podocarpus latifolius*, *P. falcatus*, and *Dombeya burgessiae* or by low-grown types such as *Xymalos monospora*, *Greyia sutherlandii*, and *Canthium mundianum*. The ecosystem is relatively species-rich. A few forests, such as Ngome Forest, are exceptionally rich in orchids. An important characteristic differentiating this ecosystem from the Eastern Mistbelt Forests is the presence of many elements typical of Scarp Forests.

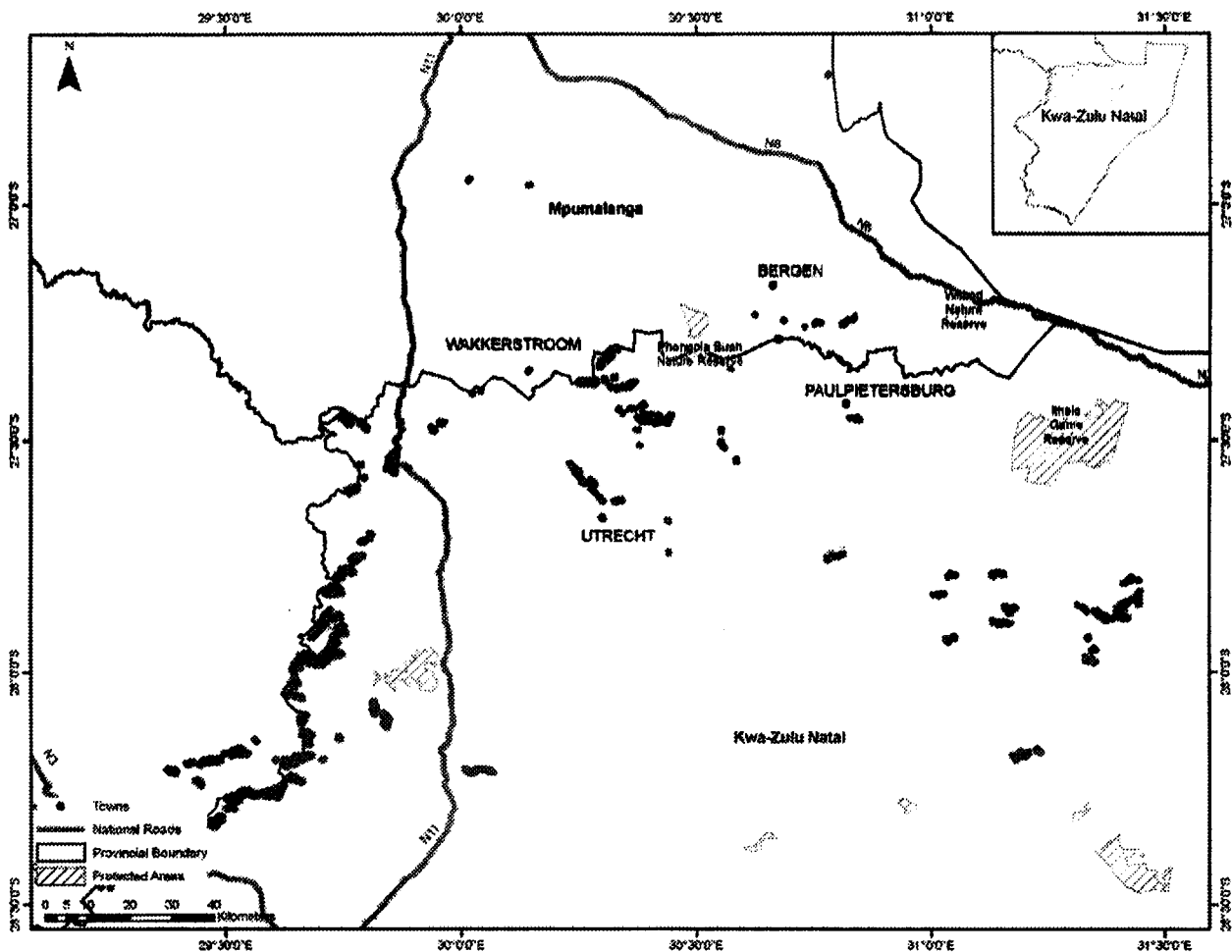
Other Information

Approximately 15% of the ecosystem is protected.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 599. South African National Biodiversity Institute, Pretoria.

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.



Location of Low Escarpment Mistbelt Forest (area of ecosystem enlarged for visibility at this scale)

180. Lowveld Riverine Forest (FOa 1)

| | |
|--|--|
| Reference number | FOa 1 |
| Listed using Criterion | A2 |
| Biome | Forest |
| Provinces | KwaZulu-Natal, Mpumalanga and Limpopo |
| Municipalities | Umhlabuyalingana LM, Jozini LM, The Big 5 False Bay LM, Maruleng LM, Musina LM, Mutale LM, Thulamela LM, Lephalale LM, Thaba Chweu LM, Bushbuckridge LM, KZNDMA27 and LIMDMA33 |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 11 000 ha |
| Proportion of ecosystem protected | 67% of remaining area |
| Known number of species of special concern | Data not available |

Geographical location

This typically hydro-pedologic azonal forest occurs imbedded within the Lowveld areas of the Savanna Biome, where it is found on alluvia of rivers (from the Limpopo River in the north to the Amatigulu River in Zululand in the south). The largest and best-developed patches are found in Maputaland and in the Mpumalanga and Limpopo Lowveld. Impoverished, albeit floristically interesting, riparian forests occur on low slopes and at the foot of the Northern Escarpment bordering the Lowveld in Mpumalanga and Limpopo Province.

Description

Tall, gallery forests fringing stretches of major rivers on nutrient-laden sediments brought by summer floods. This forest provides a unique habitat and has high biodiversity value. These forests provide an important food source (browse and fig trees) and serves as a heat avoidance microhabitat for savanna dwelling animals and shelter for riverine animals. An important ecosystem function is provided by the root system, which helps to bind soil promoting stream bank stabilisation and preventing erosion. There is no published data specifically devoted to species richness and species turnover patterns in these forests.

Other information

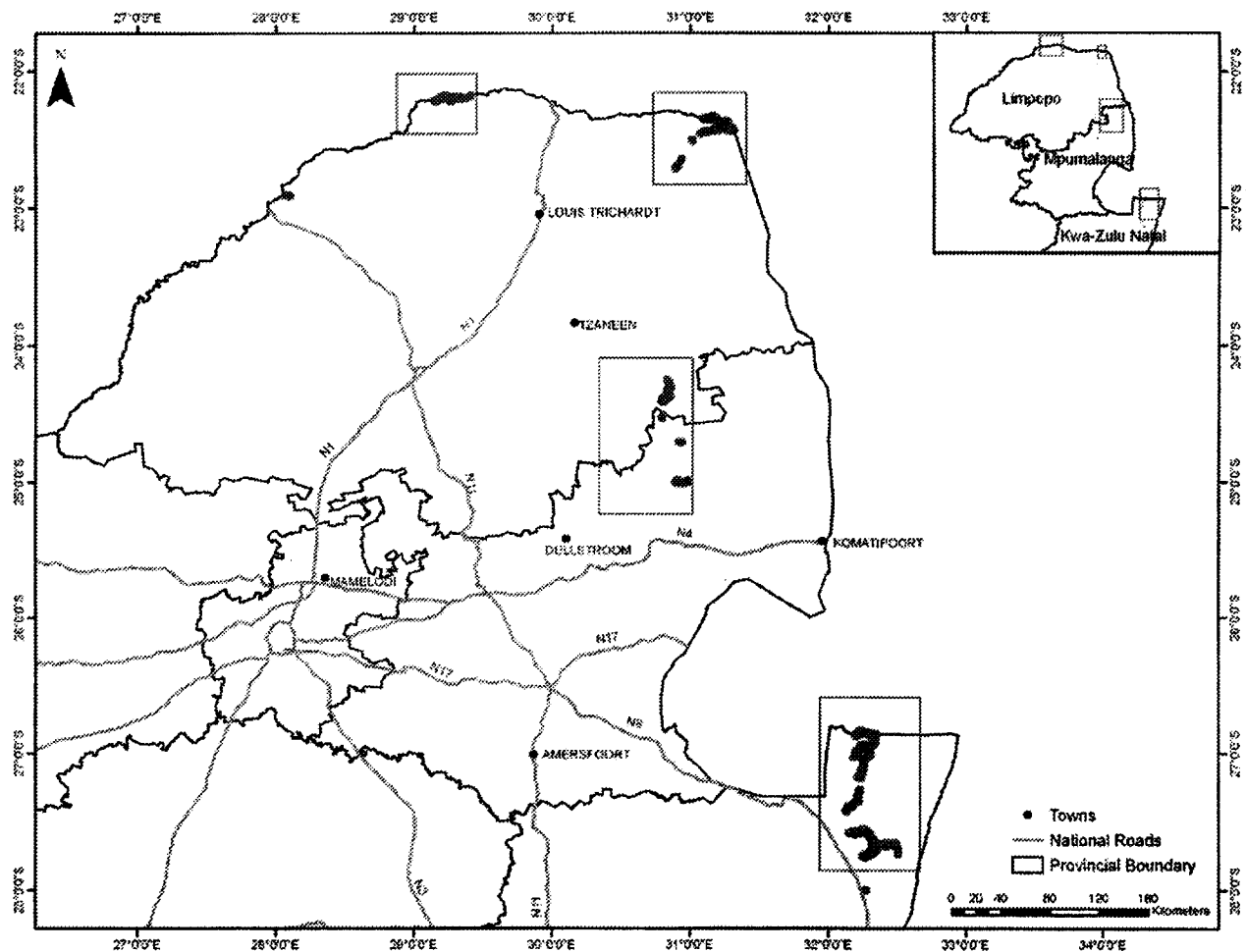
Approximately 67% of the ecosystem is protected in Kruger and Mapungubwe National Parks, isiMangaliso Wetland Park, Ndumo and Mkuze Game Reserves, Mlawula and Blyde River Canyon National Park.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland*.

Strelitzia 19: 607. South African National Biodiversity Institute, Pretoria.

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.



Location of Lowveld Riverine Forest (area of ecosystem enlarged for visibility at this scale)

181. Mafikeng Bushveld (SVk 1)

| | |
|--|---|
| Reference number | SVk 1 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Province | North West |
| Municipalities | Moshaweng LM, Ratlou LM, Tswaing LM, Mafikeng LM, Ramotshere Moiloa LM, Kagisano LM, Naledi LM, Greater Taung LM and Molopo LM |
| Original area of ecosystem | 1 438 000 ha |
| Remaining natural area of ecosystem (%) | 60% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

West of Mafikeng and south of the Botswana border westwards to around Vergeleë, southwards to Plet Plessis and Setlagole.

Description

Well developed tree and shrub layers, dense stands of *Terminalia sericea*, *Acacia luede-ritzii* and *A. erioloba* in certain areas. Shrubs include *A. karroo*, *A. hebeclada* and *A. mellifera*, *Dichrostachys cinerea*, *Grewia flava*, *G. retinervis*, *Rhus tenuinervis* and *Ziziphus mucronata*. Grass layer is also well developed.

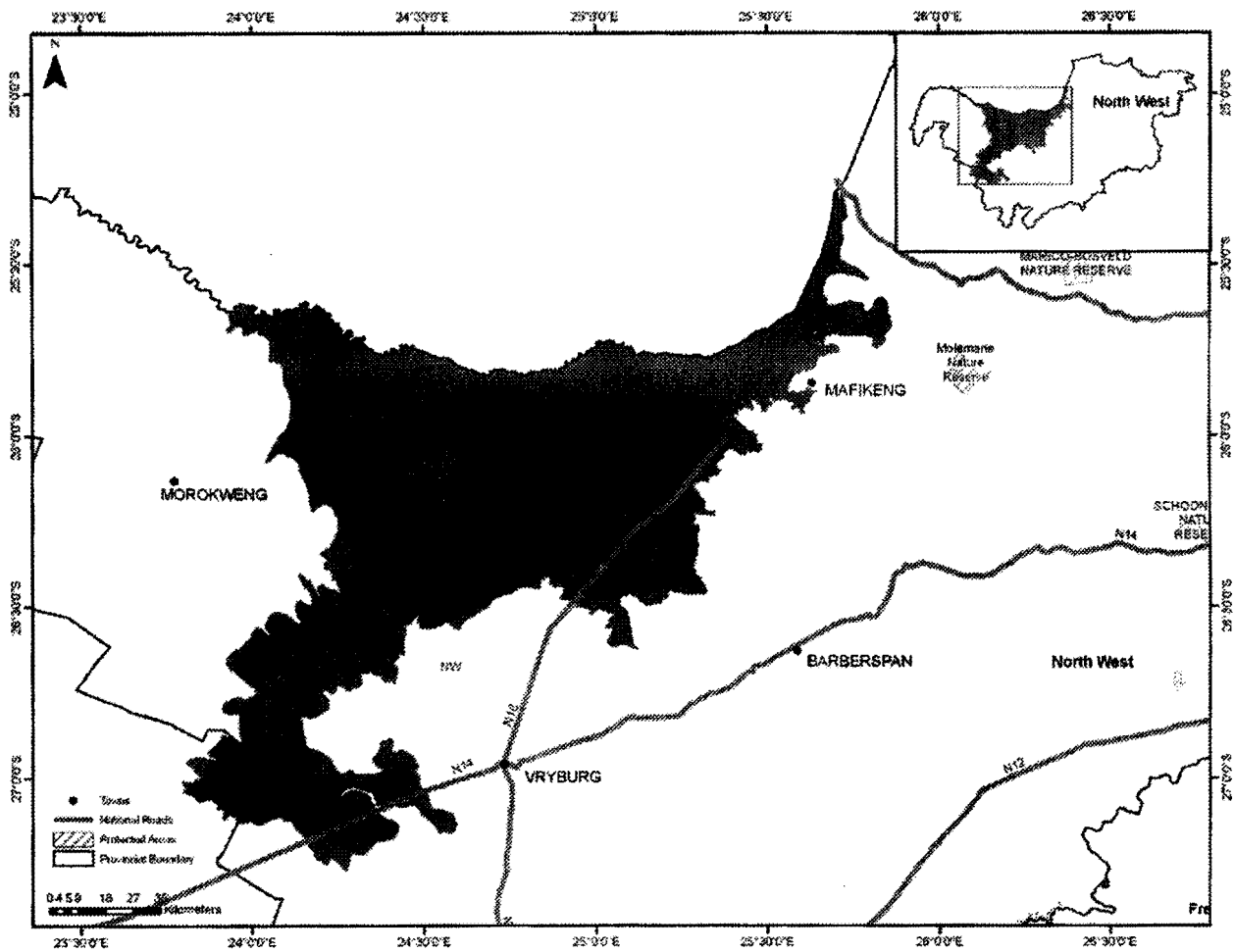
Other information

The ecosystem is not protected but a very small area is found in the Mmabatho Recreation Area.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward,

R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 514-515. South African National Biodiversity Institute, Pretoria.



Location of Mafikeng Bushveld showing original area of ecosystem

182. Magaliesberg Hekpoort Mountain Bushveld (GP 16)

| | |
|--|---|
| Reference number | GP 16 |
| Listed under Criterion | F |
| Biome | Grassland, Savanna and Forest |
| Province | Gauteng |
| Municipality | Mogale City LM |
| Original area of ecosystem | 6 000 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

West Rand of Gauteng including Hekpoort (2527DC). Ecosystem delineated by the Magaliesberg ridge system and associated koppies.

Description

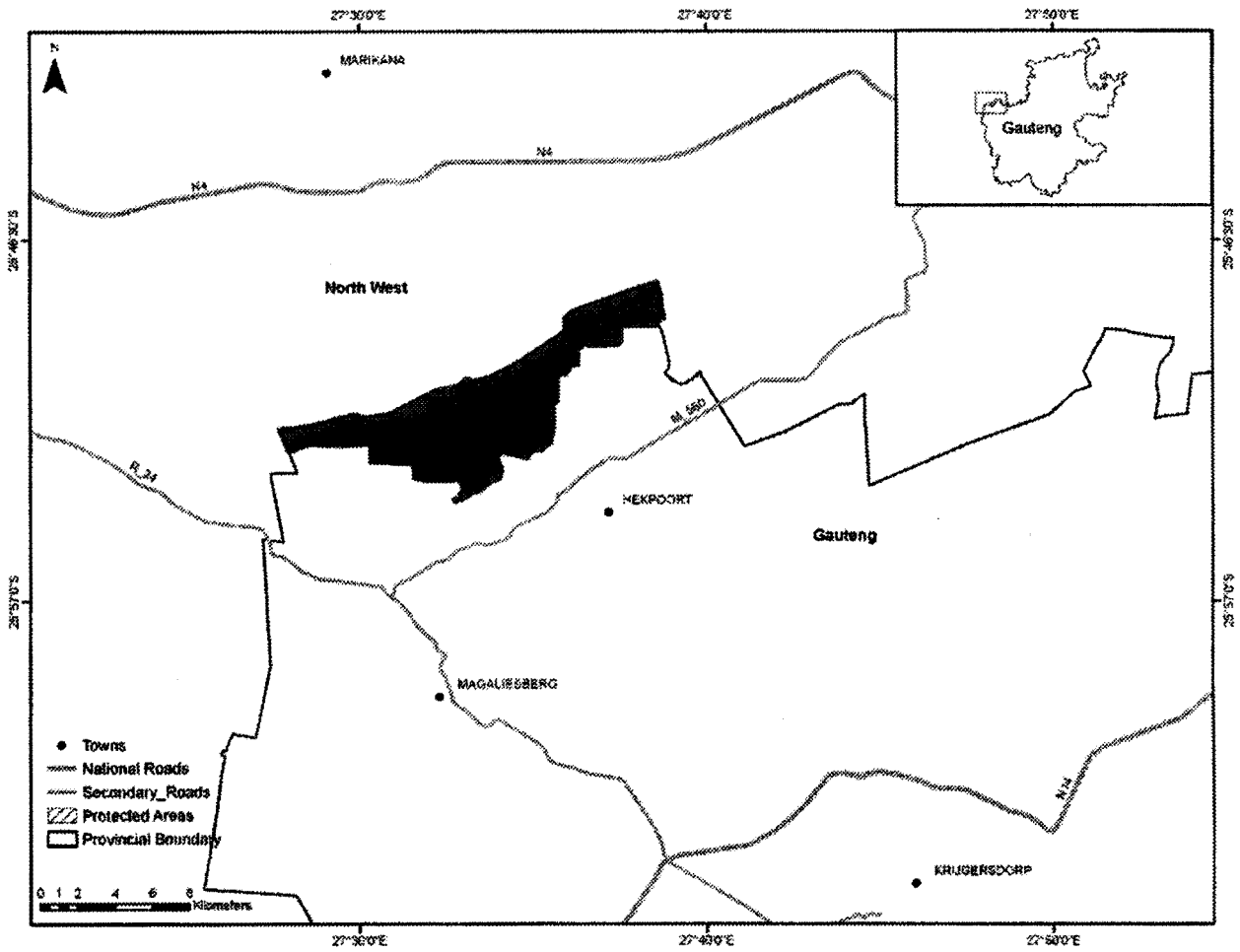
Key biodiversity features include Red or Orange Listed plants for example *Aloe peglerae*, *Frithia pulchra*; Red or Orange Listed birds for example Cape Vulture; and four vegetation types including Gold Reef Mountain Bushveld, Moot Plains Bushveld, Northern Afrotropical Forest, and Waterberg-Magaliesberg Summit Sourveld. Various drainage lines or non-perennial rivers are key features in the ecosystem.

Other information

The ecosystem is not protected.

Reference

Gauteng C-Plan Version 2. 2006. Gauteng Department of Agriculture, Conservation and Environment.



Location of Magaliesberg Hekpoort Mountain Bushveld showing original area of ecosystem

183. Majuba Mistbelt Forest and Moist Grassland (KZN 66)

| | |
|--|---|
| Reference number | KZN 66 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | Newcastle LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 68% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 2 threatened or endemic plant species including those listed below |

Geographical location

Newcastle North (2729DB) and Volksrust (2729BD). Ecosystem delineated by the Ouhoutspruit River in the north west and the Hleleqwa River in the south west.

Description

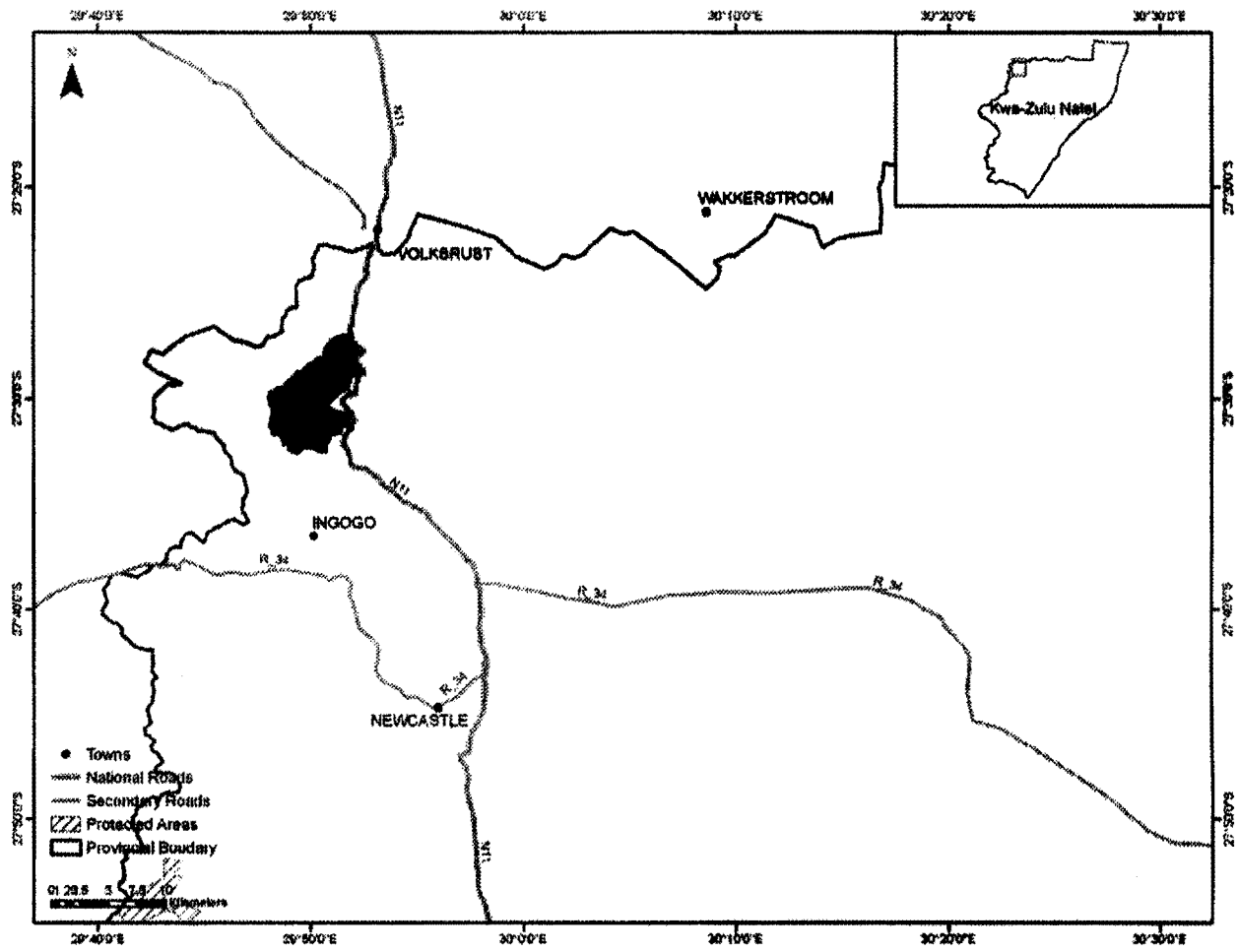
Key biodiversity features include two plant species including *Holothrix majubensis* and *Selago longicalyx*; and three vegetation types including Amersfoort Highveld Clay Grassland, Low Escarpment Moist Grassland and Eastern Mistbelt Forest.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Majuba Miatbelt Forest and Moist Grassland showing original area of ecosystem

184. Maputaland Wooded Grassland (CB 2)

| | |
|--|--|
| Reference number | CB 2 |
| Listed under Criterion | A1 |
| Biome | Indian Ocean Coastal Belt |
| Province | KwaZulu-Natal |
| Municipalities | Umhlabuyalingana LM, Mtubatuba LM, Mbonambi LM, uMhlathuze LM and KZNDMA27 |
| Original area of ecosystem | 99 000 ha |
| Remaining natural area of ecosystem (%) | 53% |
| Proportion of ecosystem protected | 17% of original area |
| Known number of species of special concern | 5 endemic plant species |

Geographical location

In South Africa from the Mozambique border near KwaNgwanase southwards to Sileza, Sibaya, Mseleni, Mbaz-wana, Sodwana Bay, Ozabeni, eastern and western shores of Lake St Lucia, KwaMbonambi and as far south as near Richards Bay.

Description

Generally flat landscape of the Maputaland coastal plain supporting coastal sandy grasslands rich in geoxylic suffrutices, dwarf shrubs, small trees and very rich herbaceous flora. Excluded from the ecosystem are the many interdune depression wetlands and hygrophilous grasslands neighbouring the wooded grasslands. At least five endemic plant species occur in the ecosystem.

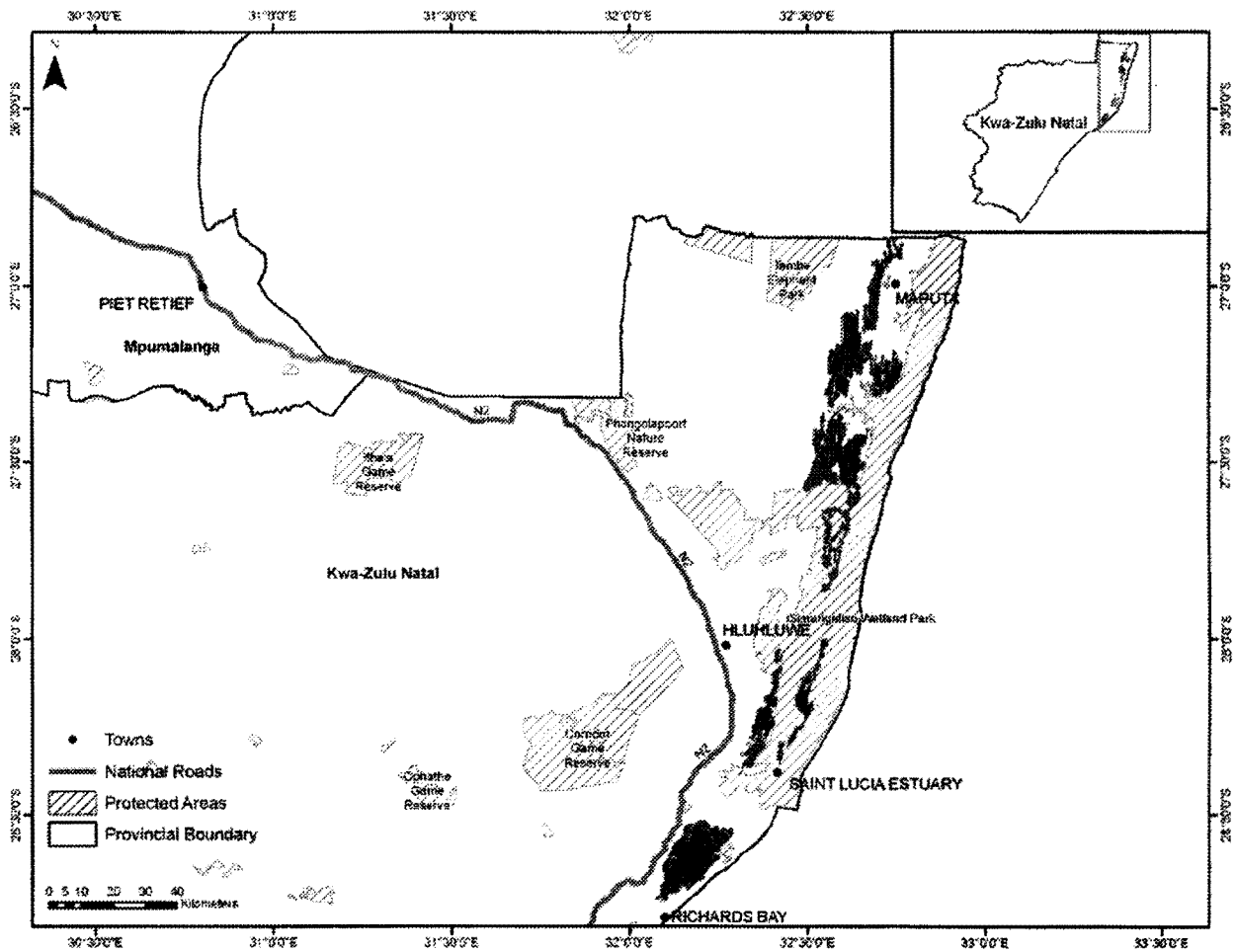
Other information

Approximately 17% of the ecosystem is protected mainly in the isiMangaliso Wetland Park.

Reference

Mucina, L., Scott-Shaw, R., Rutherford, M.C., Camp, K.G.T., Matthews, W.S., Powrie, L.W. & Hoare, D.B. 2006. Indian Ocean Coastal Belt. In: L. Mucina & M.C. Rutherford (eds). The

Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 577-578. South African National Biodiversity Institute, Pretoria.



Location of Maputaland Wooded Grassland showing original area of ecosystem

185. Marikana Thornveld (SVcb 6)

| | |
|--|--|
| Reference number | SVcb 6 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | North West and Gauteng |
| Municipalities | Nokeng tsa Taemane LM, Kungwini LM, Local Municipality of Madibeng, Rustenburg LM and City of Tshwane MM |
| Original area of ecosystem | 253 000 ha |
| Remaining natural area of ecosystem (%) | 55% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

Occurs on plains from the Rustenburg area in the west, through Marikana and Brits to the Pretoria area in the east.

Description

Open Acacia karroo woodland, occurring in valleys and slightly undulating plains, and some lowland hills. Shrubs are more dense along drainage lines, on termitaria and rocky outcrops or in other habitat protected from fire.

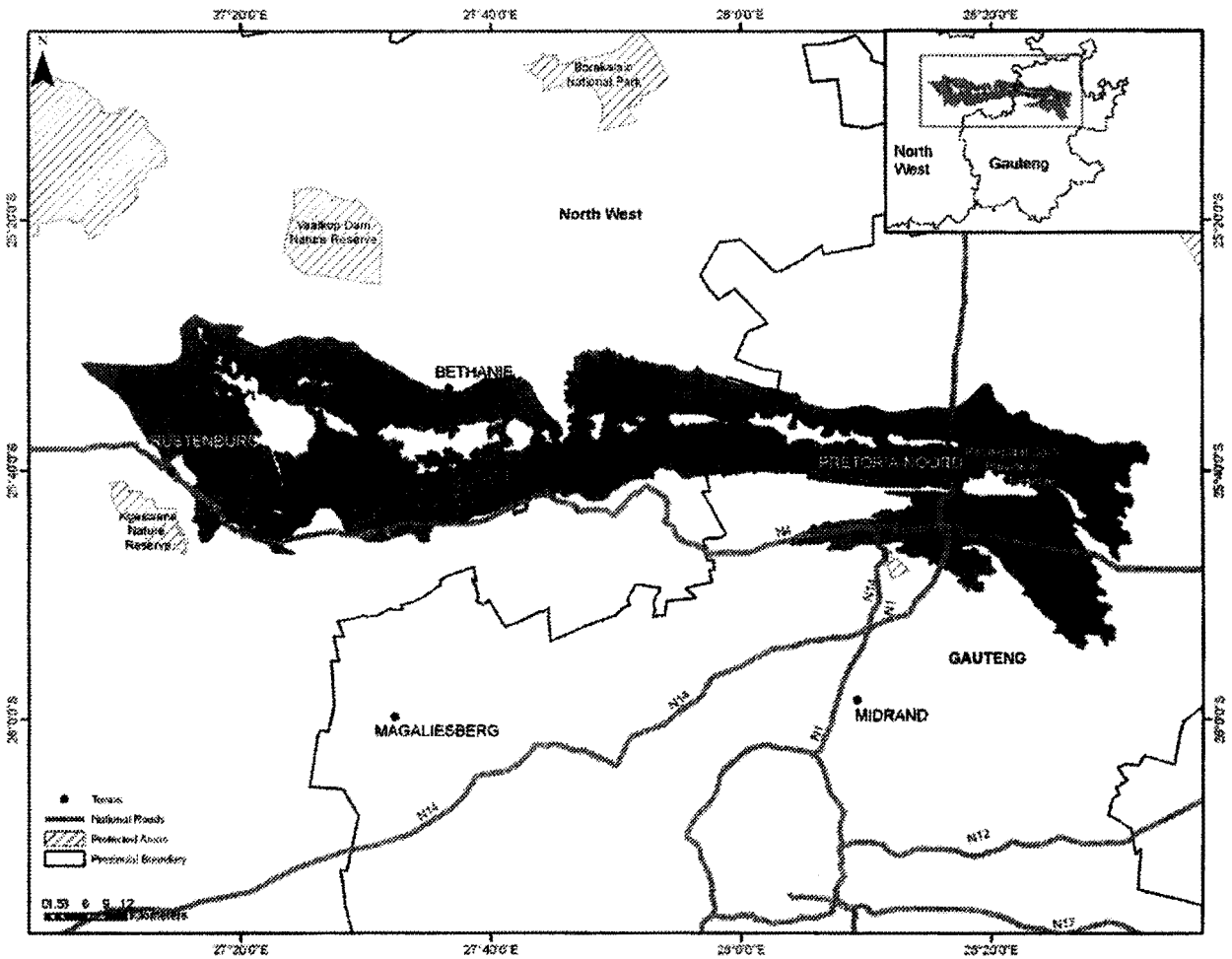
Other Information

The ecosystem is found in, for example, Magaliesberg Nature Area and in other reserves, mainly in De Onderstepoort Nature Reserve.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward,

R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 463-464. South African National Biodiversity Institute, Pretoria.



Location of Marikana Thornveld showing original area of ecosystem

186. Marwaqa (KZN 67)

| | |
|--|---|
| Reference number | KZN 67 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Ingwe LM and Kwa Sani LM |
| Original area of ecosystem | 4 000 ha |
| Remaining natural area of ecosystem (%) | 99% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Himeville (2929DA). Ecosystem includes lowlands and wetlands associated with crane nesting sites. Ecosystem delineated by topography and refined by excluding peripheral plantations and urban settlements. It includes cultivated fields, which are important habitat for crane foraging, and manmade impoundments, which have associated wetlands important for flufftails.

Description

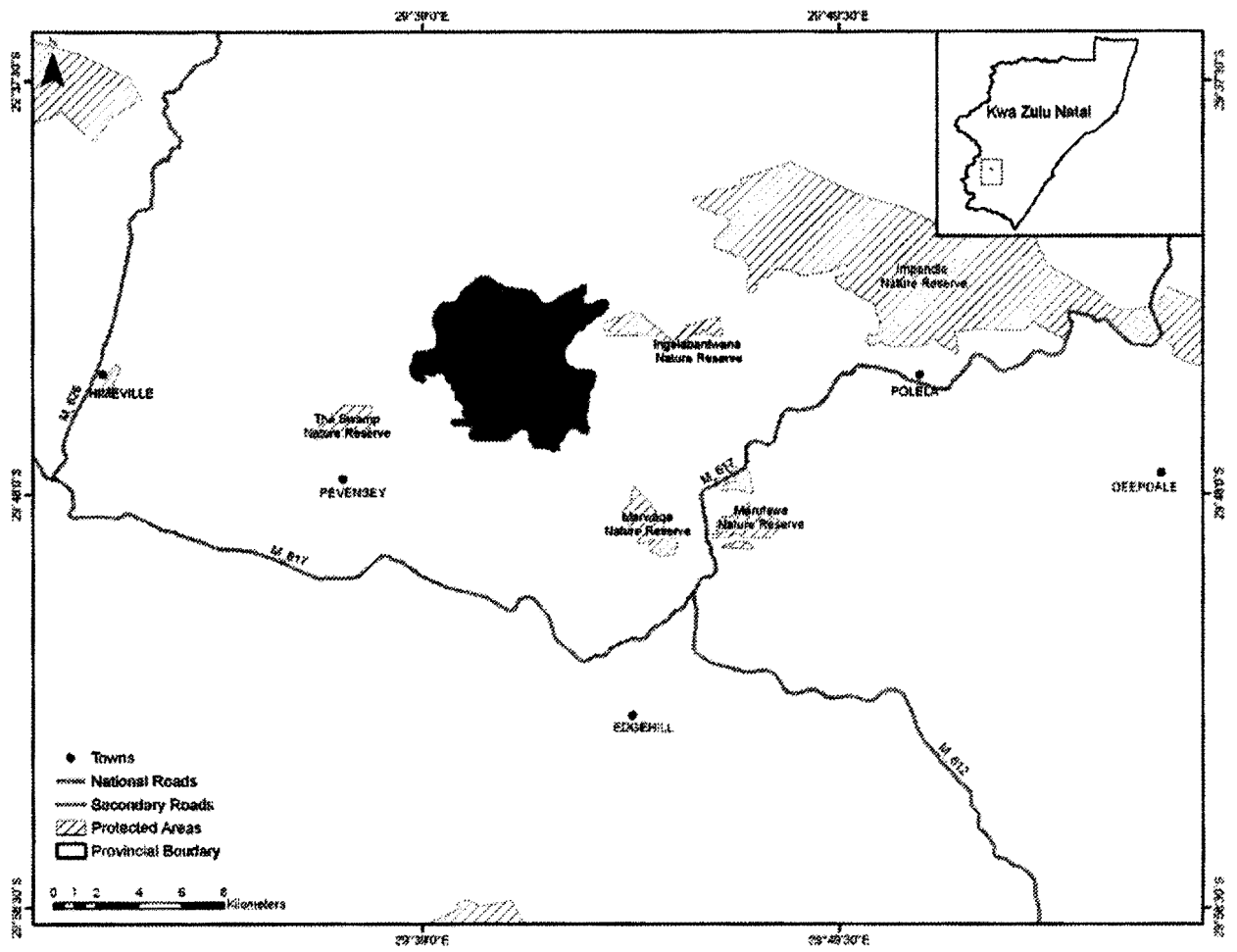
Key biodiversity features include one bird species, the Wattled Crane; one mammal species, the Oripi; two millipede species including *Centrobolus tricolor*, *Doratogonus montanus*; two plant species for example *Kniphofia brachystachya*; one reptile species, *Bradypodion thamnobates*; and four vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest, Mooi River Highland Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Marwaqa showing original area of ecosystem

187. Michaelhouse Grasslands (KZN 68)

| | |
|--|--|
| Reference number | KZN 68 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | uMngeni LM |
| Original area of ecosystem | 13 000 ha |
| Remaining natural area of ecosystem (%) | 18% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 13 threatened or endemic plant and animal species including those listed below |

Geographical location

Howick (2930AC). Ecosystem confined to the Midlands Mistbelt Grassland. Ecosystem delineated by the Fort Nottingham Lowland Grassland threatened ecosystem (KZN 52) in the west; by the Easingwold Grasslands threatened ecosystem (KZN 48) in the north; by the crest of the Dargle Ridge in the south; and by the contours defining the base of the hills upon which the N3 is situated in the east.

Description

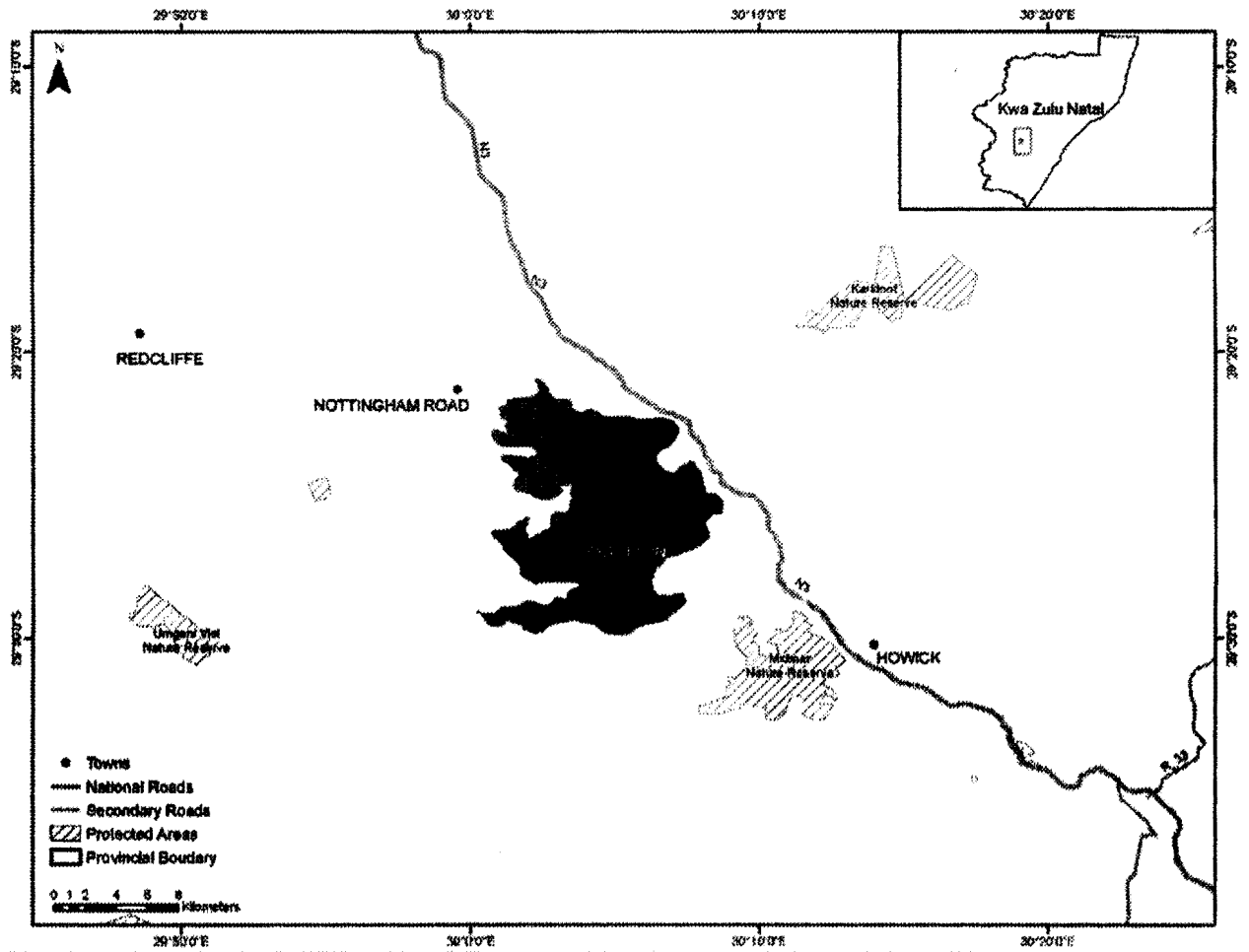
Key biodiversity features include one amphibian species, *Afrivalus spinifrons intermedius*; one bird species, the Wattled Crane; five millipede species including *Centrobolus decoratus*, *Centrobolus tricolor*, *Doratogonus hoffmani*, *Doratogonus montanus* and *Doratogonus natalensis*; five plant species including *Geranium natalense*, *Kniphofia brachystachya*, *Kniphofia buchananii*, *Plectranthus rehmannii*, *Senecio exuberans*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Michaelhouse Grasslands showing original area of ecosystem

188. Midlands Mistbelt Grassland (Gs 9)

| | |
|--|--|
| Reference number | Gs 9 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | KwaZulu-Natal and Eastern Cape |
| Municipalities | Mbizana LM, Ntabankulu LM, Qaukeni LM, Port St Johns LM, Umzimvubu LM, UMuziwabantu LM, uMshwathi LM, uMngeni LM, Mooi Mporana LM, Impendle LM, The Msunduzi LM, Mkhambathini LM, Richmond LM, Nqutu LM, Msinga LM, Umvoti LM, Ulundi LM, Nkandla LM, Ndwedwe LM, Maphumulo LM, Ingwe LM, Ubuhlebezwe LM and Umzimkhulu LM |
| Original area of ecosystem | 658 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 9 endemic plant species |

Geographical location

KwaZulu-Natal Midlands, scattered in a broad belt in the form of several major patches including Melmoth-Babanango area, Kranskop and Greytown, Howick Lions River, Karkloof, Balgowan, Cedara, Edendale, Hilton, Richmond, the Ixopo-Highflats area, Mount Malowe in the Umzimkhulu enclave of the Eastern Cape Province and the Harding-Weza area. The south western most section in the Eastern Cape Province falls in the Bulembu, Gxwaleni, Longweni and Flagstaff areas.

Description

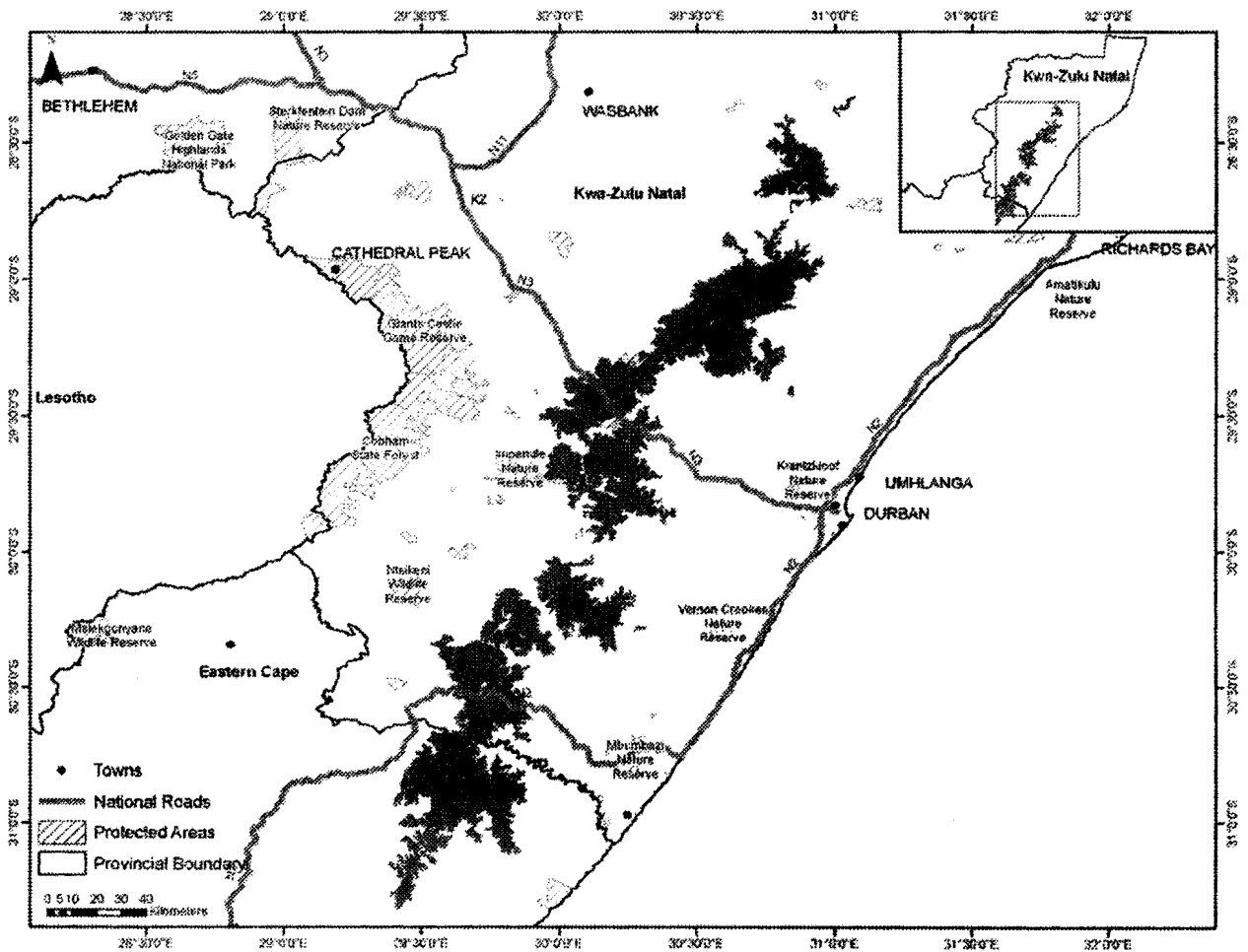
Hilly and rolling landscape mainly associated with a discontinuous east-facing scarp formed by dolerite intrusions (south of the Thukela River). Dominated by forb-rich, tall, sour *Themeda triandra* grasslands transformed by the invasion of native 'Ngongoni grass (*Aristida junciformis* subsp. *junciformis*). Only a few patches of the original species-rich grasslands remain.

Other information

Less than 1% is protected in Ngeli Nature Reserve, Impendle Nature Reserve, Blinkwater Nature Reserve, Qudeni Nature Reserve, Doreen Clark Nature Reserve, Karkloof Nature Reserve and Queen Elizabeth Park.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 422-423. South African National Biodiversity Institute, Pretoria.



Location of Midlands Mistbelt Grassland showing original area of ecosystem

189. Midmar Valley (KZN 69)

| | |
|--|--|
| Reference number | KZN 69 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | uMngeni LM |
| Original area of ecosystem | 14 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 20% of original area |
| Known number of species of special concern | 13 threatened or endemic plant and animal species including those listed below |

Geographical location

Merrivale (2930CA) and Howick (2930AC). Ecosystem delineated, in the south, by the ridge of the mountains to the south of the Midmar Valley; in the east by a minor ridge running down to the N3, along the ridge to Catoridge and up the opposing minor ridge; in the north by contours along the top of the ridge towards Lions River, down to the contour indicating the edge of the Midmar floodplain in the; and in the west along the floodplain contour and the Gqishi River, until meeting the southern boundary of the ecosystem and including the Mount Ashley Ridge.

Description

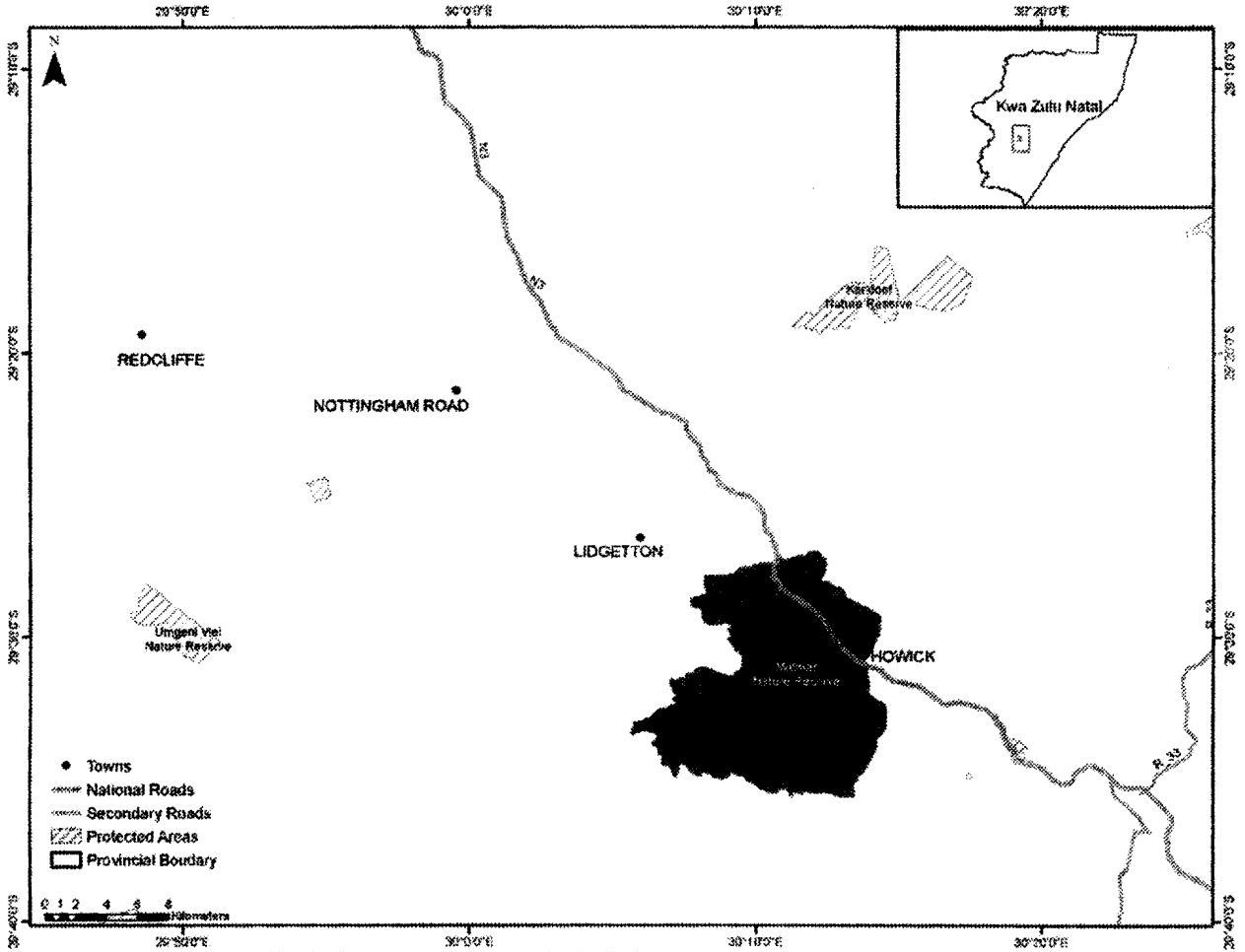
Key biodiversity features include one bird species, the Wattled Crane; one mammal species, the Oribi; three millipede species including *Centrobolus tricolor*, *Doratogonus cristulatus* and *Doratogonus montanus*; five plant species including *Dierama reynoldsii*, *Gerbera aurantiaca*, *Kniphofia buchananii*, *Plectranthus rehmannii* and *Senecio exuberans*; three reptile species including *Bradypodion bourquini*, *Bradypodion thamnobates* and *Scelotes bourquini*; and two vegetation types including Midlands Mistbelt Grassland and Southern KwaZulu-Natal Moist Grassland.

Other information

About 20% of the ecosystem is protected in the Midmar Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Midmar Valley showing original area of ecosystem

190. Montagu Shale Renosterveld (FRs 7)

| | |
|--|--|
| Reference number | FRs 7 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Breede River/Winelands LM, Swellendam LM, Kannaland LM, Hessequa LM, Oudtshoorn LM and WCDMA02 |
| Original area of ecosystem | 164 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 14 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 18 endemic plant species |

Geographical location

Patches in the western Little Karoo south of the Waboomberg and Warmwaterberg and south of the Anysberg and Klein Swartberg; along the northern foothills of the Langeberg and the southern foothills of the Anysberg, Klein Swartberg, Rooiberg and Gamkaberg; from The Koo in the west to Calitzdorp and Cloete's Pass in the east. The largest patch occurs between Montagu and Barrydale.

Description

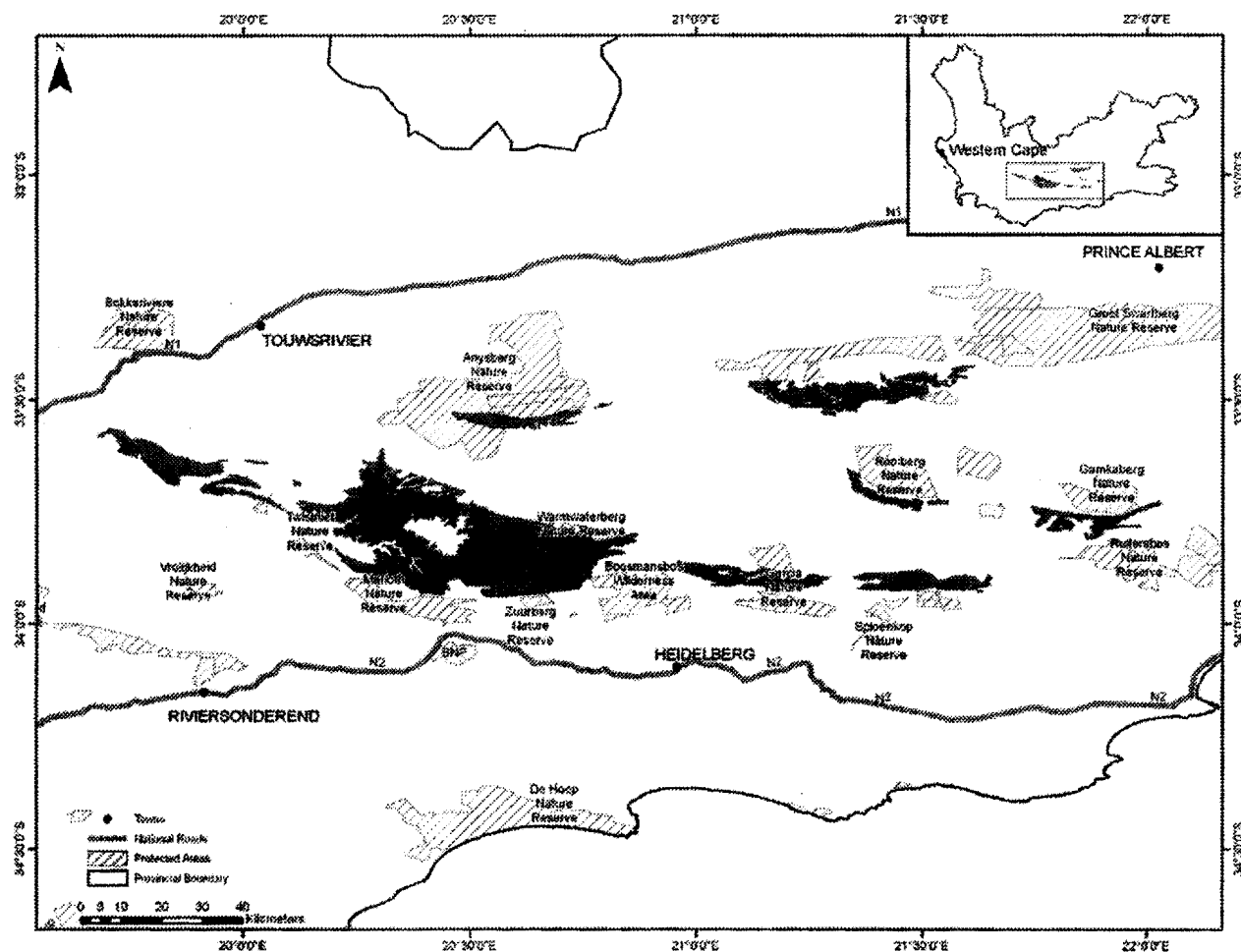
Undulating hilly landscape with broad valleys supporting open, tall shrubland in a medium dense matrix of short, divaricate shrubs, dominated by renosterbos. Transitions with Succulent Karoo ecosystems can be observed at lower altitudes. At least 18 endemic plant species and 14 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 2% of the ecosystem is protected in the Anysberg Nature Reserve, and an additional 4% found in private reserves such as Botterboom, Kanaland and Doornkloof.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 180. South African National Biodiversity Institute, Pretoria.



Location of Montagu Shale Renosterveld showing original area of ecosystem

191. Mount Gilboa Plateau (KZN 70)

| | |
|--|---|
| Reference number | KZN 70 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMshwathi LM, uMngeni LM and Mooi Mpofana LM |
| Original area of ecosystem | 11 000 ha |
| Remaining natural area of ecosystem (%) | 44% |
| Proportion of ecosystem protected | 9% of original area |
| Known number of species of special concern | 7 threatened or endemic plant and animal species including those listed below |

Geographical location

Howick (2930AC), Albert Falls (2930AD) and Mount Alida (2930AB). Ecosystem almost exclusively contained within the Drakensberg Foothill Moist Grassland and represents the eastern most extension of this grassland ecosystem within KwaZulu-Natal. Ecosystem delineated based on a combination of the Drakensberg Foothill Moist Grassland ecosystem boundary and contours of the slopes crest. In the south and east delineated by steep southward facing slopes and in the north by steep slopes leading into either Mooi River Highland Grassland and/or KwaZulu-Natal Highland Thornveld. In the west delineated by a small ridge.

Description

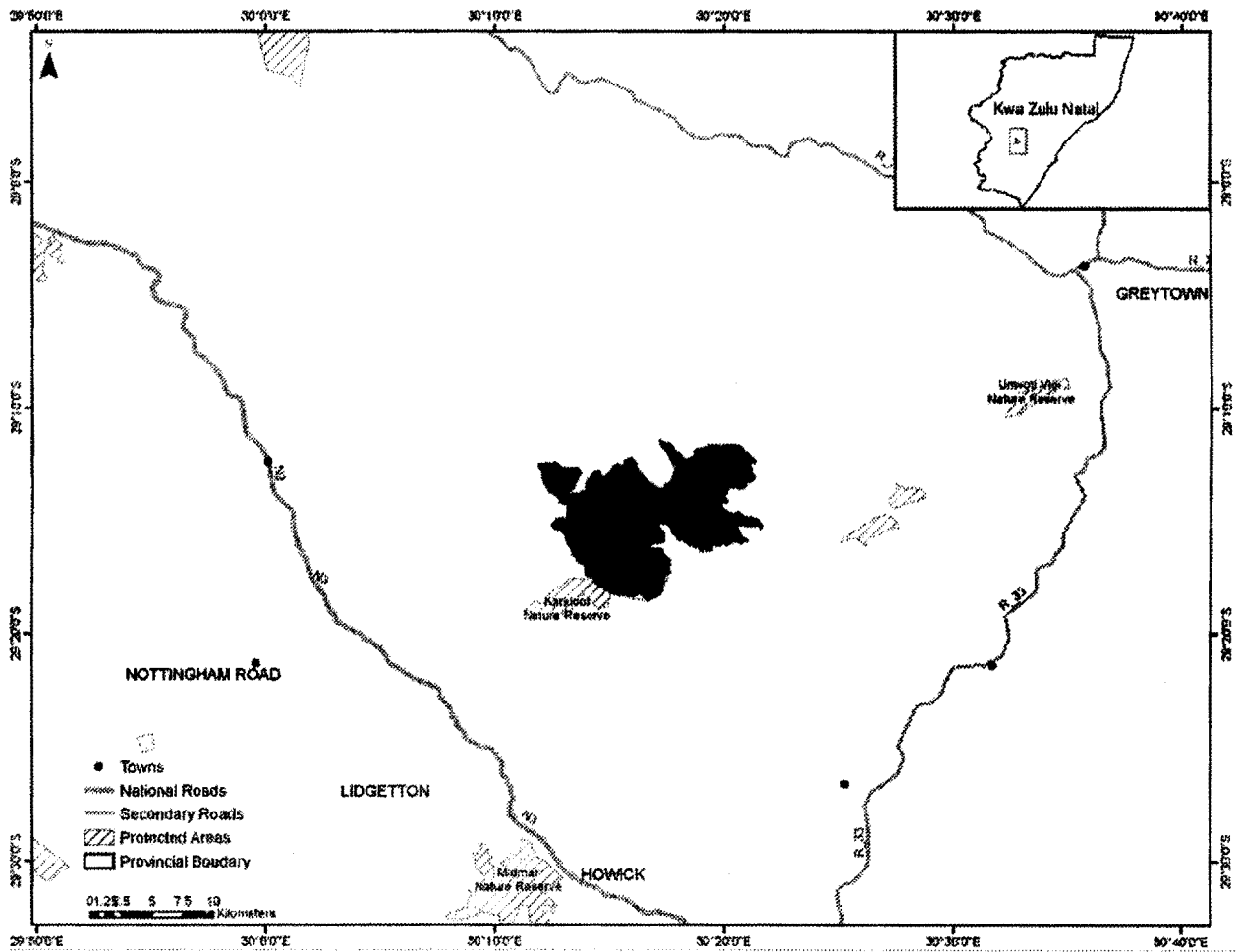
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*; two bird species including Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; one plant species, *Kniphofia brachystachya*; and five vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest, KwaZulu-Natal Highland Thornveld, Midlands Mistbelt Grassland and Mooi River Highland Grassland.

Other Information

About 9% of the ecosystem is protected in the Karkloof Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Mount Gilboa Plateau showing original area of ecosystem

192. Mount MacDonald Ridge and Wetlands (KZN 71)

| | |
|--|---|
| Reference number | KZN 71 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Greater Kokstad LM |
| Original area of ecosystem | 11 000 ha |
| Remaining natural area of ecosystem (%) | 70% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

Swartberg (3029AB). Ecosystem includes lowlands and wetlands associated with crane nesting sites. Ecosystem defined using topography and includes rocky areas along streams and valleys with woody patches of *Hesperantha woodii*. It extends in the south to include Fearnely National Heritage Site, incorporating a wetland.

Description

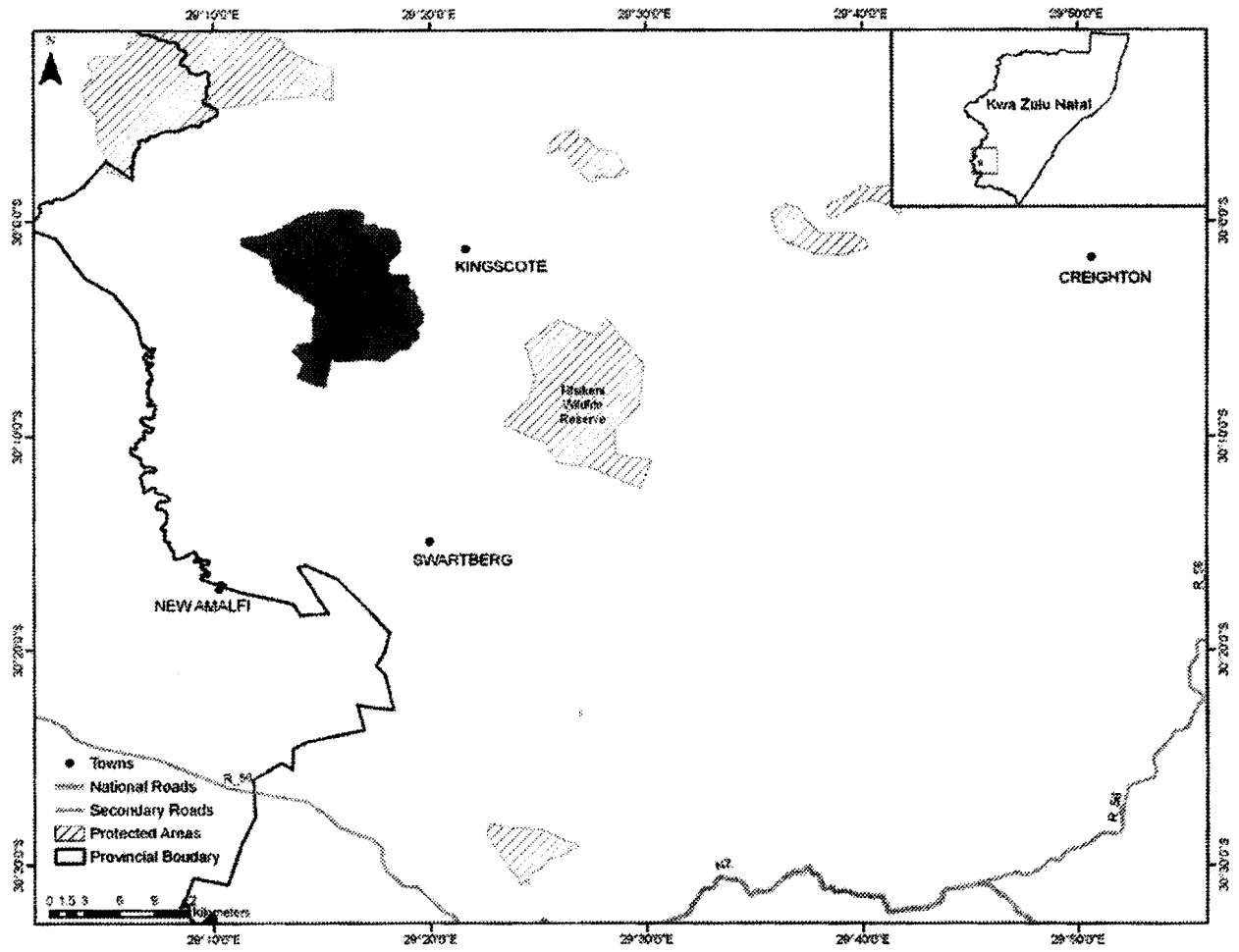
Key biodiversity features include two bird species including Wattled Crane and White-winged Flufftail; two millipedes including *Centrobolus tricolor* and *Doratogonus montanus*; four plant species including *Dierama tysonii*, *Hesperantha woodii*, *Kniphofia brachystachya* and *Kniphofia breviflora*; and three vegetation types including Drakensberg Foothill Moist Grassland, East Griqualand Grassland and Southern Drakensberg Highland Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Mount MacDonald Ridge and Wetlands showing original area of ecosystem

193. Mthatha Moist Grassland (Gs 14)

| | |
|--|---|
| Reference number | Gs 14 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Eastern Cape |
| Municipalities | Mbhashe LM, Mnquma LM, Intsika Yethu LM, Engcobo LM, Sakhisizwe LM, Elundini LM, Nyandeni LM, Mhlontlo LM and King Sabata Dalindyebo LM |
| Original area of ecosystem | 528 000 ha |
| Remaining natural area of ecosystem (%) | 53% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | |

Geographical location

Plains between Mthatha and Butterworth parallel to the coastline and excluding the river valleys that intrude landwards into the ecosystem.

Description

Undulating plains and hills supporting species-poor, sour, wiry grassland with *Eragrostis plana* and *Sporobolus africanus*, although in good condition it is more likely to be dominated by *Themeda triandra*.

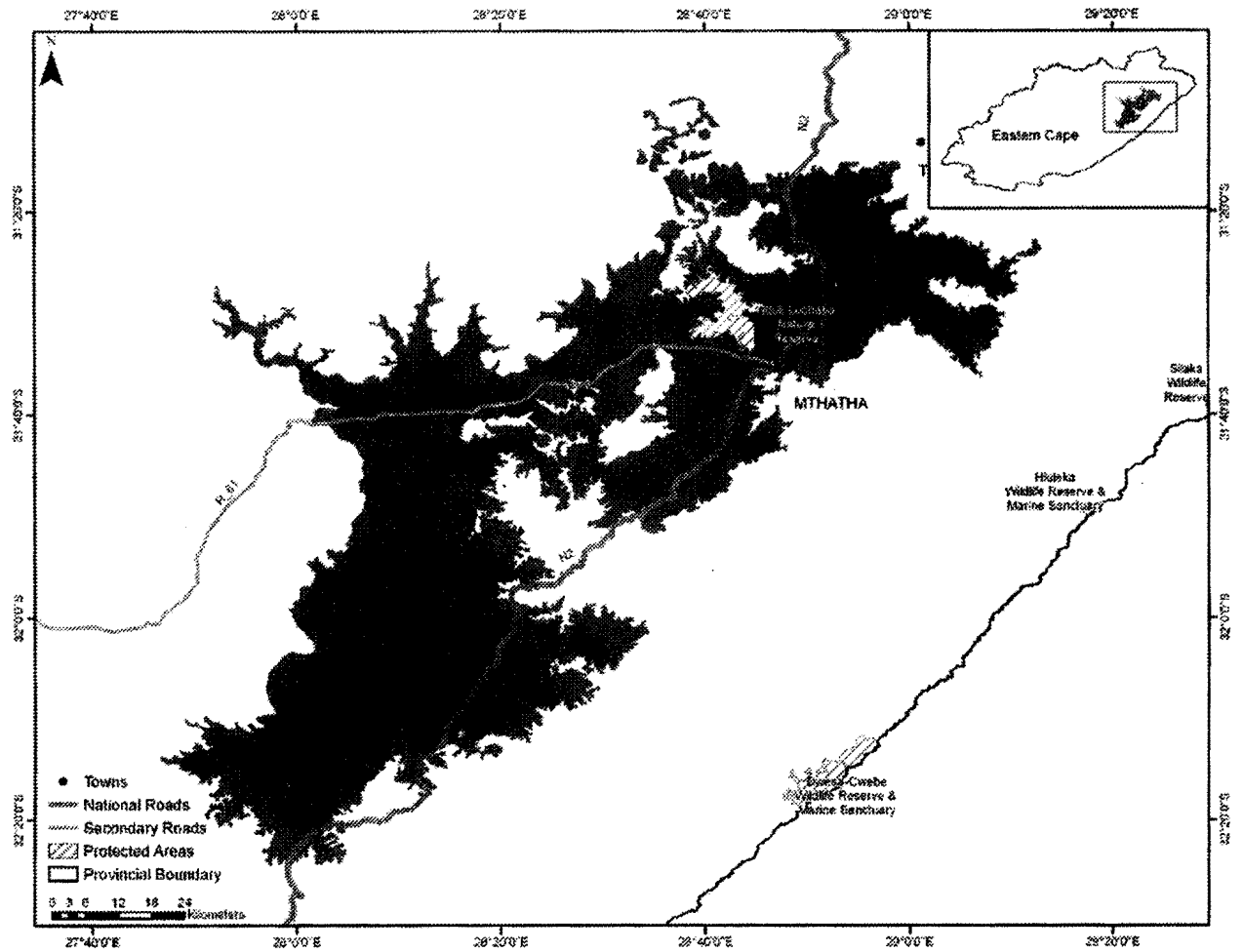
Other information

Only a small fraction is protected in the Luchaba and Nduli Wildlife Reserves.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L.

Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 426-427. South African National Biodiversity Institute, Pretoria.



Location of Mthatha Moist Grassland showing original area of ecosystem

194. Namib Seashore Vegetation (AZd 1)

| | |
|--|---------------------|
| Reference number | Azd 1 |
| Listed under criteria | A1 |
| Biome | Azonal |
| Province | Northern Cape |
| Municipality | Richtersveld LM |
| Original area of ecosystem | 1 000 ha |
| Remaining natural area of ecosystem (%) | 60% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

Richtersveld coast, between the Holgat River and Orange River mouth. The larger portion of this ecosystem extends further north along the Sperrgebiet coast into Namibia.

Description

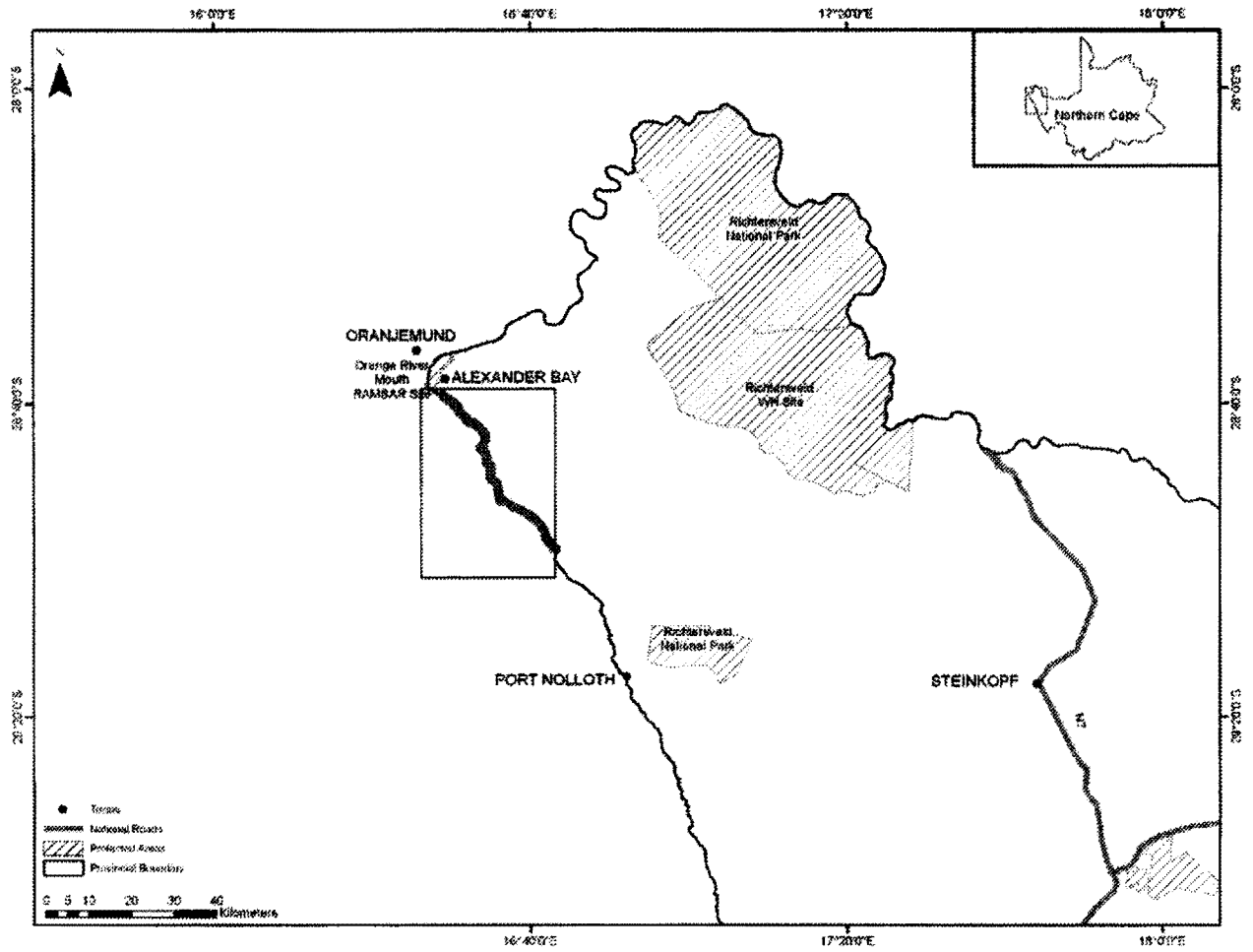
Slightly sloping beach and adjacent moving and fixed sand dunes with vegetation dominated by dwarf shrubs up to 1 m tall and spiny grasses on the windblown dunes. Small succulent dwarf shrubs are dominant on exposed rocky cliffs on the seafront.

Other information

The ecosystem is not protected, but some areas are off limits to the public due to coastal diamond mining.

Reference

Mucina, L., Rutherford, M.C., Powrie, L.W., Gerber, J., Bezuidenhout, H., Sieben, E.J.J., Cilliers, S.S., Du Preez, P.J., Manning, J.C., Hoare, D.B., Boucher, C., Rebelo, A.G., Bredenkamp, G.J., Siebert, F. 2006. Inland Azonal Vegetation. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* **19**: 683-684. South African National Biodiversity Institute, Pretoria.



Location of Namib Seashore Vegetation showing original area of ecosystem (area of ecosystem enlarged for visibility at this scale)

195. New Amalfi Wetlands (KZN 72)

| | |
|--|---|
| Reference number | KZN 72 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Matatiele LM |
| Original area of ecosystem | 7 000 ha |
| Remaining natural area of ecosystem (%) | 81% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic animal species including those listed below |

Geographical location

Cedarville (3029AC). Ecosystem includes lowlands and wetlands associated with crane nesting sites and the surrounding wetland features.

Description

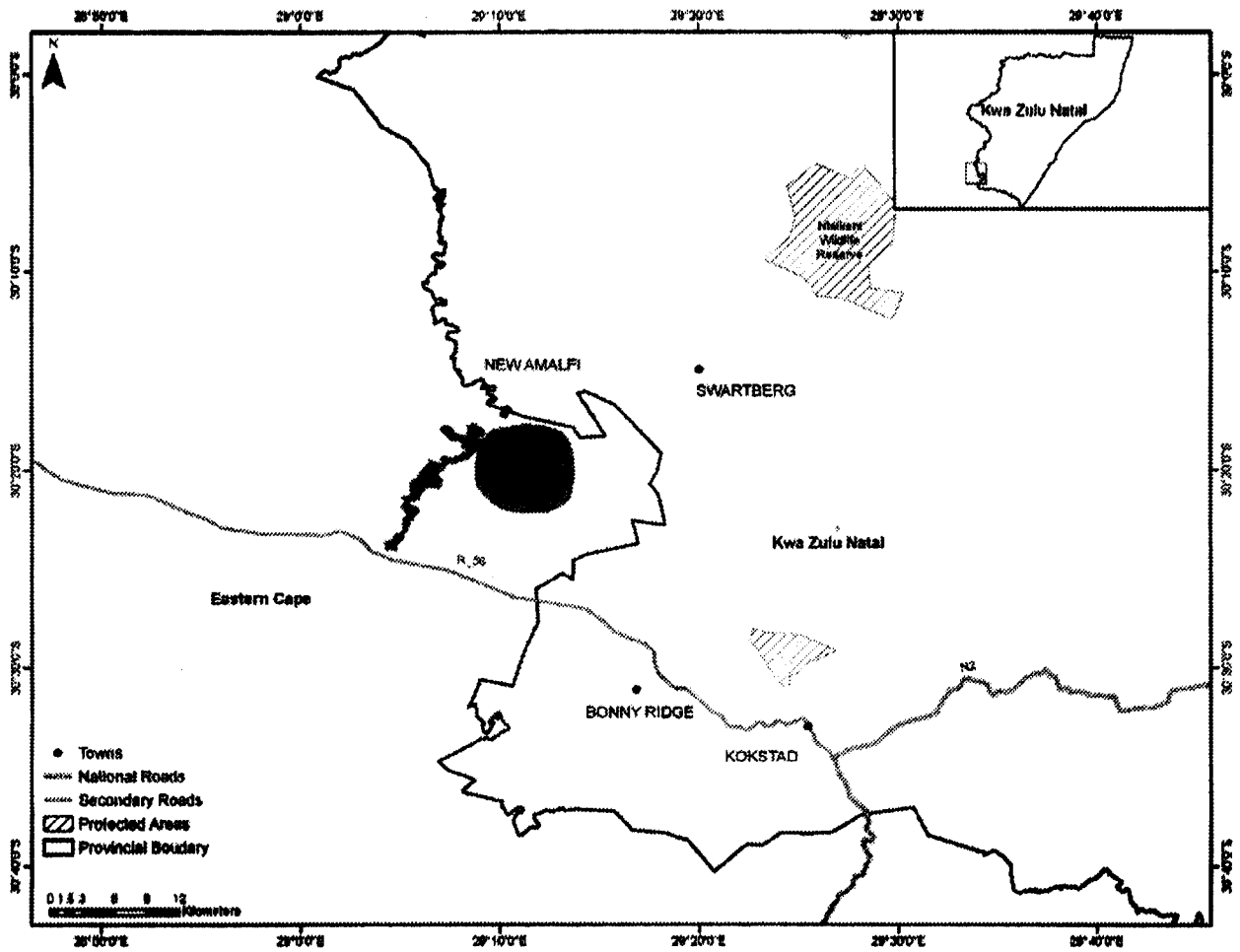
Key biodiversity features include one amphibian species, *Leptopelis xenodactylus*; two bird species including Wattled Crane and White-winged Flufftail; one millipede species including *Centrobolus tricolor*; and two vegetation types including East Griqualand Grassland and Mabela Sandy Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of New Amalfi Wetlands showing original area of ecosystem

196. Ngongoni Veld (SVs 4)

| | |
|--|--|
| Reference number | SVs 4 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | KwaZulu-Natal and Eastern Cape |
| Municipalities | Mbizana LM, Ntabankulu LM, Qaukeni LM, Port St Johns LM, Nyandeni LM, Mhiontlo LM, Ethekewini MM, Vulamehlo LM, Umzumbe LM, UMuziwabantu LM, Ezingoleni LM, Hibiscus Coast LM, uMshwathi LM, uMngeni LM, The Msunduzi LM, Mkhambathini LM, Richmond LM, Umvoti LM, Ulundi LM, Ntambanana LM, uMlalazi LM, Mthonjaneni LM, Nkandla LM, Ndwedwe LM, Maphumulo LM, Ubuhlebezwe LM and Umzimkhulu LM |
| Original area of ecosystem | 1 005 000 ha |
| Remaining natural area of ecosystem (%) | 61% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | |

Geographical location

From Melmoth in the north to near Libode in the former Transkei including Eshowe, New Hanover, Camperdown, Eston, Richmond, Dumisa, Harding, Lusikisiki and the Libode area.

Description

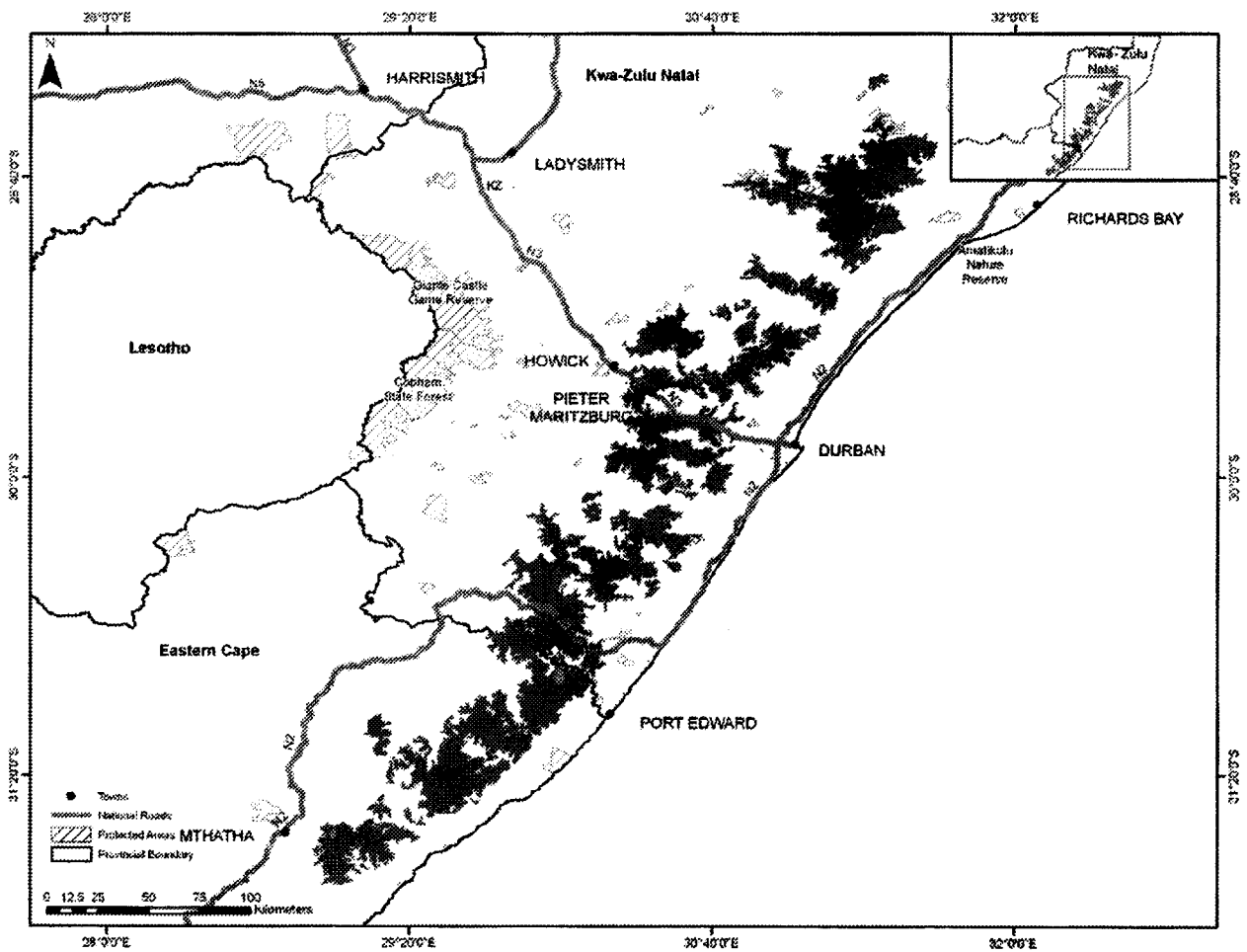
Dense, tall grassland overwhelmingly dominated by unpalatable, wiry Ngongoni grass (*Aristida junciformis*), with this monodominance associated with low species diversity. Wooded areas (thornveld) are found in valleys at lower altitudes, where this ecosystem grades into KwaZulu-Natal Hinterland Thornveld and Bhisho Thornveld. Termitaria support bush clumps with, for example, *Acacia* species, *Cussonia spicata*, *Ziziphus mucronata*, *Coddia rudis* and *Ehretia rigida*.

Other information

Less than 1% of the ecosystem is protected in the Ophathe and Vernon Crookes Nature Reserves.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 510-511. South African National Biodiversity Institute, Pretoria.



Location of Ngongoni Veld showing original area of ecosystem

197. Nieuwoudtville Shale Renosterveld (FRs 2)

| | |
|--|--------------------------|
| Reference number | FRs 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Northern Cape |
| Municipality | Hantam LM |
| Original area of ecosystem | 16 000 ha |
| Remaining natural area of ecosystem (%) | 58% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 17 endemic plant species |

Geographical location

Bokkeveld Plateau at Nieuwoudtville extending in a 1–4 km wide strip 13 km south of Boererus on the Oorlogskloof River near Papkuilsfontein and almost 20 km north of Nieuwoudtville in the vicinity of Kleinplaas.

Description

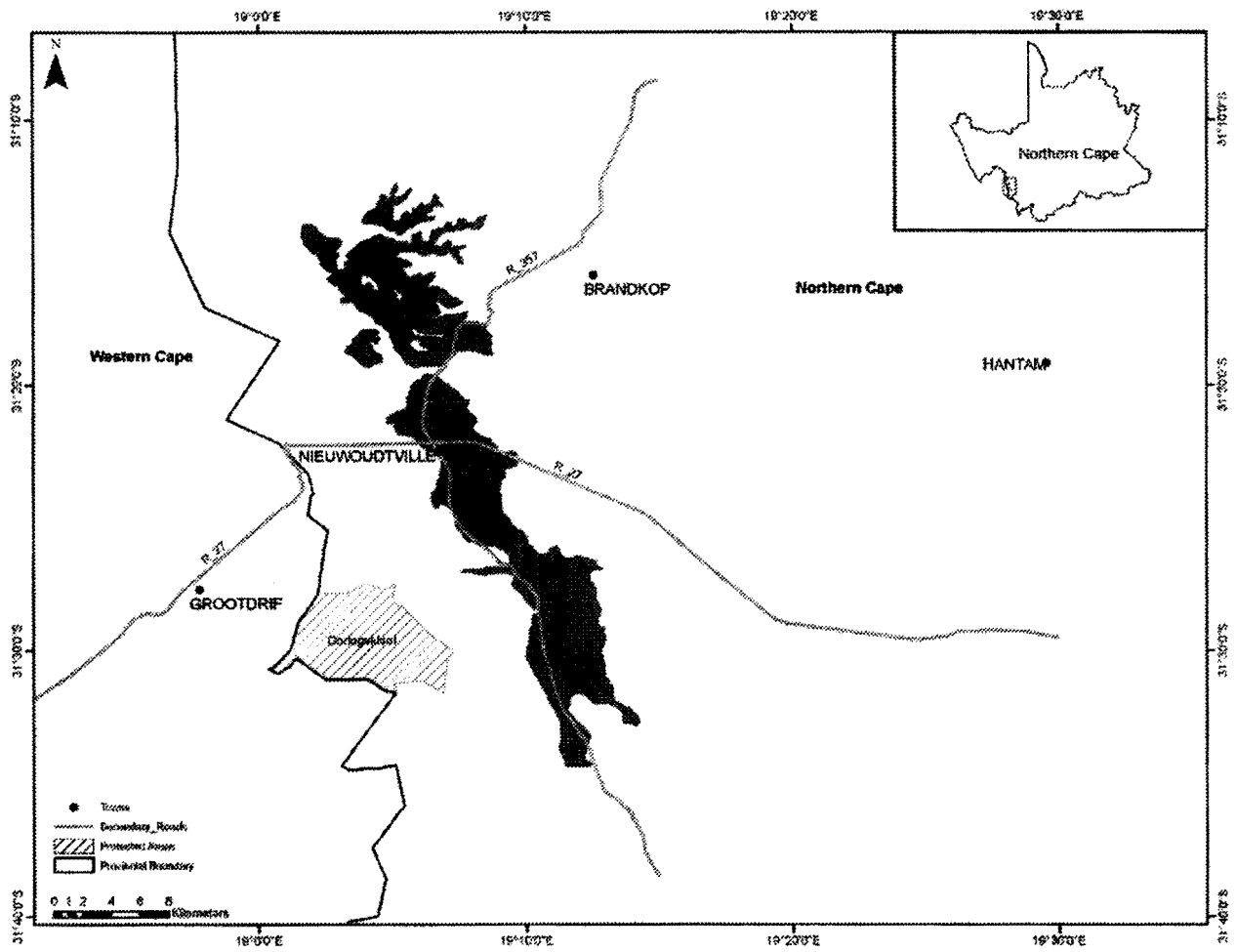
Flat tableland covered with uniformly structured low renosterveld shrubland with small, woody shrubs (0.5–1.6 m tall) and a variable grass layer. A diverse geophyte and annual community is prevalent in the wet season. Dominants are strongly related to soil, displaying large compositional turnover with soil texture, depth and aspect. The transition to fynbos in the west is abrupt and determined by sandstone geology. Progressively increasing aridity results in a more gradual transition to Hantam Karoo in the east. At least 17 endemic plant species occur in the ecosystem.

Other Information

The ecosystem is not protected.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 176. South African National Biodiversity Institute, Pretoria.



Location of Nieuwoudtville Shale Renosterveld showing original area of ecosystem

198. Nkandla Forests and Grasslands (KZN 73)

| | |
|--|---|
| Reference number | KZN 73 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipality | Nkandla LM |
| Original area of ecosystem | 8 000 ha |
| Remaining natural area of ecosystem (%) | 76% |
| Proportion of ecosystem protected | 42% of original area |
| Known number of species of special concern | 7 threatened or endemic plant and animal species including those listed below |

Geographical location

Nkandla (2831CA). Ecosystem incorporates the Nkandla Forest Reserve Complex (Nkandla Forest Reserve, Vungwini Nature Reserve, Mome Nature Reserve, Sibudeni Nature Reserve, Dhlabe Nature Reserve, Edodweni Nature Reserve and Mndunduzeli Nature Reserve). Ecosystem delineated in the north by the Thathe River, in the north east by the Mavungwini River and in the south by the Nsuze River.

Description

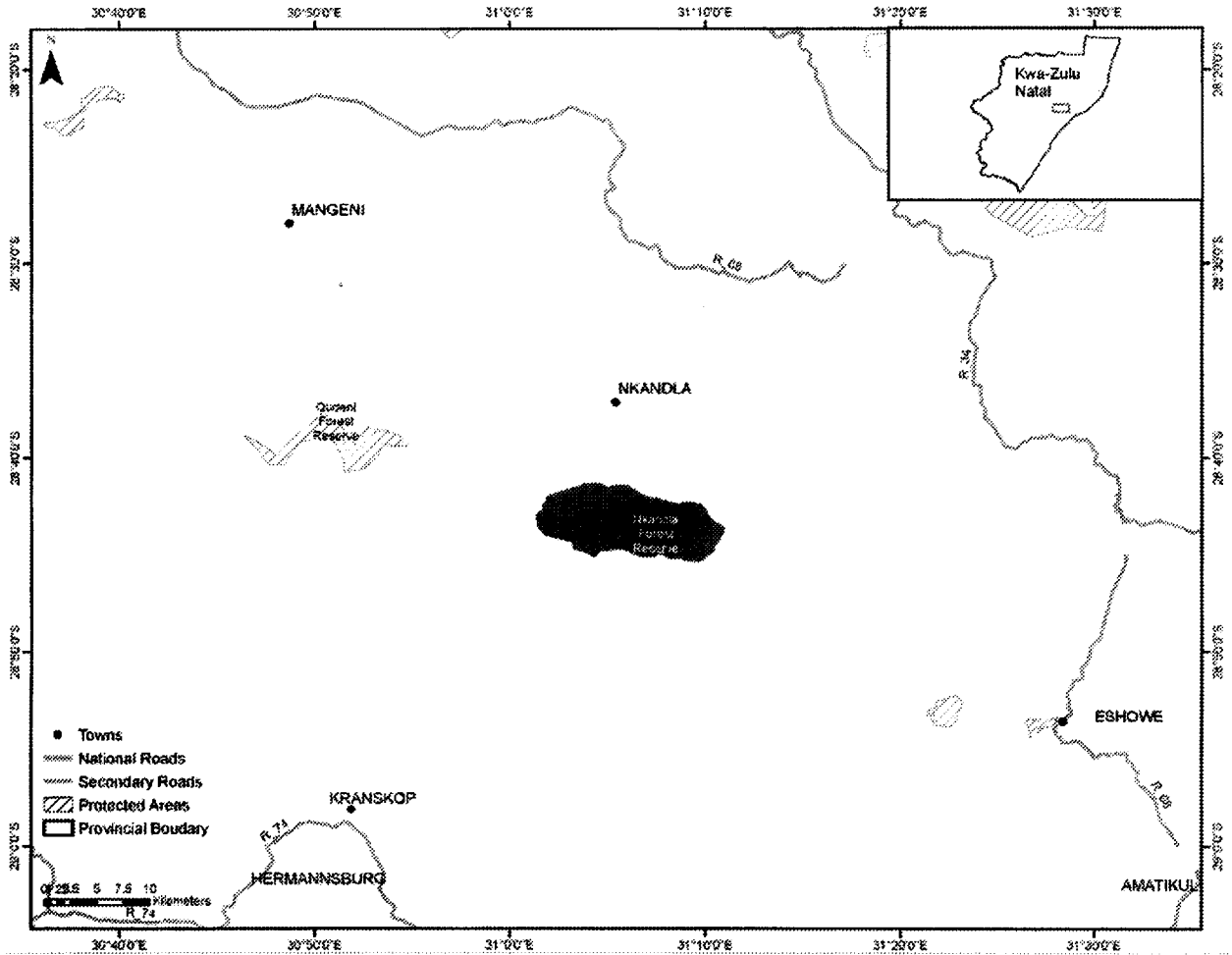
Key biodiversity features include four millipede species including *Allawrencius nodulosus*, *Centrobolus bifidus*, *Centrobolus fulgidus*, and *Doratogonus peregrinus*; two plant species including *Aloe saundersiae* and *Kniphofia buchananii*; one reptile species, *Bradypodion nkandlae*; and three vegetation types including Eastern Scarp Forest, Midlands Mistbelt Grassland and Ngongoni Veld.

Other information

Approximately 42% of the ecosystem is protected in the Nkandla Forest Reserve, Vungwini Nature Reserve, Sibudeni Nature Reserve, Mome Nature Reserve, Dhlabe Nature Reserve, Edodweni Nature Reserve and Mndunduzeli Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Nkandla Forests and Grasslands showing original area of ecosystem

199. Nkunzi/Sundays River Grasslands (KZN 74)

| | |
|--|---|
| Reference number | KZN 74 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Emnambithi-Ladysmith LM and Dannhauser LM |
| Original area of ecosystem | 26 000 ha |
| Remaining natural area of ecosystem (%) | 77% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Fort Mistake (2829BB) and Elandslaagte (2829BD). Ecosystem includes a system of grasslands and wetlands bounded by the Nkunzi River in the northeast and the Sundays River in the southwest. It incorporates the Sundays River wetlands, Bosberghoek Mountain, Slangberg Mountain and Snipe Marsh.

Description

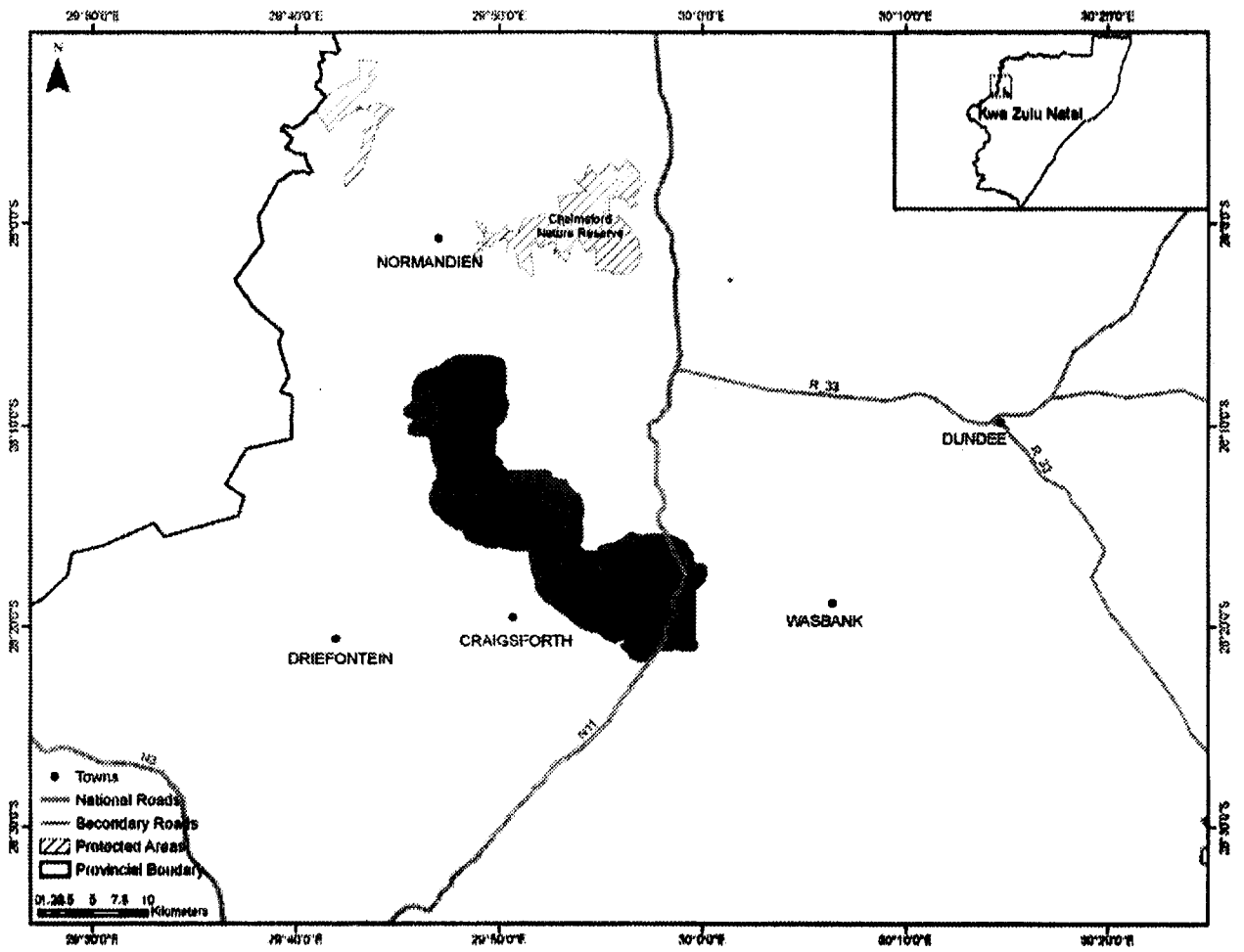
Key biodiversity features include two bird species including the Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two plants species including *Kniphofia breviflora* and *Selago longicalyx*; and three vegetation types including Northern KwaZulu-Natal Moist Grassland, Low Escarpment Moist Grassland and Eastern Mistbelt Forest.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Nkunzi/Sundays River Grasslands showing original area of ecosystem

200. Northern Escarpment Dolomite Grassland (Gm 22)

| | |
|--|---|
| Reference number | Gm 22 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Province | Mpumalanga |
| Municipalities | Greater Tubatse LM, Albert Luthuli LM, Highlands LM, Thaba Chweu LM and Mbombela LM |
| Original area of ecosystem | 94 000 ha |
| Remaining natural area of ecosystem (%) | 46% |
| Proportion of ecosystem protected | 2% of original area |
| Known number of species of special concern | 8 endemic plant species |

Geographical location

From the high-lying dolomite grasslands of the Abel Erasmus Pass and Motlatse (Blyde) River (Vaalhoek) areas in the north, it extends southwards in a broad dolomite band along the Northern Escarpment, to as far south as the vicinity of Kaapsehoop.

Description

Very species-rich grasslands that occur along the Escarpment dolomite belt. The grasslands are characterised by a very diverse shrub layer which varies in height and density. The herbaceous component becomes more dense northwards as the climate becomes drier. At least eight endemic plant species occur in the ecosystem.

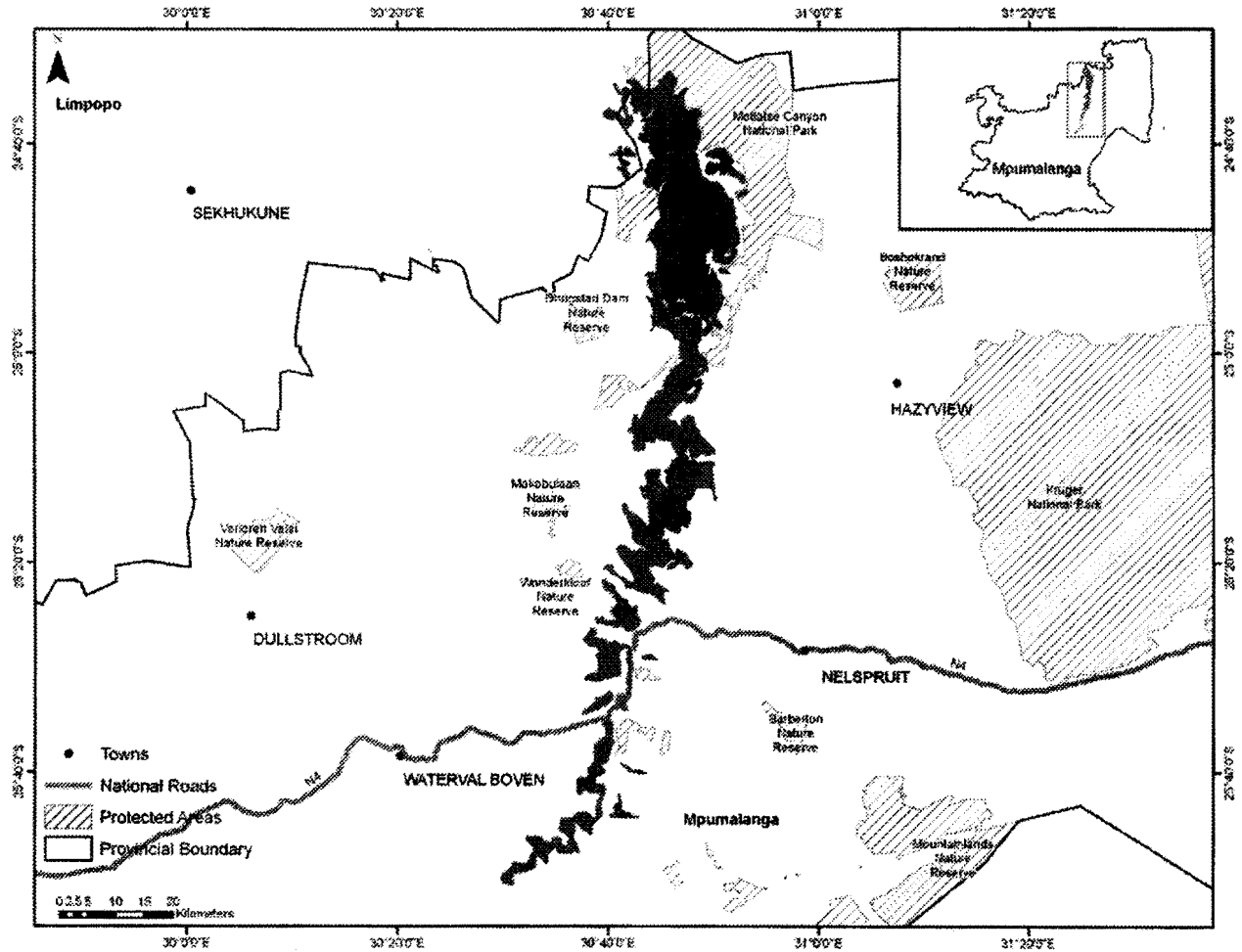
Other information

Approximately 2% of the ecosystem is protected within the Blyde River Canyon National Park. It is also found in the private Driekop Caves and London heritage sites in the north and in the Mooifontein and Mondi Cycad Reserve heritage sites in the south.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H.,

Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 409-410. South African National Biodiversity Institute, Pretoria.



Location of Northern Escarpment Dolomite Grassland showing original area of ecosystem

201. Northern Qudeni Mistbelt Grasslands (KZN 75)

| | |
|--|---|
| Reference number | KZN 75 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Nquthu LM and Nkandla LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 23% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Qudeni (2830DB) and Fort Lois (2830BD). Ecosystem lies to the west of Madlozi Mountain and is delineated by the edge of the Midlands Mistbelt Grassland in the east.

Description

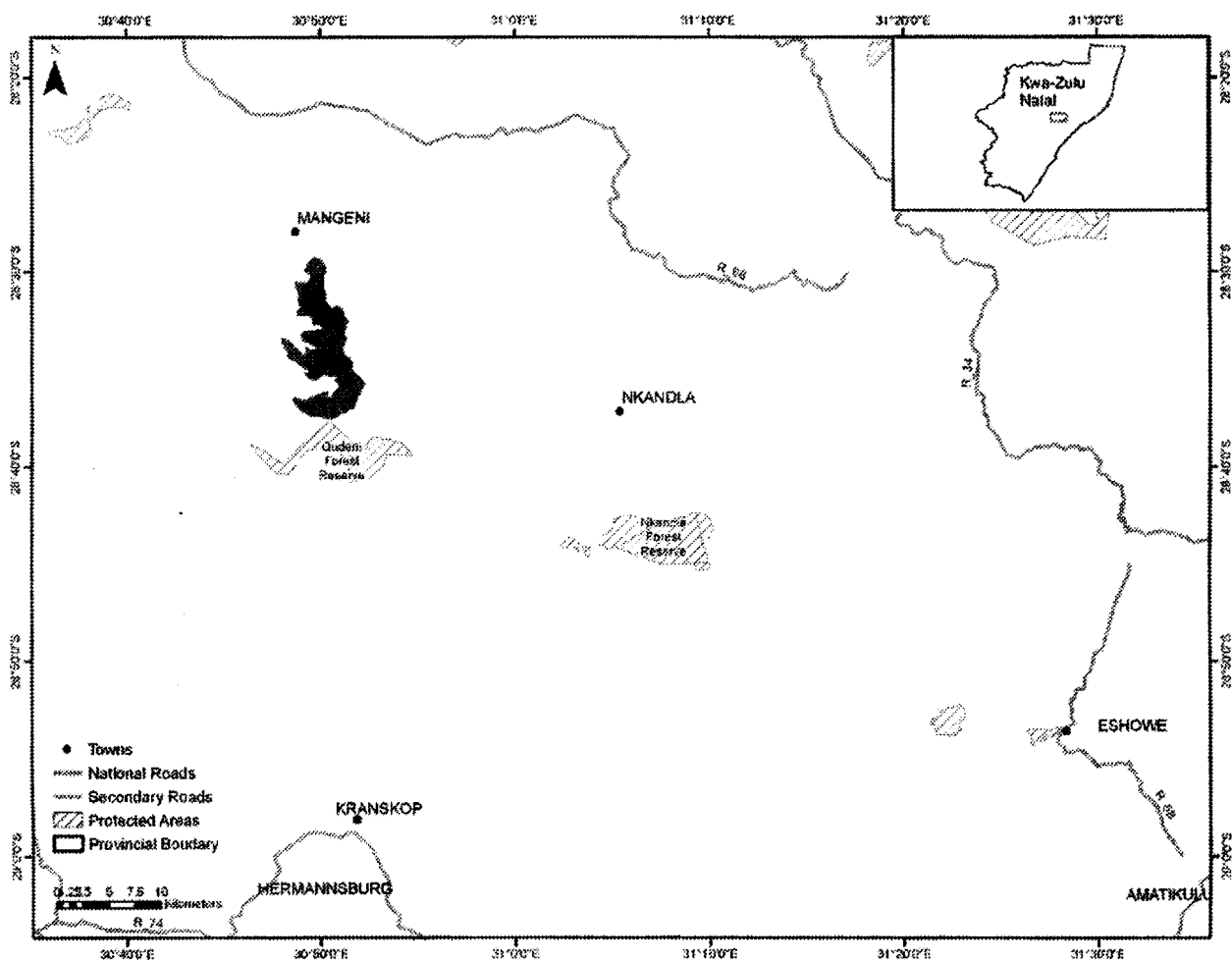
Key biodiversity features include one millipede species, *Doratogonus natalensis*; one plant species, *Acalypha entumenica*; one reptile species *Bradypodion tilburyi*; and two vegetation types including Midlands Mistbelt Grassland and Northern KwaZulu-Natal Moist Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Northern Qudeni Mistbelt Grasslands showing original area of ecosystem

202. Ntsikeni Vlei (KZN 76)

| | |
|--|--------------------------------------|
| Reference number | KZN 76 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Greater Kokstad LM and Umzimkhulu LM |
| Original area of ecosystem | 10 000 ha |
| Remaining natural area of ecosystem (%) | 95% |
| Proportion of ecosystem protected | 92% of original area |
| Known number of species of special concern | 1 threatened animal species |

Geographical location

Swartberg (3029AB). Ecosystem delineated by the boundary of the Ntsikeni Nature Reserve.

Description

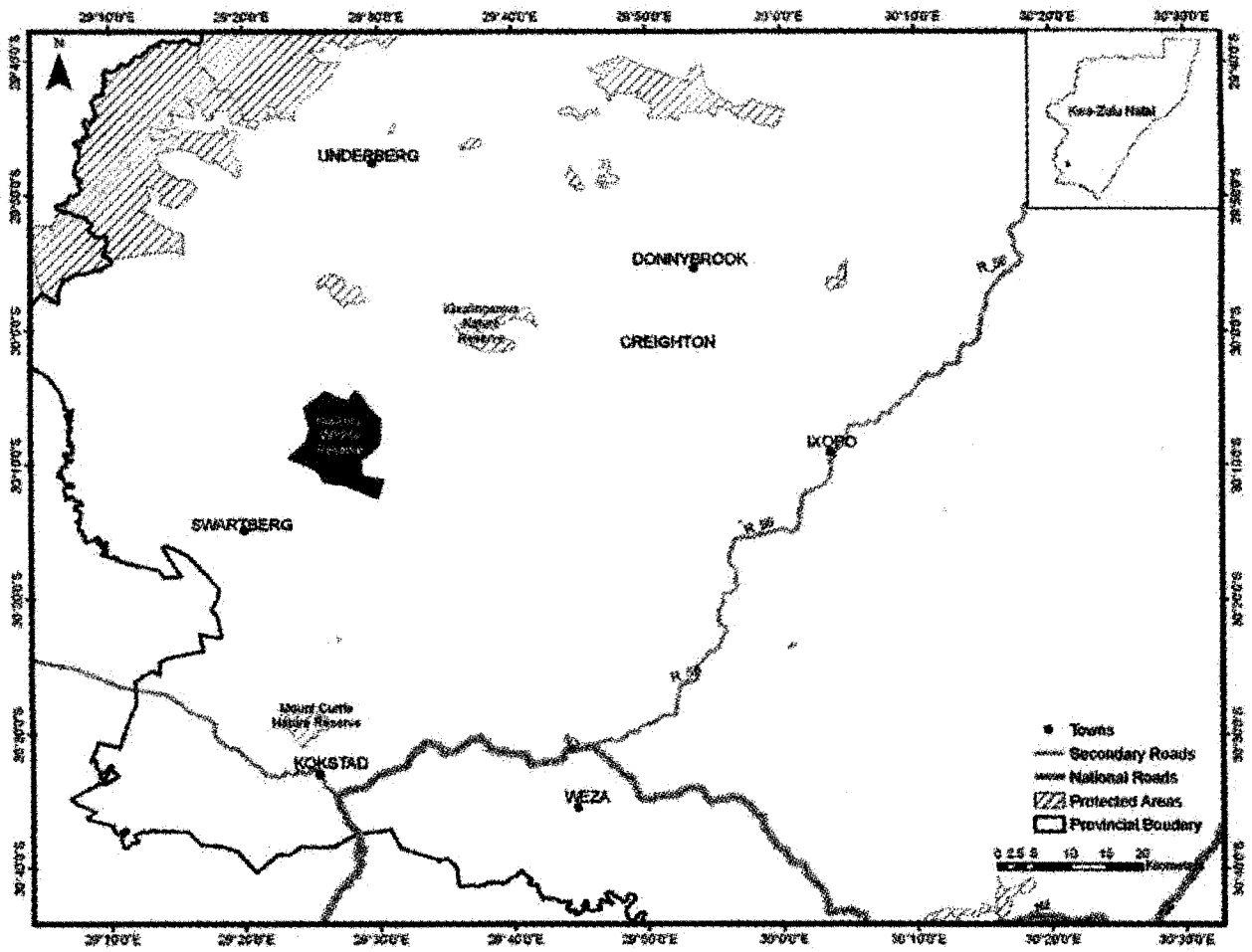
Key biodiversity features include one bird species, the Wattled Crane; and two vegetation types including the Drakensberg Foothill Moist Grassland and Eastern Mistbelt Forest.

Other information

Approximately 92% of the ecosystem is protected by the Ntsikeni Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Ntsikeni Vlei showing original area of ecosystem

203. Oakspring Valley (KZN 77)

| | |
|--|---|
| Reference number | KZN 77 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM and Mooi Mpofana LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 46% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Weston (2930AA). Ecosystem encompasses a single small watershed and is delineated by river channels to the north and west, and a small ridge in the east.

Description

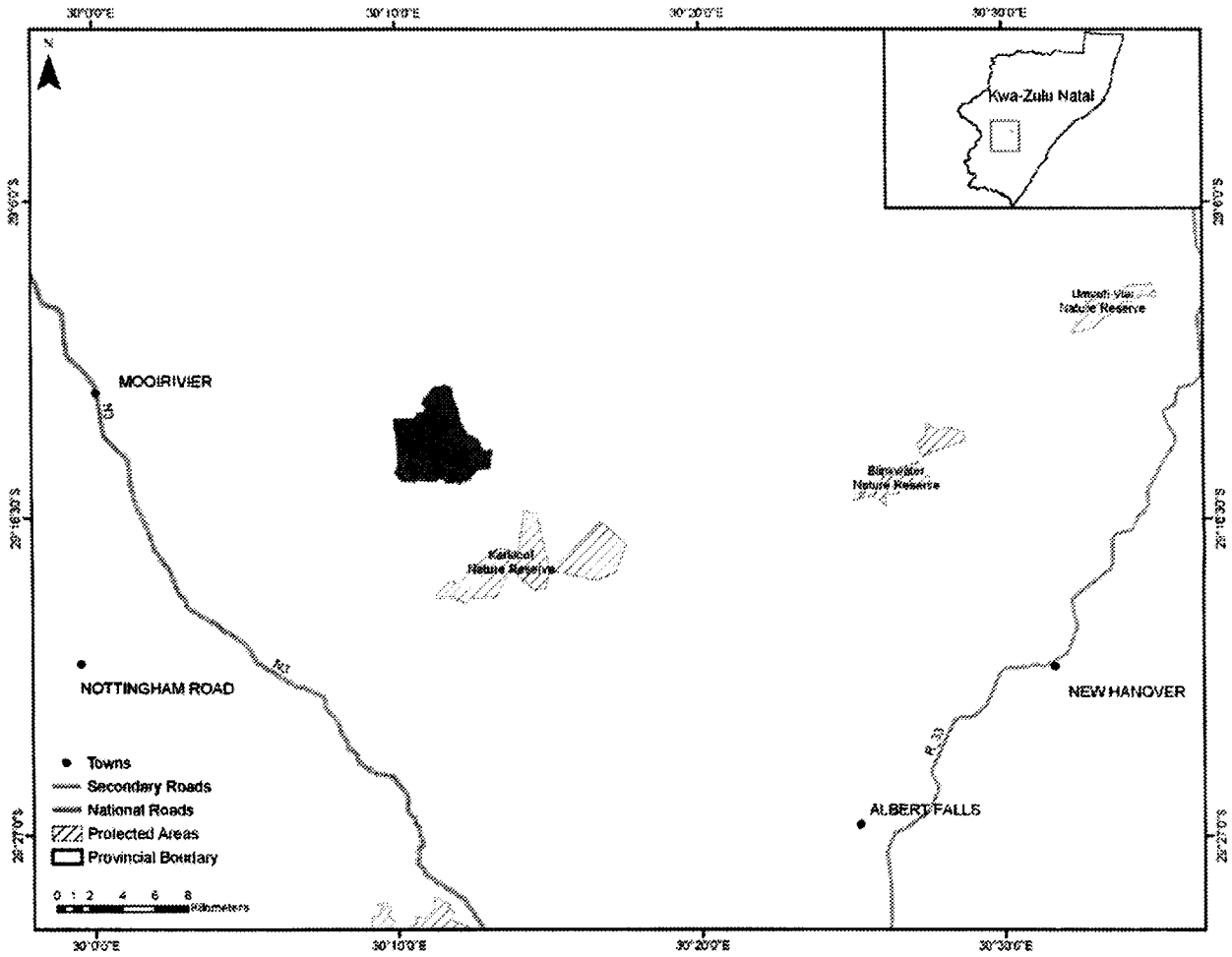
Key biodiversity features include one amphibian species, *Afrixalus spinifrons intermedius*; one bird species, the Wattled Crane; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; one plant species, *Kniphofia brachystachya*; and two vegetation types including Drakensberg Foothill Moist Grassland and Mool River Highland Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Oakspring Valley showing original area of ecosystem

204. Paulpietersburg Moist Grassland (Gm 15)

| | |
|--|---|
| Reference number | Gm 15 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | KwaZulu-Natal and Mpumalanga |
| Municipalities | Utrecht LM, eDumbe LM, Abaqulusi LM, Mkhondo LM and Seme LM |
| Original area of ecosystem | 333 000 ha |
| Remaining natural area of ecosystem (%) | 58% |
| Proportion of ecosystem protected | < 1% of original area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

Broad surrounds of Piet Retief, Paulpietersburg and Vryheid, extending westwards to east of Wakkerstroom. The ecosystem occurs in the uppermost catchments of the Phongolo River.

Description

Mainly undulating with moderately steep slopes, but valley basins are wide and flat and mountainous areas occur mostly along the northern and eastern boundary. Tall closed grassland rich in forbs and dominated by *Tristachya leucothrix*, *Themeda triandra* and *Hyparrhenia hirta*. Evergreen woody vegetation is characteristic on rocky outcrops. At least one endemic plant species occurs in the ecosystem.

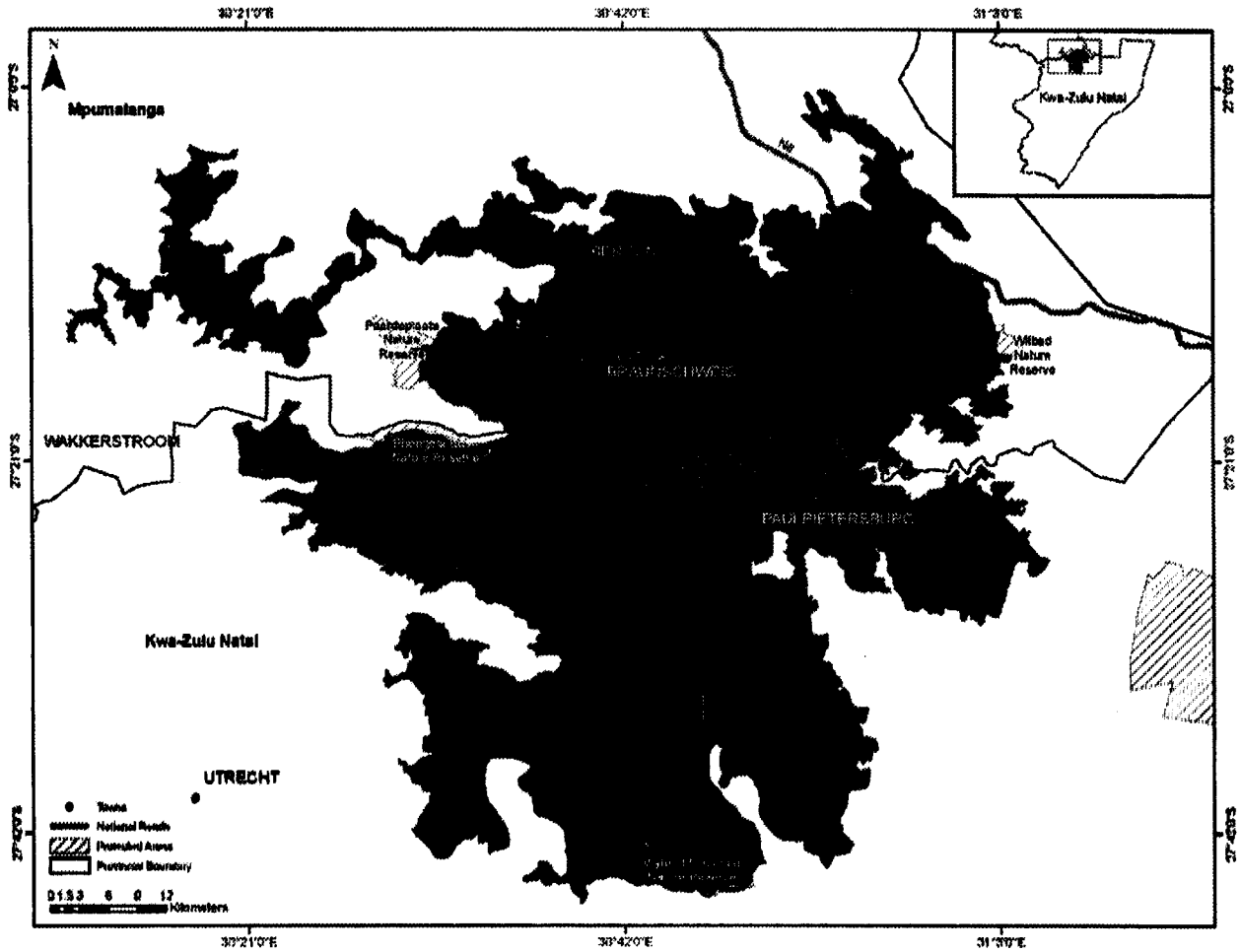
Other information

Only a very small portion of the ecosystem is protected in Witbad, Vryheid Mountain, Paardeplaats and Phongola Bush Nature Reserves. Small patches are also found in private reserves for example Rooikraal, Mhlongamvula and Kombewaria.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M.,

Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 403. South African National Biodiversity Institute, Pretoria.



Location of Paulpietersburg Molst Grassland showing original area of ecosystem

205. Piketberg Quartz Succulent Shrubland (SKk 8)

| | |
|--|-------------------------|
| Reference number | SKk 8 |
| Listed under Criterion | C |
| Biome | Succulent Karoo |
| Province | Western Cape |
| Municipality | Bergrivier LM |
| Original area of ecosystem | 200 ha |
| Remaining natural area of ecosystem (%) | 60% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 endemic plant species |

Geographical location

Piketberg area, larger patch on the Farm Draaihoek between Piketberg and Eendekuil (at eastern foothills of the Piketberg Mountains), in the vicinity of Het Kruis and Redelingshuys (north of Piketberg Mountains) as well as near Sauer at the southwestern foot of the Piketberg Mountains.

Description

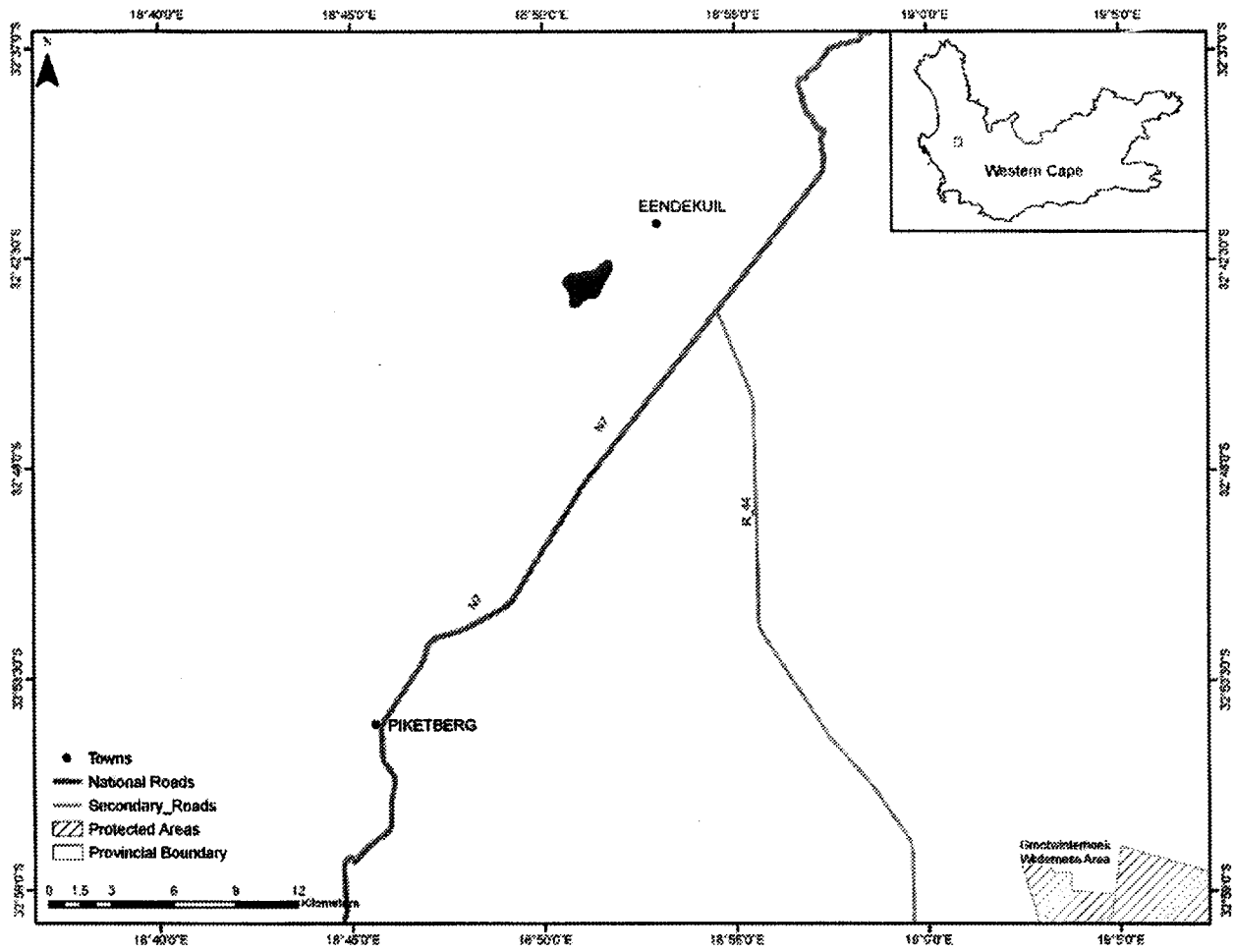
Low shrubland dominated by sturdy, succulent *Sarcocornia* from the *S. mossiana* complex, and accompanied by leaf-succulent, contracted vygies, especially in shallow trenches and depressions. Elevated sites (hummocks) with deeper soils support dense shrubland.

Other information

The ecosystem is not protected.

Reference

Mucina, L., Jürgens, N., le Roux, A., Rutherford, M.C., Schmiedel, U., Esler, K.J., Powrie, L.W., Desmet, P.G. & Milton, S.J. 2006. Succulent Karoo Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* **19**: 276-277. South African National Biodiversity Institute, Pretoria.



Location of Piketberg Quartz Succulent Shrubland showing original area of ecosystem

206. Piketberg Sandstone Fynbos (FFs 6)

| | |
|--|---|
| Reference number | FFs 6 |
| Listed under Criterion | D1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipality | Bergrivier LM |
| Original area of ecosystem | 46 000 ha |
| Remaining natural area of ecosystem (%) | 87% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 41 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 39 endemic plant species |

Geographical location

Mainly on the Piketberg Mountains in a triangle formed by Aurora, Het Kruis and the town of Piketberg but also on isolated hills to the north of the mountain including Driefonteinberg, Tiernesberg, Dassieberg and Klein Tafelberg.

Description

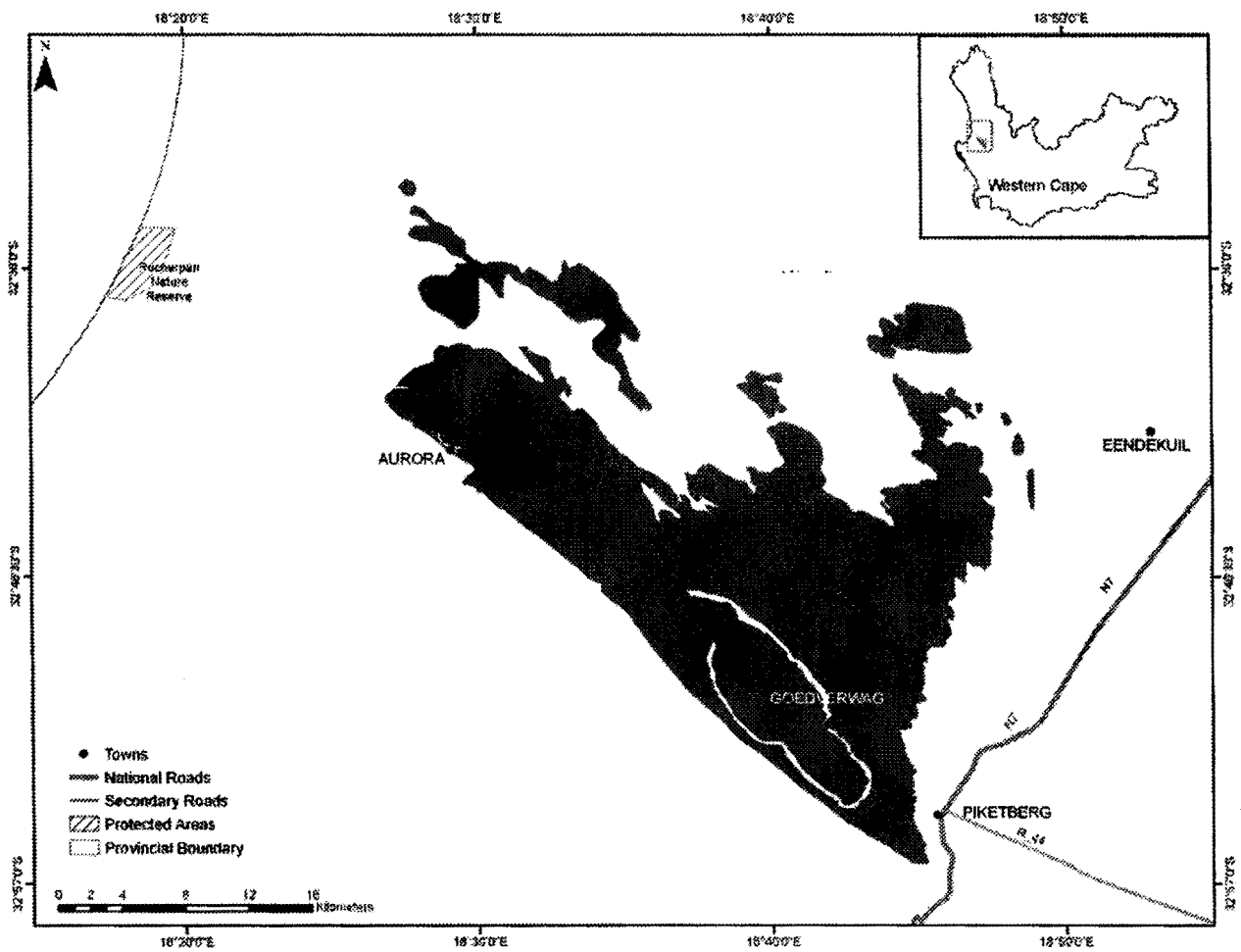
Large inselberg built of slowly eroding hard rocks towering over the surrounding sandy and shale plains of the West Coast. Mostly steep slopes, with some small plateaus and peaks. Vegetation is mainly closed restioid on deeper moister sands with low, sparse shrubs that become denser and the restios less pronounced in the drier habitats. Asteraceous and proteoid fynbos predominate in rocky areas, and Cape thicket is prominent as well. At least 39 endemic plant species and 41 Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected but 4% is found in private nature reserves.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 104-105. South African National Biodiversity Institute, Pretoria.



Location of Piketberg Sandstone Fynbos showing original area of ecosystem

207. Pondoland Scarp Forest (FOz V2)

| | |
|--|--|
| Reference number | FOz V2 |
| Listed under Criterion | A2 |
| Biome | Forest |
| Provinces | Eastern Cape and KwaZulu-Natal |
| Municipalities | Mbizana LM, Qaukeni LM, Umzumbe LM, Ezingoleni LM and Hibiscus Coast LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 12 000 ha |
| Proportion of ecosystem protected | 10% of remaining area |
| Known number of species of special concern | 3 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Found on south-facing or east-facing slopes of the coastal scarp ridge, on sandstone outcrops (quartz arenites) in Pondoland in the north-eastern Transkei (Eastern Cape Province). Located from the complex of forests at, and immediately north of, Port St. Johns and reaching as far north as Oribi Gorge in southern KwaZulu-Natal.

Description

Tall (15-25 m) species-rich forests found on Msikaba Formation Sandstones of the coastal scarp ridge. Structurally diverse with open substrata and poorly developed herb layer. Wooded steep slopes of gorges are a characteristic of this forest ecosystem. The forest comprises three distinct strata, with a well developed seedling and sapling stratum and a poorly developed herb layer. Underneath the canopy the forest is relatively open and trees are mostly single stemmed. Pondoland Scarp forests are 'hotspots' of species richness and fall within the Pondoland Centre of Endemism. At least three Red Data List plant species occur in the ecosystem.

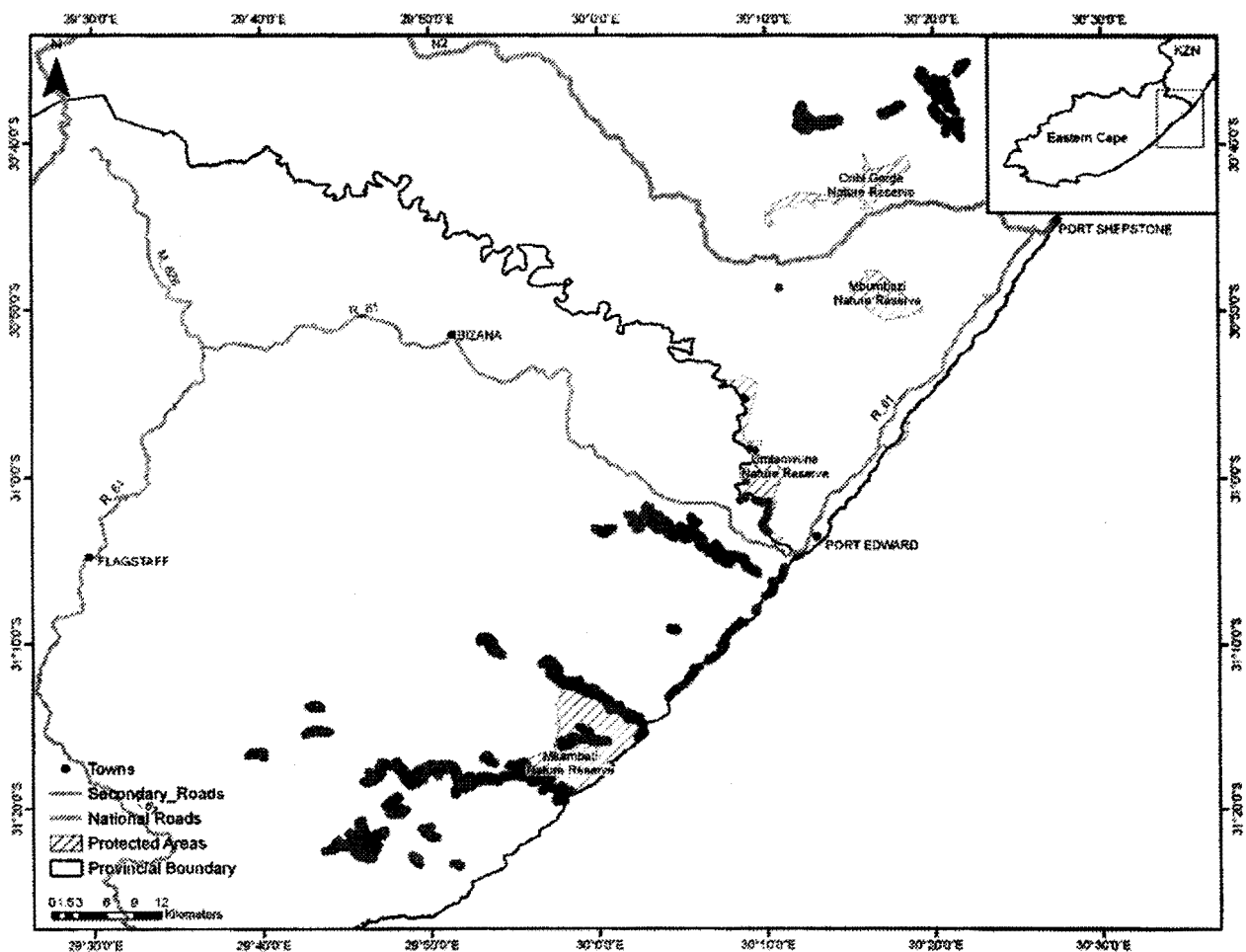
Other Information

Approximately 10% of the ecosystem is protected. Pondoland Scarp Forest is generally less well conserved and managed than the Eastern Scarp Forest of KwaZulu-Natal and many large forests have already been destroyed.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotropical, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 602-603. South African National Biodiversity Institute, Pretoria.

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.



Location of Pondoland Scarp Forest (area of ecosystem enlarged for visibility at this scale)

208. Pudsey/Otterburn Wetlands (KZN 78)

| | |
|--|---|
| Reference number | KZN 78 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipalities | Ingwe LM and Kwa Sani LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 27% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 5 threatened or endemic plant and animal species including those listed below |

Geographical location

Pevensey (2929DC). Ecosystem includes lowlands and wetlands associated with crane nesting sites. Ecosystem defined by topography and refined by excluding peripheral plantations and urban settlements. It includes cultivated fields, which are important habitat for crane foraging, and manmade impoundments which have associated wetlands important for flufftails.

Description

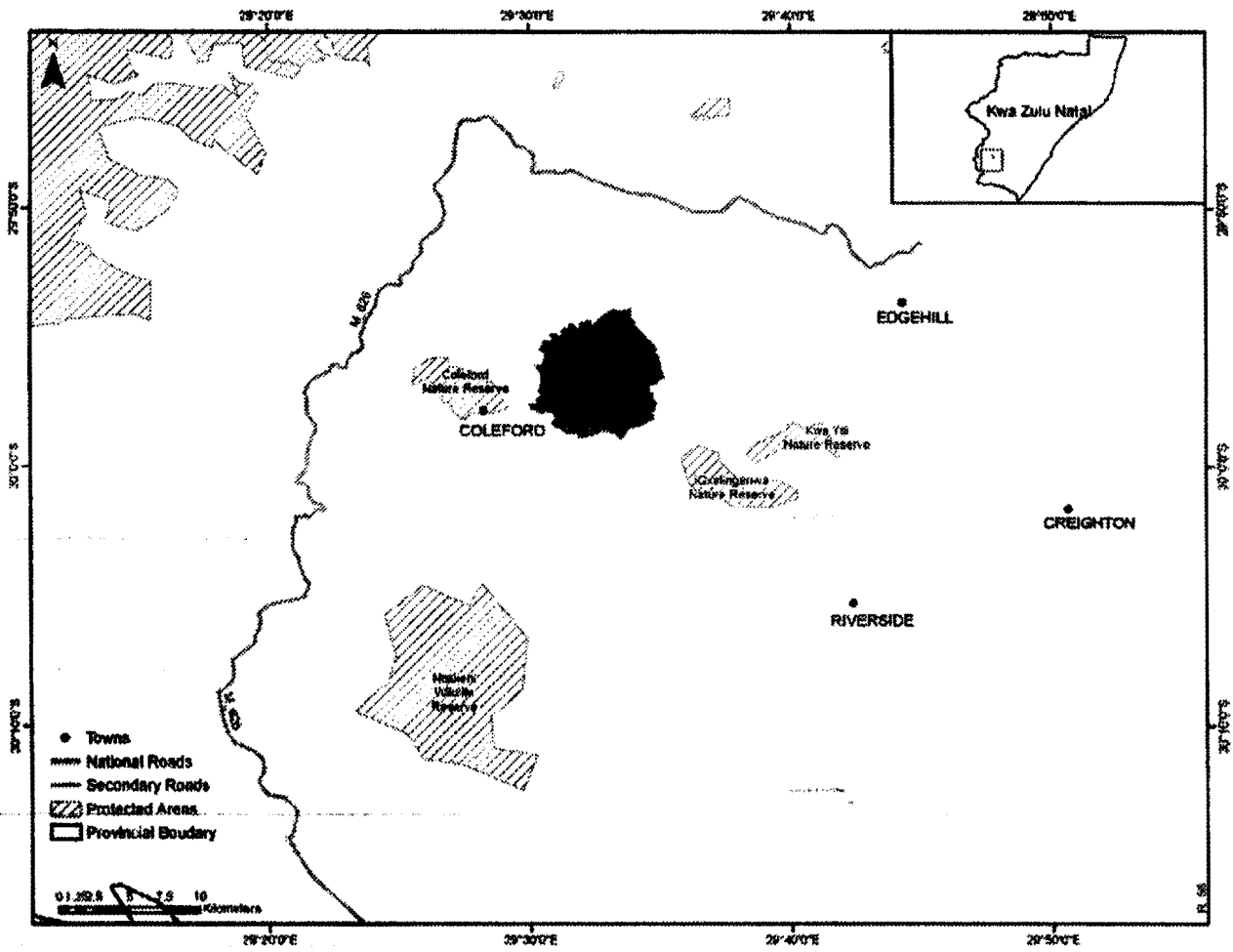
Key biodiversity features include one bird species, the Wattled Crane; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; one plant species *Kniphofia brachystachya*; one reptile species, *Bradypodion thamnobates*; and one vegetation type, the Drakensberg Foothill Moist Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Pudsey/Otterburn Wetlands showing original area of ecosystem

209. Rand Highveld Grassland (Gm 11)

| | |
|--|---|
| Reference number | Gm 11 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Gauteng, North West, Free State and Mpumalanga |
| Municipalities | Ekurhuleni MM, Mophaka LM, Emfuleni LM, Nokeng tsa Taemane LM, Kungwini LM, Westonaria LM, City of Johannesburg MM, Greater Marble Hall LM, Elias Motsoaledi LM, Makhuduthamaga LM, Delmas LM, Emalahleni LM, Steve Tshwete LM, Highlands LM, Thembisile LM, Rustenburg LM, Kgetlengrivier LM, Ditsobotla LM, Ventersdorp LM, Potchefstroom LM, Matlosana LM, Merafong City LM and City of Tshwane MM |
| Original area of ecosystem | 1 026 000 ha |
| Remaining natural area of ecosystem (%) | 60% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | 5 endemic plant species |

Geographical location

In areas between rocky ridges from Pretoria to Witbank, extending onto ridges in the Stoffberg and Roossenekal regions as well as west of Krugersdorp centred in the vicinity of Derby and Potchefstroom, and extending southwards and north-eastwards.

Description

Highly variable landscape with extensive sloping plains and a series of ridges slightly elevated over undulating surrounding plains. The vegetation is species-rich, wiry, sour grassland alternating with low, sour shrubland on rocky outcrops and steeper slopes. The most common grasses on the plains belong to the genera *Themeda*, *Eragrostis*, *Heteropogon* and *Elionurus*. High diversity of herbs, many of which belong to the Asteraceae, is also a typical feature. Rocky

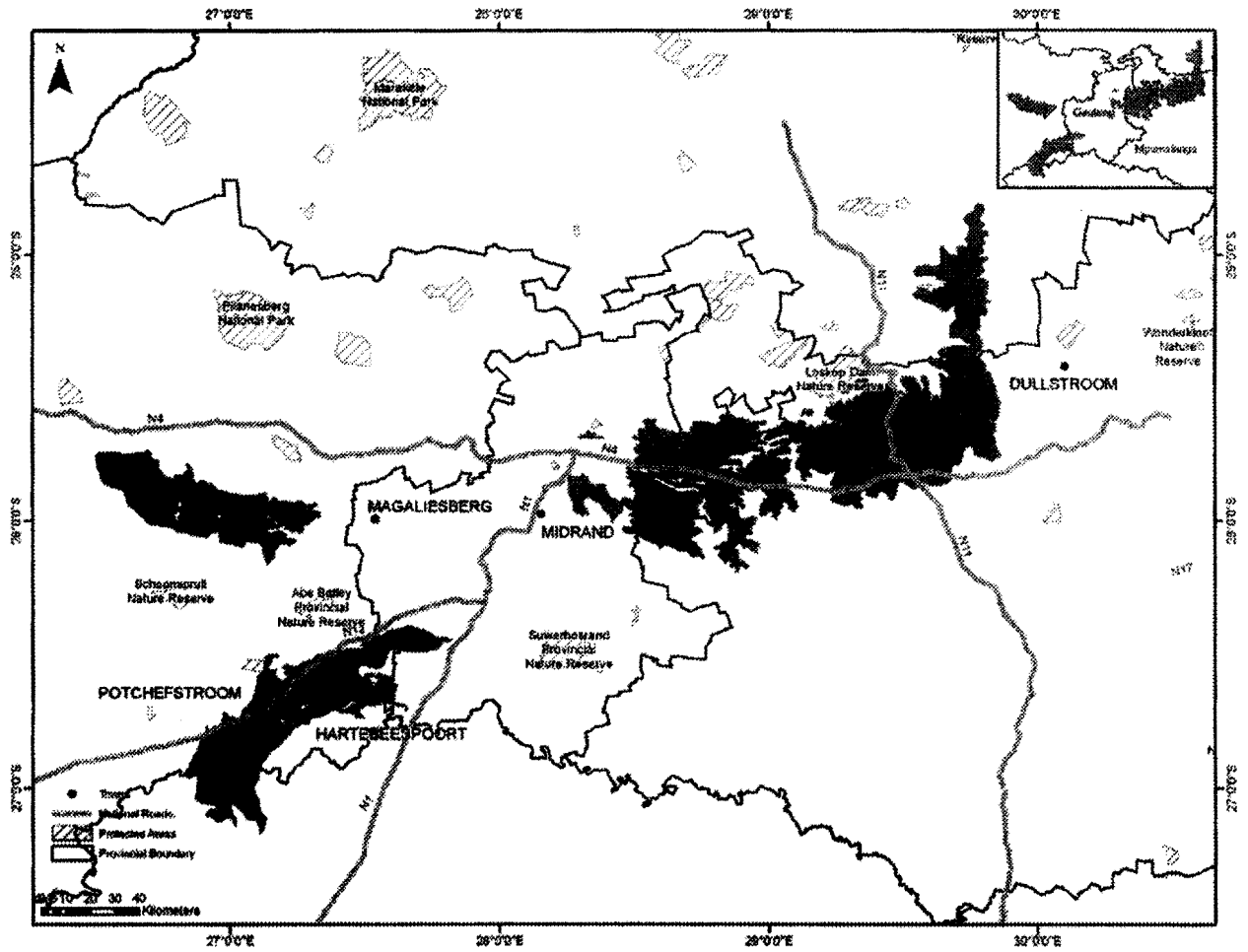
hills and ridges carry sparse (savannoid) woodlands with *Protea caffra* subsp. *caffra*, *P. welwitschii*, *Acacia caffra* and *Celtis africana*, accompanied by a rich suite of shrubs among which the genus *Rhus* (especially *R. magalisonata*) is most prominent. At least 5 endemic plant species occur in the ecosystem.

Other information

Approximately 1% of the ecosystem is protected in small patches in the Kwaggavoetpad, Van Riebeeck Park, Bronkhorstspuit and Boskop Dam Nature Reserves. The ecosystem is also found in private conservation areas for example Doornkop, Zemvelo, Rhenosterpoort and Mpopomeni.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 399-400. South African National Biodiversity Institute, Pretoria.



Location of Rand Highveld Grassland showing original area of ecosystem

210. Saldanha Flats Strandveld (FS 3)

| | |
|--|--|
| Reference number | FS 3 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Bergrivier LM, Saldanha Bay LM, Swartland LM and WCDMA01 |
| Original area of ecosystem | 76 000 ha |
| Remaining natural area of ecosystem (%) | 48% |
| Proportion of ecosystem protected | 11% of original area |
| Known number of species of special concern | 26 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) and 2 endemic plant species |

Geographical location

Extensive coastal flats from St Helena Bay and the southern banks of the Great Berg River near its mouth in the north to Saldanha and Langebaan in the south, with the southernmost extension at the coast near Yzerfontein and Rietduin.

Description

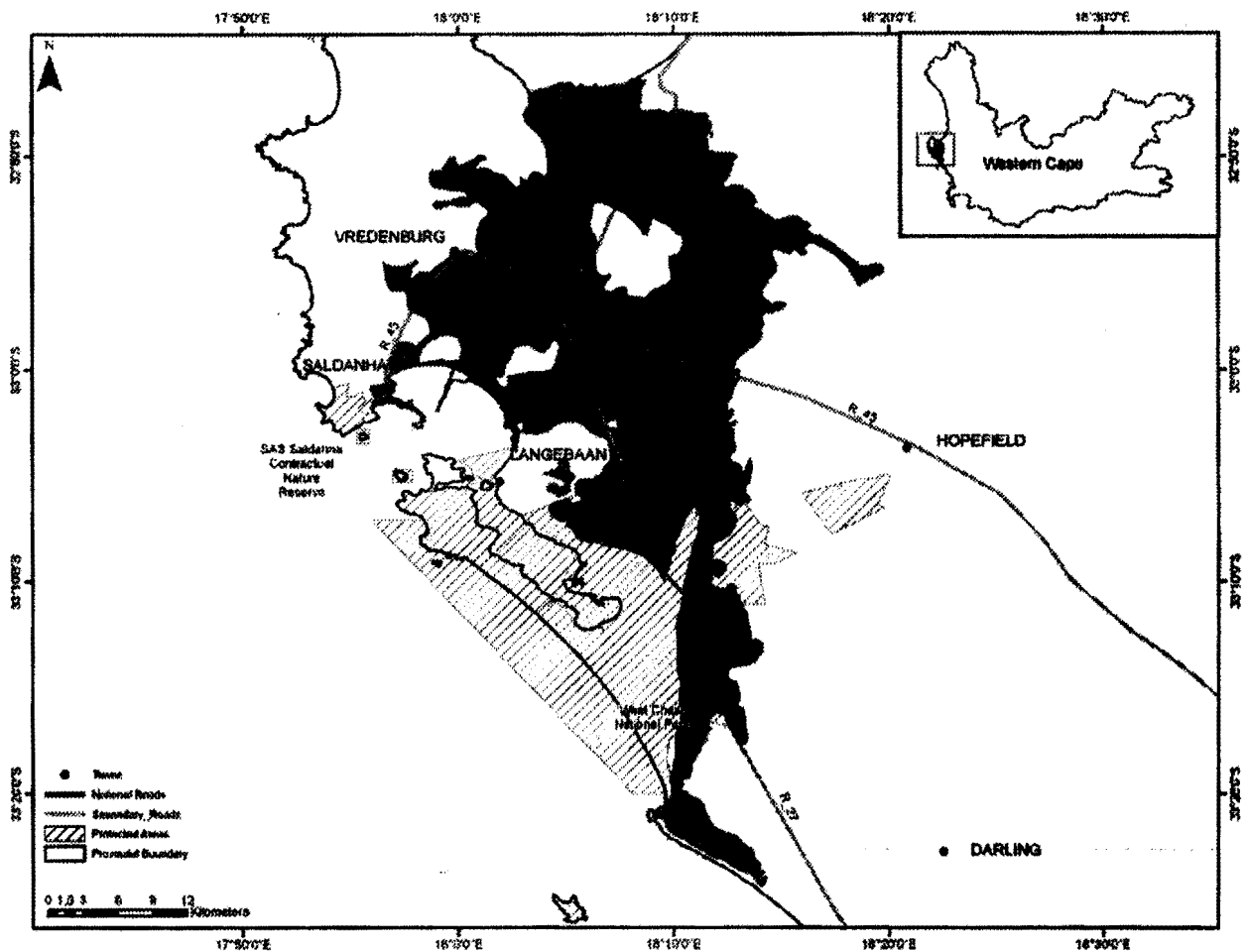
Sclerophyllous shrublands built of a sparse emergent and moderately tall shrub layer, with an open succulent shrub layer forming the undergrowth. Conspicuous displays of geophytes and annual herbaceous flora in spring. At least two endemic plant species and 26 Red Data List plant species occur in the ecosystem.

Other information

Approximately 11% is protected in the West Coast National Park and Yzerfontein Nature Reserve and a very small portion is also found in private conservation areas such as Jakkalsfontein and West Point.

Reference

Rebello, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19: 200-201.* South African National Biodiversity Institute, Pretoria.



Location of Saldanha Flats Stranveld showing original area of ecosystem

211. Schweizer-Reneke Bushveld (SVk 3)

| | |
|--|---|
| Reference number | SVk 3 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Province | North West |
| Municipalities | Tswaing LM, Naledi LM, Mamusa LM, Greater Taung LM and Lekwa-Teemane LM |
| Original area of ecosystem | 203 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

Schweizer-Reneke area in the east to Amalia in the west and from the farming areas of around Broedersput in the north to Never Mind (Christiana District) in the south.

Description

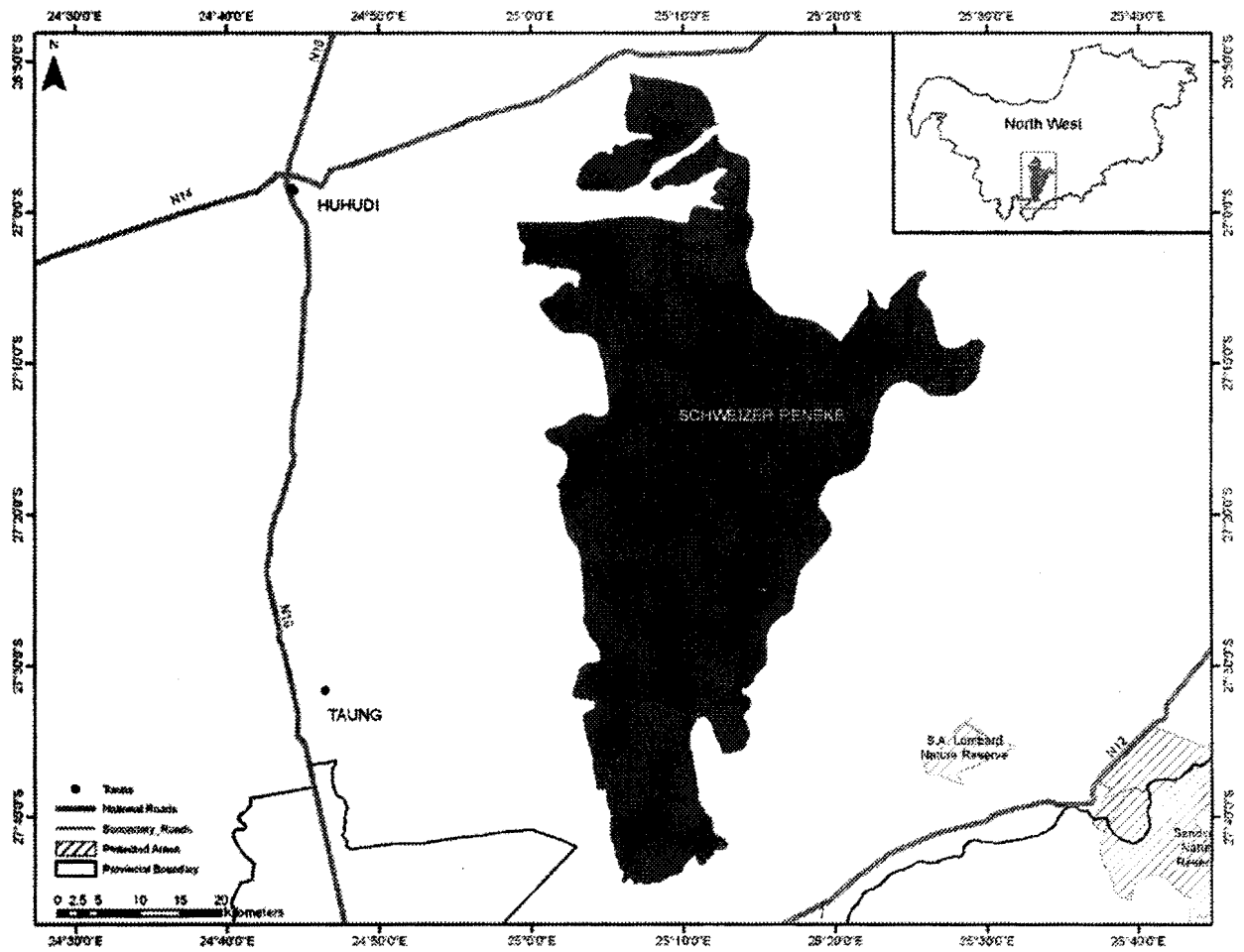
Plains, slightly undulating plains and some hills, supporting open woodland with a fairly dense shrub layer, with trees *Acacia erioloba*, *A. karroo*, *A. tortilis*, *Rhus lancea* and shrubs *A. hebeclada*, *Diospyros lycioides*, *Grewia flava* and *Tarchonanthus camphoratus*.

Other information

The ecosystem is not protected.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 516. South African National Biodiversity Institute, Pretoria.



Location of Schweizer-Reneke Bushveld showing original area of ecosystem

212. Sherwood Forest Collective (KZN 79)

| | |
|--|---|
| Reference number | KZN 79 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | uMngeni LM and Mooi Mpopana LM |
| Original area of ecosystem | 2 000 ha |
| Remaining natural area of ecosystem (%) | 45% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 7 threatened or endemic plant and animal species including those listed below |

Geographical location

Howick (2930AC). Ecosystem includes all the Eastern Mistbelt Forest patches situated along the north facing slope and entirely contained within the Drakensberg Foothill Mistbelt Grassland. Ecosystem delineated by the lowermost contour of the slope and the Mooi River Highland Grassland in the north; and by the 'crest' contour of the same slope in the south. All forest patches lying in this defined area are included.

Description

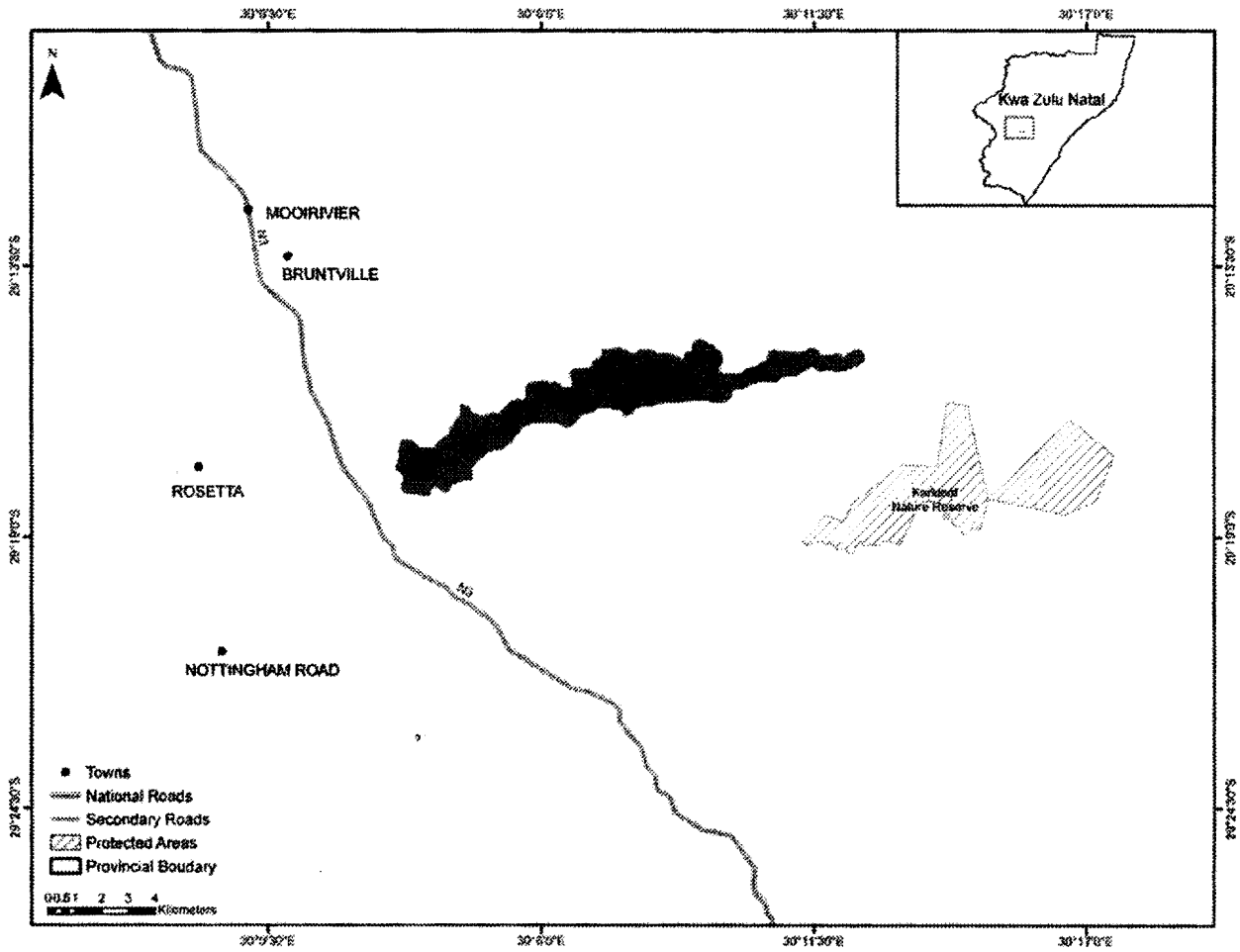
Key biodiversity features include one amphibian, *Afrixalus spinifrons intermedius*; one bird species, the Wattled Crane; one mammal species, the Oribi; three millipede species including *Centrobolus tricolor*, *Doratogonus hoffmani* and *Doratogonus montanus*; one plant species, *Kniphofia brachystachya*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including Drakensberg Foothill Moist Grassland, Eastern Mistbelt Forest and Mooi River Highland Grassland.

Other Information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Sherwood Forest Collective showing original area of ecosystem

213. Soweto Highveld Grassland (Gm 8)

| | |
|--|---|
| Reference number | Gm 8 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | Free State, Gauteng, Mpumalanga and North West |
| Municipalities | Phumelela LM, Ngwathe LM, Metsimaholo LM, Mafube LM, Ekurhuleni MM, City of Johannesburg MM, Erfuleni LM, Midvaal LM, Lesedi LM, Mogale City LM, Randfontein LM, Westonaria LM, Msukaligwa LM, Seme LM, Lekwa LM, Dipaleseng LM, Govan Mbeki LM, Delmas LM, Emalaheni LM, Potchefstroom LM and Merafong City LM |
| Original area of ecosystem | 1 451 000 ha |
| Remaining natural area of ecosystem (%) | 54% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

In a broad band roughly delimited by the N17 road between Ermelo and Johannesburg in the north, Perdekop in the southeast and the Vaal River (border with the Free State) in the south. It extends further westwards along the southern edge of the Johannesburg Dome (including part of Soweto) as far as the vicinity of Randfontein. In southern Gauteng it includes the surrounds of Vanderbijlpark and Vereeniging as well as Sasolburg in the northern Free State.

Description

Gently to moderately undulating landscape on the Highveld plateau supporting short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* and accompanied by a variety of other grasses such as *Elionurus muticus*, *Eragrostis racemosa*, *Heteropogon contortus* and *Tristachya leucothrix*. In places not disturbed, only scattered small wetlands,

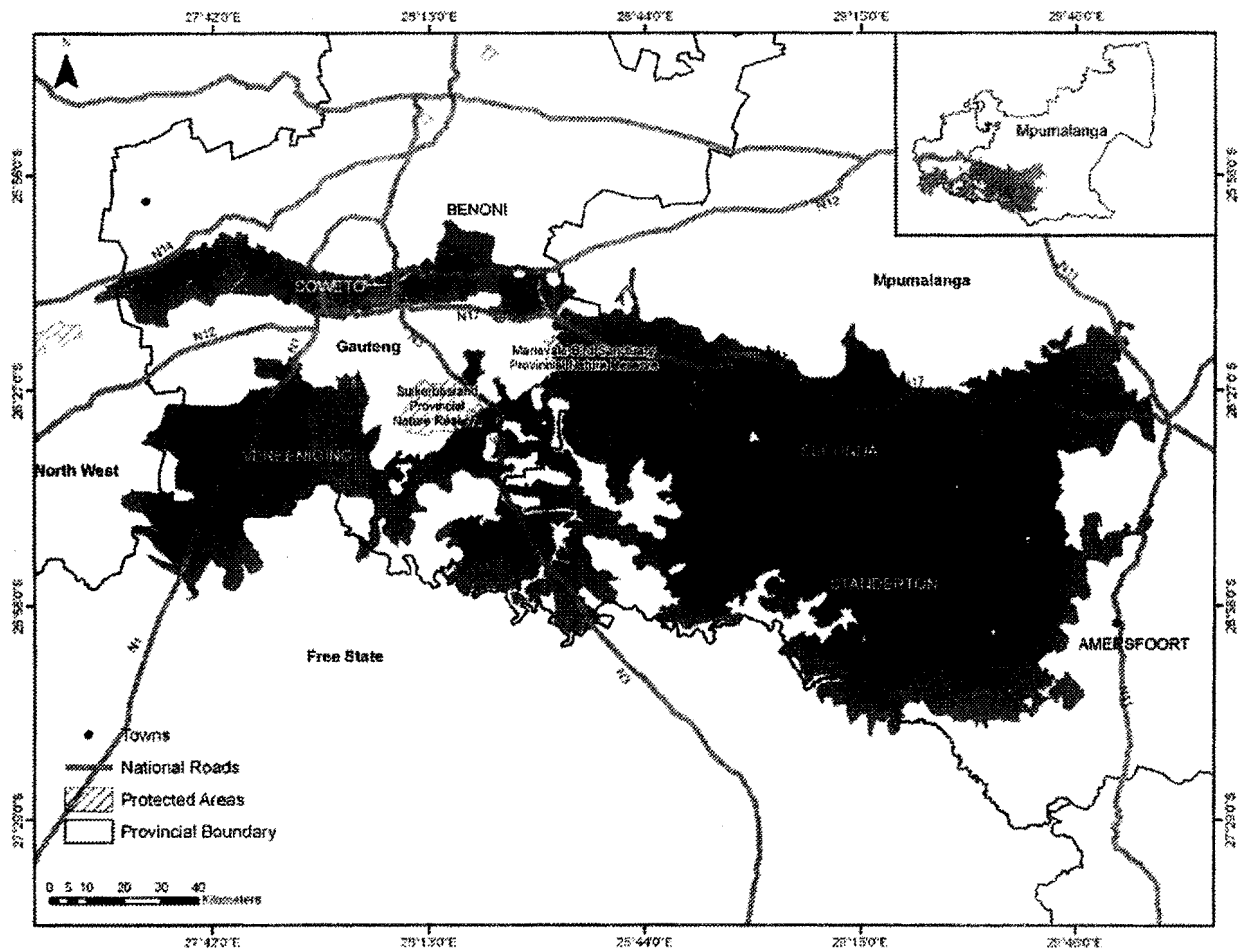
narrow stream alluvia, pans and occasional ridges or rocky outcrops interrupt the continuous grassland cover.

Other information

Only a handful of patches are protected.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 397. South African National Biodiversity Institute, Pretoria.



Location of Soweto Highveld Grassland showing original area of ecosystem

214. Springbokvlakte Thornveld (SVcb 15)

| | |
|--|---|
| Reference number | SVcb 15 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | Gauteng, Limpopo, Mpumalanga and North West |
| Municipalities | City of Tshwane MM, Nokeng tsa Taemane LM, Polokwane LM, Lepele-Nkumpi LM, Thabazimbi LM, Mookgopong LM, Modimolle LM, Bela-Bela LM, Mogalakwena LM, Greater Marble Hall LM, Elias Motsoaledi LM, Dr JS Moroka LM, Moretele LM and Local Municipality of Madibeng |
| Original area of ecosystem | 880 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | |

Geographical location

Flats from Zebediela in the northeast to Hammanskraal and Assen in the southwest as well as from Bela-Bela and Mookgophong in the northwest to Marble Hall and Rust de Winter in the southeast.

Description

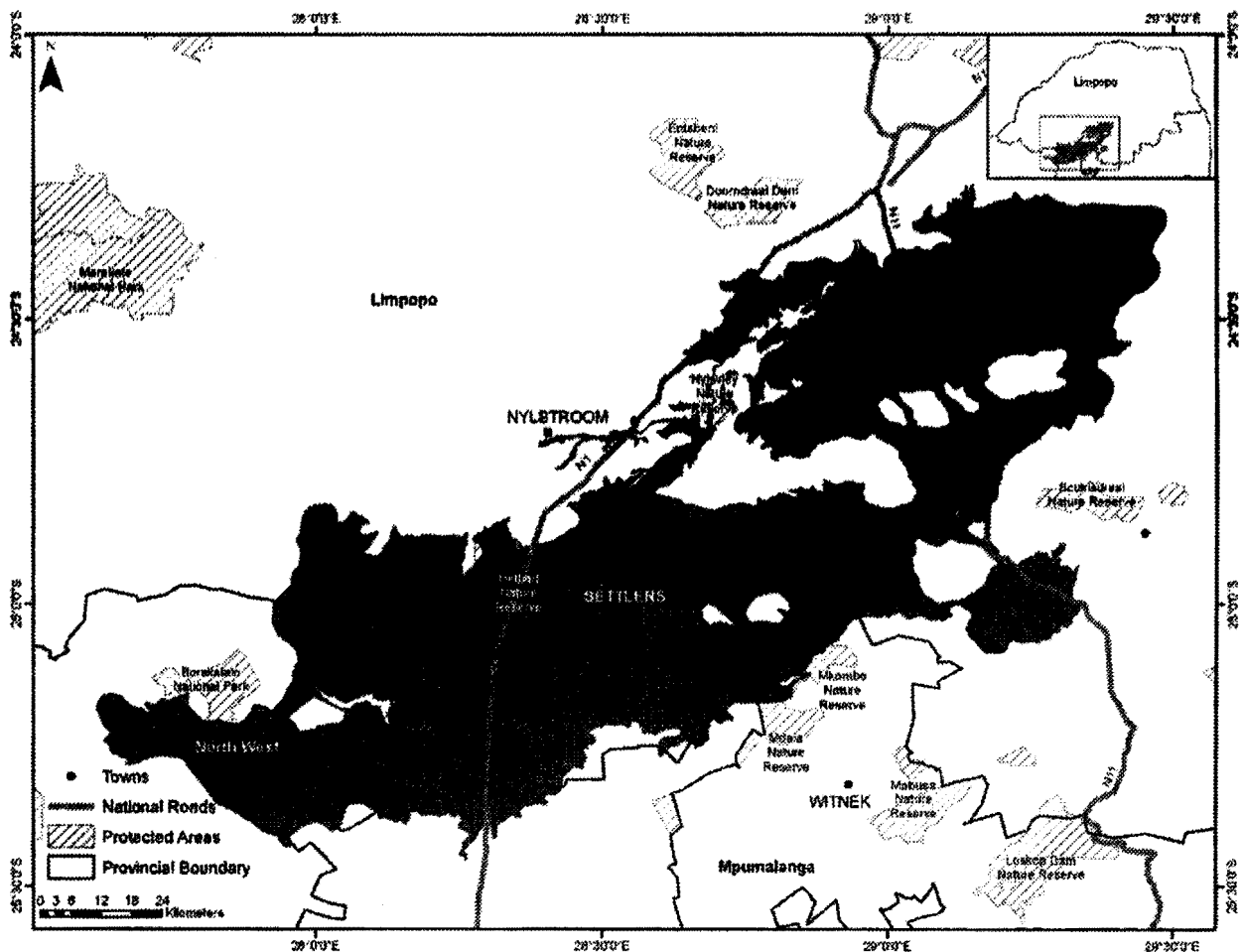
Open to dense, low thorn savanna dominated by *Acacia* species or shrubby grassland with a very low shrub layer. The ecosystem occurs on flat to slightly undulating plains.

Other Information

Approximately 1% of the ecosystem is protected, mainly in the Mkombo Nature Reserve.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 471. South African National Biodiversity Institute, Pretoria.



Location of Springbokvlakte Thornveld showing original area of ecosystem

215. Swamp Forest (Foa 2)

| | |
|--|---|
| Reference number | FOa 2 |
| Listed under criteria | A2 and C |
| Biome | Forest |
| Provinces | KwaZulu-Natal and Eastern Cape |
| Municipalities | Umhlabuyalingana LM, Mtubatuba LM, Mbonambi LK, uMhlathuze LM & KZNDMA27 |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 3 000 ha |
| Proportion of ecosystem protected | 67% of remaining area |
| Known number of species of special concern | 1 endemic plant species |

Geographical location

Pockets and narrow ribbons of Swamp Forests extend in a narrow belt along the Indian Ocean coastal seaboard from within Mozambique, through Maputaland to as far south as Port Grosvenor - Msikaba River in Pondoland. Their distribution is curtailed more in the south than that of Mangrove Forests, suggesting they are more climatically susceptible than mangroves. The ecosystem occurs only at low latitudes between 20m and 60m.

Description

Usually 12-15 m tall forests and comprises two main strata (canopy tree stratum and the shrub layer). The trees and herbaceous plants have strong tropical affinities. Swamp Forests are supported by sandy, waterlogged soils in habitats close to still, or very slow flowing, fresh water bodies. There is a characteristic build up of organic decaying material. Specialized breathing and mechanical supports, such as stilt roots, underground suckers, lenticels, and microphores occur in some dominant species in these forests. Presence of ferns, epiphytes and creepers in the understorey is another striking feature of this forest ecosystem. Low-stature thickets and forests dominated by *Hibiscus tiliaceus* (in freshwater situations) are also classified within this forest ecosystem. The extreme and very specialized habitat conditions of Swamp Forest do not support a high number of species. In addition, this tropical forest ecosystem reaches its southernmost distribution limits in South Africa and is naturally depauperate. Few dominant canopy tree species reflects the low species diversity of this forest type.

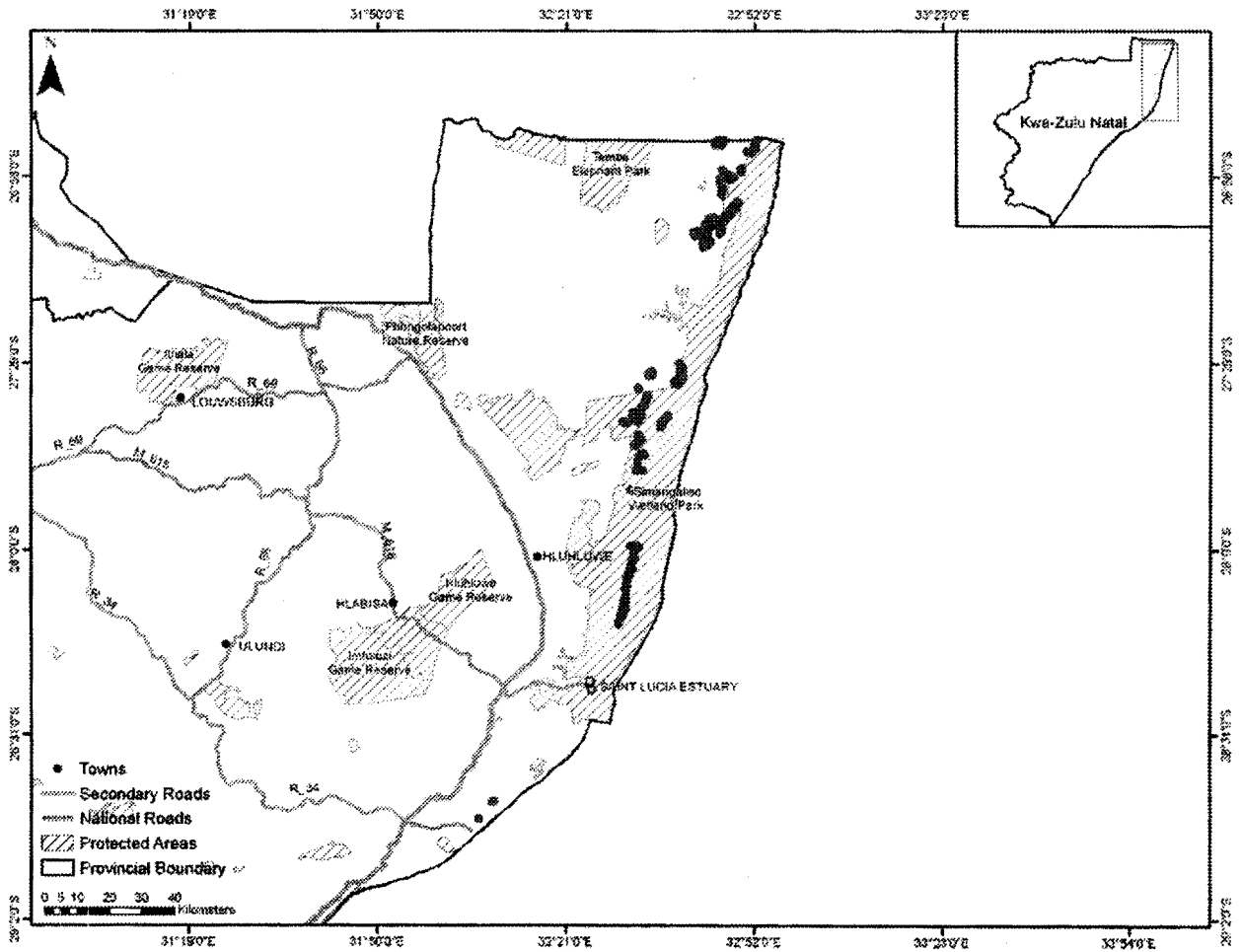
Other information

Approximately 67% of the ecosystem is protected in isiMangaliso Wetland Park, Maphelana, Dududuku, Raphia Palms and Umlalazi Nature Reserves.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 607-608. South African National Biodiversity Institute, Pretoria.

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.



Location of Swamp Forest (area of ecosystem enlarged for visibility at this scale)

216. Swartland/Franklin Vlei/Kokstad Ridge and Wetlands (KZN 80)

| | |
|--|---|
| Reference number | KZN 80 |
| Listed under Criterion | F |
| Biome | Grassland and Forest |
| Province | KwaZulu-Natal |
| Municipalities | Greater Kokstad LM and Umzimkhulu LM |
| Original area of ecosystem | 42 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 8 threatened or endemic plant and animal species including those listed below |

Geographical location

Swartberg (3029AB), Franklin (3029AD) and Glengarry (3029BC). Ecosystem defined by the ridges and wetlands associated with Wattled Crane, White-winged Flufftail and Oribi habitat.

Description

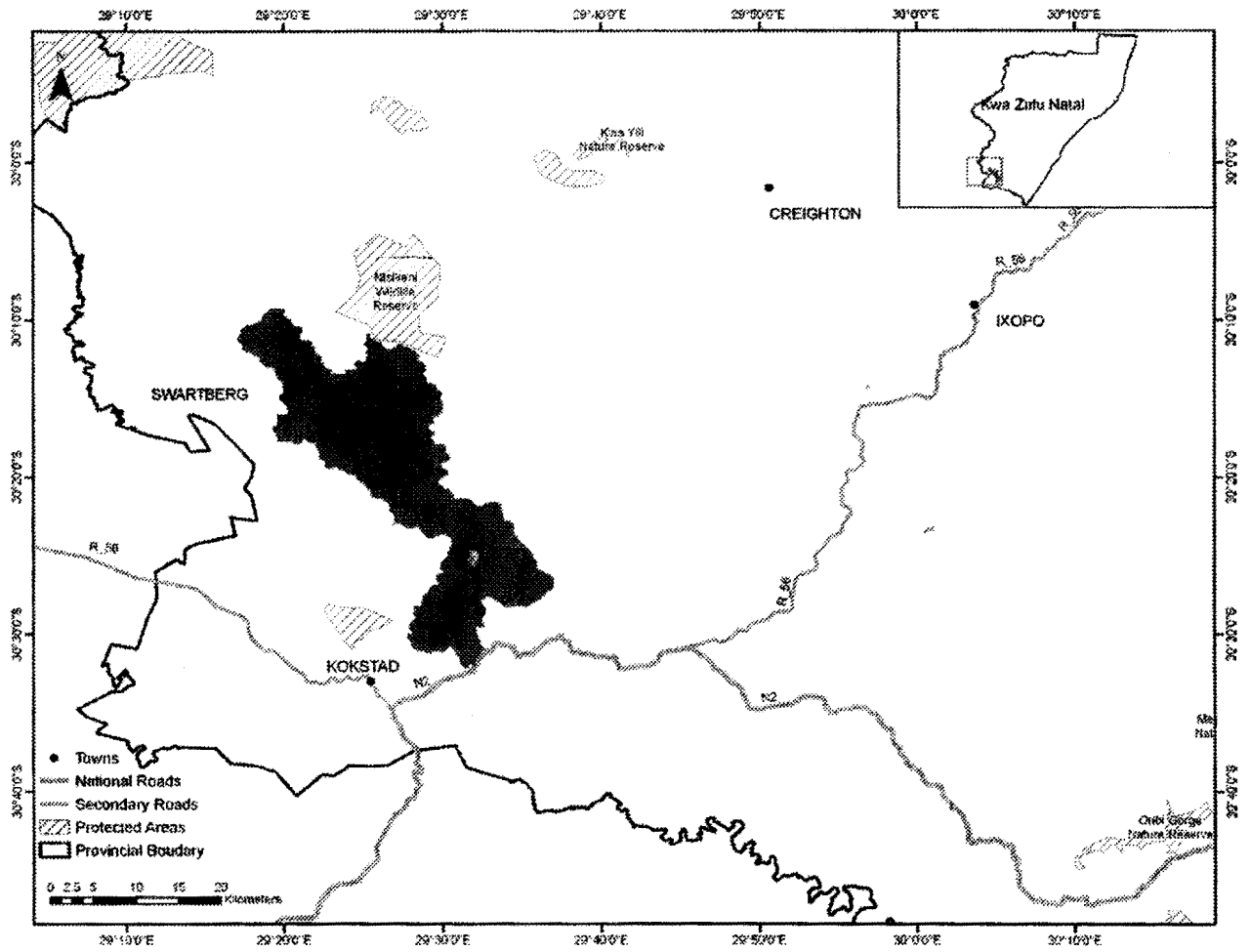
Key biodiversity features include one amphibian species, *Leptopelis xenodactylus*; two bird species including Wattled Crane and White-winged Flufftail; one mammal species, the Oribi; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; two plant species for example *Dierama tysonii*; and four vegetation types including Drakensberg Foothill Moist Grassland, East Griqualand Grassland, Eastern Mistbelt Forest and Midlands Mistbelt Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Swartberg/Franklin Vlei/Kokstad Ridge and Wetlands showing original area of ecosystem

217. Swartland Alluvium Renosterveld (FRa 2)

| | |
|--|---|
| Reference number | FRa 2 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | City of Cape Town MM, Saldanha Bay LM and Swartland LM |
| Original area of ecosystem | 6 000 ha |
| Remaining natural area of ecosystem (%) | 51% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 Red Data plant species (EX, EW, CR, EN & VU excl VU D2) |

Geographical location

Narrow belts in the southern Swartland encompassed by Klipheuwel, Malmesbury, Moorreesburg and Darling along the Groen and Diep Rivers.

Description

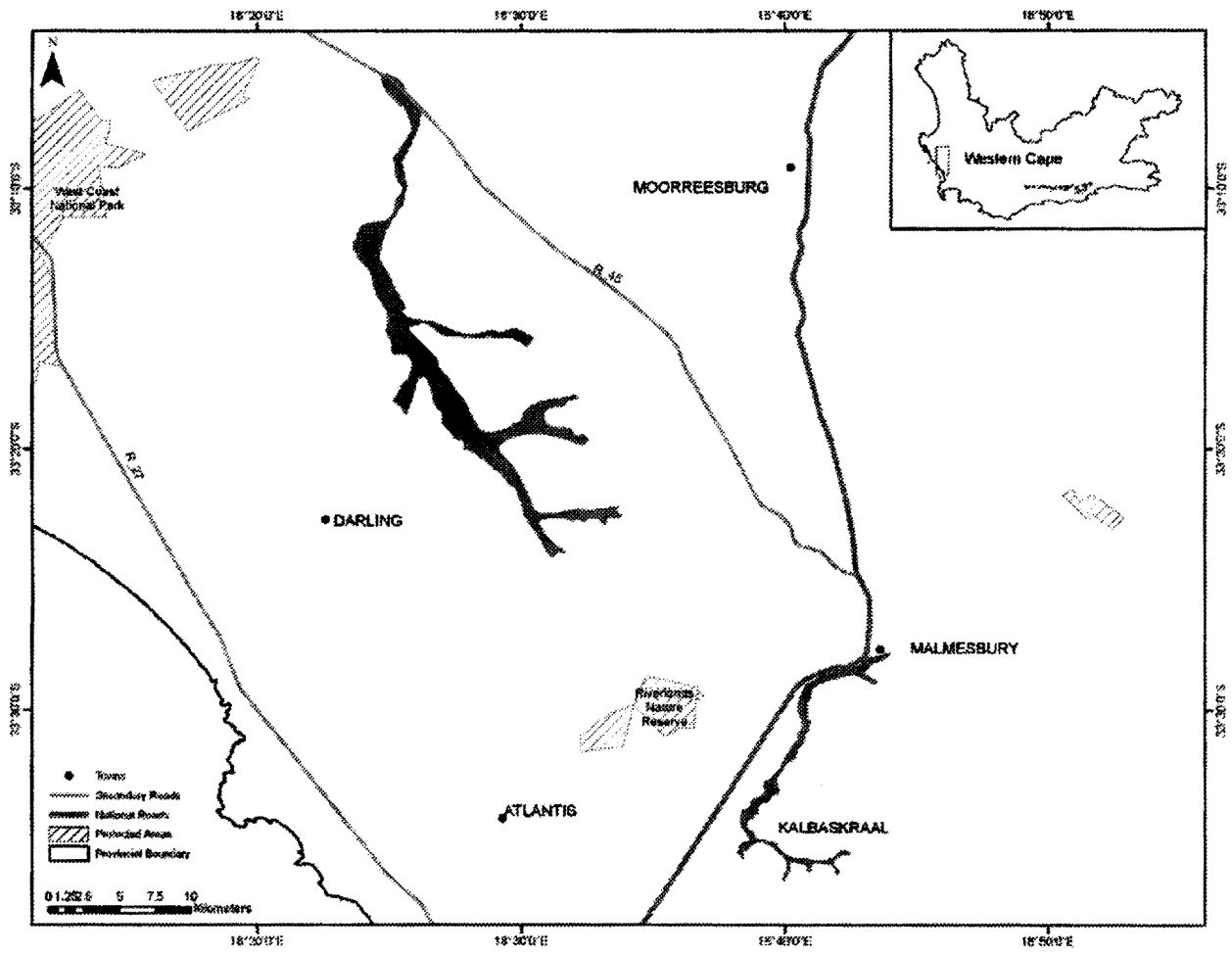
The ecosystem is found in riverine plains and bottomlands. Open, low, short cupressoid and low to moderately tall, grassy shrubland, dominated by renosterbos. At least four Red Data List plant species occur in the ecosystem.

Other information

The ecosystem is not protected.

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia* 19: 194-195. South African National Biodiversity Institute, Pretoria.



Location of Swartland Alluvium Renosterveld showing original area of ecosystem

218. Swellendam Silcrete Fynbos (FFc 1)

| | |
|--|---|
| Reference number | FFc 1 |
| Listed under Criterion | A1 |
| Biome | Fynbos |
| Province | Western Cape |
| Municipalities | Swellendam LM, Hessequa LM and Mossel Bay LM |
| Original area of ecosystem | 87 000 ha |
| Remaining natural area of ecosystem (%) | 49% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 23 Red Data plant species (EX, EN, CR, EN & VU excl VU D2) and 14 endemic plant species |

Geographical location

Relatively large patches on southern foothills of the Langeberg from around Swellendam to north of Dekriet/Soutpan (between Riversdale and Albertinia), becoming highly fragmented between Albertinia and the southern side of Robinson Pass to around Molenrivier (north of Klein-Brak River).

Description

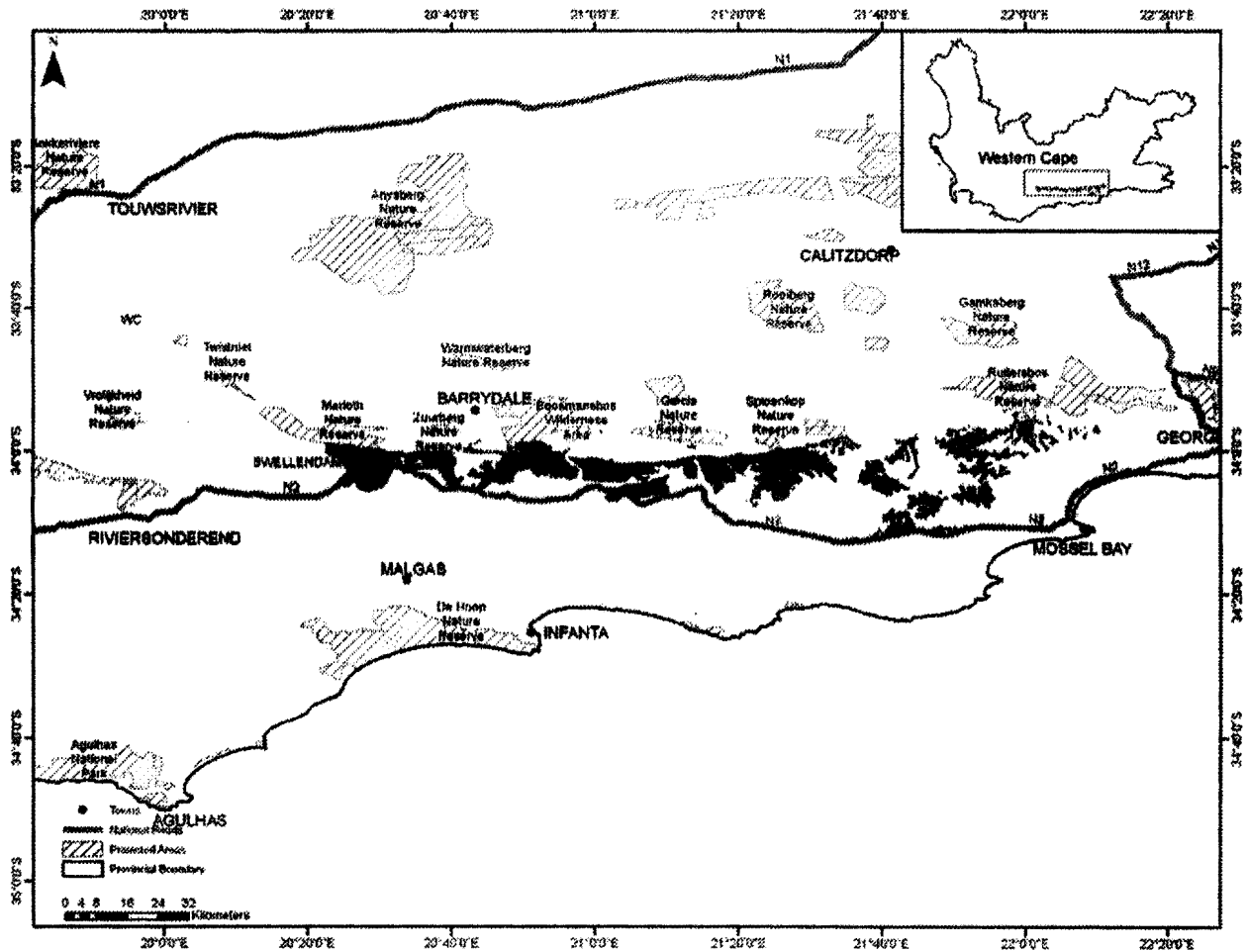
Mainly undulating hills on the coastal forelands, the remains of the old African surface. Structurally it is a medium tall evergreen shrubland or grassland. Predominantly asteraceous fynbos, but graminoid fynbos on summits and northern slopes where disturbed. Proteoid fynbos occurs on southern slopes and ericaceous fynbos is found in wetter habitats. Afrotemperate forest occurs in fire-safe alluvial areas, such as along perennial rivers. It is uncertain whether proteoid fynbos, renosterveld or thicket was the dominant type in some of the eastern plateaus; it has all been converted to pasture. At least 14 endemic plant species and 23 Red Data List plant species occur in the ecosystem.

Other Information

Approximately 4% of the ecosystem is protected in the Bontebok National Park and small patches are also found in Langeberg-oos (mountain catchment area).

Reference

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. *et al.* 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*: 158-159. South African National Biodiversity Institute, Pretoria.



Location of Swellendam Silcrete Fynbos showing original area of ecosystem

219. Transkei Coastal Scarp Forest (Foz V3)

| | |
|--|--|
| Reference number | FOz V3 |
| Listed under Criterion | A2 |
| Biome | Forest |
| Province | Eastern Cape |
| Municipalities | Mbhashe LM, Mnquma LM, Qaukeni LM, Port St Johns LM, Nyandeni LM and King Sabata Dalindyebo LM |
| Original area of ecosystem | Data not available |
| Remaining natural area of ecosystem | 61 000 ha |
| Proportion of ecosystem protected | 10% of remaining area |
| Known number of species of special concern | |

Geographical location

Transkei Coastal Scarp Forests (previously called Transkei Coastal Platform Forests) occur as two spatially separated belts, representing two subtypes. Transkei Coastal Platform Forests are found scattered along the Southern Transkei coast between Mngazana (just south of Port St. Johns) in the north and East London in the south. The southern most forest patch of this subtype is represented by Umtiza Forest (just west of East London). Transkei Lower Scarp Forests are situated in a belt more inland (up to 600-800 m of altitude), in scarp situations (e.g. on slopes of deeply-incised river valleys).

Description

Transkei Coastal Forests comprise low-grown (up to 9 m) and middle-grown (15-25 m) species-rich forests. The ground layer is only poorly developed. The forests of this ecosystem are found on sloping coastal platforms as well as steep scarps in deep incised valleys at altitudes between 0 to 600-800 m. Medium to coarse-grained spatial scale of regeneration of woody plants indicates that this forest is gap or event driven.

Other information

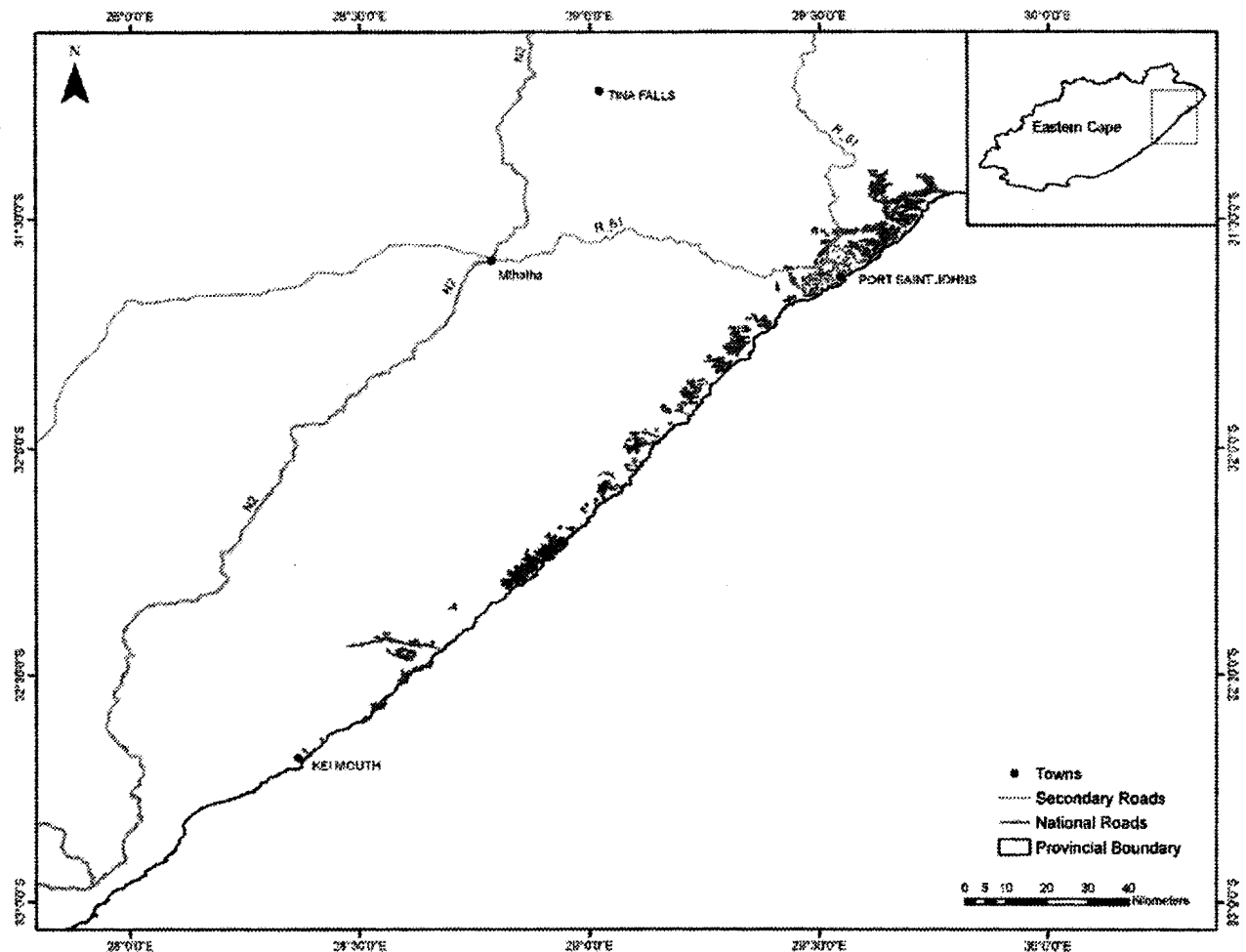
Approximately 10% of the ecosystem is protected in, for example the Dwesa/Cwebe Wildlife Reserve and Marine Sanctuary and Hluleka Nature Reserves. Many smaller patches occur on State forest land with low protection levels.

References

Mucina, L. & Geldenhuys, C.J. 2006. Afrotemperate, Subtropical and Azonal Forests. In: L. Mucina & M.C. Rutherford (eds). *The Vegetation of South Africa, Lesotho and Swaziland*.

Strelitzia 19: 602-603. South African National Biodiversity Institute, Pretoria.

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.*



Location of Transkei Coastal Scarp Forest (area of ecosystem enlarged for visibility at this scale)

220. Tzaneen Sour Bushveld (SVI 8)

| | |
|--|--|
| Reference number | SVI 8 |
| Listed under Criterion | A1 |
| Biome | Savanna |
| Provinces | Limpopo and Mpumalanga |
| Municipalities | Greater Letaba LM, Greater Tzaneen LM, Maruleng LM, Thulamela LM, Makhado LM, Molemole LM, Polokwane LM, Lepele-Nkumpi LM, Greater Tubatse LM and Thaba Chweu LM |
| Original area of ecosystem | 343 000 ha |
| Remaining natural area of ecosystem (%) | 57% |
| Proportion of ecosystem protected | 1% of original area |
| Known number of species of special concern | |

Geographical location

A band extending along the foot slopes and hills of the northeastern escarpment, from the Soutpansberg Mountains in the north via Tzaneen and narrowing to the Abel Erasmus Pass area in the south.

Description

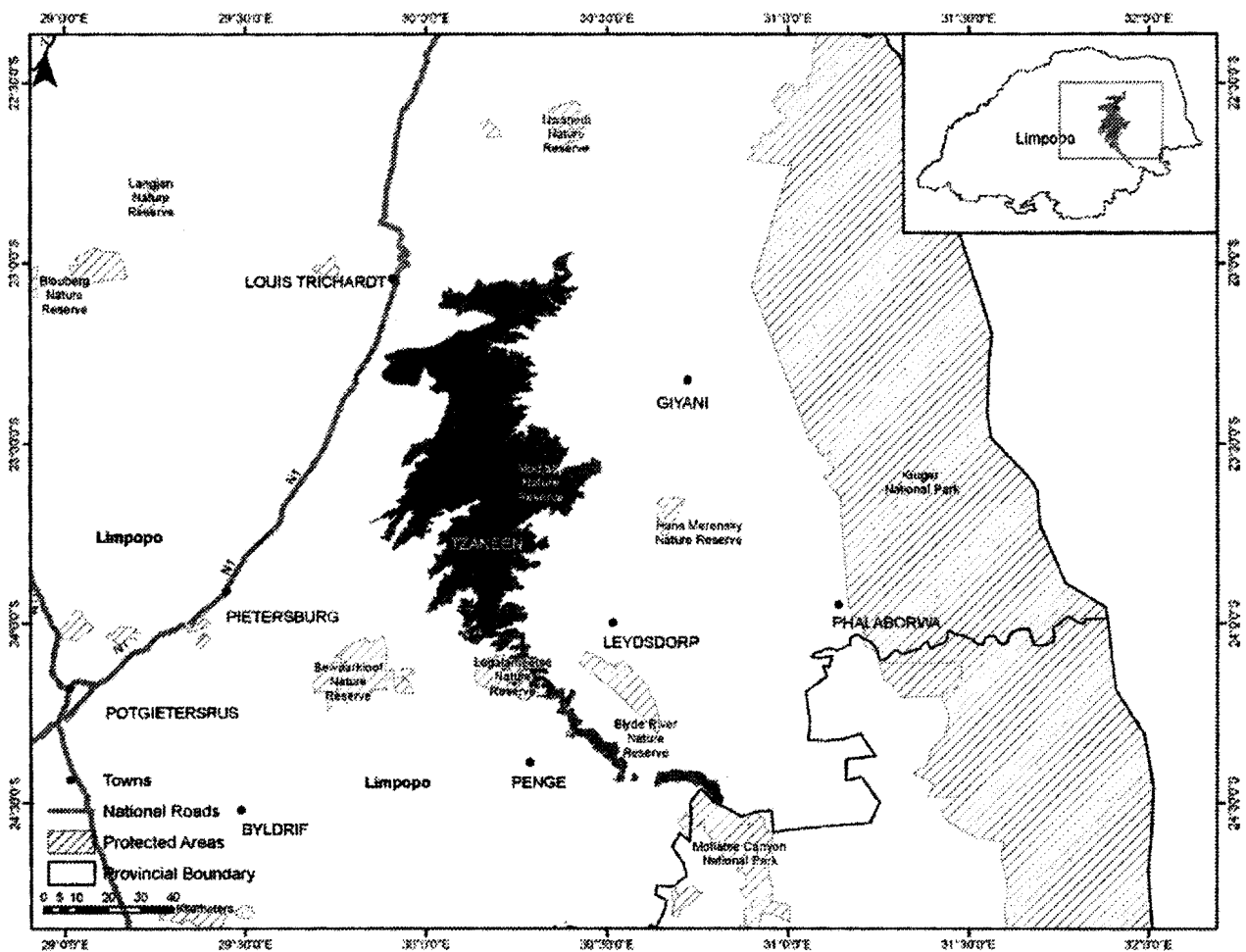
Deciduous, tall open bushveld (parkland) with a well-developed, tall grass layer, occurring on low to high mountains with undulating plains mainly at the base of, and on the lower to middle slopes of the northeastern escarpment.

Other information

Only a little over 1% of the ecosystem is protected, almost all in the Lekgalameetse Nature Reserve, and about 2% is found in private reserves such as the Selati Game Reserve and Wolkberg (Serala) Wilderness Area.

Reference

Rutherford, M.C., Mucina, L., Lotter, M.C., Bredenkamp, G.J., Smit, J.H.L., Scott-Shaw, R., Hoare, D.B., Goodman, P.S., Bezuidenhout, H., Scott, L., Ellis, F., Powrie, L.W., Siebert, F., Mostert, T.H., Henning, B.J., Venter, C.E., Camp, K.G.T., Siebert, S.J., Matthews, W.S., Burrows, J.E., Dobson, L., van Rooyen, N., Schmidt, E., Winter, P.J.D., du Preez, P.J., Ward, R.A., Williamson, S. & Hurter, P.J.H. 2006. Savanna Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* **19**: 495-496. South African National Biodiversity Institute, Pretoria.



Location of Tzaneen Sour Bushveld showing original area of ecosystem

221. Umvoti Vlei and Surrounds (KZN 81)

| | |
|--|---|
| Reference number | KZN 81 |
| Listed under Criterion | F |
| Biome | Grassland and Indian Ocean Coastal Belt |
| Province | KwaZulu-Natal |
| Municipality | Umvoti LM |
| Original area of ecosystem | 11 000 ha |
| Remaining natural area of ecosystem (%) | 19% |
| Proportion of ecosystem protected | 4% of original area |
| Known number of species of special concern | 6 threatened or endemic plant and animal species including those listed below |

Geographical location

Greytown (2930BA). Includes the Umvoti Vlei and its surrounding lowlands. Ecosystem delineated by contours defining the valley floodplain.

Description

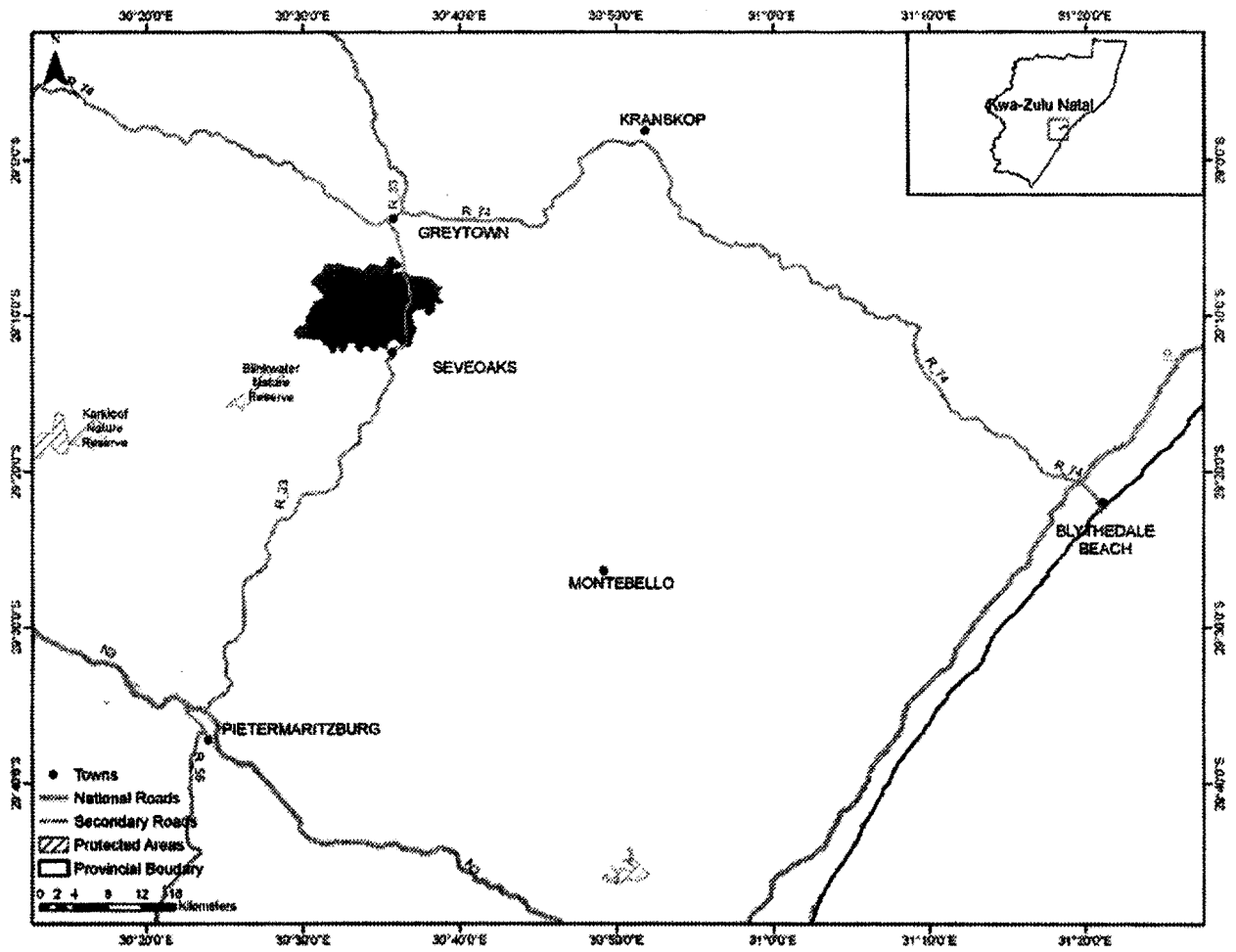
Key biodiversity features include one bird species, the Wattled Crane; one mammal species, the Oribi; one millipede species, *Doratogonus montanus*; three plant species including *Gerbera aurantiaca*, *Kniphofia latifolia* and *Senecio exuberans*; and one vegetation type, Midlands Mistbelt Grassland.

Other information

About 4% of the ecosystem is protected in the Umvoti Vlei Nature Reserve.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Umvoti Vlei and Surrounds showing original area of ecosystem

222. Uyskop Valley (KZN 82)

| | |
|--|---|
| Reference number | KZN 82 |
| Listed under Criterion | F |
| Biome | Grassland |
| Province | KwaZulu-Natal |
| Municipality | Utrecht LM |
| Original area of ecosystem | 1 000 ha |
| Remaining natural area of ecosystem (%) | 63% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 3 threatened or endemic plant and animal species including those listed below |

Geographical location

Utrecht (2730CB). Ecosystem lies in the valley between the Uyskop trig beacon and surrounding hills south of the Sandspruit River.

Description

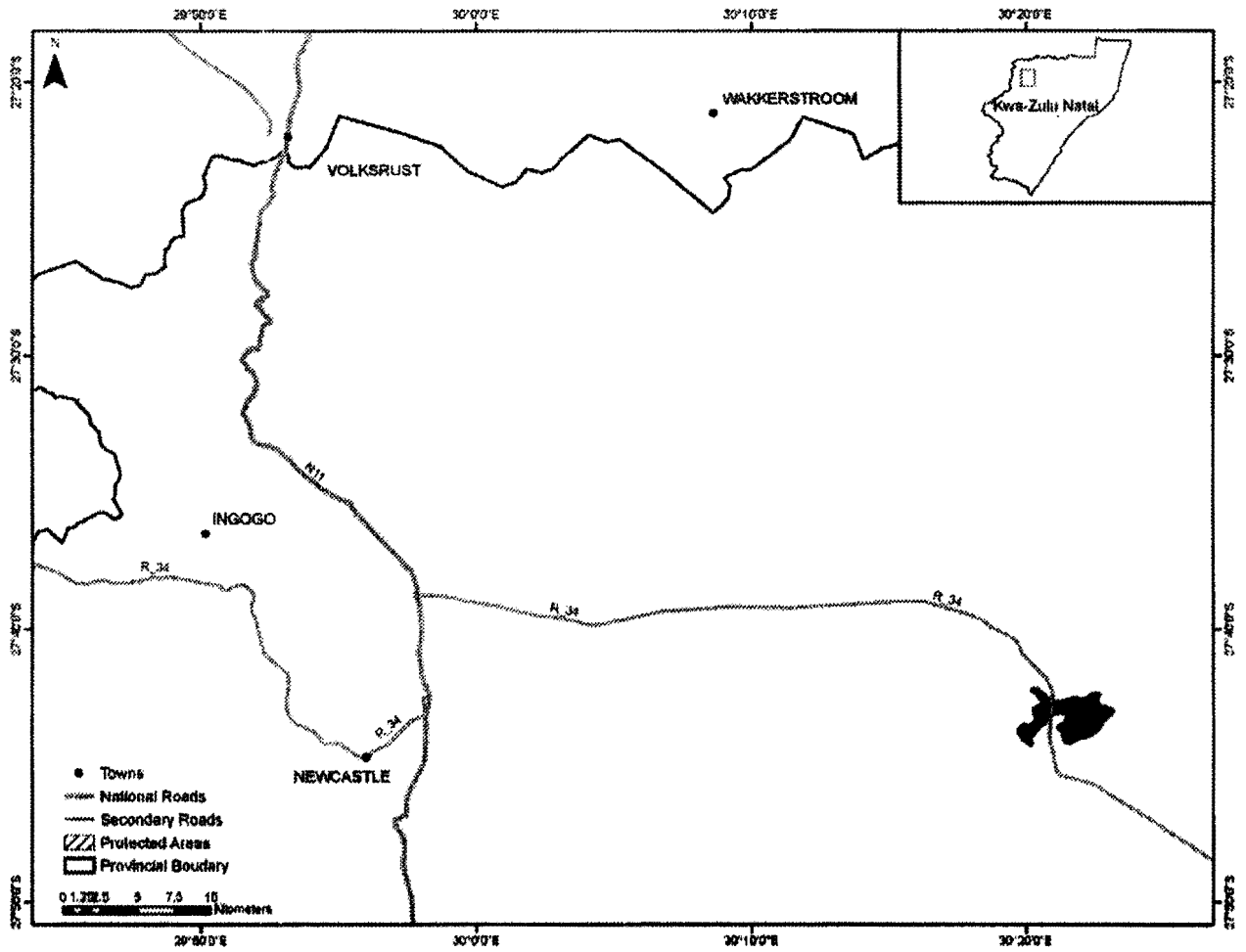
Key biodiversity features include one bird species, White-winged Flufftail; one millipede species, *Doratogonus minor*; one plant species *Kniphofia galpinii*; and one vegetation type, Income Sandy Grassland.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Uyskop Valley showing original area of ecosystem

223. Vaalkop Headlands (KZN 83)

| | |
|--|--|
| Reference number | KZN 83 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Umvoti LM |
| Original area of ecosystem | 6 000 ha |
| Remaining natural area of ecosystem (%) | 68% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 10 threatened or endemic plant and animal species including those listed below |

Geographical location

Mount Alida (2930AB). Includes the headwater system of a multiple of small valleys, each with a number of small wetlands. Ecosystem delineated by ridges and valleys.

Description

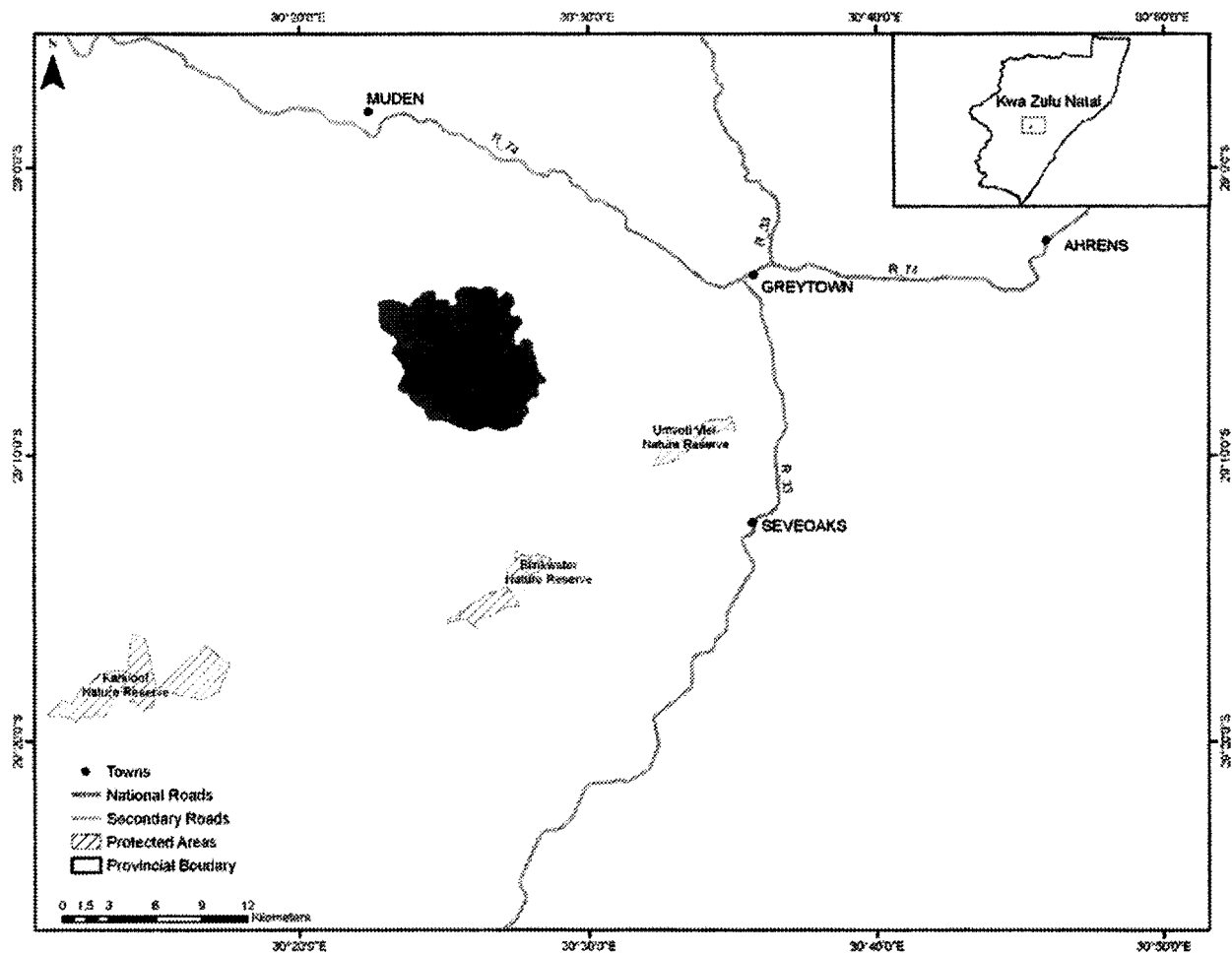
Key biodiversity features include one bird species, the Wattled Crane; one mammal species, the Oribi; four millipede species including *Centrobolus tricolor*, *Doratogonus falcatus*, *Doratogonus montanus* and *Doratogonus natalensis*; three plant species including *Geranium natalense*, *Senecio exuberans* and *Watsonia canaliculata*; one reptile species, *Bradypodion thamnobates*; and three vegetation types including KwaZulu-Natal Highland Thornveld, Midlands Mistbelt Grassland and Thukela Valley Bushveld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Vaalkop Headlands showing original area of ecosystem

224. Vredefort Dome Granite Grassland (Gh 11)

| | |
|--|--|
| Reference number | Gh 11 |
| Listed under Criterion | A1 |
| Biome | Grassland |
| Provinces | North West and Free State |
| Municipalities | Moqhaka LM, Ngwathe LM, Potchefstroom LM |
| Original area of ecosystem | 92 000 ha |
| Remaining natural area of ecosystem (%) | 59% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | |

Geographical location

Central portion of the Vredefort Dome around Parys and Vredefort.

Description

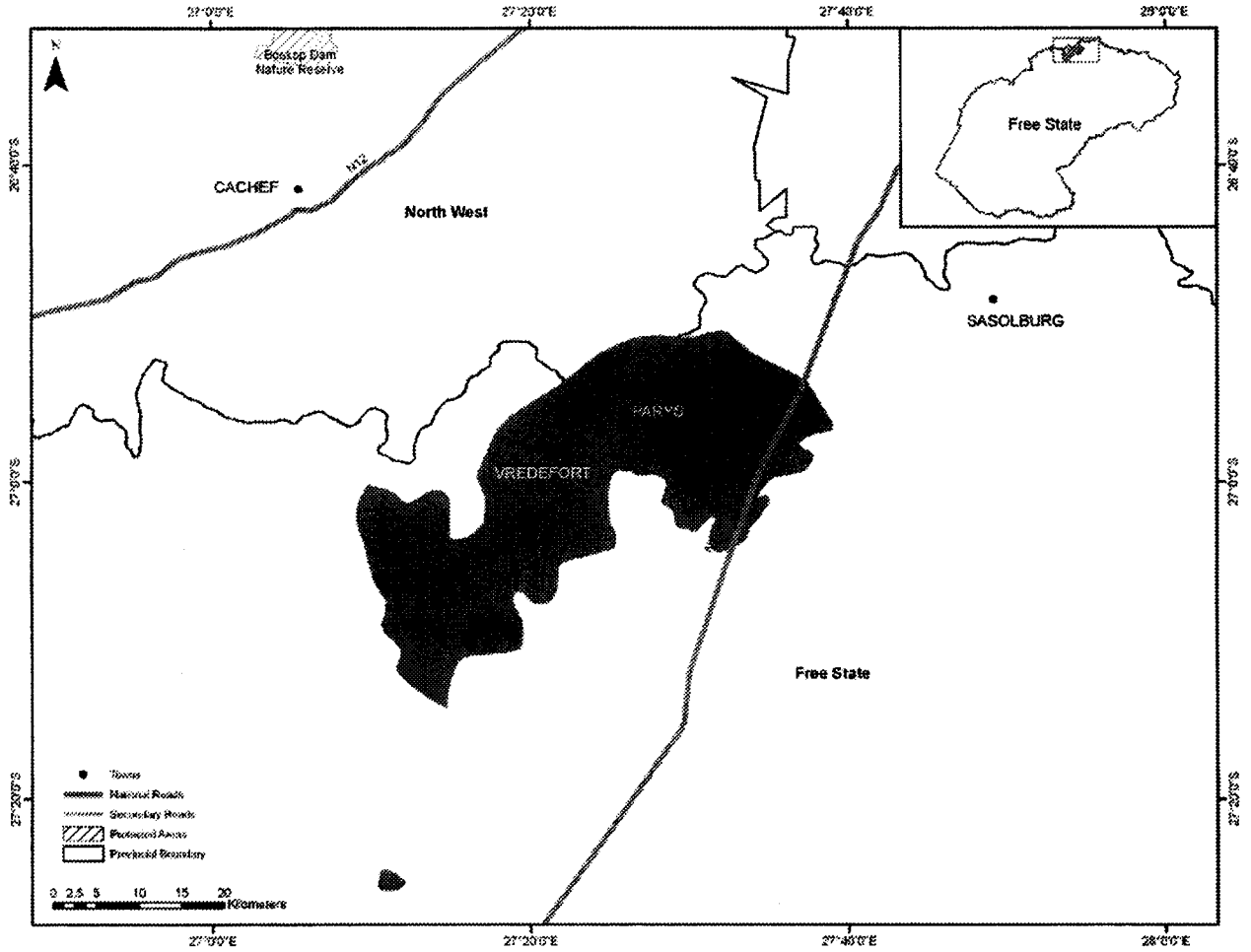
Slightly undulating plains with mainly short, *Themeda triandra*-dominated grassland, though mostly grazed and often degraded. One of the most scenic landscapes of the Highveld, with the Vaal River cutting through the mountainous landscape (Savanna Biome) of the Vredefort Dome. Big boulders of granite are conspicuous in the area, creating microhabitats for a diversity of plant species.

Other information

The ecosystem is not protected.

Reference

Mucina, L., Hoare, D.B., Lotter, M.C., du Preez, P.J., Rutherford, M.C., Scott-Shaw, R., Bredenkamp, G.J., Powrie, L.W., Scott, L., Camp, K.G.T., Cilliers, S.S., Bezuidenhout, H., Mostert, T.H., Siebert, S.J., Winter, P.J.D., Burrows, J.E., Dobson, L., Ward, R.A., Stalmans, M., Oliver, E.G.H., Siebert, F., Schmidt, E., Kobisi, K., & Kose, L. 2006. Grassland Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 385-386. South African National Biodiversity Institute, Pretoria.



Location of Vredefort Dome Granite Grassland showing original area of ecosystem

225. Warley Commons (KZN 84)

| | |
|--|---|
| Reference number | KZN 84 |
| Listed under Criterion | F |
| Biome | Grassland and Savanna |
| Province | KwaZulu-Natal |
| Municipality | Mooi Mpofana LM |
| Original area of ecosystem | 5 000 ha |
| Remaining natural area of ecosystem (%) | 41% |
| Proportion of ecosystem protected | 0% of original area |
| Known number of species of special concern | 4 threatened or endemic plant and animal species including those listed below |

Geographical location

Weston (2930AA) and Estcourt (2929BB). Includes Wattled Crane habitat and is primarily determined by the requirements of this species. Ecosystem delineated by contours that strongly align with the location of the lowlands and the basal regions of the surrounding hills.

Description

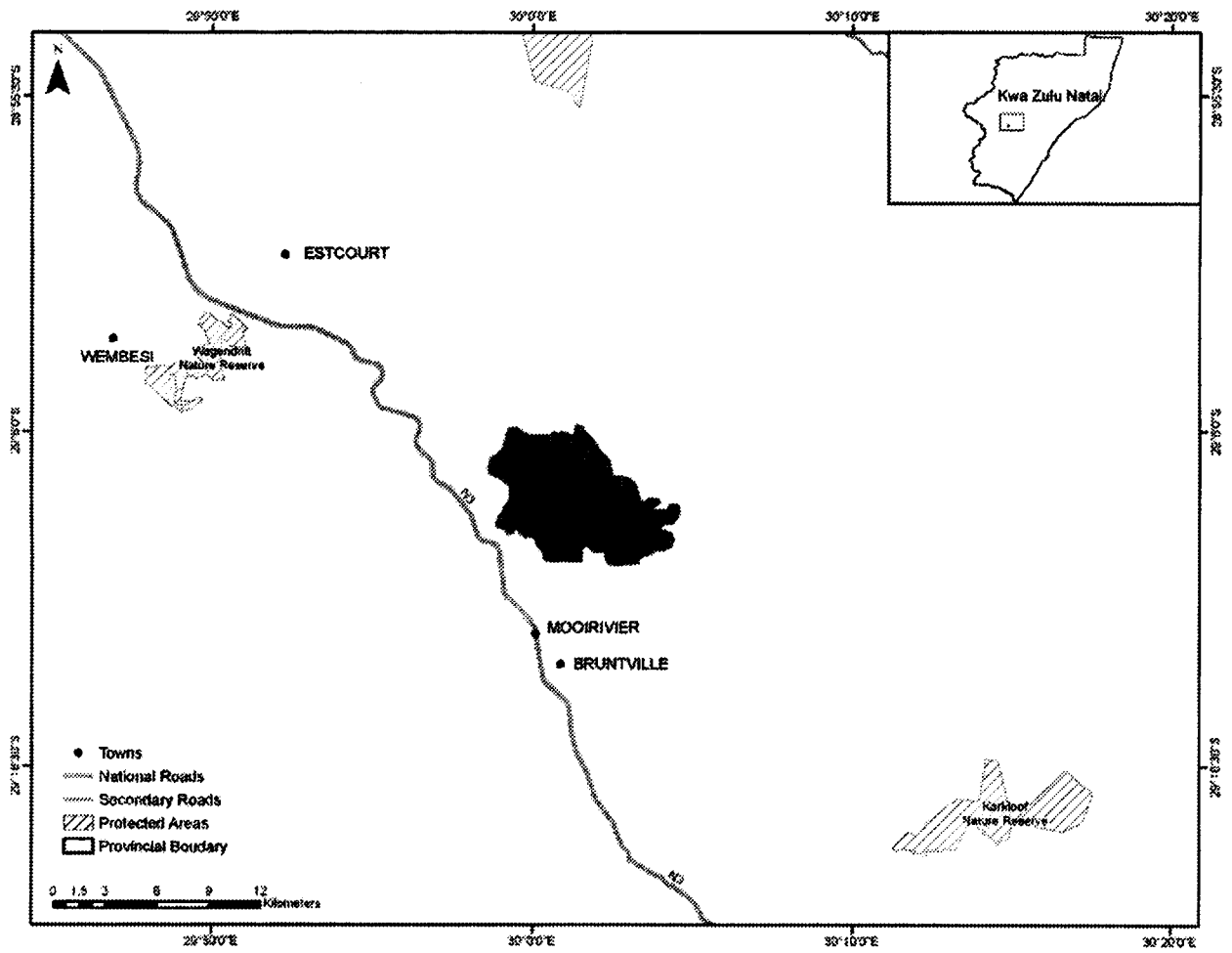
Key biodiversity features include one bird species, the Wattled Crane; two millipede species including *Centrobolus tricolor* and *Doratogonus montanus*; one reptile species, *Bradypodion thamnobates*; and two vegetation types Mool River Highland Grassland and Thukela Thornveld.

Other information

The ecosystem is not protected.

Reference

Goodman, P.S. 2007. KwaZulu-Natal Terrestrial Conservation Plan (C-Plan), Version 4. Biodiversity Conservation Planning Division, Ezemvelo KZN Wildlife.



Location of Warley Commons showing original area of ecosystem

8 Contact details

For further information on the process of listing threatened or protected ecosystems in terms of the Biodiversity Act please email threatenedecosystems@sanbi.org.za.

For further information and advice on obtaining the relevant spatial information on threatened ecosystems please visit SANBI's Biodiversity GIS (BGIS) website at <http://bgis.sanbi.org> or email bgishelp@sanbi.org.

Appendix A: Relevant sections of the Biodiversity Act

Sections of the Biodiversity Act that deal directly or indirectly with threatened ecosystems are:

- Sections 52-55 on protection of threatened and protected ecosystems
- Sections 43-46 on biodiversity management plans and biodiversity management agreements
- Section 97 on regulations that the Minister may make
- Section 9 on norms and standards that the Minister may issue
- Sections 99 and 100 on consultation and public participation

Protection of threatened or protected ecosystems

Ecosystems that are threatened or in need of protection

52. (1) (a) The Minister may, by notice in the Gazette, publish a national list of ecosystems that are threatened and in need of protection.

(b) An MEC for environmental affairs in a province may, by notice in the Gazette, publish a provincial list of ecosystems in the province that are threatened and in need of protection.

(2) The following categories of ecosystems may be listed in terms of subsection (1):

(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;

(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;

(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; 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).

(3) A list referred to in subsection (1) must describe in sufficient detail the location of each ecosystem on the list.

(4) The Minister and the MEC for environmental affairs in a relevant province, respectively, must at least every five years review any national or provincial list published by the Minister or MEC in terms of subsection (1).

(5) An MEC may publish or amend a provincial list only with the concurrence of the Minister.

Threatening processes in listed ecosystems

53. (1) The Minister may, by notice in the Gazette, identify any process or activity in a listed ecosystem as a threatening process.

(2) A threatening process identified in terms of subsection (1) must be regarded as a specified activity contemplated in section 24(2)(b) of the National Environmental Management Act and a listed ecosystem must be regarded as an area identified for the purpose of that section.

Certain plans to take into account in protection of listed ecosystems

54. An organ of state that must prepare an environmental implementation or environmental management plan in terms of Chapter 3 of the National Environmental Management Act, and a municipality that must adopt an integrated development plan in terms of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), must take into account the need for the protection of listed ecosystems.

Amendment of notices

55. The Minister or the MEC for Environmental Affairs in any relevant province may, by notice in the Gazette, amend or repeal any notice published by him or her in terms of section 52(1) or 53(1).

Biodiversity management plans

43. (1) Any person, organisation or organ of state desiring to contribute to biodiversity management may submit to the Minister for his or her approval a draft management plan for—

(a) an ecosystem—

(i) listed in terms of section 52; or

(ii) which is not listed in terms of section 52 but which does warrant special conservation attention;

(2) Before approving a draft biodiversity management plan, the Minister must identify a suitable person, organisation or organ of state which is willing to be responsible for the implementation of the plan.

(3) The Minister must—

- (a) publish by notice in the Gazette a biodiversity management plan approved in terms of subsection (1);
- (b) determine the manner of implementation of the plan; and
- (c) assign responsibility for the implementation of the plan to the person, organisation or organ of state identified in terms of subsection (2).

Biodiversity management agreements

44. The Minister may enter into a biodiversity management agreement with the person, organisation or organ of state identified in terms of section 43(2), or any other suitable person, organisation or organ of state, regarding the implementation of a biodiversity management plan, or any aspect of it.

Contents of biodiversity management plans

45. A biodiversity management plan must—

- (a) be aimed at ensuring the long-term survival in nature of the species or ecosystem to which the plan relates;
- (b) provide for the responsible person, organisation or organ of state to monitor and report on progress with implementation of the plan; and
- (c) be consistent with—
 - (i) this Act;
 - (ii) the national environmental management principles;
 - (iii) the national biodiversity framework;
 - (iv) any applicable bioregional plan;
 - (v) any plans issued in terms of Chapter 3 of the National Environmental Management Act;
 - (vi) any municipal integrated development plan;
 - (vii) any other plans prepared in terms of national or provincial legislation that is affected; and
 - (viii) any relevant international agreements binding on the Republic.

Review and amendment of biodiversity management plans

46. (1) The Minister must review a biodiversity management plan published in terms of section 43(3) at least every five years, and assess compliance with the plan and the extent to which its objectives are being met.

(2) The Minister, either on own initiative or on request by an interested person, organisation or organ of state, may by notice in the Gazette amend a biodiversity management plan published in terms of section 43(3).

(3) Before amending a biodiversity management plan, the Minister must consult—

- (a) any person, organisation or organ of state implementing the plan; and
- (b) any organ of state whose activities are affected by the implementation of the plan.

Regulations by Minister

97. (1) The Minister may make regulations relating to—

- (a) the monitoring of compliance with and enforcement of norms and standards referred to in section 9;
- (b) ... (vi) the minimising of the threat to the ecological integrity of a listed ecosystem;

Norms and standards

9. (1) The Minister may, by notice in the Gazette—

- (a) issue norms and standards for the achievement of any of the objectives of this Act, including for the—
 - (i) management and conservation of South Africa's biological diversity and its components;
 - (ii) restriction of activities which impact on biodiversity and its components;
- (b) set indicators to measure compliance with those norms and standards; and
- (c) amend any notice issued in terms of paragraph (a) or (b).

...

(3) Norms and standards may apply—

- (a) nationwide;
- (b) in a specific area only; or
- (c) to a specific category of biodiversity only.

(4) Different norms and standards may be issued for—

- (a) different areas; or
- (b) different categories of biodiversity.

Consultation

99. (1) Before exercising a power which, in terms of a provision of this Act, must be exercised in accordance with this section and section 100, the Minister must follow an appropriate consultative process in the circumstances.

(2) The Minister must, in terms of subsection (1)—

(a) consult all Cabinet members whose areas of responsibility may be affected by the exercise of the power;

(b) in accordance with the principles of co-operative governance set out in Chapter 3 of the Constitution, consult the MEC for Environmental Affairs of each province that may be affected by the exercise of the power; and

(c) allow public participation in the process in accordance with section 100.

Public participation

100. (1) The Minister must give notice of the proposed exercise of the power referred to in section 99—

(a) in the Gazette; and

(b) in at least one newspaper distributed nationally, or if the exercise of the power may affect only a specific area, in at least one newspaper distributed in that area.

(2) The notice must—

(a) invite members of the public to submit to the Minister, within 30 days of publication of the notice in the Gazette, written representations on, or objections to, the proposed exercise of the power; and

(b) contain sufficient information to enable members of the public to submit meaningful representations or objections.

(3) The Minister may in appropriate circumstances allow any interested person or community to present oral representations or objections to the Minister or a person designated by the Minister.

(4) The Minister must give due consideration to all representations or objections received or presented before exercising the power.

Functions of SANBI

11. (1) The Institute—

(a) must monitor and report regularly to the Minister on—

(ii) the conservation status of all listed threatened or protected species and listed ecosystems

Monitoring

49. (1) The Minister must for the purposes of this Chapter designate monitoring mechanisms and set indicators to determine—

- (a) the conservation status of various components of South Africa's biodiversity; and
- (b) any negative and positive trends affecting the conservation status of the various components.

(2) The Minister may require any person, organisation or organ of state involved in terms of subsection (1) in monitoring the matters referred to in that subsection to report regularly to the Minister on the results of such monitoring measured against the predetermined indicators.

(3) The Minister must—

- (a) annually report to Parliament on the information submitted to the Minister in terms of subsection (2); and
- (b) make such information publicly available.

Appendix B: Relevant sections of NEMA (as amended)

The relevant sections of NEMA are:

- 24(2)-(3)
- 24A
- 24B
- 24D

24. Environmental authorisations

(2) The Minister, and every MEC with the concurrence of the Minister, may identify -

- (a) activities which may not commence without environmental authorisation from the competent authority;
- (b) geographical areas based on environmental attributes, and as specified in spatial development tools adopted in the prescribed manner by the environmental authority, in which specified activities may not commence without environmental authorisation from the competent authority;
- (c) geographical areas based on environmental attributes, and specified in spatial development tools adopted in the prescribed manner by the environmental authority, in which specified activities may be excluded from authorisation by the competent authority;
- (d) activities contemplated in paragraphs (a) and (b) that may commence without an environmental authorisation, but that must comply with prescribed norms or standards:

Provided that where an activity falls under the jurisdiction of another Minister or MEC, a decision in respect of paragraphs (a) to (d) must be taken after consultation with such other Minister or MEC.

(3) The Minister, or an MEC with the concurrence of the Minister, may compile information and maps that specify the attributes of the environment in particular geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes which must be taken into account by every competent authority.

24A. Procedure for listing activity or area

Before identifying any activity or area in terms of section 24(2), the Minister or MEC, as the case may be, must publish a notice in the relevant Gazette -

- (a) specifying, through description, a map or any other appropriate manner, the activity or area that it is proposing to list;

(b) inviting interested parties to submit written comments on the proposed listing within a period specified in the notice.

24B. Procedure for delisting of activities or areas

(1) The Minister may delist an activity or area identified by the Minister in terms of section 24(2).

(2) An MEC may, with the concurrence of the Minister, delist an activity or area identified by the MEC in terms of section 24(2).

(3) The Minister or MEC, as the case may be, must comply with section 24A, read with the changes required by the context, before delisting an activity or area in terms of this section.

24D. Publication of list

(1) The Minister or MEC concerned, as the case may be, must publish in the relevant Gazette a notice containing a list of-

(a) activities or areas identified in terms of section 24(2); and

(b) competent authorities identified in terms of section 24C.

(2) The notice referred to in subsection (1) must specify the date on which the list is to come into effect.

Appendix C: List of workshops and work sessions held

The following workshops and work sessions were held over the period October 2006 to April 2008, to develop criteria, test and identify the list of threatened terrestrial ecosystems.

Organisations represented at each workshop or work session are provided.

| Date | Workshop or work session | Organisations represented |
|-----------------------------|--|---|
| 24 – 26 October 2006 | National Workshop: Development of Criteria for Listing Threatened or Protected Ecosystems In South Africa | African Environmental Centre Agricultural Research Council (ARC) Botanical Society of South Africa CapeNature Centre for Invasion Biology (University of Stellenbosch) Council of Scientific and Industrial Research (CSIR) Eastern Cape Parks Endangered Wildlife Trust (EWT) Ezemvelo KwaZulu-Natal Wildlife Free State Department of Tourism, Environment and Economic Affairs (DTEEA) Freshwater Consulting Group Gauteng Department of Agriculture, Conservation and Environment (GDACE) Limpopo Department of Economic Development, Environment and Tourism (LEDET) Mpumalanga Department of Agriculture and Land Affairs (DALA) Mpumalanga Tourism and Parks Agency (MTPA) National Department of Agriculture (DoA) National Department of Environmental Affairs and Tourism (DEAT) National Department of Water Affairs and Forestry (DWAF) Nelson Mandela Metropolitan University (NMMU) North West Department of Agriculture, Conservation and Environment (NW DACE) Northern Cape Department of Tourism, Environment and Conservation (DTEC) Percy Fitzpatrick Institute (University of Cape Town) South African Institute for Aquatic Biodiversity (SAIAB) South African National Biodiversity Institute (SANBI) South African National Parks Board (SANParks) University of Stellenbosch University of Witwatersrand Working for Wetlands (SANBI) Independent Biodiversity Planning and Vegetation Mapping Consultants |
| 11 & 12 December 2006 | Work Session: Testing Criterion A: Loss of Natural Habitat and Criterion D: Threatened Species Associations | Council for Scientific and Industrial Research (CSIR) Gauteng Department of Agriculture, Conservation and Environment (GDACE) Nelson Mandela Metropolitan University (NMMU) South African National Biodiversity Institute (SANBI) |

| Date | Workshop or work session | Organisations represented |
|--------------------|---|---|
| 8 February 2007 | Work Session: Finalisation of Approach for Criterion A: Loss of Natural Habitat; Criterion D: Threatened Species Associations; and Criterion F: Priority Areas for Meeting Explicit Biodiversity Targets as Defined in a Systematic Biodiversity Plan at the 2007 Biodiversity Planning Forum | C.A.P.E. Fine-scale Biodiversity Planning Project CapeNature Council for Scientific and Industrial Research (CSIR) Eastern Cape Parks Ezemvelo KwaZulu-Natal Wildlife Free State Department of Tourism, Environment and Economic Affairs (DTEEA) Gauteng Department of Agriculture, Conservation and Environment (GDACE) Independent Biodiversity Planning Consultants Limpopo Department of Economic Development, Environment and Tourism (LEDET) Maloti-Drakensberg Transfrontier Project (MDTP) Mpumalanga Tourism and Parks Agency (MTPA) North West Department of Agriculture, Conservation and Environment (NW DACE) Northern Cape Department of Tourism, Environment and Conservation (DTEC) South African National Parks Board (SANParks) South African National Biodiversity Institute (SANBI) Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) |
| 23 & 24 March 2007 | Work Session: Testing of Criterion F Using Provincial Biodiversity Plans | Ezemvelo KwaZulu-Natal Wildlife Gauteng Department of Agriculture, Conservation and Environment (GDACE) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) |
| 16 May 2007 | Work Session: Development of Criteria for Threatened Forest Ecosystems and Planning for Stakeholder Workshop | Department of Water Affairs and Forestry (DWAF) Eco-Logic Consulting South African National Biodiversity Institute (SANBI) |
| 28 & 29 May 2007 | Stakeholder Workshop: Development of Criteria for Listing Threatened Forests Ecosystems | Botanical Society of South Africa Buffelskloof Private Nature Reserve Council for Scientific and Industrial Research (CSIR) Department of Water Affairs and Forestry (DWAF) Eco-Logic Consulting Forestwood cc Limpopo Department of Economic Development, Environment and Tourism (LEDET) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) University of KwaZulu-Natal |
| 16 & 17 July 2007 | Work Session: Review of Forest Targets and Testing of Criteria for Threatened Forest Ecosystems | Department of Water Affairs and Forestry (DWAF) Eco-Logic Consulting Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) University of Stellenbosch |

| Date | Workshop or work session | Organisations represented |
|-----------------------------|--|---|
| 21 – 23 November 2007 | Work Session: Identify and Finalise List of Threatened Terrestrial Ecosystems using Criteria A, D and F | Botanical Society of South Africa C.A.P.E Fine-scale Biodiversity Planning Project CapeNature Ezemvelo KwaZulu-Natal Wildlife Gauteng Department of Agriculture, Conservation and Environment (GDACE) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) |
| 31 January 2008 | Review of Threatened Terrestrial Ecosystems Identified Using Criterion F | Ezemvelo KwaZulu-Natal Wildlife Gauteng Department of Agriculture, Conservation and Environment (GDACE) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) |
| 27 February 2008 | Work Session: Results of Forest Target Review and Testing of Criteria for Threatened Forest Ecosystems | Department of Water Affairs and Forestry (DWAF) Eco-Logic Consulting Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) |
| 6 March 2008 | Work Session: Final Review of Threatened Terrestrial Ecosystems Identified Using Criterion F | Ezemvelo KwaZulu-Natal Wildlife Gauteng Department of Agriculture, Conservation and Environment (GDACE) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) |
| 12 & 13 March 2008 | Workshop: Identification of List of Threatened Forest Ecosystems | Department of Water Affairs and Forestry (DWAF) Eastern Cape Parks Eco-Logic Consulting Ezemvelo KwaZulu-Natal Wildlife Limpopo Department of Economic Development, Environment and Tourism (LEDET) National Department of Environmental Affairs and Tourism (DEAT) South African National Biodiversity Institute (SANBI) South African National Parks (SANParks) not present but provided input |
| 22 & 23 April 2008 | Work Session: Finalise List of Threatened Ecosystems and Supporting Material for Submission to Working Group 1 | Botanical Society of South Africa CapeNature Department of Water Affairs and Forestry (DWAF) Ezemvelo KwaZulu-Natal Wildlife Gauteng Department of Agriculture, Conservation and Environment (GDACE) Mpumalanga Tourism and Parks Agency (MTPA) South African National Biodiversity Institute (SANBI) |