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#### GRASSLANDS AROUND THE WORLD

Grasslands cover 40% of the earth's non ice-bound terrestrial surface and are home to over 1 billion people. They contain biodiversity of significance and provide ecosystem goods and services that support human life. However temperate grasslands across the world are one of the biomes most impacted by anthropogenic activities. The Millennium Ecosystem Assessment highlighted that globally, more than 70% of this biome had lost its natural cover by 1950. An additional 15,4 % has been lost since then.

#### GRASSLANDS IN SOUTH AFRICA

The grasslands biome covers 29% of South Africa and occurs in 7 provinces, Gauteng, Limpopo, Eastern Cape, Mpumalanga, KwaZulu-Natal, Free State and the North West. Our grasslands have high species richness and a high turnover of biodiversity across the landscape. The South African grasslands are a very old, complex and slowly-evolved system with indigenous species diversity is 2nd only to the well-known fynbos biome. The grasslands also play a critical role in water production with the South Africa's major river systems all originating in the biome.

The term "grassland" creates the impression that the biome consists only of grass species. In fact, only one in six plant species in the biome is a grass. The remainder includes bulbous plants such as arum lilies, orchids, red-hot pokers, aloes, watsonias, gladioli and ground orchids. There are also many other species, such as blue cranes and swallows, habitats and ecosystems that form an important part of the grassland biome, including rivers and wetland systems.

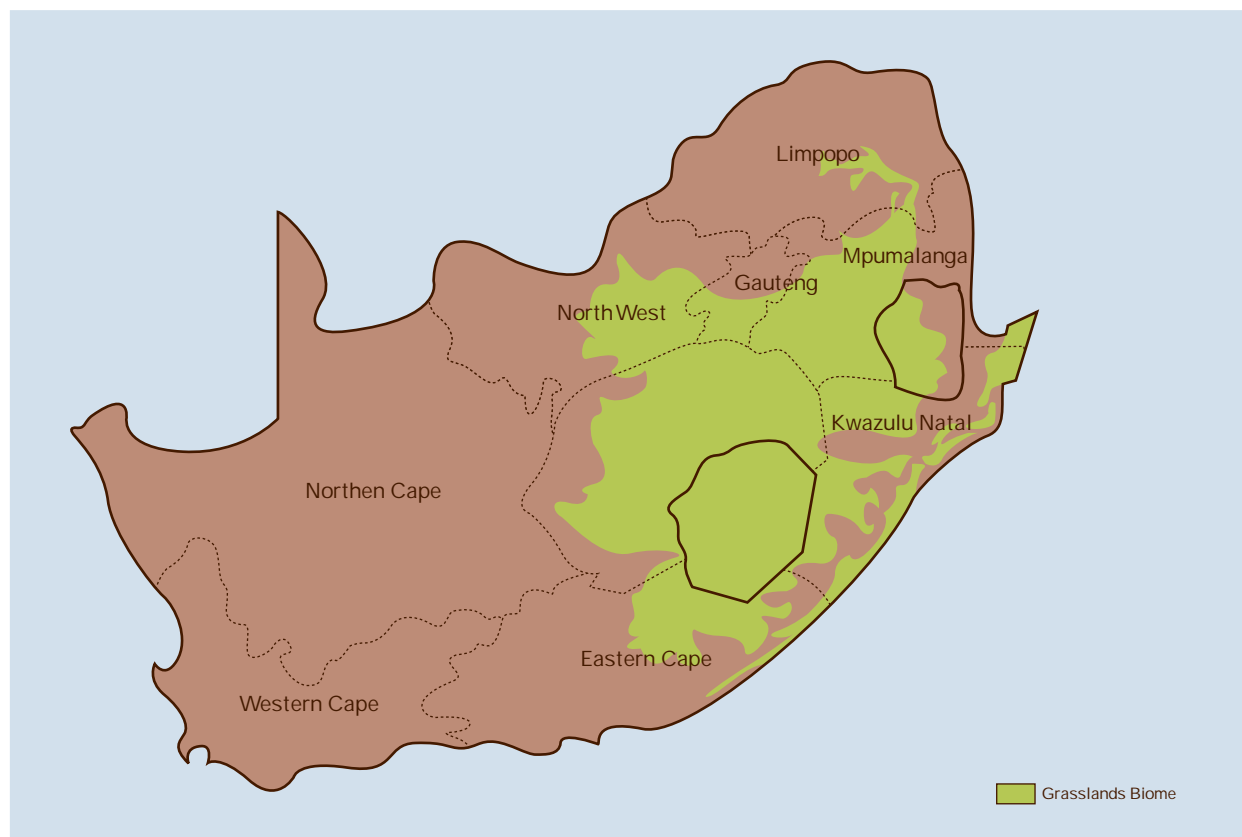
- Of the 72 vegetation types in the biome, 1 is listed as critically endangered, 14 are endangered and 24 are classed as vulnerable.
- 83% of river ecosystems are ranked as threatened, with 48% critically endangered.
- The biome contains South Africa's national bird, the Blue Crane, the critically endangered Wattle Crane and Rudd's Lark.
- Of the 195 reptile species endemic to South Africa, 22% are found in the biome.
- One-third of the 107 threatened South African butterfly species occur in the grasslands.
- Wetlands fulfill an important water provision and flood attenuation role in the grasslands.

The grasslands is one of the most threatened biomes in South Africa. 30% of the biome is irreversibly transformed and only 1.9% of the biome is formally conserved. Because the grasslands biome contains the economic heartland of South Africa and is home to most South Africans, it is under considerable development pressure. The life-sustaining biodiversity and ecosystem services (such as water production) of the grasslands are being eroded to such an extent that human wellbeing is threatened. As a result, the government has identified the grasslands biome as one of the priorities for conservation action.

#### THE GRASSLANDS VISION

The biodiversity and associated ecosystem services of the grasslands biome are sustained and secured for the benefit of current and future generations.

## IMPLEMENTING THE GRASSLANDS PROGRAMME



### THE MISSION

- Ensure that the wise management of biodiversity contributes to sustainable development in the grasslands biome
- Ensure that production and development activities are appropriately located and managed to maintain the delivery of ecosystem services that underpin the economy
- Mobilise and empower land users, landowners and officials, in the private and public sectors, to be effective stewards of the landscape
- Secure the natural and cultural heritage of the grasslands biome

### IMPLEMENTING THE GRASSLANDS PROGRAMME

A 20 year conservation strategy has been developed for the Grasslands Programme. Key elements of the strategy, in order to achieve grasslands biodiversity targets, are effective protected areas, mainstreaming, good management practice, sustainable use, a strong enabling environment for grasslands conservation and improved awareness of the biome.

The Grasslands Programme is being catalysed by an initial five year mainstreaming programme funded by the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP). The mainstreaming strategy aims to complement and facilitate synergies between grasslands biodiversity conservation initiatives by seeking to mainstream conservation objectives into agriculture, forestry, urban development and coal mining sectors.

Mainstreaming means that these sectors contribute to the achievement of the biodiversity conservation priorities of the grasslands biome. The approach acknowledges that trade-offs will be necessary between development and biodiversity. It seeks to find win-win solutions where economic development is sustained by the ecological services provided by a healthy and well-managed grasslands biome.

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## FORESTRY



Most of South Africa's commercial forestry industry occurs in the grasslands biome.

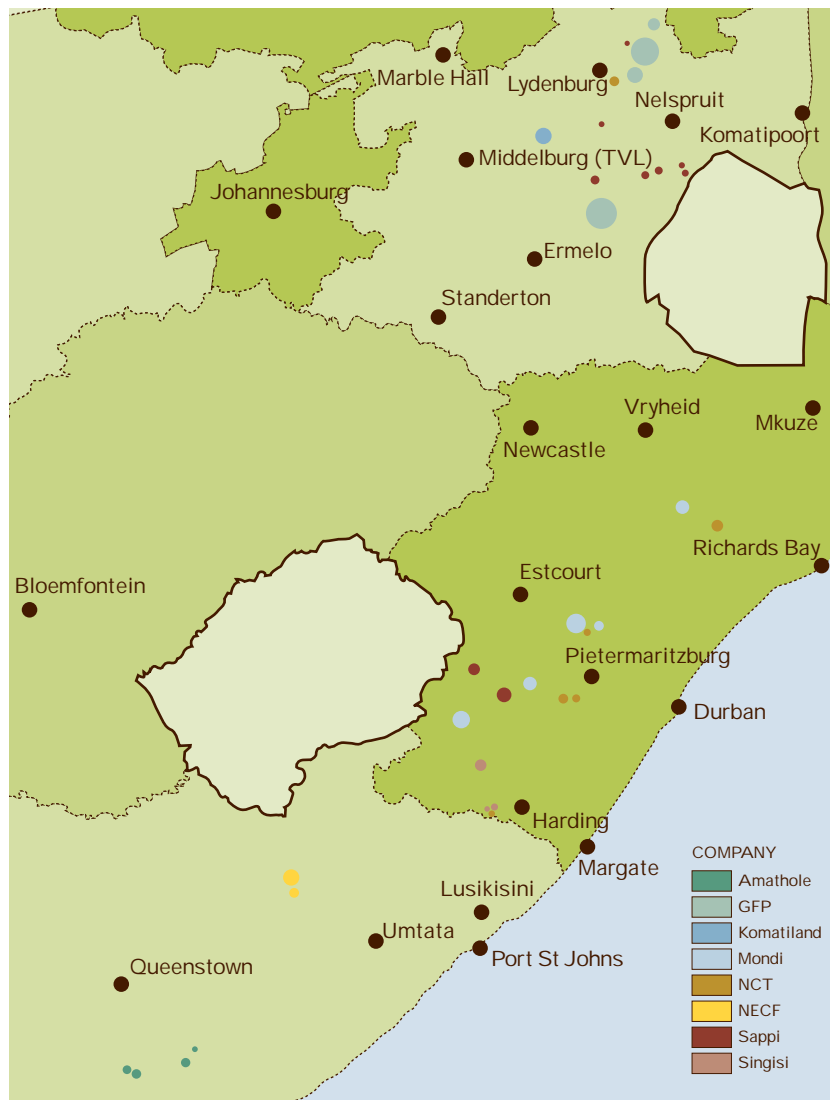
South Africa's plantation forest industry, most of which occurs in the grasslands biome, makes an important contribution to the national economy. The value of forest product exports, which include paper products, solid wood and pulp, grew significantly from R2.3 billion in 1992 to R10.2 billion in 2006. An estimated 991,900 ha of land is committed to plantation forestry in the grasslands biome. This amounts to 18% of commercially cropped/planted land within the biome, making it the second largest commercial land use after maize.

The forestry sector is well organised under Forestry South Africa with 2 500 members divided into small, medium and large growers. The organised forestry sector in South Africa is environmentally aware and participates in the international certification system operated by the Forest Stewardship Council. Forestry companies, and in particular large growers, own large tracts of land that are presently unplanted with trees and are likely to remain so. Some of this land overlaps with biodiversity priority areas and the companies have indicated an interest in formalising the protected area status of this land (see map of forestry priority sites). Because of its economic contribution, forestry is seen as an important development sector and emphasis is on small grower expansion in the Eastern Cape and KwaZulu-Natal.

The aim of the Grasslands Programme is to secure and sustain biodiversity within the grasslands biome. In its Forestry Component, which is being implemented by Forestry South Africa, the Programme aims to ensure that biodiversity is mainstreamed into the forestry sector in South Africa.



PRIORITY BIODIVERSITY AREAS ON FORESTRY-OWNED LAND



THE GRASSLANDS PROGRAMME'S INTERVENTIONS IN THE FORESTRY SECTOR INCLUDE:

- The management of the forestry estate is improved to more effectively mitigate biodiversity impacts and contribute to meeting grasslands conservation targets
- The formal conservation tenure of unplanted, high priority forestry landholdings is secured

- The expansion of small grower plantation forestry is underpinned by biodiversity considerations, and capacity-building to meet industry-led certification standards

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The Forestry Component is being implemented by Forestry South Africa

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## AGRICULTURE

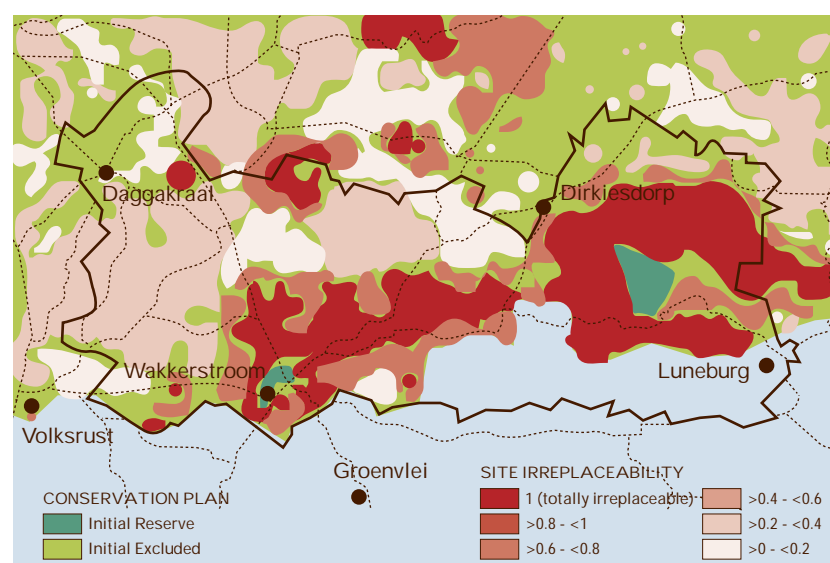


Commercial farms make up 32,44 million hectares within the grasslands biome.

South Africa's agricultural sector is characterised by a dual economy with a well-developed commercial sector and a subsistence farming in the communal areas. Almost half of the grasslands biome is used for commercial crops such as maize, sugar cane, ground nuts, sugar beans and sunflower. Virtually the entire grasslands area that is not cultivated is used as rangeland - either for sheep or for cattle. The biome contains up to 6.4 million cattle (50% of South Africa's beef cattle) and 13 million sheep (58% of South Africa's sheep flock). The commercial game ranching industry has shown extraordinary growth during the past 40 years. In 2006 the game farms generated R1.1 billion directly, of which 72% was derived from local hunters and sale of live animals.

A recent study on the impact of land uses on the biodiversity of South Africa grasslands, found that under the right management regime, livestock farming and game ranching are the most compatible land uses with grasslands biodiversity.

### THE WAKKERSTROOM / LUNEBURG AGRICULTURE DEMONSTRATION DISTRICT



THE FREE STATE RIVER ECOSYSTEMS DEMONSTRATION PROJECT



The aim of the Grasslands Programme is to secure and sustain biodiversity within the grasslands biome. In its Agriculture Component the Programme aims to ensure that biodiversity is mainstreamed into the agricultural sector.

- Promote biodiversity-friendly livestock/game production systems through certification and labeling schemes.
- Incorporate biodiversity into agricultural policies, guidelines and decision making:

DEMONSTRATION PROJECTS WITHIN THE AGRICULTURE COMPONENT INCLUDE:

THE GRASSLANDS PROGRAMME'S INTERVENTIONS IN THE AGRICULTURAL SECTOR INCLUDE:

- Develop biodiversity-compatible good management practices that balance the needs of biodiversity with production, based on demonstrations in select areas, that highlights the importance of biodiversity to agricultural sustainability.
- Put in place conservation stewardship arrangements on private and communal land to secure and sustain grasslands biodiversity in agricultural production areas.

- The Wakkerstroom / Luneburg Agriculture Demonstration District (see map) - the Grasslands Programme is working with land owners to demonstration biodiversity good management practice and to implement conservation stewardship in an agricultural landscape
- The Free State River Ecosystems Demonstration Project (see map) - the Grasslands Programme is working with stakeholders to implement activities to conserve and rehabilitate highveld river ecosystems in an agricultural landscape

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More plant species occur in Gauteng per unit area than in any other province.

## URBAN

Biodiversity and ecosystem services are crucial to ensuring that cities are livable, healthy environments for all residents. Natural areas provide green spaces where residents can relax and are also important refuges for indigenous fauna and flora in otherwise built up environments. Wetlands in and around cities help to purify the water that flows from our taps, while green spaces help to purify our air by absorbing carbon dioxide and other pollutants.

While urban areas occur throughout the grasslands biome, poorly located and executed developments often destroys key habitats resulting in unacceptable loss of biodiversity. The loss of natural areas and the services they provide also impacts on economic growth. Without functional natural areas we have to pay more for clean water, we have to look elsewhere for the recreational and amenity values provided by these sites, we lose the revenue that natural areas generate through tourism and we have to resort to costly solutions to protect vulnerable communities from the impacts of environmental degradation. The importance of biodiversity and functional ecosystem services is no less significant in Gauteng - South Africa's smallest and most urbanized province.

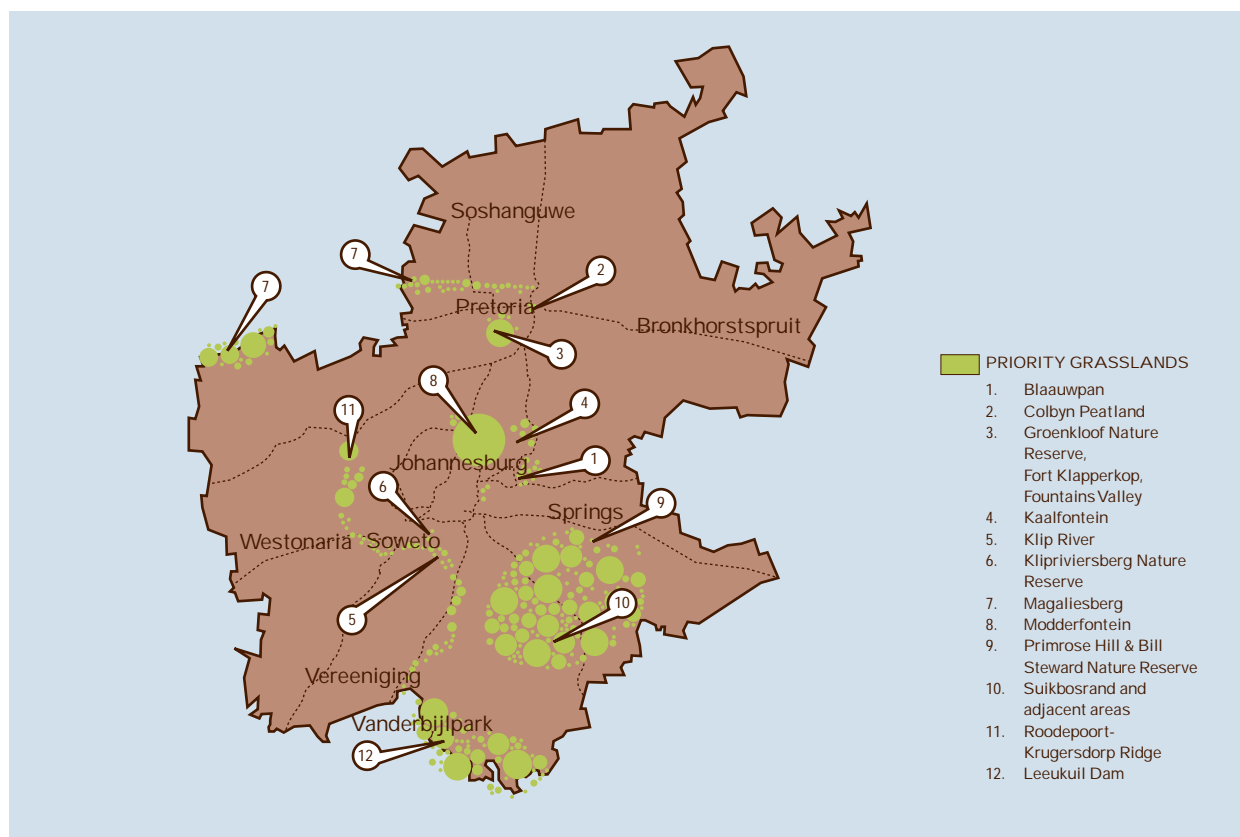
The aim of the Grasslands Programme is to secure and sustain biodiversity within the grasslands biome. In its Urban Component, which is being implemented Gauteng's Department of Agriculture, Conservation and Environment (GDACE), the Programme aims to ensure that biodiversity is mainstreamed into urban development in Gauteng.

### SOME LITTLE KNOWN FACTS ABOUT GAUTENG'S BIODIVERSITY:

- 71% of Gauteng is contained within the grasslands biome
- More plant species occur in Gauteng per unit area than in any other province
- Of the five grasslands vegetation types in Gauteng, all are endangered



## MAP OF BIODIVERSITY PRIORITY SITES IN GAUTENG



- Gauteng is a centre of distribution for components of grasslands biodiversity, including the critically important Bushveld-Bankenfeld vegetation type.
- 443 endemic plant species are found within Gauteng, with 3 critically endangered, 8 endangered, 10 vulnerable and 19 listed as rare.
- Gauteng also has 42 animal species of special concern within select taxa.

### THE GRASSLANDS PROGRAMME'S INTERVENTIONS IN THE URBAN SECTOR INCLUDE:

- Secure priority sites representative of grasslands biodiversity.
- Develop a toolkit to strengthen biodiversity mainstreaming in the urban sector.
- Strengthen capacity for urban biodiversity management through awareness and training.

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## COAL MINING



40% of coal in South Africa is extracted by open-cast methods.

The grasslands biome contains a rich mineral wealth, that includes coal, gold, diamonds, platinum, and stone. Of these, coal mining is the most significant mining sector in terms of spatial coverage and is the South Africa's second biggest mining sector after gold.

South Africa has the fifth largest coal reserve in the world and is one of the top five countries in terms of coal production, coal consumption and coal exports. Coal is currently the second largest earner of foreign exchange in SA and contributes 4% of the GDP. Most of the coal produced is consumed locally as 92% of South Africa's electricity comes from coal.

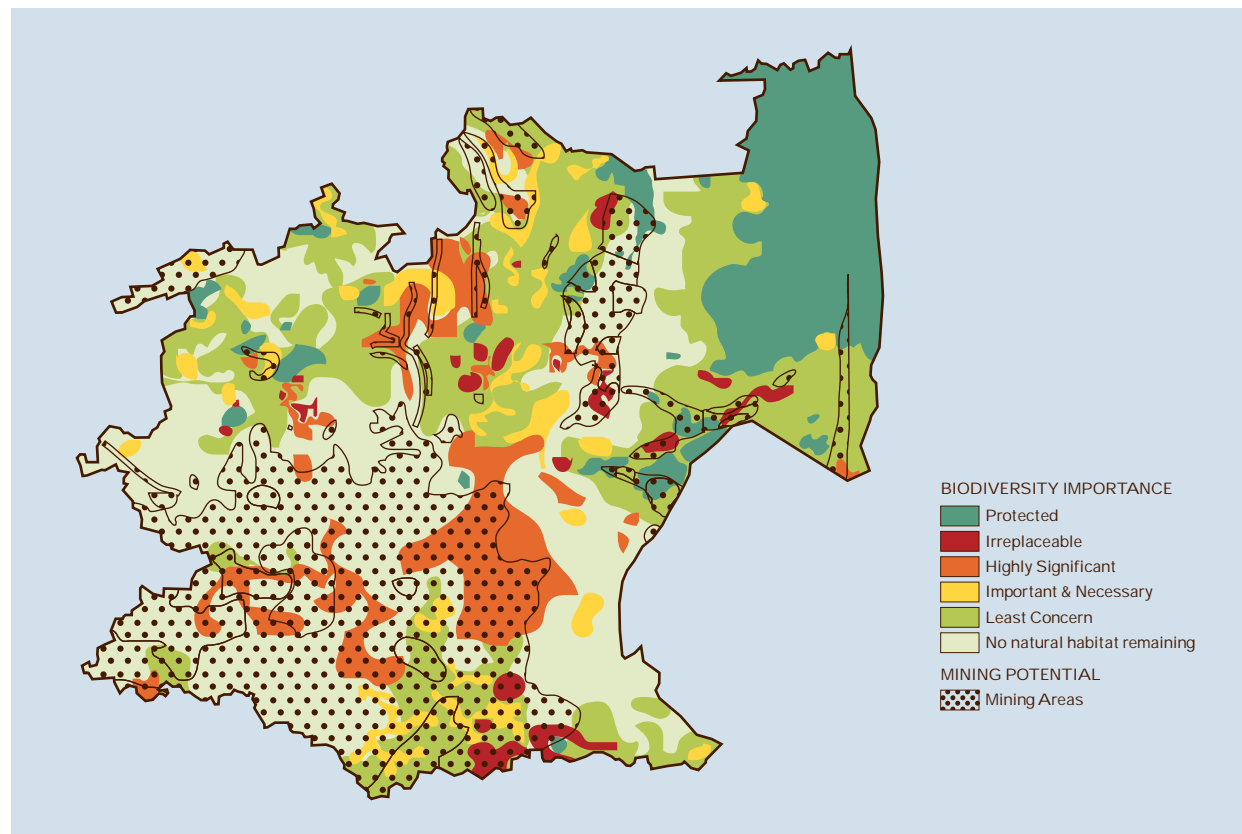
Open cast mining has a devastating impact on biodiversity, effectively removing biodiversity values from the landscape. This includes negative impacts on wetlands, as coal resources often underlie wetlands. Demand for coal is increasing both locally and internationally due to the growing demand for electricity. This is resulting in coal mining expansion at a rapid rate across the highveld grasslands, leading to increased pressure on grasslands biodiversity, including wetlands and water production.

While the demand for coal will continue to grow, a challenge for biodiversity management is to limit and direct the impact of mining activities on the grasslands biome. Ensuring that spatial biodiversity information informs decisions around mining is one way to work towards this (see map of biodiversity priorities and mining potential). Other opportunities lie in the regulatory and market environment that influences coal mining.

The aim of the Grasslands Programme is to secure and sustain biodiversity within the grasslands biome. In its Coal Mining Component, which is being implemented by the Working for Wetlands Programme, the Programme aims to ensure that biodiversity is mainstreamed in the coal mining sector.



## MPUMALANGA BIODIVERSITY PRIORITY AND MINING POTENTIAL AREAS



### THE GRASSLANDS PROGRAMME'S INTERVENTIONS IN THE COAL MINING SECTOR INCLUDE:

- Wetlands are protected through a wetland mitigation and/or banking offset scheme
- Mining companies and regulatory authorities use biodiversity planning information to plan new coal mines

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At present, less than 2% of South Africa's grasslands biome is formally protected.



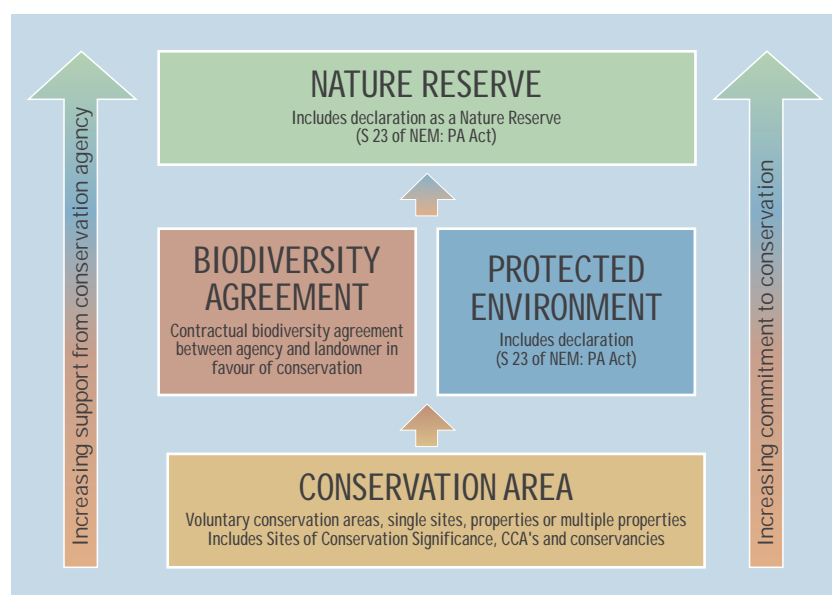
## BIODIVERSITY STEWARDSHIP IN THE GRASSLANDS BIOME

### BIODIVERSITY STEWARDSHIP – PARTNERSHIPS TO CONSERVE GRASSLANDS

At present, less than 2% of South Africa's grasslands biome is formally protected. Partnerships between the owners and users of land, conservation authorities and other parties including NGOs are therefore critical to securing biodiversity. Biodiversity stewardship provides the tools to conserve biodiversity on private and communally owned lands while generating livelihoods through the effective management of the resource base.

Conservation authorities in KwaZulu-Natal, Mpumalanga and Gauteng are championing biodiversity stewardship in critical areas of the grasslands biome. Conservation authorities are working closely with landowners and land-users in the agricultural, forestry, mining and urban development sectors to achieve conservation targets. The Grasslands Programme is playing a key role in supporting provincial biodiversity stewardship programmes.

The Grasslands Programme works with partners to secure and sustain biodiversity in the grasslands biome. The Programme has established partnerships in the agricultural, forestry, coal mining and urban development sectors to secure grasslands biodiversity in these landscapes. One of the ways the partners do this is to encourage land owners to enter into biodiversity stewardship agreements, which formally recognise the role played by private and communal landowners in the conservation of biodiversity.



With the correct management practices, wildlife ranching and livestock production, as well as tourism are compatible with grassland conservation. Biodiversity stewardship partnerships are ideal in these instances.

FIGURE: THE BIODIVERSITY STEWARDSHIP APPROACH

This figure highlights the key elements of biodiversity stewardship. Where there is high value biodiversity land, there will be increased support from conservation authorities and their biodiversity stewardship partners in exchange for increased commitment to conservation by landowners.

**BIODIVERSITY STEWARDSHIP PRINCIPLES:**

**Focuses on biodiversity priorities:** Resources must be focused on areas already identified as biodiversity priorities by national and provincial conservation authorities.

**Landowner-focused:** Biodiversity stewardship agreements must be backed up with sufficient resources to inform, help and support landowners.

**Acknowledges people's needs:** Biodiversity stewardship must be based on a clear understanding of the needs of those who own, live and work on the land.

**Biodiversity as the bottom line:** Decisions on conservation investment should be based on the biodiversity value of the land.

**Guarantee site security:** Land with high biodiversity value must be secured through legally sound biodiversity stewardship agreements.

**Build cooperation:** The agreement must be based on mutual trust to enable effective conservation management and sustainable livelihoods.

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