



Biodiversity is the variability among living organisms. This diversity can be within a single species, between different species as well as ecosystems. Biodiversity is vital and contributes to a wide variety of environmental services such as the regulation of gases in the atmosphere and the hydrological cycle. Humans present the ultimate threat to biodiversity. They threaten biodiversity in four main ways: land/urban development; production of waste and pollutants; over-exploitation of resources and through the introduction of alien species.

Six indicators were selected to measure biodiversity in Mpumalanga, including:

- Endemic species per taxonomic group;
- Threatened and extinct species per taxonomic group;
- Distribution of selected alien species;
- Resource use: medicinal plants;
- Areas of conservation importance; and
- Visitors to conserved areas.

Endemic species per taxonomic group

Endemic species are limited in distribution to a specific geographical area. Near endemic species are also marginally present elsewhere. Endemic species are important because their conservation is the sole responsibility of the people in the region in which they occur. Due to a lack of species-specific information, this indicator looks at regions or centres of plant endemism in Mpumalanga as a proxy. There are three recognised centres of plant endemism in Mpumalanga (Barberton, Sekhukhuneland and Wolkberg), and one proposed centre (Lydenburg). The level of formal protection of these centres of endemism (and therefore valuable regions of biodiversity richness) is very low and conservation efforts should be focused on these areas.

Threatened and extinct species per taxonomic group

A reduction in species' numbers or extinctions causes not only a loss of the intrinsic value of the species but may also impact on the collective species' ability to provide valuable ecosystem services such as water purification and erosion control. Various taxonomic groups are reported for this indicator. The table shows those groups in Mpumalanga that require urgent protection and conservation (light orange rows).

IUCN Category	Plants	Mammals	Birds	Fish	Reptiles	Amphibians	Invertebrates	Total
Extinct in the wild (EW)	1							1
Critically endangered (CR)	9	2	5	1			3	20
Endangered (EN)	16	7	4	1	4		5	37
Vulnerable (VU)	37	7	15	4	9	8	5	85
Near threatened (NT)	18		3	5	1			27
Least concern (LC)					1			1
Data deficient (DD)								
Not evaluated (NE)		5						5

Summary of threatened species per taxonomic group (Emery, Lötter & Williamson)

Distribution of selected alien species

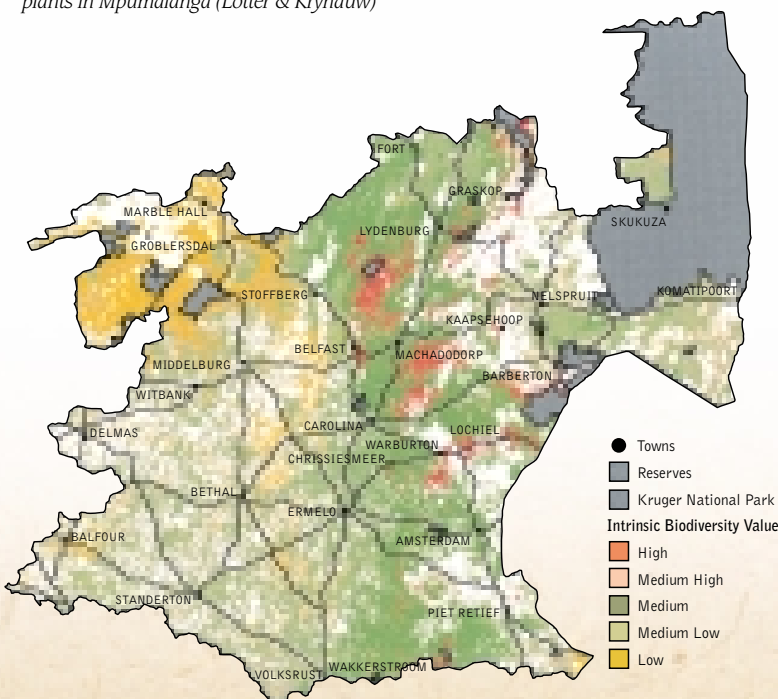
Invading alien plants waste up to 7% of our water resources, reduce farming productivity, intensify flooding and fires, cause erosion and degrade river systems. In Mpumalanga two quaternary catchments are more than 10% invaded by alien plant species (the highest category of invasion). Approximately 33 395 ha of land within Mpumalanga has been cleared of alien species to date.

Resource use: medicinal plants

Flora and fauna are traditionally harvested in rural areas for food and traditional medicine. It is estimated that in Mpumalanga there are 1.7 million consumers of indigenous medicine. Twenty-six priority medicinal plants in Mpumalanga were assessed according to their IUCN (International Union for Conservation of Nature and Natural Resources) conservation status, and their demand and availability. Those medicinal plants with a high IUCN status and that are classified as having scarce availability and top demand status are red flag species that need to be monitored and evaluated. Traditional healers in the Bushbuckridge area are already reportedly having difficulty in obtaining medicinal plants for their practices.

Demand and Availability of Medicinal Plant Species	
Top demand, scarce availability	8 species
High demand, medium availability	3 species
Medium demand, declining availability	9 species
Mentioned demand, low availability	6 species
IUCN Status of Medicinal Plant Species	
Critically endangered	5 species
Endangered	3 species
Vulnerable	4 species
Near threatened	9 species
Least concern	3 species

Species categorised by IUCN classification and the demand and availability of medicinal plants in Mpumalanga (Lötter & Krynauw)



Sites of intrinsic biodiversity value and current reserves (Emery, Lötter & Williamson)

Areas of conservation importance

Conservation action has shifted in recent years from protecting individual species to conserving habitats and ecosystems. The designation of protected areas is a widely used approach, however the designation and delineation of reserves has not been based on systematic conservation planning. Within Mpumalanga only 23% of land of very high intrinsic biodiversity value falls within protected areas. The sites classified as the lowest biodiversity value receive the most protection.

Visitors to conserved areas

The rich natural biodiversity in Mpumalanga underpins a flourishing tourism industry that contributes significantly to the provincial and national economy. Through tourism and an increased awareness of conservation and biodiversity, employment opportunities in the tourism sector have increased in Mpumalanga. Increased use of conserved and protected areas will provide greater justification and support for their maintenance. In contrast, the higher the visitor numbers the greater the potential negative impact on each area.

