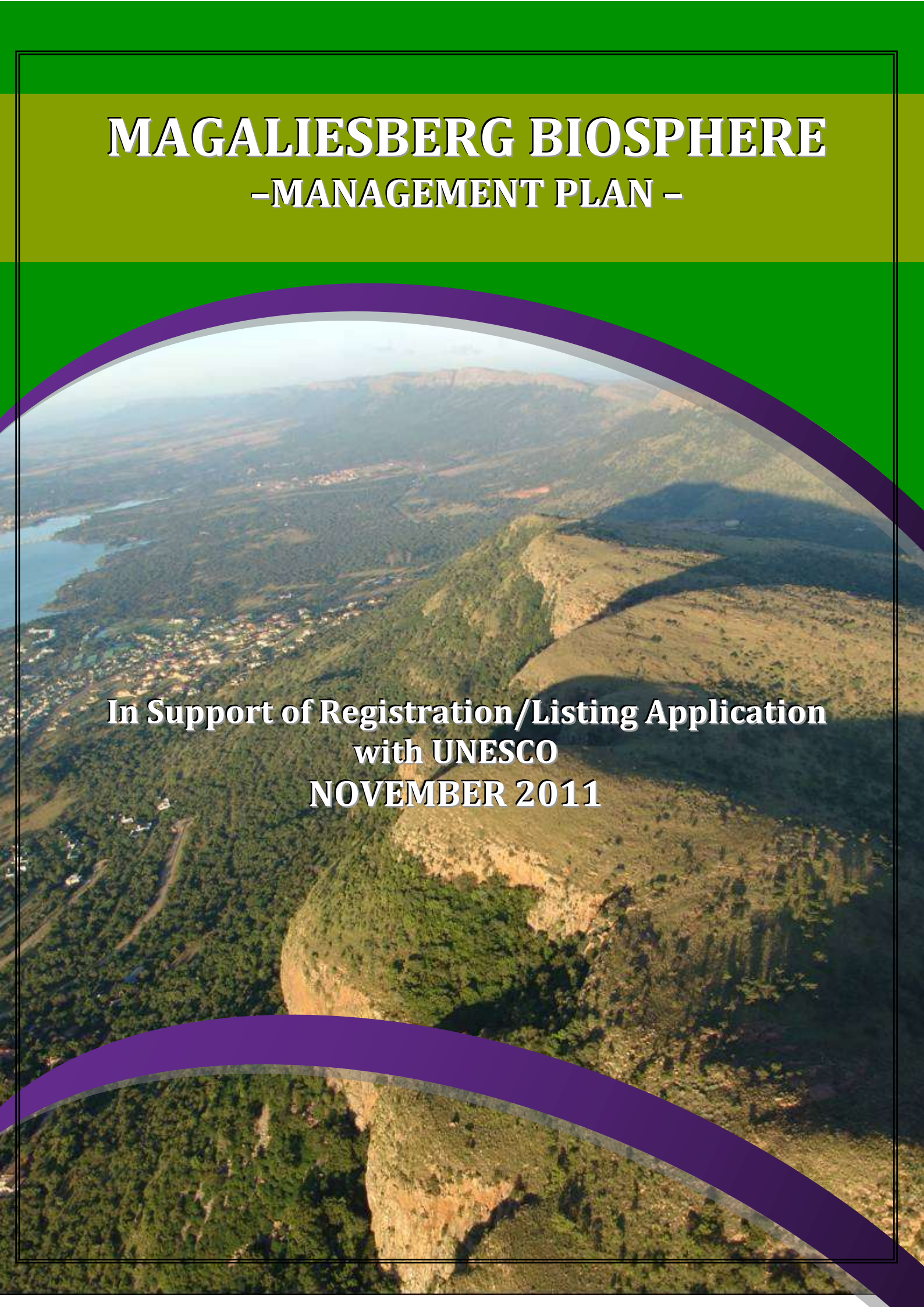


MAGALIESBERG BIOSPHERE

–MANAGEMENT PLAN –



**In Support of Registration/Listing Application
with UNESCO
NOVEMBER 2011**

MAGALIESBERG BIOSPHERE MANAGEMENT PLAN

Prepared for:



the DEDECT

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ABBREVIATIONS

BGAP	Gauteng Province Biodiversity Gap Analysis
CEO	Chief Executive Officer
CBA	Critical Biodiversity Area
C-Plan	Gauteng Conservation Plan
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
DEA	Department of Environment Affairs
DFA	Development Facilitation Act 67 of 1995
DWA	Department of Water Affairs
ECA	Environment Conservation Act 73 of 1989
EMF	Environmental Management Framework
ES	Eco-Schools
GSDF	Gauteng Spatial Development Framework in 2011
IBP	International Best Practice
ICC	International Coordinating Council
LM	Local Municipality
MaB	Man and the Biosphere Programme of UNESCO
MBIG	Magaliesberg Biosphere Initiative Group
MEC	Member of the Executive Council
MPE	Magaliesberg Protected Environment
MPE EMF Plan	Magaliesberg Protected Environment Environmental Management Framework Plan, 2007
MSA	Municipal Systems Act, Act 32, 2000
NEMA	National Environmental Management Act 107 of 1998
NGO	Non-Government Organisation
NPC	Non-Profit Company
NPAES	National Protected Area Expansion Strategy
NWCBA	North-West Province Critical Biodiversity Assessment
NWSDF	North West Spatial Development Framework
TDN	Teacher Development Network
UNESCO	United Nations Educational, Scientific and Cultural Organisation

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1. THE MAGALIESBERG BIOSPHERE

1.1 WHY PROTECT THE MAGALIESBERG?

1.1.1 UNIQUE FEATURES

The Magaliesberg region is virtually without equal in the world. It is almost 100 times older than Mount Everest and has unique geology, topography, habitats and heritage. Despite being hundreds of kilometres inland, straddling two landlocked provinces - Gauteng and North West - the rocks of the Magaliesberg bear the ripples of tides which lapped the shore more than 2 000 million years ago. The ocean then met a land surface devoid of life and an atmosphere that was unbreathable.

The region is unparalleled in its richness of history and biodiversity and reflects many aspects of South African geology, biodiversity, human evolution and history.

It lies at the interface of two great African biomes – the central grassland plateaux and the sub-Saharan savannah – with remnants of a third, Afro-montane forest in the north-facing kloofs. The landscape accommodates species from each of these biomes and the result is an exceptionally diverse fauna and flora that has drawn naturalists and explorers to the region for the past two centuries.

The biodiversity is matched by its unique human history encompassing a two-million-year time line from early hominids through Stone and Iron Age cultures, pre-colonial Tswana tradition and the South African Wars. In short, it is a priceless encapsulation of South African heritage and landscape and serves as a focal point for national unity and pride.

The rugged scenery and benign climate are especially suitable for outdoor recreation and the close proximity to the Gauteng conurbations and the mining city of Rustenburg make it particularly suitable for human use. Tourism, recreation and residential developments are expanding rapidly in the area, providing access to this valuable public asset while simultaneously protecting it for posterity poses special difficulties.

"The entire duration of human existence - let alone the lifespan of just one human being - is humiliatingly insignificant when compared with the period of the creation of the Magaliesberg." ~ Vincent Carruthers, author of "The Magaliesberg".

The Magaliesberg is also bordered by major industrial centres and its wealth in minerals such as Platinum and Chrome has attracted major mining investments and activities; all of which have a major impact on the Magaliesberg and its surroundings. The cumulative effect is already clearly visible in various forms of terrestrial, aquatic and air pollution.

1.1.2 UNIQUE CHALLENGES

This attractive landscape with its rich history and biodiversity that forms an important part of South Africa's natural and cultural heritage requires appreciation, respect and protection if it is to be conserved for future generations.

At the same time, the Magaliesberg mountain range and the neighbouring areas are intensively utilised and highly developed with severe impacts. The Magaliesberg is directly bordered by the Gauteng Metropolitan (the most developed commercial metropolitan area of Africa) and the mining city of Rustenburg (which is

believed to be the fastest growing city in Africa) and accommodates within its boundaries amongst others the urbanised resort towns of the Hartbeespoort Dam area and the informal settlement of Mjakaneng. The area can therefore expect increased pressure from an increasing urbanised and industrialised footprint which has growing demands and needs.

The challenge is to manage these increasing development pressures and demands in such a way that the natural resources and cultural heritage of the Magaliesberg are not depleted.

1.2 THE BIOSPHERE OPTION

1.2.1 WHY A BIOSPHERE?

Due to the unique features of the Magaliesberg and recognising the severe pressures on the area's natural and heritage resources, the key stakeholders as represented by the North West and Gauteng Provinces and concerned private land owners and interest groups as represented by the Magaliesberg Biosphere Initiative Group (MBIG), agreed to pursue the option of nominating the Magaliesberg as a biosphere with the United Nations Educational Scientific, and Cultural Organization (UNESCO).

A Biosphere is established to promote and demonstrate a balanced relationship between humans and the environment. This is achieved by combining three functions:

- The conservation of landscapes, ecosystems and species;
- The promotion of socio-culturally and ecologically sustainable economic and human development; and
- Support for environmental education and training, research, demonstration projects, and monitoring related to issues of conservation and sustainable development.

1.2.2 WHAT IS A BIOSPHERE

A biosphere is an area of terrestrial (and coastal/marine) ecosystem (or combination thereof), which is internationally recognized within the framework of UNESCO's Programme on Man and the Biosphere (MAB)

In essence, Biosphere represents an innovative and sustainable approach to managing land and water resources across landscapes made up of one or more bioregions. The development of a network of Biosphere, as envisaged by UNESCO, is aimed at ensuring conservation and sustainable development in order to:

- Reduce biodiversity loss;
- Improve livelihoods;
- Enhance social, economic and cultural conditions for environmental sustainability; and
- Contribute towards environmental sustainability through the pursuit of the Millennium Development Goals.

1.2.3 BIOSPHERE APPLICATION PROCESS

The UNESCO application process comprises of the following important steps:

- Development of a Situational Analysis Report which will assess the natural, legal and socio-economics of the study area

- Development of a Management Plan that will assist the management authority to manage the Magaliesberg Biosphere in a professional and responsible manner for the benefit of all stakeholders
- Development of an Implementation Plan that will priorities issues and provide a programme of action
- Preparation of documentation in preparation of the nomination documentation to be presented to UNESCO by national government
- Stakeholder Participation will be facilitated throughout all of the above processes
- A Final Constitution will be drafted and the UNESCO Application will be submitted by national government.

1.3 THE MANAGEMENT PLAN

To meet the aforementioned challenges, the Magaliesberg Biosphere needs;

- A suitable Management Framework
- Resource Protection Strategies and Instruments;
- Sustainable and Equitable Development Promotion strategies;
- Appropriate Education, Training and Research; and
- An Implementation and Monitoring Plan

These issues are addressed in the remaining chapters of this Management Plan; which sole aim is to provide the future management agency with a broad strategic framework and tool for the establishment and management of the Magaliesberg Biosphere.

1.4 VISIONING STATEMENT

1.4.1 VISION

The vision of the Magaliesberg Biosphere is:

“A sustainably managed region that is enjoyed and protected by all.”

1.4.2 MISSION

The mission of the Magaliesberg Biosphere is;

- To create awareness, appreciation and respect for the unique landscape, biodiversity, natural systems and cultural history of the Magaliesberg Biosphere through appropriate research, interpretation, education and promotion;
- To introduce and maintain development and land use guidelines that will contribute towards the conservation of its unique natural and cultural resources and will facilitate its sustainable development, land use and enjoyment;
- To proactively identify and facilitate the distribution of benefits to land owners, communities and visitors; and
- To contribute towards the knowledge of the Magaliesberg Biosphere, its natural environment and cultural history through research and education.

“The task is not, therefore, to preserve a ridge of solid quartzite. Instead, the real challenge is to learn to accept all that the mountains have to offer so that the diversity we enjoy can be sustained in perpetuity.” ~ Vincent Carruthers

1.4.3 CORE VALUES

The above vision and mission statements are based on the following core values:

- Conservation of unique landscape, biodiversity, natural systems and cultural history;
- Compliance with UNESCO protocol;
- Partnership between civil society, government and industry;
- Sustainable development and use;
- Integration of different land uses;
- Social benefits and upliftment of the poor;
- Visitor satisfaction;
- Conflict resolution;
- Transparency;
- Inclusivity; and
- Accountability.

1.4.4 OBJECTIVES

The main objectives of the Magaliesberg Biosphere and its management are to:

- Obtain recognition as a unique and important conservation area in an international, national, provincial (Gauteng and North West Provinces) and bioregional context so that it could be designated as a biosphere by the International Coordinating Council of the “Man and Biosphere” (MaB) Programme of UNESCO;
- Create appreciation for the attributes of the Magaliesberg Biosphere and to generate an interest and participation in the conservation of the Magaliesberg amongst land owners, residents, neighbouring communities, business society, educational and research institutions, impacting industries and visitors;
- Conserve the natural landscape, biodiversity and cultural history of the Magaliesberg Mountain range;
- Sustainable utilisation of the natural and cultural resources and other forms of sustainable development within the area;
- Management of impacts from sustainable development on the Magaliesberg Biosphere;
- Improve the quality of life of the people within the Magaliesberg Biosphere through the stimulation of job opportunities and through education and training programmes; and
- Enhance the tourism potential and tourism information network in the Magaliesberg area.

1.4.5 EXPECTED BENEFITS

The following benefits are expected from the establishment of the Magaliesberg Biosphere:

- Synergies and collaborative land use planning and management between different Municipalities and the Magaliesberg Biosphere Board
- Increased support base through collaboration that will enhance regulatory compliance and service delivery

- Access to funding through international and local recognition which could benefit the Magaliesberg Biosphere through social and environmental programmes
- Potential focus for industry and mining to invest in social and environmental programmes that will benefit the Magaliesberg Biosphere and its people
- Joint effort between different role players for a cleaner environment
- Conservation of the environment through international, national and local awareness that could bring funding, new projects and changed behaviour
- Impacts of undesirable or negative developments could be anticipated and mitigated as a result of greater awareness, collaboration and capacities
- Socioeconomic benefits through the identification of business and employment opportunities in the green economy and ecotourism.

2. BIOSPHERE MANAGEMENT FRAMEWORK

2.1 DESIRED STATE

The desired state with regards to the functioning of the Magaliesberg biosphere is that adequate management capacity and resources are in place and optimally managed to enable the Magaliesberg to fulfil its mandate and achieve its objectives in a cost-effective and efficient manner. The desired state is further described for each of the following critical organisational aspects:

- Funding
- Designated Management Agency
- Organisational Structure
- Personnel.

2.1.1 FUNDING

To effectively fulfil its mandate, achieve its objectives, execute its required functions and implement priority projects and programmes, Magaliesberg Biosphere has to be funded in line with its mandate. Funding will be required for the establishment and maintenance of a formally designated Management Agency as well as for ongoing projects and operational requirements. The best source of funding for key full-time positions should be an unencumbered endowment from a benefactor. Mining houses or other major benefactors should be approached to support the salaries of key personnel by means of an unencumbered endowment. This is similar to the endowment of a professorial chair at a university where the benefactor receives full recognition but has no influence over the appointment or activity of the incumbent. Other examples are also available.

Grant funding will also be sourced for specific projects from government, academic institutions, Non-Government Organisations (NGOs) and business partners.

The Magaliesberg Biosphere will also generate its own funding through subscriptions from members, charging members and supporting industries for the use of the Magaliesberg Biosphere branding (which therefore should be registered), arranging events and selling advertising space on the Internet.

The anticipated revenue and expenditure reflecting the above is summarised in the summarised budget of Section 6.3.

2.1.2 DESIGNATED MANAGEMENT AGENCY

The Designated Management Agency will comprise a Management Board, which will be the management authority responsible for governing the Magaliesberg Biosphere. In line with best practice in South Africa, a non-profit company (NPC), named the “Magaliesberg Biosphere” (Association incorporated under Section 21), has been registered in terms of the Companies Act. This is because:

- A registered company is a legal person capable of entering into contracts and conducting its affairs independently from any political, financial or social pressure.

- A registered company requires its directors to be accountable for governance. Even if directors are nominated by organisations or constituencies, malpractice by directors could not be hidden behind a faceless bureaucracy.

2.1.3 REPRESENTATION ON THE BOARD

The Magaliesberg Biosphere Company has an interim board which was appointed for purposes of registering the Company. Once the Magaliesberg Biosphere has been listed, the Company should however have members representing various constituencies, each of which would appoint a director to the Magaliesberg Biosphere Board – one director per constituent organisation. The following sixteen constituent structures represent specific interest groups within six Functional Groupings of the Magaliesberg Biosphere as described in Section 2.1.4 below. The Marketing and fundraising group identified in the Management Plan does not need a Board member as it is an in-house staff service under the secretariat. In addition, two interest groups not represented by functional activities of the Magaliesberg Biosphere have been identified; namely Landowners and Residents as well as Benefactors. The following Sixteen Constituent Structures will be represented by nominating one Board Member each:

- **Environment and Heritage Conservation**
 1. Natural resource conservation (e.g. MPA, MCSA, WESSA, BirdLife SA and other NGOs)
 2. Heritage (e.g. Arch Soc, HEHA, etc.)
 3. Culture (e.g. Artists, cultural centres, museums, libraries, religious organisations)
- **Economic and Tourism**
 4. Tourism (e.g. Magalies Meander, tourist associations, tour guide associations, recreation clubs such as MCSA, hiking clubs, etc.)
 5. Commerce and industry (e.g. NW Business Forum, Invest North West, Chambers of Commerce).
 6. Mines.
- **Development, Planning and Monitoring**
 7. Sustainable development (Property developers, town and regional planners, engineers, estate agents)
 8. Municipal planning and development services.
 9. Cradle WHS
 10. Marketing, legal and other specialist consulting services operating in the Magaliesberg.
- **Education and Research**
 11. Education (Schools, training centres, environmental education institutions, etc.)
 12. Research (Universities, scientific institutions, etc.)
- **Landowners and Residents**
 13. Landowners (Farmers unions, MCSA, bodies corporate/Landowners associations, etc.)
 14. Conservancies
 15. Land occupiers (permanent non-landowning residents or resident workers)
- **Benefactors**
 16. Principal supporters and sponsors of the Biosphere (e.g. MCSA, mining houses, etc.)

The Board would appoint a Chairman from among their number for a three-year term, renewable for only one further term (i.e. a maximum of six years). The Board will appoint a smaller executive management board with one representative from each Functional Groupings and including the CEO for day to day decision making (refer 2.1.4 below).

The role of the Management Agency is to represent these many interest groups and to provide strategic and policy direction for the promotion and sustainable development and utilisation of the Magaliesberg Biosphere.

The obligation of the Management Agency members will in the first place be to protect the interests of the Magaliesberg Biosphere and in the second instance to represent the interests of its members. Management Agency members will represent organisation/s by which they are nominated and will therefore not have a seat in their personal capacity and will not represent their personal interests.

2.1.4 NOMINATION OF BOARD MEMBERS

2.1.4.1 PRINCIPLES

The process for appointing Board members should be:

- Easy to manage and easy to understand
- Transparent
- Quick
- Ensure fair representation of all stakeholders.

2.1.4.2 PROCESS

The following process should be followed for the nomination of board members:

1. The Board will comprise 16 members, each representing one of the 16 interest groups listed in **Section 2.1.3** of the Management Plan.
2. It is recognised that different interest groups need different methods of electing their representative Board member/s. The following methods are proposed:
 - i. Interest groups in Environmental and Heritage Conservation should nominate candidates and stakeholders should vote for the candidate of their choice. Stakeholders representing groups (e.g. NGOs) should have as many votes as they have members in good standing.
 - ii. Interest groups in Economic and Tourism should nominate candidates and vote for them on the basis of each stakeholder having as many votes as it has associate members (e.g. Magalies Meander would have as many votes as it has member organisations).
 - iii. Interest groups in Development, Planning and Monitoring should nominate candidates and vote for them on the following basis: Municipalities – one vote per ward in the Biosphere; property developers, town planners, consultants, etc. – one vote each company/organisation.
 - iv. Interest groups in Education and Research should nominate candidates and vote for them on the basis of one vote per institution.
 - v. Interest groups in the Landowners and Residents sector should nominate candidates and vote for them on the basis of one vote per individual stakeholder.
 - vi. Interest groups in the Benefactor sector should nominate candidates and vote for them on the basis of one vote per benefactor weighted according to the value of the benefit.

3. The Board will appoint a Stakeholder Administration Subcommittee (SAS) from among its members and/or members of staff. The duties of the SAS will be to:
 - i. Maintain the database of registered stakeholders.
 - ii. Allocate each registered stakeholder to an interest group according to the stakeholder's wishes. (Note: one stakeholder may belong to more than one interest group e.g. a landowner who is a benefactor, a member of an environmental NGO and a business association.)
 - iii. Supervise (but not influence) the process of appointing Board members. To ensure that each Board member has been fairly appointed by the stakeholders in her/his interest group (in this respect its function will be similar to that of the IEC in a national election.)
 - iv. Register the names of appointed Board members with the Companies and Intellectual Property Commission (CIPC) in accordance with the Companies Act.
4. The existing Magaliesberg Biosphere Steering Committee will act as the interim SAS for the appointment of the first Board.
5. To initiate the appointment of Board members the SAS (Steering Committee) will notify every registered stakeholder of the following information:
 - i. The need for each interest group to appoint a Board member.
 - ii. A clear description of the electoral process.
 - iii. A list of all stakeholders in that stakeholder's interest group giving contact details for each.
 - iv. An invitation to submit nominations for Board members by a specified date. Nominations must be accompanied by a statement from the nominee that s/he will abide by the criteria for Board members. The nomination must include a manifesto of not more than 80 words.
 - v. A list of criteria for Board members (see Criteria below).
6. Once nominations have been received the SAS will notify all stakeholders in each interest group of the candidates standing in that group and SAS will invite stakeholders to vote according to the prescribed basis in paragraph 2 above. Voting should take place within 30 days.
7. SAS will count the votes for each candidate and advise all candidates and stakeholders of the appointed Board member for each interest group.
8. Once appointed, a Board member must appoint a deputy or proxy with authority to act on his/her behalf with regard to Board matters.
9. If no member is appointed by a particular interest group that position on the Board must remain vacant and may not be filled by any other candidate for a period of two years.
10. The Board may dissolve a Board position for an interest group if a) the position has been vacant for an uninterrupted period of two years, b) all stakeholders in that interest group have been notified and c) a majority of 70% of Board members agree.
11. The Board may create another interest group and Board member position to replace one that has been dissolved but the total number of Board members may not exceed 16.

2.1.4.3 CRITERIA

A candidate who is nominated for appointment as a Board member must sign an agreement that S/he meets the following criteria. S/he must:

1. Have the endorsement of a majority of stakeholders in her/his interest group.
2. Be a genuine representative of, and participant in, the functions of the interest group S/he represents.
3. Be 18 years or older.
4. Be unpaid and unremunerated in any other way for services as a Board member.
5. Have a genuine intention to serve on the Board for a minimum of three years unless prevented by unforeseen circumstances.
6. Agree to abide by the constitution of the Biosphere and the NPC articles of association/incorporation.
7. Agree to be registered with CIPC as a director in terms of the Companies Act and to bear such responsibilities and obligations that may entail.
8. Agree to participate, or have a deputy or proxy participate, in a minimum of 75% of Board meetings during his/her three year term of office. (Note, meetings may be held electronically and do not require physical attendance.)

Disclose any possible conflict of interest with the principles and articles of association/incorporation of the Biosphere and to resign or recuse him-/herself to avoid any such conflict.

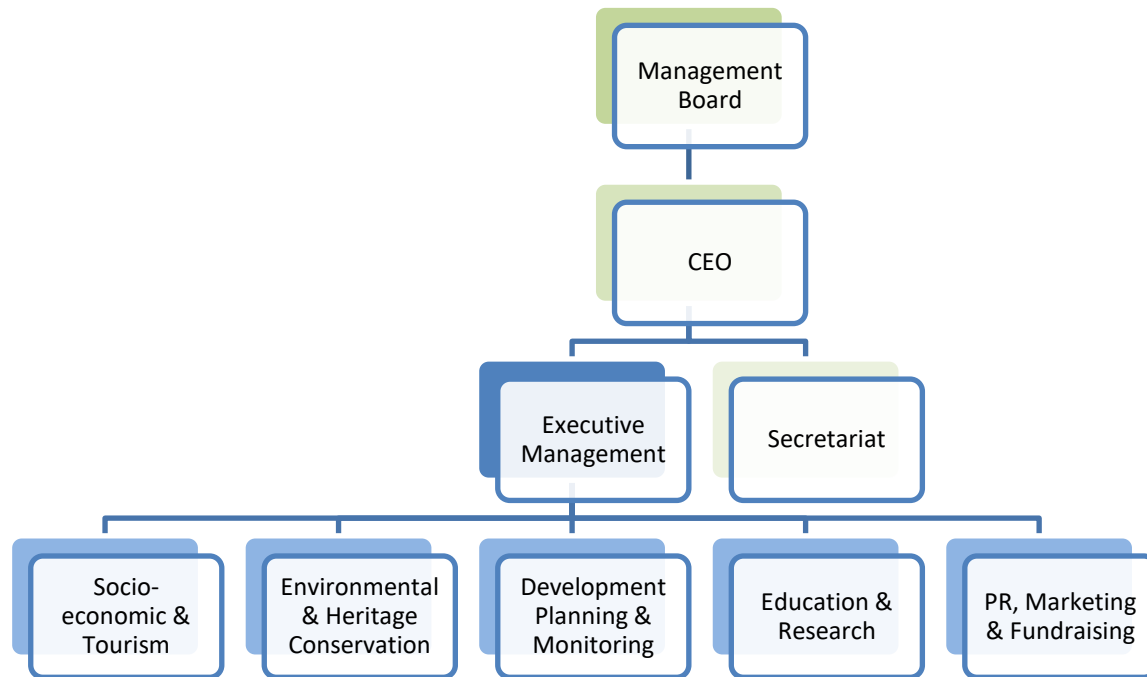
2.1.5 ORGANISATIONAL ARRANGEMENTS

Working committees or technical committees should be formed for each of the primary Functional Groupings of the Magaliesberg biosphere. The following committees are proposed:

- **Environment and Heritage Conservation**
- **Socio-economic and Tourism Development**
- **Development Planning and Monitoring**
- **Education and Research**
- **Public Relations, Marketing and Fundraising**

Each working committee or technical committee will comprise voluntary members from the various interest groups and key stakeholder groupings, jointly making up a functional committee. Within each committee a convener will be appointed by the Management Agency that will automatically be represented on the Executive Management board.

The organogram in Figure 2.1 illustrates the organisational structure of the proposed Management Agency and the functioning of its committees:

Figure 2.1: Organogram

2.1.6 PERSONNEL

Although the potential exists to incorporate volunteers into the committee structures, it can be expected that the biosphere will not make significant strides until it could fill at least a few key positions with permanent staff. Volunteers alone cannot be expected to sufficiently deal with all the issues that are relevant to the Magaliesberg Biosphere and will not successfully achievement its purpose.

A Chief Executive Officer (CEO) with a small secretariat comprising a Personal Assistant and two good, productive, Administrators/Public Relations officers would however be adequate to start with and needs to be established from the outset. An important function within the secretariat is the monitoring of land use and developments and to liaise with local, provincial and national authorities.

As funding is put in place, permanent staff members could be appointed to take care of key focus functions within some of the committee structures as represented in the organogram. All staff should be paid directly by the Board. Any funding from outside for positions within the Magaliesberg Biosphere staff compliment needs to be channelled through the Board.

2.1.7 ORGANISATIONAL PROCEDURES

2.1.7.1 BACKGROUND & CONTEXT

Two structures have been relevant to the management of the Magaliesberg Biosphere. One is the MBIG which initiated the establishment of a biosphere. The other is the North West Department of Economic Development, Environment, Conservation and Tourism which is the relevant provincial department through which the UNESCO nomination has to be tabled and funded the application process. A joint Project Steering

Committee comprising both these structures was specifically established to facilitate the application process. The COHWHS, the MPE and Kgaswane Nature Reserve in the Core Area are managed independently by their respective management authorities. There is presently no single entity managing the proposed biosphere and therefore also no overarching operating procedures for an overarching management agency.

The MBIG is in the process of registering a non-profit section 21 company as the desired legal entity. The Articles of Association for this company has been drafted and presently represent the only operating procedures for the Magaliesberg Biosphere. These may need further elaboration at the operational level.

2.1.7.2 DESIRED STATE

For the Magaliesberg Biosphere to be operated successfully and according to International Best Practice (IBP), it requires the management board and the associated sub-committees to function effectively and in accordance with prescribed procedures contained in the Articles of Association of the section 21 company and formal Administrative Procedures at all times. For a board and its personnel to operate effectively and in accordance with the prescribed procedures, it requires the people who have been elected or appointed to positions of responsibility to fulfil their mandates and carry out their duties appropriately and effectively.

2.1.7.3 POLICIES

The following policies should be considered in order to achieve the above outlined desired state:

- Persons elected to positions of responsibility must be committed to the position and the tasks that they will have to undertake as a result of being elected to such position;
- Persons elected to positions of responsibility must be familiar with the procedural requirements associated with their positions in order to facilitate the proper operation and functioning of the various committees;
- Persons in positions of responsibility must be accountable for their decisions and actions, but must not be held personally liable for any such decisions or actions that are undertaken on behalf of the Magaliesberg Biosphere;
- Failure to follow the relevant procedural requirements must be dealt with in accordance with the provisions of the Articles of Association;
- Any person who is elected as a member of the board or a committee or who volunteers to be a member of such committee must be committed to acting in accordance with the prescribed procedures and must serve the committee in a manner that upholds the best interests of the committee;
- As the undertakings of the Magaliesberg Biosphere grow it will become necessary to periodically review the various procedures to determine if they suit the requirements and needs of the section 21 company and the management board. In the event that the procedures, as set out in the Articles of Association or Administrative Procedures, are no longer applicable or relevant, then such procedures should be formally amended in accordance with the requirements of the respective documents.

2.1.7.4 GUIDELINES

The people who have been elected to positions of responsibility on the various committees are accountable for the manner in which committees are managed and operated. Accordingly, the guidelines set out below provide direction as to how these roles should be handled and carried out.

2.1.7.4.1 Chairperson

The key responsibility of a chairperson is to facilitate the proper operation and functioning of the board in accordance with the procedures as set out in the Articles of Association and the Administrative Procedures. Accordingly, the chairperson must:

- be familiar with all procedural requirements;
- provide co-ordination, guidance and leadership;
- where required, act as the board's representative when dealing with stakeholders and other entities outside of the board;
- ensure that the administrative and other tasks from meetings are carried out by the responsible people;
- ensure that all board meetings are correctly convened;
- ensure that a quorum is present when any decisions are being made;
- see to it that a responsible person is identified to ensure that meeting decisions are properly minuted;
- maintain order at board meetings;
- make sure that all items on the agenda are properly covered during meetings;
- report back or allow report back to the management board in connection with any decisions that have been made by a sub-committee, in order to have such decisions ratified, amended or rejected; and
- ensure that newsletters are drafted and publish to keep all interested parties up to date with activities of the various committees.

It should be noted that the absence of a chairperson from a meeting should not result in the meeting being postponed. In the event that a board has a deputy chairperson, then such person should act in the chairperson's stead. In the event that there is no appointed deputy chairperson present, then a suitable person should be elected by members present to chair the meeting in the absence of the chairperson and deputy chairperson and ensure that the above requirements, where applicable, are fulfilled.

2.1.7.4.2 Office Bearers

The key responsibility of office bearers (including the CEO) is to deal with administrative and operational issues and responsibilities formally assigned to them in a professional manner. Accordingly office bearers will typically:

- fulfil the requirements of their position as described in a formal performance contract and/or job description;
- report to their direct senior on a regular bases against formal key performance areas clearly described in a performance contract or job description (in the case of the CEO, to report directly to the chair person);
- diligently maintain the various records and any correspondence associated with their position; and
- within their area of jurisdiction always protect and represent the best interests of the Magaliesberg Biosphere, its members, its management agency and its management board.

2.1.7.4.3 Non-Office Bearers As Members Of The Committees

The management board will have non-office bearing members who will sit on committees. Ideally the Magaliesberg Board will over time get to the point where a component of the members of the committees will be paid employees of the Magaliesberg Biosphere who will be assisted by volunteer members. The assistance of non-office bearing members who have specialised skills and knowledge will become crucial as and when the sub-committees start implementing programmes and initiatives within the Magaliesberg

Biosphere.

The duties of such committee members will include inter alia the following:

- active participation in committee activities and business;
- where authorised, conduct business on behalf of the committees including the implementation of decisions that have been ratified by the management board;
- attending all committee meetings, and participating in decision making;
- bringing to the board's attention any identified problems or issues; and
- within their area of involvement always protect and represent the best interests of the Magaliesberg Biosphere, its members, its management agency and its management board.

3. RESOURCE PROTECTION STRATEGIES AND INSTRUMENTS

3.1 BACKGROUND AND CONTEXT

3.1.1 SEVILLE STRATEGY AND BIOSPHERE ZONATION

The Seville Strategy in *'Biosphere Reserves: The First Twenty Years'* states that "biosphere reserves are designed to deal with one of the most important questions the World faces today: How can we reconcile conservation of biodiversity and biological resources with their sustainable use?" The major objectives of the 'Convention on Biological Diversity' signed during the 'Earth Summit' of the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992 are:

- conservation of biological diversity;
- sustainable use of its components; and
- fair and equitable sharing of benefits arising from the utilisation of genetic resources.

Biosphere reserves are seen to promote this integrated approach and now recognise the link between conservation of biodiversity and the development needs of communities as a central component and key feature of the biosphere approach. Therefore, community involvement, the links between conservation and development and international collaboration are now regarded as essential aspects of biosphere reserves.

Today, biosphere reserves are intended to fulfil three complementary functions:

- **Conservation function** - to preserve genetic resources, species, ecosystems and landscapes;
- **Development function** - to foster sustainable economic and human development; and
- **Logistic support function** - to support demonstration projects, environmental education and training, and research and monitoring related to local, national and global issues of conservation and sustainable development.

To facilitate these functions and to manage the spatial relationship between these, the Seville Strategy recommends the following three types of physical elements or zones:

- **Core areas**, which are securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education);
- **Buffer zone**, which usually surrounds or adjoins the core areas, and is used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research; and
- **Flexible transition area**, or area of co-operation, which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organisations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

These zones are implemented with local needs and conditions in mind, allowing flexibility and creativity to accommodate local needs and demands.

Although no legislation exists in South Africa in direct support of biosphere reserves, the concept is widely utilised and supported by government. This also allows for the utilisation of local instruments such as other regional planning and development initiatives, protected area legislation, regional and local spatial planning tools and land rezoning processes to be used to the advantage of a biosphere reserve. More recently, also

as a result of limited financial and other government resources, greater interest and support has been shown for biosphere reserves as a meaningful means of expanding South Africa's conservation effort. This concept allows conservation efforts to be applied across the landscape regardless of who owns or utilises the land.

3.1.2 CONSIDERATIONS FOR AN EXPANDED FOOTPRINT

The following were important considerations when deciding to expand the Magaliesberg conservation footprint:

- The opportunity posed by the process of nominating the Magaliesberg area for listing as a Biosphere with UNESCO
- The conservation priority already received from national and provincial government due to the importance of the Magaliesberg as an area with unique landscape, natural, biodiversity, heritage and other values;
- The support from civil society and the private sector for its protection.

These were seen as opportunities that could be harnessed to review and where appropriate expand the boundaries of the Magaliesberg that are under protection. It is however important that these expanded boundaries are aligned with current and expected future conservation priorities, but also accommodate and stimulate compatible developments in line with a pragmatic spatial arrangement.

3.1.3 CRITERIA FOR DETERMINING OUTER BOUNDARIES

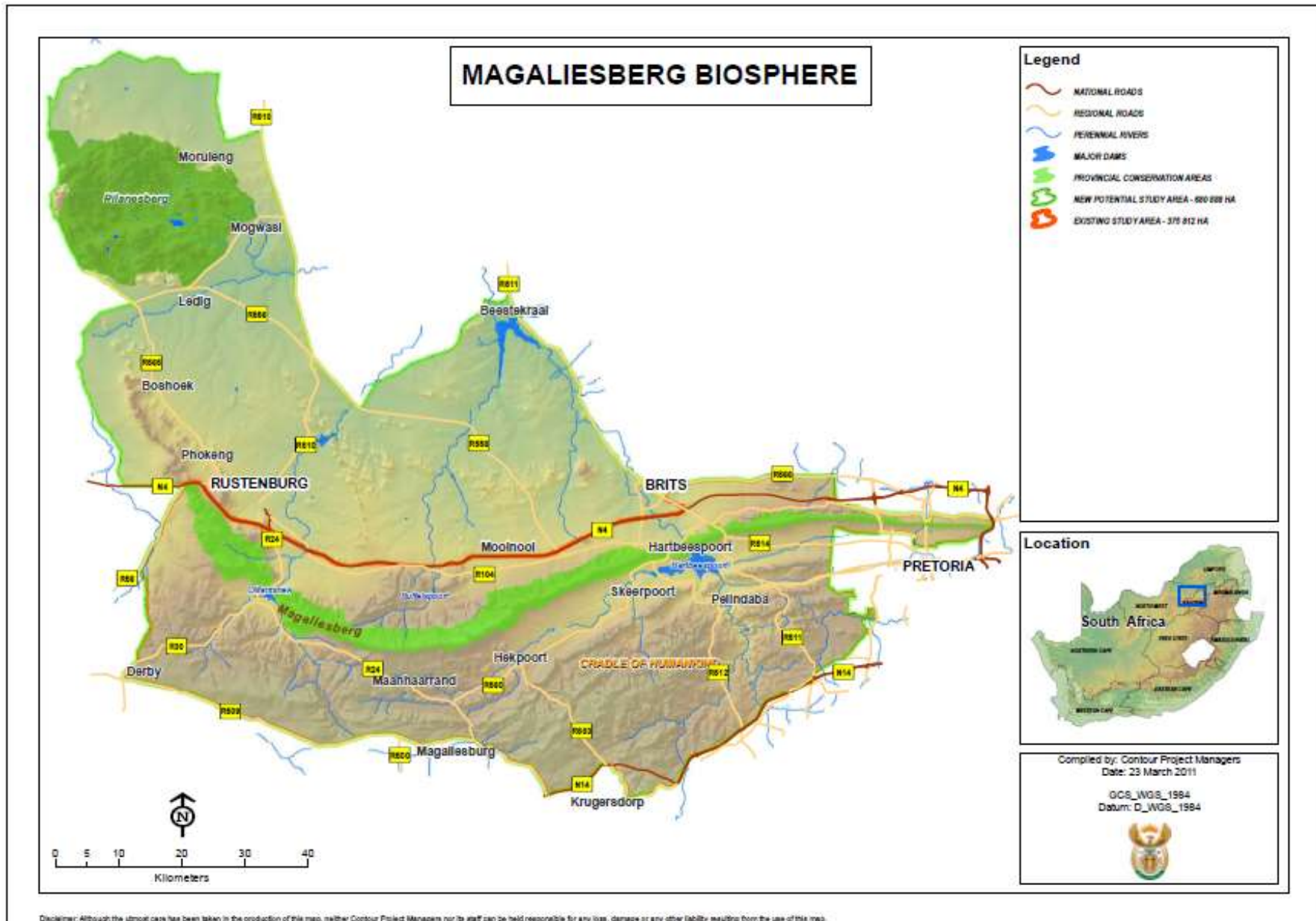
The extent of the Magaliesberg Mountain Range that had to be protected and for which the resource use have to be sustainably developed and utilised was determined by considering the following most important criteria:

- To include where practicable conservation areas of greatest importance:
 - Existing Protected Areas and Conservancies;
 - Clusters of most significant Heritage sites (archaeological and historical);
 - Areas of ecological value and sensitivity;
 - Conservation priority areas;
 - Water production priority areas and catchments;
 - Proposed environmental management zones as defined in the Environmental Management Framework (EMF);
 - Threatened or priority ecosystems;
 - A spectrum of vegetation types representative of the larger Magaliesberg Mountain area;
 - Large spectrum of landscapes (terrain morphology); and
 - Air quality priority areas.
- To include developed areas peripheral to the above mentioned areas of conservation importance, where human and man-induced developments and activities have a direct bearing or place pressure, as potential transition zones:
 - Agricultural areas;
 - Towns, settlements and informal settlements with a close connection to the conservation areas;
 - Mining areas that have a close connection to and direct bearing on the conservation areas;
 - Areas suitable for more intensive forms of tourism, including sensitively designed residential estates, golf courses, etc.; and

- Areas where changing land use is expected to have an increasing impact in future.
- To exclude highly disturbed areas or areas with high impact that do not have a direct association with or impact on the Magaliesberg Mountain area:
 - Areas with high agricultural value;
 - Bulk infrastructure corridors (main roads, electricity, water, etc);
 - Degraded and transformed areas; and
 - Areas with high levels of densification.
- Practical and cost-effective size and shape:
 - Easily identifiable boundaries (physical topographical and natural features, infrastructure, administrative boundaries);
 - Non-fragmented;
 - Practical shape;
 - Inclusive of as much of the Magaliesberg Mountain Complex and its foothills as practical, whilst taking the aims and objectives of the Magaliesberg Biosphere into account; and
 - Excluding the larger Metropolitan areas that have a direct bearing on the Magaliesberg Mountain area due to the differing character of the overall land use, but to still manage the impact through arms-length interactions, arrangements and agreements.

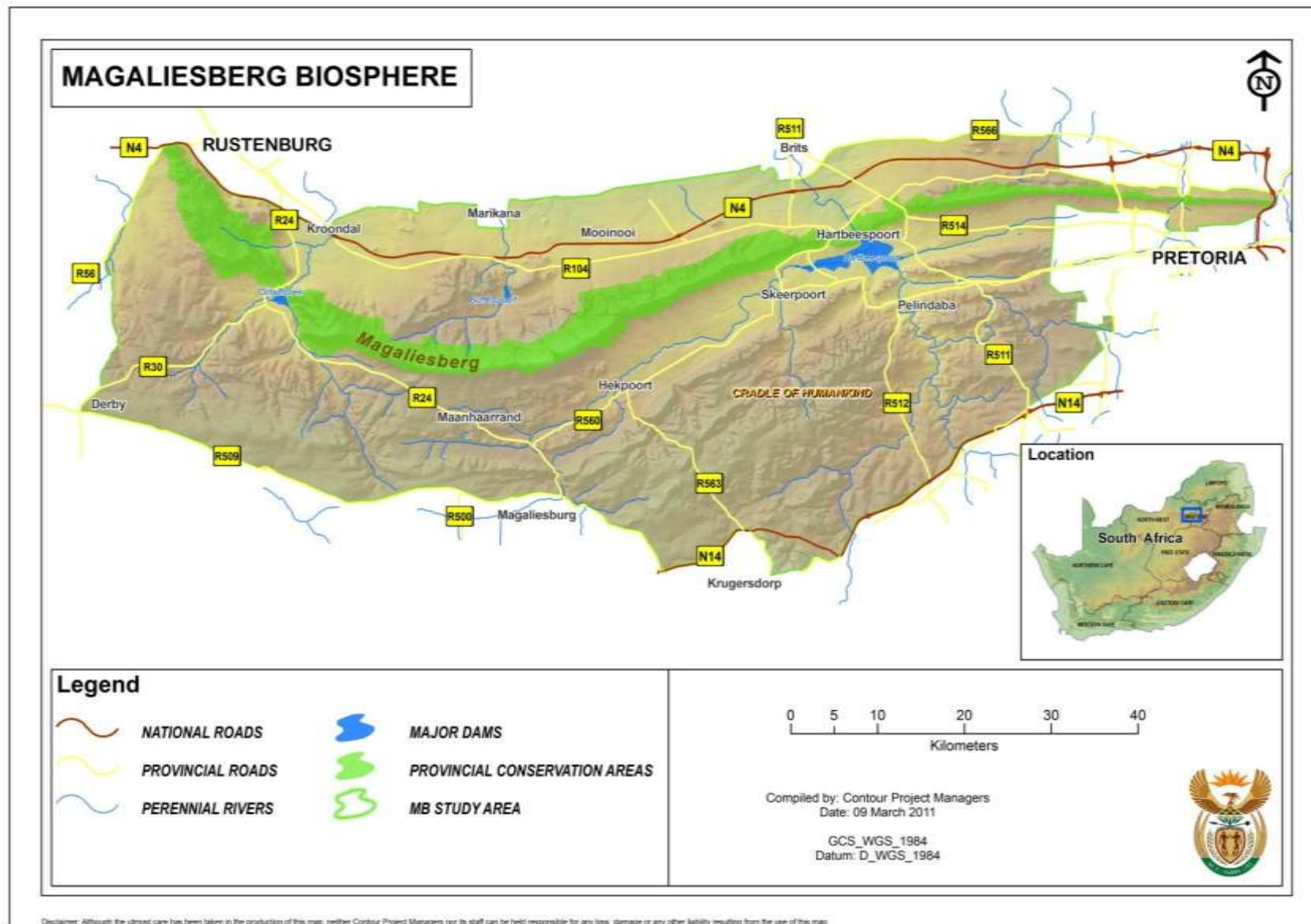
3.1.4 POTENTIAL LONGER TERM FOOTPRINT

Although the resources are not available at this time, it was agreed that the future potential exists to expand the Magaliesberg Biosphere to include more of the rapidly expanding urbanised and mining areas in the Rustenburg and Pilanesberg regions, in an effort to collaborate with the mines, industries and municipalities to minimise the high impacts that these developments have on the Magaliesberg Biosphere and the Pilanesberg National Park. A particular motivation to include the Pilanesberg is to learn from the current collaboration between the North West Parks and Tourism Board and the mines north of Pilanesberg National Park. This potential expansion is reflected in Map 3.1 below.

Map 3.1: Potential Expansion of the Magaliesberg Biosphere

3.1.5 PROPOSED MAGALIESBERG BIOSPHERE AREA

Due to immediate time, budget and capacity constraints, it was decided to rather start with a smaller and more manageable footprint than expanding the Magaliesberg Biosphere to its full potential from the outset. In consideration of the above and based on the abovementioned criteria, the following area was identified as the proposed Magaliesberg Biosphere area (See Map 3.2 below):

Map 3.2: Magaliesberg Biosphere Area

3.2 BIOSPHERE ZONATION

3.2.1 DESIRED STATE

The zonation of the Magaliesberg Biosphere is based upon the evaluation of the following criteria:

- **Status of the Environment** - pristine ecosystems on the one end of the scale and major transformation and disturbance on the other end.
- **Conservation Priorities** - areas already under formal conservation protection, areas of high conservation value including priority or threatened terrestrial and aquatic ecosystems or heritage sites; and
- **Development Pressures** – areas already highly transformed or disturbed or likely to be under severe development pressure and areas that may have a direct negative impact on the Magaliesberg area.

3.2.2 INPUT DATA

For the process of delineating Core Areas, Buffer Zone and Flexible Transition Areas within the Magaliesberg Biosphere, as required by the Seville Strategy, a Weighted Sum approach was used to guide the delineation process. Six datasets pertaining from the Situational Analysis was used for this analysis. Due to a lack of large scale data indicating environmental sensitivity for the whole study area (only some of the Local and District Municipalities in the study area have detailed ecological sensitivity type data available) only data that was available for the whole study area (mostly Provincial and National scale) were used during the overlay process to prevent a distorted result. The following seven datasets were used during the overlay process:

- National Spatial Biodiversity Assessment (2004) – Terrestrial Ecosystem Status (Refer 3.2.2.1)
- National Spatial Biodiversity Assessment (2004) – *River Ecosystem Status* (Refer 3.2.2.2)
- Draft List of Threatened Terrestrial Ecosystems (2008) (Refer 3.2.2.3)
- Protected Areas and National Protected Areas Expansion Strategy (2008) (Refer 3.2.2.4)
- Gauteng Province Conservation Plan (Version II) combined with North-West Province Biodiversity Conservation Assessment (2008) – *Terrestrial Critical Biodiversity Areas (CBAs) and Aquatic CBAs* (Refer 3.2.2.5)
- Heritage Sites (Refer 3.2.2.6)
- Land Cover (2009) (Refer 3.2.2.7)

3.2.2.1 NATIONAL SPATIAL BIODIVERSITY ASSESSMENT (2004) – TERRESTRIAL ECOSYSTEM STATUS

The terrestrial ecosystem status of vegetation types was derived from the 2006 published vegetation map for South Africa. Ecosystem status (sensitivity) is expressed in the following categories: critically endangered, endangered, vulnerable and least threatened. The ecosystem status was calculated based on the ability of the remaining vegetation area to meet the biodiversity target set for each vegetation type on a national scale. Protection status is also given and was determined by calculating the percentage of the biodiversity target met in statutory reserves (See Map 3.3 below).

3.2.2.2 NATIONAL SPATIAL BIODIVERSITY ASSESSMENT (2004) – RIVER ECOSYSTEM STATUS

The status of river ecosystems was assessed based on the river heterogeneity signatures and the integrity of main stream rivers. 120 Unique signatures were derived using the geomorphic provinces of rivers in combination with hydrological index classes. The signatures were used to depict biodiversity at a national scale using the following categories: critically endangered, endangered, vulnerable and least threatened. A critically endangered river signature is one for which there are few remaining intact examples, thus putting the biodiversity patterns and ecological processes associated with that river signature at risk (See Map 3.4 below).

3.2.2.3 DRAFT LIST OF THREATENED TERRESTRIAL ECOSYSTEMS (2008)

The Biodiversity Act (Act 10 of 2004) provides for the listing of threatened or protected ecosystems, in one of four categories: critically endangered, endangered, vulnerable or protected. The purpose of listing threatened ecosystems is primarily to reduce the rate of ecosystem and species extinction by preserving sites of exceptionally high conservation value. Listed ecosystems were defined at the local rather than a regional scale and were delineated based on one of the following: the South African Vegetation Map, national forest types recognised by the Department of Water Affairs (DWA), priority areas identified in a provincial systematic biodiversity plans, or high irreplaceability forests patches or clusters systematically identified by DWA.

3.2.2.4 PROTECTED AREAS AND NATIONAL PROTECTED AREAS EXPANSION STRATEGY (2008)

Formal protected areas represent areas that are formally protected, appear on the registers where proclamation records and boundaries exist were used. For informal protected areas, known private game reserves and conservancies were included to reflect their conservation efforts. Focus areas for land-based protected area expansion are large, intact and unfragmented areas of high importance for biodiversity representation and ecological persistence, suitable for the creation or expansion of large protected areas. These focus areas were identified through a systematic biodiversity planning process undertaken as part of the development of the National Protected Area Expansion Strategy (NPAES) of 2008. These areas present the best opportunities for meeting the ecosystem-specific protected area targets set in the NPAES, and were designed with strong emphasis on climate change resilience and requirements for freshwater ecosystems.

3.2.2.5 GAUTENG PROVINCE CONSERVATION PLAN (VERSION II) AND NORTH-WEST PROVINCE BIODIVERSITY CONSERVATION ASSESSMENT (2008) – *TERRESTRIAL AND AQUATIC CBA'S*

The second version of the Gauteng Conservation Plan (C-Plan) is the result of a systematic conservation planning approach utilizing data from the Gauteng Province Biodiversity Gap Analysis (BGAP) which was aimed at identifying and mapping areas of importance for biodiversity protection in Gauteng. The C-Plan is based on the analysis of site selection units that are 100ha in size or smaller and distinguishes between three different types of sites: Irreplaceable sites (sites essential in meeting conservation targets), Important Sites (sites that are important for conservation) and Reserved Sites (existing protected areas).

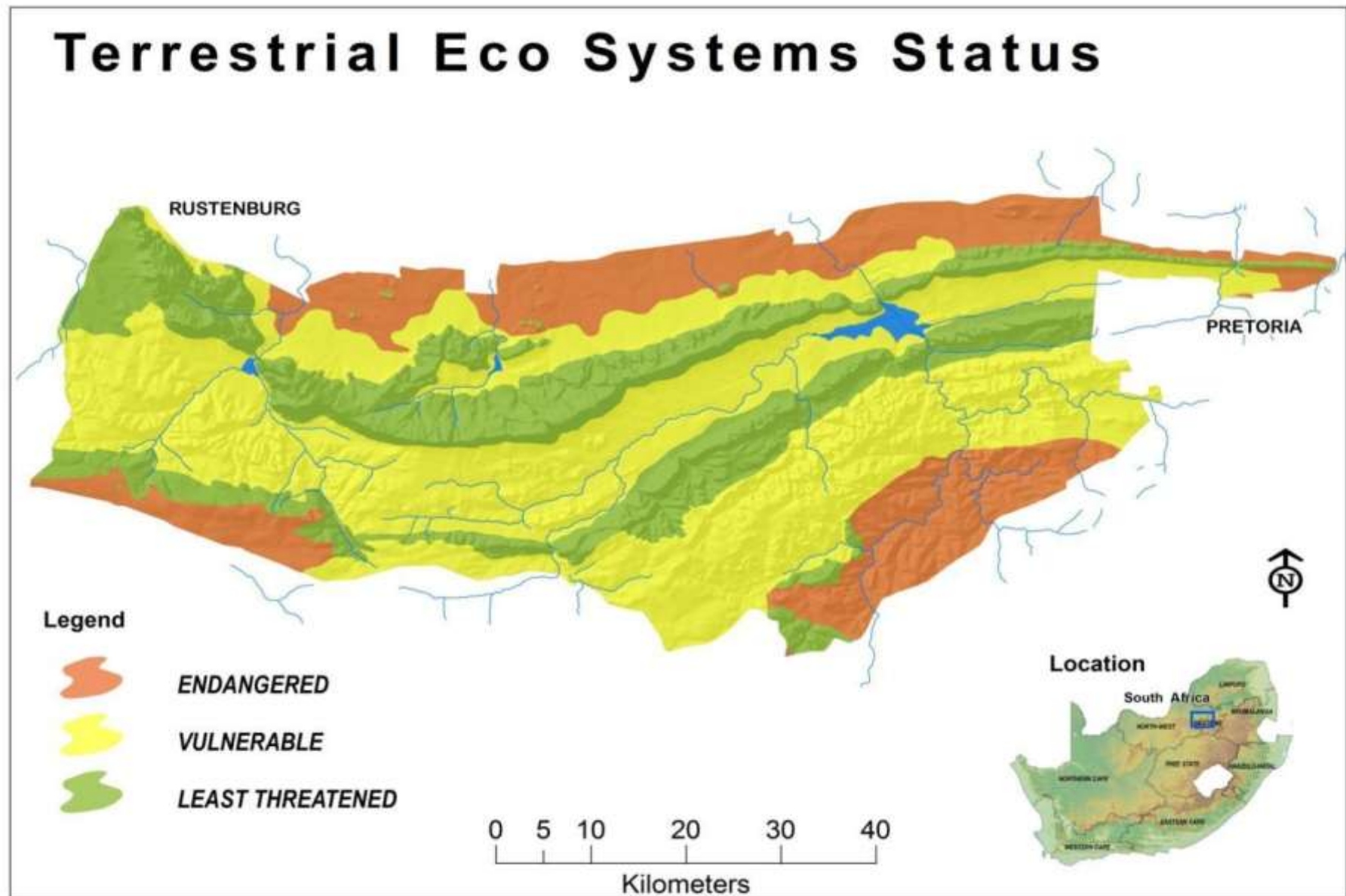
The purpose of the North-West Province Critical Biodiversity Assessment (NWCBA) is to serve as a tool that will inform the development of bioregional plans in the province. A systematic conservation planning approach was used to identify Critical Biodiversity Areas (CBAs) within the province. CBAs are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services. The assessment distinguishes between two types of Terrestrial CBAs: CBA 1s (natural landscapes where ecosystems and species are fully intact and undisturbed) and CBA 2s (Near-natural landscapes where ecosystems and species are largely intact and undisturbed). The assessment also distinguishes between two types of Aquatic CBAs: CBA 1s (natural landscapes where ecosystems and species are fully intact and undisturbed) and CBA 2s (Near-natural landscapes where ecosystems and species are largely intact and undisturbed).

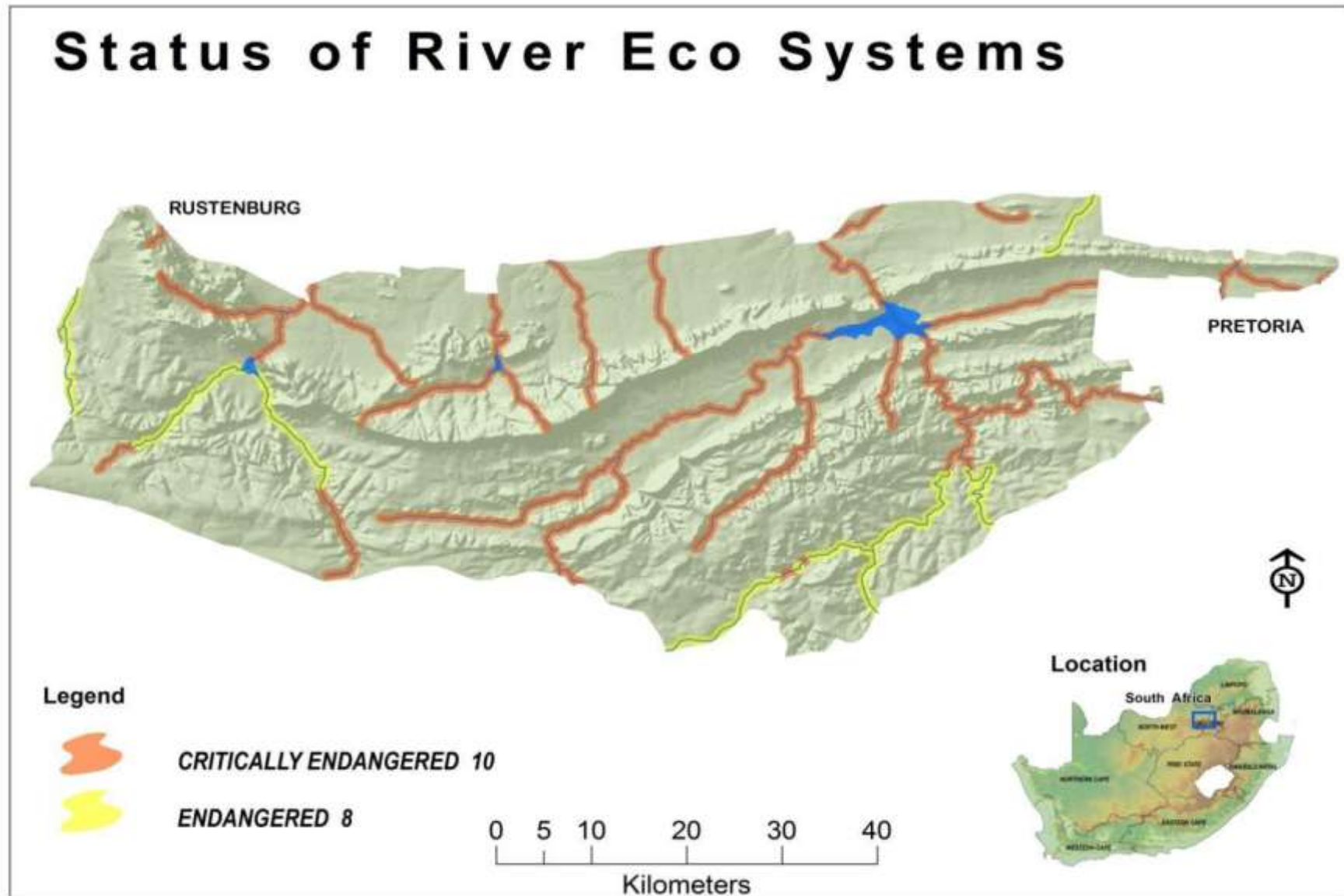
3.2.2.6 HERITAGE SITES

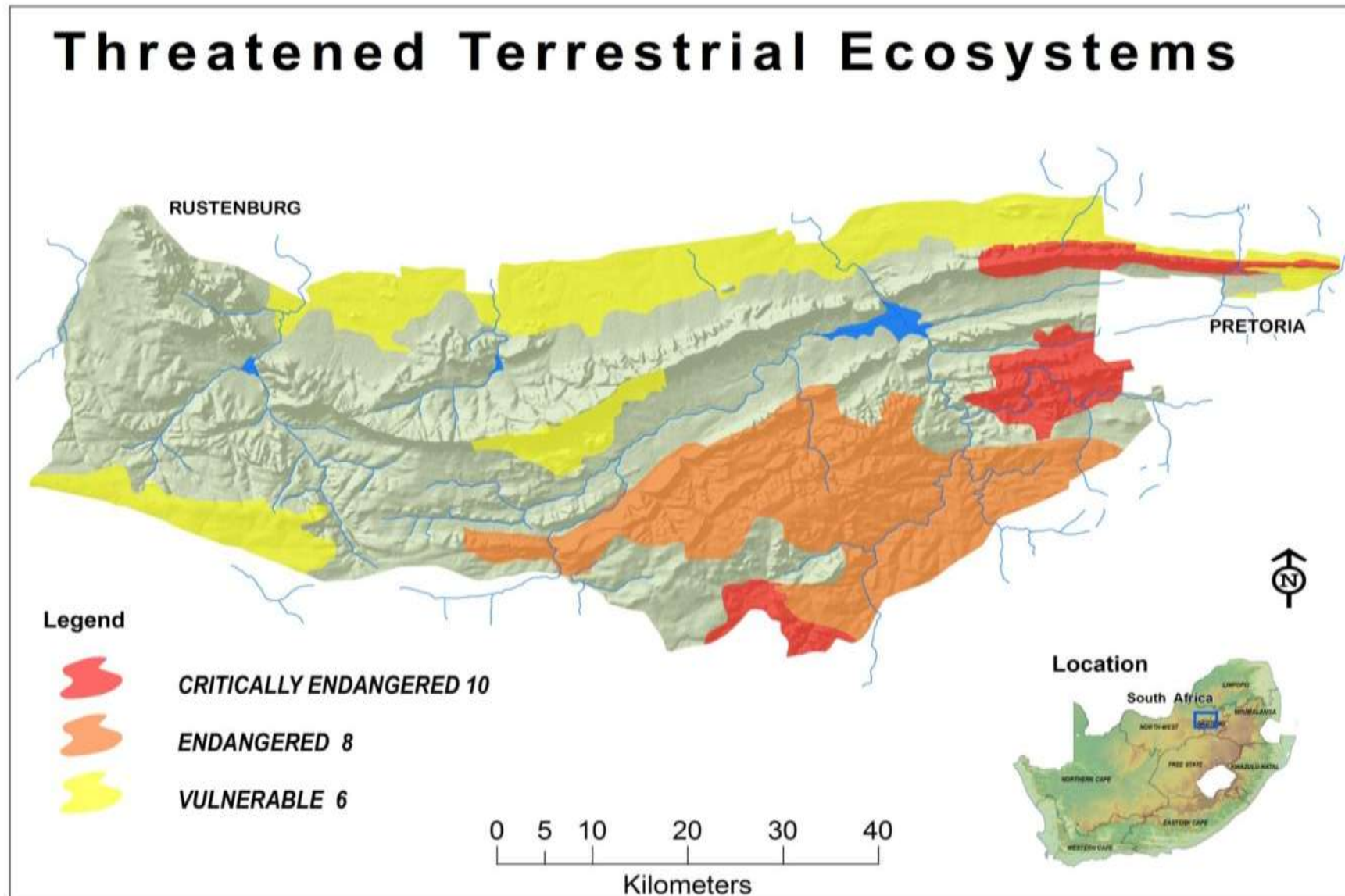
The Heritage sites were derived from known heritage sites in the study area. To make these sites stand out more prominently they were given a 1km buffer. In this layer the footprint of the Cradle of Humankind World Heritage Site as listed with UNESCO has also been added.

3.2.2.7 LAND COVER (2009)

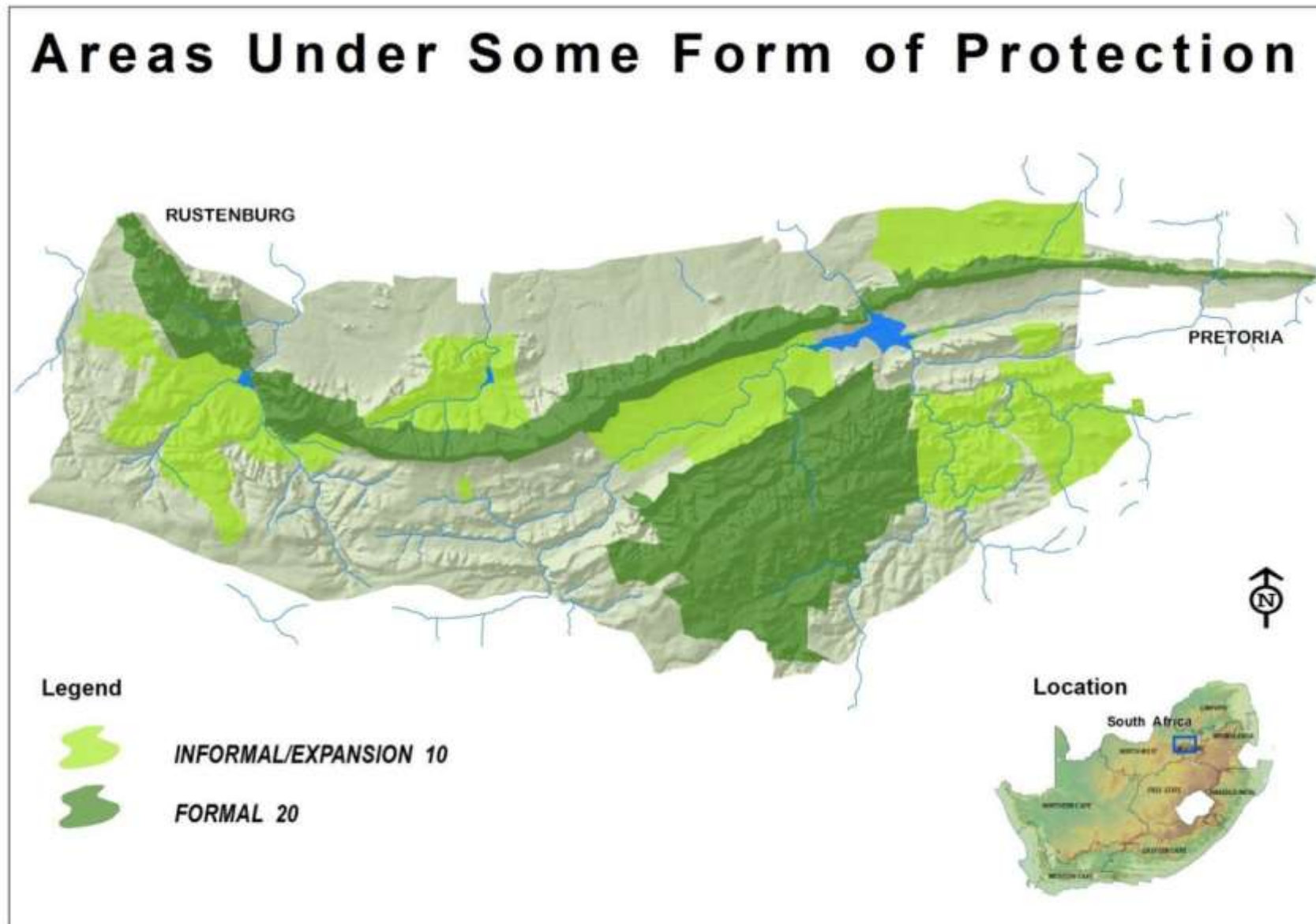
The 2009 Land Cover dataset as developed by the South African National Biodiversity Institute is a composite of all available fine scale land cover datasets for South Africa. The dataset uses the 2000 National Land Cover Dataset as a base layer for areas where newer data is not yet available, but was supplemented with other land use datasets i.e. 2005/2006 Field Boundaries. In the case of North West, the North West's 2006 Land Cover data was included. The dataset distinguishes between Natural, Cultivated, Degraded, Urban built-up, Water bodies, Plantations and Mines.

Map 3.3: Terrestrial Ecosystems Status

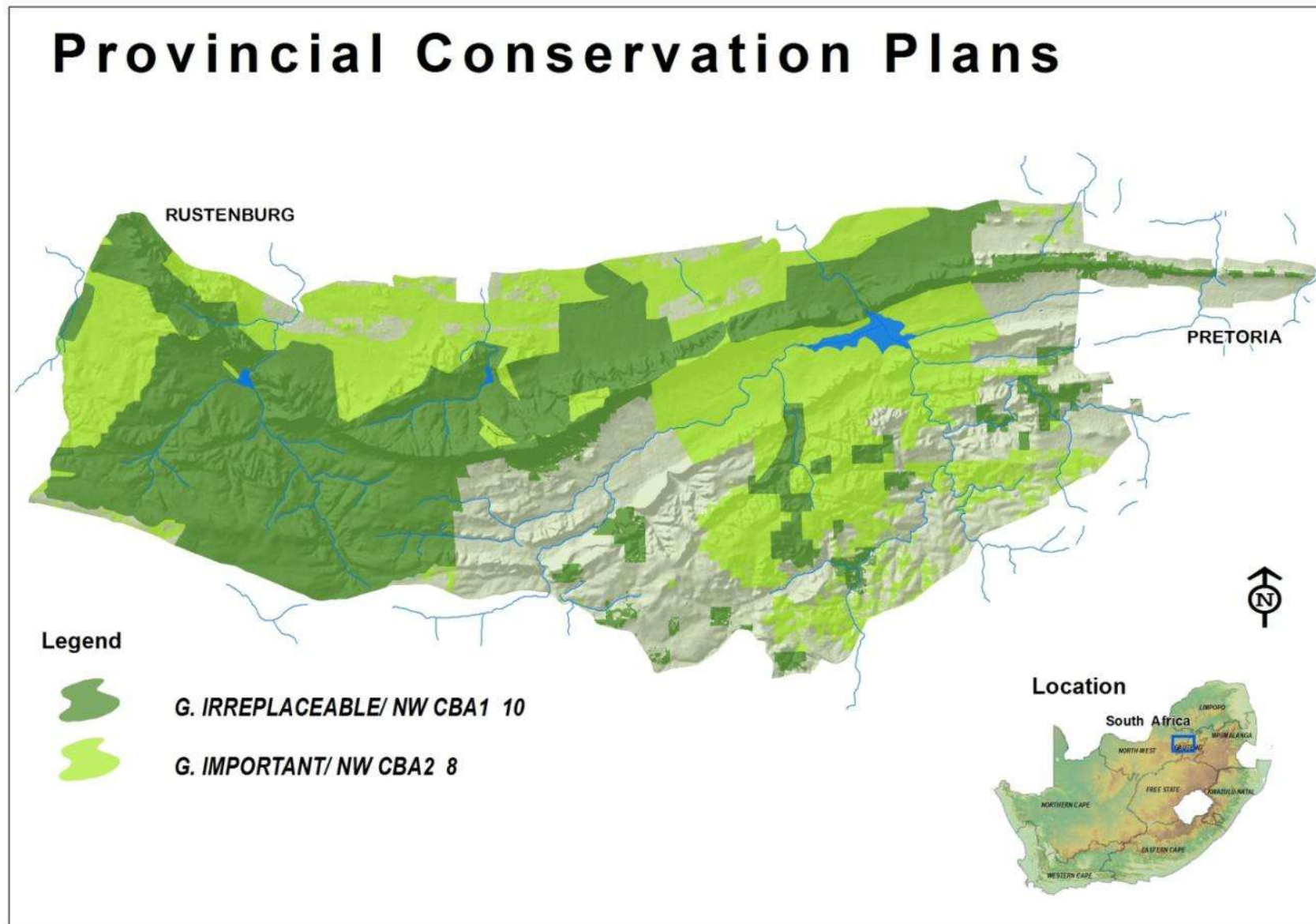
Map 3.4: Status of River Ecosystems

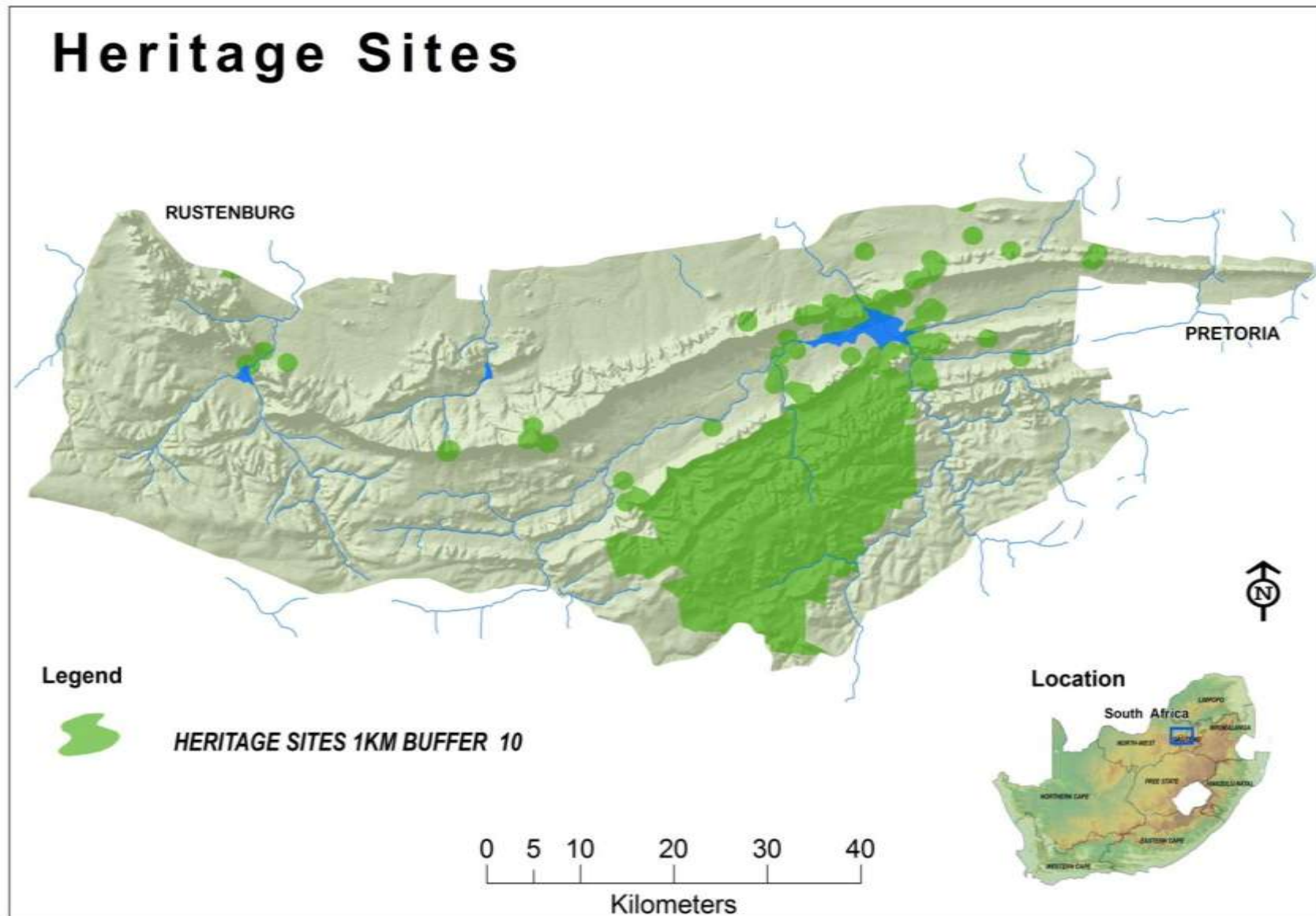
Map 3.5: Threatened Terrestrial Ecosystems

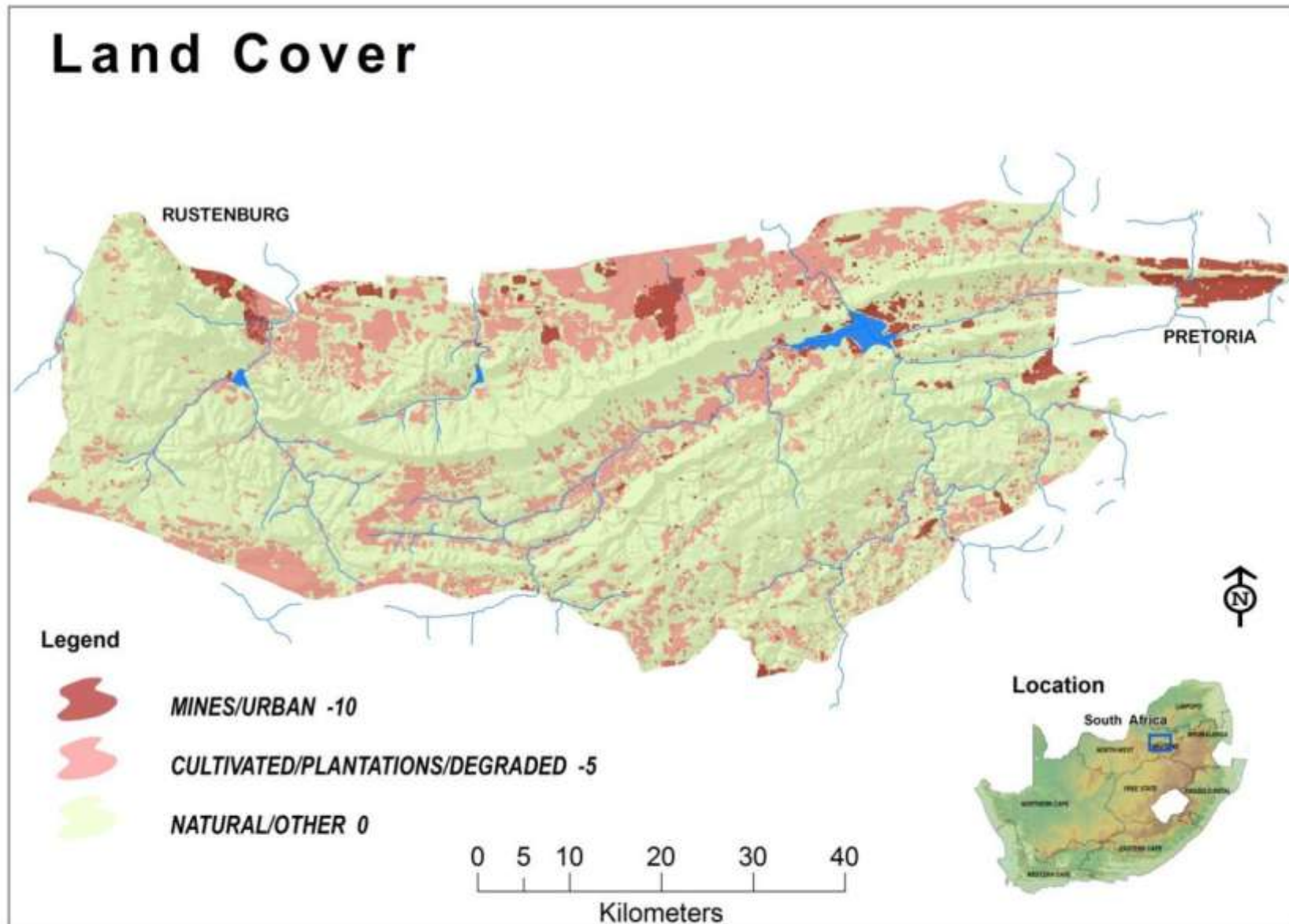
Map 3.6: Areas Under Some Form Of Protection



Map 3.7: Provincial Conservation Plans



Map 3.8: Heritage Sites

Map 3.9: Land Cover

3.2.3 METHODOLOGY

Ratings were allocated on a scale of minus ten (-10) to ten (10) as shown below and were allocated to the different criteria in each dataset as indicated in the subsequent table:

Table 3.1: Rating Scale

-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Severely transformed areas					Moderately transformed areas					Neutral			Least Threatened			Vulnerable		Endangered / Important		Critically endangered / Irreplaceable

Table 3.2: Weighting of Layers

Layer	Criteria	Weights
National Spatial Biodiversity Assessment (2004) – <i>Terrestrial Ecosystem Status</i>	Critically Endangered**	0
	Endangered	0
	Vulnerable	0
	Least Threatened**	0
National Spatial Biodiversity Assessment (2004) – <i>River Ecosystem Status</i>	Critically Endangered	10
	Endangered	8
	Vulnerable**	6
	Least Threatened**	3
Draft List of Threatened Terrestrial Ecosystems (2008)	Critically Endangered	10
	Endangered	8
	Vulnerable	6
	Protected**	3
Protected Areas and National Protected Areas Expansion Strategy (2008)	Formal Protected Areas	20
	Informal Protected Areas	10
	Expansion Strategy Areas	10
Gauteng Province Conservation Plan (Version II)	Irreplaceable	10
	Important	8
	Reserve (Protected)	0
North-West Province Biodiversity Conservation Assessment (2008) – <i>Terrestrial CBA's</i>	CBA 1's	10
	CBA 2's	8
North-West Province Biodiversity Conservation Assessment (2008) – <i>Aquatic CBA's</i>	CBA 1's	10
	CBA 2's	8
Heritage Sites	Individual Sites & Cradle of Humankind World Heritage Site	10
Land Cover (2009)	Mines/Urban	-10
	Cultivated/Plantations and Degraded	-5

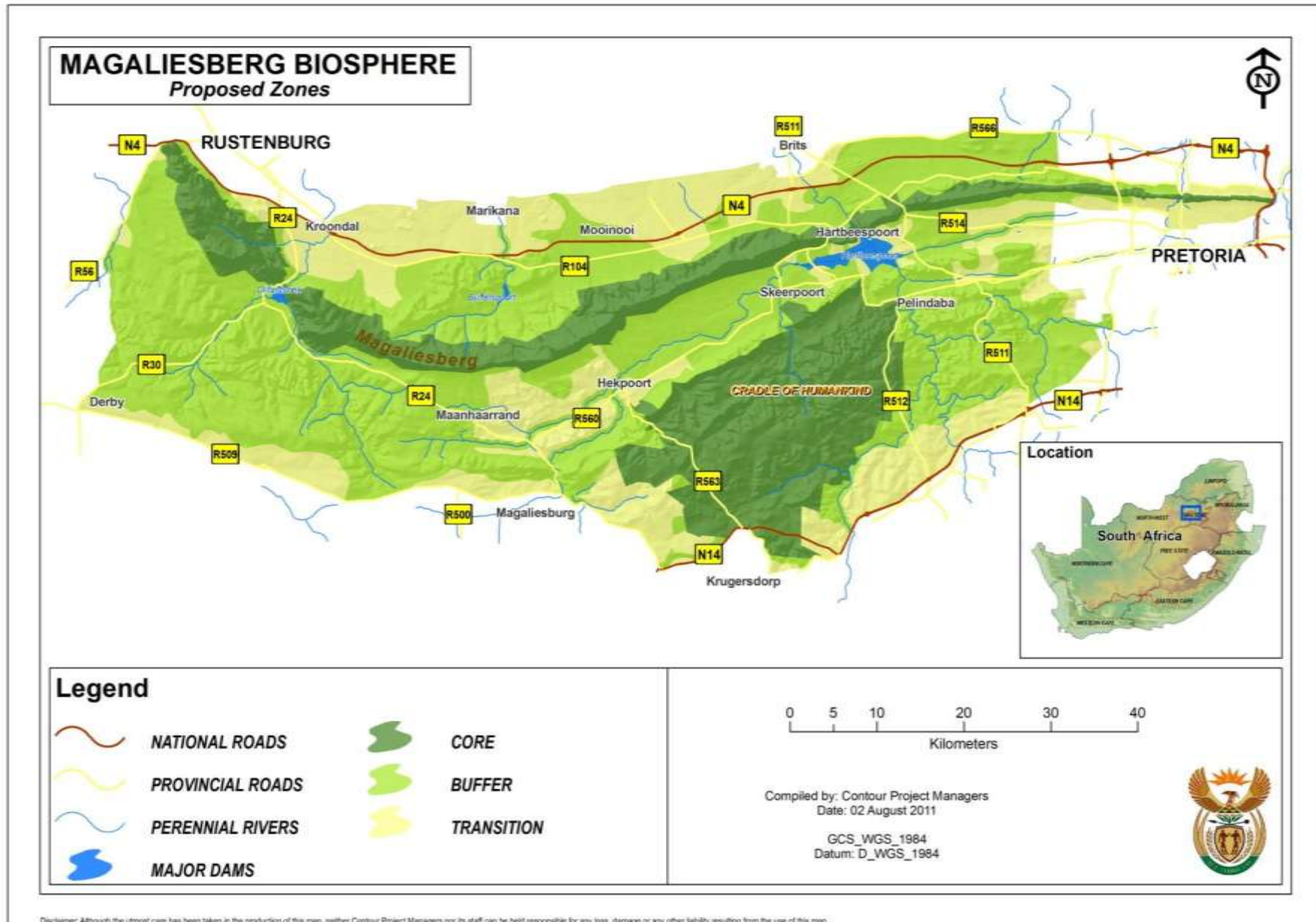
* The same information is represented in the Draft List of Threatened Terrestrial Ecosystems (2008), so no weights given.

** Criteria not present in the study area but important for standardized rating purposes.

3.2.4 PROPOSED ZONATION DELINEATION

Based on the above weighting process, the following zonation is recommended:

Map 3.10: Proposed Zonation Delineation



3.2.5 CORE AREA

3.2.5.1 DEFINITION AND DESCRIPTION

These are securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as environmental education and low impact nature based eco-tourism).

Core areas are legally constituted areas used primarily for conserving biodiversity. Although these areas do not have to be formally protected, they should be formally devoted to long term protection.

World heritage sites, nature reserves and national parks naturally fall within this category, but so can privately owned land that has been placed under strict conservation management in a stewardship programme or other formal agreement. The Protected Areas Act could also provide formal protection on private land.

Core areas must be sufficiently large.

3.2.5.2 LAND USE

Conservation is the priority land use in this zone and should be promoted in every instance. Limited use for research, environmental education and low impact nature based eco-tourism will be permitted.

3.2.5.3 ENDORSEMENT

Endorsement is through acquiring formal protection under the Protected Areas Act or entering into a formal conservation agreement with adjoining land owners and/or conservation agency recognised by the Magaliesberg Biosphere.

3.2.5.4 CONTROL

Land use will be controlled through a management plan as required by the Protected Areas Act, by a formal management plan acceptable to the Magaliesberg Biosphere or by other relevant bioregional plans. The guidelines in the MPE EMF Plan in conjunction with a set of evaluation guidelines (see **Annexure 1**) will be used as the relevant guideline for all future land included into the Core Area. The primary land uses are conservation, research, education and limited nature-based ecotourism activities.

3.2.6 BUFFER ZONE

3.2.6.1 DEFINITION AND DESCRIPTION

Buffer zones are areas which usually surround or adjoin the core areas, and are used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research.

Buffer zones are predominantly natural or near natural areas and ecologically sensitive areas with clearly defined boundaries and formal administrative status.

3.2.6.2 LAND USE

Activities involve conservation and maintenance of ecosystems, nature based recreation, eco-tourism, primary dwellings, new developments and small resorts coupled to conservation areas that are compliant with the Environmental Impact Assessment regulations.

These areas can not necessarily rely on conservation focused rules and regulations for protection, as the majority of these areas will not enjoy formal legal protection. Only activities compatible with the conservation objectives of the MB should occur within the Buffer Zone. Thus, the buffer zone is where the impact of a well developed spatial development framework with attendant development guidelines will be the greatest.

3.2.6.3 ENDORSEMENT

Endorsement is through signing a formal endorsement form. Land owners falling in an area that is predominantly Buffer Zone that do not formally endorse the MB will automatically become part of the Transition Area.

3.2.6.4 CONTROL

Developments and land use within the Buffer Zone will be controlled through development and land use guidelines incorporated into local government land use management instruments, such as Environmental Management Frameworks and Spatial Development Frameworks.

3.2.7 TRANSITION AREA

3.2.7.1 DEFINITION AND DESCRIPTION

Transition Areas are flexible transition areas or areas of co-operation, which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organizations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.

3.2.7.2 LAND USE

The land use within the Transition Zone will allow for game ranching, cattle grazing, pastures, eco-tourism developments, higher level tourism developments, cultivated lands, irrigation, orchards, agro-industries, human settlements, support services and infrastructure, mining and industrial development. Emphasis will be placed on entering into collaboration with communities and industries to wisely develop, cooperatively management and sustainably utilise the larger area to ensure the protection of the natural and heritage resources of the Magaliesberg.

This area will be the focus for collaborative effort for environmental education, public awareness and specialist training activities; with the aim to reduce impact on the Magaliesberg and to enhance the benefits to communities.

3.2.7.3 ENDORSEMENT

Endorsement is through collaborative agreements and letters of endorsement.

3.2.7.4 CONTROL

Land use will be controlled through normal legislation and through collaboration agreements.

3.3 SPATIAL DEVELOPMENT FRAMEWORK AND DEVELOPMENT GUIDELINES

3.3.1 BACKGROUND AND CONTEXT

3.3.1.1 PROVINCIAL REGULATIONS FOR THE MAGALIESBERG BIOSPHERE

The Magaliesberg Biosphere spans two provinces, namely North West and Gauteng.

While Provincial government has full authority in terms of the functional area of environment in terms of Schedule 4A of the Constitution of South Africa and exclusive provincial planning legislative powers are created in terms of Schedule 5A of the Constitution, local government has full authority over municipal land use planning as listed in Schedule 4B.

Both of these spheres of government need to align their legislation in order to establish a suitable planning and regulatory mechanism for the development of regulations specific to the Magaliesberg Biosphere.

The guidelines set out below indicate what could be contained in such regulations to govern the developments and activities that should and should not be allowed within the core areas, buffer zones and transitional areas of the Magaliesberg Biosphere.

3.3.1.2 DISTRICT AND LOCAL MUNICIPAL LAND USE MANAGEMENT

Various spatial development guidelines and spatial management tools exist on a national, provincial and local level, which are used to manage land uses and land use changes in the study area. These tools provide specific guidelines for desired spatial patterns and land use management.

With regard to the Magaliesberg Biosphere, the North West Spatial Development Framework (NWSDF) Plan was approved in 2004, and the Gauteng Spatial Development Framework in 2011 (GSDF). Both are components of the respective provincial growth and development strategies.

In North West Province SDFs for Kgetlengrivier and Bojanala district municipalities, and Rustenburg and Madibeng local municipalities have been approved. In Gauteng SDFs for West Rand District Municipality, Mogale City local municipality, and the City of Johannesburg and City of Tshwane metropolitan municipalities have similarly been approved. These were approved in terms of the Municipal Systems Act, 2000, and include the whole Magaliesberg Biosphere area.

However, although the SDF plans do recognise the importance of the Magaliesberg as a conservation area, no formal recognition is afforded the MNA or the MPE by local authorities (except in the case of Rustenburg). No clear differentiation is made with regard to guidelines for development or land use management within the MNA or the MPE. Understandably, no guidelines exist for the proposed Magaliesberg Biosphere.

Municipal land use management schemes/town planning schemes prepared in terms of the Town-planning and Townships Ordinance, 25 of 1986, apply in these areas, but these do not cover the whole study area of the Magaliesberg Biosphere. There are a number of other land use development and regulation laws that influence land use in the area (eg the Physical Planning Act, 88 of 1967, and the Development Facilitation Act, 67 of 1965).

In addition, there are other land use related laws that need to be recognized as having potential impacts on the development landscape, administered by various government departments relating to mining, subdivision of agricultural land, provincial and national roads, protection of heritage resources and the like.

The existing land use spatial planning and regulatory laws do not specifically cover the Magaliesberg Biosphere, and the following need to be addressed:

- The choice of a suitable legal vehicle for the Magaliesberg Biosphere
- The absence of a overall master plan to conserve/manage land uses in the Magaliesberg Biosphere area;
- The involvement of two provinces (North West and Gauteng) in the Magaliesberg Biosphere;
- The involvement of numerous local municipalities: District, metropolitan and local at a spatial development framework level;
- The different levels of constitutional competency to prepare and impose laws;
- The diversity of existing land use planning laws at provincial and local government level and their specific geographic applicability;
- The diversity of decision makers with potential impacts on the Magaliesberg Biosphere;
- The spheres of government with a say in the various developmental aspects of the Magaliesberg Biosphere;
- The incompatibility of the current laws and the management objectives of the Magaliesberg Biosphere;
- The likelihood of new provincial planning legislation in Gauteng in the current year;
- The absence of a comprehensive database of properties and existing town planning and related rights;
- The institutional capacity to give effect to the Magaliesberg Biosphere proposals; and
- The establishment of a monitoring system.

The way forward is to develop a clear set of uniform guidelines that should be included in a range of planning instruments, from macro to local spatial development framework plans and land use management schemes for the whole study area, to contribute to a holistic approach with regard to conservation and development in the Magaliesberg Biosphere.

3.3.2 DESIRED STATE

The desired state for the Magaliesberg Biosphere is:

- That the spatial plans and regulations at all spheres of government incorporate and support the role of the Magaliesberg Biosphere in conservation and eco-tourism;
- That the eco-tourism value of individual landowners' properties is underpinned and enhanced through the protection of the Magaliesberg Biosphere's natural attributes, while enabling a broad range of tourism activities across the distinctive biosphere zones;
- That the environmental, heritage, conservation areas, biodiversity hotspots and ecologically sensitive areas be protected and managed through appropriate spatial and land use development tools to ensure that the natural integrity is retained and that these areas are not adversely affected by other activities;
- That all provincial and local municipal spatial development frameworks and land use management schemes include and reflect the Magaliesberg Biosphere and its zones;
- That a standard set of development guidelines be developed at provincial level (provincial regulations), which should be applicable for land use management and protection of the Magaliesberg Biosphere at a local level, and include legal mechanisms which should be used in support of the Magaliesberg Biosphere.

3.3.3 OBJECTIVES

The objectives of the spatial development framework and management plan for the Magaliesberg Biosphere are:

- The protection and management of the Magaliesberg Biosphere;
- The promulgation of provincial regulations for the Magaliesberg Biosphere; and
- The inclusion of the Magaliesberg Biosphere zones (core, buffer and transitional zones) into provincial and local municipal spatial development frameworks and land use management schemes to provide the necessary protection guidelines, tools and mechanisms.

3.3.4 STRATEGIES

The strategies proposed to achieve the desired state include:

- the promulgation of provincial regulations for the Magaliesberg Biosphere; and
- Incorporation of the regulations into provincial, district and local municipality land use management tools, including spatial development frameworks and land use management schemes
- Identification, interaction and cooperative agreements with sectoral departments that operate in terms of parallel laws that could impact on the Magaliesberg Biosphere.

3.3.4.1 PROVINCIAL REGULATIONS FOR THE MAGALIESBERG BIOSPHERE

Various options exist:

- Under Section 23 of the Environment Conservation Act 73 of 1989 (ECA), the provinces may declare the Magaliesberg Biosphere a limited development area,
- Section 24 of National Environmental Management Act 107 of 1998 (NEMA) provides the provinces with the ability to promulgate regulations in terms of which specified activities may require impact

assessments and authorization from the Member of the Executive Council (MEC) responsible for environmental matters.

- Sections 2 and 3 of the Mountain Catchment Areas Act, No 63 of 1970, to declare ridges and areas in the Magaliesberg Biosphere mountain catchment areas and to prepare and promulgate regulations in this regard.
- Section 28 of the National Heritage Resources Act, No of 1999, provides for a designation of Protected Areas.
- Chapter 3 of National Environmental Management: Protected Areas Act, 57 of 2003

If the above are not adequate to suit the protection requirements of the Magaliesberg Biosphere, it may be necessary to draft specific provincial regulations for the Magaliesberg Biosphere.

Until such time that the North West and Gauteng provinces have promulgated new provincial land use planning legislation, the primary forward planning tool is the municipal spatial development framework in terms of the Municipal Systems Act, 32 of 2000 (MSA), with the main regulatory component the Town Planning and Township Ordinance 15 of 1986 and the Development Facilitation Act, 67 of 1995 (DFA) that apply to both provinces. It should be noted that there are a number of other planning and related laws that are used to regulate land uses and subdivision in both provinces.

3.3.4.2 DISTRICT AND LOCAL MUNICIPAL LAND USE PLANNING AND MANAGEMENT

District municipalities are responsible only for integrated development planning for their districts, which includes the preparation and adoption of spatial development frameworks in terms of the MSA, 2000.

The MSA, 2000, also permits the relevant MEC to authorize district municipalities to undertake municipal planning in the case of capacity problems municipalities.

At district and municipal level, the development guidelines for the core, the buffer and the transitional zones should be incorporated in the district and local municipal spatial development frameworks.

At municipal level the land use definitions and regulations pertaining to each zone should be incorporated into the land use management schemes (which may have to be extended to include the affected portion of the MAGALIESBERG BIOSPHERE within each local municipal area.)

The above will take some time to implement, and as an interim measure affected district and local municipalities should be approached to take the Magaliesberg Biosphere policy into account in decision making in the area.

3.3.5 DEVELOPMENT AND LAND USE GUIDELINES

The development guidelines are aimed at protecting the special attributes of the Magaliesberg Biosphere and its landscape, and have been set with eco-tourism principles in mind.

The intention is to promote conditions to protect the integrity of the Magaliesberg Biosphere in respect of the conservation of existing ecosystems and biodiversity, the diversity of fauna and flora, the visual

appearance, the context of core zone, and the limitation of potentially adverse impacts of human development on the Biosphere.

The development guidelines for each of the Magaliesberg Biosphere zones are summarised in the Table below. It is proposed that any development and land use application will be assessed against these guidelines by the relevant land use authority and the Management Board of the Magaliesberg Biosphere before such rights are granted. A comprehensive description of the land use definitions and the detailed guidelines will be available on the website.

Table 3.1: Summarised Development Guidelines for Magaliesberg Biosphere

	CORE AREA	BUFFER ZONE	FLEXIBLE TRANSITION AREA
DEFINITION	Comprises formally protected areas and areas seeking formal protection within the Magaliesberg Biosphere, also areas designated as National Parks, Nature Reserves, World Heritage Sites, or the like.	Comprises of relatively undisturbed areas of the Magaliesberg Biosphere that are worthy of protection due to their generally high natural, visual and cultural quality and/or sensitivity and that underpin the core natural and cultural resource base of the Magaliesberg Biosphere.	Areas of co-operation within the Magaliesberg Biosphere, where most people reside and where there is significant and diverse economic activity.
OBJECTIVE	Conserve the landscape, biodiversity and cultural history of the Magaliesberg Biosphere - promote the use of these resources in a sustainable way.	Aimed at supporting the environmental integrity of the Core Area, but would allow a wider range of environmentally sensitive land uses and activities which are environmentally, socially and economically sustainable. Endorsement of Magaliesberg Biosphere by land owners.	The intention in these Areas is that stakeholders work together to manage and develop the area's resources in a sustainable and environmentally friendly way, with due recognition of the Magaliesberg Biosphere.
LAND USE/ DESIRABLE ACTIVITIES	Conservation, research, extensive agriculture and ecotourism activities (see below). No prescribed list.	Rather than prescribe a list it is proposed that any land use/activity within the general ambit of the above be assessed by the Management Authority/Board utilising a set of evaluation criteria (see below) to evaluate a list of potential impacting issues (see below).	SDFs that affect the Magaliesberg Biosphere address the sensitivities of the interface between the defined Core and the Buffer Areas and the Transition Areas, consideration should be given to compatibility of uses within Magaliesberg Biosphere objectives.
Mechanisms	Consolidation of land holdings/cooperative arrangements between owners and/or custodians of formally protected land.	Consolidation of land holdings/cooperative arrangements between owners under a formal stewardship programme.	Collaboration, awareness,
Primary Land Use/Desirable	Conservation activities, research activities, conservation-based education and limited low-key	Land uses/activities considered suitable are conservation, research, conservation-based education, tourism (resorts and	Land uses/activities that are considered suitable in terms of planning guidelines, with an

	CORE AREA	BUFFER ZONE	FLEXIBLE TRANSITION AREA
Activities	nature-based tourist facilities and activities with a light touch. Agriculture activities include stock grazing and game farming within the limits of natural ecological carrying capacities.	lodges) and recreational activities. It would also include existing agricultural and other legal land uses.	assessment/comment by the Management Authority/Board and due recognition of the Magaliesberg Biosphere.
INFORMATION REQUIRED FOR LAND USE	1. A sensitivity analysis of the site	1. A sensitivity analysis of the site	Information normally required in terms of land use and environmental legislation.
	2. A site development plan	2. A site development plan	
	3. An outline services report	3. An outline services report	
	4. A traffic impact study	4. A traffic impact study	
	5. Design and finishes of buildings and structures using eco-friendly concepts	5. Design and finishes of buildings and structures using eco-friendly concepts	
	6. Landscaping proposals	6. Landscaping proposals	
	7. Legal documentation and approvals as required	7. Legal documentation and approvals as required	
	8. A management plan and monitoring plan for the development, including a disaster management strategy and rehabilitation plan.	8. A management plan and monitoring plan for the development, including a disaster management strategy and rehabilitation plan.	
EVALUATION CRITERIA	Does it serve the conservation, research, education or eco-tourism purpose/s of the Core Area?	Does it respect the Magaliesberg Biosphere values, the management plan, and the purpose of the Buffer Zone?	Does it respect the MAGALIESBERG BIOSPHERE values, the management plan, and the purpose of the MAGALIESBERG BIOSPHERE?
	Is it essential that the locality be inside the Core Area?	Does it promote the objectives of the Magaliesberg Biosphere?	Does it comply with the relevant SDF?
	Is it legally compliant?	Does it conserve the natural landscape, biodiversity, cultural/heritage resources?	Has adequate supporting information been provided?
	Is more than one land parcel affected and, if so, how are they to be linked/tied?	Does it provide for sustainable use of resources?	Is the land use/activity appropriate to the site?
	Is it supported by the municipality and consistent with	Is it supported by the municipality and consistent with the relevant EMF, SDF	Is it supported by the municipality and consistent

	CORE AREA	BUFFER ZONE	FLEXIBLE TRANSITION AREA
	the relevant EMF, SDF and other regulations and official guidelines?	and other regulations and official guidelines?	with the relevant EMF, SDF and other regulations and official guidelines?
	Has adequate supporting information been provided?	Does it contribute to social improvement in local communities (economic and human)?	Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?
	Is the land use/activity appropriate to the site?	Does it enhance tourism, environmental education, research?	Are the engineering services, access, and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?
	Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?	Is it legally compliant?	Are the waste management arrangements suitable and practicable?
	Does the land use/activity blend into the landscape?	Is more than one land parcel affected and how are they to be linked/tied?	
	Does the scale comply with the regulations of the appropriate protected area and the recommendations of an impact assessment (height, floor area, built form, number of employees, number of visitors, development foot print and the like)?	Is it supported by the municipality or consistent with the relevant SDF?	
	Are the engineering services and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?	Has adequate supporting information been provided?	
	Are the waste management arrangements suitable and practicable?	Is the land use/activity appropriate to the site?	
	Are the management and staffing arrangements adequate?	Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?	
	Is there a suitable disaster management plan?	Does the land use/activity blend into landscape?	

	CORE AREA	BUFFER ZONE	FLEXIBLE TRANSITION AREA
	Is there a rehabilitation plan?	Is the scale compliant with the guidelines (height, floor area, etc.)	
		Are the engineering services and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?	
		Are the waste management and staffing arrangements suitable and practicable?	
		Is there a suitable disaster management and rehabilitation plan?	

4. SUSTAINABLE AND EQUITABLE DEVELOPMENT PROMOTION STRATEGIES

4.1 DEVELOPMENT STRATEGIES

4.1.1 BACKGROUND AND CONTEXT

The socio-economic evaluation of the Magaliesberg Biosphere (refer Section 4.1 of the Situational Analysis report) noted the following features key to identifying an appropriate set of development strategies:

- No significant employment nodes and areas of employment concentration within boundaries of study area
- Growing importance of the tourism sector in the provincial and local economies relevant to the study area
- Influence of defined urban edges on overall urban development patterns and level of construction activities, especially in Gauteng and Rustenburg Local Municipality (LM)
- Extensive mining activities along the northern boundaries of the study area and dominant role of the mining sector in the local economies of Rustenburg and Madibeng Local Municipalities
- Decline of gold mining sector activities in Gauteng and West Rand areas and resulting environmental impacts of disused gold mines (e.g. impact on surface and ground water quality)
- Extent of proposed developments around Lanseria airport and its potential impacts in the south eastern parts of the study area
- Overall decline of agricultural sector in the study area may lead to potential alternative uses such as the establishment of residential estates in rural areas
- Large and growing populations in areas east, south east and north of the study area, as well as the fast-growing Rustenburg area in the north west
- The N4 transport corridor along the northern periphery
- Potential impact of internal migration patterns in South Africa, especially from Limpopo and North-west to Gauteng
- Limited education levels of population in and around study area
- High unemployment rates, especially in the areas north of the study area.

4.1.2 DESIRED STATE

The Magaliesberg region's diversity of plants, animals and micro-organisms make up our living biosphere. The desired state therefore meets the material needs and aspirations of people through wise and sustainable use of its resources. The need for development, particularly in the face of high levels of unemployment and poverty, cannot be ignored. Rather, suitable trade-offs should be made between conservation and development and such development should be correctly planned and managed, to ensure that development takes place in appropriate locations and in a sensitive manner, thereby allowing for both conservation and development goals to be met.

It is therefore envisaged that the Magaliesberg Biosphere will, in partnership with government, the private sector and NGO partners, and in line with its conservation and socio-economic objectives, be a catalyst for:

- integrating and expanding the conservation effort;
- stimulating sustainable and responsible tourism developments with a specific focus on adventure-

- and nature-based tourism;
- mitigating against negative environmental impacts from urban areas and industry;
- promoting and supporting responsible and sustainable economic utilisation of resources;
- developing a strong brand identity which is effectively projected to the market; and
- in all of the above seek economic opportunities and facilitate capacity building programmes that would benefit its people.

4.1.3 STRATEGIES

The following high level strategies are proposed:

- **Conservation strategy** – focussing conservation effort around identified biodiversity, ecological and heritage priorities (spatial, topical, thematic and temporal) and by integrating these efforts through facilitating collaboration between varied stake holders;
- **Tourism development strategy** – focussing tourism effort on adventure- and nature-based tourism, anchored around the development of themed nodes and routes that would also open opportunities for smaller role players;
- **Environmental management strategy** – identifying areas of negative environmental impact from residential, commercial and industrial developments in the Transition Zones and neighbouring land and identifying potential mitigating environmental management options that could provide business and employment opportunities; and
- **Empowerment strategy** – facilitating the empowerment and beneficiation of rural communities by proactively identifying opportunities for them to integrate into conservation, environmental management and tourism projects, programmes and ventures and where feasible to proactively facilitate partnerships that will give access to business opportunities and employment.

These strategies are directly or indirectly linked to a number of additional strategies that are set out separately below, namely:

- Investment promotion strategy (Section 4.2);
- Marketing strategy (Section 4.3); and
- Social benefit strategy (Section 4.4).

4.1.3.1 CONSERVATION STRATEGY

The following core areas within the Magaliesberg Biosphere have been identified to have substantial conservation expansion potential, namely:

- The Cradle of Human Kind World Heritage Site; and
- Kgaswane Nature Reserve.

It is recommended that the formal conservation agencies, combined with the informal conservation entities and the various stewardship programmes, form an “Environmental and Heritage Conservation” working group (See Section 2.1.3). The focus of this working group should be to:

- Revitalise and formalise the informal conservation initiatives that have become defunct establishing a formal stewardship programme
- Collaborate to prioritise the incorporation of vulnerable and threatened ecosystems and heritage sites into either formal or informal protected areas and where feasible to increase the Core Area and the Buffer Zones with as much of the land functioning as functioning open ecological systems
- For those areas that fall inside the proposed Buffer Zone to incorporate the development guidelines

for the Magaliesberg Biosphere (See **Annexure 1**) into their own Management Plans and development guidelines

- Collaborate with one another for the joint management of natural resources and where necessary developing special management plans for prioritised species, ecosystems, habitats and natural resources and their management (e.g. joint fire management, law enforcement and brown hyena and leopard monitoring) and for the restoration of the ecology and the rehabilitation of degraded areas
- Introduce collaborative measures and projects or programmes to identify prioritised species, ecosystems, water courses, heritage sites and other valuable natural resources and to monitor the status and trends in partnership with tertiary and research institutions and NGOs
- Develop Action Plans for each of the aforementioned strategies and all special projects and programmes
- Incorporate all of the above initiatives into a Magaliesberg Biosphere Conservation Management Plan that will consolidate the area's conservation effort and create synergistic benefits for all the participants.

This Plan will not only provide a conservation focal point for the Magaliesberg Biosphere, but also promote processes of integration and collective action in support of establishing the area as a serious conservation destination.

4.1.3.2 TOURISM DEVELOPMENT STRATEGY

The existing Magaliesberg brand should be capitalised upon to establish the Magaliesberg Biosphere as a significant regional tourism destination. This should underpin the development of a strong brand and utilise the full potential of the variety of nature- and adventure tourism products already on offer. The marketing strategy (See Section 4.3) further deals with this issue.

A spatial tourism development plan should be developed for the Magaliesberg Biosphere. The following preliminary tourism spatial development framework is proposed upon which a more detailed spatial tourism development plan could be built.

A. TOURISM ZONATION

The zonation of the Magaliesberg Biosphere (See Map 3.9) and the associated spatial development guidelines (refer Section 3.3) organises the density and nature of tourism developments to be of a 'very low' intensity within the Core Areas and of a 'low to moderate' intensity in the Buffer Zones. Although the guidelines do not address tourism developments within the Transition Zones, their impact on the Magaliesberg complex will be considered. Certain areas within the Transition Zones and outside the Magaliesberg Biosphere have traditionally had tourism developments of a much higher intensity and can be expected to continue in the same manner. As a result, the bulk of the high intensity tourism developments will mostly be along the outer periphery of the Magaliesberg Biosphere, with moderate intensity nature-based tourism products being along the base of the Magaliesberg Mountain and the very low to low developments with low impact being along the slopes and crest of the Magaliesberg Biosphere.

The Magaliesberg Biosphere and its varied topography combined with sensible zonation and land use caters for the full spectrum of permanent to occasional residents, through day visitors to overnight tourists. Due to its locality immediately adjacent to South Africa's major metropolis and gateway into Africa, day trips have become a significant part of its market focus. Many of these day trippers spend significant amounts of time and money in the area, visiting points of interest, arts and craft stalls, curio shops and local restaurants

and tearooms, where they are exposed to the local culture. This creates substantial business prospects for local entrepreneurs and provides opportunities for employment and skills development amongst host communities. The day visitor market should therefore be strongly catered for in the spatial development plan.

B. VISITOR CIRCULATION

Visitor circulation is a key component in any spatial tourism development plan. The three main components of visitor circulation to and within a tourism destination are:

- Access;
- Transition; and
- Travel within the destination.

All of these aspects should be properly integrated to provide visitors with a memorable tourism experience.

The alternative types of transport used by different markets should be considered when evaluating accessibility and catering for their needs, taking into consideration time, cost, comfort, safety, the potential to get lost in a new area, etc. There should also be a visible point of arrival on each of the access routes so that visitors can experience a transition from travelling “to” to travelling “within” the area. Clear signage along major routes should indicate to visitors when they access the Magaliesberg Biosphere. This transition into the destination will be further enhanced if visitor information and route maps were available at major entry points, either at a local shop or information centre or by way of large billboards with directional maps and relevant information.

Once within the Magaliesberg Biosphere, there is a whole range of opportunities to enrich the tourism experience, to the point where the travel itself becomes the primary experience, rather than reaching any particular attraction or overnight stop. This is particularly important in the Magaliesberg Biosphere context, where the Magaliesberg is the primary day visitor retreat for visitors from the highly built up areas on its periphery as well as international and domestic visitors to particularly Gauteng. Meanders and Themed Routes have already become key tourism products and have the potential for expansion.

C. VISITOR CIRCULATION FRAMEWORK

The terms that are generally used for describing and mapping visitor circulation are summarised as follows:

- **Staging posts:** Places where tourists stop to replenish and often stay overnight for the journey ahead;
- **Gateways:** Access or entry points to the destination, where the abovementioned transition takes place. They usually have both a physical component (a structure) and a spatial component (point of entry, information centres, distribution points); and
- **Distribution points:** Decision points, such as crossroads, where the visitor can proceed in several different directions. The term is mostly used where there is at least a basic level of services and tourist information.

A particular locality may qualify for more than one of the aforementioned categories and the same principles can be applied at different levels depending on the length of the journey and the scale of the planning. For example, Pretoria, Johannesburg, Brits, Krugersdorp, Hartbeespoort, Magaliesberg, Koster, Rustenburg, Marikana and Mooi-nooi can be described as Gateways for the Magaliesberg Biosphere, but are also Distribution Points, and could potentially become Staging Posts for one or more of the Themed Routes.

The Staging Points for international and regional visitors to the Magaliesberg Biosphere are identified as Johannesburg/Sandton, Pretoria, Rustenburg and Gaborone and the Bakwena Platinum Highway.

Apart from the gateways, most of which will all also act as distribution points, Hartbeespoort Dam as the heart of the Magaliesberg Biosphere should be the most important Distribution Point and Visitor Business Centre for the Magaliesberg Biosphere. To celebrate and interpret the rich and unique attributes of the Magaliesberg and to create the necessary awareness, Visitor Centres could play an important role as Distribution Points. These Visitor Centres if planned and developed by utilising latest techniques and technology could be exciting and vibrant places with great tourism appeal. Three major themes are recommended:

- Archaeology, Culture and History
- Conservation and Sustainable Living
- Industrial Development, Mining and Beneficiation

The Maropeng Visitor Centre already fulfils an important role as a Distribution Point and could be expanded to fully represent the cultural and historic wealth of the entire Magaliesberg region.

The Harties Metsi A Me project focuses on the imbalances and unhealthy biological conditions in the Hartbeespoort Dam and is an important stepping stone towards a Visitor Centre that does not only interpret the impact of human development on important and natural environments and potential remediation to school groups and community leaders, but could also become an important exhibition opportunity for green technology industries. Sustainable living has increasing appeal and offers the opportunity for attracting a range of visitors.

Rustenburg as the economic centre of North West and the world's Platinum City is ideally situated for the establishment of a Platinum Visitor Centre, focusing on interpretation of the development and utilisation of the area's natural resources and an exhibition opportunity for mining, agricultural and other industries. A study was previously done on the potential feasibility of a "Rustenburg Platinum Visitor Centre". This initiative could be revitalised. The platinum beneficiation incubator project of the Platinum Trust and other small business and skills training initiatives could be integrated with this visitor centre.

D. ROUTES AND MEANDERS

The existing themed routes of the region could be expanded through collaborative effort. These routes could be anything from special interest routes such as heritage, archaeological, cultural, mining, arts and crafts and agricultural with meanders that link different associated products along a themed route or could merely be scenic routes. These routes should consider and capitalise on the visitor circulation framework explained above.

Routes in the Magaliesberg Biosphere should subscribe to the principles of ecological, economic and social sustainability, and should seek to obtain optimum community participation, providing the following benefits:

- Obtains buy-in from participants and local communities which brings commitment and creates sustainability;
- Different themes attract different visitors and provide valuable information about the area. This is particularly important for overseas and regional visitors;
- Shared marketing costs and participation on websites reduces the cost for each participant; and
- Smaller products and operators that are often community based benefits from a greater flow of visitors as visitors are encourage to stop at the smaller products en route. In addition, the inclusion

of a range of products in the route forum encourages community members to interact and learn from the more established product owners.

Routes and meanders share the following attributes:

- All routes and meanders focus on a flow of visitors, rather than a large concentration of people at one anchor attraction;
- The act of travelling on the route or meander is presented as part of the experience;
- They nearly always present two main types of information: navigation information and information about the theme or special characteristics of the route or meander;
- Good road signage makes a difference in that it helps people to find their way, but it is questionable whether this should be the main “driver” of the route;
- Meanders seem to be mostly commerce and product driven, rather than being developed “top-down” by a government agency. Routes are often a mixture of the two;
- The most successful routes and meanders show strong participation and sense of ownership by a route forum or a meander committee; and
- Most participants view routes in the same line as interpretation centres – there must be things that people can do without always having to pay.

A significant start has been made in this regard with the development of the **Magalies Meander**. Further recommendations for additional themed routes were developed by the Rustenburg Local Municipality. Other routes and meanders could also be developed.

4.1.3.3 SOCIO-ECONOMIC DEVELOPMENT STRATEGY

4.1.3.3.1 Empowerment Strategy

A. OPPORTUNITY

The Magaliesberg Biosphere should pro-actively identify and facilitate significant socio-economic projects in the Magaliesberg region, as part of its own social responsibility. An area in which a great need as well as a significant opportunity lies, is in the Majakaneng area where communities have settled in formal and informal structures within the Magaliesberg Biosphere right up to the base of the Magaliesberg Mountain. Other similar communities should be identified.

It is suggested that a detailed Socio-Economic Plan is developed in a partnership between the Magaliesberg Biosphere, the relevant community, the mining industry or other major industry operating in the area and government. This Socio-Economic Plan should identify community needs, resource opportunities and environmental concerns, so that a strategy could be developed that optimises tourism, develops alternative livelihoods, provides models for sustainable living and addresses critical social issues; so that communities can benefit from their land whilst minimising the negative impact on the natural environment.

The significant opportunity for tapping into the corporate social programmes of the major role players in particularly the mining industries adjacent to the Magaliesberg Biosphere to fund this socio-economic development strategy should not be wasted.

B. STRATEGY

The Magaliesberg Biosphere should facilitate the establishment of a partnership in support of landowning communities with the objective of developing a working partnership between them, the private landowners and the business community, aimed at jointly planning, developing and managing the Majakaneng area (and

any other identified priority area) to the benefit of the community and with a specific focus of empowering and supporting the landowning communities to ensure that they acquire the necessary capital, skills and support to achieve identified land management objectives and social upliftment.

This partnership should take joint responsibility towards ensuring that the community;

- acquires the capacity and the skills to develop, manage and utilise the land through the implementation of a viable land use model;
- obtains real socio-economic benefits from the land owned by them;
- is empowered so that they become proud and capable landowners and land managers with tangible benefits; and
- complies with the municipal and the Magaliesberg Biosphere Development and Land Use Guidelines for the optimum benefit of the communities.

C. GUIDELINES

It is necessary to ensure that the landowning communities tap into all the available sources of financial and other support. It is therefore suggested that the Socio-economic and Tourism Committee (Refer Section 2.1.3) comprise of the following entities:

- The landowning communities;
- The owners of neighbouring properties within the same area;
- Appropriate government departments (land and rural development and conservation nationally and provincially);
- National development agencies (Development Bank of Southern Africa and Industrial Development Corporation); and
- Major corporate business with a local social responsibility (e.g. mines).

It is proposed that these entities define respective roles and that they enter into a collaborative agreement or memorandum of understanding to cement the relationship. The Magaliesberg Biosphere should continue its role as facilitator during the process of implementing the process.

It is further recommended that the first focus should be on assisting the Majakaneng Community with the development and implementation of a Land Use Plan. This plan could become a model for other identified community focus areas.

4.1.3.3.2 Community Development Strategy

A. STRATEGY

For one, the majority of the Majakaneng community is not necessarily in support of the protection and conservation of the Magaliesberg Biosphere and its natural resources. A supplementary strategy to the empowerment of such communities should therefore be to identify and support community owned natural resource based and tourism ventures. It is recommended that this strategy should focus on all communities concentrated at the base of the Magaliesberg Mountain.

B. GUIDELINES

It is necessary to ensure that potential community based natural resources projects and tourism businesses have access to available sources of financial and other support. In providing this type of intervention, the Magaliesberg Biosphere should note the following:

- Care should be taken not to attempt top down interventions, but to identify community members

and groups that have shown sufficient initiative in establishing their own projects and are committed to their product, to each other if working in a group, and in making personal sacrifices in reaching an identified goal;

- All projects dependent on natural resources should use such resources within limits of sustainability
- Projects supported should have a reasonable chance of becoming sustainable over time. The attraction, amenities and access of the product or products should be of a requisite standard; and
- Intervention by Magaliesberg Biosphere involves a long term commitment, including ongoing training and mentoring aspects.

4.2 INVESTMENT PROMOTION STRATEGIES

4.2.1 BACKGROUND AND CONTEXT

The Magaliesberg region has been under severe development pressures over the last few decades. In as much as undesirable developments need to be controlled through the proposed Development Guidelines, it is necessary to pro-actively attract and encourage appropriate developments that would enhance the Magaliesberg and the visitor experience.

4.2.2 DESIRED STATE

The present interest in the Magaliesberg Biosphere as a concept, as a prime tourism destination and conservation priority and the general support from developers should be capitalised upon to attract appropriate investments for the area; through the development and implementation of a comprehensive and integrated branding, marketing and communication strategy.

The desired state is that the Magaliesberg Biosphere is recognised as a prominent “responsible” nature-based and adventure-based tourism destination with a rich cultural history within the South African context, contributing substantially towards the socio-economic development and well-being of the region. “Responsible” in this context refers to developments and operations that subscribe to the principles of environmental and social responsibility and sustainability.

In addition, the Magaliesberg Biosphere should be recognised amongst potential investors and partners as a secure investment area where the natural beauty of the Magaliesberg is protected, where appropriate developments are encouraged, where the rights of land owners and investors are protected, and where collaborative branding and marketing creates and maintains a vibrant tourism interest.

Through this recognition, substantial commitments are made by government and the private sector in the Magaliesberg’s significant investment and partnering opportunities in the fields of conservation, tourism development, scientific research, education and social upliftment.

4.2.3 STRATEGIES

The desired investment promotion climate will be created through:

- Branding and marketing of the Magaliesberg Biosphere as a significant conservation project and a destination recognised for its “responsible” nature- and adventure-based tourism practices offering attractive collaboration opportunities to likeminded investors and partners;

- Endorsement of the proposed Development and Land Use Guidelines by relevant authorities and key stakeholders;
- The implementation of the Development and Land Use Guidelines (see Section 3.3.5);
- Making a toolkit available that will enable investors to understand and utilise not only the Magaliesberg Biosphere Development and Land Use Guidelines, but also the necessary procedures to protect the value of their investment;
- Pro-actively facilitating investment and collaboration promotion to targeted entities for identified priority focus areas; and
- Facilitating cooperation between existing and restored community landowners through the establishing of well functioning open system conservancies.

4.2.3.1 BRANDING AND MARKETING

As the Magaliesberg Biosphere brand is developed, appropriate investment will be attracted to the Magaliesberg Biosphere, specifically in the fields of tourism and residential estates. This is an important strategy that is extensively covered in Section 4.3. It is, however, also important that the Magaliesberg Biosphere is marketed to other investment partners, including potential contributors and participants in the fields of conservation, green technologies, research, education and empowerment. Government is an important investment partner in a number of these fields, therefore being a strong and ongoing collaboration partner that should not be neglected.

4.2.3.2 ENDORSEMENT OF THE SPATIAL DEVELOPMENT FRAMEWORK

The Magaliesberg Biosphere will proactively promote the Magaliesberg Biosphere with relevant authorities and amongst key stakeholders, through road shows, ongoing advocacy and awareness creation, so that their formal and ongoing endorsement is obtained for the Biosphere and its objectives and to ensure their cooperation during implementation.

4.2.3.3 IMPLEMENTATION OF THE SPATIAL DEVELOPMENT FRAMEWORK

Through collaboration with government, Development and Land Use Guidelines will be proposed for incorporated into development planning instruments and by-laws of provincial and local government for the Magaliesberg Biosphere so that all new developments conform to the Magaliesberg Biosphere objectives and so that a conducive investment climate with appropriate protection for investors is created.

A toolkit will be developed that will guide the Management Agency and interested and affected parties in assessing proposed new developments and operations against the proposed Development and Land Use Guidelines and as an aid for monitoring existing operations.

4.2.3.4 PROMOTING PRIORITY FOCUS AREAS

Priority focus areas that may require investment or other forms of interventions will be identified and reviewed annually and appropriate partners will be sought for collaboration in those fields, to ensure that the areas not naturally attractive to government or the private sector can be proactively addressed. This may include conservation, social, economic, research or any other projects or programmes important to the success of the Magaliesberg Biosphere.

4.3 MARKETING PLAN

4.3.1 BACKGROUND AND CONTEXT

The many individual tourism products in the Magaliesberg region are generally well marketed and combined with collaboration efforts such as the establishment of information centres, meanders and rambles, have all contributed towards a certain level of market recognition for the Magaliesberg region. Adventure clubs and the Magaliesberg Biosphere Initiative Group (MBIG) in their own right have also contributed towards the creation of awareness. However, no combined collaborative marketing drive for the establishment of a unified branding of the Magaliesberg as a tourism destination has been undertaken.

Although a fair amount of tourism market information is available for different parts of the Magaliesberg region, no uniform information can be found for the region as a whole.

4.3.2 DESIRED STATE

The present market awareness around the Magaliesberg as a prime nature-based tourism destination and conservation priority and the general support from local communities, land owners, developers, nature lovers and adventure tourists should be capitalised upon. This awareness and support should be harnessed to develop a unified brand identity for the Magaliesberg Biosphere that will;

- position the Magaliesberg Biosphere as a “responsible tourism” destination of distinction;
- engender a sense of pride and retain goodwill amongst land owners;
- create improved understanding, support and participation within communities; and
- establish Magaliesberg Biosphere as a branded and integrated destination within the tourism industry that will attract appropriate developments and visitors to the area.

This unique “responsible tourism” brand identity will be achieved through the development and implementation of a comprehensive and integrated branding, marketing and communication strategy.

4.3.3 STRATEGIES

The following strategies are recommended for the establishment of the Magaliesberg Biosphere brand and the required market awareness:

- Engaging all product owners in a baseline market research project and an ongoing programme to track trends;
- Development of an inclusive marketing plan that does not only promote the natural and cultural assets and associated tourism products, but also eMagaliesberg Biosphere embraces the greater environmentally sustainable and socially responsible development philosophies that includes other responsible land uses such as agriculture, mining, industrial development and country living;
- Positioning and branding the Magaliesberg Biosphere as a “responsible tourism” destination of distinction;
- Marketing of the Magaliesberg Biosphere as a nature-based and adventure tourism destination to potential investors and visitors;
- Promotion and facilitation of partnership opportunities, specifically amongst disadvantaged communities;

- Establishment of a partnership programme that will empower disadvantaged communities;
- Co-operative marketing;
- Development of an events calendar that will attract a variety of visitors throughout the year; and
- Regular communication and information dissemination to stake holders and visitors.

4.3.3.1 MARKET RESEARCH PROGRAMME

An effective market baseline study follow by an ongoing research programme that collects, analyses and disseminates information to stake holders, is required. Tracking of recent and frequently updated market information on visitor trends, profiles, needs and preferences is essential. This information will be made available to public and private sector partners, operators and other stakeholders to inform decision-making on both the marketing efforts of the Magaliesberg Biosphere and the potential opportunities for new tourism products, attractions and activities. Tourism operators should participate in the market research programme.

The following market research could be undertaken:

- Macro-market research:
 - Determination of market characteristics;
 - Short- and long-range forecasting;
 - Trend studies;
 - Competitive offering studies;
 - Measurements of market potentials;
 - Market share analysis; and
 - Sales analysis.
- Micro-market statistics:
 - Tourist satisfaction surveys;
 - Tourism and migration studies;
 - Arrivals statistics by visitor destination;
 - Arrival statistics by form of travel;
 - Arrivals growth projections;
 - Visitor spend data;
 - Seasonality index;
 - Visitor purpose (reason for travel); and
 - Average length of visitor stay.
- Tourism industry growth and contribution to GDP:
 - Market segmentation reports.

4.3.3.2 MARKETING PLAN

Marketing of the Magaliesberg Biosphere should be based on sound information, should be directed by a well-developed Marketing Plan and should be well funded. Prioritised markets should be targeted, the most appropriate marketing channels and cost-effective marketing tools should be used, a common vision and unified brand should be presented, and marketing should be a collaborative effort by all tourism stakeholders. The Magaliesberg Biosphere Tourism Marketing Plan will include the following elements:

- Vision, goals and objectives;
- Institutional arrangements;
- Target markets and market segmentation;
- Strategies for targeted markets;

- Positioning and appropriate branding:
 - Unique selling points;
 - Marketing name for the area;
 - Unique brand identity (including by-line, logo, etc.);
 - Brand building strategies.
- Promotion and communication strategy:
 - Marketing tools to be used for each target market;
 - Communications & information dissemination.
- Marketing budget;
- Action Plans and Timeframes;
- Implementation and monitoring of brand awareness.

The Marketing Plan will also be updated at least every 5 years in order to keep up with changing trends in the tourism markets.

4.3.3.3 MARKETING OF THE DESTINATION

The Magaliesberg Biosphere needs to be marketed as a nature-based and adventure tourism destination to prospective visitors, tourists and tour operators, in order to attract appropriate investments and improved tourist flows and spending to the region. Generic marketing of the Magaliesberg Biosphere as a destination will create a platform upon which individual tourism products can be promoted. The Marketing Plan will utilise appropriate marketing tools and channels (see Section 4.3.3.2 above), which may include the following marketing channels and tools:

- Electronic tools:
 - Interactive website (already in place);
 - Newsletters and direct e-mail campaigns;
 - SMS promotions;
 - Electronic brochures;
 - Direct marketing using electronic and cell phone technology;
 - Listing on tourism directories.
- Printed tools:
 - Brochures;
 - Magazines/journals;
 - Newspapers;
 - Trade directories;
 - Tourism maps.
- Advertising:
 - Outdoor billboards and signage;
 - Television advertisements;
 - Commercial radio advertising;
 - Cinema advertising.
- Public relations;
- Face to face personal selling and sales promotion;
- Trade shows;
- Sponsorships; and
- Tourist information and booking centre.

4.3.3.4 PROMOTION OF INVESTMENT OPPORTUNITIES

Investment opportunities related to new tourism products and projects based on identified priorities (see Section 4.2.3.5 above) should be proactively marketed to potential investors.

Projects that have been thoroughly researched and are aligned with the Magaliesberg Biosphere Vision and branded identity and those that are endorsed by the Magaliesberg Biosphere and government have a better chance of success. To maximise the chances of success, it is therefore important that opportunities are not marketed without proper planning and without support from appropriate authorities and stakeholders. The investment procurement process should ideally comprise of the following:

- Confirm potential feasibility of priority projects;
- Develop profile of projects;
- Develop procurement policies and strategies;
- Develop prospectus of priority projects; and
- Promote directly or use investment procurement agencies.

4.3.3.5 PROMOTION AND FACILITATION OF PARTNERSHIPS

The Magaliesberg Biosphere will promote partnership opportunities for sustainable socio-economic development and conservation, research, education, monitoring and any other projects or programmes important to its success. The Magaliesberg Biosphere will facilitate the establishment of strategic partnerships with government departments, NGOs, international and national support agencies or the private sector, for financial, institutional, technical and other support requirements.

4.3.3.6 ESTABLISHMENT OF A PARTNERSHIP PROGRAMME

In line with the approach of biospheres to encourage participation of a range of stakeholders working together towards the achievement of sustainable development to the benefit of both the environment and the socio-economic development of local communities, the Magaliesberg Biosphere will establish a partnership programme whereby private landowners, as well as a range of business initiatives (including conservation partners, commercial tourism and agricultural enterprises and support services, mining and other industries) can align and commit themselves to the overall vision. Through these strategic partnerships, a wide spectrum of stakeholders can become involved in the promotion of the Magaliesberg Biosphere and its goals.

In exchange for stakeholders' commitments to sharing the vision and principles of the Magaliesberg Biosphere, promoting the region as a "responsible" land use area, prominent nature-based and adventure tourism destination and catalyst for sustainable socio-economic development, developing and operating its enterprises within the guidelines of the biosphere and actively engaging with the management of the Magaliesberg Biosphere, participating stakeholders are provided the opportunity to associate themselves with the biosphere when marketing their establishments. This could include permission to use the logo of the Magaliesberg Biosphere on signage and in individual marketing collateral. Such partners may also benefit from broader joint marketing and promotion activities of the Magaliesberg Biosphere (see Sections 4.3.3.3 and 4.3.3.4 above).

Different levels of partnerships may be developed, including full partnership status and associate privileges for initiatives and businesses/land owners that are fully compliant with the recommended land uses within each zone, or recognition of support as "friends of the Magaliesberg", where businesses, initiatives or land users are in agreement with the philosophies and values of the Magaliesberg Biosphere and provide support

through financial or other means.

4.3.3.7 POSITIONING AND BRANDING

According to the South African Tourism Planning Toolkit for Local Government (DEAT), branding involves the effective management of the associations consumers have with the products, services and organisations that form part of the region's tourism industry and provides the information that people will use when deciding on how valuable/desirable those tourism products or services are.

The Magaliesberg Biosphere will, therefore, establish a strong, distinctive brand that is distinguishable and well-known and which portrays a positive image.

The Magaliesberg Biosphere brand will effectively differentiate what it has on offer from other competing destinations and should entice tourists to visit the area. The brand will be effectively managed and promoted in such a way that not only tourists recognise the brand as a guarantee of excellent quality, but it should also invoke pride among local tourism operators and partners in the way they operate their establishments or businesses and should build confidence among potential investors that the destination is worth the investment.

It is recommended that a branding study be commissioned (this should be included as part of the development of a marketing plan) to identify the most viable branding options and to develop a unique brand for incorporation into all future marketing materials and signage and for collective marketing, as part of the partnership programme (refer Section 4.3.3.6).

4.3.3.8 EVENTING

Events already play a valuable role in the region and the marketing of the destination and the brand can be improved by expanding the range and amount of events offered throughout the year. Events can introduce new visitors to the region. Well organised and established events are important attractions in themselves that are able to increase tourism numbers and tourist spend.

The Magaliesberg Biosphere will develop and manage an events calendar that covers a wide range of interests and will actively market and promote such events. These events should be promoted by all the partners, at tourism information centres and in local media and publications.

4.3.3.9 COMMUNICATION & INFORMATION DISSEMINATION

The provision of appropriate tourism information to tourists visiting the Magaliesberg region will greatly enhance the visitor's experience of the destination. A wide range of tools can be used to disseminate information amongst operating tourism partners, such as maps and tourism route guides that provide accurate information on the range of product offerings and relevant contact details.

The biosphere will, therefore, establish effective communication channels through the use of an interactive and user-friendly website, the management of an up-to-date partner contact database and through a partnership programme.

The Magaliesberg Biosphere will also support and where necessary improve existing or establishment new well-managed tourism information centres as the first point of contact for visitors at key locations, providing tourists with user-friendly and useful information. These visitor information centres can be established and

run by the private sector as stand-alone centres or as visitor information centres incorporated into existing tourism trading facilities or attractions such as at a retail outlet, restaurant, resort or place of interest. The placement of these information centres should be aligned with the tourism spatial plan (refer Section 4.1.3.2).

4.3.4 GUIDELINES

The Magaliesberg Biosphere in partnership with its key partners needs to play a central role in the marketing and promotion of the area as an exciting destination for investors and tourists, focussing on developments and operations that will entrench and enhance the brand identity of a destination that is recognised for “responsible” nature-based and adventure tourism as well as “responsible” and sustainable natural resource use, with valuable investment opportunities in conservation, socio-economic development, research and education. The Magaliesberg Biosphere should also provide the platform for collaborative marketing among individual stakeholders under a unified, recognisable brand.

4.4 SOCIAL BENEFIT PLAN

4.4.1 BACKGROUND AND CONTEXT

A primary focus of the Magaliesberg Biosphere is to ensure basic human welfare and a liveable environment in the context of swift urbanization and energy consumption as drivers of environmental change. This requires the creation of awareness regarding environmental impacts and challenges and the transfer of knowledge regarding potential solutions. An environmental education programme with a focus on sustainable development and land use needs to be introduced.

The proposed biosphere area includes a wide range of different activities; the largest of these are the tourism, mining and industrial sectors that play a gigantic role in this area, which provide extreme socio-economic challenges. The desired state of the Magaliesberg Biosphere shows high levels of unemployment that must be addressed.

4.4.2 DESIRED STATE

The desired state for the Magaliesberg Biosphere is that all people living in the biosphere are provided with basic services at an acceptable level and that the unemployment levels are reduced through the development and expansion of new and existing tourism and other industry programmes.

4.4.3 STRATEGIES

The following strategies are required to achieve the desired state:

- The introduction of environmental education programs aimed at community leaders, educators and school children
- The introduction of skills development programmes aligned with the job markets in the area, through partnership programmes with the relevant industries.
- Introduction of an alternative livelihood and support programme that will assist the lowest income members within the community, through partnership programmes with NGOs.

- Demonstration programmes that will reduce environmental impact and improve quality of life, such as;
 - Energy efficiency methods;
 - Gardening techniques; and
 - Cropping methods.
- Engaging with the relevant local authorities (Rustenburg LM, Madibeng LM, Mogale City LM and Tshwane MM) for the provision of relevant and necessary services to the communities in the biosphere area where necessary.
- Contribute towards planning strategies (e.g. IDP, SDF etc.) to align future development and expansions to comply with social needs of the area in line with the Magaliesberg Biosphere vision and objectives.
- Engaging with provincial Department with regards to provision of health, educational, welfare and other services.
- Engaging with mines and other industries within the area, regarding provision of skills and financial assistance towards social projects and programmes within the Biosphere area.
- Encouragement to all people living and working in the area to engage in more sustainable and environmentally friendly land use practices to ensure sustainability of natural resources within the biosphere whilst allowing continued socio-economic growth for the area.

The role of the Magaliesberg Biosphere Management Agency would be to create awareness, establish linkages and facilitate partnerships.

5. EDUCATION, TRAINING AND RESEARCH

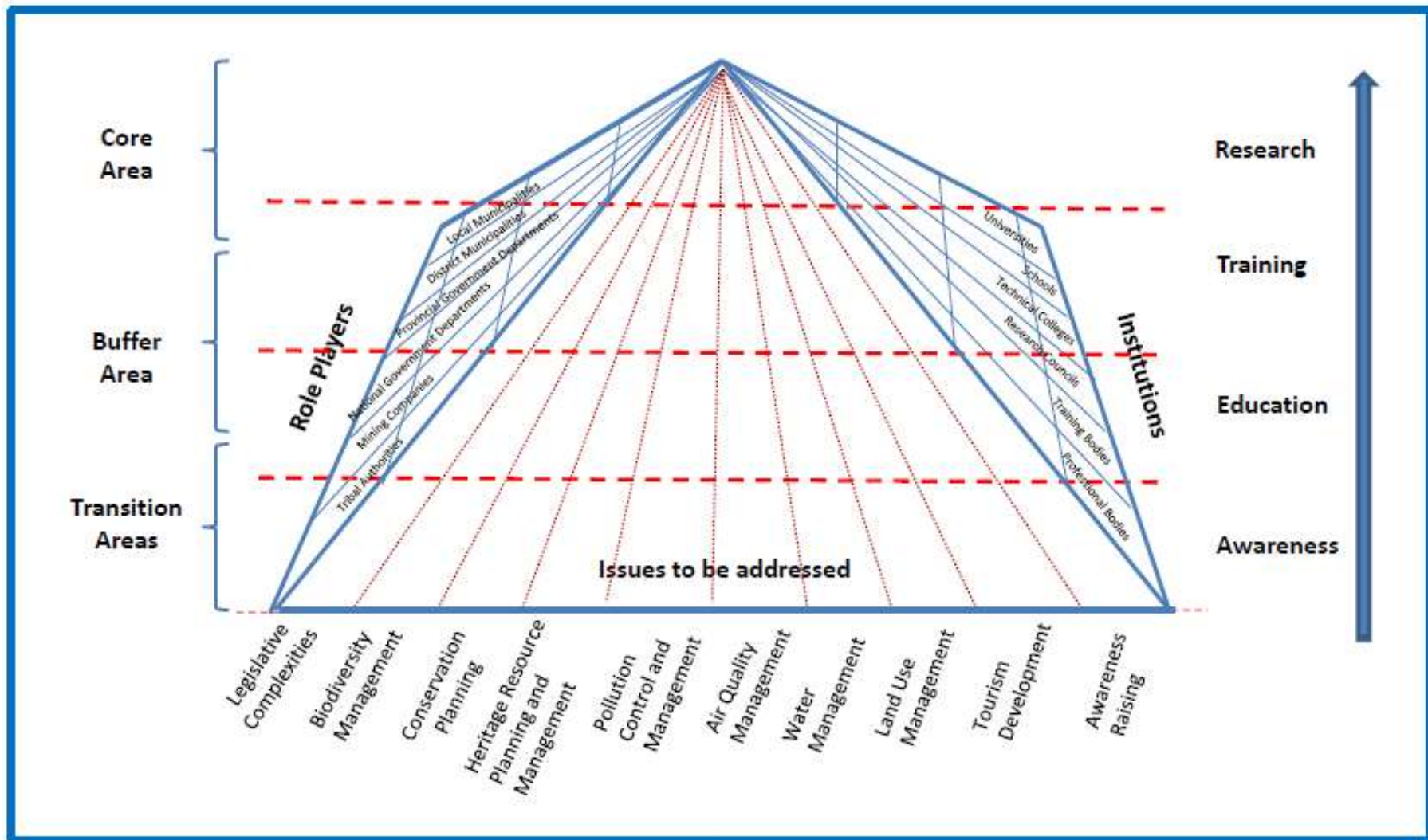
5.1 BACKGROUND AND CONTEXT

This section provides a brief description of the desired state, needs, opportunities and recommendations in relation to education, training and research within the biosphere study area. In this regard it became clear during the situation analysis that these aspects are exceedingly difficult to analyse due to the very complex and multifaceted nature thereof. In an attempt to gain a more holistic perspective and to conceptualise the role of education, training and research the following conceptual framework is proposed, which needs to be unpacked and refined as part of the continual management of the area – see Figure 5.1.

The framework suggests that a hierarchy exists between awareness at the lower tier, followed by training and ultimately research on the highest tier. Ideally these three tiers need to inform each other and strengthen the overall contribution of the biosphere to decision making and behaviour. In relation to these three tiers there are four interrelated components to consider, namely:

- *Role players* involved: Education training and research needs to benefit different role players and more importantly decision makers in the study area. These include the Local Municipalities, District Municipalities, National State Departments, Industry, Mining companies, NGOs, Tribal Authorities, etc. All these role players have different needs in terms of education, training and research.
- *Issues* to be addressed: The situation analysis and the SWOT analysis related thereto highlighted various issues to be addressed in the area, especially in terms of research needs, which are also summarised below.
- *Institutions* involved in education, training and research in the area: These institutions were identified in the situation analysis report under the section dealing with 'Logistical Support'. It is concluded that there are numerous institutions involved in the study area although most of them are not located within the study area.
- The different *zonation regions*: It is evident from the zonation exercise that the different zonation regions (i.e. core, buffer and transitions zones) will have different potential and needs in terms of education, training and research. For example, the core areas might be more focussed on low impact research while the transition areas focus more on education and training geared towards improved environmental management and governance.

Figure 5.1: Conceptualisation of the Education, Training and Research needs for the Magaliesberg Biosphere



The methodology followed for identifying education, training and research needs relied on the outcomes of the situation and SWOT analysis. Moreover, the sections also relied on inputs received during the public participation process. It must be stressed that the following discussions are not exhaustive, and that the education, training and research needs will have to be refined and developed further once the biosphere has been established and a Management Agency has been set up. Finally it is also suggested that this section be read together with the section on 'Logistical Support' included in the Status Quo document, which summarizes the existing situation for the area. In the following sections education and training is dealt with under the same heading since these two aspects are closely related within the study area.

5.2 ENVIRONMENTAL EDUCATION AND SKILLS TRAINING

5.2.1 BACKGROUND AND CONTEXT

Specialist training opportunities such as: projects for students; training and workshops for scientists; professional training and workshops for resource managers and planners; extension of services to local people; and training for staff in protected area management are evident.

Due to the close proximity and comparable ecological characteristics of the Waterberg Biosphere Reserve a unique opportunity exists for collaboration with the proposed Magaliesberg Biosphere.

International twinning arrangements, bilateral collaborative research activities and other potential collaborative opportunities are available, especially through the existing relationships with Finland.

Aspects such as environmental education and training, research and monitoring, are conducted by various public and private organisations in an uncoordinated manner. The reasons for the latter is numerous and may include; lack of communication between various institutions, *ad hoc* research and monitoring efforts, and sometimes no communication of community efforts.

5.2.2 NEEDS AND RECOMMENDATIONS

The education and training needs are potentially limitless and therefore only the 10 most pressing themes are highlighted:

Table 5.1: Research needs in the study area

Themes	Education and Training Needs	Education and training recommendations
Complex management context especially from a policy and legal perspective	Capacity to deal with the complex decision making context towards effective management of the area.	Although various education and training options exists on environmental governance in general – no training course exists on the management of biosphere reserves in South Africa. The latter will probably have to be developed and it is recommended that the Management Agency approach tertiary institutions in this regard.
Awareness of the uniqueness and conservation value of the area	Appreciation of the uniqueness of the area and the need to conserve.	There is currently various awareness raising efforts as described in the status quo report. These efforts need to strengthened and supported by the Management Agency.

Biodiversity Management	Skills around biodiversity management is limited which hampers awareness raising as well as general management of the area	Various biodiversity management training courses are available - from awareness raising level to post-graduate level.
Conservation Planning	Conservation Planning skills are limited within the province and even nationally	Nationally there are specialist training courses available in conservation planning, although closer to the study area the North West University will offer training at honours level in 2013.
Heritage Resource Planning and Management	The heritage resources in the area is not well identified / defined or managed.	Training courses on heritage management already exist and it is recommended that the Management Agency liaise with those institutions to integrate the context specific needs of the Magaliesberg Biosphere.
Pollution Control and Management	The extensive mining operations in the study area suggest the need to education and training with regards to pollution control and management.	The mining operations in the study area already conduct various education and training initiatives related to pollution control and management, both from a health and safety and environmental perspective.
Air Quality Management	The mining operations and residential developments have resulted in serious air pollution issues in the study area.	Air pollution is a specialised field both from a technical and legislative / policy perspective. There are various air quality training and education opportunities although no training with specific focus on the study area exists.
Water Management	Water Management is important within the study area from both a water quantity and quality perspective.	As for air quality various training options exists, although none of the existing training focus specifically on the study area.
Tourism development	The study area is identified as a key tourism hub for the region.	Education and training in tourism development is well established and widely available. However, very little training and research focus specifically on the study area.
Land Use Management	The effective management of land use is key to the future management of the biosphere	Land Use Management education and training is widely available, and therefore the Management Agency should have opportunities to empower staff in this very important area.

5.2.3 DEMONSTRATION PROJECTS

Based on the above education and training needs and requirement distilled from the status quo analysis the following projects are recommended to form part of the Environmental Education and Skills Training Programme. As so-called 'demonstration projects', they reflect on past and existing initiatives against which future recommendations are made:

- Project 1: Development of a Biosphere Reserve Management Course for the South African context

- Project 2: Coordination of training and skills development
- Project 3: Support of existing Environmental Education Programmes
- Project 4: Support of developing Education Publications

A brief description of each project is provided below:

5.2.3.1 BIOSPHERE RESERVE MANAGEMENT COURSE

The lack of a specifically designed training course for the management of biosphere reserves, specifically for the South African context and in particular for the Magaliesberg Biosphere, is an important need. It is evident that the required expertise does exist but that no initiative has yet been taken to design such a course. It is therefore proposed that; i) the different types of expertise required to contribute to the course are identified; ii) a particular training institution (such as North West University or University of Pretoria) are approached to coordinate the development; and iii) the course be formally registered with the South African Qualifications Authority (SAQA). The training and skills development will target those responsible for management but also those role players who contribute to the management of the biosphere through their contribution to, role or interest in, or affect on the area (i.e. mines, conservation authorities, local authorities, etc.). The course will have to cover outcomes such as an understanding of:

- The complex decision making context within which the biosphere operates
- The legal framework and legal mechanisms that the biosphere depend on for its land use control
- The uniqueness and conservation value of the area with particular reference to biodiversity and heritage resources
- Conservation planning skills
- Monitoring and response to rezoning applications, change in land use, new developments and illegal activities
- Pollution control and management with specific relation to waste, air and water management
- Land use management arrangements in the area.

5.2.3.2 COORDINATION OF TRAINING AND SKILLS DEVELOPMENT

It is evident that there are various training and skills development initiatives in the study area. The status quo report identified 22 organisations and institutions involved with environmental education, skills development and awareness. Moreover more than 30 facilities were identified. There is therefore a lot happening in terms of training and skills development but with very little coordination. It is recommended that a project be initiated which aims to coordinate the various training and skills development initiatives with a view to optimise the use of resources and avoid duplication. The latter is especially relevant to instances where tertiary institutions are involved as well as government related initiatives. This project should aim to incorporate information specific to the biosphere that will enhance the knowledge-base and the management of the Magaliesberg Biosphere, into existing programmes that may be of a more generic awareness, training and skills development nature. In this way the objectives for the biosphere could be integrated into existing initiatives and over time become entrenched in the various efforts already underway.

5.2.3.3 ENVIRONMENTAL EDUCATION AND AWARENESS

The following environmental education and awareness demonstration projects are already in place:

5.2.3.3.1 Eco-Schools

The Eco-Schools (ES) programme (www.wessa.org) is the only nationally implemented environmental learning programme in South Africa and is implemented in 1111 schools (2011). It has been going since 2003 and since inception has had two external evaluations which have led it to grow and improve. The ES programme aims to promote environmental learning and whole school development. Activities that enable the programme to meet these aims relate strongly to providing support and capacity development for educators who coordinate ES activities and learning programmes in their schools. Current capacity development for educators are structured around support through workshops (ES operational, content related and curriculum related) as well as through “one on one” contact support (support for environmental lesson planning and co-teaching where appropriate).

Currently the ES programme is participating in the Teacher Development Network (TDN) led by Rhodes University and has the support of the Departments of Basic Education and the Department of Environmental Affairs and Tourism. The TDN constitutes a Professional Learning Community that has shared knowledge and practice of teacher development to formulate a course for teacher development that will improve a teacher’s content knowledge, pedagogy and assessment practice. The course is made up of a core text focusing on these three aspects as well as exemplars on various content areas such as climate change and biodiversity. Other exemplars are still being developed with support and collaboration from other Higher Education Institutions (HEI’s) and DBE curriculum advisors. The course is currently being piloted, with one on climate change having just taken place and the next one on biodiversity due to take place in June 2012. A monitoring and evaluation process is also taking place concurrently, with the results from this process also being used to further develop the course materials and methods of implementation.



Within the Biosphere, the ES programme has begun to collaborate with other Non-Profit Organisations such as SEED (www.seed.co.za) to offer educators worthwhile workshops or resources such as those relating to permaculture.

The ES programme is attractive to all types of schools irrespective of urban or rural location, infrastructure development or access to resources. The playing fields are levelled, as schools are not assessed relative to one another but rather on the improvements that have occurred at their own

school during the year of assessment. Currently in the area of the biosphere the following schools are registered:

- Pecanwood College, Broederstroom (since 2007)
- The Mountain Cambridge School, Hartbeespoort (since 2007)
- Ennis Thabong Primary, Ifafi (since 2008)
- Selly Park Primary, Rustenburg (since 2010)
- Rustenburg Hoërskool, Rustenburg (since 2012)
- Pansdrif Primary, Brits (since 2012)
- Isaac Mokoena Primary, Mothotlung (since 2012)

5.2.3.4 EDUCATIONAL PUBLICATION

The need for published educational literature eventually covering the full spectrum of the Magaliesberg's rich natural and cultural heritage should be encouraged, as it provides a valuable strategy towards creating awareness and knowledge and changing perceptions and attitudes. Some of the existing and planned publications include the following:

5.2.3.4.1 The Magaliesberg (Vincent Carruthers)

The Magaliesberg is a comprehensive study of the area of the proposed Biosphere and it is the principal source of accessible information on the geomorphology biodiversity, history and heritage of the region. The book is laid out in two parts – the first deals with natural features of the area and the second with the history of humankind.

The first two chapters describe and illustrate the unique geological events that created the dramatic Magaliesberg landscape over a period of two-and-a-half billion years. Here is explained the origins of stromatolites and the initial oxygenation of the atmosphere, the emergence of the Bushveld Complex and the world's richest deposits of platinum, vanadium, manganese and chrome. The tilting of an ancient seabed created the mountain range and spectacular kloofs and cliffs that are the hallmark of Magaliesberg scenery were carved by the Karoo ice age and millennia of weathering.

The mountain range lies along the interface of the two largest southern African biomes – grassland and savannah – and the consequent intensity of biodiversity is discussed and illustrated. Six chapters deal, respectively, with the trees, wild flowers, mammals, birds, reptiles and invertebrates. The species of the area are all identified and described in the context of the specialised habitats that the Magaliesberg provides.

The second part of *The Magaliesberg* traces the history of humankind from the evolution of our earliest ancestors through to modern times. A chapter on human evolution (the Cradle of Humankind World Heritage Site is part of the Biosphere) is followed by chapters on Stone Age tools and rock engravings, precolonial society and settlements and the Ndebele kingdom that dominated the Tswana communities in the early nineteenth century. The later arrival of white settlers eventually led to conflicts between Boer and Briton, in which the Magaliesberg was a primary theatre of war, and the battlefields are all described and mapped.

The final chapter of the book deals with the modern era of development and human pressure on the natural and cultural resources of the region.

The author, who was also the initiator of the Magaliesberg Biosphere concept in 2006, describes the objective of the book as being: "to help deflect the environmental assault, not by condemnation, but

by providing information which demonstrates how precious the region is to our South African culture and environment. This is the eternal wealth of the Magaliesberg.”

For more than three decades, and through three revised editions, *The Magaliesberg* has remained the top selling reference on the area and in 1996, a first edition copy was presented to the then President of South Africa, Nelson Mandela.

Reference:

Carruthers, Vincent, *The Magaliesberg* (Johannesburg, Southern Book Publishers, 1990)

Carruthers, Vincent, *The Magaliesberg* (Pretoria, Protea Book House, 2000)

Carruthers, Vincent, *The Magaliesberg* (Pretoria, Protea Book House, 2007)

5.2.3.4.2 Wild Flowers of the Magaliesberg (Kevin Gill and Andy Engelbrecht)

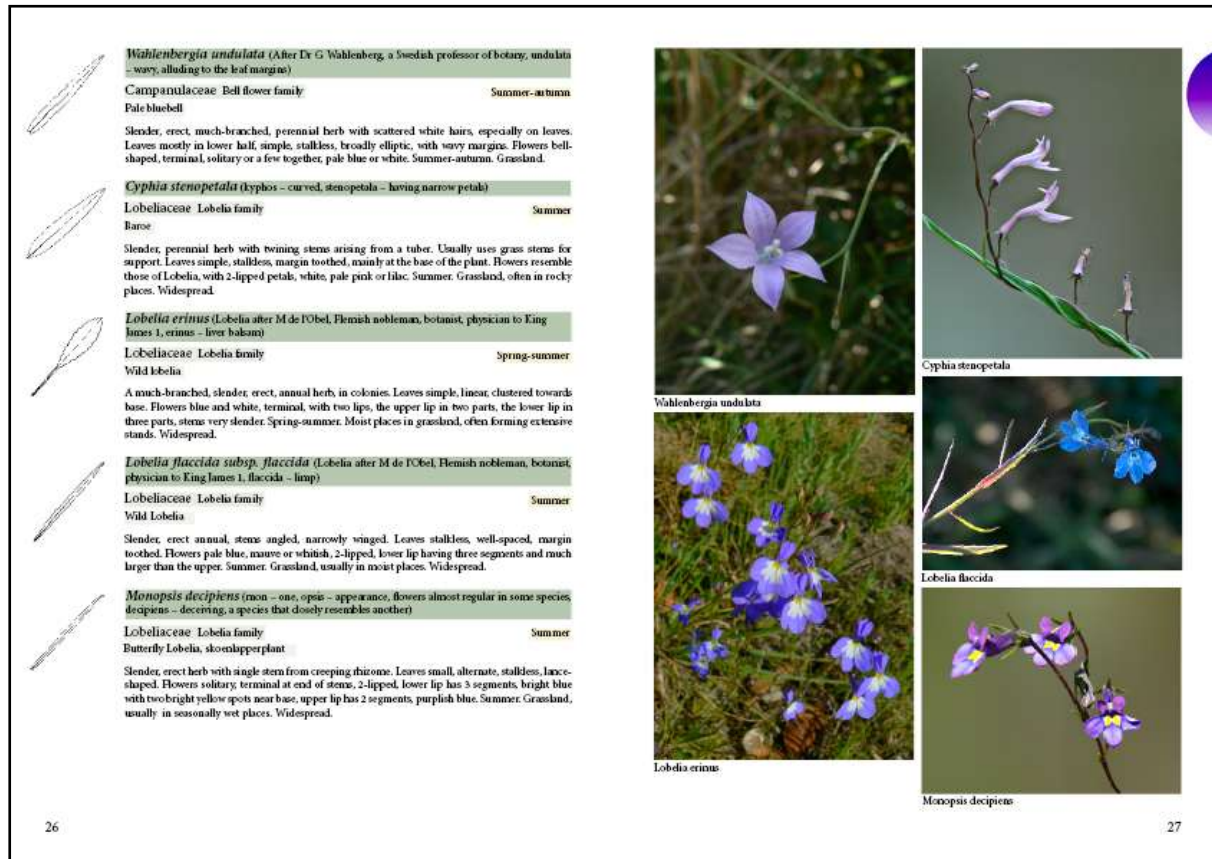
Wild Flowers of the Magaliesberg is being planned as a simple, uncluttered, straightforward “first-entry” introduction to the subject. It is aimed at tourists, hikers, all people who live in the area, including those whose past opportunities were limited, week-end visitors and flower-lovers. By providing easily accessible knowledge it is hoped to bring people back to nature, increase awareness, appreciation, enjoyment and respect for the natural world. Conservation and protection should then follow. Removal of the destroyers of South African indigenous vegetation should be encouraged.

This easy-to-use guide will feature about 500 species, with an emphasis on those most commonly seen or of special interest. Flowers will be grouped according to their predominant colour, making it as easy as possible for the user. Each description offers key information on the scientific name, derivation thereof, family, common names (English, Afrikaans and Setswana), identification features, flowering time, habitat and abundance. The contents will follow the conventional lay-out : title page, sponsors and publication details, contents, acknowledgements, foreword, introduction (giving inter alia advice to the layman as to where and when to look), the main body of the book, references to more detailed works and finally indices to common and scientific names. All the photographs are by the authors. It is expected that the total number of pages will be between 200 and 250.

Attributes of the planned publication include the following: Up-to-date scientific botanical names are given. Derivations of names are prominently featured to promote understanding. A prime objective has been to use simple language, avoiding botanical terminology. The object of course is to make information immediately accessible to the reader, thus avoiding irritating, forced reference to a lengthy, pedantic, botanical glossary. Some species are featured which did not appear in Field Guide to the Wild Flowers of the Highveld. Within each colour group families are dealt with in scientific order. This will be appreciated by the “cognoscenti”, who know where to look. More importantly, the layman will appreciate having together for comparative purposes species which look similar. With increasing awareness of advancing, aggressive exotic invaders, readers will find the worst offenders featured.

The Field Guide to the Wild Flowers of the Highveld by Braam van Wyk and Sasa Malan is an admirable, detailed and invaluable work, first published in 1988, with a second edition following in 1997. From time to time reprints occur. Both the publisher and author thereof have acknowledged that the current project is not in competition - each occupies a different niche. They complement each other, so the planned publication should stimulate sales of the earlier, more comprehensive work. Sadly three other significant and substantial books are well and truly out of print. They are : Transvaal Wild Flowers by Anita Fabian and Gerrit Germishuizen (1982), Wild Flowers of Northern

South Africa by the same team (1997) and Guide to the Wildflowers of Northern South Africa by Gerrit Germishuizen and Brenda Clarke (2003). Other books by Annabelle Lucas and Barbara Pike (1971) and Cythna Letty (1962) go back even further. A Field Guide to Wild Flowers of KwaZulu-Natal by Elsa Pooley and Wild Flowers of the Limpopo Valley by Retha van der Walt are helpful. Other books are devoted to a particular family, such as the Field Guide to the Orchids of Northern South Africa. Certainly there is no botanical publication devoted exclusively to the Magaliesberg.



Beyond ordinary readership, distribution could be considered to other parties such as:

- Learners at schools along both sides of the range, in order to promote environmental awareness
- Persons and institutions which could promote the establishment of a botanical garden in the Rustenburg area, which would showcase the various regional habitats and become a much-needed community asset
- North West Government for use in connection with its current process for obtaining public approval for registering the Magaliesberg Biosphere with UNESCO
- Conservancies seeking material specifically applicable to the area.

5.2.3.4.3 Publications on the Magaliesberg by Jane Carruthers

Professor Jane Carruthers is an environmental historian with a special research interest in protected areas and the politics of conservation. She has written two items about the Magaliesberg.

In 2002, her article entitled, 'From "land" to "place": Communities and conservation in the Magaliesberg area' was published in the journal *Kleio*, 34 2002 (pp.72-103). Against the longer geological, biological and human history of the region, this traces the genesis of organised conservation of the mountain range from the 1960s onwards. Threatened at that time from

unregulated development, particularly recreational and industrial infrastructure, in a vacuum of any legal protection, Carruthers explains how archaeological research, particularly by Professor Revil Mason, combined with concern from the Mountain Club of South Africa and the Wildlife Society of South Africa and press publicity, catalysed public activism for conservation laws specifically applicable to the Magaliesberg and similar landscapes. Provincial conservation authorities became involved and eventually a number of Acts of Parliament were created to ensure that a management authority was appointed. The present Biosphere initiative is an outgrowth of that history.

In 2006, Carruthers situated this historical narrative of public activism and participation against an international comparison with an Australian case study. This appeared as a chapter, 'From "land" to "place": Environmental activism in the Magaliesberg, South Africa, and Cooper's Creek, Australia' in C. Mauch, N. Stoltzfus and D. Weiner, eds, *Shades of Green: Environmental Activism around the Globe* (Lanham etc.: Rowman and Littlefield, 2006). Both these campaigns involved private, rather than state-owned land, and they illuminate the limitations of regarding landscape as monetary wealth alone. They emphasise the importance of developing a broader sense of value that is not defined solely by financial considerations, but consider landscape as being infused by social, cultural and biological worth.

References:

Carruthers, Jane, 'From "land" to "place": Communities and conservation in the Magaliesberg area', *Kleio*, 34 2002: 72-103.

Carruthers, Jane, 'From "land" to "place": Environmental activism in the Magaliesberg, South Africa, and Cooper's Creek, Australia', in C. Mauch, N. Stoltzfus and D. Weiner, eds, *Shades of Green: Environmental Activism around the Globe* (Lanham etc.: Rowman and Littlefield, 2006).

5.3 RESEARCH

5.3.1 BACKGROUND AND CONTEXT

The Magaliesberg Biosphere offers a wealth of knowledge to the world network of biospheres due to the immense diversity and depth of research that has been and is being done in abiotic, biotic and socio-economic areas.

5.3.2 NEEDS AND RECOMMENDATIONS

Due to the fact that the potential research needs are unlimited, an attempt was made to highlight what is considered the 11 most pressing research needs – see Table 5.2.

Table 5.2: Research needs in the study area

Theme	Issue	Possible research area
Statutory Framework	No biosphere specific legislative framework currently exists.	Development of a statutory framework for the management of the biosphere.
	Failure to draft and implement municipal by-laws.	Drafting of municipal by-laws to support the management of the biosphere.
	The legislative regime is exceedingly complicated and fragmented combined with a lack of cooperative	A critical evaluation of the legislative context and the development of cooperative governance arrangements to support the management of the biosphere.

Theme	Issue	Possible research area
	governance arrangements.	
Strategic Planning and Decision making	Strategic policies and plans are not aligned, with special reference to spatial planning and conservation planning.	Alignment of strategic plans and policies in the area.
	Lack of land use management implementation.	Critical evaluation of the implementation of land use management mechanisms in the study area.
Environment and Conservation	The detailed distribution and occurrence of species poorly understood.	Fine scale research on the occurrence and distribution of species in the study area.
	The contribution of the area to water quantity and quality has not been investigated.	The contribution of the area towards water quantity and quality management for the region.
	Justification for the extent of buffer zones is not well defined.	How to delineate and determine the required extent of buffer zones to maintain the ecological integrity of the area.
	The region represents a climatic transition zone. However, the impact of climate change on the region has not been researched.	To determine the impact of climate change on the ecological functioning of the area.
	The exact status of air quality is not certain for the area. Moreover, current air quality management occurs on an ad-hoc basis.	To determine the status and extent of air quality in the area and make recommendations for air quality management.
	The occurrence of heritage resources is not well researched and management arrangement are lacking.	The identification and mapping of heritage resources with related management options.

The latter table shows that the main areas of research relates to the statutory framework, strategic planning and ecological functioning of the area. It is clear that the complexities surrounding the management arrangements which include the legislative and decision making mandates as well as the biophysical uniqueness will require innovative and creative management solutions. The Status Quo report already provides a good point of departure but it is clear that the Management Agency will have to initiate more focussed research to support effective management.

5.3.3 DEMONSTRATION PROJECTS

In view of the above sections the following four 'demonstration projects' are described. They relate specifically to management arrangements, land use management, pollution control, and heritage.

For each project more specific deliverables are highlighted below:

5.3.3.1 DEVELOPMENT OF A COOPERATIVE GOVERNANCE FRAMEWORK

The success of the management of the biosphere will rely heavily on the ability of the management authority to design effective cooperative governance and management arrangements with the different role players and decision makers. Of particular importance is the need to establish arrangements with different spheres of government namely local, provincial and national. Moreover, it is also evident that a range of other role players such as industry, conservation authorities and NGOs play an important decision making role in the area. Various corporative governance mechanisms exist in policy and legislation but these mechanisms have not yet been unpacked and defined to serve the biosphere. It is therefore recommended that as a priority a project should be initiated to design and implement the required cooperative governance arrangements. The latter would also serve the need for awareness and capacity building amongst role players involved with the biosphere.

The following project deliverables are proposed:

- Conduct a legal and policy review to identify possible mechanisms to promote cooperative governance
- Tailoring of relevant mechanism to serve the management of the Magaliesberg Biosphere Reserve
- Implementation of the relevant mechanisms.

It needs to be stressed that the main challenge for the management of the biosphere will be to understand and inform the various decision making processes impacting on the area. Therefore this project should be considered as a pro-active effort to position decision-making and management of the biosphere within the complex decision making context that exists for the area.

5.3.3.2 ESTABLISHMENT OF AN INTEGRATED LAND USE MANAGEMENT SYSTEM

The area included in the biosphere includes a tapestry of different land uses. These include different forms of urban and agricultural uses as well as diverse types of mining and industries. The question is how to manage these land-uses so as to ensure least impact on the biosphere and its objectives? What makes the challenge even more difficult is the fact that former studies were not done for the entire area at the same scale and existing land use management policies and plans are not aligned, with special reference to spatial and conservation plans. In addition, land use management mechanisms are also not rigorously applied which result in various illegal land uses. The diversity of land uses is however not only a negative aspect but also a positive feature reflecting the rich diversity in the area. The following project deliverables are proposed:

- A detailed survey of land use patterns and the occurrence of unique biodiversity in the area across the entire Magaliesberg Biosphere at the same scale
- Critical evaluation of the implementation of existing land use management mechanisms
- Identification of 'high risk' land use areas in relation to unique natural features and biodiversity resources
- Recommendation on the future management of land use through mechanisms such as buffer zones to maintain and promote the ecological integrity of the area.

5.3.3.3 POLLUTION CONTROL AND MANAGEMENT

The extensive mining and industrial activities located within the transitional zone and immediately outside the borders of the biosphere present particular challenges as well as opportunities related to pollution and waste management. In addition, the residential land uses generate municipal waste streams with very little to no recycling initiatives.

The following specific areas of intervention could benefit the biosphere initiative and at the same time provide employment and development opportunities for many of the poorer communities within the region.

- *Waste management:* The current lack of recycling is a particular weakness within the region and presents an ideal opportunity for pilot initiatives also aimed at job creation. Such initiatives will also focus on the lower income section of the community where recycling presents a more viable financial proposition. Therefore such projects could also contribute significantly to environmental awareness and skills development.
- *Water management and pollution control:* It is evident from the status quo report that the Magaliesberg represents a very important water catchment from both a quantity and quality perspective. Particular areas of intervention are the Hartbeespoort Dam as well as water sources downstream from the Magaliesberg. Research focussing on different water management technologies and systems to deal with pollution are important for water use and availability over the medium to long term.

The following currently operated demonstration projects illustrate the awareness, concern and involvement of government, NGOs, communities and business regarding environmental challenges:

- Harties Metsi a me Biological Remediation Programme
- Bolokang Metsi Re Ipoloko (save water, save ourselves) Project
- Working for Wetlands
- Eradication of Alien Invasive plants

A short summary of some of these projects that need to be supported as demonstration projects for the Magaliesberg Biosphere are provided below.

5.3.3.3.1 Harties Metsi a me Biological Remediation Programme

In terms of water management there are already very specific and highly successful projects initiated for the Hartbeespoort Dam, which is a very important strategic water resource in the study area. The ecology of the dam has been disturbed by a number of factors such as rising nutrient levels resulting in algal blooms, overgrazing by unwanted fish species, fluctuations in water levels and destruction of shoreline vegetation. The Harties Metsi a me Biological Remediation Programme has been launched to address these negative ecological effects. Two specific projects run by the Department of Water Affairs and Rand Water, which will be supported and strengthened by inclusion as demonstration projects for the biosphere initiative, are:

- *Floating wetlands project:* The aim of the floating wetlands is to improve habitat conditions for the breeding and maintenance of zooplankton, invertebrate, insect, fish and bird populations. This will contribute towards improving the natural energy and nutrient flow in the food web and ultimately water quality in the Dam.
- *Rehabilitation and management of the shoreline vegetation project:* The destroyed shoreline has a detrimental effect on the critical biological/wetland activity which would normally take place within the riparian zone. This has impacted on the aquatic food web as the habitat for zooplankton and other aquatic epi-biota has been lost in the process.



The overall objectives of the floating wetlands and shoreline rehabilitation projects are to, amongst others, i) manipulate and increase species diversity, ii) establish habitat which will increase the diversity of the aquatic biota within the water body, iii) supplement and rehabilitate destroyed shoreline vegetation, iv) stabilise water temperature, v) minimize the effects of erosion, and vi) reduce turbidity along the shoreline. Moreover the project aims to contribute to the development of new technologies related to floating wetlands. The project also makes significant contributions to job creation and social development with 27 individuals already trained in the production of the floating wetlands and a further 9 trained in monitoring the success.



5.3.3.3.2 Bolokang Metsi Re Ipoloko (Save Water, Save Ourselves) Project

The Xanadu Eco-Estate Conservancy in Hartbeespoort is a partner in the Magaliesberg Biosphere initiative. The Bolokang Metsi Re Ipoloko (save water, save ourselves) Project is a joint project with Ennis Thabong School in which learners from the local Popo Molefe informal settlement play a key role in leading a betterment initiative.

Through a participatory research and dialogue process the children set out to identify environmental issues in their environment. Originally they focused on water issues but in the process of undertaking research they reported that waste management and personal insecurity also affect their lives adversely. Adult stakeholders that willingly participate in assisting the children to find and

implement sustainable solutions include settlement residents, municipal officials and commercial agencies.

The project process has been going through the following phases:

- Consultancy meeting
- Skills workshop
- Data analysis workshop
- Multilevel discussion meeting
- Children's liaison with stakeholders
- Review interviews



The following problems were identified:

- Water Issues
- Waste issues
- Lack of adult remedial action
- Violence and crime



Solutions, actions and outcomes were identified and action plans developed in each of the following areas:

- Adult remedial action and waste management
- Water usage: piping, taps, laundry, pets
- Violence and crime

Although waste management in Popo Molefe has been improved to some degree, sanitation and water quality are not optimum and will continue to pose serious health challenges at the Popo Molefe site, especially for children. This project reveals some of the challenges that partners in the Magaliesberg Biosphere might face when addressing Biosphere objectives. Innovative solutions will be required to accomplish sustainable outcomes.

The heroes of this project are the children, as it was they who initiated the process of participatory investigation and recommendations for action. They are to be commended for their honest and clear vision in opening the way for adult partnerships and action at Popo Molefe.



5.3.3.3.3 Working for Wetlands

Wetlands play a vital role in human health and well-being yet out of more than 114 000 wetlands that have been mapped all over the country many are either damaged or destroyed due to human impact.

In 2000 the Working for Wetlands Programme was launched due to a need to rehabilitate these wetlands spread throughout the country. To date there are about 40 wetlands rehabilitation projects all over South Africa. This has not only seen thousands of people getting employment but has also made an impact in skills development.

In 2009 alone, Working for Wetlands rehabilitated 95 wetlands in all nine provinces and in the process created employment for more than 1500 people and made use of 250 small businesses.

The programme is implemented by the South African National Biodiversity Institute (SANBI) on behalf of the departments of Environmental Affairs (DEA); Agriculture, Forestry and Fisheries (DAFF) and Water Affairs (DWA). It forms part of the government's Expanded Public Works Programme, which seeks to draw unemployed people into the productive sector of the economy.

A number of projects have been carried out in the Magaliesberg Biosphere region and are maintained by Working for Wetlands and private land owners, often with support from NGOs.





5.3.3.3.4 Eradication of Alien Invasive plants

Weeds have been cleared on a regular basis by the Mountain Club of South Africa over the last 11 years. This is a regularly recurring event as their seeds are spread by wind and water, thus requiring attention at least once a year.

Declared invasive plants are required to be eradicated by law. The Mountain Club ensures that all their properties as well as the areas used by them are kept clear of invasive weeds.

The only bio-control agents that are currently used are the crofton weed gall flies (now widespread) and pompom fungus. Neither keep plants from flowering. It is hoped that better bio-control agents of crofton and pompom can be found eventually. None are available for the other plants.

The most serious invasive plants that are eradicated are:

Crofton weed <i>(Ageratina adenophora)</i> 	Pompom weed <i>(Campuloclinium macrocephalum)</i> 
Jerusalem cherry <i>(Solanum pseudocapsicum)</i> 	Senna <i>(Senna septemtrionalis)</i> 

Other invasive plants include:

- **Verbena** (*Verbena bonariensis*)
- **Inkberry** (*Phytolacca octandra*)
- **Bugweed** (*Solanum mauritianum*)
- **Lantana** (*Lantana camara* complex)
- **Guava, jacaranda, granadilla, mulberry**

The Kloofs (gorges) that are cleaned by the Mountain Club include the following:

- Castle Gorge:
- Boekenhoutkloof & Dome:
- Tonquani:
- Mhlabatini:
- Grootkloof:
- Seremodi:

5.3.3.4 RESEARCH AND CONSERVATION

A number of research and conservation projects are already established in the Magaliesberg Biosphere area. These include:

- Jackal Project: Mogale's Gate Vulture Restaurant

- VulPro Vulture Conservation Programme

5.3.3.4.1 Jackal Project: Mogale's Gate Vulture Restaurant

Motivation

Vulture restaurants are increasingly utilised in South Africa, both as an ecologically friendly means to dispose of animal carcasses, as well as to provide food for vultures. However vulture restaurants that are regularly supplied with large amounts of meat, such as at Mogale's Gate, may be associated with abnormally high resident populations of scavenging predators, such as brown hyenas and jackals.

As a result of this high predator content, there is a common perception amongst both game and livestock farmers, that vulture restaurants may result in an increase in predations of game and livestock, both on the farm where the restaurant is located, as well as on neighbouring farms. These predations may translate into significant financial damages to these farming enterprises.

Surprisingly, no research has been completed on the effects that vulture restaurants may have on the predator populations that are supported by these large food sources, or the ramifications of such high predator populations with respect to livestock and game depredations.

Aims

The aims of the project are to:

- Assess the movements and predatory impacts of radio collared jackals on resident wild ungulate populations
- Assess the movements and predatory impacts of radio collared jackals on neighbouring livestock and game farms
- Assess the influences of such a prolonged and constant food source as represented by the vulture restaurant at Mogale's Gate on jackal population dynamics with respect to jackal territory sizes and behaviours, age group structures, breeding cycles, pup mortalities, dispersals and jackal population growth parameters
- Assess possible disease transmission, internal and external parasite loads and skin ailments such as mange in the jackal population.

The project plans to run until January 2013.

Methodology

The methodology used is to trap, radio-collar and monitor the movements of 20 jackals attracted to the vulture restaurant.

Benefits

Results from this project is expected to have far reaching implications over the whole of South Africa with respect to management strategies for vulture restaurants, and the scavenging predators associated with such food sources.

5.3.3.4.2 VulPro Vulture Conservation Programme

Vultures form an important ecological component of the Magaliesberg natural environment, where one of the few remaining breeding colonies can still be found. They clean up dead carcasses and decrease the spread of some diseases. The relationship between vultures and people is also a venerable one – vultures played roles in some early societies, including the Egyptian and the Hindu

societies; vultures continue to be used as symbols or metaphors in modern societies; and vulture body parts are used in muthi (African traditional medicines).

Today, vultures face an unprecedented onslaught from human activities. They have to cope with electrocutions and collisions with electrical structures, poisonings, land-use changes, a decrease in food availability and exposure to toxicity through veterinary drugs, to list just a few of some of the challenges facing vultures today.

Vultures, positioned at the top of the food chain, are an indicator of the health of the environment below them – and dependent for their survival on a healthy environment. As such the work of the Vulture Conservation Programme (“VulPro”) work is intended and expected to impact on many other aspects of the environment – beyond vultures.

VulPro approaches vulture conservation in an integrated, multidisciplinary fashion, with the benefits from the programme accruing to both vultures and society at large. VulPro combines education and good science, with networking, capacity building and knowledge generation. The veterinary disciplines of toxicology, pharmacology, clinical pathology and medicine are combined with the science of cell-phone telemetry and the banking of genetic resources, with the goal being to positively influence the well-being of our natural resources to the ultimate benefit of society. In this regard, VulPro engages in a number of interrelated activities, and uses a variety of resources, in endeavouring to meet its objectives.



The following summarises the most important activities of VulPro:

- GPS tracking devices are used to determine foraging and home ranges of a large number of vultures in Southern Africa. The output from this research allows for the monitoring of capture-release free-ranging vultures and for the mapping of areas for further actions (such as community education and the safeguarding of vulture food through the monitoring of vulture restaurants).
- VulPro conducts and facilitates educational talks and interaction with both tame and wild vultures at the rehabilitation and educational centre in Hartbeespoort, and regionally, through the follow-up of vulture home range and feeding studies.
- Undertaking and publishing studies determining drug residues in carcasses, and lobbying communities and society for appropriate actions to be taken to benefit our natural environment and to ameliorate the effects of drugs on vultures are part of VulPro’s work. This work includes proactive efforts to determine, evaluate and monitor veterinary drugs or chemical residues in carcasses that are made available to vultures; building dedicated laboratory models for predicting avian toxicity; using mass awareness campaigns to involve and get feed-back from the public; determining the home ranges of vultures, so as to better

understand their foraging habits; and collecting appropriate biological samples for current and future project use.

- Through partners, such as the Faculty of Veterinary Science at the University of Pretoria, potentially harmful veterinary substances similar to diclofenac, can be identified and monitored. Where necessary, VulPro can engage in or support lobbying for the removal or responsible use of these substances.
- With the many threats vultures are facing throughout Southern Africa, vulture rehabilitation has become an essential part of the work of VulPro. Collecting grounded, injured, poisoned and disabled vultures around South Africa, special emphasis within the Gauteng, North West and Limpopo Provinces, VulPro is able to save many vultures that would otherwise have met untimely deaths. By doing this, VulPro is in a position to release those vultures that are fit and healthy and to keep in captivity those that cannot be released, for breeding, research and educational purposes. Vulture populations are in many instances so depleted that the rehabilitation and release of individual birds can be ecologically and genetically significant. At present, VulPro operates the only facility approved by Gauteng Nature Conservation and recognised by North West Nature Conservation for vulture rehabilitation.
- This multidisciplinary and networking programme looks at conservation holistically, by focusing on the vulture at the top of the food chain and gaining new knowledge on the environment below and so also impacting on society's well-being.

The Objectives of VulPro are summarised as follows:

- Vulture rehabilitation
 - Collect injured, grounded and disabled vultures
 - On-going monitoring of released vultures using patagial tags and GSM/GPS devices
- Distribution, dispersal and foraging ranges of vultures
 - Tracking of the Magaliesberg Cape Vultures using patagial tags and GSM/GPS devices
 - Monitoring of vulture restaurants and recording vulture re-sightings i.e. patagial tags and photographs
 - Tracking African White-backed and Cape Vultures which frequently visit Mankwe Nature Reserve, adjacent to Pilansberg
 - Monitoring and tracking Cape Vultures from the Manoutse breeding colony near Kruger National Park
 - Recording and keeping a database of all vulture re-sightings related to the B-series of patagial/wing tags
- Cape Vulture breeding monitoring (four largest colonies globally):
 - Magaliesberg (inside the Magaliesberg Biosphere)
 - Kransberg
 - Blouberg
 - Manoutsa
- Veterinary and ecological research related to vultures:
 - Researching the effects of lead and NSAID's on vultures
 - Surveying and studying vulture restaurants
 - Researching the role vultures play in the spread of diseases
 - Ongoing research related to providing veterinary treatment for vultures (i.e. for snake bites, poisonings etc.)
- Cape Vulture breeding and reintroduction programme (Namibia)
 - Creating a safer environment for vultures in Namibia.
 - Rebuilding the Cape Vulture population in Namibia.
 - Monitoring the Cape Vulture population in Namibia as part of a national avian scavenger population monitoring programme.

- Providing an effective information, outreach, education and information sharing platform for vulture conservation as well as facilitating collaborative conservation support in Namibia and the region.
- Vulture educational and awareness programmes
 - Holding talks and public displays
 - Conducting workshops and training
 - Assisting with farmer/vulture conflicts

5.3.3.5 DEVELOPMENT OF A HERITAGE MANAGEMENT PLAN

The process of identifying heritage sites in the proposed Magaliesberg Biosphere Reserve has not been completed. Site visits will be required to (1) record the GPS coordinates of the already identified heritage sites in order to refine the GIS database, and (2) identify more heritage sites, especially in the extended area north of the N4, where there may be unidentified farmsteads and stone-walled Iron Age structures of heritage value. Very few of the heritage resources in the proposed Magaliesberg Biosphere reserve have been classified in the four categories of World Heritage Site, National Heritage Site (Grade I in terms of the National Heritage Resources Act), Provincial Heritage Site (Grade II) or Local Heritage Site (Grade III). It is necessary to determine the significance of each undeclared heritage site and to write a statement of significance, which can then be attached to an application for declaration of that site (where required) to be submitted to SAHRA (South African Heritage Resources Agency). This will be extremely helpful to the management authority in decision-making about the management, protection and conservation of heritage sites. It is advisable that an overall Heritage Conservation Management Plan for the proposed Biosphere Reserve should be compiled to be included in an Integrated Management Plan.

The following project deliverables are proposed:

- Identification of heritage sites
- Determination of significance of heritage sites
- Development of a Heritage Conservation Management Plan for the overall management of heritage as well as for individual sites.

It is finally proposed that attention be given to an agreement on communication and collaboration between the Biosphere management authority and the management authority of the COHWHS (Cradle of Humankind World Heritage Site) with special reference to the management of heritage resources.

6. IMPLEMENTATION AND MONITORING

6.1 IMPLEMENTATION PLAN

The nine most important actions required to ensure appropriate implementation of the strategies proposed in the Management Plan has been identified and Action Plans developed that will assist management in initiating implementation through the Action Plans described below.

In terms of implementing this Management Plan, the following key Action Plans were developed:

- Endorsement Action Plan (see Section 6.1.1 below).

In terms of the Reserve Management, the following key Action Plans were developed:

- Organisational Structures Action Plan (see Section 6.1. 2 below);
- Personnel Appointments (see Section 6.1. 3 below);
- Organisational Procedures (see Section 6.1. 4 below); and
- Funding Operations (see Section 6.1. 5 below).

In terms of Resource Protection, the following key Action Plans were developed:

- Incorporation of Legal Systems (see Section 6.1.6 below).

In terms of Sustainable and Equitable Development Promotion, the following key Action Plans were developed:

- Project Initiatives (see Section 6.1. 7 below);
- Social Benefits (see Section 6.1. 8 below); and
- Marketing and Communication (see Section 6.1. 9 below).

As this section merely provides an overall set of broad strategies for immediate implementation, it will be necessary for the Management board from the outset to develop an annual Implementation Plan and Budget, based on current priorities and availability of resources, which should be reviewed annually and used as a workplan against which the executive needs to report.

For each of the identified priority actions, an Action Plan has been developed to assist with implementation. These Action Plans are described in the remainder of this section.

6.1.1 ENDORSEMENT ACTION PLAN

6.1.1.1 BACKGROUND

This Action Plan speaks to the Endorsement proposals (Refer Section 6) in the Management Plan.

6.1.1.2 SPECIFIC OBJECTIVE

As part of the UNESCO application procedure, it is necessary to ensure that the Magaliesberg Biosphere is endorsed at local, district, provincial and national levels of government, by prominent corporate business and by landowners or custodians of formally protected areas or larger portions of land under conservation stewardship, and that the Magaliesberg Biosphere nomination is approved by UNESCO.

In addition to the initial endorsement associated with the Magaliesberg Biosphere UNESCO application process, management should increasingly seek endorsement for the project from

individual people living within the Magaliesberg Biosphere to ensure that they conduct their activities and developments in accordance with guidelines relevant to the area of land that they occupy and to progressively expand the core area and buffer zones where appropriate, so as to ensure the protection of the natural and heritage environment and other unique features associated with the Magaliesberg Biosphere.

In addition, twinning relationships can be set up with suitable established international biosphere reserves so that there can be an exchange of information and knowledge to assist with the future development of the Magaliesberg Biosphere.

6.1.1.3 SPECIFIC STANDARDS

The Magaliesberg Biosphere must be endorsed, in writing, by the majority of people living and operating businesses within the Magaliesberg Biosphere, the local and district municipalities, provincial government and relevant national departments, to ensure their long term commitment to protect the Magaliesberg Biosphere and to create awareness of, and interest in, the Waterberg and the goals and objectives of the Magaliesberg Biosphere.

The Magaliesberg Biosphere nomination must be approved by UNESCO at the end of the application period to ensure that the Magaliesberg maintains its status as a biosphere reserve. The nomination documentation must be presented to the Man and Biosphere Country Representative by September 2012. A formal twinning relationship with mutual benefits needs to be established with the Finnish government.

6.1.1.4 RESPONSIBLE ENTITY

This process must be driven by the Magaliesberg Biosphere management board and Programme Co-ordinator.

6.1.1.5 CRITICAL SUCCESS FACTORS

This process can start as soon as the Magaliesberg Biosphere Management Plan is approved.

6.1.1.6 RECOMMENDED START AND COMPLETION DATES

Recommended start date for the application process was 1 September 2011 and completion date is September 2012. National endorsement will then be expected during December 2012, with UNESCO endorsement expected in 2013. The ongoing endorsement process should continue after 1 April 2012.

6.1.1.7 WAY FORWARD

Once the initial endorsement process required for the application process is completed, full implementation of the remaining Action Plans can begin.

6.1.1.8 ACTIVITIES

During the application process, the public participation consultants, together with the provincial department, will be identifying key individuals within the various applicable local structures, local and district municipalities, provincial departments and agencies and national departments who should be approached to obtain written endorsement of the Magaliesberg Biosphere. Specific effort should focus on individuals who have influence regarding:

- the inclusion of the Magaliesberg Biosphere guidelines within applicable municipal

- documents such as spatial development plans and land use management schemes;
- the drafting of legislation or regulations that would give the Magaliesberg Biosphere legal protection through the possible declaration of a protected environment; and
- the drafting of legislation or regulations that would give the Magaliesberg Biosphere legal protection through section 51 of National Environmental Management: Protected Areas Act.

Agreements will have to be drafted and will have to be signed by landowners or mandated custodians within the core zone, who will thereby undertake to conduct their activities and developments in accordance with the core zone guidelines. In addition, endorsement documents were developed for land owners or custodians, businesses, conservation agencies, government departments and NGOs who want to be members of the Magaliesberg Biosphere, whereby they can indicate their commitment to the Magaliesberg Biosphere.

Guidelines need to be developed and implemented for governing the use of the Magaliesberg Biosphere logo by signed up members.

The programme co-ordinator, together with the management board, should identify people and entities living or operating businesses within the Magaliesberg Biosphere as potential members of the Magaliesberg Biosphere.

The Management Plan must be formally adopted by the management board and steps taken to implement the content thereof.

Research must be conducted to identify suitable international and/or national reserves that would be willing to establish a twinning relationship.

6.1.1.9 BUDGET

The costs associated with establishing a twinning relationship could be limited to a possible trip by the CEO to visit the selected biosphere reserve/s and to spend time with the relevant personnel to gain knowledge and experience (R50 000).

The cost of drafting appropriate regulations or legislation will be carried by the applicable government department.

6.1.2 ORGANISATIONAL STRUCTURES ACTION PLAN

6.1.2.1 BACKGROUND

This Action Plan speaks to the Organisational Structures proposals (refer Section 2) in the Management Plan.

6.1.2.2 SPECIFIC OBJECTIVE

A new management board (currently MBIG), as well as the sub-committees, need to be established in line with the recommendations in Section 2, to ensure that the Magaliesberg Biosphere meets its stated goals and objectives. Portfolios and operating procedures need to be established for the various sub-committees to ensure that all necessary matters of importance can be dealt with in meeting the Magaliesberg Biosphere's stated goals and objectives

6.1.2.3 SPECIFIC STANDARDS

A new management board and appropriate sub-committees aligned with the recommendations of the Management Plan will be established as per the guidelines of Section 2. The number and the size of sub-committees should evolve and increase over time as capacity increases. It is important not to be over ambitious to the point that sub-committees only exist on paper and do not operate effectively and efficiently. Accordingly, it will be necessary to increase the number of members who sit on these committees over time, but at the same time ensuring that such members are committed to the portfolio that they have been entrusted with.

6.1.2.4 RESPONSIBLE ENTITY

The Magaliesberg Biosphere management board will be responsible for implementation of the Organisational Structures, with assistance from stakeholder representatives and possible input from other interested and affected parties living within the Magaliesberg Biosphere.

6.1.2.5 CRITICAL SUCCESS FACTORS

The management board should study and review the functioning of similar management boards managing similar biospheres and the functioning of their various sub-committees, to first hand determine what aspects are most crucial to the successful management of a biosphere.

Once a clear understanding has been established within the management board, an annual general meeting needs to be called by the management board and a detailed agenda needs to be drafted and sent out to all relevant parties who will be present at the annual general meeting, where the organisational structure and the functioning of the committees could be presented to all interested and affected parties. At the AGM, registered members could be recruited and as necessary, nominated or elected to serve on the various committees.

6.1.2.6 RECOMMENDED START AND COMPLETION DATES

The implementation of this strategy can commence after acceptance of the Magaliesberg Biosphere's nomination by UNESCO.

6.1.2.7 WAY FORWARD

Once Magaliesberg Biosphere nomination is accepted by UNESCO, MBIG could facilitate the process by calling for the nomination of representatives from the Constituent Structures identified in Section 2.1.3 and then establishing the recommended management board.

Once the management board has been established, it can call a first AGM to register members and populate the committee structures as prescribed in Section 2.

6.1.2.8 BUDGET

The costs of establishing the organisational structures of the Magaliesberg Biosphere will be minimal as MBIG has the capacity to carry out this activity.

Adequate on-going funding should be procured to maintain the positions of the core management team and secretariat contemplated in Section 2. As more funds are raised and generated, it could over time become possible to supplement the services of voluntary committee members with that of specialist staff employed by the biosphere.

6.1.3 PERSONNEL APPOINTMENTS ACTION PLAN

6.1.3.1 BACKGROUND

This Action Plan speaks to the Personnel proposals (refer Section 2.1.5) in the Management Plan.

6.1.3.2 SPECIFIC OBJECTIVE

The Magaliesberg Biosphere is faced with many varied opportunities, needs and challenges and needs to be run efficiently and effectively along business principles. To achieve this, the Magaliesberg Biosphere from the outset requires a core team of dedicated and full-time employees to achieve its stated goals and objectives.

6.1.3.3 SPECIFIC STANDARDS

The number of personnel to be appointed will be determined by the specific requirements and needs of the Magaliesberg Biosphere, as well as the available funds. In the short term, at least a CEO supported by a small secretariat is required (see Section 2.1.5). Appointments are only to be made when circumstances demand such appointments and available funds allow for such appointments.

6.1.3.4 RESPONSIBLE ENTITY

The Magaliesberg Biosphere management board will take responsibility for all personnel recruitment.

6.1.3.5 CRITICAL SUCCESS FACTORS

Suitable ongoing funds need to be secured for the specific purpose of appointing fulltime personnel.

6.1.3.6 RECOMMENDED START AND COMPLETION DATES

Staff procurement can only commence as appropriate funds are secured. The duration of the posts could be linked to the biosphere review period.

6.1.3.7 WAY FORWARD

Recruitment will follow the availability of funds.

6.1.3.8 BUDGET

CEO: 1 x R500 000 p/a

Administrators/PRs: 2 x R250 000 p/a

PA: 1 x R150 000 per annum.

Total Personnel Budget: R1,150 000 per annum.

6.1.4 ORGANISATIONAL PROCEDURES ACTION PLAN

6.1.4.1 BACKGROUND

This Action Plan speaks to the requirement for the Magaliesberg Biosphere to operate effectively and efficiently. This requires a set of formal Organisational Procedures.

6.1.4.2 SPECIFIC OBJECTIVE

It is necessary to implement procedures to ensure that the management board, as well as the sub-committees, operate effectively so that the stated goals and objectives of these committees and the Magaliesberg Biosphere can be realised. Steps must be taken to ensure that any person elected to represent a committee is familiar with the operational procedures and is committed to conforming to such procedures.

6.1.4.3 SPECIFIC STANDARDS

General operating procedures dealing with issues of administration, monitoring, record keeping, communication and reporting should be in place as well as operating procedures relevant to a specific committee or discipline.

6.1.4.4 RESPONSIBLE ENTITY

The Magaliesberg Biosphere management board will be responsible for drafting procedures in partnership with the sub-committees. The various sub-committees, as well as the people elected to represent and act on behalf of such committees, will be responsible for compliance with procedures.

6.1.4.5 CRITICAL SUCCESS FACTORS

In the absence of current organisational procedures it is necessary to determine where the need is greatest so that procedures can be done for those areas first. Amendments may also have to be made to the section 21 company articles of association.

6.1.4.6 RECOMMENDED START AND COMPLETION DATES

This process can start as soon as the UNESCO approval is obtained.

Completion will be when new organisational procedures have been implemented and are deemed to be operating effectively.

6.1.4.7 WAY FORWARD

The establishment of portfolio sub-committees and the election of members to represent and act on behalf of such sub-committees can follow the finalisation of the first set of procedures.

6.1.4.8 BUDGET

Minimal budget will be required to develop and implement the organisational procedures. A provision of R40 000 is set aside for this purpose.

6.1.5 FUNDING OPERATIONS ACTION PLAN

6.1.5.1 BACKGROUND

This Action Plan speaks to the Funding proposals (refer 2.1.1) in the Management Plan.

6.1.5.2 SPECIFIC OBJECTIVE

It is important to secure sufficient and ongoing funds to allow for future planning, to rent/purchase office space, allow for the appointment of personnel to manage the day to day affairs of the

Magaliesberg Biosphere and to implement viable and worthy initiatives that benefit both the people living within the Magaliesberg Biosphere as well as the environment and cultural heritage that is key to the Magaliesberg Biosphere's protection and sustainable use.

It is necessary to actively engage with potential sources of donor funding in order to secure both the immediate and long term financial future of the Magaliesberg Biosphere.

6.1.5.3 SPECIFIC STANDARDS

Institutions that have a statutory responsibility for the management and/or support of the Magaliesberg Biosphere, industries and mines in the area that have a conservation or social responsibility to the region and/or have a negative environmental impact on the Magaliesberg Biosphere and NGOs in support of conservation and social programmes (local, regional and international) are all potential funders and should be approached for grant funding support.

Land owners, businesses and agencies that endorse the Magaliesberg Biosphere and make use of its logo to promote their image and their businesses should contribute to the funding of the biosphere through the payment of royalties.

Members of the Magaliesberg Biosphere should receive benefits commensurate with their membership and should pay an annual membership fee to contribute towards the management costs associated with the Magaliesberg Biosphere.

Funding should be procured for both ongoing management functions as well as for specific projects. These funds should be managed and accounted for separately.

6.1.5.4 RESPONSIBLE ENTITY

The CEO and the Magaliesberg Biosphere management board are responsible for this action.

6.1.5.5 CRITICAL SUCCESS FACTORS

Government departments (national, local and provincial), education and research institutions and non-government organisations should be researched to determine their suitability as possible sources of donor funding.

Contact CEOs from other South African Biosphere reserves and discuss possible ways forward regarding funding. Arrange for the CEO to undertake an internship with an established biosphere reserve, either locally or internationally.

Develop and implement a formal fundraising plan.

6.1.5.6 RECOMMENDED START AND COMPLETION DATES

This action plan needs immediate implementation and can be initiated by MBIG until the new management board is in place. This activity is ongoing.

6.1.5.7 WAY FORWARD

Funding should be sought prior to the establishment of the management board so that funds can be in place prior to the appointment of Magaliesberg Biosphere personnel and the initiation of the Implementation Plan proposed in this Section and the proposed Demonstration Projects can

commence. As formal funding commitments are obtained, personnel can be employed and projects and programmes can be implemented.

6.1.5.8 BUDGET

The budget for the payment of the CEO and the core personnel should be procured as a first priority. The personnel operating costs are estimated at R1,25m p/a (see Section 6.1.3.8). Assuming a staff cost percentage of 60%, an additional budget of R0,75m p/a can be expected for non-staff costs. This brings the total operating costs of the Magaliesberg Biosphere to an amount of R2,0m p/a or R167,000 per month.

These costs are calculated at present value and will escalate annually, at least in line with the Consumer Price Index.

6.1.6 INCORPORATION OF LEGAL SYSTEMS ACTION PLAN

6.1.6.1 BACKGROUND

This Action Plan speaks to the Spatial Development Framework and Development Guideline proposals for the various zones of the Magaliesberg Biosphere (refer Section 3.2).

6.1.6.2 SPECIFIC OBJECTIVE

The objective is to facilitate the protection and management of the Magaliesberg Biosphere through the promulgation of Biosphere provincial regulations, as well as the inclusion of the Magaliesberg Biosphere zones (core, buffer and transitional areas) and related development and land use guidelines into Environmental Management Frameworks, Spatial Development Framework Plans and Land Use Management Schemes at all levels of government and pro-actively advocating for their alignment with one another.

6.1.6.3 SPECIFIC STANDARDS

These guidelines should be applicable to the respective zones throughout the entire Magaliesberg Biosphere, should be incorporated into all land use tools administered by government, should be enforced by all levels of government having jurisdiction over land use and monitored by the Magaliesberg Biosphere in collaboration with its members and the relevant government agencies.

6.1.6.4 RESPONSIBLE ENTITY

The Department of Economic Development, Environment, Conservation and Tourism (DEDECT) is responsible for initiating the promulgation of provincial regulations.

The Magaliesberg Biosphere management board will create the necessary awareness with the relevant district and local municipalities, whom in turn are responsible for incorporating the land use guidelines into all land use schemes and land use instruments and regulations.

6.1.6.5 CRITICAL SUCCESS FACTORS

The Magaliesberg Biosphere Management Plan and Implementation Plan needs to be formally endorsed by the responsible national and provincial government agencies, the agencies and entities representing the land owners of the core areas and the buffer zones, and in particular the district and local municipalities which have a legal mandate to control development and land use. The

endorsement forms have to reflect a formal commitment to uphold the development and land use guidelines of the Magaliesberg Biosphere.

6.1.6.6 RECOMMENDED START AND COMPLETION DATES

Once a decision has been made on the most suitable means of offering formal legal protection to the Magaliesberg Biosphere, immediate steps should be taken to lobby the relevant government departments.

The legislative process is generally very slow and the drafting and eventual implementation of new legislation can take several years. It will be necessary to find somebody within the relevant government department who are aware of the issues facing the Magaliesberg Biosphere that would be willing to push new legislation through.

The endorsement phase of the UNESCO application process which will be running between January and April 2012 offers the ideal opportunity for municipalities to commit towards alignment of their development and land use by-laws with that of the Magaliesberg Biosphere. The incorporation into municipal by-laws and land use schemes will have to be synchronised with the appropriate planning cycles of local government.

In the immediate short-term, The DEDECT should; i) draft land use guidelines for the respective zones of the Magaliesberg Biosphere as part of the UNESCO application process; ii) submit them for public scrutiny between September 2011 and March 2012; iii) submit them for review by the Steering Committee in March 2012; and iv) incorporate them into the UNESCO nomination documentation by June 2012.

For long-term protection of the Magaliesberg Biosphere; i) the Magaliesberg Biosphere Management Board should through collaboration with local government ensure incorporation of the land use guidelines as recommended above, into all land use legal instruments; and ii) DEDECT should draft regulations governing the management of the Magaliesberg Biosphere (or ideally all biospheres in the Province) and publish them in the Government Gazette by March 2014. If DEDECT does not have the necessary capacity, it should appoint an appropriate person or body to perform the task.

6.1.6.7 WAY FORWARD

The endorsement phase should be utilised to obtain formal commitments for alignment of guidelines from relevant government agencies. This short-term issue should be concluded at the March 2012 Steering Committee meeting.

Provision should be made in the 2013/14 budget for the drafting and promulgation of biosphere regulations for at least the Magaliesberg Biosphere or for all present and future biospheres of the North West Province.

Once the necessary instruments are in place, ongoing monitoring of land use and evaluation of new applications will be needed to ensure compliance.

6.1.6.8 BUDGET

The drafting of land use guidelines was covered under the UNESCO nomination process budget. The cost of incorporating land use guidelines into land use planning and management instruments and the cost of the proposed new regulations for biospheres and the associated public participation process will be carried by the legal sections of the relevant local and provincial government

department/s.

6.1.7 PROJECT INITIATIVES ACTION PLAN

6.1.7.1 BACKGROUND

This Action Plan speaks to a number of long term initiatives that are not necessarily important to get the Management Plan kick-started, but are still important as long term strategies. It covers the Conservation, Tourism Development, Socio-Economic, Alternative Income, Investment Promotions, Education, Training and Research Promotion proposals (refer Sections 4.1, 4.2, 4.3, 4.4, 5.2 and 5.3) in the Management Plan.

6.1.7.2 SPECIFIC OBJECTIVE

The Magaliesberg Biosphere needs to be pro-active in the implementation of suitable initiatives and projects that could result in benefits to the Magaliesberg Biosphere community and the environment. The purpose of the implementation of suitable initiatives and projects is necessary in order for the Magaliesberg Biosphere to be seen as a credible concept that results in tangible benefits.

6.1.7.3 SPECIFIC STANDARDS

The types of initiatives to be implemented must strike a balance between socio-economic and environmental conservation needs and requirements. Accordingly, the scope will be wide ranging and will be dependent on the nature of the issues that need to be dealt with. These initiatives should cover at least all of the following strategies recommended in the Management Plan:

- Conservation (Section 4.1.3.1);
- Tourism Development (Section 4.1.3.2);
- Socio-Economics (Section 4.1.3.3);
- Alternative Income (Section 4.1.3.4);
- Investment Promotions (Section 4.2);
- Marketing (Section 4.3);
- Social Benefits (Section 4.4);
- Environmental Education and Skills Training (Section 5.2); and
- Research (Section 5.3).

Each of these focus areas should at least annually be thoroughly interrogated to review existing and identify new initiatives and each initiative will need a Programme Plan of its own.

6.1.7.4 RESPONSIBLE ENTITY

Relevant sub-committees acting in collaboration with NGOs and government departments at national, provincial and municipal level will take responsibility for the individual projects and programmes covered under this action plan.

6.1.7.5 CRITICAL SUCCESS FACTORS

The following activities are necessary:

- Identification of priority initiatives as recommended above;
- Obtaining the necessary funds for each programme or project;
- The appointment of people/entities to manage the implementation and day to day activities

of the individual projects and programmes; and

- Establishing relationships with organisations and departments that are already actively implementing similar initiatives within the Magaliesberg Biosphere to create synergies and avoid unnecessary duplication and overlaps.

6.1.7.6 RECOMMENDED START AND COMPLETION DATES

The start dates will be determined on a project by project basis and the end dates as and when the desired outcomes of the various initiatives have been achieved.

6.1.7.7 BUDGET

The costs will be project or programme specific and determined by their own workplans.

6.1.8 SOCIAL BENEFIT PROGRAMME ACTION PLAN

6.1.8.1 BACKGROUND

This Action Plan speaks to the Social Benefit proposals (refer Section 4.4) in the Management Plan. The Magaliesberg Biosphere is uniquely placed at the interface between the highly developed and impacting urbanised and industrialised areas of Gauteng and Rustenburg on the one hand and the highly valued and vulnerable archaeological, heritage, biodiversity and landscape attributes of the Magaliesberg mountain range. The opportunity exists to capitalise on this position to not only find solutions to mitigate against the impact on the natural environment, but also to capitalise on business and job opportunities for deprived and impoverished rural communities living within the biosphere. The mines and industries in the area all have corporate social and environmental programmes which could be aligned with the objective of addressing the environmental and social strategies of the Magaliesberg Biosphere.

6.1.8.2 SPECIFIC OBJECTIVE

The objective is to identify and develop innovative projects and programmes in partnership with civil society, government, industry and non-government agencies to; i) act as pilot projects for developing and testing new green technologies; ii) address the social needs of the communities of the area; and iii) assist communities to reduce their carbon footprint and live more sustainably.

6.1.8.3 SPECIFIC STANDARDS

The projects and programmes should achieve the following standards within target communities:

- Increased participation and representation in the biosphere structures and committees and participation within local government structures and planning exercises
- Improved environmental awareness
- Increased skills to capitalise on opportunities in environmental programmes, social programmes and tourism opportunities
- Increased involvement of NGOs in the fields of environmental and social programmes
- improved levels of sustainable living (e.g. percentage of households using run-off water and alternative energy sources)
- Increased number of innovative green technology demonstration projects
- Improved basic services
- Increased partnerships and flow of funding from industries into community programmes and projects

- Increased levels of employment.

6.1.8.4 RESPONSIBLE ENTITY

The Magaliesberg Biosphere management board will be responsible for this action plan.

6.1.8.5 CRITICAL SUCCESS FACTORS

The most critical success factors would be:

- Working through appropriately representative and mandated community structures
- Creating appropriate awareness within the communities
- Establishing the necessary partnerships
- Obtaining the necessary buy-in from NGOs and industry as a source of funding for projects and programmes
- Creating and maintaining appropriate oversight and project implementation capacities.

6.1.8.6 RECOMMENDED START AND COMPLETION DATES

This Action Plan should be initiated during 2013 after approval by UNESCO and should continue on an ongoing basis.

6.1.8.7 WAY FORWARD

This action plan requires an ongoing engagement with the IDP processes and relies on relationship building with industries and the Municipalities.

Development of an overarching prospectus of current and potential NGO work and priority projects and programmes should be carried out to assist with procuring donor funding.

6.1.8.8 BUDGET

It is proposed that an initial budget of R250 000 is provided to identify priority projects, to establish the necessary structures and to prepare a basic prospectus that could be taken to NGOs and industries for support funding.

6.1.9 MARKETING AND COMMUNICATION

6.1.9.1 BACKGROUND

This Action Plan speaks to the Marketing proposals (refer Sections 4.2 and 4.3) in the Management Plan.

6.1.9.2 SPECIFIC OBJECTIVES

The specific objectives are to:

- Establish and maintain an effective market research programme that provides and distributes updated tourism market information to the Magaliesberg Biosphere Management and Public and Private sector partners and stakeholders, in order to inform decision-making, marketing efforts and opportunities for new product development.
- Effectively plan and budget for the marketing of the Magaliesberg Biosphere to the appropriate markets through the relevant marketing channels and to promote a common vision and collaborative marketing by all tourism stakeholders.

- Promote partnership opportunities for sustainable socio-economic development and conservation, research, education, monitoring and any other projects or programmes important to the success of the Magaliesberg Biosphere with government departments, NGOs, international and national support agencies or the private sector, be it for financial, institutional, technical or other support requirements.
- Establish effective communication channels to disseminate relevant information to potential visitors, investors and private sector partners and to facilitate and support the establishment of well-managed tourism information centres at key locations throughout the Magaliesberg Biosphere.

6.1.9.3 SPECIFIC STANDARDS

Annual research

Annual research is required on macro-market trends and forecasting at international, national and provincial level; micro market statistics on tourist arrivals, profiles and characteristics for the Magaliesberg Biosphere; and tourism industry growth reports.

Marketing plan

The Marketing Plan will include at least the following elements:

- Marketing vision, goals and objectives of the Magaliesberg Biosphere;
- Institutional arrangements;
- Target markets and market segmentation;
- Strategies for targeted markets;
- Positioning and appropriate branding of the Magaliesberg Biosphere:
 - Unique selling points;
 - Marketing name for the area;
 - Brand identity (including by-line, logo, etc.);
 - Brand building strategies.
- Promotion and communication strategy:
 - Marketing tools to be used for each target market;
 - Communications & information dissemination.
- Marketing budget;
- Action Plans and Timeframes;
- Implementation and monitoring of brand awareness.

The Plan is adopted by all key stakeholders (i.e. provincial departments, district- and local municipalities and other key role players).

The recommendations of the Marketing Plan is adopted and implemented through collaborative effort over a period of three years. The Marketing Plan is reviewed every five years, in line with updated research information

Partnerships

The Magaliesberg Biosphere Management will as a critical priority step negotiate and establish firm strategic partnerships and cooperation with partners to ensure effective support for the programmes of the Magaliesberg Biosphere. A good report and regular engagement will be maintained with partners.

Communication

It is necessary that effective communication channels are established through:

- Interactive and user-friendly websites;
- Tourism route guides and maps;
- An up-to-date partner contact database;
- An established partnership programme; and
- The establishment of well-managed tourism information centres.

6.1.9.4 RESPONSIBLE ENTITY

The Socio-Economic and Tourism Committee will be responsible under supervision of the Magaliesberg Biosphere management board, with assistance and inputs from the Education and Research Committee and the Development Planning and Monitoring Committee.

6.1.9.5 CRITICAL SUCCESS FACTORS

The following has to be in place before proceeding:

- Organisational structures of the Magaliesberg Biosphere (Section 2.1.3);
- Funding for research needs to be procured (Section 2.1. 1);
- Market research programme completed (Section 4.3.3.1); and
- Tourism Spatial Plan completed (Section 4.1.3.2).

6.1.9.6 ACTIVITIES

The following critical activities are necessary:

Research

- Secure funding for Research Programme;
- Appoint service provider to undertake market research;
- Disseminate results to stakeholders; and
- Update market research every 5 years.

Marketing Plan

- Secure funding for the Marketing Plan;
- Appoint a service provider to develop a comprehensive Marketing Plan;
- Submit / negotiate funding and approvals for implementation of the Marketing Plan to Government Departments, grant funding/support agencies, local Industries through Corporate Social Investment (CSI) programmes, etc;
- Support implementation and monitor progress; and
- Review Marketing Plan every 5 years.

Partnerships

- Identify key programmes and relevant support needs;
- Identify potential partner agencies/departments that can provide the required support;
- Establish contact and negotiate cooperation/partnership/support agreements; and
- Maintain continuous contact with partners.

Communication

- Developing a suitable brand;
- Establishment of clear communication channels and procedures for various target groups and stakeholders;
- Maintenance of an interactive website and partner contact database;

- Identification of investment opportunities;
- Obtaining commitment and funding for information dissemination projects;
- Appointing service provider/s to develop tourism route guides and maps; and
- Facilitating/negotiating and supporting investments (see Section 4.2) and the establishment of tourism information centres in line with the Tourism Spatial Plan (refer Section 4.1.3.2).

6.1.9.7 RECOMMENDED START AND COMPLETION DATES

The action plan can be started by MBIG, the current interim board of the Magaliesberg Biosphere and the Magaliesberg Biosphere Interim Steering Committee and fully implemented after UNESCO approval which is expected in 2013.

6.1.9.8 BUDGET

The following budget components have been identified:

- Securing funding: Internal
- Market Research: R500 000 every 5 years
- Continuous market intelligence and collection of general market information from regularly published sources: R50 000 per annum
- Marketing Plan: R500 000 once-off
- Marketing Plan review: R75 000 every 5 years
- Implementation:
 - Implementation costs to be determined by Marketing Plan
 - Magaliesberg Biosphere contribution of R200 000 per annum towards marketing
- Branding: R250 000
- Partnering: Internal
- Establishment of communication channels: Internal
- Maintenance of websites and database: Internal
- Securing of funding: Internal
- Development and printing of route guides and maps: R400 000 per annum (funding to be sourced for additional printing from external funding sources as required)
- Facilitation and support of tourist information centres: Internal
- Support of investment promotion: To be funded by promoters

6.2 IMPLEMENTATION PROGRAMME

The above priority Action Plans should be implemented in accordance with the following programme:

Table 6.1: Implementation Programme

ACTION PLANS	MONTHS (April 2012 – March 2013)												AFTER APPROVAL & ONGOING	
	2012										2013			
	04	05	06	07	08	09	10	11	12	01	02	03		
Endorsement														
Organisational Structures														
Personnel Appointments														
Organisational Procedures														
Funding														
Incorporate Legal Systems														
Project Initiatives														
Social Benefits														
Marketing & Communication														

6.3 IMPLEMENTATION BUDGET AND POTENTIAL FUNDING SOURCES

The key broad financial requirements for implementation of the Management Plan were assessed, in accordance with the various recommendations made for the Magaliesberg Biosphere. This assessment is based on the Action Plans described in Section 6.1 above.

Table 6.2: Implementation Costs (Current Values in South African Rand)

ACTION PLANS	COST ESTIMATES (RAND)			%	PROPOSED FUNDING SOURCES
	2012/13	2013/14	2014/15		
Endorsement	50 000				DEDECT
Organisational Structures					N/A
Personnel Costs		1 150 000	1 150 000	39%	Benefactors/members
Organisational Procedures	40 000				Benefactors
Operational Costs		900 000	900 000	31%	DEDECT/Benefactors
Incorporate Legal Systems					Relevant govt departments
Project Initiatives		Ad hoc	Ad hoc		Project specific
Social Benefits	250 000				DEDECT
Marketing & Communication:					
Research	500 000	50 000	50 000		DEDECT/Sponsors
Marketing Plan	500 000				DEDECT/Sponsors
Branding		250 000	250 000	30%	Own/members
Marketing		200 000	200 000		Own/members
Route Guides & Maps		400 000	400 000		Members
TOTAL	1 440 000	2 950 000	2 950 000		

6.4 MANAGEMENT PLAN IMPLEMENTATION ROADMAPS

6.4.1 MANAGEMENT BOARD ROADMAP

Once the Magaliesberg Biosphere management board has been established, the onus will rest with the members of the management board to consider the content of the Management Plan and begin implementing those aspects that are regarded as a priority and which can be implemented effectively. One of the shortcomings of the biosphere reserve concept is that it is not, other than peripherally in terms of the latest EIA regulations, a recognised protected area concept in any South African legislation and is, therefore, not provided with any formal means of legislative protection. Accordingly, much will depend on the ability of the Magaliesberg Biosphere management board to, through the various means available, gain legal recognition of the Magaliesberg Biosphere by way of the inclusion of the Management Plan guidelines in various district and local municipal, as well as provincial governance tools and mechanisms. Although it is anticipated that the land use guidelines contained in this Management Plan will eventually find its place in the various legal instruments of provincial and local government, the Magaliesberg Biosphere will have to rely on other methods to achieve its objectives.

In order to achieve the above, the management board will have to make use of the rights of public participation in the legislative process that are afforded to South African's. The first and foremost piece of legislation that created the right to public participation at the municipal level is section 152 of the Constitution, which specifically places an onus on local government structures to encourage the involvement of communities and community organisations in the matters of local government. This section of the Constitution partly necessitated the drafting of the Local Government: Municipal Systems Act 32 of 2000, which contains a whole chapter on community participation and which specifically places an onus on municipalities to *inter alia* "encourage and create conditions for the local community to participate in the affairs of the municipality including the preparation, implementation and review of its integrated development plan." The Municipal Systems Act proceeds to state that municipalities must establish mechanisms, processes and procedures that allow local communities to participate in the affairs of the municipality and must provide for:

- "the receipt, processing and consideration of petitions and complaints lodged by members of the community;
- public meetings and hearings;
- consultative sessions with locally recognised community organisations..."

Accordingly, there is no doubt that the management board has a legal right to become involved in the activities of the municipality, including the preparation, implementation and review of integrated development plans. It is this right which the management board needs to harness in order to promote the inclusion of the numerous Management Plan guidelines in the various relevant municipalities' planning documents. This can be achieved through the implementation of a number of recognised mechanisms of public participation including:

- **Lobbying** – Involves persuading relevant key municipal personnel with decision making powers, such as councillors, to support a cause or to take certain actions. It will be necessary to build relations and cement existing relations with the key municipal personnel and encourage trust and mutual support for common goals and objectives. However, lobbying does not necessarily only have to focus on municipal officials, as such activities can also focus on companies and organisations outside of municipal structures and which may be in a position to assist and support the goals and objectives of the Magaliesberg Biosphere. This may lead to having greater influence on municipal decision makers.

- **Ward Committees** – ward committees should be established by municipalities as a means of engaging communities in municipal decision making. A ward committee should consist of the councillor and a maximum of 10 people from the ward who are elected by the community. The role of ward committees is to “make sure that voters are involved in and informed about council decisions that affect their lives... The ward committees’ main tasks are to communicate and consult with the community in respect of development and service plans”. Accordingly, it may be worthwhile seeking representation on any relevant and operational ward committees and if this is not viable, then attendance at ward committee meetings should be a requirement in order to ensure that the interests of the Magaliesberg Biosphere are represented at such meetings. Involvement in ward committees will also provide the Magaliesberg Biosphere Management with valuable information and input regarding municipal budgets.
- **Consider Draft IDPs and By-laws** – The management board must consider the content of any draft IDPs and by-laws and compile formal replies thereto to try and influence the inclusion of Magaliesberg Biosphere specific concerns and issues therein. In addition to drafting formal submissions, representatives of the Magaliesberg Biosphere should attend public hearings relevant to draft IDPs and by-laws, which public hearings are discussed in more detail below.
- **Attend Public Hearings** – Municipalities are obliged to give notice regarding public hearings that are required to be held in relation to certain municipal activities, including the development and drafting of municipal IDPs and by-laws as well as assessing and approving municipal budgets. Representatives of the Magaliesberg Biosphere should attend public hearings to ensure that the stand point of the Magaliesberg Biosphere is recorded in the minutes of these meetings.
- **Formalise relations** – A memorandum of understanding should be entered into between the Magaliesberg Biosphere and the respective district municipalities with jurisdiction over the area. Similar memorandums of understanding should be entered into with the local municipalities within the boundaries of the Magaliesberg Biosphere, in order to promote common goals and objectives. This effort should be combined with the process of procuring endorsement for the Magaliesberg Biosphere, as prescribed in Section 6.1, and should obtain the commitment for incorporation of the Magaliesberg Biosphere guidelines into local government legal instruments.
- **Consultation** – The management board should establish formal consultation relations with the district and local municipalities to ensure that all parties are kept updated with developments on both sides and that such relations can, where necessary, be called upon when specific levels of expertise are required to deal with arising issues. This relationship can also be utilised for direct yet indiscreet lobbying purposes.
- **Media** – Develop relations with media networks so that such relations can be harnessed to promote the Magaliesberg Biosphere and the causes relevant thereto, which will assist with bringing the Magaliesberg Biosphere to the attention of decision makers.

The Magaliesberg Biosphere management board should also establish a strong relationship with the provincial departments and such relationship should be maintained and developed overtime. In the event that it is decided that it would be beneficial for the Magaliesberg Biosphere to be declared a limited development area in terms of the Environmental Management Act, then some of the above listed public participation mechanisms will have to be employed by the management board to realise this goal. In this instance, it would be crucial to harness existing well established relationships. Representatives of the Magaliesberg Biosphere should also attend public hearings relevant to provincial bills that are being discussed and which may have a bearing on the Magaliesberg Biosphere. Guidance could also be sought from counterparts in the Western Cape who may have

been involved in the development of draft provincial biosphere legislation.

It would certainly be in the interest of the Magaliesberg Biosphere to work on establishing such relations with relevant national government departments and/or officials to bring the objectives and goals of the Magaliesberg Biosphere to the attention of decision makers at a national level. To achieve this, it would certainly necessitate adopting some of the public participation mechanisms recommended above. It may well be difficult for the management board to place the Magaliesberg Biosphere at the forefront of national decision maker's agendas and it is, therefore, recommended that emphasis be placed on district and local municipal as well as provincial public participation as it is at this level that the most influence can be applied.

6.4.2 THE INCORPORATION INTO PLANNING INSTRUMENTS

The following steps need to be taken to ensure that the proposed policy document is incorporated by the relevant local municipalities:

- Introduce the Magaliesberg Biosphere Management Plan document to Officials/Councillors/Stakeholders and Community;
- Have workshops and obtain the consent to implement the policy/plan;
- After consent has been obtained, request then that the SDFs and LUMS be reviewed to include this policy document;
- Include reviews in IDP (for budget purposes);
- Once the project is approved:
 - Appoint service providers for reviews; and
 - Ensure that Magaliesberg Biosphere Management Plan is introduced to the steering committee/stakeholders as an important document to be included in the reviews.

SDF Reviews:

- Include Magaliesberg Biosphere Zones in municipal wide SDFs; and
- Include all guidelines related to the zones.

LUMS:

- Include a set of definitions as included in the Magaliesberg Biosphere Management Plan; and
- Include the development parameters as well as the specific conditions and limitations applicable to the Magaliesberg Biosphere.

6.5 EVALUATION AND REPORTING STANDARDS AND SYSTEMS

The strength of the biosphere system, as set out in the Seville Strategy and the Vision for Biosphere Reserves, is the recognition that each biosphere reserve faces its own unique set of challenges and dynamics, and that the key players to which the biosphere reserve management is accountable are first and foremost the various stakeholder groupings present within the reserve itself. Objective II.1 of the Seville Strategy is to secure the support and involvement of local people and no less than nine recommendations are made in the context of this objective. States are encouraged to establish regional and/or thematic sub-networks of biosphere reserves, and promote development of information exchanges within the framework of these sub-networks. Based on these recommendations, individual biosphere reserves are encouraged to share information with the provincial and national MaB committees, but are not accountable to them in a way that requires

formal reporting standards and systems.

In contrast, individual biospheres are accountable to the International Coordinating Council (ICC) of UNESCO's MaB programme, upon whose recommendation their continued inclusion within the World Network of Biosphere Reserves relies. The status of each biosphere reserve is subject to a periodic review every ten years, based on a report by the concerned authority, and forwarded to the Secretariat by the State concerned. It is, therefore, to the conditions of the periodic review that one must turn to consider the standards and systems of evaluation and reporting.

6.5.1 STANDARDS

The following key aspects are reported on during the periodic review:

- **Zonation** – including a justification of each zonation in terms of the various roles of biosphere reserves;
- **Human activities** – including a description of the population living in the reserve, the cultural significance of the site, the use of resources by local populations in each zone, and the income and benefits to local communities;
- **Research and monitoring programmes** – including past and on-going research and/or monitoring, and the extent to which the results of research programmes have been taken into account in the management of the biosphere reserve;
- **Education, training and public awareness programmes** – including types of activities related to environmental education and public awareness; and
- **Institutional aspects** – including the existence of a Management plan/policy, Financial source(s) and yearly budget, mechanism for consultation of local communities (and level of participation of local communities), the existence or otherwise of a protection regime of the core area and possibly of the buffer zone and land tenure of each zone.

The extent to which the biosphere reserve is succeeding in its mandate is then measured against the four broad goals as identified at the Seville Conference, namely:

- To use the biosphere reserve to conserve natural and cultural diversity;
- To use the biosphere reserve as a model of land management and approaches to sustainable development;
- To use the biosphere reserve for research, monitoring, education and training; and
- To implement the biosphere reserve concept by harmonising biosphere reserve functions through adequate planning and management.

The periodic review requires considerable detail in reporting, and provides an evaluation process that while infrequent in nature is of sufficiently serious implication to ensure that the necessary processes and programmes of action are maintained during the ten year period intervals.

6.5.2 SYSTEMS

The system required for the periodic review will be a report drawn up by the relevant provincial department (in this case DEDECT) in close cooperation with the Magaliesberg Biosphere management board. This report is forwarded to DEA, which submits it to the ICC. The Magaliesberg Biosphere's first periodic review report should be due before the end of 2023, if the application is approved in 2013.

ANNEXURE 1 – LAND USE GUIDELINES FOR THE MAGALIESBERG BIOSPHERE

DEVELOPMENT AND LAND USE GUIDELINES FOR THE MAGALIESBERG BIOSPHERE

1 DEVELOPMENT AND LAND USE GUIDELINES

The development and land use guidelines should be ready in conjunction with Section 3 of the Magaliesberg Biosphere Management Plan (2011); are aimed at protecting the special attributes of the Magaliesberg Biosphere and its landscape; and have been set with eco-tourism principles in mind.

The intention is to promote conditions to protect the integrity of the MAGALIESBERG BIOSPHERE in respect of the conservation of existing ecosystems and biodiversity, the diversity of fauna and flora, the visual appearance, the context of core zone, and the limitation of potentially adverse impacts of human development on the Biosphere.

2 DEFINITIONS

Insofar as these terms are to be used in the proposed regulations and town planning/land use management schemes, they may need to be adjusted to fit existing definitions used in such documents.

*AGRICULTURE - land that is used or intended to be used for buildings and land uses associated with farming practices, and specifically for the following activities:

- Production of food and fibre;
- Cultivation of crops;
- Farming of livestock, poultry and bees;
- Horticulture and market gardening;
- Urban agriculture; and
- The use of buildings for associated activities, including educational activities.

AGRI-INDUSTRY- land and buildings used for retail trade and industrial activities in only fresh products produced on the farm (or adjacent farms), and related services, education and administration conducted on agricultural land and in agricultural buildings.

BIODIVERSITY - a measure of the number and relative abundance of biological species. The variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.

BUILDING- a structure or building for which building plans are required to be submitted for municipal approval in terms of the National Building Regulations and Standards Act, 103 of 1997.

CARAVAN PARK - land provided with adequate ablution facilities for the temporary accommodation of mobile dwelling units and / or tenting or camping ground.

COMMUNITY SERVICES - Community projects that focus on conservation/tourism and sustainable resource utilisation, schools, clinics, and the like

CONFERENCE FACILITY - a building designed for use or used for a lecture hall, training facility, meetings, conferences, symposiums and related uses.

CONSERVANCY - informally protected area that has been established on a voluntary basis by a group of land owners.

CONSERVATION ACTIVITIES- purposes normally or reasonably associated with the use of land for the preservation or protection of the natural or built environment, including the preservation or protection of the physical, ecological, cultural or historical characteristics of land against undesirable change or human activity.

CULTURAL HERITAGE SITE - all world, national and provincial heritage sites (archaeological sites, graves, forts, rock art sites, battlefields, conservation-worthy buildings as well as monuments, memorials and natural sites).

DEVELOPMENT SITE – a site on which a development is built, including related grounds, gardens, parking areas, engineering services and administrative facilities.

DEVELOPMENT FOOTPRINT- area of site covered by building and related facilities and infrastructure measured in square metres.

DWELLING UNIT - an interconnected suite of rooms, which does not include more than one kitchen, designed for occupation and use by a single family or extended family as well as a maximum of three (3) unrelated persons and which may include such outbuildings and servants quarters as are ordinarily incidental thereto.

ENGINEERING SERVICE- facilities for the provision of water, sewerage, electricity, municipal roads and storm water drainage, and refuse sites.

ENVIRONMENTAL EDUCATION- facilities for teaching environmentally related topics.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) – an evaluation of the environmental effects of development in terms of the requirements of the National Environment Management Act, 1998 (Act 107 of 1998).

ENVIRONMENTAL MANAGEMENT PLAN - a management plan as contemplated in terms of section 11 of the National Environmental Management Act, 1998 (Act 107 of 1998) or section 39 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

ENVIRONMENTALLY RESPONSIBLE LODGES AND CAMPS – lodges and camps that are sited, designed, constructed and managed along environmentally friendly principles, with the aim of minimising its negative environmental impact through sensitive placement and by utilising environmentally friendly materials and technologies.

ERECTION OF A BUILDING - includes any structural alteration or addition to a building or groundwork in connection therewith.

EXTENSIVE AGRICULTURE – includes livestock grazing and game farming within the natural ecological carrying capacity of the land, but excludes agri-industries and buildings or structures.

FARM SETTLEMENT - the use of land for homesteads for people living on a commercial farm and associated with the bona fide farming activities of that specific farm.

FLOOR AREA - the total of the floor area occupied by a building at the floor level of each storey.

GROUND FLOOR - a floor at natural ground level with its entrance from ground level.

HEIGHT - the height of the building expressed in the number of storeys, measured from ground floor.

HOTEL - an accommodation enterprise that is registered as a Hotel in terms of Section 1 of the Act on Hotels 1965 (Act 70 of 1965) as amended and includes ancillary places of amusement and places of refreshment.

INFORMAL RURAL SETTLEMENT - settlement situated on private, tribal or state land. Settlement is not planned or surveyed. Ownership is communal and is managed by a Communal Property Association or Tribal Authority.

LAND MANAGEMENT UNIT – a portion of land with one or more title deeds joined together through formal land owner collaboration agreements and managed as a single ecological unit.

LAND USE MANAGEMENT SCHEME - a land use regulation scheme which determines and regulates the use and development of land in an area.

LODGE - a residential enterprise for guests conducted from detached or attached rooms, with a kitchen and facilities for its residents.

LOCAL AUTHORITY - the responsible local, district or metropolitan municipality and / or any employee in its service to whom authority has been delegated.

MAGALIESBERG BIOSPHERE (MB)-the area defined on the map and comprising Core, Buffer and Transitional Zones.

MANAGEMENT INFRASTRUCTURE-the infrastructure needed to support a land use such as roads, water pipelines, electricity, and sewage works.

OFFICES- Buildings used primarily for administrative activities relating to the zone in which they are situated, or the land use with which they are associated.

PROTECTED AREAS – an area registered as a National Park, Nature Reserve, Protected Environment or World Heritage Site, as defined in the Protected Areas Act, Act 57 of 2003, or an area registered under an international conservation treaty, such as the RAMSAR Convention on wetlands.

RESORT - a place of rest, holiday place, tenting or camping ground, caravan park, game park, pleasure resort or picnic spot intended for public recreation with the view to profit or gain and includes a place of refreshment and other buildings normally related and appurtenant to such a resort, provided that no facility within the resort shall be occupied by any person for a period exceeding three (3) months within a period of twelve (12) months, except with the consent of the Local Authority.

RESTAURANT - a building or part of a building used for the preparation and sale of meals, refreshments, and confectionery for consumption on the premises.

RIPARIAN LAND - land adjacent to the 100 year floodline of a watercourse or dam.

SETTLEMENT- an area of land that is not a township and which is occupied by a group of persons mainly for the purposes of a place of residence.

SHOP- a building used for the purpose of conducting a retail business, and includes a kiosk.

*SITE DEVELOPMENT PLAN - a plan showing at least the following:

- the siting, height and coverage of all buildings;
- open spaces, children's play grounds (if it features in the proposed development) as well as site layout and landscaping;
- ingress to and egress from the erf and any proposed subdivision thereof;
- the proposed consolidation / sub-divisional lines if the property is to be consolidated / subdivided;
- development phases where development will occur in phases;
- the layout of existing engineering services and provision for any augmentation and / or connection to existing engineering services;
 - water
 - sewer
 - electrical
 - fire prevention
 - roads
 - storm water management
 - Telkom
 - Eskom
- access to buildings and parking areas;
- building restriction areas, if any;
- parking areas and vehicle routes;
- aesthetic elevation of all buildings;
- floodlines (if applicable)
- any servitudes and or rights i.e. usufructs, leases, rights of way, servitudes, way leaves and surface right permits
- any condition imposed in terms of the authorisation to develop the site, and
- any other aspects which may be required by the approving authority.

*SPATIAL DEVELOPMENT FRAMEWORK (SDF) – an approved municipal or district Spatial Development Framework as required in a Local Authority's Integrated Development Plan in terms of Section 26(e) of the Municipal Systems Act, 2000 (Act 32 of 2000).

SPECIAL CONSENT - the consent of the Local Authority granted in terms of the provisions of a specific of the relevant town planning scheme.

STREET OR ROAD - part of any street, road, or right-of-way.

TOURIST FACILITIES- Guided trails, guided low density game viewing, guided horse trails, environmentally responsible lodges, rest camps and light foot print camps

WILDLIFE ESTATES AND LIFESTYLE ESTATES- Residential developments that seek to retain elements of the natural attributes of the site and use strict developmental guidelines to give an eco-friendly character to the development.

ZONE – an area of land use or an area of land to which particular conditions apply in terms of a town planning scheme or land use management scheme.

3 CORE AREA

3.1 DESCRIPTION

This zone is reserved for conservation, research and limited nature-based eco-tourism and should be restricted to activities which do not compromise the environmental integrity of the area.

The Core Area comprises formally protected areas and areas seeking formal protection within the Magaliesberg Biosphere, including any area registered or listed under an international conservation treaty, such as a:

- National Park;
- Nature Reserve;
- World Heritage Site;
- Ramsar Site;
- Biodiversity Site; and
- Privately-owned land that has been placed under strict conservation management, by way of a legally established conservancy agreement and/or formal protection of private land through the Protected Areas Act.

3.2 OBJECTIVES

The objectives are to conserve the landscape, biodiversity and cultural history of the Magaliesberg Biosphere and to promote the use of these resources in a sustainable manner.

3.3 LAND USES AND ACTIVITIES

The primary land uses are conservation, research, education and limited nature-based ecotourism activities.

The land use and activities within the present protected areas of the Magaliesberg Biosphere Core Areas (COHWHS and Kgaswane Nature Reserve) are governed by their respective management plans. The MPE land use is governed by the MPE EMF Plan. It is proposed that the MPE EMF Plan guidelines in conjunction with the following broad guidelines and procedures are used for the evaluation of compatibility of land use for any new areas intending to be included in the Core Area of the Biosphere Reserve or for any new land use applications in existing Core Areas.

3.3.1 PRIMARY LAND USES/ACTIVITIES CONSIDERED SUITABLE

The following land uses/activities are considered suitable in the Core Area:

- Conservation activities
- Research activities
- Environmental education activities
- Limited Nature-based Eco-Tourist facilities and activities.

Note: Notwithstanding the above list, there may be supporting facilities, infrastructure and other uses that comply with the assessment criteria and may be considered appropriate. There may also be legitimate homesteads; infrastructure and development rights that are already in place and that would need to be accepted.

Generally speaking, subdivision of existing land parcels is not favoured, while consolidations and joint ventures between contiguous land parcel owners to form larger tracts of land are favoured.

3.3.2 INFORMATION REQUIRED FOR LAND USE/ACTIVITY APPROVAL

Supporting information for new rights should contain a motivation and adequate information to show that the proposed use/activity will be congruent with the character and function of the Core Area, including:

- A sensitivity analysis of the site to highlight attributes to be protected and conserved, including topography, vegetation, geology, water bodies and courses and floodlines, heritage findings and the like;
- A site development plan showing the proposed development of the site and facilities;
- An outline services report showing the engineering services design and proposals to blend in with the site, and comply with eco-friendly principles. Where engineering services and waste removal facilities are to be provided by the developer, suitable arrangements in terms of a services agreement must be concluded with the affected municipality;
- A traffic impact study or scoping report or any other report that will support the decision-making process;
- Buildings and structures and their design and finishes using eco-friendly concepts;
- Landscaping proposals;
- Legal documentation (title deeds, Surveyor General diagrams, zoning certificates, etc) and approvals as required; and
- A management plan and monitoring plan for the development, including a disaster management strategy and rehabilitation plan.

3.3.3 EVALUATION CRITERIA FOR DEVELOPMENT/ACTIVITY PROPOSALS

Applications will be considered by the Management Board in the light of the impact of the land use/activity on the integrity of the Core Area and its sustainability (environmental, social, economic and institutional).

The following table is proposed to ascertain the suitability of a proposal:

Criteria	Yes	No	Comment
Compatibility with Core Objectives			
Does it respect the Magaliesberg Biosphere values and the management plan?			
Does it promote the Magaliesberg Biosphere?			
Does it conserve the natural landscape?			
Does it conserve the biodiversity?			
Does it conserve cultural/heritage resources?			
Does it provide for sustainable use of resources?			
Does it contribute to social improvement in local communities (economic and human)?			
Does it enhance tourism?			
Does it promote environmental education?			

Does it promote research?			
Proposal Specifics			
Does it serve the conservation, research, education or eco-tourism purpose/s of the Core Area?			
Is it essential that the locality be inside the Core Area or can it be accommodated in the Buffer Zone?			
Is it legally compliant?			
Is more than one land parcel affected and, if so, how are they to be linked/tied (ie land management unit)?			
Is it supported by the municipality or consistent with the relevant SDF?			
Has adequate supporting information been provided?			
Is the land use/activity appropriate to the site?			
Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?			
Does the land use/activity blend into landscape?			
Is the scale appropriate (height, floor area, built form, number of employees, number of visitors, development foot print and the like)?			
Are the engineering services and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?			
Are the waste management arrangements suitable and practicable?			
Are the management and staffing arrangements adequate?			
Is there a suitable disaster management plan?			
Is there a rehabilitation plan?			

4 BUFFER ZONE

4.1 DESCRIPTION AND DEFINITION

The Buffer Zone comprises of relatively undisturbed areas of the Magaliesberg Biosphere that are worthy of protection due to their generally high natural, visual and cultural quality and that underpin the core natural and cultural resource base of the Magaliesberg Biosphere.

It is defined as per the zonation delineation plan, and is subject to buy-in by the owner/s to the Magaliesberg Biosphere objectives through endorsement and/or formal voluntary participation in a stewardship programme (i.e. a member of a conservancy) which formally endorses the Magaliesberg Biosphere.

4.2 LAND USES AND ACTIVITIES

As for the Core Area, rather than prescribe a list of land uses/activities that are permissible, it is proposed that any land use/activity within the general ambit of the above be assessed by the relevant land use authority and the Management Board in terms of specific criteria to establish whether it is consistent with the objectives of the Buffer Zone and whether it meets certain sustainability measures.

This requires that certain information be submitted to the relevant land use authority and the Management Board for consideration prior to the issuing of its decision and any development being initiated.

It also requires the participation of the relevant land use authority and the Management Board in monitoring the implementation of the proposals and their long term maintenance and functioning, and its intervention where problems arise.

4.2.1 PRIMARY LAND USES/ACTIVITIES CONSIDERED SUITABLE

The primary land uses/activities considered suitable are conservation, research, conservation-based education, tourism (resorts and lodges) and recreational activities. It would also include existing agricultural and legal land uses.

Note: Notwithstanding the above list, there may be supporting facilities, infrastructure and other uses that comply with the assessment criteria and may be considered appropriate.

As with the Core Area, subdivision of existing land parcels is not favoured, while consolidations and joint ventures between contiguous land parcel owners to form larger land management units are favoured.

4.2.2 INFORMATION REQUIRED FOR LAND USE/ACTIVITY APPROVAL

Supporting information should contain a motivation and adequate information to show that the proposed use/activity will be congruent with the character and function of the Buffer Zone, and should include:

- A sensitivity analysis of the site to highlight attributes to be protected and conserved, including topography, vegetation, geology, water bodies and courses and floodlines, heritage findings and the like;
- A site development plan showing the proposed development of the site and facilities;
- An outline services report showing the engineering services design and proposals to blend in with the site, and comply with eco-friendly principles. Where engineering services and waste removal facilities are to be provided by the developer, suitable arrangements in terms of a services agreement must be concluded with the affected municipality;
- A traffic impact study or scoping report or any other report that will support the decision-making process;
- Buildings and structures and their design and finishes using eco-friendly concepts;
- Landscaping proposals;
- Legal documentation (title deeds, Surveyor General diagrams, zoning certificate, etc) and approvals as required; and
- A management plan and monitoring plan for the development, including a disaster management strategy and rehabilitation plan.

4.2.3 EVALUATION CRITERIA FOR DEVELOPMENT/ACTIVITY PROPOSALS

Applications will be considered in the light of compatibility with the environmental characteristics of the area, the impact on the integrity of the Core Area, and its sustainability (environmental, social, economic and institutional).

The following table is proposed to ascertain the suitability of a proposal:

Criteria	Yes	No	Comment
Compatibility with Core Objectives			
Does it respect the Magaliesberg Biosphere values, the management plan, and the purpose of the Buffer Zone?			
Does it promote the Magaliesberg Biosphere?			
Does it conserve the natural landscape?			
Does it conserve the biodiversity?			
Does it conserve cultural/heritage resources?			
Does it provide for sustainable use of resources?			
Does it contribute to social improvement in local communities (economic and human)?			
Does it enhance tourism?			
Does it promote environmental education?			
Does it promote research?			
Proposal Specifics			
Is it legally competent?			
Is more than one land parcel affected and how are they to be linked/tied?			
Is it supported by the municipality or consistent with the relevant SDF?			
Has adequate supporting information been provided?			
Is the land use/activity appropriate to the site?			
Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?			
Does the land use/activity blend into landscape?			
Is the scale appropriate (height, floor area, built form, number of employees, number of visitors, development foot print and the like)?			
Are the engineering services and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?			
Are the waste management arrangements suitable and practicable?			
Are the management and staffing arrangements adequate?			
Is there a suitable disaster management plan?			
Is there a suitable rehabilitation plan?			

5 TRANSITIONAL AREA

5.1 DESCRIPTION AND DEFINITION

Transition Areas are areas of stakeholder co-operation within the Magaliesberg Biosphere, which may contain diversity of economic activities, settlements and other land uses and in which local communities, management agencies, scientists, non-governmental organizations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the

area's resources. It is an essential component of the economic viability of the Magaliesberg Biosphere.

The Transition Areas are defined as per the zonation delineation plan and needs no formal buy-in from individual land owners or residents.

5.2 OBJECTIVES

The intention in the Transition Areas is that the stakeholders work together to manage and develop the area's resources in a sustainable and environmentally friendly way, with due recognition of the Magaliesberg Biosphere.

5.3 LAND USES AND ACTIVITIES

The scope of land use options is constrained only by the municipal/land use guidelines and environmental requirements.

It is intended that the spatial development frameworks that affect the Magaliesberg Biosphere address the sensitivities of the interface between the defined Core Areas, Buffer Zones and the Transition Areas, and that consideration be given to the compatibility of uses with the Magaliesberg Biosphere objectives.

It is important that information on new applications be assessed by the relevant authorities against these criteria and that such applications would also be submitted to the Management Board as a stakeholder and that its comments be provided serious consideration by the appropriate authorities in the granting of permissions for development and change in land uses in the Transition Areas.

The monitoring of implementation of the proposals and their compliance with stipulated conditions by the relevant authorities could be augmented by the Management Board.

5.3.1 INFORMATION REQUIRED FOR LAND USE/ACTIVITY APPROVAL

The legally prescribed supporting information for new land uses and activities in the Transition Area would be required by the relevant authorities (e.g. the municipalities).

It is intended that by cooperation with these authorities, the Management Board should be included as a stakeholder and that notice of applications should be referred to it for comment within a specified timeframe.

In assessing the applications and providing comments the following evaluation criteria in 3.2.5 should be used by the relevant authorities and the Management Board.

5.3.2 EVALUATION CRITERIA FOR DEVELOPMENT/ACTIVITY PROPOSALS

The following table is proposed to ascertain the suitability of a proposal:

Criteria	Yes	No	Comment
Compatibility with Magaliesberg Biosphere Objectives			
Does it respect the Magaliesberg Biosphere values, the management plan, and the purpose of the Magaliesberg Biosphere?			
Land Use/Activity			
Does it comply with the relevant SDF?			

Has adequate supporting information been provided?			
Is the land use/activity appropriate to the site?			
Is the location appropriate (accessibility, vegetation, riparian areas, slopes, visibility, lighting, etc)?			
Is the land use/activity/layout sensitive to the natural landscape, including vegetation, geology and riparian areas?			
Is the scale appropriate (height, floor area, built form, number of employees, number of visitors, development foot print and the like)?			
Are the engineering services, access, and infrastructural needs adequate, eco-sensitive, and compliant with municipal requirements?			
Are the waste management arrangements suitable and practicable?			