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8 May 2015

Dear Sir

**COMMENTS ON THE DRAFT SCOPING REPORT FOR THE PROPOSED HOUSING DEVELOPMENT ON FARM UITKOMS NO. 463, PORTION 1, KURUMAN ROAD, KATHU, NORTHERN CAPE**

**D:E&NC REF: NC/EIA/10/JTG/GAM/KAT1/2014**

- 1 We refer to the above matter and confirm that we act on behalf of Kalahari Gholf en Jag (Pty) Ltd, the Khumani Housing Development Company (Pty) Ltd and the Kalahari Gholf en Jag Home Owners Association ("our clients").
- 2 We are instructed to comment on the Draft Environmental Scoping Report dated March 2015 ("the report") in respect of a proposed housing development ("the proposed

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**Directors** DG Williams (Chairman) AL Armstrong BA Aronoff DA ArtelroT Bata AR Berman NMN Bhengu L Bick GT Bossr TJ Boswell MC Brönn W Brown PF Burger PG Cleland JG Cloete PPJ Coetser C Cole-Morgan D Corbett JN de Villiers GW Driver LJ du Preez RJ Feenstra S Fodor SJ Gardiner D Gewer H Goolam R Gootkin ID Gouws GF Griessel D Hertz J Hoffesen VR Hoslosky BB Hotz HC Jacobs TL Janse van Rensburg N Jansen van Vuuren G Johannes S July J Kallmeyer SLG Kayana A Kenny BM Kew N Kirby HA Kotze S Krige P le Roux MM Lessing E Levenstein JS Lochner L Louw JS Lubbe BS Mabasa PK Mabaso PM Madala MPC Manaka PJG Mason H Masondo C Moraitis KO Motshwane TA Mthiyane J Nickig JJ Niemand GA Nott BPF Olivier WE Oosthuizen M Pansegrouw CP Pauw AV Pillay T Potter BC Price AA Pyzikowski RJ Raath L Rood BR Roothman W Rosenberg NL Scott LK Silberman JA Smit JS Smit CI Stevens PO Steyn J Stockwell JG Theron JJ Truter KJ Trudgeon DN van den Berg HA van Niekerk FJ van Tonder JP van Wyk A Vatalidis RN Wakefield DC Walker D Wegierski M Wiehahn DC Willans E Wood BW Workman-Davies **Consultant** JM Bortz



**development**") on the property known as Farm Uitkoms No. 463, Portion 1, Kuruman Road, Kathu, Northern Cape ("**the property**").

### 3 **THE PARTIES:**

3.1 The application was prepared and submitted by EnviroAfrica CC ("**the EAP**") on behalf of Sishen Iron Ore Company (Pty) Ltd, the applicant.

3.2 Our clients are owners of various properties situated within close proximity to the property on which the proposed development is to take place and therefore have a direct interest in the application for environmental authorisation.

3.3 Our clients are firmly of the view that the application is undesirable and will have significant negative impacts on both the receiving environment and surrounding environment and act herein in their own interest as well as in the interest of the environment and in the public interest.

### 4 **BACKGROUND:**

4.1 On 7 February 2014 our clients received a notification letter, together with a background information document, advising of the public participation process being conducted in terms of the National Environmental Management Act, 1998 ("**NEMA**") in relation to the application for environmental authorisation for a proposed development.

4.2 On 13 May 2014 correspondence was sent to the EAP confirming that our firm was to be registered as an interested and affected party on behalf of our clients.

4.3 On 10 March 2015 our firm received notification of the availability of the report prepared in respect of the application for environmental authorisation for the proposed development.



Due to the time delay in the documents being made available to us, the EAP has agreed that these comments may be submitted by 8 May 2015.

4.4 The report indicates that on 28 January 2014 an application for environmental authorisation was lodged with the Department of Environment and Nature Conservation, Northern Cape ("D:E&NC"), the application was formally accepted on 29 January 2014.<sup>1</sup> We note that although the report refers to this application form as an Appendix, it has not been provided with the report.

4.5 It is noted that the applicant intends constructing a housing development; internal roads; open spaces; and associated infrastructure with an estimate of up to 172 individual property units on the property.<sup>2</sup> The proposed development will further include approximately 163 interlinked rooms in a single building for accommodation purposes.<sup>3</sup> The applicant also intends developing sectional title residential units that will be placed at random on the property.<sup>4</sup>

## 5 PROPERTY DESCRIPTION AND LOCATION

5.1 The report notes that the property is approximately 112 hectares in size and located to the north-east of the town of Kathu, west of the Sishen Golf and Country Club, and adjacent to the Kathu Forest.<sup>5</sup>

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<sup>1</sup>Page 12 and Appendix 1 of the report.

<sup>2</sup>Page 7.

<sup>3</sup>Page 17.

<sup>4</sup>Page 17.

<sup>5</sup>Page 7.



- 5.2 It is also noted that the proposed development is bordered by the N14 to the east and Frikkie Meyer Street to the south, and access to the proposed development will be gained via Frikkie Meyer Street.<sup>6</sup>
- 5.3 The report states that the current property zoning of the property is Agriculture, with the property being classified for sports and recreation activities (the Kathu Equestrian Club present on the property). The report notes that an application for rezoning and subdivision is being considered for the proposed development of a low density residential development.<sup>7</sup> No information has been provided as to the status of this application.
- 5.4 As stated above, the report notes that the proposed development is located adjacent to the Kathu Forest. In terms of Government Notice R727 in *Government Gazette* 32370 of 10 July 2009 ("**the Notice**") the Kathu Forest was declared a Protected Woodland in terms of the National Forest Act, 1998 ("**NFA**"). The Notice records that "*the Kathu Forest is a unique woodland of exceptionally large Camel thorn trees (Acacia erioloba) north of the town of Kathu in the Northern Cape Province. The woodland (Kathu forest) was registered as a National Heritage Site in 1995 under the former Department of Environmental Affairs and Tourism's program*". It is also noted that the woodland, of about 4 000 ha, is one of only two such woodland in the world, making it the only woodlands of its kind in South Africa.
- 5.5 In terms of the Notice the Kathu Forest is located on Portion 1 & Remainder of the Farm Uitkoms No. 463. We note that the Kathu Forest is located on the property which the applicant intends developing and not adjacent to the property.
- 5.6 As detailed above, the Notice indicates that the Kathu Forest was registered as "National" Heritage Site in 1995; we understand that this was a typographical error and that the Forest

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<sup>6</sup> Page 7.

<sup>7</sup> Page 7.



was declared a Natural Heritage Site. It is our understanding that this designation was undertaken in terms of the South African Natural Heritage Programme established by the Department of Environmental Affairs in 1985. This Programme is now regulated under the National Environmental Management: Biodiversity Act, 2004 and National Environmental Management: Protected Areas Act, 2003 which provide the enabling structures to support it. The Natural Heritage Site covers an area of approximately 4672 ha. The Kathu Forest has also been included in the National Committee for Nature Conservation (NACOR) list as an area of conservation importance in 1978.

5.7 The Natural Heritage Site status results in the limitation of activities which may take place thereon.

5.8 We submit that these important aspects have not been sufficiently addressed in the report. This is a glaring omission in the report and constitutes a significant flaw in the environmental impact assessment process.

5.9 Our clients are of the view that the proposed development is undesirable and will have a negative impact on their own rights and interests as landowners as well as on the receiving and surrounding environment. Our clients have instructed us to submit comments on the report, which we hereby do.

## **6 LEGAL FRAMEWORK:**

### **6.1 National Environmental Management Act, 1998**

6.1.1 NEMA is the overarching framework environmental management Act regulating environmental activities in South Africa. The framework created under NEMA ensures the legislative concretisation of the environmental rights guaranteed in section 24 of the Constitution of the Republic of South Africa. In its nature as a framework Act, it embraces



various fields of environmental concern namely, resource conservation and exploitation, pollution control and waste management, and land use planning and development.

6.1.2 The NEMA principles set out in section 2 apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. Important for the purposes of these comments, section 2(3) provides that development must be socially, environmentally and economically sustainable.

6.1.3 Section 2(4)(a) provides that sustainable development requires the consideration of all relevant factors including the following:

- That the disturbance of ecosystems and loss of biological diversity area be avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- That a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- That the negative impacts on the environment and on peoples environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

6.1.4 Section 2(4)(b) provides that environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the Best Practicable Environmental Option ("**BPEO**").



- 6.1.5 Section 2(4)(l) provides that the social economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.
- 6.1.6 Section 2(4)(r) provides that sensitive, vulnerable, highly dynamic or stressed ecosystems such as coastal shores, estuaries, wetlands and similar systems requires specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.
- 6.1.7 The NEMA 2010 regulations<sup>8</sup> were repealed and replaced by the NEMA 2014 regulations<sup>9</sup> on 4 December 2014, however regulation 53 of the NEMA 2014 regulations states that an application submitted in terms of the previous NEMA regulations and which is pending when the new regulations came into effect must, despite the repeal of those Regulations, be dispensed with in terms of those previous NEMA regulations as if those previous NEMA regulations were not repealed. In this regard, the application for the proposed development must be dispensed with in terms of the NEMA 2010 regulations.
- 6.1.8 Regulation 1 of the NEMA 2010 regulations defines "*environmental impact assessment*" as *a systematic process of identifying, assessing and reporting environmental impacts associated with an activity.*
- 6.1.9 Regulation 2 provides that the purpose of these Regulations is to regulate the procedure and criteria relating to the submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities in order to avoid detrimental impacts on the environment, or where it cannot be avoided, ensure

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<sup>8</sup> GNR 543 of June 2010.

<sup>9</sup> GNR 982 of December 2014.



mitigation and management of impacts to acceptable levels, and to optimise positive environmental impacts.

6.1.10 From the above, it is clear that the environmental impact assessment process is a process of information gathering in order to identify and assess the possible impacts of the intended activity in order for the decision-maker to make an informed decision whether to grant an environmental authorisation or not.

## 6.2 **The National Heritage Resources Act, 1999 ("NHRA")**

6.2.1 The NHRA regulates heritage resource management in South Africa and further promotes the protection of areas and infrastructure considered to be of heritage significance. The NHRA prohibits the alteration or demolition of any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.<sup>10</sup> Of particular relevance to developments which span large areas, section 38 provides that where a development will involve the construction of certain infrastructure which exceed the determined thresholds including; any development or other activity which will change the character of a site exceeding 5 000m<sup>2</sup> in extent; or the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent; notice must be given to the responsible heritage resources authority who will then determine whether any heritage resources will be affected by the proposed development.

6.2.2 Due to the size of the proposed development, it is clear that section 38 is triggered. It is further noted that the Kathu Forest, situated on the property, enjoys Natural Heritage status and was declared as the first Protected Woodland in the country in terms of section 12 (1) (c) of the NFA.

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<sup>10</sup>Section 34.





### 6.3 The National Forests Act, 1998

- 6.3.1 In terms of section 12 of the NFA, the Minister may declare a particular tree; a particular group of trees; a particular woodland; or trees belonging to a particular species as protected.<sup>11</sup>
- 6.3.2 In terms of section 15, no person may cut, disturb, damage, destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate in any other manner acquire; dispose of any protected tree, or any forest product derived from a protected tree, without a licence granted by the Minister. Furthermore, the Minister also has the power to declare a natural forest or woodland which is threatened with deforestation, or is being or has been deforested, a controlled forest area, if the Minister is of the opinion that urgent steps are required to prevent further deforestation or rehabilitation.
- 6.3.3 As noted above, the Kathu Forest is situated on the proposed development property and has recently been declared a protected woodland. As such any activities within the woodland area are subject to the limitations prescribed by section 15, above.

## 7 GROUNDS OF OBJECTION

- 7.1 We understand that the application process is currently in its infancy, and that further information will be provided in the reports to follow. We will however record our clients' initial concerns (in order to ensure that the subsequent iterations of the impact assessment reports adequately address our clients concerns), reserving the right to provide further and more comprehensive comments once further information has been provided. Our clients comments on the report are detailed below, but may be summarised as follows:

- 7.1.1 The information provided in the report is misleading and unclear;

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<sup>11</sup>Notice of the list of protected tree species under the National Forest Act, is published under Government Gazette Notice 877 of Government Gazette 37037 of 22 November 2013.



- 7.1.2 The report contains insufficient information in order for interested and affected parties to submit informed comments on the proposed development;
- 7.1.3 The report fails to adequately address the land use planning requirements;
- 7.1.4 The report does not address the implications of NEMA, particularly the implications of the section 2 NEMA principles;
- 7.1.5 The report does not provide adequate information as required by regulation 28 of the NEMA 2010 regulations; and
- 7.1.6 The report fails to adequately address the impacts on the surrounding environment.

**7.2 The information provided is misleading and unclear:**

7.2.1 In the report, the EAP refers to compliance with regulation 54(2)(6)(vi) of the NEMA 2010 regulations by confirming that notification letters were sent to the following organs of state which have jurisdiction in respect of the proposed development:<sup>12</sup>

- Department of Water Affairs;
- South African Heritage Resources Agency;
- Department of Agriculture and Land Reform;
- Department of Roads and Public Works;
- Department of Cooperative Governance, Human Settlements and Traditional Affairs;

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<sup>12</sup>Page 27.



- Department of Agriculture, Forestry and Fisheries; and
- The South African National Roads Agency SOC Limited.

7.2.2 It is noted that the initial notification letter which was purportedly sent to the South African Heritage Resources Agency ("**SAHRA**") was not attached to the report. It is therefore unclear as to whether SAHRA was notified of the proposed development, as required in terms of section 38 of the NHRA.

7.2.3 This discrepancy represents a flaw in the report. As such, the report must be amended in order to confirm whether SAHRA was notified, as it legally required, and proof of such notification must be provided.

7.2.4 Furthermore, the report states that the proposed property may form part of the Kathu Forest. We submit that this statement is misleading and incorrect. The proposed property does form part of the Kathu Forest as confirmed in the Notice declaring the forest a protected woodland.

### 7.3 **Insufficient information provided:**

7.3.1 As noted above, our clients are aware that the assessment process is in its infancy and that further information about the proposed development will be made available in due course. We note that the report indicates that the environmental authorisation application has been provided, this is incorrect. The environmental authorisation application form which was submitted to the D:E&NC has not been provided with the report. The report is therefore incomplete and must be recirculated for comment together with the completed application form, as submitted to the D:E&NC.

7.3.2 Section 9 of the report notes that the following specialist studies are required and will be undertaken during the environmental impact assessment stage of the application process:



- Botanical Impact Assessment
- Traffic Impact Assessment
- Archaeological/Heritage Impact Assessment
- Paleontological Impact Assessment

7.3.3 As detailed below, we submit that further specialist studies are to be undertaken, including a biodiversity assessment; a visual impact assessment; a dust impact assessment; a socio-economic impact assessment; a water assessment; and a noise impact assessment. The failure to provide sufficient information as part of the environmental impact assessment will result in interested and affected parties being unable to formulate and submit informed comments on the impacts of the proposed development. Furthermore, this will also affect the ability of a decision-maker to grant the environmental authorisation as the decision-maker will not have sufficient information on the impacts of the proposed development.

7.3.4 No specialist reports have been provided with the current report and, considering the size and nature of the proposed development, we submit that the following studies must be undertaken:

7.3.4.1 **Biodiversity impacts** - We note that the EAP has identified a botanical impact assessment as a study which must be undertaken as part of the environmental impact assessment process. We note that a number of biodiversity impacts are likely to occur as the report indicates that the project area includes the unique protected tree, *Acacia erioloba* (Camel thorn), and associated fauna and avi-fauna species associated with the Camel thorns on the property. Furthermore, the property is situated within a protected woodland area, is declared a natural heritage site and is subject to development limitations. The report states that no fauna or avi-fauna impacts are anticipated and



therefore no impact assessments of these aspects will be undertaken.<sup>13</sup> This statement is unqualified and cannot be relied upon. Reference is made to an article prepared by T. A. Anderson (**Annex 1 hereto**), which notes that the uniqueness of the Kathu Forest was confirmed in 1956 when the forest was declared a State Forest. The article notes that the Camel thorn trees provide services which are scarce in the area, including shade and shelter for many animal and bird species, including Red Data and other protected species. The article further states that the forest supports a unique array of bird species. Importantly, the article states that the forest must be actively conserved for scientific, biodiversity, landscape and eco-tourism reasons. It is for this very reason that the Forest was declared a protected woodland area, in terms of the NFA. Considering the location of the proposed development (in the Kathu Forest area) and the need to protect biodiversity corridors The impact assessment cannot be limited to botanical aspects. The need for a comprehensive biodiversity impact assessment is apparent.

7.3.4.2 **Water impacts** - We note that the report does not identify a water impact assessment as being necessary. The report states that no above ground water resources are present on site.<sup>14</sup> This has not been confirmed by an independent assessment. Reference is also made to the Gamagara Municipality Reviewed Spatial Development Framework, 2010 ("**GMRSDF**") which provides that water resources located within the Kathu area are extremely limited and the area has become extremely dependant on underground water resources. Due to the nature and scale of the proposed development, we anticipate that a large portion of the property will be levelled and covered with built structures, concrete or tar. This will likely impact on storm water velocity which may increase erosion of the surrounding properties and may result in storm water contamination. Furthermore, the report confirms that there are no plans for any bulk storm water management

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<sup>13</sup> Page 25.

<sup>14</sup> Page 21.



infrastructure.<sup>15</sup> Considering the size of the proposed development, it is unclear as to why this infrastructure has been deemed unnecessary. The need for a water impact assessment report is therefore apparent. This impact assessment report must identify the various water impacts and propose mitigation measures which will be put in place in order to properly manage these impacts. Furthermore, we note that water storage and the use of borehole water are also required for the proposed development;<sup>16</sup> however the report does not indicate whether a water use licence application will be made. Further information on these aspects of the proposed development is required.

**7.3.4.3 Traffic impacts** - We note that the EAP has identified the traffic impact assessment report as a study which must be undertaken as part of the environmental impact assessment process. Due to the scale of the proposed development, it is clear that there will be a significant increase in traffic in the area during the operational phase. Traffic impacts will also result from the construction phase as a result of slow moving heavy - duty construction vehicles accessing and leaving the site. This will put pressure on existing transport arteries identified in the report. The impact assessment report must propose traffic mitigation and safety measures which will be put in place in order to properly manage these traffic impacts.

**7.3.4.4 Archaeological, Heritage and Paleontological impacts** - We note that the EAP has identified archaeological, heritage and paleontological impact assessment reports as studies which must be undertaken as part of the environmental impact assessment process. As noted above, section 38 of the NHRA requires that notification of the proposed development must be submitted to the heritage authority. The report does not provide a clear indication as to whether a notice of intention to develop was submitted to the authority. Furthermore, our research has indicated that significant Stone Age sites

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<sup>15</sup> Page 24.

<sup>16</sup> Page 23.



occur in and around Kathu and on adjacent farms, with these areas being subject to on-going archaeological research. Reference is made to Annex 1, which notes that in 1995, the forest was declared a Natural Heritage Site and is therefore afforded additional protection. The article further notes that the Kathu Forest is found on red Aeolian sand which is considered to be a fossil desert. The need for a comprehensive assessment of the impact of the proposed development on these resources is apparent.

7.3.4.5 **Visual impacts** – We note that the report does not identify a visual impact assessment as being necessary.<sup>17</sup> We submit that due to the location, rural ambience, size and nature of the proposed development, significant visual impacts will occur as a result of the proposed large scale development. An independent specialist must assess the anticipated visual impacts, particularly those associated with the multi-storey buildings, building materials used, and artificial lighting (particularly on animal and bird species) and propose adequate mitigation measures so that interested and affected parties (and the decision-maker) may be informed as to what these impacts are and how they will be managed.

7.3.4.6 **Noise impacts** - We note that the report does not identify a noise impact assessment as being necessary. Due to the density, scale and location of the proposed development we note that noise will be generated during the construction and operational phases (construction noise, residential and commercial uses and increased traffic will affect the ambience of the area). This will likely cause a nuisance which would affect the use and enjoyment of the surrounding properties as well as negatively impact the value of these properties. Noise impacts may also result in negative impacts for animal and bird life in the area. These noise impacts are not normally associated with the current property uses in the area and an assessment is required in order to identify the impacts and propose adequate mitigation measures.

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<sup>17</sup> Page 26.



7.3.4.7 **Dust impacts** - We note that the report does not identify a dust impact assessment as being necessary. Due to the scale of the proposed development, we anticipate there to be high levels of dust generated by construction and ancillary activities. This would likely cause a nuisance which would affect the use and enjoyment of the surrounding properties and landowners as well as negatively impact the value of these properties.

7.3.4.8 **Socio-economic impacts** - We note that the report does not identify a socio-economic impact assessment as being necessary. Furthermore, we note that the proposed development may have a positive effect in respect of employment creation for the local community, mainly during the construction phase and to a lesser extent for the operational phase, however the impacts identified above may have a detrimental effect on existing businesses and activities which are undertaken in the area and would likely result in job losses as a result. A socio-economic assessment is required in order to identify the impacts associated with the proposed development and propose adequate mitigation measures. Such an assessment would also assist in the desirability determination, as discussed below.

### 7.3.5 **Infrastructure requirements:**

7.3.5.1 We note that the infrastructure requirements for the proposed development have not been adequately addressed in the report. The report notes that no constraints exist regarding the availability of services for the operation of the proposed development other than permission being required for the connection to the existing Kathu East Reservoir and Tower. We note that no confirmation from the relevant authorities as to the availability of capacity to supply the necessary services has been provided. Considering the nature and size of the proposed development, it is imperative that a reliable water supply be secured for both the construction and operational phases in order to prevent any detrimental impacts on the natural water resources in the area.





- 7.3.5.2 A Preliminary Bulk Services and Infrastructure Status Report ("**the BSISQR**"),<sup>18</sup> was provided with the report; however the BSISQR states that it should be read in conjunction with previous reports prepared by Aurecon / WorleyParsons.<sup>19</sup> We note that these previous reports have not been made available together with the report, making it impossible for interested and affected parties to submit informed comments thereon.
- 7.3.5.3 The report also states that the existing electrical substation in Kathu is able to accommodate the proposed development.<sup>20</sup> We submit that this statement is contradictory based on the recommendations made in this specialist Electrical Service Report,<sup>21</sup> which specifically states that the existing capacity on the current 11Kv cable is insufficient to accommodate additional development and recommends that the applicant make further upgrades to this infrastructure.
- 7.3.5.4 It is unclear whether the proposed Postmasburg Waste Water Treatment Works and sewer line forms part of the current application process. We submit that the lack of clarity regarding this activity presents a flaw in the report. Waste water and sewerage treatment are of significant concern to our clients, whose use and enjoyment of their properties will be negatively impacted upon as a result of inadequate waste water and sewage management. The lack of information presents a significant flaw in the report and it must be amended and recirculated for comment.

#### 7.4 **Failure to adequately address the land use planning requirements:**

- 7.4.1 The report makes mention of one Erf being utilized for sectional title blocks which will be placed at random on the property to accommodate the existing Camel thorn trees. This is

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<sup>18</sup> Appendix 5.

<sup>19</sup> Page 1 of Appendix 5.

<sup>20</sup> Page 24.

<sup>21</sup> Appendix 6.



known as Residential Zone II which will consist of a *group of separate and/or connected individual residential units*. We note that the report contains contradictory information regarding the number of property units which are to be developed and does not provide sufficient detail regarding the designated uses for each of these units. The report should be supplemented to reflect the exact amount of residential units which the applicant intends to develop. Once supplemented the report must be recirculated for comment.

7.4.2 We note that the report does not provide sufficient information on the GMRSDf, this is particularly significant with regard to whether the municipality has the proper refuse disposal infrastructure and capacity required to accommodate the proposed development.

In our consideration of the GMRSDf we have noted that refuse disposal is a growing concern for the municipality as refuse is being transported to Dibeng for dumping, however, it appears that this is not a legally declared dumping site. The municipality intends on entering into discussions regarding an alternative dumping site between Kathu and Dibeng. However the current status of these discussions is unclear.

7.4.3 The failure to ensure that there is adequate infrastructure available presents a significant flaw in the application and it must be referred back to the EAP for supplementation. Inadequate provision for waste management resulting from the proposed development will also trigger the duty of care obligations under section 28 of NEMA and section 16 of the National Environmental Management Waste Act, 2008 which may result in criminal liability for the applicant.

#### 7.5 **Failure to consider the provisions of NEMA:**

7.5.1 Subsection 2(2) of NEMA provides that environmental management should be primarily concerned with people that will be affected by the activities and their respective needs.



As such we note that the report does not provide for any management measures addressing impacts and issues identified.

- 7.5.2 As it stands, interested and affected parties are not provided with sufficient information on the proposed measures to be employed to mitigate and manage negative impacts which may occur, this does not accord with the NEMA requirements.
- 7.5.3 Subsection 2(4)(a)(vii) sets out that a risk averse and cautious approach should be followed, we note that the report identifies general risk factors, however the manner in which these factors are to be managed has not been addressed.
- 7.5.4 Subsection 2(4)(a)(viii) requires the applicant to identify negative impacts on the environment and on people's environmental rights and provide measures to prevent or minimise such impacts. The applicant has identified general anticipated negative impacts and has undertaken to address these impacts during the environmental impact assessment phase; however we note that no specific mitigation measures have been included in the report.
- 7.5.5 Subsection 2(4)(i) requires social, economic and environmental impacts of activities, including disadvantages and benefits to be weighed up. The report broadly states that the direct and indirect socio-economic benefit of not constructing the residential development will not be realised if the proposed development does not materialise. No further socio-economic benefits and disadvantages are provided in the report. The report should include a socio-economic impact assessment report which identifies both the advantages and disadvantages of the proposed development (including the impact on existing businesses) and propose adequate mitigation and management measures.
- 7.5.6 Subsection 2(4)(r) makes provision for sensitive, vulnerable, highly dynamic or stressed ecosystems which require specific attention in respect of management and planning



procedures where they are subject to human usage and development. The current report does not include the identification of any negative impacts that may occur and simply states that the measures will be assessed in the specialist reports to be undertaken as part of the environmental impact report. Furthermore, the report does not indicate whether the applicant intends to enter into an off-set or conservation management agreement with the authorities for the conservation and management of the protected Kathu Forest and adjoining areas.<sup>22</sup>

## 7.6 Failure to consider regulation 28 of the EIA 2010 regulations:

7.6.1 In order for the competent authority to properly consider the application for environmental authorisation, the report must set out any feasible alternatives to the activity.<sup>23</sup> This requirement relates to regulation 28 of the NEMA 2010 regulations,<sup>24</sup> which requires *inter alia*, that a scoping report must contain the following information:

7.6.1.1 *A description of feasible and reasonable alternatives that have been identified;*

7.6.1.2 *Identification of all legislation and guidelines that have been considered in the preparation of the scoping report;*

7.6.1.3 *A description of environmental issues and potential impacts, including cumulative impacts, that have been identified;*

7.6.1.4 *A description of the need and desirability of the proposed activity;*

7.6.1.5 *A description of identified potential alternatives to the proposed activity, including disadvantages and advantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;*

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<sup>22</sup> Published under Government Notice R727 in *Government Gazette* 32370 of 10 July 2009.

<sup>23</sup>Section 24O of NEMA.

<sup>24</sup>Published under Government Notice R543 in *Government Gazette* 33306 of 18 June 2010.



7.6.1.6 *In addition, a scoping report must take into account any guidelines applicable to the current activity which is the subject of the application.*

7.6.2 It is submitted that the report fails to identify and describe all the feasible and reasonable alternatives.

7.6.3 The definition of "alternatives" in the NEMA 2010 regulations provides that, in relation to the proposed activity, "alternatives" means *different means of meeting the general purpose and requirements of the activity, which may include alternatives to-*

7.6.3.1 *the property or location of the activity;*

7.6.3.2 *the type of activity to be undertaken;*

7.6.3.3 *the design or layout of the activity;*

7.6.3.4 *the technology to be used in the activity;*

7.6.3.5 *the operational aspects of the activity; and*

7.6.3.6 *the option of not implementing the activity".*

7.6.4 The report states that various alternatives were identified during the scoping phase,<sup>25</sup> however only four alternatives are presented, with Alternative 3 being the preferred alternative. We note that the report does not include a comprehensive assessment of the advantages and disadvantages of each proposed alternative.

7.6.5 The following alternatives must be assessed or an explanation furnished by the EAP as to why they are not deemed reasonable or feasible alternatives:

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<sup>25</sup>Page 15.



- 7.6.5.1 the property on which the proposed development will take place: considering the adverse impacts of the proposed activities on the receiving and surrounding environment and the unique sensitivity of this environment, it is incumbent on the EAP to show that there are no other, more suitable sites or location alternatives available;
- 7.6.5.2 the type of activity to be undertaken: it is incumbent on the EAP to show that there are no other, more suitable activity alternatives available; and
- 7.6.5.3 the same argument would apply in respect of the design or layout of the proposed development; the technology to be used in the proposed development and the operational aspects of the proposed development.
- 7.6.6 When considering the no-go development alternative the report states that no agricultural activities are taking place on this site although it is zoned as Agricultural Zone I.<sup>26</sup> We note that the report does not address why agricultural activities are not being undertaken on the property nor does it adequately assess the potential of the property being used for agricultural purposes. The report confirms that not pursuing the proposed development may result in no potential negative environmental impacts,<sup>27</sup> this results in a positive impact as the natural vegetation, biodiversity, heritage resources, water resources and existing businesses and activities will not be negatively affected.
- 7.6.7 It is submitted that the identification and assessment of alternatives is inadequate and does not meet the legal standard required under NEMA, read with the relevant guidelines on the identification and assessment of alternatives. The report must be amended by including further information on reasonable and feasible alternatives which is properly and comparatively assessed against the no-go option (which also requires proper description of the advantages and disadvantages of the no-go option). Following the inclusion of this information, the report must be recirculated for public comment.

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<sup>26</sup> Page 17.

<sup>27</sup> Page 18.



7.6.8 The assessment of the *need and desirability* of the proposed development does not meet the requirements of the Department's guidelines for the assessment of need and desirability in environmental impact assessment.<sup>28</sup>

7.6.9 The concept of "*need and desirability*" relates to, amongst others, the nature, scale and location of activities for which authorisation is sought, as well as requiring the wise use of land. The Guideline provides, *inter alia*, that:

*"While essentially, the concept of "need and desirability" can be explained in terms of the general meaning of its two components in which need primarily refers to time and desirability to place (i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed?), "need and desirability" are interrelated and the two components collectively can be considered in an integrated and holistic manner. In order to properly interpret the EIA Regulations' requirement to consider "need and desirability", it is necessary to turn to the principles contained in NEMA, which serve as a guide for the interpretation, administration and implementation of NEMA and the EIA Regulations. With regard to the issue of "need", it is important to note that this "need" is not the same as the "general purpose and requirements of the activity. While the "general purpose and requirements" of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for proposing the specific activity, the "need" relates to the interests and needs of the broader public. In this regard the NEMA principles specifically inter alia require that environmental management must:*

- *"place people and their needs at the forefront of its concern and equitably serve their interests;*

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<sup>28</sup>Published in government Notice 891 in *Government Gazette* 38108 of 20 October 2014.



- *be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option;*
- *pursue environmental justice "so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person";*
- *ensure that decisions take "into account the interests, needs and values of all interested and affected parties"; and*
- *ensure that the environment is "held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage".*

*The consideration of "need and desirability" in EIA decision-making therefore requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest. The government decision-makers, together with the environmental assessment practitioners and planners, are therefore accountable to the public and must serve their social, economic and ecological needs equitably. Ultimately development must not exceed ecological limits in order to secure ecological integrity, while the proposed actions of individuals must be measured against the short-term and long-term public interest in order to promote justifiable social and economic development - i.e. ensuring the simultaneous achievement of the triple bottom-line. Considering the merits of a specific application in terms of the need and desirability considerations, it must be decided which alternatives represent the "most practicable environmental option", which in terms of the definition in NEMA and the purpose of the EIA Regulations are that option that provides the most benefit and causes the least damage to the*





*environment as a whole, at a cost acceptable to society, in the long-term as well as in the short-term.*<sup>29</sup>

- 7.6.10 The Guidelines therefore provide that the consideration of need and desirability during the assessment process must consist of a preliminary description of the relevant considerations in relation to the feasible and reasonable alternatives.
- 7.6.11 The consideration of need and desirability in decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest. In the light of the flaws in the identification and assessment of alternatives noted herein, the inadequacy of the assessment of need and desirability in the report is a glaring omission in the application process.
- 7.6.12 Simply put, the statutory imperative to assess need and desirability is to determine whether this is the right time and the right place for the proposed activities, and whether the proposed activity is the most sustainable use of the land concerned. We submit that the information presented in the report does not place the decision-maker in a position to make this determination.
- 7.6.13 The Guidelines note that, in order to properly interpret the requirement in terms of the NEMA 2010 regulations regarding "need and desirability", it is necessary to turn to the National Environmental Management Principles in terms of NEMA which serve as a guide for the interpretation, administration and implementation of NEMA and its regulations. We note that the report does not adequately address the NEMA principles and how the proposed development will meet these principles.
- 7.6.14 The EAP has referenced the benefits of the proposed development; however we note that these benefits are limited and the proposed development will likely have a far more

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<sup>29</sup>On page 15 and 16 of the Guidelines.



significant detrimental impact on the sense of place and current surrounding property uses, which include a thriving tourism and agricultural industry.

- 7.6.15 Considering the detrimental and irremediable impacts associated with the proposed development, it is clear that the activities for which authorisation is sought will manifestly not represent the BPEO, which is defined in NEMA as “the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term” and that the BPEO will be the ceasing of any further development in the area.
- 7.6.16 In considering the desirability of the proposed development the report notes that the site is located in close proximity to the N14. The N14 passes through the Kathu Forest and has been identified as a scenic route.<sup>30</sup> We submit that the report does not fully consider the desirability of the proposed development as the location of the proposed development does not accord with the current sense of place. Reference is made to Annex 1, which states that due to the protected woodland status of the Forest area, only low-impact, ecotourism facilities and low density residential eco-estates may take place in the Forest and Forest buffer areas.
- 7.6.17 It is noted that the criteria used to determine the desirability of the location is based on the principles of integration by means of infill planning and the optimum utilisation of available land and resources, availability of bulk services, accessibility and proximity of employment opportunities.<sup>31</sup> It is submitted that the report does not adequately explain and assess these requirements which results in a further shortfall to the application and report.

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<sup>30</sup> Page 15 of the Heritage Impact Assessment for a proposed 132 kV power line, Kuruman Magisterial District, Northern Cape dated February 2015.

<sup>31</sup> Page 10.



7.6.18 Furthermore, Annex 1 states that groundwater resources in the area have been detrimentally affected by mining activities, as such, the proposed development will likely put further strain on these limited resources and is clearly undesirable. Annex 1 indicates that, should any further reduction in groundwater occur, this may very well result in the death of the Kathu Forest, which is dependent on the underground aquifers in the area.

## 7.7 Impact on the surrounding environment:

7.7.1 The area has a unique ambience and the biological diversity of the area should be protected for the use and enjoyment of future generations. The proposed development should be viewed in light of the uniqueness of the Northern Cape and in accordance with the objectives of NEMA. The benefits derived from the proposed development should be cautiously balanced against the significant impact of this development on the surrounding environment, which is an important tourist attraction.

7.7.2 It is noted that the town, Kathu has become known as the "town under the trees" due to the location of the Kathu Forest, a unique woodland of exceptionally large Camel thorn trees, situated north of the town.<sup>32</sup> It is further noted that the Kathu Forest, which enjoys Natural Heritage status was declared the first Protected Woodland in the country in terms of section 12 (1) (c) of the NFA.

7.7.3 According to the Gamagara Municipality Integrated Development Plan, 2013/2014 ("**GMIDP**") the following major environmental challenges are found within the Kathu area:

7.7.3.1 unsustainable utilisation of the natural environment;

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<sup>32</sup>Page 19.



- 7.7.3.2 the current development and expansion of the town of Kathu which includes an up-market housing development to the north of the town;
- 7.7.3.3 new and expanding mines;
- 7.7.3.4 the impact of the proposed development on the Kathu forest's ecological integrity and the potential loss of biodiversity;
- 7.7.3.5 groundwater issues are also of major concern, because the lowering of the water table by abstraction could lead to the death of the protected Camel thorn trees.
- 7.7.4 It is noted that none of these issues raised in the GMIDP have been addressed in the report. We submit that this is a glaring omission in the report and furthermore, does not accord with the principles outlined of NEMA as discussed above.
- 7.7.5 According to the GMRSDf, core conservation areas are critical to habitat preservation and strict environmental control measures should be put in place for any development or activity that would affect these core conservation areas.<sup>33</sup> The GMRSDf further notes the importance of the Kathu Forest and states that, due to its protected status under environmental legislation, protection against urban pressure is of extreme importance. We submit that the report has not assessed the negative impacts that the proposed development will have on the Kathu Forest and this constitutes a significant flaw in the report.
- 7.7.6 The GMRSDf also notes that development to the north of the town Kathu, which lies adjacent to the Kathu Forest, should be discouraged in order to avoid irrevocable environmental damage.<sup>34</sup> As previously stated the EAP states that the proposed

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<sup>33</sup> Page 58 of GMRSDf.

<sup>34</sup> Page 39 of GMRSDf.



development is situated adjacent to the Kathu Forest. This is incorrect as the Kathu Forest is also placed on the property. It is submitted that the report does not adequately address the impacts of the proposed development on the surrounding environment. The report should be supplemented to provide for the assessment of the impact that the proposed development will have on the surrounding environment (including the Kathu Forest) and be recirculated for comments.

7.7.7 The report states that the proposed development is located within the urban edge of Kathu, and can therefore also be considered to be *infill development*. It further notes that infill planning are contemporary principles used to promote integration and to ensure optimum utilisation of available land. The report does not however consider the negative impact the proposed development will have on the interests of those who own properties within close proximity to the proposed development as well as the negative effect on the Kathu Forest as a protected area and important tourist attraction. It is therefore submitted that the report does not adequately consider the impact that the proposed development will have on the surrounding environment as required in terms of section 2 of NEMA.

7.7.8 Further to the above we submit that the report has failed to adequately (if not at all) address or identify a number of impacts that will occur as a result of the proposed development which include water impacts; biodiversity impacts; socio-economic impacts; visual impacts; heritage impacts; traffic impacts; impacts on municipal services in the area; and construction phase impacts. The impacts of these activities may have the following results:

7.7.8.1 As noted above, the GMRSDf states that water resources located within the Kathu area are extremely limited and the area has become dependent on underground water



resources.<sup>35</sup> The report does not address this issue and a water impact assessment should be undertaken to address any water use requirements and impacts that the proposed development might have on the water resources in the area.

7.7.8.2 The EAP states that the impact on mammal and bird species were not considered, as the proposed development is not expected to have any significant permanent impact on these species except those species associated with the Camel thorn trees.<sup>36</sup> We note that no fauna or flora impact assessment has been undertaken, as such no reliance can be placed on this statement. As noted above, the Kathu Forest provides the ideal habitat for a number of red data and protected species (including birds). The need for such an assessment is clear.

7.7.8.3 The report makes reference to the socio-economic context of the area and states that the unemployment rate is 17.7% for the Gamagara Municipality;<sup>37</sup> however the negative socio-economic impact of the construction and operational phase on the greater surrounding areas has not been addressed. It is likely that the construction phase will result in temporary employment and the operational phase will also provide limited employment opportunities, however there may also be significant detrimental impacts on employment for the existing businesses in the area as a result of the undesirable negative impacts associated with the proposed development.

7.7.8.4 The report states that no visual impact studies are contemplated due to the nature of the activity, the surrounding land-uses and the proximity to other residential developments, and that the sense of place is not expected to be significantly altered by

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<sup>35</sup>Page 11 of the GMRSDf.

<sup>36</sup>Page 25.

<sup>37</sup>Page 21.



the proposed residential development.<sup>38</sup> As noted above, the location, size and nature of the proposed development will result in a significant change of the current sense of place as well as numerous intrusive visual impacts. The failure to consider a visual impact assessment as being necessary presents a flaw in the application. It is likely that the proposed development will have a negative impact on the visual aesthetics of the area which cannot be adequately minimised or remedied, particularly considering that the area (the Kathu Forest) is an important tourist attraction and known for its unique sense of place.

7.7.8.5 The report states that heritage impacts have been identified as a number of Early Stone Age, Middle Stone Age and Later Stone Age implements were encountered over the proposed development site as well as a number of tools in disturbed areas,<sup>39</sup> however we note that no heritage, archaeological or paleontological impact assessment report has yet been prepared. Furthermore, the report does not clearly indicate whether there has been compliance with section 38 of the NHRA. As detailed above, the Kathu Forest area is located in a fossil desert, is a natural heritage site and a significant tourist attraction; it can only be assumed that the proposed development will have a negative impact on the heritage resources of the area.

7.7.8.6 The construction and operational phase may result in negative impacts as the use of vehicles, construction materials, chemicals and other hazardous substances may contaminate soil and water sources and negatively impact on various fauna and flora on the property (including the horses housed at the equestrian club) as well as the surrounding properties. The operational phase will see the use of vehicles and the generation of solid waste and other activities which could result in contamination of soil and water sources and the increase in vermin, likely leading to a decline in agricultural

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<sup>38</sup>Page 26.

<sup>39</sup>Page 21.



production and the degradation of the protected Kathu Forest and the fauna and flora in the area.

7.7.8.7 As noted above, no studies have been provided as to the traffic impacts associated with the proposed development. It is submitted that the construction of a housing development in the area will result in a significant increase in traffic on roads which will have a high negative impact on existing road infrastructure. The report confirms the anticipated high volumes of traffic that will be generated by this development recommends that external road upgrades take place and suggests that mitigation measures be put in place regarding the proposed access route, however fails to elaborate on these suggested mitigation measures.<sup>40</sup> Furthermore, the GMSDF confirms that Kathu is already facing traffic congestion issues due to a large number of mining activities which are extremely transport intensive. It is further noted that traffic congestion already occurs on the N14 which is located within close proximity to the proposed development. A traffic impact assessment must be undertaken to assess the potential traffic impacts and propose adequate management measures.

7.7.8.8 The report notes that no constraints exist regarding the availability of services for the operation of the proposed development. As noted above, this statement is incorrect. We note that no confirmation of capacity from the relevant service providers has been provided with the report. Furthermore, the EAP assumes that the Kathu East Reservoir and Tower as well as the current sewer infrastructure have the capacity to accommodate the proposed development. It is submitted that this is a speculation, as the capacity to provide these services has not yet been determined. In respect to road service requirements, the BSISQR states that "*Frikkie Meyer Street is in the planning stage of a*

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<sup>40</sup>Page 26.





*total upgrade and it is assumed that the EIA for this project covers the existing entrance to the Equestrian Centre",<sup>41</sup> we submit that this assumption has not been confirmed.*

- 7.7.8.9 Furthermore, the report incorrectly states that the existing electrical main substation in the Kathu area is able to accommodate the proposed development.<sup>42</sup> We submit that this statement is contradictory based on the recommendations made in this specialist Electrical Service Report,<sup>43</sup> which specifically states that the existing capacity on the current 11Kv cable is insufficient to accommodate additional development. The report must be supplemented to clarify the infrastructure requirements and availability of capacity to accommodate the needs of the proposed development.
- 7.7.8.10 The construction phase activities will result in the increase in soil erosion and dust which may present a nuisance to interested and affected parties which are in close proximity to the proposed development and may negatively impact on the Kathu Forest and the ecology of the area. As noted above, a dust impact assessment must be undertaken in order to identify the dust impacts and propose adequate mitigation measures.
- 7.7.8.11 Furthermore, we note that the proposed development will be situated on the same property as the existing Kathu Equestrian Club. The report does not address the negative impacts that the proposed development will have on the horses in the area during both the construction and operational phases of the proposed development.
- 7.7.8.12 During the construction phase, equipment and construction materials such as concrete and other building materials must be handled and stored properly in order to prevent spillages and contamination which will negatively affect the soil and water resources and

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<sup>41</sup> Page 16 of Appendix 5.

<sup>42</sup> Page 24.

<sup>43</sup> Appendix 6.



surrounding properties. This is an important factor, considering the likelihood of soil and water contamination and the likely degradation of the Kathu Forest area.

- 7.7.8.13 Facilities are to be provided for workers during the construction phase for both solid waste and ablution facilities, this may attract vermin if this waste is not collected and disposed of properly. Ablution facilities must be monitored in addition to the behaviour of workers in order to prevent contamination which will negatively affect the soil, water sources, and the surrounding properties.
- 7.7.8.14 Noise as a result of the use of heavy duty vehicles and construction equipment during the construction phase and the increase in people and activity in the area during operational phase will likely destroy the current ambience of the rural area. As noted above, this may detrimentally impact on the use and enjoyment of the surrounding properties, the current businesses and activities being undertaken in the area (such as the Kathu Equestrian Club and tourism businesses related to the Kathu Forest) and will also result in the reduction of property values. Noise impacts will also impact on fauna and avi-fauna in the area.
- 7.7.8.15 Emissions during both the construction and operational phases of the proposed development will be increased which will have an effect on air quality in the area as not only dust will be discharged but vehicular, and commercial emissions will result from the proposed development.
- 7.7.8.16 The area is inherently agricultural in nature, the proposed development, which consists of high density residential activities in such an area would impact on the sense of place and likely reduce property values, with the impacts associated therewith likely resulting in the diminished use and enjoyment of neighbouring properties by surrounding residents and owners.



## 8 CONCLUSION:

8.1 For the reasons motivated above we submit that:

8.1.1 The report is misleading and contains insufficient information, including reference to documents which have not been provided, in order for interested and affected parties to submit informed comments thereon;

8.1.2 The report does not address the implications of the NEMA; and

8.1.3 The report fails to adequately address all the impacts associated with the proposed development.

8.2 The report, in its current form, is incomplete as certain material information, relied upon in the report, has not been provided; there has not been compliance with the NEMA requirements impacts associated with the proposed development have not been properly assessed; and adequate management and mitigation measures in respect of impacts likely to be associated with the proposed development have not been provided. Consequently, the report should be supplemented in order to address the gaps identified herein and recirculated for comment.

9 We thank you for your kind consideration of our clients' comments.

Yours faithfully



**WERKSMANS ATTORNEYS**

## The 'forest' in the Kalahari

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Commonly known as the Kathu Forest, an exceptional *Acacia erioloba* (Camel Thorn) woodland stands tall in the semi-arid southern Kalahari, just north of the town of Kathu which is 50km south-west of Kuruman. It is described as a forest because of the exceptional size and density of the Camel Thorn trees which form an open to closed canopy. It is apparently one of only two such woodlands in the world, with the other being between Mariental and Rehoboth in Namibia. The uniqueness of this small 4000 ha 'forest' was recognised as early as 1920, when it was declared a State Forest. In 1956 this forest was de-proclaimed to allow for the establishment of the town of Kathu, 'the town under the trees', in the southern portion of the woodland. In 1995 several properties containing the largest part of the Kathu Forest were registered as a Natural Heritage Site. It is encompassed by the Griqualand West Centre of Endemism (Van Wyk & Smith 2001).

The Kathu Forest is found on red aeolian sand of the Gordonian Formation, Kalahari Group, which is now considered to be a fossil desert. The red sands of the Kalahari are often underlain by calcrete of tertiary to recent age, which in turn overlies andesitic or basaltic lava of the Ventersdorp Group (Visser 2006). This

intrazonal woodland is within the Eastern Kalahari Bushveld Bioregion and the Kathu Bushveld vegetation unit (Mucina & Rutherford 2006). Only 1% of the vegetation is transformed when considering the level of transformation at the macro-scale for the entire extent of this vegetation unit. At the local level however around the town of Kathu there is significant transformation pressure on the vegetation, especially where there are high concentrations of *Acacia erioloba*. The presence of this dense woodland at Kathu may be due to the large underground water supply, which occurs in huge aquifers below the red Kalahari sand and calcrete substrates.

*Acacia erioloba*, a protected tree under the National Forests Act of 1998, plays an important role in the Kalahari Savanna of the Northern Cape. Throughout most of its range, it is the only large tree species that grows on sand where average annual rainfall is below 400mm (Carr 1976; Milton & Dean 1995). Large isolated Camel Thorn trees provide resources and services that are scarce in the Kalahari, such as shade and shelter for many animal species, nest sites for birds and mammals, observation posts, bark foraging for birds, mammals and reptiles, and specialized food for

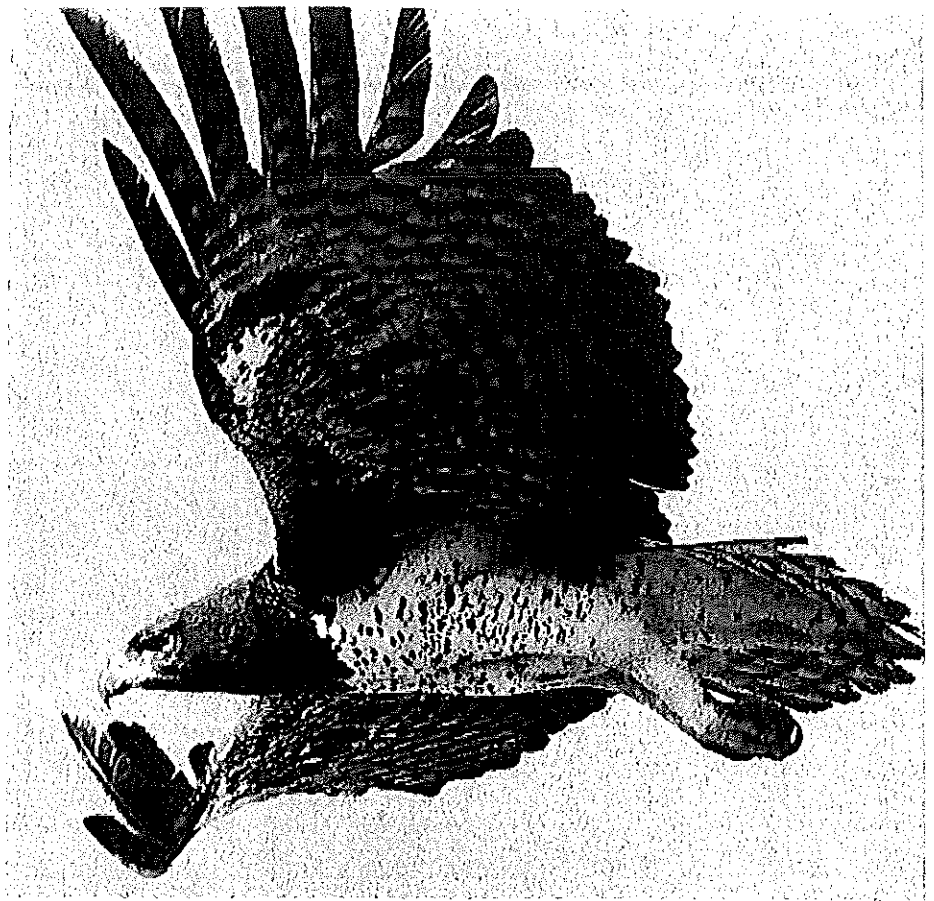
The Camel Thorn, *Acacia erioloba*.



prey items (Milton & Dean 1995). Owls, raptors and vultures use Camel Thorn trees for perch-hunting, nesting and roosting. Camel Thorn trees provide food to many animals, in the form of foliage and pods, with the latter being available during winter when other protein-rich foods are scarce.

The Camel Thorn is considered to be a keystone species in the Kalahari because it facilitates the processes that maintain heterogeneity and species diversity, namely seed dispersal and site modification (Milton & Dean 1995). One of its keystone functions is the generation of patchiness, performed only by large trees. Over the centuries it has been of much use to man; many historical moments have been made in the shade of a Camel Thorn tree. The wood was used to make domestic utensils, the seeds used as a coffee substitute by the Korannas, the bark and pods were used medicinally, and the roots used to make flutes by the Nama when reeds were unavailable.

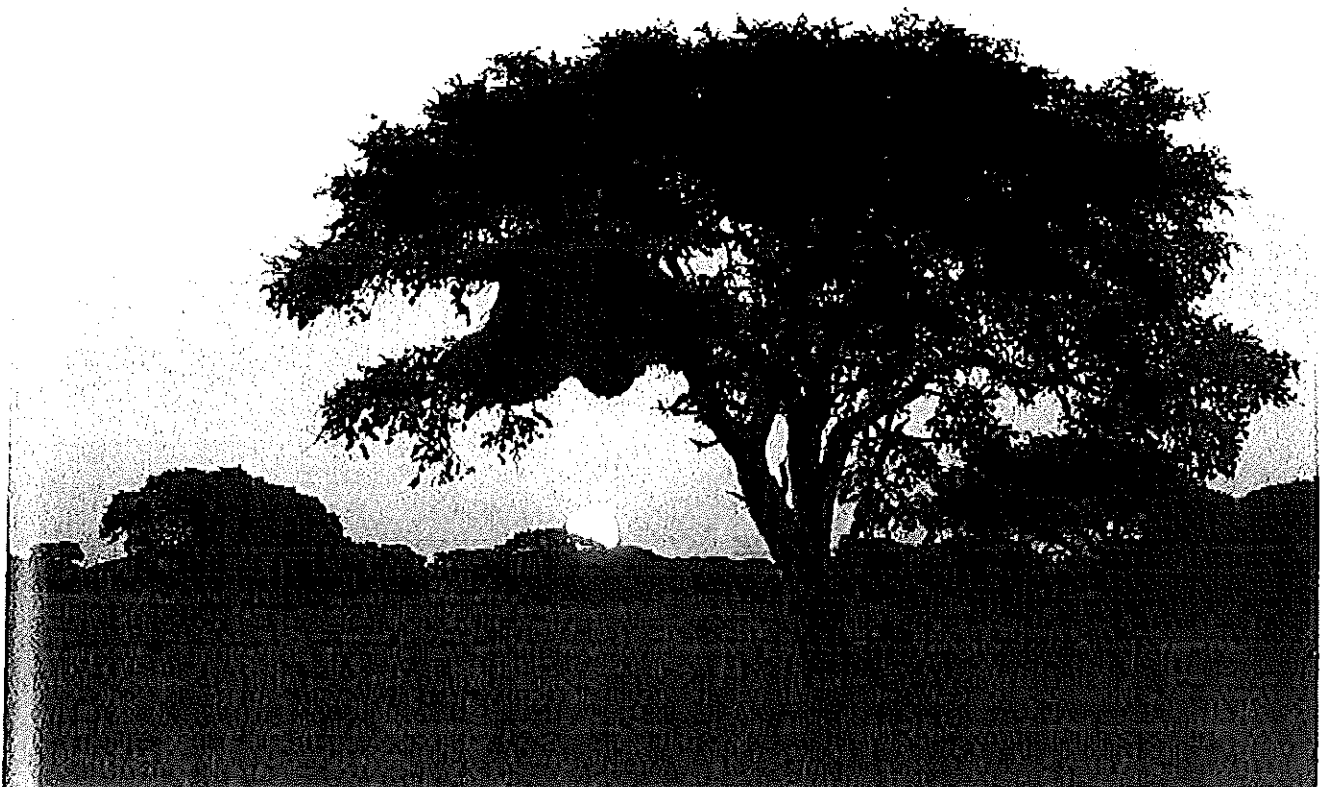
Today it continues to provide shade and shelter in desert areas, and sweet gum that is relished as a sweet by children, to mention but a few of its values to man. The Kathu Forest has had a long history of utilization by man dating back 800 000 years, confirmed by the presence of innumerable artefacts which make it one of the richest archaeological sites in the world.



The magnificent Martial Eagle inhabits the Kathu Forest.  
Photo: Mark Anderson

The teeth of an extinct species of elephant, *Elephas recki*, along with finely crafted silica-coated hand axes, have been found in a site on the edge of the forest. The most recent traces of early people include San stone tools and Tswana pottery. Early people would have harvested berries from the large Buffalo Thorns (*Ziziphus*

Sunset view of *Acacia erioloba* woodland.



*mucronata* subsp. *mucronata*), Raisin Bushes (*Grewia flava*) and Blue Bushes (*Diospyros lycoides*), and used the roots of the Shepherd's Tree (*Boscia albitrunca*), which is also present in the forest. *Hoodia gordonii*, present in small numbers as isolated individuals, has for thousands of years been used by the San to stave off

hunger during their often lengthy hunting trips. *Boophone disticha* and other geophytes may have provided their medicinal needs. Red Data species recorded in the woodland include *Hoodia gordonii* and *Harpagophytum procumbens* subsp. *procumbens*; both these species occur in low numbers

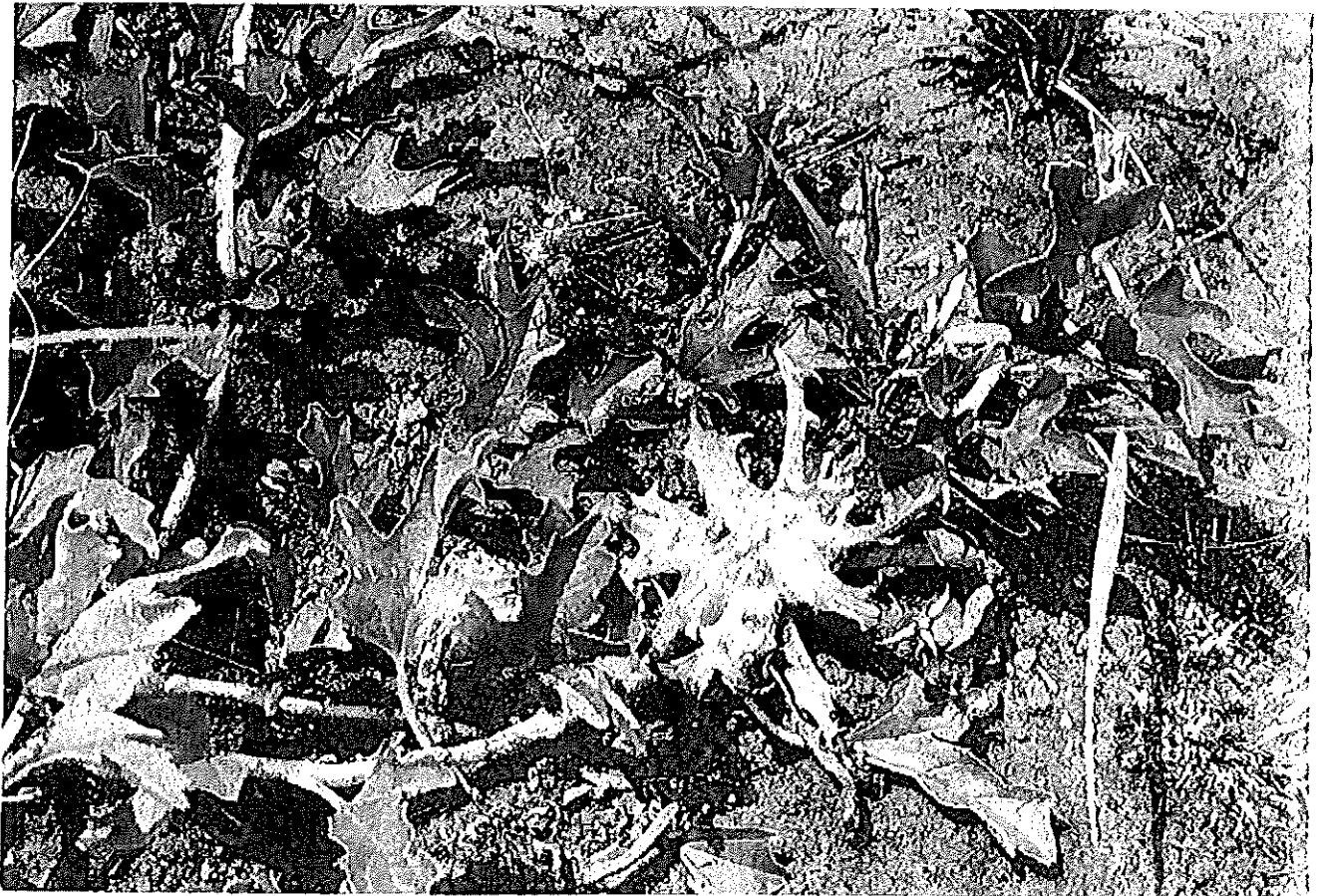
and in fairly small populations throughout most of their range. The woodland also harbours protected species such as *Ammocharis coranica*, *Nerine laticoma* and *Ruschia griquensis*, and the endemics/near-endemics *Rhus tridactyla* (endemic to the Griqualand West Centre), *Anthepera argentea* and *Panicum kalaharensis* (endemic to the southern Kalahari).

The plants of the Kathu Forest support a unique array of bird species, such as the rare yellow morph of the Green-winged Pytilia, yellow Crimson-breasted Shrikes, Red-billed Spurfowl, Pied Babbler, Groundscraper Thrush and Red-billed Buffalo Weaver (Liversidge 2000).



*Harpagophytum procumbens* flower.

*Harpagophytum procumbens* is a Red Data species, visible above ground for a few months after summer rains.



For thousands of years this dynamic ecosystem has been providing goods and services and playing a role in the maintenance of patterns and processes in the southern Kalahari.

Now, faced with a new suite of increasing threats, it must be actively conserved or die a slow death by a thousand cuts. In recent decades, parts of the Kathu Forest have been mis-managed which has led to its deterioration.

Arboricides have been used to control Black Thorn trees (*Acacia mellifera* subsp. *detinens*), spreading as a result of overgrazing. The chemicals have also affected other woody vegetation including Camel Thorns (Liversidge 2000).

Mine dust from the nearby Sishen Iron Ore Mine has been implicated as a possible cause of tree die-offs. Camel Thorn pods were being collected on a large scale to use as livestock feed and sections have been overstocked. For several years harvesting of protected Camel Thorn trees from the Natural Heritage Site for the fuelwood market escalated (Anderson & Anderson 2001).



*Nerine laticoma* on pan fringes at Kathu.

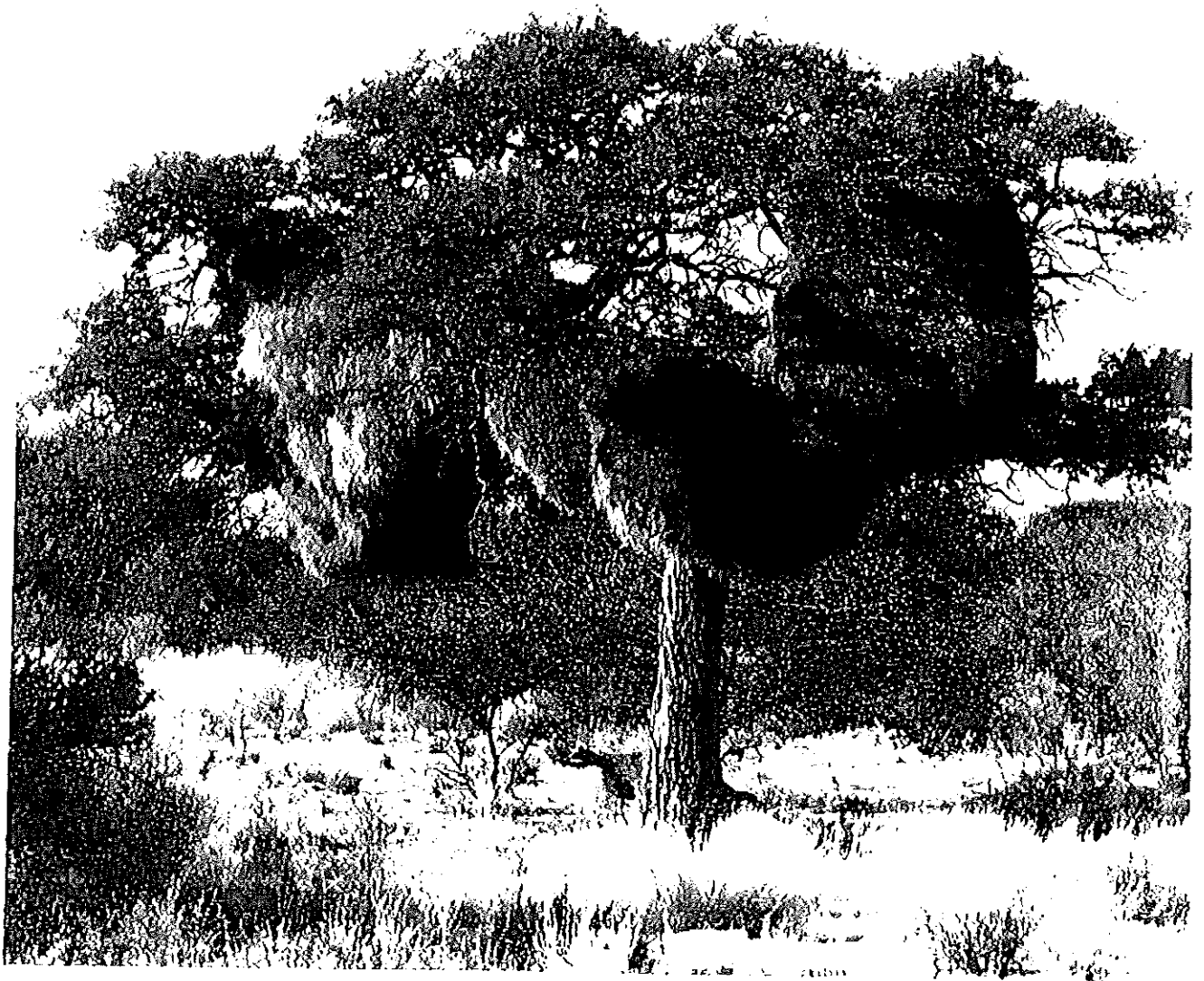
Today, the rich fossil water resource in the aquifers is rapidly being abstracted for use by Kumba's Sishen Iron Ore Mine, by surrounding farmers and by a developmental boom in the once-sleepy town of Kathu which includes water-thirsty, up-market housing developments. This unsustainable use and lowering of the water table could lead to the death of Camel Thorn trees, the keystone species of the forest. *Acacia eritoloba* is able to access permanent water deep in the soil, and tap roots of up to 60m have been reported.

Kathu Forest is considered worth protecting for scientific, biodiversity, landscape and eco-tourism reasons. Surveys have shown a moderate to high diversity in plant and animal species, including several Red Data, endemic and protected species. Specialist reports for environmental impact assessments around Kathu indicate that the Kathu forest is seriously under-protected (Van Rooyen 2006). Between 27-34% of the forest has already been transformed, and new developments could increase this figure to 36%.

According to the National Spatial Biodiversity Assessment for South Africa, the threshold at which an ecosystem could become critically endangered is when only 16 to 30% of the natural ecosystem remains. For a forest ecosystem the threshold could be as high as 70% and, as this has already been reached for the Kathu Forest, it could already be considered Critically Endangered.

To afford the woodland a higher level of protection before too much is transformed, a request was made to the Department of Water Affairs and Forestry (DWA) in April 2006 for emergency protection of the Kathu Forest under the National Forests Act (NFA). The DWA in July 2007 gazetted its intention of declaring the Kathu Forest a Protected Woodland under Section 12 of the National Forests Act.

A task team co-ordinated by the provincial Department of Tourism, Environment and Conservation met for the first time in November 2007 to tackle the process of formally declaring the forest a protected environment under the National Environmental Management: Protected Areas Act. Such protection will allow current land use practices to continue, but will safeguard the woodland against future detrimental anthropogenic influences. The core area of dense woodland will be regarded as the prime conservation area, while the development of limited low-impact, ecotourism facilities may be allowed in the second class of more open woodland. Low density residential eco-estates may be considered in the buffer area (comprising the third class of open woodland), but with compensatory actions to provide for the protection of the primary conservation areas.



A large Sociable Weaver nest in a Camel Thorn tree. Photo: Mark Anderson



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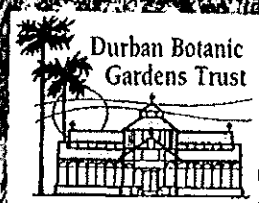
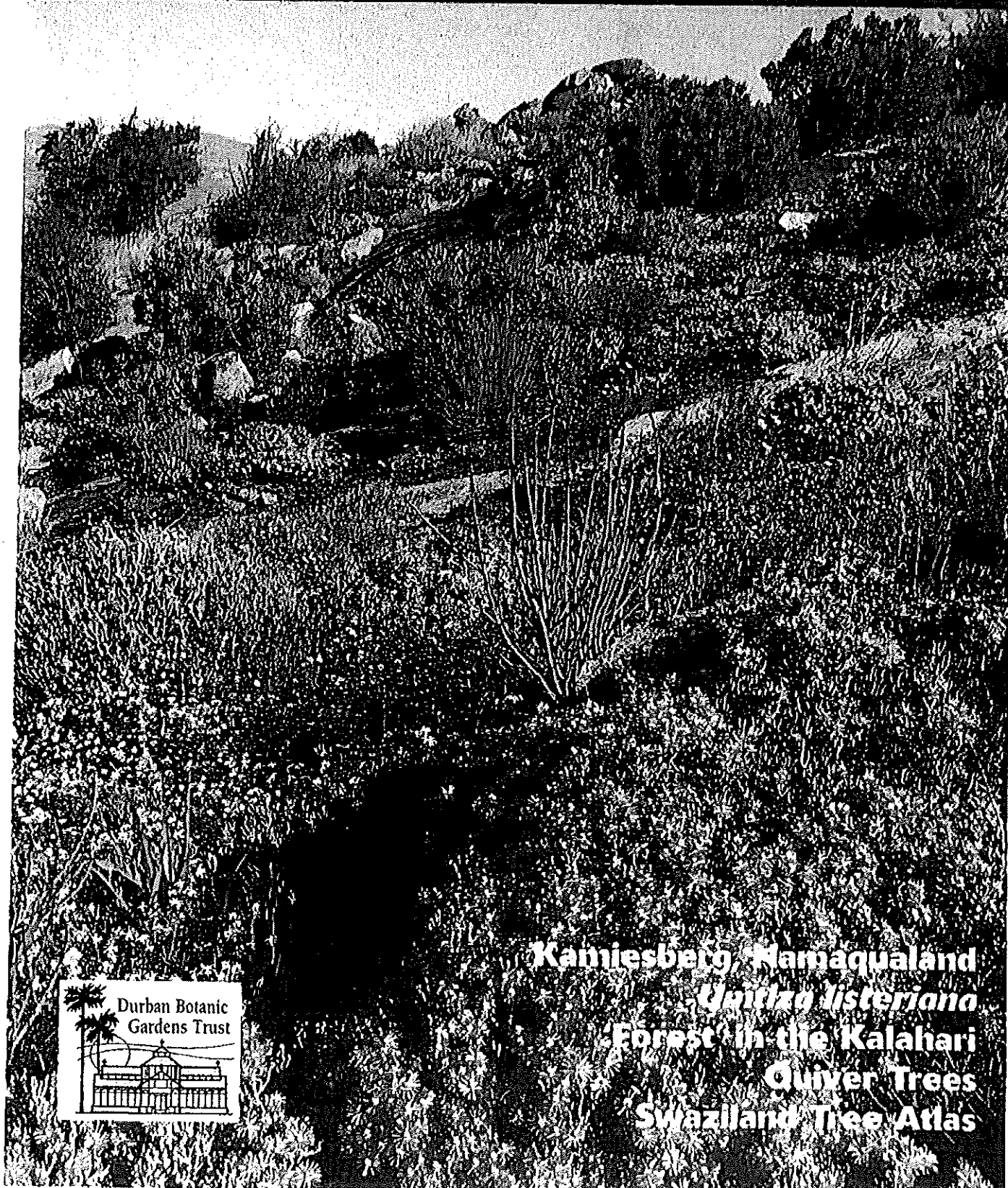
Sociable Weavers entering their nest at sunset. Photo: Mark Anderson

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