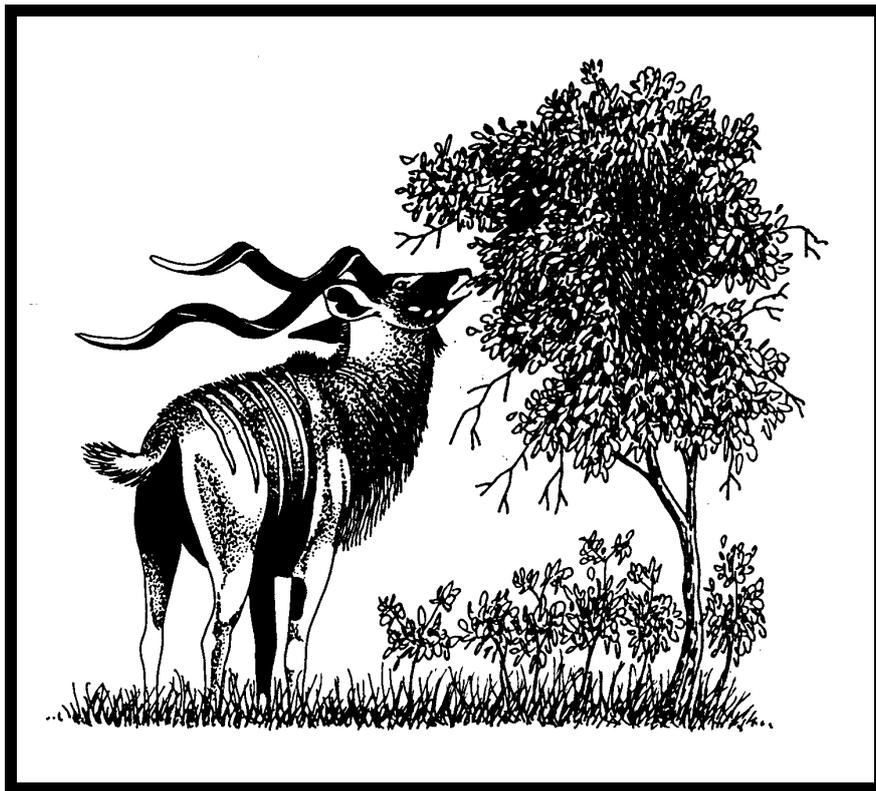


ECOLOGICAL CAPACITY OF THE LITTLE KAROO FOR LARGER WILDLIFE

MATCHING GAME SPECIES TO HABITAT
AND RECOMMENDED DENSITIES

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1. INTRODUCTION

It is important for landowners to appreciate that game introduction into the Little Karoo area must be carefully considered. Changing from livestock farming to game ranching does not imply more sustainable utilization of the veld or a financially viable enterprise.

The Little Karoo area is much less productive than the Savanna, Grassland or Great Karoo in terms of game forage, particularly grazing. Grass is a seasonal occurrence and is dependent on the timing and amount of rainfall that differs vastly across the area.

In general, the ability of the veld to sustainably support game is very low and what makes matters worse, is that in many parts of the Little Karoo, excessive small stock farming has reduced the capacity of the veld to support grazing animals.

Here we provide a list of the game species and the stocking rates we believe most suitable for the Little Karoo. This is merely a guideline with the sole purpose of assisting landowners to utilize their veld at sustainable levels.

We sincerely hope that prospective game farmers will find our suggestions useful and that they will consider our recommendations **before** they consider the introduction of game. Our figures may not be 100% accurate, but certainly will enable landowners to develop a reasonable idea about the most suitable species and potential numbers of game that a particular property can sustain.

2. SPECIES THAT SHOULD NOT BE INTRODUCED INTO THE LITTLE KAROO

Patch-forming, herding species like the extralimital (species that did not occur in the area) black wildebeest, blue wildebeest and blesbok are not a good option for the Little Karoo area. Their behaviour generally exacerbates the already arid situation in flat, open and disturbed veld, where the conservation and improvement of the natural plant cover is a primary rehabilitation objective.

Species which will compete with sensitive locally indigenous species like common duiker, grysbok, klipspringer and steenbok and also larger species like eland and kudu should also be avoided. Examples of these species are the extralimital impala, nyala and giant eland.

Careful consideration should be given to what is often regarded as non-malignant extralimital species such as giraffe and gemsbok. We have no data on the long-term impacts of these species on the veld, but there are other studies that show they can have detrimental impacts on the veld. Gemsbok is a particularly difficult case as they often do very well in the area and are thus popular, but they may hold a threat especially to the succulent biodiversity of the Little Karoo.

3. HABITAT SUITABILITY

It must be appreciated that certain species which occurred in the Little Karoo in the past may now be unsuitable for introduction into most game farms because of habitat change that may have occurred or habitat area limitation. The black rhinoceros, which requires approximately 2 000 ha per animal is an example.

It must also be kept in mind that not all parts of a particular farm are suitable for all of the species considered suitable for the general area. It may be that a particular farm has absolutely no suitable habitat for kudu, while the adjacent farm does have good kudu habitat.

The principle that should thus be used for the introduction of game into the Little Karoo is “to match the game to the available habitat”.

We enclose a set of maps for each of the recommended game species, indicating where suitable habitat occurs in the Little Karoo. The maps also indicate the estimated carrying capacity of the habitat (thus how many hectares you require for each species).

There is no specific combination of game animals that will be suitable for introduction to all of the farms in the Little Karoo. The mix of animals introduced must be in accordance with the variety and extent of the habitats on a particular farm. You can use the maps provided to determine the specific combination of animals that would be best suited to your needs.

4. SUITABLE GAME SPECIES

Table 1 lists the game species which are considered suitable for introduction into the Little Karoo area. These are the species which are known to have occurred in the Little Karoo area in the historical past according to Skead (2007).

| COMMON NAME | SCIENTIFIC NAME |
|----------------------------------|---------------------------------|
| Black rhinoceros | <i>Diceros bicornis</i> |
| Hippopotamus | <i>Hippopotamus amphibious</i> |
| Cape mountain zebra | <i>Equus zebra zebra</i> |
| Plains zebra (replaces quagga) | <i>Equus burchelli</i> |
| Buffalo | <i>Syncerus caffer</i> |
| Eland | <i>Tragelaphus oryx</i> |
| Greater kudu | <i>Tragelaphus strepsiceros</i> |
| Red hartebeest | <i>Alcelaphus buselaphus</i> |
| Springbok | <i>Antidorcas marsupialis</i> |
| Common duiker | <i>Sylvicapra grimmia</i> |
| Steenbok | <i>Raphicerus campestris</i> |
| Grysbok | <i>Raphicerus melanotis</i> |
| Klipspringer | <i>Oreotragus oreotragus</i> |
| Grey rhebok | <i>Pelea capreolus</i> |
| Bushpig | <i>Potamochoeris porcus</i> |
| Ostrich (only indigenous strain) | <i>Struthio camelus</i> |

TABLE 1: Game animals which are considered suitable for introduction into the area covered by the Little Karoo vegetation map.

5. PROPOSED STOCKING RATES FOR THE GAME OF THE LITTLE KAROO AREA (Also see attached maps for Little Karoo)

Table 2 lists the Little Karoo game species and the estimated area required per animal (hectares) for the major habitat types.

| HABITAT | OSTRICH | RHINO | HIPPO | MOUNTAIN ZEBRA | PLAINS ZEBRA | BUFFALO | ELAND | KOEDOE | RED HARTEBEES | SPRINGBOK | DUIKER | STEENBOK | KLIPSPRINGER | GRYSBOK | RHEBUCK | BUSHPIG |
|----------------------------------|---------|-------|-------|----------------|--------------|---------|-------|--------|---------------|-----------|--------|----------|--------------|---------|---------|---------|
| River & floodplain | - | 2000 | 180 | - | 100 | 80 | 50 | 25 | 75 | - | 5 | - | - | - | - | - |
| Valley Thicket | 90 | 1500 | - | 80 | 80 | 80 | 50 | 25 | 35 | - | 5 | - | - | - | - | - |
| Arid Thicket | 50 | 1500 | - | 120 | 120 | 110 | 50 | 25 | 35 | 15 | 5 | - | - | - | - | - |
| Thicket Mosaics & Randte & Asbos | - | 2000 | - | 120 | 120 | - | 65 | 75 | 25 | 15 | 5 | 16 | - | 7 | - | - |
| Apronveld | 30 | 4000 | - | 120 | 120 | - | 65 | - | 25 | 10 | 8 | 10 | - | 5 | - | - |
| Gannaveld | 30 | 4000 | - | - | - | 220 | 50 | 50 | - | 10 | 5 | 10 | - | - | - | - |
| Scholtzbosveld & Kalkveld | 40 | - | - | - | - | - | - | - | - | 10 | 15 | 10 | - | - | - | - |
| Arid & Mesic Renosterveld | 90 | - | - | 40 | 40 | 220 | 65 | 75 | 35 | 15 | 8 | 30 | 16 | 2 | 8 | 30 |
| Grassy Fynbos & Waboomveld | - | - | - | 40 | 40 | 220 | 65 | - | 75 | - | 15 | - | 10 | 4 | 8 | 10 |
| Fynbos all & Sandolienveld | - | - | - | 120 | 120 | - | 150 | - | - | - | - | - | 10 | 7 | 12 | 7 |

TABLE 2: Recommendations of the minimum area (ha/animal) for the Little Karoo Map Grouped Habitats.

6. THE PRINCIPLES UPON WHICH THE RECOMMENDATIONS FOR GAME STOCKING RATES ARE BASED

- The ha/animal value is the total area of **suitable** habitat available per habitat type and not for the entire farm.
- These estimates need to be reassessed regularly and adjustments to the ha/animal estimate should be made in accordance with rainfall and veld condition as shown through veld monitoring results.
- The estimates are based on LAU to game conversions given in Bothma (2002), but have been moderated to fit Little Karoo conditions in terms of our observations of sustainable browse and grazing availability in Little Karoo vegetation.
- These estimates are meant to provide only a very basic guideline. They are purposefully conservative to cater for the extremely arid climate of the Little Karoo area and they are based on the generally low rainfall of approximately 250 mm per year (150 - 300 mm range).

7. RECOMMENDATIONS REGARDING GAME MANAGEMENT IN THE LITTLE KAROO VEGETATION MAP AREA

- a) **PLANNING:** Consult CapeNature and/or a game expert with experience in the Little Karoo **before** you erect any game fences on your property. In many cases these game fences will create barriers that holds a threat to natural migrating species. You may well save yourself money and a lot of trouble in time.
- b) **ADVICE:** Although stocking rates for game species are recommended per habitat type for the vegetation map, conditions vary considerably across the landscape. Differences in rainfall, soils and grazing history all play a role in veld and game management. It is thus advisable to seek the advice of an experienced veld and game management consultant before any animals are purchased.
- c) **MONITORING:** Once game is introduced into a farm, it is critical that the impact that the animals have on their food resource is monitored. It is also important to collect information about where the animals spend most of the time foraging and also to keep accurate records of numbers of animals you have.

Once you have an idea what areas on the farm the animals prefer and which plants they target it is a good idea to establish photo-monitoring sites. The areas round water points are often the first to be impacted upon and are often good sites to establish photo-monitoring plots.

Veld degradation is often a gradual process that is not detected, unless you have reference photos to look at. Good records of monthly rainfall will further enable good game and veld management.

- d) **SOURCING GAME:** Game animals should be sourced from as close to the Little Karoo as possible, and preferably from within the Little Karoo. This will greatly reduce the losses that usually occur from feeding stress when animals are sourced from the northern provinces, Natal and Namibia. The stress of long transporting is also reduced and locally sourced animals are also better able to survive local parasites and diseases.

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EXAMPLE OF MAPS (Also available as high resolution pdf files showing cadasters)

Eland (current)

