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HAND GUIDE FOR RANGE MANAGEMENT

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DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT



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MINISTRY OF AGRICULTURE, WATER AND RURAL DEVELOPMENT



**REPUBLIC OF NAMIBIA** 

#### COMPILED

BY

## THE DIRECTORATE OF AGRICULTURAL RESEARCH AND TRAINING

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#### INDICATOR PLANTS AND RANGELAND EVALUATION

It is important that planners and farmers should be able to evaluate the natural rangeland or range. This means that they must know what type of range they are dealing with and what is happening to the range over the long-term. This information is very important for the planning of grazing areas, as well as the determination of grazing capacity and choice of range management strategies.

When evaluating the range indicator trees and grasses are used. These trees and grasses indicate; climate and soil, veld type, palatability of the range, plant succession stage, whether the range is improving or not, potential land use and past treatment such as overgrazing and burning.

In order to evaluating rangeland it is important that one must know what is the potential of the specific veld type so that one can determine the present condition of the range. The only way to determine the present condition of the range is to compare it with a protected area (benchmark) where the range is still in good condition. Using the benchmark as norm  $\mathcal{L}_{\mathcal{L}}$ one can determine the present condition of the range and make recommendations as too defaced of which management strategies should be followed.

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Grasses are classified according to their position in the plant succession;

- Pioneer grasses indicate the lower stage of the plant succession and occur mainly on disturbed areas such as over grazed areas, road making, old lands etc.
- Sub-climax grasses can be seen as an intermediate stage between the pioneer stage and climax stage. The sub-climax stage is not necessarily brought about by over-grazing alone, but can be due to a combination of climate and incorrect grazing.
- Climax grasses are those which occur under prevailing climatic conditions and good range management. - (Tablel)

It must be kept in mined that a range that is in good condition will not only have climax grasses but a combination of the different stages of succession. A range that is dominated by one species only, especially annual grasses or weeds (forbs), is not good. Many of the weeds however, are very palatable and nutritious and play a very important role as fodder. In the Dwarf Shrub Savanna these forbs are a valuable source of fodder later in the season. Trees and shrubs are also classified in the different stages of succession. Bush Bad Acus encroachment is an example of an unwanted situation were trees dominate and suppress. for a grass growth. Deforestation coinciding with bad range management leads to a rangeland concerned dominated by annual grasses. dominated by annual grasses. system

In Diagram 2 the relation between range soil and water and the direction of change when the range is subjected to grazing treatment is illustrated.

Table 1: Species abundance in different stages of succession. Runge Condition Rating Fair Good Excellent PEOR NNUCLE X х X Х X X radicans X X Х X C. ciliaris X × echinochloidia X lehmanniana X X X E. rigidior X × rotifer X X X E. trichophora - × \ ×. Х coloratum X maximum

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, pappophoroides

(Bester 1984)

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# THE RELATION BETWEEN VELD, SOIL AND WATER



