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## Basic guidelines to Veld Management – West Coast

The West Coast mainly represents a winter rainfall area in the Succulent Karoo biome. The average rainfall varies from 100 – 300 mm and the area can be described as arid. The vegetation in the south of the West Coast forms part of the Fynbos biome and specifically the sandy veld types. Both of these vegetation regions have many plant species that are unique to the area and have to be protected. All veld types are sensitive to incorrect grazing practices and it is therefore extremely important that good veld management is practised in order to ensure the conservation of the veld by proper utilisation.

Pasture management can be divided into two components, namely:

- pastures (veld (natural pastures), cultivated pastures, etc.); and
- management (**plant** production, **seed** production, **seedling** establishment).

### What are pastures and why are they important?

Pastures provide food for animals.

This is determined by:

- plant cover;
- species composition (different types of plants in the veld);
- productivity (yield of plants); and
- palatability of veld plants.



### This is influenced by:

- Soil – can be improved by leaving organic material on the ground, which leads to better water infiltration resulting in a denser plant cover, more food and less erosion.
- Climate (rainfall, temperature, etc.)
- MANAGEMENT – this is where humans fit in. If a farmer does not look after and takes care of his veld, he will not have food for his animals.

### Veld

The number of plants or the plant cover, the type of plants (species composition) found in the veld, the size of the plants, their palatability and how well they grow (productivity) determine how much food there

will be and apart from the environment, the farmer has the greatest impact on this. It is therefore important to know how the livestock utilises the veld, to have knowledge of the plants that grow in the veld and to know in what condition the veld is.

Veld condition is the condition of the vegetation in relation to certain characteristics such as the species composition, cover, productivity, palatability and nutritional value. Grazing capacity depends on the condition of a camp or the veld of the farm.

### How does livestock make use of the veld?

Livestock first eats the plants that are palatable and leaves the unpalatable ones until last. Palatable plants include the following:

vaalbietou (*Chrysanthemoides incana*), rusty sage/sandsalie (*Salvia lanceolata*), perdebos (*Didelta spinosa*), Hartbees grass (*Chaetobromus dregeanus*) and perennial veldt grass/rooi-saadgras (*Ehrharta calycina*).



Although these plants are dependent on a certain amount of grazing to stimulate growth, overgrazing can negatively influence their growth and therefore careful note must be taken of the utilisation of all plants in the veld, particularly the palatable plants. In order to build up reserves for dry periods, no more than 40% of a plant should be used in one season.

If there are too many animals or if they are in a camp for too long, they will graze all the palatable species while only the unpalatable ones remain and multiply, therefore the farmer can keep fewer animals over a period of time in the same camp. It also leads to trampling of the vegetation and as a result a hard and impermeable soil crust may form which can hinder the germination of seeds.

It is therefore important for the farmer to know his veld, which species are desirable, which type he would like a lot of and which are the unpalatable

and poisonous species of which he wants little or none in the veld. He must also know which plants are invasive species, such as *Prosopis* spp. (mesquite tree), cactuses, slangbos/bankruptbush, etc. and certified weeds such as burweed, cocklebur, etc.

### Does the veld improve with time or does it deteriorate?



Do the palatable species increase and grow bigger, thereby creating better cover and providing more food and causing less soil erosion, or are the plants grazed away with only gnarly bits remaining, totally gone or very scarce? Vegetation cover along the West Coast

increases from the north to the south from 15% to 40% as a result of the increasing average rainfall. An indication that the veld has deteriorated is the increasing presence of kraalbos, katdoring, kriedoring (*Lycium* spp), blasiebrak and resin bush/harpuisbos, etc.

Another good indicator of the condition of the veld is whether there are seedlings and young plants of the palatable species growing in the veld, or whether there are only seedlings of unpalatable species and some ephemerals (opslag).

### Soil

The way in which veld is managed will have a long-term impact on the soil. If the veld are overgrazed and trampled by animals as a result of incorrect management, erosion can take place or the soil surface can form an impermeable layer. This means that the seeds that are present and germinate cannot get their roots through the soil crust to become established and the water runs off instead of penetrating. Consequently rain becomes less effective, the top soil gets washed away and this can lead to gully erosion.

To create an effective seed bed for germination and the establishment of plants the farmer can by means of good management and observation ensure that organic material (twigs, leaves, etc.) is left on the ground to



decompose and be converted by microbes so as to be absorbed by the soil as food for the plants (organic carbon). Together with the plant cover, this will help to regulate the soil temperature and with holes/hollows in the ground it will help with better water infiltration because water will flow away much slower; it also help to catch the seed and to provide shelter for the young seedlings.

### How is the farmer going to make sure that the veld provides enough food for his animals?

He can do this by applying the correct management. The following are a few points that should be noted:

1. the number of animals that the farm can support (grazing capacity); and
2. the management system that is followed.

### Grazing capacity and stocking rate

**Grazing capacity** is the ability of a specific piece of veld to produce food, therefore the number of animals a farmer can keep in a camp or on the farm, without the deterioration of natural resources (soil, plants, etc.). As already mentioned, this is dependent on the condition of the veld. Grazing capacity is expressed in ha/LSU (hectare per large-stock unit), or roughly how many hectares are required to provide food for a year for one head of cattle weighing 450 kg. Meissner and others (1983) divided all livestock and game as a factor of a large-stock unit. For example: One wool-bearing ewe (dry) = 0.15 LSU, while a wool-bearing ewe with a lamb is equal to 0.20 LSU.

**The TOTAL number of animals should not exceed the recommended grazing capacity!**

For example: A grazing capacity of 30 ha/LSU means that the farmer needs 30 ha to provide food for one cow over a period of a year, that is to say that approximately a 100 head of cattle can be kept on a farm of 3 000 ha. For sheep this means that approximately 4.5 hectare is required for one sheep (seven wool-bearing sheep (ewes) are equal to one small-frame cow). The farmer can therefore keep approximately 700 sheep on his 3 000 ha farm, in other words, 400 breeding ewes plus the lambs, rams and replacement ewes.



**Stocking rate** is the number of animals that a farmer can keep for a specific period on a certain area of the veld (camp/farm). This includes all animals on the farm, large and small, sheep, cattle, goats, donkeys, ostriches, game, etc.

Grazing capacity and stocking rate should be reconciled with one another in order to ensure the sustainability of a production system on the farm.

**Grazing capacity** is how many animals you can keep on the farm.

**Stocking rate** is how many animals you are keeping on the farm.

The farm's grazing capacity is an indication of how many animals can be kept there, while stocking rate is an indication of how many animals are kept there. If the farmer keeps more animals than his grazing capacity permits, the condition of the veld will deteriorate and as a result he can keep fewer animals over the long term.

If the farmer keeps fewer animals than he is allowed to keep according to the recommended grazing capacity, this will be to the benefit of the veld and

the animals because the veld will build up reserves (new plants, bigger plants, regrowth of existing plants, flowers, seed formation, etc.) and improve over the long term. The farmer will find it easier to overcome drought periods (may not have to feed – cost implication), he will be able to keep more animals over the long term, thereby giving more stability to the farm.

The recommendation is usually to keep fewer animals than those that can be kept according to the recommended grazing capacity.

The recommended grazing capacity is a long-term value and an indication of grazing capacity under optimal conditions and for large parts of the West Coast this is 30 ha/LSU. There will be above and below average rainfall years over a 10-year period when more or fewer animals can be kept, but on average this should not be more than one head of cattle per 30 ha over the 10-year period. In drier years the number of animals should be reduced to adapt to the amount of food that is available. During good years the numbers can be gradually increased but not more than the recommended numbers.

**Example:**

Farm size (veld): 3 000 ha  
 Recommended grazing capacity: 30 ha/LSU/year  
 Animals that the farm (grazing land) can carry:  
 Farm size ÷ grazing capacity 3 000 ÷ 30  
 = 100 LSU per year

Present stocking rate on farm (veld) (total number of animals kept on farm):

1 000 breeding ewes (wool-breeding x 0.15 LSU) = 150 LSU  
 1 200 lambs x 0.10 LSU = 120 LSU  
 30 rams x 0.19 LSU = 5.7 LSU  
 4 head of cattle = 4 LSU  
**Total** 279.7 LSU

The veld is carrying 180 more LSU than recommended and will therefore deteriorate rapidly.

**What is the ideal stocking rate?**

4 head of cattle = 4 LSU  
 300 breeding ewes x 0.15 LSU = 45 LSU

60 replacement ewes x 0.15 LSU = 9 LSU  
 360 lambs x 0.10 LSU = 36 LSU  
 9 rams x 0.19 = 1.7 LSU  
**Total number of cattle on the farm:** 95.7 LSU

If the farmer wants to keep more animals than allowed according to the grazing capacity of the farm, he has to give them additional fodder – in a feeding-lot. Animals should not be fed in the veld because this leads to trampling and deterioration of the condition of the veld. Animals still graze even if they get additional fodder in the veld. If he wants to keep more animals, the period for which the veld can be used also becomes shorter (see the box with the example of grazing days). The additional fodder leads to higher costs. If the farmer is not going to feed, this will lead to deterioration of the veld as well as lower animal production (therefore a poorer lamb percentage, a lower mating percentage and the growth of animals will decrease). All of these factors have financial implications.



**Grazing days**  
*Referring to our example, let's look at the number of grazing days in the veld:*

Grazing days =  
 farm size ÷ grazing capacity  
 x 365 days  
 = 3 000 ha ÷ 30 ha/LSU  
 x 365 days  
 = 36 500 grazing days/LSU.

How many days' food is available for 100 LSU?  
 = total grazing days ÷ LSU  
 = 36 500 ÷ 100  
 = 365 grazing days

How much food is available for 280 LSU? The number of animals presently on the farm in the example:  
 = total grazing days ÷ LSU  
 = 36 500 ÷ 280  
 = 130 days (4 months)

*The same method can be used to determine how many grazing days are available in a specific camp.*

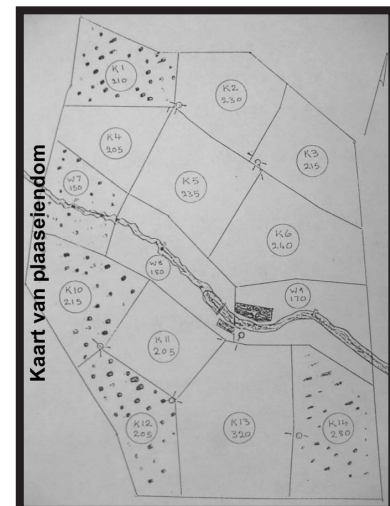
**Management**

The farmer should preferably keep his stocking rate equal to or even lower than the grazing capacity. If incorrect management is applied the veld can still deteriorate, for example when animals graze in the same camp every year at the same time of the year, such as a lambing camp or a mating camp, etc. If a camp is used every year when the palatable plants are flowering and form seeds, the plants are unable to multiply. The palatable plants that die are not replaced and after a few years all palatable plants, which are the main source of fodder, are grazed away and therefore fewer animals can be kept. The production of the animals will also decrease because their fodder is substandard.

It is therefore important that a rotation rest/grazing system should be followed where the farm is divided into camps and each camp gets a rest period during the year. To prevent continuous grazing, the farm should be divided into camps and the animals should be rotated between the camps throughout the year. These camps should also have a central watering place so that grazing can be spread out evenly throughout the camp.

**Example:**

The farm consists of four camps where each camp is approximately the same size and able to carry the same number of animals. One camp annually gets the opportunity to rest for



the whole year. The same camp is never used for grazing in the same season over a four-year period. The camp therefore gets sufficient opportunity to flower, form seeds and seedlings get a chance to establish themselves while reserves (regrowth) can build up.

A four-camp grazing system:

	Summer Dec/Jan/ Feb	Autumn- March/Apr/ May	Winter Jun/Jul/ Aug	Spring Sep/Oct/ Nov	Rest
Year 1	A	B	C	A	D
Year 2	B	C	D	B	A
Year 3	C	D	A	C	B
Year 4	D	A	B	D	C

Only three camps are used annually, while the fourth camp rests for the whole year and is only used for grazing again in the third grazing season. The camp is therefore rested for 18 months after which it gets intermittent rest for 6 - 9 months over a four-year period. The 18-month rest period follows after the camp has been used for grazing twice in the previous calendar year with only six months of rest between the grazing periods.

#### Game:

Game is not easily rotated in a grazing system with camps. The game continuously grazes in the veld and should therefore be kept at 60%, or even less, of the recommended stocking rate. This will ensure that the veld will have a better chance of recovering after the rains. With continuous grazing the animals tend to concentrate on the more palatable parts, in other words the flowers and this is the next generation of plants.

#### Drought management

Before an area is hit by a disaster drought the number of animals has to be reduced. The animals must be moved to the feeding-lot to be rounded off and to save the reserves of the veld. The number of animals should be reduced to a core herd by selling the castrated animals first, followed by older animals and then the culls, including ewes that have not lambed in the previous season. Strict breed standards have to be applied when choosing culls.

Regardless of whether or not you have a veld management system, keep the number of animals low so that the impact on the veld is not too great. Get to know your veld and take note of the presence/absence of seedlings of the palatable species and make sure that

preferably not more than 50% of them are used. Also make sure there is organic material on the ground (twigs, leaves, etc.). Lastly you should also look at the condition of your animals and their breeding. If the condition of your animals starts to deteriorate, you will often find that the veld has become impoverished. The most important thing to remember

is that you are a veld farmer and not an animal farmer.

Contact your local extension officer (veld expert) and LandCare officer for assistance with a veld management plan for a specific farm.

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**Remember, you firstly farm with your veld and then with your animals.**

If you do not look after your farm lands, you will not have fodder for your animals and therefore generate no income!

