

NEWSLETTER FEBRUARY

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Dear clients,

We hope the new year is going well for you so far! In this newsletter we talk about the red velvet mite, also known as rain bugs. Did you know they have an interesting love life? The second part of this newsletter is a bit of a long, but hopefully interesting read, about habitat management and debushing. When driving through Namibia we see that several areas are being radically debushed, which in the long run is not good for the veld quality. We hope this article gives you some (new) insights in debushing.

Kind regards, the Wildlife Vets Namibia team

RED VELVET MITE

With the rains, some interesting creatures emerge... One of them is the red velvet mite, in Namibia also called the rain bug or rain baby. The official name is a bit more complicated; *Trombididae*. The red velvet mite looks like a spider after a huge Christmas dinner, and although they are arachnids (invertebrate with eight legs), they are only distantly related to spiders.

There is no need to be afraid of red velvet mites. Unlike some mite-species (you might know mites as itch-causing bugs, e.g., Demodex), these guys don't bite or sting. There are 22 known species of the red velvet mite, found across Africa, Europe, Asia, America and Australia. They have a thick red coat of velvet-like hair called setae. This colour is a warning for predators, they taste terrible (apparently!).

The red velvet mite stays under the soil most of the year, and comes out after rain. They are predators, and feed on larvae and eggs of insects.

The mating and reproduction cycle of the red velvet mite is very interesting. The Oatmeal (which you might know from the card game Exploding kittens) made a funny comic about the love life of red velvet mites. Click [here](#) to visit the comic, it's much better than us trying to explain it 😊



Red velvet mite. © M. Bijsterbosch



HABITAT MANAGEMENT & DEBUSHING

While driving through Namibia you all have seen some areas being radically debushed. Usually, the aim is to create more grass for the animals, but when you look at habitat management, radical debushing might not be such a good thing in the long run. In this article we speak about habitat management first, and then discuss debushing.

People usually ask how to best manage an animal species. This is the wrong approach! The question should be how to best manage the habitat to make it suitable for specific animal species. Before we answer this question, we have to understand what habitat really means.

Wildlife habitat is defined as:

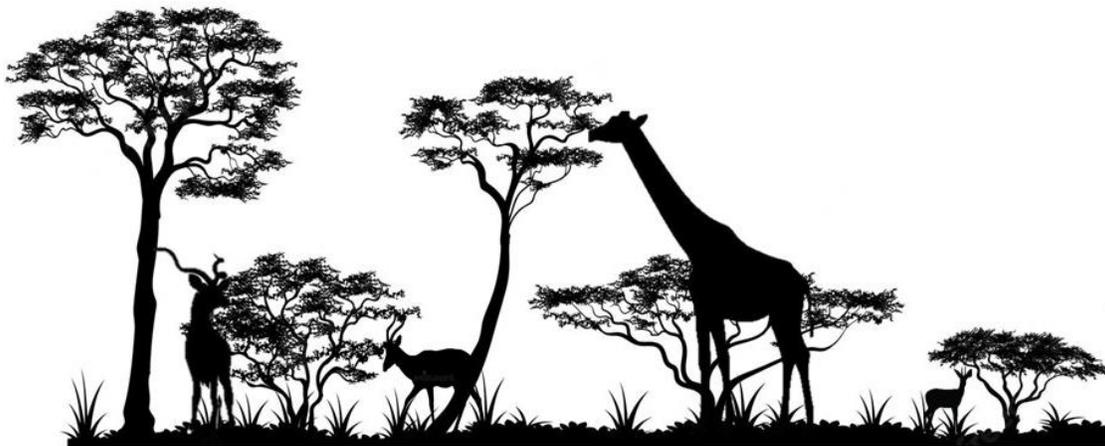
An area distributed *both horizontally as well as vertically* across a landscape, which fulfils the basic requirement needs (food; water; reproductive needs e.g., nesting; shelter against elements, competitors and predation) *for a particular animal species*.

The ideal habitat thus varies between species and habitat is not synonymous with food only.

Another often misunderstood idea used in the promotion of game ranching is that *a game farmer can stock his farm to a higher animal density than a livestock farmer*. This assumption is not wrong; however, one has to compare apples with apples! If we accept the fact that two blue wildebeest (or oryx) will eat as much grass as a single cow, one could say that instead of keeping say 100 cattle on the farm you could keep 200 oryx. Based on a biomass calculation (biomass grass consumed by biomass animal grazing it) there is no difference in the carrying capacity between cattle and **grazers!**

The truth in the above assumption comes in when the game rancher takes full advantage of the tremendous species variety (both fauna and flora) of our African bushveld savannah. Livestock farming is usually a monoculture farming practice (cattle, sheep or goats as main species) which places a very high pressure on a limited component of the plants (mostly grasses). Game ranching, esp. when combining browsers, grazers and mixed feeders, utilises a much wider spectrum of plant species, often with minimal inter-species competition. This enables a **well-managed** game ranch to carry a higher animal biomass relative to the grazing potential of the farm without causing habitat degradation.

The secret behind the potentially greater carrying capacity of a game ranch relative to a cattle ranch lies in the **concept of resource partitioning**, or niche differentiation. Here natural selection results in competing species using different resources, thus, to a large extent avoiding competition between species. Resource partitioning at the food level is well illustrated in the below figures.

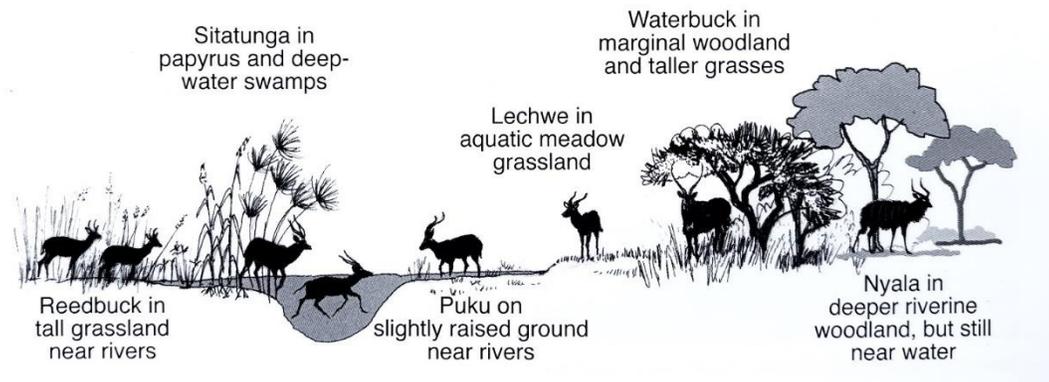


Different browser species predominantly utilize bush and forbs within a vertical distribution relative to their size. This enables multiple different browser species to cohabitate the same habitat, often with little competition for food. © U. Tubbesing

Farmers often ask why no or few giraffe calves grow to adulthood on their farm. In virtually all cases the farm is vastly overstocked with giraffe and in some cases excessive bush was removed. This results in the young giraffe around breeding age starving to death, as they cant reach the leaves. Feel free to read more about this topic in our [January 2022 newsletter](#).



Different wildlife grazers prefer different types of grasses. Here species commonly found in close proximity to each other benefit by the process of facilitation. This is the interaction between species where the presence of one species alters the environment to the advantage of the other species (growth, survival, breeding). The bigger species e.g., buffalo or zebra, will consume tall rough grasses, making a pasture progressively more accessible to other species preferring finer grass species growing closer to the ground. © U. Tubbesing



In a very similar way different antelope species preferring a riverine habitat are more commonly associated with specific niche habitats © [Game Ranch Management – J du P Botha et al.](#)

From the above discussion it should be clear that the game rancher can indeed stock his ranch with a higher density (biomass) of herbivores, provided that he/she makes good use of species variety of both vegetation as well as animals. The ideal game ranch should have **as diverse habitat as possible** (e.g., densely bushed/forested riverine areas interspersed with open grasslands and higher mountainous areas) since each habitat niche will support different vegetation types.

Debushing

We often see farms practising radical de-bushing. This is detrimental to successful game ranching! Unless a farmer aims to eradicate certain bush or tree species, e.g., the invasive *Prosopis* (*Prosopis chilensis*), the game farmer is strongly advised against radical debushing.

Before undertaking aggressive habitat manipulation such as debushing or planting cultivated pastures, the game farmer should consider how these may impact the future suitability of the habitat to support a wide variety of wild animal species. Bush provides food for browsers. In addition, a well-structured bush and tree cover provides nutrients to the soil, as well as shelter against the elements (sun, heat, severe winds etc.). Many game species hide their young offspring for the first few days of life in dense bush.

To provide sufficient browse for the browsers and mixed feeders on a farm, the farm should support a wide plant variety consisting of:

- 🐾 High quality early growers to kickstart the growing season. The much-despised swarthaak or black thorn (*Senegalia mellifera*) is one of the shrubs/trees that greens up and flowers weeks before other shrubs. This means this bush often gives the first fresh food to browsers such as the kudu after the dry winter. Even though this is a frequent invader plant, game farmers should not eradicate them from their property.
- 🐾 Shrubs producing high bulk and quality brows throughout summer (e.g., blinkblaar wag-n-bietjie, rosyntjebos).
- 🐾 High bulk (even if low quality reserves) to sustain animals during the winter months.

You might want to read the interesting research that has been done by Zimmermann et al (2017), titled ‘*The influence of two levels of debushing in Namibia’s Thornbush Savanna on overall soil fertility, measured through bioassays*’. The study was conducted in central Namibia, and they looked at soil fertility after debushing. It seems soil fertility is higher in un-debushed areas, and much lower in debushed areas. Even 13 years after the radical debushing, the soil fertility was not yet restored. Nutritious grass is less likely to grow well after debushing, and bushes are more likely to regrow. They suggest doing partial debushing rather than radical debushing, as partial debushing allows for a slower loss in soil fertility than in radical debushing. Click [here](#) to read the article, in where the authors also give some tips in the end on how to debush while trying to minimize soil fertility. There are several other studies available that support the conclusions mentioned in this article.

We also recommend to rather to a structured bushing than radical debushing, for example in a pattern of a cheetah skin for example. Create open grass plains (the yellow part), interspersed with 5-50 ha or bigger sized patches of denser bush (the black spots), where the animals can find cover from the elements and hide. As an alternative, one could try something in line of a zebra skin pattern, which provides game habitat corridors to move in. Avoid long straight lines, as these are not natural and actually make for rather boring game drives.



Let nature guide you; debush according to a cheetah or zebra skin. Leave dense spots for animals to hide and seek shelter. Natural patterns look more attractive for yourself, and guests.

The **edge effect**, which occurs at the boundary of two or more habitats types, is extremely important. When you do structured debushing, you create perfect habitat for animals. On these edges (e.g., from plains to dense bush), is where one finds the greatest species variety because this transition zone provides the optimal combination of food and shelter.

When embarking on a debushing exercise keep the concept of resource partitioning for browsers in mind! As far as possible leave the big trees standing and only clear overly dense trees, shrubs and bushes. It is essential not to remove high quality low growing shrubs (fine leaved species) since these are within reach of and essential food for browsers (kudu, eland, impala, giraffe).

Structured debushing has several advantages:

- 🐾 The visibility will be increased, and as one can look further into the field, it makes game drives more rewarding.
- 🐾 Grass growth will be encouraged, increasing the carrying capacity of the camp for grazers.
- 🐾 The edge effect is increased. Many animals, including birds mostly live around this edge, as this is where most of the food is found, and refuge is quickly found as the denser bush is close by.
- 🐾 A good grass cover, with the roots binding soil, is essential to prevent soil erosion. It is important to remember that, especially on open plains, wind erosion can be as detrimental (if not more so) than soil erosion caused by rain water runoff.

If you want to read more on bush clearing, the '[Bush Control Manual](#)' written by Dr Axel Rothauge is a good place to start.



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