

Going beyond best practice in the Kalahari bushveld savannah

Case study of Brahman Botswana on farm Oasis

Oasis

Most deserts have oasis where humans and animals find nourishment for their physical needs. These special places demonstrate nature's unexpected abundance and the creative ability of humans to produce sustenance in harsh conditions. Given this tradition of naming places in deserts the early settlers of the Kalahari SEMI-desert may be forgiven for choosing the name Oasis for a farm 25 km South of Ghanzi near the Western border of Botswana with Namibia. The extension of the Kalahari towards the North is more bushveld savannah than desert and when one travels across the 18 832 hectare farm the diversity and abundant growth of grass, shrubs and trees and the absence of a "special water hole" asks for a non-traditional association with the term oasis. The long-term average rainfall here is 420 mm but over the last 8 years there were differences between 210 and 696 mm.

Rather than creating magic around an insular water point, the owners and managers of Oasis have engaged the whole landscape to achieve rangeland and livestock production and personal satisfaction. Many times one hears people say "If you still need convincing that management is THE critical factor in the productivity of rangelands observe the expansion of *brachiaria negropedata* (swartvootjie gras) in the Kalahari sand at Oasis."

The people and the land

The property became part of the Barnes family business in the mid 1980's, through the father of Denise Barnes, married to Dudley (Gus) Barnes. Dudley had been farming with cattle on properties in South Africa and with irrigation agriculture on their own farm in the Kimberley district. The dwindling carrying capacity of the leased veld led him to attend a course in Holistic Management held by Stan Parsons in 1986. The principles of planned grazing and engaging animal impact as a stimulant for plant growth were not easy to implement on the hired grazing as the land owners were sceptical. However, in 1988 the Barnes' started to subdivide the near perfect rectangular boundary of the farm Oasis into a radial array of 8 camps each around 8 water points. While at first the layout looks more like a wishful "desk design" of neatly uniform shapes, one realizes during a visit that this is realistically possible in the flat, relatively homogenous landscape.

Dudley and Denise Barnes, both approaching 60, live "at the caravan". From the days of moving between numerous hired properties they were happy to make an abandoned mobile home in the bush their base instead of the solid traditional homestead with infrastructure and staff quarters some kilometres away.

Their three sons, Sheldon, Quinton and Jason, with their wives Mandy, Michelle and Anne, live and operate farming enterprises in South Africa, and have all had some input into Oasis during the late 1990's through to the current 2010.



The close family connection and collaboration is a very strong feature of the management strategy purposefully chosen by Dudley and Denise. The family attended practitioner training in Holistic Management in the late 1990's facilitated by Dick Richardson Dick Richardson and eldest son, Sheldon, was so inspired by the practical common sense approach to management that he enrolled in the certified educator training in Holistic Management. He took over the day-to-day management of Oasis in 1999 and started to draw up and implement a thorough plan that would prove to reveal the true potential of the land and form the basis of the Holistic Management implementation.

Photo 1 Dudley (also called Gus) and Denise Barnes

In 2003 son and daughter-in-law, Jason and Anne, joined Sheldon to assist with the operation. In 2004 Sheldon and family moved to South Africa to build up a grazing operation on hired land there and in 2007 Jason and Anne returned to Kimberley to focus on the irrigation farming.

Son Sheldon and father Dudley keep on practicing rigorous peer-review, jointly monitoring their respective grazing, herd and financial management plans, with further input and collaboration from all other family members, including Jennifer, the youngest sibling who processes and presents the monthly financial outcomes of the farming enterprises to the rest of the family team.



Currently 13 permanent staff members under the competent leadership of Julius Molatele help with the animal handling and the clearing and repair of the aging fence lines (approximately 270 km). Listening to the experiences of the Barnes it took them some years to work out an appropriate strategy for "getting the work done" – ie maintaining the entire infrastructure and handling the large herds.

Photo 2 Gus Barnes and Julius Molatele planning the work

While before they resigned themselves to the usual practice of high turn-over of young men who often did not speak any of the languages the Barnes' speak and who had little formal education, they now attract people who at least speak English or Afrikaans because they value clear communication.

Two shepherds (herdsmen) stay with each of the two main herds all the time – moving from one water place to the next. Each water point has a traditional hut built from natural materials and a tent, folding chairs and other furniture that the shepherds arrange into a comfortable camp. Horses are the main vehicle used for collecting and driving cattle.



Photo 3 Shepherds moving on horseback

Where in the late 1990s temporary labour was engaged for mending fences etc, the Barnes' now prefer a stable team of people they can get to know and build a relationship with. Initially keeping the workforce small made sense in reducing the overhead costs of the business. As the profitability of the farm improved, the Barnes are now sharing their success through expanding employment and income opportunities.

Development – making infrastructure work with and for nature

Although the main development of the farm's infrastructure happened pre-1999, the real value of this capital outlay emerged from using it differently.

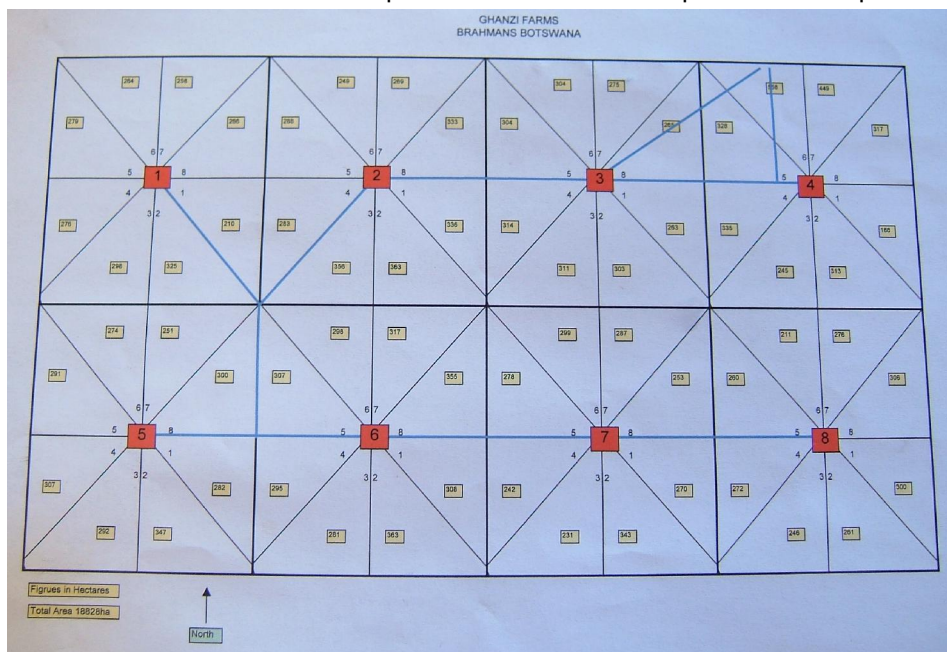
All the water points are served by two boreholes (75 m deep) and distributed to eight watering points via 35 km of 63 mm pipeline dug into the Kalahari sand. At least one of the pumps on the two boreholes runs 24 hours, 7 days a week. Up to now the water pumping needs could not be served by a solar system but the rapid development of pumping technology may soon lead to the replacement of the diesel Lister engines as fuel for water pumping make up a considerable part of the production costs and the Barnes would prefer to use renewable energy for the sake of self-sufficiency. They are also considering the drilling of a third borehole.

Deliberate leakages in the pipelines create watering holes for game away from the cattle posts. The Holistic Management policy has been extended to the game on the farm where commercial hunting does not take place and all animals are allowed to exist symbiotically and balance their own numbers. Cheetah and Leopard are not hunted. Rather their natural prey is conserved for their consumption. Domestic dogs that are seen as danger to small game are not kept on the farms and meat rations are provided to labour in an effort to eliminate unwanted trapping and consumption.

Despite their similar shape, the extremes of the camps vary from 188 hectares to 558 hectares. The average size of the 64 subdivisions is 290 hectares. There are two handling facilities and only one loading ramp near the public road to the Western border of the farm.

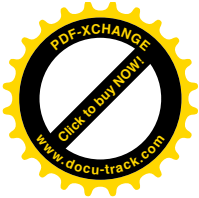
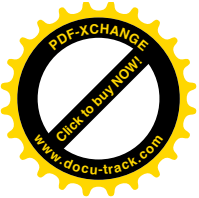
Photo 4 The map of Oasis with its 64 camps and 8 water points

Between 1988 and 1999 these many subdivisions were mainly used to separate different classes of cattle. The hired manager followed a pattern of weekly rotations. Each Monday all herds changed from one camp into another, without a more differentiated analysis of grass growth and nutritional needs of animals. Neighboring land was leased to augment the forage needs, especially in response to low-growth or drought years.



Then the Barnes started to implement the principles and financial and grazing planning procedures of Holistic Management. They combined some of their herds and started to move the animals from one camp to the next according to a time plan that was designed to promote grass growth AND that takes into consideration the nutritional needs of animals at different times to optimize the daily weight gains.

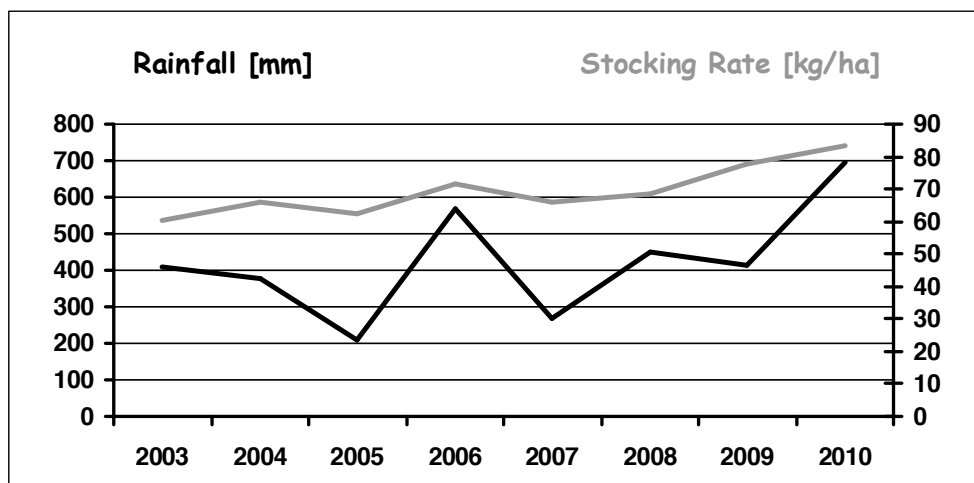
Sorting out the water supply is often the biggest stumbling block farmers cite in changing to large or very large herds. The most important factor when watering large herds is to provide for quick recharge in the drinking troughs. On Oasis this is facilitated by gravity feed through short 80mm diameter pipes from reservoir to trough with a 50 mm ball valve. The ball valve is at the same height as the bottom of the large water reservoir. Since the storage dam is continually filled up (through gravity feed from other water posts and/or pumping from borehole into the reticulation system), the water pressure is relatively consistent and high. This way the recharge is fast enough that up to 2000 animals get their fill comfortably around two troughs of only 3 m long. Increasing the number per herd beyond 2000 requires an additional water crib, but that is relatively easy to accomplish. Since all 8 water reservoirs are linked by pipeline, the storage at any one post is backed up by water held at the other posts. With the diesel engines this can be pumped at any time of the day or night.



Helping the livestock to garden its own food

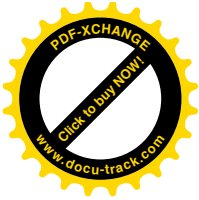
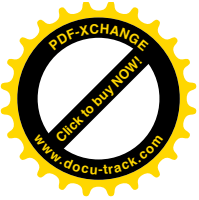
Realizing that they could keep many more animals with deliberately timed grazing they were, and still are, very interested in optimal animal performance – for providing sufficient milk for young calves, for achieving good condition for re-conception after birth and for reaching favorable weights at slaughter or other sales. They move the animals frequently during the growing season to obtain short grazing periods followed by sufficiently long recovery periods that allow perennial grass plants to replenish their underground energy reserves.

The average grazing period in the growing season is around 4 days but these moves are worked into a carefully planned calendar that also takes into account the “other realities” of the farming enterprise: holidays when they choose to keep animal handling to a minimum, size of camps, quality and quantity of forage in each camp, vaccinations, weaning, marketing, special treatment of specific problem areas and species and growing conditions such as rainfall, amount of sunlight, length of day etc. The average recovery period between grazings has fluctuated between 2003 and 2009, with the shortest actual recovery period being only 80 days in 2008 where the rainfall generated fast grass growth. The Barnes plan for an average recovery period of 120 days. Although it is acknowledged that fine tuning the graze/recovery periods relative to fast/slow growth would increase production further, the Barnes’ have tended to use constant periods (relative to the grazing plan), due to the practicality of moving the large herds. Use of the Grazing Plan which they feel is of the utmost importance has helped the Barnes increase their carrying capacity even with years where rainfall was only half of the average.



Graph 1 Graph comparing rainfall with stockingrate

Similarly, for each non-growing season a new calendar of animal moves is drawn up. Generally short grazing periods (3 to 5 days) are planned but this time the harvesting pattern of forage is focused on the needs of the animals AND on preparing the soil surface for the coming raining season. During a first round through a set of camps the animals make their first selection of forage and it takes little adjustment of rumen flora to digest the forage when moving from one camp to the next. There after they take the “second best” selection or composition of plants from each camp.



Since 1999 (at the start of the holistically planned grazing) there has always been excess of forage. In the years before the change additional grazing land had to be leased frequently to prevent “drought sales” of livestock. Dudley arranges all his other commitments around the various tasks of planning the grazing calendar. In essence the grazing plan helps him to design the animal moves “to the right place for the right reasons at the right time”.

The power of herd effect

Timing the grazing and recovery events is just one of the factors that promoted the phenomenal improvement of carrying capacity at Oasis. An equally important aspect is the so-called herd effect. By combining the various smaller herds into two large herds of around 2000 animals the animals move at higher density. That means the animals move closer to each other while walking between water point and grazing area. This tends to stimulate different behaviour: the animals eat a greater diversity of plants – being less selective about the species they choose. They tend to place their hooves more randomly and trample down old, unpalatable plant matter. This again forms the crucial soil cover that reduces evaporation, water and wind erosion and that reduces extreme soil temperature ranges. Depending on the size of the camp, the average densities on a given day may differ from 10.6 animals spread over 1 hectare (if 2000 animals move in a camp of 188 hectares) to 5.5 animals (in a camp of 365 hectares). Although far from optimal, the increase in density from the previous herd size of around 250 animals has shown remarkable effects (250 animals result in a density of below one animal per hectare in most camps on Oasis).

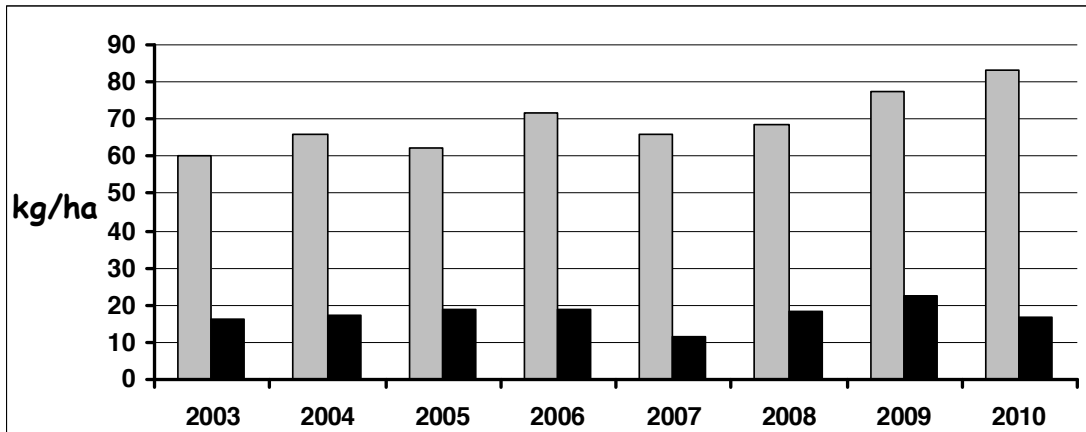
It is recognised that densities are all important in the so called “brittle” areas and that densities, within a planned, well serviced infrastructural environment, should increase further.

Growing by recognizing and reducing the solar spill

The peace of mind that comes from this twice yearly planning and ongoing monitoring of veld condition and animal performance raised the confidence of the Barnes. Stocking approximately 80 kg of live animal mass per hectare in the Kalahari bushveld savannah is regarded crazy by most – unless you have seen the veld and the herd of healthy, beautiful beef master cattle at Oasis. In 1998 they ran a maximum of 1900 head of animals on the 18800 hectares. By 2003 it was 3200 and in 2010 the number has risen to 4170. The Barnes’ translate the various classes of animals into so-called metabolic units – similar to a large stock unit, but it takes into account the nutritional need for growth or feeding a calf, using the following formula:

$((\text{Average life mass of particular class in kg} \times 2) + 100\text{kg}) \div 1000 = \text{proportion of 1 metabolic unit.}$

Talking of weights... The Barnes took over the stock from Brahmans Botswana, Denise father’s cattle. Realizing that these large framed animals struggle to perform optimally in the Kalahari sand conditions, the family decided to adopt the principles of Beef master selection. Initially (from 2000) they introduced Beef master bulls to the Brahman herd and over the last 10 years have brought the animals to a compact medium frame size that allows for more numbers of animals to be fed on the available land. A greater number of animals mean more hooves and animal impact which helps to improve the growing conditions for perennial grasses. The average kilograms per hectare produced between 2003 and 2010 was 17.54 kg.



Graph 2 comparing stocking rate and kg/hectare produced on Oasis over 8 years

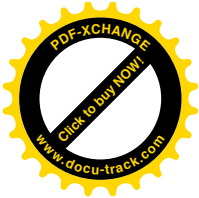
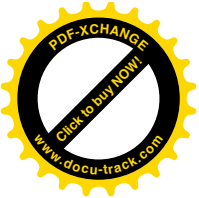
Recognizing that the solar energy entering the ecosystem at Oasis was “spilling”, unused and even detrimental to the existing organisms through heat and radiation, they engaged their livestock in a different way to increase the conversion of this free sunlight into benevolent food and ecological services.

Selecting for well adapted animals

Between 1999 and 2006 the selection of animals was considerably influenced and hampered by the low beef slaughter prices in Botswana. Given the fact that the Barnes wanted to build up their herd and had ample forage, their selection standard for especially the inter-calving period was lower and they kept animals on the farm which they now cull. They observed the general difficulties the Botswana Meat Commission had in obtaining a reliable supply and quality of grass-finished slaughter animals and the lack of incentives for farmers to improve their product when prices are low. So in 2006 Dudley became involved in helping to discuss and plan for improved marketing opportunities in various local and national organizations. Now that the meat price is comparable to that in other Southern African countries, the Barnes apply stricter selection criteria because they get a better price for cull animals AND they want to increase not just numbers of animals, but also their quality.

Based on the herd-genetics principles of beef master breeding, most bulls come from their own herd but 7 to 8 animals are purchased each year from other beef master breeders. This Dudley refers to as the “genetic crank” that helps them re-dress some of the neglect in selection in past years. The core group of around 50 bulls is augmented by another 45 young males (all from the own herd).





Keeping it simple – supplementation on Oasis

Cattle are given a very simple, self-mixed phosphate lick to compensate for mineral shortcomings in the soil throughout the year:

10 parts P21, 5 parts salt and ½ part Sulphur

The rationing is ad lib and the mixture is the same in winter and summer. Calculating average intake of lick the current consumption per LSU works out at around 8gms phosphate per day.

No Urea in winter??? Looking at the shiny coats of the animals one wonders where the protein component in the animals' winter diet comes from? It grows under their feet. Due to the increasing number of broadleaved perennials, that are regularly pruned from dry dead leaves and stalks through relatively even grazing, these grass plants tend to carry on growing sufficient young green leaves even in winter to provide the little protein and vitamins that other farmers supplement "from the bag".

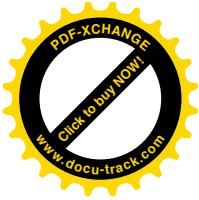
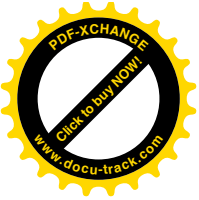
The moisture retained in the strong roots and in the ground due to the breaking of the soil crust (breaking the capillary action where moisture moves up from lower layers and evaporates) and through the laying down of dead plant material supports slow growth as soon

as light reaches the growth points at the crown of the grass plant and as long as ambient temperature allows growth. The few green grass leaves are augmented with liberal takings from the broadleaved edible bushes. The Barnes observe that their cattle regularly browse on the *cross yellow wood* (*terminalia sericea*) and *apple leaf* (*lonchocarpus nelsii*) shrubs and trees and eat the pods of acacia trees. A laboratory test showed that the protein content of this leave mix is higher than that of standard feed lot mixes.



Photo 7 A brachiaria negropedata tuft and field like is no rare sight on Oasis

The Barnes stopped feeding urea after 3 years of planned grazing. It was an informed decision they took, as all their efforts continue to focus on animal performance. A drop in animal performance would result in lower conception and higher birth intervals and that would work against their production goal of increasing the number of animals on the farm and with that raising the stocking rate to full capacity. They monitor the balance of protein to carbohydrate components in the animal diet by measuring the PH of fresh urine from their cattle.



Simply holding some litmus paper under the tail of a few cows they can see if there is a shortage of protein (indicated by alkaline tending urine). And the very short time that there may in fact be a slight shortage of protein, does not justify the cost nor the energy needed by the animals to adapt their digestion to a chemical supplement.

Sulphur is added to the lick to help re-mineralize the soils with this element and also to help the body to take up the proteins that come with the natural forage. It also assists with the animal's resistance to winter lice and ticks. In winter a very small quantity of a mix of trace minerals is added to the lick (1 kg on a total mix of 1500 kg), due to the dormant growth period (inactive mineral cycle) again helping with the uptake of naturally growing proteins and vitamins. The Barnes are considering relinquishing this process as well.

Making it easier for animals to reproduce

Forever looking for ways in which the farmer can enhance the productivity of the livestock-rangeland suite by using the available on-farm resources, rather than bought in-puts the Barnes have made further adjustments to their production system:

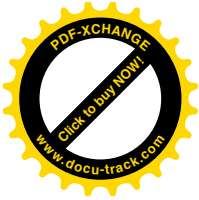
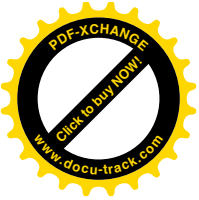
Firstly, they changed to only summer calving. Having observed that the growth per day over the first three years of both the females and males in their winter-born animals was lower than with the summer born animals, the Barnes decided to follow the instinctive natural reproduction cycle of mammals in Southern Africa.

The adjustment required some careful and highly disciplined financial management to make up for the delayed loss of income from one crop of winter calves, but the higher performance of the herd as a whole has clearly paid off.

The breeding season now is from 1 February to end of May. The fourth month is designed as a conception insurance should something go wrong in the first 65 days of breeding. Animals that conceive during May, if not required, are marketed as "pregnant value added animals". The heifers that will be bred for the first time at 2 years of age are put with the big cow herd some weeks before the breeding season officially starts to expose them to mothering behaviour. Also, the bulls are put with the herd one week prior to the official start of the breeding season as the Barnes have observed that the cows' ovulation cycle is stimulated by the presence of the bulls.

Another strategy that optimizes the use of locally produced nutrients is the follow-through grazing pattern which Dudley has worked into his grazing plans since 2008. Where beforehand he would frequently separate and "finish" those animals that were soon to go to market by letting them take the "best pickings" of a "sacrificial" set of camps, realizing that this benefited only a small fraction of the total herd, he now gives the benefits of "first selection" to the productive animals – i.e. growing and 1st calf females. This is achieved by some adjustments to the grazing plans.

To understand this, it is best to look at the sketch map of the farm. The western set of 4 cells (one each around a water point) is used by the growing herd (weaners, oxen and cull cows); the Eastern 4 cells are used by the cow herd. These two main groups of animals are not swapped around.



In order to create preferential grazing opportunity for weaner heifers to boost their growth per day rate, they graze in a smaller herd in the same set of camps but ahead of the main growing herd. At the beginning of the growing season they usually start in the camps where grass greens first. Between the time that the leading herd leaves and the following herd arrives Dudley calculates his desired recovery period for grasses.

Similarly with the cow herd: during the non-growing season all the bulls go before the main herd to recover body condition before the next breeding season. A week before the breeding season starts officially, the bulls go into the cow herd and those heifers that will give birth for the first time form the leading herd during the growing season. They are mated in the leading herd. Optimal animal condition at birth leads to better re-conception rates and the Barnes have ample evidence that their conception rates have improved since changing to only summer breeding and implementing the leading herd practice. Dudley follows a guideline of letting the size of the leading herd not go beyond 25 % of the main herd.

The improved nutrition (from summer calving and the leading herd arrangement) has led to 20% better animal condition and with that to a higher fertility of the herd as a whole. The conception rate has gone up to 85 % and Dudley expects further improvement with stricter selection of females and males.

To make sure that they are not “killing the goose that lays the golden eggs”, the Barnes use their early warning biological monitoring to see what changes are taking place in the veldt due to the leading herd practice. So far the monitoring reveals no negative signs and instead a trend towards increased bio-diversity and expansion of climax grasses. 2010 Biological monitoring has demonstrated a static environment with increased bare ground between grass plants around the Cell centres.

Animal Handling

The sorting and handling of animals in general has become the bottleneck of further increasing animal numbers in the herds. While Dudley really would like to further increase animal density through larger herds, rather than further subdividing the camps, the time used for treating individual animals and sorting starts to create stress on animals and people. Since stress affects animal performance negatively and puts a damper on people’s joy when working the Barnes have already reduced handling to a minimum:

- Only males that are selected for breeding are weighed at weaning and once at 2 years of age.
- No individual animal records are kept. Not even the mother’s of selected bulls are known.
- The internal boluses which are placed by government officials are the individual identity marker of the animals for tracing purposes at marketing.
- Pregnancy testing is done 8 weeks after the end of the breeding season. Non-pregnant cows are moved to the growing herd to avoid a further sorting event and marketed.
- Inoculation is done by the government veterinary services once a year and weaning is done in two batches – once for the early conceived and once for the “late comers” but without bringing together the whole herd.

While no sticks or pipes are used for prodding animals and there is no shouting, the five day long confinement in the kraal without fodder and water has led the Barnes to at least feed the weaned calves hay. This is working to calm both cows and calves and people. Similarly, the Barnes hire a cook who prepares meals for the workers during those long days in the dust and sun.

Growing confidently by being committed to the feedback loop

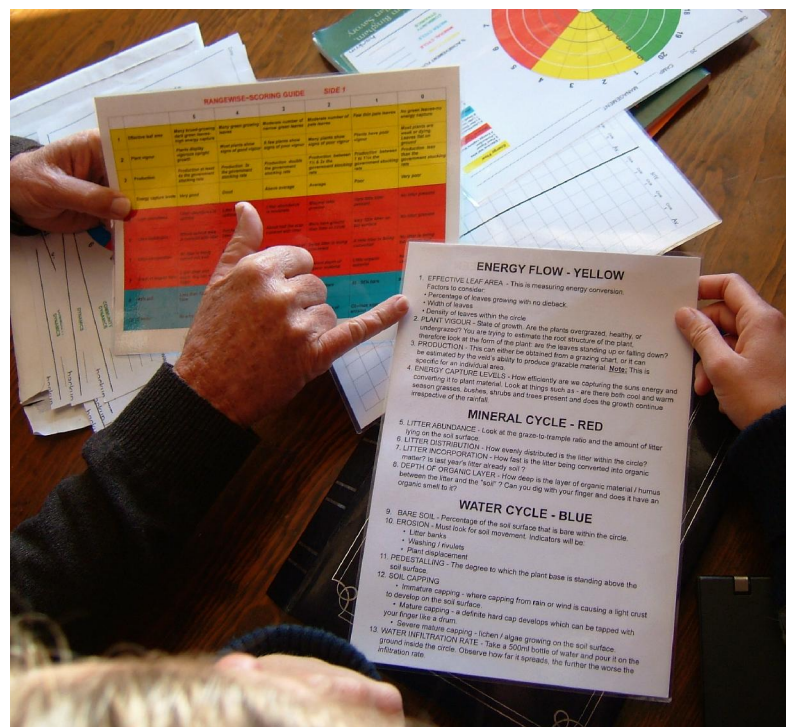
The Barnes started to practice annual early warning biological monitoring as suggested by Holistic Management. One representative site in each of the eight cells was selected in 2000. Initially the Barnes kept to the observation and documenting of information from 100 random dart points. In following years they took only 50 dart points per transect. Having been introduced to another version of biological monitoring for rangelands, adapted by the Elandslaagte management club (South Africa) they changed the methodology of monitoring half of the farm to this new monitoring method in 2007. Both monitoring systems reveal highly valuable and important information for the grazing planning and so it ranks high in the priority list of the Barnes to complete their biological monitoring at the height of the growing season.

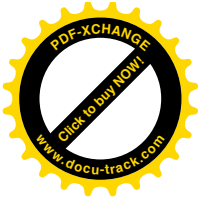
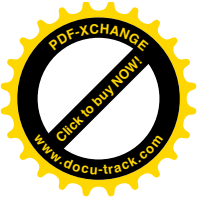
The monitoring focuses the attention on the 4 aspects of the eco-system process. The presence and depth of organic litter and soil movement indicate the effectiveness of the water cycle. Presence of dung, organic litter and signs of small organisms

and the hue of green in leaves indicate the effectiveness of the mineral and nutrient cycle.

The width of leaves and the combinations of plants (annual and perennial, grass, herbs, legumes and woody species) indicate the effectiveness of the conversion of sunlight through photosynthesis into plant matter. The diversity of plants, signs of animals and the physiological state of the plants indicate community dynamics of plants and animals – indicating “encroaching” effects or the danger of extinction of certain organisms.

The Barnes use the monitoring data by comparing it not only to the previous years but also to see if and how smoothly their management leads them towards their desired landscape description. For example two years after they combined the animals into the large herds and planned for and implemented an average of 120 days recovery period they measured at the biological monitoring sites and through informal spot checks the expansion of brachiaria negropedata grass plants in some of the camps. Brachiaria negropedata is regarded as THE climax grass species in Southern Africa. Following the initial establishments in islands in some camps it is now steadily expanding into and across all of the camps.





With regards to the accuracy and reliability of the biological monitoring the Barnes stress the importance of the same person doing the observations year after year. With different family members having done the monitoring since 2000, Dudley says that the most consistent data available for scientific purposes is from 2006. Another aspect they stress is that the person who is responsible for drawing up the grazing plans should also do the biological monitoring as this provides essential impressions for later forage evaluation and for planning special measures to be taken for protection or additional animal impact at specific sites on the farm.

The farm land surrounding Oasis is dominated by *Stipagrostis* and *Eragrostis rigidior* and mostly annuals grass plants. A comparison of photographs taken to either side of a 10 km border fence taken by Dr Richard Fynn of the University of Botswana exemplify the effect that the grazing management on Oasis had on enhancing perennial grass growth.



Photo 8 *Brachiaria negropedata* on Oasis (R. Fynn)



Photo 9 *Stipagrostis* on neighboring land (R. Fynn)

Besides the general biological monitoring the Barnes have gladly hosted scientific research on specific species and their habitat.

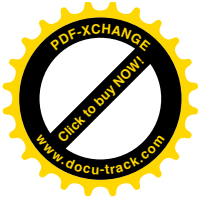
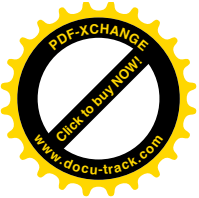
Among them are the following:

Population size and distribution of the cheetah and leopard in relation to prey densities on a farmland in Ghanzi District, Botswana – by Mariska Snelleman, Cheetah Conservation Botswana June 2008 to February 2009. Tracking of the predators was done by footprints and camera traps

One relevant outcome of the study was that the cheetah and leopard never followed the herd. There was no special strategy to predate on livestock and the wild cats fed mostly on the antelope and other game on the farm. The Barnes had already noticed that combining their livestock into large herds had reduced their calf losses to predators.

The relationship between Jackal and Karakal by PHD research by Vivienne Kent, University of Sussex, 2009

Again, the Barnes want to get to know the behaviour of the predators as their wellbeing is an important indicator of all other organisms (biodiversity) lower in the food chain.



PHD study on *Dung beetle activity* by Mr Power Tjikale, University of Pretoria und Prof Clerk Scholtz, 2009

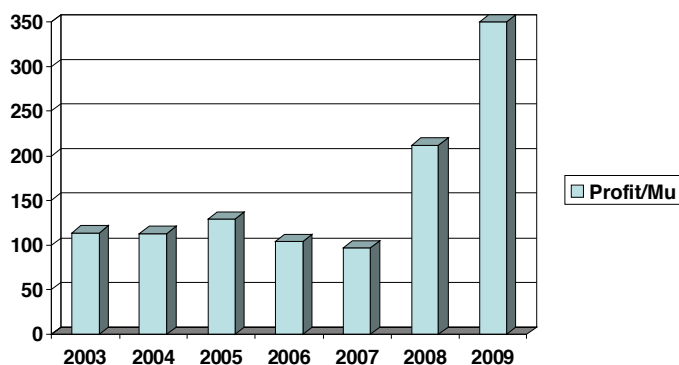
This study corresponds directly with a big personal passion the Barnes have for dung beetles. Recognizing their vital role in burying cattle dung before the nitrogen has escaped into the atmosphere, the Barnes were happy to see the dung beetle populations increase after they stopped dosing animals some 20 years ago and after managing for more organic litter cover on the soil surface.

Seeing the whole chain and focusing on the right link

at the right time

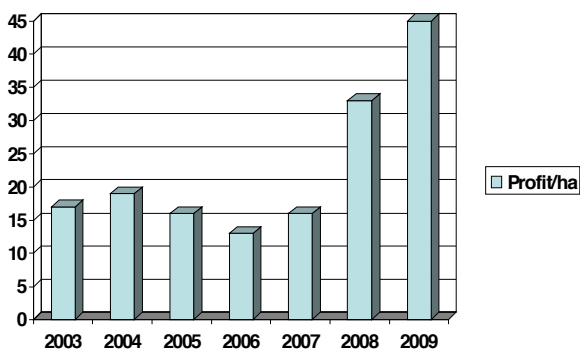
The Barnes have a keen understanding that at least the material aspect of their quality of life is directly linked to how successful they are in helping to convert sunlight into different forms of energy and products. While the meat price was so low and therefore marketing was actually the weakest link in the chain of production they kept focusing their attention on their most direct sphere of influence – enhancing soil health and grass growth.

Profit / MU

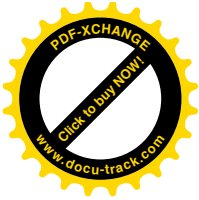
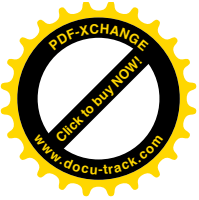


Once they had boosted the carrying capacity of the land and with that reduced the cost per unit produced, they realized that they could and had to expand their sphere of influence to inform and support the marketing agents for beef. Unless the market does not support sound and sustainable production, farmers will be motivated into unsustainable directions with regards to rangeland management for the sake of satisfying their financial objectives.

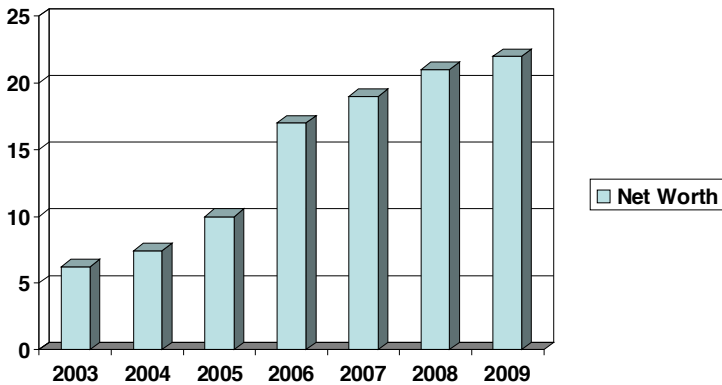
Profit / ha



Currently enthusiastic colleagues and friends approach the Barnes with suggestions of how to enhance the ecological productivity of the land. For example one way to further increase the animal density to achieve even better soil cover (mulching) and utilization of forage would be to further subdivide the land either by fencing or herding. However, as there is no shortage of grass and animal condition is good and keeps improving, the Barnes currently “just let the herd grow naturally”, slowly increasing animal numbers and with that density.



Increase in Net Worth



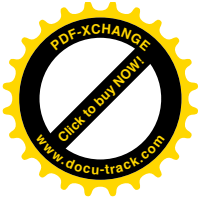
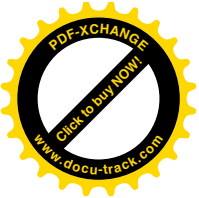
The financial success and clarity of purpose they gained from practicing Holistic Management provides the freedom and motivation to invest time and money beyond their own land and to join others in developing markets and participating in national and international efforts that support sustainable agriculture.

The Human factor

Another aspect of sharing the learning and opportunities with their surrounding community is to host students from agricultural colleges on their practicals. Having met and spoken to one of these students they highly appreciate being exposed to the connection between theory, science and practical farm management. The Barnes are selective about who they host for a practical, being clear about wanting to maintain a harmonious relationship with and among their staff and wanting to have a high marginal reaction for the time and energy invested in mentoring a student.

The phenomenal progress over a relatively short time, in raising the ecological productivity and personal satisfaction from farming with livestock, the Barnes also credit the dedicated support and learning through their Management Club co-founded with Dick and Judy Richardson who had helped hundreds of South African farmers practice Holistic Management. Meeting 8 to 10 times a year with the decision makers of 3 other farming enterprises the club discussed each grazing and financial plan and biological monitoring as well as monitoring the general movement towards quality of life goals.

Having established trust they openly shared plans and actual implementation, eager to learn from the questions by other members of the group. Rather than comparing their outcomes to a group average or even to other members, the purpose was and is mainly, to find critical peer review and encouragement for the process of each individual's ambition and strategy. Although the original constellation of this management club has disbanded in 2008, the Barnes family members keep to a similar routine of regular monitoring and sharing sessions. They invite professionals who help them learn new skills for communication, planning and specific technical challenges they encounter.



Besides these structured efforts the Barnes make sure that they spend quality and relaxing time as a family, as they consider these relationships their primary source of joy and motivation. Recognizing the strengths and passion of each individual and accepting or creating opportunities for these to be expressed is an important part of maintaining balance and stability in the multi-generational team. Even though their children live currently in neighbouring South Africa, Dudley and Denise Barnes feel excited and supported by the fact that all their children have a similar love of nature and a good understanding of why they manage the land as they do.

From observing the dynamics that made Oasis the farm it is today, companionship and compassionate and professional peer review may just prove to be an important need and factor to take into account when making radical changes for sustainable rangeland management.

Radical changes do not always come with big noise and upheaval. The term radical originates from the Latin term radix – meaning root. The radical changes on Oasis are literally grass root changes – they happen in the silent dark. They happen not through confrontation, but through collaboration where the basic needs of soil, plants, animals and people are all taken care of as nature intended it to be.

The Barnes' wish to acknowledge and thank all those who have been part of the process, realising that it could not have been achieved without their input.

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with generous contributions by Dudley, Denise and Sheldon Barnes