THE BARKING GECKO

Newsletter of the NamibRand Nature Reserve

May 2011 ***Volume 12 Nº 2***

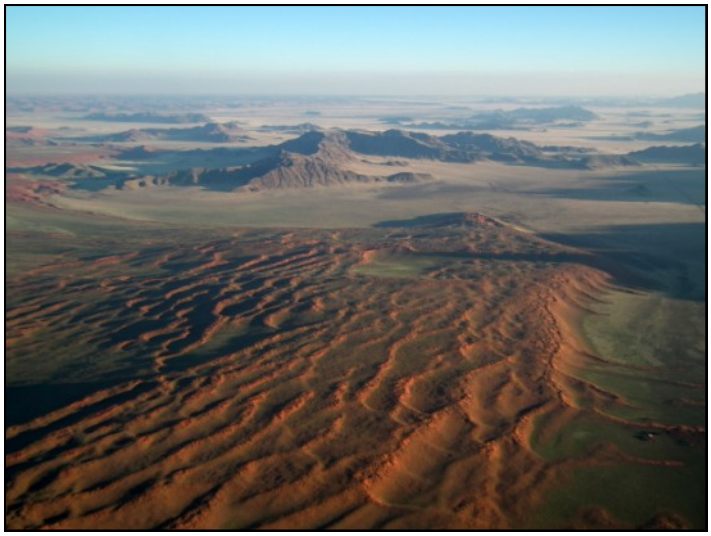

Photo: Ann Scott

Spectacular views of NamibRand and northwards from a hot-air balloon in April 2011—note the generous grass cover on the dune edges.

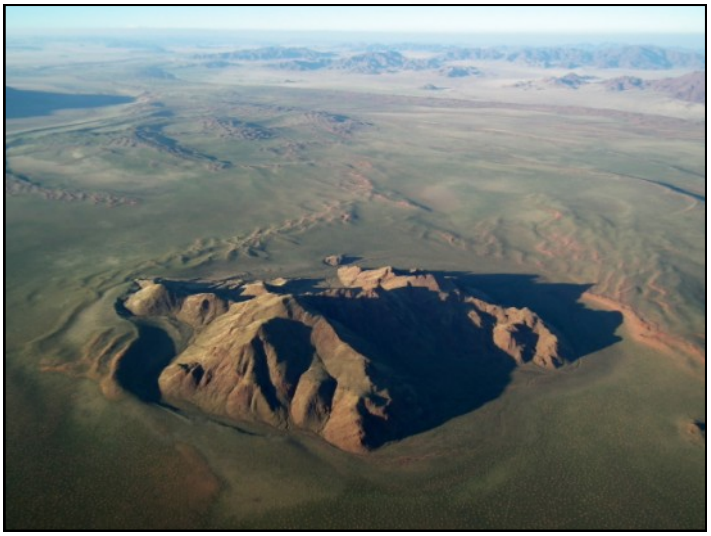

Photo: Ann Scott

Jagkop Mountain from a hot-air balloon, looking southwards across a green sheen of grass.

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And the rain has continued

beyond expectations

Never has a topic been so much discussed as the unprecedented high rainfall of 2011 in Namibia! After a good start (see previous issue of *The Barking Gecko*), NamibRand has continued to have its fair share, with an average of 330 mm and a top record of 464 mm to date (see page 2 and 3 for further details and photographs).

Our CEO, Nils Odendaal, outlines some important proposed strategic changes aimed at forging closer working relationships with our neighbours, and good progress in making our dream of a "Fence-Free Namib" a reality. The NaDEET Centre reports on a record-breaking year in 2010, and an exciting new community education programme to promote sustainable living in 2011. Some searching questions are asked about carbon offsetting and tourism: are we on track?

On the biological side, we look once again at the origins of fairy circles; further studies on wedge-snouted lizards; an exciting new study on leopard prey remains; our first mark-and-recapture estimate of Hartmann's mountain zebra; and a host of fascinating sightings and photographs, related mainly to the recent rains.

A recent highlight for us, on a personal level, was a trip in a hot-air balloon (compliments of NamibSky Balloon Safaris). Many thanks for this very special and unique opportunity for a bird's eye view of the vast and spectacular expanses of NamibRand—coated with a velvety sheen of grass.

Ann Scott

More on rain!

As in most areas of Namibia, early and good rains fell at the beginning of 2011 (see previous issue of The Barking Gecko), continuing through to the middle of May. The totals recorded to date have been exceptional throughout the country, and also at NamibRand (see Figure 1 below). Our stations with the highest rainfall are Wolwedans Reception (464 mm), Moringa (447 mm), NaDeet Base (416 mm), Boscia (415 mm) and Nadeet Centre (412 mm); the mean for all the stations below is 330 mm (*n* = 40), compared to the generally accepted long term mean of 70-80 mm (up to end of 2010). The rains transformed the landscape and brought excitement and adventures to us all, especially to those hazarding a trip from NamibRand to the surrounding areas or *vice versa*. The increase in vegetation biomass was accompanied by a wealth of interesting and unusual sightings—see page 15 and 16.

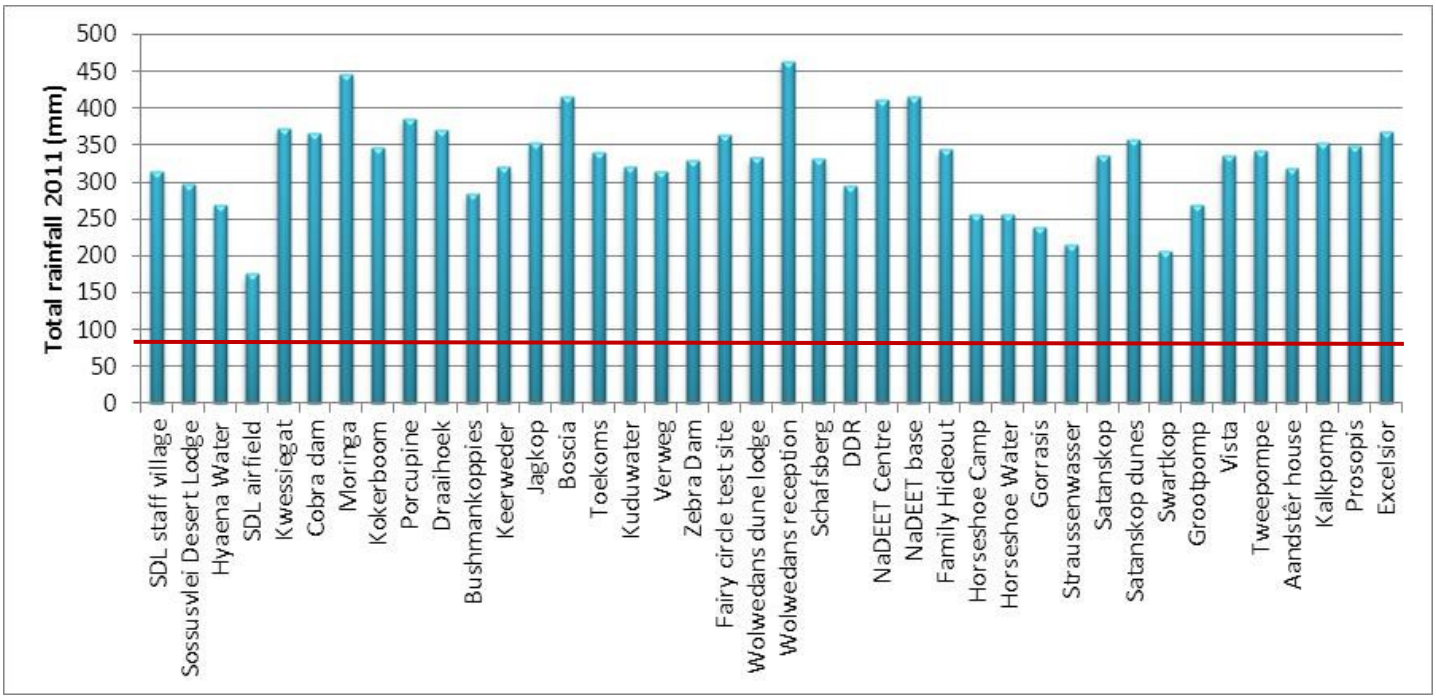

Figure 1. Total rainfall measured at 40 gauges at NamibRand this season (up to 15 May 2011). The red line shows the long term mean (up to the end of 2010).

The changing face of the landscape east of Jagkop in the central part of NamibRand after the 2011 rains: Top row (L to R): 25 January, 3 February, 13 February; Bottom row (L to R): 2 March, 20 March, 16 May.












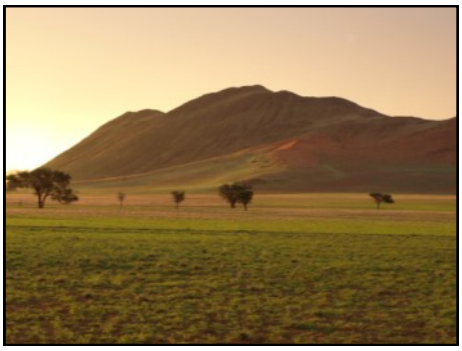

A kaleidoscope of 2011 rain and summer scenes (photographers' names in brackets): Row 1 (L to R): Keerweder (Nils Odendaal); Wolwedans (Ann Scott); Toskaan (Jürgen Klein). Row 2: Boscia (left & centre; Ann Scott), Draaihoek (Jürgen Klein). Row 3: Gorrasis (Cila Venter); Die Duine (Tok Tokkie Trails). Row 4: Duiwiseb River on Excelsior (Sean Gibson); Wowedans (Vinte Mendes); Jagkop (Ann Scott). Row 4: Aandstêr (Franziska Woolfe); access road to Sossusvlei (Sean Gibson); Excelsior (Sean Gibson).

News from the CEO

From time to time, NamibRand management and our board of directors meet to hold a visioning workshop for the future of the NamibRand Nature Reserve. Recent cooperative developments in large landscape conservation as well as the change in the predominant land use of the area from agriculture to conservation and tourism have resulted in an eco-system that is now primarily geared toward biodiversity conservation. While the Reserve has embarked upon and entered into partnerships with like-minded neighbours, some of these partners have expressed interest in formally joining the NamibRand Nature Reserve. However, some of these potential members have also indicated that the current Articles of Association of the NamibRand Nature Reserve are too stringent and that they would prefer to join only once new or revised rules and regulations can be adopted.

With these objectives in mind a meeting was facilitated by Dr Peter Tarr of the Southern African Institute for Environmental Assessments in Windhoek on 17 March 2011. The meeting was attended by NamibRand directors and seen by all as a success. Everyone felt that it is necessary to devolve more rights and freedom down to the landowner so that these could benefit more from being a part of the Reserve. The directors agreed that additional autonomy on issues such as private homesteads and resource utilisation on their own land is granted, provided that these rights stay within the overall vision and framework of the Reserve. Over the next few months, management will be revising the management plan and making recommendations to the possible amendment of our Articles of Association to effect such changes. In addition to these practical rights, members of the association also felt that extra financial benefits for landowners should to be investigated. A task force has been established to investigate possible alternatives in this regard. All directors re-affirmed their commitment to the NamibRand Nature Reserve conservation project and while some work needs to be done to update relevant sections of our Articles of Association and associated Environmental Management Plan the overall strategic vision for the Reserve is intact and wholeheartedly supported.

Once all members of the NamibRand Nature Reserve are happy with these proposed strategic changes, we will enter into discussions with our neighbours to see how their concerns and issues can be incorporated in order to facilitate possible joining of the Reserve or forge a closer working relationship.

Photo: Ann Scott

Sections of the northern boundary of NamibRand were removed on 2 March 2011, as part of an agreement with Wilderness Safaris for a "Fence-free Namib".

We are proud to hold these stakeholder consultations from time to time to ensure that NamibRand remains a dynamic and relevant conservation project.

We are pleased to report that the Global Environmental Facility, though the United Nations Development Programme, has now approved funding for the Namibia Protected Landscape Conservation Areas Initiative (NAM-PLACE). At its core this project envisages the establishment of collaboration and co-management with partners (Ministry of Environment and private sector) to promote and enhance broad-based approaches to conservation and sustainable natural resource management and socio-economic development. The Directorate of Environmental Affairs will be managing this project and we envisage that work for the co-management and development of the Greater Sossusvlei - Namib Complex will start soon. The dream of a "Fence-Free Namib" is becoming a reality!

Photo: NamibSky

Farewell to Eddie Weber!

Photo: Johann Diergaardt

A proud Quintin Hartung with his award.

On a sad note, we say goodbye to Edgar Weber, who has been at the helm of operations management at Wolwedans since November 2009. We will miss you, and wish you happiness and every success in your new life at the Cape.

We also extend our congratulations to ranger Quintin Hartung on being nominated the best 3rd year Nature Conservation student at the Polytechnic of Namibia for 2011!

Nils Odendaal

March 2011 Kgotla

The first Kgotla meeting for 2011 was held on 29 March at Keerweder, hosted by the NRNR staff. Fewer people attended, compared to the previous Kgotla, but the outcome was nonetheless a great success. Warden Mike Scott opened proceedings by welcoming those present, with special reference to newcomers, stating apologies for those who could not make it and conveying Albi Brückner's best wishes for fruitful deliberations. Topics of concern were then discussed, and mutual agreements were attained. Information on the latest developments on the Reserve and ideas for the future was then shared. After the meeting snacks were offered. Once again, thank you to everyone who attended the event.

Quintin Hartung

Photo: Paul Gomachab

Participants at the March 2011 Kgotla at Keerweder—celebrating the abundant grass!

News from the South

Warm greetings to all from Aandstêr! After a record rain season the veld is abundant, the animals are fat and relaxed and the water tables are all topped up. The last rain was sufficient to turn the grass green again and also gave the perennials a chance for a second reproductive cycle this season. I have never seen this density of wild peas (*Crotalaria* sp.) and another noticeable feature is the encroachment of sour grass.

The biggest recent event in the south is the change of ownership of Springbokvlakte and Saffire. These farms have been purchased by Mr John Bernstein. We are pleased to say that the new owner has bought the properties solely for conservation purposes and fully supports the efforts of NamibRand in conserving this unique area. NamibRand Safaris has already entered into an agreement to help with logistical and management support on these two properties. The prospects of a further conservation agreement with NamibRand Nature Reserve are also excellent. We are pleased to have a like-minded neighbour who supports conservation.

We are also pleased to say that our neighbours to the west, the Ministry of Environment and Tourism, are taking an active interest in the Namib Naukluft National Park. We have been able to build a good working relationship with the warden of the area, Mr Penda Shimali, and have joined him and his team on several patrols of the area. It is encouraging to see that a wildlife waterhole, about 30 km inside the National Park, has been re-activated and that the area is now being patrolled regularly.

Work on repairing the road to De Duine has begun, although there is still much to do. The initial priority was to redirect the water fed in from the C27 from the centre to the sides of the road. This has been successful, but improvements can still be made. There is also a section where the calcrete has been exposed as a result of water erosion, which must be covered with clay-rich soil in order to provide a smoother surface. It will first be necessary to engage the participation of all members that will benefit from this operation, so that the repairs can be completed before the next season.

Photo: Peter Woolfe

Photo: Ann Scott

Heavy rains have necessitated ongoing maintenance and repair of roads, shown here near Die Duine (above) and Wolwedans (below).

Peter Woolfe

News @ NaDEET

Photo: NaDEET

Tree-planting group at Bethanie (see "365 TREES", page 6).

NaDEET Centre

Last year was a record-breaking year for NaDEET Centre – we had 25 groups and there is no sign of slowing down in 2011. Since February, we have hosted Family Hope Services (school for orphaned and vulnerable children), two secondary schools from St George's College, rural development workers from the Ministry of Water, Agriculture and Forestry and two NATH Desert Guiding courses. In response to a growing number of requests from secondary schools, we now have a brand-new secondary school programme featuring amazing new activities, environmental auditing and solar cooking.

Last year, we began renovations to the NaDEET Centre accommodation units. The heavy rainfall interrupted our programmes so much that we decided to revise the design. Hence, our new accommodation units will now feature two layers of shade cloth and a canvas roof that can be unzipped. We would like to renovate all of the accommodation units by December 2012 if enough funds are available.

Environmental literacy

NaDEET has published the latest *Bush Telegraph*, titled "Rethinking Waste Through Pollution Solutions". The mini-magazine features easy-to-understand descriptions of the city recycling programme, tips on waste management, entertaining puzzles and activities and an introduction to the Three R's: Reduce, Reuse and Recycle.

We have also published the latest book in our *It's Time to…* series, titled "It's Time to be Efficient". The book is a sustainable living guide designed to complement our community education programme, ensuring the longevity of sustainable living practices after learners have left NaDEET. The book features directions on how to build a solar oven and hot box; how to save water around the household; how to cut energy costs; and a sustainable living checklist. Soon it will be launched officially.

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Both publications can be found as downloadable PDFs at our website (www.nadeet.org/educationalMaterials.html).

Staff Valley

As of May 2011, the dune valley next to NaDEET Centre will feature new living quarters for volunteers, students and Centre staff. The four-bedroomed housing unit, known as Staff Valley, is a generous donation from the Wolwedans Foundation. We look forward to its official opening soon.

365 TREES

In celebration of the UN's International Year of Forests, NaDEET staff and volunteers will be planting 365 trees throughout the southern regions of Namibia this year. Viktoria Keding, Jon Maravelias, Johannes Tsaobeb and Emilia Sende have already planted 102 trees throughout their evaluation trip (see article below for locations) and at NaDEET base. The trees we will plant are all native species grown from seedlings either at NaDEET, purchased at the Botanical Society of Namibia or donated by the Ministry of Agriculture and Forestry.

365 Trees is part of NaDEET's "Less Impact More Education" (L.I.M.E.) green initiative to create an annual staff project that will preserve and enhance the environment. The L.I.M.E. green initiatives seek to leave less impact on the environment and more impact on the minds and lifestyles of Namibians for a sustainable future.

Jon Maravelias

Evaluation of NaDEET's

new community education programme

In April, NaDEET embarked on an evaluation of our pilot programme, "Mitigating Climate Change in Local Communities through Sustainable Living Education and Practices", to assess if it has changed the lifestyles of rural adult Namibians. In five days we travelled to the communities of Rehoboth, Mariental, Keetmanshoop, Bethanie and Maltahöhe, and visited the homesteads of nearly 30 participants. Two questionnaires were used to gain knowledge and understanding about the frequency of alternative cooking technology use, the general appearance of the homestead and lifestyle habits of saving water and energy.

Photo: NaDEET

John interviewing Anne Marie in Keetmanshoop.

Overall, we can proudly conclude that NaDEET's community education programme has been a huge success so far. Of those interviewed, 67% cited a daily-use of their solar cookers, acknowledging that it has saved them time, effort and money by not having to collect firewood or use gas or electricity. Ingrid Kanguatuuako from Mariental explained to me that she cooks all of her meals on the solar cookers – "I have also taught my mother and even those who ask when they pass by," she said. Furthermore, Ingrid now knows how to check her water meter, reuse dish and laundry water for trees and unplug her refrigerator at night. She then explained to me that she is planning to hold practical demonstrations in the community for building solar ovens using our new sustainable living guide, "It's Time to be Efficient", so that they can generate income to visit NaDEET again.

Photo: NaDEET

Katrina in Maltahöhe using her fuel efficient stove.

Ingrid's account of how NaDEET changed her life was very promising for our evaluation but, obviously, not everyone is capable of making such big leaps of change in their communities. Those who used their solar cookers only "occasionally" or "rarely"", typically reported that solar cooking interfered with their work schedule, or that they were afraid of theft. Several community members fixed this problem by relying on their family members; they would transport the cooker to a different homestead or, in one instance, we stumbled upon an unemployed young man solar cooking outside. He was the brother of a NaDEET participant who was working most days, so he learned how to use the cooker himself since it obviously saved them money on gas and electricity. This was a great surprise for us early on in the trip and was followed by several more success stories:

"Orange Babies" in Rehoboth, a clinic helping HIV-positive mothers keep their babies HIV free, is using the solar cooker to hold cooking demonstrations and bake sales in the community. With the revenue earned, the clinic can continue to provide essential provisions for mothers.

In Keetmanshoop, many community members had moved to Windhoek or did not have proper transport for the solar cookers. As such, three solar cookers were sitting at the Women's Action for Development (WAD) office. What's worse – they had never been assembled. Prior to the evaluation, we had anticipated this problem of matching appropriate owners to solar cookers, so this experience taught us what type of owners would be more responsible and suitable for implementing a sustainable lifestyle. As a solution, we assembled the solar cookers and organised a mini-seminar at the WAD office to demonstrate how to use the solar cooker, solar oven and fuel-efficient stove. Afterward, we brought one

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of the solar cookers that was being under-utlised to the Keetmanshoop Multi-Purpose Youth Resource Centre and designated them as the new owners. The youth members were ecstatic and even argued about who would get to use the cooker first.

In Bethanie, Anna Fredericks, the chief's wife, organised many of the community group participants to meet with us at her home. While we were there, we watched her family prepare meals using the fuel-efficient stoves and recycled firebricks. Many community members remarked that the alternative cooking technology has been a life-saver since many do not have electricity, or it is frequently being switched off. Furthermore, they feel proud to be leaving less of an impact on their environment.

The community of Maltahöhe had received the most solar cookers from the programme, thanks to a very generous donation of four additional cookers from the NamibRand Conservation Foundation (NRCF). Every community member we visited remarked that they use their solar cooker daily or often. Veronika Katjikuru, the community organiser, runs a small shop specialising in solar-baked goods. Her electric bill has dropped by N$80/month and she has used the extra money to help buy a small plot of land to hold solar cooking demonstrations for the community. NaDEET and the Maltahöhe community are very grateful for the support of the NRCF. Many community members we met have already asked when they too may come to NaDEET to learn about solar cooking and sustainable living. We hope that the NRCF will continue to fund future groups and cookers for NamibRand Nature Reserve's closest village.

These stories can be followed by many others, but they are offered as a glimpse into how capable Namibians are of living sustainably if given the information and the resources. NaDEET will continue its community education programme this year with new groups from Stampriet, Rehoboth, Krumhuk Agricultural College and possibly Maltahöhe. We look forward to teaching rural Namibians how to protect their environment and empower themselves and their communities.

Jon Maravelias, NaDEET intern

Carbon offsetting and tourism

Sean Gibson of Drifter's Desert Lodge on Excelsior.

It is pretty much a given nowadays that carbon (and its associated CO_2 and other gases) consumption through flying and driving, amongst other things, is changing the world's climate. In fact many tourism operators, especially airlines and car hire companies, are advertising their "carbon status", and giving customers the option of making a voluntary "carbon payment" to offset the carbon they use during the course of their travels. One of the ways that companies are doing this is through facilitating a donation on one's behalf to a certified carbon offset programme. Perhaps an "energy from waste" project in India, or a hydroelectric scheme in Indonesia – schemes that generate energy from carbon-free sources where they would otherwise have used conventional energy systems. This is called "voluntary offsetting" and it is a small part of the $135 billion dollar annual global carbon market.

Photo: Sean Gibson

The Drifter's Desert Lodge on Excelsior is one of NamibRand's neighbours, on the southern side and, together with NamibRand and Dina, a member of the Pro-Namib Conservancy.

Yet many carbon offset schemes have earned themselves a bad reputation, and the concept of carbon offsetting has itself been widely criticised for being an easy way out – using money to buy a clean conscience. In the context of tourism in general and lodges in particular, we remain dependent on fossil fuels; and consumers, in our case tourists, are becoming more discerning: social responsibility programmes were not even on the agenda fifteen years ago and nowadays it seems as if every lodge around has some form of community programme. I suspect many if not most of these are more for appearances than they are real, just as carbon offsetting has become synonymous with "green-washing". Schemes that use gas "flare offs" from petroleum operations to fire furnaces have been certified as carbon offset programmes – rather like the pot calling the kettle black.

But what if the carbon offsetting scheme were locally grown and could make a real difference at the level of implementation? Drifters Desert Lodge is no different to any other tourism operator with regard to carbon. We have a large generator that provides the majority of our power needs, and while the technology exists for this power to be provided from entirely renewable resources, it is expensive to implement. It follows that if our (and by extension your) clients are conscious enough of the carbon conundrum they may well be willing to contribute towards funding a move away from fossil fuels towards a carbon-neutral scenario. If consumers paid a small amount toward changing the energy reticulation here at Drifters, this payment could contribute towards offsetting their carbon footprint for the part of their holiday that they spend here with us.

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I have been conducting surveys at the Drifters Desert Lodge and Drifters Desert Camp (sample size 160 respondents) to see what portion of our clients would be willing to pay toward a locally grown offset programme, with interesting results.

Drifters Desert Lodge

74 % of lodge clients (respondents) said they would pay towards offsetting their carbon footprint.

22% indicated they would pay between N$20 and N$50 toward a carbon offset programme.

50% said they would pay between N$51 and N$100.

28% (the balance) were willing to pay more than N$100.

48% said they wanted the scheme to be fully audited by an accounting firm, and the exact same figure of 48% of respondents said that they would be happy with regular email updates on the state of the scheme coming from Drifters. The balance wanted no updates. Thus while offsetting may be acceptable to most, there is a strong need for accountability.

Drifters Desert Camp

82.5 % of campers at the Drifters Desert Camp declared their willingness to pay towards offsetting their carbon, with the balance of the figures following trends similar to the lodge guests.

It should also be said that a portion of the costs of implementation would be borne by Drifters: salaries, wages, tools, equipment and expertise being some examples.

These results are amazingly positive and indicate to what extent tourists are aware of energy issues in general. I think that with us being here near the foot of Africa, struggling to find a place to deposit our glass for recycling, we sometimes forget to what extent Europe and America are ahead of the game. It seems that asking our clients to help us move from a fossil fuel based economy to one based on a renewable energy scenario is something towards which they would readily contribute.

While it may be that carbon offset schemes have a poor name internationally on a local level, as long as the right checks and balances are in place, there may be a real possibility that they can work. Lest we forget, many governments in Europe have already banned the use of incandescent (normal) light bulbs, made recycling a legal requirement, and implemented compulsory buy-back programmes that require industries that produce recyclate to reuse a percentage of their end product: all of which make the man in the street more conscious of energy consumption and the environment than we may realise.

Of course theorising about something and implementing it are two entirely different prospects, but a degree of willingness to pay is an indicator of good possibilities. It is also an indication of the seriousness with which tourism operators need to address their carbon footprint. Carbon neutrality could create a real competitive edge in a crowded marketplace. The sample taken is large enough to form the basis of a robust study and will form the basis of my research towards a Master's degree in Sustainable Development.

Sean Gibson

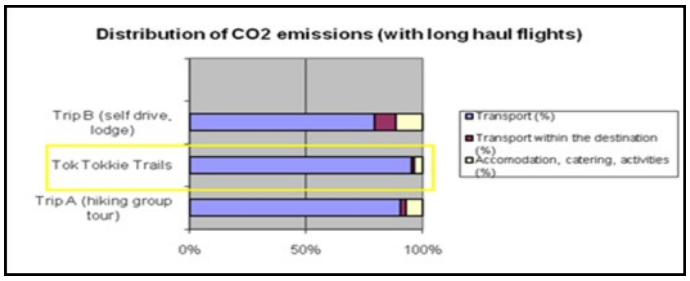
Tok Tokkie Trails takes part
in carbon footprint research

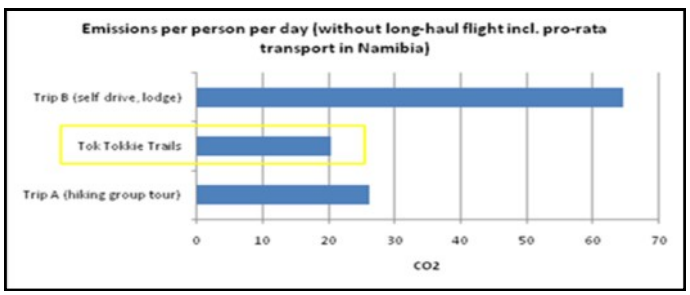
In February and March 2011, Tok Tokkie Trails took part in a research project on "Nature-based Tourism and Climate Change - Carbon footprint assessment and carbon management options – The case of Namibia", carried out by Dr Strasdas, a professor at Eberswalde University for Sustainable Development in Germany. The aim of the project was to research the carbon footprint of nature-based tourism packages in Namibia. Based on the findings, recommendations will be developed how the carbon footprint of nature-based tourism in general can be improved.

Dr Strasdas asserted the economic importance of tourism for Namibia and that tourism was highly beneficial for conservation and rural communities in the country. However, Dr Strasdas also pointed out that despite Namibia's relative dependence on tourism, the country was not well-prepared for the challenges that will be brought about for tourism by climate change, be it physical impacts, like more frequent droughts or indirect societal impacts, like the increasing awareness for climate change among tourists or regulations making long-haul flights more expensive. Therefore, and because Namibia is a rather carbon-intensive destination, Dr Strasdas's advice is that Namibia should position itself as a climate-friendly destination by adopting efficient mitigation strategies. Such strategies could be the increased use of renewable energies, more local sourcing, transport optimization, reducing travel distances for tours or the offsetting of emissions that cannot be avoided.

For Tok Tokkie Trails the results of the study are very reassuring. The charts below clearly show that we are more CO_2 efficient than e.g. a self-drive lodge stay. At Tok Tokkie Trails most energy is created by solar power and great care is taken to minimize consumption of fossil fuels. These results are an incentive for us to continue with further improving our CO_2 efficiency and overall environmental balance.

Barbara Wayrauch





The revenge of the tsamma melons?

Is the tsamma melon an agent in the formation of fairy circles?

The tsamma melon/wild watermelon (*Citrullus lanatus*, family Curcubitaceae) commonly grows on sandy soils amongst the dunes and on the plains. With the exceptional rain season in 2011 this striking annual creeper has proliferated on NamibRand, and the large, yellowish green fruits (15-20 cm in diameter and weighing about 600 g) and leaves are enjoyed by a variety of animals, from oryx, springbok and rodents to insects and other invertebrates. The juicy fruits are also edible to people, resembling watermelons in taste and smell (in fact the tsamma is believed to be the ancestor of our domestic watermelon). However, while some of the fruits are bland and palatable, others are extremely bitter.

The stems of the tsamma are prostrate (lying on the ground) and can grow up to 2 m long – about the average radius (i.e. half the diameter) of a fairy circle ... We noticed that the growth of the tsammas has an effect similar to what is seen on fairy circles: the melons outcompeted most other plants and resulted in a mono-culture in a diameter of about 4 m, with bare patches in between (see photo above). It was not just a case of the tsammas moving into an existing fairy circle – there was none of the tall annual peripheral grass characteristic of fairy circles around these patches; in fact in many (but not all) established fairy circles, the tsammas seem to grow around the edge rather than within the circle. Many of the above (potential) "tsamma circles" also seem to lie amongst existing fairy circles, with little overlap and showing a spacing that speaks of competition. In terms of the "environmental engineering" taking place, the feeding of antelope and ungulates also has a considerable trampling effect where the melons grow.

On a slightly different note, Quintin Hartung and I tried to test for the presence of subterranean water in a primitive but established way, using two vertical wires held firmly in front of one, in parallel and about 5 cm apart. The wires normally "pull" and cross when one stands above a water vein. When we walked onto a fairy circle, the wires tended to move apart as far as possible, ending up 180° apart at the far ends.

However, when we held the wires above the main taproot of a green, flourishing tsamma plant, even within a fairy circle, they crossed – indicating the presence of water? The relationship between subterranean water and fairy circles has already been investigated, but not yet in association with tsammas.

These observations have given rise to some questions that need to be tested scientifically:

What will happen when the tsamma plant dies off – will a bare patch or fairy circle be left in its place? We have staked out a few sample sites to check on. Do tsammas have some chemical effect (i.e. do they produce “allelochemicals” – possibly related to the bitterness of some of the fruits) that could have a poisoning or growth-inhibiting effect on the soil, which eventually results in a bare patch (or fairy circle)? Are some fairy circles the relict "graves" of tsamma plants?

What is the relationship between subterranean water veins, fairy circles and tsammas? Can this be verified by water diviners?

Tsamma fruits have a high water content (these are *water*melons); is the competitive absorption of water part of their survival strategy?

These ideas will probably not explain the origin of all fairy circles … but perhaps a number of different agents are at work together?

Ann Scott

Heavy rains cause caterpillar outbreak at NamibRand

Our field work in late February and March 2011 coincided with the exceptional rains that fell at NamibRand. Since part of our work involved plant transects, we also observed many of the insects that had responded to the rains and taken advantage of the luxuriant plant growth. Most evident was an outbreak of caterpillars of various species, whose numbers exploded during a period of a few days. The numbers eventually increased to the point where they impacted on the plant cover, to the extent that they became a problematic variable when doing plant transects and estimating plant cover, as they began destroying entire plants. *(Continued on p10)*

Photo: Leila Mitrani

Caterpillar of the striped hawk-moth *Hyles lineata livornica*.

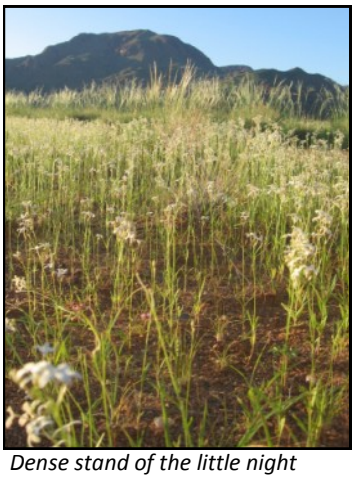


Photo: Leila Mitrani

Dense stand of the little night flower (Kohautia caespitosa), one of the favoured foodplants of the striped hawk-moth.

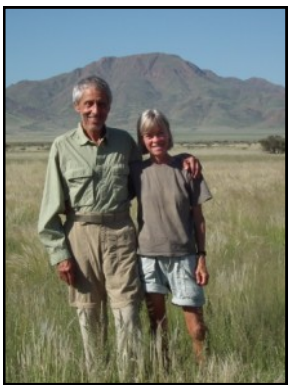
(Continued from p9)

Although a number of species were involved, the most conspicuous (and problematic) was a species of hawk moth, which fed voraciously on a bulb, the Namib wild onion (*Dipcadi balcerianum*) as well as on the little night flower (*Kohautia caespitosa*), an annual of the family Rubiaceae whose intoxicating perfume scented the warm nights. The caterpillars belong to a species widespread across Africa and Eurasia, the striped hawk-moth (*Hyles lineata livornica*).

Such rapid increases in population numbers are characteristic of true outbreaks, and show an interesting response to variables such as above-average rainfall. These initial outbreaks are generally not held in check by parasites, unless there is a second generation of caterpillars. The latter might well happen if the rains persist, when the first generation of moths gives rise to a second generation of caterpillars. This is technically termed "multivoltanism". After pupating underground, the army of caterpillars gives rise to swarms of hawk moths, which patrol the desert at night in their search for nectar of tubular flowers.

Kelly Vlieghe & Dr Mike Picker

Further studies of thermoregulation in the wedge-snouted lizard



Barry Dworkin and his wife Maria Wilén.

This year we returned to Kwessiegat with our portable computerized laboratory to continue study of thermoregulatory behaviour of wedge-snouted lizards (*Meroles cuneirostris*; see previous issue of this newsletter. Our goal was to confirm our previous findings; to get data from individuals ranging in weight from ~3 to 10 grams, and to finalize our study for a publication. With the support of the NamibRand staff, and help with catching lizards by Emilia Ndahafa Sende and other volunteers at NaDEET, things went smoothly, at first.

Sand lizards use two separate behaviours to prevent thermal damage or hyperthermia: a thermo-protective "thermal dance" that avoids burned feet, and a thermoregulatory push-up-like response, in which the entire body is lifted off of the substrate, preventing excessive rise of core temperature. Our video recordings from last year showed evidence of a sharp switch in behaviour appearing at a core temperature of 40 to 41°C. (At ~41°C behaviour changes from the thermoprotective "thermal dance" to the thermoregulatory push-up; thus, somewhat surprisingly, the switch in behaviour depends less on substrate than on core temperature.) This year we found that, at core temperatures below ~38°C, there was usually neither thermoprotective nor thermoregulatory behaviour. With increasing body mass, core temperature rises more slowly and, as would be logically expected, larger lizards tolerate higher substrate temperatures than smaller ones before exhibiting thermoregulatory behaviour; however, as logically expected, it did not appear that thermoprotective behaviour also depends on core temperature.

To study this effect of core temperature directly, the test surface was programmed to maintain a baseline temperature of either 35°C or 45°C. At 45°C, the lizard's initial core is preconditioned to a higher level. With this higher initial core temperature, shifting to the test temperature of 70°C results in the "switch-point" core temperature being achieved more rapidly; and correspondingly, a more rapid onset of thermoprotective behaviour. This manipulation showed that the onset of the behaviour depended on the core temperature *per se*, rather than on the time on the substrate. In contrast, with a core temperature lower than 35°C, almost no reaction to the hot surface is observed.

We had completed experiments with one large lizard and had started the same programme with a smaller one, achieving very consistent results, which supported our hypothesis, when lightning struck the antenna of the cellular repeater at Kwessiegat on at 08h00 on 12 March 2011. The powerful surge blew electrical outlets from of the walls, filled the house with smoke, and destroyed most of our electronic equipment, as well as the domestic water pump. Because of this, we were not able to continue our experiments or remain in the house. Fortunately only a few minutes before the strike, we had unplugged the transponder device used for remote measurement of core temperature, and this critical and expensive instrument was undamaged; also, although the lab computer was completely destroyed, its hard disk was unharmed and all the data were saved. With the help and generosity of the staff at Keerweder we moved our personal belongings to the guesthouse, and remained there until we departed for Sweden, several weeks earlier than planned. After recovering from the ordeal, with the help of the exquisite vista from the Keerweder guesthouse veranda, we decided that the results were too promising to give up, and resolved to replace the equipment and return next year to complete the project. (In addition to the view, while sitting on the veranda we watched the local skink sun itself in the morning, and got ideas about other thermoregulatory behaviours that will be incorporated into our study next year—also see next page.)

Barry Dworkin

Photo: Maria Wilén

Photo: Ann Scott

(Continued from p10)

Above: The Keerweder guest-house resident skink basking at an angle that is optimal to absorb solar energy on a cold day.

Below: Conversely, at an ambient temperature of 34°, this wedge-snouted lizard was found darting from tuft to tuft of grass between the fairy circles and then maintaining an erect posture - apparantly oriented in order to minimize the "cosine" effect (heat absorption surface area) and to catch the wind.

Photo: Conrad Brain (remote)

The leopard lair research team at NamibRand in April 2011

Leopard and cheetah news

An investigation into leopard prey remains

The first steps in a project to investigate prey remains in the NamibRand, Kulala and Naukluft area were taken recently when a group of experts gathered at Toekoms on Namibrand in April 2011. Among these were Dr Conrad Brain (Wildlife Veterinarian); Dr Charles K Brain (well-known Paleontologist and Taphonomist); Dr Virginia Watson (Veterinarian and Osteologist); Dr Tim Brain (Physician); and four other members of the Brain clan.

The aim of this initial investigation was to locate as many sites used by leopards where prey remains have accumulated. Additionally, an attempt was made to assess the approximate time period that the sites have been used by leopards in order to assess whether further excavation of the sites can be planned.

This project was initiated because leopard prey remains offer unique insights into the prey base of an area. In particular, if the lairs have been used over generations a valuable historic understanding can be achieved as to possible shifts in prey type, age composition of prey and other changes associated with a predator-prey relationship. This could be of particular interest in this study area as the predator-prey system is re-emerging with the natural influx of predators as well as re-introductions of predators. Findings from this project over time could then be incorporated into the management practices of the area as well as provide information on historic changes in the area that have formed it into what it is today.

Multiple sites were visited during this initial study and many leads were developed to find more sites in the area. Some sites were more promising than others in terms of long term accumulations, but all were valuable in providing initial insights as to the directions into which the project can develop.

Conrad Brain

(Continued on p12)

Photo: Conrad Brain

Dr Charles ("Bob") Brain examines some leopard prey remains, including those of springbok, at Boscia.

Photo: Ann Scott

Members of the Brain clan cluster with interest around some prey remains found at Draaihoek.

Photo: Conrad Brain

The Brain clan investigate a leopard lair—somewhat cautiously (see previous page).

Photos: Birgit & Madel: &Beyond guests

Guests at Sossusvlei Desert Lodge were fortunate to see five cheetahs (above) and a leopard (below) on NamibRand.

(Continued from p11)

Cats in the desert

Stories from &Beyond – Tell the World!

We had the pleasure of staying at &Beyond Sossusvlei Desert Lodge for four nights in January 2011. We travelled through Namibia for almost four weeks, the stay at your lodge being the ultimate highlight of the trip. Everyone did their utmost to make our stay memorable and the birthday celebration held for my mother is probably the memory she will cherish the most. A moment I will never forget was seeing no less than five cheetahs with a kill! The evening sun gave the scene an otherworldly light and made the dry grass look like silver. I kept teasing our guide Nestor, claiming I wanted a leopard in addition to the cheetahs, or preferably five leopards to match the cheetahs. On my last game drive, as the sun was setting, I got my wish. Perched high on top of the rocky boulders of a hill it lay watching us, only the head was visible. I saw a leopard once again in the Caprivi Strip. It was positively posing for the camera with a rainbow ending in the tree where it was sitting. Yet, the leopard in the desert remains my favourite.

Birgit & Madel (submitted by Roelene Beumer)

Three wild cheetahs spotted on Geluk from a hot air balloon

On 24 March 2011, pilots from NamibSky Balloon Safaris spotted three cheetahs in the Pro-Namib area just north of NamibRand, on Geluk (see two photographs below). As far as they could tell none of the cheetahs had a monitoring collar. More evidence that the hard work by NamibRand, CCF and N/a'an ku sê to re-establish cheetah in the area have been successful?!

Andreé & Paul Vicry

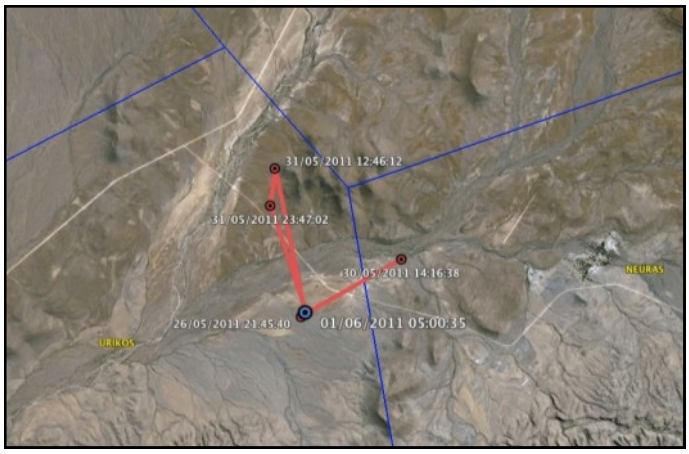
Photos: NamibSky Balloon Safaris

Three wild cheetahs spotted at Geluk in March 2011.

Satellite transmitter of female cheetah continues to transmit

The latest feedback (end of May 2011; see map below) on the satellite-tracked female cheetah shows that for the most part she is in the same area of Urikos; however on 30 May she was on Neuras. By 31 May she had returned to Urikos but that evening made a trek (about 3 km) northwards, remaining on the same farm. In the early hours of 1 June she was back in her new core area, 40 km NE of Vremdelingspoort in NRNR and 10 km S of the Namib-Naukluft National Park.

Rob Thomson



First mark-recapture estimate of mountain zebra numbers in NamibRand

One aim of current research on mountain zebras in NamibRand is to estimate the numbers present and the use of water points. Populations of this species are difficult to count directly from roads in broken terrain and another approach is needed. The alternative adopted takes advantage of the individual-based approach that I am using in the current study. Mountain zebra each have unique stripe patterns and can thus be recognised individually. This allows estimates of the population by identifying individuals observed in notional "mark" and "recapture" periods without the disturbance of physical capture that is necessary for artificial marking. Population size can then be estimated from the numbers seen and the proportion of "marked" animals in the second period. In previous work on mountain zebra in Namibia I have developed a bar-code system based on variation in stripe patterns and this allows large numbers of zebras to be identified relatively quickly.

The key to any population estimate is unbiased sampling of the population under study. This is relatively straightforward in the case of mountain zebras because they are water dependent and usually visit water holes every day in the dry season. Camera traps placed at water points can thus potentially sample the entire population. Our initial aim was to estimate numbers in the northern part of NamibRand from Losberg up to the northern boundary. Five camera traps (which switch from infra red photography at night to normal photography in the daytime) have been used at Moringa, Draaihoek, Porcupine, Kudu and Hyena water points.

Cameras were in place between April and November in 2010 and over this period 217 individual zebra were identified with many observed repeatedly. Largest numbers were identified at Moringa, Draaihoek and Porcupine in the north-east and there was also considerable overlap between visits to these three water points. Of the 115 animals seen at Moringa, 25 (22%) were also seen at Draaihoek, Porcupine or both. The images from Moringa show intense competition for access to water and also that subordinate animals sometimes wait for long periods before drinking. This water hole depends on water being trucked in twice a week and, when the water is exhausted, some animals move to Draaihoek and Porcupine. This movement is over 9km in a straight line, perhaps double by zebra trails, so it must be energetically costly. However most animals that drink at Moringa (78%) have not been seen at other water points and it seems likely that they move out of NamibRand to the north-east to drink elsewhere. None of the small number of animals identified at Kudu Water and Hyaena Water has been photographed at any other water point, but mountain zebra are highly mobile and overlap will probably be detected in the future.

The mark-recapture estimate was carried out during a period when all five cameras were operating in September/October 2010. 10 day "mark" and "recapture" periods were adopted with a two week interval in-between (to allow for remixing of the population). Pooling the information from all five water points, a total of 150 individuals were identified in the two sample periods: 126 were seen in the "mark" period, 83 in the "recapture" period and 59 in both. The estimated total population using these data in conventional mark-recapture calculations was 178+/-9 (mean +/- standard error). This number is less than the 217 animals identified between April and November, probably because the animals in the reserve at any one time are only part of a larger population.

Above: Mountain zebras at Moringa Water. Right body sides only are used in the survey (to reduce analysis time) and the two animals on the left can be individually recognised in this photograph.

Below: Aggressive behaviour at Moringa Water. Competition for access to water occurs at all water points but is most common at Moringa because of the large numbers that drink there and the limited water supply. The left hand animal is perfect for individual recognition. Note the branched "first rump stripe" (the stripe below the gridiron pattern above the base of the tail) a character that occurs in only 29 of the 217 individuals recognised.

It is intended to repeat the dry-season estimate in 2011 and to this end cameras are currently being placed for short exploratory periods at other water holes not previously sampled. The aim is to check for overlap with the five water holes used in 2010 to help plan future work. However cameras have been left in place at Moringa and Draaihoek for continuous monitoring of the known individuals that use these two important sources of water.

I am grateful to Nils Odendaal, Mike and Ann Scott and their staff at Keerweder for their unfailing support; and especially to Quintin Hartung for his sterling work in keeping the camera traps operating. The Rufford Foundation and the Namibia Nature Foundation have provided generous financial and other support.

Dr Morris Gosling

Giraffe update

Photo: Julian Fennessy

Four of NamibRand's eight giraffes were successfully captured and translocated to N/a'an ku sê Wildlife Sanctuary in September 2010 (see the September 2010 issue of The Barking Gecko), leaving two adult bulls and two cows. A new calf was reported on 31 January 2011, and another calf has since made its appearance, in April 2011. The giraffes were photographed by Dr Julian Fennessy, well-known giraffe expert (and Director of Namibia Nature Foundation), with Nils Odendaal in May 2011.

Mike Scott

Photo: Julian Fennessy

NamibRand's giraffe family at Draaihoek.

Photo: J & D Klein

Photo: Nils Odendaal

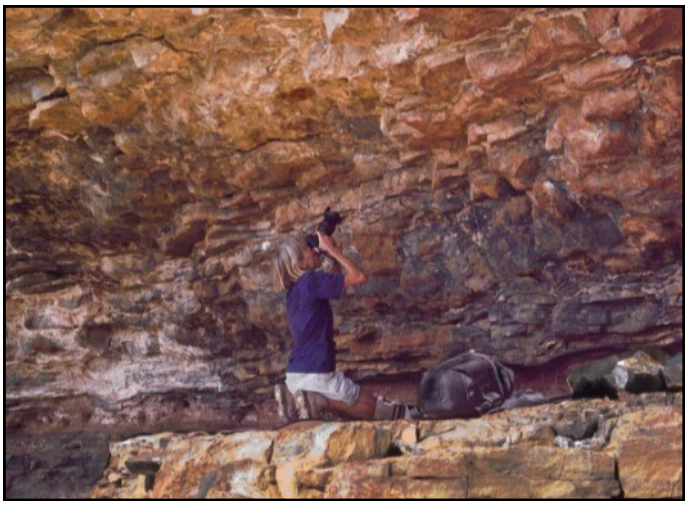


Photo: Barry Dworkin

Maria Wilén carefully examines and photographs some of the rock art on Vreemdelingspoort.

Rock art study at Vreemdelingspoort

During our recent visit to NamibRand to work on the wedge-snouted lizard (see below), we had the opportunity to visit the Black Mountain Shelter Bushmen paintings, a beautiful 45 min walk from Sossusvlei Mountain Lodge. Maria (my wife) will document the site and paintings as a student project for the Archaeology Department at Uppsala University. Three visits with extensive photography revealed remarkable pieces of mono- and dichromatic, more or less intact paintings of animals, humans and other objects.

It was fascinating to discover new paintings every time we examined the rocks as we became more aware of what to look for on the rock surfaces. We believe that this site must have been very rich in paintings as there are many small or large remnants of paintings, or just spots of colors. The art appears to be of different styles and/or made at different times. One example, the giraffe on the underside of a horizontal rock, is quite amazing with details of the body accurately and consistently portrayed. Other figures look more "primitive" in the sense that they are less realistic and their context is not as easy to interpret. The third motif was the small group of "stick figures" in black.

Dr Beatrice Sandelowsky will kindly assist with the task of examining the photos to determine whether the paintings are authentic, what they might represent, and when they were likely made. Thanks to Sossusvlei Desert Lodge, Ann and Quintin for all the support to begin this project.

Barry Dworkin

Photo: Ann Scott

This exquisite rock painting of a giraffe at Vreemdelings-poort suggests that giraffe formerly occurred in the area.

Interesting sightings and photo gallery


Left: Jewel beetle at Keerweder (Julodis, probably J. humeralis); the function of the red, eye-like waxy patch is not known (Ann Scott).
Centre: "White lady" spider that had captured a scorpion at Sossusvlei Desert Lodge. Inset shows the scorpion's fluorescence, in UV light (Miles Paul).
Right: Centipede Scolopendra, whose bites can pose a medical issue (found inside Mike Scott's sandal - while he was wearing it; Ann Scott).



Left: Sidewinder with a very unusual track; it had apparently just had a meal, probably a lizard, and could not "sidewind" as usual (Miles Paul).
Centre: Whip snake, found at NaDEET Base at Die Duine; this common, very fast snake preys on skinks and lizards (Quintin Hartung).
Right: The identity of this large, mysterious python-like snake found at Boscia still has to be established (Ann Scott & Quintin Hartung).




A wealth of unusual bird sightings includes nesting Chestnut Weavers (left); a lonely Masked Weaver that built 14 nests and found a mate only half-way through the process (2nd from left); a juvenile Reed Cormorant (2nd from right) - all at Keerweder; and six White Storks (right). Others include Lesser Grey Shrike, African Hoopoe, Common Quail, Kurrichane Buttonquail, Lilac-breasted Roller, Violet-backed Starling, Wattled Starling and Red-billed Quelea.



Left: A little brown bird called Monotonous Lark that resided at Aandstêr since the rains and has driven everybody insane as it just goes on 24/7 and NEVER stops, even throughout the night (Stephan Brückner & Peter Woolfe; photo Warwick Tarboton).
Centre and right: A pair of warthogs seen regularly at Draaihoek/Keerweder (Jürgen Klein); and a warthog at Excelsior (right; Sean Gibson).

More photographs

Photo: Frans Lanting, copyright National Geographic

Photo: Frans Lanting, copyright National Geographic

The latest National Geographic Traveller magazine features an article on Namibia, including NamibRand in the last part . The story is by Chris Eckstrom who accompanied Frans Lanting in 2009 on assignment for a feature National Geographic magazine article on Namibia's coastal area being proclaimed as a contiguous National Park. The two beautiful photographs above were taken during their visit to NamibRand. The article is online at http://travel.nationalgeographic.com/travel/countries/namibia-traveler/ and on our NamibRand Facebook page at http:// www.facebook.com/NamibRand.

Photo: George Tucker

NAMIBIA FLYBY: On 19 May 2011 the International Space Station, with shuttle Endeavour docked alongside, flew over Namibia - and right by the Large Magellanic Cloud (LMC). Photographer and astronomer Dr George Tucker recorded the southern hemisphere encounter from Namibia at the observatory of the Sossusvlei Desert Lodge, on NamibRand. Orion is partially hidden by the telescope and the Large Magellanic Cloud is the fuzzy object on the left.

Thank you

Many thanks to those of you who have contributed to providing articles for this issue of The Barking Gecko:

Roelene Beumer, Dr Conrad Brain, Dr Barry Dworkin, Sean Gibson, Dr Morris Gosling, Quintin Hartung, Jon Maravelias, Nils Odendaal, Mike Scott, Rob Thomson, Andreé & Paul Vicry, Kelly Vlieghe & Dr Mike Picker, Barbara Wayrauch and Peter Woolfe; and to all those who have submitted interesting sightings and photographs, and provided editorial inputs and assistance with the identification of species, including Dr Mike Picker, Peter Cunningham and Johan Marias.

The Barking Gecko is your newsletter and, as always, your contributions in terms of news and views, short reports, sightings, comic relief, artwork and photographs are much appreciated!

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