



THE BARKING GECKO

Newsletter of the NamibRand Nature Reserve



June 2012

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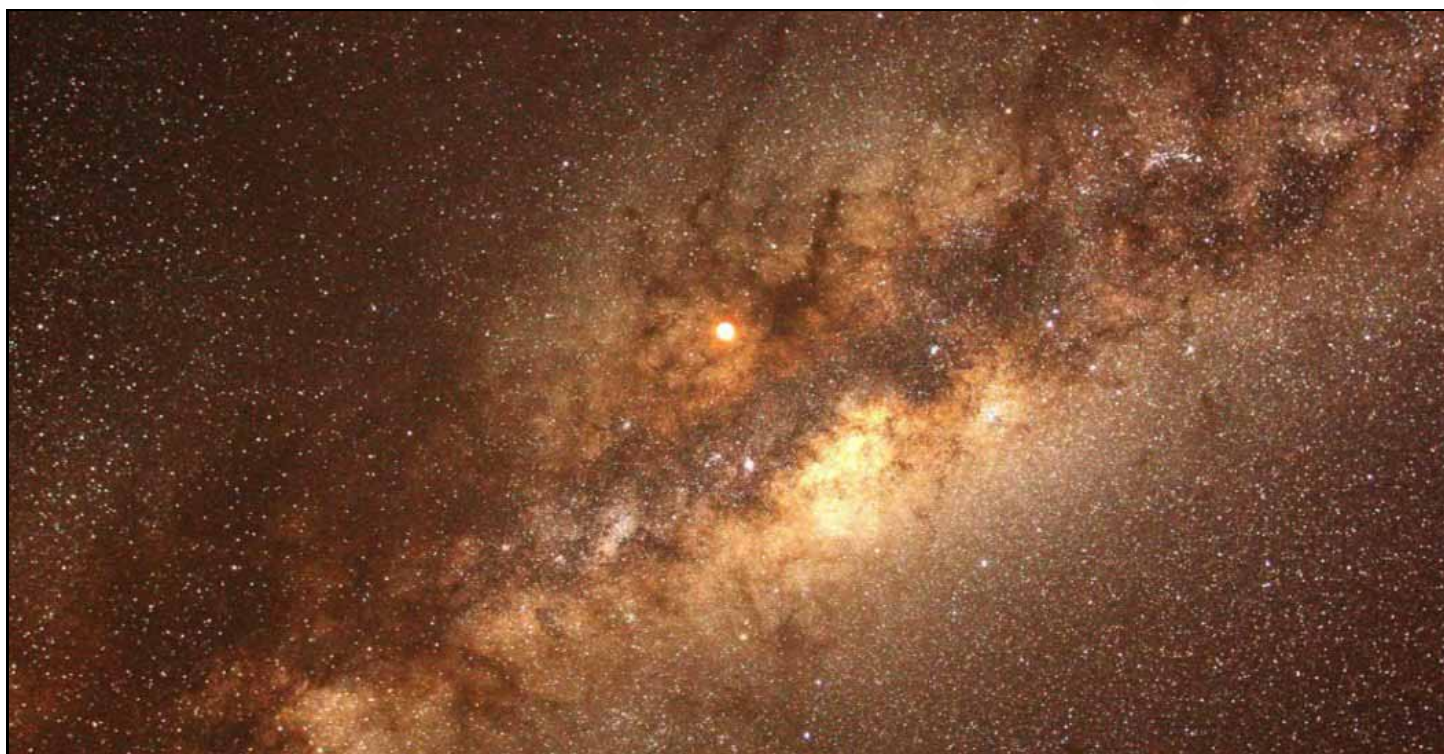


Photo: George Tucker

NamibRand's spectacular night skies have been awarded the highest international conservation status. This unique photograph shows the eclipsed moon in the Milky Way during the lunar eclipse on 15 June 2011, photographed from the Reserve.

In this issue:

Editorial.....	1
NamibRand becomes Africa's first International Dark Sky Reserve.....	2
News from the CEO.....	3
J.A. (Albi) Brückner—a conservation hero.....	5
Annual game count 2012.....	5
Rain.....	6
Fire drill.....	7
More lightning fires.....	8
NamibRand Birding Big Day March 2012.....	8
Up the Losberg.....	9
March 2012 Kgotla.....	9
News from Aandstêr.....	10
Quality early education to make a difference	11
Wolwedans village news	12
News@NaDEET.....	13
A desert wedding at the Family Hideout.....	14
Natural gas theory may dispel myth of fairy circles.....	14
The life cycle and life span of Namibian fairy circles.....	16
Research on the ecology of ephemeral water pools.....	17
Insect inventory project.....	18
Photographing a barking gecko.....	19
Latest population estimates of mountain zebra.....	19
Interesting sightings and photo gallery.....	21

NamibRand grows in many directions

This winter issue brings exciting news as NamibRand expands in different directions: firstly by becoming Africa's first International Dark Sky Reserve. One may ask, why should such a step be necessary? Dark skies are a precious resource in many senses, from spiritual and aesthetic to ecological and economic, and already threatened by burgeoning light pollution. Adding this aspect to our conservation priorities confirms NamibRand's position as a leader in this field.

Further exciting news is the inclusion of two more properties to the south of the Reserve, and we welcome the Bernstein family to our NamibRand community. This close-knit group continues to demonstrate its ability to work together in many joint activities, including a fire drill and fire fighting, the annual game count and a Birding Big Day. Our concessionaires bring further news of interesting and innovative initiatives.

Fairy circles once again claim their space with the publication of two fascinating reports, while speculation on their origins continues to run rife. Our mountain zebra research project gathers momentum, and plains zebra make their appearance in the south for the first time in many years. Your sightings and photographs round off this issue, which we hope you enjoy!

Ann Scott

NamibRand Nature Reserve becomes Africa's first International Dark Sky Reserve

Photo: Bernd Pröschold



A bright meteor flashes up in NamibRand's clear night sky above the northern slopes of Jagkop.

24 May, 2012. TUCSON, AZ & WINDHOEK, NAMIBIA – Namibia's NamibRand Nature Reserve, one of Africa's largest private nature reserves, has expanded its conservation role to include preserving the star-filled nighttime skies that shine above its dunes and mountains. These efforts in night sky conservation have earned the reserve high honors as the International Dark-Sky Association has just announced that NamibRand Nature Reserve is the world's newest International Dark Sky Reserve.

The International Dark-Sky Association's night sky conservation efforts include working with groups to form International Dark Sky Reserves (IDSR) and other dark sky places. International Dark-Sky Association's Executive Director Bob Parks explains, "The night sky over the NamibRand Nature Reserve is exceptional, as are the efforts the reserve has taken in modifying its lighting for the sake of its wildlife and visitors."

Dr George Tucker, a retired professor of physics from the USA, who identified the NamibRand as a potential Dark Sky Reserve and led the certification effort, says "Viewing the pristine night sky over the NamibRand is an unforgettable experience. Being recognized as a Gold Tier International Dark Sky Reserve will serve to promote and protect this valuable resource. Achieving this status is a significant accomplishment not just for the NamibRand, but also for Namibia and all of Africa." Gold Tier is the term used to describe reserves with nighttime environments that have little to no impact from light pollution and artificial light. NamibRand's nearest neighboring communities are small and lie some 60 miles distant, so the reserve's sky is one of the darkest yet measured.

In the core of the new reserve is the Namib Desert Environmental Education Trust (NaDEET) Centre, which runs environmental education programs that teach about the Earth and sky. Astronomy programs do more than explain about the physical universe – they focus on the importance of the night sky in the cultural heritage of Namibians. Overnight guests, usually groups of schoolchildren, even have the opportunity to sleep in "open air" units where they can view the night sky

from the comfort of their beds. The NaDEET Centre's programs are open to all Namibians and visitors from around the world. For the Namibians who cannot reach the Centre in person NaDEET offers extensive outreach programs in the schools and communities of their region.

Viktoria Keding, NaDEET's Director, explains: "Prior to the NaDEET astronomy activity, even the most basic knowledge about the night sky and the threats posed by light pollution were completely unknown to most Namibian children. This recognition therefore makes our participants aware of just how unique it is to have a dark night sky."

Nils Odendaal, the Chief Executive Officer of the NamibRand Nature Reserve describes the importance of receiving the IDSR designation, "The conservation of the night sky and the mitigation of light pollution is an area of conservation in Namibia that, to date has unfortunately not enjoyed much attention. We hope to use our influence as a leader of tourism and conservation, not only in our area, but also on a national level to change this and raise the awareness of this important environmental concern.

He continues, "The NamibRand IDSR is the first in Africa – as well as the first in any developing country in the world. We hope that this IDA designation will generate international support, publicity and targeted research both for the NamibRand and for Namibia as a whole, further reinforcing the country's leadership role in environmental issues."

(Continued on p3)



Photos: NamibRand Nature Reserve

What does becoming a Dark Sky Reserve entail? In order to preserve the magnificent views of the night sky above the NamibRand Nature Reserve, exterior lighting will be kept to a minimum. Whenever possible, amber or red bulbs will be used in exterior lights. Exterior lights will use bulbs with the minimum light output necessary to accomplish their purpose and, whenever possible, these lights will be fully shielded (i.e. they must emit no light above the horizon). NamibRand did a detailed audit of all its external light fixtures and applied corrective measures (retrofitting, replacing fixtures or using lower wattage and/or amber bulbs) where necessary, so that these comply with the above lighting guidelines as stipulated in our Dark Sky Reserve management plan. The example above, at the Family Hideout Campsite, shows the original light which emits light in many directions (left), and the retrofitted light which is now shielded (right).



NamibRand's dark, starry night sky captured recently by a guest at the Family Hideout.



(Continued from p2)

About the IDSPlaces Programme

The International Dark-Sky Association (IDA) established the International Dark Sky Places conservation programme in 2001 to recognise excellent stewardship of the night sky. Designations are based on stringent outdoor lighting standards and innovative community outreach. Exmoor National Park, located in Devon and Somerset Counties in England and Mont Mégantic in Quebec, Canada are the other International Dark Sky Reserves. Since the programme began four communities and ten parks have also received International Dark Sky designations.

To learn more about the IDSPlaces program, please visit <http://www.darksky.org/IDSPlaces>



A guest at Sossusvlei Desert Lodge enjoys viewing NamibRand's night skies through a 12 inch (30.5 cm) aperture Meade, LX200R telescope, which is at the top of the range of portable telescopes and has 2000 times the light-gathering power of the human eye. It is available for use every night under the direction of the visiting guest astronomer.

News from the CEO



The NamibRand Board of Directors celebrating the addition of the farms Springbokvlakte and Saffier as well as the launch of NamibRand as an International Dark Sky Reserve at NaDEET. FLTR: Chris Berker, Les Carlisle, J.A. (Albi) Brückner (Chairman & Custodian), Stephan Brückner, John Bernstein (new director) and Jürgen Klein.

We are thrilled to announce that the farms Springbokvlakte and Saffier have officially joined the NamibRand Nature Reserve. Members of the NamibRand Nature Reserve Association approved the inclusion of these additional 30,000ha to the south of the Reserve at our Annual General Meeting on 2 June 2012. Mr John Bernstein, who along with the Springbokvlakte Foundation Trust is the co-owner of these two "new" properties, will also serve on our board of directors. Mr Bernstein has nature conservation at heart and joined the NamibRand Nature Reserve in order to secure the land and the environment for conservation. We welcome John, his wife Ingrid and their children to the NamibRand Family and we look forward to working together towards our common conservation goals in the future.

At our AGM the NamibRand community officially unveiled a plaque at the NaDEET Centre to commemorate our approval as an International Dark Sky Reserve (IDSR). The board of the International Dark Sky Association (IDA) endorsed the recommendation of the IDA advisory board to inscribe the NRNR as a Dark Sky Reserve at the "Gold Tier" level – the darkest and strictest available category. Regular visiting astronomer at Sossusvlei Desert Lodge, Dr George Tucker, the driving force behind our application, sums it up nicely: "I believe that by drawing attention to the importance of preserving the dark skies of Africa we have accomplished something of significance for the Reserve, Namibia, and the world at large." Our designation as an IDSR is significant as we are the first in Africa and the first in any developing nation! This designation will give us significant credence with international astronomers and a very good marketing platform for the star-gazing community to come to NamibRand.

(Continued on p4)



(Continued from p3)

News from the Protected Landscape Conservation Areas Project (NamPlace) is that the representative committee for the Greater Sossusvlei-Namib Landscape Association (GSNL) has been busy drafting a Constitution and a Management Plan. The Vision of the GSNL Association is to co-manage the Greater Sossusvlei-Namib Landscape for enhanced landscape and biodiversity conservation, and socio-economic development, for the sustained benefit of the people within the Landscape and the Region. We truly feel that this partnership and co-management approach will greatly benefit the area. The eyes of the world are on Namibia as this is a ground-breaking initiative designed to overcome barriers (conservation, social and economic) for the benefit of the area. NamPlace has already started to implement some of its objectives, for example: we plan to roll out the vehicle-based game count across the landscape so that wildlife can be monitored in the greater area. This is particularly useful in understanding the wildlife ecology across the landscape. Preliminary results from our recently held NamibRand annual game count indicate that only two thirds of the previously counted springbok population were recorded. A game count across the larger landscape would thus be useful as we would then know "where there animals went".

Last year we piloted a conservation student internship project with the University of Nebraska-Lincoln in the USA. As the project was successful, we decided to continue with this programme. This year we welcome Lars Anderson as a (temporary) member of our resource management team. Lars arrived at NamibRand in mid-May and has been instrumental in helping us with our Geographic Information System (GIS). He has been upgrading our ageing software, helping us to produce new maps and training our staff in the use of this management tool. Lars is part of our team and he is experiencing the day-to-day activities of life on the Reserve. He has also visited some of our tourism partners on the Reserve to get some insight into those industries as well.



Photo: Quintin Hartung

Lars Anderson, student intern from the University of Nebraska-Lincoln was part of a team that climbed the Losberg recently (see p9).



Photo: Nils Odendaal (automatic)

FLTR: Jim, Courtney and Chris Scott from The Nature Conservancy, USA and Nils Odendaal at NamibRand.

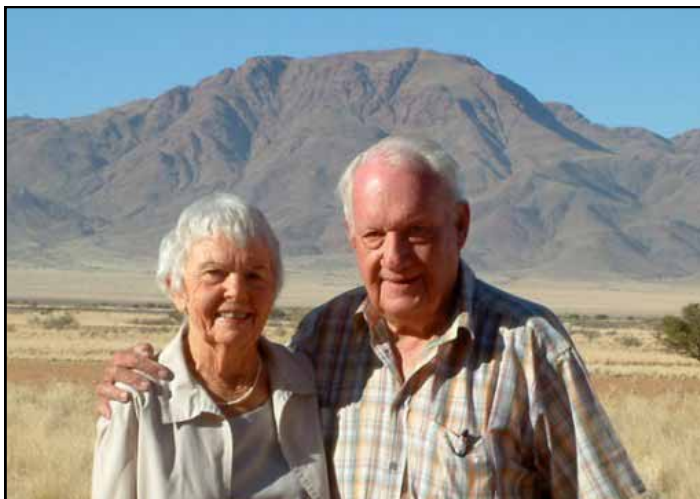
In April Jim Scott, his wife Chris and their daughter Courtney visited NamibRand. The Scotts are involved with and serve on the board of The Nature Conservancy in the USA (see www.nature.org) and they also have close ties with the Grasslands Foundation and the Rocky Mountain Research Centre. As reported in previous issues, we have a history of hosting conservation groups and facilitating study visits from the USA in the interests of promoting NamibRand as a model for sustainable biodiversity conservation.

Jan and Jay Roode from Skyhawk Photography spent a few days on NamibRand in May. They overflew the Reserve in their virtually silent Jabiru 430 aircraft, photographing the landscape and animals. The purpose was to obtain scenic photos to be used in commercial artwork and poster production, and to collect stock footage (particularly of existing infrastructure) for the Reserve's management purposes. We have entered into an agreement with Skyhawk whereby a percentage of all photographic artwork or products sold (using NamibRand-obtained images) will be channelled into the NamibRand Conservation Foundation for use in conservation (for more information see www.skyhawk.co.za).

Interest in fairy circles and the possible "answer" to this mystery remains high. A team of scientists from the University of Pretoria, who conducted their studies at NamibRand, are getting a lot of press lately, which claims that they have solved this mystery (see mg.co.za/article/2012-03-16-himba-dragon-myth-not-just-hot-air). The scientists themselves are somewhat more modest in their conclusion as is evident in their original scientific paper published by the Journal of Arid Environments. On the same note, Walter Schinkels new paper on fairy circle characteristics that need to be explained is further food for thought (see articles on p14-16 of this newsletter and also www.namibrand.org/Library.htm).

The first six months have seen some exciting developments and the achievement of some key milestones towards our conservation mission. Thank you all for your continued input and assistance, NamibRand could not be the success that it is today without your support and dedication.

Nils Odendaal



J.A. (Albi) Brückner and his late wife, Antje, at Keerweder in April 2010.

J.A. (Albi) Brückner —a conservation hero

As part of its Conservation Destination Campaign, the Namibia Tourism Board recently honoured NamibRand Custodian and Chairman of the Board, J.A. (Albi) Brückner as one of the country's conservation heroes. The article below is reproduced from <http://stories.namibiatourism.com.na/blog/?Tag=Conservation+Hero>, posted on 28 May 2012.

Space. Vast, open, endless. Namibia is known for this quality; however, it is not something to be taken lightly. Space needs protection and even a purpose. Decades ago, Albi Brückner recognized this and began buying livestock farms in the Namib Desert, adding a few at a time and convincing others to join him. Today this collection of private farms, which have all been rehabilitated and turned back to nature, is dedicated to sustainable conservation and covers 172,000 hectares (425,500 acres).

Known collectively as the NamibRand Nature Reserve, it is one of the largest private nature reserves in the world. For his pioneering spirit and dedicated vision towards conservation, Albi Brückner is a true Namibian Conservation Hero.

Removing farm fences to allow for the seasonal migration of game, the NamibRand Nature Reserve protects a rich diversity of desert habitats. From dunes to desert plains sprinkled liberally with fairy circles, to mountains and inselbergs, the area attracts cheetah, gemsbok, springbok, hartebeest, ostrich, zebra and leopard, as well as many smaller desert denizens such as the endemic golden mole, geckos, snakes, beetles and an abundant variety of birds, including Namibia's only true endemic, the Dune Lark.

To ensure the long-term sustainability of the Reserve, tourism concessionaires and exclusive safaris are offered on sections of NamibRand. Each collects a park fee from guests on behalf of the Reserve and this revenue is used to cover operating expenses, conservation expenses such as game re-introduction and research expenses such as satellite monitoring collars for wildlife. The Namib Desert Environmental Education Trust (NaDEET), an exceptional centre for sustainable development and education, also has its home on NamibRand.

Ginger Mauney

How old is NamibRand?

The recent spate of anniversaries related to NamibRand (see January 2012 issue of this newsletter) has given rise to the question of how old the Reserve is. The reply is that it is not something that happened overnight, but rather an on-going evolutionary process with the following milestones:

September 1984: Purchase of Gorrasis, the first property from which NamibRand was ultimately born.

1989/1990: The NRNR vision/mission was conceptualised between the then landowners, and the present structure implemented.

September 1991: The Reserve itself and the co-operation between the various landowners was implemented at a **workshop at Wolwedans**, facilitated by David Peddie. Following the workshop, the **first concession agreement** was entered into with Namib Sky.

6 March 2002: The legal status of NRNR was later formalised by the registration of an "Association not for Gain" Section 21 company, under registration number: 21/2002/091.

24 May 2012: NamibRand became Africa's first **International Dark Sky Reserve!**

1 June 2012: The Reserve **increased** to its present size of 202,000 ha.

Annual game count 2012

Our annual game count took place on 2 June 2012, under warm, breezy conditions. A quick look at the results indicates that actual numbers of oryx (1,314) were slightly higher than last year, while only two thirds the number of springbok were counted (i.e. 1,021). Note that these are the raw data, and that two correction factors still have to be applied in order to obtain our total estimate and other results. We can speculate on whether the low numbers of springbok are associated with the weather conditions that day, or whether some other factors were involved. Either way, it is important to keep the monitoring going in order to determine long-term trends. A big thank you to all participants! As always, your commitment and enthusiasm make it possible for this important annual monitoring activity to take place. We look forward to bringing you the full report in due course.

Ann Scott



The team for Route 1 of the game count sets off enthusiastically.



Once again the Losberg stands proud above sheets of silvery grass, with total rainfall this year up to 222 mm to date.

Rain

The indications are that our total rainfall this year will be in the region of "good" (as in 2006, 2008, 2009) rather than exceptional (as in 2011; see Figure 1).

To date our highest figures were recorded against the mountains, at Boscia (222 mm) and Toskaan (209 mm). Slightly lower rainfall was measured at Toekoms (182 mm), Moringa (179 mm), Porcupine and Draaihoek (174 mm) and Keerweder (171 mm). In contrast, figures for the dune areas appeared lower, namely for Kwessiegat (136 mm), Wolwedans Reception (116 mm), Wolwedans Dune Lodge (95 mm), Chateau Plains (41 mm), NaDEET Centre (119 mm), Die Duine (112 mm) and Horseshoe (119 mm). In the south, Grootpomp (193 mm) and Satanskop dunes (188 mm) were the highest, followed by Aandstêr (127 mm) and Schafsberg (81 mm).

Most of the rainfall was in February, then March. The spread of rainfall at Keerweder over the months for the past five years (see Figure 2) shows that this year's data appear to follow the norm; the exceptional rainfall in 2011 was accompanied by relatively high figures for May, and August, and this could be what has helped sustain the good grass cover.

Ann Scott



Flooding of the road at Aandstêr after a welcome 25 mm of rain on 26 February 2012.

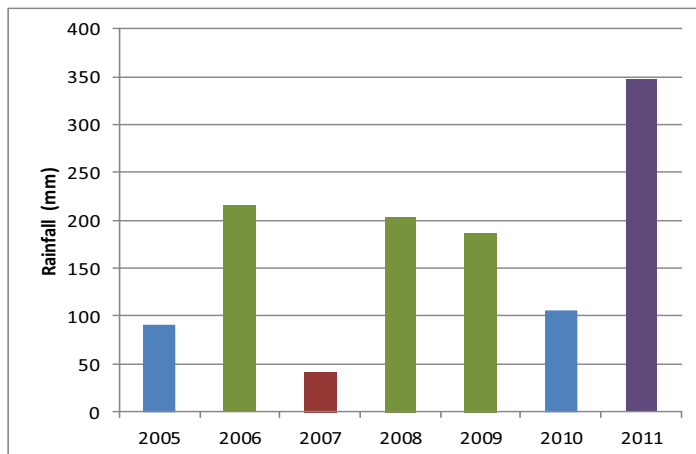


Figure 1. Mean annual rainfall at NamibRand, 2005-2011.

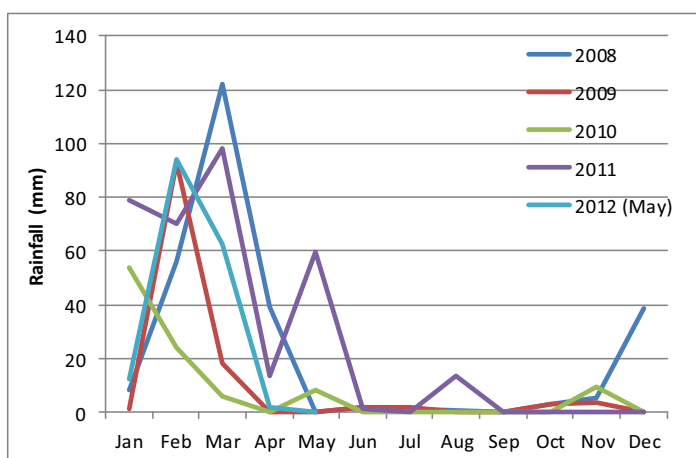


Figure 2. Mean monthly rainfall at NamibRand, 2008-2012 (May).



The Draaihoek waterfall came crashing down after 65 mm of rain on 27 March 2012.

Fire drill

A half-day workshop on fire management was held at Keerweder on 1 February 2012. The idea of the workshop was to bring all stakeholders on the Reserve together for a joint participative venture to discuss fire-fighting equipment, gear, training requirements and operational aspects. To newcomers it was a good introduction to fire management, and also an opportunity for many as a refresher course.

The workshop was well attended, with 27 participants from various fields (e.g. wardens, rangers, operations, guides, field rangers, kitchen, maintenance, administration etc.) representing the Reserve and its concessionaires.

The programme comprised theoretical and practical sessions, supported by the Reserve's Wildfire Management Guidelines document.

The theoretical session was guided by means of a Power Point presentation, with inputs from those participants with knowledge on the subject. It covered aspects such as:

Reserve fire policy:

- Fire-fighting equipment requirements, operation and maintenance
- Fire-fighting gear requirements and functions
- Pre-fire season preparation
- Observing, reporting and responding to a fire

- First fire unit arriving at the fire
- Some safety tips
- Fire mop-up
- Post-fire procedures
- Short discussion

The practical session included:

- Familiarisation for newcomers and refresher for experienced staff on fire-fighting equipment and handling
- Live fire dowsing exercise (drill)
- Fire mop-up techniques
- Debriefing

The level of participation and enthusiasm was high, and the team work spirit very good. Many ideas and experiences were shared and consensus was reached on the way forward regarding procedures, equipment and gear requirements and training. The workshop seems to have been well timed as there were several fires soon afterwards where these aspects could be applied (see p8).

The workshop will be held annually before the fire season as standard practice, with an open invitation to all stakeholders operating on the Reserve. It is an ideal platform for promoting team work and the sharing of ideas on wildfire management techniques and procedures. I would like to thank all concerned for their participation and enthusiastic inputs, which played a very important role in making the morning a great success.

Mike Scott



Above: Power point presentation and discussion.
Below: Use of a fire extinguisher.



Above: Hose assistant and nozzle operator.
Below: "Mopping up" after the fire.

Photos: Ann Scott

More lightning fires

Photo: Ann Scott



A veld fire on 25 February 2012 swept from near the Private Camp at Wolwedans towards the farm Wêreldend.

A veld fire started on 25 February 2012 at 12:15, 2-3 km south of Private Camp. The cause was lightning. Hileni, presently a waitress at the Private Camp, called me to report the fire. A radio call report was sent immediately to Keerwerder, and Quintin Hartung responded with his fire unit and a team of four personnel. A Wolwedans fire team was immediately assembled, and two vehicles dispatched, one to first assess the situation, and the other ("Obelix") with one tank. The second tank was also dispatched 20 minutes later after the radio call for back-up. Sixteen personnel took part.

The fire spread towards the camp, and immediately changed direction towards the dunes (west) due to wind change. After 30 minutes or so, the direction of the wind picked up again and turned again towards farm Wêreldend. The fire went into the farm, but luckily we extinguished it. The fire team came back to base at 15h10. We thanked the team for the efforts. The rain also came shortly just after we put the fire out.

Jefta Ampueja

In February 2012 we received word of a veld fire on the neighbouring farms, Wêreldend and Eckberg. We immediately put a team together, loaded the fire-fighting unit onto the bakkie and set off to go and help the farmer. We managed to extinguish the fire in about an hour's time. Shortly after this we were informed that another one had started on the farm Excelsior. Some of the NRR staff then went with another fire-fighting team to extinguish the second fire, which wasn't as big as the first fire. Both these fires were caused by lightning.

On 25 April 2012 Wolwedans informed us that they had seen smoke near Jagkop waterhole. I had a look at the Jagkop area from Keerwerder but could not see anything, but just to be sure I asked Markus to drive to Jagkop waterhole to see if he could spot a fire. Markus returned soon and reported that the fire was actually just close to Wolwedans. We loaded up the fire-fighting unit and went to the fire. We found the Wolwedans team already fighting the fire, so we joined them and extinguished the fire, which was spreading southwards (toward Wolwedans), in about half an hour's time. This fire

was also caused by lightning.

Later on that evening, Wolwedans informed us of another fire on the Chateau plains. We again "saddled up" and went to the fire. The Wolwedans team was already in the thick of things, so we joined them to help put out the fire. This fire was also caused by lightning.

Quintin Hartung

NamibRand Birding Big Day March 2012

A Birding Big Day was held on 8 March 2012. Two teams participated in this event. The South team consisted of Vilho Absalom, Quintin Hartung, Peter Woolfe, Anthony Washford and Aldred Basson. The North team consisted of Ann Scott, Ronney Tswowaseb, Jawnesty Naobes, Ben Petrus and Siegfried Havarua. The two teams set out from the Wolwedans base at 7h00. The purpose of the exercise was to identify and record as many bird species as we could find on the Reserve and within the 50km radius from Wolwedans. This means the counters are allowed to go to a specific spot to look for certain bird species and do not have to follow one particular route. They are allowed to get off the vehicle and walk around, and to use binoculars.

A total of 68 species was recorded on the two routes in 9 hours. In the north, 61 species were counted and in the south 47, including two new ones: Gray's Lark and Clapper Lark (western form); and a Kori Bustard, unusual for the area.

Also of interest were Booted Eagle, Crimson-breasted Shrike, Lesser Grey Shrike, Purple Roller, Red-headed Finch, Red-necked Falcon, Rosy-faced Lovebird, Rufous-eared Warbler, Verreaux's (Black) Eagle, Violet-backed Starling and 12 lark species, including Fawn-coloured, Red-capped and the endemic Dune Lark.

The inaugural NamibRand Birding Big Day was a big success thanks to the help of Wolwedans and Sossusvlei Desert Lodge who sponsored the two vehicles and to all the concessionaires who participated in the event. We look forward to the next count, scheduled for September 2012.

Quintin Hartung & Ann Scott



Photo: Lukas Hanse

Two teams (North and South) participated in NamibRand's own Birding Big Day on 8 March 2012.



Part of the team that braved the Losberg (almost 2000 m high) in June 2012.

Up the Losberg

In May 2012 we purchased new batteries for the radio repeater on the Losberg Mountain, knowing that a helicopter was due to arrive on the Reserve in June. Nils Odendaal then organised with the helicopter pilot to take a NamibRand staff member up to the repeater with the helicopter to install the new batteries. The helicopter arrived on 10 June and the pilot agreed to take Peter Woolfe, Jakobus Kooper and me up to repeater as there was enough space. We took off from Aandster on 11 June in the afternoon and within about 15 minutes we were on top of the mountain at the repeater. Unfortunately we came to realise that the new battery terminal poles differed from the ones that had been installed on the repeater and I did not have the necessary clamps to install the new set of batteries, which meant we had to hike up the mountain soon after. Nils then bought the necessary terminal clamps and sent them down to the Reserve.

So on 16 June 2012, Lars Anderson, Vilho Alsalom, Nick Heinke and I climbed up the Losberg. On our way to the mountain we lost the tracks to the "car park" at the bottom of the mountain and ended up having to leave the car and walk to where I thought the route started. Subsequently we accidentally took a "scenic route" which did not go so well. Half way up I realised that we had gone up the wrong side. We'd been climbing for two hours so we decided that we wouldn't make it if we were to go down and climb up the correct route, so we continued on our "scenic route". It just got steeper and steeper and on a number of occasions we had to rock-climb with hands and feet. After five and a half hours of intense climbing and mental exhaustion we finally made it to the top where we had to face gusting winds and the blistering cold. After changing the batteries and taking a hard-earned breather we started our journey to the bottom of the mountain along the "correct route". The hike down the mountain was done in about three hours, but in excruciating pain, after my hamstrings had started to cramp up on the way up the mountain. Luckily I had an "on-board paramedic" in Vilho who had to do running



FLTR: Quintin Hartung, Vilho Alsalom, Lars Anderson and Nick Heinke on top of the Losberg.

repairs on my hamstrings all the way up the mountain and down. The other climbers also had to bear with sore feet and knees on our way back to the car which was parked about 2km from the bottom of the mountain. After another 45 minute walk to the car and 15 minute drive back to Toekoms we finally made it back in time to watch the second half of the South Africa – England rugby match, which South Africa won, to lift up my spirit.

Quintin Hartung

March Kgotla at Toekoms

The first Kgotla meeting of the year was held on the 29th of May at Toekoms. NRNR hosted the meeting which was well attended by members from NaDEET, Tok Tokkie, Family Hideout and Wolwedans. Mike welcomed everyone to the meeting with special mention to the newcomers, Nico Kisting (New Tok Tokkie guide) and Johanna Nghishiiko (NRNR student based at Keerweder) after which apologies were made for those who could not attend the meeting. The agenda was then discussed and thoughts and ideas were shared on matters brought forward. After the meeting Mike Scott thanked everyone for attending and we took a group photo.

Quintin Hartung



Participants at the March 2012 Kgotla at Toekoms.



Peter Woolfe doing what he like best: driving his beloved "Cat".

News from Aandstêr

Greetings to all readers! All is well here in the south, and particularly good news is that Boulders Camp has been busy during April.

Of interest is the presence of three small groups of plains zebra here in the south of the Reserve. It is the first time they have been seen here. A group of six was spotted in the Dina/Excelsior region; another group of five has been seen near Schafsberg, the last sighting of which included a young foal. The third group of six was seen in the Prosopis/Springbokvlakte area. For all here in the South this has been a highlight and we hope that they will remain and multiply.

I have also noticed an extraordinary number of Secretarybirds this year and, unusually, as many as five all together. Twelve years ago one seldom saw them and then at most two together, so this is a further sign that the system is functioning well on NamibRand. The same applies to our vulture population: Jack Albertein, a farmer to the south, recorded 26 Lappet-faced Vultures on a carcass a couple of weeks ago – his first such sighting in 15 years. Rainfall has also played its part and it is interesting to note that although our rainfall this year was less than half that of last year, the veld seems to be in better condition now than a year ago.

A new management couple has now moved onto Excelsior. They are Louis and Geraldine Fourie from Maltahöhe. Louis was farming in the Fish River area prior to moving to Maltahöhe two years ago. We would like to welcome them to the Namib and look forward to a co-operative relationship with them in the interests of conserving this special place. It is good news that Springbokvlakte and Saffier are joining the Reserve, adding 30,000 very valuable hectares and further extending our border with the Namib Naukluft Park. The owner, Mr John Bernstein, is passionate about the Namib and a passionate conservationist. One of the first tasks will be to remove the fence between Aandstêr and Springbokvlakte/Saffier. The farms are also part of the NamPlace project (see p4), which is important as they also border on the Namib Sand Sea area to the west.



Photo: Kerstin Klein



Photo: Lars Anderson



Photos: Sean Gibson

Top: Hard at work doing maintenance on the access road to Die Duine.

Centre: The "Cat" in action, doing rehabilitation work at Kwessiegat.

Bottom and inset: New arrivals in the South: a small group of plains zebras that appear to have made their way down from Keerweder, past Wolwedans, NaDeet, Aandstêr and onto Dina and Excelsior, a round 60kms. As Sean Gibson remarks, "What a wonderful thing it is to be a part of an open system..."

On the maintenance front, the main access road to Die Duine has been upgraded in a joint effort between NRNR and concessionaires involved; the "Cat" has also been used for rehabilitation work at Kwessiegat and Bushmankoppies.

Peter & Franzi Woolfe



Quality early education to make a difference in a child's life

Namib Sky Balloon Safaris has created the Namib Sky Community Trust which has as its first project the foundation of an early childhood development centre in Sossusvlei. "Little Bugs" provides free education from 2-5 years old.

Quality early education is vital to make a difference early in a child's life. Helping children to live and enjoy life, enrich their personal, social and cultural experiences, encourage creativity and health habits is our largest educational commitment. Children have the chance to explore sound and colour, texture, shape and form. Through music, dance, art, craft and cooking they have the chance to use their imagination, to listen and to observe. They use a wide range of materials to express their feelings, ideas, thoughts and dreams.

"Little Bugs" focuses on children learning how to work, play, co-operate with others and function in a group beyond a family. Our mission is to cover important aspects of personal, social and moral development including the understanding of self and others. Other areas of learning also make a crucial contribution to transform these children into readers and writers because they allow them to develop competences in talking and listening.

Our main goal is to create brilliant minds for the future in order to build a better world.

We hope that the information offered here will provide you with a taste of the exceptional experience that comes from being a "Little Bug". You can make a difference in the lives of these Little Bugs and your support is vital with voluntary donations to help this project live and expand.

"Little Bugs" works hard to ensure the success of each child because education is the key for development. If you have any questions please feel free to contact us (Namib Sky Balloon Safaris, email admin@namibsky.com, tel. +264 63 683188).

Andreia Hesemans



Eric Hesemans of Namib Sky investigates a Moringa tree ...



Quality early education is vital to make a difference early in a child's life. Helping children to live and enjoy life, enrich their personal, social and cultural experiences, encourage creativity and health habits is the largest educational commitment of "Little Bugs".

Wolwedans Village news

The Desert Garden - organic gardens for self-sustainability

Tobias Linus, who grew up in the rural Omusati Region, was just a boy when he discovered his passion for agriculture. As almost all rural boys do, he helped with the Mahango planting around the homestead, acquiring early skills for his future as the chief gardener of Wolwedans and *nice* (the Namibian Institute of Culinary Education).

After completing school Linus moved to the capital Windhoek to enroll in the Agricultural Management Course at the Polytechnic of Namibia. He washed up on the Wolwedans shores as a young intern, completing his practical experience for his studies at Polytechnic of Namibia.

Linus has worked closely with Stephan Brückner (MD of Wolwedans) in pioneering the idea of a self-sustainable vegetable production for both Wolwedans and *nice*. He was actively involved in creating both the herb garden in the backyard at *nice* and the extended vegetable gardens at Wolwedans. "It was a learning process for me to rethink the theory learnt at Polytech", Linus muses. "Stephan wanted to create organic gardens, while at school we were taught to use chemical fertilizers and pesticides, so I had to open my mind to a new way of doing things."

Originally the garden comprised just a flowerbed of herbs in front of the Wolwedans kitchen and a small plant nursery behind the laundry. The building of four tunnels as well as a spacious green house was completed in 2010. The beds were constructed of concrete and filled with a mixture of fertile dune sand and organic compost, which is being made on site and uses all vegetable off-cuts generated by the Wolwedans kitchen. Linus is very excited by the idea of using earthworms to lend lasting quality to the compost. Proudly he shows off a handful of soil from the compost heap and says with a smile: "Smell this earth, this is what a healthy soil smells like!"

The road to harvesting was still a rocky one, as Linus had to work out a plantation cycle carefully, which could guarantee a constant supply of fresh produce to be delivered to the kitchen. After two years of experimentation and trial and error, he now knows that lettuces need to be sown every ten days, carrots every three weeks while tomatoes, cucumbers and eggplants require a three-month interval. The gardens currently produce a large variety of herbs, lettuces and various other vegetables, which find their way fresh from the garden to the guests' plates at the Wolwedans Collection of Camps.

Like any remote hospitality operation, Wolwedans trucks in its weekly supplies from Windhoek. Unfortunately many of the vegetables and salad ingredients have lost their original freshness and quality by the time they arrive. Therefore the organic gardens at Wolwedans go a long way to increasing the quality of fresh produce offered to guests, as well as managing resources in a sustainable manner. So far the gardens have resulted in a healthy amount of 30% less fresh produce needing to be trucked in from Windhoek. The garden also manages to supply 100% of the chef's herb requirements.



Photo: Jana Brückner

Tobias Linus proudly shows his organically grown produce at Wolwedans.

In line with the recently acquired GER® (Global Ecosphere Retreat) certification, the Wolwedans commitment to sustainability is shown in the effective demonstration that its resources are managed sustainably. One major factor in creating the vegetable gardens was the sustainable management of water. It took a while for it to emerge that drip irrigation works only for seated crops, while the more leafy varieties need sprinklers to get enough water supply for good growth. Other best practices include crop rotation, which helps to avoid plants being attacked by diseases and pests. Linus also favours companion planting where certain crops benefit others such as legumes (beans) helping non-leguminous plants by placing nitrogen back into the soil with their special features of nitrogen fixing bacteria in their root nodules. Certain herbs (i.e. basil, mint and rosemary) have a strong aroma that helps to repel insects and pests from attacking crops. Soil resting is a helpful tool in organic gardening, allowing the soil to regain its quality, as is the use of organic sprays to control insects and pests.

Environmental challenges also play a major role, as creating abundant vegetable gardens in the harsh and unforgiving desert climate is not without challenges. Temperatures vary dramatically, with frost in winter once causing Linus the loss of all tomatoes and cucumbers during a winter planting season. Methods of bringing down icy temperatures will still have to be devised, such as placing fire drums around the green-houses. The summer heat can be equally challenging for the plants, and the tunnels occasionally need to be cooled down then to bring relief. Dust and wind are also problem-causing factors, which has now been counteracted by shielding the gardens with a surrounding saltbush hedge.

When asked what he foresees for the future of the Wolwedans organic gardens, Linus passionately replies: "I would like us to source more organic seeds, which so far have been difficult to obtain in Namibia, as well as to implement a solar-driven centralised watering system." His passion in caring for the organic gardens is clearly visible and brings Wolwedans a great step forward in reaching self-sustainability in herb and vegetable production.

Jana Brückner



News@NaDEET

Programmes at NaDEET Centre

With a 36% increase in participating groups at NaDEET Centre in 2011, our environmental education programmes are in full swing. Our first group after the Namibian summer holidays was the Grade 8 learners from St George's College who came for their annual school outing. This was followed by several primary schools from Rehoboth and Aranos. These two towns are in our focal area of the Hardap Region. With the ongoing support of several donors including the European Union, we are on target to reach out to all schools in this region to ensure that they have been to NaDEET at least once. Of course there are always a few challenges along the way, such as 62mm+ rain in our area. A total of forty learners from three different primary schools were due to come to NaDEET. Two of the schools were about 80 km from the Centre when their school bus got terribly stuck in the mud. The third school wasn't even able to meet the school bus as a raging river blocked the only exit out of their village. Luckily we have been able to reschedule their visit and we were able to get the bus out and the schoolchildren safely to NaDEET. We are already fully booked for this year at the Centre and look forward to working with all of the upcoming participants.

New Centre accommodation houses

After nine years and more than 6000 participants we have also embarked on renovating the Centre accommodation houses. The houses themselves are beginning to fall apart due to wear and tear and there is a need for us to make them more weather-proof. In February we completed the reconstruction of three of the houses. With generous donations from the German Embassy, Rotary Club Windhoek and private donors we aim to renovate the remaining houses in May. This includes three houses for children and two for accompanying supervisors, drivers or other visitors. With the new design and layout, we will add one more shower and dry toilet for the new supervisor house. All the houses are equipped with bunk beds and can accommodate eight people comfortably.

"Staff Valley" official opening

To meet this increase in NaDEET Centre participants, we have also employed more staff members. After many months of sharing tight quarters, our Centre-based staff now live in a beautifully constructed tent-like camp in a valley next to the Centre, nicknamed "Staff Valley". Staff Valley was made possible through a generous donation from the Wolwedans Foundation that included all materials and the actual construction. It is built with the same sustainable living principles as NaDEET Centre with solar cooking facilities, bucket showers, solar hot water and dry sanitation. Officially opened on 17 February 2012 by NamibRand's custodian Albi Brückner, Staff Valley sets an example as how high-impact staff accommodation can also be provided in a sustainable manner.

Viktoria Keding

Captions (top to bottom): Stephan Bruckner, Wolwedans MD, and Viktoria Keding, NaDEET Director at Staff Valley. New Centre accommodation house. Long-time Wolwedans guests and donors of a new accommodation house, Mr and Mrs Speich. Bus stuck in the mud.



A desert wedding at the Family Hideout

Below are some pictures of a wedding at the Family Hideout on 28 December 2011. The groom is the son of Bischof Hertel of the Christus Kirche.

Albi Brückner



Photos: Family Hertel



Photo: Lars Anderson

The Tok Tokkie Trail is a wonderful way to encounter the Namib Desert! Hiking amongst the red dunes is an experience one is not likely to forget and a great way to learn about the specialised plants and animals that live there..

Natural gas theory may dispel myth of fairy circles



Photo: Siegle Baumeister

Noel van Rooyen, Gretel van Rooyen, Egmont Rohwer, Yvette Naude monitoring gas erupting from a circle.

Although highly visible in grasslands, fairy circles are not exclusive to vegetated areas of the region. Just as powder will reveal a fingerprint, so grasslands may serve to expose the presence of fairy circles. Gretel's keen eye discovered that these nearly circular depressions continue even in the absence of vegetation! Many decades of research by a number of scientists produced fascinating clues to the puzzle that we know as the fairy circles:

- Fairy circles debut as nearly circular zones with severely stressed (yellowing/greying) plants.
- The stressed plants do not survive and eventually a bare soil patch develops (mature fairy circle).
- After rain, seedlings appear in a fairy patch, fail to thrive and ultimately do not survive.
- Fairy circles range in size, from small to super-sized structures (even up to a kilometre), and in shape, e.g. circular, elliptical, or elongated pockmarks.
- Fairy circles are often surrounded by a halo of flourishing vegetation.
- Fairy circles may contain different plant species (e.g. annuals or shorter lived species), while perennials usually grow between the circles.
- Fairy circles have more moisture.
- It is no surprise that insects, amongst others, are attracted to fairy circles, given that circles are a source of moisture and the surrounding halo of relatively lush vegetation provides food and shelter.
- Fairy circles have unusual microbial population patterns.
- Fairy circles contain a significantly higher density of microbial organisms that thrive in an oxygen poor environment than outside the circles. Mycorrhiza, which are considered to be oxygen loving organisms, are mainly absent in the roots of plants growing inside fairy circles, whereas they are generally present in the roots of plants growing outside the circles.

(Continued on p15)

(Continued from p14)

- Fairy circles are zones with altered soil chemistry: even in the laboratory, plants show poor growth and eventually do not survive when planted in soil collected from fairy circles. This stress response is not observed for plants growing in soils collected from outside the circles.
- Fairy circles are zones with a subsurface seep factor: plants growing in circle soil placed in containers with sealed bottoms do survive. However, once the bottom of the container is removed the plants wither and die.
- A mathematical study shows that the space-filling nature of fairy circles' distribution is either random, or it shows self-organising features, or it is spatially independent.
- Baby circles appear, as if by magic, when it rains. Often these satellite circles appear close to a parent (bare soil) circle.

Dr Harald van der Werff, an expert on geological remote sensing in the faculty of Geo-Information Science and Earth Observation (ITC) of the University of Twente in The Netherlands, has published extensively on circular geobotanical phenomena (called halos) associated with gas and hydrocarbon seepage. On being asked if these halos of stressed vegetation and bare soil spots (resembling "our" fairy circles) are unusual, he replied thus:

"...halos caused by gas are a wide-spread phenomenon. I came across a book of a Shell exploration geologist, written in 1947. This man already noted the circles as a well-known indicator for seepage in Indonesia (then a Dutch colony), and this was mentioned in a way that reflected it was actually public knowledge. More to the point, I have confirmations of halos found in the UK (carbon dioxide), Italy (hydrocarbons) and California (hydrocarbons)." Describing halos in Hungary: "In any way, the gas simply follows the easiest route up. At the top, the recent sediments (now soils) cover the older faults, leading the gas to rise more dispersed, creating a tulip-like structure which is seen at the surface as a circle." Describing gas/hydrocarbon seep circles in general: "Seeps can bring up water - a reason why you can not only find stressed but also green vegetation, sometimes at the same time. A small amount of hydrocarbon might also act as a fertilizer...So, it's complicated ... I studied seepages that result from geothermal and seismic pressure. These are bound to seismically active regions, typically plate boundaries. Depending on source and the structure of the substratum, the migration mechanism and resulting surface patterns differ. Microseepage can also occur completely diffuse, where an area of several km² might be affected as if it was one big 'circle' anomaly. The seeps I studied all had a central vent, and are thus not diffuse, apart from dispersion in the few meters of soil close to the surface. Depending on soil condition, and the substratum, the sizes can thus differ enormously - the very reason why remote sensing of these phenomena is difficult, as each seep may look different."

So, the fairy circle phenomenon is not unique to southern Africa. Any of several geobotanical anomalies can appear in an



Photo: Siegle Baumeister

Above: Birth of a circle: a circle in the making containing bare soil; and green, dead and stressed vegetation.

Below: Gretel van Rooyen (L) and Egmont Rohwer collecting a soil gas sample at NamibRand.

area of hydrocarbon microseepage. These can take the form of vegetation sparseness, stress effects, and species differences. We propose a brand new consideration to the perplexing puzzle: natural gas venting from below is the fairy circle maker. We discovered that periodic degassing from below takes place in fairy circles. We also detected low volatility hydrocarbon complex mixtures and fossil fuel biomarkers, pristane and phytane, in the soils of baby fairy circles. This discovery supports our hypothesis of natural gas from below causing chemically altered zones, and triggering stunted growth of vegetation, resulting in fairy circles. Since the fairy circles bear an uncanny resemblance to offshore gas pockmark fields, it is perhaps no coincidence then that the region, both onshore and offshore, is extensively covered by gas and hydrocarbon prospecting licences.

A geochemical origin of the Namibian fairy circles seems to tick all the boxes.

Yvette Naudé, Gretel van Rooyen and Egmont Rohwer

The life cycle and life span of Namibian fairy circles



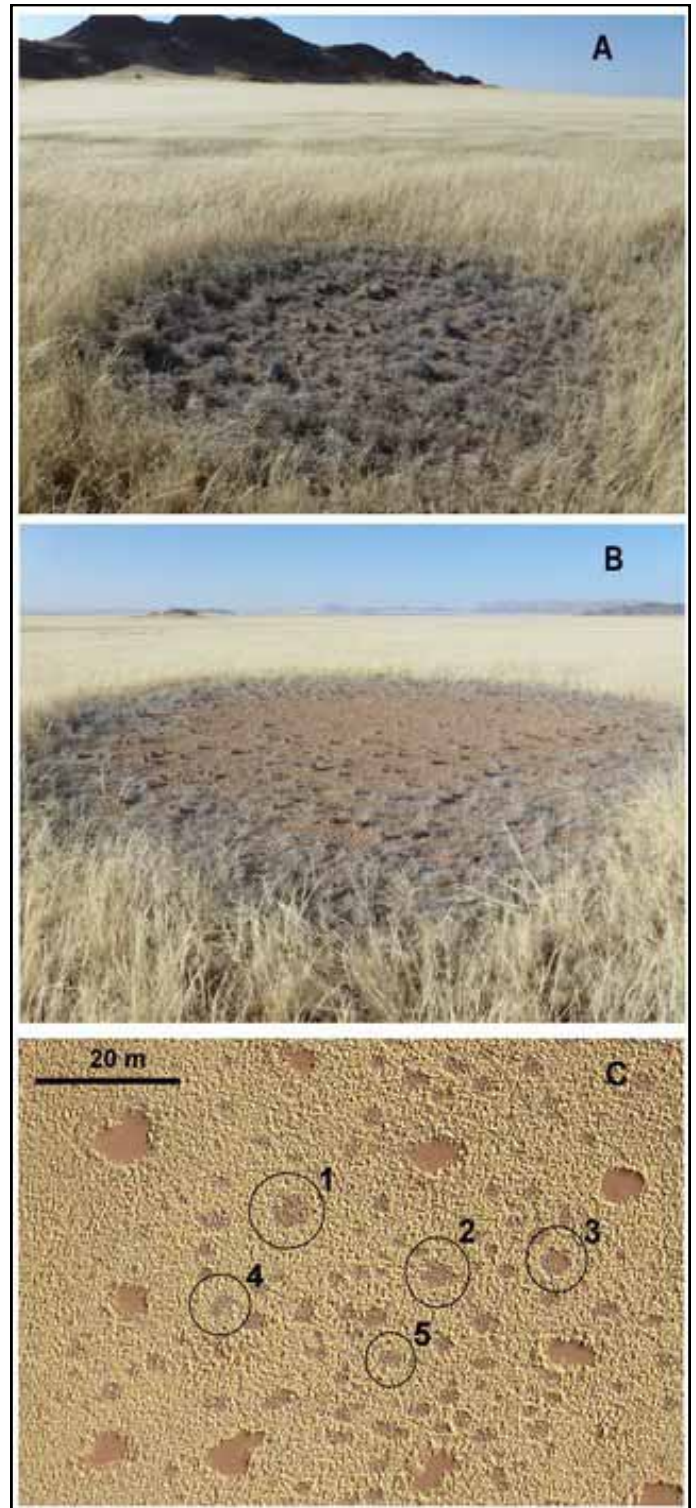
Photo: Tschinkel Library

Walter Tschinkel investigating the properties of a fairy circle on NamibRand, assisted by Elton Vries. Walter explains that it is not the aim of this paper to explain the causes of fairy circles, but to inventory the characteristics that need explaining. His main findings include the fact that the small circles stick around for about 24 years, while the larger ones last as long as 75 years.

Abstract

In Namibia of southwestern Africa, the sparse grasslands that develop on deep sandy soils under rainfall between 50 and 100 mm per annum are punctuated by thousands of quasi-circular bare spots, usually surrounded by a ring of taller grass. The causes of these so-called "fairy circles" are unknown, although a number of hypotheses have been proposed. This paper provides a more complete description of the variation in size, density and attributes of fairy circles in a range of soil types and situations. Circles are not permanent; their vegetative and physical attributes allow them to be arranged into a life history sequence in which circles appear (birth), develop (mature) and become revegetated (die). Occasionally, they also enlarge. The appearance and disappearance of circles was confirmed from satellite images taken 4 years apart (2004, 2008). The frequency of births and deaths as a fraction of the total population of circles allowed the calculation of an approximate turnover rate, and from this, an estimate of circle lifespan. Lifespan appeared to vary with circle size, with small circles averaging about 24 years, and larger ones 43–75 years. Overall lifespan averaged about 41 yr. A second, independent estimate of lifespan was made by revisiting circles 2 to 9 years after their clear status had been confirmed. This resulted in a lifespan estimate of about 60 years. Any causal explanation of fairy circles must include their birth, development and death, their mean lifespan and the variation of their features under different conditions.

Walter Tschinkel



Photos: Denis Hesemans

Newly forming fairy circles in a grass matrix.

A. Note circle of grey, dying and collapsed grass in the upper panel, and B. its substantial disappearance in the lower panel. C. Aerial view of newly forming fairy circles.

Citation: Tschinkel WR (2012) The Life Cycle and Life Span of Namibian Fairy Circles. PLoS ONE 7(6): e38056. doi:10.1371/journal.pone.0038056

The full report is downloadable from:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0038056>

Research on the ecology of ephemeral water pools



Ephemeral rock pools, such as this one north of Keerweder, are teeming with life after the rains—but for a short time.

Water is a scarce resource in deserts and semi-deserts. The occurrence of open freshwater bodies is generally irregular and restricted to a short time during the rainy season. Hence, such freshwater systems are assumed to be inhabited by highly adapted species and animal communities. Furthermore, open water bodies in arid areas feature a high degree of spatial and temporal isolation due to their sparse availability. However, little is known so far about the ecology of such freshwater systems, especially in the region.

Consequently I visited NamibRand Nature Reserve in March 2012 within the scope of a preparatory PhD study since my further research will deal with this habitat type and its biocoenoses. The major objective of the visit was to identify possible model taxa and suitable study sites.

As a result of the one-week stay several types of freshwater systems were identified, such as ephemeral water bodies in the plains like pans or rock pools and habitats like perennial springs and streams in hilly areas. Furthermore, three different types of regular inhabitants of such water bodies were chosen as valuable bio-indicators including the genera Odonata (dragonflies and damselflies), Amphibia (frogs and toads) and Crustacea (e.g. freshwater shrimps). These taxonomic groups will be used for the analysis of biodiversity, species assemblages, population dynamics and spatial distribution as well as morphological and behavioural adaptations to the extreme conditions of aquatic habitats in the desert.

As a promising preliminary result at least 13 species of dragonflies and damselflies, four species of amphibians and four species of crustaceans were found in the freshwater systems within NRNR during the spot checks.

Holger Gruss



Top to bottom:

Holger Gruss samples the water in the gravel pit south-west of Keerweder, watched by Mike Scott..

Ephemeral rock pools near Hardrock Café.

Rock dropwing - a regular dragonfly at ephemeral waters.

Tadpoles within a perennial pool at the Draaihoek waterfall.

Insect inventory project

Photo: Ann Scott



Johanna Nghishiiko with her collection of invertebrates (insects and arachnids) found on NamibRand.

I am Johanna Nghishiiko, 21 year old, Wambo-speaking and a third-year student in Nature Conservation, in the Polytechnic of Namibia. It was early October 2011 when I had to look for a place to conduct my first in-service training, as part of our syllabus and it is compulsory that every student goes through this training. I sat all day long thinking where to go, when out of nowhere I came across NamibRand's website. I looked no further but to apply to this Reserve, after I had read a very interesting history about it. It didn't take long before I received a reply, informing me about the interview, so I was lucky. I am very happy to be doing my in-service training project in the NamibRand Nature Reserve.

The project I am doing is on insect inventory for the Reserve. I started with the observation and trapping on 20 February 2012. I conducted my research and observation in four different habitats, namely dunes and sandy plains, gravel plains, inselberg and gravel- sandy plains, around the Reserve, I labeled the habitats in sites 1-4. The main aim was to find out different insect species which are inhabiting the Reserve, and which habitat is most favoured by most insect species, and which species are found in all habitats, and why?

PROJECT OBJECTIVES

- To trap, collect and identify insects that inhabit the NamibRand Nature Reserve, and to compare the number of species from each habitat according to the following: habitat and climate.
- To compile a checklist of all the insects observed in the Reserve, and add (opportunistically) incidental records of insect relatives.
- To mount and label specimens on a card board for display.

RESULTS

Site 1 (dunes and sandy plains) is the habitat favoured by most species, with a total number of 31 species, with site 2 (gravel plains) being the least favoured habitat with a very small number of insect species, total 12 species. I had six other species occurring in both habitats, though in some of the habitat they occur in very limited number. Why are they found in both habitats? This got me thinking too, this is because they can adapt to all the conditions in both habitats, and also for food, competition (within their own niche, by their own species members).

Figure1 (below): 1a shows the materials which I used during my trapping, collection, identification and documentation; 1b shows collecting vials with insect species (day 1 collection).

Figure 2 (below): 2a shows preserving jars with methylated spirit as my preserving liquid, spirits prevent rotting of specimen; 2b shows how I pinned specimen onto the drying board, before identification; 2c specimens were pinned separately according to their habitat.

All specimens were then mounted onto the display board, which will be the Reserve baseline for insect identification, and most of all a conservation structure, and for future reference.

Special thanks to Quintin Hartung, my mentor for his contributions to my project in many ways, and to the entire Keerweder "army" for their help, during my stay, six months feels like a year for someone like me in the wild for the first time. I will surely practise all I learned here. Thank you!

Johanna Nghishiiko

1a



1b



2a



2b



2c



Photographing a barking gecko

Barking gecko – what a name! One cannot help imagining some dog sized creature, but in reality this gecko is tiny.

We were sitting on the porch of the Gorrasis farm house, come cold beverage in hand, and contemplating the afterglow of a marvellous sunset. We, that was Albi Brückner and three crazy photographers: Amy Schoeman, Pompi Burger and myself, having just returned from a photo shooting trip in the southern part of NamibRand.

And then we heard it – the unmistakable seek, seek, seek call of the barking gecko. We strained our ears and eyes and finally spotted the barking critter, poking its head out of its burrow, just a few metres away. But our little gecko did not allow a close approach, simply vanishing into its hole when we tried to get close enough for macro shooting.

So, out came the heavy artillery, that is the long tele-lenses: Pompi a 600 mm and my 400 mm plus a flash mounted on the camera, since by now it had become dark. In order to find the elusive gecko again, let alone to be able to focus on it, a torchlight was set up on a chair, spotlighting the entrance of the burrow. Then Pompi and I sprawled on the ground, as close to the hole as our lenses would allow and waited, and waited, and waited.

Inside the house, we could smell it, dinner was ready, but the chance to capture a barking gecko on film was more tempting than the prospect of dining and wining.

And sure enough, our patience paid off after a while, when the gecko's head appeared in the hole. Flash, flash – our cameras went off simultaneously, and off went the gecko as well. So we took our photos in turns and successfully captured head and shoulder portraits of the mighty barking gecko.

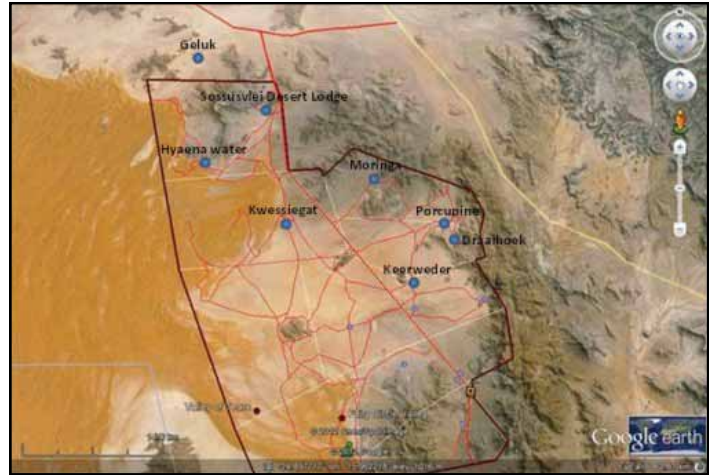
And the dinner afterwards? Ah, that was delicious!

Burkhard Dobiey



A cold barking gecko emerges from its burrow after a rainy night at Keerweder—another way of getting a photograph!

Latest population estimates of mountain zebra in NamibRand



Google map of NamibRand showing the northern water holes mentioned in this article.

I have continued to monitor numbers of mountain zebra in the northern part of the NamibRand Reserve using the individual-based techniques described in earlier editions of *The Barking Gecko*. Basically, I identify individual mountain zebra from their stripe patterns using photographs taken by camera traps at water holes and construct an ID library which can be used for detailed investigation of the population. However, the first information that emerges is the number of known individuals and these can be tracked over time to detect trends. The library grows continuously as new animals are detected but at the time of writing the number of animals identified over the two years of the study is 466. Of course these animals are not all present in the Reserve at any one time: they are the "source" population that ranges over a wide area and whose members visit NamibRand for varying periods. In 2010 the number identified or otherwise known to have been alive (for example if they were detected as adults in 2011) was 423 mountain zebra; and the number in 2011 was 424. The last figure will increase as new animals are detected and at present the figures simply suggest that the source population is at around the same level over the last two years.

But, how many animals are present at any one time? Different techniques are available but one that is suitable for mountain zebra in broken terrain is mark-recapture analysis. The basic approach is to "mark" (i.e. recognise) a sample of animals in an initial period, then measure the proportion of these individuals in a second "recapture" period. A preliminary estimate was presented for 2010 in a previous issue and we intended to repeat the estimate for 2011 to detect trends. Camera traps need to be set continuously at the key water holes for sampling periods and we aimed to sample at Moringa, Porcupine, Draaihoek, Hyena and Sossusvlei Desert Lodge water holes. However, while a lot of work has been done and much information has been obtained, the challenges of keeping all the cameras working is daunting, and various

(Continued on p20)



Mountain zebras drinking at the Moringa water hole, captured on a camera trap.

(Continued from p19)

equipment failings meant that cameras were not always operating simultaneously at the times needed. As a result, a simple comparable estimate could not be obtained and I have had to adopt a different approach starting with estimates of each water hole. The largest numbers were at Moringa water, the most north-easterly water source at the head of the Moringa valley (see map on p19): mark and recapture periods of 48 hours each in October-November 2011 yielded an estimate of 158 ± 12 mountain zebra. The next highest numbers were Porcupine, this time with similar sampling periods in November, where an estimate of 87 ± 13 was obtained. Draaihoek water was sampled in October and gave an estimate of 77 ± 17 .

These estimates of numbers visiting the main northern waterholes cannot be simply summed because there is some overlap in their use. For example, over the last two years, of the 275 individuals identified at Moringa water at the head of the Moringa valley, 83 animals (30%) have also been seen at either the Draaihoek or Porcupine waterholes or both. However, in the sampling periods for the mark-recapture exercise reported here, the overlap was far less. Over the four days of sampling at Moringa only three (2.5%) of the identified individuals were seen at Draaihoek and Moringa. This is partly because of the short periods of sampling, but the increased reliability of Moringa as a source of water following successful pump engineering (and good rainfall) at this site has undoubtedly had a major effect in holding animals in the area. The proportion of animals confined to Moringa during the sampling period is thus 97.5% and this value can be used to adjust the estimate of 158 to the portion that occurred only at this water hole to 154. Similar calculations of overlap in identified individuals give values for 58.7% for Porcupine Water and 39.0% for Draaihoek. These values are lower because there is far higher connectivity between these two water sources than with the more distant Moringa. Using these proportions, the estimates for Porcupine are adjusted

from 87 to 51 and those for Draaihoek from 77 to 30. The adjusted values can then be summed to give a total estimate for these three key waterholes and this yields a value of 235 mountain zebra. The calculation of variance with this model is complicated, but a simple average of the standard errors for the three sites is a reasonable approximation and this (finally!) gives an estimate of 235 ± 14 . This value is higher than that calculated in 2010 but the procedure was more straightforward in that year so is not strictly comparable. It is based on 196 individuals actually identified at the three water holes, 83% of the estimate, and so despite the methodological difficulties is probably quite realistic.

Hyena water and the water hole at Sossusvlei Desert Lodge in the north-west were also included in the field work for the estimate but the numbers are relatively small at these sites and there has been no detected connectivity between these two water holes and the Moringa/Porcupine/Draaihoek complex. Numbers at Hyena cannot be estimated because visits by mountain zebra are too brief and fragmentary to provide useful data, as a result of the water hole being monopolised by oryx. However, over the two years of the study 12 individuals have been identified there. The estimate for the water hole at Sossusvlei Desert Lodge was 16 ± 1 but samples were too small for a reliable estimate and over the three months between October and December 2011, 24 individuals were identified. As mentioned in the previous edition of *The Barking Gecko* there is a high level of connectivity between Hyena water and Sossusvlei Desert Lodge and these animals are probably the southern edge of a sub-population that extends northwards beyond the boundaries of NamibRand; new work is currently underway to extend our knowledge of this sub-population.

To summarise, in the 2011 dry season, numbers of mountain zebra in the 30,000ha northern part of NamibRand were about 259 (235 from the Moringa/Porcupine/Draaihoek estimate plus 24 known at Sossusvlei Desert Lodge) which gives a density of $0.86/\text{km}^2$. These were the numbers present in part of the Reserve out of a source population of over 424 and so represent about 61% of the wider population. From the point of view of population management this is good news because the chance of a larger population remaining genetically viable is higher. However, it also means that the conservation of the wider population, in the Nubib mountains and beyond, is dependent on actions beyond the boundaries of the Reserve and thus on wider co-operation between landowners.

I am grateful for the ongoing support and collaboration of Nils Odendaal, Ann and Mike Scott, Quintin Hartung and their colleagues at Keerweder. Thanks also go to the Directors of NamibRand for permission to carry out this work and to the Rufford Foundation and the Namibia Nature Foundation for financial and other support.

Morris Gosling

Interesting sightings and photo gallery



Clockwise from top left: False ink cap (Claire Hobbs); Orb spider (Ann Scott); sunworshipping agama (Ann Scott); a flock of nomadic Yellow-billed Kites (Peter Woolfe); first-born giraffe at N/a'an ku sê in May 2012—offspring from the NamibRand giraffes translocated in 2010 (Catie Ash); juvenile black spitting cobra (Lars Anderson).



FLTR: Leopard at Aandstêr in February 2012 (Peter Woolfe); cheetah on Kroonhof West on 21 February 2012 (Antony Washford) - Louis Fourie also reports: My family and I had the exciting privilege to spot a cheetah female with 5 cubs on 20 June 2012, on the border of Dina and Excelsior; a beautiful Greater Painted-snipe found (unfortunately dead) at Keerweder in June 2012—a new and unusual record for NamibRand (Ann Scott).



FLTR: Bat-eared fox (Hagen Klein); brown hyena at Geluk (camera trap); red hartebeest at Keerweder (Ann Scott).

Spots on show



Photo: Hagen, Jürgen & Dorothe Klein

The Klein family was lucky to spot this exquisite young leopard at Porcupine water hole on Draaihoek recently and capture some remarkable photographs.

Thank you

Many thanks to those of you who have contributed to this issue of *The Barking Gecko* by providing articles: Jefta Ampueja, Jana Brückner, JA (Albi) Brückner, Burkhard Dobiey, Morris Gosling, Holger Gruss, Quintin Hartung, Andreia Hesemans, Viktoria Keding, Ginger Mauney, Yvette Naudé, Gretel van Rooyen & Egmont Rohwer, Johanna Nghishiiko, Nils Odendaal, Mike Scott, Dr Walter Tschinkel, Dr George Tucker and Peter & Franzi Woolfe. We would also like to thank all those who so generously share their photographs and interesting sightings! Thank you to Nils Odendaal, Mike Scott and Lars Anderson for editorial inputs. *The Barking Gecko* is your newsletter and, as always, we invite you to keep on sending us your contributions of news and views, short reports, sightings, artwork and photographs!



Photo: Ann Scott

Spots of a different kind: fairy circles continue to be the subject of hot debate. Will these enigmatic formations, viewed here near Jagkop from a hot-air balloon in April 2011, ever yield all their secrets?

Newsletter of the



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