

African WILDLIFE & ENVIRONMENT

ISSUE 73 (2019)

A NEW BRANCH OF SCIENCE
DENDROHYDROLOGY

Old and new
BUSH CHARIOTS

Exploring the Kruger National Park

PUNDA TO PAFURI

THE MAGAZINE OF THE WILDLIFE AND
ENVIRONMENT SOCIETY OF SOUTH AFRICA



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Cover photo:

Typical view of the Levubu river drive between the Pafuri picnic site and Crooks corner

© John Wesson



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EDITORIAL

Dr John Ledger

Heads of state, business leaders, technical experts and community representatives gathered at Victoria Falls on June 23-25 for the Africa Wildlife Economy Summit, which aimed to radically change the way the continent's nature-based economy is managed. Convened by UNEP and the African Union and hosted by the president of Zimbabwe, the summit was an African-led vision of conservation that links the private sector with national authorities and local communities to design and finance conservation-compatible investments that deliver sustainable economic and ecological benefits to countries, people and the environment.

This is the text of an important declaration tabled at the summit:

“We, the over 40 community representatives of 12 countries across Africa have met prior to *Africa's Wildlife Economy Summit*, to tell the stories of our experiences of living with and among Africa's wonderful wildlife that our forebears watched over and cared for from time immemorial as an integral part of their societies' culture, traditions and economies. We have discussed the role of communities in managing wildlife resources on their land – bearing the costs of living among them sustainably over centuries, despite the continuing legacy of dis-empowering colonial laws and policies. We are the front line of defence in protecting natural resources and combatting illegal wildlife trade.

A key component of Africa's economic potential lies in its biodiversity and wildlife economy, as a unique competitive advantage, for fighting poverty and building resilient communities. Given rapid changes facing Africa in terms of growing poverty and inequality, impacts of climate change, and increasing land transformation that have the potential to destabilize economies of the continent, urgent attention needs to be paid to these threats.

We are not helpless communities. We have strong capacity to take this New Deal forward ourselves, if our rights of ownership, governance and use of our natural resources are recognized and respected, as share-holders and not mere stakeholders.

We therefore implore you the Heads of State and governments in Africa together with the private sector and international organizations to recognize the role of communities in the ownership, management and conservation of natural resources that drives the wildlife economy across Africa and to address our concerns, in the spirit of environmental and economic justice. Let us move from a raw-deal to a New Deal.

Goals

Noting increasing rural poverty across the continent, loss of wildlife and habitat, lack of inclusion of communities in decision making and lack of rights, our goal is to reset the agenda for community based natural resources management to:

- Reduce poverty at household level;

- Turn wildlife into a rural economic engine;
- Achieve self-determination and security of rights and tenure; and
- Develop strong community institutions to govern wildlife sustainably.

Solutions and way forward

- With consideration of the above arguments, we the communities of Africa propose the following as the way forward to achieve a New Deal:
- Recognize community rights over the ownership, management and use of resources
- Strengthen community governance and institutions
- Build and enhance local capacity of communities to govern and manage natural resources
- Recapitalise the communities and their natural resources including across boundaries
- Ensure that community voices are heard in shaping policy and decision making – from the local to the global level
- Strengthen evidence-based adaptive management, incorporating indigenous knowledge
- Promote investment partnerships in a community-owned wildlife economy.
- Ensure that a full and fair share of benefits from the wildlife economy flow directly to the communities.
- Change the development model from doing things for communities to financing well-governed communities to do things for themselves

This is an invitation to Heads of State and governments of Africa, the private sector and international organizations to work with us to allow our continent's communities to achieve a New Deal that will become a stronger foundation of Africa's Wildlife Economy. We trust that this is the first step in a meaningful process bringing us together as communities, government, private sector and international organizations as equal partners to conserve our biodiversity into the future. We call on the global community to support this initiative as our biodiversity is a global asset.

It is our request that this Declaration be part of the



formal record of this Summit.”
For many years African leaders have built up growing resentment about the way their wildlife assets have been rendered worthless through the decisions made by the parties to CITES (Convention on International Trade in Endangered Species). The bans on trade in ivory and rhino horn, and various restrictions on the importation of African hunting trophies, have

undermined the excellent conservation achievements by many African states, of which Namibia is my favourite example. This is the start of a push-back which is long overdue. Let’s see where it goes to...
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LETTERS TO THE EDITOR

Your opinion is highly valued and welcome. Please send your feedback, letters, comments and suggestions to editor@wessa.co.za



The Lonely Impala

Four years ago, before we had erected an electric fence round our farm just outside White River, we were surprised to see a lone female Impala in the macadamia trees. It had probably escaped from one of the many estates in the area that have game. For the next month it would come and go, but when we completed the fence we found that we had a captive Impala.

To begin with its flight distance was about 40 metres, until it started trying to team up with the duiker, which were plentiful, and which would hide in thick vegetation. But while Impala are herd animals, duiker are solitary, and it soon became obvious that they resented the overtures made by the Impala as they would run away and hide themselves in suitable cover whenever she got close to them. Soon she was also hiding in suitable cover, and on one occasion was

seen lying with her head on the ground, which I have seen Mountain Reedbuck do when the grass was too short to adequately conceal them. Her flight distance at this stage was about 30 metres.

And then I got a flock of geese, and her behaviour changed again. She has now joined the flock, and as long as the geese are happy, she is happy. But let the geese give warning calls and she will head for the hills. When the geese are resting she also rests, and her flight distance is now about 10 metres. Even then she doesn't go far, but will retreat sedately to about 30 metres away. When the perceived danger is past she will join the flock again.

Surprisingly, she prefers the company of the geese to that of the flock of sheep that I have.

Regards
Ricky Pott
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GOOD READS

Book reviews by Dr John Ledger

Community Conservation in Namibia

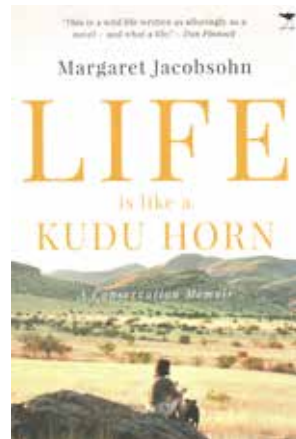
Jacobsohn, Margaret (2019). Life is Like a Kudu Horn. A Conservation Memoir. Jacana Media, Auckland Park, South Africa. Soft cover, 15x24 cm, 271 pp, illustrated with colour photographs in a dedicated section. ISBN 978-1-4314-2866-3. R260.

“This book’s title – *Life is Like a Kudu Horn* – is a proverb used by the semi-nomadic Ovahimba herding people in Namibia and Angola. It means life is full of unexpected twists and turns: a great description of my life in the last nearly six decades. I have been a journalist, and underwater documentary film-maker and an academic, working as an archaeologist and an anthropological field worker, before finally these strands merged into 35 years in community-based conservation, with a bit of community tourism mixed in. This type of conservation was regarded as lunatic fringe when we started in the 1980s but is today fairly mainstream across the world.”

The book comprises eighteen chapters, each of which reads like a stand-alone short story, indeed a Kudu horn roller-coaster experience for the reader. Margie is a professional journalist and the book certainly does read like a novel – I found it hard to put down. She lived in a mud hut in a Himba village while doing research for her doctoral degree. She teamed up with Garth Owen-Smith, the iconic Namibian conservation pioneer and author of the classic book about his work called *An Arid Eden*. They created a formidable partnership, and helped to put Namibia on the map as having one of the most successful wildlife management policies on the African continent, with a solid foundation of community-based conservation as its backbone.

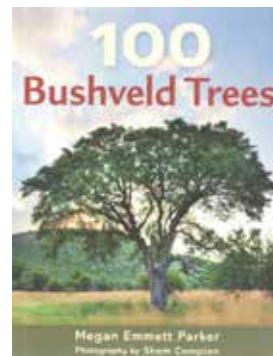
Dr Jacobsohn has received some top conservation awards including the US Goldman Grassroots Environmental Prize for Africa (with Garth Owen-Smith), the United Nations Global 500 Award, WWF Netherland’s Knights of the Order of the Golden Ark and the Cheetah Foundation’s Special Conservation Award. There is marvellous chapter entitled *Veldskoene in the palace*, describing their visit to the UK where Garth was awarded the Prince William Lifetime Conservation Award by the Tusk Trust.

The penultimate twist of the Kudu horn is the chapter called *The real threats to African wildlife*. Margie identifies these as the loss of land for the



wildlife to live on, and the fact that the majority of Africans, and most of their leaders, do not view, or experience, wild animals as one of their most valuable resources. She makes a case for trophy hunting and for trade in wildlife products, to maximise the value of wildlife for those who live with it. The chapter ends with the following words:

“Garth and I have won some international awards for our community-based conservation work for the past 30 plus years but in reality, it is the Namibian rural people who are prepared to live with wildlife who deserve recognition.” This is a truly remarkable story, and one that deserves to be read by every person who is interested in wildlife in Africa. It is indeed a story of ‘Courage, conflict and an African way of doing conservation.’



Bushveld Trees

Parker, Megan Emmett (2019). 100 Bushveld Trees. Struik Nature, an imprint of Penguin Random House South Africa (Pty) Ltd, Cape Town. Soft cover, 18x23 cm, 224 pp, illustrated in colour throughout with photographs and sketches. ISBN 978-1-77584 -655-0. R300.

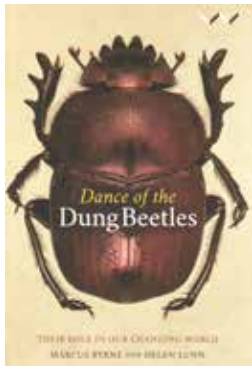
“The trouble with trees is that there are so many of them that trying to identify specimens can be daunting. Like charismatic mammals, their size makes them intriguing, and stately old specimens that may have been there for centuries demand our respect. We are sometimes captivated by details such as the seed pods strewn beneath them, or the jagged edges or curious scent of their leaves. Majestic or otherwise significant trees can even populate our memories of the bush, becoming characters rather than simply being part of the ecology. But how to name them all? This book shows you that, once you’ve taken in the simple identification guide, trees are easier to distinguish and identify than you thought.”

Megan is an excellent communicator, having been senior producer on the well-known 50/50 TV programme for more than a decade, as well as having written several books, including the best-selling



Game Ranger in Your Backpack. With renowned photographer Shem Compion, they provide an excellent and comprehensive identification guide to 100 of the more conspicuous and abundant trees of the bushveld. The species are each described over a double page spread, with a photo of the whole tree on the left spread, together with a 'Quick ID', and images of bark, leaves, flowers, pods and other details on the right spread.

We are introduced to the mnemonic 'SAMSON B FISH', with the SAMSON part dealing with the arrangement of the leaves, as follows: S – Simple or compound; A – Arrangement; M - Margin; S – Size and shape; O – Odour and texture; N – Nodules and other structures. The B is for Bark, and F – Fruit and flowers; I – Impression of whole tree (GISS); S – Spines or thorns; H – Habitat and distribution. This is very clever, and SAMSON B FISH is indeed my new tree guru! This is an excellent new book that you will really appreciate as your companion on your visits to the Bushveld.



AmaBhungane

Byrne, Marcus & Helen Lunn (2018). *Dance of the Dung Beetles. Their Role in Our Changing World*. Wits University Press, Johannesburg, South Africa. Soft cover, 15x23 cm, 228 pp, illustrated with colour and B/W photographs in a dedicated section. ISBN 978-1-7761-4234-7. **R320**.

The subheading is the isiZulu word for 'dung beetle', and it is also the name of a group of brave investigative journalists who have uncovered almost unbelievable depths of corruption and state capture among South African government officials, employees and others.



Digging Dung. Fertilising Democracy.

But this marvellous new book is about the real dung beetles – ably described by this blurb on the back cover:

The humble and industrious dung beetle is a marvellous beast: the 6,000 species identified so far are intricately entwined with human history and scientific endeavour. These night-soil collectors of the planet have been worshipped as gods, worn as jewellery, and painted by artists. More practically, they saved Hawaii from ecological blight, and rescued Australia from plagues of flies. They fertilise soil, cleanse pastures, steer by the stars, and have a unique relationship with the African elephant (along

with many other ungulates). Above all, they are the ideal subject for biological study in an evolving world. In this sweeping history of more than 3, 000 years, beginning with Ancient Egypt, scientist Marcus Byrne and writer Helen Lunn capture the diversity of dung beetles and their unique behaviour patterns. Dung beetles' fortunes have followed the shifts from a world dominated by a religion that symbolically incorporated them into some of its key concepts of rebirth, to a world in which science has largely separated itself from religion and alchemy.

With over 6,000 species found throughout the world, these unassuming but remarkable creatures are fundamental to some of humanity's most cherished beliefs and have been ever present in religion, art, literature, science and the environment. They are at the centre of current gene research, play an important role in keeping our planet healthy, and some nocturnal dung beetles have been found to navigate by the starry skies. Outlining the development of science from the point of view of the humble dung beetle is what makes this charming story of immense interest to general readers and entomologists alike. This entertaining outline of the development of science from the beetle's perspective will enchant general readers and entomologists alike.

The genial Professor Marcus Byrne teaches Zoology and Entomology in the School of Animal, Plant and Environmental Sciences (APES) at Wits University. He describes himself thus: "I grew up in the UK and despite being terrified of its limited fauna I avidly watched Jacques Cousteau and David Attenborough on the TV. Moving to South Africa, I got a job as a technician at the Dung Beetle Research Unit in Pretoria, which was exporting African dung beetles to control dung-breeding flies in Australia. This experience opened my eyes to two wonderful aspects of insects; firstly biological control where one organism is used to control the population of another, and secondly dung beetles, which are enigmatic little insects that continue to entertain me 30 years after first encountering them."

The front cover picture is of *Kheper nigroaeneus*, a beautiful dung-rolling species named after the Egyptian god Khepri, and found over much of Southern Africa. The sheer volume of dung beetles is astonishing, particularly in Africa which still has representatives of the megafauna, like elephants and rhinos. A rhino dropping can attract thousands of individuals and up to 100 species of dung beetles. I cannot recommend this book highly enough. You will enjoy the wonderful prose and subtle humour than runs through the text, and marvel at photographs of dung beetles wearing green silicon boots for experiments on the effects of hot sand on their behaviour, or wearing little golf-caps in experiments on how they navigate by the sun and the stars. This is a must-have book for anyone interested in the working of the planet.



A stand of Populus canescens, an alien invasive tree, next to the Caledon River, South Africa



A new branch of environmental sciences in Southern Africa

DENDROHYDROLOGY

Dr Anthony Turton

Science is a highly iterative process, constantly seeking new knowledge and always on the journey of self-improvement. While this is true of all sciences, it is particularly relevant to environmental management.

One of the problems faced by ecologists working on wetlands is the typical lack of reliable data for past hydrological conditions. One needs to know what flows happened over a period, in order to define empirical parameters for the dynamics of the riparian zone of rivers, or the overall health of wetlands and seeps. When available, such data is typically at a catchment level, which lacks the nuance needed to accurately define local changes to environmental stimuli. In this regard the author had an interesting interview with Marthie Kemp, a scientist at the Centre for Environmental Management, University of Free State.

AT: What do invasive aliens, rings in a forest and water have in common?

MK: Many species of poplar tree grow along most of our rivers in South Africa. These alien invaders originate from the Northern Hemisphere and were introduced around the 1880s for commercial purposes. They grow fast and make straight timber for a variety of purposes, including the construction of roofs on homesteads. Unfortunately, they have spread along our river systems at an alarming rate.

AT: So, what is their usefulness, other than for building a homestead or repairing an ox wagon, when neither of these activities is still relevant in the twenty first Century?

MK: These trees show distinct growth rings and therefore have the potential to be used in dendrochronology studies. These rings are rich in data relating to environmental conditions at local level over a defined period of time. Dendrochronology is a mostly unexplored field in South Africa, compared to the wealth of studies published in this discipline in the Northern Hemisphere.

AT: What is dendrohydrology?

MK: Dendrohydrology is a subdiscipline of dendrochronology, which is the study of growth as manifest in tree rings over time. Dendrohydrology unlocks valuable data from the relationship between the width of tree rings and the influence of water-related drivers on these rings over a defined period of historic time, but at a high level of local specificity. This includes data on local streamflow, flooding, the length and duration of drought, and water-table depth at a localized place, which might differ vastly from the larger catchment in which they are located. All of these are environmental drivers that influence the characteristics of tree rings, so by reading the rings, and contextualizing them in a bigger picture, we can unlock empirical data that we never thought we had in the first place.

AT: Why would we use this approach?

MK: Studying the past, helps us to understand the natural range of variability in our ecosystems. It is variability that defines aquatic ecology. This enables us to understand how resilient, in this case, our riparian trees are. Riparian zones are four-dimensional zones, which play an integral part in our aquatic ecosystems. The more we know about how these complex systems function, the better we can manage them.

AT: Are you saying that forests along rivers contain data captured over historic time, so all we need to do is learn to interpret the code they use to store those data?

MK: Trees act as libraries, collecting and archiving data on environmental conditions over the lifespan of the tree in that specific location, within a larger more complex catchment. Our instrumental records are limited in time and space, often to the larger catchment, and even then, they are influenced by the relatively uneven distribution of instruments such as rain and streamflow gauges. This paucity of data



Marthie Kemp, from the Centre for Environmental Management, extracting a core using an increment corer



Analysing the cores using skeleton plotting in an attempt to build a master chronology for a sampling site



Cores from different species of alien invasive trees cored around the Free State Province, South Africa

limits our ability to study the relationship between tree growth located at a precise point within an ever-changing but larger environment. It is therefore possible to extend our climate data using proxy data, derived from tree rings, unlocking the nuance and texture from a dataset with greater pixel density. A tree ring responds to a change in environmental conditions. A narrow ring indicates limiting resources, such as moisture availability. On the other hand, several consecutive wider than average rings typically indicate a wetter than average period.

AT: How do we dive deeper into the rich data locked within that library?

MK: Several principles and concepts guide the study of tree rings. The principle of cross-dating is a key departure point. If a specific tree ring cannot be linked to an exact calendar year, we are unable to cross-date the sample. Cross-dating establishes a precise time stamp on the dataset, so once we have a known point of reference, we can accurately move back and forth over time. The ring-width patterns in one tree, should be matched up with the pattern of the same species of a larger cohort, to build a precise chronology. Missing rings, when no ring formation has taken place during a growth season, or the evidence of false rings, when more than one ring formed during a growth season, are just two of the challenges that dendrochronologists must deal with, when developing a chronology for an area.

AT: What does your specific research work mean for environmental management?

MK: By studying the tree ring width, and associated characteristics of poplar trees, I am hoping to determine the stand-age structure of different cohorts along the Caledon River. Exact age dating is key to determine both the time of establishment, and the mortality, of a specific tree population. This will tell us how resilient these species are to change in the flow-regime. Not much is known about the lifespan and recruitment success of this alien invader. But importantly, this will also create a more precise dataset of broader environmental parameters that will be more nuanced than the coarser datasets currently available for that specific catchment. Existing weather conditions and flow data will be used to calibrate the streamflow reconstruction mode. From that we can begin to determine if the tree ring width is a sensitive enough datapoint that reflects change in broader hydrological parameters.

AT: On behalf of the readers I wish you well in your study. The research you are doing is pioneering because it is establishing a new branch of environmental science within southern Africa.

Prof Anthony Turton
Centre for Environmental Management
University of the Free State

Exploring the Kruger National Park Part 1

PUNDA TO PAFURI

The far north of Kruger is indeed a unique place due to its geological features, especially hills and protruding ridges made up of Clarens Sandstone. The unique Makuleke Sand Bushveld, Limpopo Ridge Bushveld with dense stands on tall Mopane and Sub tropical Alluvial Vegetation makes this an area of great botanical value.

Article and photos by John Wesson

Mahonies loop drive around the Punda Maria camp hill





History

The 'Shingwedzi Reserve' was proclaimed in 1903 and comprised the area between the Levubu and Letaba Rivers. Being a very remote part of South Africa, poaching and other illegal activities, such as prospecting, illegal logging and so called 'black-birding' (the illegal recruitment of black workers from Zimbabwe (then Southern Rhodesia) and Mozambique (then Portuguese East Africa), for the gold and coal mines) were of serious concern to Major James C Stevenson-Hamilton, Warden of the Sabie and Shingwedzi Reserves. From 1904 until 1919, the only ranger in charge of the entire Shingwedzi Reserve was Major AA Frazer, based at Malunzane next to the Shongololo River (a tributary of the Tsende), west of the existing Mopani Camp. Stevenson-Hamilton expresses the need for a game ranger in the far north of the Shingwedzi Reserve.

Captain Johannes Jacobus ('Kat') Coetser was appointed as game ranger on 1 May 1919 for the far northern part of the Shingwedzi Reserve, and he enjoys the distinction of being the first Afrikaans-speaking ranger to have been appointed in the Sabie and Shingwedzi Reserves. Due to lack of roads, he had to have his belongings brought in by black porters along the old trade route past Dzungwini, a large conspicuous hill on the plains southeast of Punda Maria, next to the existing road to Shingwedzi. 'Dzungwini' is a Tsonga word meaning 'at the land belonging to the chief and cultivated by his people' (G. Dzakani, *pers. comm.*).

At Dzungwini fountain he set up a temporary camp under a huge sausage tree *Kigelia africana* which is still visible today. As winter progressed, the water from the fountain deteriorated, became brackish and could barely be used for drinking. He had heard of a strong fountain in the region of Chief Shikokololo's fertile place known to the Tsonga people as 'Dimbyeni Shikokololo' ('water or fountain of Shikokololo' – G Dzakani, *pers. comm.*), roughly 18 kilometres northwest of his camp. In the beautiful area on the foot of Dimbo Hill (a shortening of the original Venda name 'Dimboni', the name of a person from bygone days- the name was used by H Berthoud as early as 1903) and close to the fountain, he set up his permanent camp.

He had his family come along and named his camp 'Punda Maria'. With his appointment in 1919, the illegal harvesting of Rhodesian mahogany *Azela quansensis* and Msimbit or Lebombo ironwood *Androstachys johnsonii* in the Punda Maria area was brought under control. He was known as 'Gungunyane' amongst the local people, and he built a hut over the fountain at Punda Maria to keep it clean. Apparently,

there were also a few tame barbel (catfish) to keep the fountain free of insects.

The name Punda Maria stems from one of two possible origins. The first and most documented origin is that of the first animals which Ranger Coetser encountered upon his arrival in the Shingwedzi Reserve, namely a herd of zebra. The Swahili name for zebra is 'punda milia' ('striped donkey'). His wife's name was Maria and apparently, she was fond of wearing striped black and white dresses. He therefore thought that Punda Maria would be a suitable name for the post. In 1959, the National Parks Board (on recommendation of RJ Labuschagne), changed the name to 'Punda Milia', based on the incorrect assumption that Coetser had spelt the Swahili name incorrectly. In 1981, the true facts were brought to the attention of the Board by Dr U de V Pienaar and the original name was restored.

The second possible origin comes from some of the older Venda people, who called the Punda Maria area, which includes the easternmost foothills of the Soutpansberg, 'Phande Mariha', meaning 'border of the winter(s)' as they noticed the area to the west (inland) to be greener and with a more moderate climate than the plains to the east, with its frost, cold and brown winter grass ('phande' – stop, up to here, border of, and 'mariha' (plural of vuriha) – winters). They therefore maintain Punda Maria to be a corruption of Phande Mariha.

Punda Maria camp lies in a place previously (before 1919) called Shikokololo and it was situated next to old hunting and trade routes. One of these routes was known as the 'Ivory Trail', referring to the era around the early 1900s when the route running from Crooks Corner to Soekmekaar was used for recruiting of labour for the mines in the hinterland of South Africa, and for hunters, as the name suggests. Several interesting people lived in the area over the many years and some are described below:

Klopperfontein is a perennial fountain situated in the upper reaches of the Senkhuwa Spruit named after Hans (JPJ) Kloppers (1851-1928), a slightly-built, fair-faced and long-bearded hunter, and was the site of one of his favourite camps. This site, previously known as Senkhuwa (from the Tsonga name, 'nkhuwa', meaning 'great wild fig trees'), was also on the route of the old trade and hunting route, running past Punda Maria between Crooks Corner and Soekmekaar. At the eye of the fountain there was a large wild fig, and this is where Kloppers made his camp site.

A Venda man named Matjigwili used to live close to Mashikiri wind pump on one of the hills. The ruins are still visible today and Ranger Gus Adendorff found the highly prized blue beads ('Valunga ha Madi') which



Old Punda Maria with filling station near current reception/ restaurant and shop complex

are regarded as sacred by the Venda people. These were supposedly brought from the north by earlier generations of the Venda when they migrated south. It is said that a family was very proud to possess such beads and would never willingly part with them; as a result they were passed from generation to generation.

Gumbandebvu hill is situated north-east of Punda Maria en route to Pafuri. This was regarded by the local people as the 'rain hill'. Many years ago, a woman named Nwakama, a relative of Modjadji, the famous rain queen, lived there. Nwakama was supposed to have been invested with the power to call up the rain gods. When rain was needed, she ordered a black beast to be slaughtered and the meat taken to a certain spot on the hill, where it was offered as a sacrifice to the rain gods.

Crooks Corner, the area between the Levubu and Limpopo Rivers, where the borders of South Africa, Zimbabwe and Mozambique meet, was an area inhabited by a variety of fortune seekers, poachers, smugglers, thieves, renegades, and those fleeing the law. The main attraction was the unlimited hunting opportunities (especially elephant) in the adjoining Mozambique and Zimbabwe regions as well as recruitment of local people for the gold mines of the Witwatersrand. The primary connecting route between Crooks Corner and Soekmekaar, from where the recruits were transported by rail, came past

Punda Maria. Originally the recruits were transported by donkey cart, but after World War I, the official recruitment agency, Witwatersrand Native Labour Association (WNLA) improved the road and after 1929 Thornycroft buses were used.

Izak Johannes Botha was transferred to Punda Maria in April 1930, and during the winter of 1931 tourists were accommodated for the first time in a tent camp at Punda Maria. Soon afterwards, Botha and a team of labourers commenced with the construction of the traditional pole and mud thatch-roof huts. The design and outer shell of these huts is still in use today, more than seventy years later. These huts were completed in July 1931 and an ablution block was added in 1933. During this time, Botha also constructed the roads from Punda Maria to Dongadziva, Shidzavane, Magovane and Klopfontein.

On 4 February 1931, Botha planted a seedling Baobab *Adansonia digitata* in the ranger's garden at Punda Maria, and in the more than seventy years since then it had grown into a beautiful young tree with a circumference of 6,5 metres (on 1 April 2002). In 1935 he obtained permission to build the gravel dam, just south of the camp, and for many years this has drawn game to the area. In 1937 he constructed several side roads on the Punda Maria - Shingwedzi road, including the picturesque routes along the Shisha and Mphongolo Rivers. Botha resigned on 31 May 1938.



The camp today

The Shikokololo fountain remains in use to supply Punda Maria with fresh clean water and is situated 50 metres to the east of the camp gate. It had a large and distinctive Jakkalsbessie tree *Diospyros mespiliformis* close by.

The police station at Punda Maria was a landmark for many years. The last commander stationed at Punda Maria before it was closed was Awie de Clerq. The old house still stands to the east of the camp, and the many stone terraces are still visible today, built by prisoners who were mostly illegal immigrants passing through the Park from Mozambique.

The Northern region in detail

The far north of Kruger is indeed a unique place due to its geological features, especially hills and protruding ridges made up of Clarens Sandstone. The unique Makuleke Sand Bushveld, Limpopo Ridge Bushveld with dense stands on tall Mopane and Sub tropical Alluvial Vegetation makes this an area of great botanical value. Towards Pafuri the striking Baobabs offer many photographic opportunities especially at sunrise.

Special trees of the region include pod mahogany, fine specimens of which can be seen on the



Mahonie loop road around the Punda Maria hill. This approximately 27 km route through moist woodlands gives one many opportunities to find several special birds such as Narina Trogon, Grey-headed Parrot, Broad-billed Roller, and Mosque Swallow, to name but a few.

Termite mounds are a prominent feature in this landscape and support dense thickets that are the only known habitat in Kruger of the tiny Suni antelope. Attempts have been made over the years to introduce additional suni antelope from KwaZulu-Natal, but they remain extremely rare. Magnificent stands of Fever trees, Nyala trees and iLala palms

can be found along the Levubu river drive, especially from the picnic site to Crooks Corner. This drive also includes some fine Baobab specimens

This area straddles both subtropical and tropical bird ranges, making it one of the best birding habitats in the country. This area is the southern limit for a number of these bird species, such as the Bohms Spinetail.

Visitors search the tall trees along the Levubu riverine drive for the elusive Pel's Fishing Owl, especially when the river is deeper and flowing. Large numbers of Nyala family groups are regularly seen along these river drives and often come into the



Illala palms close to Crooks Corner a good spot for the special Lemon-breasted Canary

Pafuri picnic site. Crooks Corner makes an ideal spot for lunch, while you watch the Limpopo and Levubu rivers as they flow by on their way into Mozambique. Here you may enjoy the calls of African Fish Eagles overhead, the elusive Gorgeous Bush-shrike calling from the riverine thickets, the White-crowned Lapwing often patrolling the picnic site, and the array of kingfishers as they move up and down the river in search for a meal.

Normally the river consists of large sand banks unless in flood with numerous crocodiles dotted along it. The Levubu Bridge is a well-known stop where one can alight from one's vehicle. It provides a great vantage point for bird and game spotting.

Of interest to note is the occurrence here of the Sycamore fig, Fever tree, Nyala, Samango monkey and Crested Guineafowl, which link the area to the intriguing pockets of sand-forest of Maputaland in northern KwaZulu-Natal.

Bats are especially well represented, and 13 species occur only in this part of Kruger, including the Egyptian fruit bat, Wood's slit-faced bat and the Madagascar large free-tailed bat. The largely nocturnal bushpig and the rare Sharpe's grysbok attain their highest densities in the Park in this region. In the 1980s, a total of 95 Samango monkeys were released in riverine forest at Pafuri, where they have since formed small troops. Apart from the more common



Family group of Nyala common along the Levubu river drive

animals such as Impala, Bushbuck, Kudu, Nyala and buffalo, five packs of endangered Wild Dog have been observed in the area. The sandveld communities are among some of the most interesting habitats of the region. West of Punda Maria, sandstone hills and densely wooded flat areas are the dominant natural features. The plant communities found here are very diverse, and no single tree predominates.

Climate

This is a summer rainfall area with very dry winters. Annual rainfall is from 300 -700 mm, which is the lowest in the park. The highest rainfall is recorded in

the Punda Maria area with the lowest to the north, Pafuri and Pafuri gate (362 mm). Average December and July temperatures are 39.7°C and 8.5°C.

The summer months (October to April) can be extremely hot and often balmy. Winters are warm and mild but the temperature cools down rapidly at night. Dress warmly when participating in night drives, as it can become very cold, especially in the drainage lines.

Accommodation

This article focuses on the SANParks side, but accommodation is also available at the community-



One of the many stunning Baobabs at sunrise as one drops down to the Levubu river area

run Pafuri River camp near Pafuri gate and the Pafuri camp near the Pafuri picnic site run by the Makuleke community.

Campsite

Set out on the SE side of the hill at the base of the rest camp, this comprises 50 tent or caravan sites, with or without power points and rotating braai grids. There are communal ablutions and cooking facilities (24-hour boiling water, electric hotplates and washing-up facilities). A maximum of six persons are allowed per site. Although the camp sites along the fence provide great views, one must be careful to choose a site not prone to flooding during heavy rains.

The bird hide in the camp is a great attraction, and the waterhole is lit up at night. The water hole is very popular especially during the dry season. Herds of elephant and buffalo are regular drinkers

Family Bungalows & Safari Tents

Up the hill past the shop and restaurant one finds the Family Bungalows consisting of two six-bed units, with three en-suite bedrooms (two bedrooms each with two single beds and one bedroom with a double bed). They are equipped with open-plan kitchen/dining/bar area and living room with seven two-bed permanent furnished canvas tents on stilts, fully equipped, with shower, fridge, cooking and braai facilities.



The bungalows sited on the top terrace below the restaurant are the original units that Botha built in 1931/2. The interior construction was altered and upgraded in 1978. The outer walls and roof construction remain original, and the resistance of the Msimbit or Lebombo ironwood *Androstachys johnsonii* to boring insects is clearly evident.

They consist of 18 two-bed units, equipped with en-suite ablutions (all with showers), air-conditioning and a communal braai area. There are no cooking utensils, crockery or cutlery, but a communal kitchen with scullery and electrical hotplate stoves is available. The four three-bed units are equipped with en-suite ablutions (all with showers) and air-conditioning. All have sinks and hotplates with kitchenette and communal braai (barbeque) area.

The communal braai area is often visited at night by the Greater Galagos hoping to pick up scraps left by residents. Accommodation at Punda Maria Rest Camp caters to a variety of guest requirements and is well suited for those guests who are looking for a self-catering bushveld experience.

For those hot days there is a swimming pool in a great setting in the trees below the camp group braai area, with the ever present White-browed Robin-Chat calling in the shrubbery.

This camp boasts the most dramatic views of the surrounding sandveld bushveld, and there is a list of 80 tree species occurring within the confines of the camp. Guests can enjoy the short but rewarding Flycatcher Trail, a walk that offers good birdlife and vegetation of the region. It is best undertaken early in



the morning especially in summer. There is a resident flock of Crested Guineafowl in the camp.

During autumn the Wild Syringas provide dramatic colour in the camp, and to the hilly landscape behind the camp. These sandstone hills are the only locality in the Kruger or the Natal red hare and yellow-spotted rock dassie (or hyrax). The sandveld communities around Punda Maria are derived from sandstone, but near the eastern border the Wambiya sandveld is formed on coastal plain sand from Mozambique.

Travelling to this region from Gauteng

The easiest route is to take the N1 to Polokwane (Pietersburg). At Makhado (Louis Trichardt) link up with the R524 and follow this route for ±140km. That will take you to the gate. Allow between five to six hours for the trip to the gate. Punda Maria Rest Camp is 10km away from the gate. Allow about 20 minutes for the drive to the camp; however if you want to enjoy the game viewing possibilities give yourself 30 plus minutes. Approximately 561 km from OR Tambo International Airport, Punda Maria is the most accessible entrance to the Pafuri area of the Park.



One of the specials at its southern limit, the Meves Starling



Pafuri Picnic site is one of the top birding sites in the park



Peace and quiet can be found at the Klopperfontein dam



Yellow-billed Oxpeckers. These birds were extinct in the park by 1897 and then miraculously returned 82 years later

Further reading and information sources for this article

- *Hilton-Barber, Brett & Lou Arthur (2005). The Prime Origins Guide to Best Birding in Kruger: The Essential Companion to Birding in the Kruger National Park. Prime Origins, Cape Town.*
- *Mucina L. & MC Rutherford, editors. (2006). The vegetation of South Africa, Lesotho and Swaziland. South African National Biodiversity Institute, Pretoria.*
- Sanparks website: www.sanparks.org
- Siyabona Africa website: <http://www.krugerpark.co.za/>
- *Thomas, Val & Rina Grant (2006). Sappi Tree Spotting: Lowveld. Jacana Media, Johannesburg.*

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2. My grand-daughter standing next to a fallen, large English oak tree along the Boekenhoutskloof board-walk



Planting trees ENSURING THE FUTURE

Eugene Moll

Global circumstances dictate that this column MUST be different! Yes, I am a tree lover and something a local fundi. After all trees and my life have been intertwined for over 60 years and something must have rubbed off!

I discovered that if you are passionate about something, willing to share and explore new ideas particularly when in the field, and to be a life-long learner, then you are able to constantly grow and change (that after all is what evolution is about!). By keeping an open, caring mind one is never too old to learn. I too have been extremely fortunate, having been able to spend much of my life with like-minded people, many of them university students.

Today we live in increasingly challenging and changing time. I am appalled how close-minded so many people are. Maybe I expect this of my age group (70+ year olds), but I don't expect such rigidity amongst younger people, particularly those with seemingly enquiring minds and ready access to information. Yet there are environmental bigots everywhere, and from all age groups, and our planet continues to suffer as a consequence.

I'm not a great Facebooker, I am hardly ever on Instagram, I have never Tweeted or explored other electronic platforms. But I do love e-mail because I am an avid communicator, and the electronic age has allowed us to communicate rapidly and globally. I certainly use GOOGLE (with great care because there is a lot of misinformation on the Internet too), and WhatsApp is a good communication tool (not to be over-used and abused like so many things in life).

Of late many new things that impinge on the health and welfare of trees have caught my attention and I want to list some of these; in no order of priority. I'm doing this as it is critical that we humans start taking the WESSA vision *People Caring for the Earth* really seriously and become eco-warriors

1. By now you all will have heard of the Polyphagous Shot Hole Borer (PSHB) that is playing havoc killing our trees? And if you have not heard about it then please GOOGLE this immediately.

This native of SE Asia is not in itself the major problem, but the fact that it carries fungal spores that infect and kill a wide variety of trees, indigenous and non-indigenous, is seriously worrying (note I don't use alien because that has a very negative connotation).

First identified in 2017 in the Pietermaritzburg Botanic Gardens, it has now spread countrywide. The beetle is tiny and inconspicuous, and the best evidence of infection is wilting leaves, the presence of dead twigs and branches, and tiny, weeping lesions in the bark. Infected trees have to be quarantined and removed with great care so as not to spread the beetles.

To date we know that over 200 tree species in 28 families have been infected globally, with California in the USA being the hardest hit. This beetle has the capacity to change our treed landscapes significantly, and we are not yet sure what the future holds! Hopefully some of our tree species will resist the PSHB. What is certain is that our trees are in for a torrid time, another torrid time!

2. From the scientific information I have read and heard, the massive cyclones that hit Mozambique, and then another that hit India and Bangladesh, are so severe because sea surface temperatures are higher than they have been in recorded history. Climate change is not an invention by some; it is those that are in denial that are the real enemy as they hinder concerted global action. At the heart of the lack of international action is simple human greed, driven not just by notable politicians and big corporates, but by all thinking people who do nothing.

Clearly the sheer weight of human numbers on the earth is problematic, BUT there are solutions to even this challenge. To make the world a more stable and a safer place will take a sea-change and re-alignment of conservation imperatives. For those of us who are preservationists and advocate a Eurocentric view of conservation, we need to reconsider those values. Here in South Africa even our environmental legislation is borrowed from the West, and it is simply not suited to African and/or Third World values. How can we then move forward when the tools we have are the wrong ones for the job in hand?



4.

A fallen Fever-thorn alongside Nyamithi Pan in Ndumu

THE VALUE OF TREES

1. Most of us are urbanites and we know that trees help keep this space beautiful and increase biodiversity by providing a habitat for animals. Trees add texture and colour, and provide shade and food. They have enormous amenity value.
2. Trees halt and prevent soil loss, and increase water percolation. Yes, trees also use water; thus, where and what is planted is a consideration. HOWEVER, all plants use water, but not all plants provide the landscape with the ecological services that trees provide.
3. Trees improve air and water quality – mitigating climate change. Carbon dioxide in and oxygen out! Later the trees can provide timber and wood – a renewable resource!
4. Finally, trees help us psychologically. We now know that all humans need to know something about Nature in some form or another for their own sanity, trees can provide us with much of what we need.

As an example, and I don't wish to debate the legalisation of the rhino-horn trade, but for me there are clearly at least two sides to this question. One mostly driven by the West (who have no rhinos or any other big mammals as they are all now extinct), and another by Africans, who still have their big mammals (arguably Kenya has followed the Western paradigm!).

3. Moving onto something perhaps less emotive I will highlight a few matters concerning recent tree felling and timber removal from southern Africa? The sites I monitor on Facebook and the Internet are essentially those that focus on trees and other plants. In April two postings really angered me, and both have to do with current Chinese exploitation of timber/trees.

The first were photographs taken in Walvis Bay, of huge trucks loaded with large hardwood logs from the Caprivi (certainly these were NOT sustainably harvested). The second was of excavated baobab trees in northern Mozambique that are clearly being prepared for whole tree transport and transplantation.

This is not the first time such looting has taken place regionally. Last year a friend of mine worked with the German government and the IUCN to stop the wholesale plundering of hardwoods by the Chinese from northern Mozambique (being quietly shipped out of Pemba). He was partly successful because of concerted international pressure, but sadly we are not always sufficiently vigilant and well-connected to be able to prevent such wanton exploitation.

Close to home another worrying example is that following a recent massive fire on the Cape Peninsula, several large trees in the Tokai Arboretum, the oldest in South Africa, were scorched. This resulted in the illegal felling of Champion Californian Redwoods, some over two metres in diameter. These were massive, old trees with significant historical status. The logs were then transported to the Cape Town harbour for an unknown destination. This Arboretum, a nationally registered heritage site, is in the Table Mountain National Park and the road to transport these massive logs runs right past the Park HQ. When asked why this illegal felling was allowed, we were told that SANParks staff knew nothing of this. Surely an unbelievable lie!

So why all of this in my series of 'tree' articles? Well, with all the issues alluded to above, and the list is far from exhaustive, I thought it time to explode one myth about trees and tap-roots, AND give advice on how we should plant trees (because we certainly need an immediate and massive tree-planting campaign here in South Africa).

Firstly, we all learn in school that trees have tap-roots. Yet when one examines this 'fact' it is clearly NOT the truth! All tree seedlings certainly send down a tap-root, but by the time they mature the only real roots they all have are lateral roots. Just look for yourself when a tree is felled by wind, an elephant, or bulldozed!

Knowing this gives us an insight into how to best plant/transplant trees. Basically, small trees only need small holes, and bigger trees bigger holes to accommodate the root-ball. Trees do not need a large, deep hole! However, what they will greatly benefit from is minimal rivalry for water and nutrients from other adjacent, competitive plants. So, for at least a metre from the newly planted tree remove all other plants and their roots to a depth of at least 300mm, thus freeing up space for the new tree to establish a strong root base (and mulch and manure this nursery space as best you are able for better results). After all, more than 90% of all plant water and nutrient absorption takes place in the top 100-200mm of the soil surface.

Certainly, we in South Africa have an existing tree shortage with all historical and current land-clearing that has occurred. This started when large quantities of charcoal were needed to smelt the iron required for the spear carried by Zulu impis, resulting in zillions of savanna trees being felled. This was followed by tree clearing for agriculture, and most recently removal of trees by rural people for firewood and other forms of domestic timber/wood use.

The situation today is critical, and it is now time for real action! Let us make the world once again greener, by planting trees.

Finally, the photographs in this article show a complete lack of tap-root in examples of two of South Africa's most common and widespread tree genera and one common and widespread Northern Hemisphere genera.

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Old and new BUSH CHARIOTS

One of the most important tools needed to manage and secure protected areas in Africa and elsewhere, is a reliable all-terrain vehicle. Before motor vehicles were invented the older rangers used to do all their patrols on horseback and camps were set up with pack donkeys carrying all the required equipment.

Article and photos: Bryan Havemann

The transport route that ran through the southern end of the Kruger National Park is a stark reminder that ox-wagons would collect supplies from Delagoa Bay in Mozambique and deliver them to towns in the interior where supplies were needed. The heavily laden ox-wagons would cross through

wild country where dangerous predators abounded, crocodile-infested waters had to be crossed and where the Tsetse fly, ticks and malaria mosquitos just added to the misery. It was along this transport route that Sir Percy FitzPatrick wrote the wonderful book called *Jock of the Bushveld* about the male Staffordshire bull



The handover of the brand new Toyota Hilux Double Cab 4 x 4 by the Dealer Principle of Lydenburg Toyota Fanie Erasmus (in jeans), to the Warden of the Umbabat Private Nature Reserve, Bryan Havemann. Mark Griffiths (green shirt), the manager of Ntsiri Game Reserve in the Umbabat where the handover took place, joins in the champagne celebration



terrier who was the runt of the litter and took part in so many bush adventures with his master.

When I was in the Kruger National Park, firstly as a wilderness trails ranger and later on as a section ranger, I was fascinated to realise that the *Jock of the Bushveld* story that had been read to me as a young boy, and the illustrations that adorned every page by the artist E. Caldwell, was a true account of the adventures of Jock. I remember the first time I saw the birth place of Jock, north of Ship Mountain; it was an extremely humbling experience. The KNP has erected a plaque there. The exact location was found because of the story of a young German explorer called Adolf Soltké, then 23 years and keen to collect specimens in South Africa and seek his fortune at the Lydenburg gold fields. He was found walking along the transport route and was offered a lift on the wagon. At the campsite where he had been praying under a tree on a Sunday he saw a Lilac-breasted Roller, and climbed onto the wagon to get his double barrelled shotgun to try and shoot it.

When he jumped off the back of the ox wagon he accidentally shot himself with both barrels in his right

leg just below the knee. The party sent for a doctor from the Mac Mac Gold Fields to come and try to help Soltké because he was in a bad way. The doctor only arrived after four days and realised he would have to amputate the leg to give him a chance of survival. Unfortunately it did not work and Soltké died; they buried him with his amputated leg next to him. More than 100 years later the grave was exhumed and the skeleton was found intact with a leg next to it. This was the exact birthplace where 'Jess' gave birth to Jock and the other puppies in the litter.

In these modern times we cannot function as protected area managers without having reliable vehicles that can transport us efficiently and quickly. I have to confess that I have always had a love affair with Toyota products, and the first time I was at Jock's birthplace I was there in a Toyota Hilux from the KNP. Growing up, one is reminded of the power of advertising, and I remember the magazine advert for a Toyota Land Cruiser in a *Custos* magazine, where the macho ranger driver was squatting next to a fire and the vehicle was parked at an angle on the flat slab of granite rock and the caption read, 'When you



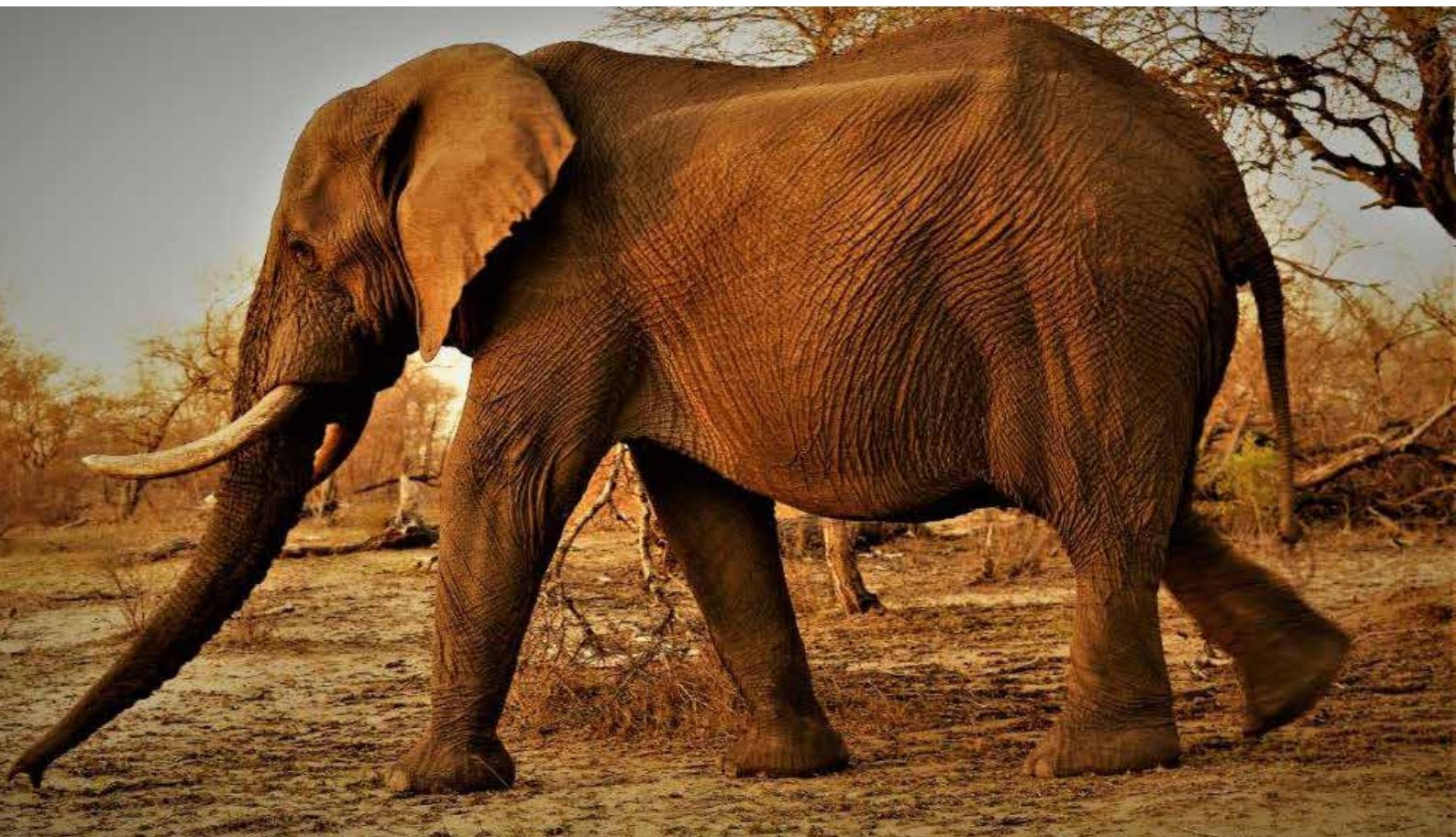


are woken at dawn by the sound of a lone, hungry hyena and the only other sound in your world is the blackened old coffee pot wheezing away on the embers, then you know you are in Land Cruiser country’.

So from a young age I was hooked, and wanted the lifestyle of a ranger in Land Cruiser country! I remember spending time at Jwala Lodge in the Tuli Block in Botswana in my holidays, when I was studying for my Nature Conservation Diploma. I was asked to

cruiser or Hilux vehicles, depending on the condition of the roads where we operated.

While we were still in the ‘closed in’ phase I think that many of the trails rangers used to let the trail group sit on the roof of the vehicle, giving them a fantastic vantage point, but of course this was not particularly safe, even though we only let them climb up once we off the normal tourist roads. I remember once we were driving around a corner and having a pride of lions walking down the road towards us. I



drive their new Toyota Land Cruiser to get supplies at Selebi Phikwe. I felt invincible in that vehicle, and I remember driving through long stretches of thick sand in 4 x 4 and then driving like the clappers to get away from an elephant cow from a breeding herd that charged with intent!

When I became a wilderness trails ranger in the KNP, we were issued with closed-in vehicles because the management felt it would be too dangerous to transport our tourists to the trails camp in an open vehicle. This logic at the time was too much for me to handle, and I remember saying to my bosses that we are walking with these same people in the KNP for three days on a trail, surely that should be seen as ‘slightly more’ dangerous? Eventually sanity prevailed and they did away with the ‘Bread Tin’ metal structure and we were issued with open game-viewing type

whispered to the sacrificial offerings on the roof to just sit dead still and not move a muscle!

As luck would have it, the lions decided that they would not simply walk past us, but would investigate us more closely. A lion can easily jump up three meters and here we had some very interested lions sniffing at the bumper, the doors, and the wheels in particular and then looking straight at the snacks sitting like statues on the roof rack. The one lioness started biting the right front wheel and I had to bang on the door to get her to move away. She then came back with reinforcements and was intent on sniffing and biting the wheels.

I soon realised that discretion is the better part of valour, and I started the engine and started moving forward slowly. It was comical watching the lions because their heads were moving from side to side



watching the wheels turning and then they all started running after the vehicle as a united pride. I then put foot and accelerated away because their intention looked too much like they wanted to play with the 'Toy' in Toyota.

After driving a safe distance, I stopped and got out to talk to our roof bait. All I saw was a wide-eyed, white-faced, wind-swept bunch, looking more like a collection of owl ornaments on a shelf than a happy trail group. Just for clarity you must remember that

and not inside, their silhouettes must have made a tempting target. I checked the tyres and realised why the lions were fixated on them. Earlier that day we had driven through some fresh lion dung which had splashed up on the tyres and chassis and this was from a neighbouring, potentially rival, pride. No wonder they wanted to chew the tyres- maybe they were not having a Good Year?

When I had started the engine, one of the victims on the roof thought that he would chance a quick



half the group were sitting safely inside the vehicle and the other half were on the roof. The banter that followed cannot be repeated, but to say that roof-rack crowd was angry was the understatement of the year.

The insiders as we will call them, were teasing them rotten with calls of 'meals on wheels' and suchlike, and it was only when they started recounting their tale, which I must say got more daring as time passed, did I realise they were really very scared. When the lions approached they were frozen with fear and dared not even look down.

Knowing that they should not look down of course they all did, and they all agreed that the lions had that 'finger-licking good' glint in their eyes. The reality is that the lions do not easily make out the human form on a vehicle. However, because they were on the roof

photo. He then picked up the camera and rather than holding on, he was trying to focus to get a photo when I accelerated! His wife grabbed his shirt and held on for dear life as he abandoned the photo opportunity and grabbed the rails to steady himself. When they had asked to see a lion kill that morning while still in the trails camp, I for some reason do not think they were meaning one of their own group to be the sacrificial lamb! The mind boggled at the thought of a sweaty, biltong-like package with a camera at the ready being dumped in the midst of the lions while they chased after the vehicle. They would have had a field day!

In 2008 and 2009, while still working at WESSA as the National Director of Conservation, I was offered the opportunity to take part in the Toyota-sponsored 'Conservation Outreach' into Africa for the first year,



and then the 'Enviro Outreach' the following year. What an immense privilege to be part of this great initiative, where we criss-crossed Mozambique, Malawi, Zambia, Zimbabwe and Botswana. We had a convoy of Toyota Land Cruisers, Toyota Hiluxes and Toyota Fortuners and interacted with protected area managers and local communities along the way. The going was tough in places, however my respect for these incredible vehicles grew immensely because they would just keep going, no matter what was thrown at them. No obstacle was too daunting and we drove to places I would have thought twice about

was a gentleman with a nice DSLR camera and zoom lens who was taking a photo of the full moon. The sun setting in the west, and this beautiful full moon rising magnificently in the east, was an incredible sight.

As a protected area manager this is a bitter-sweet occurrence, because although it is beautiful, we also know that the rhino poachers use the full moon to help them see the rhino and hunt them more easily at night. I started chatting to the man about the moon and we discussed the merits of using a tripod or stabilising the camera on a vehicle bonnet because of the low light, and so on. During the conversation



even walking. This trip was epic and deserves a story all of its own; however, my love affair for Toyotas was growing exponentially, and this brings me to current times and my new role in the Lowveld.

Being the Warden of the Umbabat Private Nature Reserve you have an overarching responsibility to manage the reserve pertaining to the ecological, socio-economic and security aspects primarily. When I started here I was given an older Toyota Hilux single cab bakkie as my run-about. One night in April 2018 I was at a sunset function on the border of the Umbabat and the KNP, where many of the members of Ntsiri Game Reserve (a share block within the Umbabat) were having a sundowner get-together and chat. While mingling with the various people, I saw there

he remarked on the old Toyota Hilux that I had arrived in. I blurted out what a wonderful vehicle it was even though it was very long in the tooth. I could see that he was looking me over with a quizzical expression and he asked numerous questions about the importance of the work that we are doing and conservation biodiversity in general. He then said he wanted to introduce me to someone, and we walked in the moonlight to a group of people where he introduced me to Fanie Erasmus Snr, who is the Dealer Principal of Lydenburg Toyota.

It turned out that the moon photographer was none other than Calvyn Hamman, the Senior Vice-President: Sales and Marketing for Toyota South Africa. A couple of days later I had a long meeting



with Fanie Erasmus, and they offered to sponsor me as the warden with a brand new Toyota Hilux Double Cab 4 x 4 bakkie. They also got Cooper to sponsor the tyres, fitted 'Old Man Emu' suspension components throughout, and also added all the accessories like cattle rails, a substantial bull bar, spotlights, seat covers, rubber splash mats and more.

Toyota is doing so much to help combat the current poaching scourge on our rhino, and by this sponsorship they recognise the importance of equipping the protected area managers with the best tools for the job. I now have an extremely capable vehicle that I can use not only daily in performing my duties in the bush, but also have a reliable vehicle to drive round VIP guests, get me to important meetings across the land, both with regional and national conservation importance. The vehicle is boldly branded and becomes a conversation topic wherever I am, whether engaging with families on a game drive vehicle in the bush or alternatively in a busy car park at a city mall in Johannesburg.

Two weeks after taking delivery of the vehicle, I was travelling down the Argyle tar road on my way to Hoedspruit when I saw some cars ahead, pulled to the side of the road and waiting for a roadblock to clear. The roadblock was in the form of a massive elephant bull that was fully in musth. The cars had apparently tried to pass, but the elephant was having none of it. I pulled up next to the vehicle closest to the elephant and asked them if I could proceed. The couple looked at each other and raised their eyebrows, but nodded affirmatively. As I drove forward slowly to the elephant I noticed that his whole attitude changed, standing tall and lifting his head high he proceeded to rush towards me expecting me to reverse in a frenzy of screeching tyres, as he continued with his game; but I did not reverse, I just stopped and waited.

He rushed right up to the front of my brand new Toyota Hilux, looking like a giant about to crush a bug. He swayed slightly as he swung his front foot on the tar and then looking down his trunk he took another step forward. I knew that if I reversed now he would chase me from here to next week. I called his bluff and drove towards him banging lightly on the door. He retreated slightly and looking down his trunk in disbelief at this impertinent whipper-snapper who should have turned tail and run. He took one more step backwards, and I drove forward again, keeping him retreating till he reached the side of the road and trumpeting loudly he stepped off into the bush. He then rushed forward again at my vehicle but I stayed put and he realised his game was up.

He swaggered off into the bush, and I then realised the palpable sense of fear in my vehicle was coming from my partner Lindsey, who had tears streaming

down her face and just managed to get out a high-pitched "WHY"? It had been a close call. However I was so focussed on the elephant I forgot that Lindsey had never been so close to a wild elephant in her life, let alone a testosterone-filled musth bull, intent on turning my brand-new Toyota Hilux Double Cab 4 x 4 into a sleeker Toyota Supra sports car, with a far lower profile. Not sure how I would have explained that one to Lydenburg Toyota? All I can say is that the slogan that the new Hilux is 'TOUGHERER' was proven that day.

As conservationists we are truly grateful to those who help in practical ways, rather than just give lip service to conservation efforts. Toyota SA and in particular Lydenburg Toyota have committed to help further the strategic direction, not only of the Umbabat Private Nature Reserve within the Associated Private Nature Reserves cluster, but also within the Greater Limpopo Trans Frontier Conservation Area. We all hope that everything keeps going right? Maybe a photo of my awesome Toyota Hilux that has been sponsored can also inspire some young aspiring boy or girl to take up a career in conservation, just like the Toyota Land Cruiser magazine advertisement did for me as a young boy. Remember to do what you can to save this planet and its myriad species. We do not have another planet to go to!

Bryan Havemann

Warden of the Umbabat Private Nature Reserve
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Gardening for wildlife: CREATE A BUSH CLUMP

There are few readers of this magazine that don't yearn for at least a little wilderness when they are away from 'the real thing'. Creating a space in the garden to replicate part of nature or landscaping the entire garden to imitate the local natural environment can become as much a refuge for lovers of wilderness as it is for nature itself.

Heather Balcomb

Bush Clumps in nature epitomise a 'refuge'. In the garden, they lend themselves very well to adding a degree of 'wildness' to an otherwise tame setting of lawns and flower beds. Bush Clumps can a) be included in a small townhouse garden, b) create refuge areas in medium-sized to large open garden or even c) comprise the entire garden. Strategically placed, a Bush Clump could create a corridor for shy creatures to move around and forage between gardens or surrounding vegetation.

What is a Bush Clump?

A Bush Clump is commonly recognized as a collection of plants of varying heights, including some trees, shrubs and smaller herbaceous plants including grasses, growing close together and surrounded typically by grassland. The combination of species that make up the bush-clumps or patches of forest in an area vary slightly or dramatically depending on aspect, slope, soil type and proximity to water.

It is thought that Bush Clumps arose on the Highveld in areas where the environment offered some form of protection from fire and frost. The Highveld region was virtually devoid of trees before human settlement, as although the rainfall is good enough to support woodland or forest growth, trees could only establish themselves in areas where the ravages of the grassveld fires could not get to them.

Fires would burn across the veld for weeks until blocked by rivers, rocky ridges or mountain ranges. It is in these refuges from frost and fire that trees and shrubs were able to establish themselves. We can still see relic patches of forest in sinkholes (especially visible in the World Heritage Site area of the Cradle of Humankind) and along river and stream banks, as well as on koppies.

The importance of a Bush Clump to wildlife

Many species of plants found in a Bush Clump arrive by virtue of the wildlife that is found in this taller vegetation. Birds seeking refuge from heat in summer or concealment from predators may deposit seeds in their droppings, from nearby vegetation. One could argue that once the skeleton is provided, birds and small mammals contribute the species used by them.

Bush Clumps include indigenous plant species of varying heights, shapes and characteristics. This creates opportunities for a larger number and diversity of animal species to feed on these plants or interact with them in some way (e.g. refuge or nesting). The range of plant heights means that for a creature needing to make a quick getaway, there is no prolonged, exposed flight to the top of a tall, bare stemmed tree. Rather, creatures can flit or scramble into leafy vegetation at almost ground level, making their way up to the top of the canopy or even out of the garden under cover and in safety.

Natural Bush Clumps characteristically occur in low surrounding vegetation, namely grasses. Bare patches of soil amongst the grasses, or rocks and boulders provide sunning spots, or places to gather ants and other invertebrates for food. Bush Clumps also provide shelter for wildlife from unfavorably cold, wet or hot weather.

In summary, the Bush Clump provides an important 'exclusion area' where creatures can be present in garden and still feel safe from unwanted attention. The more of life's requirements one can provide for in such an area, the more likely one is to find a variety of creatures making use of your offering of great habitat.



Thorny and fruit bearing Gymnosporia for wildlife



The importance of a Bush Clump for the nature enthusiast or wildlife gardener

Gardening in such a manner as to consider the needs of and take joy in the creatures that may share your garden produces a garden that is much more than a beautiful landscape. It satisfies a sense of being at one with nature, deep within the soul. Our senses naturally appreciate a beautifully and thoughtfully put together garden, and inviting the wildlife in does not mean one has to sacrifice any of the design principles that produce an aesthetically pleasing garden space.

A well-thought out, well-positioned Bush Clump can provide privacy by screening out unwanted attention from outside of the garden. Leaves of different shapes and sizes serve to block out different pitches of sound. A Bush Clump with a variety of indigenous plants provides variety in leaf shape and size as well. Including taller trees with a sort of 'hollow' centre section could provide a refuge from the outside world, when one just needs some alone time away from everything. This can be elaborated on to include a table and chair, a bench, or a strategically placed pole or trees to string a hammock between, and lose yourself in the beautiful dappled shade.

A Bush Clump can provide height in a garden where buildings or other structures need to be balanced. Varying the density and height of the vegetation or extension of the bedding plants around a Bush Clump, can lead the eye along very pleasing lines in the garden. They can be used to create garden rooms, or a sense of intrigue at what lies beyond them.

Quietly sitting immersed in nature, surrounded by indigenous plants and the life they support, has a highly cathartic effect on the conscious gardener's soul. The alone-time, the oxygen-rich environment, the good fortune of spotting some creature, that one was previously unaware of, in the garden are all things that can have a calming influence on our psyche.

Creating a Bush Clump in the garden landscape

Putting together a Bush Clump allows one to disregard the rules about planting trees and shrubs

close together. Allow these plants to share planting holes, or space them as close as 30cm apart. Vary the spacing, and if time allows, vary times of planting too. A natural Bush Clump will develop over time, with species added by creatures in their droppings, or seeds finding that once there is protection from other herbaceous plants, they are able to establish themselves in otherwise frosty or very hot, dry conditions.

For greater authenticity and aesthetic value, rocks and/or wood can be added. Observe how these are found in nature and copy this natural look in the garden as far as possible. If using large rocks or boulders, it is well worth the investment of employing a landscaper that specializes in natural landscapes to place these items for you.

Below are a few suggestions of indigenous plants that can be combined to provide an authentic Bush Clump. Not all species need to be included, but it is imperative to have a variety of species and heights in the Bush Clump vegetation.

Another consideration is to provide at least some thorny species. Also select species that can provide for as many different dietary preferences as possible (fruit, seeds, nectar and those that attract insects).

Perhaps one of the most important pieces of advice is to use indigenous plant species that occur naturally in your area. This creates a truly authentic look and feel to your Bush Clump.

Below are some species that you could possibly use. This list is by no means exhaustive, so when visiting your nursery, consult them for other suggestions that may be suitable

Trees

Large trees

- Celtis africana* (White Stinkwood)
- Combretum erythrophyllum* (River Bushwillow)
- Ziziphus mucronata* (Buffalo Thorn)

Medium trees

- Acacia caffra* (Common Hook Thorn)
- Combretum molle* (Velvet Bushwillow)
- Dombeya rotundifolia* (Wild Pear)



Halleria lucida provides nectar, berries and attracts insects for birds



- Searsia pyriodes* (Firethorn Rhus)
- Cussonia paniculata* (Highveld Cabbage Tree)
- Euclea crispa* (Blue guarri)
- Halleria lucida* (Tree Fuschia)

Small trees

- Volkameria glabrum* (=Clerodendrum glabrum) (Smooth Tinderwood),
- Afrocanthium gilfillanii* (Velvet Rock-alder)
- Rhamnus prinoides* (Dogwood)
- Ehretia rigida* (Puzzle Bush)
- Zanthoxylon capense* (Small Knobwood)
- Heteromorpha trifoliata* (Parsley Tree)
- Englerophytum magaliesmontanum* (Stamvrug)

Shrubs

- Diospyros lycioides* (Bluebush)
- Pavetta gardeniifolia* var *gardeniifolia* (Christmas Bride's Bush)
- Pavetta lanceolata* (Bride's Bush)
- Buddleja saligna* (False Olive)
- Myrsine africana* (Cape Myrtle)
- Hypoestes aristata* (Ribbon Bush)
- Asparagus* species, including *A. laricinus* (Bushveld Asparagus)
- A. plumosus* (Asparagus Fern)
- A. falcatus* (Large Forest Asparagus)
- Carissa bispinosa* (Forest Num-num)
- Vangueria infausta* (Wild Medlar)
- Strychnos pungens* (Spine-leaved Monkey Orange)

Smaller plants (herbaceous species, bulbs, grasses)

- Ledebouria revoluta* (Common African Hyacinth),
- Scadoxus puniceus* (Paint Brush)
- Themeda triandra* (Red Grass / Rooigras)
- Hyparrhenia hirta* (Common Thatching Grass)
- Setaria sphacelata* (Golden Bristle Grass)
- Melinis nerviglumis* (Bristle Leaved Red Top Grass)
- Aloe greatheadii* var *davyana* (Kleinaalwyn/ Grasaalwyn)
- Helichrysum* species
- Sansevieria hyacinthoides* (Mother-in-Law's Tongue)
- Lantana rugosa* (Birds' Brandy)



Pavetta lanceolata attracts abundant wildlife to the bush clump



Nature plants trees close together for a very good reason

For a tall Bush Clump you are unrestricted as to the height of trees used. It is a good idea though, to consider the gap between tallest shrubs and lowest branches of the tall trees. The idea of the bushclump is to create almost a 'ball' of vegetation from the outside – so that there is no great break in leaf cover.

For a medium-height Bush Clump, use smaller trees or large shrubs instead of tall trees. Some good species to use as the tallest component would be *Acacia caffra*, *Afrocanthium gilfillanii*, *Euclea crispa*, *Halleria lucida*, or *Combretum molle*.

A Bush Clump for a small garden will need short species to create the backbone of the feature. For this *Afrocanthium gilfillanii*, *Diospiros lycioides*, *Heteromorpha trifoliata*, or *Volkameria glabrum* (=Clerodendrum glabrum) might be a good idea. If the Bush Clump is to enhance such a small garden as that of a townhouse, consider pruning up the lower branches to be able to see into the Bush Clump, or even create a seating space within it.

Heather Balcomb
Random Harvest
www.rh.co.za



Artworks to inspire RECYCLING



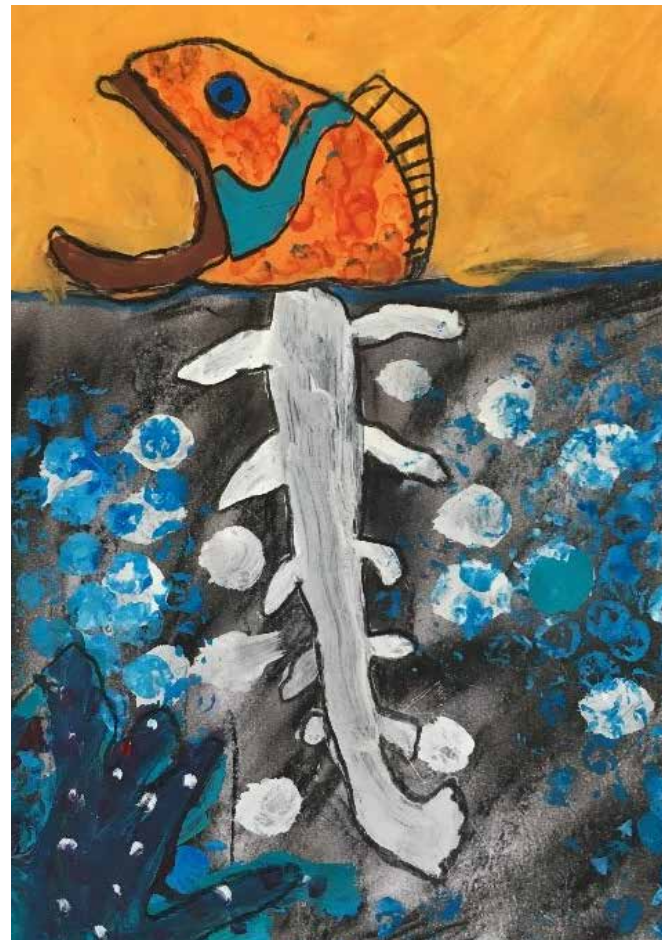
Cathy Dzerefos

The oil recycling rocks competition run by WESSA on behalf of the ROSE foundation had over 60 colourful entries from KwaZulu-Natal, the Western and Eastern Cape, the Free State, North West and Limpopo provinces. Mr Bubele Nyiba, the ROSE Foundation's Chief Executive Officer, selected a personal favourite artwork for an extra award.

The CEO's Special Award was awarded to Grade 8 learner, Kabelo Khutlhelang from Thuto ke Maatla Secondary in Groot Marico. Kabelo Khutlhelang has earned a picnic table made from recycled plastic for the school campus. This will be a reminder to all learners that by recycling waste something useful and lasting can be created. The following ten entrants will be receiving a tablet for their creations: Daniel Ellis St Francis College (Gr 5), Kabelo Phege Groot Marico Academy (Gr 7), Camryn Bothma Kenridge Primary School (Gr 7), Anida Theron Laurus Primary School (Gr 7), Dohann Schoonbee Bersig Academy (Gr 8), Kabelo Khutlhelang Thuto ke Maatla Secondary (Gr 8), Nadine Parsotham Heather Secondary (Gr 10), Braydon Carolus St Colmcille Secondary (Gr 10), Alexander Fourie Ridgeway College (Gr 10) and Karabo Lebatlang Grenville High (Gr 10). The entries can be viewed on www.facebook.com/WESSASchoolsProgramme.



Alexander Moolman - St Francis College (Gr 6)



Daniel Ellis - St Francis College (Gr 5)



Alexander Fourie - Ridgeway College(Gr 10)



Elisabeth Sitshetshe - St Francis College (Gr 5)



Letlhogonolo Gopolang - Groot Marico (Gr 7)



Camryn Bothma - Kenridge Primary School (Gr 7)



Kabelo Phege - Groot Marico (Gr 7)



Tasmiyya Paruk - Nova Pioneer Ormonde School (Gr 8)

OIL RECYCLING VISUAL ARTS CONTEST



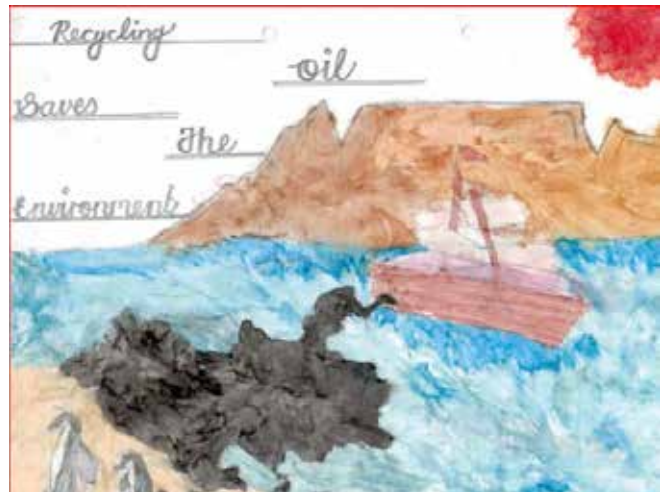
Goodwill Eland - Grenville High (Gr 10)



Karabo Lebatlang - Grenville High (Grade 10)



Kegomoditswe Rammutla - Grenville High (Gr 10)



Braydon Carolus - St Colmcille (Gr 10)



Anida Theron - Laurus Primary School (Gr 7)



Boitshepo Petlele - Grenville High (Gr 10)



Reaping rewards RECYCLING

Cathy Dzerefos

Let's face it, environmental issues can be downright depressing to talk about and recycling projects can be dull till they become part of a daily routine. It was therefore with great delight that WESSA Eco-Schools promoted a pilot project in the North West Province, whereby schools could choose an entry level recycling project and see how their choice to separate waste resulted in a bicycle for the school, as well as a useful product with indefinite usefulness.

In 2019, Qhubeka made six bicycles available to Eco-Schools that collected ten kg of plastic bottle tops each. The schools have been provided with a spring balance so that the concept of weighing can be better understood. The bottle tops are melted down to create buttons for bags or as packaging for bicycles produced in Groot Marico and destined for other destinations in Africa.

To date three schools have received a bicycle for their efforts, namely Kgetleng Primary in Swaruggens, Sefatlhane Primary School in Zeerust and Groot Marico Academy in Groot Marico. The bicycles were handed over during an assembly period by innovator and engineer Colin Cooper. He demonstrated to the assembled learners how the plastic bottle tops were

transformed to buttons and packaging. The experiential learning fits in well with the national curriculum which covers recycling and re-using in Terms two and three and encourages learners to look at common objects with a critical eye.

Plastic bottle tops are problematic worldwide, as they are made from a different plastic polymer to that of a plastic bottle. Thus, if the two plastic types are mixed together the product will not be useable. Plastic bottle tops can jam processing equipment at recycling facilities, and plastic bottles with screwed on tops will not compact properly during the recycling process. There is also a safety risk as tightly fastened tops can cause plastic bottles to explode when the temperature increases and could hurt workers.

Further information on WESSA school programmes can be requested from cathy@wessa.co.za 083 746 2239.

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The Pied AVOCET

Over a hundred years ago, this was a rather wild and not so common bird in South Africa. They frequent both coastal and inland marshes, including salt pans. They usually feed in shallow water on various aquatic animals and worms. The Pied Avocet has a curiously shaped bill which is specially formed for its way of feeding. The foraging bird progresses quickly in shallow water, moving its head and bill from side to side, leaving a zigzag mark in the sand or mud. When the water is deep, they completely immerse the head and neck in search of food.

The late Willie Froneman





The Pied Avocet *Recurvirostra avosetta* (R 294, 'Bontelsie' in Afrikaans) is an unmistakable white-and-black wader, with a long, very thin, upturned bill. It is a medium sized bird, with long pale bluish-grey legs. The general plumage is pied, black and white above, the crown is black as well as the back of neck. The underparts are all white. In flight the pied pattern is striking, showing a conspicuous black-and-white, with the long legs and toes extending well beyond the short tail. The iris in the male bird is red, and brown in the female. The bill in both sexes is black.

The Pied Avocet is a common resident, but displays nomadic behaviour, at wetlands, occasionally on sandy beaches, in small flocks. Its distribution is the whole of southern Africa except the Lesotho and Eastern Cape mountain ranges. They breed discontinuously

throughout Africa, Europe and central Asia. These palearctic birds migrate to Africa, India and south east Asia. They are locally common, especially in the western parts of South Africa. Some birds however are resident, others possibly non-breeding Palaearctic migrants visiting during our summer months.

Their typical habitat is shallow water in estuaries, lagoons, marine shores, dams, sewage ponds, pans and coastal lakes. They are gregarious in small flocks or solitary. The Pied Avocet forages by wading briskly in shallow water, less often by swimming. They have enjoyed a boom period over the last 60 years with the creation of artificial water bodies, especially those of coastal salt works, sewage effluent evaporation ponds and industrial pans, such as those established in the vicinity of mining activities.



Photographs: Albert Froneman





They feed by sweeping their bill from side to side. Their toes are partly webbed, and they often swim, up-ending duck-like in deeper water. Their diet consists of insects, crustaceans, worms, molluscs, small fish, some seeds and other plant material (like detritus scooped up from bottom of flooded areas).

They breed from August to November, singly or in loose colonies, but opportunistically in any month after suitable rains, mostly in ephemeral wetlands. The nest is a shallow scrape, lined with vegetation and other material.

Their pre-copulatory display is highly ritualised, and begins in water with both adults involving in much head-rolling. This may continue for 45 minutes before copulation occurs. The male jumps sideways onto the female's back with wings outstretched and bill slightly open, while the female moves her head from side to side.

A clutch is normally four light greenish- to grey eggs, boldly spotted with black and grey. Incubation is done by both sexes for 16 days. Both the male and female care for the fledging chicks for a period 57 days. The young can fly at about five to six weeks.

The largest concentrations of the Pied Avocet are to be found at Walvis Bay and Swakopmund in Namibia, while large numbers are also seen at Etosha Pan and in the Makgadikgadi system of Botswana.

Albert Froneman

<http://www.wildlifephotography.co.za>

The history and achievements of the SPRINGS-NIGEL BRANCH

The Springs-Nigel Branch has been an active conservation organization in the community of Springs and Nigel for over 44 years and must be one of the oldest active environment groups in South Africa, if not the oldest branch of WESSA.

Stan Madden



Mobile Hide designed by Stan and built by Ron Burrows and the WESSA team



During this long period it has been the driving force in the conservation and protection of the Blesbokspruit Wetland and has supported the official custodians of the Marievale Bird Sanctuary since 1974 in the management of this well known international Bird Sanctuary. Most of the bird hides and facilities that make this Sanctuary so popular were built by the branch. Working under the umbrella of the branch, the 'Friends of Marievale' (formed in 1983) meet regularly to carry out maintenance to these amenities and also will include repair of roads when necessary.

The present-day relationship between the official managers of the Blesbokspruit Ramsar Site, the Gauteng Department of Agriculture and Rural Development (GDARD) and the WESSA branch is one of mutual respect, and has resulted in the ongoing well-being of this important conservation area. This has now also culminated in the signing of an 'Agreement of Understanding' with GDARD and this agreement has strengthened the partnership. Meetings between the branch and GDARD are held regularly, and working together is now achieving better overall management of this important sanctuary.

It was during 1994, at the height of the pollution of the water in the Blesbokspruit by the gold mining industry, that members of this WESSA branch were responsible for applying great pressure on the Government, which led to the forced shut down of

mining operations until a temporary water treatment plant was set up.

The branch also took an early lead in the initial efforts in 1995 to control the encroachment of the aquatic vegetation which was affecting the habitat for birds in the Blesbokspruit Wetland, by experimenting with the use of suitable herbicides to control and manage the problem. This method is now being used more extensively by the GDARD, the official manager of the wetland. The branch is now actively involved in assisting with the management of reed encroachment.

The branch has earned the respect of the community for caring for the environment, and its members are called on frequently to serve on various committees and groups when required. The branch is involved in all the environmental impact assessments in the region. The large local corporations invite the branch to participate in their environmental meetings and again this relationship has been earned. This branch also has a member on the 'Grootvaly Wetland Board', the only NGO managing a portion of the Blesbokspruit Ramsar Site.

The local newspaper has also come to respect and depend on the branch for their opinions on conservation and environment issues. This is also a beneficial relationship, as the press is also supportive when needed by the branch.

The branch has supported the transport and care of injured wild animals to the nearest animal rehabilitation centre over the past 30 years. Due to the close proximity of the Blesbokspruit Wetland there are a high number of injured wild birds reported in the area. The branch organised the training of interested persons to treat and transport injured birds and the system has worked well. Donations are regularly made to the rehab centre for ongoing care and treatment of wild animals.

The branch organises functions to encourage the branch members and the local population to become interested in the environment. Bird identification courses and bird watching outings to suitable areas are well patronised. The combined bird walk/bring-and-braai/star-gazing function, held twice annually for the last three years, has become a popular event.



Alan Madden repairing the road at Marievale

Stan Madden
stmadden@telkomsa.net

WESSA MEMBERSHIP



WESSA is one of South Africa's oldest membership-supported, non-governmental organisations and for over 90 years has played a key role in the conservation of our country, helping to ensure sustainability for present and future generations through environmental action; education programmes; and human capacity development to empower individuals and communities to make sustainable choices. Friends Groups and Affiliate members make a valuable contribution to the work WESSA does in the areas of conservation and education as well as strengthening the environmental movement by networking and actively working in communities at a grass roots level.

EARTH CARER MEMBERSHIP OPTIONS 2019/20

MEMBERSHIP ONLY OR WITH DIGITAL AFRICAN WILDLIFE | SPECIAL SPONSOR | SUPPORTER

STANDARD	EC01	275	Standard membership + digital African Wildlife
BASIC	EC02	180	Membership only
DISCOUNTED	EC03	195	Discounted membership + digital African Wildlife: Youth & Seniors under 25 over 60
GROUP	EC04	500	Membership x 3 digital African Wildlife add members @R180 each incl. digital mag
SPECIAL SPONSOR	EC05	2500	Donation complimentary membership + print African Wildlife & EnviroKids
SUPPORTER	EC06	FREE	Optional donation

MEMBERSHIP WITH PRINTED MAGAZINES

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AFRICAN WILDLIFE	LEVEL B	425	Standard membership + print African Wildlife
ENVIROKIDS	LEVEL C	260	Discounted membership + print EnviroKids: Youth & Seniors under 25 over 60
DISCOUNTED	LEVEL D	335	Discounted membership + print African Wildlife: Youth & Seniors under 25 over 60

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- Activity newsflashes & e-newsletters
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Earth Carer special sponsors receive:

All of the above benefits plus complimentary print issues of African Wildlife & EnviroKids; S18A Tax Receipt; Certificate of Appreciation; Acknowledgement of support on the WESSA web portal.

Earth Carer supporters receive:

Letter of Acknowledgment | Limited web portal access | Activity newsflashes & newsletters

To find out more about:

Business membership, Friends Groups & Affiliates, School membership, Gift membership, Group membership or magazine subscriptions only, go to: www.wessalife.org.za | or email membership@wessalife.org.za

Donations

As a non-profit environmental organisation we rely on the support of our members, sponsors and the general public. As such, we are most grateful for any additional donation you are able to give. WESSA is a Section 21 company registered as an Incorporated Association not for gain with Section 18A status.

Leaving a LEGACY



WESSA has played a key role in the conservation of our country's natural heritage. Our mission is and remains to implement high-impact environmental and conservation projects, which promote public participation in caring for the Earth. As an NGO, we depend on funding from individuals and businesses to make possible the work we do. Unrestricted gifts allow us more flexibility in dealing with environmental priorities. Below are some examples of options you might like to consider.

All of us would like to leave this world knowing we're passing on a healthy and thriving planet to our children and others. One of the most significant ways to show your support and passion for the conservation of the earth, and all that lives upon it, is to leave a bequest to WESSA in your will. Making a will ensures that everything you have worked hard for in your life is passed on to your loved ones and the causes you care about. A bequest is a personal gift of great importance and a lasting legacy to your beliefs and values. It is thanks to bequests made that WESSA is able to run hundreds of conservation projects, protect many species and improve the quality of people's lives – today and into the future. If you already have a will it is easy to add a codicil which names WESSA (the Wildlife and Environment Society of South Africa) as a beneficiary.

A Specific Sum:

This is the simplest form of bequest. However, it does not allow for inflation or charges within your estate.

A Residual:

After making provision for your family and friends, you may wish to leave the unallocated portion of your estate to WESSA.

A Percentage:

Often it is difficult to predict the final value of your estate. By giving a percentage of the total, rather than a fixed amount, you can be sure that all your beneficiaries will receive the stipulated share.

A Gift of Real Estate or Property:

This may be made outright, or you can arrange for the property to pass on to WESSA after the death of another beneficiary, such as your spouse.

An Assurance or Endowment Policy:

Often an insurance policy taken out years ago loses its relevance as you get older. Such a policy may be ceded to WESSA as the beneficiary.

COMPANY REGISTRATION NUMBERS

Reg No. 1933/004658/08

(Incorporated Association not for gain)

Registration Number in Terms of the Non-Profit Organisation Act 1997: 000-716NPO

Tax Exemption Number:

18/11/13/1903

Photograph: John Wesson

WESSA MEMBERSHIP

- New and renewal membership
- Information update
- Donations

Return information and proof of payment to:

Email: membership@wessalife.org.za
 Fax to email: 086 519 2018
 Postal: c/o 100 Brand Road Durban 4001
 Phone: 031 303 6099



See also, regional contact details on page 1

EARTH CARER MEMBERSHIP APPLICATION

Main contact person if in name of family, company, group, school, organisation or institution			
NAME MEMBERSHIP HELD IN			
MEMBERSHIP OPTION		MEMBERSHIP NUMBER	
SURNAME		TITLE	
FIRST NAME			
POSITION if company, group etc.			
YEAR OF BIRTH if an individual			
EMAIL			
LANDLINE			
CELL			
POSTAL ADDRESS			POSTAL CODE
NOTES & ADDITIONAL INFORMATION			

EXTRA POSTAGE: International & SADC country magazine subscribers add extra postage (per annum) as follows:

LEVEL A: INT R745 SADC R485 | LEVEL B & D: INT R290 SADC R215 | LEVEL C: INT R175 SADC R140

SADC COUNTRIES: Angola, Botswana, Burundi, Comoros, Congo (DRC), Congo (Peoples Rep), Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Reunion, Rwanda, Seychelles, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

<p>BANK ACCOUNT DETAILS Name of Account: WESSA Membership Bank: First National Bank Branch & Code: Howick 22-07-25 Account Number: 62 219 969 732</p>	<ol style="list-style-type: none"> 1. EFT DIRECT DEPOSIT: Deposit ref: Initials & Surname + membership number if existing member 2. ONLINE: Go to: www.wessalife.org.za 3. DEBIT OR CREDIT CARD: Complete details below and return. 4. CHEQUE: Cross and make payable to WESSA
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Payment type & amount	Payment amount	R	Renewal	New	Donation
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PAYMENT BY DEBIT OR CREDIT CARD: Visa or MasterCard. Please complete the following and return via email or post

Cardholder's Name													
Signature													
Card Number													
CVV Number				Expiry Date									

All necessary precautions will be taken to ensure compliance with the Protection of Personal Information (POPI) Act 4 of 2013



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AT EXCLUSIVE SPECIALIST RETAILERS
AND ONLINE AT WWW.SWAROVSKIOPTIK.COM

For your closest stockist,
please contact Brad on 0861-005903

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