

# *African* WILDLIFE & ENVIRONMENT

ISSUE 71

Provide shelter for  
WILDLIFE IN YOUR GARDEN

EXPERIENCE A  
DRAMATIC GETAWAY

GET TO KNOW THE ICONIC  
SAUSAGE TREE

THE MAGAZINE OF THE WILDLIFE AND  
ENVIRONMENT SOCIETY OF SOUTH AFRICA



WESSA

PEOPLE CARING FOR THE PLANET

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- WESSA uMngeni Valley | uMngeni Valley Reserve, 1 Karkloof Rd, Howick KZN | 033 330 3941 | reservations@wessa.co.za
- Umbogavango | Umbogavango Reserve, Umbogintwini Industrial Complex KZN (managed by Upper South Coast Branch)
- Bush Pigs | P O Box 2247, Modimolle, 0510, Limpopo | 014 717 1285 | admin@bushpigsedu.co.za

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Cover photo: *The Majestic Drakensberg*  
© John Wesson



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# EDITORIAL

Dr John Ledger

**This edition of the magazine brings you some excellent reading, beautiful photographs and a whole lot of informative and interesting material. We hope our readers will appreciate the work that goes into writing these articles from our dedicated team of knowledgeable and talented authors. This is original material, not published or available anywhere else. Members of WESSA receive four issues of this magazine a year. They are a lasting record of environmental and conservation activities in southern Africa, to be read, re-read and shared with others.**

Our members are the backbone of our organisation. Let's remind ourselves what we are all about:

**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.**

We encourage our members to support WESSA in any way that you can. Persuade your friends and business associates to join the organisation and so help support its work. Give a gift subscription to a friend, someone you work with, or your local school. There is information about the different categories of membership, as well as application forms, at the back of the magazine. We have now added the option of a subscription to an electronic version of *African Wildlife & Environment* which you can download to your computer for just R100 a year for four issues. We hope this will spread the content of this publication to a wider audience, and will encourage readers of the e-magazine to become members.

Dr Anthony Turton is a regular contributor to our publication, and he always has some deeply thoughtful ideas to share with us. This time he writes:

"In my lifetime I have seen the population of the continent double by the time I turned 20, then double again when I became 40, and double yet again when I turned 60. In my lifetime I have witnessed the first human heart transplant, the first man on the moon, and the aftermath of splitting the atom. I have also seen the last of the great herds and the drying up of rivers to quench the insatiable desire of *Homo sapiens* to progress. This brings me to that which I want to reflect on today. Humans have become an invasive species, impacting every ecosystem on the planet.

When reflecting on this stark reality, I travel back in time to the wonder of that small boy contemplating his own insignificance in the planetary scheme of things and I have come to one startling realisation that I share today. Yes, *Homo sapiens* is an invasive species, but we have wisdom that could be used to drive us to behave better in the future. We certainly need to do this if we are to survive as a species, for all other hominids that preceded us have become extinct. In fact, we are currently the shortest-lived of the 18 known species that preceded us, with a mere 200,000 years of time walking this planet."

He goes on to describe how modern technology will have to be used to keep the planet in habitable shape:

"Then it dawned on me. Yes, we have walked on the moon and thus become the only terrestrial organism to leave a footprint in space. Yes, we are so smart that we are impacting the creation of rocks that will bear our fingerprint millions of years from now. So, if we wish to retain the level of social cohesion we need to live a reasonably comfortable life, and create jobs for a growing and restless population, then we



can use our command of science, engineering and technology to reconstruct ecosystems."

Profound thoughts, indeed, and remember that you read them first in *African Wildlife & Environment!*

Other highlights published in this issue include a visit to the spectacular Royal Natal National Park with John Wesson's superb photographs, Bryan Havemann's rather chilling account of how we humans can become part of the food-chain, and the great environmental education programmes exemplified by WESSA's e-STEAM initiative and the work of the Lapalala Wilderness School.

Eugene Moll introduces us to the remarkable Sausage Tree, while Heather Balcombe shares valuable insights into how to make our gardens more attractive to little creatures by providing more places where they can shelter, feed and breed. Enjoy the read!

**Dr John Ledger**  
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Read all about the Royal Natal National Park  
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## MESSAGE TO MEMBERSHIP



Dr Thommie Burger

Membership at WESSA experienced a ground-breaking year when the WESSA Board approved the new Operating and Funding models for membership. The Regional Representatives contributed actively in the development of this strategic document and the implementation has kicked off immediately after the approval.

The two membership Board Representatives, Jenny and Paul, presented a detailed report about the activities of the various regions, branches and friends groups and it was impressive to see the vast impactful range of volunteer activities under the WESSA banner during 2018.

We have now appointed a new Head of Membership and Natania has hit the ground running very fast by meeting with all the regions in a very short span of time. We are convinced that the value added by this appointment will far outweigh the cost of the investment.

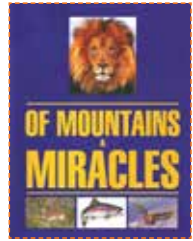
On behalf of the WESSA ExCo, I want to thank all WESSA members and other volunteers for their passion and dedication in Caring for the Earth.

I trust that you will achieve all your objectives set for 2019.



## GOOD READS

Book reviews by Dr John Ledger

**Easter Cape Thriller**

*Pott, Ricky (2018). Of Mountains and Miracles. Published by Ricky Pott, printed by White River Printers, South Africa. Soft cover, 15x21 cm, 352 pp. Price R200 plus delivery. Order by e-mailing contact details to rpott@mweb.co.za- you will receive an invoice and bank details. On receipt of payment (EFT preferred) the book will be sent to your nearest PostNet for collection and payment of delivery cost.*

This book was a great surprise to me, as I read it over the Christmas holidays and could not put it down! It is a fictional story with quite a bit of autobiographical content thrown in, although the author is at pains to say that it is **not** his own memoirs. The final chapter is a discussion between Ricky and his four children, and they find lots of resonance between the happenings in the book and their own experiences, even down to the fact that the main fictional characters have their own names. The book is set in the Eastern Cape, where I know Ricky was responsible for the environmental management of the Mondi properties there. Here we meet the white farmers, both English and Afrikaners, the Xhosa locals, and the wild folks from the Mountain Kingdom of Lesotho. There is intrigue, witchcraft, romance, crime, arson and murder, and some very scary encounters with evil individuals. The spiritual and magical beliefs of the locals contrast with the religions of the whites, but there is a meeting of minds and the book ends on a very optimistic note about the kind of South Africa Nelson Mandela would have wanted for us. Ricky and I studied Zoology at Wits University together, and many readers will know him as a staunch WESSA supporter in Mpumalanga, where his family home is in White River. Conservation, wildlife management, fishing, ecotourism, bird-watching and a love for wild places are woven into the content of the book. You will also learn quite a few words in isiXhosa! I think most readers will enjoy Ricky's book- could we have a new Deon Meyer here, writing thrillers set in South Africa?

**Our First Birder**

*Glenn, Ian (2018). The First Safari. Searching for François Levaillant Jacana Media, Auckland Park, South Africa. Hard cover, 14x21 cm, 230 pp, illustrated with coloured paintings and sketches. ISBN 978-1-4314-2733-8. R260*

François Levaillant (1753-1824) was the first and greatest South African birder, the first major figure of modern ornithology, the creator of the first 'safari', the first anthropologist of the Cape and our first investigative reporter criticising colonial brutality. He predicted the rebellion of the frontier Boers and was the first to portray the dilemmas of coloured identity. His work in creating beautifully illustrated bird books of his time inspired a map for King Louis XVI that has become the most valuable African map ever produced. His *Travels into the Interior of Africa* was a best seller across Europe and the most widely translated text on South Africa until Nelson Mandela's autobiography two centuries later. Ian Glenn has written a fascinating book about Levaillant, and Jacana Media has presented it in a very attractive format, illustrated with some very interesting pictures; it is highly recommended for anyone interested in South African history and natural history.

**Bushcraft**

*Carnaby, Trevor (2017). Beat About the Bush. Exploring the Wild - The Comprehensive Guide. Jacana Media, Auckland Park, South Africa. Soft cover, 16x23 cm, 620 pp, illustrated with photographs and sketches. ISBN 978-1-4314-2075-9. R450*

The author is a professional field guide who has been taking people into the bush in Southern and East Africa for more than 20 years, currently through his own safari company. As you can imagine, he has had to answer a lot of questions from his clients over the years, and that information has now been distilled into *The Comprehensive Guide*. Previous books in this series dealt with mammals and birds separately, but this edition includes 'all of the above' plus a lot more! Lavishly illustrated by masses of colour photographs, this is a book that everyone should read before venturing into the bush, whether on your own or on a guided tour. Armed with the knowledge contained in this volume, you will be more than a match for some of the less professional 'Jeep Jockeys' that you sometimes encounter these days. This book also has enormous value at university level, and I wish I could have had access to something as good as this as a Zoology student starting out more than 50 years ago. A truly fantastic piece of work, highly recommended!



## GOOD READS

Book reviews by Dr John Ledger

**Wondrous Wild Flowers**

*Manning, John (2019). Field Guide to Wild Flowers of South Africa. Struik Nature, an imprint of Penguin Random House South Africa (Pty) Ltd, Cape Town. Soft cover, 15x21 cm, 487 pp, illustrated in colour throughout with photographs, distribution maps and sketches. ISBN 978-1-77584 -676-5. R390*

This is the revised and improved second edition of a book first published in 2009. It is another 'blockbuster' of note from this talented author, with 487 pages of text and over 1,100 excellent photographs, almost all by the author. The independent countries of Lesotho and Swaziland (now eSwatini) are included in the geographic coverage. With some 20,000 species of wild flowers in South Africa, their identification is indeed a formidable task. The book features over 1,100 species, focusing on the most common, conspicuous and 'showy' flowering plants around the region. The introductory chapters deal with 'floral regions', 'vegetation types' and 'the names of plants'. The next ten pages are about 'how to use this book', and then we get to the 'species descriptions'. These are arranged in ten groups, and coloured tabs on the top right margin of the odd-numbered pages keep the species of each group together. The main part of the book comprises species descriptions, accompanied by excellent photographs, distribution maps, and a bar diagram to indicate months when the plants flower. This is an outstanding natural history book, a beautiful addition to the library of anyone who enjoys the outdoors and wants to learn more about our flowering plants.

**Stingers**

*Leeming, Jonathan (2019). Scorpions of Southern Africa. Struik Nature, an imprint of Penguin Random House South Africa (Pty) Ltd, Cape Town. Soft cover, 15x21 cm, 96 pp, illustrated in colour throughout with photographs, distribution maps and sketches. ISBN 978-1-77584-652-9. R230*

This is a brand new, updated version of Jonathan's excellent book that was first published in 2003. It has been freshly designed and expanded to include 12 additional species, new images and distribution maps, as well as a chapter about scorpion identification. Scorpions have a bad public image, and most people will gladly crush them before asking questions. This wonderful little book is a scorpion PR manual- the reader will learn about their incredible lives and lifestyles. Being able to identify scorpions gives you the knowledge about how scared you should be of them, and in most cases they are not dangerous at all. People who do get stung by scorpions often have this happen completely by accident – stand on or roll over a scorpion and it may sting in self-defence. This book has a very useful chapter about 'living with scorpions'. Jonathan Leeming is indeed a great ambassador for scorpions, and his book will go a long way in making people understand them better. May it be spread far and wide, especially in our schools.

**Healing herbs**

*Roberts, Margaret and Sandy (2017). Indigenous Healing Plants. Briza Publications, Pretoria, South Africa. Hard cover, 21x28 cm, 320 pp, illustrated with colour photograph and B/W sketches. ISBN 978-1-8750-9382-3. R395*

This is a fascinating compilation of the uses of more than 140 indigenous plants, from well-known garden favourites such as Agapanthus and scented geraniums to lesser known plants like 'agt-dae-geneesbossie' and 'ashwaganda'. Margaret Roberts, in her inimitable style, shares the story of each plant's history and its various uses – medicinal, in cooking, as natural insect repellents and deodorisers - along with tried-and-tested recipes, as well as brief notes on how to grow it in the garden. The plants are illustrated by Sandy's full-colour photographs, alongside Margaret's delicate line drawings. This fully updated and expanded edition of *Indigenous Healing Plants*, which was first published in 1995, now includes an additional 15 indigenous medicinal plants as well as a new section on naturalised weeds and foraged food plants. The book records traditional wisdom and practical information on the many uses of indigenous South African plants and will appeal to anyone interested in health, gardening, cooking and home-crafting. It also offers an historical perspective and botanical detail that will be of interest to students of Botany, Homeopathy and Medicine.

**Correction:** In issue 70 of this magazine we incorrectly stated that the purchase price of the book, *Fishes of the Okavango Delta*, by Mike Bruton, Glenn Merron and Paul Skelton is **R450**. The correct price of this excellent field guide is a very economical **R150**.

# Philosophy of REHABILITATION

Dr Anthony Turton

**I am privileged to be the son of an outdoorsman. My father grew up deep in rural Zululand, at a place called Hlabisa, adjacent to the corridor between what later became the Umfolozi and Hluhluwe game reserves. That part of the country had a very high population of rhino and other big game, so he grew up among these magnificent beasts, then still roaming free.**

He had many local friends and of course his dogs, whom he loved. In later life he became well known in Pointer circles for his dog whispering skills. He, and his two sisters, were the only white children in the area, so he learned isiZulu as mother tongue. The elders, in their wisdom, gave him the traditional Zulu name *uMqangabhodwe*. This name refers to the *Phragmites* reeds along the wetlands and rivers, which shoot up a fluffy plume when pollination time occurs. They dance in the wind, caressed by the gentle breeze that embraces the rolling hills of what was then called Zululand. The name describes those fluffy plumes as “standing above but always being part of a greater whole”.

That wisdom was infused in my father as a young boy, and he would think nothing of taking me from school to go on long Land Rover trips into the Kalahari and on to the Okavango. As such I found myself, as a small boy, responsible for driving a Land Rover through the thick mopani forests of the Chobe Linyanti and the majestic deserts of the Makhadikhadhi Depression. It was under the magnificence of the Kalahari night sky, sitting around a campfire that I became a philosopher. Yes, it was under that canopy of exquisite infinity, against the backdrop of the hysterical laughter of the hungry hyena, punctuated by the roar of the lion, that I realised a fundamental truth that has defined my entire life. As an individual I am insignificant, but not irrelevant, for I am but a speck of stardust floating in that infinity of space. Yet, while I am insignificant, I am not irrelevant, for my relevance is derived from being part of a greater whole.

You see I am the son of *uMqangabhodwe*, a twelfth generation African whose personality has been moulded by the migration of the vast herds that I have witnessed, thundering across the dusty Kalahari, to the well-watered wetlands of the Okavango. Imprinted in me from an early age is the restlessness of Nature, as forces are balanced and drivers like thirst and hunger are harsh but real. In my lifetime I have seen the population of the continent

double by the time I turned 20, then double again when I became 40, and double yet again when I turned 60. In my lifetime I have witnessed the first human heart transplant, the first man on the moon, and the aftermath of splitting the atom. I have also seen the last of the great herds and the drying up of rivers to quench the insatiable desire of *Homo sapiens* to progress.

This brings me to that which I want to reflect on today. Humans have become an invasive species, impacting every ecosystem on the planet. This impact has been so severe that a Nobel laureate has proclaimed that the very rocks being created today bear the human fingerprint, so he and his team proclaimed a new geological era dubbed the Anthropocene. Work by credible international scientists has shown that one of the defining elements of the Anthropocene in aquatic ecosystems is the movement of radionuclides and heavy metals through sediment at least one, and in some cases two orders of magnitude above normal background levels. We have mined deep into the crust of the planet, dammed almost every river, produced masses of carbon and are now approaching the threshold where we have used every drop of freshwater available.

When reflecting on this stark reality, I travel back in time to the wonder of that small boy contemplating his own insignificance in the planetary scheme of things and I have come to one startling realisation that I share today. Yes, *Homo sapiens* is an invasive species, but we have wisdom that *could* be used to drive us to behave better in the future. We certainly need to do this if we are to survive as a species, for all other hominids that preceded us have become extinct. In fact, we are currently the shortest-lived of the 18 known species that preceded us, with a mere 200,000 years of time walking this planet.

The reason this is important is that I was recently in Melbourne, working with Victoria Water, the utility responsible for water resource management in a dry part of Australia. I was invited to join their team

as they engage in strategic planning to develop a resilience strategy that will enable them to grow their economy, and reach a level of human well-being, in the face of growing water scarcity exacerbated by climate change. What struck me about their approach is that they have invested heavily into desalination plants to recover freshwater from the ocean. This technology is regarded by some environmental commentators as being environmentally harmful and therefore unsustainable. What surprised me therefore was a fact cited by John Thwaites, who

truth. Dam-building has significant and known ecological impacts, yet our economic wellbeing is dependent on it. But what happens when the flood pulse of rivers has been so affected that ecosystems crash? And then what happens when climate change warms the atmosphere to the extent that water stored in large dams is lost to evaporation? Is there not a finite limit to the number of dams we can build without causing irreversible ecological harm?

Then it dawned on me. Yes, we have walked on the moon and thus become the only terrestrial organism



**Figure 1**  
*Larva flow with ejecta and a terminal moraine now exposed on a beach near Chaka Rock, KZN speaks of our geological past.*

was the Minister of Water during the Millennium Drought, that “desalination plant gives us the ability to keep water in storage, reducing the risk that we need to build more augmentation. ... High confidence modelling has shown that holding additional water in storage has significant economic value as it reduces the need to expand the water supply system, or delays the need for that expansion. ... It also reduces the economic and social costs of restriction of supply (rationing), while building economic confidence for business and developers to invest knowing that Melbourne will have enough water for its rapidly expanding population”.

This blew me away, because I had never considered a high-tech solution like sea water reverse osmosis (SWRO) to be a tool for environmental rehabilitation. Yet here it was, presented as a naked

to leave a footprint in space. Yes, we are so smart that we are impacting the creation of rocks that will bear our fingerprint millions of years from now. So, if we wish to retain the level of social cohesion we need to live a reasonably comfortable life, and create jobs for a growing and restless population, then we can use our command of science, engineering and technology to reconstruct ecosystems.

In truth, planet Earth is approaching the limits of freshwater supplies needed to sustain humans. This is a fact. But we have not reached the limit of water at planetary level, because two thirds of Earth is covered by ocean, and less than 2% of all water is non-saline. We have therefore only reached the limit of freshwater, not all water. We have a salt problem not a water problem. We have the ingenuity to remove salt from water and learn how to live in



Figure 2

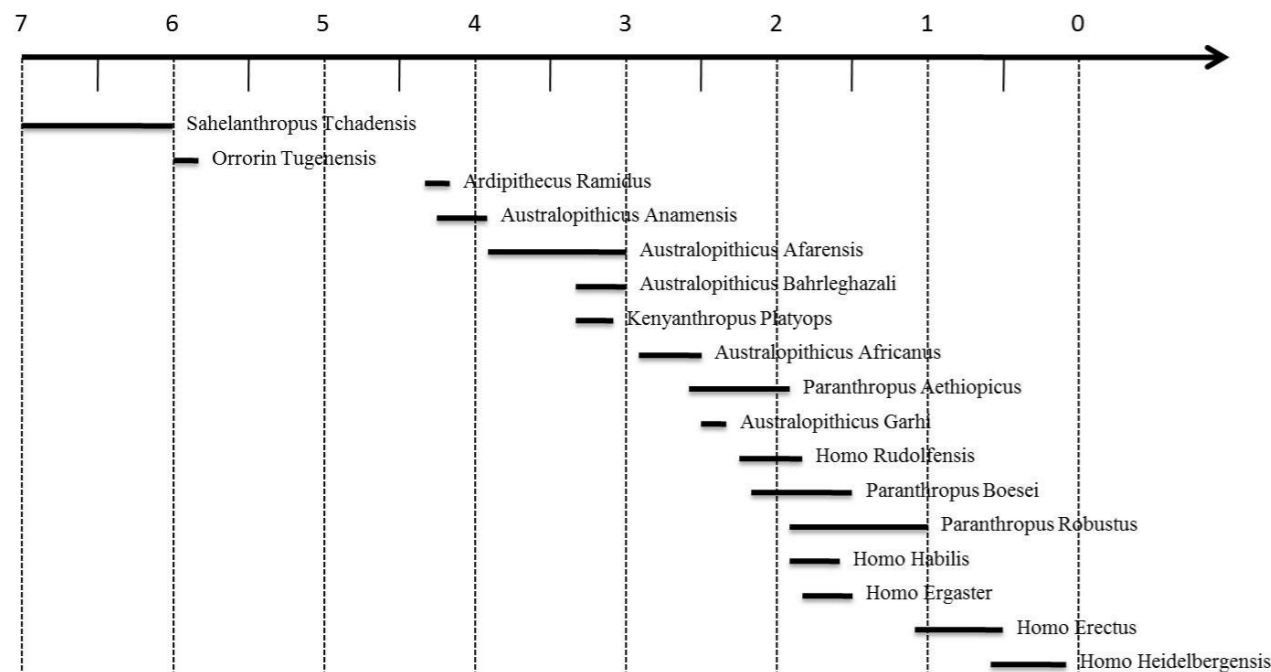
Layers of sand and mud show the change in climate as deserts and rainforests alternatively existed at Chaka's Rock, KZN.

some harmony with nature. Eric Swyngedouw, a highly respected scholar from Oxford, has written of the 'hybridization of water' in which humans have sculpted the hydrological cycle to create a new form of Nature. Is this not exactly what is happening in Melbourne as major desalination plant is creating the opportunity to rehabilitate aquatic ecosystems by reducing pressure on already overburdened surface water resources?

All of this is counter-intuitive and will probably be

received with horror by hard-core environmentalists, but the reality is that in South Africa we became a water constrained economy in 2002 when the National Water Resource Strategy confirmed that we had already allocated 98% of all available water. We became a capital constrained economy in 2014 when our national economy went into a Foreign Direct Investment (FDI) deficit that was sitting at 25% of GDP by 2017. What environmentalists need to ask is how ecosystems can be protected, or even

Millions of Years Before Present



All these hominids have become extinct over time, but we have a chance of bucking this trend if we are smart. (Data interpreted from McCarthy & Rubidge, 2005).



Figure 3

Modern algae farm in Australia produces high quality food supplements in an arid environment.

rehabilitated, in the face of endemic poverty arising from a water and capital constrained economy? Is the biggest threat to ecosystem integrity not poverty?

I believe that we need to reflect on these matters at many levels, for the future of our country depends on the way we solve the water constraints that will simply become a harsher reality as populations grow and climates continue to warm. We successfully put a man on the moon, because we can remove salt from water, overcoming the constraint of having to transport large volumes in a small space craft. We can successfully grow our economy and rehabilitate our distressed ecosystems, by embracing Swyngedouw's notion of the hybridisation of the waterscape through ingenuity and moral conscience.

We are all insignificant as individuals, and when we die we will become the dust from which stars are made, but we are not insignificant. Our significance as a species is intimately interwoven with our ability to co-evolve with nature. Technology is both our enemy and our friend, so its not about the avoidance of engineering solutions, but rather the selection of the most appropriate solution. SWRO is proven technology with a known impact, and smart design can reduce the negative impact to the point where it can become the foundation for ecosystem rehabilitation – if only we want it to happen.

FURTHER READING

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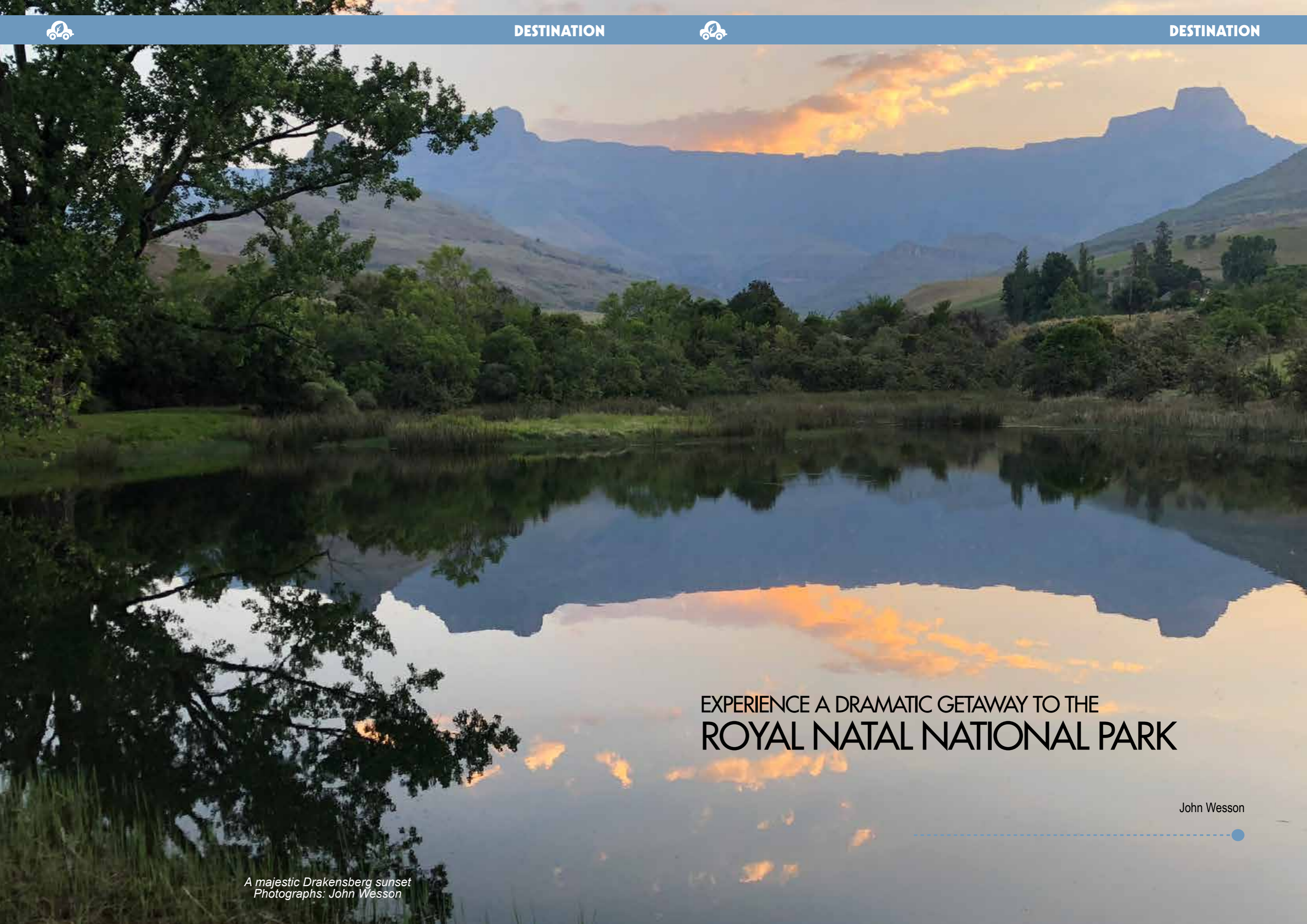
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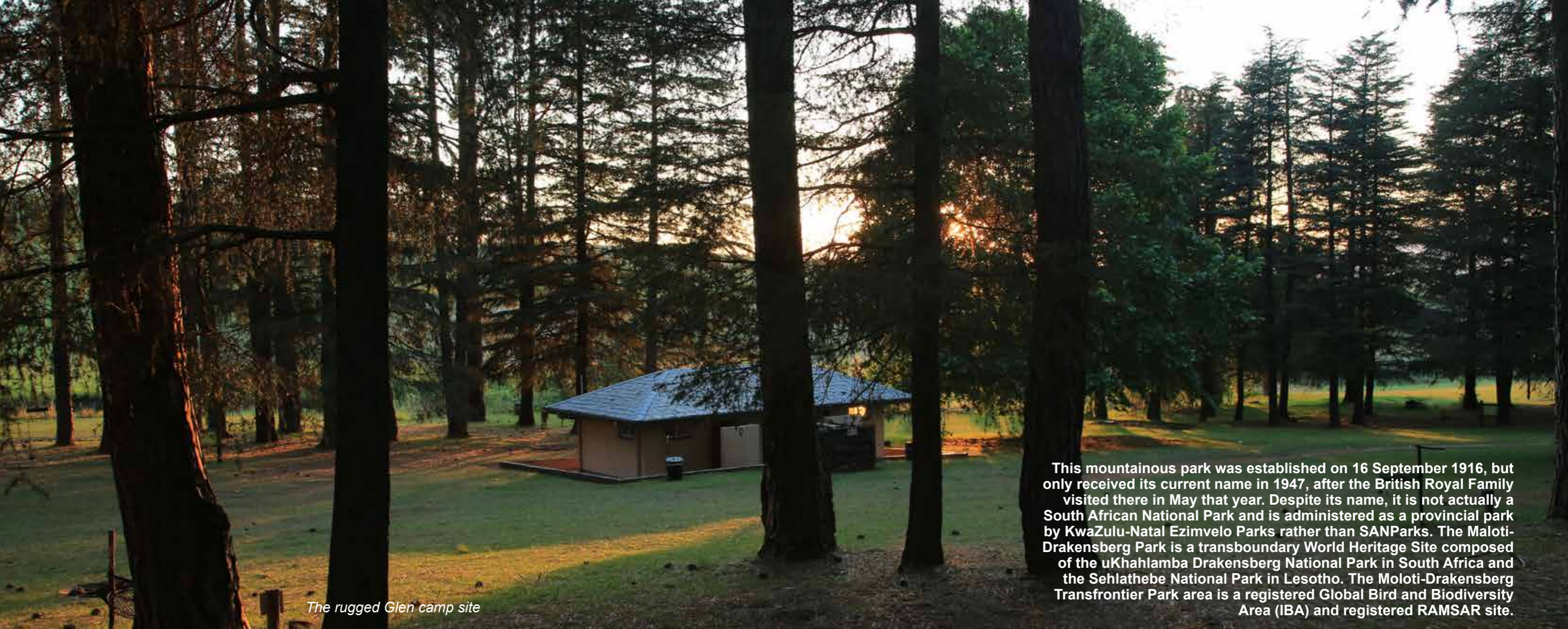
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EXPERIENCE A DRAMATIC GETAWAY TO THE  
**ROYAL NATAL NATIONAL PARK**

John Wesson

*A majestic Drakensberg sunset  
Photographs: John Wesson*



*The rugged Glen camp site*

**This mountainous park was established on 16 September 1916, but only received its current name in 1947, after the British Royal Family visited there in May that year. Despite its name, it is not actually a South African National Park and is administered as a provincial park by KwaZulu-Natal Ezimvelo Parks rather than SANParks. The Maloti-Drakensberg Park is a transboundary World Heritage Site composed of the uKhahlamba Drakensberg National Park in South Africa and the Sehlathebe National Park in Lesotho. The Moloti-Drakensberg Transfrontier Park area is a registered Global Bird and Biodiversity Area (IBA) and registered RAMSAR site.**

### **Climate**

Temperatures can fall as low as -15 °C on the higher slopes in winter, rising to a maximum of 35 °C in summer. The annual rainfall average is around 800 mm, falling mainly in the summer months (October to April.) It rains mainly in the form of thunderstorms, and no less than eighteen waterfalls can be seen cascading down the Amphitheater walls after such a storm. Residents at the Thendele Camp can often hear the rumble of boulders rolling in the Tugela River below after a summer thunderstorm.

### **The Park**

Royal Natal National Park has some of the best mountain scenery in Africa. The main feature is the world famous 'Amphitheatre' with a width of approximately five kilometers and a 613 metre high rock wall rising above the 'Little Berg' with prominently symmetrically shaped peaks on either end.

To the right of the Amphitheatre is the Mont aux Sources peak, rising 250 m above its surroundings (3,282 metres above sea level) and where the previously named Orange River (called the Senqu in Lesotho and now the Gariep in South Africa) has its origins as it starts its long way to the Atlantic Ocean. The Amphitheatre also boasts the second highest waterfall in the world (see Wikipedia) namely the Tugela Falls situated towards the centre of this massive rock wall. It drops a total of 948 m in five leaps into the Tugela gorge below, where it starts its journey to the Indian Ocean. In winter the first few hundred metres freezes into an impressive ice column, and the crest is often covered with snow.

The area below the Amphithaetre consists of dissected and ruggedly broken country, typical of the grass-covered Little Berg with numerous waterfalls, dense forests in gorges and gullies with magnificent tree ferns. This area has some of the best Yellowwood forests in the Drakensberg. During early summer the

spectacular Mountain Bottlebrushes light up the landscape.

The region can be dissected into three distinct vegetation zones namely the Montane (1,280-1,830 metres above sea level), Sub-alpine (1,830-2,865 masl) and Alpine 2,865-3,500 masl). The Drakensberg area is rich in Khoisan rock art and archaeological sites, a number of which are found within this park.

### **The Wildlife and Birds**

The park has to date 291 listed bird species on the SABAP2 (SA Bird Atlas Project) listing and a number of mammals including baboon, bushbuck, Mountain Reedbuck, Grey Rhebuck, Black Wildebeest, Blesbuck and dassies. The bushbuck are tame and can be seen early in the morning on the grassed road verges.

The best birding is in summer, when the migrants are present, and trees and shrubs such as the Sugar Bush, Mountain Bottlebrush and others are flowering. Seeding grasses and patches of weeds attract a wide

variety of seedeaters. One must always keep an eye on the sky for Cape Vultures and Bearded Vultures (with their distinctive diamond-shaped tail). At night listen for the calls of the African Wood Owl in the Mahai Camp. Early morning in summer is the best time for birding.

### **The Vegetation Types**

The lower areas are where the Northern KZN Moist Grassland starts giving way to Drakensberg Foothill Moist Grassland, and as one moves further up the escarpment it changes to Northern Drakensberg Highland Grassland with uKhahlamba Basalt Grassland at the top, interspersed with Drakensberg-Amathole Afromontane Fynbos. In the deep moist gullies one finds dense Northern Afro temperate forests. For a detailed look at each of these vegetation types consult *The Vegetation of South Africa, Lesotho and Swaziland* by Musina and Rutherford.





*Approaching Royal Natal National Park with Hlalanathi Drakensberg lodge on the right. The alien invasive Sesbanias were in full flower along the river bank.*



*The crystal clear water as it flows down the mountain forming the cascades and a number of popular swimming spots in the Mahai stream*



*The Cape Rock-thrush is often seen in the camps*



*One of the many fine specimens of tree ferns in the park*



*The Thendele Camp overlooks the Amphitheatre*



*An early morning view of the Tugela river*

**Activities**

Hiking is by far the most popular activity in the park. Comprehensive hiking guides are available for purchase at the Visitor Centre, Thendele Camp office and at the main entrance gate. The brochure shows a map of the park and the network of hiking trails, which cover every part of the park, from the leisurely shorter walks to more challenging ones. Most walks are well sign-posted. If undertaking long walks, visitors are requested to fill in the mountain rescue register at the Information Centre or at Thendele Camp. Also make sure to sign in again on your safe return! This allows officials to keep track of who is on the mountain and to initiate rescue parties should you be overdue.

Care must be taken when planning your walks in summer, as violent thunder storms can come up very quickly, normally in the afternoon. When hiking in winter, be aware of the cold conditions that can deteriorate rapidly, with serious consequences for people without protective clothing. In all seasons, prepare and dress accordingly!

**Some of the better known well marked hikes**

Shorter hikes for the less fit or those having time constraints

- **Cascades** (From the entrance to Mahai Camp). About 2.2 km round trip, mostly on a wheelchair-accessible concrete pathway.
- **Devil's Hoek Valley**. Starts next to the Tugela River at the car park near Thendele, 6 km, 2 hours, easy walk. Some Bushman rock art along the way.
- **Fairy Glen** (from the Information Center). An easy walk of about 45 minutes to cover the 4-km trail.

Longer hikes

- **Tugela Gorge Hike**. One of the more popular walks in the park. The trail starts next to the Tugela River at the car park near Thendele, 23 km return trip, five to six hours. A relatively easy walk except for the last two km that requires three easy river crossings and some boulder hopping. At the far point of the walk you will see spectacular views of the Amphitheatre, Sentinel and Tugela Falls.
- **Mudslide**. Currently closed due to a large rockfall. Eleven km, just under five hours. Check status of this walk before attempting it.
- **Policeman's Helmet** (From Thendele Camp). Fourteen km in about four hours. Lots of cycads along the way and excellent views of the Amphitheatre

For the fishermen, trout fishing can be pursued in the dams near the visitors centre as well as in the Mahai and Thukela Rivers.



*The parking site for day visitors and the start of a number of the trails*

Swimming in the fresh mountain streams is a popular summer pastime especially along the Mahai Stream.

There are several laid out picnic sites along the same stream and adjacent to the trout dams.

Horse riding is a popular activity, with the stables being situated at Rugged Glen, which is a short drive from the main entrance gate to the Park.

For photographers there are impressive land- and riverscapes to challenge your photographic skills, from the well-known 'Amphitheatre picture' taken while standing in the Tugela River, different angles of the mountains through the gorges, the river valleys leading to the mountain, and the mountain as its mood changes from early morning to the glowing golden colours of sunset or sun rise. Other great views can be had from the top of the amphitheatre overlooking KZN, capturing the storm clouds as they build up into impressive cumulonimbus anvils. And of course, there is a wide variety of wildlife and flora to photograph. There is always something to capture on camera irrespective of the season!



For those rainy days there are several restaurants and tea stops found within a relatively short drive from the park. The first of these is 'Tower of Pizza' restaurant on the road back to the R 74 and 'The Outspan' approximately 8 km along the R 74 main road when turning to Bergville at the T-junction from the park.

**Park Camps****Thendele**

The main hutted camp is Thendele, situated below the sandstone cliffs of Dooley in Yellowwood forests and Protea savannah overlooking the Amphitheatre, where every chalet has a spectacular view of the mountain. This gives the camp the status of being one of the most picturesque settings in South Africa, as well as the closest to the main Drakensberg escarpment. The camp is split into an upper and lower section, comprising 26 self-catering chalets.

Several birds and other forms of wildlife are found in and around the camp. You may hear the sounds of the Helmeted Guineafowl in the morning or late afternoon, or the troops of baboons as they move through the camp investigating the lawns and under rocks for food, while in the forested areas the call of the Chorister Robin-chat is heard. High in the trees in summer one hears the characteristic call of the Red-chested Cuckoo ('Piet-my-vrou') even on moonlit nights.



*Greater Double-collared Sunbird*

**Mahai**

This camp has 120 sites set in one of the most spectacular settings in the berg, nestled in the lower foothills of the park with tall trees and grassed areas throughout.

The sound of the continuously running Mahai Stream adds to its character. Half the sites have electrical power. Several of the less strenuous walks

start adjacent to the camp. The campsite is secure, being fenced and with security guards on patrol 24 hours a day.

**Rugged Glen**

A more rustic secluded campsite set in a plantation a short way before reaching the main park entrance gate. It has 20 sites, ten of which have electrical power. Both camps have ablution blocks with hot water.

**Getting there**

From the N3, take the R616 just south of Ladysmith towards Bergville (35 km). Where the R616 meets the R74, take a right turn and follow that road for a further 29 km until it joins with the R615. Take a left turn and you will reach the park within another 19 km. Road signs are clearly displayed along the way.

For a more scenic route, take the exit from the N3 at Harrismith and take the N5 towards Bethlehem for about 5 km, then turn left onto the R74 and follow this for about 38 km, then take a right into the R615. Following this route will take one past the Sterkfontein Dam.

**Caution!** Drive with extra care along the R615 as it passes through several rural villages where livestock and school children cross the road at will. The park is open 24 hours for residents and from 6 am to 10 pm (May-Sep) and 5 am to 7 pm (Oct-Mar) for day visitors.

The nearest petrol station and tyre repair shop is in Bergville, 48 km away.

Curios and some provisions, cold drinks etc are however available from the Visitor Centre.

**FURTHER READING AND INFORMATION SOURCES FOR THIS ARTICLE:**

*A Field Guide to the Natal Drakensberg* (A WESSA handbook) by Pat & David Irwin and John Ackhurst.

*A Cradle of Rivers* by David Dodds.

Ezemvelo KZN Wildlife website.

*The Vegetation of South Africa, Lesotho and Swaziland* by Musina and Rutherford

Wikipedia

**For further information or bookings please contact Ezemvelo KZN Wildlife Central Reservations (+27 33) 845-1000**  
bookings@kznwildlife.com



## The iconic SAUSAGE TREE

Eugene Moll

**Arguably one of the iconic African tree species, along with Baobabs and Fever thorns, is the Sausage-tree (*Kigelia pinnata* - the genus name comes from what the local Mozambicans call it; *kigeli-keia*).**

**T**his monospecific genus occurs from northern KZN east and north to Caprivi and way into Africa as a medium to large tree; mostly in riverine areas and in tall bushveld. Usually it is evergreen but can be seasonally deciduous if conditions are very dry.

The large and heavy sausage-like fruits are diagnostic (~200-350mm long and ~100-150mm diameter and can weigh up to 10kg; and rarely even more), as are the deep maroon, large flowers (60-80mm diameter) that hang on a loose spike usually hidden inside the tree, and the leaves are imparipinnate and 3-whorled. On these criteria alone, this tree species is unmistakable!

The species belongs to the family Bignoniaceae - that in Africa has some 11 species of shrubs, lianas and trees; that include *Tecomaria capensis* (Cape honeysuckle), the genus *Rhigozum* (a common increaser shrub of the Kalahari, and also in parts of the Karoo and some eastern bushveld areas) and well as our famous, yet declared “weed”, the Jacaranda.

Many of the members of the family have pinnately compound leaves that are opposite, and in the case of the sausage tree three-whorled leaves. Of note is that young plants and coppice shoots have serrated leaflets, while on mature trees the leaflets are entire. Such variation is not too uncommon in bushveld tree species, which makes their identification using vegetative criteria sometimes difficult. So, if one is trying to key a species out that has both entire and not entire leaf variations in books, like Coates Palgrave and/or van Wyk- this can be extra challenging.

### Why a monospecific genus?

Of great interest to us here in Africa is the fact that we have three iconic, large tree species that are monospecific (meaning that there is just one species



*Kigelia africana* showing 3-whorled leaves

in the genus). Possibly the best known worldwide is the African baobab (*Adansonia digitata*), another is our African marula (*Sclerocarya birrea*) of Amarula® fame, and then there is the Sausage tree.

What is of interest is why are these genera monospecific? Or, asking the question differently, how does one genus manage to just have one species?

Decades ago I listened to a paper given by a Zambian forester Mike Bingham who made the critical observation that for a genus to be monospecific

*Kigelia africana* flowers



*Kigelia africana* at the Tshokwane picnic site, Kruger National Park (2009)



*Kigelia africana* apical leaflets showing spikey margins

it would mean that there must be a continuous exchange of genetic material over evolutionary time. Thus, for plants this would mean that their fruits must be suitable for long-distance dispersal. Since the fruits of the three trees in question here are sought after by elephants and people, that gives them the opportunity to be widely dispersed. Mike made the further observation that genera with short distance modes of seed dispersal, such as *Brachystegia* (the common and widespread miombo species of Central Africa) with their explosive pods, would likely have many species per genus (and in *Brachystegia* this is the case, and why this is so is maybe for another day).

**What uses does the tree have?**

Some birds are attracted to the flowers; such as sunbirds, orioles, bulbuls, weavers, brown-headed parrots and go-way birds (that eat the flower buds)

Their scent is strongest at night indicating that



*The sausage like fruits of the Kigelia africana*

they are adapted to pollination by bats that visit them for pollen and nectar. The flowers are also visited by many insects, and baboons and vervet monkeys relish eating them, while the fallen flowers are much sought after by antelope like impala and kudu as well as porcupine.

The fruit is extremely hard and dense and the pulp is fibrous and contains numerous seeds. It is eaten by several mammals particularly elephant, bush pigs, baboons and even giraffe.

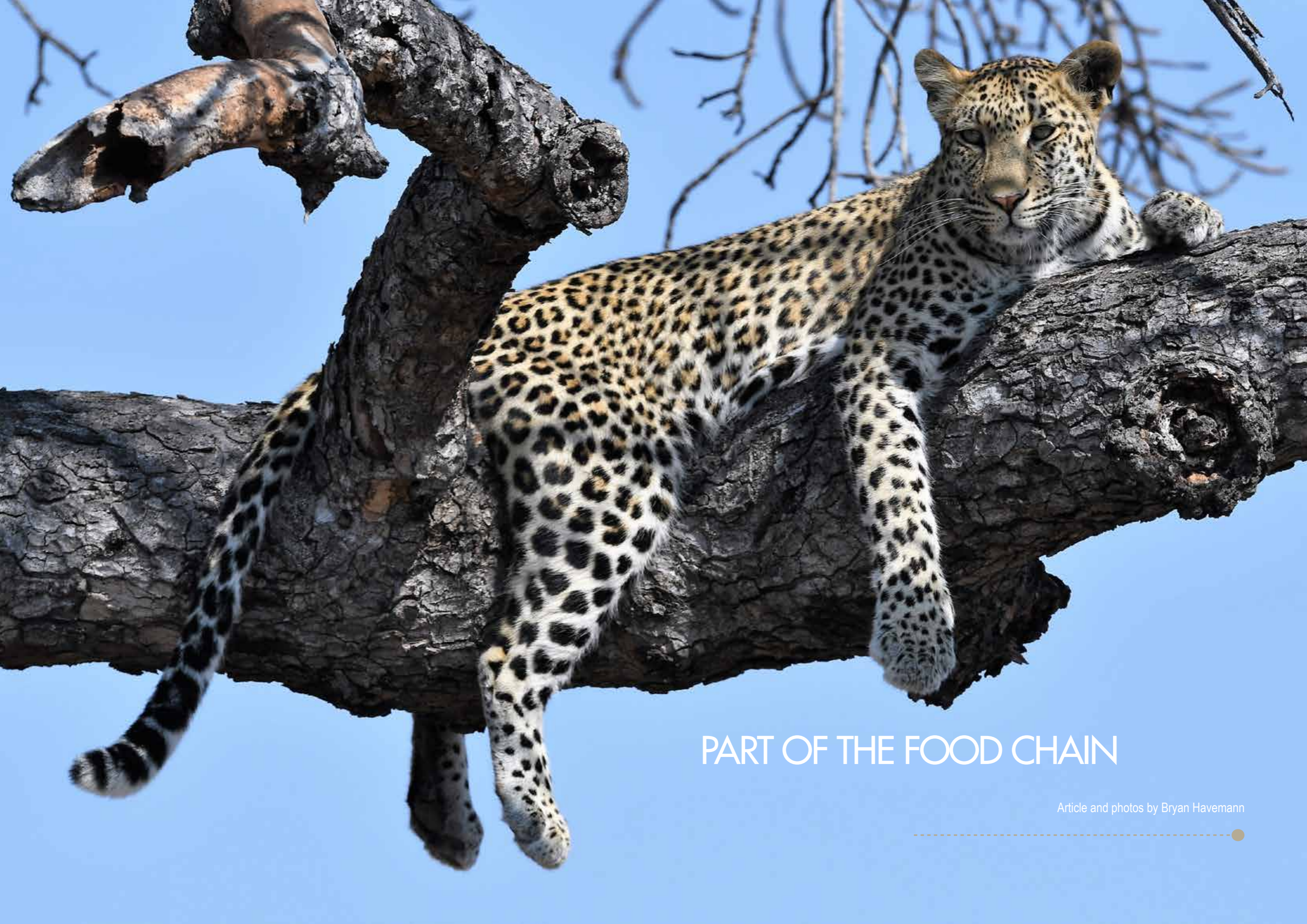
The fresh fruit is poisonous and said to be strongly purgative; some locals do eat the fruit but it must first be dried, roasted and/or fermented.

In Botswana the trunks have been used to make mokoros. In some regions the wood is also used to carve utensils.

The tree is widely grown as an ornamental for its decorative flowers and unusual fruit. Planting sites must be carefully selected as the falling fruit can cause serious injury to people and damage vehicles parked

under the trees. The roots can be quite invasive and damage walls and building as the trees mature. When I was at San Diego State University there were a couple of big trees that flowered and fruited, which meant that the local bats must also have been able to pollinate the flowers.

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## PART OF THE FOOD CHAIN

Article and photos by Bryan Havemann

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**Ever since Harry Wolhuter was hauled off his horse by an adult male lion in the Kruger National Park and dragged in its jaws to a suitable spot where he could be fed upon, we all seem to have either a morbid fascination or a deep inbred fear of this happening to us. Fortunately in the case of Harry Wolhuter he was able to unsheathe his knife and stab the lion in the heart as he was being dragged and the lion dropped him and died.**

Harry had to climb a tree and tie himself up there with his belt to prevent being eaten by another lion, and had his faithful dog that helped keep the lion at bay. He eventually made it to a hospital after an epic, infection spreading, fever-filled journey, whereafter he made a full recovery. In these modern times one only needs to see the amount of views on You Tube to realise how we as humans are still fixated on this age-old battle of outwitting those animals that still see us as part of the menu or view us as an extreme threat and will kill us in an instant.

During my long career as a dedicated conservationist I have lost track of all the times that people have asked me to recount stories of close calls with wild animals.

When one works in wild country you are conscious of the potential dangers but rather than that being a reason not to work there, many times it is the catalyst that makes many of choose this as a career that is one of privilege and appreciation. Many of the people

who ask you how you can work amongst so many potentially dangerous animals do not seem to realise that their high security fenced properties in suburbia and their daily commutes in the traffic and walking in a city environment is far more dangerous than living and working in the bush.

The main difference being that most of the time wild animals' behaviour can be predicted; however, with man you are dealing with a creature whose behaviour can never be predicted. Many humans in these modern times have no moral compass, are self-centred, without discipline and only think of furthering



themselves, never considering the bigger picture and how we are all inter-connected on this planet. You live far more dangerously in a city environment than you ever would in a wild, open ecosystem where the food web and circle of life is played out daily.

Earlier this year in the Umbabat Private Nature Reserve one of the farm caretakers saw a pride of lions drinking at a waterhole. It was already dark and he saw them run off into the bush and then make a kill. There was lots of growling typical of lions at a kill. He tried to see what they had brought down and drove round on a track nearer to their position. He saw a knitted beanie lying in the road and realised that this must be from a human they had caught. He could not see the lions due to the thick Mopani bush and came and raised the alarm. When additional reinforcements arrived the lions were eventually driven off their 'kill'

which turned out to be a Mozambican poacher who had come to the watering hole to scout for rhino spoor. Lions are very opportunistic and when the poachers walked into them inadvertently, they pounced.

The other two poacher's tracks showed that they had exited back to Mozambique through the Kruger National Park at great speed with their strides being many meters apart. This kind of running can only happen with the right kind of motivation. What were reported as two shooting stars from west to east could have been these two poachers hurdling over the Lebombo Mountains on their way back to Massingir in Mozambique? It was a tragedy that a human life had been lost; however the next day a heavy calibre rifle was found at the scene as well as other paraphernalia that poachers use and this is the risk they take walking in 'big five' country at night time. This is a severe consequence of breaking many international laws when you are up to no

good, and you end up becoming a statistic at the top of the food chain.

Many years ago during the Renamo/Frelimo Civil War in Mozambique there was a constant influx of refugees that were fleeing the unrest and crossing through the Kruger National Park into South Africa.

The lions in the area became very accustomed to having this menu of not so fast food. We will never really know the exact number of people that were caught and eaten by lions but it is substantial. There were certain lion prides that had distinctive changes in their behaviour patterns when confronted by humans. Normally a wild lion will run from humans during the day time however there were some lions that would actually come and investigate if they saw humans. Most of the refugees would cross over during the hours of darkness and this of course is when the lions are most active and do most of their hunting.

Along the Cahora Bassa Power Lines that run east/west through the Kruger National Park south of Punda Maria Rest Camp, there was a lion pride that had developed a strategy where most of the pride would lie in ambush and let other lions circle round and growl and run in chasing the refugees into the waiting jaws of the others. There were some horrific accounts of people who had escaped and told these gory, graphic tales.

I experienced it first hand on the Nyalaland Wilderness Trail where after the hot December break I was taking out the first trail for the year. Along the path we were walking I saw two large suitcases. It was evident that they had been there for more than a week and then a bit further on we found the remains of two people who had been caught and eaten by the lions. Nature is very efficient in utilising everything and apart from the torn, bloodied clothes and hair left, everything else had been consumed. What the lions don't eat, the hyenas, jackals and vultures will consume. Even the ants will get in on the act and clean up any leftovers. The suitcases were filled with staple food items, soap and clothing. It appears that these two individuals were on their way back for Xmas in Mozambique, but their families waited in vain.

When wild predators do attack humans there is usually a very valid reason why they turn from their natural prey source and consider attacking humans. In essence we are very easy targets. We make so much noise, do not try to use cover and apart from a very distinct human smell we still cover ourselves with perfumes, creams and deodorants that can be smelt kilometres away. Lions are very large predators and it is obvious that they could easily kill a human. There are however cat species like the leopard that are also very capable of killing humans. There have been many tragic cases of people being caught and killed by leopards in recent years. The Kruger National Park in particular had a spate of people being killed or injured by leopards. Some of the section rangers who were badly bitten and scratched by damage-causing animals that had entered areas where people were active, escaped death because they fought back valiantly. Other staff members were not so lucky and they were unfortunately killed.



One particular incident that I was involved in was near the Malelane Gate in the south of the Kruger National Park. A night drive student had stopped on a bridge over the Matjulu River and let some of the tourists get off to stretch their legs. He had walked with his rifle to the side of the Armco barrier at the southern side of the bridge where he was attacked by an adult male leopard. The tourists did what they could but could not save him. A short while later the Field Ranger Corporal from the Malelane Ranger Section arrived on scene and walked in to where the leopard had the student and was able to shoot the leopard. He immediately called me in and we had to deal with this very sad, surreal situation. It transpired that the leopard was in a very bad condition from mange and had been injured in a fight with another leopard. It was also the first leopard that tested positive for

Makalali in the Limpopo Province. During the night a leopard caught and killed her on the platform. She had been sleeping there alone and was only found early the next morning.

I cringe when I see people feeding hyena left over bones after having a braai. Firstly you are teaching the hyena that there are easy pickings and they learn quickly and will come back again expecting the same treatment. Maybe the next visitors are not so bush-wise and you could end up with a small kid being snatched and killed before the adults can react. The jaws of a hyena are so powerful that they will slice through human bone and flesh like a hot knife through butter. When you are sleeping out at night make sure you have someone keeping guard or make sure your tent or accommodation is properly closed. While I was still the senior section ranger at Stols Nek

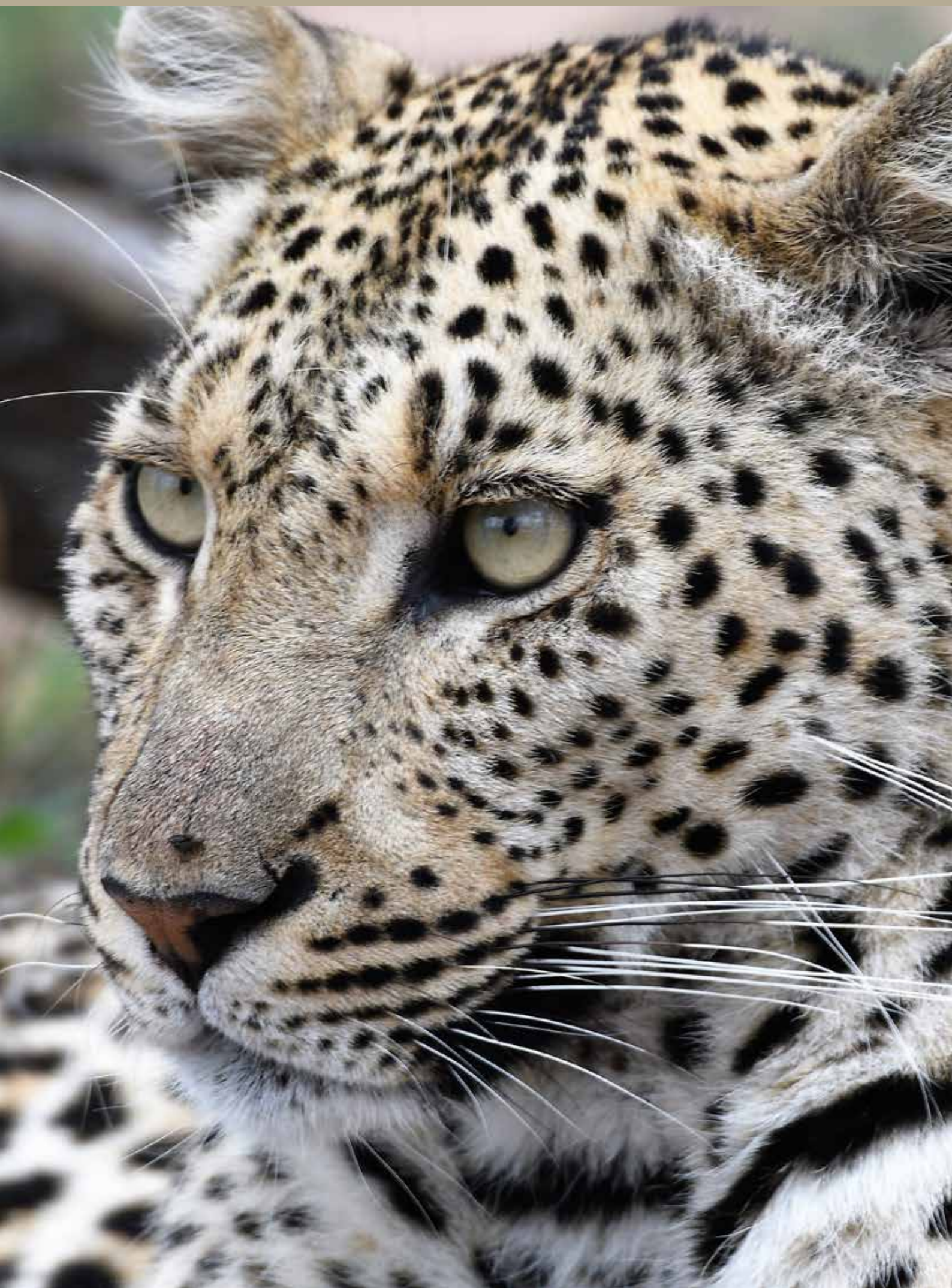


Bovine TB.

I remember carrying both the student and the leopard out to the road where they were transported away and thinking of how fragile life is. At the students' accommodation back in Berg en Dal camp was a cake that had been baked by my wife for his twenty-first birthday. There was a slice set aside and waiting to be eaten on his return that evening. This was a devastating blow for his family and the rest of the Kruger National Park staff. Three years ago a woman volunteer in her early thirties from Switzerland was sleeping on a platform at one of the bush camps near

in the South Western corner of the Kruger National Park, a body was found near the boundary fence of a man that had been eaten by hyenas. It was not clear if he was alive when the hyenas found him or whether he was dead and they just scavenged. A very macabre incident...

Other wild animals that do not see you as an easy meal but are just as capable of killing you are also numerous; however there is fortunately an inbred fear of humans that should keep you safe as long as you don't do anything stupid. Starting at the biggest, the African Elephant is the largest land mammal that



could very easily kill you. There were many refugees that were also killed by elephants when crossing the Kruger National Park during the night. A young boy was found walking aimlessly through the bush and after hearing his story, the spot was found where his uncle had been killed by an elephant and the rest of the refugees with the group had scattered. There were possibly many other such incidents that never came to light. I have personally lost friends that were charged and killed by elephants and have had some very close calls myself with these big Pachyderms. Always show respect for these incredible creatures and give them the benefit of the doubt. At six and a half tons for an adult bull, it goes without saying that they are fighting in a weight class way above ours.

Other wild animals that often have undeserved reputations are things like wild dogs. The fact that they hunt in packs and will often start eating their prey while still alive, has led to lots of misinformation being spread by scared people without the correct knowledge. I was once on a wilderness trail in the Kruger National Park where we were driving in the vehicle and we came across a large pack of wild dogs. One of the trail group was telling the others how vicious and cruel they were and that we were extremely lucky to be in the safety of the vehicle and that if we set foot outside we would be ripped to shreds in seconds. I could not let this slide and said to him that what he was saying is not true. Very sure of himself, and with a sneering challenge said to me, "Why don't you get out of the vehicle and show us Mr Brave Ranger". Now normally I would not take the bait but I could not let this man spoil it for the others. I said, "Okay I will" and opened the door and walked towards the wild dog pack. They immediately ran away but stayed very interested in me. At this stage I was about forty meters from the vehicle and I lay down flat on my stomach on the ground. After a while the dogs got braver and came up fairly close before I stood up and they ran away. Well, I felt I had proved the point, and walked back to the vehicle.

Unbeknown to me the man had been sick with worry, as he really thought that I would be ripped to pieces when I left the safety of the vehicle. Once again it is all about respect and perhaps what I did was wrong, but it was a lesson that the trail group would never forget. One of the group had taken photos of my wild dog interaction with me lying prone on the ground. Fortunately this was not the land equivalent of a Piranha feeding frenzy that would have been captured in graphic detail. Wild Dogs are endangered and the biggest threat to their existence is their diminishing habitat so we need to ensure that there are still large tracts of land in protected areas that can sustain viable populations.

The creature responsible for the most deaths of humans in Africa is undoubtedly the Nile crocodile. These dinosaur-like creatures are very efficient killing

machines and occur in most major water ways not only in protected areas but also in rural communities where people collect water and wash clothes and where domestic livestock have to drink daily. A trails ranger colleague of mine was attacked in a dam in the southern Timbavati by two large crocodiles and escaped with his life but has terrible scarring from his ordeal and lost an arm. Often referred to something being very expensive that saying, 'It could cost you and arm and a leg' is very relevant if you ever want to swim in water where crocodiles occur. I know of many people who have been killed or maimed by crocodiles in the Kruger National Park as result of either swimming or walking through the crocodile-infested waters. In Rwanda's Akagera National Park the crocodiles are huge, and many of the locals say that during the genocide in 1994, thousands of bodies were thrown into the rivers and fresh water lake systems and floated to areas where the crocodiles had carte blanche and an alternative to their predominantly fish diet. To survive a crocodile attack as a human is very rare, so stick to dry land!

Other creepies, crawlies and buzzies that could maim or even kill us and create extreme phobias are things like spiders, centipedes, scorpions, snakes, bees, hornets, wasps, ticks etc. The irony is that the most dangerous small creature ever is the mosquito. Malaria is a very serious disease and can be life-threatening. It is caused by a *Plasmodium* parasite that is transmitted to humans through the bite of the female *Anopheles* mosquito. One of my mentors and a larger than life character who was my head ranger in the Kruger National Park had a lifetime of dealing with all the large and very dangerous animals. After his retirement he contracted malaria in Mozambique while on a holiday and passed away as a result. This seemed so unfair and I know of many others who have suffered a similar fate. I have had malaria three times myself and can only reiterate to anyone entering a malaria area, take all the precautions possible and remember to cover your ankles and feet as the majority of bites from the female *Anopheles* mosquito occur here. If you have been in an area where malaria occurs and you start showing any symptoms get tested immediately. Catching it early can mean the difference between life and death.

After all this fearmongering and highlighting the dangers of the African Bush I still believe it is the best place to re-charge your batteries and appreciate what a wonderful world we live in. Give me a wild wilderness jungle over a concrete jungle, any day!

**Bryan Havemann**  
Warden of the Umbabat Private Nature Reserve  
warden@umbabat.com



## Gardening for wildlife: PROVIDING SHELTER

Slipping quietly into the indigenous wildlife garden and just observing can be a wonderful experience. It comes alive with the movements and sounds of creatures, some easy to spot and others only visible to the patient and trained eye. The garden becomes a giant 'find the missing creatures' puzzle. This is for one reason only – gardens that cater for the local wildlife provide shelter for them to stay longer than just stopping in for food.

Heather Balcomb

Providing natural shelter is essential in the wildlife garden. It not only persuades creatures to stay longer, rather than visiting for just a short while, but also attracts a greater diversity of creatures to use the garden.

The word 'shelter' refers to the provision of a safe place to rest or live – protected from bad weather and dangers of attack or being eaten, or both. In the wildlife garden, natural shelter may be provided in several forms. Plants, rocks, wood, mulch and watery places all provide some form of shelter for various creatures. To provide the most effective shelter, consider the different creatures that might access and use the garden, focusing on their habits and how they might go about their daily business.

Outlined below, are various ways in which different garden wildlife could make use of shelter provided for them.

### PLANTS (particularly indigenous plants)

A good variety of plants forms the backbone of any aesthetically pleasing garden. The beauty of the garden needn't be compromised when providing shelter for wildlife. It simply means that the choice of plants and how they are grouped together can significantly increase the quality of habitat that these plants provide. It goes without saying that indigenous plants, having long associated relationships with indigenous fauna, will be most suitable in providing shelter. These plants provide shelter through excellent backdrops for camouflage, canopies of leaves to shelter from wind, rain, cold and heat, as well as a barrier to being observed for shy species and those that are easy prey. They also provide thorny refuges for nesting birds and sheltered corridors, both horizontally and vertically in and out of the garden.

### Camouflage

Some creatures, insects in particular, use camouflage to blend in with and resemble their surroundings through colour and pattern. In this way, they gain even further shelter from the plants on which they are found. Camouflage by pigmentation and by structures that are part of the creatures body, is used mostly to avoid predation, but some creatures, such as praying mantis and spiders benefit from their camouflage in being able to ambush their unsuspecting prey. Camouflage is often observed in creatures that are associated with specific types of plants, although this is not always the case.

### Clumps of plants

Clumping plants together, particularly indigenous species, creates structurally complex shelter. The greater the variety in height and diversity of species, the more effective the shelter. Shy creatures have opportunities to move both horizontally and vertically without being detected, and if plants that they can feed off of are included in this diversity, these creatures have very little need to move out of the garden.

### Thorny plants

These are an important shelter for small birds in particular, that can nest in the centre of these plants, or dash into the thorny branches if being chased by a larger predator. Thorns not only provide shelter with their external structure, but some thorns in themselves, provide shelter. The Bastard Umbrella Thorn *Acacia luederitzii*, found in bushveld, in north eastern KwaZulu Natal and up into Mpumalanga, has some thorns that are abnormally swollen into a gall, with a hole at their base. Ants and other insects inhabit this hole, and these ants give protection to the plant against herbivores by crawling onto them and biting them when they try and browse on the tree.



*A spider wasp using a man made shelter*



A crab spider on scabiosa

**Tall trees**

Particularly those trees, not pruned up to have long, bare trunks, provide a sheltered route in and out of the garden for creatures that require this. Although deciduous trees can provide this vertical corridor, evergreen species give year-round cover for shy creatures using this area of the garden.

**Rough and fissured bark**

This provides cracks and crevices in which insects in adult and larval form can hide. Many other invertebrates also utilize this form of shelter.

**Densely branched plants**

These provide both visual and physical shelter. Nests of small birds such as Cape White-eyes and Bar-throated Apalis are well-protected in a dense thicket of branches.

**ROCKS AND WOOD**

The non-living elements of rock and wood can be selected for shape and texture that provides

maximum shelter to creatures around it. How and where they are placed in the garden is also critical in their ability to provide good shelter.

**Rocks** should be placed so that they create crevices and 'caves' into which creatures can retreat. Some rocks can be half buried in the ground so that burrowing creatures can dig underneath them, availing themselves of the impenetrable cover over head. Varying rock shape and size creates interesting spaces in between them that can be used by garden wildlife. Invertebrates such as insects and spiders as well as vertebrates such as lizards depend on these spaces in the garden.

Placing rocks near plants, or near water and or logs of dead wood will mean that creatures using the rocks as shelter can forage in the landscape close to them, without being too far from their refuge.

Some types of **wood** provide more temporary shelter than others in the garden, depending on their hardness and therefore resistance to being broken down over time. Softer woods not only provide shelter underneath them and in cracks and holes in

the wood, but borer and other creatures that feed on the cellulose of the dead wood feed within the shelter of the soft wood. As it breaks down, it forms valuable mulch in the garden, where further creatures make use of it for food as well as for shelter.

Harder wood can provide more long-term shelter as it does not break down very quickly. If this is the option of your choice, select wood that has many interesting shapes, fissures and holes in it to provide shelter for the maximum number of creatures. All wood placed in the garden, unless treated, will eventually break down – even the hardest wood. Treated wood is of little if no value to garden creatures as shelter.

**MULCH**

This provides shelter for a vast number of invertebrates in the garden. Fallen leaves (particularly softer leaves), twigs, broken up wood or wood chips all make good mulch. This organic layer between air and soil becomes a zone in which birds and reptiles can forage for insects other invertebrates, and their larvae that are living in the mulch.

**WATERY PLACES**

Mention is made of water as it is important to provide shelter for water creatures in a garden pond or dam. Overhanging grasses, reeds and shrubs provide shelter for fish fry and other aquatic creatures in the pond. If you are fortunate enough to have shy water birds in or using your garden water feature, then this plant cover is essential. This is also the area in which many insects that have aquatic larval stages will be found. They hunt from this area or are searched for here by hungry predators.

Dragonflies are a prime example of an insect that uses this area. Aquatic larvae also often require mud and detritus to hide in at the bottom of a pond or dam. Fish will appreciate a dead twiggy branch and water plants such as *Nymphaea nouchali* (Blue Waterlily) or *Vallisneria spiralis* (Eel Grass) placed where they can shelter from hungry birds that prey on them.

**MAN-MADE SHELTER**

Gardens are, by nature, associated with the dwellings in which we live. These dwellings, along with their

associated garden features such as steps, walls, overhangs, decks etc, are all exploited by opportunistic creatures. They are seeking a warm, dry, sheltered place to hide from predators, or lurk in wait of prey. Where shelter is provided – intentionally or not, we should expect to find the creatures that we share our space with. Our gardens become their safe-havens, and we are the lucky ones to find them co-existing



A camouflaged African migrant butterfly

with us. Tolerance of these creatures – particularly spiders, snakes and others capable of inflicting pain or disease varies greatly from person to person. If the garden provides many places of refuge and shelter, these creatures are easily relocated, rather than being killed. If venomous snakes are found in built up areas, it is best to call on an expert to relocate these, but House Snakes and other non-venomous species should be encouraged to stay. Their ability to keep rat populations down far outweighs any inconvenience they may cause.

**Heather Balcomb**

Random Harvest  
www.rh.co.za

# Environmental Education and Awareness Programme of LAPALALA WILDERNESS SCHOOL



*Clive Walker and learners looking at Hatton the Rhino at Doornlegte Farm.*

On his return to Johannesburg Clive, who today is the Patron of the LWS, made up his mind that one day he would find a way to establish something similar in what was then the Transvaal Province. As a former game ranger, Clive had some of the know-how required, but it was in no way equal to the knowledge dispensed during his recent eye-opening experience in Zululand. The value of being able to share knowledge of the wilderness with others, especially with children (who were the main target of the Wilderness Leadership trails), was central to Clive's thinking.

With the encouragement and support of Dale Parker, who had purchased the property Lapalala Wilderness, where the school was to be established, the first iteration of the LWS was developed at a very basic camp on the banks of the Lephalele River. In time, Dale purchased more land to expand Lapalala and in 1985 a property with a large rambling farmhouse made possible the establishment of a full-time environmental school which is still this site today.

Under the guidance of the LWS board of directors, it has gained national and international recognition for the outstanding contribution it has made to enriching the lives of thousands of children through a greater knowledge and understanding of nature, wildlife and cultural heritage.

Clive Walker says: "In my opinion, no one achieves anything alone and I was no exception. If you are fortunate enough in life to have a partner who is prepared to sacrifice a great deal, nothing is impossible. In time I heard about a 5,000 ha farm in the Waterberg. No place could have been more

**The origins of the Lapalala Wilderness School (LWS) can be traced to a Wilderness Leadership School trail in the iMfolozi Game Reserve in 1971, led by a former school teacher, Don Richards. Over the next five days Clive Walker, together with seven other men, absorbed the knowledge imparted by both Don and his Zulu game scout. It was a life-changing experience for Clive.**

Clive Walker and Mashudu Makhokha

challenging then, back in 1981, in which to establish an environmental programme for kids from all walks of life, ethnicities and colours. Remember, back then, there were separate entrances, separate schools, separate transport and getting too friendly with someone of another colour could, in itself, be a problem."

Through a dedicated team of staff and board of trustees, the school grew in leaps and bounds under the directorships of Hanneke Van Der Merwe and Madeline Van Schalkwyk. In 2005 a Section 21 company was established and a new board of directors was appointed. The LWS has since upgraded its facilities with respect to accommodation and



*A group of learners sitting on top of baboon rock, absorbing a spectacular view of Lapalala Wilderness Reserve.*

the installation of energy and water-saving devices. Staff at the school are continuously expanding and updating the School's curriculum, linking this to Share-Net and the Eco-Schools initiative.

The LWS is well-known for its innovative community

outreach programme. In 2006 the LWS worked with six schools, (under the banner of the well-known Eco-Schools programme, an international programme developed by the Foundation for Environmental Education) to better their school environment. Today this programme has expanded to 40 schools, all supported by the LWS, making this one of the most successful Eco-School nodes in South Africa.

Mashudu Makhokha (Director of the LWS) says: "I have always found it rewarding and stimulating to see young children and young adults absorbing the

new surroundings, enhanced not just by what they see, but also by what they hear, smell and touch, emphasises that their senses all too frequently have been dulled by the pollution of modern living."

In 2009 the LWS introduced educator workshops to help principals and educators recognise the vital need for environmental education. Mashudu is delighted to mention that this was a huge success with both educators and the Department of Education and that these workshops continue to be successful. A recent workshop was deemed an accredited course



*Lucas Ngobeni the LWS Echo-school coordinator handing the green flag to Monene Primary School in the Bakenberg area*

very special ambience provided by field classes at the LWS. So often the children we host are enjoying their first time ever in a natural environment, far removed from the distractions of populated centres. Their wide-eyed enjoyment, as they take in their



*Mashudu Makhokha conducting a River Ecology with a group of learners to understand the quality of water*

on Biodiversity for Life Science teachers, teaching grades 10 to 12. The course is part of the Continuing Professional Teachers Development programme and is offered in collaboration with the 'Fundisa for Change' programme and the South African National Biodiversity Institute (SANBI).

In 2018, the LWS initiated a soccer tournament in the Waterberg region. This serves as an educational and social upliftment programme in the area and encourages local communities to protect and conserve the environment. The project has been successful in that it has provided much-needed support for out-of-school youths and their parents. In future, this support will include career guidance talks, conservation talks, and discussion of crime prevention issues, including drug and substance abuse.

Also in 2018, the LWS embarked on another new project- Leadership Seminars- designed to encourage our country's leaders to embrace the key components



TBA

of the 2030 Agenda for Sustainable Development. This United Nations Agenda has 17 development goals with a major focus on protecting the planet from degradation, including through sustainable management of its natural resources and taking urgent action on climate change so that the needs of present and future generations are supported. At present, the LWS Leadership Seminars focus on district and provincial political and community leaders in the Limpopo Province. In future, the seminars will be escalated to include political and community leaders at the National level.

Words cannot describe the absolute joy of the 42 children who participated in a recent LWS-hosted speech competition. Twenty-one rural schools attended and individual children gave 'speech' performances on the subject of rhino conservation. The first prize was taken by Thabang Nkoe (Meetsetshehla Secondary School); the second prize was shared by Majoki Masenya (Meetsetshehla Secondary School) and Hope Digashu (Kgaba Secondary School); while the third prize was shared by Mpho Ramasobana (Bathokwa Secondary School) and Thapelo Molefe (Bakenberg Secondary School).

In November 2018 the Ford Wildlife Foundation (FWF) donated a new Ford Ranger to the LWS, to support capacity development within its Community Outreach Programme. The donation is an expression of the commitment to conservation and preservation of the environment in Sub-Saharan Africa, by the Ford Motor Company of Southern Africa (FMCSA). The Community Outreach Programme, through its Youth Development Programme, enables the LWS to impact many lives in rural communities adjacent to the Lapalala Wilderness Reserve. The overarching aim of this Programme is to increase awareness of

issues relating to the environment and sustainable development and to encourage children and the youth to take positive action.

The locally-built Ford Ranger is one of South Africa's top-selling vehicles overall, as well as in the light commercial segment of the motor industry. It will enable the Community Outreach Programme to expand and make a real impact - particularly in remote locations, which are often associated with conservation and environmental projects.

The full story of the LWS is yet to be written by Clive Walker and John Hanks, but we would like to mention here some significant details.

- Support for the school by the Parker family continues to this day, through their Mapula Trust with Dale's son Duncan acting as an executive board member.
- The LWS is fortunate to have as its Chairman Dr John Hanks, a leading figure in conservation work in Southern Africa and beyond, for more than 50 years.
- Over 100 000 children and teachers have passed through the outdoor classrooms of the LWS, under the watchful care of its educators.

**Get them young and the possibilities are endless.**

**Clive Walker and Mashudu Makhokha**  
Lapalala Wilderness School, P O Box 348,  
Vaalwater, 0530, South Africa  
<https://www.lwschool.org/>

See also <https://lapalala.com/> for more information and for wonderful aerial footage of the reserve.

## e-STEAM: A new focus for uMngeni Valley Education Centre EDUCATION FOR CHANGE

Dr Jim Taylor

**In a world where life-supporting resources (such as air, water, soil, plants and animals) are being degraded at an alarming rate, it is crucial to turn the situation around. Since it is us, as people, who are causing the degradation, surely it can only be through people and Education for Sustainable Development (ESD) that a long-term solution can be found. At WESSA uMngeni Valley Education Centre (uMngeni Valley), we are thus committed to work with all who care for a more sustainable future.**

The e-STEAM framework (explained below) and Action Learning processes are well-placed to do this! Indeed, we are delighted to note that UNESCO is recognising action learning as a key process for achieving the Sustainable Development Goals (Leicht *et. al.*, 2018). The SDG area set of 17 goals, adopted by 193 countries in 2015, to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda.

Resulting from the changes in school curricula and trends in education, uMngeni Valley, which was established in 1976, has seen numerous shifts in focus, as well as the adoption of new and improved learning methods. The Centre is currently reviewing and re-shaping its ESD work in KwaZulu-Natal. Working with our partners, the center's vision is to become a leading education center in southern Africa!

In an ever-changing social, environmental and economic context, different strategies are needed to stay relevant and for education centers to be regarded as the forerunners in ESD. This has led to the uMngeni Valley taking on e-STEAM as a framework for learning, as well as incorporating state of the art field work technologies. uMngeni Valley is one of the first outdoor education centers, in Africa, to do this.

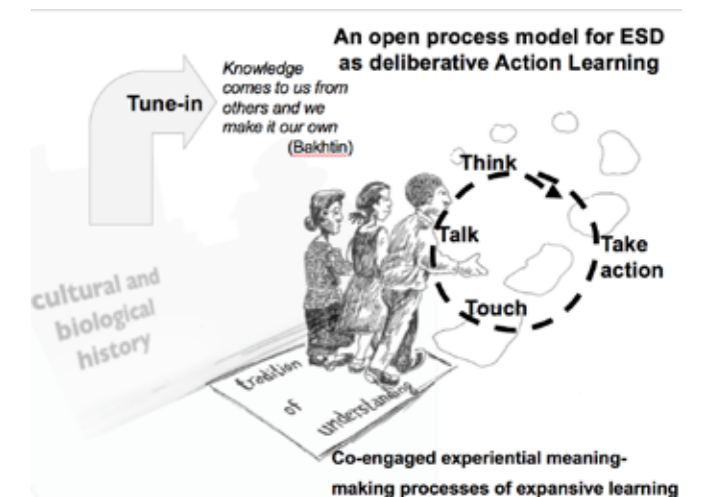
This paper will focus on Action Learning processes and the e-STEAM educational framework that is applied by the Centre, and will focus on the 'Siyabonga Helping Hands' case studies to illustrate how the Centre is working for change.

### Action learning to bring about change

Action Learning is a process that has been developed at the WESSA education centers. Action Learning includes the five T's (Tune in, Talk, Think, Touch

and Act) as processes that are proving effective and reliable in bringing about change and learner agency (Taylor & Venter, 2017). 'Learner agency' refers to the developing capability of learners to act on their potential to bring about change. The approach complements instructional approaches and reflects a learner-centered environment which is better situated, more deliberative, open-ended and thereby enables learners to act for sustainable development (O'Donoghue *et.al.*, 2017; Taylor & Venter, 2017). Earlier studies at uMngeni Valley showed that if the learning processes were to bring about changes through sustainable living they needed to include action-taking as the part of the learning process (Taylor & Venter, 2017).

The most important facet of Action Learning for facilitators is **tuning in** and carefully planning the programme with the group leader. What the learners already know, and their view of the world in which we live, is extremely important for planning the educational programmes and the methods to be used by facilitators (as can be seen in Figure 1). It is crucial that the learning is appropriate and relevant to the social and cultural context of the group/course participants. This enables participants to mobilise the prior knowledge and experience which they bring to the learning (Taylor & Venter, 2017).



**Figure 1: Action Learning with an emphasis on drawing on prior knowledge and understanding of course participants through Tuning in**



A focus for the learning programme can then be established, based on a relevant issue or matter of concern. Together with tuning in, touch (real life encounters such as field work), thinking (reflecting on what is being learned), talking (dialogue on what we already know and what we are finding out) and acting (to do something about the issue being learned about) forms part of the Action Learning process. These Action Learning processes enable learners to make choices and take further action within their local community, including their school and home environment.

We are encouraging that the learners at our Centre are connecting their work to 'Hand prints for change' as positive actions. The handprint approach, rather than always emphasizing on the negative impact of our 'foot-prints', is a pedagogy of hope. Handprint actions, involve learners taking positive actions towards a more sustainable future (Leicht *et.al.*, 2018, Taylor, 2017).

**So, what is e-STEAM?**

e-STEAM is a teambuilding, leadership and personal development-focused learning framework that builds self-esteem and works toward solving environmental

participants are guided by an eight-step process (see Figure 2), where they develop and present an action project around their chosen topic. Participants are encouraged to present their ideas in a variety of inventive ways, from building models, posters, presentations, social media posts and reporting their action through videos.

**The Siyabonga - Helping Hands for Africa e-STEAM project**

uMngeni Valley was approached by *Siyabonga – Helping Hands for Africa* to link with the programmes offered at their Centre. The process of meeting and planning (tuning in) an e-STEAM programme soon followed. Once the environmental topics of concern were identified and discussed, the programme started to take life. The initial factor that contributed to the success of the programme was the information which *Siyabonga – Helping Hands for Africa* willingly shared with the uMngeni Valley facilitators beforehand. This painted a picture of the context of the Centre, the environmental issues faced, as well of the community in which the Centre is based. The communication ranged from answering specific questions through e-mail, to the exchange of photos of the issues.

The learners from the GAP programme (learners who have finished matric) and a handful of staff members from *Siyabonga - Helping Hands for Africa* were able to take part in a two-day programme at uMngeni Valley. The participants were divided into three groups, each with a focus on a different topic or environmental issue. The issues identified in their community included incorrect waste management, alien invasive plants and the mismanagement of a wetland and stream on the piece of land opposite their Centre. The groups then set out to write their challenge

statements on their selected topic. Background research was initiated by introducing learners to work done by various groups in the community of Howick, which are related to the environmental issues identified.

The groups were taken to visit the Wildlands Recycling Depot, and the DUCT (Duzi-uMngeni Conservation Trust) trash boom below the Howick



Bridge. The uMngeni Valley field staff demonstrated the different methods of clearing alien invasive plants, as well as introducing the participants to a variety of different citizen science tools used to monitor streams. The tools used included a miniSASS test, the clarity tube and the riparian health audit. These tools were developed by WESSA and Groundtruth, with support of the Water Research Commission.

The creative juices were flowing and the learners couldn't wait to start planning solutions to their identified issues. Through careful planning and creative think-tanks, each group designed their project concept. Once they had gathered all the materials needed on their method and apparatus list, the building, painting and serious fun started. The groups were satisfied with their projects and models built, and they presented three fantastic projects.

One group presented the construction of a bridge for school children, using alien invasive plants removed from the wetland. Another group converted the impacted wetland space into a recreational space for the community and a place for tourists to visit. The restored wetland team presentation included a garden, an office, a fenced-off playground as well as a recycling village. The last group decided to tackle the waste issues in their community. The core of their proposed project included the establishment of a recycling village which will also be a means of creating jobs.

Upon reflection, it came to light that the participants grew in confidence and self-esteem (agency), when they realised what they were capable of, and were proud of what they have achieved.

Five months later, the WESSA field staff went to check in with the group of instructors/staff which attended the e-STEAM project and were astounded by the change projects that had been inspired by the e-STEAM weekend. Some of the stories (although not all) are captured below.

**Change projects as a critical evaluation**

Change projects are reflections of what we have learned and how this learning has enabled us to act and make changes within our home and social environments as well as in our workplaces. These are usually represented as a short story with pictures (Taylor, 2017). These change projects assist us with evaluating the work we do and help us determine how effective our learning programmes are.

**Story of change: Noluthando Hlongwane**

My name is Noluthando Hlongwane. I work at the Siyabonga helping hands centre in Imbali as an educator. I am currently studying education through UNISA. I am a quiet person that enjoys working with the young children in the primary school.

In the community of Imbali, there is an immense drug problem. Our centre offers an escape to learners from these social problems, a place which they visit on Friday afternoons after school. Vulnerable learners come here to receive a proper meal and to do their homework. I am inspired daily by the experience that I get here and believe that I am workplace ready once I have graduated.

While at WESSA, the topic chosen by my group was wetlands. We said that we would create a wetland park, which the tourists visiting our centre could visit when they visit our centre every Monday and Wednesday. Our project was quite intimidating, especially at the point that you come to realise that you can do something that big. It was a bit frightening not knowing how it would turn out, but you have hope, so you know it can be done.

I have learned to appreciate wetlands, since there are only a few wetlands present in our areas, which are sometimes used as dumping sites. I have passed the knowledge that I have gained onto my family and the people around me. Every time I learn something new, I share it with my two children. I saw wetlands on the news one Sunday and immediately called my children to come and look at it, and told them that it is so important that it even made it onto the news.

The biggest environmental problem in Imbali is litter. When we came back from WESSA we started an enviro club for the Grade 6s and Grade 7s at our

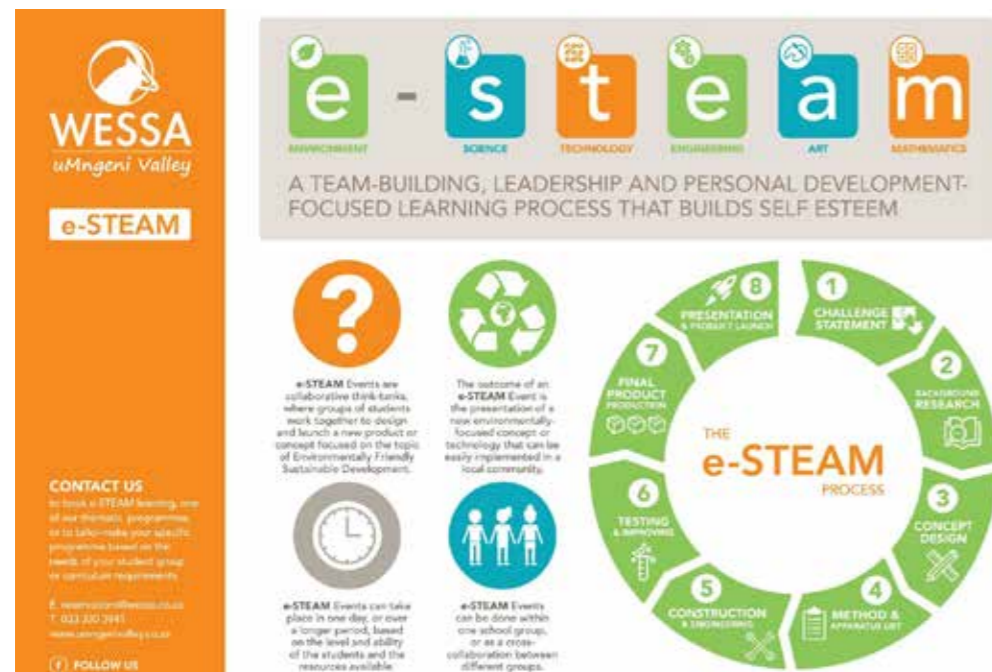


*Noluthando with a group of learners at the Siyabonga Helping hands centre*

centre. We started the club and told the kids that they should pass on what they learn here to their parents and other learners. We've been teaching them about litter, and the litter seems to be getting less.

When we came back from WESSA, we came back as young visionaries, we were very excited, we were focused, and we knew what we wanted to do, and we did it right away. We had ideas of separating the litter on both sides of our centre, so we set up drum bins. The dumping at the sides of our centre is much better now, unfortunately there are still people dumping next to the bins.

During our programme at WESSA we visited the



**Figure 2: The e-STEAM process**

issues through science, technology, arts and mathematics. At the same time, this approach to ESD exposes students to key subjects and integral skills for their educational development and future preparation for either tertiary education or entrepreneurial development.

The e-STEAM framework encourages creativity through problem-based learning. Learners/



Wildlands recycling village and we discovered that there is a lot of things that can be done with plastic. Upon our return, we shared the pictures we took at Wildlands of school benches, made from recycled plastic, with the learners. With the help of these



A wetland park was designed by a group as their e-STEAM project

pictures and books, we taught the learners about plastic and the uses thereof, we explained how harmful plastic is to the environment and how it is not degradable. This motivated the kids to also start to recycle.

A recycling bin setup was put into place at our Centre and the Enviro club kids now recycle the paper, plastic and metal that are being used. We have volunteers that take the waste away. The enviro-club, which we named the Protea enviro club, is starting with gardening next term. We want to sell our vegetables to the Siyabonga staff and teachers at the surrounding schools. The money made from the vegetables will be used to go on a trip.

Story of change: Mbali Mfeka

I am Mbali Mfeka, I am a social worker by profession and work at the Siyabonga Helping Hands for Africa centre in Edendale.

When I grew up, I never had an opportunity where I was taught about the environment. I was clueless and I did not mind littering myself. As a child I was even asked to dump a wheelbarrow filled with items into a stream. During the WESSA programme I received information; I especially remember a video clip showing people throwing litter into the uMngeni river. I reflected on this and realised that if I had the opportunity to have been taught about the environment, I might have said no at the time, and would not have done it.

After the e-STEAM project I saw a need to teach my son about taking care of the Earth. I ask him to take our empty milk bottles to his primary school to recycle it.

After UVNR we started a project which is called 'one home, one garden'. We are starting this with

our grade 1 group. All the grade 1s have to collect a soil sample from their homes and bring it back to the centre. They are currently busy with this. We shall then look at the soil and try to determine what would grow well in the garden back at their home and will then send seeds home with the pupils, to be planted. We specifically chose the grade 1s, since they are still young and will adapt to the idea. There is a saying in Zulu: *umsenge ugotshwa usemncane*, which means to bend a branch while it is still young. If children can see what comes out of the soil, they would be motivated to continue. The concept came from the idea of eradicating poverty at their homes. We are going to call a parent meeting to inform the parents of what we are doing.

Before, I didn't have an interest in the enviro side at my workplace, but after the workshop I learned a lot and I see the need for me to also be involved in the projects at the centre.

It is not a lack of not caring about nature, it is a lack of information and understanding. e-STEAM is the future, especially if it can be implemented at primary school level.

Story of change/Change projects: Asande Ngcamu

My name is Asande Ngcamu, I am 23 years old. I grew up as a Siyabonga learner, sponsored by the programme. I am a staff member now, my position is as an educator, where I teach Environmental studies and Geography. The projects that I am working on are the GAP year programme, the peace park wetland and 'one home, one garden'. I also run an eco-club at the centre, I consider the learners in my club to be a great inspiration.

What was beautiful about the programme at WESSA was going to the stream to do water testing and to see the results; it was so interesting. I will soon be doing water testing with the children in my eco-club. My highlight is that we can use what is negative in our community as something positive and that will be a benefit to a lot of people.

The e-STEAM project that our group conceptualised was to make a bridge from alien plants. When I



Mbali (left) busy constructing a section of the e-STEAM wetland project



Asande (right) at WESSA uMngeni Valley showing off the project which his group has created.

came back, I found that the alien trees weren't big enough to make a bridge, so we decided to just cut down all the alien plants. DUCT (the Duzi uMngeni Conservation Trust) assisted us with clearing the alien plants. Since we couldn't make the bridge, we decided to implement the e-STEAM project designed by another group, which was to create a wetland park. With the help of others, we created a peace park which we now use for lessons when the weather is good. We cleaned and opened up the wetland area opposite our centre and planted a few indigenous plants in the park.

We are currently busy making eco-bricks, which are two litre cooldrink bottles filled with waste such as small chip packets. We have made 33 already, which will be used to fence of our park. This will also help to encourage the community to use it to fence their small gardens.

One thing that I have learned after the e-STEAM project is that one can make an income from environmental activities, whereas I previously assumed that you can only volunteer. We planned a 360 degree clean up around our centre for the 4th of January. We included the community associations (schools, a church, the taxi rank and the community hall) around the centre, and ended up having 213 people participating. We were able to acquire funding for the event, which was for bags, gloves, tape, t-shirts, sandwiches and the professional fees of the organiser and marshals.

The GAP year learners bought into the vision of the litter pick-up event, after visiting WESSA uMngeni Valley, whereas before I had to constantly argue with them and remind them to be helpful with picking up litter. This has changed, and they now understand that they need to be the change that they want to see.

This article commenced as an evaluation of the e-STEAM project for Siyabonga Helping Hands for Africa, which took place at WESSA uMngeni Valley Education Centre. It noted how Action Learning as a process and the e-STEAM framework assists us to

facilitate learning in a way that course participants are enabled to make lifestyle changes and to act for a more sustainable world.

It was vital for the success of the programme to ensure that learning approaches should consider the context of the participants and relate to the socio-physical environment of the individual. The learning sought to be relevant and to connect with issues of concern. Prior knowledge and understanding were mobilised and participants were presented with an opportunity to engage in practice-based learning

The e-STEAM project supported Action Learning by offering the learners from Siyabonga- Helping hands for Africa the opportunity to engage, do practical field work, to share and report on ideas and most definitely enabled the participants to take action in their communities and work place.



The peace park created by the enviro-club and others, is now used often as an outdoor classroom.

FURTHER READING

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## Awards for THOUGHT PROVOKING ARTWORKS

Dr Cathy Dzerefos

The 'Oil Recycling Rocks' competition run by WESSA on behalf of the ROSE foundation had colourful entries from KwaZulu-Natal, the Western Cape, the Free State, North West and Limpopo provinces. The pieces ranged from abstract works playing on colour and texture to works that directly portrayed the devastation wreaked by oil pollution on birds and marine life. Although the competition was open to Grade 6 to 11 learners most entries were Grade 10 learners.

The finalists included learners from Glenwood House (Danielle Dominick, Adrienne Vercueil and Athene Hage), from Maritzburg Christian School (Samuel Roberts, Akhona Mthembu and Sekhona Zondi), from Waterfall College (Starla Wilson), from Le-Reng Secondary (Kalane Maleshwane, Taoana Lehlohonolo and Mosamo Thato) and Lebone II College of the Royal Bafokeng (Amalia Slater). These finalists will receive an 'Oil Recycling Rocks' jacket for their efforts. 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 10 learner, Sekhona Zondi from Maritzburg Christian School for a piece entitled 'Fairwell Fair Earth'. Sekhona Zondi 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. Dr Cathy Dzerefos of WESSA thanked the participants for the effort that they put in to create artwork with the dual purpose of being aesthetically pleasing and encouraging critical thinking on human interaction with the environment. Teachers that made the effort to encourage learners to participate, have done their part in raising awareness on issues that everyone can make an effort to improve on. The next competition will be opening soon and the closing date for submissions will be 22 April 2019 which also happens to be Earth Day. The winning entry can be viewed on [www.facebook.com/WESSASchoolsProgramme/](http://www.facebook.com/WESSASchoolsProgramme/)



Sekhona Zondi, Gr10, Maritzburg Christian School



Akhona Mthembu, Maritzburg Christian School



Starla Wilson, Gr10, WaterfallCollege



The colour combination in the plumage of the unique Lilac-breasted Roller would be considered outrageous among designers of ladies' clothing, mixing as it does glossy olive green, brown, rufous, dark blue, dusky blue and lilac.

#### The Late Willie Froneman

These attractive birds are usually seen conspicuously perched on a dead branch, observing and watching for prey on the ground. When prey is detected it is pounced upon with wings and tail spread, and it is at this moment that the roller displays its wonderful array of colours.

The Lilac-breasted Roller *Coracias caudatus* (R447, 'Gewone Troupant' in Afrikaans) is endemic to Africa. Its range is from Eritrea south through East Africa, west to Angola and south to South Africa. It occurs in several dry woodland types, provided there are some open areas that these birds can watch from a perch. Prey items taken on the ground are often taken back to the perch, where the victim may be beaten against the perch before being turned and swallowed.

This is the only roller with a lilac throat and breast, with a blue belly. The forehead and supercilium is white, the crown and nape are glossy olive green, grading into a darker brown back, scapulars and tertials. The ear coverts are rufous, the rump is dark blue. The chin is white, throat and breast lilac, with white shaft streaks most prominent on throat. The remainder of the underparts are azure. The lesser coverts are dark blue, the remainder of upper wing coverts bluish, but primary coverts are a brighter azure, with the longest alula feathers contrastingly dark blue. Remiges have the proximal part azure, distal half with black inner webs and dark purple-blue outer webs. The underwing is pale azure, the distal half of primaries dark blue. The bill is blackish, eyes sepia brown, legs and feet yellowish to olive green. In the tail, the central rectrices are dusky blue olive, with the outermost rectrices up to 80 mm long, forming black elongated streamers.

The juveniles are similar to the adults, but duller, with the supercilium pale and less distinct, crown and nape washed brownish, throat and breast buffy pink, with broader white streak less sharply demarcated. Outermost rectrices shorter than remainder of tail which is tipped dull greyish-green.

## LILAC-BREASTED ROLLER



Photographs: Albert Froneman





They are not very vocal, except during aggression and display. Their flight call is a loud, harsh “gawk gawk gharrak”. During display flight, calls are delivered in accelerated series, ending in harsh, raucous crescendo “khaar, khaaaarr, khaaaaaarr”. The male gives an advertisement call “gharrak” or a hoarse “churr” near the nest. The begging call of the young is a high-pitched “seeeeep” or “cheep”.

The Lilac-breasted Roller has irregular distribution movements, possibly local, with birds moving to more open habitats after breeding. This reflects in marked seasonal changes in abundance along roads in most of their distribution ranges.

Their most common range is of dry woodland types, including *Acacia* in northern Kalahari, elsewhere in Miombo woodland, Palm savanna and Mopani woodland. They prefer ecotones between dry open woodland, which they use for breeding, and grassy clearings for foraging. They occur commonly on several soil types, but avoid rocky areas. They are more common on wildlife management areas than in conservation areas or on unprotected land. This is probably due to reduced grazing pressure in former. For prey they are attracted to roads with wide, grassy verges, and areas cleared through woodland. They also occur in arid habitats without standing water. Lilac-breasted Rollers are common across most of their range, sometimes falling prey to Bateleur, Wahlberg’s Eagle, Peregrine and Red-necked Falcons.

They occur mostly singly or in pairs, and perch conspicuously for prolonged periods on a dead branch, utility pole or line, or on top of a bush, waiting in a sit-and-wait technique, before pouncing on prey on ground. They defend small temporary feeding territories, and drink and bath when water available. Their flight is rather slow with shallow wing-beats.

Larger prey is taken back to the perch, while smaller kills are devoured on the ground. They may also hawk flying insects in flight. Food includes a wide range of invertebrates and vertebrates, including locusts, mantids, crickets, beetles, moths, butterflies, ants, termites, solifuges, spiders, scorpions, centipedes, caterpillars and snails. Lizards, small snakes, frogs, small

birds and rodents also features on their menu. They are attracted to grass fires for opportunistic feeding on the fleeing insects, which they hawk in flight, or pounce on roasted prey on the ground, and small fleeing mammals. At times they also follow larger mammals moving through the woodland, in the hope of catching disturbed insects.

Their normal breeding season is from August to February, with a peak from September to December. They are monogamous and solitary nesters. Their nest is a natural cavity in a tree trunk or branch of a tree. They do not excavate their own nest hole. Less often they might breed in a termite mound. The birds may modify a nest hole in soft decaying wood, and sometimes usurp nest holes of other species such as Wood-hoopoe and Cape Glossy Starling. The lining to the nest chamber is minimal, with only a few fragments of plant material or hairs- generally, more material is removed than added. They re-use their nest in successive years.

The nest hole is vigorously defended against intruders, even after breeding, and they chase many species from the vicinity of the nest. The male performs aerial displays year-round. These displays intensify just before the breeding cycle; the male climbs steeply, usually while calling, then tips forward and dives with closed wings. At the bottom of the dive, he opens his wings and ascends again, tips and dives again and again, before diving down at great speed, repeatedly rolling from side to side in the latter part of descent. After this spectacular display of aerobatics, he usually lands close to the female, who generally joins in the calling. The male then proceeds to courtship-feed the female.

The usual breeding clutch contains three pure white, slightly glossy eggs. The incubation period is usually 22 days, shared by both sexes, but disproportionately by the female who is fed on the nest by the male. The nestlings are fed by both adults. The fledging period varies from 25 to 35 days. The young are fully feathered at about 19 days. After fledging the young seldom return to the nest hole to roost. After leaving the nest, the young are fed by the adults for up to 20 days, but the young do attempt to hawk insects in flight.

Lilac-breasted Rollers are not threatened and they are well protected in conserved areas. The inverse relationship between roller abundance and grazing pressure suggests that prey availability is influenced by ground cover. Opening of woodland for small agriculture creates a preferred ecotone, but they do need old trees with nest cavities for breeding purposes. Tree cutting in sparsely wooded regions may result in increased competition for nesting holes. They are more common in wildlife management areas

than in conservation areas or on unprotected land.

Around 1900 the famous historic British bird artist C. G. Finch-Davies, then with the British Troops during the Anglo-Boer War, and who later died in South Africa on 3 August 1920, at the age of 44, reported that the Lilac-breasted Roller was very wild and he had great difficulty in obtaining a specimen. He later reported that strangely enough, at Otavifontein, where the troops were stationed during the Anglo-Boer War, they were very tame. A pair perched on trees in the middle of the camp and did not seem to mind all the noise and continual movement that was going on.



### WILLIE FRONEMAN

Regular contributor to this magazine, Willie Froneman, passed away recently at the age of 81.

This avid bird watcher and enthusiast not only contributed to the *African Wildlife and Environment*, but was also a regular birding columnist in the *Kormorant* newspaper.

Willie was also very involved with environmental issues at the Xanadu Nature Estate and regularly gave bird talks at various events.

Willie's love and enthusiasm for nature, birds, and the environment as a whole, was legendary. He will be missed by all those who knew him, and our condolences are extended to his family.



# 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

# 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.

## INDIVIDUAL

OPTION	FEE P.A	DESCRIPTION	DETAILS
Level A	R500	Full benefit	Membership + African Wildlife & Environment and EnviroKids, e-communications
Level B	R370	African Wildlife	Membership + African Wildlife & Environment, e-communications
Level C	R260	EnviroKids	Membership + EnviroKids, e-communications
Level D	R270	Discounted	Membership + African Wildlife & Environment, e-communications * Under 25 and over 60 only
Level E	R150	Basic	Membership, e-communications, add on magazines as required
Level F	NIL	Supporter	Free supporter. Optional donation from R50, e-communications
Add-on mags			EnviroKids @ R130 per annum / African Wildlife @ R180 per annum

### Members receive:

- Portal access, e-communications: newsletters and newsflashes. Certain areas may also receive communications from their local regions or branch. According to the levels subscribed to above, *African Wildlife* and *EnviroKids* at a special subscription price for members.

### WESSA's membership portal:

Full access for Levels A – E and limited access for Level F. Log on to the WESSA membership portal at [www.wessalife.org.za](http://www.wessalife.org.za) to join member groups of interest to you; participate in group and branch activities; connect with environmental initiatives and projects; edit your membership details whenever necessary ... and much more.

## SCHOOLS

OPTION	FEE P.A	DESCRIPTION
Level 08 (S1)	R530	Membership + discounted EnviroKids x 2 and African Wildlife & Environment x 1, e-communications
Level 08 (S2)	R350	Membership + discounted EnviroKids x 2, e-communications
Level 08 (S3)	R400	Membership + discounted African Wildlife & Environment and EnviroKids, e-communications
Add-on mags		EnviroKids @ R130 per annum / African Wildlife @ R180 per annum

- A WESSA School Member logo for use on stationery and website
- Learners, teachers and parents qualify for a reduced rate should they wish to become WESSA members

## FRIENDS GROUPS & AFFILIATES

R 560.00 per annum. WESSA Friends Group and Affiliate members qualify for use of an affiliate member logo, full portal access, quarterly editions of African Wildlife and EnviroKids magazines plus newsletters & activity newsflashes. Their members also qualify for a special reduced group rate should they wish to become full WESSA Members, or they can sign up as free WESSA supporters to receive newsletters and newsflashes about events and activities.

## BUSINESS

PLATINUM R35 000 p.a	GOLD R20 000 p.a	SILVER R8 000 p.a	BRONZE R3 000 p.a	SMALL R1 500 p.a
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Contribution R33 500	Contribution R18 500	Contribution R6 500	Contribution R1 500	Contribution optional

**Membership fee includes:** Membership subscription; WESSA business member logo according to level of membership; Certificate of Acknowledgement; Acknowledgement of support on the WESSA website and in the WESSA Annual Review; Quarterly issues of magazines: African Wildlife & Environment and EnviroKids (one of each); E-communications: Newsletters and activity newsflashes.

**Platinum to Bronze Levels:** Contribution as indicated above. This contribution determines the level of membership and provides invaluable support for WESSA's many environmental projects. If preferred, this can be processed as a donation with a Section 18A Tax Certificate.

**Small Business Level:** Contribution optional. In support of WESSA's work, any donation amount will be much appreciated and can be added to the membership fee. A Section 18A Tax Certificate will be issued on request.

*WESSA is an accredited facilitator of Socio Economic Development and more than 89% of the direct beneficiaries of WESSA's projects are Black South African citizens as defined by current B-BBEE legislation.*

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**ADDITIONAL CHARGES FOR INTERNATIONAL & SOUTHERN AFRICAN COUNTRIES (Airmail per annum)**

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If paying in a foreign currency R155 bank charges must be added to total amount due. Bank charges are not applicable to common currency African countries i.e. Lesotho, Namibia and Swaziland. They do not apply if payment is made in ZAR from a local bank account or credit card.

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