We report on the rapidly diminishing rhino population and what action we must take to save these magnificent creatures.

RHINOS POACHED IN 2012

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A museum about the earth, its history and life on earth, both past and present.
2012 was another busy and productive year for the Museum and you can read about the highlights from our various departments in the following pages.

You’ll find a report on the anti-rhino poaching display that our exhibitions team put together – proof, if any were needed, of the Museum’s ongoing role in the preservation of our natural heritage. There are some wonderful first-person accounts from our staff about the work they do – such as David Allan’s adventures among the vultures and Leigh Richard’s field trip expeditions. Also, look out for interesting articles on Conservancies and the new online site – iSpot.org.za – where you can upload photos of any plants or animals that you would like identified.

2012 was also a great year for this publication: I am proud to announce that the Museum was the winner of Division A in the South African Museums Association 2012 Publication Design Awards for the 2011 edition of Thola (Vol 14, 2011/12). This award was received by our director, Allison Ruiters, at the South African Museums Association conference in November. It is a tribute to the passion, dedication and enthusiasm of all our staff which makes our Museum the special place it is to work.

We always look forward to hearing from our readers and receiving feedback. Please email me and keep in touch.

We wish you all a wonderful year. Happy reading, and thank you for all the ongoing support for our proud institution!

Till next year, happy reading!
A life-size replica of a rhino sponsored by the eThekwini Municipality was commissioned by the eThekwini Community Foundation to highlight the plight of the rhino and pay tribute to the creativity of our community artists and crafters. Yenza, meaning “Do it!” in isiZulu, was created for permanent display and is testament to the remarkable talent that can be found locally.

Decorated with traditional beadwork and telephone wire as well as decoupage and mosaics from recycled and upcycled corporate waste, Yenza is a perfect example of an innovative collaboration that celebrates our creativity, our natural resources, our people and our planet.
Our role as museums is multifaceted: as the principal custodians of our national material heritage, museums collect. We preserve and study what we collect and we share both the collections and the knowledge from these collections. These are the corner-stone functions of museums, the common base upon which all rest - art or science, large or small, national or municipal, public or private.

Director's report: Allison Ruiters

“We all have a role to play in safeguarding, promoting and reflecting on our collective and common heritage, and this is the key to achieving dialogue, sustainable development and social cohesion.” - Allison Ruiters

Our galleries are a façade which sometimes give an inaccurate account of all that we do and can do. And some museums are still locked in the colonial era, where these were establishments that merely collect and display. However, our relevance as museums goes beyond this.

This public space is a prime location that needs to be utilised optimally and we must go beyond simply presenting general information to our patrons about a range of different species; species that some of them will only ever see in a museum. We are obliged as heritage practitioners to link our heritage to what is current, to make ourselves and the information that we present more relevant to our visitors.

We have taken the plight of the rhino beyond the odd media excerpt that the average citizen may happen across.

Faced with a stark reality that we are at war with the rhino poaching syndicates that target not only our nature reserves, but also museums, our “Stop Rhino Poaching” exhibition was a challenge that speaks to the heart of our core business. In the development of this exhibition, we were faced with two choices: remove the horns and replace them with replicas, or keep the authentic horns in the public galleries.

My gut reaction as Director of the Museum, was to protect my staff and patrons and therefore remove our horns from public display. However, this would have left us, as a museum, with one less reason for the public to visit us; one less authentic treasure to marvel at; one less reason for a “Phillip Tobias-of-the-future” to feel inspired in our galleries; one less reason for a potential donor to give us something valuable for the public to enjoy on display in perpetuity, secure in the knowledge that we will fight to the death to guarantee its place in the public eye.

We are first and foremost heritage professionals, who understand and respect the value of museums displaying authentic objects, as well as the scientific value attached to our museum specimens, and therefore we made the decision to keep the authentic rhino horns on public display.

The advantages of this approach are two-fold: we continue to meet our core duties of exhibition, education and collections, utilising the things that are most characteristic of real
museums: the opportunity to be exposed to the authentic items; AND we boldly step forward to become a high-profile part of the solution to the rhino poaching crisis. Of course, with this decision comes great responsibility, and we have done everything possible with all the appropriate experts and role-players to minimise these risks.

It was in this light that the DNSM launched the “Stop Rhino Poaching” exhibition in support of the work being done by Ezemvelo KZN Wildlife and the other organisations affiliated to Project Rhino. We have access to hundreds of thousands of visitors to our site, as well as millions of citizens through our network of Municipal sites. Realising this, we have taken the plight of the rhino beyond the odd media excerpt that the average citizen may happen across, and have placed this crisis into the spaces that they use regularly, in the form of rotating exhibitions in our Libraries and Sizakala Centres.

2012 marked the 35th anniversary of International Museum Day, and it was apt that this was also named the year of heritage by our President. With the theme “Museums in a Changing World. New Challenges, New Inspirations.”, we are called to demonstrate how our spaces are important centres for cultural, historical and scientific exchange and enrichment to take place. In dealing with the many social challenges that confront our society, we are invited to think more carefully about the meaningful role that museums can play in the development of mutual understanding and cooperation through a shared heritage. The collaborative exhibition with KwaZulu-Natal Provincial Museum Services to mark this occasion depicted the perception of our Common Human Identity as a fascinating journey through our shared heritage through various media, illustrating that our museums are using the past to build and shape their future.

Our collections are a vital source of evidence that scientists, both locally and internationally, use to understand the world around us and drive solutions to basic human needs. The true owners of our collections are the citizens of Durban, as well as future generations of citizens. These collections of specimens are not only part of the City but also part of the national treasure, and are a cultural, scientific and educational resource of great value that require conservation and safeguarding. To achieve this, controls are required that are characterised by permanence, special knowledge, civic commitment and the observance of ethical standards accepted internationally by the world community of museums. Because of the moral and legal obligations to donors and the principal responsibility of museums towards their collections, every effort must be made to ensure their preservation and unity. The addition of the very first mammal type specimens of four recently discovered horseshoe bats to our collections, thanks to former DNSM staff member, Prof. Peter Taylor, and other notable bat researchers associated with our Mammalogy Department, has significantly increased the profile of the DNSM collections and further entrenches the

The true owners of our collections are the citizens of Durban, as well as future generations of citizens. These collections of specimens are not only part of the City but also part of the national treasure.
need for collections to be recognised as national assets.

Another project that is an indication of the immense contribution that our museum and its researchers are making to increase our knowledge of our biodiverse world, is the completion of the Geographic Variation of Southern African Birds book on which David Allan is co-author. Additionally, it is indicative of the variety of uses of museum collections, providing answers to some of the main requirements of users of taxonomic data – “What is it?” and “Where does it occur?”

With this in mind, central to our activities this year, has been our eThekwini Museums Collections Management Project, addressing some of the critical issues that emerged from the recent audit report of South Africa’s natural science collections, published by the National Research Foundation. Concerns raised included, no effective national curatorial policies, collections management procedures and standards; inadequate numbers of appropriately trained staff; and inadequate funding channelled towards collections. As part of our implementation plan to address some of these concerns, all eThekwini museums were able to acquire equipment to aid in the inventory and digitisation of our collections, made possible through the museum subsidy received from the KwaZulu-Natal Department of Arts and Culture. Additionally, due to the growth of our alcohol collections, our auditorium at the Research Centre will be converted to an additional Wet Collection Specimen Room in 2013, as one of the City’s capital projects.

Our Education Department continued to seek every opportunity to engage with various sectors of our communities, with a realisation that a museum’s educational responsibilities extend beyond the walls of our physical spaces. Our first point of call is providing answers to the question “Has the view of museums over the past century changed to the average man on the street?” In seeking to address this, we need to be honest and realise that in many cases, our public does not even know that our museums exist. Generally speaking, if they are aware of them, they think of them more as places that exclude, rather than include, many sectors of our society. We can begin to address this by ensuring that our programmes and activities are relevant to the various participants (learners, families, researchers), and are also designed to make ALL users feel confident and competent, by ensuring access to different “levels” of information. We are challenged to attend to this by marketing our museums more effectively and also committing our spaces to the promotion of our shared heritage.

This year, we encouraged our public to be concerned that part of our heritage is being obliterated, to appreciate that our heritage is a treasure which has been bequeathed to all of us by our ancestors, and to realise that it is now our duty to transmit it intact to our children. We all have a role to play in safeguarding, promoting and reflecting on our collective and common heritage, and this is the key to achieving dialogue, sustainable development and social cohesion.

TOP: School children in front of the Stop Rhino Poaching Exhibition. INSET: The Education Department brings the Museum to the people.
Only if you have been a Museum staff member do you realise what an exceptional place this is. When you are a part of this strange, quirky, highly demanding, “always aiming for perfection” team, you realise that this is no ordinary workplace. To work in this Museum, there is one trait you must possess – PASSION!! Our past staff members initiated that passion and set the high standards we all aspire to maintain. Without them, the Museum would not be where it is today, and I would not have the good foundation from which to lead this institution.

The Durban Natural Science Museum has always been in the unique position of having a team of passionate, dedicated and enthusiastic staff members, who excel at what they do and provide exceptional service to our sister departments and the public. Our Museum’s 125th Anniversary provided us with an opportunity to reminisce about where the Museum has come from and also to celebrate all that has been accomplished by past and current staff members alike.

It was apt then, that we chose to use this occasion to re-launch our scientific journal - which started in 1914 as the Annals of the Durban Museum and later changed its name to the Durban Museum Novitates – under a new name, Durban Natural Science Museum Novitates. Most importantly, we had the privilege of launching Vol. 33 of Novitates, a Special Edition: Monograph of the Butterflies of KwaZulu-Natal which has been the life work of past staff member, entomologist Clive Quickelberge.

The occasion was also used to acknowledge and re-inforce our internal and external relationships with partner organisations and fellow departments. These included organisations such as Ezemvelo KZN Wildlife, University of KwaZulu-Natal, Magqubu Ntombe Foundation, BirdLife Port Natal, Bat Interest Group, the Lepidopteran Society, and the Wilderness Leadership School, to name but a few, as well as the internally placed Environmental Planning and Climate Protection Department and Natural Resources Section.

Interested members of the public have also sustained our activities over the years through the Durban Natural Science Museum Trust and the Friends Society. Over the years, our Volunteer Programme has developed from one in which members of our community were encouraged to offer their services, resulting in increased civic ownership of the Museum, to one that has far exceeded our expectations. It is now viewed as an essential offering for mostly young people to gain work experience as well as financial empowerment and has become an essential facet to the museum meeting its objectives.

To be leading this organisation after 125 years of existence is indeed a privilege. And
when we reflect on what has made us what we are today, the journey that we are currently on and where this journey is taking us – we can look back in awe at what the Museum has evolved into today – from a mere repository during the colonial era to an institution whose scientific, cultural and economic value is undisputed.

The fundamental collections-based biodiversity research that our Research Departments undertake in our relatively new site – our Research Centre – ensures that our scientists’ quest for new knowledge contributes to changing our world. Breaking down the barriers between science and the public, our Exhibitions and Education Departments offer everyone the opportunity to learn about and be inspired by the natural world. Embracing the notion that ordinary people are part of the solution, their work, which is aided by our volunteers, ensures that we increase access to our institution, empowering people both socially and intellectually, thus contributing towards nation building and social cohesion. Our Library is an excellent resource which provides many answers to pertinent questions raised by our professional team and also amply assists other internal and external stakeholders. Our sites are fittingly managed by our Administrators and Supervisors, along with their teams, and without them we would not maintain the high standards that we currently have. Going beyond their call of duty most times, the men and women that reside within these departments are all an integral part of our team in 2012. The Museum is rich in resources – not only the precious collections and the illustrious buildings - but mostly the exceptional expertise and passion of the people. Through our collections, our strong research base and our exceptional public engagement programmes, we all truly believe that along with all those that came before us, we are making the world a better place. And that’s what makes us different from all the rest!
To mark the Museum’s 125th Anniversary and to demonstrate the vast range and diversity of the Museum’s collection, 125 items from our five collections (ornithology, mammalogy, entomology, palaeontology and herpetology) were selected for display. Here we showcase five from each collection.
1. One of only two known study skins of the highly isolated and localised nominate race of the African Barred Owlet, which is endemic to the Eastern Cape Province of South Africa. The specimen was a road casualty found some 150 years after the type specimen was collected by the doyen of South African bird collectors Sir Andrew Smith in 1834.

2. The oldest bird study skin in the bird collection and one of its most esteemed, a Green Barbet collected at Ongoye Forest in Zululand in August 1895. It was taken by the famous Woodward brothers at the time when they first discovered this subspecies, which is named after them, and it still bears their original label.


4. A study skin of one of Africa’s rarest and most threatened birds, the White-winged Flufftail, which was collected in 1982 at Franklin Marsh in KwaZulu-Natal by the renowned Ian Sinclair, who worked for the Museum at that time. Only two specimens of this species are housed in South African museums.

5. The Museum’s only type specimen of a bird at the full species level: an adult male Lemon-breasted Canary collected and described by Phillip Clancey and Walter Lawson of the Museum in 1960.

6. Rhino beetle. The museum has a collection of over 33,000 beetles.

7. Swallowtail butterfly. Order Lepidoptera. The collection has over 44,000 Lepidoptera.

8. Neithea (Cretaceous scallop).


10. Flying lizard. Elongated ribs spread to extend the wings which allow this lizard to glide long distance from branch to branch.

11. Lystrosaurus skull (mammal-like reptile).

12. Conger eel, Congo snake. It is a pond-dwelling amphibian, with barely visible front legs only.


15. The oldest specimen in the Mammal Collection is the tanned skin of a duck-billed platypus donated in 1895.


17. Stromatolite (cyanobacteria).

18. Olive sand snake. Collected in 1889, this is the oldest specimen in the herpetology collection.


20. The Mammal Collection boast one of the largest collections of African vlei rats.


22. Giant Twig Wilter. An example of a Hemiptera - true bugs.

23. The smallest of the three African elephant specimens within the Mammal Collection. A foetus approximately 3-5 months old.

24. Spotted shovel-nosed frog. This rare burrowing frog occurs locally. It digs underground chambers close to water to lay its egg.

25. Loggerhead turtle. These turtles lay their eggs on Zululand beaches.
A new interactive website called iSpot has been developed for members of the public to upload photographs of interesting sightings of animals, plants and fungi that they encounter. It is a buzzing space where all nature enthusiasts can share their observations and knowledge and help each other identify species across the broad spectrum of biodiversity. Any observation is welcomed - from the wild or your garden, from an alien to a threatened species, from a known species to a query, from a common species to a rare one.

iSpot is user-driven and provides a fun interface through which to progress from being a novice in species identification to a learned expert. iSpot helps users identify unknown species through an ingenious system where both professional and layman experts assist the training of novices to become proficient in identifying species. Reputation badges are awarded to regular contributors for posting identifications that experts agree with, incentivising the user to progress in their knowledge.

Observers with known proficiency in a group may also apply for a knowledgeable badge, and participate in training novices keen to get to grips with a group. Anyone can post an identification, and the “likely identification” is based on the number of people who confirm “I agree” with this identification and their reputation in the group.

iSpot observations are linked to Encyclopedia of Life which has further information for the species uploaded and SANBI’s Red List for South African Plants. iSpot’s dictionary includes fungi, synonyms and common names for plants, invertebrate taxonomy and much more. This tool dramatically improves taxon and observation searches, and allows iSpot users to learn about taxonomic relationships.

Species presumed extinct have already been discovered, as have a useful range of species extensions.

iSpot has great education potential, as the CREW Programme has demonstrated in its use of the site for its “bioblitzes”, which are aimed at creating awareness and excitement about the wealth of biodiversity. During a BioBlitz event experts and members of the public, particularly communities from areas surrounding important sites for conservation (usually under-studied nature reserves), work together to survey a natural area; seeking, identifying and recording as many species (from plants to insects to fungi) as possible.
As of 25 January 2013, the site has 2,296 registered users who have submitted over 42,465 observations.

over 24 hours. Observations are uploaded onto iSpot.

As of 25 January 2013, the site has 2,296 registered users who have submitted over 42,465 observations (species records), 89,091 pictures in the Virtual Museum and 78,955 agreements (confirmations of ID). All solutions have been provided by iSpot’s users. It is exciting to note that species presumed extinct have already been discovered, as have a useful range of species extensions. This is truly exceptional for a website that has been up and running for only 20 months.

SANBI’s vision is to see iSpot grow a new generation of biodiversity ambassadors who actively contribute to the conservation of our rich natural heritage. iSpot is on its way to becoming a one-stop-shop for biodiversity on the subcontinent! Become an iSpotter today visit www.ispot.org.za.

Suvarna Parbhoo is the Manager: Custodians of Rare and Endangered Wildplants (CREW) Programme: KwaZulu-Natal Node, South African National Biodiversity Institute (SANBI).
The Large glasswing (Ornipholidotos peucetia penningtoni)

This species occupies riverine vegetation, forest and heavy woodland. These glasswings keep to shady spots in the forest and settle, often in small groups, on exposed twigs and grass stems. Individuals tend to occur in small colonies and are not very active, sitting motionless for long periods of time.

The wingspan is 35–37 mm for males and females. Adults are on wing from November to May with a peak in late summer. There is one generation per year.

The Butterfly Atlas, as it is known, provides a definitive and useable guide to the species found in our beautiful province. Adrian Armstrong provides us with a fascinating behind-the-scenes look at the project, from concept to publication.
The Atlas project was registered in September 1991 with the Natal Parks Board through the office of Orty Bourquin, formerly Head of the Biodiversity Division. The Natal Parks Board (now Ezemvelo KZN Wildlife) then provided the funding for students to capture data from identified butterfly specimens in collections. Orty provided the conservation scoring system and the mapping scale used in the Atlas. His encouragement helped keep the project on track until his resignation in 1995.

GATHERING DATA
Label data were included from identified butterflies in the following museum collections: the Durban Natural Science Museum (formerly Durban Museum), the KwaZulu-Natal Museum (formerly Natal Museum), the Albany Museum, the Ditsong National Museum of Natural History (formerly Transvaal Museum), the South African National Collection of Insects, and the National Museum in Bloemfontein.

To obtain data from private collections, Jason Londt presented the project to private collectors and wrote articles in *Metamorphosis*, the Journal of the Lepidopterists’ Society of [Southern] Africa. Clive conducted butterfly surveys of most of the statutory protected areas in KwaZulu-Natal, while Clive and Jason ensured that the label data of the identified butterflies were captured. Many of the distribution data were captured electronically by the late Audrey Heeres, formerly of the Durban Natural Science Museum.

PRODUCTION OF THE ATLAS
Audrey typed much of the text that Clive had written in long-hand to form the first version of the manuscript. Around the time of Jason’s retirement in 2003, the data were passed on to myself to continue with the production. Ronel Schulz, the Administration Officer of the Conservation Planning Division of Ezemvelo KZN Wildlife liaised with Clive on the production of the Atlas over a period of about three years. She scanned all the photographs, imported the images, graphs and maps and re-typed the entire manuscript. Heidi Snyman, Cartographer at Ezemvelo KZN Wildlife, created the maps and histograms from the data provided.

EDITING AND FUNDING
David Allan, Curator of Birds at the Durban Natural Science Museum, completed most of the final editing and ensured that the Atlas was finally published. Peter Taylor (formerly Curator of Mammals at the Durban Natural Science Museum and former Treasurer and Secretary of the Durban Natural Science Museum Trust Fund) was instrumental in acquiring the necessary funding from the Trust.
The data should be very useful for determining how butterfly distributions change in relation to climate change and land transformation.


ABOVE (from left to right): Ronel Schulz, Heidi Snyman, David Allan, Audrey Heeres, Peter Taylor.

FORMAT AND LAYOUT OF THE ATLAS
The Atlas commences with an introductory part that includes background information, the aims of the project, how the data were collected and the conservation values calculated, and information about the histograms, maps and butterfly images. Also included were sections on the zoogeography and classification of the butterflies as well as maps of climatic information. The main part of the Atlas presents the accounts of the families and species. The Atlas concludes with a section on terminology, a bibliography and an index.

LAYOUT OF THE SPECIES ACCOUNTS
Below is an example of the page layout for the species accounts which displays the Ruona Elfin Sarangesa ruona page.

THE FUTURE
The KwaZulu-Natal Butterfly Atlas documents historical distributions of butterflies, mapping the distributions of butterflies in the recent past (pre-1995). The data has been incorporated into the South African Butterfly Conservation Assessment, and should be very useful for determining how butterfly distributions change in relation to climate change and land transformation (where indigenous vegetation is totally converted to other land uses). The data on how butterfly distribution ranges change could assist with making decisions on how to conserve animal species that are vulnerable to climate change and land transformation, i.e. the implementation of adaptation strategies, and to plan for the future conservation of species now so that good conservation options for the future are not foreclosed by current land-use planning decisions.

ACKNOWLEDGEMENTS
Funding for the final production of the Atlas was provided by the Durban Natural Science Museum Trust. Thank you to everyone who contributed to the Atlas in whatever form, from providing funding, to allowing access to data, to capturing data and producing the manuscript and the final publication.
Caracal sightings in the Kloof/Gillits area are becoming more frequent.
Although we received more extralimital specimens in 2012 than those collected within South Africa and/or the KZN province, two noteworthy local donations were those of a caracal and brown hyena; both unfortunate casualties of collisions with motor vehicles. The caracal was deposited by Steve Smit of Monkey Helpline, who wisely collected the road kill from the Kloof/Gillits area. Sightings of these elusive creatures within the area are on the increase, as evidenced by footage from night-time camera traps.

The caracal derives its name from the Turkish word “karakulak” meaning “black ear.” The ears are certainly the most distinctive feature of these cats and are for communicative purposes. It is the largest member of Africa’s small carnivores and can kill prey as large as medium-sized antelope and ostriches. They are very agile and are excellent hunters, capable of catching bird prey in flight. Caracals are found in sub-Saharan Africa, as well as parts of the Arabian Peninsula and Asia. They have a wide distribution throughout South Africa and often come.

We were also fortunate to have received a valuable collection of small mammals from Mali and the DRC.

During a busy year of valuable fieldwork, important discoveries and new faces, Leigh Richards is proud to announce the department accessioned nearly 400 new specimens. These included a fully grown brown hyena, small mammals from West Africa and a caracal from Kloof.
Brown hyenas are more commonly distributed throughout the more arid and dry regions of southern Africa. Sightings within the KZN Midlands region are therefore extremely rare.

into conflict with stock farmers who consider them a pest. Luckily for the caracals of the greater Kloof region there are many natural areas available to them that allow for their free movement and protection.

Notable contributions this year from around the world included 82 specimens from Liberia, 20 animals from Guinea and four bats from Gabon - all deposited by Prof. Ara Monadjem. We were also fortunate to have received a valuable collection of small mammals from Mali as well as the Democratic Republic of Congo from James Harvey. Amongst the DRC specimens was the impressive Mechow’s giant mole rat (Cryptomys mechowi); a large subterranean rodent which can grow to approximately 350 g in mass.

One of the ‘largest’ donations received in recent years was the body of a fully-grown male brown hyena, weighing approximately 40 kg. Sadly the animal experienced great discomfort prior to its untimely death as a wire-snare was caught firmly around its head and neck. The body of the animal was found by Scott Hartman, a conservationist with the International Anti-Poaching Foundation, 300 m from the N3 at Mount West along the R103. It was taken to FreeMe Wildlife Rehabilitation Centre in Howick where it was kept frozen until we were able to collect it. This species is more commonly distributed throughout the more arid and dry regions of southern Africa and sightings of the animals within the Midlands region are therefore extremely rare, with only one reported sighting every five years. Brown hyenas can occupy territories of between 20 - 300 km² and may frequently cover large distances (50 km) in search of food. They are predominantly scavengers that can consume anything from mammals, birds, insects and fruit.

THE WET ROOM

The Mammalogy Department’s wet collection now comprises approximately 5 000 specimen bodies preserved in 70% alcohol. It recently received a ‘make-over’ thanks to the dedicated work of Museum volunteer Smandege Shabala. The old and brittle plastic bottles were replaced with new glass jars and the alcohol replenished. Newly designed colour labels fixed to the outside of the bottles provided a more professional finish to the collection. The collection has rapidly out-grown its current home so plans are presently afoot to convert the Research Centre auditorium into a new and much larger wet room. This will house the mammal collection as well as the few bird specimens in alcohol. The current wet room will house the fish, invertebrate, reptile and amphibian collections.

IN PRINT

I was privileged to have two scientific papers accepted for publication this year. The first paper entitled “Cranial size and shape variation in Afrotopical Otomops (Chiroptera: Molosidae): testing species limits using a morphometric approach” was published in the Biological Journal of the Linnean Society. Here we provided further evidence for the recognition of a new species of large-eared giant mastiff bat in northeast Africa. I co-authored a second paper published in the Zoological Journal of the Linnean Society, which described a new bat species from Mount Nimba in Liberia, Rosevear’s serotine (Neoromicia roseveari) (read more on page 22). Most of the year was devoted to finalising my doctoral thesis for examination in early 2013.

My on-going chromosomal research on Afro-Malagasy bats received a boost with funds received from a Department of Arts and Culture museum subsidy grant. I was able to purchase much needed research equipment for the mammalian chromosomal laboratory based at the Museum. Funds were also used towards the purchase of additional small mammal traps for my survey work.

TO THE BAT CAVE

My ‘out-of-office’ activities kicked off with an outing to Shongweni Dam for the annual Bats KZN ‘Introduction to Bats’ course. I delivered an introductory talk on the identification of southern African bat species. After several informative lectures, delegates were treated to a visit to the Shongweni Tunnel to get up close and personal with the numerous bats roosting there.
Field based research and small mammal surveys are by far the most rewarding aspects of my job as Curator of Mammals. Early in the year I travelled to northern Maputaland to conduct several bat surveys within the region. I was accompanied by Wendy White and Stuart Angus (Bats KZN), Joy Coleman, and my two Masters students Tarin Ramsaroop and Sylvana Reddy (UKZN).

The first order of business was a visit to the expansive Jozini Dam to assess the status of the resident bat populations. We were keen to document the status of the short-eared trident bat (*Cloeotis percivali*), currently listed as critically endangered within South Africa. Jozini Dam represents one of four roosting sites of the species within the country. Much to our delight we found several individuals huddled at a far end of the dam wall tunnel. We also noted the presence of Sundevall’s leaf-nosed bat (*Hipposideros caffer*) and bushveld horseshoe bat (*Rhinolophus simulator*).

Next on our itinerary was a trip to Border Cave situated on the western face of the Lebombo Mountains. It is an important archaeological site as it has been shown to have sheltered early humans approximately 200,000 years ago. The cave can only be accessed by a narrow ledge that protrudes from the sheer rock face, lying 600 m above Swaziland. A trip definitely not for the faint-hearted! We confirmed the presence of Sundevall’s leaf-nosed bat (*Hipposideros caffer*) and bushveld horseshoe bat (*Rhinolophus simulator*).

Later that day we ventured to Hlathikulu Forest Reserve - a little known protected area, situated in the Ingwavuma district. We spent the evening netting within the reserve close to the camp.

In just one hour we caught and released 24 bats of eight species and five different families. *Hipposideros caffer*, *Rhinolophus darlingi* and *Myotis tricolor*, typically cave-roosting bats, were some of the species we found flying around the forest. Their presence within the reserve suggests that there must be caves located nearby the camp area. A thorough small mammal survey of the reserve is on the cards for 2013.

Making a deposit?

How to deposit mammal specimens with the Durban Natural Science Museum

1. Always ensure that you wear appropriate protective wear before handling any dead animal. Animal diseases transmissible to humans can be contracted through direct contact with the dead animal’s bodily fluids and excrement.

2. Record as much detail regarding the find as you possibly can. Important information is: locality, date found, cause of death, your name and contact details. It is important to record all hand-written information in pencil. Make two copies of the record. Ensure that one copy is retained with the specimen, whilst the other is kept separately.

3. Small specimens can be placed into zip sealed bags. Larger specimens can be kept in tightly sealed shopping bags or refuse bags. Make sure that the specimen is placed in a freezer as soon as possible and is stored far from unsealed meat and vegetable produce.

4. Contact Leigh Richards or Sindisiwe Nzama on (031) 322 4215/6 to arrange the collection of the specimen. Alternatively, you may deposit the specimen with us at the Research Centre. Find us at 151 K. E. Masinga Road. The main entrance is located in Wyatt Road.
The following day we travelled to the Ndumo region and visited the clinic and military base to collect genetic samples from Angolan free-tailed bats (Mops condylurus) for Tarin’s study. These chunky bats weigh around 20 g and provide a valuable ecological service by suppressing insect pest populations. The sheer numbers of the animals within the roof spaces of buildings (20 – 100+ individuals), can pose a nuisance in both unpleasant smell and in the vast accumulation of guano within roof spaces. Sylvana and Joy braved the scorching +40°C temperatures within the roof spaces in search of the bats. We found the species roosting with smaller little free-tailed bats (Chaerephon pumilus) at both localities.

My last day was spent conducting reconnaissances of the Tembe Elephant Park and Ndumo Game reserve. As both reserves contain dangerous game, we were escorted by Tarik Bodasing from Ezemvelo KZN Wildlife. We were unsuccessful in locating the elusive straw-coloured fruit bats (Eidolon helvum), that were reportedly sighted in the northern section of Tembe Elephant Park. Tembe Elephant Park sure lived up to its name when we were surprised by an inquisitive elephant that decided to investigate our presence within the woodland whilst we were on foot! Luckily our visit to Ndumo reserve was less hair-raising. We visited the vulture restaurant and spent time taking in the sights and sounds at several watering holes. Small mammal surveys of both reserves are planned for 2014.

During the year Sindi and I made two trips to the abandoned Stan Hope gold mine located within the SAPPI Mooiplaas plantation near Melmoth. We were accompanied by Onica Mukhuwana; a DST/NRF intern working at the Museum for the period 2012-2013. The mine is located along the bank of a river and...
We collected several specimens of swamp musk shrew (Crocidura mariquensis), four-striped field mouse (Rhabdomys pumilio) and multimammate mouse (Mastomys natalensis).

can only be accessed through a fairly narrow opening. We located colonies of all five bat species that have been previously recorded from the mine. We also noted the presence of Temmick’s Myotis (Myotis tricolor), Geoffroy’s horseshoe bat (Rhinolophus clivosus), and the diminutive Swinny’s horseshoe bat (Rhinolophus swinnyi); species previously not known to roost in the mine.

More time was devoted to bat-work when Sindi, Onica and I joined Bats KZN for their annual Halloween outing, which took place at Vernon Crookes Nature Reserve. The reserve is renowned for its endemic species of earthworm, including the world’s largest species Microchaetus vernoii that grows to approximately three metres in length!

Unfortunately we could not do much batting owing to poor weather. We only recorded two species, banana bat (Neoromicia nana) and Wahlberg’s epauletted fruit bat (Epomophorus wahlbergi). We did, however, have the opportunity to participate in the iSpot bioblitz organised under the auspices of the South African National Biodiversity Institute (SANBI).

In November we participated in a four day bioblitz, this time organised by Ezemvelo KZN Wildlife (EKZNW) at Entumeni Nature Reserve, 16 km outside of Eshowe. Entumeni, consisting of a mosaic of grasslands and forest, is a rather under-sampled reserve, as access to the main areas of the reserve is limited to just two hiking trails. The last small mammal survey of the reserve was in 1995. Hence, our visit was most welcomed by EKZNW officials. Sindi, Onica and I braved the very wet conditions and managed to collect four of the seven terrestrial small mammals recorded from the area. A detailed bat survey of the area is planned for the near future.

We ended the year by visiting the Spring Grove Dam development area situated 2 km west of Rosetta. This R2 billion project has been fast-tracked by the government to meet the rapid growth in water demand by industries and almost 5 million people in the Durban and Pietermaritzburg area. We were invited by members of the Environmental Monitoring Team to conduct a small mammal survey of the area prior to the impoundment of the dam basin in February 2013. We worked closely with some of the ecological consultants appointed to relocate threatened and endangered species from the regions that will soon be under water. We collected several specimens of swamp musk shrew (Crocidura mariquensis), four-striped field mouse (Rhabdomys pumilio) and multimammate mouse (Mastomys natalensis).

IT TAKES ALL TYPES

The international profile of the Mammal Collection was given a substantial boost this year with the addition of the first type specimens to the collection. A type specimen usually refers to a physical specimen/s, selected as reference material when a species is first described. The holotype refers to the single specimen demonstrating all the species-specific characteristics that the formal species description is based upon. Paratypes represent additional specimens collected from the same locality where the holotype was originally found and may be designated as a replacement type (neotype) in the event of damage or loss of the holotype. Owing to their importance, type specimens are rarely issued on loan. Instead, local and international researchers are invited by members of the Environmental Monitoring Team to conduct a small mammal survey of the area prior to the impoundment of the dam basin in February 2013. We worked closely with some of the ecological consultants appointed to relocate threatened and endangered species from the regions that will soon be under water. We collected several specimens of swamp musk shrew (Crocidura mariquensis), four-striped field mouse (Rhabdomys pumilio) and multimammate mouse (Mastomys natalensis).

**NEW DISCOVERIES IN THE BAT WORLD**

It is widely acknowledged that the number of African small mammal species has been grossly underestimated, particularly in the case of bats. An astounding 45 new bat species have been described from the Afro-Malagasy region from 1988 until 2012. Surveys of poorly studied areas and/or previously inaccessible

Sindi Nzama hails from Durban and is a University of KwaZulu-Natal graduate. Sindi certainly has a decorated research background and was exposed to different fields of science (Botany, Ecology, Entomology, Zoology and Nature Conservation). She completed her Honours project on the physiology of House sparrows (Passer domesticus) and had her research published in the international journal Thermal Biology. Her Masters project was focused on the biological control of invasive alien plants. After completing her Masters degree she worked as part-time as a Nature Conservation tutor at UNISA. She later accepted an internship with the South African National Biodiversity Institute (SANBI) and was based at the KZN herbarium. There she worked on newly detected invasive alien plants, had two popular articles published in SAPIA News and the eThekwini State of Biodiversity (2010/2011). Sindi has been working as the mammal technical assistant since April 2012. Her main duties include the accessioning, preparation and curation of donated mammal specimens. She has participated in several field-based mammal surveys. We hope that she will continue to enjoy her stay with us.
areas have yielded morphologically distinct species previously not known to science. More importantly, DNA-based studies have begun to reveal that many wide-spread Afrotropical species may in fact be composed of two or more well-defined species.

It is therefore unsurprising that the very first type specimens attributable to the Mammal Collection represent four bat species that are new to science. The fact that Durban Natural Science Museum researchers were involved in the description of the new species highlights the valuable role that Museum scientists continue play in improving our understanding of the natural world.

Prof. Peter Taylor, former Curator of Mammals, headed up a team of bat researchers from southern Africa that conducted a detailed investigation of the species-complex of Hildebrandt's horseshoe bats (*Rhinolophus hildebrandti*); one of the largest African horseshoe bat species. Horseshoe bats are so named as they possess a horseshoe-shaped structure that forms part of the nose-leaf, a fleshy protuberance of the nose. The investigation was sparked off by the discovery of different echolocation call frequencies among geographically segregated populations of Hildebrandt's horseshoe bats, as well as bats occurring within the same region. The researchers used various data sets that included skull morphology, echolocation calls, genetics and the morphology of the male baculum (a minute bone located in the penile tissue), to diagnose the different groups. Much to their surprise they uncovered evidence for five distinct species, four of which were new to science. Types of three of the new *Rhinolophus* species are held in the Mammal Collection.

The discovery of two new bat species, Mount Mabu horseshoe bat and Rosevear’s serotine, would not have been possible without modern day explorations of some of the most remote and/or biologically diverse areas in Africa.

Scientists uncovered evidence for five distinct species, four of which were new to science. Types of three of the new *Rhinolophus* species are held in the Mammal Collection.
and is surrounded by savanna and croplands. It remained unexplored by modern day scientists due to civil unrest within the country that effectively prevented access to this remote region of northern Mozambique.

An expedition to the area took place in 2008 and was coordinated by members of the RBG and the Darwin Initiative Project. Dr Julian Bayliss of the RBG led several expeditions to the area and collected small mammal specimens. Some of the specimen material was kindly donated to the DNSM Mammal Collection and includes three shrew species, five rodent species and six bat species. Several new vertebrate species including Rhinolophus mabuensis, have been discovered thanks to this African treasure.

In 2009, the Mozambique government formally announced plans to thwart commercial logging within the area. Dr Woody Cotterill (University of Stellenbosch), Dr Julian Bayliss of the RBG and the Darwin Initiative Project. Dr Woody Cotterill (University of Stellenbosch), Dr Corrie Schoeman (University of KwaZulu-Natal), Prof. Ara Monadjem (University of Swaziland).

Liberia – Mount Nimba

The mountainous Nimba range, approximately 40 km in length, is located on the borders of Ivory Coast, Guinea and Liberia in West Africa. The highest point along this mountain range reaches approximately 1,700 m above sea level. It is an important biodiversity hotspot with at least 200 endemic species described from the Liberian region.

The mountain range is composed of montane forests that are replaced by lowland forest and savanna grasslands that cover the foothills. The greatest threat to this wildlife habitat in the past was iron-ore mining activities that had led to some degradation of the massif on the Liberian side, evidenced by a deeply eroded ‘scar’ that is visible with satellite imagery. Iron-ore mining continues to take place within the area, but is conducted in accordance to high standards of corporate responsibility and environmental mitigation. In more recent times, poaching and the reclamation of land for agriculture and cattle farming have become the greatest threats to biodiversity within the region.

Prof. Ara Monadjem of the University of Swaziland and long time benefactor of the Museum conducted two biological surveys within the ArcelorMittal iron-ore mining concession area of Mount Nimba between December 2010 and January 2012. All collected specimen material was deposited with the Durban Natural Science Museum, and include rare endemics such as the Nimba Goliath shrew (Crocidura nimbasylvanus) and Aellen’s roundleaf bat (Hipposideros marisae), both species known only from a handful of specimens. The Museum now houses approximately 139 bat specimens from an extraordinary 40 species, making it one of the most important collections of Nimba bats worldwide.

Mozambican horseshoe bat (Rhinolophus mossambicus)*

- A widespread species described from five separate localities in Mozambique, including Gorongosa caves and Gerhard’s Cave, and north-western Zimbabwe.
- Described as a medium-sized species within the complex.
- Named after the country of origin of the type series.
- Holotype: DM8578; Paratypes: DM8577-80, DM11276.

Mount Mabu horseshoe bat (Rhinolophus mabuensis)*

- Only recorded from two mountainous localities in northern Mozambique, Mount Mabu and Mount Inago.
- This species is second in size to Cohen’s horseshoe.
- The scientific name is derived from Mount Mabu, a unique yet threatened montane habitat.
- Holotype: DM10842; Paratype: DM11485.

Smither’s horseshoe bat (Rhinolophus smithersi)*

- Collected from the Lutope-Ngolangola Gorge south of the Zambezi Escarpment in north-western Zimbabwe.
- Possesses the smallest skull and highest echolocation call frequency of all the four newly described species.
- Named after the late Reay Henry Noble Smithers (1907–1987), former Director of the National Museums of Zimbabwe.
- Holotype: NMZB 33647; Paratype: NMZB 33652.

Rosevear’s serotine (Neoromicia rosevearii)*

- Collected by Prof. Ara Monadjem from the edge of the East Nimba Nature Reserve at the base of Mount Nimba in Liberia.
- Possesses unique ear characteristics and baculum.
- Described after the late Donovan Reginald Rosevear who made a significant contribution to West African bat research.
- Holotype: DM12617; Paratype: DM13326.

* Indicates material deposited in the DNSM Mammal Collection.
Conservancy is a voluntary, co-operative, environmental management of an area by its owners, communities and user groups, and is registered with the local provincial conservation authority. Conservancies can be found almost anywhere - in rural, urban, peri-urban areas, in the marine environment, in industrial areas and educational institutions, in townhouse complexes, and formal and informal settlements.

TO PROTECT AND SERVE
South Africa’s biodiversity is legendary but becoming increasingly threatened. The network of formal reserves is not enough to protect those species and habitats under pressure. And with 80% of South Africa’s land in private hands, conservation strategies must involve private landowners.

PRESERVING THE PAST
South Africa’s first conservancy was established in 1978 by the local farmers in the Balgowan district of the Natal Midlands under the guidance of the then Natal Parks Board with the primary objective of protecting game on the farmlands. As the first registered conservancy, it pioneered the idea of protecting natural areas outside formally protected reserves. The concept was later taken up and adapted to suit the urban and industrial environment. In 1991 Everton was the first urban conservancy to be registered in Durban, KwaZulu-Natal.

Jean D Lindsay discusses the benefits of establishing a legacy of conservancies around our city.

There are now more than 400 registered conservancies in all nine provinces of South Africa. Their vision is to promote the stewardship of our natural resources at a community level, and fulfil some or all of these critical objectives:

- To promote the conservation of flora, fauna and natural ecosystems.
- To create an awareness of conservation among landowners and residents.
- To encourage landowners to remove and control all invasive, alien plants.
- To encourage all forms of waste minimisation.
- To monitor, report and curb all forms of pollution.
- To promote the creation of ecological corridors.
- To promote the environmentally friendly use of energy and water resources.
- To monitor all injudicious and environmentally unfriendly construction and development.
- To promote and assist with local community conservation projects.
- To network with other conservation organisations.
- To develop a strong, united voice for conservation in the province.

THE KZN CONSERVANCIES ASSOCIATION
In 1981 The Natal Conservancies Association (NCA) was formed to provide a forum to liaise with the provincial conservation, local government bodies and with non-government organisations on behalf of the conservancy movement. It was also a forum where member Conservancies could discuss matters of mutual interest.

The NCA was constituted in 1987 and is administered by an executive committee elected at the annual general meeting and is served by a part time secretary. In 2001 the NCA changed its name to the KwaZulu-Natal Conservancies Association (KZNCA).

Membership is open to all registered conservancies and membership fees used for general administration of the association. The number of ‘paid up’ members provide a united voice which adds power to conservancy issues when negotiating with authorities or affected parties. Conservancies increasingly play a role in environmental management partnerships with local government authorities.

In 2012 eThekwini had 40 registered conservancies which include mostly urban, a few rural and peri-urban, four marine areas, one industrial zone, three schools, all three campuses of the University of KwaZulu-Natal, one townhouse complex and the Mariannhill Landfill conservancy, which is the only registered landfill conservancy in the world.

For more information visit the website at: www.landfillconservancies.com.

OUT AND ABOUT
Many of Durban’s conservancies are very active, are influential in their communities and are involved with many effective projects. Here we highlight some of these successful, local projects.

There are now more than 400 registered conservancies in all nine provinces.

- Mount Moreland Conservancy: for six months of the year they welcome many visitors nightly to watch the phenomena of millions of Barn Swallows returning to their roost.
- Everton Conservancy: an annual Garden Party to raise funds for alien plant eradication in their conservancy. Everton is the first urban conservancy and is still active 21 years later.

And the winner is...
Every year, the City acknowledges the importance of conservancies in the life of our communities with the Annual Mayor’s Biodiversity Awards.

2011 Finalist
Iphiti Nature Reserve: Gillitts Conservancy

2012 Winner
Clansthal Conservancy

2012 Finalists
Everton Conservancy
Richmond Mariannhill Conservancy
Conservancies

How to start your own Conservancy

Canvas as many people as possible in your area or suburb and hold a public meeting. Contact your local District Conservation Officer (DCO) from Ezemvelo KZN Wildlife or a member of the KZNCA executive committee who can help and guide you through the process. Lobby interested persons who may wish to serve on the committee.

To register your conservancy you will need:
1. A name
2. A constitution
3. A map of the area
4. A committee with a secretary
5. Minutes of the inaugural meeting

For more details:
KZN Conservesries Association
Alison Young: 082 406 5638
Jean Lindsay: 031 705 5448 / 082 550 4427
Ezemvelo KZN Wildlife
Graham Keet: 033 845 1652 / 083 225 2992
Johan Vermeulen: 031 274 1150 / 082 931 8335

Visit the National Association of Conservesries and Stewardship of South Africa at www.nacsa.org.za

• Adopt-a-Highway Project (along the M13): creating a biodiversity corridor – five conservancies.
• Kloof Conservancy: an annual Open Gardens to raise funds for alien plant eradication in the Krantz Kloof Nature Reserve.
• Hillcrest Conservancy: fortnightly environmental education talks and walks in the Springside Nature Reserve.
• Ummgeni Estuary Conservancy: environmental education, recycling and rehabilitation of the estuary and surrounds.
• Richmond Mariannhill Industrial Conservancy: river clean-ups, annual environmental seminar.
• New Germany Conservancy: “Evening of Froggie Operatics”.
• Mariannhill Landfill Conservancy: annual spring walk, waste and recycling education.
• Gillitts Conservancy: transformed 12 hectares of a gum tree plantation into the Iphiti Nature Reserve.
• Crawford La Lucia School Conservancy: transformed 15 hectares of a sugar cane plantation into a biodiversity corridor.
• Westville Conservancy: revitalising, beautifying and creating biodiversity corridors by planting more than 1,000 indigenous trees and shrubs.
• Clansthal Conservancy: regularly host beach walks to create environmental awareness and projects to protect marine and terrestrial wildlife.

BATS KZN

www.batskzn.co.za email: info@batskzn.co.za

WHAT WE DO:
• Outings to batty places in KZN.
• Talks to members, schools and clubs.
• Advice to homeowners with bats.
• Training courses such as “Introduction to Bats”, “Pest Control Workshops”, “Bat Worker Training”, and “Bat Rehabilitation Training”.
• Scientific field work, organise wind farm working groups and attend the eThekwini Biodiversity Forum.
• Long term monitoring of KZN bat roosts and populations.

Join us and bring a new thrill and purpose to your life!
Prof. Mike Cooper reports that after an absence of ten years, the Palaeontology Department is back, with new premises and solid plans for this vital resource – but some challenges remain.

Work in the Palaeontology Department commenced in January 2012, following a hiatus of 10 years, with the final movement of the collections from City Hall into the new premises under the careful supervision of Ms Immie Mostert. Much of the basic equipment requested to fit the department has been approved and is awaiting delivery or installation, and we now have our own office.

Much initial work involved unpacking and sorting of material, initially on a one day per week basis, and its storage is approaching a state of systematic order despite an early setback: during the rains the room was flooded, as a result of which drawers of the wooden cabinets close to the floor swelled and jammed, and could no longer be opened. A move to elevate the cabinets off the floors had been abandoned and the cabinets were left in disarray.

A decision has now been made to progressively purchase metal cabinets, and when this happens the crucial work of sorting the collections will recommence. Numbering of specimens will also have to wait until labels are printed. In addition, due to the huge number of specimens (which number in the hundreds of thousands), it will be necessary to employ a part-time assistant to commence this enormous task. Mrs Greling has begun work on a database of type and figured specimens. This is well under way, but it will have to be supplemented by records from the old catalogues which have only recently been rediscovered.

In the meantime, the important outreach and publishing work of the department continues. A grade 12 student from Inanda Seminary spent two days during the July vacation in the department learning about fossils and the functioning of the department. Prof. Cooper published three scientific papers on fossil molluscs in international journals during the course of the year, as well as a paper in the Durban Natural Science Museum Novitates vol 34: *Austromyophorella*, a new genus of Lower Cretaceous trigonioid bivalve from South Africa.

Oldest dinosaur nursery discovered in South Africa

Professor Robert Reisz of University of Toronto and his team unearthed the skeleton of a 190-million-year-old adult *Massospondylus* dinosaur with complete embryo (photograph above courtesy of Diane Scott). The fossils were found in sedimentary rocks in the Golden Gate Highlands National Park. This site has previously yielded the oldest known embryos belonging to *Massospondylus*.

The newly unearthed dinosaur nesting ground predates previously known nesting sites by 100 million years.

The scientists found ten nests, suggesting that there are a lot more in the cliff, still covered by tons of rock. It is predicted that many more nests will be eroded out in time as natural weathering processes continue.

For further information go to: www.news.utoronto.ca/ancient-dinosaur-nursery-oldest-nesting-site-yet-found
For the Bird Department, much of 2012 has been devoted to expanding the research focus on vultures that began in mid-2011. The underlying motivation for this emphasis is two-fold. Firstly, vultures have become a particular focus of global concern from a conservation perspective, with most species featuring on the world red data list. The catastrophic crash of vultures across the Indian subcontinent in the 1990s, linked to contamination of their food supply by the veterinary use of the compound diclofenac in livestock, has fuelled especial concern for these impressive and useful scavengers.

Secondly, and of more immediate import, southern Africa stands on the cusp of an arguably over-hasty and extensive roll-out of wind-energy developments on an unprecedented scale. The only place in the world where a similar juxtaposition of Old World vulture populations and large-scale wind farming has already occurred is in the Iberian Peninsula and the results there have been ominously calamitous. It is uncertain that the population of Griffon Vultures in Spain, the last European stronghold of this species, can withstand the mortality pressures stemming from collisions with wind-turbine blades in this region. The already beleaguered southern African Cape Vulture is a virtual carbon-copy of the Griffon Vulture but is far less abundant and far more restricted in its distribution. Yet this vulture, and the even more scarce and localised Bearded Vulture, could soon face a similar array of wind-farm developments across their respective, rugged local ranges. The call to arms in the protection of our vulnerable vulture species in the face of this rapidly emerging threat brooks no delay.

No fewer than five gatherings were attended, most of which were directly relevant to vulture research and conservation, during the course of

David Allan continued the vital research on the rapid decline of the world’s vulture population and details the many challenges that must be addressed to protect these magnificent birds.
the year, with presentations covering aspects of the Museum’s vulture work offered at each. The first was a two-day ‘Cape Vulture Task Force’ meeting held at Hartebeeshoek in Gauteng in early March to assess existing and identify new threats to this species. Hard on the heels of this was a ‘Frontiers in South African Ornithology’ conference hosted by BirdLife South Africa and the Percy FitzPatrick Institute in Port Elizabeth in mid-March. The third event was a highly ambitious week-long ‘Pan-African Vulture Summit’ convened in the world-famous Masai Mara wildlife area in Kenya during April. The next momentous assembly was the 13th ‘Pan-African Ornithological Congress’ held not far to the south in Arusha, Tanzania, in October. The final rally was a ‘Bearded Vulture Task Force’ meeting close to Durban in November, where the looming threat of wind farms in the Lesotho highlands took centre stage.

But it was not just all talk about vultures in 2012. Three field trips were made to survey Cape Vulture breeding colonies in the coastal Transkei region of the Eastern Cape in June, August and September-October. A helicopter survey of breeding vultures in the Drakensberg and Maluti mountains was carried out in July. Finally, I assisted a team capturing Cape Vultures and fitting them with satellite trackers at the Mkambati Nature Reserve in Transkei in November.

A wide range of other stakeholders accompanied these field endeavours, including personnel associated with Ezemvelo KZN Wildlife, Eastern Cape Parks and Tourism, University of KZN, Wits University, BirdLife South Africa, the Vulture Programme of the Endangered Wildlife Trust and a private consultant assessing potential wind farm sites in the Eastern Cape.

Things were also active on the publication side, and by the end of the year articles had been prepared on trends in the literature on African vultures since the 1950s, a review of the status of vultures in each Afrotropical country, a comparison between the numbers of Cape Vulture breeding along
the Drakensberg escarpment in the 1980s and currently, a multi-authored paper on the status of the Bearded Vulture in South Africa and Lesotho, and a short note describing an observation in Transkei of an adult Cape Vulture at a breeding colony with a gin-trap attached to its leg. Two popular articles were also prepared, one on the conservation status of the Cape Vulture and the other on the potential threat to vultures posed by wind farms in the Lesotho highlands, both for the new magazine *African Birdlife*. In addition, a comprehensive register of over 200 extinct and extant Cape Vulture breeding colonies throughout the global range of this species was brought close to completion.

A busy year indeed on the vulture front.

**FAREWELL EZRA**

Ezra Mdletshe joined the Museum from the City’s Parks Department as the technician in the Bird Department in 1994 under Dr Aldo Berruti, the Museum’s Curator of Birds at the time. Due to his wife’s ill health, Ezra decided to take early retirement in 2012 and he left us at the end February. His primary legacy to the Museum is the thousands of bird skins he has prepared to the highest standard and added to our world-class ornithology holdings. Ezra’s dedication and calm nature will be sorely missed and we wish him all the best in his new endeavours.

**Below:** David Allan surveys the Tembukazi Cape Vulture colony in Transkei. (Photo: Pat Benson).

**National Research Foundation Intern to the fore**

Onica Mukhwana was the NRF (National Research Foundation) intern taken on by the Museum in 2012. Onica spent six months working in the Bird Department and her tireless efforts have been a godsend, especially considering the absence of a formal technician in the Bird Department for most of 2012 following Ezra’s retirement. Her assistance with the monthly waterbird counts in Durban Bay, which continued unabated throughout the year, was particularly valuable.

**Geographical variation book hits the stands**

2012 was also a landmark year in that our book, *Geographic Variation of Southern African Birds*, finally hit the bookstores after a six-year gestation period. There has been intense interest in this unique publication and talks and courses have been, or are soon to be, presented covering the contents of the volume at both the Durban and Pietermaritzburg campuses of the University of KZN, at the Museum itself, as well as to interest groups in Ballito, Howick, Johannesburg, Cape Town and even on a cruise ship between Cape Town and Walvis Bay. More formal presentations on the subject matter were also given at the ‘Frontiers in South African Ornithology Conference’ in Port Elizabeth in March and the 13th ‘Pan-African Ornithological Congress’ in Arusha, Tanzania, in October.
The Dodo skeleton, which was bought by the Museum’s Curator in 1919 and brought to Durban from the volcanic island of Mauritius, is one of the most complete and best preserved in the world. Proudly on display at the Museum, it apparently contains some skeletal elements not found anywhere else. It is one of two which were prepared by Etienne Thirioux of Mauritius; the other is on display in the main museum in Mauritius itself.

What makes these two skeletons so special is that they were said to have been discovered in a cave (the locality of which has never been revealed) and are relatively recent in origin. This explains both their excellent preservation and their completeness. The other Dodo skeletons on display elsewhere in the world are largely incomplete and built up piecemeal of composites of much older and more degraded material recovered from a large Mauritian swamp.

Our bird has escaped scientific investigation for centuries, but in January 2012, Prof. Leon Claessens, of the College of the Holy Cross University in Massachusetts, USA, and two of his students visited the Museum to undertake a detailed digital scan of this famous skeleton.

Over the course of two weeks, Claessens used revolutionary 3D laser surface scanner technology to examine the skeleton. The surface scanner consists of a high-resolution camera and a laser, which are finely tuned to one another. As the laser shines on part of the skeleton, the camera photographs a specific
area, scaling down to one millionth of a metre.

Once the scans were complete, more research was carried out on the bird, using computer software to reconstruct muscles over the bones, which can show how the Dodo’s limbs moved.

Dodos, which were closely related to pigeons, were once thought to be creatures of mythology, but are today icons of extinction and the ultimate symbol of the tragedy of biological destruction caused by human greed. Large flightless birds that lived only in Mauritius, they stood over a metre tall and weighed at least 20 kg. “The first humans recorded on the island arrived in 1598,” said Claessens. “Back then, the concept of extinction didn’t exist, and people thought these animals were a limitless resource.”

Hunting and forest clearing by settlers and the predation of Dodo eggs and chicks by pigs, monkeys, dogs, cats and rats introduced to the island helped seal the birds’ fate. Then, almost 200 years after the extinction of the large bird, scientists found a swamp on the island filled with Dodo bones - but a complete skeleton was never found. These bones were collected until 1930, when the swamp was filled in to avoid the spread of malaria.

Claessens confirmed that the Durban skeleton is different from the ones found in the swamp, which were assembled from many birds. “I am convinced that this skeleton, like the one in Mauritius, comes from a single Dodo, and that makes it one of the top two specimens in the world.

“There is so much we don’t know about what these animals did and how they lived,” said Claessens. “Dodos have been forgotten over time, but this study will allow us to answer questions that could not be answered before. This is something fantastic, and the potential for the public to learn about this specimen is invaluable.”

Digitising the Dodo

Aves 3D provides an online database of three-dimensional digital surface models of the various bones that make up the skeletons of birds. Aves 3D aims to provide as wide a representation of living and extinct bird species as possible. Scans are generated through non-contact laser surface scanning onsite and at various institutions the collections of which are being scanned for the database. Visit www.http://aves3d.org for more info and for a look at the online database.
For the Exhibitions Department 2012 proved to be an extremely busy year. Apart from all the usual maintenance on and upgrades to the permanent exhibitions and the design of brochures, flyers, posters and banners, we were involved in a number of special events during the year.

Our various displays and presentations served to educate our patrons and raise the profile of the Museum, both within our walls and in the world beyond. A Triga banner entitled “Museums in a Changing World” was designed for the International Museums Day on 18 May. We provided two PowerPoint presentations and roll-up banners for the Durban Natural Science Museum’s (DNSM) 125 Years celebrations on the 31 July. Our previous temporary exhibitions on “Invasive Alien Plants” and “Curators and Collections” were converted to travelling exhibitions using roll-up banners for display in various municipal libraries. We were also involved in numerous functions, in particular the DNSM Seminar Series, in supplying photographs of the events.

By far the biggest and most challenging event was the “Stop Rhino Poaching” temporary exhibition. Apart from our involvement in the Rhino March on 10 July and the “Walk a Mile” on 22 September, for which we supplied large banners advertising the opening of our temporary exhibition, the bulk of the work took place inside the Museum’s exhibition halls.

The temporary exhibition took shape through a highly collaborative effort involving the Museum Curators, Exhibitions and Education Departments and Ezemvelo KZN Wildlife (EKZNW). It also received generous support from some highly respected contributors. Photographs were kindly supplied by Brent Stirton (Getty Images for National Geographic magazine), Wikipedia and EKZNW (in particular Rod Potter), while text for the display panels came from TRAFFIC - The Wildlife Trade Monitoring Network and EKZNW, in particular Rod Potter and Sharon Price. EKZNW also supplied some items to put in the display.

The exhibition itself was housed in the temporary exhibition display area, as well as the Mammal Gallery, and asked some simple, yet poignant, questions. The first display case dealt with the escalating number of rhinos poached each year and showed some horrific images of poached rhinos. The second case described the situation at the source: South Africa, and asked the questions: “Why are our rhinos being poached?” , “Who is killing our rhinos?” and “Why is it a problem?” The third case involved the situation in the end-use market: Vietnam, and asked the question: “Where is the rhino horn going?” The fourth and final case posed the question: “What is being done to stop rhino poaching?” Each display panel was powerfully illustrated with photographs and text was kept to a minimum.
Our intention was to bring a strong awareness to the public of the plight of our rhinos.

The exhibition then spilled over into the Mammal Gallery where our rhino specimens are housed. Here the questions became even more provocative. Earlier in the year, the Exhibitions Department had removed the horns on our Black Rhino and attached them, with the help of Nathi Magwaza (Local History Museum), onto a Black Rhino skull. This skull then joined our White Rhino skull with horns attached in the permanent display case which had been upgraded with an alarm system and new labels. Immie Mostert of the Exhibitions Department very skillfully modeled the ‘dehorned’ rhino specimen to look as though it had been professionally dehorned as a deterrent to poachers. A large panel posing the question: “Should we dehorn rhinos?” was placed on the wall behind our rhinos.

The official opening of the exhibition took place on the 27 September, with guest speakers Francois du Toit from African Conservation Trust and Jabulani Ngubane from EKZNW. The exhibition received a very favorable response from many who visited the museum in the months it was on display.

The exhibition didn’t end here however. To get the message out to the masses a travelling exhibition was also produced, consisting of five double-sided roll-up banners, one side in English and the other side in isiZulu. A total of 20 sets of these banners were printed to take the message to all of the municipal libraries.

Our intention with this exhibition was to bring a strong awareness to the public of the plight of our rhinos, to illicit a favorable response from them to “spread the word”, and to get people actively involved in supporting organisations, in particular EKZNW, in their war on poaching.

EXHIBITIONS TEAM:
Dudu Hlatshwayo (Exhibitions Curator)
Immie Mostert (Museum Officer)
Andrew Carter (Museum Officer)
“Time flies like an arrow, fruit flies like a banana” — GROUCHO MARX

It was a busy year for the Entomology Department as Kirstin Williams tells us: field trips, research, presentations at various important conferences – and providing the necessary forensic insects to help UKZN students solve a murder mystery.

It has been an incredibly busy year for the department, with time flying by on the wings of beetles – or indeed blowflies. While the important work within our walls continued, there were also plentiful opportunities for field trips, presentations at conferences – and engaging with the public and with other institutions in ways only this department could.

One such engagement was with the University of KwaZulu-Natal (UKZN) who invited the department to assist with the first module of their Biological Sciences honours course, by taking part in a “murder mystery”. Students were provided with a murder scenario and required to solve it with the help of various scientific techniques. The Museum provided beetles for the forensic entomology component of the module and consulted with the students as they tried to establish a time frame for the “murder” from the entomological evidence. The genetics department was also provided with blowfly maggots for the students’ practicals.

Interest in maggot debridement therapy (MDT) has grown substantially in recent years and this year the department was invited by Dr Frans Cronje to assist with the set up of a maggot debridement therapy colony at Stellenbosch University Medical School. MDT involves the use of live maggots to clean necrotic wounds on patients. It has proved to be a relatively cheap yet remarkably effective treatment especially for those with diabetes or with ulcerating wounds in their extremities that can’t heal due to poor circulation.
When Dr Cronje was based in Pretoria at the Eugene Marais Hospital, we published a paper together on the identification and use of the greenbottle blowfly (*Lucilia sericata*) for maggot debridement therapy. With his move to the Stellenbosch Medical School, he saw an opportunity to establish an MDT colony at the university. The department assisted in the identification of flies to ensure the correct species was used.

During the course of the year, nursing sister Cindy Bradley contacted the department with a view to establishing an MDT colony here in Durban. She provides medical care to numerous elderly patients who for various health reasons cannot undergo standard treatment, and believes these patients would benefit considerably with the introduction of MDT in local hospitals. So much so that at the Durban Exhibition for Sustainable Living in August last year, Cindy managed an exhibition stand to garner support and encourage local politicians to embrace the venture.

**RESEARCH**

My research on the *Lucilia* blowflies continued last year while I worked on the geographic distributions of these flies in South Africa. To this end, I accompanied my colleague, Leigh, her technician, Sindisiwe, and our NRF intern, Onica, on a field trip to Entumeni Reserve outside of Eshowe to collect flies. This field trip was part of Ezemvelo-KZN Wildlife Bioblitz Programme where specialists are invited to participate in surveys to help compile lists of species for each of their reserves.

Unfortunately the weather was not conducive to collecting insects - it bucketed down with rain for the first three days of our trip! But I was fortunate enough to catch some *Lucilia* blowflies in the garden of the guest house in which we were staying and managed to catch further insects on the final day when the sun decided to make an appearance. These included some robber flies (see sidebar) and very colourful horse flies which have now been added to the collection.

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**Cash for moths**

Hermann and Doug invite you (as team SA) to assist in this task by collecting and rearing (from caterpillar to moth) as many South African species as you can. If Team SA collects more species in the upcoming season than Hermann and Doug, the one with the most points will receive a R20 000 cash prize. The runner-up will receive a week’s trip for two along the Garden Route including accommodation and transport. Those who would like to contribute to this project stand a chance to win fantastic prizes. For more information visit: [http://xa.yimg.com/kq/groups/18778810/91488337/name/Moth%20Caterpillar%20Challenge%20short.pdf](http://xa.yimg.com/kq/groups/18778810/91488337/name/Moth%20Caterpillar%20Challenge%20short.pdf)
The Eshowe Butterfly Dome is a butterfly haven and features the Emperor Swallowtail, the largest butterfly in South Africa.

The field trip was an excellent opportunity to meet and network with fellow scientists from all over the country. Hermann Staude, of the Lepidoptera Society, was particularly interested in collecting moth caterpillars. Very little is known about the caterpillar stage of most moth species, and his forthcoming book *Moths of South Africa – a field guide* written in conjunction with Doug Kroon promises to reveal new insight into this mysterious phenomenon.

While in the area, Sindi and I visited the Eshowe Butterfly Dome which is situated on the edge of the beautiful Dinza Forest and forms part of the historical Fort Nongqayi complex. The dome is a butterfly haven and features species from the surrounding Afromontaine forest, including the Emperor Swallowtail (*Papilio ophidicephalus zuluensis*) which is the largest butterfly in South Africa.

The bred-in-captivity adult butterflies emerge from pupa stage and fly freely inside the enclosure among abundant indigenous vegetation. Visitors are free to walk amongst the butterflies while viewing the indigenous host plants and nectar plants which simulate the butterfly’s natural environment.

CONFERENCES AND WORKSHOPS

At the fourth Biodiversity Information Management Forum held in June at the Old Mutual Conference Centre at Kirstenbosch in Cape Town, I delivered a presentation on our own Museum’s database project, which was completed at the beginning of the year. The BIMF is the only national platform dedicated to discussing biodiversity information management issues. This year the theme was “Making a difference” with a specific emphasis on core scientific and taxonomic skills which form the basis of biodiversity information.

In July the annual conference of SASSB (the Southern African Society for Systematic Biology) was held in Arniston in the Western Cape. The primary aim of SASSB is to promote and represent the activities and interests of all biological systematists, evolutionary biologists, curators and managers of natural history collections in South Africa. I contributed to the proceedings with the presentation of my paper “Predicted geographic distributions of Lucilia sericata and *Lucilia cuprina* in South Africa”.

SABIF (The South African Biodiversity Information Facility) held a three day Geo-referencing Training Workshop in November at the KZN Museum in Pietermaritzburg.

Geo-referencing is the process of recording the ‘where’ of primary biodiversity data. The workshop provided valuable insight into

The importance of the digitisation of good quality primary biodiversity data, which helps contribute to South Africa’s sustainable development in the following ways:

- Facilitating access to biodiversity and related information on the internet.
- Giving a geographical context to the digitised specimens.
- Offering insight into the range and occurring locations of a given species.
- Aiding collectors in the field in locating relevant specimens.
- Enabling the application of many useful tools, from species dot maps to full GIS analysis.

The skills learned will be put to good use in our collections.

Horsing around

The robber fly from the Asilidae family is a powerfully built, bristly fly with short, sharp, stout sucking mouthparts. The name “robber” reflects its notoriously aggressive predatory habits; they feed mainly on other insects waiting in ambush to catch their prey in flight. Horse flies are from the Tabanidae family and are members of the insect order Diptera. They habitually attack humans and livestock and are widely regarded as pests because of the bites that females of most species inflict. Although some species transmit diseases and parasites, Tabanidae are important pollinators of some flowers. In particular, several South African species have spectacularly long proboscides adapted to the extraction of nectar from flowers with long, narrow corolla tubes, such as *Lapeirousia* and some *Pelargoniums*.

Database project

Mariana Tomalin and Daindree Naidoo once again did a sterling job of capturing the information from our thousands of specimens and entering them into our electronic database. All our specimens have been electronically captured and accessioned. This benefits the department tremendously and improves our service to researchers and scientists who make use of our collection regularly. Any queries we now have regarding our collection can be dealt with quickly and efficiently.

Our very capable volunteer, Odile Pfaeler, continued to assist in the collections and began the process of updating the taxonomy of the beetle collection.
Once a symbol of the triumph of conservation, rhinos again face a global threat. With a growing demand for rhino horn, primarily in China and Vietnam, and driven by international criminal syndicates, rhinos around the world are in danger of extinction. Last year, both the Western Black rhino and the Vietnamese population of Javan rhino were declared extinct, and there are fewer than six Northern White rhino left in the wild.

In the past 45 years, Africa has lost around 100,000 rhinos to poachers and South Africa is now the last country to have a significant population of rhinos left in the wild. This is one of the reasons why South Africa is bearing the brunt of what can arguably be described as one of the worst global wildlife conservation crises of the past 100 years. Over 1,700 rhinos have been killed within the country’s borders in the past four years, and experts are warning that should rhino poaching continue to escalate at current (2013) levels, South Africa’s rhino populations may be in a negative growth scenario in as little as 2 years, bringing the threat of extinction that much closer.

Roughly 60% of rhinos killed by poachers have been killed in the Kruger National Park.

In June 2011, the conservation community of KwaZulu-Natal recognised a growing threat from rhino poachers and that a united response was urgently needed. Project Rhino KZN was the result. **Sheelagh Antrobus and Francois du Toit** report.

18 organisations come together to conserve and protect the White and Black Rhinos of KwaZulu-Natal.

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**THE KILLING FIELDS**

In June 2011, the conservation community of KwaZulu-Natal recognised a growing threat from rhino poachers and that a united response was urgently needed. Project Rhino KZN was the result. **Sheelagh Antrobus and Francois du Toit** report.

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LEFT: Statistics show the shocking increase of rhino poaching in South Africa between the years 2000 and 2013. Rhino horn photo by Richard Conniff.
Special Report

poachers target rhino indiscriminately. After the Kruger National Park, the two provinces worst affected in 2012 were the North West Province and KwaZulu-Natal (KZN).

Project Rhino KZN is KwaZulu-Natal’s response to this crisis. It is the first provincial rhino-focussed association in South Africa to bring together the provincial government conservation body (Ezemvelo KZN Wildlife) with leading private game reserves, community-owned game reserves and the province’s top conservation NGOs, all of whom have joined forces to combat rhino poaching.

It is thanks to KZN’s rhino conservation pioneers like Dr Ian Player that in 2010, Southern White rhinos numbered 22,000.

A GLOBAL FIRST
Made up of 18 highly respected organisations and incorporating more than 15 game reserves in northern KwaZulu-Natal where rhino populations are highest, Project Rhino KZN’s wide-ranging efforts include:
• Raising funds for counter-poaching strategies and urgently needed anti-poaching equipment;
• Providing a central platform for rhino owners in KwaZulu-Natal and the province’s conservation community;
• The establishment and funding of an aerial surveillance programme (the Zululand Anti-Poaching Wing);
• Building relationships and maintaining partnerships with national rhino stakeholders and external service providers;
• Providing direct support to game reserves under threat.

HOME OF THE SOUTHERN WHITE RHINO
KwaZulu-Natal has a proud history of efforts on behalf of the rhino, having brought the Southern White rhino back from extinction before. Southern White rhinos once roamed throughout southern Africa until uncontrolled hunting in the 19th Century all but exterminated them. Thought to be extinct, 40 were unexpectedly discovered in northern KZN in 1894, leading to the proclamation of the Umfolozi Game Reserve to protect these last survivors of a once-prolific species.

By the 1960s, their numbers had increased to 600 and so began Operation Rhino - an international success story that saw the translocation of hundreds of Southern White rhino back into habitats across Africa, including the Kruger National Park. Today, roughly 21% of South Africa’s White rhinos and 24% of the country’s critically endangered Black rhino populations are to be found in KZN’s state, private and community-owned game reserves. It is thanks to KZN’s rhino conservation pioneers of the 1960s like Dr Ian Player that in 2010, Southern White rhinos around the world numbered 22,000.

ORGANISED CRIME, AN ORGANISED RESPONSE
Project Rhino KZN is today’s Operation Rhino, committed to the same ideals but operating in a vastly changed landscape. Current threats come in the form of furtive raids by poachers armed with high-calibre rifles, night-vision equipment, getaway vehicles and backed by a vast, well-funded international courier network, which aims to extend from the boundaries of KZN’s pristine wilderness areas to the streets of Vietnam and China.

Countering this requires sophisticated responses that can benefit a multitude of game reserves, as well as ensuring that anti-poaching teams on the front line are adequately equipped, trained and supported; this is where Project Rhino KZN plays a significant role.

Today’s threats come in the form of furtive raids by poachers armed with high-calibre rifles, night-vision equipment, getaway vehicles and backed by a vast, well-funded international courier network.
The Zululand Anti-Poaching Wing is an example of how Project Rhino KZN works at a macro-level to protect large numbers of rhinos across a range of private, provincial and community-owned reserves. It comprises of four aircraft – 2 fixed wing aircraft and two helicopters – that collectively provide the aerial surveillance and reaction needs pertaining to rhino security throughout northern KZN.

BATTLES WON – BUT THE WAR CONTINUES

While Project Rhino KZN has reported several successes in its first 18 months of operation - including preventing the loss of rhinos and some significant arrests of poachers - it is clear that 2013 will be another difficult year. The 18 member organisations continually seek ways to improve their collective efforts, source the large amounts of funding needed for wide scale counter-poaching, and aim to extend the range of Project Rhino KZN’s activities in coming months.

The African Conservation Trust (ACT) is a founding member of Project Rhino KZN and brings 13 years of Southern African conservation, biodiversity and environment knowledge to the fight against rhino poaching in KwaZulu-Natal. In 2011 the ACT Rhino Fund was created to support South Africa’s rhino populations and to date has raised and distributed over R3.6 million to bona-fide anti-poaching efforts. Francois du Toit is the CEO of ACT and Sheelagh Antrobus is the co-ordinator of Project Rhino KZN.

Project Rhino KZN

Founding Members

- African Conservation Trust (ACT)
- Ezemvelo KZN Wildlife
- Game Rangers Association of Africa (GRAA)
- Maqhuba Ntombela Foundation
- Phinda Private Game Reserve (& Beyond)
- Space for Elephants Foundation (SEF)
- Thanda Foundation
- Thanda Private Game Reserve
- Wilderness Action Group
- Wilderness Foundation
- Wildlands Conservation Trust (WCT)
- Wildlife & Environment Society of SA (WESSA)
- Wildlife ACT Fund
- WWF Black Rhino Range Expansion Project
- Zululand Rhino Reserve
- Zululand Wildlife Security Initiative

Associate Members

- eThekweni Community Foundation
- Lawrence Anthony Earth Organisation
This was yet another rewarding and ambitious year for the Museum’s Education Department. As a team we took on various events, projects, programmes and activities aimed at spreading environmental awareness, promoting Science and supporting of our National education curriculum, closing the year having achieved what we set out to.

OUTREACH PROGRAMMES

When it came to reaching out to the community of eThekwini Municipality, North to South, East to West, we had absolutely no boundaries, and coordinated with the most diverse range of departments ever. We conducted school visits, facilitated outreach programmes, organised public and educational events, and volunteered our assistance in a range of initiatives. Under different underlying themes, we all had one goal: to open the eyes, mind and heart of every individual we reached out to. All our messages were efficiently delivered and well received through our whole-hearted engagement with our various audiences. The groups of enthusiasts we reached out to ranged from pre-school children to the older senior citizens.

YOUTH CAMP

Together with Local History Museum, KZN Love Life, SANDF, KZN Sport and Recreation, the KwaMkhizwane Horse Riding Committee, and Ukhozi FM, we assisted in the running of a Youth Camp, which was coordinated by eThekwini Municipality Sport and Recreation.

The objectives of the camp were to empower youth with the critical leadership and life skills; to create a culture of unity, morals and values whilst eliminating racism, xenophobia, sexism and discrimination; and to create a platform for...
positive social interaction. The camp, held over a period of 4 days and 3 nights in the KwaXimba/KwaMkhizwane area, brought 120 youth together of diverse cultural, religious and ethnic backgrounds. The participants were engaged in various development activities, from cultural diversity workshops to various indigenous games, life skills training etc.

It was a well-structured camp, at which every attendee, whether as a participant or a facilitator, left the camp positively empowered with a better understanding of the need and advantages of positive social interaction.

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A TRIBUTE TO ZOE

After three memorable years of service at the Museum, Zoliswa “Zoe” Nhleko leaves us to pursue her studies. Joining with great enthusiasm in 2009 as Education Officer, Zoe carved out an outstanding career for herself at the Museum. With a BSc in Zoology which she attained at University of Rhodes, she studied further at UNISA and attained her BSc(Hons) in Environmental Management. She is now a full time registered Master’s student with Rhodes University.

We consider ourselves fortunate to have worked with Zoe and we thank her for all her hard work. She will be remembered fondly and we wish her every success for the future.

A FOND FAREWELL TO SHIRLEY

Shirley Scott started at the Museum in 2003 as a Trust Volunteer Coordinator and Manager of the Waterhole, our old coffee shop, later moving into a role as an assistant in the library.

Peter Taylor, Acting Director at the time of her appointment had these kind words to say, “Through the Church we both attended I knew her to be a very upright, loyal, responsible, caring and warm person and I know she carried these traits into her job at the Museum.”

From all of us at the Museum, we wish Shirley well in her retirement.

THANKS RENUKA

Renuka Hurburun joined the Museum in 1997 as a volunteer upon retiring from her career in teaching. She was later endorsed to be one of the four Trust Volunteers, the Museum’s honorary volunteers, until retiring in 2012.

Her selfless devotion has touched the lives of so many people, including staff (past and present), the many volunteers that came and went and the Museum patrons with whom she regularly interacted. Thank you for your integrity and dedication to the museum. May your new chapter be an adventure.
Angelo Lambiris provides a fascinating insight into the progress and various processes involved in the restoration and reclassification of the Herpetology Department’s specimen collections.

When I started work on the collections in mid-2010, much needed to be done in order to develop the department into a research and educational resource worthy of the Museum and the constituencies it serves.

The collections include 1,235 amphibians in 3 orders, 13 families, 27 genera, and 64 species and subspecies of salamanders, caecilians, frogs and toads; and 1,649 reptiles in 3 orders, 22 families, 78 genera, and 151 species of crocodile, tortoises, turtles, lizards and snakes. The oldest amphibian and reptile specimens in the collections date back to 1911 and 1889 respectively, and the most recent records end in 1986.

Before the work of reclassifying the current collection could commence, there were some mundane but nevertheless important tasks to be completed. The confused array of specimen jars on the crowded shelves first had to be sorted to see exactly what was in the...
collection. This involved weeks of removing jars from shelves, setting them out on the floor, arranging them in order, then returning them to the shelves, labelled to show what species were on which shelf. The alcohol in each bottle had to be checked and replenished or replaced. Because its use is strictly controlled, every millilitre of old alcohol discarded and of new alcohol used had to be recorded in a register for auditing.

The identification of all 2,884 specimens had to be checked and, where necessary, corrected. This apparently straightforward task was complicated by the fact that naming and classification are undergoing revolutionary changes based on DNA studies, and there is often little agreement among different authorities on these crucially important matters! Finding a balance between old names and classifications and a bewildering array of new ones is not easy, but must be done somehow, or communication and the effective use of information breaks down completely. This is just as important to the amateur naturalist in the field as it is to the scientist lurking in his laboratory.

This work often seemed as much historical as it was scientific. It became apparent that the existing catalogues were based on several older sources which could not at first be found, and which had many serious discrepancies. Searches by Museum staff eventually unearthed Xerox copies of various original catalogues, and also portions of the personal records of some collectors who had contributed substantially to the Museum’s collections. All of these are now being collated and entered onto a computer database. This will involve many months of painstaking work, but the end result will be a set of records that will be as complete, accurate and as true to the originals as possible.

Once that has been done, we shall be able to give each specimen a new label bearing important details such as date, locality, name of collector and field notes, and also to prepare new archival-quality registers for permanent written records, as well as specially designed computer databases for curatorial and research work.

Shelf space will soon be greatly extended, and we will be able to set out the specimens more effectively, greatly benefitting all users. In addition, a bequest to the Museum will eventually add another 5,000 specimens to the collection, representing about 500 different species.

These are exciting developments, and although there is still much to do, firm foundations are being laid for the new Department of Herpetology. Our goal is to develop it into one of the country’s leading research units, with resources that will fulfill the needs of researchers and the general community alike.
2012 was a busy year for the Museum Library, reports Lumka Ludwaba, with the move of all the operations into a single location, the automation of borrowing and the introduction of a work experience student onto the staff.

Unfortunately, there was insufficient space at the Research Centre to accommodate all of the journals from the City Hall, so the curators were asked to identify the priority publications. A total of 2,331 copies were moved to the Research Centre, with lesser-used ones left at the City Hall. Museum volunteers assisted with the movement, unpacking and shelving of journals.

Moving the resources to the Research Centre has brought several key benefits. The turnaround time for requests has been reduced; the library staff have control of book stock; and the operations have been simplified. Once staff moved to the Research Centre and we introduced the circulation module of the library system to control the borrowing of library material, it became quicker and easier to check who has the book when it is on loan.

FAREWELL TO SHIRLEY GORDON

In 2012 the Library and Heritage staff bade a fond farewell to Shirley Gordon who retired at the end of June. Shirley worked at the Newlands East Library and the Sparks Estate Library before joining the Departmental Libraries in 1991. She was also a very active member of the Wellness Committee.

A wonderfully generous colleague, Shirley is always willing to share her knowledge and for the past 22 years has been a true inspiration to all of us. We wish her well in her retirement and hope she will now have more time for her favourite pastimes which include travelling and spending time with her family.

Library matters

DUT student Londeka Mbonambi joined the Library Department in July as part of our work integrated learning programme. Short staffed since the retirement of our library assistant Shirley Gordon, Londeka proved to be extremely useful for the eight weeks she was with us.

During her time with us, she took the initiative to install a memorable display for Mandela Day. This was then used by the Education Officer to encourage the volunteers to create their own ideas which could add value to the museum.
The Museum has a long and proud history of developing and honing the skills and competencies of young adults wishing to pursue careers within the natural sciences.

THE VOLUNTEER PROGRAMME
Established in 1986, this remains the longest running Volunteer Programme at the Museum. It is coordinated by the Education Department with training courses run annually, and provides a basic platform for matriculants, tertiary graduates, and unemployed individuals to develop their work-related skills and advance themselves both personally and intellectually. It also brings value to the Museum, which would not be able to deliver its sought after public services without the assistance of the volunteers.

The programme kicks off with a call for applicants in early January, and the shortlisting of applicants takes place at the end of the month. Short-listed candidates are required to participate in a two week training course which involves a series of theoretical lectures and practical work that culminates in a written examination, and is managed by the Education Officers and Volunteer Coordinators. Final selection of successful candidates is based on marks scored on the examination and on the astute observations of staff members during the training period.

Volunteers are assigned work within the Museum based upon their areas of interests and repertoire of skills. This may include conducting tours of the Museum galleries at City Hall, facilitating outreach programmes, assisting with

MAKING A DIFFERENCE

Why not take the opportunity to be counted amongst one of our success stories? It will be well worth your time, say Leigh Richards and Busisiwe Gumede both former volunteers.
The volunteers not only provide a valuable service to the Museum and general community, but are also afforded the opportunity to acquire and develop their own personal skills and competencies.

The volunteers not only provide a valuable service to the Museum and general community, but are also afforded the opportunity to acquire and develop their own personal skills and competencies that would make them sought after employees. Many of our volunteers have benefited from their work experience at the Museum, moving effortlessly into permanent employment.

HOW TO APPLY
Interested individuals should look out for the public notice placed either in the December or January editions of Ezasegagasini Metro newspaper. Alternately you may wish to visit the Museum’s information desk at the City Hall in late December or early January to make further enquiries about upcoming programmes.

DST/NRF INTERNSHIP PROGRAMME
The Internship Programme managed under the Human Capital and Knowledge Systems programme of the Department of Science and Technology (DST) and administered by the National Research Foundation (NRF) was formally introduced in 2005. The aim of the programme is to provide university graduates and post-graduates in the Science, Engineering, and Technology (SET), Research and Development fields are eligible. Non-South Africans need not apply. Applicants should not be older than 35 years old at the time of submission of application. Candidates with disabilities are encouraged to apply.

Successful applicants will be placed in various institutions throughout the country and should thus apply for a position available in the province where they would like to be placed. The NRF does not pay relocation costs to appointed applicants who have to relocate to far away provinces.

The Internship Programme is offered for a period of 12 months. Successful applicants will be required to sign an internship contract for the duration of the internship period.

• Applicants should apply when the call for applications is advertised, usually in September or October annually.

• The advert appears in regional newspapers, on websites of the DST (www.dst.gov.za) and NRF (www.nrf.ac.za), and notice boards at Higher Education Institutions.

• All applications must be submitted online to www.setinternship.co.za and click on ‘vacancies internship’.

• Please also attach certified copies of qualifications, academic records and a South African Identity Document.

NB: Applicants may submit a maximum of three applications. Each application must specify one area of specialisation. No e-mail or faxed applications will be considered.

FOR MORE INFORMATION
Monwabisi Mhlo: 012 481 4023
Sello Raseruthe: 012 481 4388 / 4049

Intern today. Scientist tomorrow.

Onica Mukhuwana tells us about the time she spent at the Museum as part of the DST/NRF Internship Programme in 2012/2013:

I am originally from the Limpopo province. I obtained my BSc degree in Biodiversity and Conservation from the University of Venda in 2010, then went on to study towards my Honours degree at the University of Stellenbosch. Early in 2012 I was offered an internship by the National Research Foundation (NRF) with the Durban Natural Science Museum (DNSM) as a host institution. I have had the pleasure of working within the three research departments, and have assisted the curators with the preparation and curation of the research collections and have provided much needed administrative support to all the departments. I have also participated in several outreach programmes and exhibitions. Educating the public through talks and behind-the-scenes tours makes me feel like a leader. But for me, the most interesting aspect has been participating in the field work for data collection. There, I apply all I have learnt during my studies and get to feel like a real scientist. I’m proud to say that I have learnt and acquired many skills and knowledge from all the amazing people at DNSM. You get to experience everything at DNSM and if I could ask for more time, I would.

The Museum’s previous volunteer success stories!

The following staff members began their careers as volunteers at the Museum:

• Anita Rutenbach (former Technical Assistant: Mammals)
• Busisiwe Gumedze (Education Officer)
• Busisiwe Mdlovu (General Assistant: Research Centre)
• Laurette Goodyear (Chief Administrative Clerk)
• Leigh Richards (Curator of Mammals)
• Renusha Balder (Building Supervisor: Research Centre)
Form a conservancy with like-minded people in your area to control invasive alien plant life and maintain your local environment.

A conservancy is a voluntary, co-operative initiative to help owners and residents provide environmental management and promote stewardship of our natural resources at a community level. All conservancies are registered with our provincial conservation authority, Ezemvelo KZN Wildlife.

The first urban conservancy was established in 1991 with the Everton Conservancy in Gillitts. Twenty one years later, we now have a proud record of voluntary environmental work with over 40 other urban conservancies in and around eThekwini.

We hold regular bi-annual workshops to empower our residents with valuable knowledge and information and use many of our local experts for advice. Contact Jean Lindsay on 082 550 4427 or email her at lindsayjd@mweb.co.za

Private Bag X 3, Congella 4013
Museum Diary: 2013/14

**Biodiversity Seminar Series**

- **SAAMBR, Len Baumann Conference Hall, Education Centre, uShaka Marine World**
  - **Dr Angus MacDonald**
  - **5 June 2013**
  - Why is genetics important for marine conservation?

**Educator Skills Development Training**

- **DNSM City Hall**
  - **10-12 June**
  - Biodiversity: Life Science (Gr 10 & 11).

**Holiday Programme**

- **Various Locations**
  - **24 June - 12 July 2013**
  - In conjunction with Durban Art Gallery, Central Library and Local History Museum.

**“Night at the Museum” Sleepover**

- **DNSM City Hall**
  - **28 June 2013**
  - Roam the halls of the Durban Natural Science Museum at night.

**Biodiversity Seminar Series**

- **UKZN**
  - **3 July 2013**
  - **Dr Darryl Wood**
  - Snake Bites.

**“Night at the Museum” Sleepover**

- **DNSM City Hall**
  - **5 July 2013**
  - Roam the halls of the Durban Natural Science Museum at night.

**National Science Week**

- **Various Venues**
  - **29 July - 3 August**
  - Including guided tours of our facilities (29-30 July); Church Walk Exhibition (31 July); Women in Science Seminar (1 Aug); KwaNunu Expo (2-3 Aug).

**Mobile Museum Launch**

- **Venues to be confirmed**
  - **July - August 2013**
  - An educational outreach project aimed at bringing the Museum to rural and urban communities.

**Climate Change Exhibition Launch**

- **DNSM City Hall**
  - **1 August 2013**
  - Coincides with National Science Week Programme.

**Biodiversity Seminar Series**

- **UKZN**
  - **7 August 2013**
  - **Prof. Chris Appleton**
  - An update review of the invasive freshwater snails in SA.

**Educator Skills Development Training**

- **Venue to be confirmed**
  - **13-15 August 2013**
  - Biodiversity: Life Science (Gr 10 & 11).

**Biodiversity Seminar Series**

- **DNSM Research Centre**
  - **4 September 2013**
  - **Dr Dai Herbert**
  - Shell Curation.

**Magqubu Ntombela Legacy Programme**

- **1-30 September 2013**

**Magqubu Ntombela - Ian Player Annual Lecture**

- **DNSM Research Centre**
  - **26 September 2013**
  - The purpose of this annual lecture is to provide a forum for prominent and distinguished speakers who are leaders in the field of biodiversity conservation science and social science to address the general public on the subject of the environment, culture and social cohesion. This year’s lecture is planned around the launch of our new Wet Collection Room.

**Biodiversity Seminar Series**

- **SAAMBR**
  - **2 October 2013**
  - **Dr Dalene Vosloo**
  - How can studying captive African Penguins help us understand stress responses in these endangered birds?

**Educator Skills Development Training**

- **Venue to be confirmed**
  - **9 - 11 October 2013**
  - Biodiversity: Life Science (Gr 10 & 11).

**Biodiversity Seminar Series**

- **DNSM Research Centre**
  - **6 November 2013**
  - **Martin Taylor**
  - Red Data Book of Birds.

**Southern African Association of Science & Technology Centres Conference**

- **DNSM Research Centre, Various Venues**
  - **11-14 November 2013**
  - Annual conference of Southern African science and technology centre stakeholders (museums; science centres; zoos; aquariums; etc.)

**Holiday Programme**

- **Various Venues**
  - **9 December - 14 January 2013**
  - In conjunction with Durban Art Gallery, Central Library and Local History Museum.

**“Night at the Museum” Sleepover**

- **DNSM City Hall**
  - **20 December 2013**
  - In conjunction with the Durban Art Gallery, Central Library and Local History Museum.

**“Night at the Museum” Sleepover**

- **DNSM City Hall**
  - **10 January 2014**
  - In conjunction with the Durban Art Gallery, Central Library and Local History Museum.

**ALL EVENTS ARE SUBJECT TO CHANGE**
Our little heroes from Tree Tops school in Durban have achieved Green Flag status as a WESSA Eco-School. This means that, together with 1,200 other schools around the world, they are helping to create awareness and action around environmental sustainability in the school and surrounding communities. Fly down to the Climate Change Exhibition at the Durban Natural Science Museum during August 2013 and you might just get inspired to do your bit for our environment. After all, every little bit helps.