

# Biodiversity Information Management Forum

20 – 23 September 2010



## Forum report



## Contact details

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## 1. Executive Summary

The third Biodiversity Information Management Forum was held on 20 – 23 September 2010 at the South African National Biodiversity Institute (SANBI), Kirstenbosch, Cape Town. The Forum has been established to:

- co-ordinate biodiversity information management initiatives among partner organisations
- Establish and promote common standards and practices
- Promote the free flow of data
- Provide a platform for knowledge sharing

The focus of the 2010 Forum was on achieving excellence in biodiversity information management. This builds on the emphasis of previous forums on capacity development and leadership.

Peter Thomas facilitated an all day workshop which looked at the following questions:

- What do we mean by excellence in our field?
- What our purpose/objectives in achieving excellence should be?
- What will help and hinder us in achieving excellence?
- What are the models of excellence?

The workshop identified four mechanisms that could be used to develop the collective capacity and work towards the establishment of a national centre focusing on biodiversity information practices and capacity building. The four are:

- Research programmes
- Research chairs
- Centre of excellence
- Hybrid of the above

Individuals were nominated to take forward the process of establishing one or more of these mechanisms.

The year preceding the 2010 BIMF saw the launch of the Biodiversity Human Capital Development strategy, a joint initiative by SANBI and the Lewis Foundation. This is a significant development for the biodiversity sector, and for biodiversity informatics which has been identified as a scarce skill. Renee le Roux, Programme Director, addressed the Forum about the implications of this major development for biodiversity informatics.

The 2009 Forum initiated a process of analysing job roles in biodiversity information towards clarifying capacity requirements, which informs engagement with tertiary institutions towards the supply of appropriately skilled graduates. Rene du Toit of SANBI presented the analysis for comment.

Our exposure to the biodiversity information networks throughout Africa is growing and consolidating, particularly through SABIF's role in GBIF regional initiatives. SABIF delegates were impressed with the synergy in Kenyan efforts to establish a Centre of Excellence. The delegates from Kenya brought a valuable perspective to the BIMF,

emphasising that biodiversity information management is a new discipline in Africa that needs to build stakeholder support and demonstrate relevance. They shared their skills through a training working on the data management tool, BRAHMS.

The workshops, training sessions and presentations provided insight into the depth and scope of work that is taking place across the country in biodiversity information. The opportunities for networking, keeping up to date with new developments and exposure to tools and methods were amply demonstrated, and appreciated in the feedback.

Presentations and reports are available on the Biodiversity Information Management Forum website <http://infoforum.org.za/>

## 2. Forum Programme

		MONDAY, 20 September 2010	
TIME		VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION	VENUE: SEMINAR ROOM, KIRSTENBOSCH RESEARCH CENTRE
Pre-forum workshops	09h00	Registration	
	09h30	BRAHMS workshop	
	11h00	Tea	
	11h30	BRAHMS workshop	Virtual Museums/Citizen Science System workshop (12:00 - 13:00)
	13h00	Lunch	
	14h00	SPECIFY workshop	Presentation of NFEPA DVD and GIS Viewer
	15h30	Tea	
	16h00	SPECIFY workshop	
	17h30	Close	

		TUESDAY, 21 SEPTEMBER 2010	
TIME		VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION	
Main forum - Day 1	08h30	Registration	
	09h00	Welcome address: Ms. Carmel Mbizvo (SANBI) Moving towards excellence in Biodiversity Information: Mr Selwyn Willoughby (SANBI) Approaches to achieving excellence: Speaker to be confirmed Establishing a Biodiversity Information Management CoE in East Africa: Mr. Francis Oguya (National Museums of Kenya) Gathering requirements for the CoE: Mr. Owen Hendersen (BPG)	
	10h30	Tea	
	11h00	Plenary discussion	
	12h30	Lunch	
	13h30	Group discussion	
	15h00	Tea	
	15h30	Plenary discussion on the way forward	
	16h30	Close	

		WEDNESDAY, 22 SEPTEMBER 2010		
TIME		VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION		
Main forum - Day 2	08h30	Registration		
	09h00	Moving towards excellence: a way forward: Mr. Selwyn Willoughby (SANBI) Biodiversity human capital development strategy: Ms. Renee le Roux (Lewis Foundation/SANBI) Review of biodiversity information management job roles: Ms. Rene du Toit (SANBI)		
	10h30	Tea		
	11h00	Parallel Session 1: System and tools development	Parallel Session 2: Data collection methods	
		<i>VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION</i> Session Chair: Mr. Reuben Roberts Note taker: Mrs. Gloria Cupido	<i>VENUE: SEMINAR ROOM, KIRSTENBOSCH RESEARCH CENTRE</i> Session Chair: Mrs. Fatima Parker-Allie Note taker: Ms. Hyleen Ferguson	
		Natural Indicator Collection Kit: Mr. Stefan Steenekamp (Peace Parks Foundation)	SABIF funding and way forward: Mrs. Fatima Parker-Allie (SANBI, SABIF programme)	
		Some tools developed for the use of bringing biodiversity data forward for decision and policy making: Mr. Les Powrie (SANBI)	The National Collection of Nematodes and South African Plant Parasitic Nematode Survey programme at ARC-PPRI: Dr. Mariette Marais (ARC, SABIF programme)	

	Collecting plant data via PDA: Ms. Heather Terrapon (SANBI)	State of digitization of zoological collections in South Africa: Prof. Michelle Hamer (SANBI, SABIF programme)
	SAEON's Data Portal: Ms. Victoria Goodall (SAEON)	Assessment of localised habitat rarity using empirical flora and vegetation data: challenging the myth of Least Threatened vegetation types: Mr. A Barrie Low (Coastec)
	Overview of RIMS InfoEd: Mr. Nils van Heerden (NRF)	The Status of Medicinal Plants in two districts in Zimbabwe (preliminary): Mr. Member Mushongahande (Forestry Commission of Zimbabwe)
13h00	Lunch	
14h00	Parallel Session 4: Linking biodiversity information to decision & policy making	Parallel Session 3: Data and information management
	<i>VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION Session Chair: Mr. Reuben Roberts Note taker: Ms. Gloria Cupido</i>	<i>VENUE: SEMINAR ROOM, KIRSTENBOSCH RESEARCH CENTRE Session Chair: Mrs. Fatima Parker-Allie Note taker: Ms. Hyleen Ferguson</i>
	The Biodiversity Advisor: Ms. Heather Terrapon (SANBI)	BRHAMS and SALL: Initiating a paradigm shift: Dr. Matt Buys (SANBI, SABIF programme)
	Biodiversity Information Policy Framework: Mr. Selwyn Willoughby (SANBI)	Marine Biogeographic Data Management: Mr. Marten Grundlingh (AFROBIS-CSIR)
	Developing an integrated early warning system for rapid environmental change: Dr. Phoebe Barnard (SANBI)	The Museum Data Migration Project: Mr. Willem Coetzer (South African Institute for Aquatic Biodiversity, SABIF programme)
	BICS Africa Indicator: Ecosystem Protection Levels: Mr. Smiso Bhengu (SANBI)	Biodiversity summaries project: Ms. Sediqa Khatieb (SANBI)
15h30	Tea	
16h00	Biodiversity Bazaar	
	Presentations by: Arne Purves (City of Cape Town) Jackson Muhirwe (Lake Victoria Basin Commission) Kerry Maree (CapeNature) Member Mushongahande (Forestry Commission of Zimbabwe) Namhla Mbona (SANBI) Zishan Ebrahim (SANParks)  Forum closure and thanks: Mr. Selwyn Willoughby (SANBI)	
17h00	Poster viewing Dinner	

Main forum - Day 2

THURSDAY, 23 SEPTEMBER 2010		
TIME	VENUE: COLOPHON ROOM, CENTRE FOR BIODIVERSITY CONSERVATION	VENUE: SEMINAR ROOM, KIRSTENBOSCH RESEARCH CENTRE
08h30	Registration	
09h00	Integrating biodiversity into land-use planning, policies and guidelines	SA Encyclopedia Of Life workshop
10h00	Tea	
10h30	Integrating biodiversity into land-use planning, policies and guidelines	SA Encyclopedia Of Life workshop
11h45	Lunch	
12h30	Integrating biodiversity into land-use planning, policies and guidelines	Working with Interoperable, Distributed Spatial Data Sources – Guidelines and Issues
14h00	Tea	
14h30		Working with Interoperable, Distributed Spatial Data Sources – Guidelines and Issues
16h00	Close	

Post-forum workshops

### **3. Opening addresses and Exploring Excellence workshop**

The Forum opening addresses were given by Carmel Mbizvo and Selwyn Willoughby of SANBI, Frank Mazibuko of the NRF and Francis Oguya of the National Museums of Kenya.

Carmel Mbizvo spoke about the value of working in partnership, and moving beyond our borders in our commitment to learning from each other and constantly moving forward in our work.

Selwyn Willoughby emphasised the critical skills shortage in Biodiversity Information Management, and the need to mobilise our resources more smartly in the future in achieving excellence.

Frank Mazibuko explained that producing PhD's is a key driver in building capacity and the importance of sustainability in establishing Centres of Excellence.

Francis Oguya spoke of Biodiversity Information Management as a new skill in Africa needing to constantly demonstrate relevance to increase stakeholder support. Information processes and technology are key drivers in developing this field. .

The Exploring Excellence workshop was facilitated by Peter Thomas of the Business Presentation Group. See Annexure 1 for a report of the workshop.

### **4. Biodiversity Human Capital Development Strategy (HCDS)**

Renee le Roux presented the strategy which can be accessed on the website <http://www.skillsforbiodiversity.org.za/>

The HCDS focuses on high level skills in response to the lack of equity at senior levels and leadership positions in the biodiversity sector and scarce skills in the sector. Biodiversity informatics is identified as a scarce skill, although there is further work that needs to be done to establish what biodiversity informatics skills are currently being offered at higher education institutions and what the current and future demand is.

The vision of the HCDS is a socially equitable and suitably skilled workforce of biodiversity leaders, professionals and technicians to optimally implement the sector's expanding and increasingly complex mandate. This vision is to be pursued through four strategic goals:

- To increase the number of talented black South Africans attracted to working in the biodiversity sector.
- To improve the quality, levels and relevance of skills for the sector.
- To improve the retention and effective deployment of suitable individuals in the sector.
- To create enabling macro-conditions for skills planning, development and evaluation.

There are strategic objectives and associated activities linked to the strategic goals. Relevant activities include promoting biodiversity informatics as a career choice, engaging with higher education institutions around learning programmes, funding bursaries and internships in priority fields and supporting the supply of scarce skills through targeted higher education initiatives such as the establishment of a Centre of Excellence in biodiversity informatics. Models and tools to improve retention and effective deployment of skilled people will be developed through the activities.

## **5. DRAFT Biodiversity Information Management job roles analysis**

Rene du Toit of SANBI presented the draft analysis of potential job roles in the biodiversity information management sector. The need to identify job roles was agreed at the 2009 Biodiversity Information Management Forum as a necessary step in conducting a skills audit towards addressing the shortage of appropriately skilled BIM professionals and the need for transformation.

Input from different institutions in the sector will be valuable in assessing whether the roles identified in this document are relevant and appropriately clustered. For the full first draft of the analysis see Annexure 2, or follow the link below.

<http://www.infoforum.org.za/images/BIMF2010/jobroleswithinbim.pdf>

## **6. Parallel Sessions**

Available presentations can be viewed on the website <http://infoforum.org.za/>

### ***Parallel Session 1: System and tools development***

A number of issues came up in discussion during this session.

- Users can add value by giving feedback about problems with data that is not accurate.
- There should be consistency across institutions and individuals as to what constitutes sensitive data and how it is handled.
- Data management systems and tools may need to interlink and be used together.

### ***Parallel Session 2: Data collection methods***

Important points from the session are:

- SABIF funds for data verification can be accessed through the annual grants process
- All SABIF data is available on the web portal, although it is loaded up in batches. Sensitive data is not freely available, and requests are evaluated on a case by case basis at this stage.

### ***Parallel Session 3: Data and information management***

The following two key issues were highlighted:

- Access to biodiversity information could be best facilitated by providing a centralised service for geo-referencing and data-capturing
- Factors hindering data capturing in Africa include language, access to internet and computers

### ***Parallel Session 4: Linking biodiversity information to decision and policy making***

Important points from the session are:

- There is overlap in the role of SAEON and SANBI
- SANBI publishes an annual draft list of sensitive taxa
- SANBI is drawing up agreements related to the Biodiversity Information Policy Framework

## **7. Workshops**

### **SPECIFY**

Chairs: Francis Oguya, National Museums of Kenya;  
Nickson Otieno, National Museums of Kenya;  
Willem Coetzer, South African Institute for Aquatic Biodiversity;  
Henry de Lange, SANBI.

Francis Oguya gave an overview of information management in this organisation, including the history and implementation of Specify in the National Museums of Kenya (NMK). This was followed by a more detailed account of particular Specify databases, by Nickson Otieno, who presented the challenges faced by NMK in implementing Specify and plans for future development. Willem Coetzer of SAIAB gave a presentation on the Specify 6 'language', which was followed by a hands-on workshop during which users had the opportunity to interact with the Specify 6 user interface.

### **BRAHMS**

Chairs: Francis Oguya, National Museums of Kenya  
Pieter Winter, SANBI  
Matt Buys, SANBI

The visiting BRAHMS practitioners shared their experiences to give an initial impression of whether the software had a role to play in SANBI and the rest of southern Africa's herbarium network.

Pieter Winter sketched the **South African situation & vision** and explained why there was a need for SANBI to investigate new software to manage collections in Herbaria.

**Francis Oguya** (coordinator, Biodiversity and Collections, NMK) gave a presentation on their experience in the National Museums of Kenya using BRAHMS in the development of the program from its inception. The East African Herbarium (EAH) has a collection of over 1 000 000 collections.

Challenges included: the tedious nature of digitization; deciphering of handwritten labels; multiple languages; and development of information products for decision support and policy framework.

The workshop participants found BRAHMS to be versatile and appropriate for most of SANBI's needs. However, BRAHMS has a different way of relating species names to related data. As far as the conventional method for georeferencing in PRECIS is concerned, BRAHMS is sufficiently flexible, and can accommodate the Quarter Degree Squared system (QDS) in addition to other systems.

**Jonathan Ayayo** (Database specialist, NMK), delivered a more technical presentation on BRAHMS

Selwyn Willoughby sketched the way forward for SANBI's Collections System Project, including a user needs survey, a verification of the functionalities in BRAHMS in addressing SANBI's needs, and the migration of the data.

## **Virtual Museums / Citizen Science System**

Chair: Henry de Lange, SANBI

A range of citizen science systems were presented, including iSpot, Virtual museums from the Animal Demography Unit, the Biodiversity Database. It was clear that there are strengths and weaknesses of the different systems and decisions should be based on what is needed.

Some issues to consider with a citizen science system are:

- Levels of confidence for identifications and the involvement of experts to verify data;
- Security and data access around location for certain species;
- Screening for undesirable images;
- Marketing.

There are outstanding issues that still need to be clarified, such as purpose, direction and leadership in this area.

## **Presentation of NFEPA DVD and GIS Viewer**

Chair: Ashton Maherry, CSIR  
Jeanne Nel, CSIR

The National Freshwater Ecosystem Priority Areas project identifies a national network of freshwater conservation areas and explores institutional mechanisms for their implementation. The first National Spatial Biodiversity Assessment could not identify priority areas for biodiversity conservation for freshwater conservation ecosystems because critical data sets were missing. However, it highlighted the dire state of river ecosystems in South Africa. The work of the current project is identifying wetlands as the highest priority greatest threat. The workshop went through the background of the project, how it builds on the work of the 2004 NSBA and gave some background into the concepts of systematic conservation planning and the criteria used for identifying freshwater ecosystem priority areas.

The presenters gave information on the data used in creating the final shapefiles, and they took the participants through the NPEFA DVD.

## **Working with Interoperable, Distributed Spatial Data Sources – Guidelines and Issues.**

Chair: Wim Hugo, SAEON

The workshop focused on (1) finding and using data (including spatial data) through a Shared Platform, (2) contributing to a growing infrastructure and (3) issues and problems with sharing spatial data.

The Shared Platform currently hosts the SAEON Data Portal, SAEOS, the Risk and Vulnerability Atlas, and several other initiatives.

The workshop provided an overview of the platform architecture and a live demonstration of search, data visualization, and data capture capabilities. It also explained the available services that can be used to interoperate with the Shared Portal.

A key area that was discussed was the establishment of controlled vocabulary services. Meta data systems of SAEON and SAEOL will benefit from improved descriptions of terms used in abstracts, key words and titles. SAEOL can contribute to the taxonomy aspect of these descriptions. There is generally a lack of consistency in terms used in ecological and environmental observation processes e.g. alien vegetation / invasive species / alien invaders etc.

The platforms managed at SAEON have services that other participants in ecological and environmental observation can utilise to improve their own systems. SAEON needs to make time to document and advertise these services and to enable capacity through training workshops.

## **Integrating biodiversity into land-use planning, policies and guidelines**

Chair: Jeffrey Manuel, SANBI

Jeffrey Manuel gave an overview of the training programme on integration of biodiversity information into land-use planning, and described how SANBI engages with municipalities to enable and support the mainstreaming of biodiversity into municipal land-use planning. He covered the following areas:

1. An overview of biodiversity: Our Natural Environment
2. The Rural Land-use planning context
3. Biodiversity Planning: Science and Policy
4. Integrating biodiversity into land-use planning, policies and guidelines.
5. Integrating biodiversity into Spatial Development Frameworks

Many of the participants have been involved in generating and presenting data, and expressed the value of seeing how that data is used in training and mainstreaming. They had never realised how the information would be perceived.

## **SA Encyclopaedia of Life**

Chair: Michelle Hamer, SANBI

The Encyclopedia of Life is an unprecedented global effort to document all 1.8 million named species of animals, plants, and other forms of life on Earth. For the first time in the history of the planet, scientists, students, and citizens will have multi-media access to all known living species, even those that have just been discovered. ([www.eol.org](http://www.eol.org))

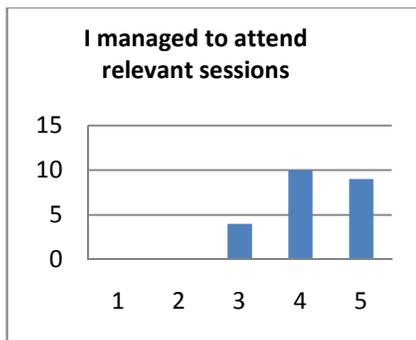
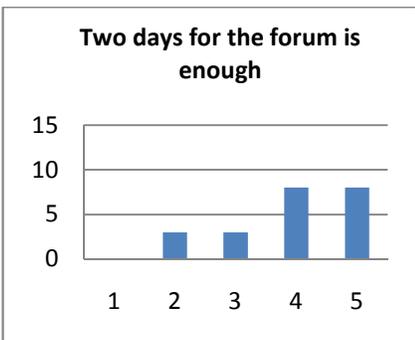
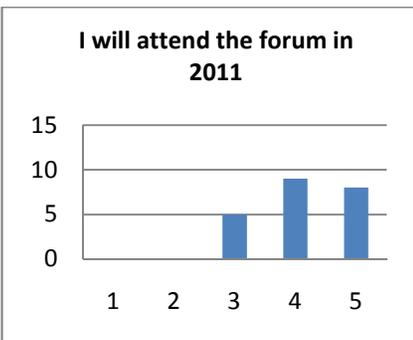
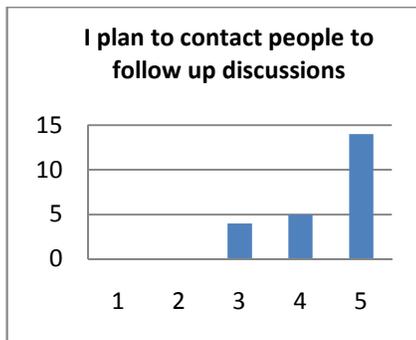
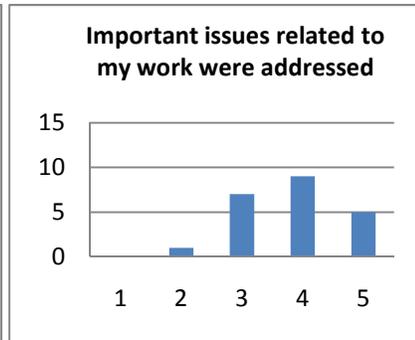
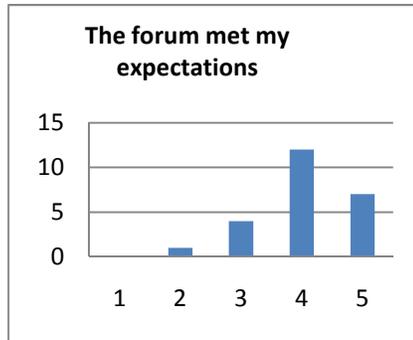
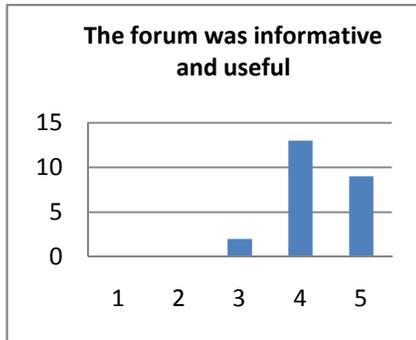
Key issues in this workshop were the way ahead with SAEOL with regard to some of the technical components, data formatting and alignment of websites across national and international initiatives. The workshop discussed whether SPECIFY is an appropriate tool to manage the taxonomic data. SAEOL has capacity constraints with regard to data management and CSIR and SAEON offered assistance with developing a more sophisticated interface for the data.

## 8. Feedback from the BIMF 2010

This information is collated from 23 feedback forms returned to SANBI BIM after the forum.

### Ratings in response to statements

In the graphs below the horizontal axis is the rating where 1 is “strongly disagree” and 5 is “strongly agree”. The vertical axis is number of respondents.



## 9. List of participants

NAME	SURNAME	ORGANISATION
A Barrie	Low	Coastec
Alan Aldrin	Meyer	CSIR
Amalia	Stipinovich	City of Cape Town
Andrew	Turner	CapeNature
Arina	Britz	Meraka, CSIR
Arne	Purves	City of Cape Town
Aurona	Gerber	Meraka Institute
Benedict	Winter	Drakenstein Municipality
Bernard	Niemand	DEA&DP
Boyd	Escott	Ezemvelo KZN Wildlife
Bruce	Brockett	North West Parks & Tourism Board
Bunafsha	Mislimshoeva	SANBI
Calsile	Mhlanga	Swaziland Environment Authority
Carmel	Mbizvo	SANBI
Cecily	van der Berg	Department of Environmental Affairs
Cindy	Prins	Drakenstein Municipality
Cleo	Schroeder	Environmental Resource Managements
Dalton	Gibbs	Environmental Resource Managements
Dennis	Laidler	DEA&DP
Devona	Naude	Drakenstein Municipality
Domitilla	Raimondo	SANBI
Fahiema	Daniels	SANBI
Fatima	Parker-Allie	SANBI
Francis	Oguya	National Museums of Kenya
Frank	Mazibuko	NRF
Gloria	Cupido	SANBI
Hans-Dieter	Oschadleus	UCT
Heather	Terrapon	SANBI
Henry	De Lange	SANBI
Hyleen	Ferguson	SANBI
Indiana	Mehlo	Iziko Museums of Cape Town
Jackson	Muhirwe	Lake Victoria Basin Commission
JEFFREY	MANUEL	SANBI
Jonathan	Ayayo	National Museums of Kenya
Karla	Coombe-Davis	Centre for Invasion Biology
Kerry	Maree	CapeNature
Khwezi	Flatela	SANBI
Koos	Smit	Exxaro Resources

Lauren	Lawrence	SANBI
Lawrence	Monda	National Museums of Kenya
Les	Powrie	SANBI
Lize	von Staden	SANBI
Louisa	Liebenberg	SANBI
Mariette	Marais	ARC - PPRI
Mark	Lisher	South African Institute for Aquatic Biodiversity
Marten	Grundlingh	AFROBIS-CSIR
Martin	Cocks	SANBI
Matt	Buys	SANBI
Mbulelo	Selebe	Department of Agriculture, Forestry and Fisheries
Michelle	Hamer	SANBI
Moore Norma	Malatji	SANBI
Nacelle	Collins	FS DETEA
namhla	mbona	SANBI
Nils	van Heerden	NRF
Nixon	Otieno	National Museums of Kenya
Paul	Petersen	Department of Environmental Resource
Paula	Hathorn	SANBI
Peter	Kantor	Kantor Legal Services cc
Peter	Thomas	Participlan
Phoebe	Barnard	SANBI
Pierre	De Villiers	Drakenstein Municipality
Pieter	Winter	SANBI
Prideel	Majiedt	SANBI
Rene	Du Toit	SANBI
Renee	Le Roux	Lewis Foundation/SANBI
Reuben	Roberts	SANBI
Reuben	Roberts	SANBI
Rose	Hamilton	Ezemvelo KZN Wildlife
Rukaya	Johaadien	SANBI
Sediqa	Khatieb	SANBI
Selwyn	Willoughby	SANBI
Smiso	Bhengu	SANBI
Stefan	Steenekamp	Peace Parks Foundation
Tertia	Horne	University of South Africa
Timothy	Crowe	UCT
Tony	Rebelo	SANBI
Trevor	Arnold	SANBI
Tsamaelo	Malebu	SANBI
Ursula	von St ange	CSIR

Victoria	Goodall	SAEON
Vuyokazi	April	SANBI
Willem	Coetzer	South African Institute for Aquatic Biodiversity
Yvette	van Wijk	Southern Cape Herbarium
Yvonne	Reynolds	SANBI
Zahir	Allie - Parker	Department of Environmental Resource
Zishan	Ebrahim	SANParks
Zoe	Davids	SANBI