

SANCOR NEWSLETTER

South African Network for Coastal and Oceanic Research

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Major research project for the Seychelles archipelago

By Paul Cowley

South African Institute for Aquatic Biodiversity

Scientists from the South African Institute for Aquatic Biodiversity (SAIAB) along with the Seychelles Fishing Authority (SFA), Seychelles Island Foundation (SIF) and the Island Conservation Society (ISC) will collaborate on a new research and monitoring programme that will focus on the outer islands complex of the Seychelles archipelago. Over the next five years the research team with the help of citizen scientists will study fish communities at some of the most remote atolls and islands on the planet. The team will embark on two

2-month research cruises per year on board the 60m expedition vessel *M/V Pangaea*, sponsored by Outpost Expedition Pacific. The *Pangaea* has a full complement of highly trained crew, a dive unit and seven smaller craft for conducting shallow water work. In addition, research funding for the *Pangaea Project* was pledged by the Teach Green Charitable Foundation. This significant research project has an estimated overall budget of approximately 4.5 million US dollars.

The *Pangaea* was used as a research platform for a similar project at the Palmyra Atoll in the Pacific Ocean, where it was shown that the collaboration between researchers and citizen scientists was a huge success. This project



The M/V Pangaea – a fully equipped platform for shallow-water and oceanic research (Photo: Pangaea)



resulted in several research outputs on the ecology and predator-prey dynamics of fishes at Palmyra and Kingman Atolls National Wildlife Refuge.

Fisheries are economically important to Seychelles, so emphasis will be placed on doing detailed studies on several important fishery species. These will include highly sought-after recreational species, such as bonefish, giant kingfish, bluefin kingfish and parrot fish, as well as species that are important to the artisanal fishery such as bourzwa (red) snapper, rabbit fish and several grouper (rockcod) species. Besides the detailed studies on selected fishery species, the *Pangaea Project* will document fish diversity, abundance and habitat affinities at several remote island localities and assess connectivity between geographically-separated “island” populations of commercially important fishes. The applied nature of this research will assist with the conservation efforts of some globally significant biodiversity hotspots and address the management needs for sustainable fisheries.

Due to the elusive nature of certain target species, such as bonefish and giant trevally, this research project will make full use of *Pangaea's* highly skilled fly fishing guides who have been involved with citizen science based research for many years. The experience of these professional guides will facilitate the effective capture and handling of samples. All fish will be captured using least invasive methods, such as barbless hooks to ensure minimal fatigue and stress, thereby allowing researchers to measure, tag and release fish quickly and unharmed. The adoption of “best practice” principals will be documented and used to guide the development of sustainable tourism at many resort hotels throughout Seychelles that offer recreational fishing opportunities.

Each research cruise will start at the main island of Mahe and the vessel will sail to the outer islands, while collecting information along the way. The biodiversity assessments will employ different methods, including

sophisticated underwater stereo-video camera systems that not only record the abundance of different species but also their size dimensions. This will enable researchers to quantify species diversity, population sizes and biomass associated with different habitats and/or depth profiles. This standardised approach will allow for direct comparisons to be made between fish communities in areas subjected to different levels of exploitation or protection. Furthermore, archived video footage will always be available for the implementation of long-term monitoring programmes to study climate change effects.

The study of connectivity (movement behaviour and dispersal) is essential for the management of exploited fish species and the evaluation of conservation strategies based on no-take marine protected areas. The *Pangaea Project* will adopt different methodologies at different spatial scales to investigate movement behaviour and connectivity. Acoustic telemetry studies will be carried out at an island/atoll level to investigate site fidelity, residency patterns and spawning aggregations dynamics, while conventional tagging studies, using plastic dart tags, will be conducted at discrete sites that are geographically-separated to evaluate dispersal and connectivity between the identified sites. Ocean-scale connectivity will also be evaluated by tracking the movements of large sharks tagged with satellite tags.

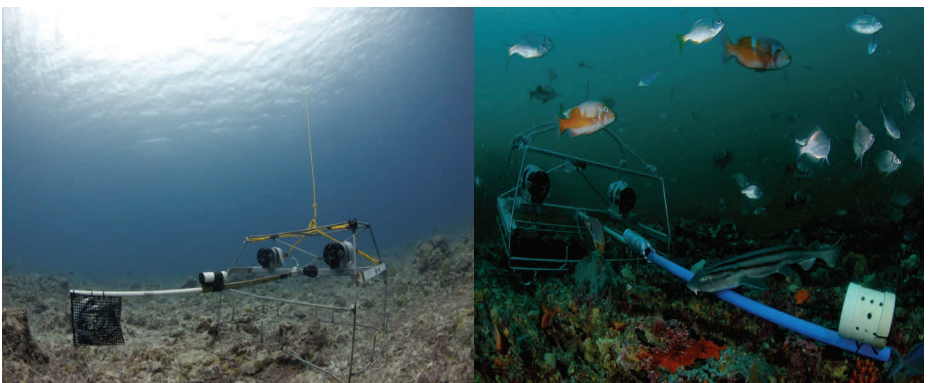
While adopting a benign approach to fish sampling, researchers will take small biopsies in the form of fin clips to study the



The adoption of best handling practices will assist with the development of sustainable recreational tourism (Photo: Fabien Forget)

genetic variability of fish populations throughout the Seychelles archipelago and other islands throughout the Indian Ocean. The *Pangaea Project*, therefore, provides an unprecedented opportunity to study connectivity between island populations that are separated by basins and oceanic ridges within a complex system of ocean currents. Knowledge of the evolutionary connectivity between populations is needed for the design of an appropriate network of marine protected area and vital for effective biodiversity protection.

The benefits of the *Pangaea Project* extend beyond gaining a better understanding of fish biodiversity and conservation. The research platform (*M/V Pangaea*) will also be utilised by local researchers and NGOs to conduct much needed monitoring of other biota, such as turtles, birds, corals, mangroves, and seagrass meadows on remote islands that are often difficult to access or too expensive for deployment of research and monitoring teams. ∞



A baited remote underwater stereo-video system (stereo-BRUVs) (Photos: Steve Benjamin)



South African scientists explore the oceanographic and biodiversity links between Madagascar and the northern KZN coast of South Africa

By Penny Haworth

South African Institute for Aquatic Biodiversity

Research in the high seas around South Africa is imperative if we are to understand the impact of climate change and possible future global change impacts such as deep sea mining, on our territorial waters and associated ecosystems.

The South African Department of Environmental Affairs (DEA's) research vessel, RV Algoa (Figure 1), docked in Cape Town on 31 July 2013 after a 22-day cruise to the ocean southeast of Madagascar to investigate similarities in biodiversity between Madagascar and southern Africa.

A team of ten biologists and geneticists from the Oceanographic Research Institute (ORI), the South African Institute for Aquatic Biodiversity (SAIAB) and the South African National Biodiversity Institute (SANBI) spent two weeks on the southeast coast of Madagascar. Along with their Malagasy research partners, they have been inspecting and sampling key organisms that are considered likely to have connectivity and genetic links between the two coastlines. The likely injection of unique genetic material from Madagascar into South African marine ecosystems may increase the resilience of these systems to global change.

The research cruise, which began from Durban on 08 July, is a research project funded by one of the largest marine science programmes in the country, the African Coelacanth Ecosystem Project (ACEP). ACEP is a joint project between the Department of Science and Technology (DST), the

Department of Environmental Affairs (DEA) and the Department of Agriculture, Forestry and Fisheries (DAFF) and a key partner in the Agulhas and Somali Current Large Marine Ecosystem Programme (ASCLME). The cruise included a stop-over at Fort Dauphin in Madagascar on 14 July, to pick up samples from the coastal biology team and to build relations through hosting a delegation of Malagasy officials and students to give them an overview of the project.

The project aims to identify similarities in coastal biology using, amongst other techniques, state-of-the-art genetic analyses. It also aims to establish how it is possible for such connectivity to exist between the ocean-separated land masses.

One of the hypotheses the project is attempting to test is that large (200-300 km) vortices of spinning water (eddies), originating south of Madagascar, pull shelf water rich in biota — especially larvae — off the continental margin and capture this in the core water of the passing eddies, where it appears nutrients and planktonic food are readily available to sustain the eddy-trapped organisms. The nutrients needed to sustain these biota are drawn up into the surface waters inside of the eddy from deeper levels in the ocean — a process known as eddy pumping. The laws of planetary physics dictate that these eddies then circulate westwards, travelling across some 1500 km of open ocean for approximately three months, to eventually collide with the African coast north of Richards Bay on the KwaZulu-Natal (KZN) north coast. Here, it is possible that the trapped Madagascan biotas are 'off-loaded' as some of the eddy water is leaked into the KZN coastal environment.



Figure 1 - RV Algoa

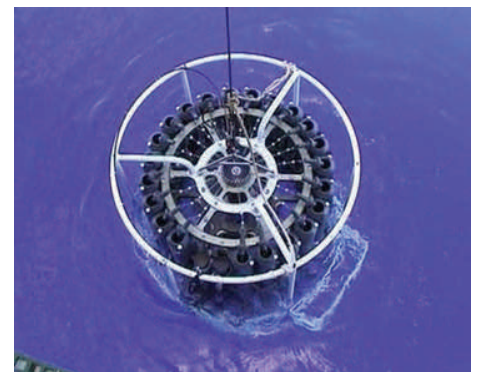


Figure 2 – CTD equipment collects water samples and measures Conductivity, Temperature and Depth.

A major task of the multidisciplinary science team on board the RV Algoa, including students, was to profile such an eddy using equipment (Figure 2) that accurately measures salinity, temperature, dissolved oxygen, nutrients, phytoplankton, and zooplankton and, of course, the key microorganisms thought to be commonly dispersed between the two coastlines. These data, together with information collected by remotely operated vertical profiling (Argo) floats deployed in the sampled eddy, and data downloaded from satellites which track eddies and ocean models will enable the scientific team to piece together the physical, chemical and biological processes responsible for the capture, sustenance and transportation of biota between Madagascar and southern Africa. ∞



Start of a new era of coastal and marine research in the Eastern Cape and South Africa

By Penny Haworth

South African Institute for
Aquatic Biodiversity

Through the South African Institute for Aquatic (SAIAB) and the South African Environmental Observation Network (SAEON) the National Research Foundation provides significant platforms for coastal-inshore and marine research, providing coastal vessels, instrumentation, data systems, dive units, remote operated vehicles and skippers, as well as monitoring the movements and migrations of marine animals along South Africa's east coast through the Acoustic Tracking Array Platform. Coastal and marine resources provide opportunities for economic and social activities that include: fisheries, agriculture, mineral resource exploitation and a range of development opportunities. The coast and its many estuaries are also highly valued for recreation. The sustainability of these resources is important since they constitute a rich and diverse national asset which is sensitive to human induced and environmental pressures.

Following on from the East Cape Ports and Maritime Conference held in Port Elizabeth earlier this year, at which SAIAB and SAEON Elwandle Node provided a joint exhibit to showcase the research being undertaken by the two NRF facilities in Algoa Bay, during National Science Week, SAIAB held a morning of public presentations followed by a panel discussion about research, economic development and the establishment of a maritime cluster in Algoa Bay.

SAIAB's long standing research in estuaries and the coastal environment has resulted in a rich history of research collaboration between SAIAB scientists and NMMU researchers. SAIAB has hosted the SAEON Elwandle Node for the last seven years and between the two NRF entities we have developed a range of research platforms such as the Algoa Bay Sentinel Site, Coastal



Signatories to the MoU are (standing from left): Prof Andrew Leitch (Executive Dean, Faculty of Science, NMMU), Prof Thoko Mayekiso (Deputy Vice-Chancellor: Research and Engagement, NMMU), Dr Albert van Jaarsveld (Chief Executive Officer of the NRF), (seated from left) Johan Pauw (Managing Director, SAEON), Prof Derrick Swartz (Vice-Chancellor, NMMU), Dr Angus Paterson (Managing Director, SAIAB).

craft platform, Acoustic Telemetry Array Platform (ATAP) and Remote Operated Vehicle unit, to name a few. These research platforms are in use by researchers from all the Eastern Cape universities and further afield.

To cement the strong ties in marine research that have developed over years of collaboration, on Monday 26 August, Nelson Mandela Metropolitan University (NMMU) formalised its working relationship with SAIAB and SAEON in a Memorandum of Understanding (MoU) which covers a wide range of initiatives to provide key research on the Indian Ocean inlet and surrounding coastline.

According to Dr Tommy Bornman, manager of the SAEON Elwandle Node who has been instrumental in the negotiations, the signing of this Memorandum of Understanding (MoU) signals "the start of a new era of coastal and marine research" in the Eastern Cape and Southern Africa.

"It will give all involved a stronger platform

from which to work in a number of areas."

Both SAEON and SAIAB are entities of the National Research Foundation (NRF), which also works closely with the university, and in this case, NMMU's Coastal and Marine Research Unit.

"We have always had a good working relationship with the two Grahamstown-based organisations. The MoU will allow us to further align our efforts," says NMMU's Science Faculty Dean, Prof Andrew Leitch.

Algoa Bay, stretching from Cape Recife in the west to Cape Padron in the east, is already acknowledged as one of the best researched bays in southern Africa and is often referred to as a health yardstick for bays nationally. SAIAB, with its long-standing research in estuaries and the coastal environment, and the Elwandle Node of SAEON, which focuses on monitoring and collecting the data from such long-standing aquatic research, will now formally pool their resources with NMMU in terms of knowledge, equipment and researchers. ✂



Chasing the black holes of the ocean

By Angelika Jacobs

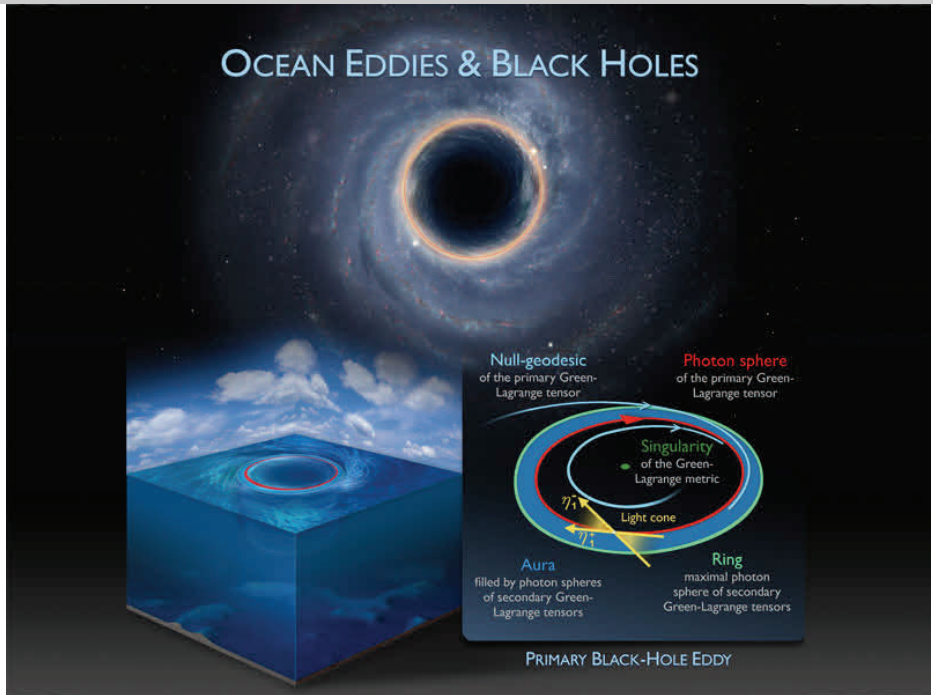
Swiss Federal Institute of Technology (ETH), Zurich

According to researchers from ETH Zurich and the University of Miami, some of the largest ocean eddies on Earth are mathematically equivalent to the mysterious black holes of space. These eddies are so tightly shielded by circular water paths that nothing caught up in them escapes.

The mild winters experienced in Northern Europe are thanks to the Gulf Stream, which makes up part of those ocean currents spanning the globe that impact on the climate. However, our climate is also influenced by huge eddies of over 150 kilometres in diameter that rotate and drift across the ocean. Their number is reportedly on the rise in the Southern Ocean, increasing the northward transport of warm and salty water. Intriguingly, this could moderate the negative impact of melting sea ice in a warming climate.

However, scientists have been unable to quantify this impact so far, because the exact boundaries of these swirling water bodies have remained undetectable. George Haller, Professor of Nonlinear Dynamics at ETH Zurich, and Francisco Beron-Vera, Research Professor of Oceanography at the University of Miami, have now come up with a solution to this problem. In a [paper](#) just published in the *Journal of Fluid Mechanics*, they develop a new mathematical technique to find water-transporting eddies with coherent boundaries.

The challenge in finding such eddies is to pinpoint coherent water islands in a turbu-



Mathematically speaking, ocean eddies are counterparts to the black holes in space. (Illustration: G. Haller / ETH Zurich)

lent ocean. The rotating and drifting fluid motion appears chaotic to the observer both inside and outside an eddy. Haller and Beron-Vera were able to restore order in this chaos by isolating coherent water islands from a sequence of satellite observations. To their surprise, such coherent eddies turned out to be mathematically equivalent to black holes.

No escape from the vortex

Black holes are objects in space with a mass so great that they attract everything that comes within a certain distance of them. Nothing that comes too close can escape, not even light. But at a critical distance, a light beam no longer spirals into the black hole. Rather, it dramatically bends and comes back to its original position, forming a circular orbit. A barrier surface formed by closed light orbits is called a photon sphere in Einstein's theory of relativity.

Haller and Beron-Vera discovered similar closed barriers around select ocean eddies. In these barriers, fluid particles move around in closed loops – similar to the path of light in a photon sphere. And as in a black hole,

nothing can escape from the inside of these loops, not even water.

It is precisely these barriers that help to identify coherent ocean eddies in the vast amount of observational data available. According to Haller, the very fact that such coherent water orbits exist amidst complex ocean currents is surprising.

Eddies as water taxis

Because black-hole-type ocean eddies are stable, they function in the same way as a transportation vehicle - not only for micro-organisms such as plankton or foreign bodies like plastic waste or oil, but also for water with a heat and salt content that can differ from the surrounding water. Haller and Beron-Vera have verified this observation for the Agulhas Rings, a group of ocean eddies that emerge regularly in the Southern Ocean off the southern tip of Africa and transport warm, salty water northwest. The researchers identified seven Agulhas Rings of the black-hole type, which transported the same body of water without leaking for almost a year.



Haller points out that similar coherent vortices exist in other complex flows outside of the ocean. In this sense, many whirlwinds are likely to be similar to black holes as well. Even the Great Red Spot – a stationary storm – on the planet Jupiter could just be the most spectacular example of a black-hole type vortex. “Mathematicians have been trying to understand such peculiarly coherent vortices in turbulent flows for a very long time”, explains Haller.

Notably, the first person to describe ocean eddies as coherent water islands may well have been the American writer, Edgar Allan Poe. In his story “A Descent into the Maelstrom”, he envisioned a stable belt of foam around a maelstrom. This served as inspiration for Haller and Beron-Vera, who went on to find these belts – the oceanic equivalent to photon spheres – using sophisticated mathematical formulas. Their results are expected to help in resolving a number of oceanic puzzles, ranging from climate-related questions to the spread of environmental pollution patterns.

Eddy in the Gulf of Mexico

Just after the publication of Haller’s and Beron-Vera’s results, Josefina Olascoaga, also a Professor of Oceanography in Miami, tested their new mathematical method. She unexpectedly found a large, black-hole type eddy in the Gulf of Mexico. (VIDEO) Olascoaga now uses her finding to assess the coherent transport of contamination from a possible future oil spill.

Journal Reference:

G. Haller, F. J. Beron-Vera. Coherent Lagrangian vortices: the black holes of turbulence. *Journal of Fluid Mechanics*, 2013; 731 DOI: 10.1017/jfm.2013.391

This media release was sourced from the [Swiss Federal Institute of Technology](http://www.swissfederalinstituteoftechnology.ch).

Warmer oceans could raise mercury levels in fish

Dartmouth College,
New Hampshire, USA

Rising ocean surface temperatures caused by climate change could make fish accumulate more mercury, increasing the health risk to people who eat seafood, Dartmouth researchers and their colleagues report in a study in the journal [PLOS ONE](http://www.plosone.org).

Until now, little has been known about how global warming may affect mercury bioaccumulation in marine life, and no previous study has demonstrated the effects using fish in both laboratory and field experiments. Mercury released into the air through industrial pollution can accumulate in streams and oceans and is turned into methylmercury in the water.

The researchers studied killifish under varying temperatures in the lab and in salt marsh pools in Maine. Fish in the marshes ate insects, worms and other natural food sources, while the lab fish were fed mercury-enriched food. Results showed the fish in warmer waters ate more but grew less and had higher methylmercury levels in their tissues, suggesting increases in their metabolic rate caused the increased uptake of the toxic metal.

This story has been sourced from http://www.eurekalert.org/pub_releases/2013-10/dc-woc100313.php



Dartmouth and other researchers studied killifish under varying temperatures in the lab and in salt marsh pools in Maine. Photo credit: NOAA

BELMONT FORUM

GULLS Research Vacancies

*Global learning for
“Local Solutions:
Reducing vulnerability of
marine-dependent coastal
communities” (GULLS)*

GULLS is an international research project funded through the International Opportunities Fund of the Belmont Forum and G8 Research Councils Initiative on Multilateral Research Funding. Applications are invited for the following vacancies in the South African components of the project:

Based at Rhodes University

- i) Post-doctoral fellowship in resilience to climate change and variability in the Western Indian Ocean.
- ii) A doctoral position is available to undertake research into the impacts of variability in abundance and distribution of the South African sardine on the national small pelagics fishery and its management.

Based at the University of Cape Town

- i) Post-doctoral fellowship in resilience to climate change and variability in southern African coastal regions.
- ii) A Masters position is available for a South African student to undertake research into selected impacts of environmental variability on a southern African fisheries resource and dependent coastal communities.

Closing date:
11 November 2013

Further details are available [here](http://www.gullsforum.org).



Eye-opening SANCCOB campaign calls for penguin adoption

The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) has released a thought-provoking series of graphic posters.

SANCCOB's Marketing Coordinator, Francois Louw, said, "The objective of the campaign is to create striking, visual imagery about the plight of the endangered African penguin and how the public can join SANCCOB's conservation efforts in saving the species. Re-classified as endangered in 2010 and with less than 21 000 thousand breeding pairs left in the wild, urgent conservation measures are required to save the only penguin species endemic to Africa."

By adopting a penguin from SANCCOB the public can become part of an international conservation movement to save the species.


Each adoption costs R500/\$50 and includes a photograph of your penguin, a letter of adoption and a certificate of adoption in the adoptees name.

Research has shown that the African penguin population is 19% higher because of the rehabilitation work carried out by SANCCOB since 1968.

The posters were conceptualised by award-winning Cape Town advertising agency Bittersuite. The series of four posters was placed in doctors' rooms, optometrists, hospitals, shopping centres, tourist sites and schools.



You can help save the species by adopting a penguin from SANCCOB today. Visit www.sanccob.co.za

Download the posters for free (A1, A3 or A4 size) from SANCCOB's [Event page](#). 





Conference Listing for 2014

Upcoming Conferences

to keep updated on the latest conference announcements visit the [events](#) section of the SANCOR website.

POGO-15 Meeting	22 - 24 January 2014	Hobart, Australia
2014 Ocean Sciences Meeting	23 - 28 February 2014	Honolulu, HI, USA
2nd Symposium on Fishery-Dependent Information	3 - 6 March 2014	Rome, Italy
Oceanology International 2014	11 - 13 March 2014	ExCel London, UK
Indian Ocean Futures Conference 2014	25 - 28 March 2014	Fremantle, Australia
13th International Coastal Symposium (ICS 2014)	13 - 17 April 2014	Umhlanga Rocks, Durban
3rd International Science and policy Conference on the resilience of social & ecological systems	4 - 8 May 2014	Montpellier, France
International Public Communication of Science and Technology (PCST) Conference	5 - 8 May 2014	Salvador, Brazil
ATCM XXXVII - CEP XVII: Antarctic Treaty Consultative Meeting (ATCM) and the meeting of the Committee for Environmental Protection (CEP)	12 - 21 May 2014	Brasilia, Brazil
Sharks International 2014	2 - 6 June 2014	Durban, South Africa
IMBER Open Science Conference - Future Oceans	23 - 27 June 2014	Bergen, Norway
6th International Workshop on Modeling the Ocean	23 - 27 June 2014	Nova Scotia, Canada
Southern African Marine Science Symposium	15 - 18 July 2014	Stellenbosch, South Africa
XXXIII SCAR Biennial Meetings (Scientific Committee on Antarctic Research)	22 August - 3 September 2014	Auckland, New Zealand
2014 SCAR Open Science Conference	25 - 29 August 2014	Auckland, New Zealand
Oceans 2014 - MTS/IEEE	14 - 19 September 2014	Newfoundland, Canada
The Climate Symposium 2014	13 - 17 October 2014	Darmstadt, Germany
17th Physics of Estuaries and Coastal Seas	19 - 24 October 2014	Pernambuco, Brazil
IUCN World Parks Congress	12 - 19 November 2014	Sydney, Australia
III International Conference on ENSO: "Bridging the gaps between Global ENSO Science and regional processes, extremes and impacts"	12 - 14 November 2014	Guayaquil, Ecuador
2nd International Ocean Research Conference: One Planet One Ocean	17 - 21 November 2014	Barcelona, Spain





SANCOR hosts Western Cape Student Workshop

By Hayley Evers-King

Marine Research (MA-RE) Institute, University of Cape Town

On the 6th of August 2013, a large number of Western Cape students attended the SANCOR Student Workshop, sponsored by the National Research Foundation, to discuss the 'future of marine science'. A great opportunity for students to present their work and meet other students from different institutions.

The first thing I noticed was the large and varied audience this event had attracted. It was also great to see so many students presenting who I knew of, but hadn't seen present before. Armed with a new set of results from my recent 3 months at the National Oceanography Centre, Southampton, I was glad to be presenting.

Keynote talks began and ended the day, after an introduction about SANCOR from Carmen Visser, Prof Larry Hutchings gave a historical overview of marine science in South Africa - emphasising the best bits of the past and where we need to go in the future - leaving us all inspired that 'there's always something interesting to do in marine science in southern Africa'. Dr Deena Pillay followed this up with some amazing examples of how interdisciplinary research is being used to understand changes in our amazing coastal ecosystems.



PhD student, Hayley Evers-King, reports on the workshop in the [MA-RE Blog](#).

But today was not just about science. Two talks from Dr Sebastiaan Swart (CSIR) and Mthuthuzeli Gulekana (DEA) gave students food for thought about life outside academia and how to pursue a career in marine science. Sebs advice included gaining analytical skills to help you conduct research freely - R, matlab, statistica etc, making the most of opportunities and that is was important to not choose the easiest route but definitely choose something interesting. Mthuthuzeli's story of his path in to marine science explained that failing a course or two can only be a stumbling block with hard work and support. He also emphasised the importance of outreach work - something close to the hearts of many MA-RE students.

After tea the first session of student talks began, with many fascinating, interdisciplinary topics covered. Hayley Cawthra (our first Hayley of the day!), combined geophys-

ics and archaeology to discuss the impact of sea level changes on the Mossel Bay area; whilst Kate Watermeyer has been exploring the impact of shifts in sardine and anchovy on the wider ecosystem in the southern Benguela using ecosystem modelling. The southern Benguela was the subject of several talks, with Raissa Philibert comparing nitrification there with that in the southern Ocean, Mutshutshu Tsanwani proposing a new PhD project on ocean acidification and my own talk presenting a new seasonality of chlorophyll in St Helena Bay and examining interannual forcing of Harmful Algal Bloom events. Sifiso Mbambo took us to Algoa bay to finish off the first session with his masters work on the variability of phytoplankton communities.

Lunch provided a chance to chat over tasty food. I myself managed to set up a new project with Thomas Mtontsi of SAEON to use my recent grant from my "I'm a Scientist, get me out of here!" win (more on that [here](#)). We're hoping to get a class from a South African school to take part in this fantastic programme - watch this space!

After lunch the second round of student talks began with adventurous tales of field work from Jessica Dawson - investigating the impact of, as she put it, 'hippo crap' on the St. Lucia estuary. Zoleka Filander then delivered an expert overview of her detailed MSC work on the systematics and diversity of South African echinoids, followed by Shan-



Participants of the Western Cape Student Workshop



non Hampton - sharing a chapter from her recently submitted thesis, looking at genetic differences between anchovy populations along the South African coast. My perspectives were changed on both parasites and invasive species after talks by Thomas Morris and Brendan Havenga, from whom we learned that parasites are useful (for investigating trace metals) and the invasive species are not always necessarily harmful. Our final Ha(y)ley for the day - Haley Pope, brought invasive species in to a climate change context, outlining her plans for comparing the interactions between indigenous and non indigenous barnacles. Morgan Brand finished off the session with a fantastic presentation produced in Prezi ([check it out](#) if you haven't used it!) about his experiments with cultured abalone.

A final tea time was welcomed before the final two keynotes on 'The perfect supervisor' and 'The perfect student' by Dr Sophie

von der Heyden and Prof Coleen Moloney.

Sophie asked students what they felt was important in a supervisor, and gave a few of her own suggestions, creating a list including: Enthusiastic, forward thinking, available but doesn't micromanage, has direction, challenges you, has funding, honest, driven, a leader in their field, promotes personal growth, knowledgeable and approachable. Admitting that you could never really get the '[perfect supervisor](#)' Sophie suggested that those interested in trying out the job could start gaining experience through mentoring during their PhD.

Turning the tables, Coleen gave us her 'Oceans 12' ideas for being the perfect student, with ideas for proof to show to prospective employers: 1. Enthusiasm e.g. outreach. 2. Communication skills e.g. writing/presentations 3. Initiative e.g. project you've run 4. Reliability e.g. show responsibilities 5.

Honesty e.g. be strong ethically on (e.g) plagiarism, confidentiality 6. Flexibility e.g. broad knowledge. 7. Numeracy e.g. applied programming skills etc 8. Dedication e.g. overcoming obstacles. 9. Critical thinking e.g. asking good questions 10. Diligence e.g. no typos on your CV! 11. Interpersonal skills e.g. collaboration 12. Publications!

A few questions and comments on funding and awards for great presentations to Raissa and Zoleka finished off our day - congratulations both!

Many thanks to SANCOR for organising a great workshop! ☺



Western Cape Workshop Organizing team (left to right): Carmen Visser, Amy Weber and Juliet Hermes.

SANCOR invites all KZN marine science postgraduates

- EVENT:** KwaZulu-Natal Student Workshop
- DATE:** Tuesday, 19 November 2013
- VENUE:** Biology Building, School of Life Sciences, UKZN Westville Campus
- TIME:** 8h30 for 9h00 until 16h00
- RSVP:** [RSVP here](#) before 12 November

This free workshop aims to:

- Give an overview of the marine and coastal research landscape
- Provide valuable career advice from the experts
- Promote interaction with other marine postgraduates and scientists



**SOUTH AFRICAN NETWORK
FOR COASTAL AND OCEANIC RESEARCH**



SANCOR Steering Committee changes in 2013



The SANCOR Steering committee bids farewell to Prof

Michael Schleyer who served two consecutive terms as the KZN Regional Representative and the SANCOR Steering Committee Chairperson. We thank him for his excellent leadership and commitment to the activities of SANCOR.



Prof Michael Schleyer

nearshore ecology and mangrove ecology.

Prof Ticky Forbes (SANCOR Forum Chair) and Dr Anusha Rajkaran (Eastern Cape Regional Representative) were re-elected for a second term in October.



Prof Ticky Forbes

Anusha is also the vice chairperson and acting chairperson.



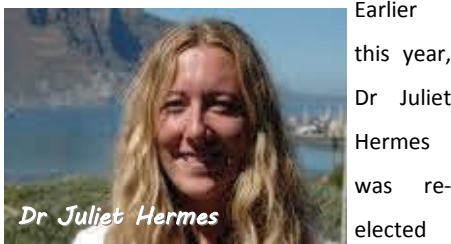
Dr Anusha Rajkaran

Dr Ursula Scharler has been appointed as the new KwaZulu-Natal Representative



Dr Ursula Scharler

and we wish her all the best in her new role. Ursula is a lecturer at the School of Life Sciences at the University of KwaZulu-Natal. Her research interests are: ecological networks - system level research; estuarine and

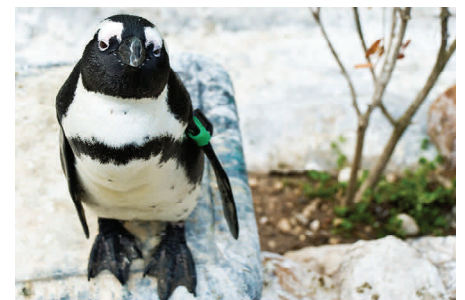


Dr Juliet Hermes

Earlier this year, Dr Juliet Hermes was re-elected to serve as the Western Cape Regional Representative. Anusha, Ticky and Juliet are thanked for the active role that they play in the events and activities of SANCOR. ☘

SANCCOB penguins and seabirds tours now every second Saturday

The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) now offer their behind-the-scenes public tours of their penguins and seabirds rehabilitation centre every second Saturday. These weekend tours are in addition to the normal Monday to Friday tours of their international recognize seabird rehabilitation centre situated in Table View, Cape Town. Tours give visitors a behind-the-scenes look at how the birds are cared for, treated and fed while undergoing rehabilitation at the centre. Visitors might even experience a penguin encounter during a tour! Saturday tours take place at 10am, 12pm and 3pm. A maximum of 10 people are allowed per tour at a cost of R40 per person. Weekday tours run from 11am-12pm and 3pm-4pm). Booking is essential via email at education2@sanccob.co.za or by calling SANCCOB at 021 557 6155. ☘



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Private Bag X2, Roggebaai, 8012

Enquiries: EDITOR: Carmen Visser

Tel: +27-21-402 3536

E-mail: sancor@daff.gov.za

Website: <http://sancor.nrf.ac.za>

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