

May 2018

Issue 218

ISSN 03700-9026

Inside this issue:

SA to play key role in unprecedented Antarctica expedition	4
Rediscovery of 'orphan collection' quickens star fish taxonomy	6
Abalone poaching: lifting the lid on why, how and who	8
Global warming could spell disaster for King Penguins	10
DEA research team returns with the first visuals of the Cape Canyon seabed	12
Life on the rocky shores: Taking education to the ocean	14

SANCOR'S CURRENCY AND STRENGTH IS INFORMATION

SANCOR Newsletter

Discovery of a new coastal current off Madagascar

South African, Malagasy and French researchers have discovered the existence of a coastal current off Madagascar. The newly-described current, the South-west Madagascar Coastal Current, flows poleward off the south-west coast of Madagascar. Knowledge about and a thorough understanding of it will help scientists understand ocean circulation in the region and have

direct implications for the management of local fisheries south of Madagascar.

"Revealing the existence of the new coastal current is an important discovery for South Africa as it adds to our understanding of the global ocean circulation and brings new insights about biological connectivity between the Madagascar and



A vessel returns to the traditional fishing village Lavanono, inshore of the upwelling zone at the southern end of Madagascar, in a region where the newly discovered coastal current could play a key role for the local fisheries. Credit: Mathieu Rouault

South African marine regions,” says Dr Marjolaine Krug, CSIR senior researcher.

The study forms part of the PhD of Heriniaina Juliano Dani Ramanantsoa of the Nansen-Tutu Centre for Marine Environmental Research, hosted at the Department of Oceanography at the University of Cape Town, titled, “Variability of coastal upwelling south of Madagascar”, which Krug supervised.

The research drew on the contributions of oceanographic experts from numerous institutions, including the CSIR, the University of Cape Town, the University of Western Brittany, in France, and the French Institute for Research and Development. The researchers combined in-situ and satellite observations with numerical model outputs to highlight the existence of a coastal poleward current located along the south-western coast of Madagascar. They found that the current is a relatively shallow (< 300 m) and narrow (< 100 km wide), warm and salty surface current with a transport volume comparable to that of the Leeuwin current, near Australia.



Dr Marjolaine Krug, a senior researcher at the Council for Scientific and Industrial Research, left, and oceanographer Juliano Ramanantsoa, from UCT.

Ramanantsoa says he developed a strong interest in ocean dynamics and investigated the variability of upwelling south of Madagascar as part of his PhD studies. Upwelling is an upward motion of deep water bringing rich nutrients to the surface layer, promoting fertilisation.

Krug’s research focuses on the Agulhas Current. “In my research I make extensive use of satellite remote sensing observations to better understand how the Agulhas Current varies and how this variability impacts the coastal regions. Madagascar is similarly flanked by a boundary current called the East Madagascar current.

Like in the Agulhas Current, variability of the east Madagascar current impacts the productivity of the waters near the coast and shelf. One can use similar tools and approaches to study the two systems.”

Krug says the Southern Madagascar region is a transition zone between the tropical waters of the Indian Ocean and temperate waters off South Africa, with a high degree of endemism. She says the southern waters off Madagascar are very productive and support a wide range of migratory species, including seabird and cetacean and that therefore there is a direct biological

link between the oceanic regions of Madagascar and South Africa.

Ramanantsoa says the new knowledge about the current has very specific value for players and decision-makers in the fishing industry. The fishing industry in South Africa and in a country like Madagascar is significant, with a huge impact on food security, employment and the ability to earn foreign exchange income.

"Countries have to manage their coastal and marine resources in a way that will ensure the safeguarding of ecosystems. Sustainability is closely linked to how well we manage our marine resources. The more we understand and know, the better we can manage our marine resources," he says.

The research was recently published in the journal *Geophysical Research Letters* and selected as a [Research Highlight](#) by the editorial team to be featured on <https://Eos.org>, as well as on the journal's website.

Krug says that it is not easy to prove that one has found a new current and that they had to provide strong evidence for it to be accepted in a peer reviewed journal. "It is a rare opportunity to discover a new current in the 21st century. It is a significant finding for the global ocean community and a really amazing achievement for Juliano," she says.

"As a Malagasy who grew up along this coastline, I have an intimate relationship with the current. I grew up with this current; it was such a big part of my life. Publishing the research was a truly

emotional moment in my life," says Ramanantsoa.

Journal Reference: Ramanantsoa, J. D., Penven, P., Krug, M., Gula, J., & Rouault, M. (2018). Uncovering a new current: The Southwest Madagascar Coastal Current. *Geophysical Research Letters*, 45. <https://doi.org/10.1002/2017GL075900>

Full video: <https://youtu.be/rad7KlcJJoQ> or <https://www.csir.co.za/videos/discovery-new-coastal-current-madagascar>

Source:

Discovery of a new coastal current off Madagascar. (2018, April 9). CSIR Media Release. Retrieved from <https://www.csir.co.za/discovery-new-coastal-current-madagascar> ↗


6th International conference on

Marine Science

September 21-22, 2018 | Dallas, USA

Theme: Influencing issues in marine life

Marine Science 2018



SA to play key role in unprecedented Antarctica expedition

South Africa will play a key role in an unprecedented expedition to one of the remotest places on Earth.

The Weddell Sea Expedition is heading to the Weddell Sea region of Antarctica in January and February 2019. It will study the ice shelf and marine life of the Larsen C Ice Shelf. The team of 30 will also look for the ship *Endurance* that sank in November 1915. Sir Ernest Shackleton's ship sank after ice trapped and crushed it.



The Royal Geographical Society will announce the expedition in London. Dutch charity the Flotilla Foundation, which funds marine research, is financing the expedition.

Researchers from the University of Cape Town, Nelson Mandela University and the South African Environmental Observation Network will join the researchers and crew from Britain and New Zealand.

The expedition said in a media statement there had been little commercial fishing in the area, which is home to 14,000 species, due to the thick sea ice.

Antarctica. File photo. Image: Andrew Mandemaker

"This unique area is home to marine animal communities and ecosystems that have adapted to Antarctic living conditions over millions of years ... Marine biologists have compared the diversity of species found here to that of tropical coral reefs."

The Larsen A and B ice shelves collapsed in 1995 and 2002.

"Ice shelves are of particular scientific interest because they are susceptible both to atmospheric warming from above and ocean

warming from below."

The explorers will use the Department of Environmental Affairs' *S.A. Agulhas II* vessel, which was built in 2012. It houses laboratories and other research facilities. The strengthened vessel can break ice more than one metre thick.

The team will use Underwater Autonomous Vehicles (AUVs) to survey up to 3km underwater and work 100 nautical miles away from the vessel.

Aerial drones and satellite remote sensing will help the captain to find the easiest path through the ice.

The Weddell Sea is approximately 2.8 million square kilometres and was discovered by British explorer James Weddell in 1823.

Professor Julian Dowdeswell from the University of Cambridge planned the expedition.

“Antarctica has about 1.5 million square kilometres of floating ice shelves, which have been surveyed and studied from above, but only very rarely from beneath. Many of these ice shelves are thinning and retreating rapidly, making scientific investigations here very timely.”

Source:

Gous, N. (2018, April 10). SA to

play key role in unprecedented Antarctica expedition. Times Live. Retrieved from <https://www.timeslive.co.za/news/south-africa/2018-04-10-sa-to-play-key-role-in-unprecedented-antarctica-expedition/> ⌘

Research Funding Calls	Closing date
Thuthuka research grants for academics and researchers at research institutions.	5/10/2018
NRF Human and Social Dynamics Funding Instrument 2019	5/11/2018
DST – NRF Fellowships for Early Career Researchers from the United Kingdom 2019. This call is intended for applicants based in the United Kingdom, who want to do a postdoctoral fellowship at a South African host	5/11/2018
NRF Freestanding, Innovation and Scarce Skills Postdoctoral Fellowships 2019	5/11/2018
Indigenous Knowledge Systems (IKS) 2019	5/11/2018
NRF Research Development Grants for Y-Rated Researchers 2019	5/14/2018
NRF Support for Unrated and Rated Researchers 2019	5/14/2018
DST-NRF Conference Fund 2019 Supports ‘global conferences’ of more than 500 participants.	5/15/2018
National Equipment Programme (NEP) 2019 Supports the acquisition, upgrade and development, of state-of-the-art research equipment.	5/17/2018
NRF-FRF Sabbatical Grant 2019	5/17/2018
NRF and the European Research Council (ERC) 2018 For South African postdoctoral researchers interested in undertaking research visits to ERC funded teams.	5/18/2018
Community Engagement Programme 2019	5/28/2018
Foundational Biodiversity Information Programme (FBIP) - Concept Notes for Large Integrated Team Projects	6/4/2018
Foundational Biodiversity Information Programme (FBIP) - Small Grants 2018	6/4/2018

Rediscovery of 'orphan collection' quickens star fish taxonomy

In taxonomy, the 'holotype' specimen can be considered the cornerstone of a species description – the single physical example of an organism, known to have been used when the species was formally described.

When this specimen goes missing the foundation upon which a species' taxonomy is built becomes shaky and can hinder further efforts like new species descriptions and modifications to higher level taxonomy, with potential implications for conservation efforts down the line.

This was the unfortunate situation for the echinoderm genus grouping *Asteroschema*: the global taxonomic schema was missing a 'building block' – the holotype.

This state of affairs for the brittle star grouping changed unexpectedly in 2009, according to Dr Jennifer Olbers a Marine Ecologist at Ezemvelo KZN Wildlife.

A curious 'orphan collection' was discovered at the Durban Natural Science Museum.

Orphan collection

According to the literature the holotype of *Asteroschema capensis* was located at the Durban Natural Science Museum, deposited 93 years ago in 1925 by one Theodore Mortensen but searches by Olbers and various other international brittle star taxonomists yielded no information or luck in locating the specimen.

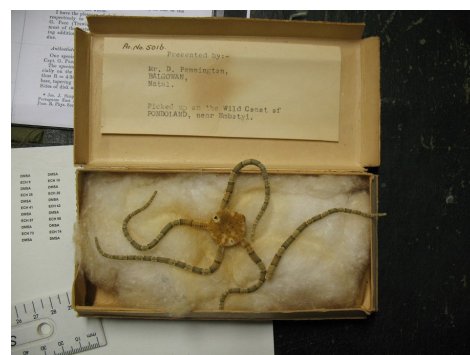
"It was only by chance that Mrs Mariana Tomalin, a volunteer working in the taxonomic collection at the Durban Natural Science Museum in 2009, opened a cupboard to be surprised by a stuffed lion which was aptly guarding the small but important and significant echinoderm collection," Olbers told the Foundational Biodiversity Information Programme (FBIP).

An orphan collection in this context means that there is no dedicated curator.

"In this case, the Durban Natural Science Museum do not officially house marine specimens but



The 'holotype' specimen can be considered the cornerstone of a species description.



A star fish specimen which formed part of the rediscovered 'orphan collection' (Credit: Jennifer Olbers)



Asteroschema capensis holotype.

because this collection holds type material, they keep them instead of sending them to larger collections," said Olbers.

The scientific community was notified about the rediscovery of the collection in the *DNSM Novitates* journal.

"Ever-evolving" taxonomy

The discovery of the collection, particularly the *Asteroschema capensisholotype* specimen, has injected new energy into taxonomic work within the echinoderms, and more specifically the snake star group, *Asteromorpha*.

In 2013 Olbers and two Japanese colleagues published a ['Taxonomic Review of the Genus *Asteromorpha*' in *The Raffles Bulletin of Zoology*](#).

The authors highlighted the fact that "some species of *Asteroschema* may in fact be *Asteromorpha*" and that the prior studies had questioned the taxonomic position of the former. Additionally, *Asteroschema capensis'* similarity to *Asteromorpha* had never been discussed.

The snake stars of the

genus *Asteromorpha* are known from deep waters (75-382m) of the south-western Indian Ocean off Reunion Island, and from the south-western Pacific Ocean, eastern Indonesia and eastern Australia.

The rediscovery of the *A. capensis* holotype gave Olbers and her colleagues the opportunity to re-evaluate the species morphology, particularly the "oral bridge" and "arm spines", and conclude that "*A. capensis* should be transferred to the genus *Asteromorpha* of the family Euryalinae".

According to Olbers the rediscovery of the echinoderm collection and subsequent taxonomic revision highlights the "ever-evolving" nature of taxonomy as new information, techniques and new species are found and developed.

FBIP SeaKeys project

Countries should compile and update a list or inventory of all species that have been recorded or occur in that country, with the correct name for each species. The change to the placement of *A. capensis* was captured in the

national checklist of Echinodermata as part of the SeaKeys project, which was funded through the FBIP.

Dr Kerry Sink, leader of SeaKeys, said the project enabled the networking of taxonomists through its 'taxonomic working group' and facilitated the inclusion of the information in national marine lists. This story highlights the value of collaboration and networking as well as the collections housed in museums which form the basis for organising and making sense of the millions of species on earth.

Source:

McDonald, D. (2018, April 16). Foundational Biodiversity Information Programme. Retrieved from <http://fbip.co.za/2018/04/16/rediscovery-of-orphan-collection-quickens-star-fish-taxonomy/> ☞

Abalone poaching: lifting the lid on why, how and who

Wildlife poaching has long been a subject of interest in academia. Research by biologists, zoologists and environmental scientists mostly focused on the impact of these crimes on wildlife populations and their habitat. More recently, criminologists interested in different types of environmental crimes, have started studying poaching.

This is because of the realisation that poaching affects more than wildlife: it has implications for developing nations' economies and often involves transnational criminal enterprises.

Theories developed to understand street criminals' behaviour are now being applied to green criminology. The hope is that this will help identify the causes of wildlife crimes, provide offender profiles and facilitate practical solutions. One of the focus areas is abalone poaching. It's an in-demand and expensive delicacy, and wild and farmed abalone fisheries are common in the Western Cape.

It is legal to harvest wild abalone (with permits and adherence to number limits) but poaching in the



The value of abalone increased as it moves from traffickers and later to overseas wholesalers. Shutterstock

wild fisheries has steadily increased since the mid-1990s. This is partly because of the social, political and economic changes in South Africa after apartheid. A weak economy, high unemployment, and ineffective policing have contributed to the rise in abalone poaching. So too has the presence of Asian criminal enterprises in the region and increasing market demand for abalone from Asia.

In 2013 I conducted an exploratory analysis of abalone poaching in a South African national park to see whether the "routine activities

theory" might be useful in tackling the problem. This theory, which falls under the concept of situational crime prevention, contends that crime happens when three elements converge: a motivated offender, a suitable target and a lack of security or motivational guardianship.

Motivated offenders are the opportunistic criminals often present in socially disorganised communities. Suitable targets are accessible, valuable and desirable. Guardianship includes law enforcement and physical barriers. According to the theory, crime rates vary based on changes to these elements.

Applying the theory in a national park

The concept of situational crime prevention is useful in wildlife crime research. It draws on other theoretical approaches like opportunity theory. Opportunity theory is concerned with the availability of opportunities to commit crime. It also contends that offenders make rational choices or decisions selecting targets with little risk and high reward.

Among the national parks I visited was Table Mountain in the Western Cape. It's a well established and frequently visited park in the densely populated Cape Town area. It has a full staff of rangers including an investigative unit, modern infrastructure to facilitate tourism and controlled access from land. There's a marine protected area offshore that is home to abalone.

The rangers didn't deter motivated offenders from targeting the park. Some poachers were subsistence hunters and sport divers who only took a few. Others were small-scale commercial poachers who legally entered the park by car and operated from the coastline, taking dozens of the molluscs at a time. The area was also targeted by large

commercial operations that entered the marine protected areas in boats and dispatched scuba divers to poach hundreds of abalone.

Those are the offenders. Then there's the "suitable target": abalone itself. In 2013 poachers sold abalone for between USD\$10 to sometimes USD\$40 per kilogram. The value increased as it moved to traffickers and later to overseas wholesalers, where it reached a few hundred dollars per kilogram. Some final retail prices have even exceeded USD\$3000 per kilogram in Hong Kong's markets

Security makes the difference

The key preliminary finding from the research was how variations in proper guardianship or security affected poaching. A park's fencing had little influence on offender behaviour since land based poachers could legally enter by pretending to be tourists.

The major factor was the size and capability of ranger units. They need to continuously watch visitors and boats near the abalone habitat. Poachers quickly exploited the lack of security in these areas. I found no evidence of collusion between rangers and poachers.

So what are the possible solutions? These may include more remote surveillance from fixed cameras in parking lots and along the coastline, and by drones over the water. Funding for these improvements could come from charging increased fees for park admission or fishing licenses. Adding more rangers to monitor park visitors for suspicious activity along with further enhancing the park's dedicated anti-poaching officers would be effective and is necessary.

Table Mountain had a motivated and capable investigative unit that was specially training in anti-poaching, including offshore operations, and able to deal with armed offenders should the need arise.

Anti-poaching efforts also need a sufficient number of well maintained patrol boats that allow armed rangers to physically check the activities of suspicious boats and sport divers in the protected areas.

Source:

Warchol, G. (2018, April 15). The Conversation. Retrieved from <https://theconversation.com/abalone-poaching-lifting-the-lid-on-why-how-and-who-88486#republish> ↗

Global warming could spell disaster for King Penguins

Nelson Mandela University's long-term research on King Penguins at Marion Island formed part of an international study which predicts that 70% of the sub-Antarctic seabirds could disappear by 2100, as a result of climate change.

The study found that warmer sea temperatures are shifting King Penguins' main food sources further south and, unless the penguins move too, they could starve.

"More than 70% of the world's King penguin population form breeding colonies on Crozet, Kerguelen and Marion Island," said Nelson Mandela University zoology senior lecturer Dr Pierre Pistorius, one of the co-authors of a [paper on the study](#), which has been published in the prestigious journal *Nature Climate Change*.

The French-led study - which included researchers from Monaco, Italy, Norway, Austria and the United States - has also been important in shaping a new three-year collaborative study between South Africa and France, funded by the South African National Antarctic



DIRE FUTURE: In less than 100 years, Marion Island's King penguin population - observed here by Nelson Mandela University zoology senior lecturer, Dr Pierre Pistorius - could disappear from the island. Photographer: Otto Whitehead

Programme (SANAP), to further investigate the impact of climate change on Marion Island's seabird populations.

Pistorius, who heads the Marine Apex Predator Research Unit (MAPRU) at Nelson Mandela University, said King Penguins rely on the Antarctic Polar Front - an upwelling front in the Southern Ocean, where cold Antarctic and warmer sub-Antarctic water meet, churning up nutrients and attracting enormous amounts of fish - as their main food source. In the breeding season, parents leave their chicks to swim 350km to 500km to the front, returning days

later with food for their young.

But warmer seas are shifting the front further south - and the study predicts that the penguins will have to swim more than 700km, the maximum distance they can travel to find food without compromising the survival of their chicks, due to their own increased energy expenditure. The possible starvation of their chicks could lead to huge population crashes.

"The front moves from year to year depending on the temperature of the ocean - and we have already seen impacts in King penguin numbers in the years it has shifted further away

from the breeding sites,” said Pistorius.

“What we have found at Marion Island is that King penguin numbers have actually been stable over the past years, but this study provides strong predictions about how it could all change in the future, if we don’t do something about global warming ... It’s hard to imagine Marion Island without King penguins, but there is no doubt that climate change is causing major changes in the Southern Ocean.”

The study says King penguins could save themselves by moving to other islands further south, except they have strict habitat requirements, so a new home might be hard to find. To form a colony where they can mate, lay eggs and rear chicks over a year, they need tolerable temperatures all year round, no sea ice around the island, relatively smooth beaches – and a food source close by to feed their young.

The research team used high-tech modelling, based on genetic and demographic data, to reconstruct the changes in the worldwide penguin population throughout the last 50,000 years. What they found was that past climatic changes,

causing shifts in marine currents, sea-ice distribution and Antarctic Polar Front location, have always been linked to critical episodes for the King penguins. However, they have always managed to overcome these, relocating during tough times.

However, they have never had to compete with rapid and irreversible changes in their environment caused by human activity.

The Polar regions are feeling the impact of climate change the most – and the Southern Ocean is also subject to commercial fishing.

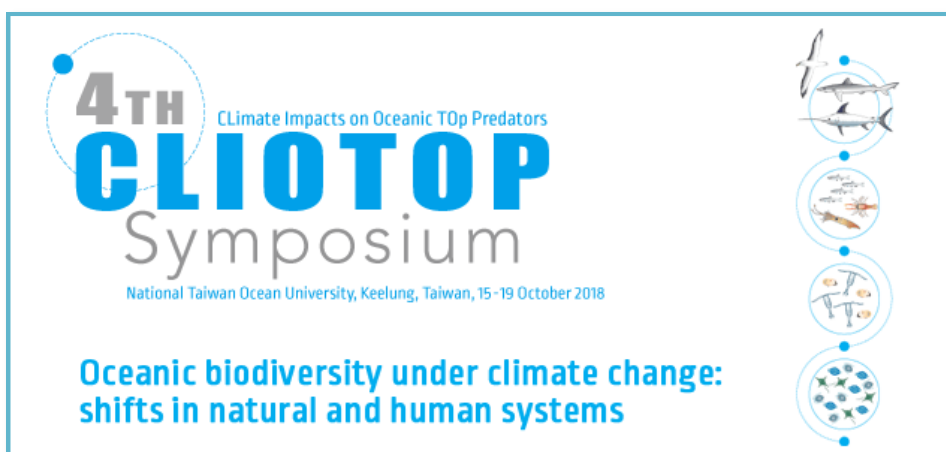
“There are still some islands further south where King penguins may retreat,” says study co-author and co-supervisor Dr Celine Le Bohec, from the University of Strasbourg in France, “but the competition for breeding sites and

for food will be harsh, especially with the other penguin species like the Chinstrap, Gentoo or Adelie penguins, even without the fisheries.

“It is difficult to predict the outcome, but there will surely be losses on the way. If we want to save anything, proactive and efficient conservation efforts but, above all, coordinated global action against global warming should start now.”

Source:

Global warming could spell disaster for King Penguins. (2018, March 28). Nelson Mandela University News. Retrieved from <http://news.mandela.ac.za/News/Global-warming-could-spell-disaster-for-King-Pengu> ⚡



DEA research team returns with the first visuals of the Cape Canyon seabed

A team of Department of Environmental Affairs' (DEA) researchers (scientists and technicians) have returned from a four-week research expedition, on board the Research Vessel *Algoa*. The cruise covered an area of over 100 x 300 km² where information on the biodiversity, oceanography and geology was collected throughout the operational area.

Amongst other successes, the team returns with the first visuals of the rocky habitats of Cape Canyon seafloor, and in doing so advance the knowledge of deep-sea research in the country. The overarching aim of this expedition was to document and explore some of the uncharted areas of largest known submarine canyon off the South African west coast- the Cape Canyon.

South Africa not only boasts a spectacular number of canyons on land but also has a notable amount of underwater canyons, such as the Cape Canyon, which may be foreign to the human eye. Such underwater features are reported to potentially

play a significant ecological role in the life history of some commercial resources (e.g. hake), and their unique structure connects the coastline to the deep-sea environment. Apart from their ecological functions, intensified upwelling events have been noted within submarine canyons and these in turn may power cetacean and seabird feeding grounds.

In light of the canyon's countless potential ecological services, the Department of Environmental Affairs: Oceans and Coast Branch initiated a 3 year collaborative project; in order to provide insights on the functionality of the Cape Canyon in relation to nearshore and offshore areas. The survey design undertaken followed an array of ship-based sampling methods, which included a tow-camera system that takes images and videos of the seabed; a bottom sampler collecting sediment from the seafloor; a dredge which collects invertebrate animal samples from above the seabed; and a Conductivity Temperature



R/V Algoa at sea on the Cape Canyon science expedition.



Still image showing pumpkin urchins, brisignids, yellow hydroids, white lace coral and solitary corals.



An eel, with white soft coral in the foreground, and encrusting sponges on the rocks.



White soft corals and lace corals.

Depth (CTD) device package that records information on the conductivity, temperature, salinity, and collects water samples to analyse environmental variables at different depths throughout the water column.

Apart from these physical sampling approaches, an acoustic device which releases sound at different rates produced a map outlining the topography of the canyon. Cetacean and seabird observers also participated and provided information on the distribution and abundance of the different species



Leg 1 participants of the Cape Canyon science expedition. Photo by Gaopalelwe Moroane.

recorded within the canyon.

These 2016 - 2018 datasets will collectively provide answers to the project's objective in characterising the area, and further complement South Africa's Marine Spatial Planning efforts.

Source:

DEA research team returns with the first visuals of the Cape Canyon seabed. (2018, March 29). Department of Environmental Affairs—media release. Retrieved from <https://www.environment.gov.za/mediarelease/dearesearchteamreturns>



3–6 July 2018
University of Venda, Main Campus, Thohoyandou (Limpopo)



Life on the rocky shores: Taking education to the ocean

The Two Oceans Aquarium has, for many years, offered a huge variety of educational classes to school children of all ages. But what about schools that want to take part in these lessons, but are unable to get to the Aquarium? We can bring the marine classroom to a beach near you!

Our Rocky Shore Ecology lesson introduces learners to animals and plants found in rocky coastal ecosystems. It also gives children a chance to investigate factors that influence the distribution of species on our shores and the interactions between the living and non-living parts of our environment.

We tailor each lesson to suit the needs of your class's curriculum - we have a world-class team of educators that are up for any challenge!

What do the kids get up to?

We joined Holy Cross Sisters' Primary School for a morning exploring the rocky coast of Big Bay - let's see what the grade 4s learned!

A few days before the Grade 4's trip to the coast, they were visited by the Oceans in Motion mobile

aquarium and a few of our educators who taught the children about the animals that inhabit our shores, with both live animals, sea plants and skeletons. The kids were then given the checklist they would be using later in the week for their beach visit - so that they would know exactly what to be on the lookout for.

When the classes arrived at Big Bay, they were split up into small groups - each partnered with an Aquarium intern or educators and their own teachers. These groups then worked together to explore the rockpools of this short stretch of coastline. They collected any interesting specimens they discovered to share with the rest of the group later.

Many of the kids had visited this beach before and were amazed by the huge numbers of animals (like everyone's favourite cushion starfish) that they had simply overlooked before.

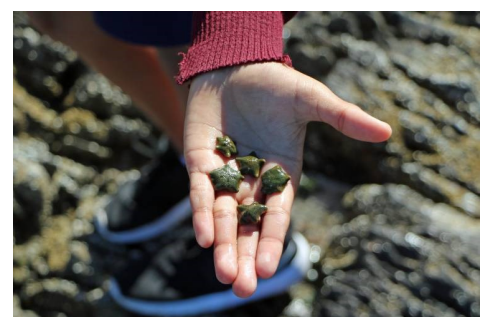
By exploring the rock pools, the children were able to put the lessons they learned in the classroom into practice in reality. "Look, the anemones are covering themselves in sand for



Eager learners inspect a fascinating discovery.



Educator Bianca Engel shows the learners a dissected red bait (*Pyura stolonifera*), provided by local fishermen, showing the children how sea squirts, a primitive animal, feed - and how "redbait" got its name.



The tiny dwarf cushion-stars (*Parvulastra exigua*) quickly became the children's favourite animal. These little animals feed on the algae covering rocks.

camouflage!" "The klipfish are scared of seagulls, so are probably hiding in the shady spots!"

With all the groups coming together the interesting and more unusual creature and plants found were shown to the whole group.

Looking at all these animals together, it is easy to see how complex even an ecosystem right on our doorstep can be. Even the pesky seagulls circling the class were a vital part of that system.

Our incredible animal volunteers were then swiftly released unharmed back into the rockpools to resume their lives in the wild.

By this point, many of the kids had noticed that the rocks, water, sand and sunlight weren't the only non-living components of the ecosystem - there was a lot of manmade plastic pollution.

The children were taught about the "Dirty Dozen", the 12 items most commonly found littered on beaches in South Africa. Each group was quickly sent out to try and find one of each of these items in as quick a time as possible!

Cigarette butts and single-use drinking straws were the two most common plastic litter items on this stretch of beach!

How you can book a lesson for your school?

School groups can book any one of a large number of lessons at the Aquarium's Environmental Education Centre.

If you would like the Aquarium's education team to bring the Rocky Shores lesson to a spot near you, you can arrange a booking by contacting [Carrin](#). Please be aware that these lessons are only possible

during low tides, so contact the Aquarium at least a month in advance so that a suitable date can be found to give your learners the best possible experience.

If you are a teacher from a school that is unable to afford the expenses associated with an Aquarium visit, or the Rocky Shore Ecology lesson, feel free to get in touch with our incredible outreach team - the *Oceans in Motion and Smart Living* outreach vans are on the road visiting schools every day, yours could be next!

Source:

Life on the rocky shores: Taking education to the ocean. (2018, April 12). Two Oceans Aquarium Blog. Retrieved from <https://www.aquarium.co.za/blog/entry/life-on-the-rocky-shores-taking-education-to-the-ocean-book-your-school> ↗

Vacancies	Organisation	Location	Closing Date
Part-time Education Guide	uShaka Sea World Education	Durban	5/8/2018
NRF Freestanding, Innovation and Scarce Skills Postdoctoral Fellowships 2019	NRF	countrywide	5/11/2018
Postdoctoral opportunity to research microplastics in seafood.	AIMS	Townsville, Queensland	5/14/2018
Quantitative Fisheries Scientist	CSIRO	Hobart, Tasmania	5/15/2018
Operations/Product Manager	ABALOB	Cape Town	5/15/2018
Coastal Systems Modeller	CSIRO	Australia	5/18/2018

Student / Early Career Training Opportunities	Institution	Closing Date
NRF Freestanding, Innovation and Scarce Skills Postdoctoral Fellowships 2019	NRF	5/11/2018
NRF-Nuffic Doctoral Scholarships 2018 Doctoral scholarships for study full-time in the Netherlands (i.e. single site mode) and full-time joint doctoral degrees (i.e. split site mode).	NRF	5/14/2018
Joint Master Course on Maritime Spatial Planning	Erasmus Mundus	5/15/2028
PhD project at University of Queensland to study trajectories of change in marine megafauna. If successful, the student will have the opportunity to conduct research in both Australia and the UK.	UQ	5/26/2018
Postdoctoral position in physical oceanography.	JPL	5/31/2018
PhD position to work on the bioregionalization of zooplankton on the Canadian west coast. Closing date unspecified. Start date: Sep 2018.	UBC	6/23/2018
Scicom Skills Development for African Communicators Stellenbosch University is offering a flexible study opportunity in the field of public science communication and engagement. This 6-week online course (6 Aug - 17 Sep 2018) is aimed at communicators or managers at the interface between research and public/policy audiences, as well as scientists who are interested in exploring new, evidence-based approaches to communicating their research.	Stellenbosch University	7/9/2018
UCT Applied Ocean Sciences Masters Degree This course will provide academic and technical skills to deal with the most applied aspects of oceanography and marine biology.	UCT MA-RE	10/31/2018

Issued by the
South African Network for Coastal and Oceanic Research



Enquiries may be directed to the editor:

Mrs Carmen Visser

Private Bag X2, Vlaeberg, 8018

Phone: 021 402 3536

Fax: 086 440 1518

E-mail: sancor@daff.gov.za

Our Focus: Science in the Marine and Coastal Environments

SANCOR's activities are made possible through financial contributions from the Department of Agriculture, Forestry and Fisheries (DAFF), the Department of Environmental Affairs (DEA) and the National Research Foundation (NRF).

Disclaimer: SANCOR's main function is to disseminate information. SANCOR encourages robust, indeed provocative debate about any matters relevant to the marine science community. The views and opinions expressed in all communication from SANCOR are not a reflection of the views of SANCOR or the SANCOR Secretariat.

Visit our website:

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

Follow us on Twitter:

<https://twitter.com/SANCORCommunity>

Find us on Facebook:

<https://www.facebook.com/SANCORCommunity/>



**agriculture,
forestry & fisheries**

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



RISA
Research and Innovation
Support and Advancement