

PhD opportunity
Institute for Coastal and Marine Research (ICMR)
Nelson Mandela University (NMU)

Development of a marine spatial plan for Algoa Bay

In September this year, the Department of Science and Technology (DST), through the National Research Foundation (NRF), awarded a grant to develop a Community of Practice (CoP) in Marine Science in the Eastern Cape. The recipients of the grant include a transdisciplinary team of marine researchers from Nelson Mandela University (NMU), Rhodes University (RU), the University of Fort Hare, the South African Institute for Aquatic Biodiversity, the South African Environmental Observation Network, and the Climate Service Center in Germany (GERICS). The team is led by six DST/NRF South African Research Chairs (see the media release copied below).

The aim of the CoP is to develop scenarios for marine spatial planning in Algoa Bay, to inform the drafting of area-based plans required under South Africa's new marine spatial planning legislation. The team is taking a 'Systems Thinking' approach, and seeks a PhD candidate to contribute towards the development of a bio-physical marine spatial plan for the Bay. This plan will form part of a broader social-ecological dynamic simulation model of the Algoa Bay system, to be developed by a Postdoctoral Fellow working with the PhD candidate. The model, constructed using tools such as agent-based models, network analysis models and Vensim software, will describe the relationships between different components in the Bay – these components will include coastal and ocean governance, the bio-physical system, and the social system, all within a changing climate. The PhD candidate will, however, concentrate on the bio-physical component of this model.

Experience in systematic conservation planning and Geographic Information Systems will be an advantage. Additional experience in applying Systems Thinking or Systems Dynamics Modelling will also be an advantage, but candidates who have a keen interest and willingness to work across scientific disciplines are encouraged to apply.

Expressions of interest are invited from candidates who have a MSc in the biological or environmental sciences. South African citizens will be prioritized.

Value and tenure: The value of the PhD bursary is ZAR 120,000 per annum. No benefits or travel allowances are included in the value of the bursary. The bursary is tenable for 3 years, starting in early 2018.

Academic base: The successful candidate will be based at the new Ocean Sciences Campus at the Nelson Mandela University in Port Elizabeth, South Africa, working closely with the academic supervisor, Prof. Mandy Lombard, with additional mentorship from Dr Linda Harris, Dr Lorien Pichegru, and the Postdoctoral Fellow. The candidate will also be part of the larger CoP team and will thus benefit from a transdisciplinary learning experience with exposure to many fields of research.

Please email expressions of interest to:

Prof. Mandy Lombard (DST/NRF SARChI Chair: Marine Spatial Planning, NMU)

mandy.lombard@mandela.ac.za

Please provide a CV, short motivation regarding your interest in this project, and the email addresses of two academic references.

Applications close on 15 December 2017.

Media Release

1 September 2017

Eastern Cape marine scientists working together to plan for the future of Algoa Bay

Eastern Cape, South Africa – Seventeen scientists from across the Eastern Cape have launched a collaborative, two-year project to develop a marine spatial plan for Algoa Bay that harnesses the collective expertise of researchers in the natural sciences, humanities and law. The project marks the first step in developing a local marine spatial plan for South Africa.

Led by principal investigator Prof Rosemary Dorrington from Rhodes University (RU) and co-investigator Prof Amanda Lombard from Nelson Mandela University (NMU), the team includes 15 other lead researchers from institutions in the Eastern Cape including the University of Fort Hare, the South African Institute for Aquatic Biodiversity (SAIAB) and the South African Environmental Observation Network (SAEON), in addition to RU and NMU. More than fifty additional scientists will contribute to the project. Both Dorrington and Lombard are SARChI Professors (SARChI, the South African Research Chairs Initiative, is a joint programme of the National Research Foundation and the Department of Science and Technology to promote excellence in research and innovation).

The Algoa Bay project is funded through the NRF's Communities of Practice program, which promotes strategic research partnerships to conduct research that solves societal challenges and influences policy.

The project aligns with the objectives of South Africa's National Development Plan. More than 40% of South Africans live near a coastline and the country has more ocean territory than it has land. In 2014, government launched "Operation Phakisa" to unlock the economic potential of the oceans by developing the 'Blue Economy'. One of the three pillars of this endeavour is marine spatial planning.

Prof Lombard, SARChI Professor of Marine Spatial Planning at NMU, explains, "Marine spatial planning is about using marine resources sustainably. We bring together all the data and everyone with an interest in the oceans—government, fisheries, shipping, energy, tourism, conservation and recreation—to make coordinated, evidence-based decisions about how to use resources and manage our oceans. The goal is to optimise economic opportunities without compromising the environment."

The marine spatial plan for Algoa Bay will provide a case study on fulfilling the requirements of the new Marine Spatial Planning Bill, which dictates that four regional area plans will be consolidated into a national plan.

Prof Dorrington, SARChI Professor of Marine Natural Products at RU says, "We're delighted to have earned funding from the NRF for this project, which draws together a multidisciplinary group of researchers. The Eastern Cape is often overlooked as a centre for marine research and development, but we have excellent researchers, including six SARChI professors working in the marine sciences."

Dorrington continues, "We're harnessing our collective expertise on a project of critical national importance that will attract scientists and entrepreneurs to the Eastern Cape and develop economic potential to benefit everyone. We've brought together experts in law and ocean governance, molecular biology, ecology, marine biology, geography, geology, oceanography, conservation, fisheries, sustainable development—no single researcher could tackle this complex challenge alone."

The first two years of the project will focus on collating biological and physical data and creating a conservation plan for the Bay. "We're starting with what we know and what we know is biophysical," says Prof Lombard. Algoa Bay, which is a SAEON Sentinel Site for Long Term Ecological Research, is the best monitored coastal area in Africa and in the entire Southern Hemisphere and the fauna and flora of the system have been well studied."

"In the next phase of the project, we'll focus on people," says Prof Lombard. "We'll gather all the stakeholders to map everyone's needs and goals, from whale watchers to fishers to the Port Authority."

The next step is a legislative and governance framework, followed by combining everything into a draft regional marine spatial plan for Algoa Bay.

Prof Dorrington says, “We’ve reached out to colleagues in the Department of Environmental Affairs to offer our Algoa Bay project, the first of its kind, as a learning experience for scaling up the marine spatial planning process to the entire country.”

Algoa Bay contains ports, estuaries, islands, rocky reefs, dunes and Blue Flag beaches. It is a hotspot for biodiversity including charismatic whales, endangered African penguins, fish, an extraordinary diversity of invertebrates, seaweeds and corals, all of which are important to the functioning and health of the ecosystem. Coastal communities and industries, such as those of the Nelson Mandela Bay Metropolitan Municipality, depend on these resources.

Contact:

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Prof Amanda Lombard, Nelson Mandela University

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List of senior scientists included in the project by institution:

Rhodes University

Prof Rosemary Dorrington

SARChI Professor, Marine Natural Products

Prof Christopher McQuaid

SARChI Professor, Marine Biology

Nelson Mandela University

Prof Janine Adams

Director, Institute for Coastal and Marine Research

Prof Amanda Lombard

SARChI Professor, Marine Spatial Planning

Prof Renzo Perissinotto

SARChI Professor, Shallow Water Ecosystems

Prof Michael Roberts

SARChI Professor, Ocean Science and Marine Food Security

Ms Bernadette Snow

Researcher, Development Studies

Prof Hennie van As

Researcher, Centre for Law in Action

Prof Patrick Vrancken

SARChI Professor, Law of the Sea and Development in Africa

University of Fort Hare

Prof Ken Lui

Researcher, Geology

Mr Jacques Mahler-Coetzee

Researcher, Nelson Mandela School of Law

SAEON

Dr Thomas Bornman

Manager, Elwandle Coastal Node

Dr Shaun Deyzel

Researcher, Elwandle Coastal Node

Dr Wayne Goschen

Researcher, Elwandle Coastal Node

Dr Shirley Parker-Nance

Researcher, Elwandle Coastal Node

SAIAB

Dr Gwynneth Matcher

Researcher, Aquatic Genomics Research Platform

Dr Francesca Porri

Researcher, Marine Ecology