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First-of-its kind Namib desert research leads to master's degree



Liezl Maritz

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Photo: Liezl Maritz

After working in isolation on the coast of the southern Namib desert, University of Cape Town (UCT) student Liezl Maritz will graduate with a Master's in Biological Sciences.

She undertook the first (and only) investigation of the ecological viability of wetland marine ponds created by diamond-mining activities.

Maritz' research, which involved identifying and understanding spatio-temporal patterning and the relationship between natural and anthropogenically induced phenomena, took place within the Southern Coastal Mines licence area. This is one of the largest licencing areas held by Namdeb Diamond Corporation and where Maritz has been employed since 2012. The region is a high-security area enclosed by a double fence where public access is strictly controlled.

"The mining activity that takes place progressively pushes the coastline out into sea. This enables mining to take place in what was previously a surf zone, in the lee of 'sea walls' that hold the sea at bay. In the process, multiple large marine ponds – some as much as 1 km long – are created along the coast, which are clearly visible on Google Earth," she said.

Prior to the mining, the coast was covered in a naturally occurring dune hammock system, which has now disappeared and been replaced by the man-made marine ponds. Maritz aimed to assess whether these ponds could supplement the sparse estuarine and lagoonal systems that exist on the parched coast.

When conducting her study, which took place on an area approximately 75 km in length and with 150 pools in total, she assessed the age, physical properties, amount of salt-marsh vegetation, bird species and fish benefitting from each pond. This allowed her to determine whether the ponds serve an important ecological role worth preserving.

In the end, the final verdict was positive. Her research revealed that the pools do in fact support and attract biodiversity.

"In short, they allow the development of salt marshes that would otherwise be absent, support populations of a limited number of marine fish species and have a remarkably rich waterbird fauna."

Findings from her research show that the rich waterbird fauna found in the area is on par with other regions classified as Important Bird and Biodiversity Areas. Thirty-six different bird species were recorded during her study, and the ponds provide an attractive alternative habitat for waterbirds to nest, forage and roost.

With these findings, as well as her ongoing research, Maritz is confident that she will make a valuable contribution to the biodiversity conservation efforts in the Southern Coastal Mines area and Namibia as a whole, as well as create opportunity for the fields of restoration, ecology and mining environmental management to expand and grow.

"There are a limited number of studies conducted in the area because of access restrictions, making the data I collect very valuable," she added.

Access control wasn't the only challenge she faced when completing her degree, however. She also had a full-time job and had to constantly balance her time, energy and attention. She overcame this obstacle by strictly managing her daily schedule and weekly deliverables. Allowing time for herself to rest and recuperate was also an important factor in her success.

With only a two-way radio to communicate with security in the study area, and having remote contact with her supervisors, Maritz admitted that despite all the challenging times there were also many rewarding moments, which is "typical when spending time in nature".

She also recently completed a training programme for conservation leadership, administered by Fauna and Flora International and funded by De Beers. Moving forward, she plans to continue working on her conservation project for this programme.

“My conservation project is a continuation of my MSc project — with a focus on multiple bird species and explores the extent to which birds benefit from the existence of the mining ponds,” she explained.

It is evident that for Maritz this degree is more than just an accolade. Instead, it is a symbol of the lasting positive impact and legacy she is leaving in her field and beyond.

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