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## BACKGROUND ON RESEARCHERS

### Michael Rutzen

Michael Rutzen is a conservationist and a specialist in great white shark behaviour. He is one of only three people in the world who free dives with great white sharks using his posture and body language to communicate with great whites during these sessions.



Michael has dedicated over 20 years of his life to educate the public and promote a healthier relationship between humans and great white sharks. He has guided several world-renowned still photographers and film crews and initiated a series of [internationally acclaimed documentaries](#) to promote white shark conservation. Despite a biased popular image, great white sharks are extremely vulnerable as a species and rapidly declining in numbers.

Through his shark cage diving company [Shark Diving Unlimited](#) in Gansbaai, South Africa, he promotes the positive experience of observing live sharks in their natural habitat and uses the profits to fund conservation and several scientific research projects. He also provides field support for researchers and officials from the Department of Environmental Affairs.

Michael is one of the four inventors of the technology behind the [Sharksafe Barrier](#). The Sharksafe Barrier combines magnetism and visual stimuli to deter the three shark species (great white sharks, tiger sharks, and bull sharks) considered dangerous to humans. The aim of this project is to find an alternative eco-friendly solution to anti-shark nets culling and baited hooks, to protect both beach goers and sharks.

### Dr Sara Andreotti

Dr Sara Andreotti, a marine biologist from Stellenbosch University, works toward the development and implementation of a long term management system for the conservation of South African white sharks. She has been involved in marine biology since the age of sixteen, when she started working as a volunteer at the Natural Marine Reserve of Miramare in Trieste, Italy.



Following her passion for marine life and research, she completed a bachelor in biology at the Università degli Studi di Trieste in Italy. She then became involved with the non-profit organisation Posidonia as a scientific collaborator in 2007 in order to work on shark behaviour. This organisation organised frequent field trips to South Africa. In 2008 she completed an MSc in marine biology (*cum laude*) at the same University. The title of her thesis was 'Field ethological observations on the great white shark (*Carcharodon carcharias* L.)' under the supervision of Prof. Enrico Ferrero.

In 2009 Sara came back to South Africa to continue her work to create a database of white sharks based on photos of their dorsal fins. In order to achieve this, she teamed up with Michael Rutzen from Shark Diving Unlimited and also closely collaborated with officials from the Oceans and Coasts branch of the Department of Environmental Affairs.

The project evolved into research for a PhD at Stellenbosch University under the supervision of Prof. Conrad Matthee. In order to extend the study from Gansbaai to the entire South African coastline, Rutzen's company sponsored a catamaran with which they undertook several research voyages around South Africa. After six years of field work, Sara and Michael managed to catalogue 426 white sharks and collected more than 300 genetic samples. The PhD was awarded in March 2015.

Sara has also been working on the [Sharksafe Project](https://www.facebook.com/Sharksafebarrier) in order to develop an eco-friendly technology to protect both beach goers and sharks ([https:// www.facebook.com/Sharksafebarrier](https://www.facebook.com/Sharksafebarrier)).

### **Prof. Conrad A. Matthee**

Prof. Matthee is head of the [Department of Botany and Zoology](#) and a principle investigator in the Evolutionary Genomics Group at Stellenbosch University. With over 100 peer-reviewed works published to date, his research focuses on terrestrial and marine phylogeography, with a particular interest in the identification of geographic regions in Southern Africa characterised by high levels of genetic diversity. These geographic regions act as biodiversity hotspots and, once identified, will enhance our ability to make informed management decisions.



He is also closely involved in higher level systematics. Constructing an accurate phylogeny for any group of organisms is fundamental to understanding biology. Amongst others, it can serve to provide a robust classification system, supply valuable information on evolution and speciation and assist in explaining complex biological patterns.

Prof. Matthee supervised Sara's PhD thesis, entitled "The conservation of South African white sharks: population numbers, genetic distinctiveness and global connections". He is also one of the four inventors of the technology behind the Sharksafe Barrier.