

From insects to invasion science

Mark Robertson is currently an Associate Professor in the Department of Zoology and Entomology at University of Pretoria. *QUEST* asked him about his career.

Where did you go to university and what degrees/qualifications do you have?

I studied at Rhodes University and obtained a BSc, majoring in Zoology, Botany and Entomology. I then did a BSc honours degree in Zoology, followed by a PhD in Botany and Entomology.

Describe the career path that led you to your current role? Where have you worked before this position?

During my studies I worked on various contracts for the Agricultural Research Council based in Grahamstown. I also travelled to many countries in Africa to do paid field work. After my PhD I moved to Pretoria to take up a job as lecturer at University of Pretoria.

What are your current duties?

I have several duties including research, lecturing, and supervision of postgraduate students.

Tell us about your interest in invasion science. Why did you choose to follow a career in invasion science?

I have had a keen interest in plants and animals for as long as I can remember. By travelling to different places during my studies I became interested in the diversity of species in these areas and the reasons that they occur there. I also observed that many places had the same plants in common and that people must have introduced these species. I became interested in invasive organisms because of the potential threats they pose to the natural areas that I like to spend time exploring. I found that invasion science offers an interesting combination of theoretical issues and practical management problems that need to be researched.

Why is research such as yours important for South Africa? What is important about your work?

All organisms, including humans, rely on functioning ecosystems and biodiversity to survive. Invasive organisms can have many negative impacts on natural systems. For example, invasive insects can cause major economic impacts on agriculture, particularly for crop production. My research investigates how to manage invasive organisms and to understand some of the risks and impacts that they have on natural systems in order to limit the negative impacts that they can have.

What were the skills you had to have to do the work your work?

A good understanding of ecology, the ability to analyse data, write computer programs, scientific papers and work with other people.



Mark Robertson. Image: Mark Robertson

Not many youngsters look at science as a career path, what led you down this path? What attracted you to it?

I grew up in a small town in the eastern Free State and spent a lot of time walking and amusing myself in the veld. I have always been keen on hiking, rock climbing and camping. My dad played quite a big role in my interest in spending time outdoors. I became really interested in nature by doing these outdoor activities. I really enjoyed biology at school and realised that it was possible to make a career of it. My parents were very supportive and said that I should follow a career that interested me.

What do you enjoy most about your work; what makes it all worthwhile?

I really enjoy discussing interesting ideas with people and enjoy the excitement that comes from answering research questions about the natural world. I enjoy teaching and working with young people. I enjoy the diversity of plants and animals that I work with and the interesting places that I work in. My motivation is the enjoyment of my research and I have learned that hard work and discipline are vital, even when you enjoy your work.

What do you do to unwind?

I like to go running, canoeing, spend time in the mountains and most of all, flying my paraglider.

A career in invasion science

Invasive alien species are considered one of the foremost threats to our biodiversity and ecosystems, and to keep invasive alien species in check, we need the knowledge and know-how of dedicated individuals. One such individual is Ulrike Irlsch, currently the Programme Manager for Monitoring and Evaluation in the Invasive Species Unit of the City of Cape Town.

After matriculating in 1999, an interest in nature led Ulrike to a BSc in Biodiversity and Ecology at Stellenbosch University. Ulrike soon decided she was ready for the challenge of postgraduate studies and continued with an Honours and then Masters degrees in zoology at Stellenbosch University. Although she considered a PhD, Ulrike wanted to find her feet and interests in the working environment. Her career started off with an internship at the Zoological Society of London (UK) collecting data for a research project on pheasants. Coming back to South Africa, she held several positions at universities and NGOs where she learned the skills to equip herself for her current position. After a contract with the Wilderness Foundation as Stewardship Officer, Ulrike was appointed as Programme Manager for Monitoring and Evaluation in the Invasive Species Unit of the City of Cape Town.

Ulrike currently oversees the species programme, a programme that focuses on the

control of emerging weeds and problem species across the City of Cape Town. Her day-to-day activities include awareness campaigns, the management of teams that do invasive species removal, research, monitoring and evaluation. For her position as programme manager, Ulrike developed a specific set of skills needed for success: good writing, communication, time management, conflict management and mentoring. Because the focus of her programme is on invasive species, she has to have a working knowledge of the identification of different invasive species as well as knowledge about their impact and management.

Ulrike and her team are doing valuable work in combating invasive alien species. Emerging weeds are species that are in the process of becoming invasive or potential threats. If one removes them as soon as possible, the cost of control is far less than if one left them to spread further. Ulrike explains, 'In Cape Town we have identified about 20 plant species that are emerging, or that are on our watch list, and we control them and raise awareness on these species. While some of the plants have been in Cape Town for quite some time already, we believe that in Cape Town we can bring them under complete control. For example, red valerian, has been in Cape Town for many years and was widely planted as a garden plant. A few years ago



Ulrike Irlsch. Image: Ulrike Irlsch

this species jumped the garden fence and is now spreading into Table Mountain National Park. Red valerian is a fire retardant species, so could potentially be very detrimental for the fire-driven fynbos'.

Despite having a lot on her plate, Ulrike has recently enrolled for a PhD at the DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch University and her advice to youngsters 'Take every opportunity you get, and make the best of it! Even if you don't enjoy what you are doing, you don't know what doors it will open next!'