Dave Richardson. Image: Jaco le Roux

From forestry to invasion science

Dave Richardson is currently Director of the DST-NRF Centre for Invasion Biology. *Quest* asked him about his career.

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

I have a BSc in Forest Science and Nature Conservation from Stellenbosch University and Masters and PhD degrees in Botany from the University of Cape Town.

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

During my final year of forestry studies at Stellenbosch University I applied for a position as researcher at the Jonkershoek Forestry Research Centre. I worked there for 10 years, during which time I completed my Masters and PhD degrees on the work I was doing on the ecology of tree invasions in fynbos. I then worked for 13 years at the University of Cape Town at the Institute for Plant Conservation. In 2004 I moved to Stellenbosch University to be part of the DST-NRF Centre of Excellence for Invasion Biology (C•I•B). In 2011 I was appointed Director of the C•I•B.

What are your current duties?

As Director of the C•I•B, I'm responsible for managing a team of researchers and administrative staff at the Stellenbosch HQ, and for the functioning and performance of the national C•I•B operation which involves researchers and students at many South African universities. I am also a Professor in the Department of Botany and Zoology at Stellenbosch University.

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

I got involved in invasion science by accident. While studying forestry I envisaged going into a career in commercial forestry. A job opportunity at Jonkershoek, to work on invasive plants in catchments, provided a good excuse to keep living in Stellenbosch after my studies. The start of my job at Jonkershoek fortuitously coincided with the launch of an international programme on biological invasions in which South Africa played an important part. My work on invasive trees in fynbos fed into this programme and I soon became fascinated with the new field of invasion ecology.

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

Invasive species are trashing South African ecosystems at an alarming rate. Trashed ecosystems cannot deliver the services such as clean water and healthy soils, that we need to build a prosperous country. We need innovative ways of dealing with the massive problems we have now and to reduce the likelihood of new invaders taking hold. I believe that the C•I•B is making a real difference in these areas.

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

The work for my Masters and PhD involved the population ecology of invasive tree species, that is, how the tree populations grow or shrink over time and what causes these changes. This involved combining methods in plant ecology, remote sensing (using satellite imagery and aerial photographs to examine and reconstruct plant invasions) and computer modelling (to forecast population changes after many generations). These skills have served me well in my career, but I've needed to learn many new skills and have needed to collaborate with colleagues in many different disciplines to deal with the growing challenges involved in understanding and managing invasions. I've also had to learn about managing a large research programme – one of South Africa's national Centres of Excellence – which seeks to focus and strengthen national skills and resources to deal with an issue of growing importance to the country.

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

I love the challenge of tackling complex problems using the tools and methods of science – and problems don't come much more complex than those relating to biological invasions.

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

Unravelling the many factors that determine why some species are so successful as invaders is like building a complex jigsaw puzzle. I love the detective work that is required in the many studies that I am involved in. I have collaborated with hundreds of colleagues from all corners of the world and have many great friends as part of my work. I really enjoy the challenges involved in managing a large team of people with diverse skills and backgrounds.

The most important lessons you've learnt during my career are?

Opportunities arise in unexpected places and at unexpected times. Always be ready to seize these.

What interests/hobbies do you have?

I love music, reading, hiking, natural history and enjoying fine food and wine with family and friends.