

# Bar coding SA's biodiversity

By [Lezette Engelbrecht](#), ITWeb copy editor and journalist  
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A team of local and international researchers are set to embark on a 17-day expedition next month to collect samples of SA's plant and animal species for DNA bar coding, as part of the International Barcode of Life (iBOL) project.

The initiative is organised in collaboration with SA National Parks, CapeNature, the Biodiversity Institute of Ontario, and Toyota, as part of its Enviro Outreach 2010 project, officially announced at the University of Johannesburg (UJ) last week.

The team will set off on 20 September to conduct the DNA bar coding in three 'biodiversity hotspots' in the country – the Succulent Karoo, the Cape Floristic Region and Maputaland-Pondoland-Albany.

According to a statement by the initiative, the goal is to collect a wide range of specimens and produce DNA barcode records for all of them.

These barcode sequences will be uploaded on the Barcode of Life Data Systems, an online informatics platform, where they will become part of a DNA bar codes reference library for South African plants and animals.

Professor Michelle van der Bank, from UJ's department of botany and plant biotechnology, says the aim is to collect at least 1 000 plant specimens and up to 2 000 animal specimens, of which the biggest majority will be insects.

"I think this is where we will find the biggest surprises when we start bar coding," she says. "For instance, 50 000 species of insects have been recorded in SA but an estimated 50 000 more have yet to be described. Basically, I am hoping for lots of new species."

Van der Bank notes that all the data collected during the trip will be stored on the iBOL database and be available for scientists around the world.

"The improved documentation of flora and fauna with genetic information will render biodiversity information more widely available to policy-makers, the general public and other scientists."

She says the DNA barcode identification system could help curb the illegal trade of endangered species, control pests, and identify invasive and poisonous organisms, as well as fragmentary material in forensic investigations. "However, the main application will be to assess species diversity," she adds.

The initiative's members explain in a statement that DNA bar coding utilises sequence diversity in a standardised gene region to identify species and discover new ones.

"This database will allow scientists in the future to be able to identify plants by matching the DNA barcodes of plants that they collect to that of plants that are already in the database," adds Van der Bank.

She says using technology has accelerated the speed and ease of identifying species. "You can basically have an answer within a few hours.

"In the future, however, we'd like to see this idea of reading plant and animal genetic barcodes translated into a portable device, as small as a GPS," she adds. "This could be taken into the field to analyse the sample's DNA and compare it to the reference database, allowing almost instantaneous identification."

According to the initiative, SA plans to barcode 20 000 specimens by April 2011 and a further 40 000 specimens by April 2013.

With 2010 being the International Year of Biodiversity, water and environmental affairs minister Buyelwa Sonjica noted at the People and Parks conference in KwaZulu-Natal, yesterday, that SA's biodiversity richness ranks fifth in the world, and protecting natural resources is a priority.

She added that the biodiversity and conservation sector is integral to the development of a green economy in SA, and its move towards a more sustainable future.

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