

Biggest DNA barcoding project yet

Joburg university scientists track animal, plant species

ANGELIQUE SERRAO

A TEAM from the University of Johannesburg is about to embark on an expedition that will contribute to the biggest DNA barcoding project in the world.

A team of 18 scientists will begin to barcode plant and animal species in South Africa, which will contribute to the International Barcode of Life (iBOL) project, being run from Canada.

The iBOL's goal is to assemble a DNA barcode reference library for all life on Earth. The project has so far been able to identify 66 000 species, and the aim is to identify a further 50 000 species by 2015.

Professor Michelle van der Bank, from the University of Johannesburg, said that with the help of sponsors Toyota, a team of botanists and zoologists will work on the project over the next three years.

They hope that by April next year they will have barcoded 20 000 specimens in South Africa and a further

40 000 by April 2013.

Three of the country's hotspots will be used for collection – the Succulent Karoo on the coast of Namibia, Northern Cape and Western Cape; the Cape Floristic Region in the Western Cape; and Maputaland-Pondoland-Albany in KwaZulu-Natal.

The University of Johannesburg has also set up a new research centre on barcoding in South Africa that will combine expertise and data collected into one mainframe.

Van der Bank said the research would be invaluable for the identification of animals and plants in southern Africa.

She said the human mind could recognise only about 1 000 species, but there were about 100 million species on Earth. South Africa was filled with species, many of them new ones being discovered almost every day.

With the DNA barcoding, Van der Bank said, they were discovering more new species and finding that some of the

species they thought were the same have different DNA.

For instance, South Africa has 10 percent of the world's flowering plants.

Van der Bank's team are hoping to capture as many specimens as they can to add to the international database. There are currently 8 700 identified fynbos species, but in one week at least five new species are being found.

And new discoveries are not being made only in the plant world – in five years, 18 new species of dung beetle have been found.

At the moment, it takes many years for a new species to be certified as such, but with DNA barcoding, the process can be done a lot quicker.

Van der Bank said the project has many positive practical spin-offs.

She said most biologists agree that Earth's biodiversity is disappearing at a rate never before witnessed in human history. Every year about 50 000 plant and animal species become extinct because of



INVALUABLE MISSION: University of Johannesburg Professor Michelle van der Bank will be one of a team working on a project for three years to help assemble a DNA barcode reference library for all life on Earth.

overpopulation, industrial and agricultural development, pollution and climate change. The professor believes that by identifying species, we will be able to protect them better.

She said that if species are on the database, it could take a mere 48 hours to identify a species, which would help speed up the protection against illegal trade, such as bush meat.

The ultimate goal is for a technological device to be created that can be taken onto the field and identify a species immediately.

Van der Bank said the technology was about five years away, but it would need a comprehensive DNA database in order to work.

The expedition will also be working on the Southern African Bird Atlas project.

