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A small group of scientists have launched an ambitious project to use DNA sequencing and genetic barcoding technology to study the plants of South Africa's Kruger National Park, in a bid to identify the elusive genetic "barcode" for the Earth's plant species.

The endeavour - led by Dr Michelle van der Bank of the University of Johannesburg's department of botany and biotechnology and Dr Vincent Savolainen from the Royal Botanic Gardens in the UK - will yield the most comprehensive inventory of the park's rich plant life.

It will also be the largest and most diverse sampling ever made for barcoding purposes in a protected area.

DNA sequencing has becoming a popular tool to study organisms. In plants, it is used to track down the history of species diversification by drawing the "genealogical trees" of groups of organisms.

In 2004, the Consortium for the Barcode of Life launched an initiative to promote DNA barcoding, a process enabling the rapid and inexpensive identification of the estimated 10-million species on Earth.

While the technique has been successfully applied to animals, in the case of plants the search for short fragments of DNA to act as "barcode" has so far proved unsuccessful.

Now, scientists from 11 institutions around the world are searching for the elusive gene that will allow them to barcode all 300 000 plant species on Earth.

As part of this effort, Van der Bank and Savolainen, together with University of Johannesburg postgraduates students Olivier Maurin, Renaud Lahaye and Sylvie duThoit - started collecting plants in the Kruger Park in September 2005. To date they have collected more than 1 600 specimens.

All samples are taken back to the University of Johannesburg, where they are analysed, categorised and stored. DNA duplicates will also be stored at the DNA Bank at the Royal Botanic Gardens in the UK.

Plans are also under way to have this data placed on the website of the Consortium for the Barcode of Life, to make it available to other scientists.

"We hope to be the team to identify the genetic barcode for plants," says Van der Bank. "Such a discovery would allow botanists to do groundbreaking identification of species using the barcoding method."

SouthAfrica.info reporter