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UJ and Toyota make single biggest contribution to international DNA project

Toyota Enviro Outreach 2010



Scientists at the University of Johannesburg (UJ), in association with *Toyota Enviro Outreach*, embarked on an ambitious international DNA expedition to document animal and plant species in South Africa's biodiversity hotspots. This initiative forms part of the International Barcode of Life (iBOL) project, originated in Canada.

The Toyota Enviro Outreach, which set out on 21 September 2010, recently come to an end after making the single biggest contribution to this project yet recorded.

The Toyota Enviro Outreach scientific team consisting of specialists in the field of insects, plants, birds, mollusk and fish identification was led by the University in collaboration with the University of Guelph in Canada. The team traveled more than 3 200 km to collect plant and animal specimens for DNA barcoding in the three-biodiversity hotspots in South Africa. A massive total of more than 3 500 species representing approximately 5 000 individuals were collected.

Once the barcodes for these samples are produced they will be uploaded onto the Barcode of Life Data Systems (BOLD), an online informatics platform where it will become part of a growing reference library of DNA barcodes for South African plants and animals that will be freely available for use by the broader scientific and amateur naturalist communities.

South Africa plays key role

As part of this project South Africa has committed to collecting the DNA of 20 000 species by April 2011 and a further 40 000 species by April 2013. South Africa is widely regarded as one of the most important role players in this project, partly due to its rich natural heritage and partly because the University's Prof Michelle van der Bank was responsible for identifying the matK-gene, which is used as identifier for all plant species' DNA.

"We are truly proud of the contribution that South Africa and this group of 17 scientists have made during the 2010 Toyota Enviro Outreach," says project leader Gerhard Groenewald of the Klipbokkop 4x4 Academy in the Western Cape. "in order to offer 3 544 species to the international DNA project, scientists had to collect more than 10 000 individual plant, animal and insect species over the two and a half week period. This is widely regarded the single biggest contribution to this project to date."

iBOL to protect biodiversity



Prof van der Bank explains that the project offers a multitude of benefits to South Africa and the world in general. "The collection of DNA will support and speed up scientific research and traditional taxonomic descriptions of species. It will also allow us to better monitor the illegal trade of plant and animal species, while at the same time building the national collection of species for future generations."

According to Prof van der Bank the team already identified several unique plant and animal species during the Toyota Enviro Outreach. The team consisted of specialists in fields as diverse as insects, birds, fish and plants and was led by the University of Johannesburg with the support of the University of Guelph in Canada.

The Toyota Enviro Outreach travelled to the Succulent Karoo, the Cape Floristic Region and the Maputland-Pondoland-Albany region, which are listed amongst 34 biodiversity hot spots around the world that scientists will focus on as part of the 2010 celebrations of the Year of Biodiversity.

"For me the most wonderful experience was how people from different backgrounds and experiences can work as a group to achieve a common goal. The spirit and enthusiasm was fantastic. Special thanks must go to Gerhard and Elmarie Groenewald and their team. Without the logistic support and constant encouragement we would never have achieved our goals," says Prof van der Bank.

The Toyota Enviro Outreach was sponsored by Toyota South Africa Motors (TSAM) who provided the vehicles and financial support and was supported by Cape Nature, Sanparks, the University of Johannesburg and the University of Guelph in Canada.



Pictures top left to bottom right:

The Toyota Enviro Outreach Team at Noup, northern Cape The Plant Collecting Team from University of Johannesburg with Masha from Canada Prof Herman van der Bank casting a net at Klipbokkop Nature Reserve Olivier and Michelle collecting *Babiana sambicina* at Klipbokkop Nature Reserve *Argyrodema delaetii* commonly known as bababoudjies *Dactyloopsis digitata* or Duim-en-wysvinger Herman and Hendrik collecting fish at Colchester Olivier, Jephris and Michelle collecting at Diepwalle



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