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Barcode for every species on earth

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Scientists take Earth's inventory — barcodes included

Imagine walking through the woods and being able to identify any plant or bug that catches your curiosity by its DNA simply by touching it with a handheld device.

On a screen would pop up the name of the species, its origin and an encyclopedic description of it.

It's not just a pie-in-the-sky idea, but an actual goal that 100 international scientists gathered in Toronto Sunday are working toward developing within the next decade.

From 25 countries, the scientists officially launched the International Barcode of Life Project, the largest biodiversity genomics initiative ever undertaken.

Together they plan to build a digital identification system for all life on Earth. Within the next five years alone, they aim to identify 5 million specimens from 500,000 species.

"We are taking stock of the inventory of our planet. That's often what barcodes are used for, inventory management," explained Paul Hébert, the project's scientific director and head of the Biodiversity Institute of Ontario at the University of Guelph.

The scientists will assign unique DNA identifiers in the form of barcodes to all specimens they register. China will barcode its pandas, Australia its marsupials and eucalyptic plants and Canada the 100,000 species that live within its boundaries.

To mark the launch of the project, a barcode of the Canadian beaver was flashed on the CN Tower Saturday night.

Canada, considered a world leader in the field, has been laying the groundwork for the Barcode of Life Project for the last three years and has already registered about 15,000 of the nation's 100,000 species, including birds, fish and plants.

The process is done at what Hébert calls the "barcode factory," the Canadian Centre for DNA Barcoding, located within the biodiversity institute.

Hébert said it now takes a "roomful of equipment" and a couple of days to assign a unique DNA identifier to a specimen, but that's changing.

"In the future, there are going to be handheld devices that read life all around you. At the moment, you tell organisms apart by their shape and their size and their colour. In the future, we are going to be telling them apart by reading this tiny little piece of DNA," he said.

Hébert says the project will help abate species extinction and monitor the movement of species that can be harmful to human and ecological health.

For example, it can be used to detect prohibited species at border points, track movement of pests and invasive species, and even pinpoint



Canada has barcoded about 15,000 of the country's 100,000 species. The Canadian beaver's barcode flashes on the CN Tower Saturday night.

RICK TURNER/BOL

sources of contamination in food.

"This will lead to a whole new relationship between humans and the life that surrounds them. We think that is very important to protect life," he said.

The barcode factory is already being commissioned to assist in some unusual forensic investigations. For example, earlier this year, it tracked down the source of a mouse head that showed up in a TV dinner to Southeast Asia, from where the chicken for the product had been imported.