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Canadian Barcode of Life Network

Status	Current
Competition	III
Sector	Environment
Genome Centre	Ontario Genomics Institute
Project Leader	Paul Hebert

Project Description

DNA barcodes use a small fragment of an organism's DNA – a portion of a single gene – to identify the species to which an organism belongs. They are powerful tools, which can be used to help catalogue biodiversity. DNA barcoding began in Canada, and Canadian scientists continue to lead international work aimed at developing a complete catalogue of the Earth's life forms.

Dr. Paul Hebert, an evolutionary biologist and Director of the Biodiversity Institute of Ontario at the University of Guelph, is project leader of the Canadian Barcode of Life Network.

It has taken 250 years to catalogue some 15% of the world's biodiversity. But with many species now under threat, the Canadian Barcode of Life Network seeks to develop comprehensive DNA barcode libraries for all the world's birds and fishes, and then of other animals, fungi, plants and protists (these are often single-celled organisms).

This project seeks to develop a DNA-based identification system which can be used to catalogue all species. Given that this and other barcoding projects are expected to generate a flood of new data, the Network will also create an advanced databasing system to aid the storage and analysis of barcode records.

It is hoped that the barcoding project will provoke the development of hand-held barcoders. These devices could then be used by bioprospectors in the rapid identification of thousands of species with the potential to yield lifesaving drugs, or to signal the presence of animal and plant organisms in food even after processing.

The Network will initially barcode groups of particular economic and social interest in Canada, before moving on to examine environmental samples from a wide range of other species. The project is a vital step toward the creation of a complete inventory of Canadian biodiversity – the first inventory of its kind in the world.