

## Costa Rica's digital nature

**Costa Rica is putting all its animal and plant life online to create a digital record of its rich natural wealth.**

The National Biodiversity Institute (Inbio) has developed an information management system called Atta to catalogue species at risk from farming and logging.

The researchers turned to information technology to help them as Costa Rica has a greater variety of plants, insects and animals in proportion to its size than just about any other country.

"The key issue is that we know less than 10% of what we have here and we don't have much time to learn about the 90% that remains," explained Dr Erick Mata Montero, coordinator of information management for the institute.

"If we do inventories in a different way using information technology, we can go a lot faster."

### Massive task

Inbio was set up in 1989 as a non-governmental non-profit institute to increase awareness of Costa Rica's fauna and flora.

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Dr Erick Mata Montero, Inbio

One of the ways it is doing this is by carrying out an inventory of the environment, with special emphasis on national protected areas.

Costa Rica has one of the highest indices of biodiversity per area, as it shelters 4% of the world's biological diversity.

The country is estimated to have between 12,000 and 14,000 species of plants, 40,000 kinds of beetles, and 20,000 species of butterflies.

So far the biologists at Inbio have barely scratched the surface in recording all these different species.

"We know we will be busy for the next 20 years," Dr Montero told the BBC programme Go Digital.

"We are aiming at conducting a whole inventory of the biodiversity of Costa Rica. We know that there are still hundreds of thousands of insects."

The researchers know they have a massive task ahead of them and that they are running out of time. Some of Costa Rica's rainforests have been chopped down, to make room for farming, cattle-raising and to build communities.

They are hoping that information technology can help process large amounts of data quickly and efficiently.

### Global tool

The Atta system contains a relational database with over two million records, each one corresponding to a single specimen.

The system also includes a basic geographic information system so that researchers can choose a region in Costa Rica and find out detailed information on the species in that area.

"This was designed to be a general tool that allows an institution or government to gather information about their biodiversity and make it available to the world through the web," said Dr Montero.

"If we have the information in digital format, we can turn that digital information into a nice website for children or for teachers.

"Or we could turn it into CD-Roms for legislators who are in need of information in a summarised format."

Dr Montero believes the tool developed in Costa Rica could be used in other countries. In the long term, he envisions the work of biologists around the world being available to all online.

"You can have many databases geographically distributed all over the world," explained Dr Montero.

"Technically, it is now feasible to have one query going to wherever that query has to go, gather the data and present one single result in a web portal.

"It's technically possible but it is going to take at least a couple of years," he said.

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