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News Release

Issued: Tuesday 23 June 2015

Darwin's finches offer fresh insights into island biodiversity

A family of birds that helped Charles Darwin devise his famous theory of evolution has enabled scientists to gain new insight into biodiversity.

Darwin's finches, which the famous naturalist collected from the Galapagos Islands, have reached a plateau in terms of how many different species of the birds can exist at any given time, according to new research.

In the first study of its kind, scientists examined DNA from birds on the islands, including finches, to understand how the number of species had changed over millions of years. They were investigating a theory predicting that islands can support a limited number of species.

They were surprised to find that the number of bird species in the Galapagos is rising overall. However, Darwin's finches were found to contradict this outcome by having a fixed number of species, with new species frequently coming into existence, but only as others die out.

Researchers from the Universities of Potsdam, Edinburgh, and Groningen say their work gives a new perspective on whether island species' diversity is limited or not.

Most of the finch species in the study – which have differently shaped beaks according to the food available locally – are found only on the Galapagos archipelago. Darwin devised that each species' beak had evolved to suit the food available, which was central to his theory.

The research, which involved reconstructing the timeline of bird species arriving and diverging into new species in the Galapagos, provides a new framework for biologists studying island habitats. The study was published in *Ecology Letters*.

Dr Ally Phillimore, of the University of Edinburgh's School of Biological Sciences, who took part in the study, said: "Darwin's finches have long been famous as an example of how a group can rapidly adapt to fill empty niches, but now it appears that there are limits to this."

Dr Luis Valente, of Potsdam University, who led the study, said: "Even after four million years of birds arriving and diversifying on the Galapagos, diversity is still rising."

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