

New Iguana Species Discovered

Scientists discover a new Pacific iguana and more clues to a longtime mystery.

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A new iguana has been discovered in the central regions of Fiji. The colorful new species, named *Brachylophus bulabula*, joins only two other living Pacific iguana species, one of which is critically endangered. The scientific name *bulabula* is a doubling of *bula*, the Fijian word for 'hello,' offering an even more enthusiastic greeting.

Pacific iguanas have almost disappeared as the result of human presence. Two species were eaten to extinction after people arrived nearly 3,000 years ago. The three living *Brachylophus* iguana species face threats from loss and alteration of their habitat, as well as from feral cats, mongooses and goats that eat iguanas or their food source.

"Our new understanding of the species diversity in this group is a first step in identifying conservation targets," said Robert Fisher, a research zoologist at the U.S. Geological Survey in San Diego, and coauthor of a study on the new iguana with scientists from the Australian National University and Macquarie University in Australia.

An important study finding for conservation of the genetic diversity in these iguanas is that, with only one exception, each of the 13 islands where living iguanas were sampled showed at least one distinct iguana genetic line that was not seen elsewhere.

The Fiji crested iguana, *Brachylophus vitiensis*, is gone from many islands it once occupied and is now listed as Critically Endangered on the "Red List" of the International Union for Conservation of Nature. The IUCN is the largest global environmental network. "Unfortunately, this new study indicates that the other previously-identified Pacific iguana species, *Brachylophus fasciatus*, is probably critically endangered also," Fisher said.

The mystery of how the Pacific iguanas originally arrived has long puzzled biologists and geographers. Their closest relatives are found nearly 5,000 miles away across the ocean in the New World.

"The distinctive Fijian iguanas are famous for their beauty and also their unusual occurrence in the middle of the Pacific Ocean because all of their closest relatives are in the Americas," said Scott Keogh, an Associate Professor at the Australian National University in Canberra, Australia, and lead author of the study.

The highest islands of Fiji have been continuously above sea level for at least the last 16 million years, and the current study's findings suggest that the Pacific iguanas, both extinct and living, were likely on the islands much of that time. Ancestors of the Pacific iguanas may have arrived up to 13 million years ago after making a 5,000 mile rafting trip from the New World.

Realizing that scientists are just now describing the diversity in even such colorful and distinctive groups as Pacific iguanas is important in setting biodiversity targets for the Pacific Basin.

"This island basin is currently under attack by a number of invasive species such as the brown tree snake, various rat species and the coqui frog, which tend to reduce biodiversity," said Fisher. "Climate change may reduce coastal habitats and alter coastlines in the Pacific, further putting biodiversity at risk. A more accurate understanding of the patterns and processes that impact diversity in these unique island groups will help land managers set appropriate goals for conservation of these resources."

The new discovery is published in a recent special edition of *Philosophical Transactions of the Royal Society B* that pays tribute to Charles Darwin's contribution to the Pacific region. The other coauthors of the study are Danielle Edwards at the Australian National University, and Peter Harlow at Macquarie University in Australia.