

# The last croak for Darwin's frog

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Rhinoderma darwini. Credit: © Claudio Soto-Azat

Deadly amphibian disease chytridiomycosis has caused the extinction of Darwin's frogs, believe scientists from the Zoological Society of London (ZSL) and Universidad Andrés Bello (UNAB), Chile.

Although habitat disturbance is recognised as the main threat to the two existing [species](#) of Darwin's [frogs](#) (the northern *Rhinoderma rufum*

endemic to Chile, and the southern *Rhinoderma darwini* from Chile and Argentina), this cannot account for the plummeting population and disappearance from most of their habitat.

Conservation scientists found evidence of amphibian chytridiomycosis causing mortality in wild Darwin's frogs and linked this with both the population decline of the southern Darwin's frog, including from undisturbed ecosystems and the presumable extinction of the Northern Darwin's frog.

The findings are published today (Nov 20) in the journal *PLOS ONE*.

Professor Andrew Cunningham, from ZSL's Institute of Zoology says: "Only a few examples of the "extinction by infection" phenomenon exist. Although not entirely conclusive, the possibility of chytridiomycosis being associated with the extinction of the northern Darwin's frog gains further support with this study".

Hundreds of specimens of Darwin's frogs and other amphibians from similar habitats collected between 1835 and 1989 were tested in order to find DNA pieces of *Batrachochytrium dendrobatidis* (Bd), a fungus that causes the disease chytridiomycosis. In addition, 26 populations of Darwin's frogs were surveyed in Chile and Argentina between 2008 and 2012 for the presence of Bd.

Darwin's frogs were named after Charles Darwin who first discovered *R. darwini* in 1834 in south Chile during his famous voyage around the globe. The species have a distinct appearance, having evolved to look like a leaf, with a pointy nose. Research leader Dr. Claudio Soto-Azat, from UNAB and former ZSL PhD student says: "Amphibians have inhabited the earth for 365 million years, far longer than mammals. We may have already lost one species, the Northern Darwin's frog, but we cannot risk losing the other one. There is still time to protect this

incredible species," Dr Soto-Azat added.

Amphibians provide an important ecosystem service by maintaining balance in the environment. Without them insect plagues and their subsequent effect on agriculture and public health would be more frequent. ZSL scientists are working to further understand the reasons behind the [extinction](#) of Darwin's frogs, and ensure the long-term survival of the species.

Provided by Zoological Society of London

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