# Scientists nail quail mystery

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Specimen of an extinct New Zealand quail in the Paris Museum of Natural History.

(PhysOrg.com) -- A Massey biology researcher has used DNA analysis to prove quail on Tiritiri Matangi Island are Australian and not remnants of an extinct New Zealand species.

PhD researcher Mark Seabrook-Davison from the Institute of Natural Sciences at Albany says the introduced bird could enhance our forests if allowed to thrive in other regions.

Mr Seabrook-Davison, who has just completed his studies and will graduate next April, undertook a two-year project analysing ancient DNA from museum specimens of the extinct New Zealand quail Coturnix novaezelandiae and from living Australian brown quails.

In a paper just published in the international Public Library of Science journal PLoS ONE and co-authored with an Australian and two Massey scientists as part of his PhD on conservation management in New Zealand, he set out to clarify the relationship between the extinct New Zealand quail and two Australian quail species introduced here as game birds.

Using sophisticated new DNA gene coding, he found quail on Tiritiri Matangi to be genetically identical to the Australian brown quail. As a result of the study, some museums around the world will have to rename their exhibits of quail, with Coturnix pectoralis (Australian stubble quail) previously labelled as Coturnix novaezelandiae.

The New Zealand quail was once widespread throughout the country but declined rapidly in the mid-1800s as a result of large-scale deforestation and predation by dogs, cats and rats, and was declared extinct by 1875. The Australian brown quail was introduced as a game bird to replace it.

As well as clearing up an enduring mystery over the identity of quails on the island, Mr Seabrook-Davison's research findings open up another debate on the role of introduced species in New Zealand.

Unlike the 70 million Australian possums that devastate native forests, and harm bird and insect species, the quail could prove beneficial to our forests as an "ecological engineer" by tilling leaf litter and distributing seeds, he says.

"The main reasons are that it is similar to the extinct New Zealand quail and appears to benefit an ecosystem and has no detrimental impact on threatened native species. I propose that exotic species should be used for ecological rehabilitation when it can be shown that these surrogate species contribute to ecosystem function."

However, he acknowledges the idea may be controversial idea among conservationists, he says there are very good reasons for allowing the Australian quail to proliferate here.

Despite being a small ground bird with limited flight, is well-adapted to avoiding predators due to its protective group behaviour and vocal call used as a warning when suspected predators are near. It is currently found in the upper parts of the North Island, but Mr Seabrook-Davison would like to see the species translocated to other offshore islands with limited vegetation where it could spread tree and plant seed.

Other introduced species thriving here but endangered in their countries of origin could be given special conservation status if they are not a threat to native species,

"In some ways New Zealand is an important reservoir of species that are going extinct in Australia. We have already repatriated a wallaby species that went extinct in across the Tasman. Also, the British view our populations of their song birds such as goldfinches, greenfinches, yellowhammers, skylarks as critical for their conservation as many of these British birds are threatened with extinction in the British Isles."

Provided by Massey University (news : web)