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Media Release

Chiefs of Staff, News Directors

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DNA tests on albatross poo reveal secret diet of top predator

A study that used DNA tests to analyse the scats of one of the world's most numerous albatrosses has revealed surprising results about the top predator's diet.

DNA analysis of 1460 scats from breeding sites around the Southern Ocean has shown that the diet of black-browed albatrosses contains a much higher proportion of jellyfish than previously thought.

The finding, in a study led by IMAS researcher Julie McInnes and published in the journal *Molecular Ecology*, is important because top predators such as the albatross are used as indicators of the health of the broader marine ecosystem.

Ms McInnes said jellyfish have traditionally been regarded as an unlikely food source due to their poor nutritional value, although sightings of albatross eating jellyfish are occasionally made.

"We need to understand what albatross eat so we can identify how marine ecosystems might be changing in response to pressures such as climate change or fishing," Ms McInnes said.

"Past studies of albatross diets relied largely on analysis of their stomach contents, with jellyfish found in less than one in five samples and then only in low volumes of around 5 per cent of the total.

"In contrast, our study found that in fact jellyfish are a common prey of black-browed albatrosses and the closely related Campbell albatross.

"While there was large variation between breeding colonies, jellyfish were present at seven of the eight sites sampled and in 37 per cent of the scats tested, comprising 20 per cent of the DNA sequences identified.

"We were also surprised to find jellyfish in the diet of chicks, as we had expected adults would prefer fish to low energy value jellyfish when feeding their offspring.

"The failure of previous studies to detect jellyfish in albatross stomach contents can be explained by the speed with which they are digested and the lack of hard parts, such as fish bones or squid beaks, that might be retained in the birds' stomachs for days or weeks.

Ms McInnes said the study showed the value of new DNA metabarcoding technology in the study of seabird diets.

“Ongoing monitoring of the diet and foraging behaviour of top marine predators will help scientists to understand the future impacts of environmental change and fisheries, with climate change predicted to have a significant impact on the abundance and distribution of species across the world’s oceans,” she said.

The research was in collaboration with the Australian Antarctic Division and DPIPWE, as well as a number of international researchers. The work was funded by an Australian Antarctic Science grant and the Winifred Violet Scott Charitable Trust.

IMAS Media Contact: Andrew Rhodes (03) 6226 6683 or 0417 239 537, email: ajrhodes@utas.edu.au

Information released by:
Communications and Media Office, University of Tasmania
Phone: 61 3 6226 2124
Email: Media.Office@utas.edu.au