

## Media Release

### Chiefs of Staff, News Directors

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### **Immune response linked to natural DFTD recovery in a small number of wild Tasmanian devils**

Researchers have seen evidence for the first time that some Tasmanian devils are capable of naturally recovering from the deadly Devil Facial Tumour Disease.

The research was performed by scientists from the University of Tasmania's Menzies Institute for Medical Research, School of Biological Sciences and School of Medicine, with support from the University of Southampton and Tasmanian Department of Primary Industries, Parks, Water and Environment.

Blood samples analysed at Menzies found that six wild devils with DFTD developed an immune response to the cancer cells. Four of these devils recovered, but one relapsed and DFTD re-occurred.

The study was undertaken in north-western Tasmania in wild devils that have been systematically monitored by Biological Sciences scientists since the arrival of DFTD in 2006. The immune response was detected in fewer than 10% of the devils analysed, but the finding significantly assists scientists in their understanding of the biology of DFTD.

Until now there has been no convincing evidence that wild devils could recover from DFTD. This study suggests that some wild devils can develop an immune response to the cancer on their own.

Professor Greg Woods, the leader of the DFTD team at Menzies, said that although only a small proportion of devils appeared to recover from DFTD, the discovery of the association of an immune response with recovery was important. "Further evidence is required to confirm that the immune response contributed to this recovery," he said.

Professor Woods highlighted the importance of the vaccine research to protect the majority of devils that can't naturally protect themselves from DFTD. "Full protection for the species will require a more widespread response, and that is what we are aiming for in the current vaccine research."

Biological Sciences researcher Dr Rodrigo Hamede, who established the field patterns of recovery over a 10-year period at the site in north-west Tasmania, said the results of this study could help with understanding how devils were evolving to co-exist with DFTD. “As some devils are responding to the cancer it suggests the population can evolve to live with the disease. To further understand the adaptive and evolutionary response of devils to this disease we need to continue the long-term monitoring of wild devil populations,” he said. This natural immune response might be the result of evolutionary forces between the devils and tumours over several generations.

Dr Hamede is part of a team that has been studying devils for the past 27 years. “This is an exciting discovery that supports our recent finding that devils are evolving at immune and cancer genes in as little as four generations after disease outbreak.”

The research was supported by the Holsworth Wildlife Endowment Fund, the Australian Research Council, the National Science Foundation with additional support provided University of Tasmania Foundation through funds raised by the Save the Tasmanian Devil Appeal.

Professor Woods said the support of the Save the Tasmanian Devil Appeal ([www.tassiedevil.com.au](http://www.tassiedevil.com.au)) was critical for ongoing work.

*RJ Pye, R Hamede, HV Siddle, A Caldwell, GW Knowles, K Swift, A Kreiss, M E Jones, AB Lyons, GM Woods. Demonstration of immune responses against devil facial tumour disease in wild Tasmanian devils. It appeared in Biology Letters October 19, 2016*  
<http://dx.doi.org/10.1098/rsbl.2016.0553>

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