

CSIRO scientists join fight to save 'Tassie devil'

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CSIRO scientists have joined the battle to save Australia's iconic Tasmanian devils from the deadly cancer currently devastating devil populations.

Researchers from CSIRO's Livestock Industries' Australian Animal Health Laboratory (AAHL), Textiles and Fibre Technology and Land and Water, are working together to hunt down the cause of Devil Facial Tumour Disease (DFTD) and possibly develop a test to identify infected animals.

DFTD is infectious and is thought to be passed between animals by biting when, for example, devils compete for food. Once the cancer becomes visible and spreads internally through the body, the animal usually dies within a few months from starvation and the breakdown of body functions.

The integrated research team at AAHL will use a variety of techniques including microscopy, microarrays and a range of molecular techniques to search for infectious agents, markers for disease and to determine where the tumours originate.

“We will be working in a number of areas including establishing whether a virus or other infectious agents are associated with the tumours,” AAHL's Dr Alex Hyatt said. “If successful, the establishment of pre-clinical tests will allow researchers to remove known infected devils, in turn limiting the spread of the disease.”

To date AAHL scientists have processed and examined 29 lesions from 12 affected animals and have also collected and processed a further 30 affected animals where both tumour tissue and tumours grown in the laboratory were examined.

A recent Senior Scientist's Scientific Forum on the DFTD reviewed progress in understanding and managing the disease and set an agenda for future research and management.

“The aim is to stop the disease in its tracks and we want to bring our experience of controlling infectious diseases to the research community involved to help achieve this,” Dr Hyatt said.

A chemist and Spectroscopist at CSIRO Textiles and Fibre Technology, Dr Jeff Church, is investigating the Tasmanian devil's hair to determine if any chemical or structural changes can be detected that can be correlated with the disease.

“We are hoping we can work together to develop a pre-clinical diagnostic test based on recent developments in the diagnosis of human breast cancer,” Dr Church said. “Such a test would enable the screening of captured animals prior to their release into the wild or placement into isolated breeding populations.” Dr Church and his team will look to extend their work using the Australian synchrotron infrared beam line when it comes on-line later this year.

Steve Marvanek, Spatial Data Analyst at CSIRO Land and Water, integrated historical wildlife spotlight data, devil monitoring data and geo-referenced reports of diseased devils into a geographical information system (GIS) to map the spatial and temporal distribution of the disease across Tasmania.

“The result of my work was a map showing the spread of DFTD over

time and some spatial statistics correlating the frequency of devils and diseased individuals with different landscapes or land uses,” Mr Marvanek said.

Dr Hyatt said helping the Tassie devil to survive the DFTD threat was crucial, not just because it is a major tourism attraction but also to ensure devils continue to play the vital role they have in maintaining Tasmania’s environmental balance.

Source: CSIRO Australia

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