



Wednesday, 3 March 2021

Study quantifies devils' decline due to facial tumour disease

New research from the University of Tasmania has estimated the toll a deadly facial cancer has taken on Tasmanian devil populations since the disease was discovered in 1996.

In a paper published in [Ecology Letters](#), researchers traced the spread of devil facial tumour disease (DFTD) across Tasmania and estimate that only 17,000 devils remain in the wild, a significant decline from their population peak of 53,000 in 1996.

Wildlife ecologist Dr Calum Cunningham said the spread of DFTD now occupies 90 per cent of Tasmania – almost all of the devils' geographic range.

"Devil facial tumour disease has caused severe population decline in Tasmanian devils, but previously we didn't have a good grasp on what factors influenced the spread of the disease or how many devils remained in the wild," Dr Cunningham said.

"In this paper, we traced the spread of DFTD across Tasmania and put numbers on the total size of the devil population, which was a deceptively difficult task. This work involved almost 2,000 nights of trapping devils and was the result of a huge team effort.

"We showed that DFTD spread rapidly across eastern Tasmania, as the disease moved through areas with high devil densities. The spread of DFTD slowed significantly from the mid-2000s when the disease-front reached areas of western Tasmania with lower devil densities."

The researchers analysed multiple streams of data including spotlight counts and trapping records from the last 35 years, revealing the staggering wave of population declines as the disease spread across Tasmania.

While DFTD has caused local devil populations to fall by about 82 per cent, this sharp decline is predicted to level off within the next decade.

"Thankfully, there are some glimmers of hope and the outlook for devils is better than it was a decade ago," Dr Cunningham said.

"No monitored populations have gone locally extinct, and our model forecasts the decline should plateau within the next decade at about 12,000 devils. These findings suggest the species is at lower risk of imminent extinction than we thought 10 years ago."

However, Professor Menna Jones warns that while this levelling off is an encouraging sign, Tasmanian devils are still much rarer than they once were and no longer play important ecological roles like consuming carrion and suppressing cat numbers.

"Based on this lower risk of imminent extinction, we have time to allow the devils to recover themselves. We suggest a management focus that facilitates and does not impede the evolution of natural resistance to DFTD," Professor Jones said.

"This could include selecting resistant devils and moving these beneficial genomes to other areas. We caution that the species is not out of the woods yet, and we need to do all we can to reduce other sources of mortality like vehicle collisions."

Photos attached:

(*Calum Cunningham*): University of Tasmania wildlife ecologist Dr Calum Cunningham releases a devil back into the field.

(*DFTD spread*): Map of DFTD spread across Tasmania. The estimated year of disease arrival is shown by colours and contours. The triangle in the far north-west shows the only remaining long-term trapping site that remains free of disease.

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