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Decline of top carnivore impacts Tasmania's ecosystem through loss of scavenging

The decline of Tasmania's top carnivore and dominant scavenger has serious repercussions for the State's ecosystem, new research has found.

University of Tasmania School of Biological Sciences' PhD candidate and lead author Calum Cunningham, along with a team of reseachers, sought to investigate how the decline of the Tasmanian devil population, caused by the deadly Devil Facial Tumour Disease (DFTD), had changed scavenging in Tasmania's ecosystem.

Mr Cunningham said top carnivores, such as the Tasmanian devil, play very important roles in structuring ecosystems yet very few studies have looked at how these predators affect the ecosystem through scavenging.

"The severe disease-induced decline of the devil presents a unique opportunity to study how scavenging by devils structures a carnivore community," he said.

The study was conducted across Northern Tasmania. Carcasses were placed in both DFTD-free areas, and in areas where DFTD has reduced the devil population.

Key findings from the study include:

- Devils consume significantly less carcasses in areas with DFTD;
- This increased the food supply for smaller scavengers including feral cats, forest ravens and spotted-tailed quolls;
- Although smaller carnivores increased their feeding on carcasses, they are much less effective at removing carcasses than devils. As a result, carcasses persist in the environment 2.6 times longer in areas with DFTD, potentially harbouring diseases in wildlife and livestock.

"We expected common scavengers such as ravens to scavenge more in areas with fewer devils, but we didn't know what to expect with feral cats, because they are thought to prefer feeding on prey they kill themselves," Mr Cunningham said.

"This is the first demonstration that the abundance of a larger predator can limit scavenging by cats, highlighting one mechanism by which devils could control cats."

Mr Cunningham said more research was needed to understand the broader impact of reduced scavenging by Tasmanian devils.

“We still need to understand whether the increase in scavenging by smaller carnivores has led to increases in their abundance, especially for the feral cat, and then what the flow-on effects are on their prey,” he said.

The study, ‘Top carnivore decline has cascading effects on scavengers and carrion persistence’, was published today in *Proceedings of the Royal Society B.*

Attached image credits: Devils3 – Dr Menna Jones; Devils4 - Calum Cunningham

For media enquiries/interviews contact: Anna Osborne, University of Tasmania Communications Officer, 0439 665 734/ Anna.Osborne@utas.edu.au

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Communications and Media Office
University of Tasmania
+61 3 6226 2124
Media.Office@utas.edu.au
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