

PhD Dissertation
Department of Environmental Science and Policy
College of Science
George Mason University

Candidate: Meadhbh Molloy

Defense Date and Time: April 16, 2024 at 1:00pm

Defense Location: Hybrid - Johnson Center Meeting Room D and virtually on Zoom

Title: Microbiomes and Threatened Species Management: Applications for the Conservation of the Tasmanian Devil

Dissertation Directors: Dr. Ylenia Chiari and Dr. A. Alonso Aguirre

Committee: Dr. Michael G. Campana, Dr. Scott Glaberman

ABSTRACT

The Tasmanian devil (*Sarcophilus harrisii*) is a marsupial endemic to Australia and is currently threatened by Devil Facial Tumor Disease (DFTD). Microbiomes are communities of microorganisms that are connected to host health and are a promising tool for threatened species management. This dissertation involves a systematic review on microbiomes and conservation translocations, a range-wide assessment of Tasmanian devil gut microbiomes and diet at different locations, and an investigation into the impact of DFTD on the gut microbiome. The results indicate an effect of location on the microbiome but no strong signatures from DFTD, providing valuable insights for Tasmanian devil management.