

MS Thesis
Department of Environmental Science and Policy
College of Science
George Mason University

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Defense Date and Time: April 9, 2024, 2:00pm

Defense Location: Hybrid – Exploratory Hall 3301 and on Zoom

Title: Profiling the hidden whales of the Smithsonian: Longitudinal hormone analyses of Antarctic blue whales and fin whales from the World War II era

Thesis Director: Dr. Kathleen Hunt

Committee: Dr. Janine Brown, Dr. Diego Valderrama

ABSTRACT

Baleen plates, the unique filter-feeding structures in the mouth of baleen whales, contain steroid hormones that can be extracted and analyzed in a time series fashion. Our research utilizes longitudinal hormone analyses of historical baleen at the Smithsonian Institution to better understand stress and reproductive physiology of baleen whales and will be the first to measure concentrations of glucocorticoids, testosterone, and progesterone in adult blue (*Balaenoptera musculus intermedia*) and fin (*Balaenoptera physalus*) whales from the Southern Ocean. These profiles could serve as “baseline” concentrations to compare how modern day baleen whale populations are adapting to differing anthropogenic disturbances.