

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

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Defense Date and Time: July 23, 2025, 10:00am

Defense Location: Virtual

Title: Microbiome Characterization of Striped Bass (*Morone Saxatilis*) As a Tool to Detect Mycobacteriosis

Thesis Director: Dr. Jennifer Salerno

Committee: Dr. Esther Peters, Dr. Gad Perry

ABSTRACT

Chesapeake Bay striped bass (*Morone saxatilis*) face increasing threats from mycobacteriosis disease. This study aimed to characterize their skin microbiome and to assess its potential as a non-lethal diagnostic tool for detecting infection. Sixty-four fish were collected (Oct-Nov 2020); skin and spleen samples were screened for mycobacteria and microbiome characterization using mycobacteria-specific and 16S rRNA gene PCR primers, respectively. Amplicons were sequenced for microbiome characterization, with no mycobacteria detected. Skin microbiomes did not differ by sex or site and showed high variability between individuals. This research establishes a baseline for the Chesapeake Bay striped bass skin microbiome and highlights its importance in fish health assessment and wildlife management.