

Project Summary: Environmental Variables and Mycobacteriosis in Maryland Striped Bass

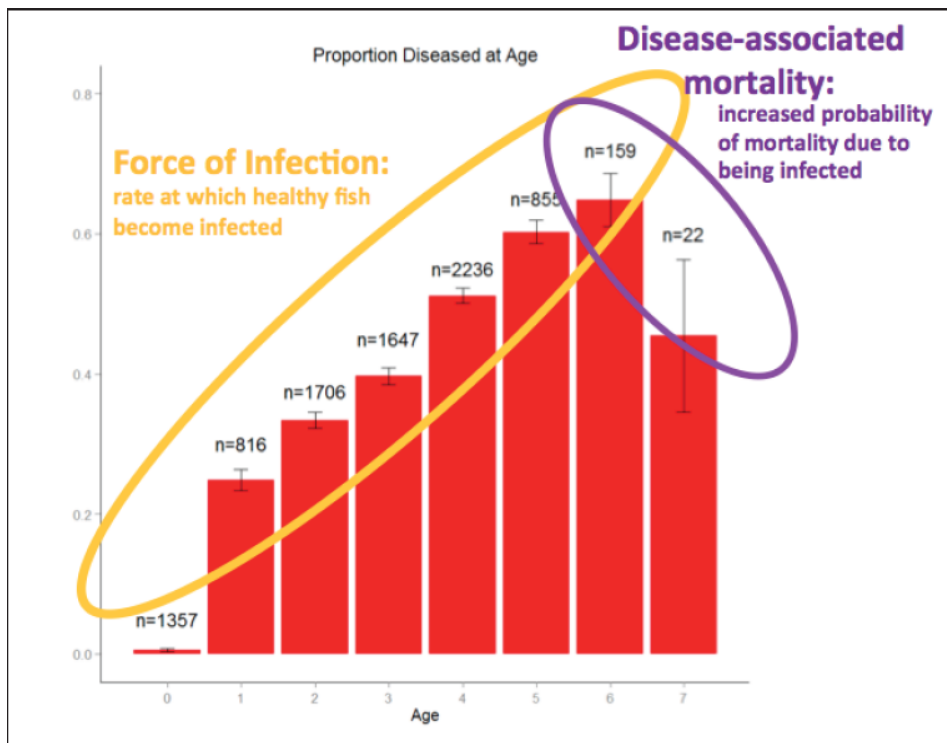
The Chesapeake Bay Program through the Chesapeake Bay Trust funded a study in 2015 investigating potential striped bass health indicators based on mycobacteriosis disease data. The study utilized 16 years of Maryland Department of Natural Resources' (MDDNR) disease monitoring data and used a modeling approach to explore connections between mycobacteriosis infection in striped bass (in Maryland waters) and environmental variables, such as water temperature and water quality. The study was conducted by Rebecca Scott (Ecoanalytics LLC), Howard Townsend (NOAA), and Mark Matsche (MDDNR).



Indicators of mycobacteriosis disease in striped bass include disease associated mortality (the increased chance that a fish will die due to infection vs. a non-infected fish), force-of-infection (rate at which healthy fish become infected), and apparent prevalence (proportion of fish that test positive for the disease). These indicators of mycobacteriosis are tracked by annual MDDNR monitoring based out of the [Cooperative Oxford Lab](#).

Findings from the study suggest that the force-of-infection of mycobacteriosis increases as striped bass get older. Findings also suggest that apparent prevalence of mycobacteriosis is correlated with water quality variables, where apparent prevalence seems to increase as total suspended solids, nitrates, and phosphates also increase. Apparent prevalence of mycobacteriosis in striped bass could be used to link water quality to fish health. A resulting striped bass health indicator could provide information about how the Bay's health could be influencing disease in the striped bass population.

Researchers summarized the study results at the full Sustainable Fisheries Goal Team's [June 2015 meeting](#) and the Goal Team Executive Committee's [October 2015 meeting](#).



This chart shows the proportion of diseased striped bass at each age from the 1998-2013 Maryland DNR striped bass health survey. Healthy fish became infected at a fast rate as they got older from ages 1-6. The drop in infected fish seen from age 6 to 7 is most likely the result of many of the infected age 6 dying from the disease. More information can be found in this [October 2015 presentation](#).