

# The influence of age on metabolic and thermal tolerance traits in New Jersey populations of Atlantic killifish (*Fundulus heteroclitus*)

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## Abstract

Otoliths, the ear bones of fish, consist of circular rings and can be used to age fish like the rings of a tree trunk. This project developed a method for aging otoliths in ImageJ so that age data for the *Fundulus heteroclitus* could be included in models examining metabolic and thermal tolerance traits. *Fundulus heteroclitus* were collected from a site that experienced waters 4°C warmer than the surrounding reference populations due to thermal effluent from the Oyster Creek Nuclear Generating Station. This led to questions of whether there were differences in critical thermal maximum (CTMax) and whole animal metabolism (WAM) across different cohorts of fish. The results of this research suggest that age specific selection was not at play since there was no differences in CTMax or WAM between age groups that were independent of mass.