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### OTOLITH ECOMORPHOLOGY AS PREDICTOR OF ESTUARINE USE FUNCTIONAL GROUPS

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Otolith morphology has become a powerful tool in fish ecology due to their ability of discriminate fish stocks and identifying ecological features of species. Nevertheless, in most studies the explanatory power of otoliths has mainly been restricted to the identification of water-column use, rather than focus on other life history strategies, such as functional groups. Therefore, the present study aimed to test whether otolith ecomorphology may be a good predictor of estuarine use functional groups (EUFG). Fishes were monthly sampled between November 2013 to October 2014 with a block-net seine in the Munda  estuarine lagoon, Alagoas, Brazil. All specimens collected were taken to the laboratory for identification and further analysis. Otoliths were removed, cleaned from tissues with water and a digital picture of the right otolith was taken using a binocular microscope equipped with a camera. The pictures were calibrated and processed with the software ImageJ. The following measurements were taken: otolith length (OL), otolith width (OW), otolith area (OA), rostrum length (RL) and sulcus area (SA). Subsequently, four ecomorphological indexes were expressed using the measurements mentioned above: Dp (perimeter/2( $\sqrt{OA \cdot \pi}$ ) - complexity), E (E=OA/OL - shape), R (R=RL/OL - total otolith length in relation to the rostrum) and S (S=SA/OA - information absorption). A matrix with the mean values of ecomorphological indexes and EUFG (retrieved from literature) of each species was created and a linear discriminant analysis (LDA) was used to identify if otolith ecomorphology could distinguish different functional groups. The LDA analysis showed a clear discrimination among the estuarine use functional groups studied (99% of total variance), and the confusion matrix was able to classify correctly 84% of species. Our results show that otolith ecomorphology is a good predictor of EUFG, which may be related to otolith's ability of recording important environmental information during species life history.

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