

# Exploring the evolution of acoustic communication in holocentrid fishes: a multidisciplinary approach

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## ORAL PRESENTATION

Despite many fish species are known for their social acoustic communication abilities, few studies investigated the evolutionary history of this trait. The aim of this study was to tackle this challenging topic by investigating a wide range of holocentrid species using a multidisciplinary approach. We first carried out a comparative analysis of the 7662 sounds recorded in the same behavioural context, from 388 individuals across 73 populations (Guadeloupe, French Polynesia, Guam, Seychelles, Philippines) and 33 species. This comparison conclusively demonstrated that sounds can be used to accurately determine the belonging to given taxa across different taxonomic levels. Interestingly, some *Myripristis* species developed patterns in their calls, enabling them to explore the acoustic space more thoroughly. We then compared the sound-producing apparatus between subfamilies but also across and within genus, and built a phylogenetic tree to evaluate the evolution of both acoustical and morphological features. Results strongly support that modifications in the calls are related to morphological differences, suggesting that acoustic communication can be a driving force in the diversification process.