



Abstract

The Role of Insular African Mangroves as Nursery Areas for the Early Life Stages of Fish [†]

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Abstract: Mangroves have been recognized worldwide as crucial nursery areas for fish larvae and juveniles. Although they are critical for managing coastal fish stocks, information about larval fish communities in African island mangroves is scarce and these potential nursery areas in São Tomé Island have remained understudied. Fish larvae were collected over four weeks from October to November 2020 using light traps, passive plankton tows and seine nets in a multi-habitat approach. To overcome species identification constraints, both morphology and molecular analysis were considered. A total of 4 010 larvae were caught across all methods belonging to 16 families or 26 species. A few species dominated the ichthyoplankton community and the most abundant families were Cichlidae—especially the invasive *Oreochromis mossambicus* (47%)—and Gobiidae (43%), constituted by 7 taxa. The remaining 14 families only accounted for about 10% of total larvae captured. Three new species were recorded for the first time in the island mangroves and another three species were documented for the first time in the São Tomé Island. Taxa composition and richness varied considerably between sampling techniques. The highest taxa richness and diversity were recorded in the Malanza mangrove (25 species) while Praia das Conchas (9 species) was not able to sustain similar levels of biodiversity. Differences on fish larvae composition were found within the studied mangroves, depicting a strong influence of habitat type and a relative position within each system. These community composition patterns were marginally influenced by local environmental conditions such as temperature and dissolved oxygen. Overall, a total of eleven taxa have commercial interest and their presence as juveniles and larvae in São Tomé mangroves reinforces the need for conservation of these ecosystems and shows direct implications for the sustainability of the local fisheries.

Keywords: fish larvae; juvenile; São Tomé; West Africa; cytochrome c oxidase I (COI)

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