



Terceira Sessão: Conservação e áreas afins – Comunicações orais

How much of shallow and mesophotic reefs are protected?

Loyola da Cruz, Guilherme (1, 2); Pinheiro, Hudson (1, 2)

(1) Center for Marine Biology, University of São Paulo, São Sebastião, Brazil; (2) Graduate Program in Zoology, Institute of Biosciences, University of São Paulo, São Paulo, São Paulo, Brazil.

Situated between 30 to 150 meters of depth, mesophotic coral ecosystems (MCEs) host distinct communities compared to shallow reefs (0 – 30m). Yet, despite both being severely affected by environmental stressors, the ecological studies and conservation policies are mainly conditioned to shallower environments. Therefore, considering the biological relevance and the variety of ecosystem services provided by reefs (e.g. food provisioning and tourism), it is crucial to quantify how much of these ecosystems are protected by legal mechanisms. This research aims to generate high-resolution bathymetric maps that encompass the shallow and mesophotic layers of reefs and then calculate how much of each depth strata is protected by marine protected areas (MPAs). The study area encompasses eight sites from distinct biogeographic provinces of the Atlantic, Pacific, and Indian Oceans. The depth and geospatial data were obtained from public databases and official repositories of the countries, with the GIS analysis conducted in the QGIS software. As preliminary results, we saw that the island of Guam has more than half of its MPAs area concentrated in shallow reefs, with only 6% designated to the deepest portion (120 – 150m). In Hawaiian waters of the Big Island, the depth intervals of 0 – 30m and 30 – 60m have, respectively, 39.4% and 46.7% of their areas protected by MPAs, while in the other strata (60 – 90m, 90 – 120m, and 120 – 150m) these numbers are at least 65%. However, when looking at no-take MPAs, there is only 1% of coverage down to 60 meters and a complete lack of protection in deeper areas. These results, associated with ichthyofaunistic assemblage data, will allow us to analyze how the biodiversity is protected along the bathymetric gradient. Thus, generating data for regions and ecosystems less studied, this research will contribute to the management and conservation of MCEs worldwide.

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