

ABSTRACT

This study aimed to examine the effectiveness of Artificial Reef Ball (ARB) as a restoration medium for coral reef growth and reef fish abundance in the Weh Island Nature Tourism Park (TWA Pulau Weh). The research was conducted from June to November 2024 in the waters of Ujong Teuku, Iboih, Sabang. An experimental observation method was applied, in which coral growth was measured using CPCe 4.1 software, while reef fish communities were observed using the underwater visual census method along a 50 - meter transect. Water quality parameters such as temperature, salinity, transparency, pH, and current velocity were also recorded.

The results showed that coral growth on ARB media varied, with an average increase in height ranging from 0.12 - 0.37 cm/month and width growth from 0.10 - 0.40 cm/month. The highest growth was recorded on medium 9, with a height increase of 2.19 cm and a width increase of 2.38 cm. A total of 16 families, 25 genera, and 34 species of reef fish were identified, dominated by Pomacentridae and Apogonidae. Fish abundance fluctuated monthly, with the highest number observed in November (690 individuals).

These findings indicate that the use of Artificial Reef Ball (ARB) is effective as a restoration medium, as it supports coral growth and enhances reef fish abundance. This research is expected to serve as baseline information for sustainable management and conservation of coral reef ecosystems in TWA Pulau Weh.

Keywords: Artificial Reef Ball, Coral Reef, Reef Fish, Restoration, Weh Island.