

## Habitat Biodiversity as a Determinant of Fish Community Structure on Coral Reefs in Halang Melingkau Island, Kotabaru, South Kalimantan, Indonesia

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### ABSTRACT

The ecosystem of coral reefs is a fundamental process for marine resources playing an important role in supporting the lives of various aquatic organisms, with coral reef fish being one of the main dependent sea animals. The current study was purposely undertaken to assess coral reef fish biodiversity and its association with coral coverage on Halang Melingkau Island, Kotabaru, South Kalimantan, Indonesia. This research was conducted in April 2019 on Halang Melingkau Island, Kotabaru, South Kalimantan, Indonesia. The research was carried out at 6 stations with 18 observation points that were considered to be representative of the conditions of coral reefs and coral reef fish in the waters of the island. The field observation method was applied by laying down 50-meter line transects (line intercept transects) and using visual census (underwater visual census) to obtain data concerning fish and coral populations. The findings indicated that the average coral reef coverage in Halang Melingkau Island was moderate ( 33.77% ), and it was remarkable that station 6 had the best coral reef coverage ( 53.71% ). Additionally, station 6 possessed the highest fish population as well as the highest number of fish species. Findings of the present study predict that correlation analysis indicated a strong positive correlation between coral coverage and the abundance of coral reef fish. In this essence, when the coral coverage increases, the coral reef fish abundance would also increase. Simultaneously, a decrease in the coral reef coverage in a specific location could result in the decrease in the abundance of coral reef fish

### INTRODUCTION

The coral reef ecosystem is an important part of the marine ecosystem, and coral reefs are a source of life for more than 500 species of marine life. The coral reef ecosystem comprises more than 300 types of corals, 200 species of fish, and dozens of species of mollusks, crustaceans, sponges, algae, and others biota (Dahuri, 2000). One of