ABSTRACT

This study supports the shift paradigm approach on coastal engineering from hard engineering approach to soft engineering approach. The use of artificial reefs as submerged breakwater is proposed in this study. The artificial reefs, beside providing marine habitats also proposed as eco-friendly coastal protection.

The artificial reefs in this study is an extended study for the first and second author. Previous study also shows that complexity and turbulent generating ability in the vicinity of reefs are primary factor in attracting fish and marine organism.

There are 65 taxa of planktonic invertebrate larvae identified surrounding artificial reef waters, represented by 36 families, 31 orders, 17 classes, and 12 phyla. The morning and day samples were dominated by calanoid copepods of Acartiidae, while the night samples was dominated by harpacticoid copepods of Ectinosomatidae.

The reef coverage in pasir putih waters analyzed using LIT - Line Intercept Transect dominated with Non Acropora, detail composition of coverage consists with 31.06-43.06% living reefs, 3.82-7.07% other fauna, 4.51-18.99% dead reefs and ± 50% abiotic.

Key words: artificial reef, soft engineering approach, planctonoc larvae invertebrates, coral reef