Borneo Journal of Resource Science and Technology (2014) 4(2): 1-8

Preliminary Study on Fish Larvae at Selected Coastal Waters of Sarawak

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ABSTRACT

A survey were carried out from April to November 2012 at five study sites namely Teluk Pandan beach, Rambungan beach, Puteri beach, Sampadi Island and Satang Besar Island, Sarawak. This survey was carried out in order to obtain early documentation of fish larvae at selected coastal waters of Sarawak. Seine net (1 mm mesh size) which was pulled by two persons at intertidal zone; and bridle net (0.5 mm mesh size) that was towed by boat at subtidal zone (Sampadi Island only) were used to collect the samples. A total of 2,562 fish larvae which comprise 25 families were obtained from both sampling methods. A total of 16 families of fish larvae were caught by seine net from the intertidal zone. The same number of families was collected at the subtidal zone of Sampadi Island by bridle net. Ambassidae, Clupeidae, Engraulidae and Gerreidae found to be dominant families in the study sites. Clupeidae and Gerreidae shown a wide larval dispersal area because they were collected at all study sites. These findings seem to indicate that the subtidal zone of Sampadi support more species of fish larvae.

Keywords: Composition, distribution, fish larvae, Sarawak

INTRODUCTION

Fish larvae are the newly hatched fish eggs which also referred to as ichthyoplankton. Most larval fishes tend to occupy the habitat with high food availability, low predation rate and stable ocean condition for growth (Freitas & Muelbert, 2004). Habitats that fulfil these requirements usually are seagrass beds, estuaries, littoral areas and reef habitats where the water is generally shallow and the larger predators will tend to avoid such environments (Anand & Pillai, 2005; Ara *et al*., 2011a; Ara *et al*., 2011b; Baran, 2002; Breitburg *et al*., 1995).

The presence of fish larvae can be an indicator of the health of aquatic environment as fish will use this area as the spawning grounds (Chamchang & Chayakul, 2000; Freitas & Muelbert, 2004) and suitable for their recruitment (Arkhipov, 2009). Ichthyoplankton survey is a way of generating fishery-independent stock assessment and key component in understanding function of marine ecosystem (Moser & Smith, 1993). Knowledge about larval stages including their dispersal and settlement events are important to ensure the consistent stock recruitment in improving the management of local fisheries (Baran, 2002).

The studies on ichthyoplankton have been conducted worldwide but in Malaysia, this research did not attract much attention to researchers. About 15 years ago, Blaber *et al*. (1997) studied on composition, distribution and habitat affinities of ichthyoplankton focused on selected estuaries in Sarawak and Sabah. Recently, ichthyoplankton studies were made to compare the larval fish density between seagrass beds and outside of seagrass beds of the Southwestern Johor (Ara *et al*., 2011a) and feeding habits of Clupeidae larval fishes in the estuary of River Pendas in Johor (Ara *et al*., 2011b).

The coastal waters of Sarawak are subjected to the influence of many large rivers which transport sediment and nutrients to the coastal areas that will lead to water quality degradation. In addition, anthropogenic activities are increasing with the increment in human population. These could influence the fish larvae community and monitoring their population is crucial in order to maintain the fish stock in natural habitat. Therefore, it is

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