

Environment and diversity of ichthyoplankton in the seagrass beds of Sungai Pulai Estuary, Johor, Peninsular Malaysia.

ABSTRACT

Larval fish composition, seasonal diversity and their abundance influenced by environmental parameters were investigated between October 2007 and September 2008 in the Sungai Pulai seagrass beds of Johor, Malaysia. Fish larvae were collected monthly by a bongo net through 30 min surface tows in the seagrass beds. In situ environmental variables were recorded during the sampling cruises. Habitat temperatures of fish larvae ranged from 26.92-30.83°C (Mean \pm SE, 29.11 \pm 0.34°C); dissolved oxygen ranged from 4.73 to 7.19 mgL⁻¹ (5.96 \pm 0.19 mgL⁻¹) and the salinity fluctuation was between 27.38 and 33.67 ppt (30.64 \pm 0.50 ppt). In total 2,801 larvae, belonging to 20 families were recorded, with a mean abundance of 79 individuals/100 m³. Top six families (Clupeidae, Terapontidae, Nemipteridae, Sillaginidae, Blenniidae and Gobiidae) occurred consistently around the year. Larvae belonging to family Clupeidae (47.94%) and Terapontidae (17.35%) were most abundant in the study area. The density of total larval fishes varied significantly ($P < 0.05$) among the different months. The highest diversity index (1.99) was observed in July while the lowest (1.20) was observed in September. Mean body length of larval fishes was 3.34 \pm 0.51 mm (Mean \pm SE) and ranged from 1.20 to 15.52 mm. It is revealed that 45% of the individuals were less than 4 mm and 99% were less than 6 mm (TL). The abundance of dominant families was found to have correlation (positive or negative) with the water parameters. Regular occurrence of larvae of different size range confirms the continuous spawning activity in this seagrass area.

Keyword: Ichthyoplankton; Ecology; Diversity; Seagrass; Malaysia.