COASTAL WATER FISHES ABUNDANCE AND DISTRIBUTION IN RELATION TO PHYSICO-CHEMICAL AND PHYTOPLANKTON AT TELUK LIKAS, KOTA KINABALU

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JULY 2016

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ABSTRACT

COASTAL WATER FISHES ABUNDANCE AND DISTRIBUTION IN RELATION TO PHYSICO-CHEMICAL AND PHYTOPLANKTON AT TELUK LIKAS, KOTA KINABALU

Teluk Likas, Kota Kinabalu are known as significant fishery resources to local community around Kota Kinabalu. The aim of this study was to assess coastal water fish abundance and distribution, then their relationship with physico-chemical water properties and phytoplankton cell density. This study conducted from February 2016 to April 2016. Fish samples, physico-chemical reading and phytoplankton data were collected from five different stations located inside the Teluk Likas. A total of 224 individual fishes consists from 21 species was identified and recorded inside coastal water area of Teluk Likas, Kota Kinabalu from all five station. The most abundant and dominant was *Hexanematichtys sagor* found at all station at Teluk Likas with total 73 of individual fish. The other dominant species is *Scatophagus argus, Psettodes erumei, Johnius amblycephalus, Chelon subviridis, Eubleekeria jonesi, Gerres filamentosus,* and *Carangoides coeruleopinnatus*. *Oreochromis aureus* which is freshwater fish caught in Station 5. Among the seven physico-chemical parameter tested in this study, water temperature (30.14 - 31.19°C), dissolved oxygen (2.15 - 4.12 mg/L), total dissolved solid (34.83 - 35.74 g/L), conductivity (57.21 - 61.34 mS/cm), salinity (35.22 - 37.47 ppt), pH (5.68 - 6.03), and water clarity (1.1 - 2.2 m). Phytoplankton cell density calculated by used Lackey drop method. Station 3 has highest phytoplankton cell density, 1200 cell/mL, while station 1 has lowest phytoplankton cell density, 237 cell/mL. The correlation between fish abundance and phytoplankton cell density is strong positive correlation with $r = 0.97$. This study shows the abundance and distribution of coastal water fish influence by physico-chemical and phytoplankton.

CHAPTER 1

INTRODUCTION

1.1 Study Background

Water quality of marine nowadays one of hot issue to us because it effect to mankind health, marine organism and their ecosystem (Hernandez *et al.*, 2004). This occur due to the rising human population and rapidly developing industry sector, water of marine obtained huge amount of pollution from various sources such as culture of fish, domestic waste, picnic activity, over plantation, disorganized development and squatters (Krembs and Sackman, 2015). Fish is one of living organism in the earth that sensitive with water chemistry changes because differ of pollution type from their surroundings (Lomeli, 2011). Physico-chemical parameters play main role with fish diversity, abundance and distribution (Latawiec *et al.,* 2015).

In ASEAN, there are region or zone that considered has a highest value marine biodiversity, the zone called Indo-Malay-Philippines Archipelago (IMPA) (Carpenter and Springer, 2005) and Sabah located on this zone has long coastline and fishing place spot (Khatib, 2015). This represent the Sabah state have highest abundance and distribution of fish.