

**RELATIONSHIP BETWEEN PHYSICO-CHEMICAL
PARAMETERS AND ZOOPLANKTON ABUNDANCE IN
LIKAS BAY AND SEPANGGAR BAY, KOTA KINABALU,
SABAH**

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ABSTRACT

RELATIONSHIP BETWEEN PHYSICO-CHEMICAL PARAMETERS AND ZOOPLANKTON ABUNDANCE IN LIKAS BAY AND SEPANGGAR BAY, KOTA KINABALU, SABAH

This study was conducted in Likas Bay and Sepanggar Bay, Kota Kinabalu, Sabah to assess abundance of zooplankton and its relationship with six selected physico-chemical parameters. There were including temperature, dissolved oxygen, salinity, transparency, nitrate and pH were measured from February 2017 to April 2017 using portable instruments such as DO Meter YSI 550 A, depth sounder, GPS Garmin, Secchi Disc, Refractometer AtagoTM and Ultraviolet-Visible Spectrophotometer Model Cary 60. The zooplankton sampling was performed using plankton net mesh size 153 μ m at each sampling point at average depths between 1.41 m and 3.30 m respectively. Zooplankton abundance was observed using Sedgwick Rafter Cell with 10X10 of magnification by using Nikon Compound Microscope. The result shows that temperature was ranged 29.63-29.91°C, dissolved oxygen ranged between 6.16 mg/L to 8.51 mg/L and salinity 30.00-31.33 ppt. Nitrate was ranged between 0.03-0.09 mg/L, transparency ranged about 1.31-2.61 m and pH from 8.04-8.22 respectively. The most dominant group of zooplankton in both study areas was from Copepod, *Oithona* sp. which has 491.67 ind/L from the total abundance, 1166.68 ind/L. From the statistical analysis using SPSS IBM Version 21, the correlation analysis showed that zooplankton abundance has positive relationship with dissolved oxygen ($r=0.929$) and nitrate ($r=0.970$). While, negative relationship with temperature ($r=-0.945$), pH ($r=-0.936$) at $P<0.01$ of significant level. However, transparency ($r=0.101$) and salinity ($r=-0.118$) with zooplankton abundance has weak positive and negative relationship. This relationship shows that dissolved oxygen was an important parameter to support living organism such as zooplankton. Meanwhile, when the zooplankton abundance increases it was beneficial for fisheries management to identify the fishing ground and increases the food availability for aquatic living as the zooplankton was the main food source for fish juvenile and larvae. Besides, conducting more studies at other places in Sabah was recommended in order to sustain the source of protein for the community area.