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Abstract. Plankton is a biota community that is able to adapt and serve as natural food for fish. This study aims to analyze the structure of the plankton community and its spatial distribution so that this research can be used as information for swamp aquaculture. This research was conducted in July and August 2019. Sampling was done at ten stations by considering the duration of inundation. The method used was quantitative exploration and inverse distance weighting (IDW). The results showed that the swamp waters of Paminggir and Danau Panggang had the highest abundance of phytoplankton (850 cells/liter), the lowest in Ambahai (150 cells/liter) in July and Bararawa (180 cells/liter) in August 2019. Zooplankton (10 cells/liter) has been identified in Jenamas with the lowest abundance, and the highest (70 cells/liter) in Babirik in August 2019. Bacillariophyceae was dominate with relative abundance of 53% species and the most zooplankton comes from Protozoa by 50%. The range of index values of diversity, evenness and dominance of phytoplankton were 1.79 to 0.21 while zooplankton were 0.46 to 0.72. Phytoplankton with appropriate abundances are spatially distributed in the western part of the swamp along the Ambahai and Babirik while the spatial distribution of the abundance of zooplankton properties clustered in the middle and southern of the swamp. Water quality parameters of the nitrate ranged 0.13 – 0.25 mg/l and phosphate ranged 0.12 – 0.52 mg/l.

1. Introduction

A swamp is an area permanently saturated with water, inundated most of the year with a depth of less than 5 meters, the water tends not to move or not to flow. The water supply from the Paminggir swamp Hulu Sungai Utara has come from rainwater, runoff from the Negara River and the Barito River which