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EUTROPHICATION OF DANAU BANGKAU PEATLAND BASED ON NITRATE-PHOSPHATE CONCENTRATIONS AND FISH DIVERSITY

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Abstract

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Danau Bangkau Peatland is one of the peatlands in which local community do fishing activities. In the dry season, agricultural farming activities are performed, while this area is also a residential area. Some of these anthropogenic activities also indicate eutrophication in this peatland. The purpose of this study was to determine the eutrophication of Danau Bangkau Peatland based on the nitrate-phosphate content and fish diversity. The parameters included analysis of nitrate and phosphate using spectrophotometric methods and on-site analysis of DO and pH to evaluate the level of eutrophication. In addition, the Shanon-Wiener method was used to determine fish diversity. The results showed the nitrate content was found low at center station and Peatland outlet (i.e. within 0.4-10 ppm). Inversely proportional to the phosphate parameter which was rather higher than Water Quality Standard (BMA) between 0.19 - 3.34 ppm, eutrophication occurred in the Danau Bangkau Peatland. DO parameter was very low (1.1 - 4 ppm), which is far from the Water Quality Standard. Surprisingly, the pH parameter was actually quite good at between 5.99 - 6.9. Fish diversity was low as only 6 species were found, namely Snakehead Fish (Chana striata), Giant Snakehead Fish (Chana micropeltes), Climbing Perch Fish (Anabas testudineus), Kissing Gourami (Helostoma temminckii), Snakeskin Gourami (Trichogaster pectoralis) and Three-spot Gourami (Trichogaster trichopterus). The high phosphate content in old peat Peatlands formed eutrophic conditions, in which only certain fish species were able to adapt. This condition made the fish diversity in Danau Bangkau Peatland very low.

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