

PHYTOPLANKTON-SURFACE WATER QUALITY RELATIONSHIP AT BAC VAM NAO, AN GIANG

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Summary

This study was conducted to examine the relationship between phytoplankton composition and water quality in Bac Vam Nao flood control area, An Giang. Three phytoplankton samples (VN1, VN3 and VN5) were collected in march and september 2018. Water samples (VN1, VN2, VN3, VN4 and VN5) were also collected in march and september from 2015 to 2018 to assess water quality and examine the relationship between phytoplankton and water quality at the sampling sites VN1, VN3 and VN5. The findings revealed that the water quality in the study area was polluted by organic matters due to low of DO and high of TSS, COD, BOD₅ comparing to surface national technical regulation on surface water (QCVN 08-MT: 2015/BTNMT, column A1). In addition, water environment was also contaminated by coliform. For phytoplankton, Euglenophyta, Chlorophyta, Cyanophyta were the major phyla accounting for 23.9%, 22.8%, and 22.8%, respectively. These phyla indicate water environment was polluted by organic matters which was in accordance with the results of chemical and physical water quality parameters analysis. Shannon Weiner diversity index (H') at the observed sites ranged from 0.569 to 2.580 indicated seasonal variation of water quality from light pollution (in wet season) to severe pollution (in dry season). At the same sampling sites, the water quality index (WQI) ranged from 4 to 37 indicating water quality from moderate to severe pollution, which did not show the seasonal fluctuations of water quality as H' . The present study pointed out that H' and WQI did not show the same status of water quality since phytoplankton be also affected by weather and phytoplankton predators. Therefore, water quality monitoring should be conducted on the basis of combining physical, chemical characteristics and phytoplankton composition.

Keywords: *Bac Vam Nao, organic pollution, phytoplankton, Shannon-Weiner diversity index (H'), water quality index (WQI), water quality.*