Session I – Climate Change and Challenges to Ecological and Economic Sustainability
11:00 AM

Response of Nutrient Levels in a Mangrove Tidal Creek at Can Gio Mangrove Biosphere Reserve, Vietnam

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Abstract

Understanding the interaction between a mangrove ecosystem and its adjacent sea is important in the overall understanding of coastal wetland ecology. To examine the nutrient dynamics in a mangrove forest of South Vietnam, surface water samples were taken throughout thirty-six tidal cycles from a creek in Can Gio Mangrove Biosphere Reserve. Dissolved inorganic nutrients exhibited clear tidal signatures, partly reflecting their origins: nitrate and nitrite were derived from the estuarine water whereas phosphate, silicate and ammonium were indicators of pore-water input. It was recognized through the concomitant fluctuation of ammonium and nitrate concentration that ammonium was additionally supplied by the sewage water from Ho Chi Minh City. The difference in nutrient concentrations between day and night suggested that ammonium appeared to be the dominant source of nitrogen for autotrophic uptake of aquatic organisms in the investigated creek. Seasonal changes could be considered as the driving forces behind nutrient and organic matters in the creek.