OJF> Vol.3 No.1, January 2013

OPEN ACCESS

The Effective Ecological Factors and Vegetation at Koh Chang Island, Trat Province, Thailand

PDF (Size:980KB) PP. 41-48 DOI: 10.4236/ojf.2013.31007

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ABSTRACT

This study aims to characterize the tropical rain forest present in the Chang Island, Trat Province, Thailand, and to analyze the environmental factors to determine its composition and structure. Thirty one plots were sampled, plant cover was measured in 20 × 40 m^2 plots, and the importance value index was calculated. A total of 78 species belonging to 32 families were identified.Twenty soil samples were analyzed, and cluster analysis was employed to classify the vegetation communities. Floristic and environmental data were evaluated and ordered using canonical correspondence analysis. The results showed that the vegetation communities could be divided into 4 types and were significantly ($p < 0.05$) controlled by a secondary distribution according to elevation and the topographic wetness index (TWI). Mixed plant communities were more likely to distribute in regions with moderate to low levels of TWI, which were divided by levels of elevation into lowland multi-aged stands (Type 1) or a *Calophyllum thorelii* Pierrecommunity (Type 2). The Dipterocarpus (*Hopea pierrei* Heim) community (Type 3) was more likely to occur in regions with moderate to high levels of TWI, but the result from cluster analysis showed that some of the plot samples from the Dipterocarpus community were separated by characteristic importance value index (IVI) values. There was also evidence that the area was impacted by an old disturbance created by a rubber plantation. This impact was referred to as a secondary succession community (Type 4).

KEYWORDS

Chang Island; Vegetation Community; Canonical Correspondence Analysis; Ecological Factors

Cite this paper

Pumijumnong, N. & Payomrat, P. (2013). The Effective Ecological Factors and Vegetation at Koh Chang Island, Trat Province, Thailand. *Open Journal of Forestry, 3,* 41-48. doi: 10.4236/ojf.2013.31007.

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