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Characterizing a Populated Riparian Zone

Darrien Yau Seng Mah

Department of Civil Engineering, Faculty of Engineering, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia
Email: ysmah@feng.unimas.my

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Abstract

Developments adjacent to river, over the years, have impacted the ecological systems along riparian zones. This paper is to explore the changes occurring in a populated riparian zone. For over 35 years, the nipah swamps along the study site at the edge of Kuching city, Sarawak, Malaysia are subjected to human disturbances. Once a nipah forest is dominated by *Nypa fruticans*, the study site is being replaced by *Sonneratia caseolaris*—a mangrove forest. Both plants are indigenous to Southeast Asia region. We observe in the study site that *Nypa fruticans*, habitually a dominant species, is weakened when human disturbances are high, and leads to event taken over by *Sonneratia caseolaris*. We point out that *Sonneratia caseolaris* behaves intrusively rather than neighborly in disturbed systems. Here, we suggest that the plant also has high resistance towards human disturbances. This is a growing behavior contradictory to reports of *Sonneratia caseolaris* in natural systems.

Keywords

Mangrove, Nipah Swamp, *Nypa fruticans*, *Sonneratia caseolaris*, Urban River

1. Background

Human activities increasingly either degrade ecosystems, leading to harsher abiotic conditions and/or more limited dispersal of the species originally present; or introduce new species which alter the biotic environment and potentially reduce chances for system redevelopment. In both situations, novel ecosystems can be expected [1]-[3]. This paper is to gain understanding of the mentioned changes in a populated riparian zone because this would allow people to identify, proactively address specific concerns and monitor changes over time.

Riparian zones are the interfaces between terrestrial and aquatic ecosystems, and host a wide array of plant and animal life [4]-[6]. Understanding of terrestrial-aquatic interactions is critical for assessing ecological effects of development because human settlements are often clustered near such areas [7] [8]. Environmental