

Destruction of Coastal Wetlands in Harper City-Liberia: Setting Nature against the Future Society

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Abstract : Coastal wetland destruction and its consequences have recently taken the center stage of global discussions. This phenomenon is no gray area to humanity as coastal wetland-human interaction seems inevitably ingrained in the earliest civilizations, amidst the demanding use of its resources to meet their necessities. The severity of coastal wetland destruction parallels with growing civilizations, and it is against this backdrop that, this paper interrogated the causes of coastal wetland destruction in Harper City in Liberia, compared the degree of coastal wetland stressors to the non-equilibrium thermodynamic scale as well as suggested an integrated coastal zone management to address the problems. Literature complemented the primary data gleaned via global positioning system devices, field observation, questionnaire, and interviews. Multi-sampling techniques were used to generate data from the sand miners, institutional heads, fisherfolk, community-based groups, and other stakeholders. Non-equilibrium thermodynamic theory remains vibrant in discerning the ecological stability, and it would be employed to further understand the coastal wetland destruction in Harper City, Liberia and to measure the coastal wetland stresses-amplitude and elasticity. The non-equilibrium thermodynamics postulates that the coastal wetlands are capable of assimilating resources (inputs), as well as discharging products (outputs). However, the input-output relationship exceedingly stretches beyond the thresholds of the coastal wetlands, leading to coastal wetland disequilibrium. Findings revealed that the sand mining, mangrove removal, and crude dumping have transformed the coastal wetlands, resulting in water pollution, flooding, habitat loss and disfigured beaches in Harper City in Liberia. This paper demonstrates that the coastal wetlands are converted into developmental projects and agricultural fields, thus, endangering the future society against nature.

Keywords : amplitude, crude dumping, elasticity, non-equilibrium thermodynamics, wetland destruction

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