FLORA IN PERIL: UNCOVERING ENVIRONMENTAL ASSESSMENT GAPS AFTER MV X-PRESS PEARL DISASTER

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The MV X-Press Pearl cargo vessel disaster in May 2021, caused by a fire aboard the ship, resulted in significant and irreversible damage to Sri Lanka's territorial waters. While the environmental impact assessments were largely centered on the faunal loss, this incident also impacted important coastal vegetation cover including mangroves, macro algae, and submerged aquatic vegetation that significantly contribute to carbon sequestration and biodiversity in these habitats .Despite the significant damage caused to the flora by the X-Press Pearl disaster in the affected area, which is rich in valuable vegetation, this region has received limited research attention. This review aims to identify the gaps in environmental impact assessments for the flora in this ecologically important zone. By addressing these gaps, the study advocates for improved research efforts and more effective protective strategies. The review methodology involved Qualitative content analysis and an extensive search of databases using keywords, primarily focusing on papers published between 2021 and 2024, while incorporating earlier publications for additional context and supporting details. A comprehensive review of 120 peer-reviewed journal papers, conference and workshop proceedings, grey literature, and country reports were carried out. This review analyzes the degradation of coastal flora following the X-Press Pearl incident. Based on the review, the disaster along Sri Lanka's western coastline, spanning approximately 120 kilometers from Negombo to Bentota, significantly impacted marine biodiversity and coastal vegetation. Toxic substances such as nitric acid (25 tonnes), plastic nurdles (billions), and oil (328 tonnes) were the most hazardous pollutants that impacted the flora. Among the publications reviewed, none of the papers analyzed a statistical evaluation of the impact on floral vegetation resulting from the disaster. The results underscore the critical importance of scientific evidence and more powerful monitoring and restoration actions for coping with future extended long-term consequences on the vegetation of impaired coastal ecosystems.

***Keywords**: Coastal ecosystems, Coastal flora loss, Restoration strategies, X press pearl cargo vessel disaster.*