Mapping the Pattern of Distribution of Threatened Marine Species from the X-Press Pearl Ship Explosion Using GIS Techniques

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Over 90% of global trade is done by shipping, and thus, the marine sector supports the transportation of a variety of critical items while balancing the global economy and keeping countries united in such a complex global market. Sri Lankan ports are strategically positioned ports for vessels going from west to east and east to west. The X-Press Pearl ship explosion recorded on the 20th of May 2021 was investigated under the study by utilising the Geographic Information Systems in the spatial domain. It severely polluted some of the coastal zones of Sri Lanka including Colombo, Kalutara, and Galle due to its chemical explosions and oil spreading. Under the research, we explored the marine species 'wash-out' incident through records and reports on social media and news reports as the main source of data. First, all data is stored in the spatial database before the analysis and along with the location coordinates. Then, the spatial analysis was carried out in the Arc GIS 10.5 platform and maps were generated to illustrate the pattern of expansion. According to the study, it has found out that the most vulnerable areas were Western and Southern coastal regions while some incidents were recorded in the Eastern part as well. The data collected and reported on social media or news was utilised in the data collection phase, and it indicates the public involvement in disaster management practices. Further, data analysis done through the GIS context would be significant in the decision-making and implementation phases as a future direction of the study.

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