

TYPE AND QUANTITY OF MARINE DEBRIS AT SELECTED PUBLIC BEACHES IN SABAH (TG. ARU & KOSUHOI) DURING DIFFERENT MONSOON SEASONS

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ABSTRACT. *Marine debris is widely distributed at the coastal area of the global oceans, but their specific sources, quantities and distribution remains inconclusive. Although the threat from marine debris pollution has beginning to be recognized in Malaysia, comprehensive studies are still lacking to document the pollution. This study has adopted a standard method of beach marine debris survey to assess the type, amount and sources of debris on a one kilometer section in Tg. Aru and Kosuhoi beaches, Sabah, during surveys in December 2012 (northeast monsoon, NEM), May 2013 (intermediate monsoon, IM) and July 2013 (southwest monsoon, SWM). The mean total debris items was $1,220 \pm 532$ items/km and weighing at 52.8 ± 17.2 kg/km, where, Kosuhoi beach (1,241 items/km or 57 kg/km) received substantially greater quantities of debris compared to Tg. Aru beach (1,199 item/km or 48 kg/km). Total debris items were more abundant during SWM (1,789 items/km) compared to NEM (1,139 items/km) and IM (733 items/km) seasons. Plastic category objects were the most numerous amounting to 1,057 item/km (86.64%) in total debris items. Clear plastic bottles, food wrappers, plastic fragments, colored plastic bottles and cups were the most abundant objects collected which they contributed 606 items/km (49.69%) from the total debris item collected. The main source of debris objects abundance was from common source which contributed 52% from the total debris objects, whereas, those from terrestrial and marine sources contributed 32% and 16% respectively. The high percentage of terrestrial and common sources debris require marine environment stakeholders to diversify their approach and priority in mitigating this alarming result especially during SWM period. Awareness program was an effective preventive measure that should be continued and intensified. However, the program should focus on target group to ensure the awareness effectiveness to reduce if not totally eliminate the debris in the marine environment.*

KEYWORDS. Beach pollution, plastic, monsoon seasons, marine debris source, Sabah