

ID: W2174475002

TITLE: Assessment of marine debris in beaches or seawaters around the China Seas and coastal provinces

AUTHOR: ['Changchun Zhou', 'Xu Liu', 'Zhengwen Wang', 'Tiantian Yang', 'Lu Shi', 'Linlin Wang', 'Suwen You', 'Li Min', 'Cuicui Zhang']

ABSTRACT:

Compared with United States of America (USA), Brazil, Chile, Australia, limited attention has been paid to marine debris research in China and few studies have attempted to quantify the abundance and mass of marine debris. In this study, firstly the general status and sources of marine debris in China were assessed in the time period between 2007 and 2014, and secondly marine debris situation was evaluated in three China Sea Areas (the North China Sea, the East China Sea and the South China Sea) from 2009 to 2013, and finally marine debris conditions and sources were analyzed in beaches or seawaters around some coastal provinces of China during 2007-2013. Based on above analysis, the primary conclusions were as follows: (1) The mean number and weight densities of beached marine debris (BMD) and submerged marine debris (SMD) were 4.30, 0.13 items/100 m² and 133.80, 22.60 g/100 m² in China from 2007 to 2014, respectively. The average number density of the large size FMD (LOSFMD) was 0.0024 items/100 m² and that of the small and medium size FMD (SMSFMD) was 0.30 items/100 m², and the mean weight density of the SMSFMD was 1.40 g/100 m² from 2008 to 2014. The SMD and FMD densities were at the low level and the BMD density was at the high level in China. (2) The marine debris primarily was comprised of plastic, Styrofoam, wood, glass, rubber, fabric/fiber and metal, which included almost all major categories of marine debris. (3) Sources of BMD and FMD were as follows: the first source was coastal/recreational activities, followed by other disposal sources, navigation/fishing activities and the activities related smoking, and the least source being those associated with medical/sanitary activities, while the source of SMD remained unknown. (4) The mean number and weight densities of BMD were the biggest in the North China Sea, while those of FMD and SMD were the highest in the northern South China Sea. The results of this study were beneficial to the establishment of management measures for dealing with ecological and environmental problems that were generated by the high speed socio-economic development in China.

SOURCE: Waste management

PDF URL: None

CITED BY COUNT: 43

PUBLICATION YEAR: 2016

TYPE: article

CONCEPTS: ['Debris', 'China', 'Marine debris', 'Environmental science', 'Oceanography', 'Geography', 'Seawater', 'China sea', 'Physical geography', 'Fishery', 'Geology', 'Archaeology', 'Biology']