

Beach Litter in Amami Islands, Japan

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Abstract

This study was performed to examine the types of beach litter in Amami Islands, Japan. The results of the study revealed that beach litter was more numerous in the northern parts of the islands than in the southern parts. Different types of litter were observed between the upper, middle, and lower levels of the beach. Pieces of broken glass dominated the lower part of the beach, while plastic materials were mostly found in the middle level. The upper level of the beach was mostly littered with formed plastic and plastic bottles. The origin of the litter was identified by labels on the litter, which were mostly in Chinese and Korean languages. About 70% of beach litter written in the languages originated from foreign countries in the spring (March - June), but the amount of beach litter from foreign countries decreased in Yoron Islands in November. These trends regarding beach litter are discussed as the Small Island Model and the Amami Islands Model.

Key words: Amami, beach litter, Kuroshio

Introduction

The problem of garbage is an important topic in environmental pollution. Much garbage is discarded into the ocean and drifts ashore on the world's beaches (MADZENA and LASIAK 1997, WILLOUGHBY *et al.* 1997, ALTER *et al.* 1999, SOMERVILLE *et al.* 2003). This garbage has adverse effects on wildlife and ruins beach scenery as well as having a negative impact on fisheries, *etc.* Floating garbage in the sea may contain PCBs and other chemicals, affecting birds, fish, and marine mammals that swallow the small plastic pellets in the sea and on the beach (DA-SILVA *et al.* 2003). These plastic materials may release chemicals in the stomachs of animals, resulting in death or injury.

Many small islands have no active industry, and rely on tourism making the scenery an important factor in their economy. Dirty beaches may adversely affect tourism in such areas. The Amami Islands are located in the southern part of Japan and include eight islands. Kikai, Okinoerabu, and Yoron Islands belong to the Amami Islands and have very small areas of 56.87, 40.35, and 20.49 km², respectively (AOYAMA 2001). Each island has many beautiful beaches, which are very popular not only for local people but also for tourists. However, large amounts of beach litter were observed on these islands (ex. YAMAGUCHI 1998, FUJIEDA 2002), which might adversely affect tourism and wildlife. Therefore, the reduction of beach litter is very important for conservation of both wildlife and the tourism-based economies of such islands.

To decrease the amount of beach litter, it is important to determine both its distribution pattern and origin. Therefore, the purposes of this study were: 1) to determine trends in observed beach litter in each of the Amami Islands, 2) to discuss these trends as the Small Island Model and Amami Islands Model.

