

# Seasonal variation of coastal debris in Awaji Island, Japan

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Despite the fact that various environmental problems are caused by marine debris, such as an influence on the scene, ecosystem, and fishery, sea pollution, waste treatment, few cases are studied about the problem of marine debris. In this study, field investigation about the coastal debris was carried out in Awaji-island located in eastern part of Seto Inland Sea in Japan, as it is surrounded by sea and the coastal debris being an important matter.

## ***Field investigation***

Investigation was carried out for seven times, every second month from October 2004 till November 2005 in three beaches (Aiga, Keinomatsubara, Amafukiage). The coastal debris collected in the area of 400m<sup>2</sup> were roughly classified into 67 items, and their numbers were counted.

## ***Results***

At the 1<sup>st</sup> time, more than 10 thousand pieces were collected in Aiga, the most in three beaches. At the 2<sup>nd</sup> and the 3<sup>rd</sup> time, the most and the heaviest debris were collected in Keinomatsubara. Many debris were collected constantly in Keinomatsubara. On the other hand in Amafukiage, few number, less than 100 pieces, were collected in each time. Many expanded polystyrene fragments and plastic fragments were found in each beach. Moreover, the influence of local industries such as roof tiles and onions was seen.

## ***Discussion***

Under the influence of the waves by the typhoon, seashore geographical features of Aiga-beach at 2<sup>nd</sup> time differed greatly as compared with the 1<sup>st</sup> time. Although many debris were collected at the 1<sup>st</sup> time, few at the 2<sup>nd</sup> time, and fragments of glass and earthenware were increased. It was thought that light debris returned to the offshore at the same time as changing geographical features, and the glass and the earthenware fragments remained.

In the Keinomatsubara-beach area, Mihara-river, which has the maximum basin on the island, exists next to the beach. At immediately after the typhoon, since many coastal debris were considered to be the island origins, it was thought that the influence of a nearby river was large.

On the contrary, Amafukiage-beach does not have a big river in near, and it seemed to be the reason why the coastal debris were few.

## ***Conclusion***

It was assured that the amount, the kind, and the ratio of coastal debris change by the weather, geographic situations of the beach (existence of the river etc.) and the mode of a society and an economic activity of the background regions.

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