

Annual report (2017-2019) of Dive against debris at ADS323 – Tung Ping Chau island, Hong Kong

Basic survey information

Dive against debris surveys at Tung Ping Chau (ADS323) were initiated and carried out by the dive group called [Tursiopsdivers](#) between July 2017 and July 2019. Surveys were conducted at least once a month, except in January and February of 2018 and January and February of 2019, when the site was inaccessible due to weather conditions. Altogether 37 surveys were carried out, over 21 different survey days.

Survey site

Tung Ping Chau island is the easternmost point of Hong Kong, located in Mirs Bay. It is closer to mainland China (4 km away), than to Hong Kong. The island is shaped as a kidney bean and its total area is 1.16 km² (0.45 sq mi). Tung Ping Chau Marine park was established in 2001 and it occupies a sea area of about 270 hectares, that includes the island itself as well. The marine park has two core areas (Figure 1, red squares), where the highest density of corals can be found. The ADS323 adopted dive site situated within the northern core area, close to Tai Tong Wan (Latitude: 22.545909, Longitude: 114.431823).



Figure 1: Map of Tung Ping Chau Marine Park – published by AFCD

Survey results

During the 37 survey events, altogether 7604 pieces, 808kg of marine debris was removed. The majority of these items were made of plastic (71%), while the second most frequently collected material was metal (15%). The relative frequency of the various debris material at Tung Ping Chau was similar to the global trend (Figure 2).

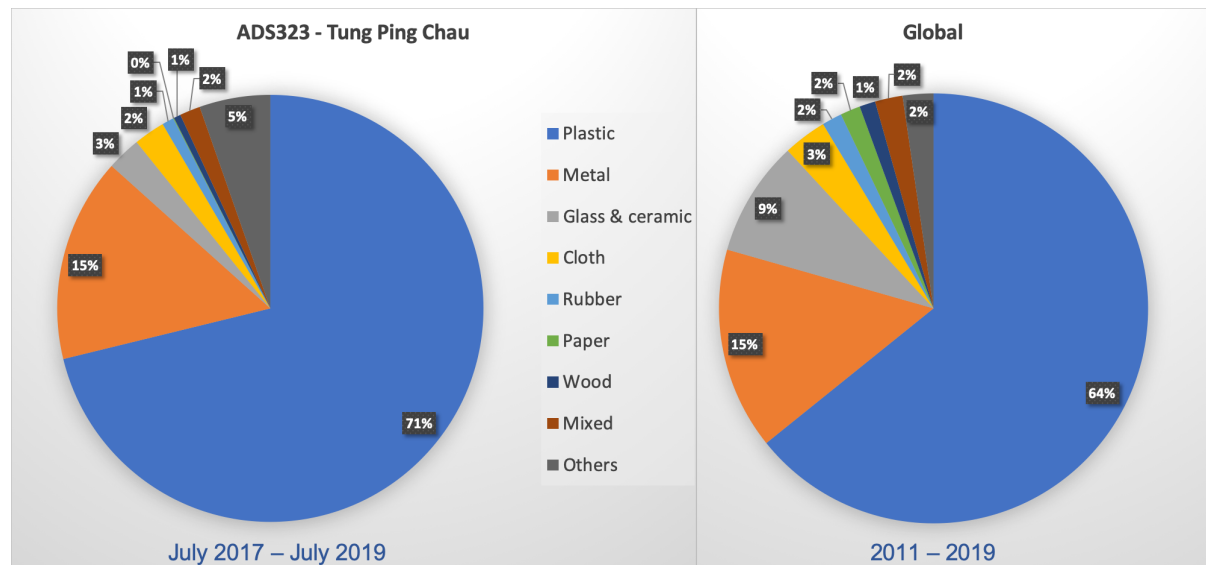


Figure 2: Relative frequency of the material of the debris items collected at Tung Ping Chau (left) and globally (right)

During the second year of our survey the number of collected debris items nearly doubled compare to the first year (2852 in the first and 4752 in the second year). However, the comparison of our first year and second year data showed no significant difference in the relative frequency of the various debris material ($p > 0.05$).

Looking at the temporal distribution of the debris materials within a year, significant increase ($\chi^2 = 115.125$, $p < 0.001$) was detected in collection of the plastic item. The temporal pattern of the frequency of the metal items showed a gradual decrease during the first year of our survey. In this second year we have noted that the occurrence of the metal items has been fluctuating and with a peak of 25% relative frequency in June 2019. It is important note that our survey period also covers the time when typhoon Mangkhut hit Hong Kong in September 2018. Tung Pick Chau was greatly affected by the storm as many of the facilities on the island were destroyed and claimed by the sea. Thanks to the tireless effort of the locals and the countless volunteers, the island has been restored to its original state.

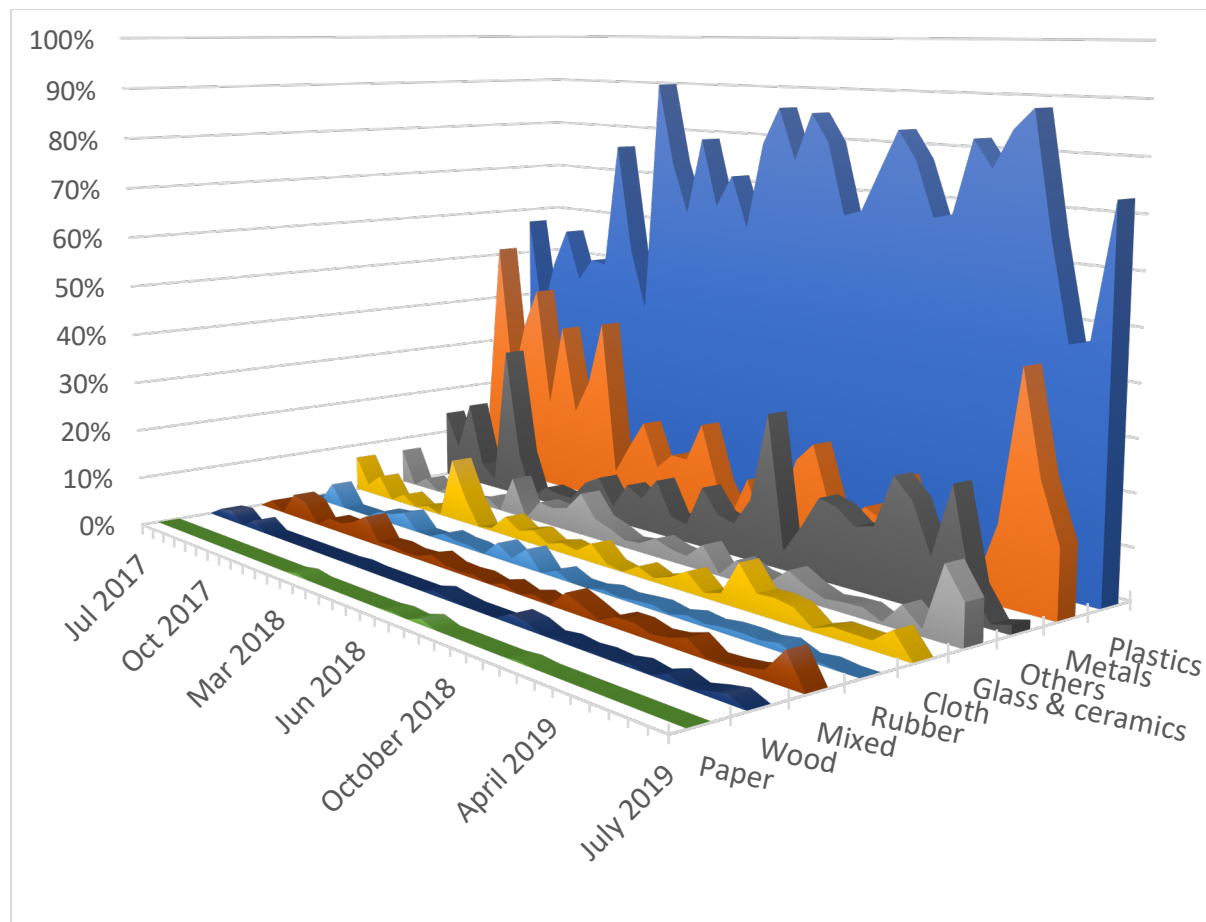


Figure 3: Temporal distribution of the various debris material found at ADS323

Most commonly found items were:

1. Plastic bags and wrappings
2. Abandoned fishing gears
3. Metal cans

The most unusual items were:

1. Household items, such as Wok frying pan or electrical fuse
2. Children toys and even a mahjong tile
3. Personal items, such as phone cases, computer parts or a valet

From the beginning of our surveys we had increasing number of participants joining our events. Some divers only signed up for a single event. However, the number of core members of Tursiopsdivers had grown from 2 to 10 divers during the first year and increased to 16 divers during our second year. we constantly receive new inquiries regarding our events.

Besides carrying out the monthly surveys, Tursiopsdivers were invited to give talks in local schools introducing the Dive against debris program. Our goal was to raise awareness of the treat to the marine flora and fauna that is caused by our current lifestyle. By promoting actions such as recycling or giving up single-use plastic items we hope to contribute to the conservation of our planet (Figure 4).



Figure 4. Team of Tursiopsdivers after a sharing talk at The HKFYG Leadership Institute

References

AFCD:

http://www.afcd.gov.hk/english/country/cou_vis/cou_vis_mar/cou_vis_mar_des/cou_vis_mar_des_tun.html

Project Aware

<https://www.projectaware.org/diveagainstdebris>