

**BRETTS WHARF**  
*HAMILTON, BRISBANE CITY*  
**SITE CLEAN UP ASSESSMENT**  
**JUNE 2020**  
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AUSTRALIAN  
MARINE DEBRIS INITIATIVE

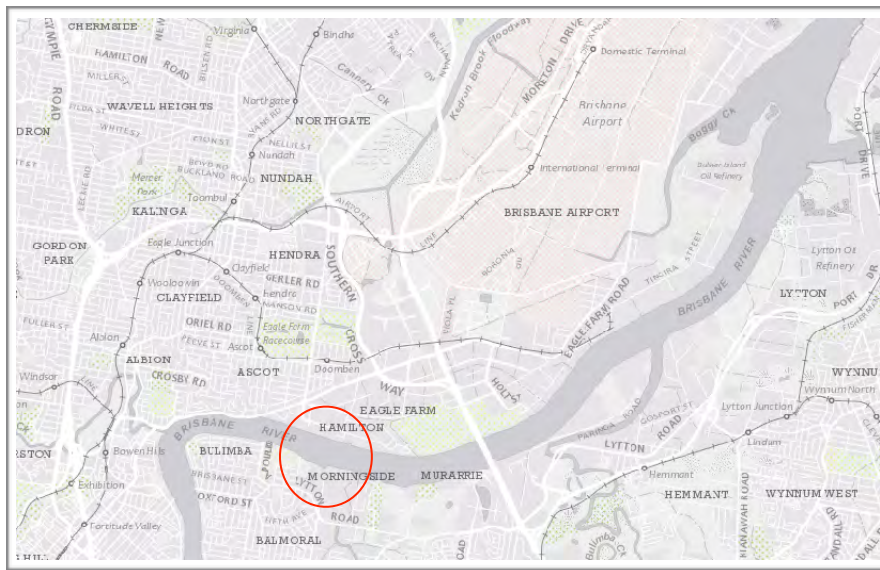


ReefClean  
Educate • Reduce • Prevent



## SITE LOCATION

Located on the Northern side of the Brisbane River, Bretts Wharf (Figure 1) serves the Brisbane suburb of Hamilton. A 150m stretch of river bank at the location (*Latitude -27.4399; Longitude 153.0638*) was cleaned up by Tangaroa Blue Foundation volunteers in June 2020. The site area is subject to medium and high storm tide inundation (Figure 2 & 3). Much of the site is inundated during high tide, and is shown to collect litter as the tide goes out.



**Figure 1:** Bretts Wharf (Source: Queensland Globe, 2020)



**Figure 2:** Medium storm-tide inundation area (Source: Brisbane City Council, 2014)



**Figure 3:** High storm-tide inundation area (Source: Brisbane City Council, 2014)



## METHODOLOGY

Field volunteers surveyed and collected rubbish over a 5 day period between and inclusive of 15/06/2020 -19/06/2020 at low tide, for 1.5 hours each day. The rubbish was collected and recorded according to material type and density. Nine broad categories were formulated as follows: Plastic, Foam, Glass & Ceramic, Rubber, Metal Paper & Cardboard, Cloth, Wood, and Miscellaneous/Other. The site was then reexamined on 22/06/2020 to assess the volume of debris post site clean up.



**Figure 4:** Clean up section, Bretts Wharf (Source: Google Maps, 2020)

## PRECIPITATION & TIDAL CONDITIONS

Rainfall and tidal conditions were observed during the site clean up period to examine the impact of these variables in correspondence to the quantity of debris washed ashore. Tide heights and tide points were considered during 15/06/20 - 19/06/20 and 22/06/20 when the site was revisited for monitoring purposes. Figure 5 shows a gradual increase in tide high points over the 5 day period, with a maximum of 2.06m on Monday, 15th June and a maximum of 2.55m on Friday, 19th June. The site was monitored during the morning of Monday 22nd June, when a maximum tide height of 1.94m was recorded at the station. Figure 7 shows higher than average rainfall event recording 11.4 mm on 15th June and 5.2mm observed on 19th June. An insignificant amount of rainfall (1.2mm) was reported on 22nd June.

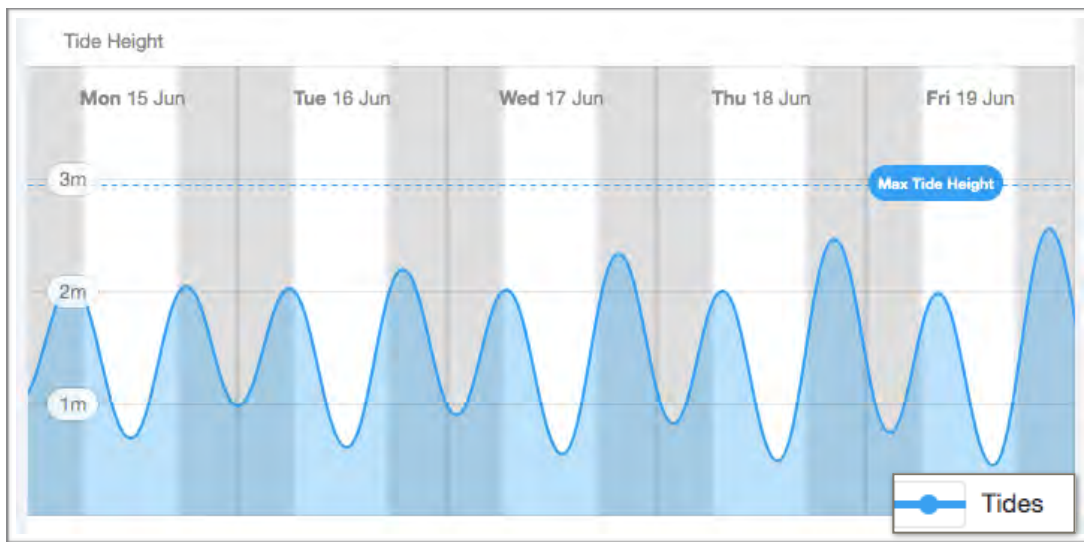


Figure 5: Tide Heights, Bretts Wharf Terminal (15/06/20 - 19/06/20); (Source: WillyWeather, 2020)

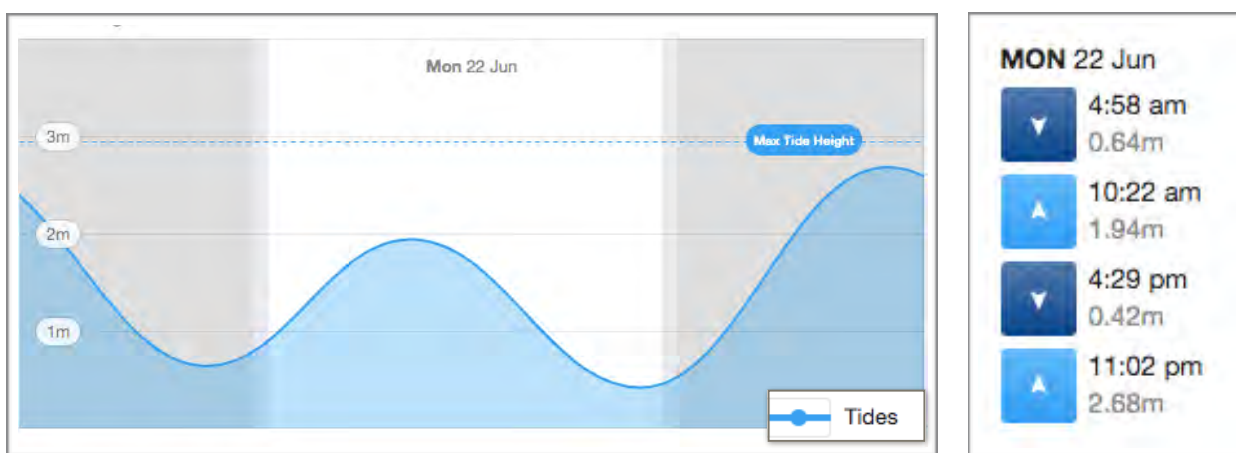


Figure 6: Tide Heights, Bretts Wharf Terminal (22/06/20); (Source: WillyWeather, 2020)

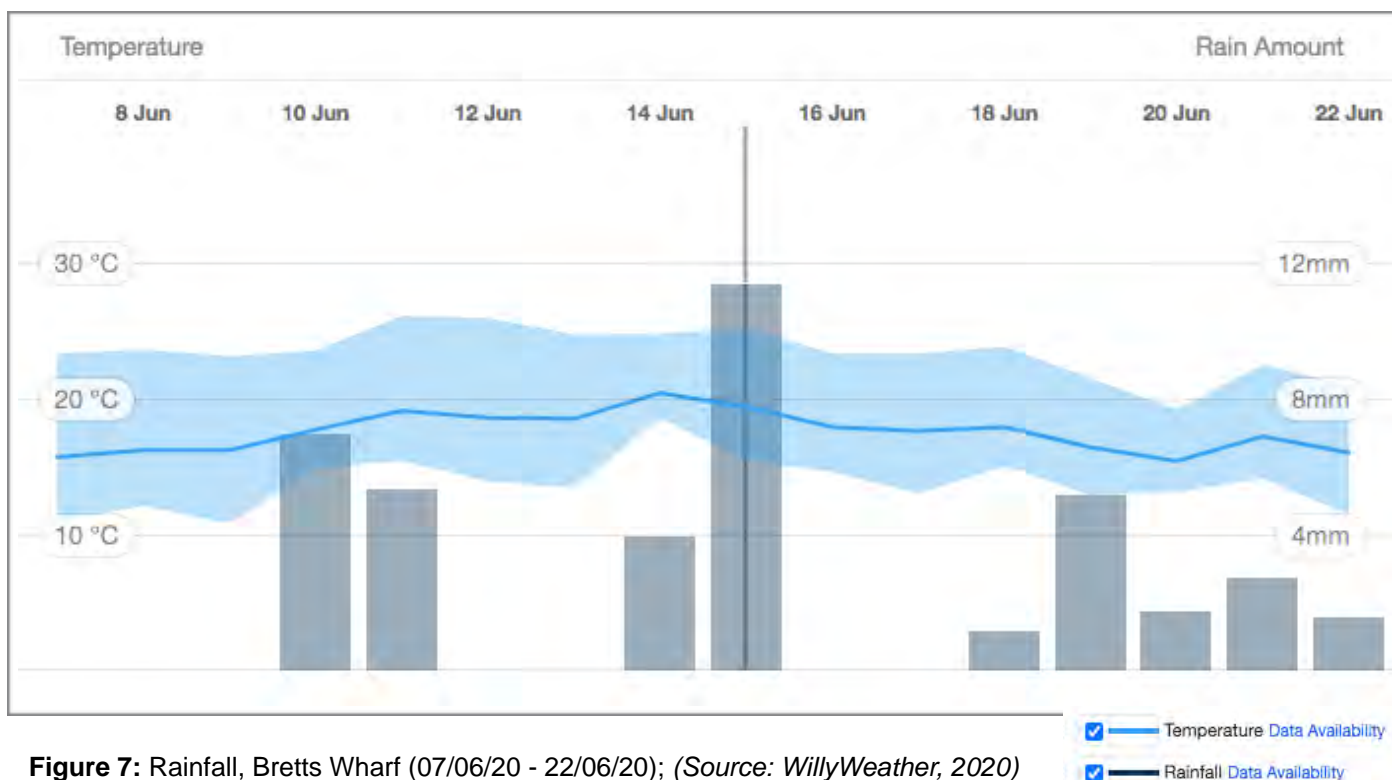
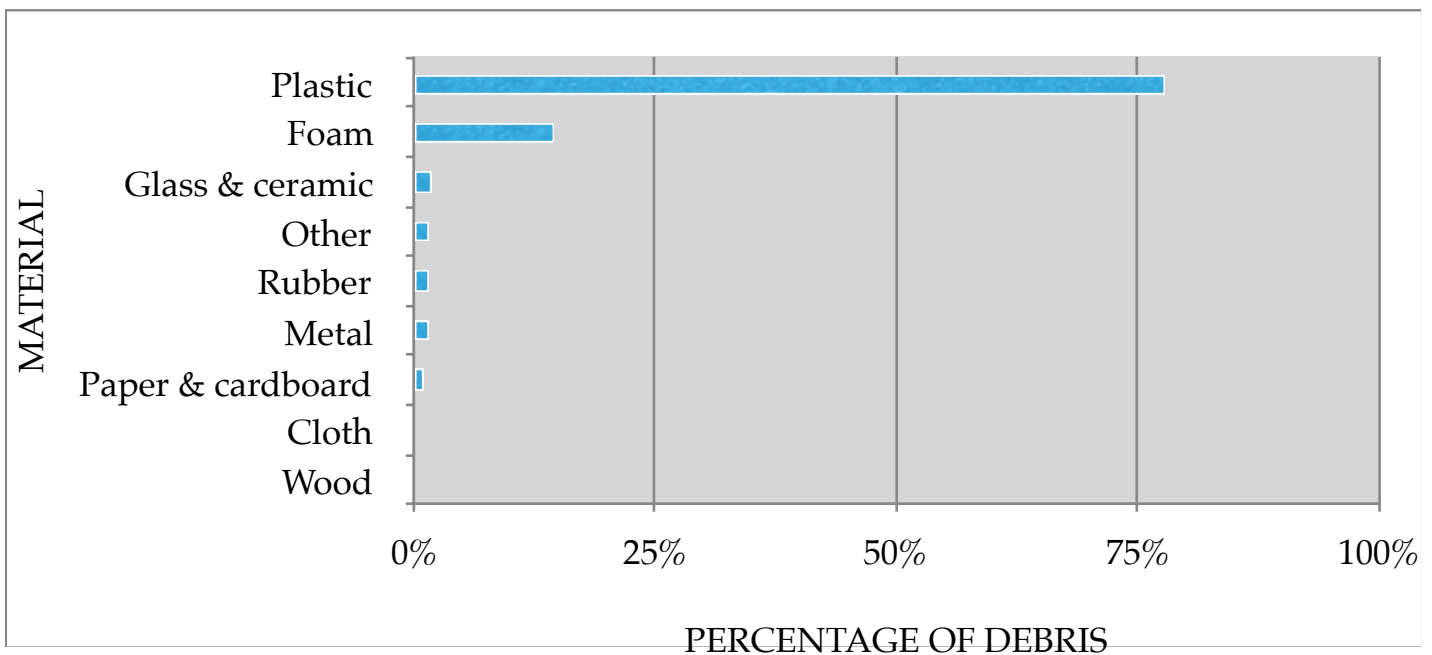


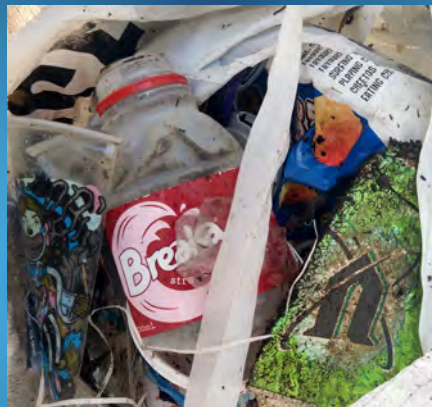
Figure 7: Rainfall, Bretts Wharf (07/06/20 - 22/06/20); (Source: WillyWeather, 2020)

## RESULTS

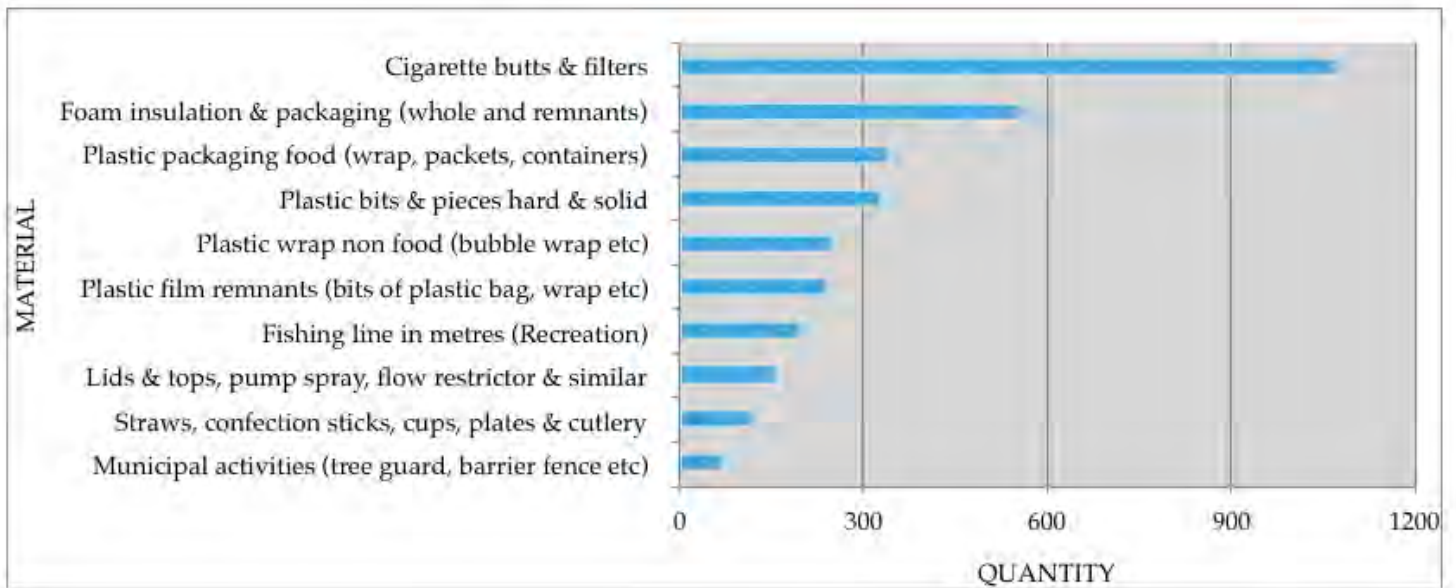
In terms of the overall 3960 items (52kg) collected, it was found that plastic ranked the highest category of debris washed up on the river bank, including plastic food packaging, hard solid plastic, bubble wrap, plastic drink and water bottles, lids, tops, flow restrictors, plastic bags and film remnants, pens and stationary, medical syringes and electrical cables and connectors. This was followed by 573 items of foam including insulation, packaging, in whole and remnant compositions. An estimated 199 recreational fishing lines and 118 straws, cups, plates and cutlery were also recorded. Figure 9 shows the top 10 categories of debris cleaned up with 1076 cigarette butts and filters in the highest category.



**Figure 8:** Relative proportions of categories of debris collected (Source: Tangaroa Blue Foundation, 2020)

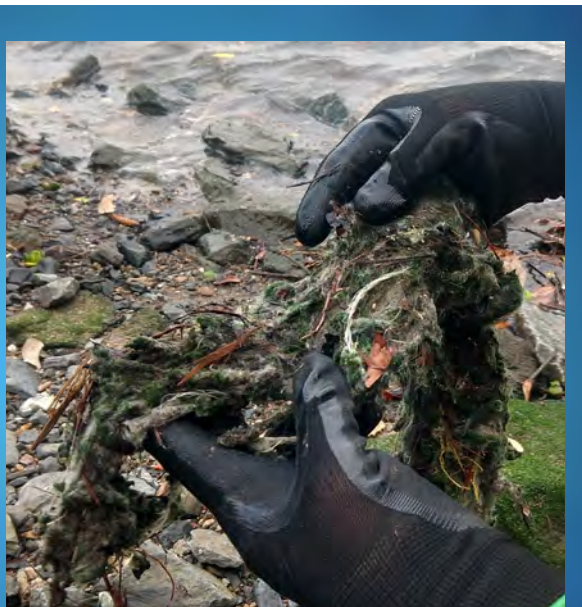






**Figure 9:** Relative proportions of categories of debris collected  
 (Source: Tangaroa Blue Foundation, 2020)

The highest volume of litter was collected on the first day of the clean up with 1105 items amounting to 11kg. The rainfall event of 11.4mm on the day was coupled with a relatively higher tide of 2.06m. In contrast, when the site was revisited on the 22nd of June, there was less than 2mm of rainfall recorded on the day, along with a lower tide of 1.94m, and there was a significant decrease in litter observed, with comparatively low volumes. The results highlight that there is positive correlation between rainfall events, tide levels and overall quantities of debris washed ashore.



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