

## IMPACT REPORT: Seabin Results: Cruising Yacht Club Australia (CYCA)

July 2020 – February 2021

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*Smart Tech Solutions*



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## Seabin Data Collection Results

### Key Findings

- 3403.9kg of marine debris<sup>1</sup> captured since July 2020.
- 6 units operational.
- 875 million litres of water filtered for microplastics, plastic fibres, oils and fuels.
- An average of 14kg captured per day.
  - o This is equivalent to 2.3kg, per day, per unit.
- 32 data collections conducted on site.
- 863 plastic items counted and recorded.
  - o 1 plastic item captured every 4 minutes in February<sup>2</sup>.
- The category “Foam Pieces” contributed to highest proportion of items counted (228), 26.4%.
- The category “Hard Plastics - Food Packaging” contributed to the highest proportion of items by weight (240g), 27.5%.
- 827 daily empties recorded by the Seabin Enviro Technician and volunteers.

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<sup>1</sup> Marine debris (or marine litter): any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment (UN Environment Program, 2009). Marine debris, microplastics and microfibrils are captured by floating organic matter which is collected in Seabins.

<sup>2</sup> In February we began collecting data for the Plastic Capture Rate (PCR) whereby the information from data collections is averaged out over a 24hr period to give a capture rate per minute.

## Breakdown of Marine Debris Caught

Table 1 displays a breakdown the main plastic items captured and counted in the 32 data collections conducted between July 2020 and February 2021 from the 6 Seabin units located at CYCA marina.

**Table 1: Breakdown of the main items captured in the Ala Wai Harbour Seabin units from September 2020 to January 2021**

MARINE DEBRIS CATEGORY	Plastic items by Count (%)	Plastics item by Weight (%)
MICROPLASTICS <5mm (incl. PELLETS, NURDLES)	15.1%	0.1%
FOAM PIECES	26.4%	0.0%
SOFT PLASTIC FOOD PACKAGING / WRAPPERS	9.5%	0.0%
HARD PLASTIC FOOD PACKAGING (CUPS etc.)	3.5%	27.5%
PLASTIC LIDS	3.0%	5.4%
PLASTIC STRAWS	1.7%	0.7%
PLASTIC BAGS	1.3%	0.3%
PLASTIC BOTTLES	0.2%	2.7%
PLASTIC UTENSILES	0.2%	0.6%
PAPER CUPS (COFFEE, ICE CREAM etc.)	0.7%	12.4%
PLASTIC LOLLIPOP / COTTON BUD STICKS	0.7%	0.0%
UNIDENTIFIED PLASTIC ITEMS - SOFT >5mm	15.5%	0.0%
UNIDENTIFIED PLASTIC ITEMS - HARD >5mm	11.1%	1.1%
CIGARETTE BUTTS	3.2%	0.3%
FISHING GEAR (FLOATS, LURES etc.)	2.7%	26.3%
FISHING LINE	0.3%	0.0%
MICROFIBERS (plastic fibers derived from rope)	1.7%	0.0%
ROPES	0.1%	0.9%
CANS	0.1%	1.7%
TAPE	1.2%	0.1%
RUBBER	0.7%	1.4%
TENNIS BALL/TOY BALL	0.1%	6.5%
Face Mask/Gloves	0.6%	8.6%
SYRINGES	0.2%	3.4%

## Main items by count

1. FOAM PIECES - 26.4%
2. UNIDENTIFIED PLASTIC ITEMS - SOFT >5mm - 15.5%
3. MICROPLASTICS <5mm (incl. PELLETS, NURDLES) - 15.1%

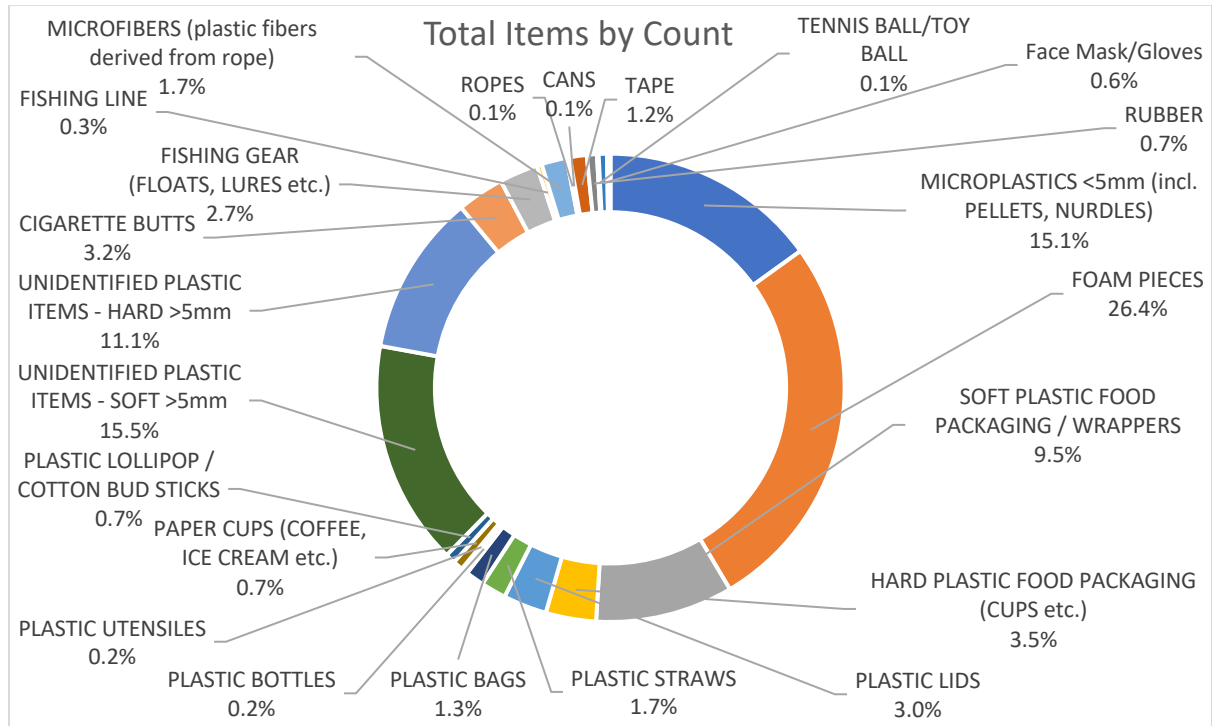


Figure 1: The total count of plastic items displayed as percentages from 32 data collections.

## Main items by weight

1. HARD PLASTIC FOOD PACKAGING (CUPS etc.) - 27.5%
2. FISHING GEAR (FLOATS, LURES etc.) - 26.3%
3. PAPER CUPS (COFFEE, ICE CREAM etc.) - 12.4%

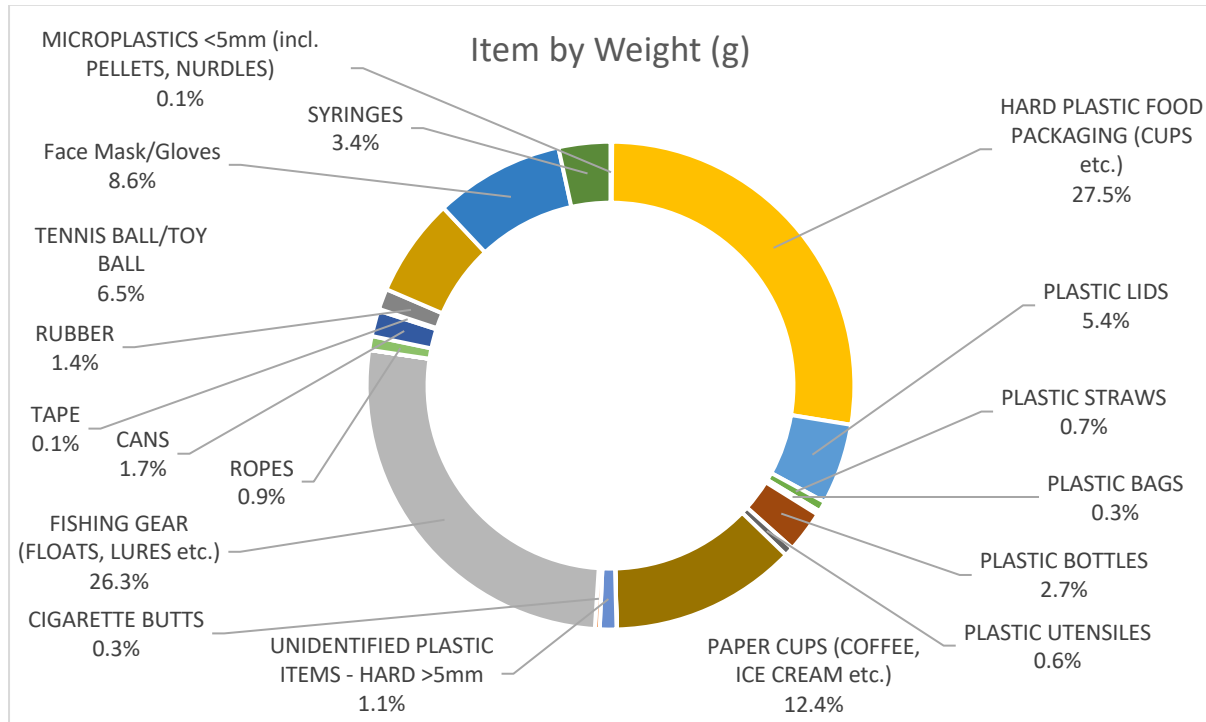


Figure 2: The total weight of counted plastic items displayed as percentages from 32 data collections at the two Seabin units.

## Seabin Catch per Unit

Figure 3 displays the variation in total catch weight since July 2020 for each of the six (6) Seabin units hosted at CYCA.

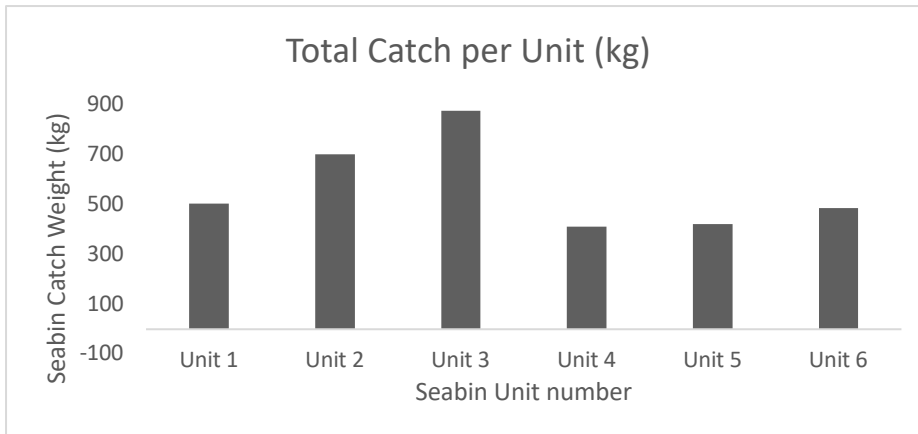


Figure 3: The total catch per Seabin unit. See location map (Figure 4) for corresponding Seabin unit location within CYCA marina.

## Seabin unit Location Map

Figure 4 indicates the location of the six (6) units hosted at CYCA marina.

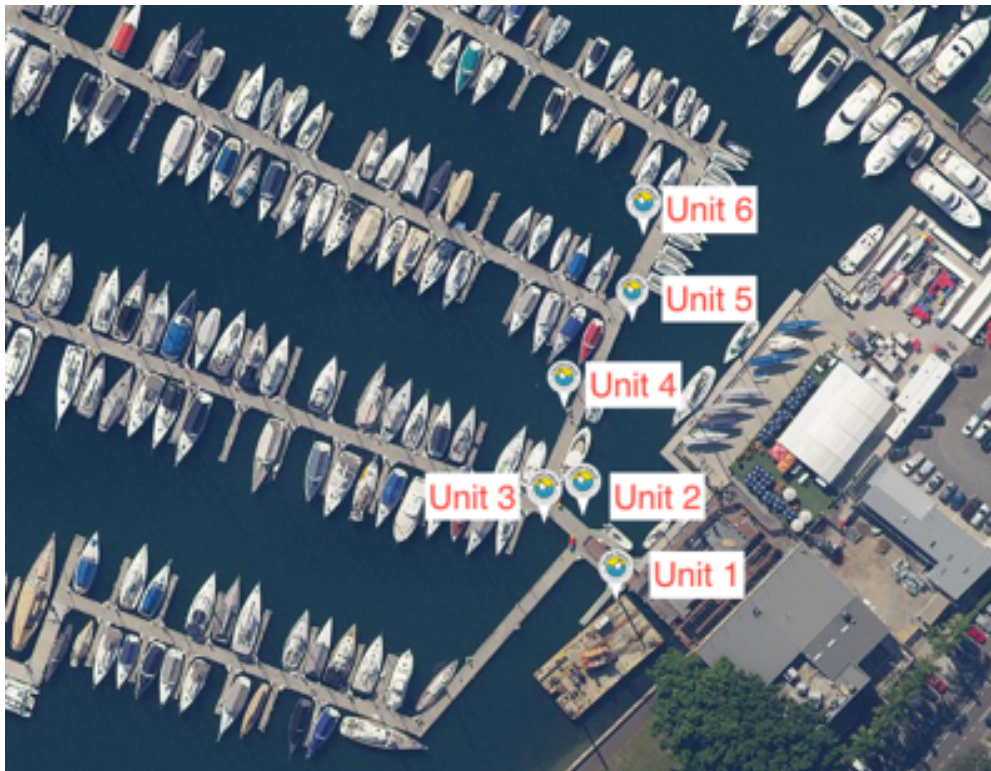


Figure 4: Seabin unit locations within CYCA Marina.