



NOOSA RIVER CLEAN UP
and
RUBBISH AUDIT
2023

Noosa River Clean Up and Rubbish Audit, 2023

A River Clean Up and Rubbish Audit were organised as part of the annual Clean Up Australia Day (CUAD) in Noosa¹ on Sunday 5th March 2023. It was also a follow-up to the 2022 survey of urban land-use pressures on the lower Noosa River², targetting sites identified in the survey degraded by a combination of pressures and accumulated rubbish and weeds.

8 CUAD Registration sites were set up around Noosa Estuary with Site Coordinators and Clean Up kits for participants to join in, by boat or kayak and on foot. Over 80 members of the public signed on and collected for around 3 hours, working along each section of the Estuary foreshore land, shoreline and shallow waters.

Rubbish was picked up by hand, placed in sacks, returned to the registration points or to the NICA RiverWatch boat and tagged. Extra bulky items were recorded separately. The tagged collections were then transferred to a central site (Tewantin Park Boat Ramp) for the Rubbish Audit and eventual disposal.

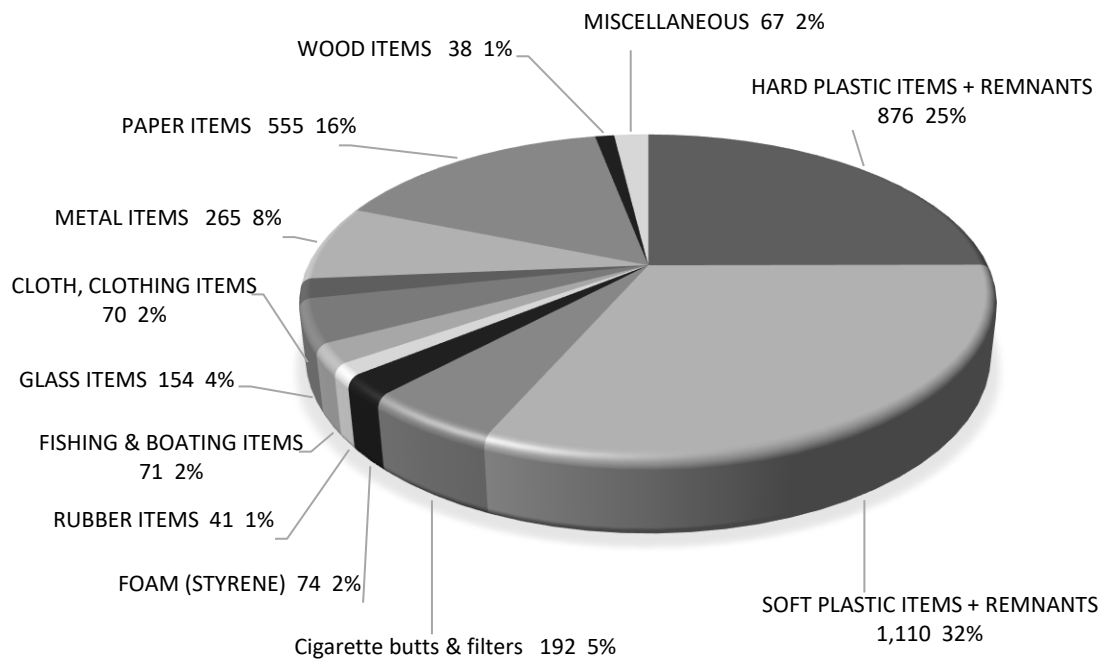
The Rubbish Audit involved measuring the volume of rubbish collected around each site, then separating and sorting the items collected in each sack into different categories of materials and counting the numbers of each type of item.

Results

Number of participants	84	
Estimated collecting effort	252	volunteer-hours
Total amount of rubbish removed	25	sackfuls (1,750 L) + 23 bulky items
	3500	estimated number of items
Amount of rubbish audited	18	sackfuls (72% of collection)
	2716	number of items audited

Types of Rubbish

ESTIMATED NUMBERS AND % OF MAJOR CATEGORIES OF ITEMS COLLECTED



Discussion

Rubbish in Noosa River

1. The River Clean Up removed 25 sackfuls and an estimated total of over 3,500 items of rubbish of diverse types, materials and sizes from the foreshores and shallows of Noosa Estuary, through Tewantin, Noosaville, Noosa North Shore and Weyba Creek.
2. These amounts are similar to those recorded in previous River Rubbish Audits³, despite the numbers of clean ups taking place. As noted in 2021, the “persistent amounts of rubbish in lower Noosa River cannot be considered reasonable or acceptable. This small Queensland coastal river system is the heart of an iconic Biosphere Reserve, highly valued by the local community, and integral to Noosa as a successful sustainable tourism destination.”
3. Noosa River’s rubbish is clearly an urban-river catchment problem: the great majority of rubbish items get into the river from people in Noosa’s urban centres close around the estuary, or on the shore or in boats, and not disposing of their abundant consumer items, containers and packaging materials properly. Too many of these items are easily blown or washed onto the shore or into the water via the many hard urban surfaces and cleared areas – roads, paths, open parkland and stormwater drains built along much of the foreshore.
4. Very little of the rubbish collected from the estuary shoreline or shallows seems to have travelled down the Noosa River from upstream, or entered the estuary from the sea on the tide, just a few highly buoyant items, blocks of plastic foam and a piece of surfboard.
5. Once on the estuary shore or in the water the rubbish items decompose at widely different rates depending on the material, and may float or sink, become trapped in denser or taller vegetation along the shoreline, incorporated into estuarine substrates, especially in backwaters or deeper spots where water flow decreases, or transported at different rates to other places, by the wind onto lee shorelines (such as north-west edge of Lake Doonella) or downstream and out to sea.
6. Neglected sections of shore infested with weeds and plant debris will also trap and obscure litter. This was apparent from the large numbers of rubbish items collected at sites identified in the 2022 Estuary-Pressures survey as “black spots” where several urban land-uses had combined and the habitat damage, weeds and debris had not been repaired or cleared by routine foreshore management.

Types of River Rubbish

7. Of the 25 sackfuls of rubbish collected, the contents of 18 sackfuls (72%) were sorted and analysed, and this proportion was used to estimate the total numbers of items collected⁴, from the numbers actually counted. Very small fragments were not able to be collected or counted.
8. The estimated total number of items collected was 3,515. By far the most abundant type of material was Plastics, over 2000 items (60% of the total) compared to 555 Paper, 265 Metal and 154 Glass items.
9. The majority of Plastic items were fragments of various Soft Plastics (estimated 1,110, 32% of all Items), or whole items or fragments of diverse types of Hard Plastics (876, 25% of all items). This reflects the ubiquity of plastics in modern society, and also the durable and readily-transportable nature of most plastic materials in aquatic environments, plus their propensity to break down into small particles.
10. As in previous River Rubbish Audits, a stand-out sub-category was Cigarette butts, with an estimated 190+ (5% of all items) collected and removed from the estuary shoreline, at parks, boat ramps, riverside roads and carparks, reflecting the carelessness of smokers in public places.
11. Over 550 pieces of Paper or card (16% of all items) were estimated to have been collected. This high level is of concern because it is probably an underestimate of the actual amount of paper rubbish in the estuary, given that paper materials become rapidly waterlogged, break down and sink into the water

rather than stay buoyant along the shoreline or on the water surface. 24 of the paper items audited were drink cups, apparently dropped on the shore or in the water close to where they were drunk.

12. The third most abundant category was metal items (estimated 265, 8% of all items). These were made up of a surprisingly high number (72) of aluminium drink cans, unsurprising numbers of metal bottle tops and ring pulls (62), 27 pieces of aluminium foil, 29 fragments of other metal items and an unexpected number of catfood tins (12), most found along Weyba Creek, probably used to bait crab traps and too smelly to dispose of properly.
13. Glass items (estimated 154, 4% of all items) made the fourth most abundant category. 62 intact glass bottles and jars were audited, and 57 glass fragments.
14. The estimated number of Cloth or clothing items collected was 70 (2% of the total), many apparently dropped on the shore or from boats.
15. An additional 53 different types of items audited were recorded as Miscellaneous, ranging from a variety of balls, balloons and frisbees, to car mats, used nappies, unidentified bones, pieces of concrete and fibro.

Noosa River Clean Up Method

16. The Clean Up method of volunteer members of the public picking up individual pieces of rubbish lying mainly along the Estuary's shoreline and public foreshore land is labour intensive and relies on individuals' visual acuity and dexterity, but it is effective at removing significant amounts of rubbish from the river, and cost-effective because the labour is voluntary.
17. The method captures only a limited part of the problem of Noosa Estuary pollution from land or sea sources. Clean Ups do not collect or measure litter items that sink to the river bed, accumulate in deeper parts and perhaps become buried in sediment. They also do not deal with any liquid or dissolved waste materials nor any finer particles entering the saline-brackish ecosystem from any source.
18. There is great educational value in people's participation in the River Clean Up. They see up close how the living Estuary functions and the amounts and kinds of rubbish that get into it, accumulate and spread so easily, cause damage to the amenity and ecology, and require so much effort to remove. The rubbish in the River is no longer Out of sight, Out of mind, and there is a sense of achievement when participants see the cleaned up river foreshore and shallows.
19. However picking up people's rubbish is not a pleasant task especially in some conditions; participants can be disheartened if the problem is not reduced over time and the effort seems futile.
20. The public Clean Up event highlights the need to address the problem at source rather than in the sink of the Estuary. As often noted, the overwhelming majority of items picked up in Noosa River become rubbish after only a short 'useful life' yet are made from non-biodegradable materials that would persist and impact the estuary and marine environment for many years or decades.
21. Periodic Clean Ups by community volunteers need to be matched by other actions led by local businesses which sell and supply the goods, working with local and State governments to prevent materials from becoming items of rubbish within the Noosa River catchment. Measures should include stopping both the manufacture and the local use of items and materials that so readily become ubiquitous litter or damaging pollutants after their short lives as consumer items.

Additional Notes

1

For Clean Up Australia Day 2023, Noosa Integrated Catchment Association (NICA) organised a total of 18 public collection sites across the Noosa Shire – 8 around the Estuary, 3 on the Eastern Beaches and 7 across the Noosa hinterland – where volunteers were able to register and collect rubbish in the vicinity.

The total number of registered participants was 225, and the total amount of rubbish collected was estimated to be 360 kg, including 200 kg of accepted recyclable items, plus over 3.5 tonnes of extra large items (wheels, tyres, fridges, washing machines and similar) discarded in the local environment.

2

For details of the survey results refer to the report **Noosa River Estuary – Assessment of Urban Land-Use Pressures** November 2022, available from NICA Website. The survey was organised under the *Get your Wetlands* Project supported by the Queensland Department of Environment & Science, Community Sustainability Action program.

From mapping the pressures from intensive urban land-use around the estuary, the survey concluded that “around 60% of Noosa Estuary’s foreshore (41 km out of 66km) is degraded by urban land-use built in close proximity and with inadequate buffering, resulting in extensive encroachment and increased inputs of ‘foreign’ materials (including) weeds, pollutants, litter and waste.”

3

Noosa River Rubbish Audits in 2021, 2020 and 2019 picked up similar amounts and types of rubbish, although the data are not strictly comparable given variations in collecting effort per site. There is no precise collation of data on the total amounts and types of rubbish in or removed from Noosa River by various clean up efforts.

4

The Audit sorted rubbish pieces into the major types of material – Paper”, “Glass”, “Hard Plastics, “Soft Plastics” etc. – because these behave differently as pollutants in the estuary. Additional, more-detailed categories were used mainly to match those used in the AMDI (Australian Marine Debris Initiative), although these data are collected for a rather different purpose. The decision to measure overall volume and number of rubbish items for the Noosa River Clean Up and Audit was based on these being reasonably easy to obtain and reasonably useful for understanding the effects of this form of solid waste in the estuarine ecosystem: each piece of rubbish more-or-less smothers a small to medium area of river bed or shore, preventing movement of water, dissolved materials (notably oxygen) and organisms between the water and the substrate – mud, sand or stone. The alternative of measuring weight would give no information about the waste’s impact on the estuary, but is more relevant to the subsequent transport and disposal of the waste collected.