



# LITTER CONGRESS 2019

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# KEYNOTE PRESENTATION:

## Going Round in Circles – It starts at the beginning and not the end



**Tiffany Correggia**  
Ricardo Australia

Every year, 8 million tonnes of plastics make their way into the ocean. We've all seen the images before, we have heard the stats, but it still doesn't fail to shock. Plastic pollution and is devastating our land and seas.

The scale of the current problem is almost incomprehensible. A recent report by the Ellen MacArthur Foundation showed that if we do not act now, plastic will outweigh fish in the oceans by 2050. In just 30 years' time. And it's not just our flora and fauna that our mismanagement is killing. A further report from WasteAid UK, Tearfund and Fauna and Flora International showed that plastic waste and litter can be attributed to between 400,000 and one million human deaths worldwide. Deaths caused by everything from diarrhoea, malaria and cancer, all of which researchers have linked to plastic waste building up near people's homes, or being burnt, which can result in damaging fumes.

Pictured is East Beach, Henderson Island (Pitcairn Islands), in the south Pacific Ocean. The uninhabited island has been found to have the world's highest density of waste plastic, with more than 3,500 additional pieces of litter washing ashore daily at just one of its beaches. Every one of those 3,500 pieces was discarded by someone, somewhere. It was deemed to have

served its purpose and to have no further value.

The scale of the problem is enormous and growing. Despite international effort and attention. It is not enough. We need action from everyone, everywhere. We can be under no illusion that this has been, still is and will continue to be a catastrophic crisis for our planet.

The bottom line is that we are all responsible. Every one of us, David Attenborough himself, and our governments. We are all responsible.

Plastics and other pollution do not respect borders, they cross continents in ocean currents, meaning the responsibility falls on all countries to act together. With the world's population expanding, we need to create global economies that do not just use and dispose of stuff but that work in regenerative circles. Ones in which people can thrive, but where we design products from cradle to cradle and all materials are valorised and not just discarded.

### The material flows of plastics

Ok Let's take a step back - Where is this plastic litter coming from? Another report from the Ellen MacArthur

Foundation shows the material flows of plastics globally.

Every year we make 78 million tonnes, 98% of which is from virgin feedstock: 40% of this is landfilled, buried and lost from productive use; 14% is collected for recycling; Just 2% makes it back into productive use. i.e. only 2%, basically statistically nothing, makes its way back into the productive economy. Unfortunately, the market currently favours virgin feedstock over recyclate and not all packaging is made to be recycled. A lot of it is thin and has little 'value' to an operator, so the market for recycling it just isn't there. It is designed to be single use. To serve its purpose to protect a good, to be a cheap and easy container to hold a takeaway drink or food. It hasn't been designed within a system that allows for cascading use, or one that values each material as it travels through the economy.

And what is one of the results of this system design? That 32% - almost a third of all plastics are lost as leakage, this leakage is potential marine and terrestrial litter: dinner for our Albatrosses and death traps for our turtles.

Yes, despite our awareness, despite all our action, our programs and our good intentions how often do we still beaches on our doorstep, strewn with plastic and other takeaway litter. This litter not only damages our environment and the flora and fauna that inhabit it, but it has a direct and indirect cost to Council and ultimately to the ratepayers of the community. In fact, it was estimated that the direct cost to council to clean up litter in NSW is around \$66 million a year. That isn't even considering the external costs, such as loss of amenity value or buried costs such as burst tyres from smashed glass on roads.

The only option is to move to a circular economy that tries to design out



Source: [Inhabit.com](https://www.inhabit.com)

any single use waste from the very beginning. One where once a product is finished with, there is incentive to send it back to the start of the manufacturing process to be made into something else. An economy where value is placed on every product and we use tried and tested models such as biomimicry, industrial symbiosis, cradle to cradle design and the sharing economy to change our manufacturing processes and our individual value systems. We need to go further than telling people what not to do – we need them to start placing value on those items.

The waste hierarchy shows us that a preferential hierarchy should be followed to prevent marine and terrestrial litter. Product design, material choice and efficiency should be prioritised, but we still seem to spend most of our time at the collection/ recycle stage, sometimes at the reduction phase, but rarely at the full-on prevention by design stage.

In fact, it is a striking demonstration that our international sign for 'litter prevention' shows someone using a bin. This is testament that the majority of our focus is still reactive and not proactive. We need to rethink and not just react.

Let's all also never forget that plastic has played an essential role in our everyday life since its invention. It has, along with many other uses, allowed us to have sterile operations and preserve food for longer which ultimately lessens wastage. There will always be a use for it in our society and I can't help but think that often it is a case of us shooting the messenger and blaming the symptom rather than the cause. The cause is the

system. The regulatory and economic model that has allowed us to become so complacent and create this value-less 'waste and litter' in the first place. So much of what we produce isn't made to be recycled or we do not have the right infrastructure to do it.

## We need to rethink – not react

A circular economy is an alternative to a traditional linear economy (i.e. straight line - make, use, dispose). In a circular economy we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life. Waste is not waste – it is a resource with value for another process – not something to be strewn on a beach or even thrown in landfill. It is changing an economic system but also the value associated with that resource and the behaviours that flow from that. It is where we start to think in whole systems, with regulatory change, business model changes, reverse cycles, infrastructure and product design, biomimicry and industrial symbiosis. It is about innovation for those materials once lost into the marine and terrestrial environment and adding value to them. We are not talking about destroying economies but just creating a new more sustainable one. In fact, McKinsey recently estimated that circular business models could add \$1tn (£640bn) to the global economy by 2025.

Circular Economy for litter prevention, is not just these individual changes

and business models but creating whole communities. Communities where nothing is seen as 'waste' where everything is a valuable resource, from the products to the materials to the energy and water. An economy which favours innovation to design out waste in the first place. Innovative design such as Ooho water, a film made from edible seaweed which allows people to drink water without the need for a plastic bottle. This innovation has been so successful that it was in fact replaced plastic bottles for runners in this years London Marathon.



Source: Katchoo

I know that all of us are trying to do our bit. We all manage regulatory programs, council level campaigns or multi-national charities. But it is not enough. Litter is not about disposal, it is about creating an economy that designs it out. It is not necessarily about public place bin design, but the design of our entire economic model, which is hard to do.

But we need to encourage a framework of circular economy measures to promote change across all governance levels. We have incentives to promote recycling, but there are not so many incentives to promote reuse and prevent waste. All of which ultimately prevents litter.

We need simple, common local authority recycling systems that at least get the basics of recycling right and allow innovation in those materials we cannot currently recycle. We need more circular economy strategies at community and at state level and need more litter behaviour change programs which proactively promote circular economy thinking. Co-creation, co-design and innovation in circular solutions is where civil society must play a role. We need to start at the beginning of the litter story and not the end.



Source: The Ellen MacArthur Foundation

# How we conduct an effective litter enforcement program



**Brendon Andrei & Kenneth Fitzgerald**  
Blacktown City Council

## Our journey

4 years ago, we only issued around 40 littering fines a year. We set about looking at ways to improve the number of fines and building capacity in staff so that it was incorporated in day to day tasks. We also wanted to dispel the myth that people will never get fined. Our community surveys showed that Blacktown residents didn't think there was any chance they would get fined for littering.

After completing a number of litter prevention initiatives, enforcement was the missing link which stopped our projects reaching their full potential. To test how integral enforcement is, we applied for a NSW EPA Council Litter Prevention Grant to target littering around fast food outlets and allocated funds to employ a dedicated Litter Enforcement Officer for 6 months. We wanted to examine whether conducting sustained enforcement at these litter hotspots would lead to sustained litter reduction.

Litter enforcement proved to be a resounding success with 309 fines issued by the Litter Enforcement Officer over 6 months and an 82% reduction in roadside litter achieved.

We were able to prove that litter enforcement was a highly effective method for behaviour change and we were able to build a business case to retain the position. Through Better Waste and Recycling Funding we have extended the Litter Enforcement Officer's employment for another 2 years to sustain our enforcement presence and help maintain low litter rates. Blacktown City Council has gone from issuing an average of 40 littering related fines a year to now issuing over 800 a year. These fines include deposit litter from vehicle, deposit small items, not state name/address, and deposit advertising material in/on any place.

Some councils may be hesitant to undertake litter enforcement. This is often due to concerns about their ranger's safety and perceived negative community perception about fines being issued. From our experience, we've found it to be relatively easy to conduct litter enforcement and our community law enforcement officers have not had any major incidences where their safety was at risk. We have also found that our community are very supportive of us fining litterers and we promote our enforcement efforts via social media.

## Targeting littering from vehicles

We target littering from vehicles by patrolling major roads, fast food outlet car parks and litter hotspots. Patrol vehicles are fitted with forward and rear facing dash cams for the purpose of securing evidence of the littering offence. Officers look for signs that a littering offence may occur. This could include someone eating or smoking in a vehicle, a car window is down, smoke coming from the cabin or ashing a cigarette out the window.

When a littering offence is observed, the footage is saved, details are taken of the vehicle, a registration check is requested from NSW Roads and Maritime Services and a fine is posted to the owner of the vehicle. This is the easiest form of litter enforcement as no direct interaction is required and the value of the fines is high. We have found that different locations attract people and litterers at different times of the day. The areas we patrol are scheduled around these optimal times.

## Targeting littering in public places

If a Community Law Enforcement Officer observes someone litter and the person is not in a vehicle, direct engagement is required. The uniformed officer will approach the offender and identify themselves as a compliance officer. In a calm and assertive manner, they explain that a littering offence has been committed and request the person's identification. They take a photo of the identification which is usually a driver's licence, thank the person for their cooperation and advise the fine will be sent in the mail. This





technique reduces the amount of time spent with the offender which reduces the chances of them getting angry. When undertaking enforcement around shopping centres, officers often film the offences on hand held cameras to record evidence. They occasionally wear a body cam which assists in getting the offenders to comply. Litterers almost always have an excuse for littering and try to get out of a fine; however 90% of them comply with the direction given by our Community Law Enforcement Officers. When extenuating circumstances exist, our Community Law Enforcement Officers may issue a formal warning in the form of a penalty infringement notice with a value of \$0. We issue formal warnings to approximately 10% of people.

### What if they won't produce identification or provide their details?

Around 10% of offenders are difficult and will refuse to give their details. Our Community Law Enforcement Officer's cautions them that it is an offence to not provide their personal details and this offence attracts an additional \$750 fine. Once given the choice of paying an \$80 littering fine or an additional \$750 fine, most people hand over their identification. In some instances, the offenders have had the logo of their workplace on their shirt or have been standing next to their company branded vehicle. We advise them that we will contact their employer to obtain their details if they do not provide identification.

Our Community Law Enforcement Officers will safely follow an offender if they run away as they usually run back to their workplace or to their car. When the offender runs back to their workplace, the Community Law Enforcement Officer will speak to the business manager/owner and will obtain the employees details from them. The offender is issued a littering fine and a \$750 fine for not providing identification.

Often the offender will run back to their vehicle and drive off. In this instance, the officer will photograph the vehicle's number plate and do a registered

number plate search on the vehicle to obtain the owner's details. A Section 193 letter (notice requiring information and/or records to be provided) is then sent to the vehicle owner giving them 10 days to identify who was driving the vehicle on that day. Once the offender is identified, they are issued a littering fine plus a \$750 fine for not providing identification.

### Partnering with NSW Police

On occasions we target specific shopping areas that are harder to undertake enforcement in. These areas often attract rebellious individuals or groups who won't provide identification and if they run into a shopping centre, we can't do much about it. When we target these areas, we do it as a joint litter enforcement operation with NSW police. Our Community Law Enforcement Officers undertake the litter enforcement and plain clothes police officers observe from nearby. Should an individual become too difficult for our Community Law Enforcement Officer's to handle, the plain clothes police officers intervene and assist in the matter.

### Advice for councils thinking of undertaking a similar approach

It is our experience that enforcement has been the missing link in litter prevention. For us to truly get littering under control in NSW, we need all councils to undertake hard enforcement so we have a consistent approach across the state. We encourage councils to follow our lead. Encourage your authorised officers to try litter enforcement, offer them a dash cam for their vehicle or give them time to target littering. This will build their confidence and help embed litter enforcement into their daily tasks.

Funding opportunities exist to help you undertake enforcement. You could consider incorporating the employment of a Litter Enforcement Officer into your next Council Litter Prevention Grant application.



# Does taking regulatory action diminish the value of education?



**Fiona Stock & Joshua Azzi**  
Georges River Council

Local Government has a range of functions, including both community education responsibilities and regulatory, compliance and enforcement powers. These responsibilities and powers are starkly different in their delivery methods and achieve different results. But how should Local Government prioritise these often competing functions and which should be implemented first? Does (often quantitative) regulatory action diminish the (intrinsic and often qualitative) value of education?

NO Littering requires a multi pronged approach. There is no fixed stereotype of “people who litter”, they cross ages, demographic and cultural boundaries.

People who litter require different drivers to engage behaviour change. For some education, others a monetary incentive while others require a financial disincentive. Littering also requires effective infrastructure in place to minimise the option for littering waste.

This presentation will outline how successfully Georges River Council has reduced littering in one of its main CBD areas by 32%

Due to the fact that littering crosses many demographics including age, cultural differences, and gender a more holistic view is required for a whole of community. Hurstville, Forest Rd is one of the main CBD centres with close to 20,000 rail passengers per day passing through not including people using the shopping precinct.

Council has completed a multi-pronged approach to review:

- Items littered
- Education campaigns
- Regulatory blitzes

Council built on the previous EPA program and studies which focussed

on The Four Tiered litter education process, this includes Pathways (signage), Pride and Ownership, Positive Social Norming and Enforcement. These four tiers were reinforced throughout the process.

Due to the close proximity with Hurstville Station, Hurstville Public school partnered with Council to build students capacity and voice within the community. Council completed a litter audit of the school to identify the main items littered and alternatives to littering which included recycling and Container deposit collection.

Council then presented to the school their findings including other data gathered from various sources including a recent report from the EPA App, Councils litter bin audit and visual observations of Forest Rd Hurstville as well as data from bin sensors located along Forest Rd.

Based on the data collected, an Artwork competition was run in conjunction with the school to develop messages to discourage litter in a CBD context. These were advertised through the printing of flags, signage on litter bins and use of social media.

Council has a recent example of where education and regulation were used hand in hand to see a significant reduction in litter deposited around a Reverse Vending Machine, located in one of Councils Premier Parks. This example has been included to compare and contrast the variety of methods which can be adopted by Council to achieve a multi pronged program.

During the education campaign Council officers conducted a Litter blitz on several busy days as well as the use of illegal dumping/ littering cameras. Cigarette butts were the most prevalent item found during the blitz.

## Carss Bush Park Return and Earn RVM – Case Study

In the Georges River Local Government Area (LGA), Illegal dumping and ‘Please don’t litter around bins to avoid a fine’ signs were positioned around the Return and Earn reverse vending machine (RVM) at Carss Bush Park in early November 2018 one week after the machine was installed. Twenty signs were installed around the front and rear of the RVM after littering and illegal dumping presented itself as an issue during the first week of operation.

Mobile surveillance cameras were installed in early December 2018 after it was determined there was no reduction in littering offences during the one month since the installation of waste education signage. Additionally, the area surrounding the Return and Earn RVM in Carss Bush Park was identified as a ‘hotspot’ which warrants daily patrols. Regulatory action commenced on 11/12/18 with the issue of the first infringement notice.

Between the 6 monthly period from 11/12/18 - 12/5/19 Georges River Council has issued 90 Penalty Notices and 2 Clean Up Notices under s143 and s145 of the Protection of the Environment Operations Act 1997.

According to Council’s Waste Investigation Officer, as of May 2019 the number of littering incidents has reduced by 50% since education and regulatory action commenced. Additionally, Illegal Dumping incidents at the rear of RVM have decreased by 80% since January 2019. This result is directly attributed to the installation of waste education signage and the regulatory actions taken by Council in issuing infringements, patrolling the area and performing surveillance.





## School Litter Program –Case Study

Hurstville Public School partnered with Georges River Council in 2019 to participate in a program to use their connection with their school and local community to reduce litter. The program consisted of three parts:

**1. Forest Rd litter Audit** conducted through the main street of Hurstville, Forest Rd, which was conducted during busy periods in the day.

**2. Litter Art Competition** - Students from stages 1, 2 and 3 were invited to participate in an art competition. They were invited to 'Draw a clean, litter-free Hurstville and come up with a creative and positive litter slogan to put somewhere on [their] artwork'. A total of 298 submissions were received and three winners from each stage were selected and awarded prizes by the Deputy Mayor in front of their school community at a school assembly. The winners will have their artwork displayed on flag poles around the Georges River LGA in June 2019 in commemoration of World Environment Day.

**3. School Yard Litter Audit** - Five stage three classes participated in a school yard litter audit. An instruction manual was developed by Council to guide the students through the litter audit process. The manual guided students to separate the collected litter into three categories (commingled recycling, general waste and food scraps/organics) so as to better understand their school's litter profile. The guide was developed in accordance with the key pillars of effective litter programs and based on the NSW Environment Protection Authority's (EPA) Local Litter Check. Results revealed that over half (57.1%) of litter collected was either recyclable or food scraps.

The purpose of these initiatives within the School Litter Program is to encourage correct litter behavior by creating a sense of ownership. The art competition provided an avenue for the students to situate themselves as responsible members of a wider community, whilst the litter audit saw the students come face to face with their own litter and encourage a sense of responsibility.

## Future Trajectories of each Program

Due to the experience of the joint implementation of education and regulatory actions at the Carss Bush Park RVM, it is expected the program will continue under a business-as-usual arrangement. Additional data collection will inform future changes to the program and indicate if/when signage should be updated or changed, or if patrols or surveillance should be altered (reduced/increased).

In terms of expanding and enhancing the waste education provided to schools and children within the Georges River LGA, other primary schools in the LGA will be invited to participate in the School Litter Program as a result of the success of the trial at Hurstville Public School. Based on qualitative feedback from students and the participating teachers, the program will be implemented across the LGA as a permanent fixture to Georges River Council's waste education initiative. Future artworks created during subsequent competitions and results of the litter audits will be displayed via signage in surrounding community areas. Additionally, the Schools Litter Program will be further expanded to encompass all key pillars of effective litter programs: education and awareness, infrastructure, regulation and enforcement and evaluation and monitoring.

A full report will be available on the Georges River Council website once approved by Council's Communications and Executive for each of the above mentioned programs. These reports will further display both qualitative and quantitative results as the programs continue to be implemented by Council and additional data has been collected.

## Evidence and Evaluation

In evaluating the regulatory actions taken at the Carss Bush Park RVM, it was determined that fines were necessary at areas surrounding the RVM's as there is a lack of pride towards that area by offenders. The location of the RVM's is not frequented by the community to live, work and play. In the case of regulatory action compared with education at the Carss Bush

# Does taking regulatory action diminish the value of education?

Continued

Park RVM site, it was determined that education alone was not successful at deterring littering and illegal dumping offences. Positive behaviour change was achieved when both education and regulatory actions were implemented in conjunction.

During the evaluation of the School Litter Program it was determined that displaying student artwork on flags along Forest Road in the heart of Hurstville plays on the heartstrings of adults and encourages positive behavior change because the education is delivered in a place where people live, work and play.

Based on these case studies implemented by Georges River Council at Carss Bush Park and Hurstville Public School, it can be surmised that regulatory action does not diminish the effectiveness of education when both regulatory and education actions are jointly implemented. Ultimately, the circumstances and the nature of the project, the geographic location and the demographics at play will impact upon and thus determine the most appropriate regulatory and educational activities to be implemented.

Council had installed sensors in the litter bins along Forest Rd and through using this data, it was discovered that the frequency of litter collections required a slight tweaking to ensure a more efficient service.

Littering observation audits and bin audits were conducted after the campaign and initial results show littering reduced by 32%.

## Conclusion

This project has been very successful and through it we have commenced a campaign to congratulate the users of this space.





# NSW EPA Online and Face to Face Litter Courses



**Kiah Hunter**  
NSW EPA

## Who is NSW EPA LaRC?

When you work in compliance, your law-enforcement actions may be subject to public scrutiny at any time. It's challenging, complex, and important work. So how can you stay up-to-date, minimise risk to your agency, and take the right actions in an ever-changing regulatory environment? A key element is through regulatory officer training.

The NSW EPA Learning and Regulatory Capability (LaRC) team delivers regulatory training to Commonwealth, State and Territory, and Local Government organisations. All courses are led by experts and designed to provide you with the specialist skills and knowledge you need to excel as a regulator.

## Litter Enforcement Training

NSW EPA Learning and Regulatory Capability team deliver a face-to-face Litter Enforcement training to Local Government organisations. The course is designed to assist in meeting the Premiers Priority of reducing the volume of litter by 40% by 2020 and to support the NSW Litter Strategy 2017-2020 with a focus on increasing capacity within councils to undertake litter enforcement.

The course provides regulators with the necessary knowledge, skills and confidence to undertake litter enforcement functions such as dealing with unlawful behaviour and securing enough evidence to take-action for breaches.

The litter enforcement courses provide the following outcomes:

- Gain an understanding of the litter regulatory framework
- Learn the extent of littering problems within their jurisdiction, including the reasons why people litter
- Establish if an offence has been committed and determine what action to take
- Interact effectively with the public to achieve law enforcement outcomes
- Understand WH&S requirements and apply strategies for staying safe in law enforcement situations
- Exercise regulatory powers
- Document information and secure evidence of offences

## Litter Enforcement now ONLINE!

A NEW online Litter Enforcement course has recently been developed to compliment the face-to-face training. The online course is now available via the NSW EPA Learning website and allows regulatory officers, especially in regional areas to easily access the course content.

## Access and Course Dates

Details on delivery dates and locations of courses managed by the EPA LaRC team are available online through the EPA Learning website (<https://learning.epa.nsw.gov.au>), where individuals can also apply for any of the courses listed.

## Contact Us

If your organisation would like to book a Litter Enforcement course, please click on the 'Course Requests' in the menu bar at the top of the EPA Learning website.

You can also contact us via email to [learning@epa.nsw.gov.au](mailto:learning@epa.nsw.gov.au)

## Costs

FREE for AELERT members / \$50 for non-members

The Litter Enforcement course promotes opportunity to connect with as many council representatives as possible through Australasian Environmental Law Enforcement and Regulator's network (AELERT).





# 1.6 billion reasons to be proud



**Rhonda Hobson**, NSW EPA &  
**Janelle Neath**, Exchange for Change

The NSW Container Deposit Scheme (CDS), publicly known as Return and Earn, began on 1 December 2017. Return and Earn is the largest litter-reduction initiative undertaken in NSW. The people in NSW are helping to reduce beverage container litter in the environment and the state work towards the Premier's priority of reducing litter volume statewide by 40 per cent by the year 2020.

It is estimated that 3.5 billion drink containers, eligible for redemption under Return and Earn, are sold in NSW every year. Prior to the scheme commencement, drink containers made up 49% of all litter volume in NSW, impacting our streets, beaches, waterways and parks every year.

Return and Earn is a customer-facing scheme and it relies on the participation of consumers, industry and contributing businesses. The design of Return and Earn recognises the responsibility that the beverage industry shares with the community for reducing and dealing with the waste generated by beverage consumer packaging.

Return and Earn design objectives include:

- State-wide access;
- Financial incentive for consumers to participate;
- Sharing responsibility between the beverage industry and consumers at no/low cost for the Government;
- The development of a scheme that compliments the existing kerbside recycling system;
- Cost efficiency.

The success of Return and Earn is dependent upon the collaboration between the NSW Environment Protection Authority, the Scheme Coordinator Exchange for Change

and the Network Operator TOMRA Cleanaway. The harmonisation of the network and the 96% uptime for Reverse Vending Machines provide consistency in the user experience and a large volume of information collected through the collection points across the state.

Sharing responsibility to achieve litter reduction is the key to influence positive disposal and recycling behaviours.

Suppliers of beverages into NSW are required to pay monthly contributions to cover the cost of the scheme. That cost comprises the 10cent refund paid to consumers for each container returned, as well as the administration and operational costs of running the scheme. The monthly contribution is calculated based on the actual scheme cost and the beverage supplier's market share of the number of containers supplied into NSW.

Under Return and Earn, consumers receive a 10cent refund for any eligible drink container returned to an approved collection point. Return and Earn incentivises consumers to pick up littered containers as well as hold on to their containers to receive the refund.

## Success measures

Return and Earn achievements to-date range from:

### 1. A large, technology-based network comprising of:

- 319 reverse vending machines - the backbone of the network processing around 80% of the containers returned;
- 24 automated depots - bulk container return centres best for returning larger volumes 500+ containers per transaction;
- 282 over the counter return points through existing local businesses, playing an important role in providing access to Return and Earn in regional as well as metro NSW.

### 2. Volumes returned

- Return and Earn is close approaching the 2 billion containers returned through the network. Whilst it took 12 months to reach the first billion, the second billion milestone will likely be achieved in six months. This coupled with record daily returns





over Summer of 6.8 million, which shows the increasing uptake by consumers who are returning 30 million containers every week.

### 3. Litter reduction

- 57% reduction in eligible drinks container litter in the NSW environment since the scheme commenced, as measured by the Keep Australia Beautiful National Litter Index.

### 4. Community Engagement

- 48% of the NSW adult population have participated in the Return and Earn scheme.
- 81% support the scheme, which demonstrates how Return and Earn is being woven into the fabric of NSW.
- 304 schools supported by automated depots, providing easy access to Return and Earn
- A valued platform supporting community groups to raise funds through the donation of drinks containers. Over \$350,000 has been fundraised for community through the Donation Partner program.



### Environmental, social and economic benefits

It is the ability to harness the contributions of the NSW community that enables Return and Earn to achieve success at scale.

The stories about individuals and communities participating in Return and Earn are a testament to the NSW Government's design which has provided a platform that is driving positive behaviour change and is delivering not only environmental outcomes, but also economic and social benefits across NSW.



### 1. Sturt Public School

Sturt Public School is a progressive primary school in Wagga Wagga who, through their STEM (Science, Technology, Engineering and Maths) program, asked their year 3 and 4 students to look at ways of improving recycling and litter reduction.

In 2017, they undertook several initiatives including waste audits, ordering of recycling bins and appointing of bin monitors to educate all school students about recycling.

As part of their program, the school also introduced a Return and Earn bin for collecting eligible containers. The school, where the students are firm advocates and users of Return and Earn, continue to raise funds to support their STEM projects.

The students are true eco-warriors, having published a book on recycling, rebranded their town's rubbish trucks with their class designed super heroes, and take control of their school's recycling system by educating their peers and incorporating Return and Earn into the school for fundraising.





# 1.6 billion reasons to be proud

Continued

## 2. NSW recyclers donate over \$70,000 to drought-stricken farmers – Drought-relief charity Buy a Bale

NSW residents have rallied behind drought-stricken farmers by donating more than \$70,000 through Return and Earn refunds to drought-relief charity Buy a Bale.

The milestone comes as much of the state continues to struggle with the devastation of the drought that led Return and Earn to announce Buy a Bale as its major donation partner in August 2018. Statewide promotion encouraged the donation of eligible containers. NSW recyclers have since banded together and donated \$70,000 to Buy a Bale through reverse vending machines.

"When our partnership with Return and Earn first took flight we set a donation target of \$50,000. To raise more than \$70,000 through the simple but important act of recycling containers is brilliant – it's been a massive success," said Buy a Bale CEO, Charles Adler. "It's during times of hardship that the true spirit of individuals and communities shines brightest, nowhere more so than in Australia, and the support shown across NSW has been a testament to this."

The 700,000 container refunds donated to Buy a Bale is equivalent to more than six semi-trailer loads of hay, providing much needed feed for livestock deprived of sustenance by the severe drought conditions plaguing NSW.

Macarthur-based farmer, Brett Hayter, says, "We're just so appreciative. It got to the stage where myself and the hundreds of farmers in the same situation didn't know how we were going to source feed – the drought was that widespread. I would look at my hay shed, and it's been pretty empty at times but there would always be one

bale left because I've tried to hang onto it. I kept thinking, maybe there will be another truckload not far away, and it always turned up just when we needed it most." He was grateful for the support. "Without this fodder, I wouldn't have been able to keep my stock. It makes you realise what a great community we have," said Mr. Hayter.



## Vinnies garnering national awards and recognition

St Vincent de Paul, affectionately known as Vinnies, has been one of the first charity partners participating in the NSW Container Deposit Scheme, Return and Earn. Their first entry into the Return and Earn scheme as a Major donation partner was to raise funds to provide a helping hand to those Australians experiencing disadvantage and homelessness in our local communities.

Then, they saw the opportunity to join the benefits of a sustainable revenue stream, contributing to an independent donation income, with the commencement of a new social enterprise. As a recycler by vocation, participating in Return and Earn, was a natural diversification/extension of their business model, which they believed could future-proof their brand. St Vincent De Paul Society currently runs five bulk container deposit centres / automated depots and 14 over the counter collection points in NSW. Their business model is very unique and it shows how users of the scheme support the provision of Vinnies' accommodation and social services, such as counselling and case management, for vulnerable and disadvantaged people across the state.

The Automated Depot in Unanderra, for example, works with most of the schools in the area, catholic and state schools. The Catholic Education Office allows all the eligible containers collected at the Catholic schools to be donated to Vinnies to fund their community charity work.

Return and Earn was a tangible way of bringing the environmental curriculum to life in the playground. Enabling the children to contribute to their community and become good citizens who understand about "giving back". Return and Earn has helped reinvigorate the commitment of parents, friends and mitigated the "donation fatigue" that was hitting the more traditional fundraising efforts.

In recognition of the social and environmental impacts their participation in the Return and Earn program is having, Vinnies was awarded Social Responsibility Champion at the 2018 National Retail Awards in August, and received the 2018 Litter Prevention Award at the Keep Australia Beautiful NSW Sustainable Cities Awards.





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# The impact of the Don't be a Tosser campaign and its evolution



**Natalia Giraldo**  
NSW EPA

## Overview

The Tosser campaign launched back into market in 2014 with Hey Tosser! and is now in its sixth year. The campaign's approach was to "call out" the litterer from the perspective of a "witness" to a littering act. The approach was based on social research that showed people tended to litter when they thought no one was watching. The campaign was successful in raising the awareness of littering within the community.

This presentation looks at how the campaign has evolved, what are some of the latest campaign results, and where the campaign is heading next.

## Don't be a Tosser

The current campaign was introduced in March 2018 and it builds on the Hey Tosser! campaign approach. It no longer relies on using the witness to drive behaviour change. It is designed to place the responsibility for littering on the individual and encourage people to have an internal conversation and think about their actions. The concept is playful and eye-catching, with the reintroduction of the Don't be a Tosser! messaging. This message gives people a choice to NOT be a 'Tosser' – with the tagline Don't be a Tosser! reinforcing positive behaviour.

The campaign uses focus group tested 'excuses' to reflect what litterers say to themselves to justify littering. The excuses are used ironically. The tagline 'If it's not in the bin, it's on you' is a friendlier method of saying 'put it in the bin'. The aim is to make the audience recognise themselves and their own behaviour. Having an emotional or humorous reaction helps to cement the campaign image and message in their mind and be responsible for their litter.

## Self-reported litterers



## Key Result: Greater awareness of own littering behaviour

The campaign has had an incredible impact in the community's own self-awareness of their own littering behaviour. Since the introduction of the current campaign, there has been a 17% increase in people's own self-awareness of their littering behaviour. The biggest shift in self-awareness has been the number of people admitting to littering less than once a month. This figure is significant as the number has always stayed stagnant until the introduction of the current campaign. This is critical to creating long-lasting behaviour change, as once someone is aware of their own actions, you're able to positively influence their behaviour.

## The excuses - creating a positive influence on the community attitudes and beliefs about litter

There has been a strong increase in the number of people that feel it is likely they will be caught and fined if they litter. There has been an increase of 10% since the introduction of the new campaign. This figure may seem small, but this number has only moved by 1% each year since the start of the campaign back in 2014. It's clear the excuse "I didn't know I could get fined" has helped change that perception.



## The most impactful excuses in terms of acceptability



There has been a significant change in attitude amongst these two excuses:

"I'm not a litterer, I only do it sometimes" and "There isn't a bin, what else can I do?" as acceptable excuses to litter. The reduction in respondent acceptance of these excuses across all age segments suggests they have been highly effective in changing behaviour.



## The Marine Campaign

Building on the success of the Tosser Campaign, the NSW EPA is now developing a Marine litter campaign to raise community awareness of the impact of litter on the marine environment. The objective of the marine campaign is to:

- Target the most detrimental marine litter issues in NSW
- Build on the success of the Tosser campaign and extend the message into the marine environment.

The EPA commissioned two bodies of research to understand what the key litter items are to target in the NSW marine environment. This included a data-led study of litter items collected in the NSW marine environment, followed by focus groups. These were held with marine stakeholders such as community groups, boating associations, councils and non-for-profit organisations to understand what they perceived were the key littered items in the NSW marine environment.

## Key litter items in the NSW marine environment

The research shows the key littered items in the marine environment are:

1. Cigarette butts
2. Plastic bags
3. Take away food packaging, including straws and coffee cups
4. Plastic bottles.

## The campaign approach

The NSW EPA will extend the campaign in the marine environment by using strategic tactics that will allow us to create meaningful conversations with the community about the consequences of marine litter. The NSW EPA will showcase the consequences of littering in a meaningful way that will capture the attention of the community and educate them on why their litter matters.

The goal is to create an efficient and effective campaign that will capitalise on the high awareness associated with the Don't be a Tosser! campaign. Research shows the value of the word tosser and there is a high percentage of people that relate the word tosser with littering.

## The proposed Marine campaign strategy

The strategy includes 4 tactics that will work together to increase awareness and build on the communities understanding of the consequences of litter to the marine environment and why their litter matters.

### Tactic 1: Marine creative

- The NSW EPA will create bespoke marine creative and develop tools for stakeholders to use

### Tactic 2: Advertising

- The NSW EPA will use advertising to support bespoke marine creative and promote the content on social and digital channels

### Tactic 3: Experiential

- The NSW EPA will create an experience for the community to engage and interact with to understand the consequences of litter in the marine environment

## Tactic 4: Public Relations

- The NSW EPA will work with a PR agency to create meaningful stories about the consequences of litter and explain the 'why'

The NSW EPA looks forward to working with councils and marine stakeholders to implement this campaign and reduce litter in the marine environment.



# Communities removing litter from the waterways



**Graham Johnston**  
clean4shore

## 1. Who we are, what we do

Clean4shore is a small not for profit group based on the Central Coast of NSW, dedicated to removing litter from the waterways of the Hawkesbury River, Brisbane Waters and Tuggerah Lakes.

tip, Clean4shore unloads all gear, washes clothing and wetsuits, edits all photos, completes social media and official field trip reports then approves all sub contractors payments. Emailed enquiries are followed up plus future bookings and engagements completed.

collected forwarded to Tangaroa Blue.

## 2. Bit of History

Clean4shore was formed following a Duke of Edinburgh's Award expedition, by MacMasters Beach Surf Club, on the Hawkesbury River in 2010.



## 4. Community Engagement

- Macmasters Beach Surf Club adopted the program as an additional activity for junior and senior members, again as an "off season" Duke of Edinburgh's Award activity, utilising the Club's IRB's (rescue vessels) and sea kayaks.
- During 2012, the success and interest shown by the "young people" transferred to Brisbane Waters Secondary College's "youth at risk" group, who thrived on the challenge and adventure of a trip on the Hawkesbury. School executive expanded the program to incorporate the "Bushcraft and Support Unit's" into the program, again with success.
- Promotion with the school system was difficult through to 2015 as "risk assessment" and teacher willingness to "get out of the classroom and into the environment" presented obstacles. Disability schools were much more receptive, the programs challenges and sites adjusted to cope with the needs of the students.
- Community awareness increased with award recognition by Landcare, together with approved stakeholder risk management and WHS guidelines. Field trip report generated to a more professional standard with statistics gathered on type, weight and numbers of litter

- Funding was an issue to expansion up to 2014, schools needed to forward plan, and with limited funding the program was "off and on" again. This was an issue for school commitment.
- Genuine funding arrived in 2015 and has continued with both Central Coast and Hornsby Councils combining with Greater Sydney Local Land Services and the EPA, to guarantee a commitment for expansion.
- Major flooding in 2015 had Clean4shore, out and about assessing and planning clean ups. Local community groups on the Hawkesbury forwarded major flood litter, with both Councils keen for assessment and clean up strategies.
- Clean4shore working relations with key stakeholders National Parks, Maritime, Fisheries and local waterway commercial operators created a strong networking group.
- 2016 had Clean4shore into Tuggerah Lakes, engaging local schools, disability and community groups especially Hopetown school, Green Army and The Glen (Aboriginal Drug and Alcohol Group). Tuggerah presented additional challenges with poor access due to shallow water, and very smelly mud and lots of rubbish.
- A successful three year Federal Government Grant in 2017 allowed real expansion and engagement with four new schools in the Hornsby Shire, eight in Brisbane Waters and the flexibility to tackle the problem "larger" items utilising

## 3. How's it done

- Approved groups gather at a "start site", at 9am and are briefed (often shocked), then kitted in PPE including booties, wetsuits, fluoro tops, life jackets and gloves.
- They are transported to litter sites in large barges, then "off loaded" into mud, mangroves, slippery rocks and sandy beaches collecting litter and larger items by hand, packing into bags which are loaded back onto the barge. Rubbish is then "off loaded" into a trailer for delivery to Woy Woy Landfill.
- Volunteers then change, often enjoying a health lunch and depart after lunch. Statistics are gathered on the litter, and following the

The Glen, Green Army and "Work Experience" programs. 76 field trips in 2017 expanded to 114 field trips in 2018.

- Larger items removed included 43 concrete covered polystyrene pontoons, illegally abandoned and "unwanted by all stakeholders". These pontoons simply floated in the Hawkesbury, moved with the tides, and became wedged in the rocks and mangroves. Most had exposed polystyrene "leaking" into the waterway. They weighed between 480 kilos and 5 tonne. Two washed up on Umina Beach with four drifting into Kincumber Broadwater.
- Additional larger issues are the 'unwanted or disowned boats and larger vessels, simply dumped in the mangroves to break up and decay. Clean4shore has removed sixty vessels in the past four years, one way or another.
- Oyster product in Brisbane Waters is a continual major issue for Clean4shore, each year we remove 1,000 plus pieces of infrastructure, trays and baskets from the foreshores. Derelict and abandoned leases are the 'culprit' with compliance and "pending" legal issues frustrating our efforts.

## 5. Positive Government Engagement

- Close consultation in the planning and development of the "return and earn" scheme has significantly reduced the volume of 'fresh' bottles and cans entering the waterway. This program works and is backed up by our statistics in collection.



- Regulations governing supermarket plastic bags dramatically reduced the soft plastic entering the waterways. Clean4shore is encouraging more reduction in the use of industrial plastic wrapping and polystyrenes

## 6. Hot Spots and key sites.

- How bad can it get? Narara Creek July 2016 10,000 plastic bottles and polystyrene pieces, in a waterway close to the heart of Gosford CBD.
- Tascott Straight on Brisbane Waters, 1495 pieces of soft plastic, 736 pieces of polystyrene and 476 plastic bottles from 150 metres on mangroves in May 2019.
- How bad is it elsewhere?

## 7. Social media involvement?

Highly prominent and shared in facebook and Instagram, enhancing community engagement and communication between individuals and groups

## 8. Achievement

- Most importantly is improving the waterways and environment, well documented, however
- Clean4shore won the State Coastcare Award in 2017
- Clean4shore won the National "Peoples Choice" Landcare Award in 2018 voted as Australia's most popular Landcare program.

## 9. Expansion / Future Plans

- Litter reduction in targeted clean up waterways has Clean4shore planning new projects sites possibly including Lane Cove and Parramatta River and the oyster waterways of Myall Lakes.
- Retaining schools in the program will see divarication into "Bushcare" projects utilising the skills and experience of the local Bushcare groups, to incorporate young students into their program. Sites will focus on more remote waterway foreshores.

## 10. What are the benefits of the program?

- Obviously less litter in the waterways, proven evidence of these benefits
- As importantly is the benefit to the community through engagement of a wide variety of groups, from schools, disability, youth, indigenous, community and corporates. The team and communication skills in overcoming this difficult task are enormous. Self confidence and self esteem together with pride in workmanship, and that "can do" attitude from the disability groups is highly visible.. Watching our barge operators mentoring participants in marine navigation, fishing and boating skills together fun bagging and humour that is strongly associated with the program.

## 11. Finally

Has Clean4shore successfully engage our community, YES, but with time, plenty of money and patients, stakeholder approvals and on a task that is achievable – LITTER REMOVAL FROM OUR WATERWAYS AND FORESHORES.

# Broken mirrors, burn outs and baby



**Karen Manning**  
Ashfield Public School

## Abstract

The positives and unexpected outcomes from delivering a community litter project, when it has been through 2 project co-ordinators, 3 different P&C Presidents, 2 funders, a geographical location change, 5 workspace room changes, 3 assistant artists, and working with volunteers and kids.

## Introduction

In its formative stage, this project was a multifaceted engagement and optimistic solution to the heavily littered thoroughfare between Ashfield Public School and Ashfield Train Station. Infrastructure in Murrell Street and Orchard Crescent, Ashfield consisted of a mixture of Californian Bungalows, Art Deco Apartments, medium density apartments and a shop. The area covers footpaths, a commuter car park, a private road and bus stops. Students from a number of schools, an early learning centre, commuters, pedestrians and residents frequent the area. It was an area deemed perfect for a timely

injection of beautification with the planned construction of several medium to high-density apartments imminent.

This project aimed to transform this busy thoroughfare into an area of community pride and empowering students from both Ashfield Public School and Ashfield Boys High School to bring about positive and lasting change. Using the public fence as a basis of a community art initiative, this project would improve the appearance and amenity for the benefit of the local community.

It combined a range of litter reduction approaches including:

- Installing rubbish bins and instructional signs along the thoroughfare;
- Providing litter grabbers and safety vests so that students can collect litter safely;
- Educational resources to encourage users to become part of the solution and participate in the Keep NSW Beautiful 'Take the Pledge' initiative;

- Creative arts and gardening activities to beautify the area, creating a sense of pride and community ownership.

As users of the thoroughfare, messages focused on the work Ashfield Public School students are undertaking to improve the area and encouraged them to get involved to help keep the area beautiful by working on giving the area the appearance of being cared for and valued which would in turn would build and retain community pride. The project would engage a range of students and members of the community from diverse backgrounds to create a space for the school and local community to enjoy. The initial idea centred on international research and studies stating that the presence of Public Art Installations increases civic pride and becomes a valued asset to the community. By developing a community art space and an area in which litter is collected regularly these studies suggests littering behaviour will fall, following what appears to be 'acceptable' behaviour for the site.

A collaboration between Ashfield Public School involving over 500 Kindergarten to Year 6 students and the local community was imperative for the success of the project. The student population of Ashfield Public School is richly multicultural with 75% of students from a non-English speaking background, 55 language backgrounds represented and several Aboriginal students. The school has mainstream primary school classes as well as two Opportunity Classes and a Support Unit catering for students with moderate intellectual disability, Autism Spectrum Disorder, Global Development Delay, Down Syndrome and Sensory Processing Disorder. A wide spectrum of socio economic statuses is also present within the school community. The diverse population of the school is





a mirroring and representation of the wider Ashfield Community with over 44% of residents speaking a language other than English at home, two of the primary language groups being Mandarin and Hindi. Multilingual and visual educational resources were planned to educate local users using and interacting with the rejuvenated public space.

The major groups affected by the installation of Public Art and new garbage bins along the thoroughfare are:

- Students from Ashfield Public School and Ashfield Boys High School;
- Users of the Ashfield commuter car park;
- Users of Ashfield train station and buses;
- Local residents, including two major residential unit developments in Murrell Street and Orchard Crescent.

## Dealing with Change

Changing plans due to circumstance, financial constraints and other factors are a normal part of starting any grant-funded project and grant recipients generally try to plan for minor deviations from the original aims and execution. This project absorbed more changes and challenges than most with the extended timeframe being the central common denominator of change. The anticipated timeframe for the project was 6 months with the artwork due to be completed by April 2015 whereas the actual installation and completion date was September 2017. The construction of the artwork alone took close to 18 months.

Ashfield Council underwent a forced merger with Leichhardt and Marrickville councils to form Inner West Council in May 2016. Due to forthcoming council merger and informal nature of the council support with the original grant proposal and issues relating to public safety, quality control, resource allocations, waste collection and informing and consulting with



local residents this very important and valuable partnership was not practically viable. The elimination of this partnership therefore resulted in the planned installation of two public garbage bins and street based multi-lingual signage being excluded from the plan. For the project aims to be successful (including a 80% litter reduction of litter along the thoroughfare) the artwork and litter education and awareness became the focus in reducing litter in the surrounding area and 'hot spots'.

The initial idea would that the artwork would be a painted marine plywood, mural-based project attached to the public fence adjoining the NSW Transport RailCorp owned Commuter Carpark. This proposal included the provision that the artwork would last 5 years before deaccessioning. After considering 3 different plans and designs for the site and future planning for longevity it was decided that a three dimensional mosaic sculpture using largely reclaimed and recycled materials (including broken glass found during litter collection of the site) would be the most appropriate choice. This chosen design was more resistant to environmental and human factors such as graffiti, vandalism and tagging as well as having a tactile and multi-sensory element to the completed piece. Considerations as to what would happen to a fenced based mural design if the fence had to be removed or repaired also factored into the decision making process as a sculptural piece would not need be removed or

compromised if repairs or removal of the fence were to occur.

Going forward without the support of the council meant that a new site for the piece needed to be found and approved from Keep NSW Beautiful for appropriateness as the artwork could not be installed without permission onto public land. This new site was located just 50 m away from the original site on the Department of Education owned land on Murrell Street. This site was publically visible and still along a busy thoroughfare connecting Liverpool Road to Ashfield Train Station although wasn't en-route for most Ashfield Boys High School students and was the loss of a target community audience. The link to Ashfield Public School was far more pronounced in this site and the increased linkage to the school in turn increased the student, staff and school community participation and emotional investment in the project.

Infrastructure and development changes to the area occurred rapidly during 2015-2017 whilst the artwork was being constructed. Demolition of two single storey Bungalows, an Art Deco unit complex and construction of a new med-high density apartment building commenced in Murrell Street. A new multi-level Commuter Carpark commenced construction in Orchard Crescent simultaneously. The quickly growing school student population was also supported by the construction and installation of 3 demountable classrooms in the existing Murrell Street staff carpark. Construction workers and

# Broken mirrors, burn outs and baby

Continued

their vehicles, hard rubbish collections, skip bins, traffic chaos and the incidental litter created by this changing locale became the 'new normal'. The environmental elements also did their share in changing the local landscape with an accidental tree failure of a large and established Jacaranda tree due to storm damage. This tree would have framed and flanked the new sculptural piece so was replaced with the planting of young native fig tree.

The prolonged project duration also increased the number of people involved in the project. Over 500 students (including 2 graduating Year 6 classes), 3 different P&C Presidents (and many more executive members), 2 Project Co-ordinators, 3 assistant Artist Educators and 2 Funders. The investment and engagement in the project was widespread throughout the school community. Several School Holiday Mosaic and Sculpture Workshops were held, and partnerships with the Weldon After-School Care were imperative in continuing momentum and excitement with the project.

- Closed toe shoes must always be worn;
- Using correct respiratory masks with the appropriate grade fume chemical filters as standard dust mask does not filter chemicals and fumes;
- Making sure people understand specific jargon and terminology, and not assuming everyone has the same knowledge base. Using the 'Show-and-Tell' technique when informing people before they undertake a task.
- Provide a safe working environment well organised and free from mess with a range of seating options. Work outside if necessary, close to running water and with appropriate sun protection;
- Time- the natural instinct is to rush to finish a deadline based project but slowing everything down created care and a safer working environment. This also led into volunteers and paid employees alike taking timely breaks during the sessions;
- Adult supervision- the employment of three Assistant Artist Educators was a previously unaccounted for expense but the necessity of additional hands, eyes and expertise became apparent very quickly. A 'buddy' programme with Year 6 students working with younger children was also utilised. All adults involved in the project also held valid Working With Children's Checks;
- Great and effective communication. People may be shy (children in particular) when working on a project in a new situation and it cannot be assumed that they will seek out instruction or explanations. Regular 'check-ins' with all working on the project is important in making sure a safe, enjoyable and respectful working space is available to all who participate.

## Safety considerations when working with children

The safety of students, staff and volunteers was a primary concern and major factor in creating an artwork where specialised tools and equipment are used and the following steps were undertaken to ensure that the risk of a negative safety incident is minimised. These precautions include:

- Appropriate sized tools, gloves, protective clothing, and goggles (and plenty of them) including backups. The tools and protective items must be thoroughly checked at the end of each working session and damaged equipment either repaired or disposed of;





## Importance of volunteers

In a report by Volunteering Australia, gifts of time are estimated as being more than twice as valuable as monetary donations to the sector as a whole. Women constituted the majority of volunteers in community services, education, training and youth services, and health. By contrast, men dominated the composition of volunteers in sport and recreational activities and in emergency services volunteers. Women also volunteer more commonly than men and spend more time per year volunteering. This report also states that 'making a difference' and 'belief for a cause' were the most common reasons given by people for their decision to volunteer with 'helping others or the community' acknowledged as a current reason for volunteering by more than 50% of both male and female volunteers. However, reasons for volunteering are not merely altruistic with many reporting benefits to themselves such as personal satisfaction and the feeling of doing something worthwhile. Volunteer work is also sometimes undertaken as work experience as a starting point to move onto other paid employment.

The Australian Bureau of Statistics suggesting that volunteers are worth about \$40 an hour which is the market rate at what a volunteer would cost to replace if an organisation would have had to pay for the services they hadn't gotten from a volunteer. These in-kind support, per hour figures should be used as a base guide when doing project budgeting and applying for grants. These figures should also be reiterated to volunteers so that they receive recognition about being a valued team member and receive feedback about their contribution.

Even though the work that volunteers provide can be summed up in monetary value, the reality is that the support and often specialised skillset volunteers provide is invaluable and many organisations would simply fail without their backing so it is worthwhile for them to ensure that their volunteers feel valued. According to Mark Gorkin (The Stress Doc) in organisations where volunteers are heavily relied upon and/ or have fewer numbers

volunteer fatigue and burnout is high. Burnout is categorised when volunteers become tired, stressed, resentful and disengaged due to not receiving personal satisfaction or recognition for their role. Work related burnout tends to occur earlier in volunteer employees rather than employees in paid employment as the extrinsic reward of money is not there to compensate when personal intrinsic motivation and resources are drained. Once these personal and emotional needs were no longer being met, volunteer burnout occurred rapidly and performance would decline at an increasing rate. An organisation that values its volunteers tends to attract more volunteer help, meaning there are more people helping with every activity and getting more done.

## Where to from here?

The work of educators never stops and teachers will continue to instill the virtues of conscious waste management and environmentalism during their teaching day but this being said, all adults have a responsibility in passing down good habits and education to the next generation.





# PANEL DISCUSSION:

## Community Litter Grant

### Round 5: What's in it for the community?



**John Lavarack**  
NSW EPA

#### Introduction

This session was originally billed in the Litter Congress program as a panel discussion with panellists to lead the discussion from the stage. The program was adjusted to open the discussion to the whole Litter Congress. Tables were hosted by members of the EPA Litter Prevention Unit and Litter Expert team, who led discussion at each table, with Rob Curnow of Community Change facilitating the overall process. The aim was to receive feedback from delegates about how the EPA team can best connect with community groups and support them in litter prevention.

A presentation on the Community Litter Grant program introduced this discussion and is summarised below.

#### Background to Round 5 of Community Litter Grants

##### Rationale

The Community Litter Grants program is provided by the NSW Government because it is an appropriate and necessary fit with the Premier's Priority to reduce litter by 40% by 2020. Community groups are key stakeholders in the litter prevention effort. They have the knowledge and drive to influence litter prevention on a local scale. They have a strong sense of ownership of public places, which is identified as a key factor influencing local litter levels. There is also a clear demand for the program coming from community groups, identified through independent evaluation.

##### History

The Community Litter Grant program began in 2012 and was delivered across its first four rounds by Keep Australia Beautiful NSW under a Deed of Agreement with the EPA. During that time \$359,540 of grant money

funded 229 projects and 206 community groups. For the groups who were able to record a reduction in litter, the average litter reduction was between 67% to 80%.

Success in Rounds 1 and 2 led to a slow-down in community group uptake and completion of projects in Round 3 and 4. For this reason an independent evaluation was conducted after Round 4 to develop insights for an ongoing program.

This review recommended the program continue to be funded as it aligns well with overall NSW Government priorities for litter prevention.

#### Program intent

##### Objectives

The objectives for all projects funded by the revised program are to be as follows:

- All funded projects will contribute to the NSW target of a 40% reduction in litter.
- All funded projects will include direct community participation in the development and implementation of local and/or regional litter prevention activities.
- All projects will include activities that will increase capability among relevant community groups in litter prevention in local spaces.
- All projects will include aspects and/or deliverables that can be sustained beyond the grant funding.
- All funded project activities that are undertaken on land owned and/or managed by local government will include an aspect of Council collaboration in the development of evidence-based and sustainable litter prevention.

#### Principles

The guiding principles for the revised program are as follows:

- Enable willing community members and their organisations to demonstrate good litter prevention behaviours to other community members.
- Empower the community to raise litter concerns, mobilise and act.
- Provide the necessary permission and support evidence-based interventions.
- Respond to, and respect, local knowledge and networks.
- Trigger, sustain and/or expand community collaborations.
- Build on the capability and capacity that has been developed by the program to date.
- Consolidate and fast-track achievements across NSW.

#### Program structure

The model for Community Litter Grants Round 5 is based on two streams of Community Group project funding:

##### **Stream 1: Localised single-community group projects**

These are targeted at local Community Groups seeking to undertake a suitably structured litter prevention/reduction project at a single littered site ('hot spot'). This cohort will be well supported as they embark, or take early steps, in their litter prevention 'journey'. The aim is to quickly upskill groups in effective methods of litter prevention and to leave a residual degree of litter behaviour change expertise that will persist in the community.

## **Stream 2: Multi-site and/or multi-organisation projects**

These will undertake suitably structured litter prevention/reduction projects. They can address multiple sites or involve multiple community groups, whether they are different units of the same organisation or a group of otherwise unaffiliated community groups working together. This cohort has deeper capacity to engage in litter prevention and this stream aims to see litter prevention tackled at scale and over the long term.

### **Program scope**

A key part of the scope of the Community Litter Grant program is the focus on litter prevention. All projects must involve changing littering behaviours, as well as influencing other factors that help prevent litter occurring in the first place. For this reason, projects that rely only or mostly on collecting litter after the littering has already occurred (e.g. clean-ups or using devices to trap litter, such as stormwater litter booms) will not be considered eligible for a Community Litter Grant.

For Stream 1 projects, this litter prevention focus means that community groups must aim to reduce litter in a single location and consider the linkage to littering behaviour and other factors that influence the litter in or near that location. An example may be targeting takeaway food packaging at a popular park with a program that aims to get park users to put their takeaway rubbish in bins that are provided by the local council.

For Stream 2 projects that are targeting multiple sites and/or multiple organisations, the litter prevention focus will most likely mean focusing on a particular littering behaviour that impacts all the sites. An example could be targeting discarded fishing gear in a busy estuary, by setting up bins and signage in a number of popular fishing locations and promoting a "Don't be a tosser: put your fishing line in the bin" campaign in cooperation with the local council and recreational fishing clubs in the region.

## **The EPA integrated approach**

Community groups that apply for a grant under the Community Litter Grants program can get access to help to develop an effective litter prevention project. A team of Litter Experts can be made available to assist groups to use the EPA-recommended approach to litter prevention, known as the Five Factors of litter prevention. Each of the factors works with the others to achieve effective behaviour change. These integrated approaches are covered in more detail in the EPA Litter Prevention Kit Part 2: Delivering effective local litter prevention projects.

Another key resource that is available is the Local Litter Check. This online tool helps you gather evidence about why litter is occurring at a location, and what factors of the location might be changed to reduce the littering rate. How to use this tool is covered in more detail in the *EPA Litter Prevention Kit Part 3: Local Litter Check guidelines*.



The EPA Litter Prevention Kit, along with updated information on Round 5 of the Community Litter Grants program is available on the EPA website.



## **Questions to the floor**

Two questions were put to the floor for discussion at tables:

### **1. What advice do you have to guide our team (i.e. the EPA) in supporting community groups to focus on litter prevention and behaviour change?**

Key points raised in response to this question were:

- Assist groups to develop understanding of behaviour change
- Provide training and support for completing grant applications
- Ensure clear communication of core ideas – including case studies
- Provide support to research and develop project ideas
- Keep the application process as simple and practical as possible

### **2. How can we connect to community groups to support them in litter prevention?**

Key points raised in response to this question were:

- Support community group engagement with councils
- Help community groups connect to other groups
- Engage directly with groups in their local areas to gain understanding of local issues and conditions
- Provide feedback to help groups strengthen their approach to litter prevention

# Movement Building and Behavioural Change - Two keys to held change the world



**Eva Mackinley**  
The Last Straw Australia

The Last Straw is a campaign to reduce the use of plastic straws in venues around Australia. The Last Straw was founded in 2015 and has since helped inform the narrative change around waste and disposable plastics in Australia through developing a grass-roots movement to challenge excess consumption of disposable plastic straws. The campaign has worked with the hospitality industry to adopt a policy of giving straws out on request only, and campaigned in the general community to change perceptions around expecting or needing a plastic straw in their drink.

Since 2015 The Last Straw and its sister campaign on the Great Barrier Reef have onboarded close to 1000 venues to become straw responsible, including adopting an on-request policy or switching to a reusable or more environmentally friendly disposable alternative. In 2018, an independent report found The Last Straw has been responsible for stopping over 13 million plastic straws from entering the waste system. The heart of the campaign has never been about plastic straws themselves, but about changing people's hearts, minds and behaviours around consumption and climate.

## Key Campaign Findings

Upon reflecting on The Last Straw from 2015-2019, I have discerned three key lessons to share regarding the importance of movement building and behavioural change in making a lasting impact on the world. These three lessons talk more to the effects of the campaign, more than the tactics we employed to achieve them. They are:

- Build a movement, not a moment
- People change how they act once they've changed how they think
- Breadth makes way for depth

The following points expand on each campaign finding.

### 1. Build a movement, not a moment.

If the desired outcome of your campaign or your business or your organisation is behavioural change, it is difficult to promote this without first changing people's minds. Just because you place a 'don't litter' sign on the beach, doesn't mean people aren't going to litter. You have to change their minds about littering, so that they won't do it anymore- in the case of the 'Clean Up Australia' campaign, so that the message is so ingrained it feels like an unnatural act to litter.

Plastic straws became the symbol of what we were trying to achieve. If we had said 'change the way you think about the consumption of single use plastics', it would not have gone down so well. What the Last Straw did was to distil the message of reducing plastic use down to something that was approachable, easy to digest and easy to equate to a consequence. In this case, it meant turtles having straws pulled out of their noses, and it turned out nobody wanted to be responsible for that. So the idea started to form- if plastic straws are having such a negative impact on something that I care about, then why am I still using them? Why do we use so many of them?

But once the seed is planted, it has to be easy to share. Accessible language, humorous and shareable content, relevance to individual and everyday life- these are all ingredients for a viral idea. It is an inconvenient truth that an idea with breadth is often precursor to a powerful movement. The Last Straw has often been criticised as 'greenwashing' or not looking at the bigger issue of ocean plastics. The thing is it's difficult to inspire people

about cast off fishing equipment, mostly because that's not relevant or accessible to anyone other than a) people who are in the fishing industry or b) people that care a hell of a lot already about the issue. The purpose of a movement is to bring both breadth and depth to an idea. Breadth means bringing in people who may not already be sympathetic to your cause, and this can generally only be done by engaging them in language and with an issue that is relevant to them. Some issues may be able to have success by engaging only the people who already care about it. But an issue like consumer based excessive consumption of plastic waste needs to be addressed first by those excessively consuming it, which are generally the hardest people to engage.

Once the idea is in the public sphere, once it becomes 'uncool' or you become an 'other' because you still get two straws in your cocktail, that's when the idea has started to hit a critical mass.

### 2. People change how they act once they've changed how they think

Changing people's minds is one thing. Changing people's behaviours is completely another. While you may understand the vegan movement and think that they have some important moral points to make, it doesn't mean you'll go vegan yourself, especially because you just love meat so much- or in other words- it's less convenient to your everyday life to be vegan. You're not willing to sacrifice your comfort for this belief, because it's too far removed from your current reality that it's difficult to undertake. So how do you bring people around when you're asking them to do something that's less convenient to them? The equivalent to vegan in the waste arena is going 'zero-waste', an



achievement that inspirational people like 'The Rogue Ginger' Erin Rhodes have championed and inspired many others to do. However, if I framed The Last Straw as 'the solution to this problem is for me to ask everyone to adopt a zero-waste lifestyle', the pickup would have not been as ready. Again, talking about a breadth of people and an audience where you need people not already sympathetic to your cause to join, the key is to start with an action that is a) Simple b) Replicable c) Scale-able

a) Simple. The concept of saying no to a straw, or not just automatically putting a straw in a drink is exceptionally simple. It's mildly less comfortable than just using a straw whenever you want one, but it's simple enough that almost anyone that has recently changed their minds around straws can engage with it.

- b) Replicable. This action needs to be accessible to the majority and able to be replicated on a regular basis, therefore changing habits. It's hard to do a hard action once. It's easy to do an easy action multiple times. I define a change of habit as a change of action, and a change of behaviour as a change of mind and a change of action.
- c) Scale-able. It needs to be something that can be adopted as a viral action or message. This is the point at which it transcends your already engaged audience, even people directly influence by your engaged audience. Scale occurs when people or companies that were once against or unsympathetic with your cause begin to adapt the behaviour because it's now becoming the norm and they don't want to be left behind.

### 3. Breadth makes way for depth.

The last Straw theory around breadth is that breadth on its own amounts to populism, in that it becomes something that may be a trend or a widely spread idea, but it lacks any substance or long-standing relevance. The same goes for depth in that depth without breadth can equate to exclusivism, in that only the people who already care are addressed in language they already understand. The danger here is that if an issue area falls into being one solely of depth, it alienates anyone else who may get on board by communicating in a way that is polarising or too complex. Long lasting change exists at the cross-section of breadth and depth, where you have a process of increasing involvement for those who want to get more involved as they go, deep engagement for those who already has a passion for or background in that area, and an entry level for those who are new to your message.

In summary, behaviour doesn't necessarily change with just a change of legislation, neither does a change of mind. Designing levels of engagement for the different levels of your issue area is how to engage people at every level. Not every organisation has to be able to do everything, either. That's where partnerships and allies can complement each other's work. While depth is important to fully understanding and addressing a complex issue, so is breadth important for placing public consciousness and will behind that issue. The Last Straw has had significant success in being able to act as a gateway for people who never saw issues of waste as relevant or important to them, and lead them into simple, replicable, scale-able action. The movement around waste needs so much more, and plastic straws are nowhere near the heart of the plastic problem. But, in some ways, our attitudes to plastic waste and consumption are, and that's what the campaign hopes to address with by building a movement and inspiring a change of behaviour.



# Its Time to say bye-bye to single use plastic and hello BYO!



**Amanda Choy**  
Better Business Partnership



## BACKGROUND

It is an unavoidable fact that we are drowning in plastic. Single-use plastic items are used on average for 10 minutes or less before being discarded or worse escaping into the environment, often ending up in the ocean.

Australians discard more than 9.7 billion pieces of single-use plastic each year. The main culprits:

- Coffee cups (1.3 billion),
- Plastic bags (3.3 billion),
- Straws (2.47 billion)
- Bottles (1.3 billion)

Approximately 8 million tonnes of plastic waste is dumped into the ocean each year, equating to 1580kg ending up in Australia's oceans every hour.

## The Better Business Partnership

The Better Business Partnership (BBP) is a program established 10 years ago borne out of an Environmental Trust Fund grant and then securing ongoing funding by three neighbouring North Shore councils - North Sydney, Kuring-gai and Willoughby. The program works with local businesses to increase their sustainability performance – primarily in the environmental and social/community engagement space, however more recently supporting local businesses with the skills and tools to stay in business. The foundation of

the program is an online appraisal and accreditation process across 8 key areas of sustainability, with waste minimisation being a major focus. Outcomes include badges, accreditation and ultimately recognition and celebration of achievements in the Better Business Awards.

## Bye-Bye Plastic Hello BYO

Bye-Bye Plastic Hello BYO (BBPHBYO) is a campaign that was created and launched by the Better Business Partnership in July 2018, which targets businesses to reduce the amount of single use plastic they use and hand out to their customers. It also targets shoppers to reduce their reliance on single use items and to replace them with reusable alternatives.

Borrowing from the best campaigns like Plastic Free July, Sustainable Organisations Manly / Plastic Free Manly and successful social media savvy organisations like Take 3 for the Sea, we workshopped the best features from each to build an engaging campaign that would appeal to shoppers and businesses alike. Whilst light hearted, a message that would effectively raise awareness of the issue, provide support to a variety of stakeholders to change behaviours and ultimately switch from single use plastic to more sustainable alternatives.

BBPHBYO focuses specifically on the most commonly used and discarded single use items handed out by businesses and complements the broader program of Plastic Free July, the annual campaign that many councils adopt in their waste education programs.

Tapping into the ageless appeal of animated cartoon we created some interesting "villains" and "heroes". The Sad and Angry Plastic Bag were set against the Hero, Mr Stylish Boomerang

Bag, broadening the campaign's appeal to all ages, including children.

Bye-Bye Plastic also launched at the same time as the hugely successful second series of the ABC TV show hosted by Craig Reucassel, War on Waste. There was a huge outcry over the amount of waste senselessly created by the general public and many community groups and related not-for-profit environmental causes were united by the common goal of reducing waste and increasing recycling.

## How it works

At its core, Bye-Bye Plastic Hello BYO is a call to action. Reduce your single use plastic!

### Step 1 – Make the pledge

Businesses and shoppers select specific actions relating to single use items and reusables to reduce single use plastic. The site offers a range of simple, practical actions and suggestions tailored to businesses and shoppers, which they select if they already do or are prepared to start doing.

### Step 2 – Shout out on social media

Social media is used to shout out and share these commitments by local businesses and individuals to generate positive sentiment and support. Selfies of shoppers and businesses with reusables and Bye-Bye Plastic branded logos are uploaded and tagged to social media pages on Instagram and Facebook and the Bye Bye Plastic website, inviting people to comment, like and share.

### Step 3 – Follow up

Follow up emails with additional tips and information are sent to pledgers to keep them in the loop and update them on anything new.

## Pledges FY18/19 to date

- 37 business pledges
- 606 shopper pledges

## Community Engagement

The Bye Bye Plastic campaign was embraced by attendees of local community markets and events who were interested with the single use plastic challenge. Bye Bye Plastic used giveaways of useful and reusable items to engage the community.

The BBP team came across 350 printed conference bags which were destined for landfill and ingeniously up-cycled them into iconic Bye-Bye Plastic and Hello BYO bags. Through collaboration with local Boomerang Bags Ku-ring-gai group, we hand screen printed the Bye Bye Plastic and Hello BYO logos onto the inside of the bags. The aim was to give them away to shoppers in exchange for them making a pledge committing to reduce their single use plastic usage. In our initial phase, we also purchased re-usable mesh produce bags as “give-aways” for people making the pledge. The give-away was useful and reinforced the message of non-single use.

## Community volunteers and other groups

Collaboration and support from community sustainability groups and causes campaigning against single use plastic have been central to the success of Bye Bye Plastic. For example, groups such as local Boomerang Bags groups, Responsible Cafes, Good for the Hood, Surfrider Foundation, The Boomerang Alliance and Take 3 for the Sea all working for the same outcomes have been supportive and collaborative in approach to share networks, content and cross promote events and stories.

In May 2018, BBP was introduced to local school girl Sophia Skarparis who (then in year 10 at a North Sydney high school) had started a petition to ban plastic bags in NSW. Wanting the petition to be heard in NSW Parliament she had approached her local member,

the Honourable Gladys Berejiklian, Premier of NSW. Instructed to go off and get another few thousand signatures, Sophia partnered with Bye Bye Plastic and Clean Up Australia to assist in collecting more signatures. On 25 October 2018, the day that the petition was tabled in Parliament they collaborated to lead the Bye Bye Plastic Bags NSW Day of Action, in a morning event under the Sydney Harbour Bridge. This was attended by representatives from five northern Sydney councils and politicians to provide support to Sophia's efforts. Sophia was soon after awarded the Australian Geographic Young Conservationist of the Year Award by the Duchess of Sussex.

## Business Engagement

Business take up has proven more challenging. Businesses typically are not ready to engage let alone commit to the pledge on the spot and it requires meaningful engagement for business owners to understand the pledge. Further discussion is usually required to clarify the pledge is not a commitment to remove all plastic from their business but to simply start the break up by making small incremental changes - whether that be asking shoppers if they have a bag before putting their purchase in a plastic bag or taking the plastic straw container off the counter and only providing if it was specifically asked for.

Another challenge with speaking to businesses is getting to the right person – owner or manager, as lower level staff have neither the time nor the empowerment to make such commitments. Then the issue of single use plastic is often not the foremost issue of importance to a small business owner. Those who have an engaged customer base or who seek to attract the younger demographic are more aware of the marketing and reputational benefits of saying bye-bye to single use plastic and being recognised for it.

## Finding a balance between No Plastic Purists and Practical Business Solutions

Working with businesses such as cafes and take-away outlets and restaurants was also challenging due to the lack of biodegradable or sustainable single use packaging alternatives to fossil-fuel based plastic. It was becoming clear that several businesses who had done some preliminary research into alternatives had found the bio-plastic options made of vegetable based/ renewable sources which mimicked single use plastic in performance, albeit significantly more expensive.

While marginally better than fossil fuel based plastics, these were still single use and they were still challenging to dispose of sustainably. Most of them just end up in landfill / general waste bins as they are not common enough to either recycle as a separate stream or be converted into a form of compost requiring a specialised level of industrial treatment to break down.

Until biodegradable single use plastic alternatives or the organic waste stream collection and treatment options become more easily available and cost competitive, this will continue to be a challenge for a large number of businesses to overcome the convenience and cost benefits of single use plastic.

## Working with business - markets and festivals

While individual businesses take a lot of time to hand-hold through the process, it has been fruitful working with local markets in our council areas to start the journey of going single use plastic free. Partnering with smaller, sustainably minded markets including Better Business of the year Award 2018 winner Turramurra Fresh Produce and Gourmet markets and Northside Produce Markets has offered successful collaboration.

Northside Markets is a farmers' market held fortnightly in North Sydney with a keen local following and about 80 regular stall holders. Run by the North Sydney Community Centre, they have a strong sustainability focus and desired to go single-use plastic free by their



# Its Time to say bye-bye to single use plastic and hello BYO!

Continued

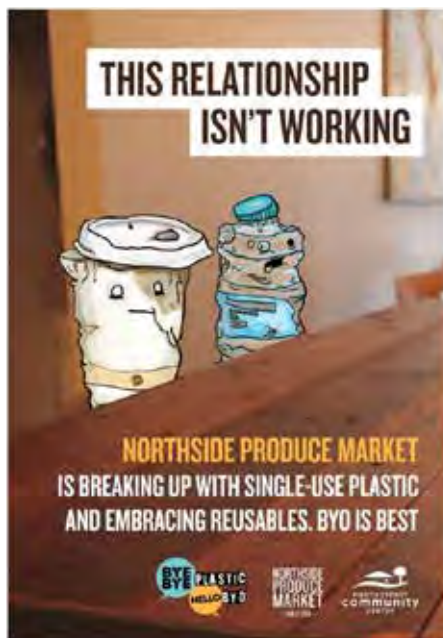
20th anniversary market in September 2019.

BBP is providing support through Bye Bye Plastic working with the market organisers and the stall holders to meet this objective. Launching at the Sustainable Futures Market held on 6 April, this intention to go single use plastic free was communicated to stall holders and market goers. Then we started to have individual conversations with each stall holder to ascertain if single use plastic items were currently in use and if so, how to transition to either a reusable or non-single use plastic alternative.

As most of the stall holders are recurrent to the market they are generally supportive of this move and those that are using plastic items are open to trialling alternatives. The other side to our plan is identifying viable alternatives which meet the needs of each stall holder. For example fresh produce and food vendors who have no choice but single use packaging, whether it is for cryo – vacuumed meat or packaging yoghurts, cheeses and pasta sauces.

## Alternative Suppliers

The Bye Bye Plastic team undertook comprehensive research into the various alternative packaging and reusable options available or being developed, including waste disposal options. One innovative solution discovered is offered by Carapac, a new Australian company that has come up with a sustainable plastic alternative made from crustacean shell waste which is home compostable and can be moulded in many different forms to suit many food applications. Through the work with Northside Markets, several stall holders with challenging packaging requirements are getting ready to test



how Carapac's solution might meet their needs and offer a sustainable compostable alternative.

Bye-Bye Plastic is now helping to build awareness and relationships between innovative reusable and non-single use plastic suppliers such as CARAPAC, Globelet, Huskee and small businesses who are willing to test out alternatives and give honest feedback to further refine the product offering.

## Digital Engagement Online app

In FY19/20 Bye Bye plastic is developing a digital app in collaboration with the Green Money platform. Green Money has developed a behavioural change tool developed for and deployed by a range of local councils to educate and incentivise their residents to follow certain behaviours for eg waste disposal and recycling.

This engagement tool is perfect for the Bye Bye Plastic program as it engages both businesses and shoppers. The businesses get a great platform to

market to the locals who are more likely to frequent them. They are promoted for doing great things with bye-bye plastic and then residents/shoppers are rewarded with benefits provided by the businesses. A true win:win.

## Bye Bye Plastic Phase 2 FY19/20

- Integrate single use plastic and alternatives into BBP{ business sustainability assessment
- Offer businesses more support, including tools and resources to reduce single use plastic and measure results
- Build strategic relationships with suppliers offering real alternatives to single use plastic for businesses
- Expand program to schools, youth groups
- Engage volunteer base more broadly to engage businesses directly with a Bye-Bye Plastic Community Champion Toolkit
- Develop Bye-Bye Plastic digital pilot app with behaviour challenges to reduce single use and incentivise businesses to engage.
- Pledge Targets FY19/20
  - o 100 business pledges
  - o 1000 shopper pledges

# ENVIROMENTORS EDUCATION PROGRAM

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- Water specific conservation
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- School Workshops
- Community Workshops
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- Litter Audits
- Education Materials
- Community Displays



## OUR TEAM

Our Sustainability Educators  
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# Central Coast Council's 'Keep the Coast Clean' Program



**Sara Blanchfield**  
Central Coast Council

Litter was identified through Council's Community Strategic Plan (CSP) as an environmental and social issue in our community. Data gathered through local litter checks showed that single use coffee cups and plastic produce bags are major contributors to the litter issue. Council working towards litter reduction introduced the 'Keep the Coast Clean' project.

Reducing litter and changing littering behaviour is complex. Picking up rubbish, as a response to the litter problem, is a short term solution; facilitating behaviour change and increasing community awareness on the negative impacts of litter provides an opportunity to create a sustained resolution. In order to facilitate behaviour change and increase awareness the reusable cup and produce bags initiatives were introduced as part of 'Keep the Coast Clean'.

Single use coffee cups and plastic produce bags, or parts thereof, consistently reappeared during local litter checks carried out across the Central Coast and at times made up to as much as 63% of the litter volume. By reducing the amount of these single use items distributed, associated litter can also be reduced. Providing a reusable alternative and promoting its reuse, facilitates the behaviour change needed for the reduction in the single use items being used and littered.

Reusable Keep Cups and reusable produce bags promoting the message 'Keep the Coast Clean' were provided to residents for free, along with educational material as to why these single use items should be avoided. A supporting communications campaign was launched which aimed to raise awareness of the benefits of using reusable items over their single use counterparts. Along with the reusable

products, incentives such as repeat use discounts encouraged sustained behaviour change amongst residents.

By educating on the importance for the behaviour change, sustained behaviour change and long term litter reduction can be achieved, creating a cleaner environment and greener community.

The products given out as part of 'Keep the Coast Clean' were high quality, met industry standards, stakeholder preferences and consumer demands. These considerations again worked to fortify sustained behaviour change.

As well as facilitating behaviour change through the distribution of reusable products; the 'Keep the Coast Clean' project works to increase community awareness on the negative impact of litter on the natural environment and the negative consequences of littering. This was done with accompanying educational material supplied with the



May 2 at 5:00am

Have you picked up your free reusable produce bag yet? We've once again partnered with local fruit and veg stores to help #keepthecoastclean by providing free reusable produce bags to their customers with purchase. Details: [centralcoast.nsw.gov.au/producebags](http://centralcoast.nsw.gov.au/producebags)

[Read Less](#)



**Central Coast Council**

Published by Angela Walsh 191 · 10 May 2018 ·

Due to the success of our #keepcup initiative earlier this year, we have distributed another 1200 reusable coffee cups to local cafés to provide to their customers for free!

To find out where you can pick up your free reusable coffee cup go to [centralcoast.nsw.gov.au/littering](http://centralcoast.nsw.gov.au/littering)

The initiative forms part of our commitment to the Don't be a Tossler! campaign to help reduce single use coffee cup litter and remind residents and visitors to dispose of waste responsibly to help #keepthecoastclean



Get more likes, comments and shares

Boost this post for \$50 to reach up to 330 people.

20,768

People reached

4,794

Engagements

[Boost Post](#)



reusable products and a comprehensive communications campaign.

Messages were repeated throughout the installation and promotion of the project, and product distribution. Messages along with the slogan 'Keep the Coast Clean' included:

- In Australia, 150 million plastic bags end up as litter, half of which were used just once.
- Love your morning coffee but hate the waste it creates?
- If we don't act now researchers estimate that by 2050 there will be more plastic than fish in the ocean.
- By bringing your reusable produce bags with you when you shop you are becoming part of the solution to protect our environment from litter and plastic pollution.

These messages were delivered through over 120 media contacts, including print and online networks, and were reiterated within the educational materials provided with the products.

In an innovative approach the 'Keep the Coast Clean' project addresses the litter issue at its potential origin, at the business where the purchase of the potentially littered item is made. Cafes were targeted for the distribution of the reusable cups and fresh produce suppliers for the distribution of the produce bags. Partnerships were established through the use of an expression of interest advertisement. The partnership criteria called for environmental mindfulness and local ownership. The development of strong partnerships was a critical component of this project, as it was viewed that the program would have greater success and longer term impact if partners had a sense of ownership of it and were in agreement of the desired outcomes.

Locally, 41 businesses came on board with the program. Through the project, partnering businesses supported the facilitation of behaviour change, by providing residents with the free reusable products and increased awareness with the use of the environmental messaging. The partnering businesses followed up with participants through surveys, offered incentives for re-use of the product and also provided education material



reiterating the reason behind the product. All businesses were advertised as part of the initiatives as partners with Council on this innovative behaviour change program.

Initially the program distributed 2000 Keep Cups and 1400 produce bags to the community through partner cafes and fresh produce suppliers. However due to very high level of community engagement and demand a second phase was introduced for both products resulting in a final total of 5000 Keep Cups and 3000 produce bag sets given out to the community through 24 cafes and 17 fresh produce business partners.

To evaluate the project qualitative and quantitative data was collected through participant and partner surveys. A sample group of participants in the Keep Cup initiative were surveyed and 96% responded that they have seen an increase in the use of the reusable cups since the start of the campaign. Surveyed participants reported that they learnt to be more litter aware and understood better the effects litter had on the environment, with 92% participants surveyed changing their behaviour by reusing the Keep Cup. Additionally 28% reduced other sources of single use plastic and 20% felt they had more conversations about litter with friends and colleagues. Along with reported reductions in single use cup costs, one café reported over 50% return rate daily. Another reported a steady increase in repeat usage up from 4 per day to 35 per day. This equates to a reduction of around 30000 single

use cups per year between these two businesses.

90% of participants surveyed who received a produce bag reported learning about plastic pollution as a result of their participant while 100% reported making changes to their behaviour.

Facebook response to the campaign was very successful with over 20,000 people reached within the first few days of both promotions and engagement rates up to 23.1%. Industry standards are high at 3%. The project has had overwhelming support from the community with 100% of the survey group feeling Council getting behind these sorts of programs was a great thing and many commented that they would like to it expanded more.

The long-term direction of the 'Keep the Coast Clean' project is to look at increased business involvement and a monetary disincentive; a charge for the single use plastic item. The 'Keep the Coast Clean' project is leading the way with reusable products, starting the community on a journey of sustainability. Straws will be the next items that are added to the program hoping to further reduce single use plastics in our community.

# Protecting our oceans from the Number 1 source of marine plastic



**Brad Dalrymple**  
Ocean Protect

## Community survey

A recent survey of 1,000 Australians nationwide commissioned by Ocean Protect demonstrated that the highest concern of all Australians with regards to population growth is marine and waterway health – ahead of housing density, reduced water supply and increased traffic. The survey also found that almost six in ten (57 per cent) of Australians are not satisfied with the health and cleanliness of their waterways such as creeks, rivers, ocean. The amount of litter (particularly plastic) is a key and growing public concern, and it is predicted that there will be more plastic in the oceans than fish by 2050.

The survey, however, also identified that Australians do not know what the largest source of this plastic pollution, with 'stormwater runoff' (the source of approximately 80% of marine plastic) thought to be the third largest source. Within Australia, stormwater is also the primary cause of degradation in our urban waterways.

## The Facts

- Each year, at least eight million tonnes of plastics flow into the ocean – which is equivalent to dumping the contents of one garbage truck into the ocean every minute. If no action is taken, this is expected to increase to two per minute by 2030 and four per minute by 2050<sup>1</sup>
- Stormwater is recognised as the key source of pollution in our urban waterways<sup>2</sup> and the vast majority of marine debris entering Australian waters is land-based and generated locally<sup>3,4</sup>
- Every time it rains, stormwater

runoff from most urban areas within Australia flows to our waterways and oceans without any stormwater treatment to remove pollutants (including plastics). Where stormwater treatment assets are present to capture pollutants, they seldom receive appropriate maintenance, meaning captured pollutants are not removed – often making the assets completely ineffective.

- The degradation of our waterways and oceans is a public health risk and has a direct impact to our economy, with the ban on commercial fishing and cautions around consumption of fish products from Sydney Harbour due to pollution<sup>5</sup> as just one current example

## Key Pressures

The impact of stormwater runoff within Australia is due to a combination of factors:

- high pollution generation rates in urban areas
- the vast majority of urban areas have no stormwater treatment systems (to intercept/ capture stormwater pollution before downstream waterways)
- where stormwater treatment systems are integrated, these assets receive minimal (and often zero) maintenance (e.g. to remove accumulated material).

As an example, Ocean Protect recently analysed the captured pollution from eight (8) gully bit basket inserts – installed in a Western Sydney road, providing stormwater treatment to an area of just 2700m<sup>2</sup> for five (5) months. These baskets (akin to 'underground

garbage bins') collected 850 bits of plastic (including 228 cigarette butts, 88 plastic drink lids, 44 cans, 22 plastic cups, 21 plastic straws) and 130kg of sediment. The accumulated material would also contain significant quantities of 'less visible' pollutants (e.g. heavy metals, bacteria) that also have a major impact to the health of our oceans (and waterways) and public.

## Recommended actions

To mitigate the impact of stormwater runoff within Australian waterways (and the ocean), we propose the following key actions:

- ban on single use plastics, supported by appropriate education
- increased and prioritised distribution of stormwater treatment systems (to provide treatment to a significantly larger area
- mandatory requirements for the appropriate maintenance of stormwater quality assets.

We acknowledge that our business (Ocean Protect) will benefit from these recommended actions. However, so too will thousands of Australian businesses across multiple sectors – as will the public via more jobs and healthy oceans.

## What is Ocean Protect doing?

Ocean Protect have undertaken a range of initiatives to protect our oceans, including:

- **Advocacy:** In 2019, we partnered with five charities (Take 3, Plastic Free Foundation, Sea Turtle Rescue, Australian Sea Bird



Rescue, Australian Association for Environmental Education) donating \$50,000 to their collective conservation efforts. We are also fundraising for them via our not-for-profit shop. We will increase our financial contribution to relevant causes in parallel with business growth year-on-year.

- **Education:** We have partnered with Keep Australia Beautiful in 2019 to help deliver an education module titled Keeping Waterways Clean to NSW schools. By 2022, we will have helped all schools in Australia to have access to marine conservation education resources. We have also recently released a short film 'If we kill the oceans, we kill ourselves' highlighting the ocean plastic problem. The new 'Ocean Protect Podcast' also hosts various guests to discuss issues facing the ocean and what we can do about it.

- **Change:** We are actively raising public awareness and speaking with politicians to make maintenance of stormwater infrastructure and roads a legal and enforceable requirement by 2021. We estimate this change in legislation will save over 500 standard (240 litre) wheelie bins of pollution reaching the ocean per day! We have also recently sent an 'open letter' to over 2000 Federal, State and local government politicians within Australia calling for a 'zero liter to ocean' target to be achieved by 2040 via the recommended actions given above. We are also undertaking ongoing liaison and collaboration with Australian politicians to help achieve this target.

We encourage everyone to sign our 'Zero tolerance legislation for trash going to our oceans' petition, available at <https://oceanprotect.com.au/petition/>

<sup>1</sup> Ellen MacArthur Foundation, 2017, The New Plastics Economy: Rethinking the Future & Catalyzing Action, [https://www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEC-Hybrid\\_English\\_22-11-17\\_Digital.pdf](https://www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEC-Hybrid_English_22-11-17_Digital.pdf)

<sup>2</sup> Melbourne Water, 2016, Management of the ecological impacts of urban land and activities on waterways – Issues Paper: understanding the science, [https://www.clearwatervic.com.au/user-data/resource-files/2016\\_08-waterways-issues-paper-pub.pdf](https://www.clearwatervic.com.au/user-data/resource-files/2016_08-waterways-issues-paper-pub.pdf)

<sup>3</sup> Dr Britta Denise Hardesty, CSIRO, Committee Hansard, 26 February 2016, p. 1, <https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id:%22committees/commsen/439759d8-696a-4708-b877-eaf069b0776f/0001%22;src1=sm1>

<sup>4</sup> Britta Denise Hardesty and Chris Wilcox, CSIRO, Understanding the types, sources and at-sea distribution of marine debris in Australian waters, <https://www.environment.gov.au/system/files/pages/8ff786ed-42cf-4a50-866e-13a4d231422b/files/marine-debris-sources.pdf>

<sup>5</sup> Department of Primary Industries, Fishing in Sydney Harbour, <https://www.dpi.nsw.gov.au/fishing/recreational/fishing-skills/fishing-in-sydney-harbour>





# ...we are simply tired of capturing the orphan litter...



**Dr Swapan Paul**  
Sydney Olympic Park Authority

## Abstract

Sydney Olympic Park Authority, due to its location at the receiving end of several creeks and drains emptying in to Homebush Bay, has been annually capturing some 150m<sup>3</sup> of floatable litter arriving from catchments outside its own boundary. The vast majority of these litters are plastics. A network of 13 floating booms and cages intercept these litter, however, yet a high proportion do escape further downstream. Another network of 35 in-ground gross pollutant traps (GPTs) and additional 93 baskets placed in stormwater pits capture approximately 130,000kg of gross pollutants. More than 50%, and up to 83% of these pollutants, also emanate from outside the Park's own boundary. Although most of the in-ground traps were installed leading to the Sydney 2000 Olympics, still some new-generation traps have been installed in recent years, including a Jelly Fish for trapping sediment. Together, the Authority has been overwhelmed by the sheer volume of the litter flowing downstream and something needs to be done to improve this situation.

## Introduction

The proud host of the 2000 Sydney Olympics – the 'best games ever' was based on an environmental emphasis – the Green Games. It was possible due to the state-of-the art facilities, infrastructure and amenities as well as venues. Among the facilities have been WSUD devices and measure; many of which included Gross Pollutant Traps (GPTs) of various types, sizes and functionalities. Together, these have been extremely effective in keeping the litter at bay and protecting the waterways further down stream. These also help protecting the nationally important and locally significant wetlands; most of which are estuarine in this 630ha site. These wetlands are supported by three major creeks and the mighty Parramatta River. All these creeks and the River, of course, bring in stormwater from upstream catchments that are outside the Authority's boundaries. Any deterioration in the water quality of the River or in these creeks and tributaries mean that these wetlands struggle to function properly. The biggest threat is the gross pollutants, sediment and other litter!

floating booms and trash racks are up to 55m long and can capture up to 20m<sup>3</sup> of litter each. A total of 35 underground GPTs and additional 93 baskets in stormwater pits capture up to 130,000kg of litter annually; more than 83% of which emanate from outside the Authority's boundary. In terms of the type of litter – the litter that emanates from the external catchments contain more plastics than the internal litter.

On the other hand some 13 floating booms and trash racks together capture up to 150m<sup>3</sup> of floating litter. This contains mainly floatable plastics and foams. The litter that emanates from within the Authority's boundary contains almost no plastics; rather it contains leaf litter, primarily due to the treed-streets and the precincts. Also, since the GPTs are strategically placed within the Authority's boundary, hardly any litter escapes from the Authority's boundary in to the floating booms. That way, more than 77% of the litter collected from the floating booms emanate from outside the Authority's boundary. The irony is, if these litters were not intercepted – all would have flown downstream in to the wetlands and waterways!



## The Authority's Litter Collection System

The Authority's non-domestic waste primarily includes litter from roads and facilities within the Authority's boundary and outside, green waste and other construction waste. This article highlights issues and opportunities in the litter that are primarily flown by stormwater. It has two major types of GPTs that capture stormwater litter. These are Underground GPTs and Floating GPTs (booms and trash racks). Underground GPTs are up to 20,000litre individual capacity whereas

## Current Issues

Whilst the Authority has been doing the best it can in maintaining its existing assets, installing new devices and improving some existing ones – it alone can not handle this ongoing pressure. Irrespective of how many devices and structures that the Authority has put in place it is never enough to intercept the sheer volume of the litter entering from outside its boundary. As a consequence, over and above the Authority's contractor cleaning litter on as needs basis; local volunteers and community groups almost regularly pick up some litter but they are losing their

enthusiasm and energy. The Authority is also under increasing budgetary constraints from having to maintain the relevant assets as well as servicing these GPTs and continue emptying.

## Other Factors

There are several variables that can contribute to the volume and type of litter. Of course, the extent, frequency, period and interval of rainfalls are the biggest factors. But it has been found that although there has been a positive correlation between rainfall and litter volume but there has not been a very strong dependence on annual rainfall; nor were monthly rainfall and corresponding litter volume too closely correlated. The sources of litter, conditions and types of the GPTs, frequency of emptying the GPTs, demography in the upper catchment and the frequency of street sweeping also contribute. An internal study conducted in 2010 suggests that whilst some GPTs can contain up to 4-times the capacity of its effective functionality; their emptying rate can also make a big difference in the rate to which litter might escape and flow further downstream. The Authority has been looking into all those factors and making improvements where it can. But only those are not able to cope up with the incoming litter!

## Future Cooperation

Unless the flow of litter from upstream catchments is reduced the Authority is unable to ensure continued and full interception of the litter and keeping the wetlands and waterways as clean as possible. This may result in more frequent complaints and outcry from locals and tourists, nevertheless, for the sake of the healthy waterways and conservation of wetlands and biodiversity, more effective and collaborative measures need to be undertaken.

Not one measure is likely to improve the situation. Improvements need to happen in focussing in to demography- and culturally-sensitive approaches and awareness programs. Also, one single land owner is never going to be able to keep on top. It is essential that land managers in the upper catchments take some effective steps so that this becomes a shared task and responsibility. It is worth mentioning that the Authority does enjoy extensive cooperation and support from these land owners, however, in case of managing litter; much more needs to be done collaboratively.



# Bridging the Data Gap on Land-Based Sources of Marine Debris



**Doug Yardley & Shayan Barmand**  
Cleanwater Group

Plastic leakage into the marine environment presents a growing environmental, social and economic challenge for society today. Impacts such as wildlife entanglement and ingestion, habitat damage, economic loss through degraded coastal areas, and navigation hazards, are common in areas with high concentrations of marine debris.

Research by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) shows that the vast majority of marine debris in Australia derives from land-based sources (Hardesty et al., 2016). Community cleanup efforts have, until now, predominantly concentrated on popular beaches and rivers throughout Australia. Various citizen science-based programs have also introduced the essential step of collecting data on the types and quantities of debris found in order to address the root cause of the problem – mismanaged waste and littering. For example, one of the largest databases, Tangaroa Blue's Australian Marine Debris Initiative, has logged over 13.5 million items and nearly 400,000 volunteer hours from 15,000 cleanups around the country. Analysing the types and quantities of debris once it reaches a beach or river, however, presents the challenge of not being able to link directly back to the local source of litter which often lies further upstream near urban centres. There remains a current gap in information around the specific land-based sources of plastic and other marine debris leaking into the environment.

## Undervalued Assets

Stormwater drains around urban centres have been identified as a major contributor to shoreline debris as they act as an outflow point of litter in urban runoff (Willis et al., 2017).

Other pollutants, such as chemicals, pesticides, and nutrients like nitrogen and phosphorous, also flow into our waterways and ocean through stormwater runoff. For this reason, most Councils and private developers employ a range of water quality improvement measures as part of what is known as the stormwater treatment train – a key piece of water sensitive urban design methods.

Within the treatment train, prevention solutions such as at-source litter traps have been found to be an effective intervention to capture land-based sources of debris and other gross pollutants before entering waterways. However, while most new development includes stormwater quality improvement measures, existing infrastructure is often largely unprotected, and, where there is protection, it may not have been adequately maintained due to restrictive budgets and/or lack of knowledge on the locations, types and conditions of assets. Where stormwater infrastructure is not adequately protected, maintained and serviced, litter and other gross pollutants can block gutters, drains and pipes, resulting in urban flooding that can damage property, risk public safety, and cost time and money to remediate.

## Inquiry

Last year, we set out to address these two challenges in our industry by asking two questions:

- How do we bring more value to stormwater assets that are an effective way to prevent plastic and other gross pollutants from reaching the marine environment?
- How do we improve the value of cleanup data so we can identify local sources of marine debris that can be targeted for effective and efficient source reduction measures?

## Discovery

One the benefits of litter traps is that they are located at, or closer to, the source as they are installed in stormwater entry points (e.g. drains along the road). If we combine them with audits that sort and analyse the captured material according to the Australian Marine Debris Initiative, then they can provide useful information on the types, quantities, flows and distribution of litter originating in urban areas.

For example, in traps installed in front of shopping centres, we find confectionery



Figure 1. Collecting litter from an at-source litter trap (A) in preparation for an AMDI audit (B)



Figure 2. Typical items found in an at-source litter trap located in front of a gym



Figure 3. Using GIS (A) to map litter captured in at-source litter traps at a shopping centre allows for location-specific data such as discovering polystyrene foam packaging at loading docks (B)



packaging and shopping docket; in front of gyms, we find energy drinks, cigarette butts and chewing gum packaging; in front of department store loading stations, we find polystyrene foam packaging.

If the devices are included in a regular maintenance and servicing contract, then they are being cleaned on a recurring basis (anywhere from monthly to quarterly), which allows for consistent sampling across seasons and often over multiple years. When mapped using geographic information systems, this location-specific data can be used to advance databases such as the AMDI, support metrics such as the KAB National Litter Index and guide management strategies developed through source reduction planning. In effect, we can now use at-source litter traps as both a preventative and a diagnostic tool to address the gap in upstream data on land-based sources of marine debris.

This model has recently been rolled out on projects for the Sunshine Coast Council, Mackay Regional Council and the Eurobodalla Shire Council, with positive results. Across these projects, both new and existing

at-source litter traps are being used in one of three primary ways: as an assessment tool in order to assess the loads and spatial distributions of pollutants; as an evaluation tool to evaluate the effectiveness of management interventions through before/after comparisons; and, as a source reduction and communication tool to build the evidence base for community-led source reduction plans. These programs leverage the successful and widely-adopted AMDI framework to collect data with repeatable and reproducible methodologies developed in partnership with Tangaroa Blue.

## Conclusion

As we move away from analyzing the magnitude and severity of the problem, and toward efforts to target source reduction, there is a significant opportunity to leverage pollution prevention devices installed in stormwater infrastructure to collect valuable information that can be used to target management actions and improve community-led source reduction plans. When combined with surveys that align with the Australian

Marine Debris Initiative, at-source pollution prevention traps installed in stormwater infrastructure can help bridge the gap by providing location-specific information on sources and distributions of litter originating from urban centres.

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# A Case Study: Eurobodalla Shire Council, stopping litter at its source



**Heidi Thomson**  
Eurobodalla Shire Council

## Background

It was recently reported (World Economic Forum 2018) that if current rates of plastic usage continue, by 2050 there will be more plastic in the world's oceans than fish. A small amount of plastic is being recycled, the rest is ending up in landfill or as marine debris. Eurobodalla Shire Council and the Eurobodalla community are doing their bit in reducing litter and marine debris. All of the activities outlined are implemented with minimal funds and are coordinated by the Environmental Education Officer employed for 15 hours per week.

The Eurobodalla Shire coastlines extends from South Durras in the north to Wallaga Lake in the south, that's 110km of coastline. There are 83 beaches and many estuaries, lake and lagoons. The population is almost 40 000 but over the summer months this triples bringing extra pressure and extra litter to the coast.

Council quickly realised that there were benefits to tackling marine debris issues at the source, that cleaning up the beaches and estuaries was good but it was not solving the issues. So in 2014 council developed a partnership with Tangaroa Blue, the not for profit organisation, leading the way in marine debris management. Since then, Council has made efforts across the board to record data about marine debris items for the purpose of developing more effective source reduction plans.

## The Australian Marine Debris Database (AMDI)

Tangaroa Blue set up the Australian Marine Debris Initiative with the governing theory being 'if all we ever do is clean up, that's all we'll ever do'

(Heidi Taylor, Tangaroa Blue). To meet their objectives they set up a national database for recording scientific data on the types and amounts of marine debris being collected across the country. They work with stakeholders all over the country to use this data for tackling the source of marine debris issues.

Last year a new app was developed that allows users to record information directly onto the database with a smart phone. This means if there are two people undertaking a clean-up, one can collect and bag the marine debris while the other one records using the app. The Tangaroa method of collecting and recording data is already well developed with loads of resources to assist users. Over 140 000 volunteers have used the program with over 13 million items of marine debris removed.

When recording data we start to see the problem items quickly and see trends in when and where they are deposited. There is also more specific information that can assist us to track the item to its source. For example,

we record the colour of the bags which tells us where the bag comes from. We know certain supermarkets used to have grey bags, the butchers have blue bags and some of the boutique bags have a business name on them. Often promotional balloons are found. Debris with identification on it is forwarded onto Tangaroa Blue who then follow up by contacting those businesses. Often the businesses are shocked to hear that their balloons or other items have become marine debris and drifted so far.

## The Community

Once council started using the database, we realised we couldn't solve the problem on our own. The information we could collect was very valuable but to extend across our 110km of coastline we would need help. So we focussed on a 'train the trainer' approach. We now have National Parks, Batemans Marine Park, a number of Local Aboriginal Land

	Top 10 items to date	Total
1	Plastic film remnants (bits of plastic bag, wrap etc)	346
2	Plastic packaging food (wrap, packets, containers)	279
3	Foam insulation & packaging (whole and remnants)	109
4	Fishing line in metres (Recreation)	100
5	Straws, confection sticks, cups, plates & cutlery	99
6	Plastic bits & pieces hard & solid	82
7	Aluminium cans	67
8	Plastic bags supermarket, garbage, dog poo, ice	56
9	Glass beer stubbies & pre-mixed alcohol bottles	52
10	Plastic vehicle parts	

Table 1. Example of the information produced from the database. The top 10 items collected at McLoeds Creek adjoining Batemans Bay CBD after just two clean ups.



Council's involved at also training their crews and uploading information to the database. We used key people in existing volunteer groups like Landcare and Surf Clubs to help through their regular working bees and we got local businesses on board. Not all are involved directly in cleanups and data recording but they have other roles Eg oyster growers collect back their poles and baskets that we often pick up, others notify us when a clean up is needed at a particular site.

The Marine Debris Working Group was created, a small group of volunteers we call on for clean ups after storm events but they also help to promote clean-ups and the database and have assisted to create a brand labelled 'I'm part of the solution'. School students who undertake a clean up can bring in a t-shirt to upcycle with a trendy screenprint. Members of the working group also started up a local Boomerang bags scheme where they sewed hundreds of bags for local stores for their shoppers to reuse. They recently participated in AUSMAP training on collecting and recording microplastics.



Figure 1. Screen printed t-shirts are a bonus for participants in clean-up activities.

## Schools

We're also working on educating and engaging the younger generations by working with teachers to incorporate the marine debris program into their curriculum. Our staff do a field session with the class and then leave the teacher to carry on the regular clean ups at the site they have adopted. Some schools have delivered whole terms of study on marine debris incorporating it into all subjects and finalising the term with a project for the kids to develop a solution to one of the world's marine debris problems.

For High School students, we run Young Legends, an empowering event for young people who want to make a difference. An application process is held and 12 participants selected from across the five high schools. They participate in two days of activities with environmental mentors. The mentors are all in their 20s and are inspiring people who had created a successful career or business in the sustainability industry.

## Drain Buddy trial

With all the data we have been able to tackle some of the problem areas. We knew the Batemans Bay CBD was contributing a large amount of street litter so rather than let that flow out to sea and then pick it up in clean-up activities we approached the maintenance team with the idea of installing drain baskets in the street drains, called Drain Buddies, to catch litter in the drains before it enters the estuary. When thinking about our actions as a whole organisation, we realised we could work together to reduce the overall efforts and get some good outcomes for litter reduction and data recording. We trained two maintenance staff members who will continue every 2-3 months to clean out the drains and record the data.

The data is already showing litter typical of a CBD with lots of cigarette butts, broken up bits of plastic bags and packaging, lolly wrappers and straws.



Photo 2. Typical litter collected in a CBD Drain Buddy.

## We CARE program

Data collection from both the drain buddies and Local Litter Checks identified that amongst the top litter items collected were single-use takeaway plastics, such as straws, coffee cups, take-away containers, cutlery and bags. As a result, the We Care Eurobodalla program was developed to engage food-outlet business owners and their customers to CARE: Carry, Avoid single use plastic items, Reuse and Encourage others to do the same. Instead of focusing on making sure that rubbish was disposed of correctly or cleaned up, we wanted to stop the rubbish being generated in the first place.

The program was made available to all food businesses between Batemans Bay and Tillba Tilba. It provided the support to reduce single-use plastic items, to help transition to eco-friendly compostable packaging and incentivise customers to BYO reusable containers.

The program was designed to target five common types of litter: plastic straws, plastic bags, coffee cups, cutlery and take-away containers

57 businesses engaged with the program, some on all five items, and others on a single item. The 24 businesses who addressed all five items were recognised as program Champions and the 33 businesses who tackled at least one problem item were recognised as a Member of the program. It was funded through the EPA Litter Prevention grants which also included promoting the Don't be a tosser message widely with message



# A Case Study: Eurobodalla Shire Council, stopping litter at its source

Continued

boards in industrial areas, ranger enforcement and additional council and community clean ups.

## Other Source Reductions

Since 2014 other achievements from the recording of data have included:

**Ban on Balloon Releases** - balloons can no longer be released at council events or reserves.

**Tap Water Please campaign** – encouraged restaurants and cafes to serve tap water saw a huge turn around in the number of single use water bottles being littered. The campaign was run a year before the container deposit scheme which has improved again the number of bottles being collected.

**Drinking water stations** - made filling water bottles easy with 30 new drinking water stations and some that are portable and can be borrowed for events.

**Seaside Scavenge event** - over 100 new volunteers came out on the Clyde foreshore to collect litter and exchange it for pre loved clothing or toys.

**Shopping Trolley Challenge** - challenged customers to minimise plastic bags and packaging before doing their shop. This educated a huge number of people on how to minimise single use plastic items and provided samples of beeswax wraps, veggie bags and reusable shopping bags.

**Plastic Free July events** - a free screening at the 3 major towns of an engaging film eg A plastic Ocean to keep the community engaged.

Investigating a project to recycle oyster industry plastics into products that their industry can reuse.

Annual Environmental Calendar – Year four students participate in a

drawing competition with a different environmental theme each year with the winning pictures being included in the calendar which is distributed throughout the community.



Figure 3. Seaside Scavenge gets new people engaged in cleaning up and understanding litter.

Figure 4. The 2018 Environmental Calendar



We're all in this together

A coordinated effort between different sections of Council has been beneficial for a successful marine debris campaign. Maintenance teams record data from the Drain Buddies and GPTs on the AMDI database. The Rangers provide support by responding to illegal dumpings, they investigate to find the source of the items and they have a budget to get these cleaned up. Outdoor staff are regularly updated at tool box meetings to provide them information about items we are finding and how they might be able to reduce their impacts.



What Next?

Council will continue to monitor the drain baskets and investigate installing more in other areas, follow up engaging more businesses in the We Care program, provide ongoing education and opportunities to all schools and the community and investigate opportunities for using the latest technology to recycle plastics into other useful products.

# Don't Forget to Clean The Beach: Why beach cleaning is important

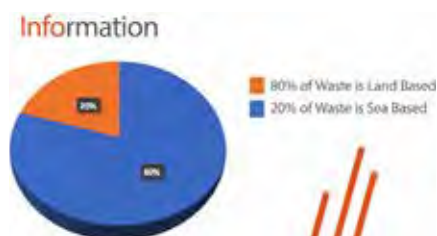


**Stephen Beeby**  
Groundwork Group

A relatively mundane topic, but one that can be significantly enhanced with the addition of Modern Technology!

CEO of Groundwork Group, Stephen Beeby, has over 30 years' experience delivering customised solutions to construction and engineering equipment. Most recently this has expanded to the beach cleaning equipment in the United States.

Research carried out by Murdoch University, in New Zealand and Australia have found that 227 items of litter per 100 square metres can lead to punctures and cuts; and choking hazards at densities of 153 items per 100 square metres. In a further report by Tori Glascock in 2016 there was evidence that 80% of beach and ocean waste comes from the land.



Although there are numerous attempts being conducted in an effort to mitigate the situation, Government Support, Volunteer Groups, Grants and other Preventative Measures are a mere "spit in the sea" (pun intended) and do little to stay abreast the problem.

Recognising that education and community efforts alone are not going to improve the solution is the first step that officials should make.

Councils have thrown on average 90% of their litter budgets on infrastructure and disposal (Kuhn 2018).

Beach Cleaning Machines have been used in hurricane clean-ups and are used in Honolulu and Hawaii to maintain several of their beaches. They

are chosen for their high-capacity ability, allowing an extremely productive and effective methodology. Equipment Manufacturers have refined and, in some cases, re-engineered their equipment to deal with the increased level of rubbish left on beaches. Use of electro magnetics has been a major breakthrough. They are ideal for optimum cleaning and aeration of sand while removing small objects; often sharp objects, that may be either on the surface or buried in the sand.

While as citizens of Australia and councils, we have a social responsibility to protect our beaches; we must also consider the responsibilities outlined in the Work Health and Safety Act 2011. A person conducting a business or undertaking must ensure, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.

The methodology begins with a multi screening system starting with a large 20mm screen and a depth of approximately 150mm. It finishes

with a 6mm grooming screen with a screen depth of approximately 100mm. The tractors are able to clean up to 30,000m<sup>2</sup> per hour at a cost of 1 to 2 cents per square metre.

Groundwork along with Macarthur Mowers and Machinery would welcome the opportunity to collaborate with KAB, Australian Councils and government agencies to help them achieve one of their main objectives of using innovation as a support tool to help achieve their vision of a litter free and sustainable Australia.

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# Litter Free Oceans - a behaviour change campaign to influence Zoo guests and the wider community to reduce their reliance on single use plastics



**Belinda Fairbrother, Taronga Conservation Society Australia**

## Introduction

Litter Free Oceans is a behaviour change campaign designed to protect our local environment, tackle one of the greatest environmental challenges facing our generation and safe guard the marine turtle from extinction.

Launched in 2016, Litter Free Oceans aims to increase community awareness of the danger that plastic pollution poses to marine wildlife. This targeted behaviour change and public education program provided individuals, schools and businesses with the tools to become plastic-free, reducing the impact of litter at the source. Elements of this program were funded by the Environmental Education grants through the NSW Environment Trust.

## What did we try to achieve?

- Increased awareness and sentiment of the impact of plastics on our oceans and marine life, focussed on reducing the use of single-use plastic items including take-away coffee cups and containers, bottles and straws but also increasing education of the problem to reduce associated negative waste behaviours, like littering.
- Outcomes-focussed behaviour change with guests, individuals and communities committing to and implementing actions to stop using or provide alternatives to single-use plastic items including take-away coffee cups and containers, bottles and straws.
- Increased commitment to and implementation of plastic free initiatives by businesses and schools statewide, using Taronga as a pilot.

## Education Program

Taronga worked collaboratively with NSW Department of Education staff to design and deliver a community education program for schools through the delivery of an educational toolkit. The toolkit includes links to existing formal education offerings to promote both Zoo visitation, but also in-school activity.

Through the program, schools and students are encouraged to undertake an audit of their single use plastics use and set targets for reduction, aligned with student-based activities and teaching resources for students and schools. To date, over 800 copies of the toolkit have been distributed.

### Case study - Floraville Public School

After downloading the Litter Free Oceans Schools toolkit, Floraville Public School undertook a waste audit and used the information to inspire changes including changing from plastic to paper straws and introducing a new program called 'Wednesday Waste Warriors' to conduct on-going audits.



## Business Program

Taronga developed an educational toolkit for small and medium sized businesses within the community who want to reduce waste but do not have the resources to investigate potential solutions and alternatives. This includes support to undertake supply chain analysis, a disposable plastic audit and methods to change practices.

Where possible, the toolkit promoted existing community-based initiatives including: The Last Straw, Responsible Cafes, Seaside Scavenge and Take 3.

As a part of the Business Program, Taronga worked with Metcash to facilitate their policy commitment to transition away from single use plastic bags by 30 June 2018. Metcash Food & Grocery supplies to 1434 IGA branded stores and 250 Friendly Grocer/Eziway stores. Metcash and Taronga developed a bespoke toolkit for to their retailers, including bespoke case studies and stories of retailers that were leading the charge.

### Taronga Unwrapped! event

On 22 November 2018, Taronga held a free networking night for small businesses to help them eliminate plastic from their supply chains. The event brought together sustainability experts and vendors to meet Sydney business owners face-to-face and inspire them to make changes. The event offered tips on how to shift to more sustainable supply chains, find cost savings, explore engagement strategies, and create peer networks that contribute to healthy oceans.

The event was attended by Mosman Councillor's with over 100 guests from a range of local businesses and cafes, councils and corporates. Vendors included Biopak, Sol Cups, Citizen Blue, Cleanaway, Australian Packaging Covenant, Tonic Lane, Responsible cafes, Taronga Zoo, Bye Bye Plastic, Vegware, Plantmade.

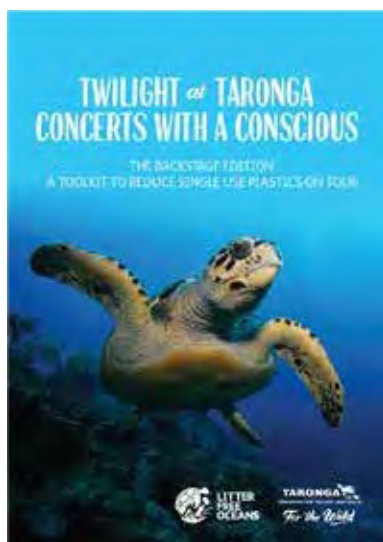




## Music Industry Toolkit

In February 2019, Taronga launched a new Litter Free Oceans toolkit for music artists to be promoted through this year's Twilight at Taronga concert series. The toolkit aims to provide the industry with easy information to reduce single use plastics both at venues and on the road, as well as tips to use their audience to raise awareness.

The campaign was also featured in the AMEX Music Backers Magazine.



## Community Engagement

### Vivid at Taronga

Litter Free Oceans was featured during the 2017 Vivid at Taronga through Ray of Light, a Stingray made from recycled milk bottles to inspire guests to reduce, reuse, and recycle plastics to protect our local environment. This was critical to raising awareness of the campaign, the issue of plastic pollution and associated behaviour change. Increased consumer sentiment was measured through an online survey for Vivid Sydney, run through Destination NSW, in which 53% of survey respondents likely or very likely to start saying no to single-use plastics, following their visit to Vivid Sydney at Taronga Zoo, with 31% indicating they already do. This allowed for a new audience for community education and galvanized Taronga's outreach with the local community.

Vivid at Taronga 2017 saw 102,565 visitors, including approx. 8998 U4s. Increased consumer sentiment was measured through an online survey for Vivid Sydney, run through Destination NSW, in which 53% of

survey respondents likely or very likely to start saying no to single-use plastics, following their visit to Vivid Sydney at Taronga Zoo, with 31% indicating they already do. Social media impact around conservation practices throughout the activation was extremely positive.

### The Inconvenience Store

Taronga received a generous donation of "The Inconvenience Store", an installation by Marina Debris, an Australian based artist whose work focuses on reusing trash to raise awareness of ocean and beach pollution. "The Inconvenience Store" was featured at the 2017 Sculpture's by the Sea and received the Allens People's Choice Award, the Waverley Council mayor's prize and the Sydney Water's environmental sculpture subsidy. Every item in the store is debris collected from non-biodegradable rubbish washed up on Sydney's beaches. The Inconvenience Store has been activated at Taronga Zoo for the past year, using art to inspire guests to change their behaviour.



### In Zoo activations

On-site activations have included school holiday activities facilitated by our Youth at the Zoo program, interpretation throughout our Penguin Exhibit, as well as daily keeper talks and presentations. These have all greatly increased Zoo guest's awareness of the impact of plastic pollution and associated behaviour change.

Guest surveys results measured during this time showed that over 90% of people surveyed agree with the statement: "I plan to make a conscious effort to do things to help conserve the environment"?



## Individual Pledge

Through a barriers and benefits study, guests identified that plastic was so integrated into their daily routines that it was hard to know where to begin when it comes to reducing it.

To inspire change, Taronga developed an impact calculator, to help individuals visualise the incredible difference you can make simply by changing a few habits. This calculator has been used by over 2000 individuals.

Further tips and ideas to reduce the impact of single use plastics is distributed to this community on a regular basis to provide on-going support.

## Next steps

On World Environment Day 2019, Taronga will be launching a new focus on Litter Free Rivers through Taronga Western Plains Zoo in Dubbo. This will be focussed on the protection of rivers and the impact of litter on iconic freshwater species like the platypus.

## The role of Zoos in behaviour change

Zoos are in a unique position to address biodiversity loss and can do so by working to inspire and influence their visitors to change their behaviour in order to help wildlife. By engaging their visitors through emotive encounters with wildlife and by creating a profound learning experience, zoos can foster a connection between people and nature that will lead to action and enable the public to help secure a future for wildlife.

For our 1.9 million guests, we create transformational experiences that empower people to change their attitudes and behaviours and achieve positive outcomes for wildlife.

Taronga's conservation campaigns are aimed at motivating individuals and businesses to choose, champion and change their everyday behaviours to support wildlife conservation and environmental sustainability.

For more information on the campaign, or to download the toolkits please visit [litterfreeoceans.org.au](http://litterfreeoceans.org.au)

# Feel it to believe it



**Anna Jane Linke**  
Seaside Scavenge

In 2014 the McCrindle Report found that 83% of Australians recognised that litter was a problem, but that only 7% had participated in an organised clean-up.

AJ recognised this disconnect in the community work she was doing at the time, and set about trying to figure out how to connect the proliferation of single-use plastics, consumer behaviour and action to reduce the impact it was having on the ocean.

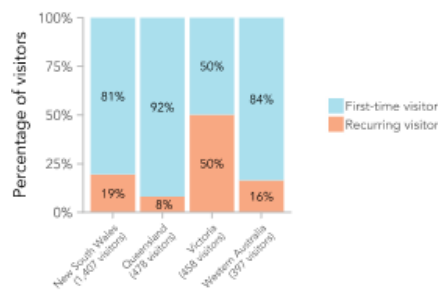
Plastic is a valuable resource but it is clear it is being misused and mismanaged.

In 2014 AJ founded a grassroots not-for-profit organisation called Seaside Scavenge. The aim of the organisation is to educate unengaged communities and businesses about varying waste streams in a fun and unique approach that inspires participation.

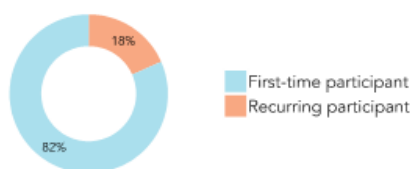
## The Litter Currency Concept

AJ's solution to the lack of awareness amongst Australians to the proliferation of waste around their local waterway was to create a currency from the litter. Seaside Scavenge run waterway clean-up festivals where litter collected from local waterways becomes a currency in a pop-up market to purchase pre-loved clothes and goods that have been donated by the local community.

Some people argue we should not need an incentive to do good, but we've seen the 'reward' becomes an influential factor that connects participants and ultimately changes behaviour. This incentivisation has enabled Seaside Scavenge to engage 82% of participants to the Festival who have never previously attended a clean-up event. See graphs below.



First-time participation



Since 2015 Seaside Scavenge have hosted 50 Festivals that have inspired over 5,296 participants in 34 communities across Australia and the globe to remove 10,223kg of litter and 156,815 cigarette butts as well as redistribute 7,711kg of second-hand goods. Our key audience is young families between the ages of 28-40 with children under the age of 12.

## Textile Waste Education

Seaside Scavenge expands the discussion of waste from single-use plastics to textile waste. A key mission of the organisation is to curb the behaviours that send six tonnes of textile waste to landfill every ten minutes in Australia by providing practical solutions.

This is achieved through encouraging the local community to donate clothes, books, toys, jewellery and more at a designated drop-off location in the community. This extends the audience who contributes to the health of local waterways as well as facilitates a community clothes swap, which demonstrates the ease at which a clothing share economy can be hosted within the community.

## Ingredients for Success

Appealing to people's desires differentiates Seaside Scavenge from other marine debris organisations. The Seaside Scavenge draws public participation not through a concern for environment, but for a want to have fun.

The Festival hosts local musicians and talks from local organisations that are powered by a bike generator. This is a fun and interactive approach to educate participants about power but more importantly creates an inviting atmosphere to engage passers-by.

Whilst in the Scavenge space participants are exposed to meaningful conversations about hot litter items such as cigarette butts, the impact of textile waste and action being taken in the community to address it. By combining elements of the market, colourful signage, art, musicians and action the events are approachable and overall connect participants with the issue of waste in a light-hearted manner.

## Citizen Science

The issue of plastic proliferation is far from light-hearted, however cleaning waterways is futile when 8-13 million tonnes of litter is entering the waterways annually. Seaside Scavenge is unique as each participant is required to sort and separate their litter if they wish to receive their tokens, and as a result contribute to citizen science.

This is where the education happens. With the support of the core volunteer team participants learn to sort and separate their litter into categories corresponding with the 'Australian Marine Debris Database' managed by Tangaroa Blue.

Participants see the quantity of littered items and discuss their impact.

They learn about the importance of cataloging the quantity of each litter item to target it at its source.

This is also an opportunity to educate participants about local waste separation services. All the litter is disposed of in local waste or recycling bins provided by local government. As a result participants gain confidence when recycling overall reducing contamination and boosting rates of recycling.

## Collaboration is Key

The Seaside Scavenge Festival invites a variety of stakeholder to be involved with the event:

- Local government – the Mayor or councilors are invited to open the event, which can lead to positive media opportunities. Council Waste and Sustainability teams are invited to host a stall to reach this new audience and promote new waste programs and gain feedback from current programs
- Businesses – sponsor the event by donating experiential vouchers to give to participants who collect the most litter, most butts etc. They also accept the litter currency in-store in exchange for coffees, hot chocolates and event beer!

Local food outlets are engaged to take the Plastic-Free Pledge which is an opportunity for the business to trial avoiding one single-use plastic item during the week of the event to receive support and promotion from the event

- Local community groups – host talks and stalls about waste reduction and environmental conservation. It is key that active local groups are present on the day to access this newly engaged audience.

## Broader Programs

Seaside Scavenge aims to diversify the audience engaged with waste reduction through expanding the programs we offer. The aim is to create waste-less

programs for business and community that are pro-active, positive and solution-based to change behaviours around consumer culture of single-use plastics and fast-fashion:

- ‘Waste Wise Workshops’ – targeted at small to medium corporates in Sydney. Tailored in-house or off-site team building opportunities that educate employees about the immensity of the ocean pollution problem, the role their behaviour has to play and solutions to reduce our impact.
- Waste Consultancy – supporting local government to help food-outlets to avoid the top five single-use plastic items by creating an awards schemes that promotes business efforts and educates them how to effectively reduce their impact.

Recently established a program with Eurobodalla Shire Council that engaged a third of food-outlets to transition away from the top five single-use plastics by either avoiding, replacing with eco-friendly alternatives and/ or providing incentives for BYO containers

- ‘Spring Into Scavenge’ - is a lighter model of the event that can be rolled out on a larger scale to empower people to host a Scavenge that will connect more communities with waste reduction using a fun and unique approach. It is a platform to support community and individuals with insurance, marketing and a basic starter kit to enable independent Scavenge events to take place around the country and the globe in the month of September annually.

Seaside Scavenge is also aiming to work with government to legislate for minimum % recycled content in plastic packaging to create a market for recycled waste in Australia. As well as with State or Federal government to simplify and standardise recycling systems to reduce contamination.

## Councils Partnerships

We have worked with over 34 local governments across Australia to host the Festival. Seaside Scavenge survives through councils all over Australia paying a set fee for us to organise the whole event.

The events do not have to be coastal, they can be riverside, lakeside, bushside or parkside. They are an opportunity to engage the wider community, so as long as there is a community of people to work with the Scavenge can be there.

In some instances we travel across the country and run a series of events like we did recently in WA. Remoteness is not a hindering factor.

The objective of the Scavenge is to help participants and volunteers from all over the country understand the immensity of the plastic pollution issue and empower them to change their consumer behaviour. So if you're a local council interested in hosting an event, a business that wants to support one or an individual that wants to host one, please get in touch: [ajlinke@seasidescavenge.org](mailto:ajlinke@seasidescavenge.org) | 0408 630 667



# Monitoring Key Litter Items in Coastal Environments in NSW: Return and learn



**Edwina Foulsham**

Office of Environment & Heritage

The NSW Marine Estate Management Authority (MEMA) has undertaken a threat and risk assessment (TARA) to identify threats to the NSW Marine Estate. Both community and expert contributions, identified litter and marine debris as a major threat to the social, economic and environmental values of the marine estate.

Our current knowledge of what, where and how debris is impacting NSW waterways and coasts is less well understood than in areas where litter is more visible. With the NSW Premier's priority to reduce litter volume by 40% by 2020 and the introduction of the 'Return and Earn' container deposit scheme (CDS), research into the litter that is entering our waterways and coastal ocean has been required to help understand the current situation and its change over time.

## The Key Littered Items Study (KLIS)

The Key Littered Items Study (KLIS) is a long-term project involving the scientific monitoring of marine debris in urbanised estuaries and on remote ocean beaches. Undertaken as a series of rigorous litter surveys, the study will complement current litter monitoring in NSW, primarily using data collected under the National Litter Index (NLI).

The KLIS, starting in 2017, is a collaboration between NSW OEH, NSW EPA, Southern Cross University, Tangaroa Blue and Hunter Local Land Services. Most of the data delivered has been through supervised participation of over 230 volunteers (citizen scientists) from state, regional and local governments, scientists, community groups, TIDE indigenous Rangers and students.

The study has collected much needed baseline data and is being used to

inform & assess litter reduction policy in NSW. With the implementation of the NSW Container Deposit Scheme (CDS) on December 1, 2017 and the voluntary single-use plastic bag ban from major retailers in late 2018, the KLIS provides information to assess the impacts of these and other management actions.

## Urban Estuarine Environments

Sites in urban estuaries are mangrove dominated and downstream from well populated urban catchments. The mangrove plants and mechanical action of the water make them natural traps for litter. The dense vegetation, inaccessibility and less than favourable conditions ensure that sites have minimal direct human interaction. As such, they provide a quality estimate of the litter that is accumulating directly from the water and not deposited from other means.

Three estuary sites are within each Local Land Services Division in NSW and cover over 19,600m<sup>2</sup> of intertidal estuary mangroves. A control site exists in both Victoria and Queensland. Quarterly litter surveys have been undertaken since March 2017. Each site contains 4 transects of 20m, in which all litter is collected at low tide across the entire intertidal zone.

## Remote Beach Environments

The remote beach field sites are areas of the NSW coast that are difficult to access either through distance from urbanised areas, or the access to them is limited to off-road vehicles or a lengthy walk. This minimises any human interaction from direct littering or clean-ups. In this instance the litter provides a reflection of the debris found in NSW Coastal Waters, rather than from direct land-based sources.

There are three remote beach sites in each of the North, Mid North and South Coast regions of NSW, covering over 2.8 million m<sup>2</sup> of remote beach. Again, partners within government organisations in Victoria and Queensland conduct surveys in control sites. Annual litter surveys have been undertaken in 2017 and 2018, with another planned in 2019. Each site contains 4 transects of 1km, in which all litter is collected at low tide across the intertidal zone, extending landward to the extent of a dune overtopping event.

## Marine Debris - Litter Analysis

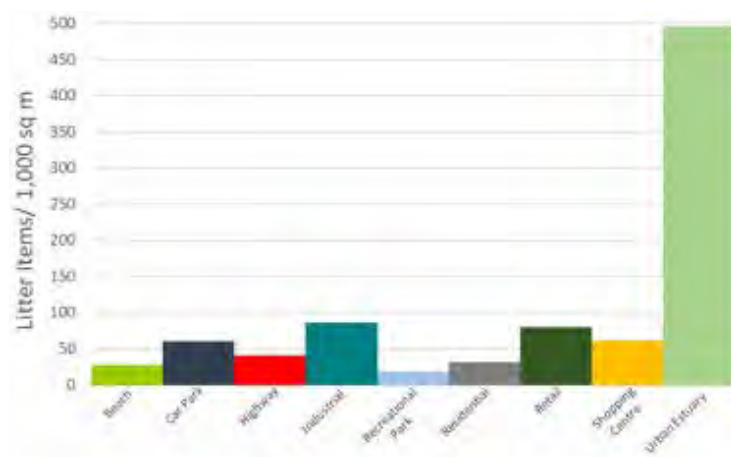
A classification system of over 230 unique litter categories was devised using the Australian Marine Debris Database (Tangaroa Blue), the National Litter Index (NLI) and additional categories specified to distinguish items of interest. The survey design is standardised and designed to be transferable and expandable within NSW or on a national scale.

## Litter in NSW Urbanised Estuaries: Baseline Data: 2017 surveys

Primarily we have found that estuaries are a magnet for marine litter when compared to other environments. They accumulate a significantly higher density of litter items with the number of items found per 1000m<sup>2</sup> almost 10 times the average of environments surveyed in NLI studies. (Refer to Figure 1)

Our analysis of the baseline conditions for litter in NSW estuaries has shown a diverse range of litter types in estuarine environments. It has enabled us to compare this with existing datasets and gain insights into the differences between estuaries and other environments. (Refer to Figure 2)

**Figure 1: Density of litter items/ 1000m<sup>2</sup> in NLI environments in 2017 NSW NLI data and in the KLIS data in urban estuaries over the same period.**



**Figure 2: Proportion of litter items in urban estuary sites in 2017 surveys (by NLI category.)**



## Litter Accumulation in NSW Urbanised Estuaries

It is evident that accumulation of debris in NSW estuaries is extremely variable. This variation is seen in both space and time and in both the amount and types of litter found. Further monitoring is needed to determine meaningful long-term averages of the accumulation and composition of litter. Future investigation of local and regional variables/drivers that can influence litter accumulation hopes to provide greater insight. Some examples of these variables include:

- Catchment size
- Urban land use type within catchment
- Stormwater drainage infrastructure
- Rainfall & rain events
- Mobilisation point of debris items into stormwater and waterway

Some items are noteworthy due to either their relative presence and absence when compared to counts in other environments. When litter items are counted (per unit area) on average we find:

- Snack and confectionary packaging items are two and a half times more likely to be found in estuary sites than in areas surveyed under the NLI in NSW.
- Whole plastic bags are found over 14 times more in our estuarine sites than in NSWs NLI.
- Estuaries surveys have found much less cigarette and cigarette packet litter than in NLI equivalent surveys. Only 1% of items are cigarette butts

and packaging, compared to 41% from the equivalent time period in the NSW NLI surveys

- Fishing related debris is a lot less prevalent than what might be expected (<2% of total items). Previous studies have found in subtidal marine environments estuaries have the highest density of marine debris, 38% of which is fishing related debris. If the risks associated with fishing-related debris are to be adequately addressed, the program needs to be expanded to subtidal environments
- The large proportion of takeaway food and beverage group is due to the prevalence of straws and snack and confectionary packaging found.
- Only 8% of items are CDS eligible beverage containers although they constitute 25% of the volume

**Table 1: Percentage of Litter Items types in Urban Estuarine Sites in NSW: Comparative statistics with NLI data**

NLI Category	Estuaries (2017)	NSW NLI Sites (2017)
whole plastic bags	14% (this also does not include the fragments of plastic bags that are very prevalent due to the mechanical and physical properties of the estuarine environment. does not include fragments of plastic bags which are very prevalent)	1%
Takeaway food and beverage	22% Predominantly straws and snack/ confectionary packaging	15%
Cigarette Butts and Packaging	1%	43%
CDS Eligible containers	25% (Volume)	47%

## Monitoring for the impact of management initiatives and policy

### Return and Learn: Container Deposit Scheme Eligible Containers

In response to the NSW Premier's priority to reduce litter volume in NSW by 40% by 2020, the NSW government introduced a Container Deposit Scheme (CDS) on the 1st of December 2017. The KLIS systematically surveyed both before and after the introduction of this scheme.

At this time, more monitoring is needed to measure the impacts of the CDS in urban estuaries. The natural variability of conditions in estuaries over the short term can provide too much noise to establish underlying trends. A longer term study will provide more data and investigation into the drivers for litter accumulation that might account for some of the variation would prove valuable.

### Single Use plastic Bags

Estuarine mangroves are magnets for plastic bags. Mangrove plant morphology and the mechanical action of the water leads to high accumulation and faster breakdown. The KLIS found single-use plastic bags account for 14% of the litter items found in estuaries, up to 36% in one site. Soft plastic fragments are also very commonly found.

A voluntary single use bag ban was implemented by Woolworths, in July 2018, and by Coles, after September 2018. The KLIS enables us to look at the impact it has had on the representation of an item (grey single

# Monitoring Key Litter Items in Coastal Environments in NSW: Return and learn

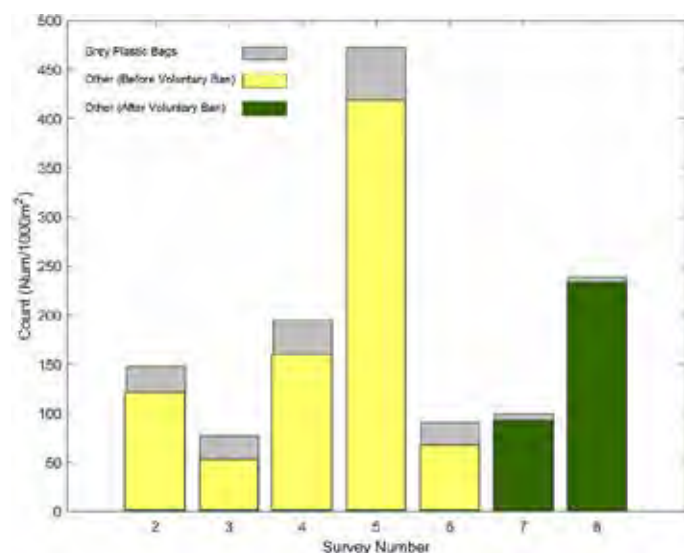
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use plastic bags) in the litter stream. Figure 3 demonstrates the reduction in the proportion of grey plastic bags that have been found since the implementation of the voluntary ban. This is a key example of how the KLIS could be used to assess the impacts of future policy and management actions aimed at litter and marine debris. (Refer to Figure 3).

Figure 3: Whole plastic bags in Urban Estuarine Sites (Grey indicating the proportion of whole grey bags)

## Key Littered items on NSW Remote Beaches

The KLIS has revealed that marine debris loads increase with increasing latitude up the NSW coast. Using a 'species' list of sorts, colleagues from Southern Cross University were able to determine the original source of the plastic bottles collected. A significant proportion of the items that could be identified have international origins, generally increasing with latitude. These findings highlight the variety of issues and impacts that marine debris has on the different environments in NSW's waterways and coasts.

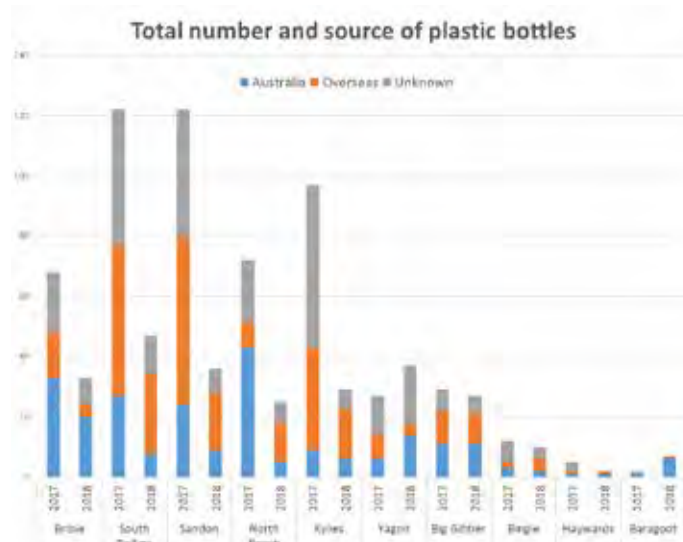


**Figure 3: Whole plastic bags in Urban Estuarine Sites (Grey indicating the proportion of whole grey bags)**

## KLIS Impacts Return and Learn: What the future holds

Continued monitoring of marine debris in urbanised estuaries and on remote beaches will:

- Help identify marine debris items that have significant presence or impacts at local to state-wide scales.
- Enable the assessment of current policy and management initiatives to deal with marine debris, and direct future actions to be taken.
- Can provide insights to inform public awareness campaigns and targeted education.
- Potentially enable the expansion of the KLIS to include co-incident microplastic surveys and subtidal surveys in these environments.







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**2019 SUSTAINABLE  
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*Thank you to our awards supporters*



# Butt Free Byron Shire



**Kate Akkerman**  
Byron Shire Council

In 2018, Byron Shire Council (BSC) was successful in securing a NSW EPA Round 4 litter grant. With this crucial funding, BSC implemented a multifaceted litter campaign to reduce cigarette butt litter in the Byron Shire with emphasis on the protection of the Cape Byron Marine Park, and the detrimental effects micro litter has on marine life.

## What was the problem?

The Byron Shire consists of approximately 32,000 residents, has over 2.1 million visitors per annum, and is an internationally well-known host for a large number of music and community events. In combination, this results in seasonal increases in volumes of ground litter.

BSC established baseline data by conducting weekly Local Litter Checks between April and July 2017 in 'hotspot' Apex Park and 'clean spot' Denning Park, Byron Bay. Apex Park overlooks Byron Bay Main Beach and is a popular tourist destination. As a result, BSC recorded 545 smoking related items in Apex Park compared to just 69

recorded in DP. This equates to 51% of the over all litter in Apex Park and 61% of the over all litter in Denning Park.

Subsequently, BSC further investigated smoking related litter hotspots in the Byron Shire by conducting weekly Local Litter Checks in Byron Bay town centre, Suffolk Park, Mullumbimby, Brunswick Heads, Coolamon Scenic Drive, Bangalow and Federal for a period of 4 weeks. In total, 2912 smoking related items were recorded, equating to 82% of the litter composition (Other 27%, Beverage 6%, Takeaway 3%).

In addition, local non-for-profit group Positive Change for Marine Life has run fortnightly beach cleans on Main Beach Byron Bay since 2012, collecting over 400,000 items of litter largely consisting of cigarette butts.

This research indicated intervention was needed to reduce smoking related litter.

## What did we do?

The NSW EPA's four pillars for litter prevention, education and awareness, infrastructure, enforcement and

monitoring, are well understood as facilitating best practice in preventing littering behaviour. As such, we followed this approach.

### Education

As well as promoting NSW EPA 'Don't Be a Tosser!' messaging, BSC partnered with local community groups to promote educational messages on the effect of micro litter on the Cape Byron Marine Park collectively titled 'Butt Free Byron Shire'. Butt Free Byron Shire is dedicated to protecting the Byron Shire from cigarette butt pollution. They include:

- Australian Lifeguard Service North Coast
- Cape Byron Marine Park
- National Parks and Wildlife Service North Coast Branch
- North East Waste
- Positive Change For Marine Life
- Reflections Holiday Parks.

Throughout the project, Butt Free Byron Shire ran ongoing educational programs including beach clean ups, educational stalls, screening of the film BLUE as well as partnering with Seaside



Scavenge to run a large clean up event resulting in the removal of 403 kg of rubbish. We also gave promotional materials to tourism driven businesses such as hostels, surf schools, cafes and dive centres to target our large number of visitors.

Don't Be A Tosser! messaging was promoted at all educational events, as it is known to resonate with people and allows a consistent message to be heard across NSW. Don't Be a Tosser! street banners remain displayed into all major townships in the Byron Shire and we had ongoing social media blitzes throughout the year.

### Infrastructure

BSC upgraded and expanded its existing butt bin network, replacing 27 butt bins in limited locations with 128 Enviropole Shire wide. The Enviropole has a higher overall capacity, extinguishes the butt using a liquid medium, collects valuable data and allows the cigarette butts to be recycled with their partnership with Teracycle. The butt bins can also be brightly branded and come with directional arrows and ground adhesives that can be used to send environmental messages.

### Enforcement

In March 2018, BSC amended its 'Smoke Free Outdoors Policy' to include beaches. The primary reason BSC voted for the ban was to reduce cigarette butt litter and to prevent the environmental damage caused by butts and improve the amenity of beaches.



The smoking ban on beaches in Byron Shire, and installation of associated signage, has created a 'smoke-free' beach environment to improve the health and safety of the environment and the community at large.

BSC aimed to change behaviours and the perception that you will not be caught or fined for littering by conducting advertised enforcement blitzes throughout the project period. During our 6 enforcement blitzes, Rangers targeting littering and the enforcement of the smoking ban. During this time the Rangers engaged with over 120 individuals and had a positive response, issuing no fines.

### Monitoring

BSC partnered with local community group Positive Change For Marine Life to conduct monthly Local Litter Checks in 26 locations Shire wide, recording information on the volume, location and types of litter. This allowed us to gain a robust data set on the microliter in the Byron Shire and monitor our program to make sure targets were being met. User surveys were conducted before and after the project as well as quarterly reporting.

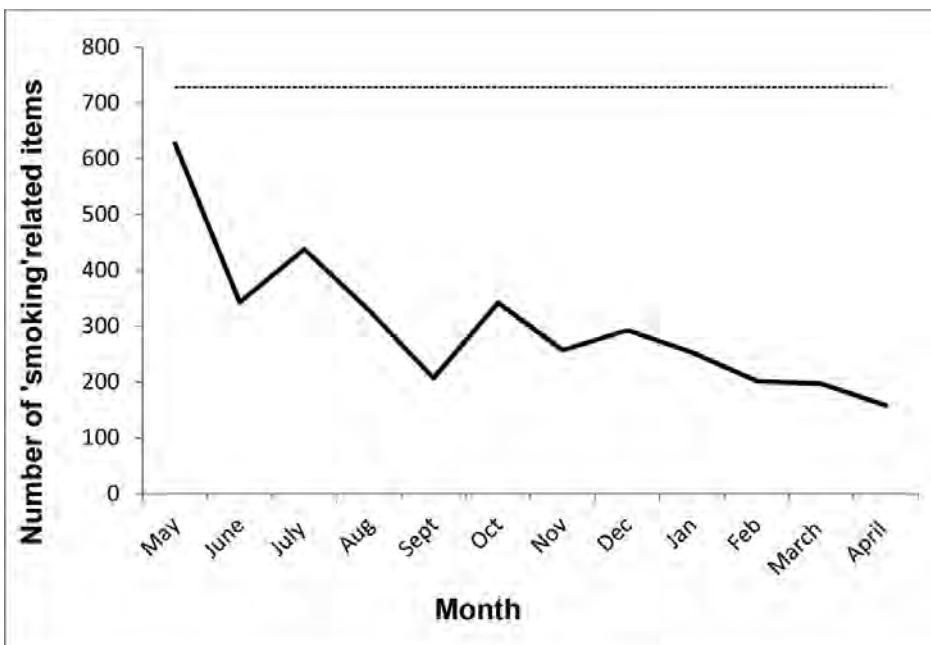
littered items Shire wide.

- 69.9% reduction in the number of all littered items- The baseline data averaged 892.5 littered items Shire wide. Our follow up data averaged 268 littered items Shire wide.
- 25.1% reduction in cigarette butt litter- The percentage of smoking related items ( compared to Beverage, Takeaway and Other items in the Local Litter Check) reduced from 83.5% to 62.25%
- 31.7% reduction in litter volume - The baseline data averaged 2.58L Shire wide. Our follow up data averaged 1.76L Shire wide.
- Average user survey score of 62/100 raised to 82/100 post project.

We thank our wonderful community groups for their support and cooperation throughout the project and the NSW EPA for funding the project.

### What did we achieve?

- 78% decrease in the number of smoking related items –The baseline data averaged 728 smoking items Shire wide. Our follow up data averaged 268





# Yeddum Munni Nadyun - Ngunnawal for Good Running Water (good quality, clean and litter free)



**Vanessa Palmer**, Queanbeyan-Palerang  
Regional City Council

Funded through the Round 4 Litter Grant, Queanbeyan-Palerang Regional Council worked with the NSW EPA to focus on the effects of littering near the Queanbeyan River. Our project, which began March 2018, was titled Yeddum Munni Nadyun, Ngunnawal for 'good running water,' meaning good quality, clean and litter free.

Because of its proximity to multiple take-away shops and the amount of users of the park, Morisset Street Park was chosen as the location to focus our efforts. Additionally, we wanted to include members from the Indigenous community, and this park is one of their gathering areas. Our research found that the previous bins in this focus area were not correctly positioned, were in a state of disrepair and were dirty.

Council began an upgrade project, just prior to this grant, to formalize the gathering location of the Ngunnawal Indigenous group. Old chairs, tables and other items were frequently brought in to make it a comfortable place because there was no designated seating previously. This led to illegal dumping and general littering, as others would often dump waste there due to it often looked untidy.

Council took the opportunity to meet with stakeholders and have an on-the-ground approach to designing the area, while using a range of methods to engage with the Indigenous group including consultations, community cleanups and ongoing conversations.

The main area for the project is currently maintained by parks and recreation staff by mowing the large area of grass alongside the river and litter picking once a week in a small area. The rubbish that ends up in the river and on the river's edge is usually only collected when there has been a complaint from the community. The grass area is often mown before a litter pick which then spreads litter further. This problem is being addressed internally via a Council sustainability policy and staff education.

The path leading to the park is used heavily by walkers, commuters and many who have frequented the local take-away shops. After baseline litter checks, we found the litter issues included recreational items like inner tubes and sports balls, clothing, fishing equipment and bottle caps.

The two most common items found were take-away containers/cups and cigarette butts. The area frequented by the Indigenous group was highly littered with cigarette butts and bottle tops. While the surrounding area was littered with take-away containers. The rubbish that finds its way along the Queanbeyan River causes environmental issues and creates an eyesore in an area of natural beauty.

After the initial litter counts and clean-ups, Council determined the number of new bins needed and their locations. We worked with the Indigenous group to design culturally appropriate "Don't be a Tosser" messaging which

was placed on the new rubbish bins and personalized butt bins. This also coincided with the installation of a covered seating barbeque area, a fire pit gathering area and several pieces of artwork.

In addition to gaining information about needs from the group, this was a great opportunity for education so they could take "ownership" of the newly designed meeting space and bins in order for the new infrastructure to work more effectively within the community.

The focus of the project has been on building a connection with the Indigenous group to help them take responsibility within the community and for them to gain a better understanding about litter issues affecting the area and the river.

Building connections and trust within this community has taken a fair bit of time due to their mistrust of Council in general. However, over time, we were able to establish relationships with some of the regular group leaders and the local elder, who assisted in the interactions.

In the end, there was no shortage of bins near the fire pit and barbeque gathering areas. Overall, Council has installed five bins near the gathering place, and five bins along the walking path from the take-away shop. You might be saying to yourself right now – "Isn't this overkill?" Possibly, but we have definitely seen a reduction in the



amount and volume of overall litter in our targeted areas. We installed the bins in stages and noticed that the litter still being discarded was within sight distance of a bin, but seemingly it was still too far to carry.

One of our main goals for this project was to have a major reduction in littered cigarette butts and bottle tops near the Indigenous gathering area. Our initial litter count of cigarette butts and bottle tops was interesting, as we had just recently installed a couple of the new bins. In total, we found 756 butts and 101 bottle tops. This was a total volume of 0.1044 litres. Needless to say, we had a hard think about what to do to combat this issue.

The answer to this was to create a repurposed beautiful, and transportable, bottle tops and butts caddy. This allowed for users of the space to stay under the covered barbeque area or near the fire pit without having to get up every time they finished a cigarette. At the end of the day, or whenever necessary, they empty the caddy into one of the rubbish bins.

While we were there, we also had a conversation with a few gathered people about the importance of litter disposal and its effect on the land. We have visited several times since the inception of the fancy caddy and found that it is actually being used quite well.

Our follow-up litter check showed a marked difference. The amount of collected bottle tops went down to just four, and cigarette butts dropped to 114 for a total volume amount of 0.0249 litres. This counts for 76% reduction in volume!!

As part of the grant, we also worked with several of the local take-away shops to spread the 'Don't be a Tosser'

message and educate the consumer on responsible disposal of takeaway containers. This also included an enforcement blitz with our rangers. One particular take-away shop was even happy to put our message in their food bags given at the drive thru window. It should be noted, though, that it is quite difficult to get our rangers to fine people for littering. So we are mainly relying on the education and infrastructure aspects of our program.

To have a continuity in our targeted area "Don't be a Tosser" footpath signs have been placed along pathways to and from the nearby takeaway food outlets. Additionally, "Don't be a Tosser" stickers were placed on all existing bins in the targeted area near the take-away shops and along the river.

Overall, this project has enabled to build better relationships with the local indigenous group who gather daily in the area. We've noticed that they have taken the initiative to clean up their space each afternoon, and especially at the end of the week because they know others use the park for a park run on the weekend. Working with the take-away shops has been a positive experience, as they've been happy to work with Council in the "Don't be a Tosser" initiative. This project has taught us that these sorts of things take time, and often more time than originally planned, to bring about positive behavioural changes within different communities of people.





# Randwick Solar Smart Bins Trial - It starts with our community

**Anil Gupta**  
Randwick City Council

## Background

The La Perouse Loop is a busy area where cars are parked all along the side of Anzac Parade, overlooking Frenchman's Bay. This area, located in a historic and pristine part of the Council, attracts many residents and tourists all year round.

## Issues

As such, for the bins placed in the La Perouse Loop, collection is often a challenge, due to the difficulty of truck access during crowded periods, especially in summer and over long weekends. Sometimes the litter collection truck is waiting for almost an hour to get access to the litter bins which leads to overflowing litter bins. The birds, rats and possums attack the open litter bins and litter on the ground leading to more litter and a mess. This area is always windy and litter is easily carried away to the pristine ocean thereby polluting the marine environment.

To mitigate this issue of overflowing bins the litter bin service team empties these litter bins 3 times a day and 7 days a week.

## Objectives

The main objectives of the Smart solar compacting bins trial are:

- To prevent overflowing bins and increase bin capacity so that the servicing of bins during summer is not impacted due to large crowds.
- To reduce litter in the surrounding pristine environment and reducing environmental harm to the marine life in Botany Bay.
- Improve the operational efficiency of the servicing the litter bins.

## Project Implementation

Council undertook a detailed procurement process to identify and purchase the appropriate smart solar compacting bins. Detailed consultation was held with the operational team to get their input and support for this trial. The issue of servicing the solar bins was raised by the operational staff due to any change that may affect the WHS of the concerned staff. Hence the Council chose Clean Cube solar-powered waste compaction bins produced by Smart City Solutions. Their solar bin uses a regular 240 L internal bin that the Council has been using all these years in the other litter bins.

Three solar smart bins were installed at La Perouse Loop in January 2019 as a trial. This technology has built-in safety sensors which detect motion and offers real time monitoring of bin capacity. Data is collected using the live monitoring website provided by CleanCityNetworks. Information such as collection dates and time, as well as fill level status are shown. Furthermore, statistics of waste generation, waste overflow and collection performance are provided. Bin fill level alert settings can be set up as required so that it is easy to monitor and service.

## Results and outcomes

Council organised a litter audit which was undertaken by Knowwaste who is a well know litter consultant. Knowwaste undertook a detailed assessment of the litter on the ground as per EPA litter audit guidelines.

Discussions were held with the Council operational staff and the local community for their assessment about litter issues after installation of the solar bins. Factors such as wind, rain, birds and overflowing bins were taken into consideration.

Some of the comments received from the operational staff are as follows.

- *'You can plan optimal route for servicing. If you know you are going to be in the area and the bin is 80% full you can make the call to service the bin'*
- *'We get notified when the bin door has been opened'*
- *'Solar bin feels about 4x heavier so more material is definitely being captured'*
- *'The solar bins are very easy to service'*
- *Some of the comments received from the community are as follows.*
- *'The water edge is National Park, so important to keep clean'*
- *'I have noticed less litter around these solar bins'*
- *'The bins function really well, I didn't even know they were solar compacting bins'*

Knowwaste provided the results of their litter audit and these are as follows.

- 73% reduction in Litter count
- 98% reduction in Litter volume
- No smart solar bins overflowing

These results are very encouraging and demonstrate a significant reduction in litter. This in turn reduces the need to pick up litter in the area as well as reduce the environmental harm to the pristine marine life. Hence the objective to reduce litter & overflowing bins was achieved.

The litter bin servicing team found the bins easy and simple to service. The collection results of the solar smart bin trial show that the 3 times/ day collection has now reduced to an average of 2 times/ week collection. That is bin servicing has reduced from 21 collections to 2 collections per week.



This is over 90% reduction in bin servicing leading to significant savings on fuel, human resources, truck movements and greenhouse gases. The bin servicing team can focus on other areas that need attention without compromising the service requirement of La Perouse litter bins. The estimated return on investment is less than 3 years for the solar smart bins.

## Challenges

Like every new technology and infrastructure project, there were several challenges that needed mitigation strategies and solutions. Some of these are as follows.

Solar Bin cleaning requires a special process and a new schedule for cleaning. This has taken the team a few weeks to understand and get used to the new process.

One of the key requirements for Council is the ability of the IT network system of the solar bin to communicate with the existing Council IT system. This is required to generate a work order for servicing the bin when it is full. Currently an email and sms alert is sent to designated officers who are then required to inform the litter bin servicing team to attend to the alert.

The communication system of the bins requires to stabilise in the new location and this required resetting and a change of card for one of the bins.

The solar bin has separate keys and hence several extra keys were required for the team. Several keys have been lost by the team and this is a continuous process.

Identifying the appropriate location for the solar compacting bins is important. This is to ensure maximum benefit for litter reduction and operational efficiency. The overall value of the bin has to be financially and environmentally sustainable.

## Conclusion

The success of this trial has prompted the Council to order and install 9 more solar smart bins for other locations in the Council for further evaluation.



# STRENGTH IN NUMBERS

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[www.kabnsw.org.au](http://www.kabnsw.org.au)



# Reducing Litter at Roadside Rest Areas - A proven approach



**Jem Hansen**  
360green

## Background

Waste management infrastructure at roadside rest areas includes a variety of bin types including some very outdated and poor quality bins. Some sites have insufficient or poorly placed bins, and generally there is little signage to encourage proper bin use. At the same time, many sites have significant litter problems resulting in complaints and significant maintenance staff time. Illegal dumping is also prevalent at some sites. In order to develop and test a solution, a pilot project was undertaken at six highway rest areas by MIDWASTE Regional Waste Forum with the support of RMS Mid North Coast, as part of the NSW EPA funded Litter Regional Implementation Plan.

## Project Summary

Key steps in the project were:

1. Research and consultation about bin types, common problems and options for improvement
2. Site assessments and litter monitoring
3. Development of an infrastructure improvement plan

4. Implementation of infrastructure improvements including:
  - o Replacement of old bins with new 240L red-lidded wheelie bins consistent with NSW best practice standards
  - o Placement of additional bins in high-use and fringe areas
  - o Installation of warning signage at site entries saying 'littering is illegal, area under surveillance'
  - o Installation of instruction and validation signage on bins to (1) direct people to proper use, and (2) thank people for proper use
  - o Installation of reminder and deterrent signage encouraging reporting of litter from vehicles
5. Litter monitoring and stakeholder consultation for evaluation

## Outcomes

This approach of providing appropriate user-friendly infrastructure combined with a mix of messaging spanning education, acknowledgment, warning and enforcement resulted in a 56% reduction in the average number of litter items at rest area monitoring sites.

A short time before the pilot program the frequency of rest area servicing was increased. As a result of increased servicing and the infrastructure improvement plan customer complaints relating to litter have reduced by approximately 80%, and the contracted maintenance company says litter management is "100% better".

The pilot project was extremely successful and provides a proven approach to reduce litter at roadside rest areas. Implementation of this approach across NSW would provide consistency of messaging, increasing its effectiveness. It is expected that the costs of implementing this project in each location would be recuperated through savings in the following areas, while providing a more positive user experience:

- Litter clean-up time
- Complaints management and response
- Bin repair and replacement
- Illegal dumping clean-up time
- Illegal dumping transport and disposal
- Other maintenance





## Key Learnings

- Rest Areas offer a significant opportunity to engage with motorists to reduce litter at these sites and also contribute to reducing litter from vehicles on highways and other roadsides.
- Rest Areas vary significantly in their design, infrastructure and maintenance/servicing regimes, meaning that each site needs to be assessed individually to determine appropriate measures to reduce litter.
- Key opportunities will likely include extra bins beside truck parking bays on fringe of site and/or in the most highly trafficked locations, replacement of old bins with bins consistent with council bin standards, bin signage to encourage and acknowledge proper bin use, and warning signs at site entry and exit.
- If planning similar projects considerations should include reviewing plans for major developments and integrating improved litter prevention into planned projects, engaging with staff/contractors servicing the sites, consideration of changes to servicing frequency and variable frequency to respond to peak periods, recognition of the limitations of RMS staff capacity to undertake the additional works required for infrastructure installations and the block-out periods for any non-urgent works, and acknowledging that these sites are isolated and unsupervised and therefore vulnerable to vandalism and illegal dumping.

# THANK YOU!

## For using the bin



**No hot ashes or liquids please.**  
*This bin is for the travelling public - dumping household or commercial waste in this bin is illegal and fines apply.*  
**Maximum Penalty exceeds \$1000, pursuant to Section 632 of the Local Government Act 1993.**

**MIDWASTE**  
Regional Waste Forum



**NSW**  
GOVERNMENT





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