



Standing Committee on Climate Change, Energy, Environment and Water
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Submission to House of Representatives Standing Committee Inquiry into the impacts of plastic pollution in Australia's oceans and waterways

Thank you for the opportunity to provide our views to the inquiry.

The [Boomerang Alliance](#) is the 'peak' community organisation representing 55 allied groups concerned with eliminating waste and plastic pollution. We engage with government, business, and the community to advocate for best practice policies and practices to eliminate and reduce the impacts of waste and plastic pollution on the environment.

The organisation has been instrumental in establishing container deposit schemes, plastic bag, and other single use plastic bans. We run the successful [Plastic Free Places](#) program across Australia.

The [Total Environment Centre](#) was established in 1972 and has a long history in the waste and recycling fields, including campaigning for product stewardship on a variety of products, reviewing and developing waste management plans and regulatory tools and opposing waste to energy.

TEC has also been active in the plastic pollution area including establishing the national microplastic assessment program, [AUSMAP](#) which also focuses on tracking sources and reduction strategies. Drawing on a national network of 1,170 trained and accredited ambassadors, in conjunction with local communities, schools and various stakeholder groups, AUSMAP has collected more than 500 samples over four years.

Introduction

*'The most effective way to reduce and mitigate the harmful effects of marine debris is to prevent it from entering the marine environment: cleaning up our oceans is a much less practical solution.'*¹

In this submission we provide perspectives on the Terms of Reference, informed by many years of research, policy development and community, business and government engagement..

While the community has high aspirations for plastic pollution reduction, and desires that recycling substantially grow – this is not being matched by business at the mainstream level. Further the ongoing adverse publicity about recycling (ie, REDcycle collapse, kerbside recycling going to landfill, failure to reach packaging targets, greenwash) threatens to create serious community disenchantment. The industry social licence to operate and confidence in government is being harmed.

Our firm view is that while the current efforts to ban single use plastic items are most welcome, the next phase should be to magnify the contribution of reusables as verified by objective standards for reusability, in order to avoid pervasive greenwash and ongoing waste and pollution.

Additionally, the packaging sector with its voluntary or co-regulatory approaches has failed and will not reach the required 2025 recycling targets. Regulatory intervention is essential across the board, now.

In regard to microplastics there is a need to recognise their importance in polluting the environment over the short to long term, tracking their sources and eliminating their contribution.

A range of other plastic pollution sources from the marine, agriculture, logistics and construction sectors also need to be addressed.

Our Key Recommendations

- 1. Develop and publish a long-term strategy to address all problematic plastics across all sectors in Australia, incorporating policies of an improved Commonwealth National Plastics Plan and other relevant policies at national and state levels in a coordinated and coherent framework.**
- 2. Develop effective regulatory tools in the National Plastics Plan so that the 2025 targets are delivered, and key policies are prioritised (e.g., Product Redesign and Stewardship, Packaging Reuse Standards, Recycled Content).**

¹ CSIRO Marine Debris Report (2014)

- 3. In order to deliver a circular economy - support, fund and coordinate national investment in infrastructure, market development and best management practices that eliminate pollution and unnecessary plastics, reduce use, encourage reusable alternatives, and promote recovery and recycling of discarded plastics. Government procurement to create secondary markets is an essential driver. Exclude waste to energy which is not consistent with the circular economy.**
- 4. Sign a high ambition international treaty on marine plastic pollution and provide funding support for research, litter clean ups and infrastructure in Australia and the Pacific/SE Asian region.**
- 5. Continue the monitoring and reporting of macro and micro plastics, linked directly to reduction strategies.**

Response to Matters Outlined in the Terms of Reference

The House of Representatives Standing Committee on Climate Change, Energy, Environment and Water has been tasked to enquire into and report on the impact of plastic pollution, including microplastics, with regard to:

- the environmental impacts of plastic pollution particularly in oceans and waterways
- the effectiveness of Australia's plastics management framework under the National Plastics Plan (NPP) and related policies to reduce plastic pollution particularly in oceans and waterways
- the effectiveness of the Australian Government's engagement with states, territories, industry, and non-government organisations to reduce plastic pollution particularly in oceans and waterways
- the effectiveness of community campaigns to reduce plastic pollution particularly in oceans and waterways and encourage the use of alternative materials
- global initiatives underway to reduce plastic pollution particularly in oceans and waterways, and
- any other relevant matter.

Environmental impacts of plastic pollution particularly in oceans and waterways

Current estimates indicate that about 11 million metric tons of plastic waste enter the ocean every year.² The plastic found along our shores and in our waterways very largely comes from our activities.

The production of plastic has grown exponentially in the last two decades, with as much plastic being produced between 2003 and 2016 as in all the preceding years combined.³ As a result global plastic production is projected to double by 2040 at current rates, with plastic pollution in the ocean expected to triple by 2040 if further action isn't taken.⁴

A recent report by the Minderoo Foundation found that Australia generates more single-use plastic waste per person than any other country except Singapore, with an estimated 59kg of plastic waste per person annually - compared with a global average of 15kg per person.⁵ Annually, Australia produces 2.5 million tonnes of plastic waste with more than 50% of this entering the environment as both macro and micro litter. According to the National Waste Report (2022) only 13% is recycled.

² The Pew Charitable Trusts and SYSTEMIQ. (2019). Breaking the Plastic Wave.

³ WWF Germany. (2022). Impacts of plastic pollution in the oceans on marine species, biodiversity and ecosystems.

⁴ The Pew Charitable Trusts and SYSTEMIQ. (2019). Breaking the Plastic Wave.

⁵ Charles, D., Kimman, Li., & Saran, N. (2021). Plastic Waste Makers Index: Revealing the source of the single-use plastics crisis. Minderoo Foundation.

No doubt other expert submissions will enlarge on the well established entanglement, ingestion and contamination impacts from macro plastic pollution. However, an emerging and serious concern is microplastics.

Microplastics are the latest reminder that humanity has produced over 7 billion tonnes of plastic that breaks up - never down - into smaller and smaller pieces until it is airborne and ingested at all levels of the trophic web. Definitions of the dimensions of a 'microplastic' are varied, but they are generally regarded as being less than 5 mm in diameter, and as 'primary' or 'secondary' in nature. Primary microplastics are manufactured to be under 5 millimetres in size, such as nurdles or microbeads.

In contrast, secondary microplastics are formed, as larger pieces of plastic break up over time either by being worn down or shredded, such as tyre dust, hard fragments, foam or recycled plastics. Both manifestations have become pervasive in Australia's waterways, and yet, our understanding of the issue remains in its infancy as standardised monitoring programs have failed to keep up with the proliferation of literature and laboratory studies. This is in spite of 'smaller plastic fragments' being reported in the ocean as early as the 1970s.⁶

Microplastics have been found in all states and territories (see Appendix A).

AUSMAP rates sites based on identified microplastic loads (microplastics per m²), which are then translated into colour-coded points on a map that represent specific load ranges. The AUSMAP microplastic load colour key and 'Watch and Act' Guidelines' are as follows:

AUSMAP Rating and Action Scale of Microplastic Loads per metre squared (MP/m²)

Microplastic levels (MP/m ²)	Grading	Hotspot
0-10	Very Low	N
11-50	Low	N
51-250	Moderate	N (Watch and Act)
251-1000	High	Y
1001- 10,000	Very High	Y
>10 000	Extreme	Y

⁶ Carpenter, E.J. and Smith Jr, K.L., 1972. Plastics on the Sargasso Sea surface. Science, 175(4027), pp.1240-1241.

The number of items per metre squared can be applied to determine if the site is considered a pollution hotspot. Levels above 250 microplastics per m² are considered a 'microplastic hotspot', although moderate levels (51-250 microplastics per m²) also warrant further investigation on a 'Watch and Act' premise. That is, continue to monitor the sites and if levels increase, hotspot grading may be prematurely applied within areas of significance based on the precautionary principle.

AUSMAP has placed a "[hotspot](#)" map in the public domain. Key results for each state and territory from over four years of sampling and their discussion are found in Appendix A.

Rubber Crumb: An Emerging Pollutant of National Concern

It is important to note that in addition to being a physical pollutant, many microplastics pose a toxic threat. One such example that has been the topic of investigation by AUSMAP in partnership with the Tangaroa Blue Foundation is the use of rubber crumb infill on synthetic turf playing fields and soft-fall playgrounds. As part of Australia's tyre recycling program, these crumb particles are now pervasive at leisure sites around the country, despite evidence reflecting that they are toxic to both humans and the environment.

Since the early 2000's rubber crumb has been identified as a high risk substance with more recent studies highlighting that it contains heavy metals, polycyclic aromatic hydrocarbons (PAHs), many of which are bioavailable.⁷ Children playing on soft fall playgrounds are exposed to these products which are toxic to different extents when inhaled, absorbed or ingested. The associated risks intensify when rubber crumb surfaces are exposed to light, heat and rain which reduces their chemical stability and can increase the release of toxins.⁸ In 2021, the United States EPA similarly observed that many of these chemicals are bio accessible, including zinc which exceeded acceptable New York State Department levels in soil. The combination of these factors should be sufficient to warrant further investigation at the minimum, as studies are currently sparse within the Australian context.

Whilst the environmental impacts of these particles are still being realised, there is evidence they are capable of impacting local ecosystems and waterways. A 2021 study in the US Pacific Northwest for example, showed that chemicals in tyre rubber particles in stormwater induced regular acute mortality events in Coho Salmon.⁹ Whilst studies are yet to fully gauge the impacts in an Australian context, it is worth noting that this year the University of Queensland¹⁰ chronicled the presence of tyre particles that leach into waterways via stormwater. They concluded that aquatic toxicity increased after rainfall events when tyre particles were most abundant. Both investigations illustrate that the toxicity of crumb

⁷ Marsili, L., Coppola, D., Bianchi, N., Maltese, S., Bianchi, M. and Fossi, M.C., 2015. Release of polycyclic aromatic hydrocarbons and heavy metals from rubber crumb in synthetic turf fields: preliminary hazard assessment for athletes. *J. Environ. Anal. Toxicol*, 5(2), p.265.

⁸ https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/4728952

⁹ Tian, Z., Zhao, H., Peter, K.T., Gonzalez, M., Wetzel, J., Wu, C., Hu, X., Prat, J., Mudrock, E., Hettinger, R. and Cortina, A.E., 2021. A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon. *Science*, 371(6525), pp.185-189.

¹⁰ Rauert, C., Charlton, N., Okoffo, E.D., Stanton, R.S., Agua, A.R., Pirrung, M.C. and Thomas, K.V., 2022. Concentrations of Tire Additive Chemicals and Tire Road Wear Particles in an Australian Urban Tributary. *Environmental Science & Technology*, 56(4), pp.2421-2431.

continues once particles enter the environment as both a micro plastic and as chemical leachate.

AUSMAP's 2021 study with the Tangaroa Blue Foundation¹¹ complements these findings by quantifying the loss of rubber crumb from soft-fall playgrounds in the Great Barrier Reef Catchment Area. Sampling was undertaken between April and May of 2021 at six locations that were in close proximity to shorelines and/or waterways. Measurements were taken at three distances of 0, 2 and 4 metres from the playground using replicated cores that removed the top 2cm of substrate. Our findings highlighted that crumb loss was occurring at all sites, with a decreasing trend away from each play area. Mean loss for all GBR sites was 12,890, 3,081 and 1,404 microplastics per m² at 0m, 2m and 4m, respectively. This implies that for a play area with 40m circumference, over 1.2 million rubber crumb pieces are being lost on average out to 4m, and for some individual sites of similar size, this could be well over 2.5 million pieces. Factors influencing this loss included the age of the surface, UV exposure, foot traffic and the nearby surface type.

These confronting results indicate that rubber crumb should be regarded as a microplastic worthy of further investigation and regulation. Given that it acts as both a physical and chemical pollutant, the urgency of this matter cannot be overstated. Particles of rubber crumb are already appearing in samples on Australia's beaches, with many having no soft-fall playground or synthetic field present in the immediate surroundings. In NSW, for example, a recent sample from Belmore Basin with a total of 100 microplastics was composed of 94% rubber crumb likely from a neighbouring playground in Brighton Lawn Reserve. This microcosmic example foreshadows the current, and future implications of rubber crumb microplastics and their ability to travel from land-based sources into waterways. With this in mind, AUSMAP and Tangaroa Blue conducted follow sampling of rubber crumb loss from soft-fall playgrounds in the Great Barrier Reef Catchment with the initial findings illustrating immense loss on a decreasing gradient from playgrounds. These findings are expected to be published in early 2023.

Effectiveness of Australia's management framework under the National Plastics Plan and related policies to reduce plastic pollution particularly in oceans and waterways

In our view, an improved and more effectively coordinated management framework needs to be put in place. A framework that broadly:

- (A) References the impacts of marine debris and plastic pollution catalogued in the latest reports
- (B) Utilises mandated government initiatives such as the National Plastics Plan, product stewardship and the Threat Abatement Plan on Marine Debris by directing these to prioritise the measures that will avoid plastics entering the environment in the first place, and

¹¹ Reef Clean, 2021, *Rubber Crumb Loss from GBR Play Areas* p1-17

(C) Annually reports to the Parliament on progress and outcomes contained in those initiatives

Referencing Plastic Pollution Impacts/Reporting

In addition to annual reporting on progress to Parliament, government research investment in identifying the impacts of plastic pollution and their sources should be a priority. This should include the contribution of the sewage and stormwater system to the plastic pollution problem. A regular review by the CSIRO to measure plastic pollution impacts, and progress towards desired goals, should be initiated and funded.

The Commonwealth should provide research funding (at least \$10mpa) to continue investigation into the impacts and sources of terrestrial and marine macro and microplastic pollution and innovations that prevent this at source.

Community organisations and the general public should be engaged. As there is limited capacity to fully assess plastic pollution impacts on our waterways and oceans, the community can play an important part in adding to this capacity through citizen science programs, clean ups, and data collections. It is important to develop a consistent approach to data collection, and to ensure that all relevant databases can be connected to build up as big a picture on impacts as possible.

Microplastics are strikingly underrepresented in the National Plastics Plan (NPP). Perhaps we can locate the crux of this issue in the fact that to date, ***microplastics are not classified as litter or specifically regulated in Australia***. This prominent oversight substantially undermines the capacity for them to be regulated and be perceived by the public as a significant pollutant. AUSMAP's findings present considerable evidence that this view is increasingly untenable and should be immediately revised.

Even within the NPP, microplastics lack a comprehensive definition, having been described as *'very small pieces of plastic that remain when large pieces of plastic break down.'* Without providing sizing parameters, microplastics continue to be categorised alongside other debris and are therefore subject to inadequate, or no mitigation measures. Traditional measures like Gross Pollutant Traps for example, are very effective in capturing macro litter though often are too porous to prevent particles below 5mm in length from entering waterways. This ambiguous description additionally omits primary microplastics such as resin pellets which has implications for industry regulation.

Addressing this disparity can be streamlined through the establishment of a clear National Plastics Pollution Monitoring Program. Doing so would allow for the execution of a common methodology and collection of scientifically rigorous and comparable data. Non-governmental organisations like AUSMAP and partners like Tangaroa Blue Foundation, have been at the forefront of national monitoring of both macro and microplastics. AUSMAP's methodology has already provided 4 years of monitoring with over 500 samples with proven replicability on a national level. By adopting this infrastructure, a unified approach to both quantify and address microplastic pollution could be achieved with greater benefits for people and the environment.

Critics of citizen science cite a lack of expertise as a reason for its dismissal in quantifying a range of issues. However, as AUSMAP has discovered, with effective quality assurance and quality controls being implemented by industry professionals, the rigour and reputability of data does not suffer. This network has become increasingly vital in a policy landscape that fails to recognise microplastics as litter, despite their pervasiveness in aquatic ecosystems. We therefore agree with the NPPs observation that *'community stewardship is key to removing litter from our waterways and beaches.'*

The Commonwealth should continue to fund community litter clean ups and citizen science projects by at least \$20m pa and ensure associated data collection practice on litter and marine debris meets best scientific identification and collection practice. All relevant databases should be able to connect, with a national and shared database easily accessible.

Recommendations

- **Provide research funding to CSIRO to continue to investigate the impacts of marine plastic pollution (at least \$10m pa) with annual reporting**
- **Report on key sources of plastic pollution, including microplastics**
- **Review the role of the sewage and stormwater systems in contributing to marine plastic pollution**
- **Continue to fund community citizen science and clean up activities (at least \$20m pa)**

Implementing More Effective Policy Initiatives

The most effective approach is to put focus on the products, practices and habits that lead to plastic pollution in the first place. That means enacting the National Plastics Plan and other Commonwealth initiatives and directing these to addressing the most obvious plastic problem issues. It is unacceptable to announce initiatives and then not deliver them (for example the strategy for the items to be banned by the Commonwealth in the NPP was not operationalised).

The Boomerang Alliance and TEC are calling for the establishment of a long-term national strategy to address all problematic plastics across all sectors, with time-bound goals and outcomes and incorporating policies of both the Commonwealth and State/Territory Governments. This is explained under the *Effectiveness of Australian Governments* section.

National Plastics Plan

The NPP outlines the Commonwealth's intended policy initiatives and catalogues any other policies relevant to addressing problematic plastics and their impacts. The NPP covers measures to prevent plastics at source, the recycling (recovery) of plastics, consumption habits and addressing plastics in oceans and waterways. All categories are important as part of an overall plan. In this section we have chosen to focus on policy measures that can reduce the use and impacts of plastics before they contaminate the environment.

The NPP set targets for 2022 that includes a phase-out of EPS packaging (June 2022); all claimed compostable packaging to be certified to Australian standards (June 2022); and EPS containers, moulded packaging, and PVC labels to be phased out (December 2022). None of these have been achieved.

The NPP also included proposals to require filters on washing machines (July 2030). We are unaware of what progress has been made with this.

The NPP also committed to initiate a cross-sectoral Stewardship Taskforce to reduce cigarette butt litter. Our colleagues at No Butts Australia and WWF, despite making representations on this issue have yet to see any concrete actions. A Taskforce needs to be initiated as a first step.

The Commonwealth must be far more active and resolute on understanding its role, and the national policies that support and give more effect to state actions. To date the Commonwealth has been too resistant to introducing measures such as mandatory product stewardship and packaging standards. This has undermined the effectiveness of state policies.

Microplastics Management

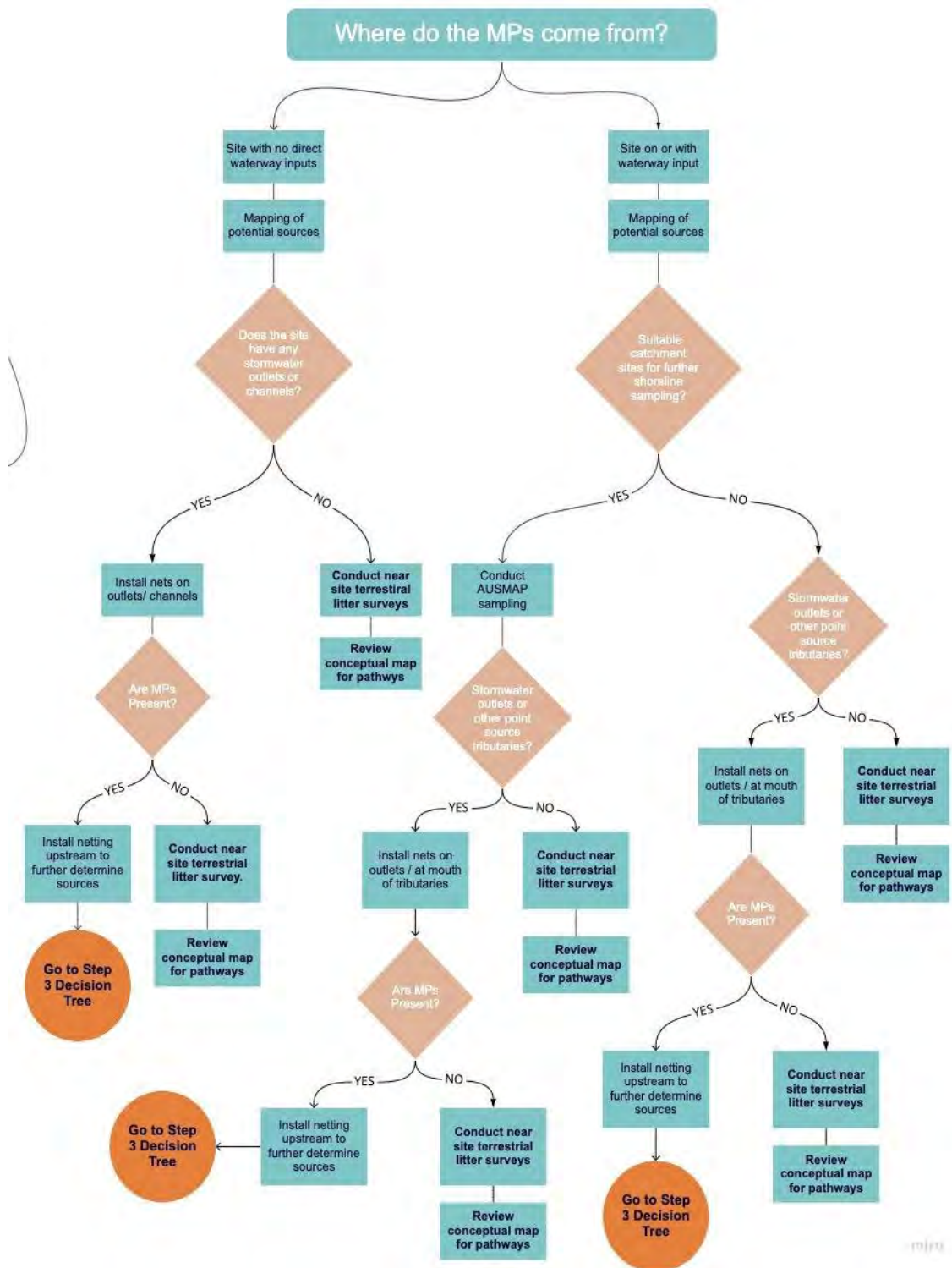
In response to insufficient action on microplastics, AUSMAP has spearheaded the creation of a **National Microlitter Reduction Framework** (MRF), through funding with NSW EPA, to trace microplastics back to the source. Composed of five stages, this framework would operate in tandem with reformed legislation to further expose microplastic pollution and provide a flexible reduction method to be implemented on a catchment-specific basis.

1. Step one: Baseline Monitoring

Step 1 involves determining if microplastics are an issue on shorelines as a surrogate measure for the neighbouring body of water. A visual assessment should be undertaken at a given site to gauge pollution levels on a frequent basis. Those with repeatedly 'High' to 'Very High' visual debris loads which occur frequently, or if a site is of regional importance, should be targeted. At these locations, a micro and macro litter assessment will be undertaken. After performing the AUSMAP microplastic assessment, a rating for the shoreline (from 'Very Low' to 'Extreme' microlitter level) is assigned. Sites that reach or exceed a 'High' classification are regarded as Hotspots and will be targeted in Step Two.

2. Source Identification

Step 2 of the MRF involves source identification. To understand this, it is firstly important to map or identify all the potential microlitter pathways for the catchment or sub catchment. A Step 2 decision tree leads users through the task options depending on location. For instance, further sampling along a tributary or drainage line in the catchment will help pinpoint potential pathways of plastic pollution. Once the main pathways have been identified and the microplastic footprint characterised, Step 3 processes should be followed.



Decision Tree developed by AUSMAP to determine microplastic source and direct stakeholders to appropriate mitigation and management strategies

3. Source Reduction Strategies

Step 3 of the MRF involves developing source reduction strategies. The selection of options should be focused on the baseline goal of long-term behaviour change leading to reduction in plastic pollution. Options can be broadly divided into Awareness, Management and Physical strategies.

To help facilitate this process the **AUSMAP Microplastic Blue Star Rating** system was developed. This program is unique in being the first of its type to provide a standard for which to benchmark management of microplastic pollution of waterways and shorelines and recognise action on this issue. It works by combining efforts on microplastic condition assessment, stakeholder participation, community capacity building and the development of specific management goals and strategies plus their review. The Blue Star System is envisaged as a good governance program that will act to encourage active participation, incentivise good behaviours which ultimately leads to positive outcomes and rewards for the environment and the community.



Blue Star System outline for microplastic governance

4. Education and Awareness

Step 4 seeks to engage the community and targeted stakeholders on the issues of plastic pollution. The key goal is for a positive behaviour change towards reducing single use plastics, plastic pollution and waste. A number of activities, at different stages of the framework, can be organised to help achieve this. Examples include community and school education and engagement, corporate and business learnings, social and other media campaigns, and training and upskilling workshops.

5. Monitoring and Evaluation

Step 5 involves the development of a Monitoring and Evaluation Plan, which is critical for a successful project. This step outlines the processes to consider along the timeline of the project as a check and balance on the progress as well as identifying project modifications required and ultimately lessons learnt.

Recommendations

The key policy initiatives contained in the NPP need to be actioned, not treated as aspirations. We have also proposed initiatives below that require specific prioritising and strengthening. These include product stewardship, packaging standards and a greater focus on reusable foodware.

- **Mandate the targets**
- **Introduce new targets for 2023-2032 (10 Year Plan)**
- **Introduce a Product Stewardship Scheme for cigarette butts and e-cigarettes**
- **Introduce Commonwealth procurement practices that support avoidance, reuse, recovery, and greater recycled content of new products**
- **Adopt specific microplastic management and reduction strategies**
- **Establish a national, publicly available database on NPP progress**
- **Review waste collection rules for ships entering Australian ports.**

A Mandatory Product Stewardship Scheme for Packaging

Commonwealth responsibilities must now be directed at resolving national packaging practices and their environmental impact. This is not something that states, and territories can do. For over 20 years, the Commonwealth has allowed a voluntary, industry-based approach to packaging through the Australian Packaging Covenant (APCO, established in 1999). This approach has failed, as amply demonstrated by the collapse of the REDcycle scheme. A small voluntary scheme, artificially amplified by the supermarket and product sectors for greenwash marketing purposes and through use of labelling - that lacked credible commitment to become mainstreamed and avoided use of the recovered material.

Recently the Senate received documents about review of the Australian Packaging Covenant and the national packaging targets that exposes significant problems (*Arcadis Summary of Issues for the APC*, 10 Nov 2022, see below). It is clear that industry is not in a position to resolve these very significant without government intervention. APCO has demonstrated it lacks the culture, power and capacity to meet the 2025 targets.

Critical gap	Issue / challenge	Impacts and comments	TOR linkage
<p>Insufficient perspective and action as a cohesive, aligned packaging system</p> <p>There are gaps in delivery of the collective impact model around most aspects:</p> <p>Common agenda</p> <p>Continuous communications</p> <p>Backbone organisation</p> <p>Mutually reinforcing activities</p> <p>Measuring results consistently</p>	<p>Lack of a coordinated, national policy and legislative framework guiding state and territory actions around packaging and addressing all segments of entire packaging value chain.</p> <p>Greater efforts to improve harmonisation, with collective input into the agreed approaches.</p>	<p>Limited buy-in from all stakeholders to a cohesive approach to the circular economy transition</p> <p>Disparate actions by states and territories increases uncertainty and cost to business</p>	TOR 1
	<p>The definitions and standards that underpin the 2025 Targets lack clarity and specificity, in some cases (e.g. “recyclable”)</p>	<p>Limits alignment and buy-in across the value chain</p> <p>Reduces confidence in potential solutions, inhibiting investment across the chain</p> <p>Uncertain alignment to ACCC green claim requirements</p>	TOR 1
	<p>The Australian Recycling Label (ARL) is broadly valued as a clear label to inform packaging design and educate consumers.</p> <p>However, the underpinning PREP tool is seen as opaque, not sufficiently aligned to recovery sector practices and improvements, and limited by its restriction to APCO members.</p> <p>Some calls for development of an agreed, open source and transparent framework to define and specify recyclable, reusable,</p>	<p>Uncertainty and (perceived) errors in assessment are a significant frustration for stakeholders across the full chain</p> <p>Adds cost, time and risk to packaging innovation</p> <p>Inhibits investment in recycling infrastructure</p> <p>Limits alignment and buy-in across the value chain</p> <p>Limits coverage to APCO members only</p>	TOR 1

	compostable etc.	Uncertain alignment to ACCC green claim requirements This could also make it easier for SMEs, although may still require a streamlined pathway PREP provides a possible basis for a standardised assessment framework.	
	Members largely value the annual reporting, however there is low confidence in published progress data and limited feedback loops on the impact of initiatives undertaken. Challenges include: lack of access to other datasets to provide a rigorous systems view (e.g. annual recycling data from states and territories) limited transparency on data processes uncertain alignment other dataset (e.g. National Waste Report)	Uncertainty about overall progress and specific gaps Limiting confidence and investment in initiatives to target specific gaps in progress	TOR 2
	Lack of engagement and activation of consumers regarding household recycling and public place litter behaviours. Significant feedback on the need for a national consumer campaign, albeit recognition that state and territory regulatory setting are a challenge to coordinated messaging	Capture rates of recyclable packaging remain below optimum levels Contamination levels remain high	TOR 2
Partial coverage of brand owners and retail allows free riders, which limits	Participation in the co-regulatory scheme has been limited by: - Commercial barriers (higher costs)	The absence of any mandatory measures has limited coverage. Solutions suggested included	TOR 2

participation and poses risks to active members that ultimately slows progress on the 2025 Targets	<p>Technical knowledge</p> <p>Low regulatory pressure to meet the Targets</p> <p>Minimal reputational risks for SMEs</p> <p>General inertia, given the effort required to change any system.</p>	<p>specified recycled content percentage by packaging material / format</p> <p>mandatory APCO membership for minimum sized companies (e.g by packaging on market each year).</p>	
	<p>Imported packaging (filled and empty) is difficult to capture under the 2025 Targets unless imported by APCO members</p>	<ul style="list-style-type: none"> - Limits coverage of the market, including in the growing direct-to-home delivery sector - Undermines confidence that all packaging will be recyclable 	TOR 1
2025 Targets structure is generally suitable for a circular economy (i.e. design, recycling rate, end markets), however the individual targets are poorly specified	<p>Significant feedback was received on the targets, including:</p> <p>Poor definition of the Targets</p> <ul style="list-style-type: none"> - The absence of sub-targets per major material / format aligned to delivery pathway to achieve 	<p>Reform feedback included:</p> <p>Target 1:</p> <p>100% is not achievable, amend</p> <p>Remove compostable</p> <ul style="list-style-type: none"> - Introduce an exemption process for packaging that has defined higher order requirements (e.g. meet TGA standards) <p>Target 2:</p> <ul style="list-style-type: none"> - Sub-targets by plastic packaging type (e.g. flexibles vs rigid) <p>Target 3</p> <ul style="list-style-type: none"> - Consider mandatory recycled content targets at material level, as an industry average - Consider removing the focus only on post-consumer content 	<p>TOR 1</p> <p>TOR 3</p>

		Target 4 - Define “unnecessary”	
	The Targets do not provide any prioritisation or interim targets on the path to 2025. Some calls for interim targets (potentially aligned to business investment cycles) that lead to more ambitious long-term Targets to drive system change.	Limited near-term traction for the Targets as less engaged companies are able to avoid early-mover risks by pushing activity to the back end of the 2018-25 period.	TOR 1
APCO as the backbone organisation	APCO has been significantly re-established in recent years as a strategic organisation. However, the current entity structure as a membership organisation creates potential for conflict of interest and uncertainty around functions, governance and engagement. Only a handful of APCO members are from the recycling sector, while consultation for this report had limited participation from the recycling and local government sectors.	- The model has hampered effectiveness in engaging outside the membership base, although other factors cited related to specific personnel rather than the structural issues Limits APCO resources - Dilution in focus due to competing priorities and functions	TOR 2
	APCO processes are slow, it is under- resourced and has limited practical industry experience.	- Working Groups were cited as cumbersome and inefficient. Calls for a reform to decision- making processes and more active facilitation to maintain focus on progress. - Limited ability to develop focused initiatives and take them through to delivery	TOR 2

		<ul style="list-style-type: none"> - Potential for marginalisation of APCO as a delivery entity for the 2025 Targets - Failure to attract and retain members, and for ongoing participation from supply chain partners 	
Need to build confidence in the quality of recovery streams and in the certainty of end markets	The Recycled Content Traceability Standard is required to provide confidence in the chain of custody, with an agreed approach across the value chain. It will need to be developed in partnership with all stakeholders.	<ul style="list-style-type: none"> - Required to increase confidence in quality of recycled content Supports ACCC green claim requirements <ul style="list-style-type: none"> - Engages the whole chain in a systems perspective - May prefer domestic sources over imported, supporting the circular economy in Australia 	TOR 3
	Need funding to support investment in recovery of non-core packaging materials	<ul style="list-style-type: none"> - Additional support is needed to incentivise investment, given smaller volumes are available to support business cases 	TOR 3
Material/Format: Flexible plastics	Flexibles are a major fraction of the plastic packaging market, with the biggest gap in recycling rate. With significant processing capacity in the pipeline, key challenge is collection. Significant support for the proposed voluntary EPR scheme in order to support collection, processing and end markets, which are currently too constrained across the value chain.		TOR 3

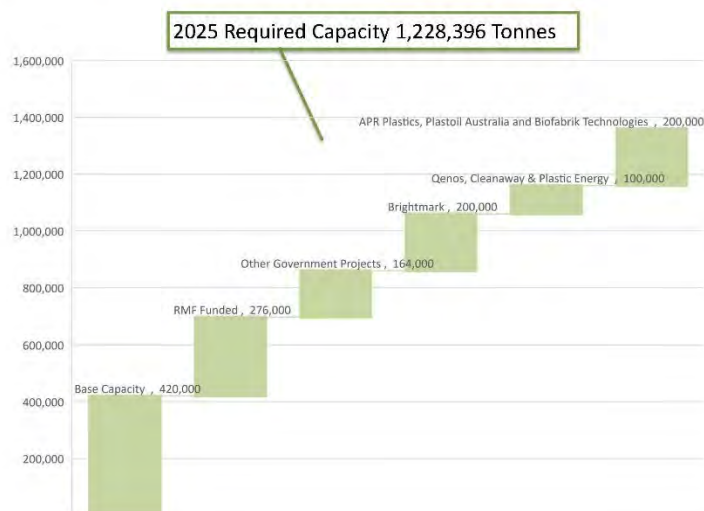
Material/Format: Polypropylene (PP)	Growing demand for recycled PP, with volumes currently being imported due to		TOR 3
	insufficient domestic reprocessing – but also limited global supply. There is a need to grow all aspects of the value chain to de-risk investment.		
Material/Format: Reuse targets	<p>Reuse models are a higher order outcome than recyclable or compostable options as they retain the inherent value in the form of the product. They are also more disruptive to mainstream models and so less likely to be deployed, with the primary focus to date being in B2B applications.</p> <p>There were mixed views on the potential for reuse, but one proposal to consider an individual reuse target, with realistic (longer) implementation timeframes.</p>	<ul style="list-style-type: none"> - Support for higher order packaging models, although this need to be tempered by lifecycle considerations - Potential to more explicitly tie reuse to Target 4 on unnecessary and problematic SUP packaging 	

Waste to Energy

A further significant problem is that the APCO regards waste to energy as “recycling” (as part of the key Target 2 – ‘70% of plastic packaging is recycled or composted’). This erroneous position is found in the 2025 National Packaging Targets Review¹² which outlines the expected new facility developments that will contribute to the target. Almost half are waste to energy plants producing fuel (Brightmark, APR Plastics, Plastoil), which according to the waste hierarchy sit below recycling and certainly are not compatible with the circular economy.

Another serious issue is that waste to energy plants require long term contracts, effectively locking out future recycling of the contracted material, that can exceed several hundred thousand tonnes a year.

Plastic Recycling Capacity



Recent investment in recycling capacity will deliver substantial new reprocessing capacity for plastic packaging by 2025

The waste hierarchy:



¹² Chris Foley, Peter Brisbane, Oct 2022 – part of the package of documents presented to the Senate

What Happened to Reusability?

Also notable in the APCO review is that they have omitted “reusable” from their description and discussion of Target 1 which states – “100% reusable, recyclable or compostable packaging”.

Plan B

In 2021, Boomerang Alliance issued ‘[What’s the Plan B for Packaging](#)’ – in which we argued none of the following preconditions to achieve the national targets have or are likely to be achieved with current Plastic Pact and APCO arrangements:

- a. all manufacturers/suppliers of packaging into the Australian market must (i) be members of APCO and (ii) endorse the Plastic Pact goals and commit to changing their practices by announced launch of 18 May 2021.*
- b. all manufacturers/suppliers of packaging must report on how they credibly plan to meet and comply with Pact goals by July 2021.*
- c. all new labelling (expanding the ARL to include reusable/compostable) plus rules around these to be confirmed and in the market by end 2021.*
- d. all manufacturers /suppliers must be ready to comply with packaging design standards for product entering the Australian market (certifications/agreed standards for reusable/compostable/recyclable) by end 2021.*

Our position stated in Plan B was and remains:

...that if all above necessary measures are not in place by mid-2022 and an independent Review reporting by then is not confident all the targets can be met by 2025 then all targets should be mandated, by the start of 2023. This gives three years to achieve the targets - that is - change product design and content; invest in new processing; and place on the market.

We do not support extending the delivery time for industry to achieve the targets.



Better Regulation of Plastics Plants

Investing in infrastructure to recycle plastic presents a positive opportunity for Australia to move towards a model that can reduce the production of virgin plastic in the future. In transitioning towards a circular economy, plastic waste products can be turned into pellets and reused in a range of settings. However, AUSMAP research in Adelaide's north, is a prime example of how poor regulation of these elements can worsen plastic pollution. For example, significant loss and disposal were salient in adjacent roads and drains, which undermined the value of recycling initiatives in preventing plastic from reaching the environment.

Blue nurdle spill observed next to the plastic recycling facility in Adelaide

With no current accountability measures in place, and microplastics not being officially regarded as litter, pellets are continually seeping unencumbered into Australian waterways in vast quantities. It is therefore crucial that investment in such facilities prioritises proper care in storing and transporting pellets with the goal of achieving zero pellet loss. The enforceability of this relies on stricter regulation of industry by federal and state governments, in conjunction with the introduction of significant penalties for companies. These calls have been echoed by entities such as Operation CleanSweep who note several benefits to harsher controls including:

- Reducing the incidence of slips and falls which are a major cause of injury in the plastic industry
- Reduction of pollutants entering waterways
- Less material becomes waste, therefore improving output.
- Companies improve their image as upholding environmental stewardship to enhance their relationships with the community and investors.

Given that Operation CleanSweep is already included in the NPP to eliminate 'pre-production plastic resin pellet, flake, recycled chip and powder loss,' we urge further regulatory efforts to address the issue. This project is underutilised and underfunded in many states including South Australia where pellet pollution has been identified as '**EXTREME.**' Addressing these shortcomings is pivotal.

Container Refund Schemes (CRS)

Australia's container refund schemes are working well and they are certainly an example of successful product stewardship in terms of recovery via a clean stream and reuse of material. Return rates are about 65-70% taking account of population numbers served.

The critical factors for greater return are consumer access to refund points and the rate of refund. Both can be improved over coming years with consideration of return to retail refund points and a higher refund value (say 20c, also to combat erosion by inflation). A further area of improvement includes not only extension to wine and spirits (in plastic and glass) but also increasing the size limit for all beverage and applicable non-beverage containers to 3L.

Recommendations

- **A mandatory Product Stewardship Scheme for Packaging to guarantee that National Waste and Plastic Plan goals (this includes the targets for recovery, recycled content, and the phase-out of problematic plastics) by 2025 will be met**
- **This should also cover manufacturer responsibilities for product design, collection and processing, and any costs that may be incurred**
- **Investments in new and established plastic recycling must implement best practice pollution controls**
- **Support a coordinated and continuous improvement process for container refund schemes in Australia. This should include setting a recovery target of 90%; the inclusion of wine/spirit bottles, other containers and products and reusables; review of refund amount to ensure high return rates; and harmonised inclusion of bottle tops.**

National Standards for Packaging and Other Products

Developing national standards on reusable, compostable and recyclable packaging is vital. We note that the Commonwealth has agreed to lead on the development of these standards (MEM Communiqué October 2022). These standards need to be urgently adopted to meet 2025 packaging targets and avoid greenwash.

National government commitments include an endorsed target of having all packaging either reusable, compostable or recyclable by 2025. There are no nationally adopted nor binding standards for such packaging. Currently there is no accepted standard for reusable packaging and other containers; and use of the accepted Australian standard for composting is often ignored by many suppliers. A “recyclable” label is just that. As the REDcycle collapse has illustrated, the ARL label on packaging does not mean that the package will be recovered.

All standards need to ensure that, when labelled as such, products will be recovered in practice and at scale.

The Boomerang Alliance has published a position on Reusable Shopping Bags (Appendix B) that could be adopted. This calls for the establishment of a national standard that would require that only bags (ie, heavyweight) meeting this standard would be provided by retailers. The standard is based upon a Californian law, widely used in Europe, that requires among other specifications, a bag to be able to be used for a minimum 125 shopping cycles. This would overcome the current proliferation of definitions in state legislation – the 35µm thickness limit (now subject to extensive greenwash); the Victorian warranty approach; and

the WA greater thickness limit. It would also assist in diverting industry responses which lead to switching single use plastic bags to single use paper bags as substitutes.

Recommendations

- **Standards must be in place ASAP requiring manufacturers to take responsibility for their products including design, use, and recovery in a way that ensures all packaging is reused, composted, or recycled, in practice and at scale**
- **Impose standards for reusability, with bags being the first item**
- **Modify labelling to be nationally recognised and consistent taking account of the realities and scale of actual recycling or composting practices.**

Making Reusable Foodware more Commonplace

The switch away from problem single use plastics must include a focus on reusable foodware. This is the area with great environmental gains.

Reusable foodware needs to become common place for packaged food and drinks, particularly takeaway. Government strategies to promote reusables have been inadequate to date. It is not sufficient to simply support the notion of reusability. What is needed are longer term policies and behaviour change measures. In this regard, it makes sense to focus on the areas where single use packaging and waste has the largest impact - takeaway and public place food and drink consumption.

Recommendations

- **Develop a national plan for reusable foodware, with goals and time-bound targets**
- **Initiate Commonwealth projects that specifically promote reusable foodware in controlled environments (e.g., offices/institutions, major events, and delivery services) and change behaviour**
- **Investigate opportunities for public place reusable foodware collection systems.**

Effectiveness of the Australian Governments engagement with states, territories, industry, and non-government organisations to reduce plastic pollution particularly in oceans and waterways

National Coordinated Response to Plastic Pollution

There is confusion and a lack of clarity on what jurisdiction takes what responsibility. More clarity would improve coordination and effectiveness and support a more consistent policy approach. However, a key reason why states have taken unilateral action on items such as banning single use plastics is the lack of Commonwealth Government action. They have of necessity filled the gap.

Whilst the Commonwealth remains hesitant, this should continue within the context of the national goal of phasing out all problematic and unnecessary plastic packaging by 2025.

The Commonwealth should be doing more in this regard to assist the coordination and progress of these state and territory bans. They are far more effective if managed consistently and using similar timeframes.

For example, NSW introduced a ban on lightweight plastic bags in July 2022. This was 14 years after South Australia and over 4 years after most other jurisdictions. The result has been that NSW has largely been a dumping ground for these bags not able to be used elsewhere.

Similarly new, effective strategies are needed for plastic wastes in the agriculture, marine and retail sectors.

What is needed is a clear national strategy that clarifies specific responsibilities and policy actions from a national, state/territory, or local level on plastics. Such a policy would clarify those responsibilities and integrate Commonwealth and state/territory government initiatives into a comprehensive and coherent strategy going forward. **We would not however support a lowest common denominator approach.**

An immediate start can be made by cataloguing all existing Commonwealth and state policies and identifying the strategic gaps and overlaps, so that the high ambition policies are enacted across the nation.

Recommendations

- **A long-term national strategy to address all problematic plastics across all sectors*, with time-bound goals and outcomes and incorporating policies of the Commonwealth, State/Territory Governments**
- **Developed policies and measures designed to build awareness, provide incentives/penalties and that give providers and consumers the opportunities to change behaviour and practices**
- **Annual reporting on progress and challenges.**

* We have identified these sectors as (1) At Home (retail) (2) Away from Home (3) Agriculture (4) Business (5) Logistics (6) Construction (7) Marine (commercial and recreational)

We note that WWF-Australia have proposed a Circular Economy (Plastics) Act. This is something that should be seriously considered. However, a circular economy framework is significantly broader than addressing problematic plastic packaging. We would suggest that a long-term strategy (as outlined above) should be integrated into a Circular Economy Act when this is enacted. Any considerations on a Circular Economy Act should not delay the development of a nationally coordinated strategy on problematic plastics. It is important that the current targets for 2025 and beyond are met.

Engagement with Non-Government Sectors

Unlike consultation processes established with most states, there has been little Commonwealth consultation with our community organisations on the NPP. The Boomerang Alliance has been fortunate that we have been able to engage through our delivery of the Plastic Free Beaches project (included in the NPP) and have enjoyed a productive level of engagement through this. However, little formal consultation has occurred on other aspects of the NPP such as proposed action on cigarette butt litter or the Pacific Litter project.

Recommendation

- As part of a revamped NPP we propose the establishment of Stakeholder Advisory Group to assist and inform the Commonwealth on the development and roll out of the NPP

Strengthening a National Long-Term Strategy

It's time for the Commonwealth and other jurisdictions to consider measures being adopted overseas, particularly in Europe where single-use plastic challenges are more aligned with Australia.

In 2019 the EU Single Use Plastics Directive was released to prevent and reduce the impact of plastics on the environment, in particular the aquatic environment and to promote the transition to a circular economy. The Directive established goals for 2030 with milestone targets. Key strategies considered were strong, enforcement bans, reduction/recycled content targets, support for reusables, deposit return systems, levies and taxes, extended producer responsibility and timely monitoring/data collection regimes.

The Directive requires that all member States:

- Ban Identified single use plastics such as plastic straws, cutlery, and EPS containers by 2021
- Introduce EPR schemes for cups, food containers and identified other plastic items by 2024, with those schemes covering the costs of collection, transport, treatment, and litter
- A significant reduction in the consumption of single use cups and containers by 2026
- The tethering of beverage caps and lids on to their containers
- Proper labelling of products
- More promotion and availability and development of reusable food ware alternatives and practices.

Similar strategies should be integrated into a national strategic and scheduled approach. A few states have already published their longer-term strategies, most have not. However, most published plans lack any clear behaviour change measures. They tend to consist of

details of what will be banned and what the alternatives are, when additional, effective behaviour change strategies can also be adopted, particularly for leading edge approaches such as reuse in the lead up to mandatory action (not instead of).

For Example

The Boomerang Alliance believes that all jurisdictions should be adopting behaviour change strategies in the lead up to any future single use plastic bans. We have raised the example of a reusable bag standard (Appendix B), as a first step to resolving habitual plastic bag use. By setting a standard of a minimum 125 shopping cycles for any bag labelled reusable and requiring retailers to only sell bags that meet this standard - preferred behaviour changes can be achieved, and bans readily adopted.

We have also developed a strategy designed to achieve a ban on plastic coffee cups (see Appendix C). This takes the learning from the EU. In our approach, plastic coffee cups and lids would be banned from use by 2024 with all disposable cups and lids banned from 2030. To achieve this, we have proposed that all cafes and food outlets who serve takeaway hot beverages, be required to offer, or sell reusable cups/lids. This rule would lead to the establishment of cup libraries and cup return networks. These allow consumers to return a cup to any location on the network. A levy of 25 cents should be applied to all disposable cups sold. The levy would be used to invest in litter prevention and reuse strategies.

Many EU countries (and other regions) are taking further steps as part of the EU *Directive on Single Use Plastics*. Here is a snapshot of new policies.

Country	Items	Action	Date
Germany	SUP coffee cups and food containers	Mandatory requirements for all cafes and food outlets to offer reusable alternatives	January 2023
The Netherlands	SUP coffee cups and food containers	Ban on SUP coffee cups Fee on other plastic packaging	July 2023
France	SUP coffee cups Reusable cups and plates	Banned (exemption for compostables) Mandatory reuse in restaurants	2020
Ireland	SUP coffee cups	0.20-euro fee	January 2023
Greece	SUP coffee cups and food containers	0.05-euro fee	January 2022
Portugal	SUP packaging in ready to eat meals and beverages	0.30-euro fee	July 2022
Sweden	SUP coffee cups, food containers and other packaging	Investigating the introduction of new policies and fees for reusables and SUP coffee cups	current
Italy	SUP products	Plastics Tax	January 2023
Spain	SUP products	Plastics Tax	January 2022
Other Examples			
UK	Reusable foodware	Proposed mandatory requirements Plastic tax on SUP packaging without recycled content	2025 2022
Scotland	SUP coffee cups	25 pence fee	pending
Vancouver, Canada	SUP coffee cups	25 cents fee	January 2022
Berkeley, California	SUP coffee cups	25 cents fee	January 2020
California	SUP products	Considering tax on all SUP products	current
McDonalds UK, Burger King US	SUP coffee cups	Trialling returnable cup systems	current
All Starbucks EU/Africa/Middle East	SUP coffee cups	Offering reusable cups share	2025
Korea	SUP coffee cups	Introduced CDS for cups sold at coffee shops and fast-food outlets	2022

Supporting Recovery of Plastics

The Commonwealth has an essential role to implement and assist a coordinated policy approach to resource recovery more generally. Whilst this is about addressing all recyclable materials, plastics is a key problem product. The recent collapse of the REDcycle service that collected soft plastics from households is a reminder that resource recovery infrastructure needs urgent investment. The Recycling Industry Modernisation Fund is an important part of solving these problems.

Recommendations

- **Review progress and repeat scheme funding for a further 4 years; and raise targets by 30% by 2030.**
- **Include a goal to have all regions with consistent standard waste, organics and recycling services and facilities operating by 2025.**
- **Funding of at least \$500m should be made available to assist the construction of organic recycling facilities around the country to achieve national targets.**

Most states and territories are also investing in resource recovery and again the Commonwealth should be playing a greater role to ensure these are complementary, consistent, and effective across all jurisdictions. This will require continued investment, procurement policies and setting of goals to have all regions in Australia with consistent standards, practices, and labels for waste, composting and recycling services.

Effectiveness of community campaigns to reduce plastic pollution particularly in oceans and waterways and encourage the use of alternative materials

The community sector continues to play a significant role in identifying (through citizen science) and cleaning up marine plastic pollution. This needs to be acknowledged and supported by continued funding. It is also the case that the cleaning up of litter reduces microplastic pollution, as large plastic items inevitably break up into microplastics over time.

We have discussed the need to practice sound scientific techniques when collecting data and further education is needed to show community groups best practices for identifying and assessing microplastics

As outlined above we have sought an annual investment of \$20M be made available for community organisations to continue this vital work. Initiatives such as Clean Up Australia, AUSMAP and Tangaroa Blue have had an immense impact on our national psyche, and continue to do so. Not only do they reduce plastic pollution impacts by their direct activities; they also provide the community with the opportunity to participate in their programs. This involvement ultimately builds community awareness about plastic pollutions problems and a recognition of the need to change the contributing damaging practices.

Many community organisations are engaged in changing community habits and practices on single use plastics. The Plastic Free July program offers valuable community education and the opportunity to put new habits into practice. It has grown into an international movement building this awareness.

Other more local activities include volunteer organisations working to make their communities 'plastic-free' by engaging the hospitality sector and public events in making the switch from problem plastics.

A key program under the National Plastic Plan is the **Plastic Free Beaches** (PFB) project developed and delivered by the Boomerang Alliance. This project, funded by the Commonwealth, engages with the hospitality and other sectors (those who provide plastic packaging to the public). Through a program that involves the whole packaging supply chain, provides expertise, and actively shows hospitality providers how to switch practice, the PFB project has significantly expanded the locations going 'plastic-free' and demonstrated significant reductions in problem plastic use are possible and achievable.

Combined with the Boomerang Alliance's [Plastic Free Places](#) (PFP) program (upon which the PFB project is based upon) the program has reduced single use plastic produce use by over 17M items just through the actions of its 1200 members. Those items include plastic straws, cutlery, food ware and coffee cups and lids. These figures are derived from purchasing records provided to the program.

The PFP was a forerunner to various single use plastic bans, demonstrating their viability and acceptance by business owners and consumers. It is now being further developed into the reuse field for consumers, events, commercial buildings and cafes.

Our impact

We work in communities across Australia. Below is the combined impact of all of our programs as at **December 1, 2022...**



1,242
Business
members

246
Plastic Free
Champions*

17,124,343
Pieces of plastic
eliminated

**Plastic Free Champions are members that have eliminated all of our key plastic items (straws, coffee cups & lids, takeaway containers & lids, food ware (cutlery, plates, cups etc), water bottles & bags).*

Recommendations

- **Funding for community citizen science and clean-up activities (at least \$20m pa)**
- **Support community group education and awareness programs**
- **Fund community projects (such as PFP) that deliver single use plastic reductions and behaviour changes.**

Global initiatives underway to reduce plastic pollution particularly in oceans and waterways/any other matters

Addressing marine plastic pollution at a global scale is essential. The first step in developing a comprehensive and enforceable treaty has just been taken. The UN resolution signed by the vast majority of nations calls for a binding treaty and a whole of lifecycle approach to resolving the problems.

The Boomerang Alliance supports the establishment of an International Treaty on marine Plastics. We are encouraged by the fact that all major political parties have supported this

and Australia's support for a high ambition outcome. The high ambition outcome includes addressing the whole lifecycle of plastics, such as product design and production as well as addressing litter, waste and clean up problems.

A high ambition approach will also ensure that domestic policies reflect the same ambition as we expect from others.

Marine plastics are a global issue so addressing these problems globally will help to resolve problems in our region and nationally. Plastic pollution of Australia's coastline is predominantly from local sources. However, in more remote locations, particularly in norther parts of the continent, plastic pollution clears emanates from overseas sources. Dumping from shipping coming to Australia or passing through Australian waters is also a growing concern.

Aside from signing a high ambition international treaty, the Boomerang Alliance has called for greater international (aid) funding for our regional neighbours to combat their plastic waste and litter problems. Many of our regional neighbours do not have the collection or processing infrastructure and services to solve their plastic problems, with waste and litter being the outcome. Without this infrastructure, plastic pollution problems will not be resolved. Funding for community infrastructure (that will also provide a local economic benefit) is urgently needed, as a first step.

In 2019 the previous Commonwealth Government promised \$16M for a Pacific Litter Project. Despite repeated requests for information on progress by the Boomerang Alliance, no information was provided. We suspect because little was done or spent. This should change, particularly if Australia wishes to build its credibility in treaty negotiations and improve its reputation in the Pacific and SE Asia. This is a case of putting your money where your mouth is.

Recommendations

- **Sign the proposed International Marine Plastics Treaty**
- **Support an enforceable Treaty with specific targets for reduction in plastic use and pollution, and in place by 2024**
- **Take a leadership role in the Asia/Pacific region to encourage neighbouring nations to sign.**
- **Fund citizen science and clean-up activities in Australia, particularly in hot spot areas**
- **Allocate funding to assist regional neighbours to clean up and invest in services to process collected plastic wastes and litter and introduce alternatives.**
- **Examine strategies to prevent ocean dumping by foreign flagged shipping.**

APPENDIX A:

AUSMAP STATE BY STATE RESULTS AND CONCLUSIONS

AUSMAP has validated samples from every state in Australia in order to determine trends and identify hotspots. Our data represents over four years' worth of insight into spatial and temporal differences in microplastic pollution Australia-wide, and has been instrumental in informing ongoing sampling and source reduction efforts.

New South Wales (NSW)

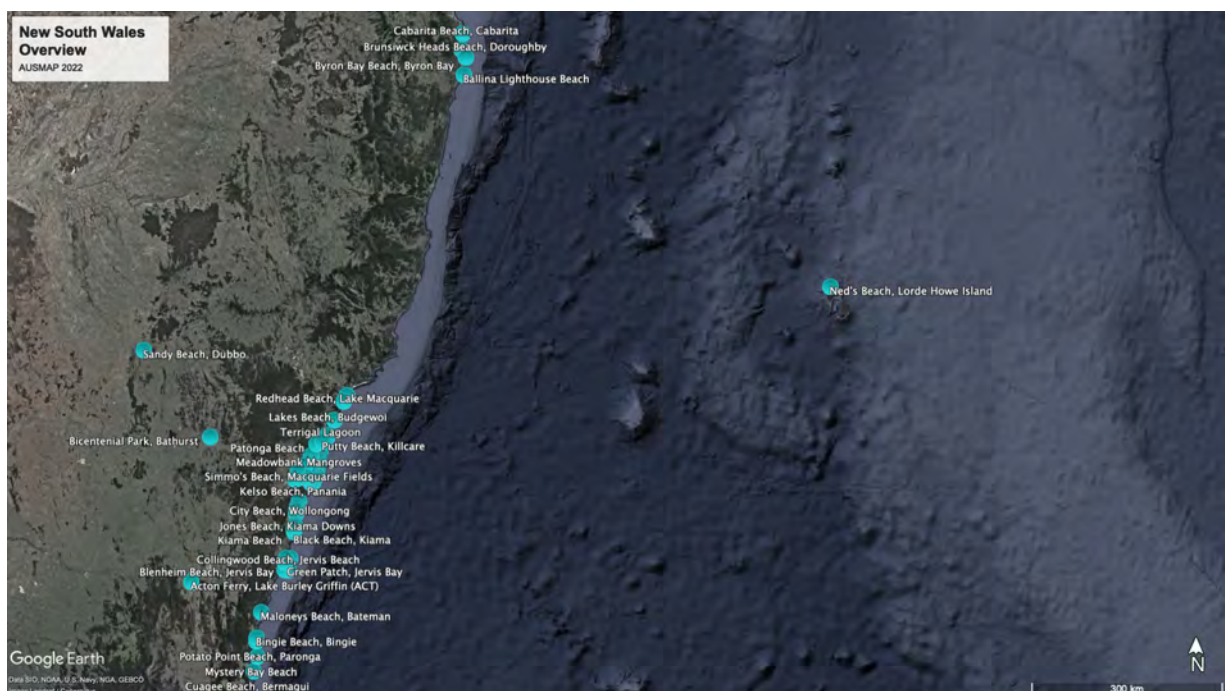


Figure.1. Overview of all sites sampled by AUSMAP's citizen science network in NSW.

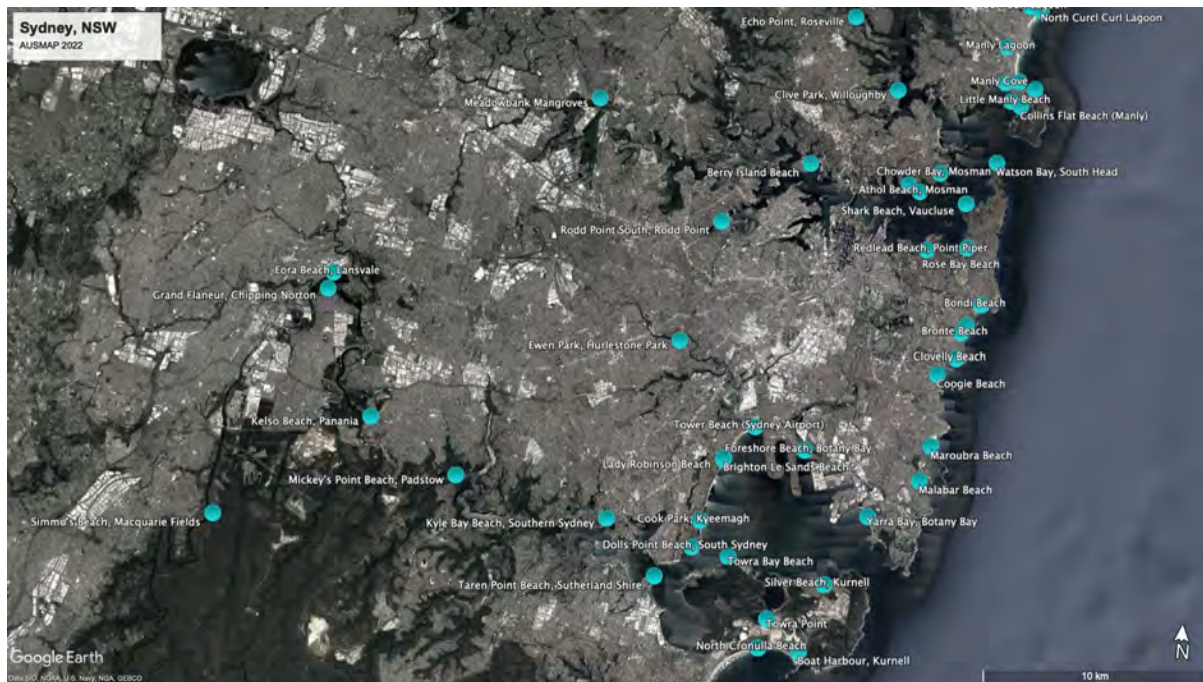


Figure.2. Overview of all sites sampled in the Sydney Metropolitan area by AUSMAP's citizen science network.

Extensive sampling has been undertaken in NSW, with our database currently boasting a record of 150 samples, including repeated sampling at known hotspots. Our extensive citizen science network has sampled at sites from Bermagui in the South to Cabarita in the North, and unearthed loads ranging from **'Very Low'** (<10 microplastics per m²) to **'Very High'** (1,001-10,000 microplastics per m²). A combination of currents, aspect, surrounding land use, the presence of stormwater drains, and urban density, can influence how easily and in what quantity microplastics will accumulate at a site. This, in conjunction with climatic factors such as heavy rainfall causes their concentrations to oscillate throughout the year.

Manly Cove

Manly Cove, in Sydney's Northern Beaches, is emblematic of the fact that microplastics are an ongoing and increasingly prevalent phenomenon in NSW, even with some variation. Since 2018, over forty samples have been taken by a combination of AUSMAP employees, ambassadors and community volunteers. This is in partnership with clean-up initiatives by Operation Straw and Eco Adventure Crew to quantify and clear macroplastics on the beach front. To our knowledge, this is the longest consistent dataset reporting microplastic pollution at a site globally. Typically, Manly Cove registers microplastic loads between 251-1000 microplastics per m² - or **'High'** on AUSMAP's grading scale - with the greatest value being reported as 4051 microplastics per m² September of 2019.

Moreover, Manly Cove is the last mainland stronghold of Little Penguins, with the current population being declared as endangered. Plastic pollution has been identified as a critical threat to their long-term welfare, though little has been done to address the prevalence of both micro and macro litter. This is in spite of microplastics being observed in the diet of

Rose Bay

Kiama

Victoria (VIC)



Sampling has been undertaken at fifteen sites across Victoria to highlight the presence of microplastics. In 2022, sampling has been focused at Port Melbourne Beach near the Melbourne CBD to ascertain plastic concentrations in an urbanised context. Five samples were collected with corporate volunteers with results ranging from four microplastics per m² (**Very Low**) to 418 microplastics per m² (**High**). This variability is due in part to the fact that samples were collected at different points along the beach, notably with larger quantities being found closer to the stormwater outlet. These outlets are responsible for depositing land-based pollutants into the aquatic environment from up-catchment, with Port Melbourne providing a prime example of this. Temporal events such as heavy rainfall additionally exacerbate the entry of pollutants, including microplastics, into waterways, often leading to higher plastic concentrations being found in their aftermath.

Port Melbourne encompasses how activity up-catchment manifests on Australian beaches and provides a poignant reminder of how land-based activities and poor waste management impact the local environment. This phenomenon is best addressed through AUSMAP's MRF in order to quell the inflow of microplastics at the source in collaboration with councils, local and state governments, industry and the community. It is critical to note that this site does not provide an exhaustive understanding of microplastic distributions and concentrations in Victoria, with further exploration remaining a key priority for AUSMAP in 2023, subject to funding and support by local and state governments.

South Australia (SA)

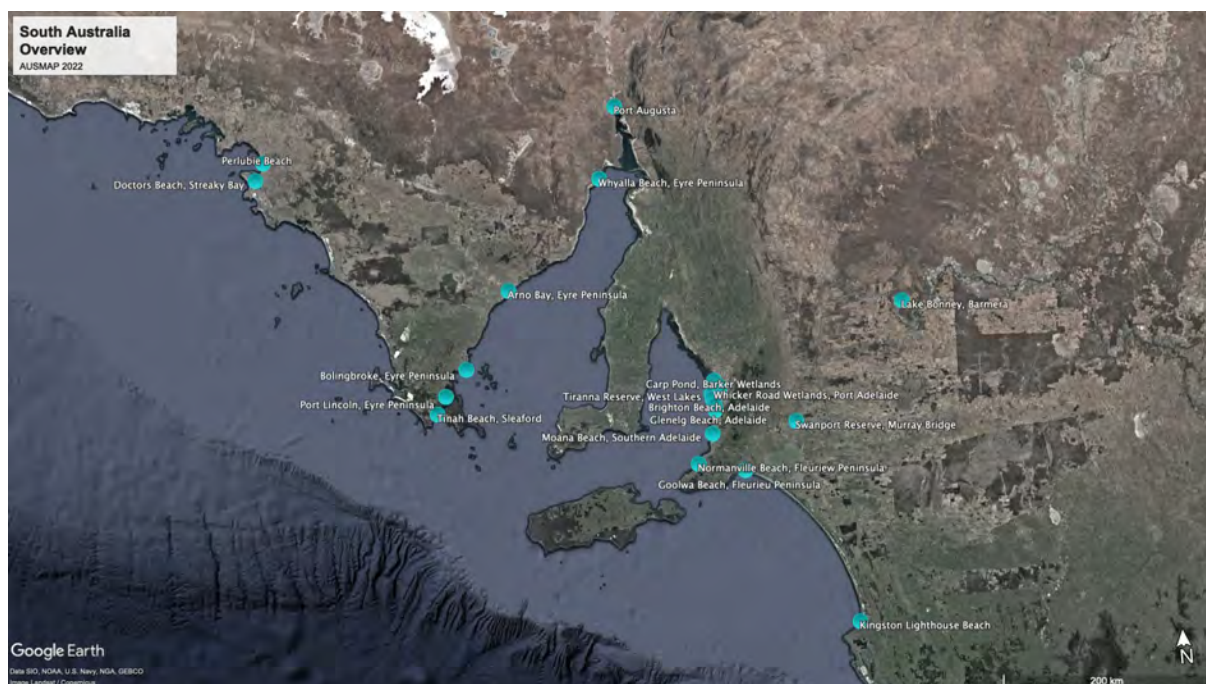


Figure.4. Overview of all sites sampled by AUSMAP's citizen science network in South Australia.

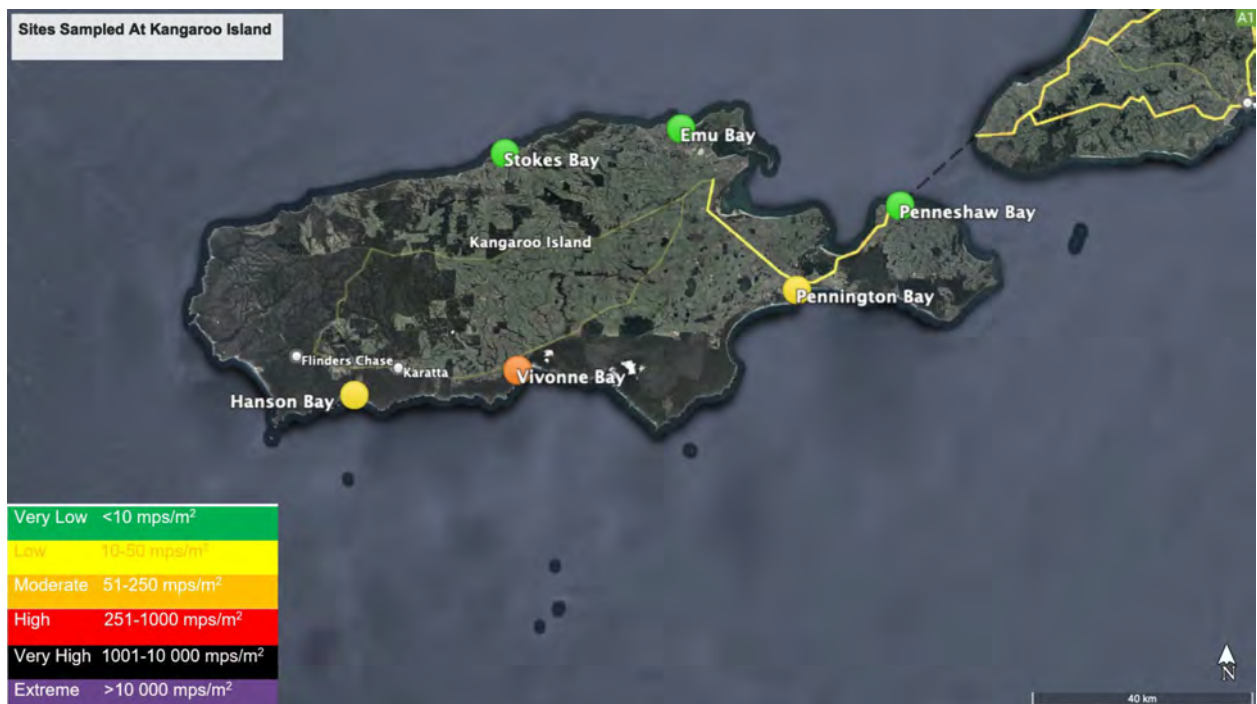


Figure.5. AUSMAP 2022 sample locations and microplastic loads at Kangaroo Island.

South Australia is well represented in AUSMAP's database, with samples showcasing microplastic loads across Metropolitan Adelaide, including extensive sampling around West Lakes, Port River and Barker Wetlands, then across to the Eyre Peninsula, South East SA, Port Augusta, and Kangaroo Island. Many of these samples have been conducted in cooperation with local councils who have identified microplastics as ubiquitous in their catchment areas. Since 2021, South Australia has held the national record for the highest microplastic concentrations with multiple sites being identified as having '**Extreme**' levels.

In 2019, the West Lakes region was identified as a national hotspot after samples at Towpath Reserve, Tiranna Reserve and Blackdragon Beach all exceeded loads of 9,000 microplastics per m², or '**Very High**' on AUSMAP's grading scale. All sites were dominated by foam and industrial pellets from industrial activity up-catchment. Ongoing sampling at West Lakes has continued into 2022 with sites continually being recorded as microplastic hotspots. These findings informed additional stormwater research and sub-catchment tracking studies to help identify the source of pollutants and findings have since been presented to local councils, relevant stakeholders and the State Government. In spite of this, nothing has been done to reduce microplastic pollution around the Lakes, with ongoing sampling in 2022 producing loads that are consistently '**Very High**' to '**Extreme**.'



Figure.6. Sample locations and microplastic loads in northern Adelaide. Refer to Figure.1 for AUSMAPs microplastic load colour key.

Following from the results collected around West Lakes, the Port Adelaide Enfield Council supported additional sampling around the Port River and associated wetlands, to investigate if these vast loads were then flowing into the river. In 2021, AUSMAP conducted research at sites around the Port River where microplastic loads were previously unknown. Seven sites were sampled between May and July to establish baseline data for the region, where concentrations ranging from 0 microplastics per m² at Club Beach, to over 750 000 per m² at Carp Pond on the edge of the Barker Inlet Wetlands (Figure 7), the highest loads of microplastics found nationally. Initial sampling at Barker Inlet Boardwalk also exceeded the threshold for ‘**Extreme**’ microplastic loads. Analysis of these samples showed that they were dominated by industrial pellets and hard fragments described as ‘shards’ of plastic by volunteers. In both samples, approximately half of the microplastics identified were opaque, and a quarter were black – making it difficult to ascertain origin. Of the samples collected, there were a significant number of coloured pellets, including blue (8,304), green (3,804), red/orange (2,472) and yellow (2,952), which were used to inform source identification efforts.

This offers a sharp contrast to metropolitan beach samples undertaken at Henley, Glenelg, Tennyson, Hallett Cove, Port Nalunga and Brighton Beach in Adelaide which typically present loads that are ‘**Very Low**’ to ‘**Low**.’ AUSMAP’s findings illustrate that sites around estuaries and wetlands with increased urbanisation, and therefore closer proximity to the source, have substantially higher microplastic loads than open coast locations. Wetlands provide a natural filtration system capable of trapping microplastics in sediment and preventing them from entering aquatic ecosystems. However, in doing so, their ability to

perform essential biological services such as nutrient cycling and water purification is dwindling. It is critical to note that wetland ecosystems like Barker Inlet provide significant habitat for birds, including as breeding and nursery areas, in addition to a range of fish and invertebrates. As an Aquatic Reserve, the state of ecological disarray observed at this site requires urgent attention.

In the case of Barker Wetlands, four stormwater drains were identified as the most likely entry pathway for plastics to enter the aquatic environment in urban and highway runoff. To confirm this, Phase Two of the investigation emulated Stage Two of the MRF to trace and identify the source. AUSMAP fitted 'end of pipe' nets to three stormwater outlets flowing in the Barker Wetlands in collaboration with the Council and community volunteers. These provided a glimpse into the contents of debris entering the Wetlands following significant rain events (>10mm) to allow for source tracking to occur. Regrettably several nets were lost, either removed, stolen or washed away in heavy rainfall which made the findings of this Phase difficult to quantify. Remaining nets however, allowed for the identification of foam, soft plastics, hard fragments and pellets to be observed coming from the stormwater network, thus confirming that land-based sources up-catchment were contributing to the extreme findings in Barker Wetlands.

Phase 3 of the project saw installation of street-level stormwater drain traps in consultation with the local Council to investigate runoff coming from a nearby plastic recycling facility. These drain traps aided in monitoring the extent of the issue, but also function as a key mitigation strategy to prevent primary microplastics from entering the stormwater network. This represents Stage Three of the MRF to help source reduction. Initial observations revealed mounds of plastic being stored uncovered, with staff regularly observed using a leaf blower to discard debris into nearby gutters and drains. Thousands of nurdles, soft plastic and small fragments were additionally recorded along the road, in gutters and outside of the facilities fenced area, indicating negligent management of these microplastics. Four drain traps were installed and emptied at three week intervals to quantify how much of the observed debris was entering the stormwater network. The results revealed that one drain, located between two factory sites, recorded the most plastic items with 94,579 fragments, including 25,630 nurdles. The highest load from this drain trap was collected over approximately one day and demonstrates how industry practice and poor regulation are significantly contributing to the number of microplastics and nurdles entering the storm water pathways.

This project is emblematic of how baseline microplastic loads and hotspots can inform collaborative efforts to track pollutant sources, implement behaviour change and develop improved waste management. AUSMAP's findings have been presented to SA Deputy Premier and Minister for Climate, Environment and Water, Dr Susan Close, Environmental Protection Agency, Green Adelaide, and Green Industries to explore collaborative solutions. AUSMAP has proposed the creation of a Working Party and implementation of the Microlitter Reduction Strategy. These efforts are critical to addressing the deleterious impacts of pollution in Barker Inlet and surrounding sites, which are being choked by microplastics.

Queensland (QLD)

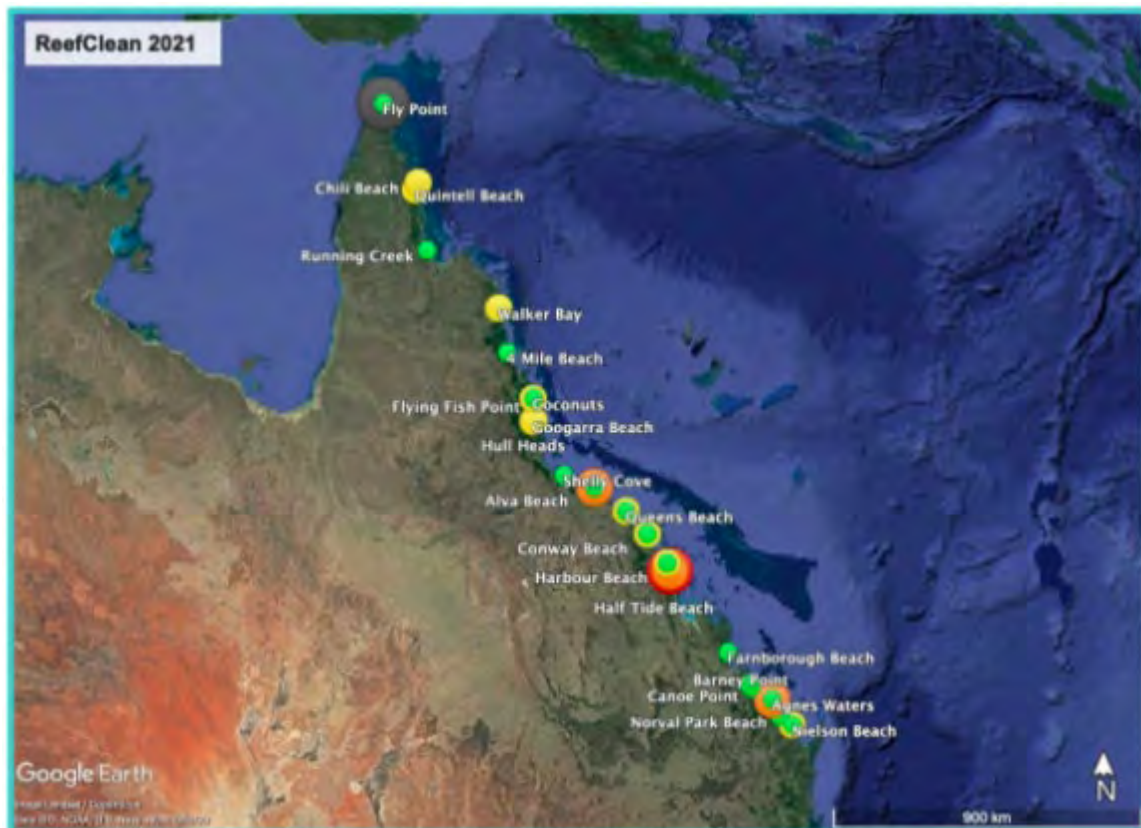


Figure.7. Reef Clean 2021 sample locations and microplastic loads. Refer to Figure.1 for AUSMAPs microplastic load colour key.

Queensland is the subject of annual sampling for the Reef Clean project in partnership with the Tangaroa Blue Foundation, funded by the Australian Government's Reef Trust. In 2021, 39 samples were collected at 23 sites in the Great Barrier Reef Catchment Area to develop an understanding of microplastic concentrations.

The findings unearthed considerable variation between sites, with values ranging from 0 (**Very Low**) to 1,191 microplastics per m² (**Very High**). The highest concentration was found at Fly Point in the Cape York region which marked a new record high for Queensland, and was the first sample to reach the threshold denoting '**Very High**' microplastic loads (1,000-10,000 microplastics per m²). Prior to this, Alma Bay on Magnetic Island held the highest known quantity with 209 microplastics per m² found in 2020. This spatial disparity is a testament to the significance of investigating novel, and widespread locations to produce more robust data. These sites provide a glimpse into the pollution that is contaminating the Great Barrier Reef, likely exacerbating the pressure on marine species and ecosystems from climate change and anthropogenic activity.

The results from 2022 Reef Clean sampling will help to place these trends in the context of a larger dataset, enabling us to identify key sites for source reduction. These will be available in February 2023, in conjunction with macro litter survey results to illuminate pollution in this iconic location. Moreover, future research will seek to provide a more comprehensive

understanding of microplastic concentrations by exploring more remote locations and those in the populous south-east corner of QLD.

Western Australia (WA)



Figure.8. Overview of all sites sampled by AUSMAP's citizen science network in WA.

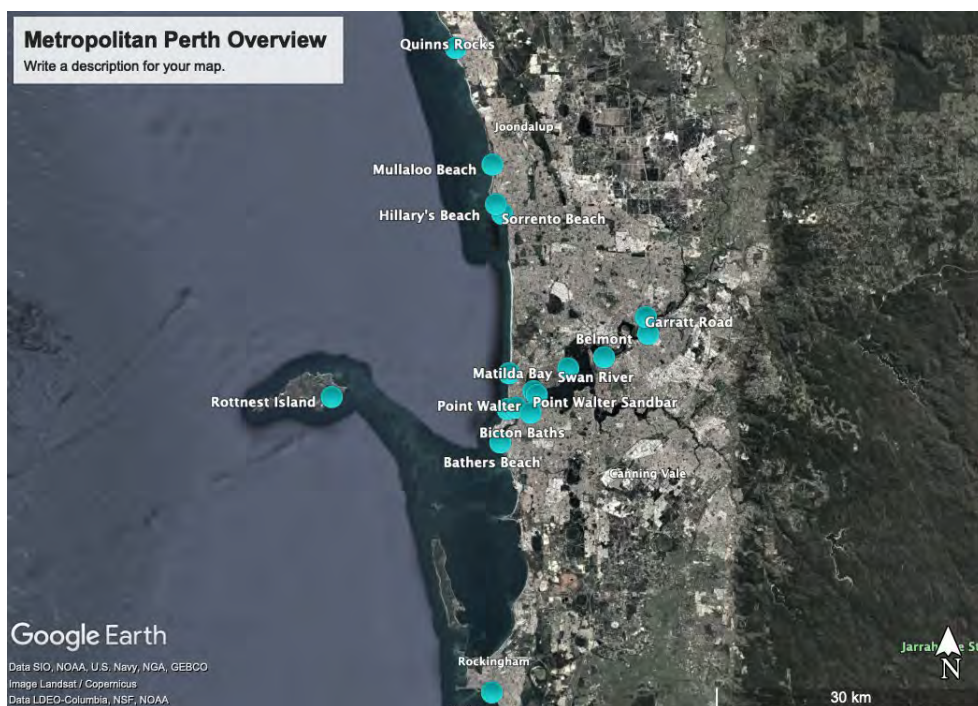


Figure.9. Overview of all sites sampled by AUSMAP's citizen science network in Metropolitan Perth.

WA has recorded 'Very Low' to 'High' concentrations of microplastics from 57 samples. The highest loads to date have been identified at Walter Point in the Swan River, with 941 microplastics per m². This sample was predominantly composed of opaque and black resin pellets (80%), originating from a range of different industrial sources up-catchment. Other sites along the Swan River including Bicton Baths have often exceeded 100 microplastics per m² which indicates a consistent land-based source entering local waterways.

Local sampling efforts are ongoing at Bathers Beach, Leighton Beach and Cottesloe Beach by local community group Ocean Remedy and the local community ambassadors. These datasets have been instrumental in establishing baseline data of microplastics at sites in Fremantle and can inform ongoing monitoring and mitigation.

In addition, AUSMAP has been working in collaboration with an education and monitoring project in partnership with Keep Australia Beautiful in 2021. Sampling was conducted at several metropolitan beaches, with students from local primary and high schools showing 'Very Low' to 'Low' concentrations. This marks the beginning of an annual collaborative sampling event designed to engage and educate young people to take ownership of their local environment and add to what is currently a limited dataset in WA.

Tasmania (TAS)



Figure.10. Overview of all sites sampled by AUSMAP's citizen science network in Tasmania.

Microplastic pollution has been identified in Tasmania, despite it being isolated from the mainland and having a reduced population density. AUSMAP citizen scientists have been instrumental in documenting loads at 14 sites, identifying values ranging from 'Very Low' to 'Moderate.' The highest known loads were found at Sandy Bay Beach near Hobart in 2019, which yielded a result of 71 microplastics per m². This site is located directly adjacent to the Hobart CBD and is connected to the Derwent River which acts as a transportation route for pollutants to reach the aquatic environment. According to AUSMAP's 'Watch and Act Guidelines' this site is a 'Watching Brief' and requires ongoing monitoring to track whether plastic concentrations increase.

In spite of these encouraging findings, the AUSMAP citizen science community has not succumbed to complacency, but rather undertakes ongoing sampling in collaboration with local schools, community, and scouting groups. This provides a critical baseline to measure future results against and additionally engages people with the microplastic issue and their role in individual source reduction.

NT

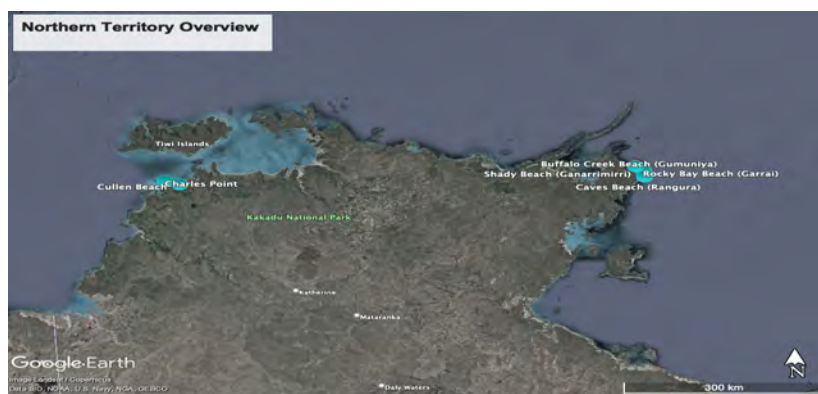


Figure.11. Overview of all sites sampled by AUSMAP's citizen science network in the Northern Territory.

In 2021, AUSMAP conducted a project to quantify the impact of microplastic pollution in remote areas across Northern Australia. The program was developed to engage and educate local stakeholders in identifying microplastics and discussing the issues, including Indigenous Ranger Groups, local councils, educators, high-school students and community members. The aim was to provide the necessary training, resources, skills and knowledge to assist in achieving successful monitoring and management of this ever-increasing problem. To do so, the Kenbi Ranger Group and Dhimurru Aboriginal Council undertook training and accreditation to foster a community-focused approach. Focus areas included the Cox Peninsula, Darwin and around Cape Arnhem which are of high cultural importance and ecologically significant due to their role in providing prime nesting habitats for marine turtles. AUSMAP sampling was conducted at these sites in a manner that was sensitive to the cultural needs of each locale, in order to recognise the equal importance of social and environmental justice.

During the project, 26 microplastic samples were collected alongside a macro debris survey to establish critical baseline data and account for the previous absence of samples from the NT in our database. The results of this investigation were varied, with a range from a 'Very Low' result of 1.3 microplastics per m² at Mindil Beach in Darwin and Long Beach, to 'High' with a result of 961 microplastics per m² at Cave Beach in Cape Arnhem. The sample sites allowed for a comparison between the findings on the East Arnhem Coast and those from the Darwin region to explore spatial differences. Hard fragments were the microplastic type found in the greatest concentrations in both categories, with most showing signs of ageing and fracturing from environmental exposure. With currents moving both easterly and westerly along Australia's northern coastline, depending on the time of year, it is thought that many of these fragments on the East Arnhem Coast originate from South East Asia. This is supported by evidence of ghost net identification in the Gulf of Carpentaria coming from

neighbouring Asian countries. The levels in East Arnhem can be juxtaposed with those in the Darwin region which are indicative of the lack of influence of ocean currents to the latter area. Darwin's concentrations are typically more reflective of localised inputs and the high tidal ranges influencing deposition on local shorelines.

This project exemplifies the value and significance of designing culturally sensitive programs to maximise the outcomes for Aboriginal communities and the environment. With environmental stewardship at its core, this project extended into the education sector with students and teachers from Nhulunbuy High School and Yirrkala school participating in accredited training and community events to maximise opportunities for awareness and behavioural change. However, ongoing sampling has not progressed due to a lack of funding for support and continued training of these Ranger groups. It is highly recommended that further funding is provided to increase these programs with these groups into the future.

APPENDIX B:

Boomerang Alliance Position on Proposed Reusable Shopping Bag Standard for Australia

A reusable bag must be designed, manufactured, and used to be able to complete *a minimum number of* multiple uses or trips for the same primary purpose, i.e., carrying shopping from a retail store. This is essential to prevent fake 'reusable' claims by bag producers and to maximise environmental gains and financial benefits to consumers.

A Reusable Shopping Bag Standard should be introduced and nationally in practice by 2024, applied to all retailers and retail bag producers and sellers; and required through government regulation (not a voluntary code or pact) with appropriate penalties to enforce compliance and prevent false advertising. Only reusable bags (with some exceptions) would be allowed to be supplied by retailers.

1. Key Principles

- Multiple use
- Designed as a reusable product
- Minimum recycled content
- Priced to support multiple use practice
- Collected for recycling at end of life

To be marketed and labelled as reusable, the bag must be designed, manufactured, and tested against multiple use criteria.

1. Multiple use criteria means it can complete a minimum 125 shopping cycles. We have proposed these, based upon a Californian reusable bag standard SB 270 (that is also adapted for use in the EU) which includes these qualities:

Multiple trips means at least 125 cycles, carrying 22lbs (10kgs) over 175ft (53.3 metres).

Bags made of plastic should be at least 2.25 mls thick (63.5microns).

Noting that, in the EU many reusable bags are often made to be a thicker 4 mls (100 microns). Such a thickness is more aligned with durability and multiple use.

2. It is imperative that any reusable bags are perceived by consumers to be reusable. That is, they should be manufactured and designed to be well-made and durable and have a credible certification.

The 125 shopping cycles criteria means that, if a bag is used for a weekly shop, it should be capable of being used for over 2 years.

2. Key Components for Reusability

- A. Independently tested and certified against a 125 shopping cycles requirement
- B. Strong, durable, fit for purpose construction with separate, industrially stitched handles
- C. A minimum thickness above 70 microns (we recommend 100 microns)
- D. Not contain any hazardous or harmful components that would inhibit recycling
- E. Have a minimum 80% recycled content, increasing to 100% where possible

- F. With a minimum price to encourage multiple use. We recommend a minimum \$2
- G. Labelled as reusable and feature an unambiguous and verifiable Reusable Shopping bag logo

3. Built-in Improvement for the Standard

We recommend the potential inclusion of other materials (such as paper or fabric) and better materials (based on sustainability criteria e.g., energy/emissions, water etc) to improve the standard in the future. This would also allow for the inclusion of new and more sustainable materials and designs as they become available.

4. Availability and end of life

- A reusable bag should be available for purchase at retail outlets
- Any profits to be donated to community groups involved in litter collection and plastic reduction activities
- Retailers should have the flexibility to increase and vary prices above the minimum and offer other incentives and communications that encourage reuse
- When at the end of its useful life or when damaged, collection services must be available at retail spaces for recovery and recycling

5. Exemptions

In circumstances where consumers do not have a bag and refuse a reusable bag, paper bags could be sold. This may also be an option for department stores or other non-food retailers. Takeaway food and drink outlets could supply paper bags to their customers.

6. Testing

Once a standard is set, an independent testing provider(s) needs to be identified. Manufacturers and suppliers who supply bags to retail will need to arrange for their products to be tested and certified as reusable against the Standard. Only bags that have passed the test can be considered reusable and labelled accordingly.

July 2022

APPENDIX C:

Boomerang Alliance Position Statement on single-use coffee cups and lids

August 2022

Boomerang Alliance proposes a national goal to phase-out on all single-use (disposable) coffee cups and lids by 2030, with milestone bans on single-use plastic cups and lids in 2024 and 2026 designed to achieve this goal.

The problem with single use coffee cups/lids

An estimated 1.8 billion coffee cups¹ are used every year in Australia. Single use coffee cups and lids are a major litter and waste problem. According to datasets that include Clean Up Australia, Keep Australia Beautiful and the Australian Marine Debris Initiative, they remain amongst the most habitually littered items in Australia.

They present significant issues and have been identified by many countries as a problem that must be addressed.

The recovery issue

Irrespective of their material use, single-use cups and lids are not effectively collected, recycled, or composted when thrown away. There is broad confusion surrounding the correct disposal method of these items. They commonly contaminate the recycling and organic streams as most municipal waste services do not have the ability to recycle *or* compost these products - although organic waste facilities are becoming more common. Furthermore, they are a massive drain on resources and for their size, add significant volumes in landfill.

Reusables are the answer

To address these problems, government policy should be focused on reducing resource use and eliminating both litter and waste of these products. Reusable coffee cups/lids are a preferred and better alternative that will positively address all the problems. They present a very viable and achievable option. There is a common and growing practice by many cafes and their customers to use reusable/BYO cups and lids, as well as the implementation of cup swap systems that have shown to be very successful in various communities throughout Australia.

Of all disposable takeaway packaging items, coffee cups/lids are an easier option to make exclusively reusable in the public place. The switch to reusables must be coupled with specific regulation, policies, and incentives to support reusable cups/lids uptake, making these a common practice.

Governments cannot rely on voluntary or individual action alone and must set a strategic agenda and timeframe that will achieve desired goals.

A reusable cup can be crockery, glass, metal, or BPA-free plastic. It must meet certain essential requirements. This includes:

- Designed to accomplish a minimum number of reuse cycles (including through cup share systems)
- Manufactured using durable (and non-toxic materials) that meet food safety standards
- Have associated reuse/return options in place (such as return to retail, cup share networks or public collection infrastructure)
- Reuse/return options that are convenient and provide reasonable opportunity to participate
- Collected at the end of their useful life and recycled

¹ https://www.agriculture.gov.au/sites/default/files/documents/apff-national-report_0.pdf

A National Strategy for Change

The goal of this strategy is to switch public behaviour away from disposable coffee cups and lids towards reusable alternatives. It recognises that single use plastic coffee cups and lids represent a particular resource, litter, and waste problem.

Our strategy proposes immediate policy actions by government to directly promote reusable cup uptake whilst implementing additional deterrence on single use items.

All policy interventions contained below are currently being planned or implemented in other parts of the world.

Commonwealth Government

Introduce a National Product Stewardship Scheme for all Packaging with mandatory recovery and reuse targets. Such a scheme should place responsibility on producers to design products for recovery and fund the collection and recovery of their products. While a Product Stewardship Scheme for Packaging applies to all packaging, it will inevitably assist the switch to reusable cups and lids through greater reusable packaging recovery targets and more funding for these measures.

The Australian Packaging Covenant Organisation has a 10% reusable packaging target. The Boomerang Alliance proposes that, for coffee cups and lids, the reusable target should be at least 80% before 2030, and achieved through the adoption of our policy roadmap outlined below and funding support from industry.

All State and Territory Governments

Set a national goal to phase-out all single-use coffee cups and lids by 2030 and implement a roadmap to achieve this.

To achieve this goal, the Boomerang Alliance is proposing a staged, transitional approach, with:

- (1) All single use plastic* coffee cups/lids banned in 2024. Exemption for compostable cups and lids (AS 5810 and 4736 only) **
- (2) Removal of the exemption for AS 4736 (commercially compostable) cups and lids in 2026. Home compostable (AS 5810) would still be allowed.
- (3) Then all disposable coffee cups and lids, including non-plastic/home compostable, would be

phased out between 2026 - 2030.

All single use coffee cups and lids would be replaced by reusable alternatives.

**A single-use plastic product means a product that is made wholly or partly from plastic and that is not conceived, designed, or placed on the market to accomplish, within its lifespan, multiple trips, or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived*

***This exemption is proposed on the proviso there are no generally available non-plastic or home compostable cups or lids currently on the market. If non plastic/home compostable cups/lids are on the market by 2024, there should be no exemptions for AS 4736 commercially compostable cups (and lids).*

A Roadmap to make Reusable Coffee Cups and Lids a Common Practice

Essential to achieving the 2030 goal, is that all State and Territory jurisdictions implement a set of strategic interventions that will lead to that outcome by changing industry practices and public habits between 2022 and 2030.

1. Introduce mandatory requirements that all outlets providing takeaway beverages also offer or sell reusable cups and lids. All outlets must accept returned cups and/or participate in a reusable cup network. This should be in place by 2024 to coincide with the single use plastic cup bans. Disposable cups and lids must not be offered for in-house consumption.
2. Identified 'controlled and managed environments' such as sports stadiums, festivals, airline and train services, government and public institutions should be early adopters and only provide reusable cups and lids to the public from 2024. Cafes in government and corporate buildings should be included to supply and provide only reusables for employees under an in-house share system.
3. A levy of 25 cents (or higher) will be charged on all disposable coffee cups, and their lids, sold from 2024 until 2030. Monies raised should be allocated to public awareness and the establishment of reusable cup/lid systems and services.
4. Maintain continuous improvement policies to support reusable product practices. These include the removal of retailer liability associated with reusable container use and continued innovation on the designs, materials and standards for all cups and containers.
5. Government Health advice provides guidance on reusable container food safe practices. There is no evidence that the COVID virus can be spread through packaging, so policies should clearly state that disposable cups and lids do not represent a preferred 'safe' option.

Local Government

1. Set licensing conditions on cafes and mobile vendors that support participation in reusable cup services, including having a dishwasher or compact dishwasher and other facilities available for those reusable cup services.

2. To lead by example, all local government offices and facilities should supply, and only allow reusable cups and lids for employees and their visitors from 2024.
3. Promote reusable cup and container use in their communities, and the establishment and uptake of cup share and return collection networks in their LGA.
4. Set local policies and introduce conditions for events that include the provision of reusable cups and washing facilities at business, public and community events.

Australian Certified Compostable Options as a Transitional Measure

Boomerang Alliance recognises that non-plastic or compostable coffee cups and lids may need to continue to be available until 2030.

Given that home compostable cups and lids are currently hard to find, we propose to exempt commercially compostable (as per AS 4736) cups and lids until certified home compostable alternatives become available. We have proposed a cut-off date of 2026 for this exemption. Non-plastic or home compostable items would be phased out by 2030.

Boomerang Alliance proposes the introduction of public place collection services for organics. Public place organics collection should start in 'controlled and managed environments' where discarded food disposal can be monitored to prevent bin contamination. Examples of these should be placed at cafes and food outlets, corporate, sporting, and public events, and at food courts and café precincts.

Non-plastic and AS certified compostable packaging, including coffee cups and lids can be collected in organics bins until they are phased out.

Plastic Free Places/Plastic Free Beaches

The Boomerang Alliance program, Plastic Free Places (with Plastic Free Beaches) program, has over 1000 participating cafes around the country and includes a Reusable Cafes initiative. Through this initiative, all participating cafes have achieved a marked increase in the use of reusable cups. Some cafes have reported that many days have seen 100% of hot drinks being served in reusable cups.

International Policy Actions

In the European Union, Extended Producer Responsibility (EPR) schemes are proposed for single use plastic packaging. These include requirements on producers to cover the costs of the education, collection, transport, and treatment of single use plastic packaging by 2024.

Many EU countries (and other regions) are taking further steps as part of the EU *Directive on Single Use Plastics*. Here is a snapshot of new policies, including for coffee cups.

Country	Items	Action	Date
Germany	SUP coffee cups and food containers	Mandatory requirements for all cafes and food outlets to offer reusable alternatives	January 2023
The Netherlands	SUP coffee cups and food containers	Ban on SUP coffee cups Fee on other plastic packaging	July 2023
France	SUP coffee cups Reusable cups and plates	Banned (exemption for compostables) Mandatory reuse in restaurants	2020
Ireland	SUP coffee cups	0.20-euro fee	January 2023
Greece	SUP coffee cups and food containers	0.05-euro fee	January 2022
Portugal	SUP packaging in ready to eat meals and beverages	0.30-euro fee	July 2022
Sweden	SUP coffee cups, food containers and other packaging	Investigating the introduction of new policies and fees for reusables and SUP coffee cups	current
Italy	SUP products	Plastics Tax	January 2023
Spain	SUP products	Plastics Tax	January 2022
Other Examples			
UK	Reusable foodware	Proposed mandatory requirements Plastic tax on SUP packaging without recycled content	2025 2022
Scotland	SUP coffee cups	25 pence fee	pending
Vancouver, Canada	SUP coffee cups	25 cents fee	January 2022
Berkeley, California	SUP coffee cups	25 cents fee	January 2020
California	SUP products	Considering tax on all SUP products	current
McDonalds UK, Burger King US	SUP coffee cups	Trialling returnable cup systems	current
All Starbucks EU/Africa/Middle East	SUP coffee cups	Offering reusable cups share	2025
Korea	SUP coffee cups	Introduced CDS for cups sold at coffee shops and fast-food outlets	2022