

Plastic Pollution Policy Country Profile: Australia

Janet Bering and Rachel Karasik

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Author Affiliations

Janet Bering, Duke University School of Law
Rachel Karasik, Nicholas Institute for Environmental Policy Solutions

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Key Takeaways*

- Australia generated 2.5 million tons of plastic waste between 2018 and 2019, and recycled 13% of its plastic waste.
- 27% of local governments do not provide recycling services to their constituents.
- Marine debris and microplastics have been found among the most remote coastal areas of Australia, with evidence that some of this litter comes from foreign areas through currents.
- On the subnational and national level, Australian government entities are targeting single-use plastics using instruments such as bans and deposit return schemes.
- Australia has also developed a number of plans to address other kinds of plastics and to protect wildlife from plastics with measurable and time-bound targets for plastic reduction and recycling.
- Effectiveness studies have found that 1) waste site management policies are more effective when coupled with informational instruments; 2) support for bag bans is high though they may not contribute to overall marine litter reduction; and 3) container deposit schemes reduce the number of bottles found during coastal cleanups and litter surveys

* These are based on a review of literature published and policies enacted before December 2021



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INTRODUCTION

This document outlines: 1) the nature of the plastic pollution problem in Australia, 2) available information about the national, subnational, and to a smaller extent, international policy landscape guiding government approaches to the plastic pollution problem in Australia, and 3) what, if any, information exists about the effectiveness of these policy approaches. This document is written using a basic literature review process and with support from the [Plastics Policy Inventory](#), as outlined in the Appendix (below), and is not exhaustive. It contains the most up-to-date information at time of publication, but this information may eventually be less relevant as the policy landscape continues to evolve. The authors were not able to get expert review for this case study, to ensure the information gathered aligns closely with what experts and practitioners are observing and experiencing on the ground. If conducting research on the plastic pollution crisis in Australia, we recommend you use this document as one of many resources available to better understand the problem and its solutions.

PLASTIC POLLUTION IN AUSTRALIA

Like many coastal states, Australia is faced with the well-documented problem of plastic pollution in the country's waters. On average, Australia's marine waters have between 4,200 and 5,000 pieces of microplastic per square kilometer (Reisser et al. 2013; Hajbane and Pattiaratchi 2017). This figure is substantially lower than high concentrations reported in subtropical gyres but higher than other coastal seas such as the Caribbean Sea or the Gulf of Maine ($1,534 \pm 200$) (Hajbane and Pattiaratchi 2017). Microplastics in Australian waters are ubiquitous and widespread, but exact concentrations are variable and dynamic (Reisser et al. 2013). Generally, concentrations are higher near urban centers (Reisser et al. 2013). Plastics found offshore consist of mostly pieces of degraded plastic from larger items, fishing line, plastic pellets, and microbeads (Reisser et al. 2013). Plastic pollution in Australia's inland waterways and soils is also extensive: a study of microplastic pollution in sediments of the Brisbane River in Queensland found levels of microplastic pollution comparable to or higher than many other world rivers, with up to 520 microplastic pieces per kilogram of soil (He et al. 2020). Microplastic pollution has also been found in the deep seabed off the coast of Australia (Barrett et al. 2020). In general, there is a significant amount of data documenting widespread pollution from marine plastics on Australia's coast and beaches (Hardesty and Wilcox 2012).

Scientists have extensively studied the negative impacts of plastic pollution in Australia. This is especially true with regards to marine megafauna, such as sea turtles and seabirds, which can suffer increased mortality through ingestion and entanglement of marine plastics (Verlis et al. 2013; Wilcox et al. 2012).¹ Additionally, Australia has a robust tourist industry, famous for its beaches and coral reefs, and coastal areas often rely on a higher proportion of tourism for economic output than on the national average (Tourism Research Australia 2012).

In 2018–19 Australia generated an estimated 74.1 million tons of waste, including 2.5 million tons of plastics (National Waste Report 2020). Just 13 percent of those plastics are recycled (National Waste Report, 2020) and 27% of local governments do not provide recycling services to their constituents (Commonwealth of Australia 2018). Comparatively, this is much lower than many other high-income nations, including the United States, where 90% of Americans have access to curbside recycling (Gendell and Coddington 2020). Despite the low recycling rate, Australia generally has low levels of waste leakage into the environment. Scientists estimate roughly two percent of Australia's plastic waste in 2015 leaked into the environment; while low compared to other countries, this still represents nearly 11,000 metric tons of pollution per year (Lebreton and Andrady 2019).

Two facts about Australia's population are important when considering policies to address plastic waste collection. Sixty-three percent of Australia's population lives in or near five major cities, all of which are coastal (Wurm et al. 2020). The rest of the population lives in rural areas, where access to curbside recycling can be

1. A full account of negative impacts from marine debris on Australia's natural environment is beyond the scope of this policy brief, but the reader is directed to the [Australian Senate's 2016](#) report on marine plastic pollution for extensive discussion of the negative impacts (Senate 2016).

limited and transportation costs can impede waste collection (Wurm et al. 2020). Thus, experts suggest that it is imperative that Australia focuses on reducing overall plastic waste production, to reduce the need for waste collection in rural areas as well as to reduce leakage into the ocean from urban centers.

Studies indicate that some marine plastics on Australian beaches and in Australian waters may be coming from passing ship traffic or through current transport from foreign nations. In general, remote beach areas tend to have debris from commercial fishing and to some extent shipping, while areas closer to cities have a higher frequency of consumer items, likely from those domestic, land-based sources (Hardesty and Wilcox 2012). For example, Smith et al. (2018) found that only half of plastic bottles found on beaches in New South Wales, Australia, originated from Australia. By examining bottle labels and the presence of marine growth on the bottles, the researchers determined that most of the bottles found were likely discarded from passing merchant marine vessels (Smith et al. 2018). Additionally, another study found that sea surface microplastic concentration were greatest during peak offshore current flow, which contributes to the transport of microplastics to Australian waters from other regions (Hajbane and Pattiaratchi 2017). This current flow increased the amount of microplastics found by an order of magnitude, as compared to other Australian waters (Hajbane and Pattiaratchi 2017). In the study, nearshore plastic pollution was driven by land-based inputs, as it increased significantly after rainfall (Hajbane and Pattiaratchi 2017). Reisser et al. (2013), however, found evidence that plastic pollution may be coming from a wide variety of locations, transported on the complex currents that surround Australia. All these studies found domestic sources to be a significant contributor to marine plastic pollution, in addition to maritime shipping and current transport.

In light of these multiple sources of pollution, Australia's national and subnational governments have implemented a suite of policies that work at different scales and target different types of plastic at various stages of the life cycle. Australia has engaged with the issue on the international level, by funding waste reduction programs in neighboring Pacific Island nations and working on reducing waste from maritime sources with the International Maritime Organization (IMO). Domestically, Australia is working on phasing out "problematic and unnecessary plastics" and improving recycling and waste management. Prioritizing the problem, the government has stated that "Australia is on a plastics mission" (Australian Government 2021).

POLICIES TO ADDRESS PLASTIC POLLUTION

Australia is comprised of six states and two territories, with governance of waste and plastic pollution divided between the federal, state, and local governments (Wurm et al. 2020). Six national and nine subnational policies were found in the Plastics Policy Inventory from Australia. From the literature, five national policies and five additional subnational policies were identified and added to the inventory. One of those policies, the 2009 National Waste Action Plan, is not discussed here because it has since been updated.

In addition to these government policies, Australia has a robust civil society, and many nongovernmental organizations are dedicated to the problem of plastic pollution. This includes several organizations with voluntary measures that businesses can participate in, such as the Responsible Cafés initiative to reduce the use of single-use coffee cups; groups dedicated to beach clean-ups and other volunteer activities; and more traditional policy advocacy groups that lobby the government and seek to increase public support for tackling the issue (Tudor and Williams 2021). While these organizations are not formal policies, they do contribute to the overall efforts of the country to reduce plastic pollution.

International Initiatives

Pacific Ocean Litter Plan

Over the course of six years, Australia has committed to investing \$16 million to help the Secretariat of the Pacific Regional Environment Programme and Pacific Island nations implement the Pacific Regional Action

Plan on Marine Litter. The funding from Australia will specifically focus on reducing the sources of single-use plastics in the marine environment. Australia will engage in capacity building and specific initiatives determined in collaboration with Pacific Island countries.

[International Maritime Organization Action Plan](#)

The IMO adopted an action plan to address marine plastic litter from ships in 2018. Australia has set a target for implementing those measures by 2023.

National Level Policies

While Australia has national-level waste management statutes, national-level action on this issue comes largely in the form of setting goals to reduce plastic use and pollution, and by developing complementary policy goals and coordinating with state governments and industry to implement policy changes. Australia also has several partnerships between industry and government to promote voluntary phase-outs of various plastic products, which are described below. For example, the Australian Packaging Covenant Organization (APCO), is an industry organization that coordinates with government to reduce packaging waste among member businesses.

[Australia National Plastics Plan \(2021\)](#)

The Australia National Plastics Plan sets the Australian national government's role in solving the plastic pollution problem. The plan is divided into five parts: prevention (plastic use reduction), recycling, consumer outreach, marine debris, and research and development.

The prevention sections of the plan are heavily based on government-industry partnerships. For example, to phase out “problematic and unnecessary plastics,” the government will work with industry to fast-track the phase out and consider regulatory action should industry phase outs not be achieved. These problematic plastics phase-out targets are plastic packaging products with additive fragmentable technology that do not meet relevant compostable standards (July 2022); expanded polystyrene (EPS) from loose packaging fill and molded packaging in consumer packaging (July 2022); EPS consumer food and beverage containers (December 2022); and PVC packaging labels (December 2022). Additionally, the plan envisages that the industry will shift to easily recyclable plastics.

The plan sets out several targets for recycling for 2025: 50% of all packaging, and 20% of all plastics (up from four percent today). The plan also includes investments of 600 million dollars in recycling capacity and additional funds in circular economy programs.

The plan also defines goals to support action by individuals. These goals include providing better recycling information, investigating recycling misrepresentations by companies, ensuring consistent curbside collection, and helping states and territories align their container deposit schemes.

In the marine debris section, the Australian government pledges to work alongside industry on an industry-led phase-in of microfiber filters on new residential and commercial washing machines by July 1, 2030. Additionally, the Australian government pledges to “pursue coordinated global action on marine litter and microplastic pollution through a new global agreement” and continue to support other international initiatives to reduce sources of marine debris, as discussed above.

In the final section of the plan, the Australian government pledges to invest nearly \$50 million AUS in new data visualizations and research plans on recycling and the circular economy.

[Recycling and Waste Reduction Act \(2020\)](#)

The objective of this Act is to reduce the amount of waste produced by Australians and to develop a circular economy. It also specifically calls for reducing greenhouse gas emissions as part of reducing waste from products. To achieve this objective, the Act sets out regulations for exporting waste to ensure it is conducted

in an environmentally sound way. It also creates a product stewardship program to promote circular economy principles, including the reuse, remanufacture, recycling and recovery of products. The product stewardship program encourages reducing waste through improvements in product design, increasing durability and managing products throughout their life cycle.

National Waste Policy Action Plan (2019)

This plan was designed to implement the 2018 National Waste Policy, and it lays out seven national targets for reducing waste or making productive use of waste when it is not possible to reduce waste. Those seven targets are:

- (1) Ban the export of waste plastic, paper, glass, and tyres, commencing in the second half of 2020
- (2) Reduce total waste generated in Australia by 10% per person by 2030
- (3) 80% average resource recovery rate from all waste streams following the waste hierarchy by 2030
- (4) Significantly increase the use of recycled content by governments and industry
- (5) Phase out problematic and unnecessary plastics by 2025
- (6) Halve the amount of organic waste sent to landfill by 2030
- (7) Make comprehensive, economy-wide, and timely data publicly available to support better consumer, investment, and policy decisions.

(National Waste Policy Action Plan 2019)

Several of these targets will likely directly reduce the amount of plastic pollution created by Australia. The increased resource recovery rate, increased use of recycled materials and the phase out of problematic and unnecessary plastics will likely have the greatest impact on the plastic pollution problem specifically.

Specific actions under the phase-out of problematic and unnecessary plastics goal include working internationally to reduce sources of marine litter (described above) and nationally to reduce reliance on problematic plastics. The government is working on developing a national plastics plan to increase recycling rates. For the phase-out of plastic packaging and microbeads, the lead partners are industry trade groups. These industry trade groups will take voluntary, coordinated action to reduce the use of problematic and unnecessary plastics.

The National Waste Policy Action Plan also sets out National Packaging Targets for industry. These targets will largely be implemented by APCO. The four targets are:

- 100% of packaging is reusable, recyclable, or compostable
- 70% of plastic packaging goes on to be recycled or composted
- 50% average recycled content within packaging (20% for plastic packaging)
- Problematic and unnecessary single-use plastics packaging will be phased out

National Waste Policy (2018)

The national Waste Policy provides a framework for coordinated action between federal and state governments, businesses, and NGOs to achieve sustainable waste management. The policy sets goals and targets based on circular economy principles for waste, recycling, and resource recovery.

Voluntary Phase Out of Microbeads (2015)

In February 2015, Australian environment ministers asked agency officials to work with industry to secure a voluntary agreement to phase out microbeads in personal care, cosmetic and cleaning products by July 1,

2018 (Hanna 2016). Work on the phase-out was led by Accord, the national industry association representing manufacturers and suppliers of hygiene, cosmetic and specialty products, their raw material suppliers, and service providers. New South Wales and the Australian national government led the government involvement in progressing the phase-out. The campaign to encourage companies to voluntarily commit to phasing out microbeads was called “BeadRecede.” The campaign applies to microbeads in rinse-off products, and exempts microbeads in “wipe-off” cosmetic products, medicines, and pre-production plastic pellets. In 2018, a review was conducted which found that companies had complied with the voluntary phase out of microbeads (Australian Government, Department of the Environment and Energy 2018).

[Threat Abatement Plan for the Impacts of Marine Debris on Vertebrate Marine Life \(2009\)](#)

Under Australia’s Environment Protection and Biodiversity Act (EPBA), marine debris was listed as a key threat to marine vertebrates in Australia. The Department of the Environment, Water, Heritage, and the Arts is required to develop a threat abatement plan (TAP) for all threats listed in the EPBA. This plan divides responsibilities for reducing the threat between the national, state, and territorial governments, along with a variety of state agencies.

This TAP has four main objectives: (1) contribute to the long-term prevention of the incidence of harmful marine debris; (2) remove existing harmful marine debris from the marine environment; (3) mitigate the impacts of harmful marine debris on marine species and ecological communities; and (4) monitor the quantities, origins, and impacts of marine debris and assess the effectiveness of management arrangements over time.

For objective 1, 18 actions were proposed by the plan. Eleven of those actions are focused primarily on reducing sea-based sources of marine debris, including from fishing vessels. The other actions were focused on reducing litter in waterways, providing education, and building collaboration on the issue across Australia and at the international level.

Objectives 2 and 4 are merged, with many data collection activities combined with removal activities. Objective 3 is focused largely on efforts from the federal government to support marine wildlife recovery and study impacts to wildlife from marine debris.

[National Environment Protection \(Used Packaging Materials\) Measure 2011](#)

This measure standardizes rules for the recovery and recycling of consumer packaging materials across state governments. This measure requires data reporting on the recovery of packaging materials, to demonstrate that participating jurisdictions are implementing packaging re-use standards.

[Antarctic Treaty \(Environment Protection\) \(Waste Management\) Regulations 1994](#)

These regulations set guidelines for waste management in the Antarctic. They specifically require the removal of plastic waste from the Antarctic at the soonest practicable time. These regulations also ban the dumping of any waste into Antarctic waters.

Subnational Level Policies

This section provides an overview of the types of subnational policies designed to combat plastic pollution in Australia, and then a description of the laws in each state or territory.

[State Level Bag Bans](#)

Every state in Australia has banned single use plastic bags, New South Wales being the last in 2021 (Tudor and Williams 2021). These prohibitive policies generally ban bags below a certain thickness (Tudor and Williams 2021). Four states, South Australia, the Australian Capital Territory, Northern Territory, and Tasmania, also exempt biodegradable plastic bags from the bag ban (Tudor and Williams 2021).

Table 1. Table of Plastic Bag Bans from Tudor and Williams

Table 1c
Australia plastic bag ban.

	New South Wales	Victoria	Queensland	Western Australia	Australian Capital Territory	Northern Territory	Tasmania	South Australia
Plastic bag ban	N	<35 µm (November 2019)	<35 µm (July 2018)	<35 µm (July 2018)	<35 µm (November 2011)	<35 µm (September 2011)	<35 µm (November 2013)	<35 µm (May 2009)
		bio. & com. ^a	bio. & com.	bio. & com.				

^a bio. & com: biodegradable and compostable bags <35 µm are included in ban.

State Level Container Deposit Scheme / Deposit Return Schemes

In recent years, the increase in public and political attention on ocean plastics has led to the introduction of container deposit schemes (CDS) in six of the eight states and territories (Tudor and Williams 2021). South Australia’s CDS has been in place since 1977. While the specifics vary by state, container deposit schemes generally give consumers money for returning plastic beverage bottles, along with bottles of other materials such as glass and aseptic cardboard/plastic packs.

Table 2. Table of CDS from Tudor and Williams.

Table 1d
Container Deposit Schemes/Deposit Return Schemes in operation – Australian States.

	Victoria	NSW	Queensland	Western Australia	ACT	Northern Territory	Tasmania	South Australia
Existence of State-wide Container Deposit Scheme	No	Yes	Yes	Yes	Yes	Yes	No	Yes

Single Use Items Bans

Single-use item bans outside of plastic bag bans are uncommon in Australia, but more recently states are moving to adopt bans on more items, such as straws, cutlery, and plates. South Australia and Queensland implemented single-use item bans in 2021. As of this writing, the state of Victoria is undergoing consultation for a 2023 ban of single use items. (Tudor and Williams 2021).

Overview of Subnational Policies by State and Territory

Australian Capital Territory

Waste Management and Resource Recovery Regulation 2017: These regulations pertain both to waste management and a container deposit scheme in the Australian Capital Territory. The regulations set up a fine for trash escape from a waste transporter and set out the sizes and types of bottles covered by the NSW container deposit scheme. They also provide for the state agency to set return rates and establish collection stations.

Plastic Shopping Bags Ban Act 2010: This Act prohibits retailers from providing or selling plastic shopping bags to consumers. Banned bags include polyethylene bags with a thickness less than 35 microns. Biodegradable bags, barrier bags, or bags for sealing products prior to sale are exempt from the ban.

New South Wales

Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017: These regulations set out the sizes and types of bottles covered by the NSW container deposit scheme. They also provide for the state agency to set return rates and set up collection stations.

Protection of the Environment Operations (Waste) Regulation 2005: This law sets out waste management, recycling standards, and hazardous waste management for New South Wales. Specifically relating to plastic pollution, the law requires businesses to ensure their packaging, including plastic bags, meets recovery, reuse,

and recycling standards set by the Environmental Protection Agency of New South Wales. Businesses are required to design a plan for complying with the recovery requirements, and face penalties if they do not comply.

Plastic Reduction and Circular Economy Bill 2021: This bill prohibits plastics deemed unnecessary, including integrated packaging, lightweight plastic bags, plastic straws, stirrers, cutlery, cotton buds, expanded polystyrene, and plastic microbeads in some rinse-off products. This bill also clarified design standards for certain items and establishes a product stewardship framework for certain products that focus on increasing use of recycled material, reducing the use of additives that are unnecessary or harmful to human health, and increasing collection and recovery, among other standards.

Northern Territory of Australia

Environment Protection (Beverage Containers and Plastic Bags) Act 2017: This act establishes the Container Deposit Scheme in the Northern Territory of Australia. This act is also the plastic bag ban in the Northern Territory. Banned bags include polyethylene bags with a thickness less than 35 microns. Biodegradable bags, barrier bags or bags for sealing products prior to sale are exempt from the ban.

Marine Pollution Regulations: This policy sets out the standards and regulations for discharge of waste from ships in the Northern Territory. Specifically relating to plastic pollution, it bans the disposal of any plastic at sea.

Queensland

Waste Reduction and Recycling Act 2011: This statute lays out regulations for waste reduction and recycling in Australia. The Queensland plastic shopping bag ban and beverage container refund scheme are codified in this Act. The Queensland bag ban exempts barrier bags for produce and meat, or a plastic bag that is part of packaging that is sealed for sale of goods. The act also prohibits littering and illegal dumping. The policy is also designed to promote re-use and recycling of waste and requires the prioritization of those things in state and local government and industry waste management plans.

Waste Reduction and Recycling (Plastic Items) Amendment Act 2021: This law codifies the Queensland single-use item ban. The Act bans the sale of the following plastic items for single use: plate, bowl; item of cutlery; straw; stirrer; a takeaway food container made, in whole or part, of expanded polystyrene (EPS); and cup made, in whole or part, of expanded polystyrene (EPS). Healthcare businesses, such as hospitals, nursing homes and clinics, and schools are exempt from the ban.

South Australia

Single-use and Other Plastic Products (Waste Avoidance) Act 2020: The sale, supply, and distribution of many types of single-use plastic is prohibited under this Act. Prohibited plastics include single-use plastic drinking straw; single-use plastic cutlery; single-use plastic beverage stirrer; an expanded polystyrene cup; an expanded polystyrene bowl; an expanded polystyrene plate; an expanded polystyrene clamshell container; and any other products determined to be prohibited plastics by regulation. The Act contains an exemption for wholesalers and distributors who work out of state, but it does not provide exemptions for schools or medical facilities. The Act also bans the sale of all oxo-degradable plastic products.

Single-use and Other Plastic Products (Waste Avoidance) Regulations 2021: These regulations allow an exemption for single-use straws for persons with disabilities and for prescribed businesses, which include pharmacies, local government council, charities, care facilities, and medical facilities.

Plastic Shopping Bags (Waste Avoidance) Regulations 2008: In coordination with the bag ban, these regulations require retailers to post signs informing customers of the ban.

Tasmania

Plastic Shopping Bags Ban Act 2013: These regulations ban the supply of any polyethylene plastic bag less than 35 microns, with an exemption for biodegradable bags and an exemption for barrier bags for produce and meat.

Victoria

Environment Protection Amendment Bill 2019: Among other amendments to the waste management sections of

the Environmental Protection Act, this legislation banned the provision of plastic bags in Victoria. The act bans the provision of any plastic bag less than 35 microns, without an exemption for biodegradable bags but with an exemption for barrier bags for produce and meat.

Pollution of Waters by Oil and Noxious Substances Act 1986 (2014 Amendments): This policy sets out the standards and regulations for discharge of waste from ships in Victoria. Specifically relating to plastic pollution, it bans the disposal of any plastic at sea. Plastics are defined to include synthetic ropes, fishing nets, and plastic garbage bags.

Western Australia

Environmental Protection (Plastic Bags) Regulations 2018: These regulations ban the supply of any plastic bag less than 35 microns, without an exemption for biodegradable bags but with an exemption for barrier bags for produce and meat. Western Australia also specifically provides an exemption for medical uses of plastic bags.

Waste Avoidance and Resource Recovery Act 2007: This act sets up many aspects of Western Australia's waste management, such as local waste collection and business waste collection, including a product stewardship scheme. Additionally, this act provides the parameters for Western Australia's container deposit scheme (CDS).

Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019: These regulations implement Western Australia's CDS, especially providing more details for suppliers and collectors of bottles.

POLICY EFFECTIVENESS

Studies of the effectiveness of policies to reduce plastic pollution in Australia have focused on three general areas: waste management and abatement generally, plastic bag ban effectiveness, and the impacts of container deposit schemes. These studies generally focus on state-level policies. The federal government also studies policy effectiveness, including an assessment of the voluntary phase-out of microbeads.

In addition to studying effectiveness, some scholars have called on the Australian government to do more to address plastic use than waste management and plastic bag bans. These scholars call for measures such as a tax on general plastic consumption, subsidizing reusable alternatives, and more research and education on the issue (Gock et al. 2018).

Federal Microbead Phase Out

The federal assessment of the microbead phase-out policy indicates that companies will comply with the voluntary phase-out by 2018, and no regulation will be needed (Australian Government 2018). This finding is based both on corporate commitments and on independent surveys of the contents of products. The report did not assess the impact of the phase out on pollution levels in Australian waterways.

Waste Management Generally

Research into the efficacy of local litter-reduction policies in Australia shows that higher proportions of local government funding going toward waste management, along with multiple targeted policies like outreach programs and waste facilities, leads to the greatest reduction in plastic pollution along coastlines (Willis et al. 2018). The researchers found that if the total waste management budget was greater than eight percent of the local government budget, the amount of marine litter would be lower (Willis et al. 2018). The researchers found that a combination of public outreach about litter and greater waste facilities along coastlines led to the greatest reductions in beach waste (Willis et al. 2018). Clean-ups alone did not reduce waste: a reduction in the sources of marine litter was the most effective way to reduce marine litter (Willis et al. 2018). The researchers note, however,

that clean-ups can be an effective part of an outreach campaign to demonstrate the negative impacts of litter.

Regional disparities in access to recycling, however, likely hamper local efforts to reduce marine litter. Much of remote and rural Australia does not have access to curbside recycling pick-up. Expanding this capacity could have an impact on reducing marine litter overall (Commonwealth of Australia 2018).

Efficacy of Plastic Bag Bans

The bag bans in Australian states generally originated from community organization and voluntary initiatives, and thus they generally have wide public support (Tudor and Williams 2021). These efforts were already reducing use of single use plastic bags in Australia as the bans were implemented (Tudor and Williams 2021).

One of the only academic studies of the efficacy of a plastic bag ban focusses on the plastic bag ban in the Australian Capital Territory (ACT). The ACT contains Canberra, the capital, and it is the smallest Australian territory by land area (Study Australia, 2022). About 400,000 people live in the territory, roughly two percent of Australia's population. The ban, implemented in 2010, targeted retailers and prohibited the sale of plastic shopping bags, excepting biodegradable bags. Macintosh et al. (2020) studied the environmental effectiveness of the ban by examining the consumption of relevant plastic bags and the impact of the ban on the presence of plastic bags in the ACT litter stream. Overall, the ban was highly effective in almost eliminating the use of single-use conventional plastic bags, but those reductions were nearly completely substituted with reusable plastic carry bags (Macintosh et al. 2020). *“Over the almost seven-year study period, the ban is estimated to have reduced net plastic bag consumption by only 275 tons, less than a year's consumption of single-use conventional HDPE bags in the ACT prior to the introduction of the ban”* (Macintosh et al. 2020). Limited evidence indicates that the ban reduced overall plastic bag litter and reduced plastics going to landfill, but likely had limited impact on plastic entering the marine environment (Macintosh et al. 2020). Despite this, public support for the ban remained high, likely because it gives consumers a sense of agency over their environmental impacts and the perceived environmental benefits (Macintosh et al. 2020).

The government of the Australian Capital Territory also commissioned a study to determine further options for reducing plastic bag use in the territory, and such options include banning all plastic bags, requiring all bags to be biodegradable/compostable, or introducing a fee on all plastic bags (Office of the Commissioner for Sustainability and the Environment 2018).

Container Deposit Schemes / Deposit Return Schemes

The Container Deposit Scheme (CDS) in Australian states have been found to reduce marine litter. Schuyler et al. (2018) found that the amount of plastic bottles found on beaches was proportionally less in states with a CDS than in those states without. The researchers also found that a CDS had its greatest effect in economically disadvantaged areas, where the highest loads of waste in the environment are found in areas without a CDS (Schuyler et al. 2018). This finding is supported by data from Keep Australia Beautiful, which found a 14.5 percent reduction in the amount of CDS bottles found in the annual litter survey from 2018–19 (Keep Australia Beautiful).

But these schemes are not without problems that may hamper their overall efficacy. CDS/DRS policies may undermine other goals, namely the overall reduction in plastic production and consumption, by maintaining the perception that plastic bottles are disposable and feeding consumer desires for single use bottles (Tudor and Williams 2021). Additionally, the CDS/DRS schemes in different Australian states are not always coordinated, meaning that consumers cannot always dispose of bottles across state lines and creating conflicting standards for businesses (Tudor and Williams 2021).

CONCLUSION

Australia's plastic waste generation remains high, though their recycling rate is above the global average. Subnational and national governments appear to have a coordinated response to the pollution problem, relying on regulatory, economic, and information based instruments to reduce plastic pollution, though they mostly target single-use plastics. Recently developed action plans include time-bound and measurable targets for reduction, recycling, and waste exports, and include more types of plastic including microplastics from tire abrasions. These plans have not yet been fully implemented and enforced. Australia is also participating in global and multilateral agreements and partnerships to address plastic pollution.

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APPENDIX – METHODS

To start off the search for policy documents, researchers referenced the Nicholas Institute’s Plastics Policy Inventory for any relevant national or subnational policies in Australia.

In addition to the Australia plastic pollution policy search, researchers then searched for academic and grey literature relating to plastic pollution and relevant policies in Australia. This search was mostly done through Google Scholar. Search terms included, but were not limited to, “Australia plastic,” “Australia plastic pollution,” “Australia plastic pollution policies,” “Australia plastic bag ban,” “Australia single-use plastic,” and “Australia plastic use.” Nineteen total articles were found, and 15 were screened for inclusion. The inclusion criteria were that the articles described the plastic pollution problem in Australia, described relevant policies in Australia, or they described the effectiveness of relevant policies. They were then read through and relevant information that could aid this case study was extracted. When citations referenced additional literature that seemed relevant, those papers were subsequently screened for inclusion as well. This is the primary method in which the background information was collected. Given the policy focused nature of the brief, this brief is not representative of the extensive literature on the extent of plastic pollution in Australia’s marine environment.

Once the secondary literature had been exhausted for relevant policies, researchers then moved the search to InforMEA and ECOLEX to see if any more policies could be found that were not referenced in the literature. Zero new policies were found.

Finally, to check if any new policies had been agreed upon or enacted since the publication of the secondary literature, the same search strings that were used to find the literature were applied in a normal Google search. Here, researchers were looking for recent news articles referencing policies that may have been implemented and not yet included in any literature. No new policies were discovered.