



16 December 2022

██████████  
Committee Secretary

House Standing Committee on Climate Change, Energy, Environment and Water  
PO Box 6021  
CANBERRA ACT 2600

Dear ██████████

**Inquiry into plastic pollution in Australia's oceans and waterways  
Submission by the Port Phillip EcoCentre**

Thank you for the opportunity to make a submission to the Inquiry into plastic pollution (including microplastics) in Australia's oceans and waterways.

We commend the federal government's commitment to tackle the problem of plastic pollution and note the recent [announcement](#) by Minister for Environment and Water Tanya Plibersek that Australia will join the [High Ambition Coalition](#) of more than 40 nations (including the UK, Canada, France, Germany and New Zealand) to end plastic pollution by 2040 and work towards delivering a legally binding global treaty banning plastic pollution. To achieve this laudable goal, changes are required not just in policy settings but also the regulatory framework, research priorities, community resourcing and industry action.

As the inquiry terms of reference are broad and time is of the essence, our submission is set out in brief below. We would be pleased to appear before the Committee or otherwise provide further information upon request in the new year. A list of selected resources is also attached for the Committee's reference.

**About the EcoCentre and Port Phillip Baykeeper**

The Port Phillip EcoCentre ('the EcoCentre') is a leading community-managed organisation with a dedicated team of qualified scientists, teachers and 3000 volunteers, who design and implement innovative environmental programs. Our expertise is Port Phillip Bay health, its catchments and the urban ecology of Greater Melbourne. We deliver specialist education, scientific research and community action projects with over 250 cross-sector partners.

The EcoCentre's Port Phillip Baykeeper has, since 2008, advocated for the protection of the Bay, engaging community through citizen science and other activities that connect them with our local environment and each other. The Baykeeper is a member of the international Waterkeeper Alliance, which endeavours to preserve and protect waterways by connecting grassroots water advocates across six continents.

## **Response to the Terms of Reference**

### **1. The environmental impacts of plastic pollution particularly in oceans and waterways**

- a. The extent and impacts of plastic pollution on Australia's coasts and waterways is well-documented, with 'ubiquitous and widespread' microplastics in Australian waters, 'extensive and insidious' plastic pollution in Australia's inland waterways, and a significant amount of documented marine plastic pollution on Australia's coasts and beaches (Nicholas Institute for Environmental Policy Studies & UNEP Law and Environment Assistance Platform, 2021).
- b. See also the two-part *Global assessment of the sources, fate and effects of microplastics in the marine environment* (GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) & UNEP (United Nations Environment Programme), 2015, 2016).
- c. The negative and toxic impacts of plastic pollution in our waterways is detailed in the Senate Committee's report, *Toxic tide: the threat of marine plastic* (Australia. Parliament. Senate. Environment and Communications References Committee, 2016) and include affecting human health and marine fauna and flora through ingestion, entanglement, transportation of invasive species, and transport and bioaccumulation of harmful "forever" chemicals (including perfluoroalkyl and polyfluoroalkyl substances – PFAS).
- d. Researchers continue to investigate the impact of microplastics and nanoplastics that are ingested and travel through the marine food web, leading to the *bioaccumulation* and *biomagnification* of chemicals that are within and adsorbed to the microplastics (Miller, Hamann, & Kroon, 2020; Saley et al., 2019). Earlier this year, researchers in the Netherlands discovered that plastic particles from our living environment can end up in the human bloodstream (Leslie et al., 2022).
- e. Plastics disrupt a range of ecosystems, including marine icons of Australia such as coral reefs. A team of Australian and US American scientists examined the health of more than 124,000 corals on more than 150 reefs in eight regions of the Pacific Ocean. The study showed that the presence of plastic debris in reefs promotes the development of diseases, with 20-fold increase in disease likelihood (Lamb et al., 2018).

### **2. The effectiveness of Australia's plastics management framework under the National Plastics Plan and related policies to reduce plastic pollution particularly in oceans and waterways**

- a. The National Plastics Plan will not, in its current form, support the federal government's laudable ambition to the end of plastic pollution by 2040. A more coherent, holistic and integrated plan to end plastic is needed – one that

includes mandatory product stewardship schemes, harmonised regulation of problematic plastics (by polymer type rather than simply a focus on single-use plastics) and enforceable obligations that eliminate or significantly reduce the leakage or disposal of plastic into the marine and terrestrial environment. The collapse of the major supermarkets' RedCycle soft plastic recycling system illustrates how voluntary schemes are not sustainable (particularly when relying on a single provider). Mandatory product stewardship schemes are needed to address plastic pollution from, among other things, rubber crumb, synthetic turf, and polystyrene.

- b. We have made similar points in our [submission](#) to the Victorian government earlier this year and reiterate that:
- i. • The single use plastic bans across Australia tend to be limited in scope, lack harmonisation across states and territories, and lag behind European and other international jurisdictions.
  - ii. • Some, but not all, states and territories have complementary plastic plans or strategies to the National Plastics Plan but generally lack the broad range of policies and initiatives that can be implemented over the short, medium and long term aimed at zero plastic pollution by 2040 (or sooner). Regard could be given to the holistic framework proposed by Ocean Conservancy which proposes a roadmap towards end plastic pollution by 2030 (Ocean Conservancy & Trash Free Seas Alliance, 2019).
  - iii. • A range of levers should be considered, not limited to plastic product bans, to support industry, retailers and consumers to reduce plastic manufacturing, usage and waste. Consistent with the national approach to introducing a circular economy, other strategies should be adopted to conserve natural resources (such as limits on using fossil fuels for virgin plastic), keep materials and products circulating at their highest value, and design out waste. The European Union's Single Use Plastics Directive models how bans can sit within a range of interventions such as labelling and consumer information at the point of sale, financial (dis)incentives to increase the affordability of reusable or more sustainable alternatives, and product stewardship restrictions on the manufacture of non-recyclable and other problematic plastic.
  - iv. • Consideration should be given to regulating material types, rather than simply banning item-by-item. This approach is considered by jurisdictions such as New Zealand (New Zealand. Office of the Prime Minister's Chief Science Advisor, 2019).
  - v. • Moreover, a lifecycle approach to adopting plastic-reducing strategies and options should be considered to ensure that bans on some plastic products (like plastic bags) don't simply result in a shift to

other plastic materials (like thicker plastic bin liners). The work of the Life Cycle Initiative (hosted by the UN Environment Programme) is instructive.

- vi. • The National Plastic Plan promotes the circularity of plastic products. In doing so, it is crucial that known or foreseeable perverse outcomes are avoided, such as microplastic leakage of plastic feedstock at plastic recycling facilities. See the report prepared for the European Commission on investigating sources, pathways and impacts of unintentionally releases of microplastics into the aquatic environment (Simon Hann et al., 2018).
  - vii. • To illustrate, the EcoCentre and Tangaroa Blue Foundation have been monitoring the issue of plastic feedstock (nurdles/pellets or shredded) leakage from plastic manufacturing facilities and is concerned that the issue is not being addressed, despite the recent introduction of a general environmental duty under Victoria's Environment Protection Act. Despite the voluntary adoption by industry, supported by the Victorian Environment Protection Act, of operational guidelines to reduce leakage ('Operation Cleansweep'). It has become increasingly apparent that the regulatory framework is not designed to deal with the cumulative impacts of microplastic pollution. The EcoCentre is interested to work with government and industry to develop mitigation strategies and standards in this area lest environments face "death by a thousand cuts".
  - viii. • We continue to call for the mandatory implementation of Operation Cleansweep to prevent feedstock 'loss' at all stages of the supply chain (suppliers, transporters, manufacturers, recyclers). Plastic feedstock leakage has been recorded at the majority of Melbourne factory sites surveyed by Tangaroa Blue; currently the feedstock debris are virgin plastics typically in pellet or shredded form. However, with the increase of onshore plastic recycling and re-manufacturing as part of the shift to the circular economy, we risk the perverse impact of *increasing* microplastics from factories so long as they have no firm obligation to 'plug the leaks'.
- c. The National Plastics Plan should have greater reporting and transparency measures in place, as well as ensure initiatives adopted by government are evaluated to ensure they are effective and have not produced perverse or unintended outcomes. Governments should be clear about what measures are being tracked and what 'success' looks like.

### **3. 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**

- a. PFAS is an example of a prolific, toxic pollutant that adheres to plastics in waterways. PFAS is still regarded by regulators and waterway managers as an 'emerging contaminant' (like microplastics themselves). Despite the significant presence of PFAS reported in environmental sampling, and its harmful effects being widely known, PFAS is not sufficiently regulated. The precautionary principle suggests that protective measures be adopted to ensure any harm to human health and the environment is avoided or reduced.
- b. Consideration could be given to improving the regulation of chemicals used in plastic that are used in manufacturing plastic products (or capable of being *adsorbed* or transported by plastics) into the environment, thereby risking harm to the marine and terrestrial environment and to human health. Regard should be given to the 'REACH' regulatory system used in Europe which requires companies to establish the safety of new chemicals before they can be approved for sale and distribution to the public (ECHA - European Chemicals Agency, n.d.).
- c. Clearly, plastic pollution is best stopped at the source, rather than intervention strategies focusing on pollution after it has already reached the marine and terrestrial environment. The impact costs of environmental harm are currently externalised from plastic manufacturers or distributors. Further, campaigns for responsible use of plastic frequently push onus onto communities such as voluntary beach clean groups (Beach Patrol, Clean Up Australia Day), citizen scientists tracking and reporting pollutants, and education (Zero Waste Festival, Plastic Free July). Plastic polluters must be held to account, particularly where they create a risk of environmental harm despite there being suitable measures available to eliminate or reduce that risk.
- d. In Victoria, the *general environmental duty* was legislated in the Environment Protection Act 2017 and became enforceable in July 2021, creating an obligation on businesses and individuals to avoid their polluting activities from risking harm to the environment or human health. The legislation also creates third party civil rights that allow community members and organisations to take action against polluters where they are either affected by a polluter's action risking harm, or otherwise where this is in the public interest and the Environment Protection Authority has failed to take appropriate action. This focus on prevention and expansion of who can hold polluters to account could be adopted by nationwide to support regulatory enforcement efforts of government regulators, including in support of the new environment protection authority proposed to be introduced by the federal government.
- e. The general environmental duty – and proactive response by plastic polluters in any event – relies upon an understanding of what controls should be adopted to eliminate or reduce the risk of harm caused by the pollution. This *state of knowledge* can be informed by legislative requirements, industry standards, research findings and best practice. Access to this information is impeded, however, where standards and research are not readily accessible.

To illustrate, industry standards developed by Standards Australia are behind a paywall, as is most peer-reviewed academic research.

- f. Some ongoing challenges impede government regulators in holding plastic polluters to account – particularly in relation to microplastic pollution (plastic pieces <5mm). Regulatory strategies tend to favour intervention in cases of visible, substantial and incident-based pollution sparking significant public concern. The cumulative harm caused by tiny pieces of plastic is not something that seems to generate a regulatory response.
- g. Full lifecycle analysis should be required for products being made out of recycled plastic to ensure they are fit for purpose, and not going to cause any further harm to environmental or human health. This includes items on the Minister's Product Stewardship List. For example, we note concern over the use of tyres in rubber crumb surfacing for playgrounds.
- h. The role of a new national EPA should be resourced not only for enforcement of accountability to pollution sources, but also in preventing plastic pollution through lifting state of knowledge with stakeholders at all phases of the plastic lifecycle (supply, transport, manufacture, recycling, use). The EPA should be granted responsibility to take action based on evidence of cumulative risk and diffuse pollutants, not just pollution incidents or spikes.

#### **4. The effectiveness of community campaigns to reduce plastic pollution particularly in oceans and waterways and encourage the use of alternative materials**

- a. To an extent, community campaigns have been effective in promoting better practices by consumers and others in the use and disposal of plastic products. The ABC's 'War on Waste' is an example of an effective campaign that highlighted the need for clarity around what can be recycled, spotlighted poor practice in recycled material going to landfill, challenged businesses to take responsibility for reducing the use of single-use plastic products, and promoted behaviour change in the waste and recycling practices across schools and neighbourhoods.
- b. Citizen science can also be used to generate data around the extent and nature of plastic pollution in the marine and coastal environment. This has generated change, such as the reduced use of plastic straws in Port Phillip cafes after a local Beach Patrol group discovered during a year-long survey that plastic straws were one of the most common items found along Port Melbourne beaches. This led to 'The Last Straw' campaign which resulted in a range of cafes and bars agreeing to replace plastic straws with paper ones. In subsequent surveys of urban rivers, plastic straws were the only item type to reduce in quantity.
- c. The EcoCentre's citizen science project resulting in the report, *Clean Bay Blueprint* (Charko et al., 2020), assessed the status of plastic (and

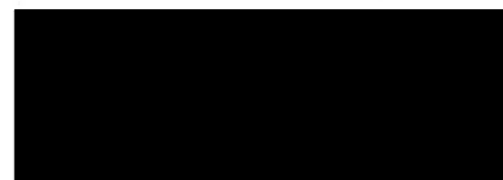
microplastic) pollution in Melbourne's urban rivers over five years. It determined that microplastics were increasing significantly year on year. That report is indicative of our ability to engage in collaborative citizen science with our partner organisations across a span of years to fill information gaps in existing government data sets. The *Clean Bay Blueprint* data was subsequently used as part of the evidence base supporting the introduction by the Victorian Government of its ban on single-use plastics.

- d. Citizen science has been recognised by the Victorian Commissioner for Environmental Sustainability as an important indicator of the health (Victoria. Commissioner for Environmental Sustainability, 2021). For citizen science to flourish, it needs greater resourcing from government and other sources. To be successful, citizen science data needs to be paired with effective science communication and storytelling.

## **5. Global initiatives underway to reduce plastic pollution particularly in oceans and waterways**

In addition to the resources already discussed, consideration should be given to the international and overseas reports and initiatives including: the 'Plastic Drawdown' report analysing policy instruments to reduce plastic pollution in UK rivers and seas (Common Seas & Eunomia, 2019); the global Plastics Policy Inventory, which synthesises the policy response of governments addressing plastic pollution through the use of regulatory, informational and financial instruments (Karasik et al., 2020); the comprehensive microplastic management plan adopted by California to address the environmental challenge of microplastic pollution in its marine environment (Ocean Protection Council, 2022); the system changes proposed to stop ocean plastic pollution adopting a circular economy approach (PEW Charitable Trusts & SystemIQ, 2020); the assessment of five scenarios for achieving significant reductions in plastic pollution by 2040 using differing interventions (Lau et al., 2020); and the work by the United Nations in assessing marine plastic pollution and legislative and policy responses (United Nations Environment Programme, 2021; United Nations Office of Legal Affairs, 2021).

The EcoCentre team, including our Port Phillip Baykeeper Neil Blake OAM, Marine Biologist Fam Charko, and I as Executive Officer, each look forward to the opportunity to discuss issues and highlight opportunities to remedy the sources and impacts of plastic pollution.



April Seymore  
Executive Officer  
Port Phillip EcoCentre




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The EcoCentre acknowledges the Kulin Nations, including the Yalukut Weelam clan of the Boon Wurrung language group, traditional owners of the land on which we are located. We pay respects to their Elders past and present, and extend that respect to other First Nations and Elder members of our multicultural community.