

“Governments All at Sea on Marine Plastic”

Summary of BA presentation to Senate Inquiry into Marine Plastic Pollution

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Environment Groups, Scientists and the community at large have joined together to express their frustration at the lack of action on marine plastic pollution by the Commonwealth and state governments leading up to the Senate Inquiry into the threat of marine plastic pollution in Australia and Australian waters.

Peak Environment Group on waste and recycling, The Boomerang Alliance and its members will present compelling evidence that highlights that:

- The overall levels of marine plastic pollution are in the order of 5 times greater than those acknowledged in previous studies;
- Nearly half the plastics entering our environment and waterways can't be captured via policy arms
- That the largest single source of marine plastic pollution is related to the beverage industry and eliminating this source of plastic pollution is the only pathway to make deep cuts.

Underpinning the community's frustration is the continued role of the Commonwealth, whose track record addressing our priority waste problems is littered with failure and a disturbing trend to misrepresent the scope of the problem. Every single time the Federal Government undertakes a study on litter and waste they badly underestimate the scope of the problem.

Environmentalists have lost patience with the bureaucratic federal government process that seems aimed at stopping new environment protection laws. Already some states have moved on plastic bags and NSW and Qld are actively investigating container deposits. State action is the way to go if we want to take this problem seriously.

Examples found at end of this outline.

Plastic Consumption in Australia: Government continues to reference the Annual Plastics Industry Survey as an indicator of consumption – ignoring the well-known fact that very little goods sold in Australia are manufactured locally.

This has seen plastic consumption reported (in 2014) as being just 1.535million tonnes p.a. when the annual amount of plastic waste and recycling dwarfs that figure at over 2.252million tonnes (nealy 50% more waste than is consumed?).

Concerned about the trend to understate waste and litter problems in Australia, Boomerang Alliance sought to dissect the current information and then replicate the best international analysis on the impact of plastics to identify the extent of Australia's marine plastic pollution¹. Using customs data and public information, Boomerang Alliance has been able to identify over 3million tonnes of plastics are consumed in Australia annually, and that number is likely to be badly underestimated as there are key areas where no data was available. The sources of plastic consumption are thought to be:

¹ While a number of studies influenced the process to re-construct plastic consumption data the process largely followed the 2014 Norwegian Report “Sources of Microplastic Pollution to the Marine Environment”.

Estimated Plastic Consumption in Australia (2013/'14)	Tonnes P.A.
Australian Made Plastic Products ²	1,008,200
Australian Made Plastic Packaging ³	527,000
Plastics Packaging Imported on finished goods ⁴	417,300
Synthetic Textile, Fabric and Carpet Imports ⁵	300,000
Imported Plastic Products (houseware, furniture, pipes etc.) ⁶	290,000
Clean Plastic Component of Machinery ⁷	65,000
Contaminated Plastic Component of Machinery	266,000
Plastic component of imported tyres ⁸	145,350
Imported Plastic Grocery Bags ⁹	21,000
Plastic Maritime Waste ¹⁰	10,000
Cigarette Butts ¹¹	7,000
Microbeads ¹²	650
Total:	3,057,500

Simply accounting for underestimated consumption suggests that the amount of plastic pollution entering our environment is double that previously thought and there is strong potential that all this material has strong potential to enter our waterways.

The Federal Government's poor understanding our plastics consumption and limited analysis of the litter stream has had a profound effect on the inertia that has characterized the development of producer responsibility schemes in Australia. To date Federal Government sponsored studies has reported that between 8-11,000 tonnes of litter enters our marine environment each year and that another 6,000 tonnes of waste related to fishing and other types of maritime activities.

Again, this sees the Federal Government not even identify well known sources of plastic pollution. Conservatively, we can identify at least 56,000 tonnes p.a. of plastic entering our environment – which is likely (but cannot be substantiated) to increase to around 80,000 tonnes when unmeasured aspects of plastics consumption are quantified. The sources and estimated scope of plastics likely to be entering Australia's waterways each year are:

² SRU Plastics Industry Recycling Survey 2014

³ Australian Packaging Covenant

⁴ Australian Packaging Covenant

⁵ Extrapolated from customs data – does not include imported synthetic clothing which potentially doubles the number of tonnes

⁶ Customs data

⁷ Clean and Contaminated plastics components of Machinery are based on studies regarding end of life cars, refrigerators, air conditioners and e-waste. No data on household electrical equipment and audio=visual electronics as such the estimate is understated.

⁸ Based on the plastics components of a tyre – number of imported tyres based on Hyder Consulting "Stocks & Fate of End of Life Tyres - 2013-14 Study—Final Report"

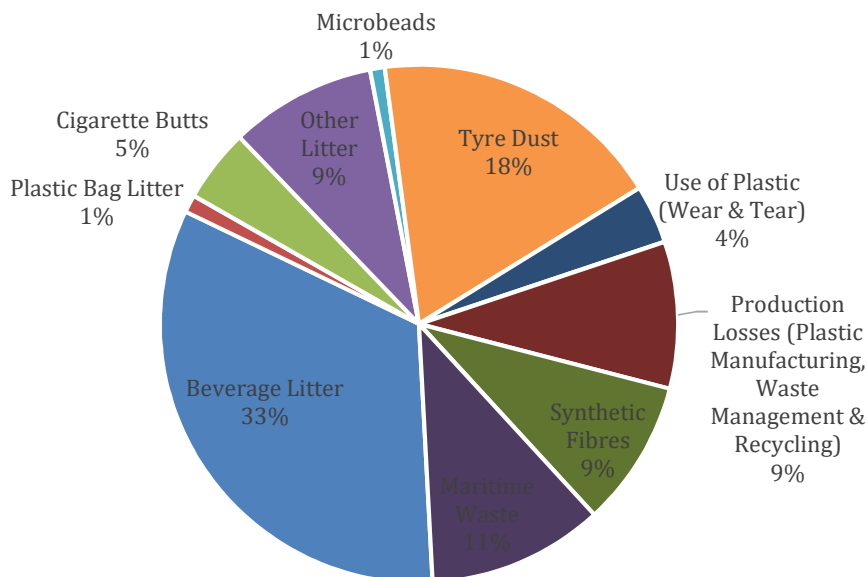
⁹ Tonnages projected from Hyder Consulting "Plastic Retail Carry Bag Use 2002 - 2005 Consumption"

¹⁰ Commonwealth Estimates- 1996 ANZECC Review of marine Debris

¹¹ Consumption based on data from the Tobacco Institute of Australia

¹² Extrapolated from Norwegian Study "Sources of Microplastic Pollution" 2014 on a pro rata basis.

Sources Of Marine Plastic Pollution in Australia



Missing from previous analysis are a large amount of microplastics from sources that cannot be readily addressed: The toxic styrene butadiene released from wear and tear of tyres on our roads (approx. 10,000 tonnes p.a.), a single piece of synthetic clothing can release about 1,900 microfibers each time it's washed- like microbeads (but much smaller) none of these fibres can be captured by our sewer treatment plants (approx. 5,000 tonnes) or the plastic dusts released in the repairs and maintenance of plastic coated household durables and building materials (2,000 tonnes).

This level of marine plastic pollution is consistent with the CSIRO analysis of marine plastic debris (if not the amounts), who have identified that 2-4% of plastic consumption is likely to end up within the marine environment (61-122,000 tonnes p.a.).

Another major source of marine plastic pollution is the release of both plastic resin pellets that escape sites during plastic manufacturing and the lightweight plastic residuals that are caught by wind and rain and escape the facility. Boomerang Alliance has identified over 5,000 tonnes of this microplastic material entering our waterways each year.

"Plastic is so permanent and so indestructible that when you've tossed it, in the ocean or even into a dustbin ... it does not go away" Sir David Attenborough

Perhaps the most troubling aspect of government research undermining the development of policies to combat plastic pollution is their assertions that the amount of litter blighting our environment (and in turn accessing our marine environment via storm water systems) is reducing¹³. Nothing could be further from the truth. The amount of litter isn't reducing its simply breaking up into smaller and smaller pieces, sinking to the bottom of the ocean or being eaten.

While Australia has been blind to this realization, the international community has not - identifying that the plastics found on our beaches represents just 15% of the total floating marine plastic debris. Similarly, recent UK studies have shown that as many as 4billion nano sized plastic fibres are being found in every

¹³ The Federal DRIS into a CDS concluded that the total amount of litter was reducing at a rate of 1.5% per annum

square klm of deep ocean sediment. To date Australian studies have been limited to the plastics that are 0.5mm in size.

Annually, over 60,000 tonnes of plastics are littered each year. Litter comprises >60% of All Marine Plastic Pollution, including:

- Around 420 million plastic bottles (18,000T)
- Another 200 million other packaging items (5,000T)
- 180million Plastic Bags (55T)
- 10 million plastic products (toys, thongs, clothing etc.)
- 11 billion+ synthetic cigarette butts (3,500T)

When factoring in the destruction of plastic packaging and products and their release as microplastic it is likely that the amount of plastic litter entering our waterways is much greater than the 11,000 tonnes identified by government – more realistically in the order of 26,000 tonnes.

ESTIMATED GENERATION P.A. OF MARINE DEBRIS VIA LITTER IN MAJOR COASTAL COMMUNITIES:

COMMUNITY:	TOTAL LITTER P.A (TONNES)	TONNES OF MARINE PLASTIC POLLUTION (CSIRO ESTIMATE OF 75%)
SYDNEY	12,545	9,409
MELBOURNE	12,000	9,000
BRISBANE	6,144	4,608
PERTH	5,455	4,091
ADELAIDE	3,617	2,713
GOLD COAST	1,751	1,313
NEWCASTLE	1,234	926
CENTRAL COAST (NSW)	919	689
SUNSHINE COAST (QLD)	833	624
WOLLONGONG	833	624
HOBART	603	452
GEELONG	517	388
TOWNSVILLE	517	388
CAIRNS	431	323
DARWIN	344	258

Conclusion:

In summary the amount of marine plastic pollution entering Australia's waterways each year is at least 56,000 tonnes per annum (not 17,000 tonnes) and could well be as high as 80,000 tonnes p.a.

With the Federal Government an ongoing mismanagement of efforts to understand our waste and litter problems combined with a 10-year track record of failure to develop effective product stewardship schemes for our most problematic waste streams the unfortunate advice for Senators sitting in on this inquiry is to remove the primary impediment from decision making – The Australian Government Department of the Environment!

The Consequences:

The consequences of this inaction are horrendous. Not only does the international research highlight that:

"Anyone consuming an average amount of seafood will ingest about 11,000 plastic particles each year!" Professor Tamara Galloway, Exeter University

But marine plastic pollution is also rapidly becoming a primary threat to our marine ecosystems. It is estimated that 96% of the food chain are likely to digest micro plastic & the particles can then pass from the gut into the bloodstream.

The impacts of entanglement in marine debris are:

- Entanglement restricts a species ability to move, swim, breath and affects at least 200 marine species
- 44 sea bird species, 9 cetacean species, 11 pinniped species, 31 invertebrate species, and 6 sea turtle species have been identified as suffering from entanglement
- The rate of species being entangled in marine debris has increased by 40% over the past 10 years
- Studies in Victoria have shown that 20% of entanglements reported are from litter (bags, ribbons, packing tape)
- Between 5-15,000 turtles become entangled in 'ghost nets' in the Gulf of Carpentaria each year
- 40,000 fur seals are killed by entanglement p.a.



The impacts of ingestion of plastics include:

- Ingestion has a less visible but significantly greater impact on marine biodiversity
- 96% of all biodiversity is vulnerable to the ingestion of microplastics
- 65% of all seabirds studied have been found to have plastic in their gut. By 2050 CSIRO estimates it will reach 99%

- 30% of all turtles autopsied in Moreton Bay have been found to have ingested plastic
- Coral has been found to be ingesting microplastics at about the same rate as plankton



What's the Cost of Litter and Marine Plastic Pollution:

The 2014 UNEP Report "Valuing Plastics: The Business Case for Measuring, Managing and Disclosing Plastic Use in the Consumer Goods Industry" puts the annual global damage bill of marine plastic pollution at \$AUD18billion p.a.

Federally sponsored studies like the 2014 packaging DRIS put the national cost of cleaning up litter at just \$35million p.a. yet the current investigation into a container deposit system has identified that the community, local councils and state government agencies are expending well over \$150million in NSW alone (extrapolates to around \$450million p.a. nationally) and that doesn't include the costs to manage litter by homeowners or business. Factoring these costs in the cost of litter is likely to be in the order of \$650million p.a.

Examples of flawed Commonwealth analysis:

Packaging: In the 2004, 2010 and 2015 Boomerang Alliance was forced to intervene during the reviews of the Australian Packaging Covenant (Covenant) to highlight that the packaging sector's recycling performance was a fiction. While our feedback was initially rejected and we were forced to expose these inadequacies in the media we have been proven right in our assertions that:

- Plastics packaging estimates of consumption and recycling were distorted by a failure to capture the amount of packaging imported via finished goods. Subsequently, earlier this year a whistle blower leaked internal documents that showed that the Covenant was aware that plastics packaging consumption was 50% more than claimed and recycling rates for plastic packaging were in fact 29% not the 44% claimed.
- In 2010 we discovered glass recycling figures were being badly distorted by including glass that was recovered but was not of a quality to be recycled. The result showed that some 500,000 tonnes of glass had been stockpiled with no apparent market. Subsequent investigations at a state level have shown that the difference between the claimed recycling rates is dramatic. In Victoria, some 76% of glass is recovered via kerbside and other recycling streams but only 48% of this material is subsequently recycled. Using Victoria's data, it became evident that around 280,000 tonnes of so called recycled glass is actually not recycled.

- The 2015 reports of the covenant acknowledge this error – noting that under there ‘new method’ the amount of plastics packaging consumed in Australia (i.e. counting imported packaging) increased from 572,400 tonnes to 944,300 tonnes (a 64% increase).

This practice has been evident for years and played a fundamental role in distorting the 2014 cost benefit analysis undertaken to consider adopting a national container deposit scheme.

Plastic Bags: Despite a strong commitment from then Commonwealth Environment Minister, The Hon. Peter Garrett, a 2007 meeting of State, Territory and the Commonwealth Environment Ministers fell into acrimonious debate on how the best address the problem. The previous voluntary retailer program initiated to address the overwhelming plastic bag use in Australia ended in 2005. In the following year plastic bag use increased by 17% between 2006 and 2007.¹⁴

Tyres: When tyres were being considered for the adoption of a co-regulatory product stewardship, in 2009 the Australian Government rejected the Regulatory Impact Statement, declaring the problem was solved as some 76% of tyres were now being exported to Vietnam. Despite spending some 5 years ‘investigating’ the problem - the regulators failed to consider the devastating impacts of tyres that were being improperly stored in Australia and so badly estimated the amount of end of life tyres generated in Australia that the claimed RIS generation of waste tyres in Australia of 30million units (240,000 tonnes p.a.) in 2009 has been revised 3 times since and it is now concluded that 4 years later estimated consumption is 51 million units (433,500 tonnes p.a.).

Interviewees:

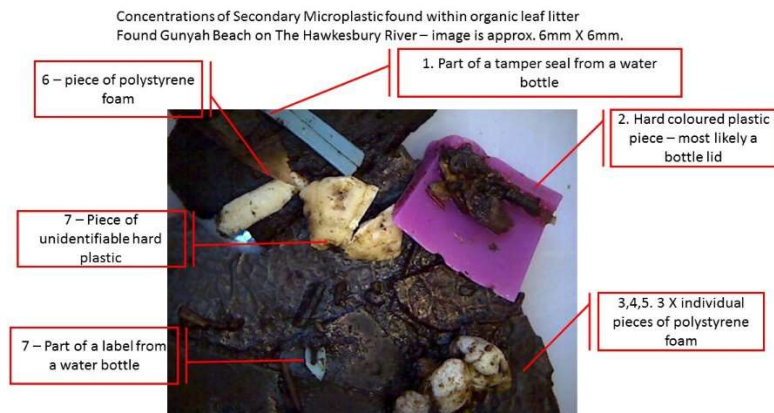
If interested BA can arrange for Senator Peter Whish-Wilson (who called for the inquiry) and Dr Jenifer Lavers (leading marine biologist testifying before the Inquiry) to be also be interviewed.

Images and Graphics:

- BA can supply a set of microplastics images
We will arrange for the use of Greenpeace boats on Botany Bay on Wednesday 17/2/16 (9 – 1pm).
- Jeff Angel, Peter Whish-Wilson and Dave West are available PM to do background shots and video interviews on Wednesday PM. We will be able to take photo using endoscopic cameras (inside drains) and have a microscopic camera available for magnified images.

¹⁴ “The Facts on Plastic Bags”, Boomerang Alliance, 08/15. http://www.boomerangalliance.org.au/the_facts_on_plastic_bags. NSW Parliament 2013, ‘Plastic bags: an update’

Sample Images:



Carrington Creek (Newcastle):



Polystyrene Escaping a waste facility in Victoria:



Water Filtration Unit (Darling Harbour Aquarium)



Circular Quay

