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**Sent:** Thursday, 20 October 2016 9:10 PM  
**To:** LCLC  
**Cc:** [REDACTED]  
**Subject:** Inquiry into the Environment Protection Amendment (Banning Plastic Bags, Packaging and Microbeads) Bill

The Secretary  
Environment and Planning Committee  
Parliament House, Spring Street  
EAST MELBOURNE VIC 3002

20th October 2016

Dear Committee Secretary,

Thank you for the opportunity to provide a submission into the Environment Protection Amendment (Banning Plastic Bags, Packaging and and Microbeads) Bill.

Surfrider Foundation Australia believes that the pollution effects of plastic debris to be one of the most critical environmental threats facing our oceans and lifestyles. We therefore strongly encourage government interventions to reduce this problem. We believe that plastic does not belong in any natural environment and particularly NOT in the marine environment. We must prevent new sources of plastic pollution being produced, which will eventually make it's way to the seas and oceans.

### **Background on the Surfrider Foundation Australia**

The Surfrider Foundation Australia is a non-profit grassroots organisation dedicated to the protection and enjoyment of oceans, waves and beaches through a volunteer activist network comprising 15 branches around Australia. We are also part of the global Surfrider Foundation organisation that was formed in California in 1984 and has over 250,000 supporters, activists and members, as well as over 100 branches worldwide.

Our volunteers engage in their community through activities like beach clean-ups to help protect our precious coastal areas. Over the past 25 years Surfrider Foundation has held hundreds of beach clean-ups around Australia (including in remote areas). This has involved collection of many thousands of kilograms of rubbish (mostly plastics), which have been categorised for data collection and research purposes and utilised by the Australian Marine Debris Initiative <sup>1</sup>.

In 2007, the Surfrider Foundation launched its 'Rise Above Plastics' program. The aim of the program is to reduce the impacts of single-use plastics on the marine environment by raising awareness and educating the public about the dangers of plastic pollution. We are advocating for the banning of single-use plastics in the form of plastic bags, take away cups, containers, straws and personal care and cleaning products containing microbeads.

## **Key Facts on Why Plastic Pollution Must Be Addressed**

### ***1. Plastics are on the rise***

The plastic produced in the first ten years of this century surpassed the amount produced in the entire last century. The five oceanic gyres are estimated to contain 100 million cubic litres of marine litter <sup>2</sup> and an estimated 20 million tons of plastic litter enter the ocean each year <sup>3</sup>. More than 70% of the rubbish entering our oceans is plastic and Australians use more than 10 million new plastic shopping bags every day <sup>4</sup>.

Current research and scientific understanding of plastic pollution in the marine environment states that "Marine litter is any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally disposed of or abandoned in the marine environment." [United Nations Environment Program (UNEP) (2009)]

Toxic chemicals absorbed into plastic particles, or used in the production of plastic can be transferred to wildlife through plastic ingestion, potentially impacting human health. Globally, plastic marine litter also results in billions of dollars of damage and other costs to the fishing, tourism and shipping industries.

### ***2. Plastic is entering our Oceans***

Plastic marine litter is one of the most pervasive and menacing problems affecting the marine environment. The volume of plastics produced in the world has sharply increased in the past decades. The plastic produced in the first ten years of this century surpassed the amount produced in the entire last century. An increasing amount ends up in our waterways and the ocean. An estimated 20 million tons of plastic globally enter the ocean each year <sup>5</sup>.

All marine litter can be linked to human activities on land or at sea. It is estimated that land based sources of marine litter account for 60-80 per cent of all marine litter, and plastic accounts for 70 per cent of this litter <sup>6</sup>.

Marine litter tends to accumulate in a limited number of sub-tropical convergence zones known as gyres or garbage patches. Currently, there are 5 gyres: North Pacific, South Pacific, North Atlantic, South Atlantic, and Indian Ocean <sup>7</sup>. Studies have shown that marine litter deposited in coastal areas tends to accumulate in the gyres within 2 years of entering the ocean <sup>8</sup>. The litter remains cycling in these gyres for many years, with more than 200,000 pieces of plastic per square kilometre in some areas <sup>9</sup>. The sizes of the gyres are difficult to determine because they are constantly expanding and moving, but the gyres are estimated to contain 100 million tons of marine litter <sup>10</sup>.

### ***3. The Danger of Plastic Litter to Marine Life***

Plastic litter is particularly hazardous to the marine environment because plastics are durable, buoyant, waterproof, indigestible and non-biodegradable. Plastics can starve, poison and strangle marine life through ingestion and entanglement.

a. Starvation of marine life:

Ingestion of plastic can wound animals internally by piercing their gut. Animals at all levels of the food chain consume plastic. Because plastic can resist biological degradation, it can fill animals' stomachs so that they have a false sense of fullness causing starvation.

b. Entanglement of marine life:

Entanglement in marine species has been documented to affect 32 species of marine mammals (including whales and sea lions), 51 species of seabirds and 6 species of sea turtles <sup>11</sup>. Entanglement can kill wildlife or impair an animal's ability to swim, meaning entangled animals must eat more to accommodate for the increased weight and drag while swimming and may have greater difficulty evading predators.

c. Poisoning of marine life:

Scientific studies have shown that toxic chemicals from plastic particles can be transferred to wildlife through plastic ingestion <sup>12</sup>. Once an animal dies its body will decompose and release the plastic again to harm and kill other animals.

#### **4. The Harms of Toxic Chemicals and Microplastics**

Toxic chemicals in plastics can poison marine animals that ingest plastic. Polychlorinated Biphenyls (PCBs) in surrounding seawater accumulate on marine plastic litter.

Concentrations of the pesticide DDT, polycyclic aromatic hydrocarbons (PAHs) and other persistent organic pollutants and pesticides have been found on samples of plastic litter collected from the North Pacific and coastal Hawaii and California <sup>13</sup>. It is reasonable to assume that similar toxic chemicals have found their way to the coastline of Australia.

Pollutants added to some plastics at the time of manufacturing, including bisphenol A (BPA) and phthalates are linked to endocrine disruption, and are capable of being transferred to wildlife through ingestion <sup>14</sup>. Plastics, their chemical additives and the toxins that accumulate on them may impact the entire food chain through animal ingestion of microplastics <sup>15</sup>.

#### **5. Products / materials that represent the major sources of plastic pollution**

a. Plastic bags

Consumption of single use plastic bags is estimated at over 10 million new bags each day in Australia (over 3.5 billion bags per annum). It is estimated that the amount of plastic bags entering the litter stream each year is more than 50 million bags per annum <sup>16</sup>.

b. Beverage containers and packaging

The single largest component of plastic litter and marine debris is beverage container waste, with plastic bottles, along with associated items (lids, straws, cups etc) and packaging representing around half of the material (by volume) of the litter stream. This represents approximately 60 per cent of all plastic rubbish recovered along Australia's beaches and waterways <sup>17</sup>. These statistics align with the observations made by Surfrider Foundation volunteers at our beach clean-ups around the coast in recent years.

c. Microbeads and Microplastics

Microbeads (ie. plastic exfoliants in cleansers) and microplastics, including nurdles (plastic resin balls from which plastics products are manufactured), are increasingly causing great concern. Tangaroa Blue (an organisation to which Surfrider Foundation provides rubbish collection data from our beach clean-ups) have carried out a number of studies and sampling over a broad geographical range in five States. They have found concentrations as high as 6000 nurdles per square metre of beach. Such plastic particles are particularly prevalent in urban beach and waterway areas <sup>18</sup>.

Microbeads are extremely tiny particles of plastic (less than 0.5 of a mm, usually polyethelene or polypropeylene) that have been added to thousands of personal products worldwide. Microbeads are a man made, and smaller than microplastics. As opposed to your normal microplastics such as decomposing plastic bags, household items and water bottles, microbeads are often invisible or hardly visible to the naked eye. They are used in the cosmetics industry as abrasives and exfoliating agents, and for thickening creams. They are often found in facial scrubs, shampoos, soaps, toothpastes, eyeliners, lip gloss, deodorants, sunblock sticks as well as household washing products. What's really concerning is the amount of microbeads entering the waterways without people knowing. Out of sight - out of mind! On average there are up to 300,000 microbeads in an average bottle of facial scrub<sup>19</sup> which means there are billions of microbeads floating in our oceans. Translated in terms we all understand - there can actually be more microbeads within the product, than is used in the packaging of some of these products.

Microbeads in beauty products have largely replaced the traditional exfoliators such as coconut, ground nut shells, oatmeal, sea salt and cocoa beans due to cost efficiency and longer shelf life. Microbeads are now used in most households on a weekly basis. The rate at which consumers currently use microbeads has elevated the issue into a serious epidemic that needs to be stopped immediately.

Microbeads are a hidden juggernaut in the world of plastic pollution for a few reasons.

Firstly due to their chemical nature (being plastic) they do not degrade or break down when they are used. Once in the underground waterways, and due to the miniscule size of the microbeads, they pass straight through the preliminary wastewater treatment screens. Our treatment plants are incapable of capturing and are not designed to filter out microbeads. They literally are being washed down our drains into the ocean. Plastic has NO place in the marine environment.

This means that each time you use a product containing microbeads, you are literally pouring plastic AWAY into sewerage and wastewater systems, because this is EXACTLY what they are designed to do. But sadly - there is NO AWAY. Once they enter the marine environment, they are impossible to remove and cause chaos to the natural balance of our oceans.

Once the microbeads are in the ocean, their devastating effects begin to occur. Unlike plastic bottles or plastic bags which typically suffocate and malnourish marine life, microbeads have the sinister effect of affecting the entire marine ecosystem. Due to their chemical make-up, microbeads absorb concentrated toxic chemicals and pollutants which are transferred to the marine life that consume them. Microbeads float and look like fish eggs; they are eaten by planktonic organisms such as molluscs and crustaceans which absorb the harmful chemicals found in the plastic. From here the domino effect begins. Fish that eat the plankton, are eaten by bigger fish, which are eaten by bigger fish and bigger fish until it reaches the top of the food chain - human consumers. Scientists believe that due to the plastic particles attracting other pollutants such as pesticides and oils, the toxins are transmitted to humans, where they are retained in the gut and not easily excreted<sup>20</sup>.

There is currently momentum surrounding the banning of microbeads with a number of large beauty corporations including Unilever, L'Oreal, Clarins and Ella Bache who have agreed to phase out the beads from products sold in Australia as well as Woolworth, Coles and Aldi who have pledged to remove products containing microbeads from their shelves by 2017. Australia's state and federal environment ministers have committed to a "voluntary phase out" of plastic microbeads by July 2018.

Whilst progress has been made, more needs to be done. The issue with addressing microbeads under a "voluntary phase out" is that 'knock off' brands sold outside major supermarkets and in chemists will continue to pollute the environment. In addition without legislation being enacted,

companies will be able to find loopholes through definitional jargon that will allow them to continue to use microbeads in their products under different scientific names.

Surfrider Australia is adamant that microbeads in any product should be banned. Surfrider believes that there should be legislation enacted to solidify the ban on a National Level immediately, followed by efforts to ban microbeads globally.

## Recommendations for Government Action

1. Banning or imposing a fee on heavily littered items such as single-use plastic bags and food and single-use take away beverage containers and straws. This would have the effect of significantly reducing the amount of plastic that enters Australia's oceans and waterways.
2. Imposing the immediate ban on microbeads in cleansing products, beauty and personal care products. This would effectively target those plastics that are most likely to be mistaken as a source of food by marine animals. Retailers should STOP selling consumer products that contain microplastics and microbeads. Manufacturers should be forced to STOP using microplastics and microbeads in consumer products worldwide and switch to natural materials such as oatmeal, salt, ground nutshells, cocoa beans and other natural alternatives that have the same properties, but do not pollute the environment with plastic pollution. A responsible company does not use microplastics and microbeads as an ingredient in its products.
3. Educate consumers to check their personal care products for pollutant plastic content such as polyethylene and polypropylene.
4. Legislators to execute an immediate ban on microplastics and microbeads in consumer products for the health of the marine environment AND humans whilst giving industry guideposts for acceptable replacements.
5. Establishing a State deposit-refund system for heavily littered items such as beverage bottles (Container Deposit Scheme). Under a Container Deposit Scheme (CDS) consumers would be able to redeem the deposit by returning the container to a designated return vending machine. This could potentially reduce beverage container litter in the marine environment by up to 60%.
6. Other potential initiatives:
  - a government sponsored review into the economic impact and health implications of plastic pollution of our oceans and waterways to humans and marine life;
  - support, funding and subsidies for organisations that attempt to significantly reduce their plastic impact and consumption.

## Conclusion

Plastic debris represents an extremely serious threat to the marine environment and imposes significant costs on governments and industries. There is an increasing need for national cooperation and uniformity to address this problem.

The Surfrider Foundation Australia urges politicians to take a leadership position on this critical issue and draw upon policies that have been proven to be successful both domestically and internationally, to develop a guiding strategy for addressing the problem of plastic pollution.

<sup>1</sup> Australian Marine Debris Initiative – Tangaroa Blue (website) (2015).

<sup>2</sup> US EPA, Marine Debris in the North Pacific: A Summary of Existing Information and Identification of Data Gaps 3 (2011)

- 3 Raveender Vannela, Are We 'Digging Our Own Grave' Under the Oceans ? Biosphere Level Effects and Global Policy Challenge from Plastics(s) in Oceans, 46(15) Envntl Sci and Tech 7932, 7932, (2012)
- 4 Clean Up Australia website 'The Facts about Plastic Bags in our Environment'
- 5 Vannela, Ibid Note 2 at 7932
- 6 California Ocean Protection Council: An Implementa ion Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter (2008).
- 7 See Global research, 5 Gyres Institute (Oct 2013)
- 8 US EPA Marine Debris in the North Pacific (2011)
- 9 UNEP, UNEP Year Book: Emerging issues in our Global Environment (2013)
- 10 US EPA Marine Debris in the North Pacific (2011)
- 11 Greenpeace, Plastic Debris in the World's Oceans (2006)
- 12 Emma L Teuten et al, Transport and Release of Chemicals from Plastics to the Environment and to Wildlife. (2009)
- 13 Emma L Teuten et al, Transport and Release of Chemicals from Plastics to the Environment and to Wildlife. (2009)
- 14 Emma L Teuten et al, Transport and Release of Chemicals from Plastics to the Environment and to Wildlife. (2009)
- 15 Richard C Thompson, 'Lost at Sea: Where is all the plastic?', 304 SCIENCE 838 Supplementary online material 3 (2004).
- 16 Clean Up Australia (website) (2015)
- 17 National Litter Index -©- Keep Australia Beautiful (website) (2015)
- 18 Tangaroa Blue (website) (2015)
- 19 ABC Report 22/1/2016 - By Sarah Whyte and Amy Sherden
- 20 The Sydney Morning Herald 14/1/2016 - Social affairs reporter Rachel Browne

Yours sincerely,

Susie Crick - President  
South Coast Branch  
Surfrider Foundation Australia

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**Surfrider Foundation Australia**  
[www.surfrider.org.au](http://www.surfrider.org.au)  
**\*20 Years of Protecting Waves & Beaches\***

Surfrider Foundation is a not for profit organisation dedicated to the protection and enjoyment of Australia's oceans, waves and beaches for all people, through CARE: Conservation, Activism, Research and Education.