

Submission to the Inquiry into plastic pollution in Australia's oceans and waterways

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Dear Committee Secretariat,

Thank you for the opportunity to contribute to this Inquiry into plastic pollution in Australia's oceans and waterways.

We are researchers with expertise in environmental health and tobacco control, who are actively conducting research on the important issue of tobacco product waste, particularly cigarette butts. We would like to take this opportunity to share some evidence and recommendations on this topic. A short summary is provided below, with further detail following:

The cigarette butt problem

- It is estimated that 8.9 billion cigarette butts are discarded into the Australian environment each year
- Cigarette butts are composed of filters made from a synthetic plastic cellulose acetate. Once smoked, they contain toxins and metals
- Many discarded cigarette butts make their way into waterways, beaches and the ocean, and take years to degrade
- Cigarette butts have been shown to be toxic to some marine organisms and may be ingested by seabirds and other marine wildlife

Options for addressing cigarette butt litter

- Include cigarette butts as a priority in national, state and local policies aimed at addressing litter and plastic pollution, including classifying cigarette butts as a single use plastic
- Introduce a mandatory product stewardship scheme to make tobacco companies pay the cost of cleaning up tobacco product waste
- Investigate options to reduce the manufacture and sale of cigarette filters, including a ban on the sale of filtered cigarettes and filters for use in roll-your-own cigarettes

Cigarette filters and their health effects

Cigarettes with filters became common in the 1950s, when the health harms of smoking were becoming recognised. The tobacco industry marketed cigarettes with filters as less harmful products¹ but the widespread uptake of cigarette filters did not reduce lung cancer rates.² The misperception that cigarette filters reduce the harms of smoking remains, so filters may perpetuate smoking by providing false reassurance. They may also facilitate uptake of smoking by young people because they make cigarette smoke seem less harsh and make cigarettes easier to smoke.

Cigarette filters are made of cellulose acetate, which is a type of bioplastic that typically takes years to break down. The filters in smoked cigarette butts discarded in the environment are infused with the same chemicals and metals that cause health harms to humans.³ There is substantial opportunity to reduce both the environmental and health harms of cigarettes.

Reducing smoking prevalence will reduce the health and environmental harms of smoking. Australia has set a target of reducing smoking prevalence to 5% or less by 2030. Banning plastic filters is one option for addressing the environmental consequences of smoking, and preliminary research shows it may also reduce the number of cigarettes smoked.⁴ Further research is needed on the environmental impact of cigarette butts without filters, and the behavioural and health consequences of removing cigarette filters but in the meantime, addressing the immediate issue of cigarette filters on the environment is vital following the precautionary principle.

The impact of cigarette butts on oceans and waterways

Cigarette butts are the most commonly littered item on earth, with an estimated 8.9 billion discarded into the Australian environment each year. They are the most commonly reported item in Australian waste audits.⁵ Many of these discarded butts end up in waterways, on beaches, and in the ocean.^{6, 7}

Cigarette butts have toxic effects on the environment and to marine wildlife.⁶ Research has found that adding cigarette butts to soil reduces the germination of grass and clover seeds and the length of their shoots.⁸ Seaworms exposed to filters from smoked cigarettes have DNA damage and reduced growth⁹ and cigarette filters (even unsmoked ones) are toxic to fish.¹⁰

The cost of cleaning up cigarette butts, to prevent them polluting oceans and waterways, is borne by the community. Local and state governments, as well as volunteer groups, are the primary organisations that work to remove these toxic products from the environment. The cost of cleaning up cigarette litter has been estimated at \$73M annually.¹¹ Despite clean-up efforts, many butts remain in the environment.

Options for addressing cigarette butt litter

Many jurisdictions worldwide are implemented or considering policies that will address the problem of cigarette waste. There are calls to ban cigarette filters completely by both environmental and health groups, including the World Health Organization (WHO).¹² Lawmakers in California and New York have attempted to ban the sale of cigarettes with filters, and New Zealand has pledged to explore a ban as part of their Smokefree Aotearoa 2025 Action Plan. Some jurisdictions are considering classifying cigarette filters as a single

use plastic as recommended by the WHO, which means their use may be banned. We strongly endorse this policy position.

Other approaches are mandatory product stewardship schemes that would require tobacco companies to pay for the costs of collection of tobacco product waste through municipal waste services, such as that proposed by the European Union in their Directive 2019/904. The UK are also moving in the direction of an extended producer responsibility scheme for managing cigarette filter waste, with consultation on such a scheme currently taking place.

The Australian government has put forward a proposal under the National Plastics Plan 2021 to address the problem of cigarette butts, however an industry led taskforce was proposed: “Australian Government to initiate an industry led cross sectorial stewardship taskforce to reduce cigarette butt litter in Australia and consider potential stewardship schemes”.¹³ This arrangement would be inconsistent with the WHO Framework Convention on Tobacco Control’s Article 5.3, which requires parties, such as Australia, to limit the interaction with the tobacco industry. We do not support a cross sectorial stewardship taskforce that is led by the companies that produce the waste and have a vested interest in continuing to produce this unnecessary waste-stream. Rather, this taskforce needs substantial government oversight with significant input from municipal local authorities.

A 2021 report commissioned by World Wildlife Fund for Nature Australia considered four regulatory approaches to address cigarette butt litter: business as usual, a ban on plastic filters, a voluntary industry product stewardship scheme, and a mandatory product stewardship scheme led by the federal government.¹⁴ A ban on plastic cigarette filters and a mandatory product stewardship scheme were assessed as having the greatest potential environmental benefit. The study suggested introducing a levy of A\$0.004 – less than half a cent – on each smoked cigarette to manage the waste. Other studies from overseas, however, show this cost would need to be higher.¹⁵ The tobacco litter abatement fee (US\$0.20 per pack) that was recommended in 2011 for the city of San Francisco has risen this year to US\$1.05 per pack to cover the cost of tobacco litter abatement.

To address the toxic waste from discarded tobacco product we recommend the following:

- Classify cigarette filters as single use plastics nationally.
- Include a mandatory product stewardship scheme that would require tobacco companies to pay the costs of cleaning up the waste produced by their products in the National Plastics Plan.
- Investigate options to reduce the manufacture and sale of cigarette filters, including a ban on the sale of filtered cigarettes and filters for use with roll-your-own tobacco. To anticipate the impact of banning cellulose acetate filters, experimental research on smoking behaviours when filters are removed and research examining the health and environmental effects of these behavioural responses are needed and should be performed by independent researchers (not by industry).
- Include cigarette butts as a priority in national, state and local policies aimed at addressing litter and plastic pollution.
- Develop an explicit plan to phase out the sale of tobacco products in Australia, such as is currently being implemented in New Zealand.¹⁶

Further resources

We have written about this topic in *The Conversation* and in the journal *Addiction*.

Morphett, K., Gartner C. & Clarke, W. (2021). Making the tobacco industry pay for cigarette litter could stop 4.5 billion butts polluting the Australian environment. *The Conversation*.

<https://theconversation.com/making-the-tobacco-industry-pay-for-cigarette-litter-could-stop-4-5-billion-butts-polluting-the-australian-environment-171831>

Morphett, K., Hyland, A., Sellars, D., & Gartner, C. (2022). The environmental impact of tobacco products: Time to increase awareness and action. *Addiction*. doi:10.1111/add.16046

We would also like to direct attention to the following reports

World Health Organization. Tobacco: poisoning our planet. 29 May 2022.

<https://www.who.int/publications/i/item/9789240051287>

World Wildlife Fund for Nature Australia commissioned report on options for ending tobacco butt litter: <https://equil.com.au/2021/12/07/ending-cigarette-butt-litter-a-report-prepared-for-wwf/>



References

1. Harris B. The intractable cigarette 'filter problem'. *Tob Control*. 2011;20(Suppl 1):i10. doi:10.1136/tc.2010.040113
2. Song M, Benowitz NL, Berman M, et al. Cigarette filter ventilation and its relationship to increasing rates of lung adenocarcinoma. *JNCI: Journal of the National Cancer Institute*. 2017;109(12). doi:10.1093/jnci/djx075
3. Novotny TE, Slaughter E. Tobacco product waste: An environmental approach to reduce tobacco consumption. *Current Environmental Health Reports*. 2014;1(3):208-216. doi:10.1007/s40572-014-0016-x
4. Pulvers K, Tracy L, Novotny TE, et al. Switching people who smoke to unfiltered cigarettes: Perceptions, addiction and behavioural effects in a cross-over randomised controlled trial. *Tob Control*. 2021. doi:10.1136/tobaccocontrol-2021-056815
5. Clean Up Australia. *Rubbish Report*. 2021. <https://irp.cdn-website.com/ed061800/files/uploaded/Rubbish%20Report-2021%20FINAL-compressed.pdf>
6. Araújo MCB, Costa MF. A critical review of the issue of cigarette butt pollution in coastal environments. *Environ Res*. 2019;172:137-149. doi:<https://doi.org/10.1016/j.envres.2019.02.005>
7. Taffs KH, Cullen MC. The distribution and abundance of beach debris on isolated beaches of Northern New South Wales, Australia. *Australasian Journal of Environmental Management*. 2005;12(4):244-250. doi:10.1080/14486563.2005.10648655
8. Green DS, Boots B, Da Silva Carvalho J, Starkey T. Cigarette butts have adverse effects on initial growth of perennial ryegrass (gramineae: *Lolium perenne* L.) and white clover (leguminosae: *Trifolium repens* L.). *Ecotoxicol Environ Saf*. 2019;182:109418. doi:<https://doi.org/10.1016/j.ecoenv.2019.109418>

9. Wright SL, Rowe D, Reid MJ, Thomas KV, Galloway TS. Bioaccumulation and biological effects of cigarette litter in marine worms. *Scientific Reports*. 2015;5(1):14119. doi:10.1038/srep14119
10. Slaughter E, Gersberg RM, Watanabe K, Rudolph J, Stransky C, Novotny TE. Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish. *Tob Control*. 2011;20(Suppl 1):i25. doi:10.1136/tc.2010.040170
11. Whetton S, Tait RJ, Scollo M, et al. *Identifying the social costs of tobacco use to Australia in 2015-2016*. 2019. <https://ndri.curtin.edu.au/NDRI/media/documents/publications/T273.pdf>
12. World Health Organisation. *Tobacco: Poisoning Our Planet*. 2022. <https://www.who.int/publications/i/item/9789240051287>
13. DAWE 2021. *National Plastics Plan*. 2021. <https://www.agriculture.gov.au/sites/default/files/documents/national-plastics-plan-2021.pdf>
14. Equilibrium. *Ending cigarette butt litter: A report prepared for The World Wildlife Fund for Nature Australia*. 2021. <https://equil.com.au/2021/12/07/ending-cigarette-butt-litter-a-report-prepared-for-wwf/>
15. Schneider JE, Peterson NA, Kiss N, Ebeid O, Doyle AS. Tobacco litter costs and public policy: a framework and methodology for considering the use of fees to offset abatement costs. *Tob Control*. 2011;20(Suppl 1):i36. doi:10.1136/tc.2010.041707
16. Thousands of lives and billions of dollars to be saved with smokefree bill passing. 13 December 2022. <https://www.beehive.govt.nz/release/thousands-lives-and-billions-dollars-be-saved-smokefree-bill-passing>