



Office of the Prime Minister's Chief Science Advisor  
Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia

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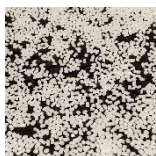
INFORMATION SHEET: Hot topic – Microplastics

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<b>Notes:</b> 'Hot topic' documents provide an overview of the topic, with links to reputable sources for further information. They are periodically updated. The most recent update is archived here.				



## Microplastics

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Microplastics are pieces of plastic that are smaller than five millimetres in length – roughly the size of a sesame seed. They are found throughout the environment as well as in the bodies of animals and humans. They come from a variety of sources, including from larger pieces of plastic that degrade into smaller pieces and from microbeads used in exfoliating face scrubs and toothpastes. Glitter is another source of microplastics. Tyres (from road wear) and textiles (which release microfibres during manufacturing and when worn or washed) are major sources of microplastics found in the world’s oceans, according to a [2020 Pew Trust report](#).<sup>1</sup> In Aotearoa New Zealand, the use of plastic microbeads in wash-off cosmetic products and abrasive cleaning products has been [banned since 2018](#).<sup>2</sup>

### The impacts of microplastics

The impacts of microplastics on ecosystems and human health [aren’t well understood](#).<sup>3</sup> Our understanding of nanoplastics, which are less than one micrometre long, is even more limited – their tiny size makes them hard to detect in ecosystems and living things, let alone study.

In 2018, the [Aotearoa Impacts and Mitigation of Microplastics](#) (AIM<sup>2</sup>) project<sup>4</sup> received five years of funding through the Ministry for Business, Innovation and Employment’s Endeavour fund to improve our understanding of the levels, distribution and impacts of microplastics in Aotearoa New Zealand. The AIM<sup>2</sup> researchers have found microplastics in beach sand across the country, in our soils, in the stomachs of dolphins, and at the surface of coastal waters both close to and far from human habitation.

Our Office’s major project for 2019, [Rethinking Plastics](#),<sup>5</sup> included analysis and recommendations relating to microplastics and nanoplastics.

### Read more

- WHO [information sheet](#)<sup>6</sup> and [full report](#)<sup>7</sup> on the health impacts of microplastics in drinking water, published in 2019 – and see [1 News interview](#)<sup>8</sup> for New Zealand expert reaction to the report
- [Science Learning Hub](#)<sup>9</sup>
- [Royal Society Te Apārangi report on plastics in the environment](#),<sup>10</sup> published in 2019
- [Pew Trust report](#) on plastic waste in the ocean,<sup>11</sup> published in 2020

## Endnotes

- <sup>1</sup> Pew Trust report – Breaking the Plastic Wave (2020), accessed on 24 February 2022 <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/07/23/breaking-the-plastic-wave-top-findings>
- <sup>2</sup> Ministry for the Environment webpage – Microbeads regulations, accessed on 24 February 2022 <https://environment.govt.nz/acts-and-regulations/regulations/microbeads-regulations/>
- <sup>3</sup> *Nature* article – Microplastics are everywhere – but are they harmful? (2021), accessed on 24 February 2022 <https://www.nature.com/articles/d41586-021-01143-3>
- <sup>4</sup> ESR webpage – Aotearoa Impacts and Mitigation of Microplastics (AIM<sup>2</sup>), accessed on 24 February 2022 <https://www.esr.cri.nz/our-research/research-projects/aotearoa-impacts-and-mitigation-of-microplastics-aim/>
- <sup>5</sup> OPMCSA webpage – Rethinking plastics in Aotearoa New Zealand, accessed on 24 February 2022 <https://www.pmcsa.ac.nz/topics/rethinking-plastics/>
- <sup>6</sup> World Health Organisation information sheet – Microplastics in drinking-water (2019), accessed on 24 February 2022 [https://www.who.int/water\\_sanitation\\_health/publications/information-sheet190822.pdf?ua=1](https://www.who.int/water_sanitation_health/publications/information-sheet190822.pdf?ua=1)
- <sup>7</sup> World Health Organisation technical report – Microplastics in drinking water (2019), accessed on 24 February 2022 <https://apps.who.int/iris/bitstream/handle/10665/326499/9789241516198-eng.pdf?sequence=5&isAllowed=y>
- <sup>8</sup> 1News article – Microplastics discovered in our drinking water ‘not a big surprise’, expert says (2019), accessed on 24 February 2022 <https://www.1news.co.nz/2019/08/22/microplastics-discovered-in-our-drinking-water-not-a-big-surprise-expert-says/>
- <sup>9</sup> Science Learning Hub webpage – Microplastics, accessed on 24 February 2022 <https://www.sciencelearn.org.nz/resources/2808-microplastics>
- <sup>10</sup> Royal Society Te Apārangi evidence summary – Plastics in the environment (2019), accessed on 24 February 2022 <https://www.royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/plastics-in-the-environment-evidence-summary>
- <sup>11</sup> Pew Trust report – Breaking the Plastic Wave (2020), accessed on 24 February 2022 <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/07/23/breaking-the-plastic-wave-top-findings>