

What and where are microplastics?

He aha ngā kirihou moroiti ā kei whea rā?

Microplastics are getting into the environment and into the food chain



He kirihou moroiti

What are microplastics?

Microplastics are very small plastic particles generally less than 5 mm in size.

- **Primary microplastics** are small manufactured plastics, for example, microbeads used in cosmetics and cleaning products.
- **Secondary microplastics** are fragmented from larger pieces of plastic during use (such as microfibers from washing clothes or tyre dust from driving) or breaking down over time (such as discarded bottles and bags).

He aha te mate?

What's the problem?

Microplastics are accumulating in our environment, entering the food chain and can be extremely difficult to remove.

He kirihou moroiti ka kaha kitea?

Which microplastics are most common?

The greatest type of microplastics found globally in sediments, soils and marine and freshwater samples are secondary microplastics, especially tyre pieces and synthetic clothing fibres.

He pēwhea i te moana?

How much microplastic is in the ocean?

In 2014, scientists estimated that there were between 15–51 trillion microplastic particles in the ocean, excluding those that have sunk to the seabed or have been deposited on shorelines worldwide. Microplastics are now found in kaimoana.

Scientists have found on average 325 microplastic particles per litre of bottled water! Most of these are between 6.5 and 100 µm in size.



Take! Action Kia kaha te mahi

Look at the diagram that shows microplastics traveling through our wastewater system and into the environment. What other pathways could occur and how do we stop them?

TĀMOKOHIA TE ORA O TE TAIAO
KITE WHATUMANAWA

It is all our duty to protect
the environment



Microplastics in the wastewater treatment system

Microbeads from industrial cleaning products, industrial abrasives and accidental loss of nurdles



Fragmented plastic and road abrasions get blown and washed into the waste and stormwater system



Microbeads and fibres used in personal care products, cleaning products and textiles



Garments made of synthetic materials, such as polyester and nylon fleece, can release **1900 fibres per wash!**

INDUSTRIAL

STORMWATER

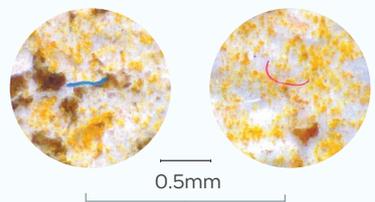
RESIDENTIAL

Microplastics washed down drains enter our waste water treatment plants

Treatment Plant



Plastics collected from water leaving a NZ wastewater treatment plant



Plastics collected from water entering a NZ wastewater treatment plant

Sewage sludge
Microplastics that are removed during wastewater treatment can end up in sewage sludge that is used as fertiliser in agriculture



Discharge
Some microplastics are so tiny and light that they do not get removed but leave the plant and enter out waterways and oceans



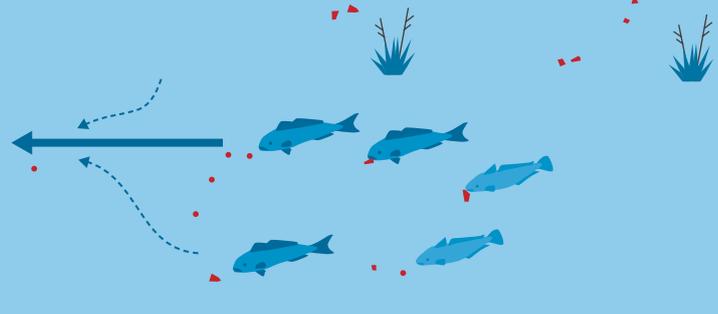
Entering the food chain

Microplastics and any toxic chemicals associated with them can end up in our food and drink.

Seep into soil, waterways, and aquifers

Microplastics enter our waterbodies

Accumulate in wetlands and streams



Microplastics are ingested by aquatic organisms