



Facts about the Environmental Impact of Cigarette and Vape (E-Cigarette) Waste

What is the environmental impact of cigarette waste?

Cigarette butts are the most littered item on earth. Cigarette butts pollute our soil, beaches, and waterways. In Australia, around 9 billion cigarettes are littered every year – that's 14% of all litter in Australia! Dropped cigarette butts are a major hazard to animals and plants:

- cigarette butts are sometimes eaten by wildlife including birds, turtles, whales, and fish, leading to poisoning or starvation;
- discarded cigarette butts can cause roadside and bushfires;
- cigarette filters look like cotton but are actually made of a type plastic (cellulose acetate) that can take up to 15 years to break down;
- cigarette filters release thousands of tiny microfibres (smaller than 0.2mm) into the environment;
- toxic chemicals leak from cigarette filters contaminating waterways;
- microfibres and toxins from filters have been found in fish and shellfish;
- plant growth is also damaged by toxins leaking from cigarette butts.

To safely dispose cigarette butts, they must be put out and placed in a bin.

What about waste from vapes (e-cigarettes)?

Discarded vapes are a growing environmental concern in Australia. The most popular vaping devices are disposable vapes designed for single-use. Litter from disposable vapes is a major environmental concern. Refillable systems are also a threat to the environment, especially those that use disposable pods. Vapes have been described as a 'triple threat' to the environment:

Plastic waste

Disposable vapes and pods from refillable systems are made of plastics that are not biodegradable. This means the plastics do not breakdown naturally and will never fully decompose. However, they will gradually get broken up into smaller and smaller pieces of plastic. This plastic pollution harms wildlife as the micro- and nano-plastics can be eaten by animals and fish leading to health problems and even death by starvation or suffocation.

Electronic waste (e-waste)

vapes are complex electronic devices that contain computer circuits and hazardous lithium-ion batteries. E-waste is not biodegradable, and is full of toxins including heavy metals such as lead and mercury, that leak into the environment.

Hazardous waste

lithium-ion batteries in vapes are classed as hazardous waste because they contain chemicals such as manganese, cobalt, and nickel which are harmful to the environment. They are also a fire risk and have been known to explode. Disposable vapes or vape pods might also contain nicotine (a poison), which can leak out and pollute the environment.

What toxins are in cigarette butts?

The tobacco industry has marketed filtered cigarettes as 'safer' than those without filters, despite knowing this is impossible. Cigarette filters do not prevent cancer causing chemicals and other toxins entering the body when someone smokes. But some of these toxins do stay in the filter, and these toxins then leak into the environment when a cigarette butt is thrown away. Studies have found over 800 chemicals in used cigarette filters, including nicotine, arsenic, formaldehyde, and heavy metals. These toxins also find their way into animals and plants. This means they can enter our food chain. Eating contaminated plants and animals means we are also taking in toxins from discarded cigarette butts.





How should vapes be disposed of safely?

Vapes are complex electronic devices which contain toxic chemicals so disposing of them is not as simple as throwing them in the bin or putting them in the recycling. Vape disposal depends on whether the device is single-use or refillable.

Refillable vapes

If the battery can be safely removed, it should be taken out and dropped off at a **battery collection point** so it can be recycled. Any e-liquid containers (including pods) should be taken to a pharmacy as part of the **Return Unwanted Medicines Project (RUM)**. Vape liquid containers are included in the RUM project because nicotine vaping products are a prescription only medicine. It is well known that most vape liquids contain nicotine even if this is not mentioned on the label. Using the RUM project collection bins means any toxic chemicals in the containers (including nicotine) will be disposed of safely. This should just leave the outer container which can go into the garbage bin.

Single use vapes

Disposing of these vapes is more challenging. They are not designed to be taken apart and doing so could be dangerous. This means battery collection points and RUM bins cannot be used to dispose of single-use vapes. Whilst some Australian cities do have disposal options for single-use vapes, these are limited and can be costly which means they are not accessible for most people. **Planet Ark** has more information about these options. We also recommend contacting your **local state or territory public health unit** for up-to-date advice on single-use vape disposal.

What can the TIS program do?

We can help protect the land and waterways from the impact of littered cigarette butts and vapes by:

- raising awareness of the environmental harm caused by dumping cigarette butts and vapes;
- promoting safe disposal of cigarette butts and used vapes;
- advocating for safe disposal or recycling services for single-use vapes;
- supporting smoke- and vape-free policies in outdoor areas like parks and beaches (which include safe disposal points);
- asking people to pledge to protect the environment from cigarette and vape litter;
- promoting caring for country as another reason to quit smoking and/or vaping.

Further Reading:

No More Butts Campaign [website](#)

Clean Up Australia Campaign [website](#)

Poisoning Our Planet (World No Tobacco Day 2022)

Novotny, T. E., & Hamzai, L. (2023). [Cellulose acetate cigarette filter is hazardous to human health](#). Tobacco Control, tc-2023-057925.

Beutel, M. W., Harmon, T. C., Novotny, T. E., Mock, J., Gilmore, M. E., Hart, S. C., Traina, S., Duttagupta, S., Brooks, A., Jerde, C. L., Hoh, E., Van De Werfhorst, L. C., Butsic, V., Wartenberg, A. C., & Holden, P. A. (2021). [A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts](#). Sustainability, 13(23), 12994.

