



THE ENVIRONMENTAL IMPACT OF TOBACCO PRODUCTS

Improperly discarded tobacco products are harmful to the environment. These products contain toxic and nonbiodegradable substances that pollute the surrounding ecosystem and can harm wildlife. Cigarettes make up the largest category of tobacco products and are the most polluted product, but as e-cigarette sales continue to rise, their contribution to environmental waste is growing.¹ Reducing tobacco use is the best way to reduce tobacco waste.

Cigarettes are the most littered product in the world

Each year, an estimated 9.7 billion cigarette filters are littered all over the U.S.² Ocean and coastal cleanup crews report cigarette butts as the top item collected globally.³ As smoking rates have declined, so has cigarette waste, but cigarette butts remain a significant contributor to pollution.⁴

One study found that nearly three-quarters of smokers (74.1%) admitted to disposing of cigarette butts on the ground or out of a car window at least once in their lives and over half of smokers (55.7%) admitted to littering their cigarette butts on the ground or in a sewer/drain within the past 30 days.⁵ Young adult smokers, aged 18 to 24 years old, report littering 46% of their cigarette butts in the previous 24 hours.⁶

Why are cigarettes bad for the environment?

Cigarette filters are not biodegradable – Approximately 95% of commercial cigarette filters are composed of cellulose acetate, a type of plastic that can take up to 10 years to break down.⁷ Cigarette filters are a source of plastic microfibers. On average, one cigarette filter is made up of 12,000 to 15,000 plastic strands and, as it degrades, releases 100 microfibers into the surrounding environment daily. Due to the ubiquity of cigarette litter, microfibers are often found in urban runoff, and up to 0.3 million tons of microfibers potentially enter oceans each year.⁸ In addition to cellulose acetate, most filters have two layers of paper/rayon wrapping, glue, and alkali metal salts, all of which can harm the environment.⁹

Cigarette filters are toxic – Cigarette filters collect some of the toxic organic compounds from cigarette smoke, including nicotine, tar, formaldehyde, acetaldehyde, and hydrogen cyanide.¹⁰ These chemicals can leach into the surrounding environment, polluting the soil, waterways, and hurting wildlife. The U.S. Environmental Protection Agency (EPA) has classified nicotine and acetaldehyde as “hazardous waste,” and formaldehyde and lead as “toxic waste” since the 1980s.¹¹ One study found that 50% of fish in water containing chemicals from cigarette filters died after 96 hours.¹²

The cigarette manufacturing process pollutes the environment – The tobacco industry’s harvesting, manufacture, and disposal of tobacco product materials can also contribute to environmental destruction and waste. Despite various tobacco companies’ claims that their manufacturing processes are well on their way to being sustainable and producing zero waste,¹³ the evidence suggests the opposite.

- **Deforestation** – The World Health Organization reported that around “600 million trees are cut down every year to make room for tobacco crops, burned during the tobacco curing process, and used for construction of curing barns.”¹⁴
- **Toxic Chemical Waste** – EPA data show that in 2022, an estimated 636,031 pounds of toxic chemicals were disposed of or released from tobacco manufacturing facilities.¹⁵
- **Plastic Waste** – Of the plastic waste products with identifiable branding collected between 2018 and 2022, products manufactured by Altria and Philip Morris International combined made up a significant portion.¹⁶
- **Greenhouse Gas Emissions** – Annually, the global tobacco industry produces carbon dioxide at levels equivalent “to the emissions of nearly 3 million transatlantic flights.”¹⁷

E-Cigarettes are a growing environmental threat

Similar to combustible cigarettes, the improper disposal of e-cigarettes and e-cigarette parts pollutes the surrounding soil, waterways, and wildlife with damaging substances like alkali metals (e.g., the lithium used in e-cigarette batteries), nicotine, and plastic. As of September 2024, pre-filled cartridges or pods made up 39.9% of sales in traditional retail outlets,* while disposable e-cigarettes made up 60%. From February 2, 2020, to September 8, 2024, disposable e-cigarette sales increased by 213.6% (4.1 million units to 12.8 million units); their unit share increased from 26.0% to 60.0% of total e-cigarette sales.¹⁸ Currently, an estimated 150 million disposable e-cigarettes are discarded each year in the United States – this means that at least “five vapes are being thrown away every second.”¹⁹

Why are e-cigarettes bad for the environment?

Chemical Waste – Toxic chemicals found in e-cigarette liquids include lead, acetaldehyde, formaldehyde, and nicotine,²⁰ and when e-cigarettes are thrown away, these contents can leak into the surrounding environment. For example, researchers found the lead content leaked from discarded e-cigarettes to be up to ten times above designated regulatory thresholds for toxic and hazardous waste in the U.S.²¹ EPA’s Office of Resource Conservation and Recovery Director Barnes Johnson described e-cigarettes as “acute hazardous waste” because they contain nicotine.²²

Electronic Waste (“E-Waste”) – In 2023 alone, 844 million vape devices were discarded globally.²³ The e-waste produced by vape devices mainly comes from lithium-ion batteries, which are particularly damaging because they contain harmful chemicals like nickel, manganese, and cobalt that can leach out if not disposed of properly and can increase fire risk as they degrade in waste facilities.²⁴ High temperatures within lithium-ion batteries could release hazardous gases into the environment and cause explosions or fires.²⁵

Plastic and Metal Waste – All e-cigarettes use plastic and can have metal parts in the coils or heating elements. The devices are designed to be disposed of or replaced as a whole or in part so that, given the high e-cigarette sales, they can contribute to the global buildup of nonbiodegradable plastic and metal. While much of the attention has been on disposable e-cigarettes, replacement pods/cartridges are also discarded after use, as well as some parts of mod-type devices and plastic e-liquid bottles.²⁶

Recycling Difficulties – There is no standardized way to recycle e-cigarettes in the U.S., so the majority of these products end up in landfills or littered in the surrounding environment.²⁷ Plastic pods and e-liquid containers cannot be recycled with other plastic waste because they are often contaminated with the residual hazardous substances found in vape juice.²⁸ In 2024, over half (58.7%) of high school e-cigarette users reported single-use, disposable vapes as the device type they most often use,²⁹ Data from August 2023 showed that less than a quarter (13%) of young e-cigarettes users (15-to-24-year-olds) reported recycling their used disposable vapes.³⁰

Some e-cigarette companies offer take-back or recycling programs in attempt to reduce discarded e-cigarettes, but those programs often have a very limited impact, if any. In 2020, Keep America Beautiful, which receives funding from tobacco companies, collected 894,700 littered e-cigarettes in the U.S.³¹

Other tobacco products can also produce waste that harms the environment

Snus and nicotine pouches, the new generation of smokeless tobacco products, are portioned tobacco or nicotine powder in a sachet made of cellulose fibers. While the cellulose fibers that make up pouches eventually decompose,³² these products can be discarded improperly and contribute to environmental litter. In addition, snus and nicotine pouches contain chemicals like nicotine that can leach into the surrounding environment and harm wildlife if they ingest the pouches.

Tobacco industry’s attempts to distract from its environmental impact

* Convenience stores, gas stations, grocery stores, drugstores/pharmacies, mass merchandiser outlets, club stores, dollar stores, and military sales. Excludes Internet sales and sales from tobacco specialty stores like vape shops.

Tobacco companies attempt to improve their public image by engaging in undertakings that make them appear concerned with the environment. These actions include marketing their products as ‘green,’ publicizing sustainability accolades, forming strategic partnerships with environmental groups, and funding eco-friendly programs, such as beach clean-ups, reforestation, and recycling campaigns.³³

Santa Fe Natural Tobacco Company (SFNTC). Since 1999, Santa Fe Natural Tobacco Company (SFNTC) has advertised its efforts, including “planting trees, recycling cigarette butts, and using wind power in its facilities,” to create a reputation of being environmentally friendly.³⁴ SFNTC’s Natural American Spirit cigarette brand is well-known for using eco-friendly wording in their advertisements and cigarette packs, such as “Earth-friendly tobacco” and “natural,” and using nature and recycling imagery, such as a “re-purposed tobacco leaf recycle logo.”³⁵ This marketing strategy, including its 2017 “Respect for the Earth” campaign with statements on packs like, “100% zero-waste-to-landfill” manufacturing and “Earth-friendly tobacco,” could convince consumers, including adolescents, to switch brands.³⁶ In 2017, the U.S. Food & Drug Administration required SFNTC to cease using “additive-free” and “natural” in its marketing materials (except for the use of “natural” in the brand name) due to research showing that those terms misled consumers to perceive those cigarettes as less harmful.³⁷



Earth Day 2023 Advertisement by Natural American Spirit “Protect the Earth from Leaf to Reef”

Earth Day Advertising. Some tobacco companies like SFNTC try to boost their credibility as environmental stewards by highlighting Earth Day in their marketing.

Bidi Stick and Elf Bar. Green marketing tactics originally used by cigarette brands are now being adopted by e-cigarette brands like Bidi Stick and Elf Bar.³⁸ For example, Bidi Stick, a single-use disposable e-cigarette brand, advertises as being “the eco-friendly vape pen” and shows a green vape positioned next to a green carbon footprint on its website.³⁹ Despite information on the Bidi Stick website about the brand’s environmental goals and programs like Bidi Cares, a recycling program that incentivizes consumers to return used devices for proper disposal in exchange for offerings like next-purchase coupons, there is little to no data to indicate that Bidi Stick has significantly reduced consumer waste.⁴⁰ For example, by October 2020, a few months after the Bidi Cares program launched, it was reported that consumers returned 1,300 Bidi Sticks to the company.⁴¹ Meanwhile, a later study

revealed that 70,000 18-to-20-years-olds alone used Bidi Sticks “every day” or “some days” in a single year.⁴² Elf Bar, the most popular disposable e-cigarette among American youth in 2024, had its advertisements banned in the United Kingdom in 2023 for the use of slogans like “recycling for a greener future” and “green awareness” that may have misled people to think that these e-cigarettes could be easily recycled.⁴³

Environmental Sustainability Awards. Tobacco companies use sustainability accolades to be seen as “partners” in environmental health.⁴⁴ For example:

- In 2012, Altria announced that it was named a member of the Dow Jones Sustainability North America Index.⁴⁵
- The four largest transnational tobacco companies, British American Tobacco, Philip Morris International, Japan Tobacco International, and Imperial Brands, all have been rated ‘A’, the highest possible rating, across various indices by the Carbon Disclosure Project (CDP).⁴⁶
- RJ Reynolds announced that it received the 2024 SEAL Business Sustainability Award.⁴⁷

The lack of a standardized, mandatory disclosure format for these awards has allowed tobacco companies to create their own units of sustainability measurement and to set their own environmental goals.⁴⁸ Furthermore, tobacco companies can “obscure the true scale of [their] environmental impact” to place themselves in the best possible light, leaving these awards with little true value.⁴⁹ Tobacco companies participating in these kinds of sustainability rankings may incorrectly promote their reputation as allies of the environment.⁵⁰

Strategic Partnerships: Keep America Beautiful. In order to bolster their public image as environmental advocates, tobacco companies donate, sponsor, and partner with environmental organizations. For example, Philip Morris USA, Reynolds American, and Santa Fe Natural Tobacco Company help to fund Keep America Beautiful's cigarette litter cleanup initiative.⁵¹ However, these types of downstream initiatives have minimal impact on reducing the overall volume of cigarette litter being produced and discarded.⁵²

Despite making public statements touting their commitment to improving the environment, tobacco companies oppose proven efforts to reduce tobacco use – and therefore tobacco waste – and instead continue to introduce new products that add to environmental waste, especially since these newer products include devices and replacement parts that are single-use and non-biodegradable.

Reducing the Environmental Impact of Tobacco Products

The negative impact of tobacco products on the environment is entirely preventable with common sense solutions. Reducing tobacco use through evidence-based solutions such as tobacco tax increases or smoke-free laws would have the most impact, since fewer tobacco products used means less tobacco product waste. Some other policy options include enacting a fee to help pay for the public services needed to clean up the waste, banning certain products that produce the most waste, or requiring tobacco companies to set up recycling or safe disposal programs. Non-policy options include providing guidance to businesses about disposal methods and requiring tobacco companies to better inform consumers about the environmental impact of their products.

Campaign for Tobacco-Free Kids, December 2, 2025 / Hope Neuling

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¹³ Altria. (January 2024). *At Altria, one of our Responsibility Focus Areas is Protect the Environment, which includes conserving the natural resources on which our businesses and communities rely*. LinkedIn. https://www.linkedin.com/posts/altria_americanrecyclesday_recyclingisessential-activity-7130645960191348736-isVI; Reynolds American, "Reynolds Breaks Ground in WaterHub Facility in Tobaccoville, N.C.," September 28, 2023, <https://www.reynoldsameric.com/news/reynolds-breaks-ground-on-waterhub-facility-in-tobaccoville-n-c/>;

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