

Tobacco in Australia

Facts & Issues

Relevant news and research

10.16 The environmental impact of tobacco use

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Research:

Dobaradaran, S, Salemi, A, De-la-Torre, GE, Telgheder, U, & Schmidt, TC. (2024). The role of different remaining parts of cigarette butts in the transfer of phenolic compounds into the aquatic environment and their ecological risk. *Sci Total Environ*, 957, 177584. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39561900>

Green, DS, Boots, B, & Tingey, T. (2024). Rapid, detrimental response of estuarine benthic macrofauna communities to pollution by littered cigarette filters and e-liquid. *Mar Pollut Bull*, 209(Pt B), 117208. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39489055>

Howlader, M, Selim, A, Shuvo, SNA, Islam, MM, Sultana, T, Moniruzzaman, M et al . (2023). Evaluating cigarette butt pollution: Insights from Cox's Bazar Sea beach of Bangladesh. *Mar Pollut Bull*, 197, 115705. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39491931>

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Morales-Vera, R, Cantillana, J, Arto-Paz, F., Hernandez, C., Echeverria-Vega, A., & Valdes, C. (2024). Treatment of Cigarette Butts: Biodegradation of Cellulose Acetate by Rot Fungi and Bacteria. *Microorganisms*, 12(11). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39597674>

Thuan, PM, Nguyen, MK, Lin, C, Rangel-Buitrago, N, Galgani, F, Chang, SW, & Nguyen, DD. (2024). Cigarette butts in Vietnam's marine environments: From pollution to solutions and prospects. *Sci Total Environ*, 957, 177484. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39528218>

Fathi, Z, Abdulkhani, A, Hamzeh, Y, Ashori, A, Shakeri, A, & Lipponen, J. (2024). Innovative upcycling cigarette filters into high-performance cellulose nanofiber-epoxy composites. *Int J Biol Macromol*, 281(Pt 3), 136561. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39401619>

Guttmann, N, Wolinska, J, Spahr, S, & Martinez-Ruiz, EB. (2024). Cigarette butts enable toxigenic cyanobacteria growth by inhibiting their lethal fungal infections. *Ecotoxicol Environ Saf*, 286, 117149. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39383821>

Yang, J, Cui, S, Zhao, F, Wang, F, Feng, J, Ning, P, & Jia, L. (2024). Waste to Wealth: Discarded Cigarette Butt-Derived Metal-Free N-Rich Carbon Catalysts for the Selective Catalytic Oxidation of Hydrogen Sulfide to Sulfur. *Environ Sci Technol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39477250>

Yona, D, Sari, SHJ, Sudono, CVA, Siburian, ASJ, & Wahyudi, AD. (2024). Alarming cigarette butts contamination on sandy beaches of East Java, Indonesia. *Environ Sci Pollut Res Int*, 31(50), 60314-60325. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39377908>

Diaz-Mendoza, C, Arias Ordiales, P, Bustos, ML, Cervantes, O, Palacios-Moreno, M, Vera San-Martin, T et al. (2023). Abundance and distribution of cigarette butts on the sand of five touristic beaches in Latin America during the COVID-19 pandemic. *Mar Pollut Bull*, 194(Pt A), 115306. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37506493>

Felipe da Silva, N, Christina Barbosa de Araujo, M, & Santos Silva-Cavalcanti, J. (2023). Spatio-temporal distribution of cigarette butt contamination in urban beaches with varying levels of use. *Waste Manag*, 168, 179-188. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37302176>

Hosseinpour, Z, Dehdari, T, & Abolghasemi, J. (2023). Application of Bandura's social cognitive theory to predict cigarette butt-littering behavior in male smokers: a case study in the parks in Tehran, Iran. *Environ Sci Pollut Res Int*, 30(32), 79469-79480. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37286838>

Shah, G, Bhatt, U, & Soni, V. (2023). A comprehensive review on triple R eco-management strategies to reduce, reuse and recycle of hazardous cigarette butts. *Heliyon*, 9(6), e16642. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37292331>

Darabi, K, Hassani, G, Alinejad, N, & Badeenezhad, A. (2023). Spatial and temporal variation of CBPI and leakage of heavy metals from cigarette butts into the urban environment. *Sci Rep*, 13(1), 1424. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36697425>

Kim, Y, Cho, SH, Lee, S, Jung, S, Chen, WH, & Kwon, EE. (2023). Environmental benefits from the use of CO(2) in the thermal disposal of cigarette butts. *Environ Res*, 220, 115217. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36608762>

- Lucia, G, Giuliani, ME, d'Errico, G, Booms, E, Benedetti, M, Di Carlo, M et al. (2023). Toxicological effects of cigarette butts for marine organisms. *Environ Int*, 171, 107733. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36628858>
- Bialous, SA. (2022). Using MPOWER policies to address tobacco impact on the environment. *Rev Panam Salud Publica*, 46, e184. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36211246>
- Raina, S. (2022). Tobacco control, climate change, public health, primary care-the name of the game is "conflict of interest". *BMJ*, 379, o2408. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36207028>
- Blanco Marquizo, A, Bianco, E, Paraje, G, Gouda, HN, Birckmayer, J, Welding, K et al. (2022). Moving forward in the Americas: tobacco control fosters sustainable development. *Rev Panam Salud Publica*, 46, e139. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36211242>
- Craig, LV, Chung-Hall, J, Meng, G, & Fong, GT. (2022). Calculating the potential environmental impact of a menthol cigarette ban in the USA. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36224044>
- Morphett, K, Hyland, A, Sellars, D, & Gartner, C. (2022). The environmental impact of tobacco products: Time to increase awareness and action. *Addiction*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36167078>
- Conradi, M, & Sanchez-Moyano, JE. (2022). Toward a sustainable circular economy for cigarette butts, the most common waste worldwide on the coast. *Sci Total Environ*, 847, 157634. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35905959>
- Sogi, GM. (2022). World No Tobacco Day 2022; Tobacco: Threat to our Environment - One More Reason to Quit. *Contemp Clin Dent*, 13(2), 99-100. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35846583>
- Webler, T, & Jakubowski, K. (2022). Attitudes, Beliefs, and Behaviors about Cigarette-Butt Littering among College-Aged Adults in the United States. *Int J Environ Res Public Health*, 19(13). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35805745>
- Roy, S, Das, T, Dasgupta Ghosh, B, Goh, KL, Sharma, K, & Chang, YW. (2022). From Hazardous Waste to Green Applications: Selective Surface Functionalization of Waste Cigarette Filters for High-Performance Robust Triboelectric Nanogenerators and CO₂ Adsorbents. *ACS Appl Mater Interfaces*, 14(28), 31973-31985. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35792904>
- Ribeiro, VV, Lopes, TC, Amaral Dos Santos Pinto, M, Povoia, AA, Correa, VR, De-la-Torre, GE et al. (2022). Cigarette butts in two urban areas from Brazil: Links among environmental impacts, demography and market. *Environ Res*, 213, 113730. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35732200>
- de Granda-Orive, JI, Solano-Reina, S, & Jimenez-Ruiz, CA. (2022). Tobacco as a Source of Microplastics. Tobacco and Environment: World No Tobacco Day 2022. *Arch Bronconeumol*, 58(5), 395-397. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35570088>
- Ghasemi, A, Golbini Mofrad, MM, Parseh, I, Hassani, G, Mohammadi, H, Hayati, R, & Alinejad, N. (2022). Cigarette butts as a super challenge in solid waste management: a review of current

knowledge. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35612701>

Hossain, MM, Abdulla, F, Rahman, A, & Huq, MN. (2022). Cigarette waste: A burden to the health, environment, and economy. *Ecotoxicol Environ Saf*, 239, 113661. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35605330>

Malone, RE. (2022). Tobacco control and the climate emergency. *Tob Control*, 31(3), 395-396. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35450940>

Araujo, MCB, Costa, MF, Silva-Cavalcanti, JS, Duarte, AC, Reis, V, Rocha-Santos, TA et al. (2022). Different faces of cigarette butts, the most abundant beach litter worldwide. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35199273>

Yousefi Nasab, A, Oskoei, V, Rezasab, M, Alinejad, N, Hosseinzadeh, A, & Kashi, G. (2022). Cigarette butt littering consequences: a study of pollution rate on beaches and urban environments. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35143006>

Zeng, G, Ran, Y, Huang, X, Li, Y, Zhang, M, Ding, H et al. (2022). Optimization of Ultrasonic-Assisted Extraction of Chlorogenic Acid from Tobacco Waste. *Int J Environ Res Public Health*, 19(3). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/35162594>

Soleimani, F, Dobaradaran, S, De-la-Torre, GE, Schmidt, TC, & Saeedi, R. (2021). Content of toxic components of cigarette, cigarette smoke vs cigarette butts: A comprehensive systematic review. *Sci Total Environ*, 813, 152667. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34963586>

Farzadkia, M, Salehi Sedeh, M, Ghasemi, A, Alinejad, N, Samadi Kazemi, M, Jafarzadeh, N, & Torkashvand, J. (2022). Estimation of the heavy metals released from cigarette butts to beaches and urban environments. *J Hazard Mater*, 425, 127969. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34891016>

Hsieh, JR, Mekoli, ML, & Edwards, RL, Jr. (2021). Levels of Chemical Toxicants in Waterpipe Tobacco and Waterpipe Charcoal Solid Waste. *J Environ Prot (Irvine, Calif)*, 12(11), 913-938. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34881071>

Morgan, JC, Jeong, M, Mendel-Sheldon, J, Noar, SM, Ribisl, KM, & Brewer, NT. (2022). The impact of cigarette pack anti-littering messages. *Addict Behav*, 126, 107184. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34906881>

Green, DS, Tongue, ADW, & Boots, B. (2021). The ecological impacts of discarded cigarette butts. *Trends Ecol Evol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34690005>

Heo, KJ, Lee, GD, Doh, SJ, & Jung, JH. (2021). Effect of cigarette smoke on the lifetime of electret air filters. *Sci Total Environ*, 807(Pt 1), 150754. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34619223>

Araujo, MCB, & Costa, MFD. (2021). Cigarette butts in beach litter: Snapshot of a summer holiday. *Mar Pollut Bull*, 172, 112858. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34419695>

Gomez Escobar, V, Moreno Gonzalez, C, Arevalo Caballero, MJ, & Gata Jaramillo, AM. (2021). Initial Conditioning of Used Cigarette Filters for Their Recycling as Acoustical Absorber Materials. *Materials (Basel)*, 14(15). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34361354>

- Gomez Escobar, V, Moreno Gonzalez, C, & Rey Gozalo, G. (2021). Analysis of the Influence of Thickness and Density on Acoustic Absorption of Materials Made from Used Cigarette Butts. *Materials (Basel)*, 14(16). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34443047>
- Laurenza, AG, Losito, O, Casiello, M, Fusco, C, Nacci, A, Pantone, V, & D'Accolti, L. (2021). Valorization of cigarette butts for synthesis of levulinic acid as top value-added chemicals. *Sci Rep*, 11(1), 15775. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34349213>
- Akhbarizadeh, R, Dobaradaran, S, Parhizgar, G, Schmidt, TC, & Mallaki, R. (2021). Potentially toxic elements leachates from cigarette butts into different types of water: A threat for aquatic environments and ecosystems? *Environ Res*, 202, 111706. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34284015>
- Banozic, M, Banjari, I, Flanjak, I, Pastar, M, Vldic, J, & Jokic, S. (2021). Optimization of MAE for the Separation of Nicotine and Phenolics from Tobacco Waste by Using the Response Surface Methodology Approach. *Molecules*, 26(14). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34299637>
- Doyan, A Leong, CL, Bilad, MR, Kurnia, KA, Susilawati, S, Prayogi, S et al. (2021). Cigarette Butt Waste as Material for Phase Inverted Membrane Fabrication Used for Oil/Water Emulsion Separation. *Polymers (Basel)*, 13(12). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34201192>
- Oliva, M, De Marchi, L, Cuccaro, A, & Pretti, C. (2021). Bioassay-based ecotoxicological investigation on marine and freshwater impact of cigarette butt littering. *Environ Pollut*, 288, 117787. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34274644>
- Freire Lima, C, Amaral Dos Santos Pinto, M, Brasil Choueri, R, Buruaem Moreira, L, & Braga Castro, I. (2021). Occurrence, characterization, partition, and toxicity of cigarette butts in a highly urbanized coastal area. *Waste Manag*, 131, 10-19. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34091234>
- Patel, M, Cuccia, AF, Folger, S, Benson, AF, Vallone, D, & Novotny, TE. (2021). Support for cigarette filter waste policies among US adults. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34103418>
- Saengsuriwong, R, Onsree, T, Phromphithak, S, & Tippayawong, N. (2021). Conversion of tobacco processing waste to biocrude oil via hydrothermal liquefaction in a multiple batch reactor. *Clean Technol Environ Policy*, 1-11. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34149340>
- Shen, M., Li, Y., Song, B., Zhou, C., Gong, J., & Zeng, G. (2021). Smoked cigarette butts: Unignorable source for environmental microplastic fibers. *Sci Total Environ*, 791, 148384. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34139503>
- Torkashvand, J., Godini, K., Norouzi, S., Gholami, M., Yeganeh, M., & Farzadkia, M. (2021). Effect of cigarette butt on concentration of heavy metals in landfill leachate: health and ecological risk assessment. *J Environ Health Sci Eng*, 19(1), 483-490. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34150252>
- Koroleva, E, Mqulwa, AZ, Norris-Jones, S, Reed, S, Tambe, Z, Visagie, A, & Jacobs, K. (2021). Correction to: Impact of cigarette butts on bacterial community structure in soil. *Environmental*

Science and Pollution Research International. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33837947>

Yousefi, M, Kermani, M, Farzadkia, M, Godini, K, & Torkashvand, J. (2021). Challenges on the recycling of cigarette butts. *Environmental Science and Pollution Research International*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33890223>

Bartolomeu Medeiros, W, Bail, J, Zambrano Passarini, MR, & Bonugli-Santos, RC. (2021). Toxicity treatment of tobacco wastes using experimental design by filamentous fungi. *Heliyon*, 7(2), e06144. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33604472>

Dobaradaran, S, Soleimani, F, Akhbarizadeh, R, Schmidt, TC, Marzban, M, & BasirianJahromi, R. (2021). Environmental fate of cigarette butts and their toxicity in aquatic organisms: A comprehensive systematic review. *Environ Res*, 110881. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33607099>

Green, DS, Kregting, L, & Boots, B. (2021). Effects of cigarette butts on marine keystone species (*Ulva lactuca* L. and *Mytilus edulis* L.) and sediment microphytobenthos. *Mar Pollut Bull*, 165, 112152. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33601278>

Koroleva, E, Mqulwa, AZ, Norris-Jones, S, Reed, S, Tambe, Z, Visagie, A, & Jacobs, K. (2021). Impact of cigarette butts on bacterial community structure in soil. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33638074>

Venugopal, PD, Hanna, SK, Gagliano, GG, & Chang, HW. (2021). No Butts on the Beach: Aquatic Toxicity of Cigarette Butt Leachate Chemicals. *Tob Regul Sci*, 7(1), 17-30. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33532516>

Alberti, S, Sotiropoulou, M, Fernandez, E, Solomou, N, Ferretti, M, & Psillakis, E. (2021). UV-254 degradation of nicotine in natural waters and leachates produced from cigarette butts and heat-not-burn tobacco products. *Environ Res*, 110695. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33400945>

Moroz, I, Scapolio, LGB, Cesarino, I Leao, AL, & Bonanomi, G. (2021). Toxicity of cigarette butts and possible recycling solutions-a literature review. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33411271>

Torkashvand, J, Godini, K, Jafari, AJ, Esrafil, A, & Farzadkia, M. (2021). Assessment of littered cigarette butt in urban environment, using of new cigarette butt pollution index (CBPI). *Sci Total Environ*, 769, 144864. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33477037>

Canales, R, Guinez, M, Talio, C, Reta, M, & Cerutti, S. (2020). Development of a green and efficient methodology for the heterocyclic aromatic amine determination in biomass samples generated from cigarette combustion and tobacco. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32964389>

Caridi, F, Sabbatini, A, Birarda, G, Costanzi, E, De Giudici, G, Galeazzi, R et al. (2020). Cigarette butts, a threat for marine environments: Lessons from benthic foraminifera (Protista). *Mar Environ Res*, 162, 105150. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32992223>

- Xie, ZT, Asoh, TA, & Uyama, H. (2020). Superfast flow reactor derived from the used cigarette filter for the degradation of pollutants in water. *J Hazard Mater*, 400, 123303. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32947707>
- Kotz, D, & Kastaun, S. (2020). Do people know that cigarette filters are mainly composed of synthetic material? A representative survey of the German population (the DEBRA study). *Tob Control*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32300028>
- Qamar, W, Abdelgalil, AA, Aljarboa, S, Alhuzani, M, & Altamimi, MA. (2020). Cigarette waste: Assessment of hazard to the environment and health in Riyadh city. *Saudi J Biol Sci*, 27(5), 1380-1383. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32346349>
- Bonanomi, G, Maisto, G, De Marco, A, Cesarano, G, Zotti, M, Mazzei, P et al. (2020). The fate of cigarette butts in different environments: Decay rate, chemical changes and ecotoxicity revealed by a 5-years decomposition experiment. *Environ Pollut*, 261, 114108. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32044614>
- Dobaradaran, S, Schmidt, TC, Lorenzo-Parodi, N, Kaziur-Cegla, W, Jochmann, MA et al. (2020). Polycyclic aromatic hydrocarbons (PAHs) leachates from cigarette butts into water. *Environ Pollut*, 259, 113916. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32023793>
- Kurmus, H, & Mohajerani, A. (2020). Recycling of Cigarette Butts in Fired Clay Bricks: A New Laboratory Investigation. *Materials (Basel)*, 13(3). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32050481>
- Rahman, MT, Mohajerani, A, & Giustozzi, F. (2020). Possible Recycling of Cigarette Butts as Fiber Modifier in Bitumen for Asphalt Concrete. *Materials (Basel)*, 13(3). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32041180>
- Valiente, R, Escobar, F, Pearce, J, Bilal, U, Franco, M, & Sureda, X. (2020). Estimating and mapping cigarette butt littering in urban environments: A GIS approach. *Environ Res*, 183, 109142. <https://www.ncbi.nlm.nih.gov/pubmed/32004828>
- Gong, M, Daniels, N, & Poppendieck, D. (2020). Measurement of chemical emission rates from cigarette butts into air. *Indoor Air*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31955455>
- Kurmus, H, & Mohajerani, A. (2020). The toxicity and valorization options of cigarette butts. *Waste Management*, 104, 104-118. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31978829>
- Poppendieck, D, Gong, M, & Pham, V. (2020). Influence of temperature, relative humidity, and water saturation on airborne emissions from cigarette butts. *Science of the Total Environment*, 712, 136422. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31931215>
- Marinello, S, Lolli, F, Gamberini, R, & Rimini, B. (2019). A second life for cigarette butts? A review of recycling solutions. *J Hazard Mater*, 384, 121245. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31585286>
- Torkashvand, J, Farzadkia, M, Sobhi, HR, & Esrafil, A. (2019). Littered cigarette butt as a well-known hazardous waste: A comprehensive systematic review. *J Hazard Mater*, 383, 121242. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31563043>

Green, DS, Boots, B, Da Silva Carvalho, J, & Starkey, T. (2019). 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*, 109418. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31327493>

Montalvao, MF, Chagas, TQ, da Silva Alvarez, TG, Mesak, C, da Costa Araujo, AP, Gomes, AR et al. (2019). How leachates from wasted cigarette butts influence aquatic life? A case study on freshwater mussel *Anodontites trapesiali*. *Sci Total Environ*, 689, 381-389. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31277005>

Sun, H, Li, Y, Zhu, Z, Mu, P, Wang, F, Liang, W et al. (2019). Photothermal conversion material derived from used cigarette filters for solar steam generation. *ChemSusChem*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31336029>

Xu, EG, Richardot, WH, Li, S, Buruaem, L, Wei, HH, Dodder, NG et al. (2019). Assessing Toxicity and in Vitro Bioactivity of Smoked Cigarette Leachate Using Cell-Based Assays and Chemical Analysis. *Chem Res Toxicol*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31286770>

Montalvao, MF, Chagas, TQ, Gabriela da Silva Alvarez, T, Mesak, C, Pereira da Costa Araujo, A, Gomes, AR et al. (2019). Cigarette butt leachate as a risk factor to the health of freshwater bivalve. *Chemosphere*, 234, 379-387. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31228840>

Hoek, J, Gendall, P, Blank, ML, Robertson, L, & Marsh, L. (2019). Butting out: an analysis of support for measures to address tobacco product waste. *Tob Control*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31147475>

Novotny, TE. (2019). Environmental accountability for tobacco product waste. *Tob Control*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31147479>

Stigler-Granados, P, Fulton, L, Nunez Patlan, E, Terzyk, M, & Novotny, TE. (2019). Global Health Perspectives on Cigarette Butts and the Environment. *Int J Environ Res Public Health*, 16(10). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/31130709>

Araujo, MCB, & Costa, MF. A critical review of the issue of cigarette butt pollution in coastal environments. *Environ Res*, 2019. 172, 137-149. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30782533>

Hardy, SD, & Bartolotta, J. Plastic cigar tips debris: Exploring use and disposal issues for Lake Erie beaches. *Mar Pollut Bull*, 2018. 137, 262-266. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30503434>

Rebischung, F, Chabot, L, Biaudet, H, & Pandard, P. Cigarette butts: A small but hazardous waste, according to European regulation. *Waste Manag*, 2018. 82, 9-14. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30509599>

Bandi, R, Devulapalli, NP, Dadigala, R, Gangapuram, BR, & Guttena, V. Facile Conversion of Toxic Cigarette Butts to N,S-Codoped Carbon Dots and Their Application in Fluorescent Film, Security Ink, Bioimaging, Sensing and Logic Gate Operation. *ACS Omega*, 2018.3(10), 13454-13466. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6217634/pdf/ao8b01743.pdf>

Montalvao, MF, Sampaio, LLG, Gomes, HHF, & Malafaia, G. An insight into the cytotoxicity, genotoxicity, and mutagenicity of smoked cigarette butt leachate by using *Allium cepa* as test system. *Environ Sci Pollut Res Int*, 2018. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30460649>

Hopkinson, NS. Tobacco smoke and environmental injustice. *BMJ*, 363, k4201. Available from: <https://www.bmj.com/content/bmj/363/bmj.k4201.full.pdf>

Loizidou, XI, Loizides, MI, Orthodoxou, DL. Persistent marine litter: small plastics and cigarette butts remain on beaches after organized beach clean-ups. *Environ Monit Assess*. 2018 Jun 20;190(7):414. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29926242>

Selmar D, Radwan A, Abdalla N, Taha H, Wittke C, et al. Uptake of nicotine from discarded cigarette butts - a so far unconsidered path of contamination of plant-derived commodities. *Environ Pollut*, 2018. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29454497>

Kungskulniti N, Charoenca N, Hamann SL, Pitayarangsarit S, and Mock J. Cigarette waste in popular beaches in thailand: High densities that demand environmental action. *International Journal of Environmental Research and Public Health*, 2018; 15(4). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29596385>

Gill H, Rogers K, Rehman B, Moynihan J, and Bergey EA. Cigarette butts may have low toxicity to soil-dwelling invertebrates: Evidence from a land snail. *Sci Total Environ*, 2018; 628-629:556–61. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29454197>

Chevalier Q, El Hadri H, Petitjean P, Bouhnik-Le Coz M, Reynaud S, et al. Nano-litter from cigarette butts: Environmental implications and urgent consideration. *Chemosphere*, 2018; 194:125–30. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29197815>

Suarez- Rodriguez M and Garcia CM. An experimental demonstration that house finches add cigarette butts in response to ectoparasites. *Journal of Avian Biology*, 2017; 28(10). Available from: <http://onlinelibrary.wiley.com/doi/10.1111/jav.01324/full>

Ogundare SA, Moodley V, and van Zyl WE. Nanocrystalline cellulose isolated from discarded cigarette filters. *Carbohydr Polym*, 2017; 175:273–81. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28917867>

No authors listed. Program reduces cigarette litter by 60 percent. *Clean Link*, 2017. Available from: <http://www.cleanlink.com/news/article/Program-Reduces-Cigarette-Litter-By-60-Percent--20681>

Murugan K, Suresh U, Panneerselvam C, Rajaganesh R, Roni M, et al. Managing wastes as green resources: Cigarette butt-synthesized pesticides are highly toxic to malaria vectors with little impact on predatory copepods. *Environ Sci Pollut Res Int*, 2017. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28913784>

Mohajerani A, Tanriverdi Y, Nguyen BT, Wong KK, Nishamal Dissanayake H, et al. Physico-mechanical properties of asphalt concrete incorporated with encapsulated cigarette butts. *Construction and Building Materials*, 2017; 153:69 – 80 Available from: <http://www.sciencedirect.com/science/article/pii/S0950061817314241?via%3Dihub>

Metcalfe S, Murray P, and Schousboe C. A kick in the butt: Time to address tobacco waste in New Zealand. *New Zealand Medical Journal*, 2017; 130(1456):65–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28571050>

Joly FX and Coulis M. Comparison of cellulose vs. Plastic cigarette filter decomposition under distinct disposal environments. *Waste Manag*, 2017. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29153904>

Hamano Y, Manabe S, Morimoto C, Fujimoto S, and Tamaki K. Forensic age prediction for saliva samples using methylation-sensitive high resolution melting: Exploratory application for cigarette butts. *Sci Rep*, 2017; 7(1):10444. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/28874809>

Dobaradaran S, Schmidt TC, Nabipour I, Ostovar A, Raeisi A, et al. Cigarette butts abundance and association of mercury and lead along the persian gulf beach: An initial investigation. *Environ Sci Pollut Res Int*, 2017. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29214478>

Dobaradaran S, Nabipour I, Saeedi R, Ostovar A, Khorsand M, et al. Association of metals (cd, fe, as, ni, cu, zn and mn) with cigarette butts in northern part of the persian gulf. *Tobacco Control*, 2017; 26(4):461–3. Available from: <http://tobaccocontrol.bmj.com/content/tobaccocontrol/26/4/461.full.pdf>

Begum AN, Aguilar JS, and Hong Y. Aqueous cigarette tar extracts disrupt corticogenesis from human embryonic stem cells in vitro. *Environ Res*, 2017; 158:194–202. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28647514>

Wallbank LA, MacKenzie R, and Beggs PJ. Environmental impacts of tobacco product waste: International and Australian policy responses. *Ambio*, 2016. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/27844421>

Purchia R. Will cigarette recycling cans encourage smoking? *SF Examiner*, 2016. Available from: <http://www.sfexaminer.com/will-cigarette-recycling-cans-encourage-smoking/>

Mohajerani A, Kadir AA, and Larobina L. A practical proposal for solving the world's cigarette butt problem: Recycling in fired clay bricks. *Waste Manag*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26975623>

Lee K, Carrillo Botero N, and Novotny T. 'Manage and mitigate punitive regulatory measures, enhance the corporate image, influence public policy': Industry efforts to shape understanding of tobacco-attributable deforestation. *Global Health*, 2016; 12(1):55. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27650401>

Dobaradaran S, Nabipour I, Saeedi R, Ostovar A, Khorsand M, et al. Association of metals (cd, fe, as, ni, cu, zn and mn) with cigarette butts in northern part of the persian gulf. *Tobacco Control*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27384342>

Di Giacomo S, Mazzanti G, and Di Sotto A. Mutagenicity of cigarette butt waste in the bacterial reverse mutation assay: The protective effects of beta-caryophyllene and beta-caryophyllene oxide. *Environ Toxicol*, 2016; 31(11):1319–28. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25728712>

d'Heni Teixeira MB, Duarte MA, Raposo Garcez L, Camargo Rubim J, Hofmann Gatti T, et al. Process development for cigarette butts recycling into cellulose pulp. *Waste Manag*, 2016. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/27825703>

Curtis C, Novotny TE, Lee K, Freiberg M, and McLaughlin I. Tobacco industry responsibility for butts: A model Tobacco waste Act. *Tobacco Control*, 2016. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26931480>

Robinson J. Man slapped with £575 fine for dropping cigarette end outside place of work. *Lancashire Telegraph*, 2015. Available from: http://www.lancashiretelegraph.co.uk/news/11775586.Man_slapped_with_575_fine_for_droppi ng_cigarette_end_outside_place_of_work/

Lee W. and Lee C. C. Developmental toxicity of cigarette butts—an underdeveloped issue. *Ecotoxicology and Environmental Safety*, 2015; 113:362–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25531833>

Javadian S, Stigler-Granados P, Curtis C, Thompson F, Huber L, et al. Perspectives on Tobacco product waste: A Survey of framework convention alliance members' knowledge, attitudes, and beliefs. *International Journal of Environmental Research and Public Health*, 2015; 12(8):9683–91. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26295244>

Di Giacomo S, Mazzanti G, and Di Sotto A. Mutagenicity of cigarette butt waste in the bacterial reverse mutation assay: The protective effects of beta-caryophyllene and beta-caryophyllene oxide. *Environ Toxicol*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25728712>

de Granda-Orive JI, Giron-Matute W, and Lopez-Yepes L. Cigarette butts: The collateral effects of cigarettes on humans, animals and the environment. *Arch Bronconeumol*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26497414>

Booth DJ, Gribben P, and Parkinson K. Impact of cigarette butt leachate on tidepool snails. *Marine Pollution Bulletin*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25913792>

Booth D. J., Gribben P., and Parkinson K. Impact of cigarette butt leachate on tidepool snails. *Marine Pollution Bulletin*, 2015. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25913792>

Bonanomi G, Incerti G, Cesarano G, Gaglione SA, and Lanzotti V. Cigarette butt decomposition and associated chemical changes assessed by ¹³C cpmas nmr. *PLoS ONE*, 2015; 10(1):e0117393. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25625643>

Oliver J, Thomson G, and Wilson N. Measurement of cigarette butt litter accumulation within city bus shelters. *New Zealand Medical Journal*, 2014; 127(1395):91–3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24929699>

Novotny TE and Slaughter E. Tobacco product waste: An environmental approach to reduce Tobacco consumption. *Current Environmental Health Reports*, 2014; 1:208–16. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25152862>

Novotny T. E. and Slaughter E. Tobacco product waste: An environmental approach to reduce Tobacco consumption. *Current Environmental Health Reports*, 2014; 1:208–16. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25152862>

Lee W and Lee CC. Developmental toxicity of cigarette butts - an underdeveloped issue. *Ecotoxicology and Environmental Safety*, 2014; 113C:362–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25531833>

Curtis C, Collins S, Cunningham S, Stigler P, and Novotny TE. Extended producer responsibility and product stewardship for Tobacco product waste. *International Journal of Waste Resources*, 2014; 4(3). Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26457262>

Smith EA and Novotny TE. Whose butt is it? Tobacco industry research about smokers and cigarette butt waste. *Tobacco Control*, 2011; 20(suppl. 1):i2–9. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i2.abstract

Smith EA and McDaniel PA. Covering their butts: Responses to the cigarette litter problem. *Tobacco Control*, 2011; 20(2):100–6. Available from: <http://tobaccocontrol.bmj.com/content/20/2/100.abstract>

Smith E. A. and McDaniel P. A. Covering their butts: Responses to the cigarette litter problem. *Tobacco Control*, 2011; 20(2):100–6. Available from: <http://tobaccocontrol.bmj.com/content/20/2/100.abstract>

Slaughter E, Gersberg RM, Watanabe K, Rudolph J, Stransky C, et al. Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish. *Tobacco Control*, 2011; 20(suppl. 1):i25–9. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i25.abstract

Schneider JE, Peterson NA, Kiss N, Ebeid O, and Doyle AS. Tobacco litter costs and public policy: A framework and methodology for considering the use of fees to offset abatement costs. *Tobacco Control*, 2011; 20(suppl. 1):i36–41. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i36.abstract

Sawdey M, Lindsay RP, and Novotny TE. Smoke-free college campuses: No ifs, ands or toxic butts. *Tobacco Control*, 2011; 20(suppl. 1):i21–4. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i21.abstract

Novotny TE, Hardin SN, Hovda LR, Novotny DJ, McLean MK, et al. Tobacco and cigarette butt consumption in humans and animals. *Tobacco Control*, 2011; 20(suppl. 1):i17–20. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i17.abstract

Moerman JW and Potts GE. Analysis of metals leached from smoked cigarette litter. *Tobacco Control*, 2011; 20(suppl.1):i30–5. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i30.abstract

Marah M and Novotny TE. Geographic patterns of cigarette butt waste in the urban environment. *Tobacco Control*, 2011; 20(suppl. 1):i42–4. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i42.abstract

Healton CG, Cummings KM, O'Connor RJ, and Novotny TE. Butt really? The environmental impact of cigarettes. *Tobacco Control*, 2011; 20(suppl. 1):i1. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i1.short

Harris B. The intractable cigarette “filter problem”. *Tobacco Control*, 2011; 20(suppl. 1):i10–6. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i10.abstract

Barnes RL. Regulating the disposal of cigarette butts as toxic hazardous waste. *Tobacco Control*, 2011; 20(suppl. 1):i45–8. Available from: http://tobaccocontrol.bmj.com/content/20/Suppl_1/i45.abstract

Vardavas CI, Mangiaracina G, and Behrakis P. 'Environmentally friendly'™ brand promotion activities: Cigarette butt clean-up campaigns. *Tobacco Control*, 2010; 19(3):259. Available from: <http://tobaccocontrol.bmj.com/content/19/3/259.short>

Novotny TE, Lum K, Smith E, Wang V, and Barnes R. Cigarettes butts and the case for an environmental policy on hazardous cigarette waste. *International Journal of Environmental Research and Public Health*, 2009; 6(5):1691–705. Available from: <http://www.mdpi.com/1660-4601/6/5/1691/pdf>

Moriwaki H, Kitajima S, and Katahira K. Waste on the roadside, 'poi-sute' waste: Its distribution and elution potential of pollutants into environment. *Waste Management*, 2009; 29(3):1192–7. Available from: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VFR-4TN8BTS-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=921d0d83e1569b87f2509c762bc4fd7d

Oigman-Pzczol S and Creed J. Quantification and classification of marine litter on beaches along armacao dos buzios, rio de janiero, brazil. *Journal of Coastal Research*, 2007; 23(2):421–8.

Martinez-Ribes L, Basterretxea G, Palmer M, and Tintoré J. Origin and abundance of beach debris in the balearic islands. *Scientia Marina*, 2007; 71(2):305–14. Available from: http://www.google.com.au/url?sa=t&source=web&ct=res&cd=4&url=http%3A%2F%2Fwww.icm.csic.es%2Fscimar%2Fdownload.php%2FCd%2F2581537c63671c47b35953d160904dca%2FIdArt%2F3518&ei=k8DqSbHANYaCkQWmwlimCA&usq=AFQjCNEDaUePQnfl9AI8V2YMqQZPzli9_Q&sig2=B2uNv0v dnP5s9ULoz1C6UA

Micevska T, Warne M, Pablo F, and Patra R. Variation in, and causes of, toxicity of cigarette butts to a cladoceran and microtox. *Archives of Environmental Contamination and Toxicology*, 2006; 50(2):205–12. Available from: <http://www.springerlink.com/content/p433v47q31282841/>

Chapman S. Butt clean up campaigns: Wolves in sheep's clothing? *Tobacco Control*, 2006; 15(4):273. Available from: <http://tobaccocontrol.bmj.com/content/15/4/273.full>

Simpson D. New Zealand: Butt bids. *Tobacco Control*, 2005; 14(4):224–5. Available from: <http://tobaccocontrol.bmj.com/cgi/content/extract/14/4/224-a>

Novotny T and Zhao F. Consumption and production waste: Another externality of tobacco use. A review. *Tobacco Control*, 1999; 8(1):75–80. Available from: <http://tobaccocontrol.bmj.com/cgi/content/full/8/1/75>

Cope J, Huffman K, Allred L, and Grossnickle W. Behavioral strategies to reduce cigarette litter. *Journal of Social Behavior and Personality*, 1993; 8(4):607–19.

10.16.1 Health claims, environmental impacts and cost

Hoang, AQ, Nguyen, LTH, & Nguyen, HD. (2024). Improper disposal of cigarette butts in a southeast Asian megacity (Hanoi, Vietnam): Pollution indexes, distribution profiles, and preliminary

physicochemical characterization. *Sci Total Environ*, 954, 176253. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39278483>

Ribeiro, VV, Garcia, Y, Dos Reis Cavalcante, E, & Castro, IB. (2024). Marine macrolitter and cigarette butts hazard multiple-use marine protected area and fishing community at Brazil. *Mar Pollut Bull*, 208, 117031. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39326330>

Lowe, AT, Maki, A, Figueroa, C, & Venugopal, PD. (2024). Place-based estimates of cigarette butt litter raise environmental justice concerns in the United States. *PLoS One*, 19(8), e0308930. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39146265>

Jain, YK, Bhardwaj, P, Joshi, NK, Singh, PK, Lal, P, Kapoor, S et al. (2024). India's environmental burden of tobacco use and its policy implications. *Lancet Reg Health Southeast Asia*, 20, 100329. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38149288>

Xi, Y, Diao, L, Wang, Z, Jin, Z, Wang, Y, Liu, W et al. (2023). Toxicity of leachate from smoked cigarette butts to terrestrial animals: A case study on the earthworm *Eisenia fetida*. *Sci Total Environ*, 898, 165531. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37454855>

Green, DS, Boots, B, Olah-Kovacs, B, & Palma-Diogo, D. (2023). Disposable e-cigarettes and cigarette butts alter the physiology of an aquatic plant *Lemna minor* (Lemnaceae). *Sci Total Environ*, 892, 164457. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37257594>

Music, B, Jemec Kokalj, A, & Sever Skapin, A. (2023). Influence of Weathering on the Degradation of Cellulose Acetate Microplastics Obtained from Used Cigarette Butts. *Polymers (Basel)*, 15(12). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37376396>

No authors listed. 3 Myths About Cigarette Filters and the Plastic They Contain. *STOP: A Global Tobacco Industry Watchdog*, 2023. May 16, 2023. Retrieved from <https://exposetobacco.org/resource/cigarette-filters-plastic/>

Masjedi, MR, Arfaenia, H, Dobaradaran, S, Keshtkar, M, Soleimani, F, Novotny, TE, & Torkshavand, Z. (2023). Post-consumption waterpipe tobacco waste as an unrecognized source of toxic metal(loid)s leachates into aquatic environments. *Sci Total Environ*, 879, 163207. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37011674>

Novotny, TE, & Hamzai, L. (2023). Cellulose acetate cigarette filter is hazardous to human health. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37072169>

Shah, G, Bhatt, U, & Soni, V. (2023). Cigarette: an unsung anthropogenic evil in the environment. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37055684>

Vanapalli, KR, Sharma, HB, Anand, S, Ranjan, VP, Singh, H, Dubey, BK, & Mohanty, B. (2023). Cigarettes butt littering: The story of the world's most littered item from the perspective of pollution, remedial actions, and policy measures. *J Hazard Mater*, 453, 131387. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37080035>

Masjedi, MR, Dobaradaran, S, Arfaenia, H, Samaei, MR, Novotny, TE, & Rashidi, N. (2023). Polycyclic aromatic hydrocarbon (PAH) leachates from post-consumption waterpipe tobacco waste (PWTW)

into aquatic environment- a primary study. *Environ Pollut*, 327, 121500. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36963456>

Sandgaard, MH, Syberg, K, Gronlund, SN, Riisgaard, EK, Rishoj, C, & Palmqvist, A. (2023). Small Butt Harmful: Individual- and Population-Level Impacts of Cigarette Filter Particles on the Deposit-Feeding Polychaete *Capitella teleta*. *Environ Sci Technol*, 57(8), 3218-3227. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36791268>

Soleimani, F, Dobaradaran, S, Mohebbi, G, Vazirizadeh, A, De-la-Torre, GE, Saeedi, R et al. (2023). Toxic effect of cigarette butts leachates on blood markers of *Periophthalmus waltoni* species from the Persian Gulf region. *Chemosphere*, 319, 138036. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36736482>

Soleimani, F, Dobaradaran, S, Vazirizadeh, A, Mohebbi, G, Ramavandi, B, De-la-Torre, G et al (2022). Chemical contents and toxicity of cigarette butts leachates in aquatic environment: A case study from the Persian Gulf region. *Chemosphere*, 311(Pt 2), 137049. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36336020>

Dobaradaran, S, Schmidt, TC, Mutke, XA M., De-la-Torre, GE, Telgheder, U, Kerpen, K, & Plonowski, M. (2023). Aromatic amines leachate from cigarette butts into aquatic environments: Is there risk for water organisms? *Environ Res*, 216(Pt 3), 114717. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36334823>

Torkashvand, J, Saeedi-Jurkuyeh, A, Rezaei Kalantary, R, Gholami, M, Esrafil, A, Yousefi, M, & Farzadkia, M. (2022). Preparation of a cellulose acetate membrane using cigarette butt recycling and investigation of its efficiency in removing heavy metals from aqueous solution. *Sci Rep*, 12(1), 20336. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36434119>

Baeza-Martinez, C, Ruiz-Alcaraz, S, Soler-Sempere, MJ, Garcia-Pachon, E, Hernandez-Blasco, L, & Bayo, J. (2022). Tobacco as a Source of Microplastics and Respiratory Health. *Arch Bronconeumol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36058771>

Santos-Echeandia, J, Zeler, A, Gago, J, & Lacroix, C. (2021). The role of cigarette butts as vectors of metals in the marine environment: Could it cause bioaccumulation in oysters? *J Hazard Mater*, 416, 125816. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34492782>

Evans-Reeves, K, Lauber, K, & Hiscock, R. (2021). The 'filter fraud' persists: the tobacco industry is still using filters to suggest lower health risks while destroying the environment. *Tobacco Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33903277>

Belzagui, F, Buscio, V, Gutierrez-Bouzan, C, & Vilaseca, M. (2020). Cigarette butts as a microfiber source with a microplastic level of concern. *Sci Total Environ*, 762, 144165. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33360456>

Dobaradaran, S, Schmidt, TC, Kaziur-Cegla, W, & Jochmann, MA. (2020). BTEX compounds leachates from cigarette butts into water environment: A primary study. *Environ Pollut*, 269, 116185. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33290951>

El Hadri, H, Lisa, JM, Gigault, J, Reynaud, S, & Grassl, B. (2020). Fate of nanoplastics in the environment: Implication of the cigarette butts. *Environ Pollut*, 268(Pt B), 115170. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33035875>

Green, DS, Kregting, L, & Boots, B. (2020). Smoked cigarette butt leachate impacts survival and behaviour of freshwater invertebrates. *Environ Pollut*, 266(Pt 3), 115286. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32781211>

Lee, T, Jung, S, Lin, KA, Tsang, YF, & Kwon, EE. (2020). Mitigation of harmful chemical formation from pyrolysis of tobacco waste using CO₂. *J Hazard Mater*, 401, 123416. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32763706>

Green, DS, Kregting, L, & Boots, B. (2020). Smoked cigarette butt leachate impacts survival and behaviour of freshwater invertebrates. *Environ Pollut*, 266(Pt 3), 115286. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32781211>

Lee, T, Jung, S, Lin, KA, Tsang, YF, & Kwon, EE. (2020). Mitigation of harmful chemical formation from pyrolysis of tobacco waste using CO₂. *J Hazard Mater*, 401, 123416. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32763706>

Mansouri, N, Etebari, M, Ebrahimi, A, Ebrahimpour, K, Rahimi, B, & Hassanzadeh, A. (2020). Genotoxicity and phytotoxicity comparison of cigarette butt with cigarette ash. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32666442>

Schneider, JE, Scheibling, CM, Peterson, NA, Granados, PS, Fulton, L, & Novotny, TE. (2020). Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. *Int J Environ Res Public Health*, 17(13). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32629929>

Dehdari, T. (2020). A qualitative exploration of Iranian smokers' experiences in terms of cigarette butt littering behaviour. *Int J Environ Health Res*, 1-9. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/32436392>

Dobaradaran, S, Schmidt, TC, Lorenzo-Parodi, N, Jochmann, MA, Nabipour, I, Raeisi, A et al. (2019). Cigarette butts: An overlooked source of PAHs in the environment? *Environ Pollut*, 249, 932-939. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30965545>

Dobaradaran S, Nabipour I, Saeedi R, Ostovar A, Khorsand M, et al. Association of metals (cd, fe, as, ni, cu, zn and mn) with cigarette butts in northern part of the persian gulf. *Tobacco Control*, 2017; 26(4):461–3. Available from: <http://tobaccocontrol.bmj.com/content/tobaccocontrol/26/4/461.full.pdf>

10.16.1.1 Environmental impacts

Lian, H, Zhu, L, Li, M, Feng, S, Gao, F, Zhang, X et al. (2024). Emerging threat of marine microplastics: Cigarette butt contamination on Yellow Sea beaches and the potential toxicity risks to rotifer growth and reproduction. *J Hazard Mater*, 478, 135534. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39151359>

Ertas, A, Gokce, B, & Tuney, I. (2024). Risk assessment of cigarette butts and microplastic pollution in a drinking and irrigation water basin of West Anatolia, Turkiye. *Environ Monit Assess*, 196(7), 676. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38951278>

Fojtikova, P., Troup, J., Merta, D., & Klementova, S. (2024). Cigarette butts as a source of phenolic compounds for the environment. *Environ Sci Pollut Res Int*, 31(30), 43138-43151. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38890250>

Mohammadi, H., Zardosht, Z., Moein, H., & Hassani, G. (2024). The effect of climatic variables and techno-structural factors on the water pollution caused by nicotine leakage from littered cigarette butts. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38907063>

Banaee, M, Beitsayah, A, Zeidi, A, Haghi, BN, Piccione, G, Faggio, C et al. (2024). Toxicity of cigarette butts (CBs) leachate on Nile tilapia (*Oreochromis niloticus*): Blood biochemical parameters, oxidative stress biomarkers, and metabolic profile. *Ecotoxicol Environ Saf*, 279, 116514. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38810286>

Faisal, M, You, ZJ, Buttar, NA, Idrees, MB, Naeem, M, Ali, S et al. (2024). Assessing Metal Exposure and Leaching from Discarded Cigarette Butts: Environmental Analysis and Integrated Waste Management Approaches. *Toxics*, 12(5). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38787103>

Howlader, M, Selim, A, Shohan, MH, Shuvo, SNA, Al-Humaidi, JY, Islam, MM et al. (2024). Exploring cigarette butts pollution in Saint Martin Island: A marine protected area. *Mar Pollut Bull*, 203, 116439. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38718549>

Acarer Arat, S. (2024). A review on cigarette butts: Environmental abundance, characterization, and toxic pollutants released into water from cigarette butts. *Sci Total Environ*, 928, 172327. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38626827>

Farzadkia, M, Yavary Nia, M, Yavari Nia, M, Shacheri, F, Nourali, Z, & Torkashvand, J. (2024). Reduction of the environmental and health consequences of cigarette butt recycling by removal of toxic and carcinogenic compounds from its leachate. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38436848>

Termeh-Zonoozi, Y, Venugopal, PD., Patel, V, & Gagliano, G. (2023). Seeing Beyond the Smoke: Selecting Waterpipe Wastewater Chemicals for Risk Assessments. *J Hazard Mater Lett*, 4. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38357015>

Hossaini Motlagh, A, Alinejad, N, Kazembeigi, F, Torkashvand, J, Tashauoei, HR., & Fattahi, M. (2024). Quality variations of leachate resulting from cigarette filter recycling as a challenge for its management. *Sci Rep*, 14(1), 972. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38200131>

Bellot, M, Manen, L, Prats, E, Bedrossiantz, J, Barata, C, Gomez-Canela, C et al. (2023). Short-term exposure to environmental levels of nicotine and cotinine impairs visual motor response in zebrafish larvae through a similar mode of action: Exploring the potential role of zebrafish alpha7 nAChR. *Sci Total Environ*, 169301. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38103609>

Duttgupta, S, Nynas, K, Richardot, W, Salam, SB, Pennington, M, Wong, J et al. (2023). Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. *Mar Pollut Bull*, 199, 115929. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38141586>

Turner, A, & Cundell, A. L. (2023). Cigarette filter fibres as a source and sink of trace metals in coastal waters. *Chemosphere*, 349, 140845. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38043613>

Dobaradaran, S, Telgheder, U, De-la-Torre, GE, Rockel, SP, Mutke, XAM, & Schmidt, TC. (2023). Elucidating nicotine transfer into water environments via cigarette butt remaining parts. *Environ Pollut*, 341, 122943. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37979652>

Kim, L, Kim, SA, & An, YJ. (2023). Microfibers from cigarette butts can induce exoskeletal alteration in whiteleg shrimp (*Penaeus vannamei*). *Mar Pollut Bull*, 197, 115734. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37922758>

Mandelli, WG, Pestana, BM, Choueri, RB, Abessa, DMS Castro, IB, & Moreira, LB. (2023). Waterborne Toxicity to Neotropical Invertebrates and Hazard of Cigarette Butt Leachates in Marine Environments. *Environ Toxicol Chem* Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37933775>

Masjedi, MR, Torkshavand, Z, Arfaeinia, H, Dobaradaran, S, Soleimani, F, Farhadi, A et al (2023). First report on BTEX leaching from waterpipe tobacco wastes (WTWs) into aquatic environment. *Heliyon*, 9(11), e21946. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38034754>

Everaert, S, Schoeters, G, Lardon, F, Janssens, A, Van Larebeke, N, Raquez, JM et al. (2023). Protecting public health and the environment: towards a general ban on cellulose acetate cigarette filters in the European Union. *Front Public Health*, 11, 1282655. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38026410>

Jain, YK, Bhardwaj, P, Joshi, NK, Singh, PK, Lal, P, Kapoor, S et al. (2023). Estimating the weight of consumed tobacco product waste in various Indian states: a novel method to assess the potential burden of tobacco product waste. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37734958>

Richardot, WH, Yabes, L, Wei, HH, Dodder, NG, Watanabe, K, Cibor, A et al. (2023). Leached Compounds from Smoked Cigarettes and Their Potential for Bioaccumulation in Rainbow Trout (*Oncorhynchus mykiss*). *Chem Res Toxicol*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37827523>

Spies, AM, Geldmacher, J, Garcia Lopez, C, Pretz, T, & Raulf, K. (2023). Methodology to quantify single-use plastic products in municipal solid waste Part 2: Quantification of tobacco products with filters in Germany. *Waste Manag Res*, 734242X231200091. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37804119>

Mghili, B, Lamine, I, Bouzekry, A, Gunasekaran, K, & Aksissou, M. (2023). Cigarette butt pollution in popular beaches of Morocco: Abundance, distribution, and mitigation measures. *Mar Pollut Bull*, 195, 115530. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37717497>

10.16.1.2 Costs

Sy, DK. (2023). Tobacco industry accountability for marine pollution: country and global estimates. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38050153>

10.16.1.3 Public perceptions

Kang, W. (2023). Age and mental health moderate the association between environmental concern (EC) and smoking frequency: smoking as a polluting behavior. *Front Public Health*, *11*, 1089148. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37860793>

10.16.2 Tobacco industry response to environmental concerns

De Fenzo, A, Giordano, M, & Sansone, L. (2020). A Clean Process for Obtaining High-Quality Cellulose Acetate from Cigarette Butts. *Materials (Basel)*, *13*(21). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33105718>

Kurmus, H, & Mohajerani, A. (2020). Leachate Analysis of Heavy Metals in Cigarette Butts and Bricks Incorporated with Cigarette Butts. *Materials (Basel)*, *13*(12). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32630391>

10.16.3 Policy response

Prabhakaran, D, Park, H, Choi, O, Abraham, A, & Sang, BI. (2024). Enhancing cellulose acetate biodegradability in cigarette filters: an in-depth analysis of thermal alkaline pretreatment, microbial dynamics, and breakdown pathway prediction. *Microb Cell Fact*, *23*(1), 199. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/39026314>

Gohain, M. B., Karki, S., & Ingole, P. G. (2024). Cellulose acetate, a source from discarded cigarette butts for the development of mixed matrix loose nanofiltration membranes for selective separation. *Int J Biol Macromol*, *271*(Pt 1), 132197. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38821793>

Parveen, N., Singh, H., Vanapalli, K. R., & Goel, S. (2024). Leaching of organic matter from cigarette butt filters as a potential disinfection by-products precursor. *J Hazard Mater*, *476*, 134976. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38917631>

Farzadkia, M, Yavary Nia, M, Yavari Nia, M, Shacheri, F, Nourali, Z, & Torkashvand, J. (2024). Reduction of the environmental and health consequences of cigarette butt recycling by removal of toxic and carcinogenic compounds from its leachate. *Environ Sci Pollut Res Int*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38436848>

Amghar, N, Moreno, V, Sanchez-Jimenez, PE, Perejon, A, & Perez-Maqueda, LA. (2024). Ca-based materials derived from calcined cigarette butts for CO₂ capture and thermochemical energy storage. *J Environ Sci (China)*, *140*, 230-241. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38331503>

Teixeira, LLA, Araujo, RO, Santos, JL, Guimaraes, MN, Ribeiro, VML, Pocrifka, LA et al. (2024). Production of solid acid catalyst using waste cigarette filters for esterification. *Environ Sci Pollut Res Int*, 31(5), 8072-8081. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38175508>

Sy, DK. (2023). Tobacco industry accountability for marine pollution: country and global estimates. *Tob Control*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/38050153>

Smith, MJ, Patterson, C, Buckton, C, & Hilton, S. (2023). Implementation of the polluter pay's principle in tobacco control in the UK: a stakeholder analysis. *BMC Public Health*, 23(1), 2271. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/37978482>

Green, DS, Almroth, BC, Altman, R, Bergmann, M, Gundogdu, S, Warriar, AK et al. (2023). Time to kick the butt of the most common litter item in the world: Ban cigarette filters. *Sci Total Environ*, 865, 161256. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/36587695>

Currie, JJ, & Stack, SH. (2021). Getting butts off the beach: Policy alone is not effective at reducing cigarette filter litter on beaches in Maui, Hawai'i. *Mar Pollut Bull*, 173(Pt A), 112937. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/34543930>

Kurmus, H, Mohajerani, A, & Grist, S. (2021). Polycyclic Aromatic Hydrocarbons (PAHs) in Fired Clay Bricks Incorporating Cigarette Butts. *Materials (Basel)*, 14(8). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33919488>

Mohajerani, A, Qun Hui, S, Shen, C, Suntovski, J, Rodwell, G, Kurmus, H et al. (2020). Implementation of Recycling Cigarette Butts in Lightweight Bricks and a Proposal for Ending the Littering of Cigarette Butts in Our Cities. *Materials (Basel)*, 13(18). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32927905>

News reports:

Stopping Tobacco Organisations and Products (STOP). The Dirt Behind Big Tobacco and the Environment. April 21, 2021. Retrieved from https://exposetobacco.org/news/big-tobacco-and-environment/?utm_source=mailchimp&utm_medium=email&utm_campaign=greenwashing

No authors listed. Greenwashing. *Tobacco Tactics*, 2020. May 7, 2020. Retrieved from <https://tobaccotactics.org/wiki/greenwashing/>

Van Velthooven, E. New research estimates 10 billion cigarette butts littered around NZ. *1 News Now*, 2019. Sept 2, 2019. Available from: <https://www.tvnz.co.nz/one-news/new-zealand/new-research-estimates-10-billion-cigarette-butts-littered-around-nz>

Root, T. Cigarette butts are toxic plastic pollution. Should they be banned? *National Geographic*, 2019. Aug 12, 2019. Available from: <https://www.nationalgeographic.co.uk/environment-and-conservation/2019/08/cigarette-butts-are-toxic-plastic-pollution-should-they-be>

No authors listed. Smokers to face \$500 littering penalty. *Canberra Times*, 2019. June 7, 2019. Available from: https://customreport.mediaportal.com/#/articlepresenter/c5f8d4e2-76df-43df-9849-847012364392/499431658/1158318827?_k=9ste43

Lazarus, S. Cigarette filters are the No.1 plastic pollutant ... and don't prevent cancer. CNN, 2019. Jan 25, 2019. Available from: <https://edition.cnn.com/2019/01/24/health/dirty-truth-about-cigarette-filters/index.html>

Puiu, T. Tobacco industry's carbon footprint mirrors entire countries — cost of cigarettes should reflect the environmental damage, WHO says. ZME Science, 2018. Available from: <https://www.zmescience.com/ecology/tobacco-industry-carbon-footprint-05343/>

Dangerfield, K. Cigarette butts are polluting the ocean more than plastic straws — so why not ban these? Global News, 2018. Sept 3, 2018. Available from: <https://globalnews.ca/news/4418956/cigarette-butts-ocean-pollution-ban/>

No authors listed. Littered cigarette butts are poisoning our oceans. Keep Britain Tidy, 2018. Aug 29, 2018. Available from: <http://www.keeppbritaintidy.org/news/its-flicking-blue-murder>

Taylor, James. Lit cigarettes get Victorians hot under the collar. Surf Coast Times, 2018. Aug 8, 2018. Available from: <https://freelocalnews.com.au/surfcoasttimes/news/lit-cigarettes-get-victorians-hot-under-the-collar/>

No authors listed. France orders tobacco industry: stub out cigarette butt pollution. Reuters, 2018. June 18, 2018. Available from: <http://news.trust.org/item/20180614142528-mryki/>

O'Neill, Katie. Smokers held responsible for most littering. The Times, 2018. June 21, 2018. Available from: <https://www.thetimes.co.uk/article/smokers-held-responsible-for-most-littering-lb0wqzjc5>

No authors listed. Philip Morris International Sustainability Report Shows Relentless Business Shift toward Smoke-Free Future. Business Wire, 2018. May 22, 2018. Available from: <https://www.businesswire.com/news/home/20180515005727/en/Philip-Morris-International-Sustainability-Report-Shows-Relentless>

Philip Morris International. Sustainability Report 2017. Philip Morris International Inc. (PMI), 2018. May 22, 2018. Available from: <https://www.pmi.com/docs/default-source/pmi-sustainability/pmi-sustainability-report-2017.pdf>

Robinson C. New bespoke ashtray ballot boxes uses butts. Lurgan Mail, 2017. Available from: <http://www.lurganmail.co.uk/news/new-bespoke-ashtray-ballot-boxes-uses-butts-to-vote-1-8188566>

Pujol-Mazzini A. Small changes, big impact: How to reduce waste in your daily life. Reuters, 2017. Available from: <http://www.reuters.com/article/us-global-waste-factbox/small-changes-big-impact-how-to-reduce-waste-in-your-daily-life-idUSKCN1BF043>

No authors listed. Some birds use discarded cigarettes to fumigate their nests, in *The Economist* 2017. Available from: <https://www.economist.com/news/science-and-technology/21729739-they-help-keep-parasites-bay-some-birds-use-discarded-cigarettes-fumigate>.

No authors listed. How to pave over our big (cigarette) butt problem. Science Daily 2017. Available from: <https://www.sciencedaily.com/releases/2017/08/170806185625.htm>

No authors listed. Cigarette litter prevention programme. Keep America Beautiful, 2017. Available from: <https://www.kab.org/cigarette-litter-prevention>

No authors listed. Litter Strategy for England. UK 2017. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/607747/litter-strategy-for- england-2017.pdf.

Lindsey P. Smokers quizzed over albiion's survival chances at the litter bin. The Argus, 2017. Available from: http://www.theargus.co.uk/news/15480380.Will_Albion_survive_is_part_of_cigarette_trial/

Jayaraman K. Cigarette butts to eliminate mosquitoes? The Economic Times, 2017. Available from: <http://economictimes.indiatimes.com/news/science/cigarette-butts-to-eliminate-mosquitoes/articleshow/60791804.cms>

Hurst D. Tokyo aims to stub out smoking in homes with children. The Times, 2017. Available from: <https://www.thetimes.co.uk/article/tokyo-aims-to-stub-out-smoking-in-homes-with-children-xm8wmqb7n>

Sinoski K. Metro mayor proposes return-it deposit on cigarette butts. Canada.com, 2016. Available from: www.canada.com/health/hold+onto+your+butts+north+mayor+proposes+return+deposit/12013633/story.html

Purchia R. Will cigarette recycling cans encourage smoking? SF Examiner, 2016. Available from: <http://www.sfexaminer.com/will-cigarette-recycling-cans-encourage-smoking/>

No author listed. Why smoking bans could help the environment. The Global Dispatch, 2016. Available from: <https://www.theglobaldispatch.com/why-smoking-bans-could-help-the-environment-87855/>

listed Na. How an aussie invention could make cigarette butts valuable. Australian Broadcasting Corporation - Triple J radio, 2016. Available from: <http://www.abc.net.au/triplej/programs/hack/aussie-invents-way-of-turning-cigarette-butts-into-bricks/7452634>

Burgmann T. No butts about it: B.C. Study says tobacco companies must deal with waste butts. Info News, 2016. Available from: <http://infotel.ca/newsitem/no-butts-about-it-bc-study-says-tobacco-companies-must-deal-with-waste-butts/it28465>

Robinson J. Man slapped with £575 fine for dropping cigarette end outside place of work. Lancashire Telegraph, 2015. Available from: http://www.lancashiretelegraph.co.uk/news/11775586.Man_slapped_with_575_fine_for_droppi ng_cigarette_end_outside_place_of_work/

Phillips A. How one company is making cigarette butt recycling not only possible, but popular. Fusion, 2015. Available from: <http://fusion.net/story/207224/cigarette-butt-recycling/>

No authors listed. Tobacco tax 'must help clear litter' - MPs. BBC News, 2015. Available from: <http://www.bbc.com/news/uk-31882078>

No authors listed. Declare cigarette as toxic waste, ngo tells ngt. Daily Pioneer, 2015. Available from: <http://www.dailypioneer.com/state-editions/dehradun/declare-cigarette-as-toxic-waste-ngo-tells-ngt.html>

No authors listed. Paris distributes 15,000 pocket ashtrays to tackle cigarette butt pollution. NewsPress.fr, 2015. Available from: http://www.newspress.fr/communiqu_e_290513_3470_RSS-EN-TS-48.aspx

Phillip Morris International. Philip Morris International inc. Is awarded an 'a list' ranking in CDP's world leaders report on climate change Phillip Morris International News Release, 2014. Available from: http://www.pmi.com/eng/media_center/press_releases/Pages/201410150800.aspx.

Philip Morris International. Philip Morris International inc. Is awarded an 'a list' ranking in CDP's world leaders report on climate change Phillip Morris International News Release, 2014. Available from: http://www.pmi.com/eng/media_center/press_releases/Pages/201410150800.aspx.

O'Shea M. Smokers caught littering can swap fines for shopping vouchers. Wandsworth Guardian, 2014. Available from: http://www.wandsworthguardian.co.uk/news/11572820.Smokers_caught_littering_can_swap_fines_for_shopping_vouchers/

O'Rourke J and Johnston S. Soft councils are letting sydney's beach smokers puff free by not enforcing ban legislation. The Daily Telegraph, 2014. Available from: <http://www.dailytelegraph.com.au/news/nsw/soft-councils-are-letting-sydneys-beach-smokers-puff-free-by-not-enforcing-ban-legislation/story-fni0cx12-1227169624588?nk=7a23785a7bf2a5dce71d8f4d83da1a90>

No authors listed. Reemtsma recognized for action on co2. Tobacco Reporter, 2014. Available from: <http://www.tobaccoreporter.com/2014/10/reemtsma-recognized-for-action-on-co2/>

Hope C. Government push to clean up britain and make dropping litter 'as socially unacceptable as drink driving'. The Telegraph, 2014. Available from: <http://www.telegraph.co.uk/news/earth/environment/11218158/Government-push-to-clean-up-Britain-and-make-dropping-litter-as-socially-unacceptable-as-drink-driving.html>

Hickmann M. Vancouver aims to stomp out cigarette litter with new recycling scheme. Mother Nature Network, 2013. Available from: <http://www.mnn.com/lifestyle/recycling/blogs/vancouver-aims-to-stomp-out-cigarette-litter-with-new-recycling-scheme>

Fletcher T. No butts about it: Vancouver council likes idea of cigarette-butts-for-cash program. The Province, 2013. Available from: <http://www.theprovince.com/news/butts+about+Vancouver+council+debates+merits+cigarette/8582701/story.html>

Clean Up Australia. Why we need a container deposit scheme. Sydney: Clean Up Australia, 2011. Last update: Viewed Available from: <http://www.cleanup.org.au/au/Whatelsewesupport/why-do-we-need-a-container-deposit-legislation-.html>.

McGregor Tan Research. Keep Australia beautiful National litter index. Annual report 2009-10, prepared for keep Australia beautiful National association. Adelaide: McGregor Tan Research, 2010. Last update: Viewed Available from: http://www.kab.org.au/files/NLI/NLI%20homepage/0910%20Reports/100923_4_mtr_nli_0910_rep_ort.doc.

Clean Up Australia. Rubbish report 2010. Sydney: Clean Up Australia, 2010. Last update: Viewed 01 August 2011. Available from: http://www.cleanup.org.au/download/cuad_rubbish_report_2010.pdf.

Butt Littering Trust. Size of the problem. Melbourne, Australia: Butt Littering Trust,, 2009. Last update: Viewed Available from: <http://www.buttlitteringtrust.org/about-butt-littering/size.html>.

McGregor Tan Research. Keep Australia beautiful National litter index. Annual report 2007-08, prepared for keep Australia beautiful National association. Adelaide: McGregor Tan Research, 2008. Last update: Viewed Available from: http://www.kab.org.au/files/NLI/NLI%20homepage/0910%20Reports/100923_4_mtr_nli_0910_report.doc.

Imperial Tobacco Group. Corporate responsibility review 2007. Bristol, UK: Imperial Tobacco Group, 2008. Available from: <http://www.imperial-tobacco.com/files/environment/cr2007/index.asp>.

Victorian Litter Action Alliance. Litter prevention kit. Cigarette butts. Melbourne, Australia: Victorian Litter Action Alliance, 2007. Available from: http://www.litter.vic.gov.au/resources/documents/Butt_Kit_Whole22_5_07.pdf.

Sustainability Victoria. Getting people to bin their butts. Melbourne, Australia: Sustainability Victoria, 2007. Last update: Viewed Available from: <http://www.sustainability.vic.gov.au/www/html/2597-campaign-tracking-and-results.asp?intSiteID=4>.

Keep Australia Beautiful NSW. New South wales has a big butt problem!!! [media release]. Sydney: Keep Australia Beautiful NSW, 2007. Last update: Viewed 30 May, 2008. Available from: <http://www.kabnsw.org.au/content/documents/Cigarette%20Butts%20Project%20MR.pdf>.

Department of the Environment Water Heritage and the Arts. A national day of action on cigarette butt litter. Cigarette butt litter: Facts and figures. Canberra, Australia: Department of the Environment, Water, Heritage and the Arts, 2007. Last update: Viewed Available from: <http://www.environment.gov.au/settlements/waste/pubs/cigarette-litter-day-facts.pdf>.

The Cancer Council New South Wales. The butt littering trust. TAGLines May/June 2006 Sydney: The Cancer Council New South Wales, 2006. Last update: Viewed Available from: <http://www.cancercouncil.com.au/editorial.asp?pageid=303>.

Ms Coffey Executive Officer. 21 March, S Chapman Professor of Public Health the University of Sydney, Editor 2006, Butt Littering Trust: Sydney.

Department of Environment and Conservation NSW. NSW extended producer responsibility priority statement 2005-06. Sydney: Department of Environment and Conservation NSW 2006. Available from: http://www.environment.nsw.gov.au/resources/warr/2005624_prioritystatement2005_06.pdf.

10.16.1 Health claims, environmental impacts and cost

Vuse. Vuse Driving Forward on a Multi-Million-Dollar, Multi-Year Commitment to Assist Disabled Veterans. *Cision PR Newswire*, 2020. August 18, 2020. Retrieved from

<https://www.prnewswire.com/news-releases/vuse-driving-forward-on-a-multi-million-dollar-multi-year-commitment-to-assist-disabled-veterans-301113749.html>

No authors listed. Global Tobacco packaging market analysis & trends Report 2018- Industry forecast to 2027: Growing demand for alternate Tobacco products and increasing demand for sustainable packaging. PR Newswire, 2018. Available from: <https://www.prnewswire.com/news-releases/global-tobacco-packaging-market-analysis--trends-report-2018--industry-forecast-to-2027-growing-demand-for-alternate-tobacco-products-and-increasing-demand-for-sustainable-packaging-300601882.html>

10.16.2 Tobacco industry response to environmental concerns

STOP. What Big Tobacco's Environmental, Social and Governance Reports Are Missing. *A Global Tobacco Industry Watchdog*, 2022. October 31, 2022. Retrieved from <https://exposetobacco.org/news/environmental-social-and-governance-esg/>

No authors listed. Talking Trash: Behind the Tobacco Industry's "Green" Public Relations *Expose Tobacco*, 2022. May 2022. Retrieved from https://exposetobacco.org/wp-content/uploads/Talking_Trash_EN.pdf

Bloch, B. Drones and AI being used to clean up Bristol. *Bristol Live*, 2022. Jan 21, 2022. Retrieved from <https://www.bristolpost.co.uk/news/bristol-news/drones-ai-being-used-clean-6526063>

'Polluter pays': French tobacco firms to fund cigarette butt clear-up. *The Connexion*, 2021. Sept 3, 2021. Retrieved from <https://www.connexionfrance.com/French-news/Polluter-pays-French-tobacco-firms-to-fund-cigarette-butt-clear-up-Alcome-the-new-eco-organisme-formed-to-tackle-the-problem>

10.16.3 Policy response

Smith, J. Twickenham pub renamed in smoking campaign. *Twickenham Nub News*, 2024. November 18, 2024. Retrieved from <https://twickenham.nub.news/news/local-news/twickenham-pub-renamed-in-smoking-campaign-245442>

The County of Santa Cruz. (2024). Landmark vote prohibits sale of filtered tobacco products Retrieved from <https://www.santacruzcountyca.gov/portals/0/county/CAO/press%20releases/2024/TobaccoFilters.10082024.pdf>

Callard, C. Growing support in Europe for banning cigarette filters. *Physicians for a Smoke-Free Canada*. 2023. April 26, 2023. Retrieved from <https://smoke-free-canada.blogspot.com/2023/04/growing-support-for-banning-cigarette.html>

National Institute for Public Health and the Environment (RIVM). (2023). *Advisory list of prohibited additives in tobacco products and e-cigarettes*. Retrieved from <https://www.rivm.nl/bibliotheek/rapporten/2022-0224.pdf>

National Institute for Public Health and the Environment (RIVM). (2023). *Towards a smoke-free generation: Options to make cigarettes less appealing and addictive*. Retrieved from

https://www.rivm.nl/sites/default/files/2023-04/75914_RIVM_014658_FS_sigaret_EN_TG_PDFa%20JR.pdf

ASH. 'No more delay – we need a Tobacco Control Plan now' urge local leaders. *Action on Smoking and Health*, 2023. Jan 19, 2023. Retrieved from <https://ash.org.uk/media-centre/news/press-releases/no-more-delay-we-need-a-tobacco-control-plan-now-urge-local-leaders>

Australian Associated Press. No butts: smoke companies to clean up. *Daily Mail*, 2023 Jan 12, 2023.. Retrieved from <https://www.dailymail.co.uk/wires/aap/article-11625421/No-butts-smoke-companies-clean-up.html>

Badcock, J. Spain to make Big Tobacco pay for cigarette butt cleaning. *The Age*, 2023. Jan 4, 2023. Retrieved from <https://www.theage.com.au/world/europe/spain-to-make-big-tobacco-pay-for-cigarette-butt-cleaning-20230104-p5ca9x.html>

King, S. Dozens of groups join our call to #ExpandTheBan on single-use plastics. Will you? *Greenpeace*, 2023. Retrieved from <https://www.greenpeace.org/canada/en/author/sking/>

Scott, B. City of Baltimore Files a First of its Kind Lawsuit Against Tobacco Companies for Cigarette Filter Waste. *City of Baltimore*, 2022. November 21, 2022. Retrieved from <https://mayor.baltimorecity.gov/news/press-releases/2022-11-21-city-baltimore-files-first-its-kind-lawsuit-against-tobacco-companies>

STOP. We Need to Make Big Tobacco Pay for Its Environmental Harms. *A Global Tobacco Industry Watchdog*, 2022. June 3, 2022. Retrieved from https://exposetobacco.org/news/polluter-pays/?utm_source=tw&utm_medium=social&utm_campaign=bbt

Lord Crisp, Lord Young of Cookham, Lord Faulkner of Worcester, & Lord Rennard. Letter: 'Polluter pays' levy can help the UK hit smoke-free 2030 target. *Financial Times*, 2022. June 15, 2022. Retrieved from <https://ash.us14.list-manage.com/track/click?u=3d5578d8735672472bede942b&id=17c45c2677&e=8996ca7e7a>

Burgen, S. Cigarette butt recycling scheme aims to stub out waste in Catalonia. *The Guardian*, 2022. May 20, 2022. Retrieved from <https://www.theguardian.com/world/2022/may/20/cigarette-butt-recycling-scheme-aims-to-stub-out-waste-in-catalonia>

Jongenelis, M, White, S, & Noble, K. NO BUTTS ABOUT STOPPING TOBACCO DAMAGING THE ENVIRONMENT. *Pursuit*, 2022. May 29, 2022. Retrieved from <https://pursuit.unimelb.edu.au/articles/no-butts-about-stopping-tobacco-damaging-the-environment>

Health and Care Bill, UK Parliament, House of Commons, Volume 711 Cong. Rec. (2022).

Lord Crisp. Health and Care Bill: Volume 820: debated on Wednesday 16 March 2022. *UK Parliament*, 2022. March 16, 2022. Retrieved from <https://hansard.parliament.uk/lords/2022-03-16/debates/4C817EAC-38E9-44EA-8B56-0BA0A095845D/HealthAndCareBill#contribution-8DE75179-9077-44C3-8F58-1C6AEC68100F>

Boffey, D. Swedish firm deploys crows to pick up cigarette butts. *The Guardian*, 2022. Feb 1, 2022 Retrieved from <https://www.theguardian.com/environment/2022/feb/01/swedish-crows-pick-up-cigarette-butts-litter>

Boztas, S. Animal rights MPs call for ban on plastic in cigarette filters. *Dutch News*, 2022. February 3, 2022 Retrieved from <https://www.dutchnews.nl/news/2022/02/animal-rights-mps-call-for-ban-on-plastic-in-cigarette-filters/>

Martinez, C. No ifs, ands or butts: California bill would ban single-use smoking products like cigarette filters. *Los Angeles Times*, 2022. Jan 25, 2022. Retrieved from <https://www.latimes.com/california/story/2022-01-25/california-bill-would-ban-single-use-cigarette-filters>

Harford, N, & French, J. (2021). *Ending cigarette butt litter*. Retrieved from <https://www.wwf.org.au/ArticleDocuments/353/pub-WWF-Australia-Ending-cigarette-butt-pollution-3Dec21.pdf.aspx>

Morphett, K, Gartner, C, & Clarke, W. Making the tobacco industry pay for cigarette litter could stop 4.5 billion butts polluting the Australian environment. *The Conversation*, 2021. Dec 6, 2021. Retrieved from <https://theconversation.com/making-the-tobacco-industry-pay-for-cigarette-litter-could-stop-4-5-billion-butts-polluting-the-australian-environment-171831>

Litter: Tobacco. April 29, 2021. Retrieved from <https://questions-statements.parliament.uk/written-questions/detail/2021-04-21/hl15154>

Ralph, A. Tobacco companies fume at picking up tab for butt litter. *The Times*, 2021. March 31, 2021. Retrieved from <https://www.thetimes.co.uk/article/tobacco-companies-fume-at-picking-up-tab-for-butt-litter-c2lfr6t68>

Smulian, M. Pow threatens tobacco firms over litter. *MRW*, 2020. August 18, 2020. Retrieved from <https://ash.us14.list-manage.com/track/click?u=3d5578d8735672472bede942b&id=9426571373&e=0741a2b768>

Cole, R. GOVERNMENT TO CONSIDER LEGISLATING OVER CIGARETTE BUTT LITTER. *Resource*, 2020. July 13, 2020. Retrieved from <https://resource.co/article/government-consider-legislating-over-cigarette-butt-litter>

Hogan, B. NY Democrats want to ban sale of single-use cigarette filters known as 'butts'. *New York Post*, 2020. Jan 17, 2020. Retrieved from <https://nypost.com/2020/01/17/ny-democrats-want-to-ban-sale-of-single-use-cigarette-filters-known-as-butts/>

No authors listed. Cig tossers face tough penalties. *Barrier Daily Truth*, 2020. Jan 24, 2020. Retrieved from <https://customreport.mediaportal.com/#/articlepresenter/b193887d-4794-44da-9aee-99eb9b32cb0d/563503077/1340137782? k=1wapqi>

No authors listed. Hefty fine for flicking butts. *Sound Telegraph*, 2019. Nov 29, 2019. Available from <https://customreport.mediaportal.com/#/articlepresenter/0d665c6c-f9c5-4197-971e-cbbdc84585df/545177930/1292539223? k=wcdnjc>

No authors listed. Tough litter laws pass ACT Assembly. *Canberra Times*, 2019. Oct 23, 2019. Available from <https://customreport.mediaportal.com/#/articlepresenter/b7651252-4a02-4837-9a92-dedb0bfe8a7a/535382381/1261904675? k=xnxme2>

Carrington, D. Britain is nation of litter louts, says Jeremy Paxman *The Guardian*, 2019. Sept 12, 2019. Available from <https://www.theguardian.com/environment/2019/sep/12/britain-is-nation-of-litter-louts-says-jeremy-paxman>

No authors listed. Bin Your Butt. *Keep Australia Beautiful*, 2019. Aug 28, 2019. Available from <https://www.kabc.wa.gov.au/campaigns/bin-your-butt>

No authors listed. Smokers to face \$500 littering penalty. *Canberra Times*, 2019. June 7, 2019. Available from: https://customreport.mediaportal.com/#/articlepresenter/c5f8d4e2-76df-43df-9849-847012364392/499431658/1158318827?_k=9ste43

Rafanelli, A. Bill Proposed to Cut Toxic Cigarette Waste. *Santa Barbara Independent*, 2019. May 20, 2019. Available from: <https://www.independent.com/2019/05/20/backdoor-butt-ban-proposed/>

O'Connor, T. Merton Council to give out free ashtrays in littering crackdown. *This is Local London*, 2019. Apr 16, 2019. Available from: <https://www.thisislocallondon.co.uk/news/17576598.merton-council-to-give-out-free-ashtrays-in-littering-crackdown/>

Batchelor, T. Cost of cigarettes must rise to reflect environmental damage from tobacco industry, WHO says. *Independent*, 2018. Oct 3, 2018. Available from: <https://www.independent.co.uk/environment/cost-cigarettes-rise-tobacco-industry-smoking-environment-who-climate-change-pollution-a8564796.html>