

Project Goals

Background

- Discarded cigarette butts, mainly the cellulose acetate filter, are globally the single most collected waste items in urban areas, parks. beaches, and roadways.
- Extensive laboratory research has established the toxicity of tobacco chemicals leached from discarded butts.
- There are increasing concerns regarding the breakdown of non-biodegradable filters into microplastic pollution.
- Clearly, tobacco product waste (TPW) is a global concern, and several international organizations now address TPW. These organizations are drawing upon research, publications, and technical assistance provided by the SDSU CTE.



Center for Tobacco and the Environment

Policy Questions

- How has research and policy work in California informed multinational and international tobacco control work?
- What are the relevant organizations that have been or could be engaged in environmental tobacco control work?
- What are the research needs going forward that can fuel progress on environmentallyrelated tobacco control policies?



• Cigarette Surfboard photo: https://www.thecigarettesurfboard.com/

Global Progress Against Tobacco Product Waste

Thomas E. Novotny MD MPH DSc

Describe how the SDSU CTE connects to international environmental initiatives Show how local actions can fuel global progress on tobacco and the environment

Identify future research needs that can accelerate this progress

 The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption. <i>Bull World Health Organ</i> 2015 Tobacco industry responsibility for butts: A model Tobacco Waste Care Act. <i>Tob Control</i>. 2017 The filter fraud: debunking the myth of "safer" as a key new strategy of tobacco control. <i>Tobacco Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control</i>. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Key Publications (Partial List)
 consumption. <i>Bull World Health Organ</i> 2015 Tobacco industry responsibility for butts: A model Tobacco Waste Care Act. <i>Tob Control</i>. 2017 The filter fraud: debunking the myth of "safer" as a key new strategy of tobacco control. <i>Tobacco Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control</i>. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	The environmental and health impacts of tobacco
 Tobacco industry responsibility for butts: A model Tobacco Waste Care Act. <i>Tob Control</i>. 2017 The filter fraud: debunking the myth of "safer" as a key new strategy of tobacco control. <i>Tobacco Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control</i>. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		agriculture, cigarette manufacture and
 Tobacco Waste Care Act. <i>Tob Control.</i> 2017 The filter fraud: debunking the myth of "safer" as a key new strategy of tobacco control. <i>Tobacco Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette sin a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		consumption. Bull World Health Organ 2015
 The filter fraud: debunking the myth of "safer" as a key new strategy of tobacco control. <i>Tobacco Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Tobacco industry responsibility for butts: A model
 key new strategy of tobacco control. <i>Tobacco</i> <i>Induced Diseases</i> 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Tobacco Waste Care Act. Tob Control. 2017
 Induced Diseases 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	The filter fraud: debunking the myth of "safer" as a
 Induced Diseases 2018 No More Butts Reducing plastic pollution means banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		key new strategy of tobacco control. <i>Tobacco</i>
 banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Induced Diseases 2018
 banning the sale of filtered cigarettes <i>BMJ</i> 2019 Online Simulation Model to Estimate the Total Costs of Tobacco Product Waste in Large U.S. Cities. <i>Int. J. Environ. Res. Public Health</i> 2020 Support for cigarette filter waste policies among US adults. <i>Tob Control.</i> 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	No More Butts Reducing plastic pollution means
 Costs of Tobacco Product Waste in Large U.S. Cities. Int. J. Environ. Res. Public Health 2020 Support for cigarette filter waste policies among US adults. Tob Control. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. Sustainability 2021 Modelling the global economic costs of tobacco product waste. Bull World Health Org 2022 Cellulose acetate cigarette filter is hazardous to human health. Tob Control 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 		banning the sale of filtered cigarettes <i>BMJ</i> 2019
 Cities. Int. J. Environ. Res. Public Health 2020 Support for cigarette filter waste policies among US adults. Tob Control. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. Sustainability 2021 Modelling the global economic costs of tobacco product waste. Bull World Health Org 2022 Cellulose acetate cigarette filter is hazardous to human health. Tob Control 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 	0	
 Cities. Int. J. Environ. Res. Public Health 2020 Support for cigarette filter waste policies among US adults. Tob Control. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. Sustainability 2021 Modelling the global economic costs of tobacco product waste. Bull World Health Org 2022 Cellulose acetate cigarette filter is hazardous to human health. Tob Control 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 		Costs of Tobacco Product Waste in Large U.S.
 adults. <i>Tob Control</i>. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		
 adults. <i>Tob Control</i>. 2023 A Review of Environmental Pollution from the Use and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Support for cigarette filter waste policies among US
 and Disposal of Cigarettes and Electronic Cigarettes: Contaminants, Sources, and Impacts. <i>Sustainability</i> 2021 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		
 Cigarettes: Contaminants, Sources, and Impacts. Sustainability 2021 Modelling the global economic costs of tobacco product waste. Bull World Health Org 2022 Cellulose acetate cigarette filter is hazardous to human health. Tob Control 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 	0	A Review of Environmental Pollution from the Use
 Cigarettes: Contaminants, Sources, and Impacts. Sustainability 2021 Modelling the global economic costs of tobacco product waste. Bull World Health Org 2022 Cellulose acetate cigarette filter is hazardous to human health. Tob Control 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 		and Disposal of Cigarettes and Electronic
 Modelling the global economic costs of tobacco product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Cigarettes: Contaminants, Sources, and Impacts.
 product waste. <i>Bull World Health Org</i> 2022 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Sustainability 2021
 Cellulose acetate cigarette filter is hazardous to human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Modelling the global economic costs of tobacco
 human health. <i>Tob Control</i> 2023 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		product waste. Bull World Health Org 2022
 Leached compounds from smoked cigarettes and their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut</i> <i>Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Cellulose acetate cigarette filter is hazardous to
 their potential for bioaccumulation in Rainbow Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut</i> <i>Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		human health. <i>Tob Control</i> 2023
 Trout (Oncorhynchus mykiss). Chem Res Tox 2023 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. Tob Control 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. Mar Pollut Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. PLOS One 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. Tob 	0	Leached compounds from smoked cigarettes and
 Nitrosamine and nicotine exposure after switching from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut</i> <i>Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		their potential for bioaccumulation in Rainbow
 from filtered to unfiltered cigarette smoking: a cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Trout (Oncorhynchus mykiss). <i>Chem Res Tox</i> 2023
 cross-over clinical trial. <i>Tob Control</i> 2024 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Nitrosamine and nicotine exposure after switching
 Influence of tobacco product wastes in a protected coastal reserve adjacent to urbanization. <i>Mar Pollut Bull</i>. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		from filtered to unfiltered cigarette smoking: a
 coastal reserve adjacent to urbanization. <i>Mar Pollut</i> <i>Bull.</i> 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		cross-over clinical trial. Tob Control 2024
 Bull. 2024 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Influence of tobacco product wastes in a protected
 Estimating the accumulation and re-accumulation of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		coastal reserve adjacent to urbanization. Mar Pollut
 of commercial tobacco, electronic cigarette, and cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Orldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		Bull. 2024
 cannabis waste based on a stratified random sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 	0	Estimating the accumulation and re-accumulation
 sample of census blocks. <i>PLOS One</i> 2025 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		of commercial tobacco, electronic cigarette, and
 Worldwide News and Comment. USA: Could this be the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i> 		cannabis waste based on a stratified random
the world's first cigarette filter ban? Lessons learned from Santa Cruz County, California. <i>Tob</i>		sample of census blocks. PLOS One 2025
learned from Santa Cruz County, California. Tob	0	Worldwide News and Comment. USA: Could this be
		the world's first cigarette filter ban? Lessons
		learned from Santa Cruz County, California. Tob
Control 2025		Control 2025

References

• Tobacco Product Waste White Paper. California Tobacco Control Program, 2022: https://cte.sdsu.edu/resources/ • Tobacco: poisoning our planet, World Health Organization: 29 May 2022: https://www.who.int/publications/i/item/9789240051287 • San Diego State University Center for Tobacco and the Environment: https://cte.sdsu.edu/resources/outdoor-environment/

Relevant Global Organizations

- CTE established with funding from University of California Tobacco Related Disease Research Program 2022.
- National/International Partners; Action on Smoking and Health, US CDC Office on Smoking and Health; Truth Initiative;, Stop Tobacco Pollution Alliance; London School of Hygiene & Tropical Medicine; University of Bath, England; Imperial College, England; University of California, San Francisco;, University of California Merced;, University of California, San Diego; Roswell Park Comprehensive Cancer Center, Buffalo.
- UNDO.Org (California Tobacco Prevention) Program)
- WHO: World No-tobacco Day on tobacco and the environment 2022
- WHO Framework Convention on Tobacco Control: COP10 adopted historic decisions to protect the environment from the harms of tobacco (2023)



ON TOBACCO CONTROL

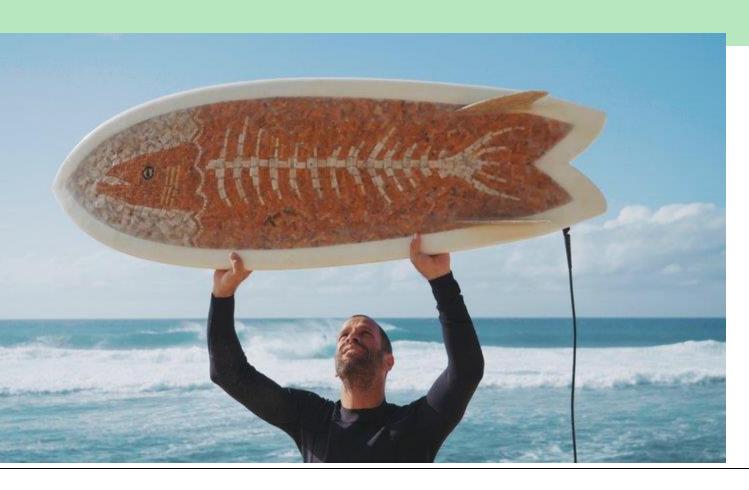
• UN Environment Program: Treaty on Plastic Pollution: Filters as single-use plastic trash, 2022-present



• The Union: World Conference on Tobacco Control: Satellite Session: *Tackling the* Adverse Environmental Impacts of Tobacco Product Use and the Industry that Produces Them







Conclusions

Tobacco Product Waste (TPW) is an international policy challenge.

CTE Lab and field research informs concerns for TPW environmental and human health harms.

Major international organizations and partners are moving forward on TPW.

Santa Cruz County's filtered cigarette ban has inspired global action.

Further research is needed on the human and environmental response to banning sales of filtered cigarettes.

WORLD CONFERENCE ON **TOBACCO CONTROL 2025**

WORLDTOBACCOCONTROL.O

DUBLIN, IRELAND 23 - 25 JUNE 2025

With support from Bloomberg Philanthropie

