City of Capitola
Commission on the Environment
Regular Meeting Agenda
Wednesday, March 19, 2025 – 6:00 PM

Capitola City Hall, Community Room
420 Capitola Avenue, Capitola, CA 95010

Chair: Michelle Beritzhoff-Law
Vice-Chair: Michael Maroney
Commissioners: Mayor Clarke, Dennis Norton
Staff Representative: Erika Senyk

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1. Call to Order and Roll Call

2. Swearing in of new Commissioners

3. Additions and Deletions to the Agenda

4. Public Oral and Written Communications

The Chair may announce and set time limits at the beginning of each agenda item. The Committee Members may not discuss Oral Communications to any significant degree but may request issues raised be placed on a future agenda.

5. Staff Comments

6. February 19, 2025 Regular Commission Meeting Minutes

Recommended Action: Review and approve minutes.

7. General Business

A. Prohibited Sale of Filtered Tobacco Products

Recommended Action: Receive a presentation from the Public Health Department of the Santa Cruz County Health Services Agency regarding the County Board of Supervisors' ordinance amending Santa Cruz County Code Ch. 5.60 to prohibit the sale of filtered tobacco products; and provide a recommendation to the Capitola City Council on whether to adopt a similar ordinance in Capitola.

B. Regular Meeting Schedule

Recommended Action: Approve the Commission's 2025 regular meeting schedule.

C. 2025 COE Workplan

Recommended Action: Discuss and approve a list of COE goals for calendar year 2025.

8. Items for Future Agenda

9. Adjournment

Next regular Commission meeting is scheduled for April 16, 2025.

Agenda and Agenda Packet Materials: The Commission on the Environment Agenda is available on the City's website: *www.cityofcapitola.org/* on Friday prior to the Wednesday meeting. If you need additional information, please contact the Public Works Department at (831) 475-7300.

Americans with Disabilities Act: Disability-related aids or services are available to enable persons with a disability to participate in this meeting consistent with the Federal Americans with Disabilities Act of 1990. Assisted listening devices are available for individuals with hearing impairments at the meeting in the City Council Chambers. Should you require special accommodations to participate in the meeting due to a disability, please contact the City Clerk's office at least 24-hours in advance of the meeting at 831-475-7300. In an effort to accommodate individuals with environmental sensitivities, attendees are requested to refrain from wearing perfumes and other scented products.

City of Capitola
Commission on the Environment Meeting Minutes
Wednesday, February 19, 2024– 6:00 PM

Capitola City Hall, Council Chambers
420 Capitola Avenue, Capitola, CA 95010

Chair: Michelle Beritzhoff-Law
Vice Chair: Michael Maroney
Commissioners: Mayor Clarke, Dennis Norton
Staff Representative: Erika Senyk

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1. **Call to Order and Roll Call –** Staff representative, Erika Senyk, called the meeting to order at 6:26pm.
   Commissioners Present: Michelle Beritzhoff-Law, Michael Maroney, John Mulry
   Absent: Mayor Clark, Dennis Norton
   City Staff Present: Tamar M. Burke (City Attorney), Julia Gautho (City Clerk), Erika Senyk (Environmental Projects Manager)

2. **Swearing in of new Commissioners**
   Commissioner Maroney and Commissioner Mulry were sworn in by the City Clerk.

3. **Additions and Deletions to the Agenda**
   No additions or deletions to the agenda.

4. **Public Oral and Written Communications**
   Sally-Christine Rodgers, Trash Talkers Organizer, provided the Commission with a written letter regarding the Santa Cruz Pitch In initiative and the second annual Pitch In All-Santa Cruz County Cleanup Day scheduled for May 10th, 2025. The letter was distributed to the Commission by City staff prior to the start of the meeting on February 14th, 2025.

   No oral communications were made by members of the public at the meeting.

5. **Staff Comments**
   The City Clerk provided an announcement that there is a Brown Act Training available to City Council members and all City Council advisory body members on Wednesday February 26th, 2025 at 5pm in the City Council Chambers at City Hall.

6. **November 20, 2024 Regular Commission Meeting Minutes**
   Recommended Action: Review and approve minutes.

   Motion to approve the November 20, 2024 minutes: Chair Beritzhoff-Law
   Seconded: Commissioner Mulry
   Motion passed 3-0-2 (Mayor Clarke and Commissioner Norton absent)

7. General Business

A. Selection of Chair and Vice Chair
Recommended Action: Select a Chair and Vice Chair to serve a one-year term for 2025.

Erika Senyk, Environmental Projects Manager, presented the staff report.
Each Commissioner provided their background and interest in the COE.

Motion to select Commissioner Beritzhoff-Law as Chair of the Commission on the Environment for calendar year 2025: Commissioner Maroney
Seconded: Commissioner Mulry
Motion passed 3-0-2 (Mayor Clarke and Commissioner Norton absent)

Motion to select Commissioner Maroney as Vice Chair of the Commission on the Environment for calendar year 2025: Chair Beritzhoff-Law
Seconded: Commissioner Mulry
Motion passed 3-0-2 (Mayor Clarke and Commissioner Norton absent)

B. Commissioner Training
Recommended Action: Receive training on ethics, transparency, and general governance from the City Attorney's Office and the City Clerk.

The Commission received trainings on ethics, transparency, and governance from the City Attorney's Office and the City Clerk's Office. Staff will provide copies of the presentation slides to the Commission following the meeting.

C. Regular Meeting Schedule
Recommended Action: Approve the Commission's 2025 regular meeting schedule.

Erika Senyk, Environmental Projects Manager, presented the staff report.

Motion to approve the regular March 19th, 2025 Commission on the Environment meeting date: Vice Chair Maroney
Seconded: Commissioner Mulry
Motion passed 3-0-2 (Mayor Clarke and Commissioner Norton absent)

The Commission discussed the regular monthly COE meeting schedule.
Commissioner Mulry expressed a preference for regular COE meeting dates other than the third Wednesday of each month.
The Commission confirmed a preference for a 6pm meeting time on a consistent schedule, where regular COE meetings occur on the same day of each month.
The Commission requested for staff to look into City Hall room availability for regular COE meeting dates, excluding Tuesdays and the third Wednesday of each month.

8. Items for Future Agenda

Staff recommended the following items for the March 19th, 2025 agenda:

- Prohibited Sale of Filtered Tobacco Products
- 2025 COE Workplan

Commissioner Mulry requested various documents (e.g., past projects, original plans, improvement plans, historical documents) pertaining to pedestrianizing the Esplanade and Esplanade Park.

Commissioner Mulry requested that staff research whether the act of recommending active transportation planning projects to the City Council would fall within the purview of the Commission on the Environment.

9. Adjournment

The meeting was adjourned at 8:53pm to the next Regular Meeting of the Commission on the Environment on March 19th, 2025.

ATTEST:

Erika Senyk, Environmental Projects Manager

Michelle Beritzhoff-Law, Chair

Capitola Commission on the Environment

Agenda Report

Meeting: March 19, 2025

From: Public Works Department

Topic: Prohibited Sale of Filtered Tobacco Products

Recommended Action: Receive a presentation from the Public Health Department of the Santa Cruz County Health Services Agency regarding the County Board of Supervisors' ordinance amending Santa Cruz County Code Ch. 5.60 to prohibit the sale of filtered tobacco products; and provide a recommendation to the Capitola City Council on whether to adopt a similar ordinance in Capitola.

Background: On October 29th, 2024, the Santa Cruz County Board of Supervisors unanimously adopted an ordinance amending Chapter 5.60 of the Santa Cruz County Code (SCCC) regarding tobacco retailing licenses to prohibit the sale of filtered tobacco products (Ordinance No. 5461, Attachment 1). The ordinance added subsection (J) of SCCC 5.60.040, which states that it shall be a violation of Chapter 5.60 "for any tobacco retailer or any of the tobacco retailer's agents or employees to sell or offer for sale, or to possess with intent to sell or offer for sale, Partially Inconsumable Cigarettes or Partially Inconsumable Cigars." "Partially Inconsumable" tobacco products contain embedded components or parts that are not intended to be consumed and are commonly referred to or marketed as "filters."

By adopting Ordinance No. 5461, Santa Cruz County became the first County worldwide to ban the sale of filtered tobacco products. The ordinance was developed by the Board of Supervisors' Tobacco Waste Ad Hoc Subcommittee and became effective on November 29th, 2024, thirty-one days after final adoption. Enforcement of subsection (J) of SCCC 5.60.040 shall begin January 1, 2027, or on a date that two additional jurisdictions in the County approve a similar ordinance, whichever date is later.

At the November 20th, 2024, Capitola Commission on the Environment meeting, the Commission moved to notify Capitola City Council that the Commission is unanimous in their support for prohibiting the sale of filtered tobacco products in Capitola. The composition of the Commission on the Environment changed in January 2025, and new Commissioners were sworn in during the February 2025 meeting.

Discussion: Santa Cruz County Ordinance No. 5461 bans the sale of any tobacco product containing filter parts or components, whether it is made of any material including, but not limited to, plastic, cellulose acetate, other fibrous plastic materials, or any other inorganic, organic, or biodegradable material by any tobacco retailer within the unincorporated areas of Santa Cruz County. The ordinance does not ban the sale of unfiltered tobacco products.

Cigarette filters are composed of a form of plastic called cellulose acetate, which breaks down into microplastics that can persist in our environment for hundreds of years. In addition to being a major form of global plastic pollution, cigarette filters are toxic waste that leach dangerous chemicals such as lead, arsenic, and nicotine into the environment. Tobacco filters also provide no known health benefits to smokers and are found to cause more harm by increasing a smoker's frequency of puffs and causing deeper inhalations of smoke into their lungs (Attachment 2).

The most littered items on the planet are cigarette filters and they are also a major source of plastic pollution in Santa Cruz County and in the Monterey Bay. The Office of National Marine Sanctuaries National Oceanic and Atmospheric Administration (ONMS NOAA) published a study in October of 2023, which analyzed marine debris data collected along the entire 276 miles of Monterey Bay National Marine Sanctuary (MBNMS) shoreline over a five-year period between January 1, 2017, and December 31,

2021. The study found that 24.5% of trash found on beaches was related to smoking and cigarette filters and made up 94.4% of the items within the smoking category (Attachments 3 and 4).

The City of Capitola contracted Save Our Shores to conduct four public Capitola Beach cleanups during Fiscal Year 2023-24 and six cleanups during Fiscal Year 2024-25. For each cleanup event, Save Our Shores records data provided by volunteers on the types and total amounts of litter collected. During Fiscal Year 2023-24, cigarette butts were recorded as one of the most commonly littered items for each of the four cleanup events, with a total of 430 cigarette butts collected over all four beach cleanups (Attachment 5).

Local policy decisions that result in reductions of littered tobacco filters have many positive implications for improving environmental and community health including, but not limited to, reducing environmental pollution, reducing costs associated with cleaning up this form of pollution, promoting public health, and protecting wildlife and the health of the Monterey Bay National Marine Sanctuary. The Board's Tobacco Waste Ad Hoc Subcommittee continues to coordinate with other surrounding jurisdictions in support of the adoption of similar ordinances to further protect our community and environment.

Report Prepared By: Erika Senyk, Environmental Projects Manager

Attachments:

1. Ordinance No. 5461
2. Special Communication Article from San Diego State University School of Public Health (Novotny and Hamzai, 2023)
3. ONMS NOAA Fact Sheet
4. MBNMS Marine Debris Final Report 2023 https://montereybay.noaa.gov/resourcepro/reports/2023marinedebris-report.html#:~:text=Key%20findings%3A,up%20during%20MBNMS%20beach%20cleanups.
5. Save Our Shores Annual Report for Capitola Beach Cleanups (Fiscal Year 2023-2024)

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Adopted 10/29/2024
Board of Supervisors
DOC-2024-810 18.a

BEFORE THE BOARD OF SUPERVISORS
OF THE COUNTY OF SANTA CRUZ, STATE OF CALIFORNIA

ORDINANCE NO. 5461

ORDINANCE AMENDING CHAPTER 5.60 OF THE SANTA CRUZ COUNTY CODE REGARDING TOBACCO RETAILING LICENSE TO PROHIBIT SALE OF FILTERED TOBACCO PRODUCTS

The Board of Supervisors of the County of Santa Cruz hereby finds and declares the following:

WHEREAS, cigarette filters, or butts, are the most littered item on Santa Cruz County's riverways and beaches, where they are washed into the Monterey Bay and contribute to a common form of litter in the world's oceans; and

WHEREAS, cigarette butts are an unsightly blight on Santa Cruz County sidewalks, parks, playgrounds, recreation trails, and other public spaces; and

WHEREAS, cigarette butts are made of cellulose acetate, a non-biodegradable plastic, which breaks down into microplastics and bioaccumulates in marine organisms; and

WHEREAS, cigarette butts are not just litter but toxic waste, leaching dangerous chemicals such as lead, arsenic, and nicotine in the environment; and

WHEREAS, improperly discarded cigarette butts can poison small children, pets, wildlife, and marine life; and

WHEREAS, improperly discarded cigarette butts are a fire hazard, responsible for burning 88,898 acres in California since 1980; and

WHEREAS, cigarette butts do not actually filter out harmful chemicals from cigarette smoke and provide no demonstrated health benefits to smokers; and

WHEREAS, emerging forms of tobacco waste include electronic cigarettes or vaping devices, and the e-juice, cartridges, batteries, and accessories associated with them; and

WHEREAS, tobacco waste is a health equity issue, disproportionately found in lower income communities and communities of color; and

WHEREAS, tobacco manufacturers take no responsibility for tobacco waste, forcing the physical and financial burden of cleanup onto local government agencies and volunteer organizations; and

WHEREAS, previous approaches including anti-litter laws, anti-smoking signage, increased waste disposal containers, smoking prohibitions in public places and robust cleanup efforts have failed to solve the problem; and

WHEREAS, on May 16, 2023, the Board of Supervisors of the County of Santa Cruz adopted Resolution No. 101-2023 that declared tobacco waste a public health and environmental threat to the residents of the County of Santa Cruz; and

WHEREAS, Resolution No. 101-2023 also created a tobacco waste ad hoc committee to work with County staff and local stakeholders to create a process for advancing policies to reduce or eliminate cigarette butt litter, including drafting an ordinance that would prohibit the sale of plastic filtered tobacco products in the County of Santa Cruz; and

WHEREAS, it is appropriate to update certain provisions of Chapter 5.60 of the Santa Cruz County Code to prohibit the sale of filtered tobacco products;

NOW, THEREFORE, the Board of Supervisors of the County of Santa Cruz hereby ordains as follows:

SECTION I

Subsections (B) and (C) of Section 5.60.010 of the Santa Cruz County Code are hereby amended to read:

5.60.010 Purpose and application.

(B) State law permits local governments to enact local tobacco retail licensing ordinances and allows for the suspension or revocation of a local license for a violation of any State tobacco control law. State law further permits local governments to restrict the sale of tobacco products beyond the restrictions that have been imposed by the State legislature.

(C) This chapter is adopted to (1) ensure compliance with business standards and practices of the County; (2) encourage responsible tobacco retailing; (3) discourage violations of tobacco-related laws; and (4) address the environmental harm and reduce the clean-up costs to the County that arise from the widespread availability of cigarettes and cigars which are marketed as “filtered.” This chapter is not intended to expand or reduce the degree to which

the acts regulated by federal or State law are criminally proscribed or otherwise regulated.

SECTION II

Section 5.60.020 of the Santa Cruz County Code is hereby amended to read:

5.60.020 Definitions.

(A) "Characterizing flavor" means a taste or aroma, other than the taste or aroma of tobacco, imparted either prior to or during consumption of a tobacco product or any byproduct produced by the tobacco product, including, but not limited to, tastes or aromas relating to menthol, mint, wintergreen, fruit, chocolate, vanilla, honey, candy, cocoa, dessert, alcoholic beverage, herb, or spice; provided, however, that a tobacco product shall not be determined to have a characterizing flavor solely because of the use of additives or the provision of ingredient information.

(B) "Cigar" means any roll of tobacco wrapped entirely or in part in leaf tobacco or any substance containing tobacco.

(C) "Cigarette" means:

(1) any roll of tobacco wrapped in paper or in any substance not containing tobacco; and

(2) any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette described herein.

(D) "Consumer" means a person who purchases a tobacco product for consumption and not for sale to another.

(E) "Department" means the Santa Cruz County Health Services Agency.

(F) "Drug paraphernalia" shall have the definitions set forth in California Health and Safety Code Section 11014.5, as that section may be amended from time to time.

(G) "Electronic smoking device" means any device that may be used to deliver any aerosolized or vaporized substance to the person inhaling from the device, including, but not limited to, an e-cigarette, e-cigar, e-pipe, vape pen, e-hookah, or similar product. Electronic smoking device includes any component, part, or accessory of the device, and includes any substance that may be

aerosolized or vaporized by such device, whether or not the substance contains nicotine.

(H) “Flavored tobacco product” means any tobacco product or tobacco paraphernalia that imparts a characterizing flavor.

(I) “Health Officer” means the Health Officer of the County of Santa Cruz or their designee.

(J) “Labeling” means written, printed, or graphic matter upon any tobacco product or any of its packaging, or accompanying such tobacco product.

(K) “Law Enforcement Officer” means a California Certified Peace Officer and/or County of Santa Cruz Sheriff’s Office designated Community Service Officer.

(L) “License” means a tobacco retailer license issued by the County pursuant to this chapter.

(M) “Licensee” means any proprietor holding a license issued by the County pursuant to this chapter.

(N) “License fee” means the charge established by resolution of the Board of Supervisors, calculated to recover the reasonable regulatory costs of issuing and administering licenses, retailer education, performing investigations, inspections, and the administrative enforcement and adjudication thereof.

(O) “Manufacturer” means any person, including any repacker or relabeler, who manufactures, fabricates, assembles, processes, or labels a tobacco product; or imports a finished tobacco product for sale or distribution into the United States.

(P) “Package” or “packaging” means a pack, box, carton, or container of any kind or, if no other container, any wrapping (including cellophane) in which a tobacco product is sold or offered for sale to a consumer.

(Q) “Partially Inconsumable Cigar” means any Cigar containing an embedded component or part commonly referred to or marketed as a filter that is not intended to be consumed, whether it is made of any material including, but not limited to, plastic, cellulose acetate, other fibrous plastic material, or any other inorganic, organic, or biodegradable material.

(R) “Partially Inconsumable Cigarette” means any Cigarette containing an embedded component or part commonly referred to or marketed as a filter that is not intended to be consumed, whether it is made of any material including, but not limited to, plastic, cellulose acetate, other fibrous plastic material, or any other inorganic, organic, or biodegradable material.

(S) "Person" means any natural person, partnership, cooperative association, corporation, personal representative, receiver, trustee, assignee, or any other legal entity.

(T) "Proprietor" means a person with an ownership or managerial interest in a business. An ownership interest shall be deemed to exist when a person has a 10 percent or greater interest in the stock, assets, or income of a business other than the sole interest of security for debt. A managerial interest shall be deemed to exist when a person can or does have or share ultimate control over the day-to-day operations of a business.

(U) "Sale" or "Sell" means any transfer, exchange, barter, gift, offer for sale, or distribution for a commercial purpose, in any manner or by any means whatsoever.

(V) "Self-service display" means the open display or storage of tobacco products or tobacco paraphernalia in a manner that is physically accessible in any way to the general public without the assistance of the retailer or employee of the retailer and a direct person-to-person transfer between the purchaser and the retailer or employee of the retailer. A vending machine is a form of self-service display.

(W) "Tobacco paraphernalia" means any item designed or marketed for the consumption, use or preparation of tobacco products.

(X) "Tobacco product" means:

(1) Any product containing, made, or derived from tobacco or nicotine that is intended for human consumption, whether smoked, heated, chewed, absorbed, dissolved, inhaled, snorted, sniffed, or ingested by any other means, including but not limited to cigarettes, cigars, little cigars, chewing tobacco, pipe tobacco, or snuff;

(2) Any electronic smoking device; and

(3) Any component, part, or accessory intended or reasonably expected to be used with a tobacco product, whether or not sold separately.

"Tobacco product" does not include drugs, devices, or combination products authorized for sale by the United States Food and Drug Administration, as those terms are defined in the Federal Food, Drug and Cosmetic Act.

(Y) "Tobacco retailer" means any person or business who sells, offers for sale or distribution, exchanges, or offers to exchange for any form of consideration, tobacco, tobacco products, or tobacco paraphernalia without regard to the quantity sold, distributed, exchanged, or offered for exchange.

(Z) "Tobacco retailing" means selling, offering for sale, exchanging, or offering to exchange for any form of consideration, tobacco, tobacco products, or tobacco paraphernalia without regard to the quantity sold, offered for sale, exchanged, or offered for exchange.

SECTION III

Subsection (A) of Section 5.60.030 of the Santa Cruz County Code is hereby amended to read:

5.60.030 Mandatory tobacco retail license.

(A) Any person intending to act as a tobacco retailer shall obtain a tobacco retailing license for each location at which tobacco retailing is to occur. No person shall engage in tobacco retailing in the County of Santa Cruz without first obtaining and maintaining a valid License for each location from which tobacco retailing is to occur.

SECTION IV

Subsection (J) of Section 5.60.040 of the Santa Cruz County Code is hereby added to read:

5.60.040 Issuance of tobacco retail license.

(J) It shall be a violation of this chapter for any tobacco retailer or any of the tobacco retailer's agents or employees to sell or offer for sale, or to possess with intent to sell or offer for sale, Partially Inconsumable Cigarettes or Partially Inconsumable Cigars.

(1) There shall be a rebuttable presumption that a tobacco retailer in possession of four or more packages containing any Partially Inconsumable Cigarettes or Partially Inconsumable Cigars possesses such packages of Partially Inconsumable Cigarettes or Partially Inconsumable Cigars with the intent to sell or offer for sale.

SECTION V

Subsection (A) of Section 5.60.090 of the Santa Cruz County Code is hereby amended to read:

5.60.090 Inspections, investigations and enforcement.

(A) Compliance with this chapter shall be monitored by the Department or any law enforcement officer. Employees of the Department or a law

enforcement officer may conduct inspections and investigations, including but not limited to youth decoy operations. All licensed premises must be open to inspection by the Department or any law enforcement officer during regular business hours.

SECTION VI

The adoption of this ordinance is not subject to the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15061(b)(3) because there is no reasonably foreseeable significant impact on the environment and CEQA Guidelines Section 15308 because the actions taken is for the protection of the environment.

SECTION VII

Should any section, clause, or provision of this Ordinance be declared by the courts to be invalid, the same shall not affect the validity of the Ordinance as a whole, or parts thereof, other than the part so declared to be invalid.

SECTION VIII

This ordinance shall take effect on the 31st day after final adoption. Enforcement of subsection (J) of SCCC 5.60.040 shall begin January 1, 2027 or on a date that two additional jurisdictions in the County approve a similar ordinance, whichever date is later.

PASSED AND ADOPTED by the Board of Supervisors of the County of Santa Cruz, State of California, this 29th day of October, 2024, by the following vote:

AYES: Supervisors Koenig, Friend, Hernandez, McPherson, and Cummings
NOES: None
ABSENT: None
ABSTAIN: None

DocuSigned by:
Justin Cummings
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11/15/2024

Justin Cummings
Chair of the Board of Supervisors

ATTEST: DocuSigned by:
Juliette Rezzato
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11/15/2024

Juliette Rezzato
Clerk of the Board

OPEN ACCESS

Cellulose acetate cigarette filter is hazardous to human health

Thomas E Novotny , Laila Hamzai

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ABSTRACT

The World No Tobacco Day 2022 theme emphasised tobacco's adverse environmental effects, including through agriculture, manufacturing, distribution, use and the disposal of tobacco product waste. A main concern regarding this toxic waste is the cigarette filter, which is attached to nearly all commercial cigarettes and is predominantly made from a plant-based plastic (cellulose acetate). Laboratory studies have demonstrated the chemical toxicity of discarded cigarette butts, and there is growing public concern regarding environmental plastic pollution resulting from single-use cellulose acetate filters. Important considerations are whether the filter has any protective role against the harms of smoking and whether it should be regulated as a plastic environmental pollutant. There is persistent misunderstanding among smokers and policy makers about the implied value of the cigarette filter. The cellulose acetate filter is simply a marketing tool that encourages smoking initiation and reduces intentions to quit smoking. This is because it makes smoking easier and implies added safety through the presumed filtration of inhaled smoke. The sale of filtered cigarettes should be prohibited to protect public health and the environment.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ FIltered cigarettes do not protect people who smoke against the harms of smoking, yet plastic filters continue to be attached to almost all commercial cigarettes. They are the main component of tobacco product waste, the single most picked up item of trash globally.

WHAT THIS STUDY ADDS

⇒ This study summarises the history, marketing, industry deceptions, ecotoxicity, and misunderstandings regarding cellulose acetate filters. It redefines these cigarette components as tobacco additives that are harmful to human health and the environment.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study calls for regulatory policies on cellulose acetate filters as unecessary single-use plastics. It suggests additional research is needed on the potential environmental and human harms due to toxic tobacco product waste.

INTRODUCTION

The harms of smoking have been recognised for decades, yet almost 6 trillion commercial cigarettes are sold globally each year, and an estimated 8 million people die each year due to smoking-attributable diseases. Recently, scientists and advocates have described the toxicity and potential ecological impacts resulting from the environmental deposition of trillions of cigarette butts. WHO's World No Tobacco Day 2022 addressed tobacco's life cycle impact on the environment.[1] In 2021, the California Tobacco Control Program (CTCP) of the California Department of Public Health commissioned a review of the science, tobacco industry responses and policy approaches regarding tobacco product waste.[2]

The environmental focus on tobacco's harms is not new, as the evidence for harms to non-smokers by exposure to secondhand smoke has been understood for many years.[3] In addition, recent research has described the health risks of third-hand smoke pollution (the toxic residues left behind in enclosed environments even after all smoking in these environments has ceased).[4] Increasingly, environmentalists and tobacco control advocates understand the life cycle environmental harms from tobacco growing, manufacturing, distribution and disposal.[5]

A main concern regarding this toxic waste is the cigarette filter, which is attached to nearly all commercial cigarettes and is predominantly made from a plant-based plastic (cellulose acetate).[6] Discarded cigarette butts are known to leach out toxic tobacco chemicals, are poorly degradable across a variety of environmental conditions and may be a significant source of microplastic waste in aquatic and terrestrial environments.[7] They have been the single most picked up waste item on beach and urban clean-ups for decades.[8] Because of these environmental concerns, WHO, public health researchers and environmental advocates have called for a prohibition on the sale of single-use cigarette filters, no matter their composition.[1] In New York in 2021, legislators introduced the *Tobacco Product Waste Reduction Act*, banning the sale of filtered cigarettes and single-use e-cigarettes; it is still 'In Committee'.[2] In California, lawmakers introduced the *Smoking Waste Pollution Prevention Act* in 2022, which would have, as originally drafted, banned single-use tobacco products.[2] In March 2022, the United Nations Environment Assembly established a committee to draft a treaty to address the global plastic crisis. This committee met in November 2022 to plan treaty negotiations, and tobacco control advocates participated as stakeholders in this process in order to include prohibiting the single-use plastic filter in the treaty.[9]

Because there are still widespread beliefs that the word 'filter' means that filtered cigarettes are safer

To cite: Novotny TE, Hamzai L. *Tob Control* 2024;**33**:663–668.

than unfiltered cigarettes, policy makers have been reluctant to take on the tobacco industry with regard to banning cellulose acetate filters.[10] This Special Communication, based on the recently published CTCP white paper,[2] will review (1) the history of the cellulose acetate filter; (2) environmental concerns regarding cellulose acetate filters; (3) health concerns regarding the use of filtered cigarettes; and (4) the challenges in addressing the cellulose acetate filter as a health and environmental hazard.

The history of the cellulose acetate filter

Most available historical information is USA oriented, including key documents from the University of California San Francisco Truth Tobacco Industry Documents Library (https://www.industrydocuments.ucsf.edu/tobacco/). Filters were first used in the 1860s to keep loose tobacco out of smokers' mouths.[11] In the 1930s and 1940s, they were marketed to protect smokers from 'poisons', such as nicotine.[12] Although they were a popular novelty at first, filtered cigarettes did not affect unfiltered cigarette sales in the early 20th century.[12] By the mid-1950s, carcinogens such as arsenic, 3,4-benzpyrene and radioactive polonium were identified in cigarettes,[13] implicating them as a contributor to the reported increase in lung cancer incidence.[14] Internal tobacco industry documents reveal that their research units also identified carcinogens in tobacco and tobacco smoke,[15–17] but the industry did not publicly report or acknowledge these findings. As tobacco companies focused on ways to eliminate carcinogens from their product, the research on filters increased in intensity.[12] Implicit and explicit product marketing focused on the presumed 'safety' of filtered cigarettes.[12] However, according to a 1958 internal company memo, Philip Morris scientists recognised that selective filtration of harmful compounds was 'a thermodynamic impossibility'.[18] As for the cellulose acetate filter, industry researchers evaluated this in 1932 and determined that there was very little difference in nicotine content delivered between regular and filtered cigarettes.[19] There were also other problems with the filter, such as fibres disbursing and being inhaled by smokers.[20 21]

By the 1950s, cellulose acetate was the most commonly used filter material. In cooperation with tobacco companies, major chemical manufacturers (Hoechst Celanese and Tennessee Eastman) provided these filters.[22] Cellulose acetate production for filters increased from 3 million tons in 1953 to 22 million tons in 1955. In 1957, a congressional committee investigation addressed 'false and misleading' advertisements by tobacco companies on the implied benefits of cigarette filters and concluded that the tobacco companies deceived the public regarding the safety of their products.[12]

The industry's overall shift to filtered cigarettes continued into the 1960s because of two important historical events. First, in 1962, the UK's Royal College of Physicians published *Smoking and Health,* highlighting the link between smoking and lung cancer and other diseases.[23] Second, the US Surgeon General's Advisory Committee on Smoking and Health published the landmark *Report on the Health Consequences of Smoking* in 1964, concluding that cigarette smoking is a cause of lung cancer and laryngeal cancer and the most important cause of chronic bronchitis.[24] These reports resulted in enormous press attention and likely encouraged tobacco industry marketing to emphasise the value of filtered cigarettes.

Almost all commercial cigarette filters are now made of cellulose acetate fibres along with paper and plasticisers. Some filters include activated charcoal, which may remove some gas-phase chemicals but not particulates or carbon monoxide.[25 26] According to the 2020 Federal Trade Commission (FTC) Cigarette Report, the US market share for filtered cigarettes across all major manufacturers was 99.8%.[6]

In Robert Proctor's historical volume, *Golden Holocaust,* a chapter entitled 'Filter Flimflam' summarised the three reasons why filters are now part of almost all commercial cigarettes. These are: (1) to lower the cost of manufacturing (cellulose acetate is cheaper than tobacco leaf); (2) to keep tobacco bits from entering the mouths of smokers; and (3) to convince people into thinking that filtered brands were somehow 'safer' than unfiltered brands.[12]

Environmental concerns regarding cigarette filters

Cigarette butts, mainly the cellulose acetate filter, have been the most commonly picked up item on International Coastal Cleanup, held worldwide each September, for almost all of the last 30 years.[8] In 2020, nearly a million were collected, but this was far less than the more than 5 million picked up globally in 2019 (likely a result of the COVID-19 pandemic, with widespread reduction in group activities, non-essential travel and socialisation).[8] Clean-up activities call attention to the problem of tobacco product waste, but because of the ubiquity of this waste source, they do not represent a valid surveillance system for quantifying tobacco waste or an intervention to substantially reduce it; they collect only a small proportion of the discarded tobacco waste products.

The negative impacts of cigarette filters on ecosystems and the organisms inhabiting them are now a growing field of research (table 1).[27] Recent reports mainly involve laboratory studies with microorganisms as well as with larger aquatic and terrestrial organisms. There is increasing concern about environmental microplastic contamination in general, including that derived from discarded cigarette filters.[28] A cigarette filter has 12 000–15 000 cellulose acetate strands, and if discarded into aquatic or terrestrial environments, these fibres can disperse into ecosystems. Belzagui *et al*[29] modelled this process in a laboratory setting and estimated that a typical filter releases approximately 100 microfibres per day, most of which are less than 0.2 mm in size. They estimated that roughly 0.3 million tons of cellulose acetate filters are disposed of annually worldwide. The released microfibres may harm small aquatic organisms. In fact, microplastics have been found in fish and shellfish that may become part of the human food chain. Although the human health risks of aquatic microfibre pollution are uncertain, it is clear that humans are exposed to them and to the toxins that adhere to them through aquatic contamination.[30] Toxic chemicals, pharmaceuticals and microorganisms may sorb onto microplastics disposed into the environment, providing potential risks to human health.[31]

Approximately 800 chemical constituents were detected in one laboratory study of fresh and saltwater cigarette butt leachates;[32] nicotine was the most abundant, which is a hazardous chemical previously used as a pesticide. Also found were diacetin and triacetin, which are plasticisers used in filter fabrication and attachment. Thirty-eight compounds found in the saltwater leachates were also identified in laboratory-exposed mussels.[32] These leachates appeared to produce positive in vitro responses in these organisms for genotoxicity (increased activation of the aryl hydrocarbon receptor (a transcription factor that regulates gene expression)) and cytotoxicity (on the oestrogen receptor-p53 loop). In another leachate study, some leached nicotinic alkaloids were found to bioaccumulate in exposed rainbow trout.[33] These and other laboratory studies suggest a potential

Table 1 Selected studies on ecotoxicity of cellulose acetate cigarette filter

Author (date)	Organism	Findings
Microbial		
Quéméneur *et al* (2020)[49]	Bacterial strains	Smoked cellulose acetate filters change diversity of microbial communities by depleting some microbes and enriching others.[49]
Aquatic		
Belzagui *et al* (2021)[29]	Water flea	Breakdown of cellulose acetate filter into microfibres induced more toxicity among water fleas than that from filter without microfibres, in some cases by fourfold.[29]
Green *et al* (2021)[50]	Mussel, macroalgae	Mussels exposed to leachates from whole butts with cellulose acetate filters had lower clearance rates, indicating increased toxicity compared with mussels exposed to other filters. Mesocosms exposed to cigarette butts with the cellulose acetate had lower chlorophyll content.[50]
Wright *et al* (2015)[51]	Ragworm	Marine worms exposed to microfibre concentrations 60 times lower than those observed in urban run-off had negative behavioural and physiological changes, including longer burrowing time and significant weight loss. DNA damage was also twice that for exposed worms compared with unexposed worms.[51]
Green *et al* (2020)[52]	Molluscs, flatworm	Exposure to leachates of five smoked cigarette butts (with cellulose acetate filters) per litre of water resulted in 60%–100% mortality of multiple mollusc species and flatworms within 5 days while lower concentrations showed reduction in activity among the organisms.[52]
Slaughter *et al* (2011)[53]	Fish	Unsmoked and smoked cigarette filter leachates were found to be toxic to both freshwater and marine fish.[53]
Lee and Lee (2015)[54]	Fish	Smoked cigarette filter leachates altered development of fish embryos and increased anxiety-like behaviour after hatching. At higher concentrations, both smoked and unsmoked filters increased mortality among the fish.[54]
Lawal and Ologundudu (2013)[55]	Frog, fish	Exposure to leachate from filtered cigarettes increased mortality among frogs. Exposure to smoked cigarette filter leachates was six and a half times more lethal to frogs and fishes compared with unsmoked filter leachates.[55]
Terrestrial		
Green *et al* (2019)[56]	Plants	Plants exposed to smoked filters, unsmoked filters or smoked filters with tobacco residue had significantly reduced germination success and initial growth. Alterations in chlorophyll content were also observed.[56]
Suárez-Rodríguez and Macías Garcia (2014)[57]	House finch	Finches use cellulose fibres from smoked cigarette butts to line their nests; genotoxic damage among the birds was positively associated with higher proportions of cellulose acetate, along with the adsorbed toxins in the filters, in the nests.[57]

risk to human health through consumption of cigarette butt-exposed biota.[34]

Novotny *et al*[35] reviewed human and animal poison centre data for reports of accidental ingestion of tobacco products, including filters. The authors found that cigarette butt consumption by small children was a health concern likely due to indiscriminate eating behaviours and modelling adult behaviours. Veterinary reports of nicotine poisoning suggest that domestic animals have consumed butts and suffered serious gastrointestinal, central nervous system and cardiovascular effects.

Health concerns regarding use of filtered cigarettes

In 2001, the *US National Cancer Institute (NCI) Monograph 13*[36] asserted that changes in machine-measured tar and nicotine yields in cigarette smoke due to filtration or other design changes (with the so-called 'FTC Method'[37]) did not reduce smokers' actual exposure to tobacco toxicants. Chapter 6 (on 'Cancer') in the 2014 *US Surgeon General's Report*[14] extensively reviewed the way changes in cigarette design have changed smoking-attributable lung cancer patterns. The population risks for lung cancer associated with smoking have increased over time, and for a particularly aggressive cell type of lung cancer (adenocarcinoma), incidence has increased. Incidence of other cell types (small cell, in particular) declined due to widespread smoking cessation. The evidence was sufficient to conclude that the increased risk of lung adenocarcinoma among smokers results from changes in the design and composition of cigarettes since the 1950s; however, the *Report* did not specify which changes these were.

A refinement to the filter, intended by the tobacco industry to lower the machine-measured tar and nicotine yields, is filter ventilation. This involves providing small holes in the filter that allow the dilution of the smoke when the cigarette is puffed. Because smokers need to extract sufficient nicotine to maintain their addiction, they obstruct the vents (so-called compensatory smoking), and puff more deeply, thereby obviating any benefits from reduced toxin or nicotine delivery. The addition of ventilated filters has clearly changed the pattern of smoking, including more intense puffing, and this has changed the pattern of lung cancer incidence (ie, adenocarcinoma in particular). The elasticity of compensatory smoking negates any benefit from smoking low-tar, low-nicotine yield (filtered) cigarettes.[38]

Despite the accumulating evidence regarding the inability of 'filters' to eliminate toxic tobacco chemicals and the increase in lung adenocarcinoma incidence that is likely attributable to cigarette design changes,[39] there still seems to be uncertainty among the public[40] and some scientists about the health value of 'filters'. Notably, the 2014 *US Surgeon General's Report on the Health Consequences of Smoking*[14] and the *US NCI Monograph 13* reviewed previous longitudinal epidemiological studies showing potentially reduced risks from low-tar, low-nicotine yield cigarettes and concluded that filters and changes in design did not make cigarettes safer.[36] A more recent Research Letter concluded that smoking unfiltered cigarettes was 'more harmful than smoking filtered cigarettes'.[41] The researchers found that, 'After adjustment, unfiltered cigarette smokers were nearly 40% (hazard ratio, 1.37; 95% CI, 1.10–1.17) more likely to develop lung cancer and nearly twice (hazard ratio, 1.96; 95% CI, 1.46–2.64) as likely to die of lung cancer compared with those who smoked filtered cigarettes'. However, it is important to recognise that this was a secondary analysis of data from a cohort study set up to assess the efficacy of tomographic (radiologic) screening in detecting lung cancer among high-risk smokers and not to assess the population-based risks of smoking unfiltered cigarettes.[42] The limitations of that Research Letter are: (1) the population included in the study was extremely high risk (men and women aged 55–74 with >30 pack-year history or quit within the last 15 years); (2) there was limited adjustment

for socioeconomic status; and (3) the reported prevalence of unfiltered cigarette use in the study population was 11.4% (less than 1% of cigarette sales in the USA are of unfiltered cigarettes). Hence, that recent study mainly suggests there are multiple confounding factors that determine lung cancer mortality among those at the highest risk for lung cancer.

Conducting a study to measure the health effects of filtered versus unfiltered cigarettes would involve a clinical trial comparing exposures and disease incidence among those randomly selected to smoke filtered and unfiltered cigarettes. The logistical and ethical challenges for such a study would be extraordinary. To date, only a small pilot, proof-of-concept study has attempted such a controlled trial. It assessed perceptions, changes in smoking topography (inhalation and puffing patterns) and changes in exposure to nicotine and some carcinogens comparing filtered and unfiltered cigarette smoking.[43] Preliminary data from this trial suggest that committed smokers, when switched to unfiltered cigarettes, smoke fewer cigarettes per day and experience less satisfaction from their smoking.[44] They did not differ with respect to urinary cotinine (the main metabolite of nicotine) or selected carcinogen exposure (Eyal Oren, personal communication, principal investigator).

Challenges in addressing the cellulose acetate filter as a health and environmental hazard

Many smokers and non-smokers still believe that filtered cigarettes are safer than unfiltered cigarettes, and most do not know that almost all commercial cigarettes have plastic filters. Using a population-based sample of 2979 adult non-smokers, former smokers and current smokers, Patel et al. (2021) studied knowledge and beliefs around cigarette filters. The authors evaluated how these factors might inform support for policies aimed at reducing the environmental impact of discarded plastic filters.[40] Only about a quarter of the participants (28.9%) thought that cigarette filters contained plastic. Stratified by smoking status, 33.2% of smokers compared with 21.3% of non-smokers believed that filters reduce the harmful effects of smoking ($p<0.001$). Epperson *et al* sought to assess knowledge, attitudes and beliefs about the environmental impact of filters among a sample of young adults.[45] Most respondents (89%) agreed that filters are harmful to the environment and not biodegradable, but only 43% knew that filters are made of plastic. Using data from a 2019 representative household survey of the German population aged 14 years and over, Kotz and Kastaun reported that the majority of both smokers and non-smokers did not know that cigarette filters were made of synthetic materials.[46]

Based on the history and anatomy of the filter, it now seems appropriate to consider defining this additive differently. According to Google's *Oxford Languages* online dictionary (https://languages.oup.com/google-dictionary-en/), the definition of 'filter' is 'a porous device for removing impurities or solid particles from a liquid or gas passed through it'. Given this specification for how filters should function, it may be better to consider cigarette filters as *product additives*. It is clear that although filters may change the machine-smoked measures of nicotine and other toxic chemicals as well as reduce some of the particulates produced by combusted tobacco, they have not prevented the severe human harms due to smoking. If these additives had effectively functioned as 'filters' (ie, removing impurities or all solid particles from cigarette smoke), there would be evidence that the risks for smoking-attributable diseases have declined since filtered cigarette smoking became normalised over the last 50 years. This is clearly not the case.[47] The filter ultimately has become nothing more than a fraudulent marketing tool, designed specifically to mislead smokers and young initiators that they are doing *something* to reduce their risks.[21]

CONCLUSION

The consensus among health scientists is that filtered cigarettes do not reduce the health risks of smoking and that they may damage ecosystems. The challenge now is to narrow the information gap among smokers, policy makers and regulatory bodies regarding the health and environmental harms of the cellulose filter. There is extensive misunderstanding about the potential value of filters, established through decades of fraudulent product marketing that implied that filters and other gimmicks reduced risks of smoking. Moreover, there is growing concern about the chemical and microplastic environmental contamination caused by trillions of filtered cigarettes discarded globally each year. Yet the global sale of filtered cigarettes continues without regulatory intervention.

In order to implement effective environmental and tobacco control policies regarding cellulose acetate filters, they should be included for regulatory consideration as part of the planned international plastics treaty. Information and advocacy materials should address misconceptions and misinformation about the composition and health risks of cigarette filters. Package warnings and point of sale messaging might be helpful in reducing these misconceptions, but upstream policy interventions to eliminate the cellulose acetate and other filters from the tobacco market will likely be more effective in reducing the adverse effects of these product additives. Ostensibly, regulatory agencies can eliminate the sale of filtered cigarettes altogether because of environmental concerns. This action should not raise concerns about product safety because filtered cigarettes do not reduce the harms of smoking.

More importantly, the cellulose acetate filter, attached to almost all globally sold commercial cigarettes, should be considered a health hazard and labelled as such. It encourages people to smoke, it deceives them into thinking a filtered cigarette is somehow safer than an unfiltered cigarette, it encourages young people to start smoking and it has led to an increased incidence of lung adenocarcinoma. Added to these concerns are the unmeasured long-term impacts of extensive environmental contamination due to discarded cigarette butts and other tobacco product waste. Increasingly, scientists concerned with the environmental impacts of discarded cellulose acetate filters are calling for a ban on these product additives.[48] There is no evidence-based health or environmental reason to allow cellulose acetate filtered cigarettes to be sold and misrepresented as beneficial to health.

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Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration
MONTEREY BAY NATIONAL MARINE SANCTUARY

MARINE DEBRIS ON SANCTUARY SHORELINES

An assessment of activities contributing to marine debris, categories and composition, spatial distribution, and predictor variables.

All marine debris comes from people and can threaten wildlife. It can enter waterways and the ocean from land through littering, poor waste management practices, storm water discharge, and extreme natural events.

DATA ANALYZED

5 CITIZEN SCIENCE data sets

4,725 SURVEY POINTS

7 HUMAN ACTIVITIES

41 debris categories

SURVEY SPAN

276 shoreline miles divided into **9** mile segments

5 year period from **2017-2021**

COLLECTED BY **37,000** volunteers

RESULTS

3 activities contributed to **95%** of marine debris

- VARIOUS* **42.5%**
- **27.9%** EATING and DRINKING
- SMOKING **24.5%**

* Items not attributed to a specific human activity because they were small unidentified plastic, glass, or metal fragments or could have originated from multiple activities.

PLASTIC FRAGMENTS, CIGARETTE BUTTS, and **WRAPPERS** contributed to **59%** of marine debris categories by count.

Debris composition:

- **72.7%** plastic
- **7.8%** paper
- **5%** glass
- **4.5%** metal
- **0.5%** cloth
- **9.6%** mixed materials

How YOU can help!

Dispose of trash properly

Get Involved in beach clean ups

Reduce, Refuse, Reuse, Replace, and **Recycle**

Save Our Shores
345 Lake Ave. Suite A
Santa Cruz, CA 95062

Capitola Beach Cleanups

Fiscal Year 2023-2024

Prepared by: Save Our Shores
Prepared for: City of Capitola
Attn: Erika Senyk

Save Our Shores
345 Lake Ave. Suite A
Santa Cruz, CA 95062

May 23rd, 2024

Overview

In 2023 Save Our Shores (SOS) and the City of Capitola partnered to host quarterly public cleanup events at Capitola Beach throughout the 2023-2024 fiscal year. The four beach cleanup events recruited **176 community volunteers** who participated to aid in debris removal and the collection of community science data by recording the types and quantity of trash items collected. In total, we removed and prevented **656.5 pounds** of debris from littering Capitola Beach and entering the Monterey Bay National Marine Sanctuary.

Event Details

Save Our Shores is the Monterey Bay regional leader in coordinating and hosting highly successful and impactful community beach cleanup events. Our team consists of experts in beach cleanup and safety protocols, data collection, and knowledge of the sites in need of cleanup around the bay. Our history, expertise, and operating procedures allow us to successfully engage diverse members of the public in stewardship of clean shores and healthy marine ecosystems of the Monterey Bay.

Save Our Shores hosted one beach cleanup per quarter at Capitola Beach during the fiscal year. Cleanups were prioritized to take place on weekends to recruit the most volunteers and engage with higher numbers of beach visitors. At each event, Save Our Shores staff and volunteers collected debris and recorded community science data on the types and quantities of litter found using the Save Our Shores Marine Tally mobile app or SOS paper data cards. The SOS cleanup leader began each event by delivering a welcome and safety talk to introduced participants to the concept of marine debris and its impact on the Monterey Bay National Marine Sanctuary, discuss the land to sea connection (watersheds), and marine debris prevention techniques. Participants received important safety information and instructions for proper data collection before cleanup activities commenced. Volunteers then proceeded to clean the beach for the duration of the event and return with the items and data they collected. At the end of the event, the cleanup leader hosted a debrief to discuss the categories of items collected and brainstorm techniques for litter prevention. Finally, the cleanup leader sorted, weighed, and disposed of all debris collected.

Outreach and volunteer recruitment for all cleanup events was conducted via the Save Our Shores website events calendar, SOS supporter monthly e-newsletters, paid advertisements in the Good Times, promotional flyers for City of Capitola newsletter distribution, and SOS social media posts and stories. Advanced volunteer registration for all events was required. The publicized event description and registration confirmation emails detailed how volunteers can prepare to participate and informed them of the meeting location, accessibility, and services available at the cleanup site.

Save Our Shores
345 Lake Ave. Suite A
Santa Cruz, CA 95062

Beach cleanup events serve as an excellent outreach and recruitment tool for cleanup and coastal stewardship activities in our communities. Visitors to the beach frequently participate unplanned and many mentioned how convenient it was that we were set up at the entrance with all the supplies available for people to use. These actions demonstrated the power of community engagement, and how conducting these events can attract attention and inspire action in the present and for future events. This incidental outreach paired with the direct messaging delivered to cleanup volunteers ensures that these events are meaningful and potentially transformative to both participants and observers.

Event Metrics & Cleanup Data

The data collected from these events follow the historic trends we see across all sites around Monterey Bay. The data continues to highlight a need to shift away from single-use plastic, disposable packaging in the food and beverage industry by prioritizing refill stations, incentivizing the use of reusable food ware, and developing sustainable packaging solutions.

Data was entered into the Save Our Shores debris database and analyzed to determine the most common trash items and identify items of concern. The data indicates that 4 of the top 5 items collected during these cleanups consisted of plastic materials. The top 5 items collected were: paper pieces (949), plastic pieces (912), plastic food wrappers (546), cigarette butts (430), polystyrene pieces (422).

Across all 4 cleanup events a total of 4,483 individual pieces of trash were removed from the environment. The results of our project suggest the continued need for beach cleanups to remove litter and prevent land-based trash from becoming harmful marine debris.

Table 1: Cleanup event metrics including number of volunteers (adults/youth) and pounds of debris collected (trash/recycling).

#	Event Date	# of Adults	# of Youth	Pounds of Trash	Pounds of Recycling
Totals		**114**	**62**	**648**	**8.5**
1	8/19/2023	14	2	26	0
2	11/12/2023	25	19	57	0.5
3	3/16/2024	36	20	173	7
4	5/11/2024	39	21	392	1

Save Our Shores
345 Lake Ave. Suite A
Santa Cruz, CA 95062

Table 2: Itemized cleanup data collected per event and the totals across all cleanup events.

Date of Cleanup	8/19/2023	11/12/2023	3/16/2024	5/11/2024	TOTALS
Common Items					
Cigarette Butts	18	224	28	160	**430**
Plastic Pieces	122	316	228	246	**912**
Plastic Food Wrappers	52	180	137	177	**546**
Polystyrene Pieces (foam)	21	270	43	88	**422**
Plastic To-Go Items	13	75	57	58	**203**
Paper Pieces	67	550	177	155	**949**
Plastic Items					
Shopping bags	7	5	2	4	**18**
Balloons	2	2	3	2	**9**
Plastic Bottles	7	8	23	9	**47**
Bottle Caps and Rings	11	33	3	8	**55**
Polystyrene Foodware (foam)	3	26	1	1	**31**
Straws and stirrers	3	35	14	11	**63**
Toys and Beach Accessories	2	16	12	0	**30**
Glass Items					
Glass Bottles	5	4	8	11	**28**
Pieces and Chunks	3	28	63	23	**117**
Paper Items					
Cardboard	0	24	1	5	**30**
Food containers, cups, plates, bowls	18	9	7	10	**44**
Metal Items					
Beer Cans	15	6	11	8	**40**
Soda Cans	2	1	24	4	**31**
Bottle Caps	3	15	14	13	**45**
Hazardous Items					
Band aids	1	4	2	4	**11**
Batteries	0	3	0	0	**3**
Personal Hygiene	0	8	3	9	**20**
Disposable lighters	0	0	0	0	**0**
Syringes or needles	0	0	0	1	**1**
Vape items/ E-smoking devices	0	0	0	0	**0**
Smoking, tobacco (not e-waste or butts)	0	24	4	0	**28**
Bagged Pet Waste	0	0	3	2	**5**

Personal Protective Equipment (masks, gloves)	0	0	5	2	**7**
Other Items/Misc.					
Wood pallets, pieces, and processed wood	1	40	19	47	**107**
Fishing gear (lures, nets, etc.)	0	4	8	8	**20**
Clothes, cloth	0	28	24	14	**66**
Other, large	0	1	2	2	**5**
Other, small	5	17	75	63	**160**

Appendix

Figure 1: Example of promotional flyer created for City of Capitola newsletter distribution.

Figure 2: Example of paid event advertisement placed in the Good Times.

Health Services Agency Public Health Division

Tobacco Product Waste: A Public Health and Environmental Threat

Taylor Lane
Co-founder, The Cigarette Surfboard Project

Tara Leonard, MPH
Project Director, Tobacco Education and Prevention, HSA

Katie Thompson, MMA
Executive Director, Save Our Shores

Capitola Commission on the Environment
March 19, 2025

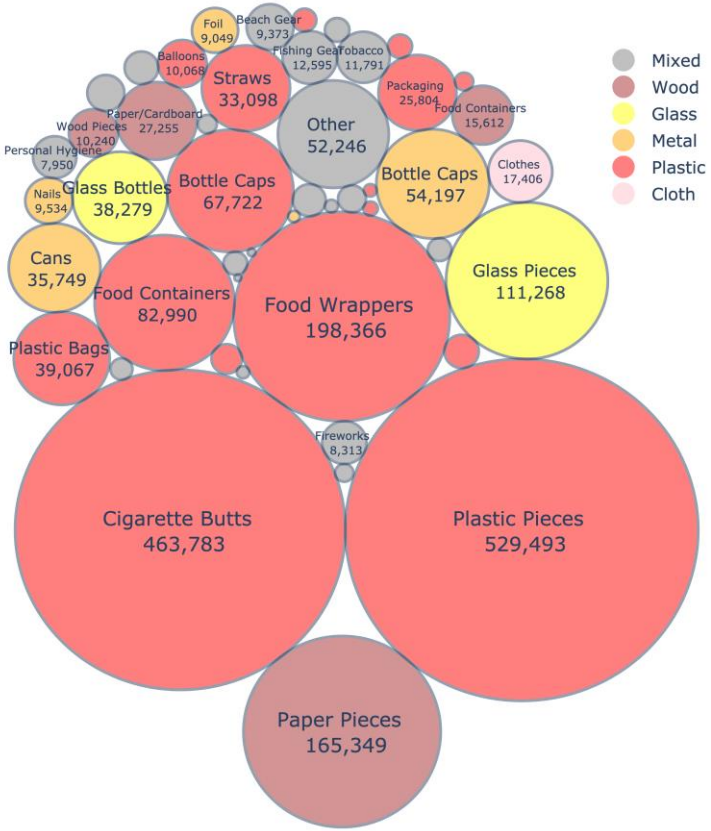
The most littered item on the planet

4.5 trillion cigarette butts worldwide

4,500,000,000

And on local beaches and riverways

In just ten years, Save Our Shores volunteers have collected almost half a million cigarette butts during local cleanup events.



Capitola beach cleanups FY 23-24

Top five items collected

Date	8/19/23	11/12/23	3/16/24	5/11/24	Total
Paper Pieces	67	550	177	155	**949**
Plastic Pieces	122	316	228	246	**912**
Plastic Food Wrappers	52	180	137	177	**546**
Cigarette Butts	**18**	**224**	**28**	**160**	**430**
Polystyrene Pieces	21	270	43	88	**422**

In 2023, Save Our Shores and the City of Capitola partnered to host quarterly public cleanup events at Capitola Beach. Cigarette butts were among the top five most common items collected.

Remnants of a deadly, addictive product

Deaths in California from Smoking	
Adults who die each year from their own smoking	40,000
Kids now under 18 and alive in California who will ultimately die prematurely from smoking	441,000

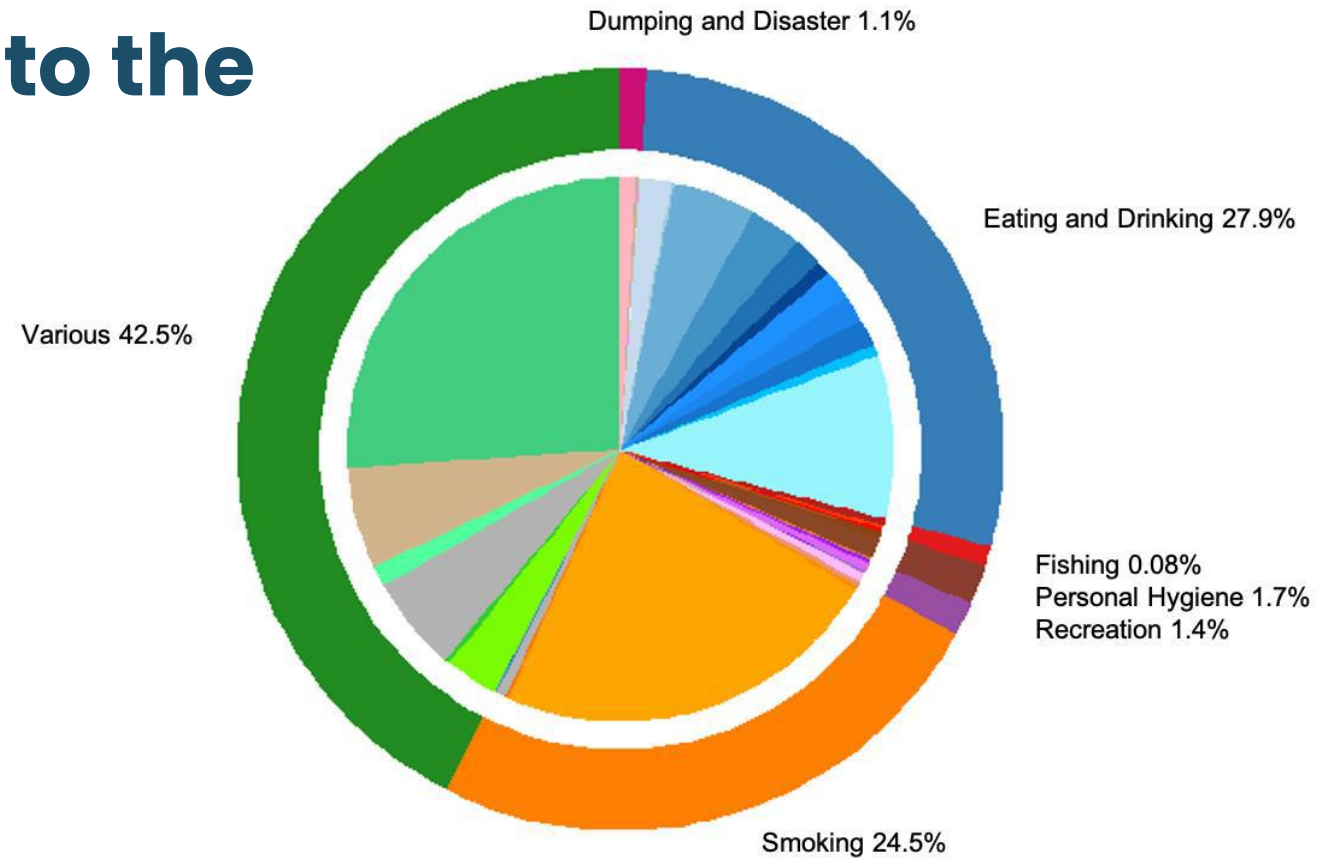
Smoking kills more people than alcohol, AIDS, car crashes, illegal drugs, murders, and suicides combined — and thousands more die from other tobacco-related causes — such as fires caused by smoking (more than 1,000 deaths/year nationwide) and smokeless tobacco use.

Tobacco products kill 500,000 people in the United States every year, including 40,000 Californians.

https://www.tobaccofreekids.org/problem/toll-us/california

Making their way to the Monterey Bay

24.5% of all litter collected on the shores of the Monterey Bay National Marine Sanctuary between 2017 and 2021 was attributed to smoking.



Marine debris on the shoreline of Monterey Bay National Marine Sanctuary: An assessment of activities contributing to marine debris, categories and composition, spatial distribution, and predictor variables, National Oceanic and Atmospheric Administration, 2023

Filters are microfiber pollution

One cigarette butt contains over 12,000 microfibers comprised of cellulose acetate with a suite of chemical additives and “plasticizers.”

Cigarette filters release about 0.3 million tons of microfibers into the aquatic environment per year.

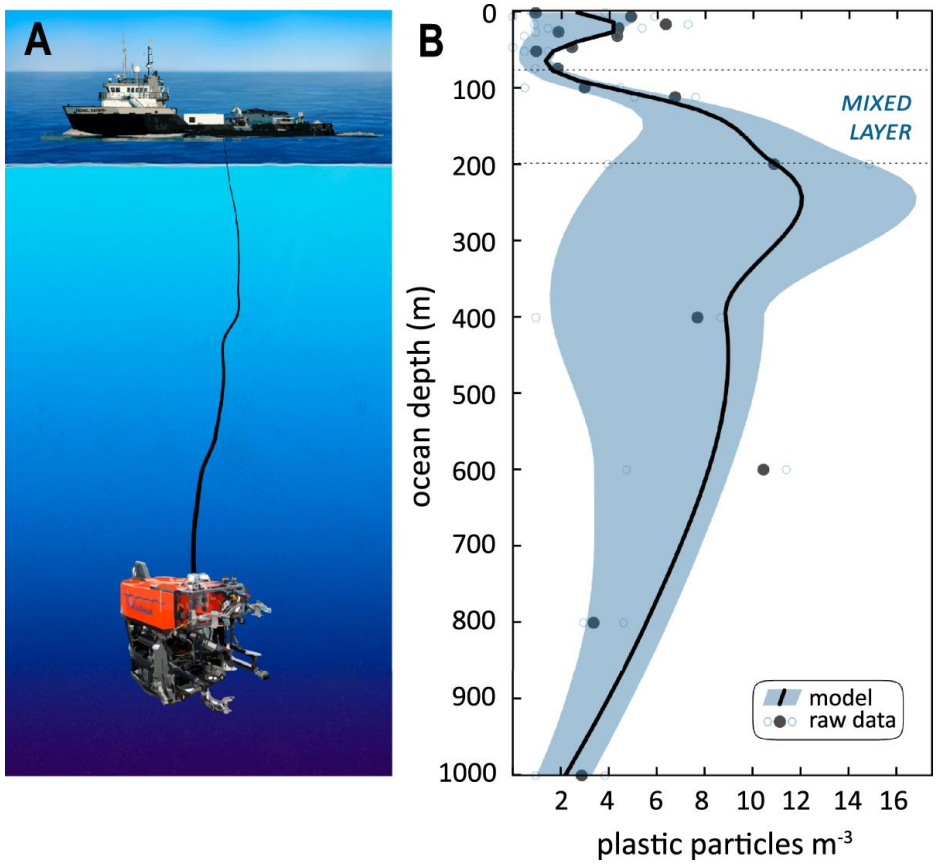
NOAA Interagency Marine Debris Coordinating Committee (IMDCC). (2024). Report on Microfiber Pollution. 149 pp. https://marinedebris.noaa.gov/interagency-marine-debris-coordinating-committee-reports/report-microfiber-pollution

Found throughout the water column

Cigarette butt microfibers break down into microplastics. According to MBARI, microplastics are now found in all layers of the Monterey Bay water column.

Microplastics are present in the seafood we eat, with potential risks to human health.

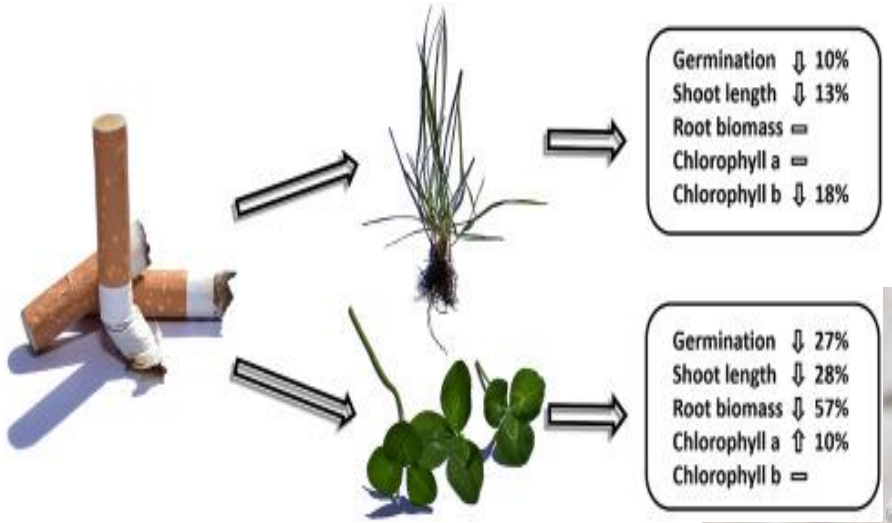
“Ingestion of food and water contaminated with microplastics is the main route of human exposure.”



Alberghini L, Truant A, Santonicola S, Colavita G, Giaccone V. Microplastics in Fish and Fishery Products and Risks for Human Health: A Review. Int J Environ Res Public Health. 2022 Dec 31;20(1):789. doi: 10.3390/ijerph20010789. PMID: 36613111; PMCID: PMC9819327.

MBARI The vertical distribution and biological transport of marine microplastics across the epipelagic and mesopelagic water column, *Scientific Reports*, 9, 7843,

A danger to plants, animals and marine life



Green et al., "Cigarette butts have adverse effects on initial growth of perennial ryegrass and white clover," Ecotoxicology and Environmental Safety, 2019

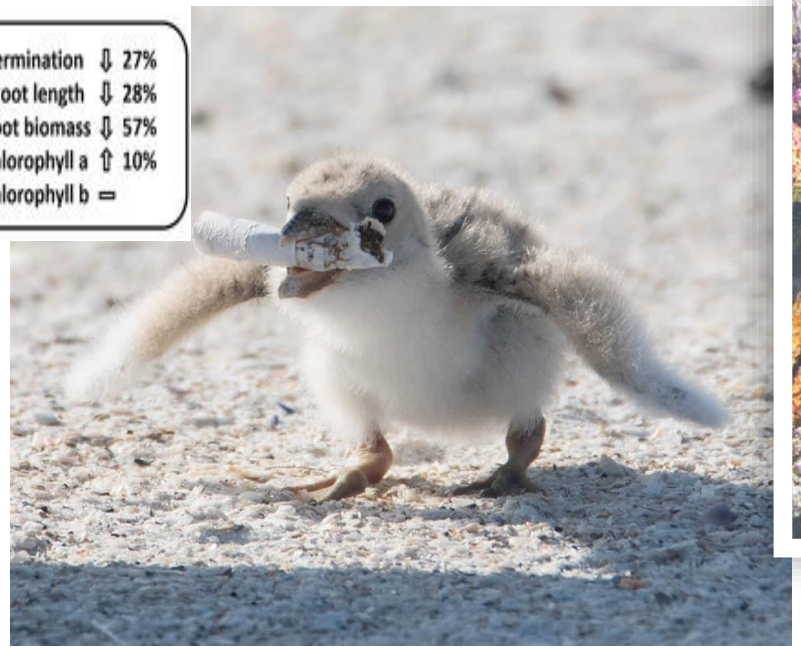


photo credit: Karen Mason

Slaughter et al: Toxicity of Cigarette Butts and their Chemical Components to Marine and Freshwater Fish, 2011

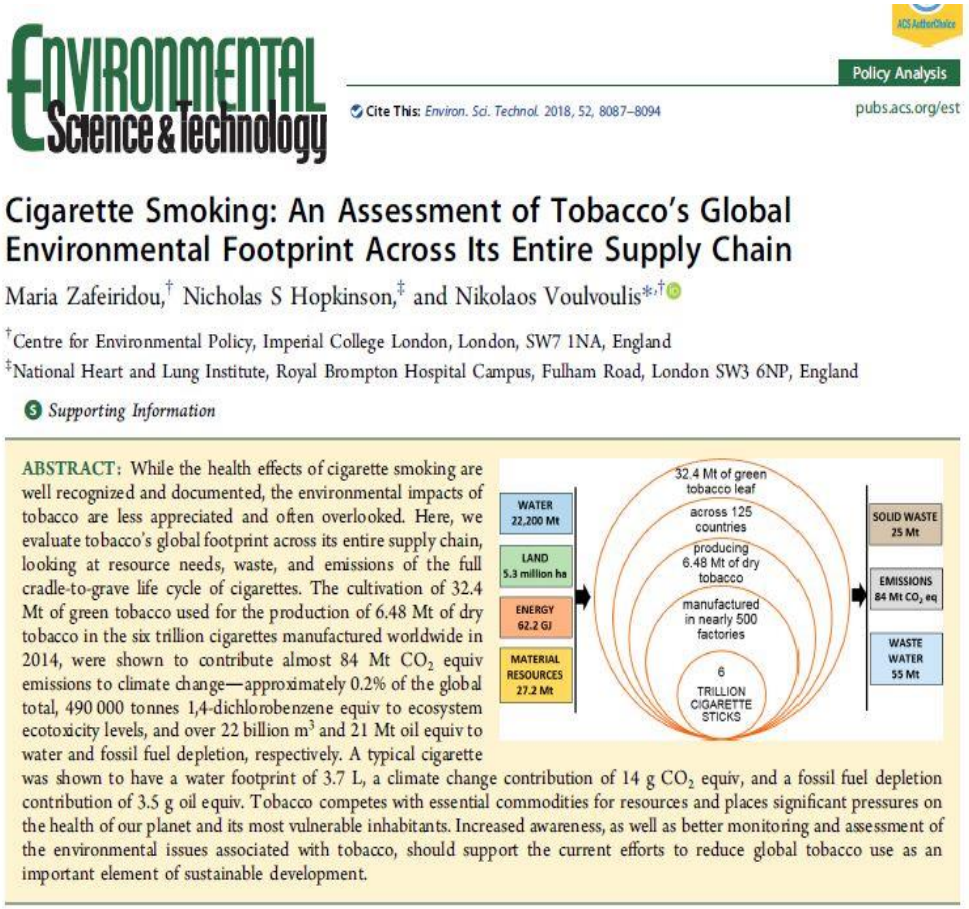
Global impacts across the supply chain

One cigarette:

- Water footprint of 3.7 liters
- Fossil fuel depletion of 3.5g of oil
- Climate change impact of 14g of CO2 emissions

Six trillion cigarettes are produced annually.

According to WHO, “Tobacco companies are a top global plastic polluter whose production and manufacturing directly contribute to climate change and deforestation.”



Environmental Science & Technology

Policy Analysis

Cite This: Environ. Sci. Technol. 2018, 52, 8087−8094

pubs.acs.org/est

Cigarette Smoking: An Assessment of Tobacco’s Global Environmental Footprint Across Its Entire Supply Chain

Maria Zafeiridou,[†] Nicholas S Hopkinson,[‡] and Nikolaos Voulvoulis*[,†]

[†]Centre for Environmental Policy, Imperial College London, London, SW7 1NA, England

[‡]National Heart and Lung Institute, Royal Brompton Hospital Campus, Fulham Road, London SW3 6NP, England

Supporting Information

ABSTRACT: While the health effects of cigarette smoking are well recognized and documented, the environmental impacts of tobacco are less appreciated and often overlooked. Here, we evaluate tobacco's global footprint across its entire supply chain, looking at resource needs, waste, and emissions of the full cradle-to-grave life cycle of cigarettes. The cultivation of 32.4 Mt of green tobacco used for the production of 6.48 Mt of dry tobacco in the six trillion cigarettes manufactured worldwide in 2014, were shown to contribute almost 84 Mt CO_2 equiv emissions to climate change—approximately 0.2% of the global total, 490 000 tonnes 1,4-dichlorobenzene equiv to ecosystem ecotoxicity levels, and over 22 billion m^3 and 21 Mt oil equiv to water and fossil fuel depletion, respectively. A typical cigarette was shown to have a water footprint of 3.7 L, a climate change contribution of 14 g CO_2 equiv, and a fossil fuel depletion contribution of 3.5 g oil equiv. Tobacco competes with essential commodities for resources and places significant pressures on the health of our planet and its most vulnerable inhabitants. Increased awareness, as well as better monitoring and assessment of the environmental issues associated with tobacco, should support the current efforts to reduce global tobacco use as an important element of sustainable development.

World Health Organization. Tobacco and its environmental impact: an overview. Geneva: World Health Organization; 2017

Filters don’t even work

According to the World Health Organization cigarette filters have “no benefit in preventing the adverse health effects of smoking.” The overwhelming majority of independent research agrees.

According to a 1958 internal memo, Philip Morris scientists recognized that “selective filtration of harmful compounds in cigarette smoke was…a thermodynamic impossibility.”

Tobacco Product Waste in California: A White Paper. California Department of Public Health, February, 2022.

O’Keefe AE. Selective filtration. September 16, 1958. Philip Morris records; Master Settlement Agreement. Available: https://www.industrydocuments.ucsf.edu/docs/hhpb0122

Big Tobacco takes no responsibility

The tobacco industry externalizes their costs, forcing the physical and financial burden of tobacco waste onto government agencies and volunteer organizations.

Significant financial burden

The Center for Tobacco and the Environment at San Diego State University has created a model that communities can use with local data to estimate how much tobacco waste costs their area.

Example: Proportional Estimation, California Cities

Large California Cities (2020 IJERPH paper)

- Proportional estimation approach using commonly available data from largest U.S. cities
- Estimate cost of TPW based fixed 25% parameter
- LA: **$19,703,611**
- San Diego: **$7,066,021**
- San Jose: **$3,908,981**
- San Fran: **$4,195,867**

Santa Cruz

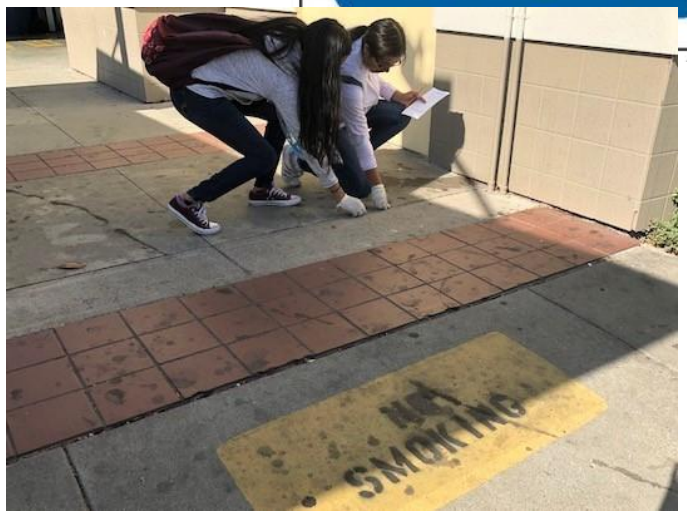
- Santa Cruz provided data on costs of all litter mitigation
- Estimate cost of TPW based fixed 25.3% parameter (average of 3 studies)
- Result: **$2,067,654**

https://cte-dev.sdsu.edu/tobacco-product-waste-economic-model/

Current efforts rely on “downstream” solutions

- Garbage cans
- No smoking signs
- Education campaigns
- Litter enforcement

Focus on Individual Behavior Change



Versus “upstream” policy options

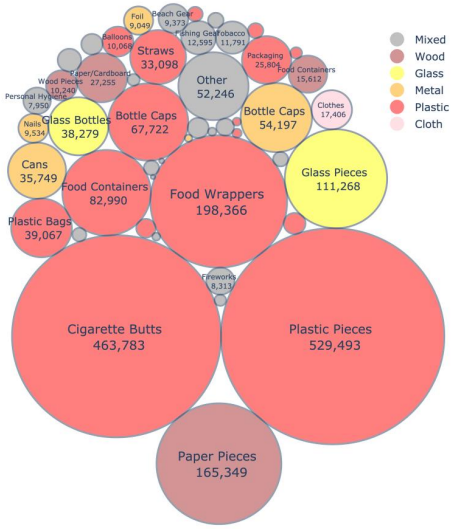
- Tobacco retail license ordinances
- Tobacco product sales bans
- Smoke-free outdoor air policies

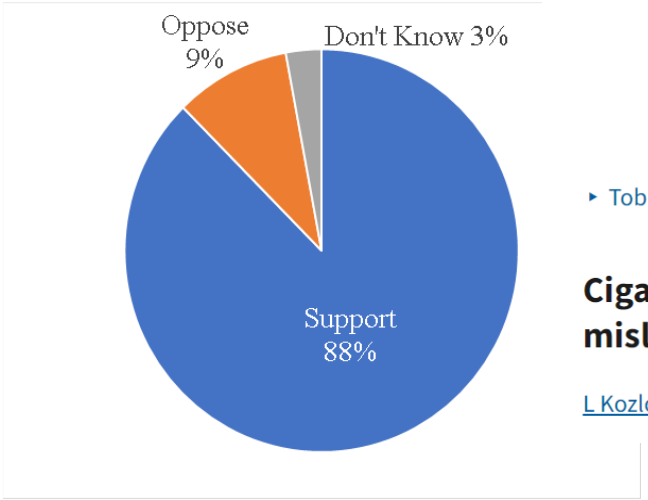
Focus on policy, environment, and systems-level change

TEP began TPW education in 2017

Cleanups across the county

A data- and science-driven approach





Tobacco Control

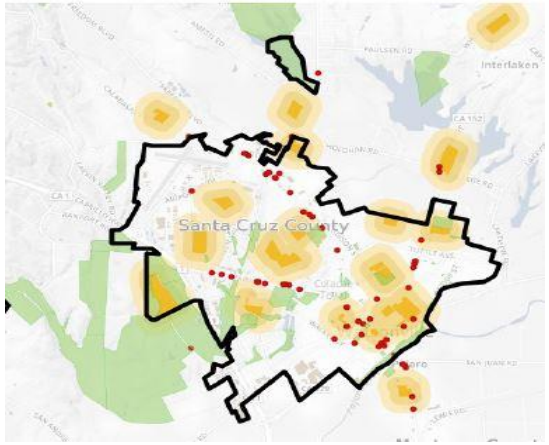
Visit this Journal BMJ

▸ Tob Control. 2002 Mar;11(Suppl 1):i40–i50. doi: 10.1136/tc.11.suppl_1.i40

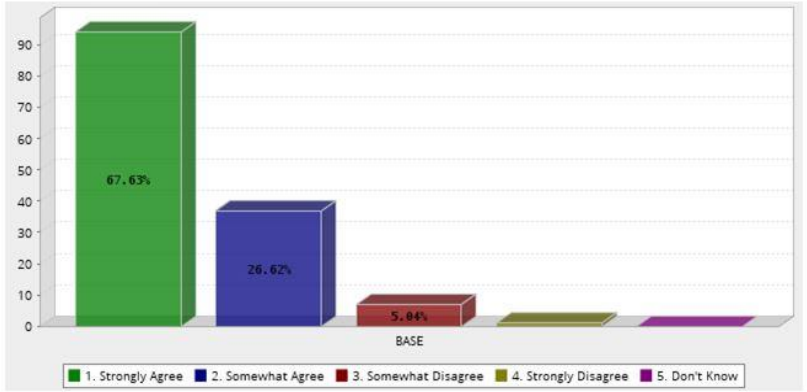
Cigarette filter ventilation is a defective design because of misleading taste, bigger puffs, and blocked vents

L Kozlowski, R O'Connor

Watsonville Tobacco Retailers CCHAT



Q2. Cigarette butts and other tobacco litter are a problem in your community.



Office of National Marine Sanctuaries
National Oceanic and Atmospheric Administration
MONTEREY BAY NATIONAL MARINE SANCTUARY

MARINE DEBRIS ON SANCTUARY SHORELINES

An assessment of activities contributing to marine debris, categories and composition, spatial distribution, and predictor variables.

All marine debris comes from people and can threaten wildlife. It can enter waterways and the ocean from land through littering, poor waste management practices, storm water discharge, and extreme natural events.

DATA ANALYZED

5 CITIZEN SCIENCE data sets

4,725 SURVEY POINTS

7 HUMAN ACTIVITIES

41 debris categories

RESULTS

3 activities contributed to 95% of marine debris

VARIOUS* 42.5%

27.9% EATING and DRINKING

SMOKING 24.5%

* Items not attributed to a specific human activity because they were small unidentified plastic, glass, or metal fragments or could have originated from multiple activities.

PLASTIC FRAGMENTS, CIGARETTE BUTTS, and WRAPPERS contributed to 59% of marine debris categories by count.

SURVEY SPAN

276 shoreline miles divided into 9 mile segments

5 year period from 2017-2021

COLLECTED BY 37,000 volunteers

Paid and earned media spread the message

No Easy Solution For Cigarette Butts On The Beach

KAZU | By Erika Mahoney
Published August 30, 2018 at 3:00 AM PDT

▶ LISTEN • 3:54

The Butt Stops Here: Reducing Cigarette Waste-PW080

July 22, 2018 | By planetwatch
Filed in: Climate Change Tags: cigarette butts, ocean pollution

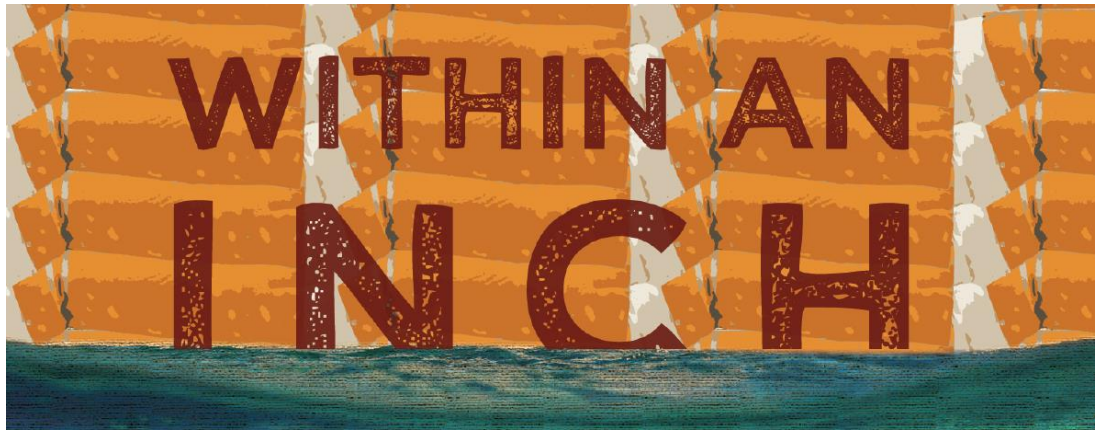
00:00 00:00

Podcast: Play in new window | Download (Duration: 53:41 — 49.2MB) | Embed

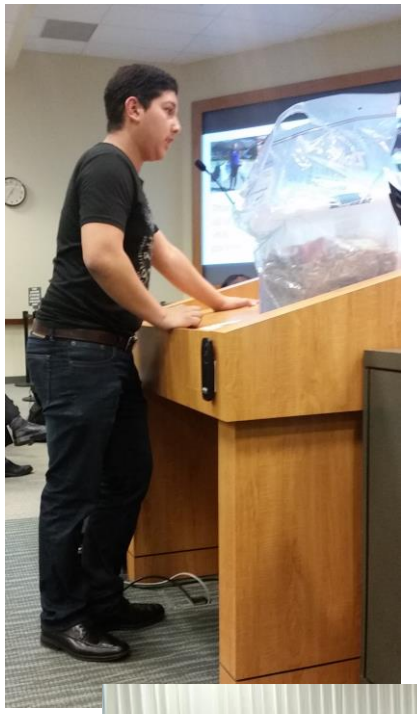
Subscribe: Apple Podcasts | Google Podcasts | Stitcher | Email | RSS | More

In 2015 ,the Ocean Conservancy's annual coastal cleanup found a total of 2,127,666 cigarette butts, over twice as many as the next most common form of litter. About half of these cigarette butts were picked up in the U.S., showing that while the problem is global, much of it is concentrated in the U.S..

Rachel Kippen is the



Public policy meetings early and often



Tobacco product waste (TPW) resolutions

By 2024 all five county jurisdictions passed resolutions recognizing tobacco waste as a public health and environmental threat:

- City of Santa Cruz, 2021
- City of Watsonville, 2021
- County of Santa Cruz, 2023
- City of Capitola, 2023
- City of Scotts Valley, 2024

The Board of Supervisors' resolution

Serving the Community | Working for the Future
COUNTY OF SANTA CRUZ

Passed on May 16, 2023 the BOS resolution:

1. Focused on tobacco butts
2. Created a TPW ad hoc committee to study policy options
3. Specified a deadline of **January 2025** for returning to the Board with a policy recommendation
4. Committed to contacting the other four jurisdictions urging collaborative action

Ad hoc committee 5/23 to 10/24

- Engaged community leaders, non-profit partners, youth, environmental advocates, and members of the public
- Held education and outreach events including a meeting with County tobacco retailers
- Assessed the latest data on tobacco waste and its environmental and health impacts
- Evaluated a variety of policy approaches
- Worked with County Counsel to develop policy language

Broad community support

- Breathe California
- The Cigarette Surfboard
- Fishwise
- Monterey Bay National Marine Sanctuary Foundation & Advisory Council
- Ocean Conservancy
- Pajaro Valley Prevention and Student Assistance
- Santa Cruz County Tobacco Education Coalition
- Save Our Shores
- Save the Waves
- Surfrider
- Trash Talkers
- And many more…

BREATHE CALIFORNIA of the Bay Area, Golden Gate, and Central Coast

FISHWISE

Santa Cruz County TOBACCO EDUCATION COALITION

MONTEREY BAY NATIONAL MARINE SANCTUARY

Ocean Conservancy

THE CIGARETTE SURFBOARD

SAVE THE WAVES COALITION

SAVE OUR SHORES

PAJARO VALLEY PREVENTION and student assistance, inc.

The County's product definition language

Partially Inconsumable Cigarette

Any cigarette containing an embedded component or part commonly referred to or marketed as a filter that is not intended to be consumed, whether it is made of any material including, but not limited to, plastic, cellulose acetate, other fibrous plastic material, or any other inorganic, organic, or biodegradable material.

Partially Inconsumable Cigar

Any cigar containing an embedded component or part commonly referred to or marketed as a filter that is not intended to be consumed, whether it is made of any material including, but not limited to, plastic, cellulose acetate, other fibrous plastic material, or any other inorganic, organic, or biodegradable material.

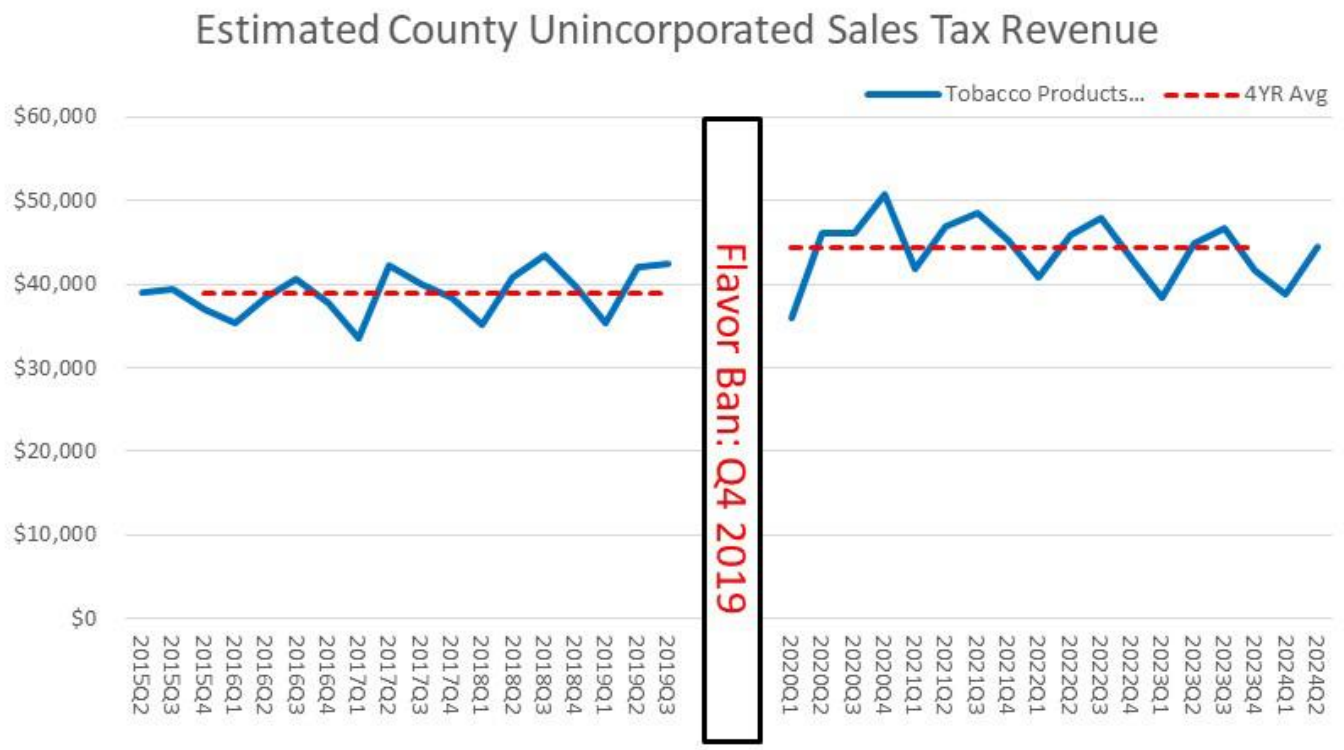
Impact on County sales tax revenue

The County's flavored tobacco sales ban led to a brief 3.1% decline in sales tax revenue over the initial six months, followed by ***double-digit increases*** as consumer behavior adjusted.

The County has 76 tobacco retailers.

The City of Capitola has 11.

- 5 gas stations
- 4 liquor stores
- 1 pharmacy
- 1 market



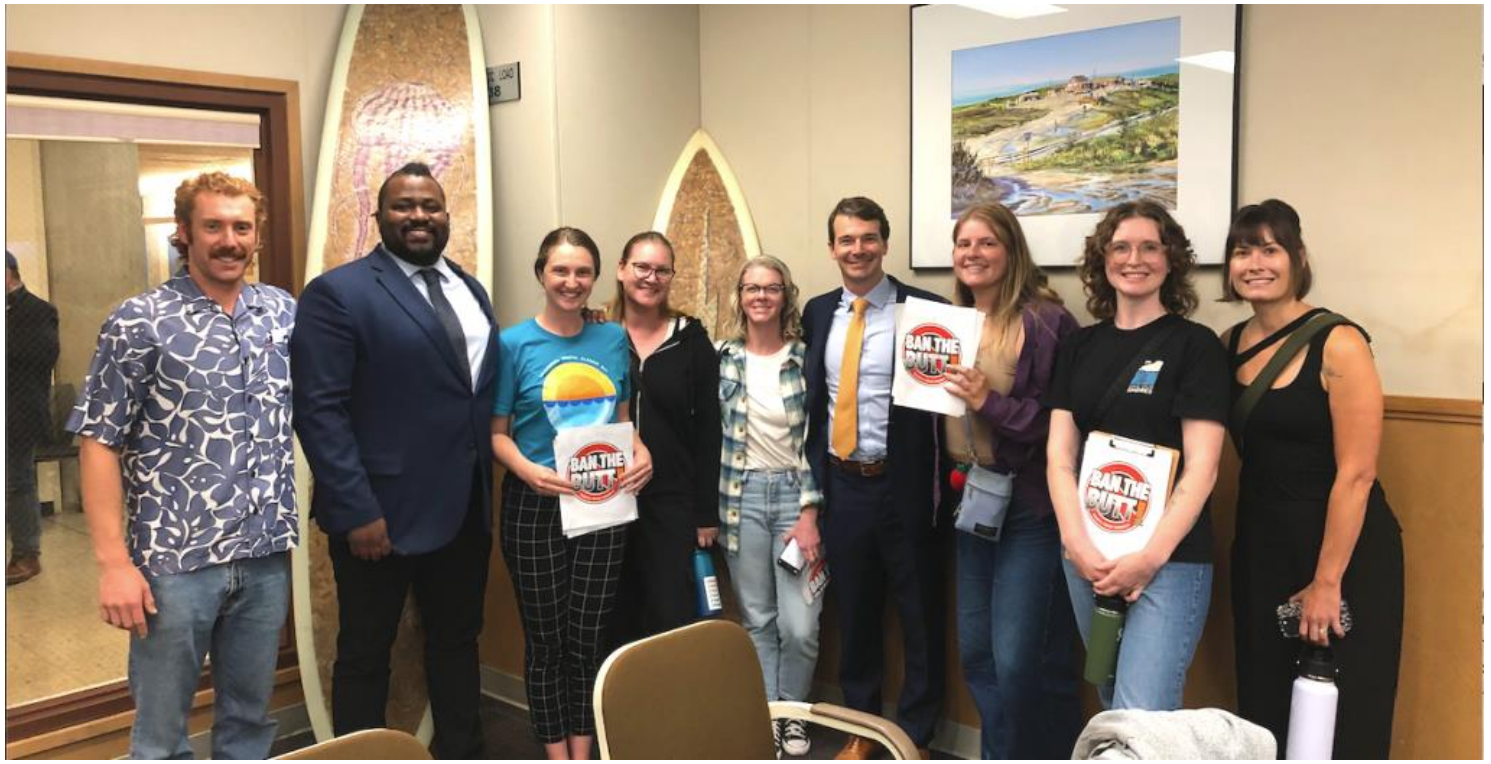
Won’t smokers get these products online?

NO. Assembly Bill 3218 went into effect on January 1, 2025.

Any provisions in a local tobacco retail licensing ordinance will automatically apply with equal force to online and delivery sales.

Policy success!

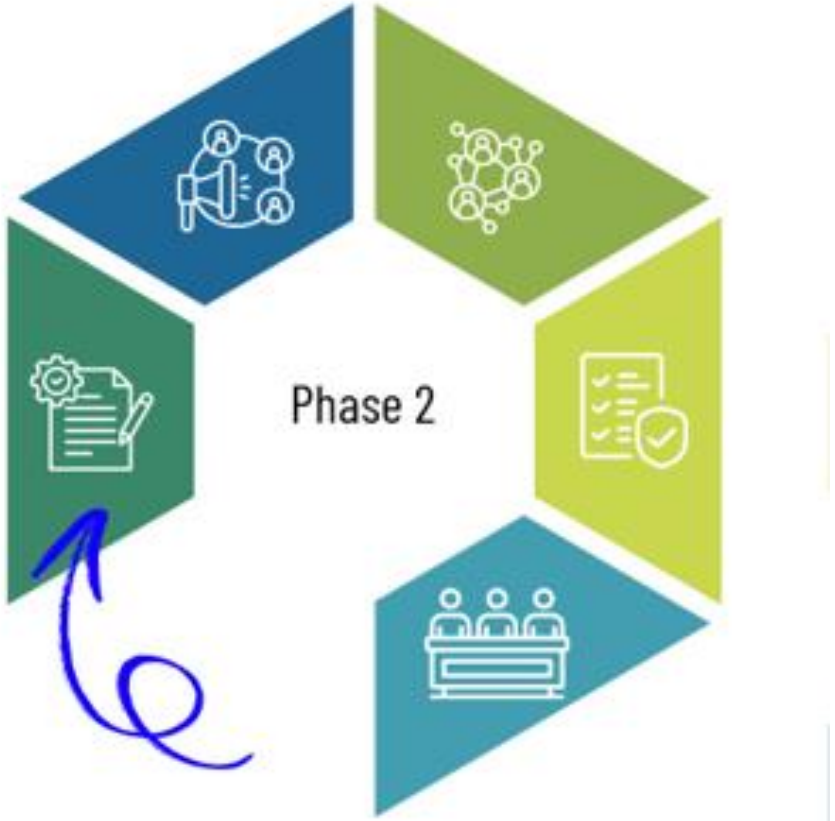
On October 8, 2024, the Santa Cruz County Board of Supervisors voted unanimously to ban the sale of filtered tobacco products.



“Enforcement…shall begin on January 1, 2027 or on a date that two additional jurisdictions in the County approve a similar ordinance, whichever date is later.”

The City of Santa Cruz

The City of Santa Cruz is addressing this issue through its Health in All Policies (HiAP) subcommittee. In April, they will host a tobacco retailers' meeting. The item is tentatively agendized for the full council on June 10.



Questions?

Thank You

Capitola Commission on the Environment
Agenda Report

Meeting: March 19, 2025

From: Public Works Department

Topic: Regular Meeting Schedule

Recommended Action: Approve the Commission's 2025 regular meeting schedule.

Background: As stated in the Commission's bylaws (Attachment 1), regular meetings of the Commission on the Environment (COE) will be held on a monthly basis. The COE meets on the third Wednesday of each month at 6pm in the Community Room at City Hall. In-person attendance is required at COE meetings and no remote access will be provided.

Discussion: Staff prepared the following draft regular meeting schedule for 2025 for review and approval by the Commission:

2025 COE Regular Meeting Schedule
Wednesday, April 16 (6pm)
Wednesday, May 21 (6pm)
Wednesday, June 18 (6pm)
Wednesday, July 16 (6pm)
Wednesday, August 20 (6pm)
Wednesday, September 17 (6pm)
Wednesday, October 15 (6pm)
Wednesday, November 19 (6pm)
Wednesday, December 17 (6pm)

Report Prepared By: Erika Senyk, Environmental Projects Manager

Attachments:

1. COE Bylaws

RESOLUTION NO. 4373

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CAPITOLA REPEALING RESOLUTION NO. 3967 AND ADOPTING REVISED COMMISSION ON THE ENVIRONMENT BYLAWS

WHEREAS, The City of Capitola benefits substantially from numerous and significant environmental resources, some of which include Soquel Creek, the ocean and Capitola Beach, and associated riparian and sensitive habitat areas; and

WHEREAS, protection and enhancement of these environmental resources maintains and enhances a quality of life in the City of Capitola that is beneficial to all; and

WHEREAS, the City Council of the City of Capitola desires to receive advice and recommendations on matters of an environmental concern from a special commission comprised of dedicated individuals with expertise in ecological and resource protection issues; and

WHEREAS, the City Council established the Commission on the Environment on January 13, 2005, by adopting Resolution No. 3424. Since the formation of the Commission on the Environment, the Commission's Bylaws have been amended by Resolutions 3610, 3696, 3779, and 3967.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Capitola that Resolution No. 3967 is hereby repealed in its entirety and the Commission on the Environment Bylaws are replaced to read as set forth in Exhibit A, attached hereto and incorporated by reference.

I HEREBY CERTIFY that the above and foregoing resolution was passed and adopted by the City Council of the City of Capitola at its regular meeting held on the 23rd day of May, 2024, by the following vote:

AYES:	CLARKE, MORGAN, PEDERSEN, BROOKS
NOES:	NONE
ABSENT:	BROWN
ABSTAIN:	NONE

DocuSigned by:
Yvette Brooks
D94288B8BCC4481...

Yvette Brooks, Vice Mayor

ATTEST:

DocuSigned by:
Julia Gautho
4DF9B5A4452E43B...

Julia Gautho, City Clerk

EXHIBIT A

COMMISSION ON THE ENVIRONMENT
BYLAWS

Section 1. The Commission shall be called the City of Capitola Commission on the Environment (COE) and is hereby established by adoption of City Council Resolution No. 3424.

Section 2. The purpose of the COE is to provide advice and recommendations to the City Council on policy and funding matters relating to sustainability, environmental protection, climate action plan implementation and resource enhancement which benefit the City of Capitola, and which are not under the jurisdictions of existing committees or commissions. The COE will also, from time to time, consider any such matters referred to it by the City Council or the City Manager.

Section 3. The COE shall be comprised of five members, consisting of one City Council member and one appointee from each of the remaining four City Council members. The COE may, at their discretion, appoint non-voting ex officio members such as student participants.

Section 4. The COE members may be City residents or non-residents.

Section 5. Regular meetings of the COE will be held on a monthly basis.

Section 6. The City will provide staff support to the COE as assigned by the City Manager. The assigned staff will be primarily responsible for assisting the COE with the preparation of agendas and minutes, compilation of material for discussion at meetings and follow-up as necessary.

Capitola Commission on the Environment

Agenda Report

Meeting: March 19, 2025

From: Public Works Department

Topic: 2025 COE Workplan

Recommended Action: Discuss and approve a list of COE goals for calendar year 2025.

Background/Discussion: At the beginning of each calendar year, the Commission on the Environment discusses and approves a workplan or list of goals for the Commission to address by the end of that calendar year. The workplan is submitted to City Council for review and approval, and City Council may request additional information from the COE prior to workplan approval.

In July of 2024, the City Council approved the following workplan for the COE. The goals were ranked in order of priority for the COE to accomplish, with number one being the highest priority. Due to time limitations, goal number four was not visited by the Commission during 2024.

Commission on the Environment 2024 Workplan

1. Support the update of the City's Climate Action Plan goals at COE meetings.
2. Pursue projects related to Soquel Creek and Noble Gulch maintenance and identify funding opportunities.
3. Improve enforcement of regulations prohibiting the use of plastic straws and plastic pollution.
4. Investigate a White Roof Rebate Program that incentivizes residents and business owners to reduce energy usage.

New members for the Commission on the Environment were sworn in at the February 19th, 2025 COE Meeting, and the Commission is to review the 2024 workplan and discuss potential new goals or initiatives for the remainder of calendar year 2025.

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