

EXECUTIVE SUMMARY

The Impact of Tobacco Product Waste in Pacific Beach on the Wetlands of Northern Mission Bay

Part 1: Tobacco Product Waste in the Pacific Beach Drainage Area

Negative Impacts of Tobacco Product Waste (TPW)

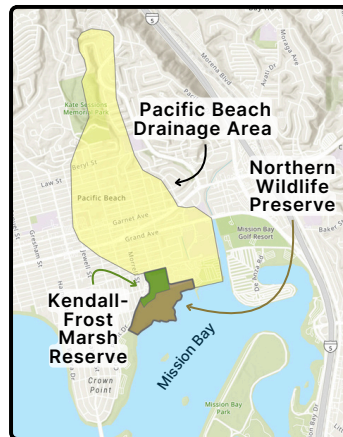
Tobacco product waste (TPW) is the discarded material from commercial tobacco consumption. It contains mostly cigarette butts, but it also includes cigar butts, cigarillos, tobacco packaging, e-cigarette parts, nicotine pouches, and multi-use items.^{1,2} Littered TPW has significant environmental impacts. Most importantly, cigarette butts break apart into **microplastics** and release **heavy metals, carcinogens, and nicotine** into soil and water.^{3,4,5} A single butt has the potential to contaminate approximately 1000 liters

of water with pollutants.⁸⁻¹² In a 2011 study, one butt in a liter of water was lethal for half of the fish exposed.¹³

TPW also imposes a **significant financial burden on local governments**, which pay for street sweeping, storm drain maintenance, and cigarette butt receptacles. On a global scale, cigarette butts are the most littered item with 4.5 trillion discarded in the environment annually. In San Diego County, a 2025 study estimated that some 200 million cigarette butts are discarded annually in the eight largest cities alone.¹

How TPW Discarded in Pacific Beach Neighborhoods Affects the Wetlands

Mission Bay is home to sensitive coastal plants, fish, birds, and other wildlife. It serves as an important location for birds, including endangered species.⁷ The beaches and waters of Mission Bay surrounding the wetlands are popular recreational areas for San Diego residents and visitors.



Stormwater drainage from the Pacific Beach neighborhood to the north flows into the wetlands and Mission Bay. During heavy rains, TPW and other litter discarded on sidewalks and streets are carried through the storm drains into the wetlands. 40 acres of protected wetlands are jointly owned and managed by the University of CA, San Diego Natural Reserve System (UCSD NRS) and the City of San Diego. UCSD manages the 16-acre Kendall-Frost Marsh Reserve, and the City of San Diego manages the remaining wetlands, including the Northern Wildlife Preserve and Stribley Marsh.

Evidence for Policymakers to Consider

In a previous study conducted from 2019-2022, San Diego State University researchers discovered pollutants from tobacco products (i.e., nicotine and cotinine) in the Reserve. The source of these pollutants was unknown, possibly coming from users of Mission Bay or from TPW discarded in Pacific Beach neighborhoods that drain into the Reserve.⁶

Policy Center researchers collected TPW near 29 storm drains within the study area on five occasions between December 2024 and March 2025.

- **In December 2024, approximately 1,400 cigarette butts were found** along the streets near the 29 storm drains.

- 87% of the TPW was cigarette butts.
- Approximately **80 new cigarette butts are discarded every day** near the 29 storm drains.

A first observational survey established a baseline, then all TPW was removed in the next 4 surveys. The findings are clear: **cleanups offer immediate but very temporary relief.**

- Within 2 days, 10% of TPW returns.
- Within 7 days, 30% of TPW returns.
- Within 2 weeks, 50% of TPW returns.
- **Within 8 weeks, more than 90% returns.**

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