



Commercial single-use plastic water bottle ban sought on Cape

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Posted Dec 16, 2019 at 5:43 PM

Updated Dec 17, 2019 at 7:59 AM

Organizers of a successful municipal single-use plastic water bottle ban hope to extend the ban to commercial sales at Cape Cod retail stores.

BREWSTER — Madhavi Venkatesan has reason to be optimistic.

In less than a year, her organization, Sustainable Practices, shepherded a municipal single-use plastic water bottle ban through 11 of the Cape's 15 towns. And Venkatesan, an assistant professor of economics at Northeastern University who serves as executive director of the organization, believes Truro, Barnstable, Mashpee and Bourne also will sign on by spring.

Building on that success, Venkatesan hopes to have a petition article on the annual town meeting warrant of every Cape town this spring to extend that ban to commercial sales of single-use plastic water bottles at retail stores.

"The municipal ban was a great first step," said Christine Kircun, of Falmouth, who is one of 15 volunteers at Sustainable Practices who speaks on behalf of initiatives in their individual towns. "I feel like this spring is a perfect time to keep moving forward with that energy."

Kircun said that in the process of campaigning for the municipal bill, she frequently encountered people who asked why they hadn't also gone for a townwide ban.

Sustainable Practices volunteer Mary Cote of Sandwich said the municipal bottle ban raised people's consciousness about their own choices.

"It has people thinking and finding ways on their own to do without plastic bottles," she said.

“Fifteen-hundred-plus plastic water bottles are consumed per second in the United States. We consume 60% of the single-use plastic bottles in the world,” Venkatesan said.

Plastics and bottled water were not always fixtures in the American home. But 40 years of marketing the convenience of bottled water and its role as a healthier alternative to municipal tap water have made a significant impact.

With the exception of 2008 and 2009, bottled water sales have grown every year since 1977, and in 2016, sales of bottled water surpassed sales of soda for the first time, which is why international soft drink corporations such as Coca-Cola, Pepsi and Nestle have bottled water brands.

Cote said concern about the quality of tap water was the single largest reason cited for bottled water use during the municipal ban campaign. But Venkatesan pointed out that, unlike bottled water, municipal water is routinely tested and the results are published for the community to see. If there is an issue with town water, she said, residents can go to town meeting and legislate improvements.

In a report published this past spring, Consumer Reports, which was pressing for more industry regulation, found that 11 brands of bottled water out of 130 they tested contained detectable levels of arsenic. One had levels of 17 parts per billion, well above the established federal limit of 10 parts per billion. Not all the companies agreed to a recall, the report noted.

“We buy something that pollutes (plastic water bottles) and on top of that you don’t know what’s in it,” Venkatesan said.

Annual plastic production has exploded in the past 40 years from just 1.5 million metric tons in 1977 to 359 million metric tons in 2018, according to PlasticsEurope. That is nearly equivalent to the weight of the entire human population, a United Nations report concluded.

Plastics production is projected to double by 2034, according to a 2014 World Economic Forum report. Half of that production is for single-use products like plastic water bottles, while recycling rates for these items was estimated at just 27% in the US.

“Planned obsolescence is in every single product we use and convenience-based consumption is the epitome of that,” Venkatesan said. “It is planned for just a moment’s use. It’s pure genius from the standpoint of the corporation

that wants to make quick money.”

But throwaway culture has environmental consequences we are just now beginning to deal with.

A United Nations report for World Environment Day 2018 said that 60% of the 8.3 billion metric tons of plastic produced since the 1950s either ended up in a landfill or was released into the environment. A 2015 study led by University of Georgia researcher and environmental engineer Jenna Jambeck found that only 9% of the total plastic produced was recycled, and that 8 million metric tons of plastic waste enters the world's oceans every year.

The World Economic Forum recently projected that by 2050, the weight of plastics in the ocean will surpass the weight of all the fish. Plastic doesn't decompose into compounds that can be reused by plants and animals, but degrades into smaller and smaller units known as microplastics. While marine animals like sea turtles literally choke on the visible stuff, most of the plastic in the ocean either hangs just below the surface in a translucent curtain of tiny particles or settles to the ocean floor.

Researchers with the Center for Coastal Study have found microplastic in plankton and all the way up the food chain to humans. Although scientists are unsure about what impact this has on human health, studies have shown links to disruptions at the cellular level including possible disruption of stomach bacteria and the immune system.

Venkatesan does not think that recycling and waste-to-energy efforts are going to stem the flow of plastics entering our oceans. The ideal recycling goal is a closed loop system in which new plastic products are created mainly from recycled product. In the case of plastic bottles at least, Venkatesan said that new plastic must be manufactured to combine with recycled product to account for density variability.

More than half the plastic produced since 1950 was discarded after a single use and not recycled. Meanwhile, the recycled plastics market was upended in 2017 when China, which at one point handled over half of the world's recycled plastic, decided to stop accepting shipments because their rivers were clogged with discarded plastic. Just 12% of plastic gets burned to produce energy.

Venkatesan's experience as a teacher has given her some hope, as her students are more attuned to the interconnection between their life and the world around them. But increased urbanization has also cut them off from the environment and surrounded them with things that are man-made.

Cote was encouraged by the hundreds of Sandwich High School students who signed a petition to remove plastic water bottles from the school.

"People should have a sense of urgency," Venkatesan said, but she said they should also see that their actions go beyond their lifetime.

"We have the opportunity to change the behavioral norms of the next generation, (so that) they automatically start off with an understanding of the balance between human systems and environmental systems," she said.

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