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The State of the Plastic Bottle



By [Gemma Alexander](#)

© JAN 26, 2022 [bioplastics](#), [plastic pollution](#), [recycled](#)

[plastic](#)



In the 1954 movie "Sabrina," Linus Larrabee declares that the future of business is plastics and attempts to marry his brother off to the daughter of a sugar cane planter to gain control of the feedstock. The movie got one thing right – plastics did take over the world. Today it is almost impossible to imagine life without the cheap, versatile material. But Humphrey Bogart's character was wrong about sugar cane. The plastic that came to dominate manufacturing was made from fossil fuels while bioplastics never went anywhere. Until now.

After decades of using plastic to make nearly everything, the drawbacks of the material are too serious to overlook. Not only

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Yes

Maybe

No

No opinion

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is plastic made from petroleum, with its attendant climate impacts, it is hard to recycle and does not biodegrade. As a result, [8 million tons](#) of plastic make their way to the oceans each year. It [harms wildlife](#) and breaks down into [microplastics](#) that work their way into the food chain. Now even some of the biggest [plastic polluters](#) are working to develop bioplastic packaging alternatives to eventually replace their PET bottles, and taking steps to ensure that more plastic containers are recycled in the meantime.

Bioplastics

The chemistry of plastics is complicated, and so is the [vocabulary](#). But the bioplastics that environmentalists get excited about are plastics that are made from biological (rather than petrochemical) sources and that will biodegrade. There are some very creative methods for making bioplastics – including [shrimp shells](#) – but most of the time plant starches are the source material. Scientists are working to [develop more efficient plant strains](#) to build plastic, but businesses are not waiting for the results. Many large beverage manufacturers are moving forward with their own bio-based plastic initiatives.

Suntory

The company that makes the Japanese whiskey Yamazaki and the American Jim Beam, as well as Sauza tequila, Orangina soda, and numerous teas and bottled water, Suntory is the latest company to [announce progress](#) in plastic packaging. Their prototype PET bottle is made entirely from plant-based materials. Using technology developed by American company Anellotech, they transform wood chips and molasses into the two types of plastic that are blended to make the bottle. It is a bio-based process for manufacturing PET. So the resulting bottle is not biodegradable but is fully recyclable. Suntory plans to use the new bottles for the Orangina and Suntory Tennensui mineral water brands. They aim to eliminate all petroleum-based virgin plastic from their global operations to use [100% sustainable PET bottles by 2030](#).

Coca-Cola

Coca-Cola is the [world's biggest](#) plastic polluter, but they are working to replace petroleum-based plastics. Coke introduced 30% plant-based PET PlantBottles in 2015. Now, like Suntory, Coca-Cola produced its own first [100% bio-based PET bottles](#) in 2021. The recyclable, plant-based bottles are ready to produce at scale, and Coca-Cola intends to use eliminate 3

Bedding



million tons of virgin oil-based plastics by 2025. It has pledged to collect as much plastic as it produces by 2030; to make 100% of its packaging recyclable; and to make 50% of its packaging from recycled material.

PepsiCo and Nestlé

The French biotech company Carbios works towards a circular plastic economy on the recycling side. In 2021, they announced the success of an [enzymatic recycling process](#). It breaks down PET so efficiently that it can be infinitely recycled without the addition of virgin materials. Backed by PepsiCo and Nestlé (the world's second and fourth biggest plastic polluters) and by Suntory, Carbios is building a demonstration plant to prove the process works at scale. By 2025, they anticipate recycling 40,000 tons of plastic into new containers annually.

Keurig Dr. Pepper

Keurig Dr. Pepper is not developing new technologies. Rather, they are making the most of the recycling options available now. Some of their products are already bottled in recycled plastic in certain markets. In 2021, they switched to [100% recycled plastic bottles](#) for their Core Hydration brand and for 16-ounce Snapple. Converting these two brands to recycled bottles will eliminate approximately 47.5 million pounds of virgin plastic annually. The company used 2% post-consumer plastic in 2020 but still has far to go to reach its goal of 25% recycled plastic by 2025.



The oceans are filled with tons of plastic waste. It won't biodegrade, but it will break down into microplastics, polluting the water, endangering wildlife, and contaminating the food chain.

The Best Plastic Bottle

After several years of [bad recycling news](#), it is heartening to see major companies creating a market for post-consumer plastics. Bio-based plastics reduce our dependence on fossil fuels and can [reduce greenhouse gas emissions](#) (up to 70%) and other environmental impacts. However, they are [not a panacea](#). Not all bio-based plastics are biodegradable or compostable. They can generate more pollutants than oil-based plastics and have negative impacts on land use. Bio-based bottles may be a step in the right direction. But the best plastic bottle is still the one you don't use.

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Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing [here](#).

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