

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

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NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

BOTH SIDES

DEF: Single-Use Plastics (ex. Fossil Fuels)

S: According to... *National Resource Defense Council, January 9, 2020*

<https://www.nrdc.org/stories/single-use-plastics-101/>

It states... Put simply, single-use plastics are goods that are made primarily from fossil fuel–based chemicals (petrochemicals) and are meant to be disposed of right after use—often, in mere minutes. Single-use plastics are most commonly used for packaging and service ware, such as bottles, wrappers, straws, and bags.

This means... it would not be legal to make any single-use product that has been made from fossil fuel chemicals, so only non-petrochemical products would be allowed.

DEF (PRO/CON): Definition of Single-Use Plastics

S: According to... *the Environmental Center, University of Colorado Boulder, February 25, 2021*

<https://www.colorado.edu/center/2021/02/25/climate-impact-single-use-plastics>

Q: It states...

What is Single-Use Plastic? Single-use plastics are pieces of plastic that are made to be thrown out. These plastics prioritize convenience over durability and repeated use, making them a prime culprit behind our throw-away society. Worldwide over 300 million tons of plastic is produced every single year, half of this is single-use plastics. Plastics do not fully decompose and instead just continually break down into smaller and smaller pieces called microplastics. These microplastics pose a huge risk to wildlife and are extremely difficult to clean up. Examples of single-use plastic include water and soda bottles, plastic grocery bags, product packaging, straws, coffee cups, and single-use plastic baggies.

DEF (PRO/CON): Examples of Single-Use Plastics (Ban Necessary)

S: According to... *the UN Environment Program, Last Accessed: December 2023*

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Cigarette butts — whose filters contain tiny plastic fibers — are the most common type of plastic waste found in the environment. Food wrappers, plastic bottles, plastic bottle caps, plastic grocery bags, plastic straws, and stirrers are the next most common items. Many of us use these products every day, without even thinking about where they might end up.

PRO/CON: Need for Awareness & Responsibility

S: According to... *Frontiers in Marine Science, December 11, 2023*

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

There is also a need for greater public awareness and engagement on the issue of plastic pollution in marine ecosystems. This could involve campaigns to reduce the use of single-use plastics, as well as educational programs in schools and universities. It is important to engage people from all walks of life, from consumers to businesses, in order to create a widespread culture of responsible plastic use (Skoric et al., 2022). Ultimately, the key to addressing the plastic threat to marine ecosystems is a multifaceted approach that involves cooperation between governments, industry, and individuals.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

PRO: BANNING SINGLE-USE PLASTICS

EFFECTIVENESS (PRO)

PRO: Solution Requires Reduction of Unnecessary Single-Use Plastics

S: According to... National Geographic, October 19, 2023

<https://education.nationalgeographic.org/resource/worlds-plastic-pollution-crisis-explained/>

Q: It states...

The solution is to prevent plastic waste from entering rivers and seas in the first place, many scientists and conservationists—including the National Geographic Society—say. This could be accomplished with improved waste management systems and recycling, better product design that takes into account the short life of disposable packaging, and reduction in manufacturing of unnecessary single-use plastics.

PRO: Ban Dramatically Reduces Plastic Waste

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

A complete ban would not be enough to end the plastic scourge, but it's a start. A new tool developed by the University of California Santa Barbara, UC Berkeley, and the Benioff Ocean Initiative shows that a 90% reduction of single-use plastics would remove some 286 million metric tons of ocean pollution by 2050—the equivalent in water bottles stacked end-to-end would cover the distance to the sun and back nearly six times. (Marc and Lynn Benioff, who support the Benioff Ocean Science Laboratory at UC Santa Barbara, also own TIME Magazine).

PRO: CA's Ban = Significant Reduction (Predicted)

S: According to... National Geographic, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

The new law aims to accomplish several big things at once. Most significantly, it requires a 25 percent reduction of plastics in single-use products in California by 2032—a first in regulatory efforts in the U.S. to restrain the growth in plastic manufacturing, which globally is forecast to triple by mid-century to 32 million tons a year. The reduction can be achieved by shrinking the size of packaging and shifting to refillable containers or packaging made from other materials, such as recyclable paper or aluminum. By the Ocean Conservancy's calculations, those packaging reductions would eliminate nearly 23 million tons of single-use plastics over the next decade. Californians throw away about 4.5 million tons of plastics yearly, according to CalRecycle, the state's waste management agency.

PRO: CA Model Typically Adopted by Manufacturers

S: According to... National Geographic, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

The new law is expected to prompt change in the plastics industry far beyond California's borders. As the most populous state and the world's fifth largest economy, California influences markets in ways that other states can't. Auto manufacturers, for example, agreed to follow California's fuel emissions standards, which are stricter than federal standards. In plastics, experts predict that product packaging lines, for example, will be adapted to California's standards no matter where the products are sold.

PRO: 40% Plastics Production is Single-Use

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Like most single-use packaging, the stickers are not easily recycled. Those that don't end up in landfill collect in the environment, and then often end up clogging up our rivers and oceans. According to the United Nations Environment Program, nearly a garbage truck and a half's worth of plastic ends up in rivers, lakes, and oceans every minute. Eventually those plastics break down into micro and nano plastic particles that poison our air, the water we drink, and our bloodstream. Approximately 40% of all plastic produced is designed for single-use purposes, and little of it is easily recycled. Like the PLU sticker, it is used just once and then thrown away. Yet the long-term consequences are enormous: The production of plastic, 98% of which is sourced from fossil fuels, is the cause of some 10% of all global greenhouse-gas emissions.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (PRO): CONTINUED...

PRO: Making Producers Responsible for Waste

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

Finally, it transfers the cost of recycling to the industry from municipalities and their taxpayers. The practice, known as extended producer responsibility, (EPR) has been in use in the European Union (EU) since the 1990s, and is credited with boosting higher recycling rates in western Europe, which hover around 40 percent.

PRO: Plastic Production Overwhelms Global Systems

S: According to... *National Geographic*, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Plastic pollution has become one of the most pressing environmental issues, as rapidly increasing production of disposable plastic products overwhelms the world's ability to deal with them. Plastic pollution is most visible in developing Asian and African nations, where garbage collection systems are often inefficient or nonexistent. But the developed world, especially in countries with low recycling rates, also has trouble properly collecting discarded plastics. Plastic trash has become so ubiquitous it has prompted efforts to write a global treaty negotiated by the United Nations.

PRO: Half of All Plastics are Single-Use (ex. Trillions of Bags per year)

S: According to... *the UN Environment Program*, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states... Around the world, one million plastic bottles are purchased every minute, while up to five trillion plastic bags are used worldwide every year. In total, half of all plastic produced is designed for single-use purposes – used just once and then thrown away.

PRO: Prevention is Vital to Managing Plastic Waste

S: According to... *National Geographic*, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

The solution is to prevent plastic waste from entering rivers and seas in the first place, many scientists and conservationists—including the National Geographic Society—say. This could be accomplished with improved waste management systems and recycling, better product design that takes into account the short life of disposable packaging, and reduction in manufacturing of unnecessary single-use plastics.

PRO: Systemic Changes are Needed (ex. 9% Recycling / \$120B Cost to Sort/Process)

S: According to... *the UN Environment Program*, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Systemic change is needed to stop the flow of plastic waste ending up in the environment. Of the seven billion tonnes of plastic waste generated globally so far, less than 10 per cent has been recycled. Millions of tonnes of plastic waste are lost to the environment, or sometimes shipped thousands of kilometres to destinations where it is mostly burned or dumped. The estimated annual loss in the value of plastic packaging waste during sorting and processing alone is US\$ 80-120 billion.

PRO: 36% of Plastic Waste from Single-Use

S: According to... *the United Nations Environment Program*, June 5, 2023

<https://www.un.org/africarenewal/magazine/may-2023/understanding-plastic-pollution-and-its-impact-lives>

Q: It states...

Where is all this plastic coming from? The packaging sector is the largest generator of single-use plastic waste -in the world. Approximately 36 per cent of all plastics produced are used in packaging. This includes single-use plastic food and beverage containers, 85 per cent of which end up in landfills or as mismanaged waste.

PRO: Turn Off the Supply and THEN Clean up the Mess (ex. Bathtub is Overflowing!)

S: According to... *PBS.org*, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states...

"When your bathtub is overflowing, you don't run for a mop before you turn off the faucet. Recycling is the mop. We need to first turn off the faucet." Jacqueline Savitz, chief policy officer at Oceana.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (PRO): CONTINUED...

PRO: Incentivize Companies to Shift from Single-Use

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

There are also has a number of actions that the plastic industry can take to accelerate this systematic change: They can eliminate problematic or unnecessary plastic packaging or products by redesigning products for enhanced sustainability and innovating their business models to move from single use to reusable plastic products. They should provide reliable and transparent sustainability information so consumers can make informed purchases. They can also increase the use of recycled content in new products in order to circulate plastic in the economy.

PRO: Government Action is Key - Ban is Recommended

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Governments are key actors in the plastics value chain and there are several things that they can do: Firstly, they can eliminate the plastic products we do not need, through bans for example. Governments can also promote innovation so the plastics we need are designed and brought into the economy in a way that allows for their reuse. Governments also need to ensure we circulate plastic in the economy for as long as possible.

PRO: Clean Seas Program = Spreading Awareness (& Encouraging Action)

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

In February 2017, UN Environment Programme launched the Clean Seas campaign, with the aim of engaging governments, the general public, civil society, and the private sector in the fight against marine litter and plastic pollution. The Campaign is part of the UNEP's broader work on marine litter and plastic pollution and supports the goals of the Global Partnership on Marine Litter and of the Global Commitment to the New Plastics Economy to raise awareness and drive innovation and change towards unnecessary and problematic plastics.

PRO: Reducing Waste is Necessary

S: According to... PBS.org, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states...

Solutions: Reduction versus recycling. A meager 9% of all the plastic waste ever generated has been recycled. This is an inadequate solution to the massive crisis. Reduction of plastic is needed. "The plastics industry is now pushing 'chemical recycling' as the solution to the plastic pollution crisis. Rather than being the solution, this is a dirty process that uses heat to turn chemicals into fuel, chemicals, or more plastic, and creates toxic emissions, accelerates climate change, and harms nearby communities," Leavitt said.

PRO: Bans are Effective (ex. Rwanda)

S: According to... Harvard University, 2018

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:42004017>

Q: It states...

Only a handful of countries have managed to significantly reduce plastic bag consumption following the enactment of a ban. These include Rwanda, Eritrea and Morocco. Rwanda has been particularly successful in implementing an outright ban on all types of plastic bags. In fact, since the entry into force of this ban, Rwanda has become one of the cleanest countries in the world. Its capital, Kigali, has been named Africa's cleanest city by the United Nations. The World Travel Guide also classifies Kigali as the third greenest destination in the world (Ekoualla, C., 2016). Reduction in plastic bag use in the country has greatly contributed to these titles. The success of the ban has been attributed to both strong enforcement and assistance – the combination of measures such as plastic bag confiscation at airports and country borders, the tracking down of trafficking networks as well as the distribution of more environmentally friendly alternatives. When it comes to bans, combining them with strong enforcement as well as availability of alternatives seems to increase the success of the regulation.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (PRO): *CONTINUED...*

PRO: Businesses and Customers are Working Together

S: According to... *PBS.org*, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states... Bans on single-use plastics, including bags, foam food ware, and straws have been implemented in various cities and states across the country. Businesses are offering plastic-free options and providing refillable and reusable alternatives to single-use. And individuals are making choices on a daily basis to stop their use of single-use plastics. "For young people, one thing that they can do is work to change the policies around single-use plastics at their high school or at their college. That is a great place to make change as well," Leavitt said.

PRO: Plastic Production Increases Plastic Waste

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

4.1 Plastic production and ocean pollution: Plastic production has reached an all-time high, with over 360 million tons of plastic produced globally in 2018. We also found that global plastic production was 459.75 million metric tons in 2019 (Geyer et al., 2017). This high production rate has led to an increase in plastic pollution, with millions of tons of plastic waste being dumped into the oceans each year. According to Jambeck et al. (2015), up to 13 million tons of plastic waste enters the oceans each year, threatening marine ecosystems and human health.

PRO: Bans Play Crucial Role in Waste Reduction (ex. EU ban of SUP)

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Governments and industry play a crucial role in reducing plastic waste. Many countries have implemented policies to ban or reduce the use of single-use plastics, such as plastic bags and straws. For example, in 2019, the European Union implemented a ban on single-use plastics, including straws, cutlery, and cotton buds (Commission, E, 2019). Similarly, many companies have made commitments to reduce their plastic waste, such as using more recycled materials and designing products for reusability. Individuals can also make a difference in reducing plastic waste. Simple actions, such as using a reusable water bottle, bringing a reusable bag to the grocery store, and avoiding single-use plastics, can have a significant impact on reducing plastic waste. Education and awareness campaigns can also help to encourage individuals to adopt more sustainable practices.

PRO: Bans Effective in Reducing Waste

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Bans on single-use plastics have been implemented in many countries and cities worldwide, and they have shown to be effective in reducing plastic waste. A study conducted in San Francisco found that the ban on plastic bags reduced the usage of plastic bags by 72% (Hoorweg et al., 2013). Product redesign is another strategy that can reduce plastic waste. For example, Coca-Cola has introduced a plant-based bottle made from sugarcane that can reduce the company's reliance on fossil fuel-based plastics (Coca-Cola, 2019). Recycling programs are also effective in reducing plastic waste. In Australia, the National Recycling Scheme has led to the collection and recycling of 2.7 million tonnes of plastic waste (National Plastics Plan, 2021).

PRO: Improved Efficiency in Recycling (ex. EU Ban Improved Efficiency)

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

We do our best to recycle plastics when we have to use them, and the plastics industry has been working hard to close the recycling loop. Out of the 3,147,000 tonnes of PET bottles and containers which entered the European market in 2016, some 1,880,900 tonnes were collected – an equivalent of nearly 60%. Of this, 1,773,200 tonnes was mechanically recycled. Plastics can be unavoidable when you're looking for a sturdy material that can support heavy loads. Thankfully, many shipping materials and tools that are made from 100% recycled plastics have become more widely available, ranging from drums to spill control pallets.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (PRO): CONTINUED...

PRO: Reducing Demand and Forcing Innovation

S: According to... National Resource Natural Resources Defense Council, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101>

Q: It states... What do the bans accomplish? They prevent millions of tons of plastic from entering the waste stream each year. And when it comes to waste that lasts forever, every ton counts. In New York, 23 billion plastic bags are used by residents each year. Not only does banning single-use plastic reduce pollution, but it also reduces demand for plastic production that's contributing to global climate change. But beyond these impacts, the bans have cultural effects. Companies are forced to innovate, rethinking their designs and sourcing sustainable materials. And they help shift consumer mind-sets, as people begin to recognize that exorbitant and avoidable waste is not sustainable. This means... banning single-use plastics will reduce waste, reduce demand, and force a shift to more sustainable alternatives.

PRO: Reducing Demand and Forcing Innovation

S: According to... National Resource Natural Resources Defense Council, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101>

Q: It states... Some companies are taking initiative on their own. McDonald's swapped its plastic straws for paper at its United Kingdom and Ireland restaurants. Disney is eliminating single-use plastic straws and stirrers at all its theme parks, resorts and properties. And Starbucks, which uses an estimated one billion plastic straws per year, is phasing them out in favor of paper ones. These actions are a response to calls for change and shifting consumer habits. This means... banning single-use plastics will not suffer from a lack of alternatives as large companies have already successfully made the shift and as such there is a marketplace for alternatives that is already in place. We did not see massive price gouging, layoffs, or any of the predictions from our opponents from any of these locations.

PRO: California Ban Has 85% Reduction

S: According to... National Resource Defense Council, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101/>

It states... Plastic is putting a strain on waste management systems, our oceans, and vulnerable communities the world over. **A wave of single-use plastic bans is sweeping the country and the globe**—most often on plastic bags, straws, stirrers, and takeout clamshells. (Some places are going so far as to ban single-use plastics entirely; most notably, India intends to go this route by 2022.) Among the U.S. cities to outlaw plastic straws are Malibu, Berkeley, Seattle, and Miami Beach. Plastic bag bans—ideally accompanied by a fee on paper bags—are also catching on. New York State and Hawaii just passed theirs, set to go into effect in 2020, and **California's bag ban, which was passed in 2014, has been shown to have reduced plastic bag usage by 85 percent** (with some customers opting to pay a 10 cent fee for thicker plastic bags) **and has reduced coastal pollution.**

PRO: Bans Prevent Millions of Tons from Entering Waste Stream

S: According to... National Resource Defense Council, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101/>

It states... What do the bans accomplish? They prevent millions of tons of plastic from entering the waste stream each year. **And when it comes to waste that lasts forever, every ton counts.** In New York, 23 billion plastic bags are used by residents each year. **Not only does banning single-use plastic reduce pollution, but it also reduces demand for plastic production that's contributing to global climate change.** But beyond these impacts, the bans have cultural effects. **Companies are forced to innovate,** rethinking their designs and sourcing sustainable materials. And they help shift consumer mind-sets, as people begin to recognize that exorbitant and avoidable waste is not sustainable.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ALTERNATIVES (PRO)

PRO: Alternatives Designed to be Biodegradable & Non-Toxic

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

One of the most promising plastic replacements is polyhydroxyalkanoate, or PHA, which is made by fermenting plant sugars that come from beets, corn, and other vegetable waste, or even biogas from landfill, in a process similar to brewing beer. As with other naturally-occurring polymers like silk or cellulose, PHA products degrade into nontoxic components within months. They can also be shredded, melted, and reformed into new products. Different kinds of bacteria, some naturally occurring, others specifically engineered, are used instead of chemical additives to create properties such as flexibility and transparency.

F: In other words... PHA is a non-plastic alternative, which is made from waste, uses bacteria instead of chemicals, and can biodegrade within a few months. Their waste can also be reformed into new and different products.

C: This means... if we ban single-use plastics, the alternatives are much better for both the environment and health.

PRO: Making Biodegradable Food Containers from Agricultural Byproducts

S: According to... *DW News*, March 9, 2023

<https://www.dw.com/en/turning-agricultural-waste-into-eco-friendly-cups-to-prevent-plastic-pollution-tamil-nadu-engineer/video-63879034>

Q: It states...

Finding alternatives to plastics is key to more efficient resource management. An engineer in Tamil Nadu has developed sustainable food containers that are made from agricultural waste.

C: This means... if we ban single-use plastics, then we have better and more sustainable alternatives available to us.

PRO: Reducing Single-Use is Necessary Step

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

Along with greenhouse gas emissions and food waste, plastics are undoubtedly the biggest polluters and environmental problems we face on the planet right now. The first step to help reduce the current rate of plastic pollution is to stop relying on single-use plastics. Every day, hundreds of millions of single-use containers, cans, trays, and cutlery are thrown away around the world. Here are five plastic alternatives for packaging you can opt for in your everyday life.

F: In other words... plastics, especially single-use plastics are creating hundreds of millions of garbage that is causing the biggest harms to the environment. There are plastic alternatives for packaging and the rest that people can use.

C: This means... if we ban single-use plastics, we can force a shift away from plastic products to non-plastic alternatives, which are better for the environment.

PRO: Alternatives are Biodegradable and Compostable

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

Materials like bagasse – a dry fibrous material left from sugarcane after juice extraction – have become increasingly common to replace single-use plastic tableware and utensils. Unlike plastics, this alternative material is biodegradable and compostable. Bagasse are malleable and can easily be manipulated into packaging ideal for food delivery and takeaway services. And since it's a byproduct of sugarcane production, it is also relatively more sustainable to produce. Similarly, Saltwater Brewery in the US has developed a compostable material for six-pack rings – which have been known to strangle marine animals when they enter the ocean – made from barley and wheat remnants.

PRO: Alternatives to Deadly Six-Pack Rings

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

Materials like bagasse – a dry fibrous material left from sugarcane after juice extraction – have become increasingly common to replace single-use plastic tableware and utensils. Unlike plastics, this alternative material is biodegradable and compostable. Bagasse are malleable and can easily be manipulated into packaging ideal for food delivery and takeaway services. And since it's a byproduct of sugarcane production, it is also relatively more sustainable to produce. Similarly, Saltwater Brewery in the US has developed a compostable material for six-pack rings – which have been known to strangle marine animals when they enter the ocean – made from barley and wheat remnants.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ALTERNATIVES (PRO): CONTINUED...

PRO: Water-Resistant Paper Products

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

It's only natural to think paper and water don't mix well and will result in a soggy mess. But a shower-friendly and water resistant paper material has been introduced in 2018 as a way to replace your shower and shampoo bottles. Hair and skincare company Seed Phytonutrients from beauty giant L'Oreal has launched bottles that are made out of recycled paper on the outside, with a recycled plastic lining on the inside. The result is a bottle with 60 percent less plastic than an average shampoo bottle. More and more companies have since joined the bandwagon in adopting paper bottles for their liquid products.

PRO: Plant-Based Products

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

Also known as bioplastics, plant-based plastics are typically made from cornstarch and bamboo fibers, which are then broken down into polylactic acid. They carry similar properties and sturdiness to traditional plastics, many of which are biodegradable in industrial landfills or home composts, depending on various conditions. Bioplastics could potentially contribute towards a more circular economy and lower environmental impact considering the plants used typically do not require pesticides or chemicals to grow. More bioplastics have been used to make drink bottles – much like the company Innocent, food containers and films.

PRO: Hemp-Based Products

S: According to... *Earth.org*, July 9, 2022

<https://earth.org/5-plastic-alternatives-for-packaging/>

Q: It states...

There's been great progress made in the development of alternatives for plastics. One of the newest innovations to arrive to the scene are hemp plastics. The Hemp Plastic Company is currently developing "a new breed of eco-friendly polymer which offers significant CO2 and other bio-advantages, while using renewable and sustainable resources." Industrial hemp, which is derived from the same species of plant as cannabis (though without any of the same effects), has a lower environmental impact than traditional plastics. Thanks to its high strength and rigidity, hemp plastics are already used in the construction of cars, boats, and even musical instruments.

PRO: Non-Plastic Alternatives to Straws

S: According to... *the World Wildlife Fund*, June 26, 2023

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Plastic free alternatives: If you can, go straw free! Or try stainless steel straws, bamboo straws, pasta straws and rice straws(yes, they're a thing!). For those that like the flexibility of plastic straws, there are other eco-friendly alternatives including paper straws, reusable silicone straws and compostable plant-based straws.

PRO: Non-Plastic Alternatives to Drink Stirrers

S: According to... *the World Wildlife Fund*, June 26, 2023

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Cocktail stirrers are a fun accessory for drinks, but most are made from plastic and only used once before the novelty of them fades and they're thrown away. They end up in the trash, on our beaches and in our oceans. Plastic free alternatives: Reusable glass or bamboo stirrers, or spoons! Or try a stick of celery, carrot or cucumber. Why not go herbal and try a stick of rosemary?

PRO: Non-Plastic Alternatives to Balloons

S: According to... *the World Wildlife Fund*, June 26, 2023

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

What goes up must eventually come down. Helium balloons may be pretty, but they're also deadly. CSIRO research shows they're one of the highest-risk plastic debris items for seabirds. And many balloons labeled as biodegradable simply aren't. Plastic free alternatives: Plan a planet-friendly party and skip the balloons. Opt for more eco-friendly decoration options like paper lanterns, reusable bunting, DIY bubble blowers and flowers.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ALTERNATIVES (PRO): CONTINUED...

PRO: Non-Plastic Alternatives to Cotton Buds

S: According to... *the World Wildlife Fund, June 26, 2023*

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Did you know that 1.5 billion cotton buds are produced everyday? Sadly, many of these cotton buds end up in our oceans. Once the cotton tips dissolve, all that's left is essentially a small, rigid plastic stick which is easily ingested by birds, fish and other marine wildlife. These are already on the way out in Australia, with many states and territories including them in single-use plastic bans. Plastic free alternatives: bamboo cotton buds, organic cotton makeup pads or a reusable silicon swab.

PRO: Non-Plastic Alternatives to Utensils

S: According to... *the World Wildlife Fund, June 26, 2023*

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Eco-friendly alternatives: Next time you order takeaway, make a special request to opt out and say no to disposables. Switch to reusable bamboo utensils, a travel cutlery set that you can take with you wherever you go or bring your own from home! Chopsticks are also a great alternative to have in your bag if you're planning on getting takeaway.

PRO: Non-Plastic Alternatives to Plastic Cups

S: According to... *the World Wildlife Fund, June 26, 2023*

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Plastic free alternatives: Bring your own reusable cup or a mason jar if you're planning a trip to your favourite juice or smoothie shop. You can also help encourage your favourite cafes and food retailers to switch to eco-friendly and compostable alternatives.

PRO: Non-Plastic Alternatives to Plastic Containers

S: According to... *the World Wildlife Fund, June 26, 2023*

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Plastic free alternatives: Choose nature-friendly takeaway! Next time you order takeaway, choose cuisines like pizza or Mexican that don't often come in plastic containers and avoid pre-packaged meals. Most food outlets will happily put the food directly into your own reusable container if you ask. Some options for containers include glass containers, stainless steel lunch boxes and mason jars. You can also shop at bulk food stores and bring your own containers to fill. If you're eating out, why not ask your favourite outlets to switch to compostable and eco-friendly alternatives?

PRO: Non-Plastic Alternatives to Plastic Plates

S: According to... *the World Wildlife Fund, June 26, 2023*

<https://wwf.org.au/blogs/10-worst-single-use-plastics-and-eco-friendly-alternatives/>

Plastic plates might be cheap and handy when hosting parties or at picnics or food courts, but once they're thrown away, they usually end up in landfills. Most recycling centres are unable to sort these plates due to their shape. These are also on the way out in many states and territories, but you can get ahead of the curve by switching to re-usables right now! Plastic free alternatives: Re-usable plastic, glass or porcelain plates. Alternatively, palm leaf or bamboo pulp plates.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CLIMATE (PRO)

PRO: Climate Change Poses Greater Threat Than Nuclear War

S: According to... *Bloomberg News, September 10, 2023*

<https://www.bloomberg.com/news/articles/2023-09-10/biden-says-climate-change-poses-greater-threat-than-nuclear-war>

Q: *It states...* President Joe Biden said the sole threat to humanity's existence is climate change, and that not even nuclear conflict poses a similar danger. "The only existential threat humanity faces, even things more frightening than a nuclear war, is global warming," Biden said Sunday during a news conference in Hanoi, Vietnam. The president added "we're going to be in real trouble" if, in the next decade or two, warming goes above the 1.5C temperature increase that scientists consider a tipping point for increasing the chances of extreme weather events. "There's no way back from that," Biden continued. "And so there's a lot we can do in the meantime."

In other words... no other threat, not even nuclear war, poses as significant danger to humanity's existence.

This means... we must ban single-use plastics in order to reduce the production and disposal of plastics. Failure to do so puts literally billions of lives at risk.

PRO: Driving Force Behind Climate Change

According to... *the Environmental Center, University of Colorado Boulder, February 25, 2021*

<https://www.colorado.edu/ecenter/2021/02/25/climate-impact-single-use-plastics>

It states... Single-use plastics are becoming increasingly prevalent across the world. These plastics most obviously create eyesores and pose a threat to the natural ecosystems they make their way into. However, these plastics are also a driving force behind climate change.

In other words... Single-use plastics not only threaten ecosystems, but also contribute to the threat of climate change.

This means... if we ban single-use plastics, we protect billions of lives because when we reduce production of plastics and reduce the burning of plastic waste, we are significantly reducing the impact of global warming.

PRO: Tremendous Emissions from Plastics Industry

According to... *PBS.org, November 1, 2023*

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

It states... How does the production of plastic contribute to climate change? The production, use, and disposal of plastic creates significant greenhouse gas emissions that cause climate change. Greenhouse gases escape from fossil fuels extracted and refined to make plastic. Fossil fuels are used to make plastic in an energy-intensive process. "When you add together all the greenhouse gas emissions related to plastic, they are greater than the emissions of every single country except for the U.S., China, India and Russia ... If plastic were a country, it would be the fifth largest emitter of greenhouse gases in the world," Leavitt said.

In other words... The production and disposal of plastic and its waste create significant amounts of greenhouse gasses. If the plastic industry was a country, it would rank 5th in the world for greenhouse gas emissions.

This means... banning single-use plastics could make a tremendous reduction of the greenhouse gasses, which threaten our very existence; all current and future life depends on reducing such gasses.

PRO: Plastic Production Causing +10% of GHG

S: According to... *TIME Magazine, November 28, 2023*

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: *It states...*

Like most single-use packaging, the stickers are not easily recycled. Those that don't end up in landfill collect in the environment, and then often end up clogging up our rivers and oceans. According to the United Nations Environment Program, nearly a garbage truck and a half's worth of plastic ends up in rivers, lakes, and oceans every minute. Eventually those plastics break down into micro and nano plastic particles that poison our air, the water we drink, and our bloodstream. Approximately 40% of all plastic produced is designed for single-use purposes, and little of it is easily recycled. Like the PLU sticker, it is used just once and then thrown away. Yet the long-term consequences are enormous: The production of plastic, 98% of which is sourced from fossil fuels, is the cause of some 10% of all global greenhouse-gas emissions.

PRO: Substantial GHG Associated with Plastics

S: According to... *the UN Environment Program, Last Accessed: December 2023*

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Additionally, some 98 per cent of single-use plastic products are produced from fossil fuel, or "virgin" feedstock. The level of greenhouse gas emissions associated with the production, use and disposal of conventional fossil fuel-based plastics is forecast to grow to 19 per cent of the global carbon budget by 2040.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CLIMATE (PRO): CONTINUED...

PRO: Creating Huge Amounts of GHG (ex. Production)

S: According to... the Environmental Center, University of Colorado Boulder, February 25, 2021

<https://www.colorado.edu/ecenter/2021/02/25/climate-impact-single-use-plastics>

Q: It states...

How is Single-Use Plastic Production Contributing to Climate Change? Because single-use plastic is produced from fossil fuels, the process of extracting and creating these plastics emits huge amounts of greenhouse gases. It is estimated that just the extraction of these fossil fuels and their transportation to plastic factories emits 12.5 to 1.5 million metric tons of greenhouse gases.

PRO: Limiting Carbon Removal from Air (ex. Deforestation)

S: According to... the Environmental Center, University of Colorado Boulder, February 25, 2021

<https://www.colorado.edu/ecenter/2021/02/25/climate-impact-single-use-plastics>

Q: It states...

How is Single-Use Plastic Production Contributing to Climate Change? The removal of forested land for oil extraction and pipeline construction has also resulted in over 1.6 billion metric tons of carbon dioxide being released into the atmosphere. This land clearing also limits the amount of carbon dioxide removed from the atmosphere.

PRO: Increasing Carbon and Methane Emissions (ex. Emissions from Refinement/Landfills)

S: According to... the Environmental Center, University of Colorado Boulder, February 25, 2021

<https://www.colorado.edu/ecenter/2021/02/25/climate-impact-single-use-plastics>

Q: It states...

How is Single-Use Plastic Production Contributing to Climate Change? The refinement of plastics emits an additional 184 to 213 million metric tons of greenhouse gases each year. Landfills, where thrown out single-use plastics are sent, account for over 15% of methane emissions. The disposal of more plastics to landfills leads to increases in landfill size and these emissions.

PRO: Disrupting Carbon Sequestration in the Ocean

According to... PBS.org, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states...

Plastic in the oceans may also interfere with the ocean's capacity to absorb and sequester carbon dioxide, thus creating another pathway through which plastic pollution contributes to and accelerates climate change. Microplastics concentrate on the very thin surface layer of the ocean. Dr. Warner said, "The oceans have been taking up 30 to 50% of all of this carbon dioxide that we've emitted. So, if we disrupt the ability of the ocean to do this, it will just make climate change that much worse."

PRO: Global Warming Poses Cataclysmic Impact

S: According to... MIT Climate Portal, MIT, Last Updated: November 7, 2023

<https://climate.mit.edu/ask-mit/why-do-some-people-call-climate-change-existential-threat>

Q: It states...

Kieran Setiya, an MIT professor of philosophy who co-teaches a course on the ethics of climate change, offers a basic and a more nuanced definition. First: In the worst-case scenarios in scientists' climate models, human-caused climate change is a threat to the continued existence of many species and to human society as we know it. If humans do nothing to slow climate change, then global temperatures may increase by 4.5 degrees Celsius or more by the year 2100.¹ This may not sound like much, Setiya says, but "it is quite cataclysmic." Earth has not been that warm in millions of years, and such temperature spikes in our planet's history are connected to mass extinction events that killed off a large percentage of species that existed at the time.²

PRO: Climate Changes Poses and "Existential Threat"

S: According to... MIT Climate Portal, MIT, Last Updated: November 7, 2023

<https://climate.mit.edu/ask-mit/why-do-some-people-call-climate-change-existential-threat>

Q: It states...

In recent years, not only climate scientists but also major world leaders—including the U.S. Secretary of Defense, major American presidential candidates, and the United Nations secretary general—have labeled climate change an "existential threat." But what does an "existential threat" really mean, and why are so many people in positions of responsibility now echoing this phrase?

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CLIMATE (PRO): CONTINUED...

PRO: Worsening Climate Threatens Democracy and Justice

S: According to... MIT Climate Portal, MIT, Last Updated: November 7, 2023

<https://climate.mit.edu/ask-mit/why-do-some-people-call-climate-change-existential-threat>

Q: It states...

How the human species responds to this crisis, Setiya says, will not only guide our future but also reveal much about our nature. Climate change could worsen worrying trends such as anti-democracy uprisings and migrant crises as people flee areas that are increasingly hit by natural disasters that will be exacerbated by climate change—rising sea levels, more frequent powerful hurricanes, and droughts that threaten freshwater supplies, for example. “The question of what happens to the human species,” he says, “is, do we make progress toward a more just and egalitarian future? Or do we end up descending into conflict and sectarianism and nationalism? That is at stake in our reaction to climate change. At stake, in turn, is how we should feel about our own existence as a species. The answer depends very much on whether we respond to crises like this with grace and compassion and justice, or not.”

PRO: Contributing to the Climate Crisis

S: According to... the United Nations Environment Program, June 5, 2023

<https://www.un.org/africarenewal/magazine/may-2023/understanding-plastic-pollution-and-its-impact-lives>

Q: It states...

Is pollution the only problem with plastic? No, it also contributes to the climate crisis. The production of plastic is one of the most energy-intensive manufacturing processes in the world. The material is made from fossil fuels such as crude oil, which are transformed via heat and other additives into a polymer. In 2019, plastics generated 1.8 billion metric tonnes of greenhouse gas emissions – 3.4 per cent of the global total.

PRO: Plastic Production Increases Methane and Contamination

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

The environmental harms associated with petroleum and natural gas production are too extensive to be recounted here.⁴⁷ The United States has become the world’s top producer and exporter of natural gas, however, and hydraulic fracking supplies an increasing percentage of the raw materials for plastic production.⁴⁸ As fracking has become more prevalent, associated risks have grown more apparent, from methane emissions to groundwater contamination.⁴⁹

PRO: Petrochemicals Exceed Coal Industry on Climate Change

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Petrochemical facilities, which convert petroleum and natural gas into plastic precursor chemicals, generate significant air and water pollution.⁵² Most petrochemical plants and refineries in the United States are located along the Mississippi River in Louisiana, an area known as “Cancer Alley.”⁵³ Barring significant change, petrochemical industry pollution may increase given the enormous growth in plastics. The magnitude of this growth is illustrated by the fact that since 2019, at least 42 U.S. plastics facilities have opened, are under construction, or are in the permitting process, compared to 130 existing plastic facilities and related power plants.⁵⁴ By 2030, the plastic industry’s contribution to climate change is expected to exceed that of the coal industry.⁵⁵

PRO: Fastest-Growing Source of Oil Consumption

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Most plastic is produced from petrochemicals,⁴⁴ which are sourced from petroleum or fracked natural gas. Plastics are said to be the oil industry’s “Plan B” as the supply of alternative energy grows.⁴⁵ Plastic has quickly become the fastest-growing source of oil consumption, and petrochemicals are expected to account for nearly half of the growth in oil demand by 2050.⁴⁶

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CLIMATE (PRO): CONTINUED...

PRO: Incineration Releases Greenhouse Gasses & Toxic Microplastics

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Incineration: Approximately 11–14% of plastics are incinerated, releasing greenhouse gases as well as pollutants such as toxic dioxins and heavy metals.⁷² Recent research suggests incineration does not eliminate plastic polymers: significant amounts of microplastics and heavy metals have been detected in residual incineration.⁷³

PRO: Human Activities Pushing Species to Extinction (ex. Global Warming)

S: According to... *the New York Times*, May 6, 2019

<https://www.nytimes.com/2019/05/06/climate/humans-are-speeding-extinction-and-altering-the-natural-world-at-an-unprecedented-pace.html>

Q: *It states...*

At the same time, a new threat has emerged: Global warming has become a major driver of wildlife decline, the assessment found, by shifting or shrinking the local climates that many mammals, birds, insects, fish and plants evolved to survive in. When combined with the other ways humans are damaging the environment, climate change is now pushing a growing number of species, such as the Bengal tiger, closer to extinction.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITIES (PRO)

PRO: Suffering from Environmental Injustices

According to... *PBS.org*, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

It states... What are the environmental justice implications of plastic? Leavitt emphasized that plastic pollution is an environmental justice issue both in the U.S. and around the world. The U.S. plays a significant role in the global plastic pollution problem. According to a 2022 study, in 2016, the U.S. produced 42 million tons of plastic waste. Leavitt explained that plastic disproportionately affects people living in “fenceline communities,” which according to the Climate Reality Project are people who live directly next to highly polluting facilities, including large manufacturing facilities or fossil fuel infrastructure. These facilities pollute the air, water and soil of the nearby neighborhoods, which oftentimes are historically marginalized neighborhoods with residents of lower incomes, or Black, Latino or Indigenous people.

In other words... Single-use plastics are an environmental justice issue in both the U.S. and for the rest of the world too. Producing and disposing of plastics disproportionately harm “fenceline communities” who are often marginalized people such as low-income families and people of color.

This means... by banning single-use plastics, we can greatly reduce the production and burning of plastic waste, making millions of lives better by reducing the effects of environmental racism and other injustices.

PRO: Sending Plastic Waste to Poorer Countries

According to... *DW News*, January 7, 2020

<https://www.dw.com/en/the-dirty-business-of-plastic-waste/video-49894611>

It states... In many countries, storage and recycling capacities are inadequate. Many prosperous countries send their trash to poorer ones. If it's sorted, some kinds can be recycled. If it's all jumbled together, it often ends up on illegal dumps or is burned.

In other words... many wealthy countries including the United States who does this more than the other countries, are dumping their plastic waste onto the poorer countries; exploiting their poverty. The waste ends up in their landfills instead of ours. Their people breathe the toxic fumes instead of ours.

This means... by not banning single-use plastics, we will generate as much as 40% extra, unnecessary plastic waste, which will ultimately be sent to island nations on their beaches or shipped through the ports so it's no longer our problem.

PRO: U.S. Companies Exploiting Developing Countries

According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

It states... Campaigners said the analysis, which Unearthed shared with the Guardian, shows the US is exploiting developing countries where there is no regulatory framework to ensure plastic waste is processed in an environmentally friendly way. “Instead of taking responsibility for their own waste, US companies are exploiting developing countries that lack the regulation to protect themselves,” said John Hocevar, Oceans campaign director for Greenpeace USA. The waste, some of which consists of household recycling produced in the US, includes single-use plastic bottles, plastic bags and food wrappings, said Hocevar. It can, however, contain toxic materials. “It’s a problem for the US and other developed countries to produce, often, toxic material which they can’t or won’t take care of themselves.”

In other words... the United States is sending its plastic waste from single-use plastics to developing countries by exploiting their lack of regulations and as such worthless and often toxic plastic waste is being forced on them.

This means... if we ban single-use plastic, we can reduce the amount of plastic waste we send to other countries and it will at least have value to them from being recycled without forcing them to burn it or overwhelm their landfills.

PRO: Reducing Unnecessary Waste is an Environmental Justice Issue

S: According to... *PBS.org*, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states...

What are the environmental justice implications of plastic? “Reducing the production of so much unnecessary single-use plastic and plastic pollution is definitely an environmental justice issue, and our governments have the responsibility to protect people, as well as our oceans and the planet,” Leavitt said. But a poll from Oceana released in February of 2023 found that 82% of American voters – including both Democrats and Republicans – support protecting fenceline neighborhoods that are most affected by the pollution from nearby plastic production facilities.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITIES (PRO): CONTINUED...

PRO: U.S. Exporting Plastic Waste to Developing Countries

S: According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

Q: It states...

Exports of plastic waste from the US to developing countries have surged following China's crackdown on foreign waste imports, new research has shown. Nearly half of plastic waste exported from the US for recycling in the first six months of 2018 was shipped to Thailand, Malaysia and Vietnam, according to analysis of US census bureau data by Unearthed, Greenpeace's investigative arm. The previous year, the US sent more than 70% to China and Hong Kong. This year's ban on foreign waste imports by China, previously the world's biggest importer of plastic waste for recycling, has left western countries scrambling to offload its extra plastic waste. The US, along with Britain, Germany, Japan and Mexico, is among the biggest exporters of scrap plastic to China.

PRO: U.S. Dumps Toxic Waste on Other Countries

S: According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

Q: It states...

The waste, some of which consists of household recycling produced in the US, includes single-use plastic bottles, plastic bags and food wrappings, said Hocevar. It can, however, contain toxic materials. "It's a problem for the US and other developed countries to produce, often, toxic material which they can't or won't take care of themselves."

PRO: Disproportionate Impacts from "Back-End" Problems

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

These new synthetic materials, however, created huge environmental problems.⁶ Adverse environmental impacts derive from all phases of the plastics life cycle,⁷ including extraction and transportation of raw materials, such as petroleum and natural gas, and pollution and waste disposal during plastics manufacturing (hereinafter referred to as "front end" problems). Intractable problems also result from the ubiquitous use of plastics and a leaky and inadequate reuse, recycling, and disposal regime (hereinafter referred to as "back-end" problems).⁸ These impacts fall disproportionately on some segments of the United States and global population, while benefits of plastics are distributed widely.⁹

PRO: Dumping Plastic Waste on Developing Nations

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Moreover, because recycling is not a lucrative business, most plastic recyclables from Western nations have historically been shipped to developing countries, most notably China.⁶¹ In 2017, however, China announced that it no longer wanted to be the "world's garbage dump" and stopped accepting the world's plastic recyclables, resulting in buildups of plastic waste in many Western countries.⁶² But the United States has continued sending its plastic to a host of other countries with poor labor and environmental regulations that mismanage most of their own plastic waste.⁶³ Malaysia, Thailand, and Vietnam have more recently taken steps to stem the tide of plastic imports, and now U.S. plastic is increasingly being sent to Cambodia, Laos, and countries in Africa that had previously not handled U.S. plastic.⁶⁴ Since China's 2017 ban, however, only about half of the plastic waste the United States once exported is still being accepted by foreign markets.⁶⁵ U.S. public works facilities are now forced to deal with the waste, which has revealed an uncomfortable truth: it was never possible to recycle most plastic exported for that purpose.⁶⁶ An estimated 20 to 70 percent of plastic exported for recycling is ultimately discarded because it is unusable.⁶⁷ In developing countries, this has caused buildups of plastic waste with resulting environmental and human health concerns.⁶⁸ In the United States, it has resulted in more plastic waste being sent to incinerators and landfills.⁶⁹ Indeed, the U.S. plastic recycling rate peaked at just 9.5% in 2014 (including exported plastics) and decreased to a dismal 5–6% in 2021.⁷⁰ These figures suggest strongly that plastics recycling is not a viable solution to plastic waste and pollution.⁷¹

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITIES (PRO): *CONTINUED...*

PRO: Developing Countries Overwhelmed with Our Plastic Waste

S: According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

Q: It states...

Reports suggest countries in south-east Asia are struggling to process and manage the tide of plastic waste waiting to be processed following the China ban. "As the imports increased, we are seeing these countries starting to react," said Hocevar. "Ultimately, we need to reduce this waste at source."

PRO: Burning Plastics Harms Millions in Low-Income/Minority Communities

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Disposed plastics also lead to inequitable distributions of exposure. Approximately 4.4 million people in the United States are exposed to pollution from the 73 waste incinerators across the country, with 79% located within three miles of low-income and minority neighborhoods.141 U.S. plastic recycling also poses significant environmental and human health hazards in foreign countries. The United States exports more than one million tons of its plastic waste annually.142 Exporting plastic waste leads to an "out of sight and out of mind" mentality for consumers in high-income countries, leading to sustained consumption.143 But for developing countries that import plastic waste, the ramifications of continued plastic consumption are far more apparent. In Cambodia, for example, some villages are so swamped with plastic that residents have raised their homes on stilts to keep them afloat above a sea of plastic.144 People living closer to landfill sites suffer from higher rates of medical conditions including asthma, reoccurring flu, and stomach problems, with participants in one study indicating fear for their health.145

PRO: Disproportionate Health Impacts (ex. Geography, Poverty, & Race)

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Disproportionate Impacts: Plastics pose considerable risks to human health, but not all people are equally at risk. Pregnant women, developing fetuses, and children, for example, are among the populations most susceptible to the hormone-disrupting properties of some plastics and additive chemicals.136 Certain populations are also more exposed to pollution from plastic manufacturing and disposal by virtue of their geography. For example, residents of Cancer Alley in Louisiana have a 50% greater likelihood of developing cancer than the national average.137 Louisiana has the highest concentration of petrochemical facilities in the entire Western Hemisphere.138 People living within three miles of these petrochemical facilities earn 28% less than the average U.S. household and are 67% more likely to be people of color.139 Cancer Alley has had one of the highest death rates from COVID-19, prompting studies which found a strong association between air pollution from the nearby petrochemical facilities and COVID-19 severity.140

PRO: Exporting Waste to Developing Countries

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Disposed plastics also lead to inequitable distributions of exposure. Approximately 4.4 million people in the United States are exposed to pollution from the 73 waste incinerators across the country, with 79% located within three miles of low-income and minority neighborhoods.141 U.S. plastic recycling also poses significant environmental and human health hazards in foreign countries. The United States exports more than one million tons of its plastic waste annually.142 Exporting plastic waste leads to an "out of sight and out of mind" mentality for consumers in high-income countries, leading to sustained consumption.143 But for developing countries that import plastic waste, the ramifications of continued plastic consumption are far more apparent. In Cambodia, for example, some villages are so swamped with plastic that residents have raised their homes on stilts to keep them afloat above a sea of plastic.144 People living closer to landfill sites suffer from higher rates of medical conditions including asthma, reoccurring flu, and stomach problems, with participants in one study indicating fear for their health.145

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITIES (PRO): CONTINUED...

PRO: Medical Plastics are "Small Fraction"

S: According to... National Resource Defense Council, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101/>

It states... There are many uses for plastic that are not only reasonable but important, such as surgical gloves, or straws for people with disabilities. But these cases make up a small fraction of single-use plastic. According to the 2017 study, more than half of non-fiber plastic, which excludes synthetic fabrics like polyester and nylon, comes from plastic packaging alone, much of which is for single-use items.

This means... a ban on single use plastics will not have a large impact on society, and many medical supply companies will shift to non-plastic alternatives.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ECONOMY (PRO)

PRO: Plastic Debris Causes Economic Damage

S: According to... *Marine Pollution Bulletin*, October 1, 2018

<https://doi.org/10.1016/j.marpolbul.2018.10.001>

[Riley E.J. Schnurr, et al, Reducing marine pollution from single-use plastics (SUPs): A review, *Marine Pollution Bulletin*, Volume 137, 2018, Pages 157-171, ISSN 0025-326X,]

It states... Microplastics could also cause human health impacts due to consumption of microplastic contaminated foods, with potential effects mainly associated with toxicity of chemicals that are absorbed from the environment or additives that are used in the plastic materials themselves (UNEP, 2015; GESAMP, 2016; Karbalaeei et al., 2018). Marine plastic pollution has justifiably become an important global issue for citizens, governments, academics, and non-governmental organizations (NGOs) (Seltenrich, 2015). Economic and aesthetic impacts of marine plastic debris are vast and the global estimate of damage to marine ecosystems caused by plastic amounts to at least USD \$13 billion annually from lost tourism revenues due to adverse impacts on recreational activities and navigation (Raynaud, 2014; Borrelle et al., 2017). In the Asia-Pacific region alone plastic debris costs tourism, fishing and shipping industries roughly USD \$1.3 billion annually and in Europe, removal of plastic debris from coastlines costs approximately €630 million each year (UNEP, 2018a).

This means... banning single-use plastics, should reduce billions of dollars that are lost from existing economic harms caused by plastic debris. The U.S. is the world's largest economy, and these costs should be comparable.

PRO: Phasing Out Plastic Waste (& Job Creation)

S: According to... *TIME Magazine*, November 15, 2023

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: It states...

If single-use packaging, such as plastic straws, shopping bags, cutlery, and expanded polystyrene food containers were to be phased out, they could be replaced by less polluting plastic alternatives and reuse systems. Take-out restaurants could serve their food in returnable containers, with a deposit system. Personal hygiene and home products like shampoo, soap, and laundry detergent would come in standardized aluminum bottles instead, making it easier for retailers to refill, reuse, and, if necessary, recycle. Remember those glass soda, milk, and beer bottles? They could make a return as well, along with local systems to collect, wash, and refill them. Maybe it's a little more work on the part of the consumer to return the empties, but it also means jobs at local bottling plants.

PRO: Retailers Saving Money (ex. Costs of Plastic Bags)

S: According to... *the Australia National University Law School*, June 10, 2018

<https://envcomm.act.gov.au/wp-content/uploads/2022/04/ACT-Plastic-bag-ban-options-analysis.pdf>

[Regulating Plastic Shopping Bags in the Australian Capital Territory: Plastic Shopping Bag Ban Act 2010 Options Analysis, Andrew Macintosh, Australia National University Law School, June 10, 2018]

It states... Prior to the introduction of the ban, most ACT retailers did not charge for single-use HDPE bags. Those bags cost retailers in the order of 0.75-1 cents per bag immediately prior to the introduction of the ban and were available free of charge to shoppers. This meant that retailers either absorbed the costs of the bags (by reducing profits) or recovered the costs by imposing higher prices on other products. Since the introduction of the ban, a significant proportion of retailers now charge for plastic bags. Reusable HDPE bags are typically either sold for 10 cents or provided free of charge, single-use biodegradable HDPE bags are generally sold for 5 cents or provided free of charge, reusable LDPE bags typically retail for 15 cents, and reusable polypropylene bags retail for around \$1.¹¹¹ The data available suggest the wholesale prices paid by retailers are approximately 4 cents for reusable (35 µm) HDPE bags, 2 cents for single-use biodegradable HDPE bags, 6-12 cents for reusable LDPE bags, and 70-80 cents for polypropylene bags.¹¹²

This means... Banning single-use plastics will help businesses save money because they can charge a small fee, or encourage their customers to bring their own bags, containers, and utensils. Businesses suffering is empirically denied!

PRO: Retailers Earn Profit from Plastic Bans

S: According to... *the Australia National University Law School*, June 10, 2018

<https://envcomm.act.gov.au/wp-content/uploads/2022/04/ACT-Plastic-bag-ban-options-analysis.pdf>

[Regulating Plastic Shopping Bags in the Australian Capital Territory: Plastic Shopping Bag Ban Act 2010 Options Analysis, Andrew Macintosh, Australia National University Law School, June 10, 2018]

It states... Given these wholesale and retail prices, the increases in retailer profits that are attributable to the plastic bag ban are likely to be small. For example, for single-use HDPE plastic bags, if the plastic bag ban was not introduced, retailers would have spent approximately \$875,000 on plastic bags in 2017-18, yet received no direct revenue from their distribution. With the ban, the aggregate net profit (before tax) to retailers from the sale and distribution of HDPE bags was probably in the order of \$100,000, meaning there has been a net gain to retailers of around \$975,000 relative to the situation if the ban had not been introduced. For reusable LDPE bags, the aggregate net gain to retailers between these two scenarios is likely to be in the order of \$35,000 across the ACT. While small, the evidence suggests retailers are likely to have benefitted financially from the introduction of the ban rather than incurring costs.¹¹³

This means... Ironically, a ban on single-use plastics will help businesses to make more money.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (PRO)

PRO: Environmental Damage Causing Grave Concern

S: According to... *Greenpeace*, September 7, 2023

<https://www.greenpeace.org/aotearoa/story/plastic-pollutions-devastating-impact-on-wildlife/>

Q: *It states...* Plastic pollution's impact on wildlife is a grave concern that demands immediate attention and concerted efforts. The alarming consequences of plastic ingestion, entanglement, habitat degradation, chemical contamination and ecosystem disruption paint a bleak picture of the state of our planet's ecosystems. However, it's not too late to reverse the damage. Using less plastic and making sure to recycle helps. But it isn't enough. We need to stop plastic production at source. We're calling on the government to ban plastic bottles. Join the movement.

F: *In other words...* The impact of plastic pollution on wildlife demands immediate attention and poses alarming consequences for the planet's ecosystems. Animals are suffering and dying, and habitats are being destroyed. Reduce and recycling won't work unless we reduce production.

C: *This means...* when we ban single-use plastics, we reduce the kinds of plastic waste that is destroying precious habitats and killing defenseless animals.

PRO: Reduced Production is Key to Results

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

It states... In the end, what sets the new California plastics law apart is the requirement that reduces plastic production, says George Leonard, the Ocean Conservancy's chief scientist. "It goes to the heart of the question—the growth of plastic production as a driver in environmental change. Is it everything? No. But it's going to bend the curve in a more practical way than anything that came before."

In other words... the chief scientist from Ocean Conservancy says that policies requiring a reduction in plastic production are necessary to address the heart of the problem.

This means... banning single-use plastics will address the root causes of the plastic waste problem destroying many habitats and ecosystems.

PRO: Single-Use Plastics Choking the Oceans

S: According to... *United Nations Africa Renewal*, July 2017

<https://www.un.org/africarenewal/magazine/may-july-2017/plastics-pose-biggest-threat-oceans>

It states... Oceans are choking on plastic junk—millions of tonnes of water bottles, soda bottles, drinking straws and single use plastic bags. Worse still, what we see floating on the surface accounts for only 5% of all the plastic litter that has been dumped into the sea. According to Ocean Conservancy, a US environmental non-profit, the other 95% is beneath the surface, where it strangles underwater creatures and wrecks aquatic ecosystems. 99% of all seabirds will have ingested plastic by 2050 if nothing is done to reverse the trend. "Oceans are now clogged with plastics, especially discarded fishing gear and single-use plastics," Ms. Earle told Africa Renewal in an interview.

In other words... Oceans are clogged with millions of tons of single-use plastic debris, which strangles sea creatures and destroys ecosystems.

This means... we need to ban single-use plastics in order to reduce the amount of plastic waste, which threatens millions of animals and protects habitats from being contaminated.

PRO: Killing Millions of Marine Animals

S: According to... *National Geographic*, October 19, 2023

<https://education.nationalgeographic.org/resource/worlds-plastic-pollution-crisis-explained/>

Q: *It states...*

Millions of animals are killed by plastics every year, from birds to fish to other marine organisms. Nearly 700 species, including endangered ones, are known to have been affected by plastics. Nearly every species of seabird eats plastics.

PRO: Reducing Impact of Harmful Chemicals

S: According to... *TIME Magazine*, November 15, 2023

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: *It states...*

An ambitious proposal would also mean bans on problematic chemical additives used in plastic production that are harmful to human health, such as Bisphenol A and its analogues, which has been linked to impaired brain and prostate development in infants and diabetes and cardiovascular disease in adults. This would make the plastic that we do still use safer. Essential plastic products, like IV bags and other non-reusable medical equipment would still be permitted. Litter would all but disappear.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (PRO): CONTINUED...

PRO: Deadly Impact to Wildlife

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Millions of animals are killed by plastics every year, from birds to fish to other marine organisms. Nearly 700 species, including endangered ones, are known to have been affected by plastics. Nearly every species of seabird eats plastics.

PRO: Animals Suffer and Die

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Most of the deaths to animals are caused by entanglement or starvation. Seals, whales, turtles, and other animals are strangled by abandoned fishing gear or discarded six-pack rings. Microplastics have been found in more than 100 aquatic species, including fish, shrimp, and mussels destined for our dinner plates. In many cases, these tiny bits pass through the digestive system and are expelled without consequence. But plastics have also been found to have blocked digestive tracts or pierced organs, causing death. Stomachs so packed with plastics reduce the urge to eat, causing starvation. Plastics have been consumed by land-based animals, including elephants, hyenas, zebras, tigers, camels, cattle, and other large mammals, in some cases causing death.

PRO: Threats to Biodiversity in the Ocean

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Tests have also confirmed liver and cell damage and disruptions to reproductive systems, prompting some species, such as oysters, to produce fewer eggs. New research shows that larval fish are eating nanofibers in the first days of life, raising new questions about the effects of plastics on fish populations.

PRO: Oceans Projected at Nearly 40 million tons per year (by 2040)

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Rivers and lakes carry plastic waste from deep inland to the sea, making them major contributors to ocean pollution. Despite current efforts, it is estimated that 75 to 199 million tonnes of plastic is currently found in our oceans. Unless we change how we produce, use and dispose of plastic, the amount of plastic waste entering aquatic ecosystems could nearly triple from 9-14 million tonnes per year in 2016 to a projected 23-37 million tonnes per year by 2040. How does it get there? A lot of it comes from the world's rivers, which serve as direct conduits of trash into lakes and the ocean.

PRO: 74% of Mississippi River Pollution is Plastics

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Flowing through America's heartland, the Mississippi River drains 40 per cent of the continental United States – creating a conduit for litter to reach the Gulf of Mexico, and ultimately, the ocean. Data collected through the Mississippi River Plastic Pollution Initiative shows that more than 74 per cent of the litter catalogued in pilot sites along the river is plastic.

PRO: Significant Risk to Human Health

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

Most plastic items never fully disappear; they just break down into smaller and smaller pieces. Those microplastics can enter the human body through inhalation and absorption and accumulate in organs. Microplastics have been found in our lungs, livers, spleens and kidneys, A study recently detected microplastics in the placentas of newborn babies. The full extent of the impact of this on human health is still unknown. There is, however, substantial evidence that plastics-associated chemicals, such as methyl mercury, plasticisers and flame retardants, can enter the body and are linked to health concerns.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (PRO): CONTINUED...

PRO: Stopping Production to Protect Marine Creatures

S: According to... Greenpeace, September 7, 2023

<https://www.greenpeace.org/aotearoa/story/plastic-pollutions-devastating-impact-on-wildlife/>

Q: It states...

It's clear that trying to deal with the endless stream of plastic just isn't working. We need to stop plastic production at its source! From marine ecosystems to terrestrial habitats, the effects of plastic waste on animals are widespread and deeply concerning. One of the most disturbing consequences of plastic pollution is the ingestion of plastic by wildlife. Animals often mistake plastic debris for food, leading to dire consequences. Marine creatures like sea turtles, whales, and seabirds like the toroa (Royal Southern Albatross) may ingest plastic bags, bottle caps, and other plastic fragments. These indigestible materials can cause blockages in their digestive systems, leading to starvation, malnutrition, and even death. Plastic particles can also accumulate toxins over time, posing additional health risks to animals that consume them.

In other words... We must reduce plastic production to reduce the plastic waste that is killing marine animals; they eat the plastic, and many will either starve or possibly choke to death.

This means... banning single-use plastics prevents the deaths of millions of sea creatures and protect vital ecosystems.

PRO: Single-Use Plastic Bags Spreading Diseases

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

In countries with poor solid waste management systems, plastic waste — especially single-use plastic bags — can be found clogging sewers and providing breeding grounds for mosquitoes and pests, and as a result, increasing the transmission of vector-borne diseases such as malaria.

PRO: Threatening Survival of Marine Animals

According to... PBS.org, November 1, 2023

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

Q: It states...

"We know from experiments that plastic could affect their [aquatic animal's] survival, their behavior, metabolism, reproduction. It could make all of these things worse, including the fish that we eat. If fish behavior changes, they can't avoid predators as rapidly and have problems reproducing. There'll be fewer fish," Dr. Warner added.

PRO: Causing Serious Injuries to Animals

S: According to... Greenpeace, September 7, 2023

<https://www.greenpeace.org/aotearoa/story/plastic-pollutions-devastating-impact-on-wildlife/>

Q: It states...

Entanglement and injuries. Discarded fishing nets, plastic ropes, and packaging materials are hazardous to wildlife due to the entanglement they cause. Sea turtles, seals, and seabirds can become trapped in these materials, resulting in injuries, amputations, and a slow and painful death. The physical entanglement disrupts animals' ability to move, hunt, and feed, thereby impacting their overall survival and reproductive success.

PRO: Bans Reduce Plastic Waste Ending Up in the Environment

S: According to... Enhesa, Last Accessed: December 2023

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

Imposing a ban on plastics can entail both positive and negative results. The positive benefits of a ban include the reduction of single-use plastics, resulting in a decrease in plastic that makes its way into the environment. Another advantage is that such bans present an opportunity to shift to more environmentally-friendly alternatives - having affordable alternatives available on the market is key here.

PRO: Significant Harm to Marine Animals

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELLR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Plastic harms fish and wildlife through physical effects (entanglement, ingestion causing digestive blockages) and toxicological impacts from microplastics. The media has documented heart-wrenching pictures and videos of whales, birds, and seals entangled in plastic or killed by ingesting plastic. 103 A total of 557 different species of wildlife are known to have been affected by either entanglement or ingestion of plastic debris. 104

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (PRO): *CONTINUED...*

PRO: Plastic Pollution Weakens Ecosystems

S: According to... *Greenpeace*, September 7, 2023

<https://www.greenpeace.org/aotearoa/story/plastic-pollutions-devastating-impact-on-wildlife/>

Q: It states...

Habitat degradation. Plastic pollution not only directly harms animals but also contributes to habitat degradation. As plastic waste accumulates in ecosystems, it disrupts the natural balance and functioning of habitats. Coral reefs, for instance, are critical marine ecosystems that suffer from plastic pollution. When plastic debris smothers corals, it prevents them from receiving essential sunlight, stifling their growth and weakening the entire ecosystem that relies on them.

PRO: Plastic Waste Mismanagement Harms Oceans

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Disposal: Plastic waste can be discarded in landfills that comply with applicable design and operation standards.⁷⁴ Nearly half of discarded plastics are mismanaged,⁷⁵ however, resulting in littering or leaking from landfills into waterways and the ocean.⁷⁶ Indeed, most plastic in the ocean comes from land-based sources, including plastic that was littered or improperly landfilled (due to coastal operations and litter carried from streams and rivers).⁷⁷

PRO: Plastic Waste Killing Marine Animals (ex. Entangle, choke, & toxic chemicals)

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

The impacts of plastic waste on marine ecosystems are wide-ranging and significant. Plastic waste can entangle and kill marine organisms, and it can be ingested by marine animals, leading to internal injuries and death (Rochman et al., 2013; Gall and Thompson, 2015; Wilcox et al., 2015). Plastic waste can also leach harmful chemicals into marine environments, affecting the health of marine organisms and potentially entering the food chain (Teuten et al., 2009; Andrady, 2011; Geyer et al., 2017). Also, Plastic pollution can alter marine habitats, with impacts on ecosystem functioning. A study published in the journal *Nature* found that plastic pollution can increase the risk of disease transmission in coral reefs (Lamb et al., 2017). The study also found that plastic pollution can alter the microbial community in marine environments, with potential implications for nutrient cycling and carbon storage. The impacts of plastic waste on human health are less well understood, but there is evidence to suggest that microplastics, which are small plastic particles, can accumulate in seafood and other food sources, potentially posing a risk to human health (Rochman et al., 2013; Van Cauwenberghe and Janssen, 2014; Galloway et al., 2017).

F: In other words... [Fact: Paraphrase for clarity].

C: This means... [Opinion: Magnitude of 'impact(s)' from Topic]

PRO: Biodiversity Loss & Extinction Threatens Human Survival

S: According to... *the New York Times*, May 6, 2019

<https://www.nytimes.com/2019/05/06/climate/humans-are-speeding-extinction-and-altering-the-natural-world-at-an-unprecedented-pace.html>

It states... Humans are transforming Earth's natural landscapes so dramatically that as many as one million plant and animal species are now at risk of extinction, posing a dire threat to ecosystems that people all over the world depend on for their survival, a sweeping new United Nations assessment has concluded. The 1,500-page report, compiled by hundreds of international experts and based on thousands of scientific studies, is the most exhaustive look yet at the decline in biodiversity across the globe and the dangers that creates for human civilization. A summary of its findings, which was approved by representatives from the United States and 131 other countries, was released Monday in Paris. The full report is set to be published this year.

In other words... Hundreds of experts from the United Nations have determined that our unsustainable activities risk the extinction of not just ecosystems and animals, but threaten our own survival as well.

This means... banning single-use plastics, significantly reduces risks that are irreversible and are infinite in magnitude. *No other risks can outweigh this impact!*

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (PRO): *CONTINUED...*

PRO: Plastic Waste Alters Marine Habitats

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

The impacts of plastic waste on marine ecosystems are wide-ranging and significant. Plastic waste can entangle and kill marine organisms, and it can be ingested by marine animals, leading to internal injuries and death (Rochman et al., 2013; Gall and Thompson, 2015; Wilcox et al., 2015). Plastic waste can also leach harmful chemicals into marine environments, affecting the health of marine organisms and potentially entering the food chain (Teuten et al., 2009; Andrady, 2011; Geyer et al., 2017). Also, Plastic pollution can alter marine habitats, with impacts on ecosystem functioning. A study published in the journal *Nature* found that plastic pollution can increase the risk of disease transmission in coral reefs (Lamb et al., 2017). The study also found that plastic pollution can alter the microbial community in marine environments, with potential implications for nutrient cycling and carbon storage. The impacts of plastic waste on human health are less well understood, but there is evidence to suggest that microplastics, which are small plastic particles, can accumulate in seafood and other food sources, potentially posing a risk to human health (Rochman et al., 2013; Van Cauwenberghe and Janssen, 2014; Galloway et al., 2017).

PRO: Plastic Waste Damages Ecosystems (ex. Algae & Acid)

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

Plastic pollution can have indirect effects on marine ecosystems, such as altering the physical properties of marine environments. It was found that plastic pollution can reduce the oxygen concentration in marine environments, leading to hypoxia and potentially harmful algal blooms (Breitburg et al., 2018). The study also revealed that plastic pollution can increase the acidity of marine environments, with potential impacts on marine organisms.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

HEALTH (PRO)

PRO: Plastics' Chemicals are Hazardous to Human Health

According to... *PBS.org, November 1, 2023*

<https://www.pbs.org/wnet/peril-and-promise/2023/11/how-single-use-plastics-hurt-our-oceans-and-warm-our-planet/>

It states... How does plastic affect human health, animal health, and the environment – particularly our oceans? Humans are eating, drinking, and breathing microplastics. Scientists are still studying how we might be affected by the plastics that are making their way into our food, water, and air, but what they do know should cause alarm. Dr. Warner highlighted that The United Nations has calculated there are 13,000 chemicals that are used to make plastic. We know that a quarter of those are hazardous to human health. Half of them haven't even been tested yet, so we do not yet know what they do to human health. She explained, "They're trade secrets. They don't have to tell us what chemicals they've added to the plastic that we're using."

In other words... the plastic industry is putting unknown chemicals into the plastics, many of which are hazardous to our health. These chemicals are in our drinking water, in the food we eat, and are even in the air that we breathe.

This means... by banning single-use plastics, we protect the health of millions of people by reducing the amount of pollution and waste that comes from the making and burning of plastics.

PRO: Buildup Reaches Crisis Point

S: According to... *the United Nations Environment Program, June 5, 2023*

<https://www.un.org/africarenewal/magazine/may-2023/understanding-plastic-pollution-and-its-impact-lives>

Q: *It states...* Overall, 46 per cent of plastic waste is landfilled, while 22 per cent is mismanaged and becomes litter. Unlike other materials, plastic does not biodegrade. It can take up to 1,000 years to break down, so when it is discarded, it builds up in the environment until it reaches a crisis point. This pollution chokes marine wildlife, damages soil and poisons groundwater, and can cause serious health impacts.

In other words... plastic waste is reaching a crisis point as it builds up in the environment contaminating our soil and our groundwater leading to serious health impacts.

This means... if we don't ban single-use plastic, then we are putting millions of lives at risk from serious contamination.

PRO: Spreading Harmful and Potentially Deadly Diseases

According to... *The Vanella Group, September 20, 2023*

<https://www.vanellagrouppmn.com/the-environmental-and-health-impacts-of-single-use-plastics-and-what-we-can-do-to-reduce-their-use>

Q: *It states...* What are the health impacts of single-use plastics? In addition to environmental impacts, single-use plastics can also negatively affect human health: Potential to harbor pathogens: Plastic waste can serve as a vector for pathogens like E. coli and Salmonella to spread and persist in the environment. Reusing plastic items runs contamination risks, even with washing. COVID-19 virus can survive on plastics. Hospital waste with plastic syringes, gloves, and IV tubes could expose waste workers to infection.

In other words... plastic waste can spread serious diseases such as E. coli, Salmonella, or even Covid. Single use plastic medical supplies can spread harmful diseases as well.

This means... we must ban single use plastics in order to reduce the spread of harmful infections, which would protect millions of people. Even mosquitoes will breed in the dirty water found in plastic debris and then spread diseases too.

PRO: Plastic Waste in Air & Water

S: According to... *National Geographic, June 7, 2019*

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Once at sea, sunlight, wind, and wave action break down plastic waste into small particles, often less than one-fifth of an inch across. These so-called microplastics are spread throughout the water column and have been found in every corner of the globe, from Mount Everest, the highest peak, to the Mariana Trench, the deepest trough. Microplastics are breaking down further into smaller and smaller pieces. Plastic microfibers, meanwhile, have been found in municipal drinking water systems and drifting through the air.

PRO: Health Risks from Chemicals

S: According to... *the Environmental Center, University of Colorado Boulder, February 25, 2021*

<https://www.colorado.edu/ecenter/2021/02/25/climate-impact-single-use-plastics>

Q: *It states...*

What is Plastic Made of? Plastic is derived from the fossil fuels natural gas and crude oil. Plastic also contains chemicals that are known endocrine disruptors and pose a threat to human health. Human exposure to plastics with these chemicals can cause hormonal imbalances, reproductive problems, and even cancer.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

HEALTH (PRO): *CONTINUED...*

PRO: Plastic Chemicals Reaching Crisis Proportions

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Although plastics present a forceful example of these deficiencies in environmental law, the same problems apply to other substances. Our inability to control toxic, persistent, and bio-accumulative chemicals has reached crisis proportions.¹⁸ Several scientists recently argued that humans have exceeded the “safe operating space of the planetary boundary for novel entities,” meaning artificial substances not found in the natural world, because the scale of production and release of those chemicals exceeds our ability to assess and monitor their impacts on global ecosystems.¹⁹ Lessons suggested by the plastics analysis likely apply to similar substances and their associated health and environmental problems.

PRO: Production Causes Chemical Waste and Cancer

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Production of plastic products from precursor chemicals also generates significant chemical waste. Over 1,200 facilities manufacture plastic and rubber products in the United States; in 2020, these facilities produced 195 million pounds of waste.⁵⁶ For example, fluoropolymer production results in the release of toxic PFAS chemicals, which are used for their oil- and grease-resistant properties. PFAS have been found in the environment, in drinking water, and in human blood of those living near production facilities.⁵⁷ A DuPont fluorochemical plant in Parkersburg, West Virginia, released these unregulated chemicals in such large amounts that many people in the town fell sick, ultimately resulting in a \$670 million settlement in a class action suit.⁵⁸

PRO: Petrochemicals Cause Pollution, and Cancer

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Petrochemical facilities, which convert petroleum and natural gas into plastic precursor chemicals, generate significant air and water pollution.⁵² Most petrochemical plants and refineries in the United States are located along the Mississippi River in Louisiana, an area known as “Cancer Alley.”⁵³ Barring significant change, petrochemical industry pollution may increase given the enormous growth in plastics. The magnitude of this growth is illustrated by the fact that since 2019, at least 42 U.S. plastics facilities have opened, are under construction, or are in the permitting process, compared to 130 existing plastic facilities and related power plants.⁵⁴ By 2030, the plastic industry’s contribution to climate change is expected to exceed that of the coal industry.⁵⁵

PRO: Plastic Contamination in Air, Water, and Soil

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Given the ubiquity of plastic products, people are exposed to microplastic particles persistently. Inhalation of airborne microplastics from polyester clothing fibers and other textiles is a major route of human exposure.⁹⁵ A study found microplastics in 81% of 159 globally sourced tap water samples.⁹⁶ Microplastics are also present in seafood and other food, in part due to chemical transfer from food packaging or food-processing equipment.⁹⁷ For example, plastic food containers shed huge numbers of microplastics into hot water.⁹⁸ Babies whose formula is prepared in a plastic bottle with hot water may be swallowing more than one million microplastic particles each day.⁹⁹ Some researchers estimate that humans ingest between 0.1 grams and 5 grams of microplastics every week (for comparison, the average credit card weighs 5 grams).¹⁰⁰ Microplastics were detected in human blood for the first time recently, and were present in varying amounts in about three-quarters of subjects.¹⁰¹ Nanoplastics are particularly worrisome as they may be able to cross cell membranes, the blood-brain barrier, and the human placenta.¹⁰²

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

HEALTH (PRO): *CONTINUED...*

PRO: Chemical Contamination and Toxic Pollution

S: According to... *Greenpeace, September 7, 2023*

<https://www.greenpeace.org/aotearoa/story/plastic-pollutions-devastating-impact-on-wildlife/>

Q: It states...

Chemical contamination. Plastics are composed of various chemicals, many of which are harmful to both humans and animals. When plastic waste breaks down into smaller particles, known as microplastics, these particles can absorb and concentrate toxic pollutants from the surrounding environment. As animals consume these microplastics, they inadvertently ingest these pollutants, which can disrupt their endocrine systems, cause reproductive issues, weaken immune systems, and potentially lead to long-term health problems.

PRO: Health Risks from Human Consumption (ex. Food Chain)

S: According to... *the Harvard Environmental Law Review, April 2023*

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Microplastics have been found to cause toxicological effects on marine animals, adversely affecting their health, feeding, growth, and survival.105 Laboratory studies demonstrate that microplastics induce a strong inflammatory response in mollusks, with worsening response over a longer exposure time.106 In fish, microplastics were found to cause changes in feeding behavior107 and gene expression related to endocrine disruption and liver toxicity.108 Concentration of chemicals associated with plastics—such as PCBs—increase up the food chain (bio-magnify) as predators eat prey containing microplastics and associated chemicals.109 Humans are predators at the top of the food chain: currently, 89 species of fish have been reported to ingest microplastics, and 49 of these species are targeted commercially for human consumption.110

PRO: Chemicals from Plastics Pose Significant Health Risks

S: According to... *the Harvard Environmental Law Review, April 2023*

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Additive chemicals with flame retardant, waterproofing, or plasticizing qualities (which can be distinguished from chemicals in the polymer structure) are mixed with the polymer to enhance the plastic product.121 Over 8,000 additives are used in combination with polymers to create plastic products.122 Additive chemicals are typically not bonded to the plastic and may leach out of plastic products over time.123 In fact, researchers hypothesize that nanoplastics act as a sort of “Trojan horse” in introducing toxic additive chemicals to our bodies because very small plastic particles can cross cell membranes and may enhance absorption of additive chemicals.124 For example, virtually all pregnant women studied in the United States have the plastic additives polybrominated diphenyl ethers (“PBDEs”) and phthalates in their blood.125 PBDEs, which are associated with adverse neurobiological outcomes, are flame retardant chemicals often put in plastic enclosures encasing electronics.126 Phthalates make plastic products more malleable and are known hormone disruptors.127 One study reported that sperm counts among men in Western countries have declined nearly 60% in the last forty years, which those scientists attribute in part to endocrine-disrupting chemicals such as phthalates.128 Phthalates are also strongly associated with pregnancy loss; in one study, women with the highest levels of phthalates had a 17% chance of early pregnancy loss compared to 4% among the women with the lowest levels.129 Phthalates may also impact children’s IQ: one study found that children whose mothers had the highest levels of phthalates during pregnancy had IQs on average seven points below those whose mothers had the lowest levels.130

PRO: Burning Plastics Harms Millions

S: According to... *the Harvard Environmental Law Review, April 2023*

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Disposed plastics also lead to inequitable distributions of exposure. Approximately 4.4 million people in the United States are exposed to pollution from the 73 waste incinerators across the country, with 79% located within three miles of low-income and minority neighborhoods.141 U.S. plastic recycling also poses significant environmental and human health hazards in foreign countries. The United States exports more than one million tons of its plastic waste annually.142 Exporting plastic waste leads to an “out of sight and out of mind” mentality for consumers in high-income countries, leading to sustained consumption.143 But for developing countries that import plastic waste, the ramifications of continued plastic consumption are far more apparent. In Cambodia, for example, some villages are so swamped with plastic that residents have raised their homes on stilts to keep them afloat above a sea of plastic.144 People living closer to landfill sites suffer from higher rates of medical conditions including asthma, reoccurring flu, and stomach problems, with participants in one study indicating fear for their health.145

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

HEALTH (PRO): *CONTINUED...*

PRO: Plastics Pose Enormous Health Risks

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

The reality is that we do not fully know the health concerns posed by our near-constant exposure to plastic and its additive chemicals. Unlike pharmaceuticals and pesticides, there currently is no systematic process for premarket testing or post-market surveillance for chemicals added to consumer products.¹³¹ Of approximately 10,500 known plastic monomers, additives, and processing aids, about 4,100 lack any reported hazard classifications, and 2,400 are classified as medium to high concern.¹³² Global chemical production has increased 50-fold since 1950,¹³³ with an estimated 350,000 chemicals on the global market.¹³⁴ Existing information about microplastics and plastic additives, including flame retardants, phthalates, bisphenols, and PFAS, however, suggest that an increasingly plastic world may pose enormous risks to public health. Chronic human disease has increased dramatically in the last several decades—mirroring the increase in plastics production.¹³⁵ Though a confluence of factors undoubtedly contribute to this increase, the demonstrated toxicological effects of many chemicals used in plastic products parallel many of the diseases increasingly plaguing society.

PRO: Plastics Posing Significant Health Risks

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: *It states...*

Human Health Impacts: Research into the health effects of plastic particles is still in its infancy, but studies of animals and human cells suggest that plastic particles can cause lung and gut injury by causing inflammation and cell damage.¹¹¹ A recent study found that microplastics can adhere to and destabilize red blood cells, impairing their proper functioning such as their ability to transport oxygen throughout the body.¹¹² The most concerning human health impacts posed by plastics relate to toxic chemicals present either in the plastic polymer structure or as additives. Bisphenols, for example, are used in the polymer structure to make polycarbonate plastics.¹¹³ Polycarbonate plastics are not inert. Bisphenol chemicals leach out during the plastics' use into the product; plastic water bottles are one common example of where such leaching occurs.¹¹⁴ Bisphenols are associated with a wide range of adverse health effects, including reproductive, cardiovascular, and immune system harm.¹¹⁵ Bisphenol A ("BPA") is now nearly ubiquitous in the environment, and although its use is increasingly being phased out due to its well-known toxic effects, the chemical and plastic industries have substituted related bisphenol chemicals such as Bisphenol S ("BPS"), which appear to have similar health concerns.¹¹⁶

PRO: Micro & Non Plastic Waste Harmful to Humans

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: *It states...* [Quoted: Entire paragraph with underlines]

The impacts of plastic waste on marine ecosystems are wide-ranging and significant. Plastic waste can entangle and kill marine organisms, and it can be ingested by marine animals, leading to internal injuries and death (Rochman et al., 2013; Gall and Thompson, 2015; Wilcox et al., 2015). Plastic waste can also leach harmful chemicals into marine environments, affecting the health of marine organisms and potentially entering the food chain (Teuten et al., 2009; Andrady, 2011; Geyer et al., 2017). Also, Plastic pollution can alter marine habitats, with impacts on ecosystem functioning. A study published in the journal *Nature* found that plastic pollution can increase the risk of disease transmission in coral reefs (Lamb et al., 2017). The study also found that plastic pollution can alter the microbial community in marine environments, with potential implications for nutrient cycling and carbon storage. The impacts of plastic waste on human health are less well understood, but there is evidence to suggest that microplastics, which are small plastic particles, can accumulate in seafood and other food sources, potentially posing a risk to human health (Rochman et al., 2013; Van Cauwenberghe and Janssen, 2014; Galloway et al., 2017).

F: In other words... [Fact: Paraphrase for clarity].

C: This means... [Opinion: Magnitude of 'impact(s)' from Topic]

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

POLLUTION/WASTE (PRO)

PRO: Disposable Plastics Persist for Hundreds of Years

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

The conveniences plastics offer, however, led to a throw-away culture that reveals the material's dark side: today, single-use plastics account for 40 percent of the plastic produced every year. Many of these products, such as plastic bags and food wrappers, have a lifespan of mere minutes to hours, yet they may persist in the environment for hundreds of years.

PRO: 8 Million Tons of Plastic Waste per Year

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Production increased exponentially, from 2.3 million tons in 1950 to 448 million tons by 2015. Production is expected to double by 2050. Every year, about 8 million tons of plastic waste escapes into the oceans from coastal nations. That's the equivalent of setting five garbage bags full of trash on every foot of coastline around the world.

PRO: Plastic Waste Lasting 400+ Years

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Plastics often contain additives making them stronger, more flexible, and durable. But many of these additives can extend the life of products if they become litter, with some estimates ranging to at least 400 years to break down.

PRO: US Plastic Waste Has Global Impact

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

On Henderson Island, an uninhabited atoll in the Pitcairn Group isolated halfway between Chile and New Zealand, scientists found plastic items from Russia, the United States, Europe, South America, Japan, and China. They were carried to the South Pacific by the South Pacific gyre, a circular ocean current.

PRO: Plastic Waste Retrieval is Nearly Impossible

S: According to... National Geographic, June 7, 2019

<https://www.nationalgeographic.com/environment/article/plastic-pollution>

It states...

Once in the ocean, it is difficult—if not impossible—to retrieve plastic waste. Mechanical systems, such as Mr. Trash Wheel, a litter interceptor in Maryland's Baltimore Harbor, can be effective at picking up large pieces of plastic, such as foam cups and food containers, from inland waters. But once plastics break down into microplastics and drift throughout the water column in the open ocean, they are virtually impossible to recover.

PRO: 400 Million Tons of Waste per Year

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...In the early 2000s, the amount of plastic waste we generated rose more in a single decade than it had in the previous 40 years. Today, we produce about 400 million tonnes of plastic waste every year.

PRO: 85% of Single-Use Plastics in Landfills (or Unregulated Waste)

S: According to... the UN Environment Program, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

We are seeing other worrying trends. Since the 1970s, the rate of plastic production has grown faster than that of any other material. If historic growth trends continue, global production of primary plastic is forecasted to reach 1,100 million tonnes by 2050. We have also seen a worrying shift towards single-use plastic products, items that are meant to be thrown away after a single short use. Approximately 36 per cent of all plastics produced are used in packaging, including single-use plastic products for food and beverage containers, approximately 85 per cent of which ends up in landfills or as unregulated waste.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

POLLUTION/WASTE (PRO): CONTINUED...

PRO: Massive Plastic Pollution (ex. Great Pacific Garbage Patch)

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

At least eight million tons of plastics enter the ocean annually, the equivalent of dumping the contents of one garbage truck into the ocean every minute.⁷⁸ A major ocean plastic accumulation zone known as the Great Pacific Garbage Patch (between California and Hawaii) is now approximately 1.6 million square kilometers, roughly three times the size of France and twice the size of Texas.⁷⁹ The World Economic Forum estimates that by 2050, the ocean may contain more plastic than fish by weight.⁸⁰ Plastic on the ocean surface releases the greenhouse gases methane and ethylene when exposed to sunlight (a process called “photo-degradation”), with polyethylene, the most produced and discarded plastic globally, as the most prolific emitter of the gases.⁸¹ Researchers found that this gas production “may continue indefinitely throughout the lifetime of plastics.”⁸²

PRO: Plastic Waste Overwhelms Landfills

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Even proper containment in landfills, however, does not alleviate problems associated with plastic disposal. Municipal landfills generated an estimated 17% of methane emissions in the United States in 2018,⁸³ and are major threats to groundwater.⁸⁴ The 2,000 active landfills in the United States are rapidly reaching capacity, with some estimates suggesting that room will run out by 2036.⁸⁵ Plastics are a large part of this problem: in 2018, U.S. landfills received 27 million tons of plastic, comprising 18.5% of municipal solid waste landfilled.⁸⁶

PRO: 81% of Plastic Waste from Asia

S: According to... Frontiers in Marine Science, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, Frontiers in Marine Science, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

Plastic pollution in the oceans is a global issue, with plastic waste found in all ocean basins. A study estimated that Asia is the largest contributor to plastic pollution in the oceans, accounting for 81% of the total mass of plastic waste in the oceans (Schmidt et al., 2017). It was also found that the top 20 countries responsible for plastic waste in the oceans were located in Asia and Africa, with China being the largest contributor, followed by Indonesia and the Philippines.

F: In other words... [Fact: Paraphrase for clarity].

C: This means... [Opinion: Magnitude of 'impact(s)' from Topic]

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

RECYCLING/COMPOSTING (PRO)

PRO: Composting is Intuitive (People Will Understand Easily)

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Another option, says Daphna Nissenbaum, CEO and co-founder of TIPA Corp, a multinational company producing a wide range of compostable plastic films and food packaging, is to go the fully compostable PLU route, and mandate, through global standards, that all flexible plastic packaging—sandwich wrappers, zipper bags, cling film, and shopping bags, for example—goes to the compost bin. TIPA's technology, which is licensed to manufacturers around the world, can create compostable packaging for everything from dry cleaning to granola bars. The goal is for no one to ever worry about special labels, she says. "It will be intuitive. If it's flexible, it will go in the compost with the banana peels." On the other hand, if it's rigid, like a soda bottle or a yogurt pot, it should go to recycling.

PRO: Recycling Companies are Overwhelmed

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

Recology, the San Francisco-based recycling company that provided seed money to get the citizen's initiative on the ballot, praised the new law for its EPR provisions and efforts to reduce plastic packaging but said in a statement even more legislation and additional funding would be required. "As a recycling company, Recology is doing everything we can, but manufacturers and their packaging companies are producing too many plastics in total and too many different kinds of plastics," the company said.

PRO: Back-End Problems Include Improper Disposal

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Use and End-of-Life: Although environmental impacts of plastics are acute during production and disposal, most people encounter plastics during the use stage of its life cycle. Subsection 3(b) below explores human health impacts from exposure to plastic products. All those materials, however, are discarded either quickly or eventually, resulting in significant back-end environmental challenges. Of all plastics produced to 2017, several experts estimated that only about 9% have been recycled, nearly 12% have been incinerated, and the remaining 79% have accumulated in landfills or the natural environment.⁵⁹ Each means of disposal has environmental impacts, explored below.

PRO: Recycling is Not Very Profitable (5-6% in 2021)

S: According to... *the Harvard Environmental Law Review*, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

Moreover, because recycling is not a lucrative business, most plastic recyclables from Western nations have historically been shipped to developing countries, most notably China.⁶¹ In 2017, however, China announced that it no longer wanted to be the "world's garbage dump" and stopped accepting the world's plastic recyclables, resulting in buildups of plastic waste in many Western countries.⁶² But the United States has continued sending its plastic to a host of other countries with poor labor and environmental regulations that mismanage most of their own plastic waste.⁶³ Malaysia, Thailand, and Vietnam have more recently taken steps to stem the tide of plastic imports, and now U.S. plastic is increasingly being sent to Cambodia, Laos, and countries in Africa that had previously not handled U.S. plastic.⁶⁴ Since China's 2017 ban, however, only about half of the plastic waste the United States once exported is still being accepted by foreign markets.⁶⁵ U.S. public works facilities are now forced to deal with the waste, which has revealed an uncomfortable truth: it was never possible to recycle most plastic exported for that purpose.⁶⁶ An estimated 20 to 70 percent of plastic exported for recycling is ultimately discarded because it is unusable.⁶⁷ In developing countries, this has caused buildups of plastic waste with resulting environmental and human health concerns.⁶⁸ In the United States, it has resulted in more plastic waste being sent to incinerators and landfills.⁶⁹ Indeed, the U.S. plastic recycling rate peaked at just 9.5% in 2014 (including exported plastics) and decreased to a dismal 5–6% in 2021.⁷⁰ These figures suggest strongly that plastics recycling is not a viable solution to plastic waste and pollution.⁷¹

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

RECYCLING/COMPOSTING (PRO): *CONTINUED...*

PRO: Worst Global Polluter (& Poor Recycling)

S: According to... National Geographic, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

The United States creates more plastic trash than any other country and ranks third among coastal nations for contributing litter, illegally dumped trash, and other mismanaged waste to its beaches. Yet, even with such an abundance of disposable plastic—scientists measured 46 million tons in 2016—the U.S. manages to recycle just under 9 percent every year.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

Misc. (PRO)

PRO: Plastic Waste Reduction Has Tremendous Advantages

S: According to... *TIME Magazine*, November 15, 2023

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: It states...

It's a problem so big that the U.N. decided to set up an Intergovernmental Negotiation Committee to end plastic pollution, calling on member states to hash out a legally binding treaty that would govern all stages of the plastic lifecycle, from production to disposal. If the gathered nations can agree upon an ambitious treaty to end plastic pollution, it would mean less plastic production, lower carbon emissions (plastics are derived from oil and gas), better recycling and waste collection, more reusable products, and more products made from recycled materials—all of which would create a healthier, cleaner environment.

PRO: Causing Severe Consequences

S: According to... *the UN Environment Program*, Last Accessed: December 2023

<https://www.unep.org/interactives/beat-plastic-pollution/>

It states...

While plastic has many valuable uses, we have become addicted to single-use plastic products — with severe environmental, social, economic and health consequences.

PRO: Plastics Use in Agriculture is Unsustainable (ex. Poisons Soil)

According to... *Communications Earth & Environment*, September 25, 2023

<https://doi.org/10.1038/s43247-023-00982-4>

[Hofmann, T., et al, Professor, University of Vienna, Environmental Geosciences (EDGE), Environment and Climate Research Hub (ECH), Plastics can be used more sustainably in agriculture, *Communications Earth & Environment*, volume 4, Article number: 332, Published: September 25, 2023. <https://doi.org/10.1038/s43247-023-00982-4>]

Q: It states...

Plastics have become an integral component in agricultural production as mulch films, nets, storage bins and in many other applications, but their widespread use has led to the accumulation of large quantities in soils. Rational use and reduction, collection, reuse, and innovative recycling are key measures to curb plastic pollution from agriculture. Plastics that cannot be collected after use must be biodegradable in an environmentally benign manner. Harmful plastic additives must be replaced with safer alternatives to reduce toxicity burdens and included in the ongoing negotiations surrounding the United Nations Plastics Treaty. Although full substitution of plastics is currently not possible without increasing the overall environmental footprint and jeopardizing food security, alternatives with smaller environmental impacts should be used and endorsed within a clear socio-economic framework. Better monitoring and reporting, technical innovation, education and training, and social and economic incentives are imperative to promote more sustainable use of plastics in agriculture.

PRO: Certified Soil-Biodegradable Mulch Films are Better

According to... *Communications Earth & Environment*, September 25, 2023

<https://doi.org/10.1038/s43247-023-00982-4>

[Hofmann, T., et al, Professor, University of Vienna, Environmental Geosciences (EDGE), Environment and Climate Research Hub (ECH), Plastics can be used more sustainably in agriculture, *Communications Earth & Environment*, volume 4, Article number: 332, Published: September 25, 2023. <https://doi.org/10.1038/s43247-023-00982-4>]

Q: It states...

Conventional plastic mulch films are typically composed of low-density PE, but can also be made of other polymers such as PVC or ethylene-vinyl acetate copolymers. At 40–50 kg/ha, the use of plastic mulch films is highest in Europe and Asia, while it is slightly lower in North and South America at 10–20 kg/ha⁵. Incomplete collection after use leads to the accumulation of persistent plastic residues in soils. Furthermore, chemical additives can leach out from the mulch films. Thus, over repeated mulch applications, the accumulation of plastic residues and released additives can lead to detrimental effects on soil productivity and soil health. Certified soil-biodegradable mulch films are marketed as alternatives to thin (<20–25 µm) conventional mulch films. These biodegradable films can be ploughed into the soils after harvest, where under oxic conditions they are intended to completely biodegrade into CO₂ and microbial biomass¹³.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

Misc. (PRO): *CONTINUED...*

PRO: Plastic Particles Threaten Crop Yields

According to... *Communications Earth & Environment*, September 25, 2023

<https://doi.org/10.1038/s43247-023-00982-4>

[Hofmann, T., et al, Professor, University of Vienna, Environmental Geosciences (EDGE), Environment and Climate Research Hub (ECH), Plastics can be used more sustainably in agriculture, *Communications Earth & Environment*, volume 4, Article number: 332, Published: September 25, 2023. <https://doi.org/10.1038/s43247-023-00982-4>]

Q: It states...

The widespread use of plastics in crop production has been reported to affect the physical, chemical, and biological properties of soil (Fig. 2). Due to the persistence of conventional plastics in the environment, plastic fragments will inevitably accumulate in soils over time, disintegrate into MNP and release additives, which may also negatively impact soil health. The effects of plastics on soil properties and fertility are strongly influenced by the properties of the material (i.e., size, morphology, and chemical composition)²¹. The residues of conventional mulch films in the soil can hinder water infiltration, decrease water holding capacity, impact microbial communities and macrofauna, and decrease soil fertility^{22,23}. As a result, plant growth and yields may be negatively impacted. Negative impacts have been observed at high plastic concentrations (>240 kg/ha)²⁴, where conventional, non-biodegradable plastic mulch films are repeatedly incompletely removed or tilled into the soils.

AT (PRO): Medical Use Plastics Only Small Fraction

S: According to... *National Resource Natural Resources Defense Council*, January 9, 2020

<https://www.nrdc.org/stories/single-use-plastics-101>

Q: It states... There are many uses for plastic that are not only reasonable but important, such as surgical gloves, or straws for people with disabilities. But these cases make up a small fraction of single-use plastic. According to the 2017 study, more than half of non-fiber plastic, which excludes synthetic fabrics like polyester and nylon, comes from plastic packaging alone, much of which is for single-use items.

This means... the inconvenience with gloves and other medical products will not have a widespread impact and thicker more sustainable alternatives will soon fill the gap.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CON: BANNING SINGLE-USE PLASTICS

EFFECTIVENESS (CON) - BANS FAIL

CON: Bans Lack Effectiveness (Lacking Enforcement & Lacking Alternatives)

S: According to... Harvard University, 2018

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:42004017>

Q: It states...

Although bans have been identified as the most frequent type of regulation enacted at the national level, it is reasonable to observe thus far that these regulations have often not met their intended objectives. However, such as observation is provisional as the determination of their effectiveness was greatly limited by the fact that over 50% of countries have only enacted their regulations within the last two years and have not yet released reports on results. Information from countries that have released evidence following the implementation of their ban shows that over 76% of them have not been very successful in doing the intended job. Lack of enforcement, lack of alternatives and opposition from producers and policy makers are often linked to the ineffectiveness of the bans. The Bangladesh ban is one of these regulations that seem not to have been at all successful, because although plastic bags were outlawed in 2002 following massive flooding caused in part by these items which choked the drainage system, plastic bags continue to be used to date in great quantities. There is also no clear evidence that plastic bag consumption has decreased in the country. Therefore, the ban has not met its objective and cannot be considered a success. Activists have suggested that lack of enforcement as well as the absence of a cost-effective alternative are responsible for the failure to eradicate or even substantially reduce plastics from the marketplace (IRIN, 2011). Cameroon and Burkina Faso have also both had difficulties in successfully implementing their bans on plastic bags less than 60 and 30 microns thick, respectively. In fact, the presence of plastic bags continues to be readily observable throughout these countries.

CON: Staggering Task for Regulators

S: According to... the Harvard Environmental Law Review, April 2023

<https://journals.law.harvard.edu/elr/wp-content/uploads/sites/79/2023/04/HELR-Vol.-47.1-AdlerWells.pdf>

Q: It states...

First, U.S. environmental law is phenomenally complex and granular. It requires regulatory agencies to analyze what is being manufactured, using what methods, and creating what pollutants and other environmental harms. Then, they must evaluate available control methods and the feasibility and cost of those controls. Regulation of the front end of the plastics life cycle is as complicated and as varied as the colossal activity it targets, confronting regulators with the staggering task of keeping up with an industry that evolves continuously.

CON: Ineffective Due to Lack of Infrastructure

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Perhaps the biggest problem is that the infrastructure to ensure these bioplastics actually biodegrade or compost is very limited. That means that despite the best intentions of manufacturers and consumers, supposedly compostable plastic bags and supposedly biodegradable single-use cutlery may be causing just as much climate damage as conventional plastics.

CON: Waste Reduction Programs Often Fail (ex. Poor Implementation)

S: According to... National Geographic, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

"A national or global company in all likelihood will make those changes globally or nationally, and not just for the state of California—or Maine," Siegler says. But he also sounded a cautionary note against counting on the new law to live up to its effusive praise as landmark: "My experience with waste reduction measures is they have always failed to meet reduction targets written into the legislation. It would be great if they were able to (in this case). Proof will be in the implementation."

CON: Bans Ineffective without Global Cooperation

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

France's effort to reduce single-use plastics is a case in point. In 2022, the country banned all non-compostable PLU tags. A win for French environmentalists, however, soon became a sticky problem for produce importers: in a globalized market where produce comes from all corners of the world, one country's ban on plastic PLU tags only really works when every other country opts to do the same.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (CON) - BANS FAIL: CONTINUED...

CON: Ineffective Without Investment (& Revenue from taxes)

S: According to... *TIME Magazine, November 15, 2023*

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: It states...

The most impactful policy proposal of all, at least in terms of impact on ocean pollution, would call for substantial investment in waste management systems. For consumers, that would probably look like more curbside compost pick up and a more streamlined recycling process (no more squinting at the tiny number inside the chasing arrows sign to figure out what can be recycled where, if it can be recycled at all). Where would the money come from to implement this? One proposal is a per-ton tax levied on plastic producers, another calls for an Extended Producer Responsibility fee charged to manufacturers that use plastic to encase their products.

CON: Increasing Plastic Use from Thicker Products (ex. Thicker Bags = Allowed)

S: According to... *Enhesa, Last Accessed: December 2023*

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

It is also worth learning from the experience of banning plastic bags; the ban led to an increase in the prevalence of unregulated thicker plastic bags. There is also research that suggests that alternatives to plastic bags such as cotton bags or paper bags also have environmental impacts that cannot be neglected (either greenhouse gas emissions, the use of pesticides and the use of copious amounts of water). For example, the fact that the alternatives currently available may actually have a greater (or different) environmental impact or that people and companies shift to using other plastics that are allowed.

CON: Bans are Ineffective w/o Incentives (ex. Fines)

S: According to... *Enhesa, Last Accessed: December 2023*

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

There is more data with regards to the success or failure of banning single-use plastic bags; consequently, we can conclude that it has sometimes worked and sometimes brought undesirable effects, such as an increase in plastic littering in Australia. What is important to keep in mind is that in order for a ban to be successful, it has to be preceded by other actions tending to change consumers' and companies' behavior, such as influencing their behavior in a positive way; disincentivizing the use of such products by imposing a levy and incentivizing research and the development of alternatives. At this point, it is fair to conclude that the ideal solution does not yet exist, but it is certainly a staggered process. Only time will tell whether a ban on single use plastics will be successful or not. However, without checks and controls in place to monitor the effectiveness of a prohibition, it will be impossible to say.

CON: Bans Lack Monitoring and Enforcement

S: According to... *Enhesa, Last Accessed: December 2023*

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

There is more data with regards to the success or failure of banning single-use plastic bags; consequently, we can conclude that it has sometimes worked and sometimes brought undesirable effects, such as an increase in plastic littering in Australia. What is important to keep in mind is that in order for a ban to be successful, it has to be preceded by other actions tending to change consumers' and companies' behavior, such as influencing their behavior in a positive way; disincentivizing the use of such products by imposing a levy and incentivizing research and the development of alternatives. At this point, it is fair to conclude that the ideal solution does not yet exist, but it is certainly a staggered process. Only time will tell whether a ban on single use plastics will be successful or not. However, without checks and controls in place to monitor the effectiveness of a prohibition, it will be impossible to say.

CON: Bans Require Public Support

S: According to... *Enhesa, Last Accessed: December 2023*

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

Why is a ban not enough? Imposing a ban on single-use plastics without bringing people on board will not work - there would be too much resistance. Instead, it is necessary to change people's behavior in such a way that they feel affinity with a movement and that they can be part of a change. Some suggest influencing behavior through media - for example, highlighting the use of reusable cups in TV shows, instead of disposable ones. In addition, as already mentioned, imposing a ban also implies spending taxpayer's money on enforcement measures.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (CON) - BANS FAIL: *CONTINUED...*

CON: 90% Global Reduction = Insufficient Impact

S: According to... *TIME Magazine*, November 15, 2023

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

It states... How ambitious the final agreement ends up being could have a marked impact on our environment. To help envision what this might look like, a team of scientists, plastic researchers, data scientists, and AI programmers at the Benioff Ocean Science Laboratory, the University of California Santa Barbara, and the University of California Berkeley have developed a new online tool that quantifies the real-world impact of the major proposals scaled to their level of ambition. Even an ambitious 90% reduction of single-use plastics would remove only 13 million metric tons (MMT) of ocean pollution, out of a projected 108 MMT, by 2050. (Marc and Lynn Benioff, who helped fund the project, also own *TIME Magazine*). Assuming nations agree to the most ambitious version of the treaty, what impact would it have on people's daily lives? Frankly, not much.

CON: "Loopholes" Allowing Slightly Thicker Bags

S: According to... *the CATO Institute*, November 17, 2021

<https://www.cato.org/research-briefs-economic-policy/intended-unintended-consequences-disposable-bag-regulation>

It states... Some plastic bag bans include loopholes that allow thicker, so-called "reusable" plastic bags to be distributed at checkout counters under the assumption that they will be reused. While these thicker plastic bags may be more durable than single-use ones, many customers are still treating them as single-use, creating a lot of plastic waste. For example, because of the loophole in California's bag ban allowing the use of thicker plastic bags, the amount of plastic bags discarded per person (by weight) actually increased in the years after the implementation of the ban.

CON: Narrow Bans Create Unintended Consequences (ex. Circumvention with straws)

S: According to... *the CATO Institute*, November 17, 2021

<https://www.cato.org/research-briefs-economic-policy/intended-unintended-consequences-disposable-bag-regulation>

It states... But do these policies achieve their intended goal? One concern with narrowly defined bans is that they may leave similar but undesirable substitutes unregulated, creating unintended consequences of the policies. In the case of assault weapon bans, gun manufacturers devised several adaptations to comply with the ban while still providing consumers with a nearly identical product. Along with the plastic straw ban, Starbucks introduced a new strawless cold-cup lid, which required more plastic than the original lid and straw combined.

CON: Bans are Significantly Less Effective

S: According to... *the CATO Institute*, November 17, 2021

<https://www.cato.org/research-briefs-economic-policy/intended-unintended-consequences-disposable-bag-regulation>

It states...Our research contributes to the recent literature on the effect of disposable bag regulations on consumer behavior by comparing the relative effectiveness of two of the most common regulation designs. To our knowledge, we are the first to rigorously study the effect of a standalone ban on plastic bags in the United States. Importantly, we can compare the two competing policy designs within the same city rather than relying on cross-state comparisons, which may be biased due to differences in the populations. We find that plastic bag bans—strict but narrowly defined regulations that leave close substitutes unregulated—are significantly less effective at reducing the use of disposable bags than disposable bag taxes and, in fact, may increase overall environmental costs by changing the composition of types of bags used.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (CON) - EMPIRICAL FAILURES

CON: CA Model = Questionable Regulations

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

Enck also criticized the EPR program for allowing the industry to organize the EPR procedures and collect fees, though the final authority to oversee the program lies with CalRecycle, the state agency. “Environmental policy makers would not put the fossil fuel industry in charge of reducing greenhouse gases, so why are we putting the packaging industry in charge of reducing packaging?” she asks.

CON: CA Laws = More Than Banning Single-Use

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

The new law also requires 30 percent of plastic to be recycled by 2028, increasing to 65 percent by 2032—a giant leap. It further requires the industry to create a \$5 billion fund over the next decade to help low-income communities impacted by the effects of plastic pollution.

CON: Lacking Effectiveness: More litter in Australia

S: According to... *Enhesa*, Last Accessed: December 2023

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

There is more data with regards to the success or failure of banning single-use plastic bags; consequently, we can conclude that it has sometimes worked and sometimes brought undesirable effects, such as an increase in plastic littering in Australia. What is important to keep in mind is that in order for a ban to be successful, it has to be preceded by other actions tending to change consumers' and companies' behavior, such as influencing their behavior in a positive way; disincentivizing the use of such products by imposing a levy and incentivizing research and the development of alternatives. At this point, it is fair to conclude that the ideal solution does not yet exist, but it is certainly a staggered process. Only time will tell whether a ban on single use plastics will be successful or not. However, without checks and controls in place to monitor the effectiveness of a prohibition, it will be impossible to say.

CON: Companies Using Thicker Products (ex Walmart in Connecticut)

S: According to... *the Hartford Courant*, July 8, 2021

<https://www.courant.com/2021/07/08/walmart-rolls-out-thicker-reusable-plastic-bags-in-response-to-connecticuts-single-use-plastic-bag-ban/>

It states... The bags, which the retail giant bills as sustainable, reusable up to 125 times and recyclable, are not prohibited under the plastic bag ban, because of their thicker weight. The State Department of Revenue Services defines single-use checkout bags as “bags with a thickness of less than 4 mils” — the thickness of the new Walmart bags. However, environmentalists say regardless of the weight, plastic is a real threat.

CON: Bans Ineffective Without Taxes

S: According to... *the CATO Institute*, November 17, 2021

<https://www.cato.org/research-briefs-economic-policy/intended-unintended-consequences-disposable-bag-regulation>

It states... The results on overall disposable bag use suggest that the tax was significantly more effective than the ban at reducing disposable bag use. Moreover, these results mask an important unintended consequence of the plastic bag ban. When we consider the effects of the two policies on the type of disposable bag used, we find that the ban eliminated lightweight plastic bag use (as designed). However, it led retailers to provide free plastic bags with a thickness roughly just over the 2.25 mils defined in the ban, five times the amount of plastic in a standard plastic grocery bag. During the ban, over 4 percent of customers shopping in Chicago used a free thick plastic bag while the remaining disposable bag users took a paper bag. These thick plastic bags were then phased out once the ban was repealed.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (CON) - ALTERNATIVES FAIL

CON: Supply of Alternative Materials is Lacking

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Practically speaking, there isn't enough global supply of alternative materials to replace the amount of single-use plastic being produced today, and that may be a good thing, says Paula Luu, project director for the Center for the Circular Economy at impact investing firm Closed Loop Partners. That's because, while plastic alternatives show a lot of promise, it won't be realized unless their implementation is accompanied by an upgrade of current waste-collection systems, ongoing scientific research, and policy change. "Before we do a full switchover, we really need to focus on addressing a number of different challenges, including customer education, waste-recovery infrastructure, and the economic incentives to a full transition," says Luu. "If it's not done thoughtfully, with a whole-system view, it could result in unintended consequences."

CON: Causing Potentially Greater Harm

S: According to... *Enhesa*, Last Accessed: December 2023

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

It states... It is also worth learning from the experience of banning plastic bags; the ban led to an increase in the prevalence of unregulated thicker plastic bags. There is also research that suggests that alternatives to plastic bags such as cotton bags or paper bags also have environmental impacts that cannot be neglected (either greenhouse gas emissions, the use of pesticides and the use of copious amounts of water). For example, the fact that the alternatives currently available may actually have a greater (or different) environmental impact or that people and companies shift to using other plastics that are allowed.

In other words... banning single-use plastics leads to companies making slightly thicker plastics, which people will continue to use because it is convenient. Other alternatives consume more energy, giving off more greenhouse gasses and also increase the use of pesticides and reduce freshwater resources.

This means... a ban on single use plastics will make the environment, human health, and any harms to communities even worse, because alternatives will be worse than the plastics we tried to replace. Their side makes things worse!

CON: Alternative Advantages are Misleading and Still Go to Landfills

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

The alternative plastic world is a minefield, cloaked in sustainability marketing that at best is aspirational, and at worst causes as many problems as the products it is trying to replace. A ban on single-use plastics could level the playing field, allowing products that are better for the climate, for the environment, and for human health to rise to prominence. That also means questioning the very idea of disposability. That is, after all, what started all the problems in the first place. If plastic products were valuable, they probably wouldn't end up polluting our oceans.

CON: Lacking Effective Enforcement and Alternatives

S: According to... *Harvard University*, 2018

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:42004017>

Q: *It states...*

Since Denmark initiated their tax, more countries have followed suit trying to obtain similar results as Denmark. Over 80 countries are currently subject to some form of reduction strategy (Figure 9). For instance, in 1999, the country of Bhutan attempted to ban plastic bags, however, lack of available alternatives resulted in poor results. The ban was reintroduced in 2005, and this time some alternatives such as cloth bags and biodegradable plastics were put in place. However, plastic bags continue to proliferate, especially in larger urban centers. The Waste Prevention and Management Regulation was established in 2012 to try to mitigate the issue, but lack of enforcement continues to be a problem (Phuntsho, S., 2013). When it comes to national bans, lack of enforcement and available alternatives often results in very limited success of the regulation. In fact, combining strong enforcement with availability of alternatives seems to increase success of the regulations.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

EFFECTIVENESS (CON) - ALTERNATIVES FAIL: *CONTINUED...*

CON: Alternatives Make the Problems Worse

S: According to... *the Hartford Courant*, July 8, 2021

<https://www.courant.com/2021/07/08/walmart-rolls-out-thicker-reusable-plastic-bags-in-response-to-connecticuts-single-use-plastic-bag-ban/>

It states... In lobbying against plastic bag bans, plastic industry officials have said that thicker, reusable plastic bags take up more space in landfills than single-use bags. The American Progressive Bag Alliance, which represents the U.S. plastic bag manufacturing and recycling industry, argued in 2019 that bans on disposable bags would be counterproductive. "You can ban this product ... but the alternative is worse, both economically and environmentally," APBA Spokesperson Matthew Seaholm said in a previous statement.

EFFECTIVENESS (CON) - PREVENTING BETTER SOLUTIONS

CON: Ban = Ineffective and Distracts from Meaningful Solutions

S: According to... *Inside Sources*, May 5, 2018

<https://insidesources.com/counterpoint-plastic-bans-wont-solve-ocean-plastic-problem/>

Q: It states... Proposed "solutions" to mounting plastic waste in the ocean continue to border on the absurd — suggesting that banning straws, bags and other consumer products offers an answer. While these policies might make good political sound bites, they are unlikely to solve anything, and they divert attention away from real solutions.

CON: Diverting Attention from Better Solutions

S: According to... *Competitive Enterprise Institute*, July 13, 2018

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

Q: It states...

Banning plastics has been a growing trend over the last several years. But do such laws and policies actually help solve the problem of plastic waste filling up our oceans? Not exactly. Here are five reasons from CEI's Angela Logomasini why banning consumer plastics actually diverts attention away from real solutions, and instead harms both consumers and the environment.

CON: Interfering with Better Solutions (Req's Value)

S: According to... *TIME Magazine*, November 15, 2023

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: It states...

Of all the proposals, one of the most impactful (a reduction of 50 MMT of waste by 2050) would be a requirement that all new plastic products and packaging must be made from a minimum amount of recycled material. In most cases, the user experience would be exactly the same, or perhaps better if manufacturers started redesigning their products to be more recycle-friendly. Once a recycled value chain is established, the cost to the producer would be negligible as well. A cap on virgin plastic production, resulting in a 28 MMT reduction in ocean pollution, would encourage that value chain as well.

CON: Technology Capable of Removing Plastic Waste (Ban Diverts Attention/Investment)

S: According to... *Inside Sources*, May 5, 2018

<https://insidesources.com/counterpoint-plastic-bans-wont-solve-ocean-plastic-problem/>

Q: It states...

Today, The Ocean Cleanup is assuming a similar role to clean the oceans. In addition to offering valuable research, it maintains it has developed and can deploy cleanup technologies that could remove more than 50 percent of the waste from the Pacific patch within five years, which would be quite a remarkable achievement if it can do it without significant harm to wildlife. While trendy bans on plastic bags, cups, straws and whatever else may enable lawmakers to grandstand on the issue for political credit, they only divert attention from developing real solutions that actually tackle the problem.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

CLIMATE (CON)

CON: Alternatives Worse for Climate Change

S: According to a white paper from Veolia UK, July 7, 2020

<https://www.imperial.ac.uk/media/imperial-college/faculty-of-natural-sciences/centre-for-environmental-policy/public/Veolia-Plastic-Whitepaper.pdf>

[N. Voulvoulis, et al, Centre for Environmental Policy, Imperial College London, Examining Material Evidence - The Carbon Fingerprint, Veolia UK, July 7, 2020]

It states... A total of 73 LCAs (see Annex 1) were identified, and information on LCA procedures including scope and boundary, functional units and analysed life cycle impacts were reviewed and summarized. Most LCA undertaken for various plastic uses show plastic performing better than the alternatives from a carbon perspective. Even if, ounce for ounce, some kinds of plastic have a higher carbon footprint than other kinds of packaging, less quantity is used reducing overall impact, as plastic is light. Plastic performs better most of the time (for example heavier-duty plastics, such as low density polyethylene or woven polypropylene bags, do have a bigger climate and energy impact than paper, but they're more durable and you get more use out of them). Several studies have shown many materials used as alternatives to plastic in packaging, such as cotton, glass, metal or bioplastics, to have significantly higher CO2 impact or water usage compared to plastic packaging. On average over current food packaging, replacing plastic packaging with alternatives, would increase the weight of the packaging by 3.6 times, the energy use by 2.2 times, and the carbon dioxide emissions by 2.7% but these can vary significantly for different cases²⁴. Some examples are 23 highlighted in Figure 3.

CON: Alternatives Create Substantially Higher Greenhouse Gas (GHG) Emissions

S: According to... McKinsey & Company, July 6, 2022

<https://www.mckinsey.com/industries/chemicals/our-insights/climate-impact-of-plastics>

It states... Among applications for which nonplastic alternatives are used at scale, the plastics examined in this paper offer lower total GHG contribution compared with alternatives in 13 of 14 cases (exhibit). GHG savings range from 10 to 90 percent, considering both product life cycle and impact of use. In addition, in many applications, particularly those concentrated in food packaging, there are few alternatives to plastics today. In fact, plastics adoption in the near term can help decarbonization efforts in these areas, particularly in terms of food spoilage and energy efficiency, given their lower GHG footprint.

CON: Alternatives Fail to Address Carbon Emissions

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

That is the dirty secret of so-called bioplastics, says Ramani Narayan, a chemical engineering professor at Michigan State University and an expert on alternative plastics. "Carbon is carbon, it doesn't matter where it comes from when it comes to biodegradability." What matters is how the long polymer chains that make the plastic, no matter the source of carbon, are configured: insert oxygen molecules in the right place with the help of a chemical additive, and it opens the way for microbes that can accelerate decomposition. Compostability may help solve plastic pollution, but if compostable plastics are still made with fossil fuels, it does nothing to address the problem of carbon emissions.

CON: "Existential Threat" is not Literal (ex. Humanity Will Survive)

S: According to... MIT Climate Portal, MIT, Last Updated: November 7, 2023

<https://climate.mit.edu/ask-mit/why-do-some-people-call-climate-change-existential-threat>

Q: It states...

That more literal-minded reading of the phrase "existential threat" may not be the best reflection of the risks of climate change, however. "Even under our most dire predictions, human society is still around," says Adam Schlosser, the Deputy Director of the MIT Joint Program on the Science and Policy of Global Change and a climate scientist who studies future climate change and its impact on human societies. "I do not personally view this as an extinction issue. But there are going to be unavoidable consequences, and disasters especially for coastal communities, coastal cities, and island nations."

CON: Global Warming is NOT the Greatest Threat

S: According to... Carla Sands, The Telegraph, September 24, 2023

<https://www.telegraph.co.uk/news/2023/09/24/biden-green-energy-evs-bankrupt/>

Note: *Carla Sands, Vice Chair of the Center for Energy and Environment at the America First Policy Institute. She previously served as U.S. Ambassador to the Kingdom of Denmark.*

Q: She states...

No, Joe, global warming above 1.5 degrees is not worse than nuclear war. Nuclear war would be less bad than global warming above 1.5 degrees, says Joe Biden. At the G20 conference this month, President Biden stated that "the only existential threat humanity faces even more frightening than a – nuclear war is global warming going above 1.5..."

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITY (CON)

CON: Agricultural Substitutions Jeopardize Food Security

According to... *Communications Earth & Environment*, September 25, 2023

<https://doi.org/10.1038/s43247-023-00982-4>

It states... Plastics have become an integral component in agricultural production as mulch films, nets, storage bins and in many other applications, but their widespread use has led to the accumulation of large quantities in soils. Rational use and reduction, collection, reuse, and innovative recycling are key measures to curb plastic pollution from agriculture. Plastics that cannot be collected after use must be biodegradable in an environmentally benign manner. Harmful plastic additives must be replaced with safer alternatives to reduce toxicity burdens and included in the ongoing negotiations surrounding the United Nations Plastics Treaty. Although full substitution of plastics is currently not possible without increasing the overall environmental footprint and jeopardizing food security, alternatives with smaller environmental impacts should be used and endorsed within a clear socio-economic framework. Better monitoring and reporting, technical innovation, education and training, and social and economic incentives are imperative to promote more sustainable use of plastics in agriculture.

In other words... plastics are very important to food production and substitution is not possible without increasing risks to the environment and would also jeopardize our food security.

This means... banning single-use plastics will pose a significant risk to millions of low-income families in the U.S. and other parts of the world, who are already struggling with food insecurity.

CON: Trade-offs to Public Health and Safety

According to... *the Reason Foundation*, October 24, 2022

<https://reason.org/commentary/the-governments-bad-idea-to-stop-using-single-use-plastics/>

It states... The Center for Biological Diversity argues that banning single-use plastics aligns with President Joe Biden's Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad," which calls for federal agencies to align their activities with the president's climate change agenda. The crux of CBD's petition is on page 9: [---skip 4 paragraphs---] We further request that the rulemaking contains exemptions for disability accommodations, disaster recovery, medical use, and personal protective equipment. GSA regulations must clarify that "single-use product" does not include medical products necessary for the protection of public health, or personal protective equipment, including masks, gloves, or face shields.

In other words... without medical exceptions, the ban on single-use plastics would make it illegal to produce single-use medical protections such as gloves, masks, and face shields.

This means... banning single-use plastics will pose significant health risks to medical professionals and the public at large due to unintended consequences. Reuse would ultimately lead to increased contamination & preventable deaths.

CON: Violates Constitution (ex. Federalism)

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

In the U.S., efforts to curb plastic waste have been scattershot. Eight states have banned plastic shopping bags. Five states have banned expanded food containers made of expanded polystyrene, or foam. The plastics industry has succeeded in persuading lawmakers in more than a dozen states to pass laws preventing such product bans.

CON (vs Exploitation): Developing Countries Already Banning Plastic Waste Imports

S: According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

Q: It states...

In Thailand, where in June the death of a pilot whale with 80 plastic bags in its stomach highlighted the harmful effects of plastic in waterways, local media report that Thai government officials are considering a ban on all waste imports, following irregularities found in recycling plants. In May, Vietnam temporarily banned plastic waste imports after two of its ports became "overwhelmed" with scrap imports following China's ban. Two months later, Malaysia revoked permits for some plastic imports after factories involved in recycling in Banting, south-west of Kuala Lumpur, were forced to close amid residents' complaints of air and water pollution.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

COMMUNITY (CON): *CONTINUED...*

CON (vs Exploitation): Legitimate Market for Plastic Trade

S: According to... *The Guardian*, October 5, 2018

<https://www.theguardian.com/global-development/2018/oct/05/huge-rise-us-plastic-waste-shipments-to-poor-countries-china-ban-thailand-malaysia-vietnam>

Q: It states...

Adina Renee Adler, senior director of international affairs at the Institute of Scrap Recycling Industries, a trade body, said that the US plastic waste industry is “not dumping waste on south-east Asia” because there is a legitimate market for the material. “What we say is recyclable material or scrap waste is bought, not sold,” she said. The temporary bans and other problems in these countries, she said, were due to problems with unscrupulous companies moving from China and working illegally, without proper controls.

CON: Plastic Mulch Film Necessary for Agriculture

According to... *Communications Earth & Environment*, September 25, 2023

<https://doi.org/10.1038/s43247-023-00982-4>

[Hofmann, T., et al, Professor, University of Vienna, Environmental Geosciences (EDGE), Environment and Climate Research Hub (ECH), Plastics can be used more sustainably in agriculture, *Communications Earth & Environment*, volume 4, Article number: 332, Published: September 25, 2023. <https://doi.org/10.1038/s43247-023-00982-4>]

Plastics in plant agriculture have many environmental and societal benefits 5,10 (Fig. 1). Plastic mulch films, which alone account for ~50% of the mass of all agricultural plastics, are widely used in crop production¹¹. They provide multiple agronomic benefits, including weed and pest control, soil moisture conservation, a means to control soil and air temperatures, and enhanced nutrient uptake. All these benefits translate to an increase in yield, improved water and nutrient use efficiency, and reduced pesticide use. In China, for example, without the use of mulch film, an additional 3.9 million hectares of arable land would be required to produce the same amount of food¹². The increased soil temperature below plastic mulch films allow farmers to plant and harvest crops earlier and thus provides a market benefit. Plastic mulch films are also used in organic agriculture because they help suppress weed and insect infestation without the need to apply synthetic pesticides.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ECONOMY (CON)

CON: Increasing Costs for Businesses & Consumers

According to... *Competitive Enterprise Institute, July 13, 2018*

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

It states... Plastics are economical. In addition to being more efficient and sanitary, plastic consumer products are also less expensive to produce than paper or aluminum alternatives. Because these items are cheaper to make, they are also less expensive for consumers both in the United States and around the globe. Bans of such economical items simply increase costs for businesses and ultimately consumers.

In other words... plastic products are less expensive to produce than the alternatives and as such, when plastics are banned, it drives up the costs for both businesses and consumers.

This means... banning single-use plastics would increase prices similar to inflation making everything including food, more expensive,. Millions of families, particularly low-income families, will suffer disproportionately to the rest of society.

CON: Major Ramifications for the U.S. Economy

According to... *the Reason Foundation, October 24, 2022*

<https://reason.org/commentary/the-governments-bad-idea-to-stop-using-single-use-plastics/>

It states... The Government Services Administration is considering phasing out single-use plastics from its supply chain and procurement processes, which would have major ramifications for America's economy and the functioning of its production and service sectors. Due to the size and market power of the GSA, the proposed rule's impacts would likely ripple through the national plastics economy and the personal plastics economy of individual Americans, who would find their choices to use single-use plastics impacted, perhaps considerably.

In other words... agencies within the U.S. government are planning to ban single-use plastics which could seriously put the U.S. economy at risk by harming the producers and the service providers ability to function.

This means... a nationwide ban on single-use plastics would pose and even greater risk to businesses and the overall economy. Literally hundreds of millions of people would suffer serious economic harm from reduced economic activity.

CON: Significant Risk to Employment

According to... *the Oklahoma Chamber of Commerce, Last Accessed: December 2023*

[https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet\[1\].pdf](https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet[1].pdf)

It states... Economic Effects: Business sales and profits are negatively affected by plastic bag bans. Plastic bag bans not only provide an unfair advantage to retailers in a geographic area without a plastic bag ban, they also have additional unintended consequences. The theft of store shopping carts and shopping baskets is higher in areas with plastic bag bans. Additionally, customers use more plastic produce bags, which undercuts the effect of the ban. Overall, plastic bag bans increase prices for consumers, decrease profit for producers, and decrease economic activity in the area affected by the plastic bag ban. Employment Effects: Banning plastic bags reduces retail employment. According to a survey on the economic effects of the plastic bag ban in Los Angeles County, stores that were inside the ban area reduced their employment by more than 10% while stores outside the ban area increased their employment by 2.4%. Retail jobs are not the only jobs that would be affected if a plastic bag ban were implemented. A large portion of plastic bags are made in the United States, and the plastics manufacturing industry employs more than 30,000 people whose jobs would be at stake if plastic bag bans became widespread.

In other words... banning single-use plastics such as bags can make businesses immediately less competitive, which threatens to reduce economic activity in the local as well as the national economy and threatens job security for workers.

This means... banning single-use plastics will pose a significant risk to businesses and the economy – as millions of families suffer from fewer jobs and lost income due to the significant increase in costs that ban will cause for businesses.

CON: Harmful Impact to Workers

S: According to... *TIME Magazine, November 15, 2023*

<https://time.com/6335579/countries-one-step-closer-to-tackling-plastic-pollution/>

Q: It states...

So, who loses out from an ambitious plastic treaty? Fossil fuel producers and petrochemical companies, mostly, for whom plastic production has long been Plan B for when the green energy transition kills demand for oil and gas. But also at risk are the many people whose livelihoods depend on these companies. And so a truly ambitious plastic treaty would also require a just transition not only for oilfield laborers, facilitating new jobs and training—but also for the waste pickers who make their living collecting plastic bottles out of the trash today.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ECONOMY (CON): *CONTINUED...*

CON: Threatening Profit for Businesses (& Increased Cost for Consumers)

S: According to... the Oklahoma Chamber of Commerce, Last Accessed: December 2023

[https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet\[1\].pdf](https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet[1].pdf)

Q: It states...

Economic Effects: Business sales and profits are negatively affected by plastic bag bans. Plastic bag bans not only provide an unfair advantage to retailers in a geographic area without a plastic bag ban, they also have additional unintended consequences. The theft of store shopping carts and shopping baskets is higher in areas with plastic bag bans. Additionally, customers use more plastic produce bags, which undercuts the effect of the ban. Overall, plastic bag bans increase prices for consumers, decrease profit for producers, and decrease economic activity in the area affected by the plastic bag ban.

CON: Passing Costs Onto Consumers

S: According to... the Australia National University Law School, June 10, 2018

<https://envcomm.act.gov.au/wp-content/uploads/2022/04/ACT-Plastic-bag-ban-options-analysis.pdf>

[Regulating Plastic Shopping Bags in the Australian Capital Territory: Plastic Shopping Bag Ban Act 2010 Options Analysis, Andrew Macintosh, Australia National University Law School, June 10, 2018]

It states... Prior to the introduction of the ban, most ACT retailers did not charge for single-use HDPE bags. Those bags cost retailers in the order of 0.75-1 cents per bag immediately prior to the introduction of the ban and were available free of charge to shoppers. This meant that retailers either absorbed the costs of the bags (by reducing profits) or recovered the costs by imposing higher prices on other products. Since the introduction of the ban, a significant proportion of retailers now charge for plastic bags. Reusable HDPE bags are typically either sold for 10 cents or provided free of charge, single-use biodegradable HDPE bags are generally sold for 5 cents or provided free of charge, reusable LDPE bags typically retail for 15 cents, and reusable polypropylene bags retail for around \$1.¹¹¹ The data available suggest the wholesale prices paid by retailers are approximately 4 cents for reusable (35 µm) HDPE bags, 2 cents for single-use biodegradable HDPE bags, 6-12 cents for reusable LDPE bags, and 70-80 cents for polypropylene bags.¹¹²

This means... Banning single-use plastics will lead to higher prices as the cost of the more expensive alternatives are passed on to consumers. Many families will suffer from this type of 'inflation' caused by the ban.

NSDA Public Forum Debate (Feb 2024)

Topic: Banning Single-Use Plastics (ver. 1.20)

ENVIRONMENT (CON)

CON: Alternatives Worse for the Environment

According to... *Competitive Enterprise Institute, July 13, 2018*

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

It states... Plastics have important environmental benefits. In many ways, plastics are better for the environment than other alternatives because they are more efficient and use less energy during production and transport. Plastic consumer goods like straws, foam cups, and utensils are less energy intensive to produce than alternatives like paper or aluminum. Production of these items takes more resources, creates more waste, and results in more pollution than the production of disposable plastic items. Reusable items like foam cups, straws, and bags require more than 100 uses—and in more than 1,000 in the case of foam cups—justify the energy required to produce them.

In other words... the alternatives will require more resources, will create more waste, and will create more greenhouse gasses and pollution compared to their plastic counterparts.

This means... the ban will not only fail to fix the root causes, but it will lead to even worse pollution than before.

CON: Biodegradable Alternatives Still Eaten by Marine Animals

S: According to... *TIME Magazine, November 28, 2023*

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Pennie Lindeque, head of science for marine ecology and biodiversity at the U.K.'s Plymouth Marine Laboratory, is currently trying to do just that, investigating how the breakdown process of biodegradable plastics impacts the ocean ecosystem. Marine creatures still mistake fragments for prey, and chemicals released in the process of breaking down might have unforeseen consequences for other kinds of ocean life, including coral. "Biodegradable materials could help reduce the impacts of plastic waste in the ocean. However, we must be sure that such materials, and the chemicals they contain, do in fact demonstrate little or no impact on organisms and ecosystems," she says. We don't want to, as she puts it, "jump from the frying pan into the fire."

CON: Alternatives Lack Capacity and Misleading about env impact

S: According to... *TIME Magazine, November 28, 2023*

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

According to chemists that specialize in plastic alternatives, most conventional plastics could theoretically be replaced by PHA, but its biodegradable qualities are better suited for single-use and disposable items. That said, PHA is currently expensive and time-consuming to produce—current global capacity is 100,000 metric tons a year, compared to the 430 million metric tons of conventional plastic produced annually. And even Anindya Mukherjee, co-founder of GO!PHA, a global PHA-focused business coalition, admits that it could have other drawbacks that have yet to be discovered. Indeed, there is a glaring absence of scientific oversight for pretty much all the current alternative plastic options, he says. "Right now, anybody can say anything they want about how good their product is for the environment. There needs to be a scientific advisory board as part of the INC process, one that will regulate the development and the proliferation of alternatives. Otherwise, we will always have this problem."

CON: No Factual Data Supporting Environmental Benefits

S: According to... *Enhesa, Last Accessed: December 2023*

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

While we would expect that imposing a ban on single-use products would result in environmental benefits, there is no actual data that supports this statement. Although some countries have reported a decrease in the use of such products, others have reported an increase in plastic waste.

CON: US Contributes Only 1% of Plastic Waste in the Ocean

S: According to... *Inside Sources, May 5, 2018*

<https://insidesources.com/counterpoint-plastic-bans-wont-solve-ocean-plastic-problem/>

Q: It states...

Of course, other nations should do their best to reduce their contributions, no matter how small. The Science article placed the United States as 20th, but its contribution to ocean plastics was just about 1 percent, even though the United States is among the top plastic producers and consumers. Credit goes to modern waste management practices — landfilling, incineration or recycling — and litter control.

NSDA Public Forum Debate (Feb 2024)

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ENVIRONMENT (CON): *CONTINUED...*

CON: Ignoring the Larger Ocean Contributors

S: According to... Competitive Enterprise Institute, July 13, 2018

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

Q: It states...

Most of the waste is not from consumers. The primary culprit of ocean pollution is not straws, cups, and plastic bags. According to the nonprofit The Ocean Cleanup, 46 percent of the Pacific patch is made up of fish nets. When combined with ropes and lines, it accounts for 52 percent of the trash. The rest ranges from large plastic crates and bottle caps to small fragments called microplastics. Obviously, this is not simply a consumer waste issue, and the solutions need to address that.

CON: Up to 83% of Ocean Waste from Asia (Not U.S.)

S: According to... Competitive Enterprise Institute, July 13, 2018

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

Q: It states...

Studies show the vast majority of plastic waste is due to poor disposal practices outside of the United States. Data in a 2015 Science magazine report reveals that China and 11 other Asian nations are responsible for 77 to 83 percent of plastic waste entering the oceans because of poor disposal practices. These practices include littering, disposed waste that isn't managed, and uncontrolled or poorly supervised landfills. This is in contrast to U.S. waste management practices, like controlled landfills and recycling programs, that decreases water and ocean pollution. A 2017 Environmental Sciences and Technology study reported that up to 95 percent of plastic waste enters oceans from one of 10 rivers—eight in Asia and two in Africa.

CON: Asia is Responsible for 80%+ of Ocean Waste

S: According to... Inside Sources, May 5, 2018

<https://insidesources.com/counterpoint-plastic-bans-wont-solve-ocean-plastic-problem/>

Q: It states...

Other studies confirm that Asia is a substantial source of ocean garbage. Data in a 2015 Science published study revealed that China and 11 other Asian nations are responsible for 77 percent to 83 percent of plastic waste entering the oceans because of their poor disposal practices. A 2017 Environmental Sciences & Technology study reported that up to 95 percent of plastic waste enters oceans from one of 10 rivers — eight in Asia and two in Africa.

CON: No Environmental Benefits (ex. Cloth vs Plastic)

S: According to... the Oklahoma Chamber of Commerce, Last Accessed: December 2023

[https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet\[1\].pdf](https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet[1].pdf)

Q: It states...

Environmental Effects: While the economic and employment effects of plastic bag bans are substantial, there are no environmental benefits to banning plastic bags. Plastic bags require less energy to produce and recycle, and they create less municipal waste than cloth bags. Cloth bags need to be used 104 times before they have an environmental advantage over plastic bags, and most cloth bags are used half that amount. Reusing cloth bags also has potential negative health effects as this practice can lead to cross-contamination and disease. As studies have shown, there is much evidence in favor of using plastic bags over cloth bags. Banning plastic bags will likely have a negative impact on jobs, the economy, and the environment.

CON: Fully Plant-Based Products Costly & Ineffective

S: According to... TIME Magazine, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states... The only problem is that while TIPA's films are compostable, they, like many other compostable products, are still made partially from fossil fuels. The technology exists to make a fully compostable, fully plant-based plastic product, but it is far more expensive than conventional plastics, and does not always work as well, especially if it is used to package food items that are acidic, or liquid, or require long-term storage. Blending plant-based and fossil-fuel sourced plastics to create a compostable product lowers the cost and improves performance.

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HEALTH (CON)

CON: Alternatives Still Contain Toxic Chemicals

According to... *TIME Magazine, November 28, 2023*

<https://time.com/6339914/plastic-alternatives-pollute/>

It states... Like conventional plastics, both plant-based and biodegradable versions—no matter their source—still need chemical additives to help with durability, fire resistance, waterproofing and colorfastness. Compressed fiber and paper plates, bowls, and cups are often lined with a plastic film to keep them from leaking. Those additives can be toxic for human health and dangerous for the environment, yet few have been studied.

CON: Alternatives Increase Health Risks

According to... *the Oklahoma Chamber of Commerce, Last Accessed: January 2024*

[https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet\[1\].pdf](https://uniformityofcommerce.org/documents/Plastic%20Bag%20Fact%20Sheet[1].pdf)

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This means... banning single-use plastics would put tens of millions of families at greater risk of getting sick from bacteria and disease.

CON: Increasing Health Risks

According to... *Competitive Enterprise Institute, July 13, 2018*

<https://cei.org/blog/five-reasons-banning-plastics-may-harm-the-environment-and-consumers/>

It states... Plastic is more sanitary and safer to use than other alternatives. Plastic items are more sanitary than other alternatives. For example, reusable bags often harbor bacteria and could pose a health risk for consumers. Plastic packaging reduces food waste and makes possible transporting and serving food in a way that reduces disease transmission. Recent claims to the contrary do not hold water.

In other words... banning single-use plastics would cause increased health risks from disease-causing bacteria inside reusable bags and would increase food waste. Plastic items are more sanitary and are much safer than the alternatives.

This means... the ban puts tens of millions of families at greater risk of getting sick from spoiled food and/or bacteria.

CON: Bans Spread Deadly Bacteria and Disease

According to... *Waste Management Resources, March 2022*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8847762/>

[Muposhi, et al, Midlands State University, Zimbabwe, Considerations, benefits and unintended consequences of banning plastic shopping bags for environmental sustainability: A systematic literature review, Waste Management Resources, March 2022.]

It states... The review showed that an outright ban on plastic bags triggered a host of challenges that were unforeseen during the policy's promulgation. Examples of such unintended consequences included job losses resulting from disinvestments in the plastic industry, health and hygiene problems resulting from the increased use of unwashed reusable shopping bags. 12 people were reported dead in San Francisco from E. coli, a foodborne bacteria related to the use of unwashed reusable shopping bags (Klick and Wright, 2012).

This means... banning single-use plastics will in fact transmit diseases, which could be deadly for hundreds perhaps thousands of people each year when the policy covers the entire country instead of just one city.

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RECYCLING/COMPOSTING (CON)

CON: Unrecyclable Items Mixed into Incorrect Waste Stream

S: According to... *Enhesa*, Last Accessed: December 2023

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

The EU intends to issue a Directive to ban single-use plastic cutlery and plates among other items, as there are alternatives available on the market for such products. However, we should be cautious with the alternatives that claim to be biodegradable or compostable. Usually these alternatives are compostable or biodegradable at industrial facilities at very high temperatures, which cannot be easily reached in normal environments. Moreover, these items cannot be recycled since they are not plastic and putting them in the incorrect waste stream (for example, with recyclable items) can distort the recycling process - sending all the recyclable items to landfills instead of just sorting out the non-recyclable item.

CON: Compostable/Biodegradable Require Industrial Facilities

S: According to... *Enhesa*, Last Accessed: December 2023

<https://www.enhesa.com/resources/article/are-bans-the-solution-to-plastic-pollution/>

Q: It states...

The EU intends to issue a Directive to ban single-use plastic cutlery and plates among other items, as there are alternatives available on the market for such products. However, we should be cautious with the alternatives that claim to be biodegradable or compostable. Usually these alternatives are compostable or biodegradable at industrial facilities at very high temperatures, which cannot be easily reached in normal environments. Moreover, these items cannot be recycled since they are not plastic and putting them in the incorrect waste stream (for example, with recyclable items) can distort the recycling process - sending all the recyclable items to landfills instead of just sorting out the non-recyclable item.

CON: 50% of Public are Confused (Will take Wrong Action)

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

But when consumers see a label saying a plastic is plant-based, “One in two Americans will say, ‘Oh, this belongs in a composting bin,’” says Luu of Closed Loop Partners, which recently conducted a survey of American attitudes to plastic alternatives. In other words, consumers might think they are doing the right thing, even if half of them are putting their plant-based PET products in the wrong place. Luu believes better labeling is the answer: “Just like we universally understand the stop sign, we should immediately understand that this package is compostable because it’s tinted green or is prominently labeled. If we don’t get labeling and design right, we could be creating problems for both the recycling and the composting industries.”

CON: Market Forces Prevent Recycling (ex. Not Enough Profit to Recycle)

S: According to... *National Geographic*, July 7, 2022

<https://www.nationalgeographic.com/environment/article/california-sweeping-new-plastics-law-could-be-a-game-changer>

Q: It states...

Federal legislation, which includes a provision calling for a fee on production of virgin plastic used to make single-use plastics, is tied up in Congress. The provision is aimed at leveling the playing field for plastic production: In the U.S., making plastic from virgin plastic is far cheaper than making it from recycled plastic, and those economics contribute to the growing accumulation of plastic trash around the world. Meanwhile, the Biden administration announced last month a plan to phase out single-use plastics in national parks and other public lands by 2032.

CON: Compostable Alternatives Still Put in Landfills (+Increases Global Warming with Methane!)

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

The technology exists—multinational fruit-labeling company Sinclair, among others, has been producing them for years—but the cost is higher given how cheap plastic is. A global ban on plastic stickers would certainly encourage competition and economic incentives, leading to lower prices for compostable versions. But without widespread access to composting facilities, most of those compostable stickers would end up in landfill anyway, where they could cause even more climate damage than conventional plastic. In a well-regulated composting facility, bacteria use oxygen to break organic materials down into carbon. In a landfill’s low-oxygen environment, that material creates methane as it decomposes, a greenhouse gas 25 times more potent than carbon when it comes to trapping heat in the atmosphere.

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RECYCLING/COMPOSTING (CON): CONTINUED...

CON: US Lacks Capacity to Compost the Alternatives

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

In the U.S., only 27% of the population has access to food waste composting programs, and only 142 out of the 201 industrial composting facilities nationwide that process food waste will accept compostable packaging as well, according to a new survey conducted by the composting website BioCycle and the Composting Consortium, a business group that promotes effective composting. That means that the country is producing far more compostable cups, plates, and take-out containers than it can actually process, says BioCycle's editor and publisher, Nora Goldstein.

CON: US Lacks Education to Separate Compost and Plastics

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Facilities that are reluctant to take compostable packaging argue that they can't always tell the difference between conventional plastics and compostable, and they don't want to risk contamination. A compostable sachet of pre-washed salad greens looks just like a polyethylene produce bag, says Goldstein. "If I can't tell the difference, and I am a composting professional, your average consumer is just as likely to throw a plastic bag in the compost as a compostable bag in the recycling." Both are bad: When plastic ends up in compost, the facility can't sell it, which threatens the financial viability of the project. And when compostable packaging ends up in a recycling facility, it can gum up the machinery or, depending on how it is made, taint the next batch of recycled plastic.

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POLLUTION/WASTE (CON)

CON: Alternatives Will Be Unsustainable

According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

It states... One proposed solution is to replace these plastics with alternatives: biodegradable utensils, compostable wrappers, plant-based bottles, and compressed-fiber plates and bowls. Theoretically, these products could seamlessly slot into existing supply chains, requiring no sacrifice on the part of consumers, who are clamoring for more sustainable options. But production is limited in scale, more expensive than conventional plastic, and it's not yet clear that the alternatives are actually better for human and planetary health: most plant-based plastics are, on a molecular level, identical to their fossil-fuel-sourced siblings and last just as long in the environment. Other substitutes require many of the same toxic chemical additives as conventional plastics to keep them waterproof, flexible, durable, and colorfast.

In other words... the alternatives, require many of the same chemicals to keep them durable, and waterproof, which means they will still end up in landfills and in the oceans.

This means... instead of the ban reducing waste, we will still have colorful waste, poisoned with chemicals, which animals will eat, and the air, water, and air will still become toxic. It won't be made of plastic, but it will be just as bad.

CON: Biodegradable/Compostable Alternatives Last as Long

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

The terms "biodegradable" and "compostable" are often misinterpreted to mean that the products will melt away in the natural environment, which is rarely the case. To meet a baseline standard of compostability, 90% of a PLU sticker, or a fork, for that matter, must break down into carbon matter within six to 24 months under carefully regulated heat and moisture conditions. But if you just tossed a supposedly biodegradable fork into your backyard, it could last almost as long as your typical plastic cutlery. In one 2019 study, researchers left compostable plastic bags buried in soil or submerged in seawater for three years as a trial. At the end, some of the bags were intact enough to carry a full load of groceries. Which means that without a dramatically ramped-up global system of collecting and processing biodegradable packaging, compostable is little better than plastic for the environment.

CON: Plant-Based are Chemically Identical to Plastics

S: According to... *TIME Magazine*, November 28, 2023

<https://time.com/6339914/plastic-alternatives-pollute/>

Q: It states...

Add plant-based plastics into the mix, and you have even more problems. Polyethylene terephthalate, the PET plastic used for most soda bottles (and also in many other single-use packaging products), is usually extracted from fossil fuels, but, in a process similar to turning corn into ethanol, it can also be manufactured from plants. The plant- and fossil-fuel-based versions are chemically indistinguishable—the only way to tell the difference is through radiocarbon dating (carbon molecules extracted from fossil fuels are older than ones that come from plants)—and like conventional PET, plant-based PET can be recycled.

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Topic: Banning Single-Use Plastics (ver. 1.20)

Misc. (CON)

CON: Urgent Need for GLOBAL Action (Note: Fits with my suggestion that UN Plastic Treaty is at risk)

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

Conclusions: Our results highlight the urgent need for global action to reduce plastic waste and prevent further harm to our oceans. The high levels of plastic production and emissions, particularly from Asia, emphasize the importance of international cooperation to address this issue. Efforts to reduce plastic waste should focus on improving waste management and recycling systems, as well as encouraging the development of alternative materials to replace single-use plastics. The role of rivers as major contributors to plastic pollution underscores the need for riverine plastic management initiatives. Finally, the presence of microplastics in the surface ocean and plastic particles across the world surface ocean highlights the need for further research to understand the long-term impacts of plastic pollution on marine ecosystems and human health. We also provided several potential applications of A.I. technology in effective mitigation of plastic pollution in a global level.

F: In other words... [Fact: Paraphrase for clarity].

C: This means... [Opinion: Magnitude of 'impact(s)' from Topic]

CON: Alternative Plastics for Packaging (Note: PRO bans all plastics including innovations in plastics)

S: According to... *Frontiers in Marine Science*, December 11, 2023

<https://www.frontiersin.org/articles/10.3389/fmars.2023.1305091/full>

[Ren-Shou Yu, Department of Tourism Management, Jimei University, et al, Global analysis of marine plastics and implications of control measure strategies, *Frontiers in Marine Science*, December 11, 2023.]

Q: It states... [Quoted: Entire paragraph with underlines]

In addition to these strategies, public awareness and education are crucial to reduce plastic pollution. Technological advancements in plastic recycling and biodegradable plastics can also help reduce plastic pollution. For instance, researchers have developed a biodegradable plastic made from cellulose and chitin that can be used in food packaging (Yu et al., 2020). These strategies and technologies have the potential to significantly reduce plastic waste and mitigate the negative impacts of plastic pollution on the environment and human health.

F: In other words... [Fact: Paraphrase for clarity].

C: This means... [Opinion: Magnitude of 'impact(s)' from Topic]

CON: Reducing Production of Crucial Medical Devices

S: According to... *the Harvard Environmental Law Review*, April 2023

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Q: It states...

The COVID-19 pandemic illustrates the beneficial uses of plastic. Plastics in masks and surgical equipment have been crucial in administering tests and vaccines. For example, about 129 billion face masks and 65 billion gloves were used every month in 2020.²⁹ As people switched from restaurant dining to takeout food, single-use plastic packaging use surged.³⁰ In response, many states and municipalities suspended or delayed implementing policies limiting single-use plastics.³¹

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