Debatetrack

Banning Single Use Plastics

Public Forum Topic (February 2024)

Notes on Evidence

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    1. **A starting point:** Please continue researching interesting & fruitful areas as you make cases.

    2. **A toolbox:** Not all of the cards in this brief will be useful to you—use them at your discretion.

- **Tags:** Cards are written with summaries (also called tags) to make understanding and presenting the material easier. However, many coaches and some high-quality briefs simply omit them, preferring to have students work more directly with the material to help with understanding and avoid power-tagging (ie, giving an inaccurate summary of the material).

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- **Quality**: Evidence quality will vary. While we prefer to use high-quality sources from thinktanks, journals and seasoned experts, this won't cover all major topic angles. To provide more helpful evidence, we also mix in legitimate but less-vetted sources, like news articles. Please be cognizant of this variation in quality.

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Definitions

SUPs: Single-use plastics are defined to include "plastic and polystyrene" products "designed for or intended to be used once and discarded"

US Department of the Interior—[Reducing Single-Use Plastic Pollution | U.S. Department of the Interior. (2023, September 27). Retrieved January 1, 2024, from Doi.gov website: https://www.doi.gov/reducing-single-use-plastic-pollution]

Issued on June 8, 2022, Secretary's Order 3407 (SO 3407) aims to reduce the procurement, sale and distribution of single-use plastic products and packaging with a goal of phasing out all single-use plastic products on Department-managed lands by 2032. SO 3407 is part of the implementation of President Biden's Executive Order 14057, which calls for federal agencies take actions to reduce and phase out procurement of single-use plastic products to the maximum extent practicable.

Single-use plastic products include plastic and polystyrene food and beverage containers, bottles, straws, cups, cutlery and disposable plastic bags that are designed for or intended to be used once and discarded.

A key requirement of SO 3407 is for all bureaus and offices within the Department to have Sustainable Procurement Plans (SPPs) that support the goals of section 208 of Executive Order 14057, including specific approaches and schedules to phase out single-use plastic products, by the end of 2032.

While every SPP was developed to meet the goals outlined in SO 3407, each includes variations to suit circumstances and needs of each bureau and office.

Existing Bans

2016 – Caribbean – Antigua & Barbuda banned Styrofoam and single-use plastics in 2016; as of 2021, 11 other Caribbean countries have followed suit

SKNIS 21– [SKNISEditor. (2021, April 26). TWELVE CARIBBEAN COUNTRIES HAVE SINCE BANNED SINGLE-USE PLASTICS. Retrieved January 2, 2024, from SKNIS | St. Kitts and Nevis Information Service website: https://www.sknis.gov.kn/2021/04/26/twelve-caribbean-countries-have-since-banned-single-use-plastics/] Joel.

Slowly but surely, more and more countries around the world are enacting bans on single-use plastics to reduce waste, enhance sustainability, and promote a healthy environment.

To date, 12 Caribbean countries including Antigua and Barbuda, the Bahamas, Barbados, Belize, the Dominican Republic, Grenada, Guyana, Jamaica, St. Eustatius, Saint. Lucia, St. Vincent and the Grenadines, as well as Trinidad and Tobago, have all placed a ban on the use and import of single-use plastics and Styrofoam.

"We are in a region where many of the islands have already banned the use of single-use plastics," said Minister of Environment, the Honourable Eric Evelyn, during a recent consultation with the public sector on the proposal to ban single-use plastics in St. Kitts and Nevis.

Minister Evelyn said that many of his colleague ministers from the Organization of Eastern Caribbean States (OECS) have pledged their commitment to assist St. Kitts and Nevis in this venture.

"I can tell you that when I was on a Zoom meeting with some of my colleagues they were heartened when I indicated that we will be moving towards banning single-use plastics and they gave me the commitment and said whatever assistance you need we can give you," said Minister Evelyn.

He noted that **the improper disposal of plastics continues to harm marine life, underwater ecosystems, and the climate to name a few**, therefore, the Federation needs to act fast.

"When we put things into context and perspective, we are lacking behind in St. Kitts and Nevis. We here in the Federation are a proud people and we do not like to lag behind and so we want to move as quickly as possible to ban single-use plastics," said the environment minister.

The Caribbean Sea is the second most plastic-contaminated sea in the world after the Mediterranean Sea. This, according to the United Nations Environment Program (UNEP), in **a May 2019 report on the Status of Styrofoam and Plastic Bags in the Wider Caribbean, estimated that 600 to1,414 plastic items per square kilometer end up in the Caribbean Sea.**

Antigua and Barbuda was the first to take action in 2016 with Saint Lucia issuing a ban in August 2019. Some governments have taken a phased approach with the full ban coming into effect in 2021.

Minister Evelyn said that while governments have put measures in place to reduce plastic pollution in the Caribbean, it takes an all of society approach to reduce our consumption of all types of plastics, utilize sustainable alternatives, and ensure proper plastic waste disposal.

February 2024: The United States federal government should ban single-use plastics.

2020-25 – China – Single Use Plastics are being banned around the country in phases, from shopping bags to plastic straws to plastic utensils

Library of Congress 21– [China: Single-Use Plastic Straw and Bag Ban Takes Effect. (2015). Retrieved January 1, 2024, from The Library of Congress website: https://www.loc.gov/item/global-legal-monitor/2021-03-23/china-single-use-plastic-straw-and-bag-ban-takes-effect/] Joel.

On January 1, 2021, a plastic ban took effect in China that prohibits restaurants throughout the country from providing single-use plastic straws and stores in the major cities from providing plastic shopping bags. These are among the restrictions on the production, sale, and use of single-use plastic products set out in a policy document jointly issued by the National Development and Reform Commission (NDRC) and the Ministry of Ecology and Environment on January 16, 2020. (The Opinions on Further Strengthening the Cleanup of Plastic Pollution (NDRC Opinions).) **Provinces throughout the country have since issued their plans for implementing the national policy.**

Plastic Bans

The NDRC Opinions lay out the following five-year roadmap to restrict the use of plastic products such as shopping bags, straws, and utensils by 2020, 2022, and 2025, respectively.

Nondegradable plastic bags: These bags will be banned in shopping malls, supermarkets, pharmacies, book stores, and food takeout services in the major cities by the end of 2020, and in other cities and towns by 2022. Markets selling fresh produce are exempt from the ban until 2025.

Single-use plastic utensils: By the end of 2020, restaurants throughout the country will be prohibited from using nondegradable single-use plastic straws. Other single-use plastic utensils will be banned for on-site dining in the cities by the end of 2020 and in the counties by 2022, and their use in takeout in the cities must be reduced by 30% by 2025.

Single-use plastic items in hotels: Star-rated hotels throughout the country will be prohibited from voluntarily providing these items by 2022. The restriction will be expanded to other hotels and homestays by 2025.

Plastic postal and courier packages: Postal and courier services in specified developed areas, including Beijing, Shanghai, Jiangsu, Zhejiang, Fujian, and Guangdong, will be prohibited from using nondegradable plastic packaging bags by 2022. This ban will be applied nationwide by 2025.

The production of cosmetic products containing plastic microbeads is also banned, according to the NDRC Opinions, and the sale of such products will be banned by the end of 2022. **Other plastic products that are banned from being produced or sold in China include (1) ultra-thin plastic shopping bags with a thickness of less than 0.025 mm, (2) polyethylene agricultural mulching films with a thickness of less than 0.01 mm, and (3) single-use foam clamshells and plastic cotton swabs.**

February 2024: The United States federal government should ban single-use plastics.

2022 – European Union – 'SUP Directive' – the EU banned the top 10 most common plastic items found on beaches, including bioplastics – member countries had 2 years to implement the ban

Euronews 22– [EU bans 10 most common single-use plastic items found on beaches. (2021, July 5). Retrieved January 1, 2024, from euronews website: https://www.euronews.com/green/2021/07/05/eu-bans-10-most-common-single-use-plastic-items-found-on-beaches] Joel.

As of this week**, straws, plastic bottles, coffee cups and takeaway containers made from certain materials are banned in the EU. Items made from expanded polystyrene, specifically, are no longer allowed to be sold.**

The exact items included are 10 single-use plastics that are most commonly found thrown away on beaches. Expanded polystyrene is being targeted because it easily breaks down into tiny white plastic balls which are blown around by the wind and eaten by fish or birds who think it's food.

The new law, called the Single-Use Plastics (SUP) Directive, requires all 27 EU member states to enforce the new guidelines. Norway, despite not being a member of the EU, is also implementing the SUP directive as a member of the European Economic Area.

The laws state that the aim is to prevent and reduce the impact of certain plastic products on the environment, in particular the aquatic environment, and on human health, as well as to promote the transition to a circular economy with innovative and sustainable business models, products and materials.

The directive will be transposed into national law and applied as of 3 July 2021 - **any countries who don't respect these obligations will be fined.**

Single-use plastics (SUPs) make up 50 per cent of all litter found on European beaches. To plan the directive, the European Commission commissioned a study that used litter data from research projects, monitoring programmes and clean-ups on 276 European beaches in 17 EU countries. It found that half of all litter on these beaches in 2016 derived from SUP items.

The EU study also reported that around 90 per cent of all single-use plastics found on European beaches consist of just 10 different types of items. As a result, the EU decided to target these specific items in its SUP directive.
It bans the top 10 SUP items for which there is an accessible innovative alternative, no matter whether it is a reusable product or a single-use product made of another material other than plastic.

Single-use plastics (SUPs) are produced to be used once, from a few seconds to a few minutes. SUPs include items like food wrappers, take-away containers, coffee cups and plastic bottles. Because they are used for such a short time, SUPs are more likely to be littered.

"When we are on the go and we only need them for a few minutes, we often don't know what to do with those plastics," says Gaëlle Haut, project manager for EU affairs at Rethink Plastic, an alliance of European NGOs fighting plastic pollution.

For other SUPs the EU did not consider environmentally-friendly alternatives advanced enough for a market restriction. Hence, **not all single-use plastic cups, food and beverage containers will be banned, just those made of expanded polystyrene.**

Rethink Plastic believes that enough alternatives are available to ban all kinds of SUP food and beverage containers.

Interestingly enough - **bioplastics are being banned, despite some members of the industry trying to have them exempted.** Unlike conventional plastics, bio-based plastics are made of biological resources instead of fossil fuels like coal, gas or oil. Yet **according to Haut, those bioplastics are "just as bad as conventional plastics."**

Their decomposition takes a very long time during which the plastics impact marine life and, "they only decompose under very specific conditions which are not even found in nature, let alone in the ocean."

For the top 10 SUP items for which alternatives are not as developed yet, the directive makes other requirements. **To make consumers more aware of which products contain plastics and how to dispose of them correctly, period products, wet wipes, tobacco products and cups will need to have warning labels.**

One of these is what Haut calls "a plague", cigarette butts.

Every year, butts are the item most commonly found in beach cleans organised by Haut's NGO Surfrider Foundation Europe. In the study the EU directive was based on, cigarette butts are the second most found SUP item.

Most cigarette filters include plastics and even though some plant-based alternatives exist, the EU calls for further innovation towards sustainable options.

Instead of banning them, the directive forces tobacco producers to help with the problem.

The measure is called Extended Producer Responsibility (EPR), and means producers will have to cover the costs for litter clean-up. This also applies to wet wipes and balloons.

However, only the market ban and the labeling requirements enter into force on 3 July. EPR and all the other measures addressing the items regarded as not fully replaceable yet will come within the next few years.
Rethink Plastic is demanding tighter deadlines.

"There is no reason why citizens should already take responsibility for plastic pollution [now] and some industry players are guaranteed some more years," says Haut.

The public approval towards the directive is expected to be high. In the 2017 Eurobarometer, which consists of around 1000 interviews per Member State**, the vast majority of respondents said it was important that products should be designed in a way that plastic can be recycled (94 per cent approval).**

They also said the industry should make an effort to reduce plastic packaging (94 per cent), the public should be educated on how to reduce plastic waste (89 per cent) and local authorities should provide more and better collection facilities for plastic waste (90 per cent).

The Member States have had two years to implement the measures of the directive in national law. Some have already done so early, for example France banned the first SUP items in the beginning of 2020. But not all countries have submitted a law draft to the Commission.

Rethink Plastic assessed how the Member States are doing in implementing the EU directive into national law. They found that four countries have not implemented the ban: Bulgaria, the Czech Republic, Poland and Romania. Many others have picked and chosen some of the measures, rather than going full hog.

While Haut says the directive is a big step in the right direction, she also thinks many more steps could be made and Rethink Plastics calls on all countries to be more ambitious than what the directive says.

February 2024: The United States federal government should ban single-use plastics.

2022 – US Public Lands – single-use plastics are being phased out in national parks, wildlife refuges and conservation lands over the coming years

Euronews 23– [England bans single-use plastics two years after the EU. (2023, October 2). Retrieved January 1, 2024, from euronews website: https://www.euronews.com/green/2023/10/02/england-bans-single-use-plastic-what-is-and-isnt-included-in-the-new-rules] Joel.

The Department of the Interior today announced that all bureaus and offices have finalized sustainable procurement plans to phase out single-use plastics on public lands within the next decade. The Department-wide plans support Secretary's Order (S.O.) 3407, which Secretary Deb Haaland signed in June 2022, **to reduce the procurement, sale and distribution of single-use plastic products.** S.O. 3407 **is part of the implementation of President Biden's Executive Order 14057**, **which calls for federal agencies to take actions to reduce and phase out procurement of single-use plastic products to the maximum extent practicable.** Secretary of the Interior Deb Haaland highlighted this effort in remarks today as part of the White House Summit on Building Climate Resilient Communities.

"**The Interior Department has an obligation to play a leading role in reducing the impact of plastic waste on our ecosystems and our climate. As the steward of the nation's public lands, and as the agency responsible for the conservation and management of fish, wildlife, plants and their habitats, we are uniquely positioned to do better for our Earth,**" said Secretary Deb Haaland. "Our Department-wide efforts are inspiring bold action to phase out single-use plastic products as we seek to protect our natural environment and the surrounding communities."

Since the signing of S.O. 3407, **Interior facilities across the nation, including national parks, national wildlife refuges and conservation lands, have made progress with key efforts that include: installing water bottle filling stations, increasing recycling, and working with concessionaires to reduce sales of single-use plastic bottles, as well as use of plastic utensils, bags, straws and other plastic products.**

Bureaus and offices will continue to work collaboratively within the Department, as well as with other agencies and partners, to share and evolve best practices and update their plans accordingly. The plans published today will be updated in 2024, to include stepdown targets and additional details on where and how single-use plastics will be eliminated.

Plastic waste is a priority environmental problem. Less than 10 percent of the plastic that has ever been produced has been recycled, and recycling rates are not increasing. Plastics, including unnecessary and easily substituted single-use plastic products, are devastating fish and wildlife around the world.

Our ocean is downstream of all pollution sources and bears the brunt of the impacts: of the more than 300 million tons of plastic produced every year for use in a wide variety of applications, at least 14 million tons of plastic end up in the ocean every year and plastic makes up 80 percent of all marine debris found from surface waters to deep-sea sediments. Marine species ingest or are entangled by plastic debris, which causes severe injuries and death, and plastic pollution threatens food safety and quality, human health, coastal tourism, and contributes to climate change.

February 2024: The United States federal government should ban single-use plastics.

2023 – England – many single-use plastics are banned, including biodegradable, compostable, and recycled plastics

Euronews 23– [England bans single-use plastics two years after the EU. (2023, October 2). Retrieved January 1, 2024, from euronews website: https://www.euronews.com/green/2023/10/02/england-bans-single-use-plastic-what-is-and-isnt-included-in-the-new-rules] Joel.

A ban on some single-use plastic items has just been introduced across England.

It will mean businesses are no longer allowed to supply some items like polystyrene cups and plastic cutlery.

"This new ban is the next big step in our mission to crack down on harmful waste," said Environment Minister Rebecca Pow.

The government already has "world-leading bans" and taxes on other forms of plastic, she added. **The new rules will "protect the environment and help to cut litter - stopping plastic pollution dirtying out streets and threatening our wildlife".**

First announced in January this year, **it is part of a goal to eliminate all "avoidable plastic waste" by 2042.** The rules across the UK vary with Scotland introducing a similar policy last year and Wales due to introduce a ban later this month.

So what is included in the ban? From 1 October, **businesses like shops, restaurants and takeaways won't be able to supply, sell or offer certain single-use plastic items to customers. They could face fines and criminal charges if they don't comply with the new rules.**

The ban includes cutlery, polystyrene cups and food containers, and balloon sticks. It covers all types of single-use plastic including biodegradable, compostable and recycled.

Businesses won't be able to supply these items even if they have stock left over from before the ban.

There are also restrictions on single-use plastic plates, trays and bowls but takeaways will still be able to use containers, trays and wraps if they are pre-filled or filled at the point of sale. Shelf-ready pre-packaged food items are also excluded from the rules.

And, retailers can still give you a polystyrene lid on your coffee cup as long as the cup itself isn't made from the material.

It adds to a ban on single-use plastic straws, stirrers and cotton buds that was introduced in 2022. The government says it is planning to ban all plastic packaging later down the line but an exact date hasn't yet been set.

England uses an estimated 2.7 billion pieces of mostly plastic single-use cutlery and 721 million single-use plates every year. That's around 37 pieces of cutlery and 18 plates per person.

Just 10 per cent of these items are recycled according to government estimates and the rest can take hundreds of years to degrade in landfills.

City to Sea, one of the charities that helped push for the ban, says that it was "hard won and very slow to come into place".

Consumption Increasing

Plastic consumption will “nearly double” by 2050 from 2019 numbers

Reuters 23 –[Reuters. (2023, February 27). Plastic consumption on course to nearly double by 2050 - research. Retrieved January 2, 2024, from Reuters website: https://www.reuters.com/business/environment/plastic-consumption-course-nearly-double-by-2050-research-2023-02-27/]

Plastic use in G20 countries is on course to nearly double by the middle of the century unless a comprehensive and legally binding global treaty to curb consumption is drawn up, according to research published on Monday.

Existing programmes to boost recycling or cut single-use plastic consumption only "scratched the surface" and a more comprehensive global plan is required, according to Back to Blue, a research group run by the Economist Impact think-tank and the Nippon Foundation, a private philanthropic organisation.

The United Nations kicked off negotiations on an agreement to tackle plastic pollution in Uruguay in November, with the aim of drawing up a legally binding treaty by the end of next year. As many as 175 countries have signed up to the talks.

However, if negotiations fail, **annual plastic production in G20 countries could rise to 451 million tonnes by 2050 according to current rates of growth, Back to Blue said - up nearly three-quarters from 2019.**

"There should be no illusions that the treaty negotiations will be anything but difficult and treacherous," the research group said. "The chances of failure - not just that no treaty emerges but one that is too weak to reverse the plastic tide - are considerable."

It called for a more aggressive ban on single-use plastic together with higher production taxes and mandatory schemes to make firms responsible for the entire lifespan of their products, including recycling and disposal.

The combined measures could limit annual consumption to 325 million tonnes by 2050, Back to Blue said, but that would still be up by a quarter compared to 2019, and the equivalent of 238 million filled rubbish trucks.
Among the G20 countries that have yet to introduce national bans on single-use plastic products are Brazil, the United States, Indonesia and Turkey, the report said.

Manufacturing

99% of plastics are made from refined fossil fuels

CIEL 17– [The Production of Plastic and Petrochemical Feedstocks Fueling Plastics. (n.d.). Retrieved from https://www.ciel.org/wp-content/uploads/2017/09/Fueling-Plastics-Fossils-Plastics-Petrochemical-Feedstocks.pdf] Joel.

[Since 1989, the Center for International Enivronmental Law has used the power of law to protect the environment, promote human rights, and ensure a just and sustainable society. Over its 25 years, CIEL has trained more than 425 interns and law fellows from 54 countries. In conjunction with this program, CIEL conducts a joint research and teaching program with American University's Washington College of Law.]

Although plastic is a familiar material in everyday life, many people do not know where plastic comes from, or even how to define what "plastic" is. **Broadly speaking, plastics are materials formed from organic polymers — giant molecules made by linking together long chains of smaller molecules, called monomers.** These monomers, however, are themselves products of a supply chain that almost always starts at a wellhead, oil rig, or coal mine.

Virtually all (over 99%) of plastics are produced from chemicals sourced from fossil fuels. While there is a wide variety in types of plastic, five kinds of plastic constitute over 90% (by weight) of all plastic produced:

• polyethylene (34.4%),
• polypropylene (24.2%),
• polyvinyl chloride (16.5%),
• polyethylene terephthalate (7.7%), and
• polystyrene (7.3%).

Ethylene is a critical feedstock for the production of polyethylene, polyvinyl chloride (PVC), polyethylene terephthalate (PET), and polystyrene, which combined represent approximately 65% of global plastics production by weight. Propylene is the platform chemical for polypropylene. Therefore, **the overwhelming majority of plastics can be traced to the product streams of just two industrial chemicals: ethylene and propylene.**

Ethylene and propylene are particularly critical in the production of plastic packaging, the largest and fastest growing category of plastics products and the biggest, though by no means only, contributor to the accelerating crisis of plastics pollution. Approximately 34% of plastic use in the United States and 40% of plastic use in Europe is used for packaging. Moreover, plastic packaging is comprised nearly exclusively of the five major thermoplastics discussed above, primarily polyethylene, polypropylene, and PET.

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Plastics Bad

Climate Change

Plastics emit carbon dioxide and are a major contributor to oil & gas mining growth – major reductions are needed to keep the Earth from warming beyond 1.5 degrees

Wilson Center 21 –[The Climate Footprint of Plastics: Search for Solutions in Asia, Europe, and the United States. (2023). Retrieved January 2, 2024, from Wilson Center website: https://www.wilsoncenter.org/event/climate-footprint-plastics-search-solutions-asia-europe-and-united-states]

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When most people think of plastic waste they might picture discarded bottles on the ground or straws in the sea, but along the entire supply chain—**from oil extraction and manufacturing to disposal—single-use plastic packaging waste is emitting carbon dioxide into our atmosphere. The Center for International Environmental Law estimates that without drastic steps to reign in plastic use, by 2050, up to 13 percent of our total remaining carbon budget will be used up by plastics. The International Energy Agency predicts that petrochemicals, including plastic, will account for 45% of the growth in oil and gas mining from 2018 to 2040. A growing number of researchers and activists are warning that the world must drastically reduce single-use plastic production and consumption to keep the earth from warming beyond the 1.5°C target.**

At this China Environment Forum, speakers delved into market changes, policies, lawsuits and technologies critical to reducing virgin plastic resin and plastic waste. Starting with Carroll Muffett (CIEL) who outlined the often hidden sources of carbon emissions along the plastic lifecycle. Next, Von Hernandez (BFFP) highlighted the climate-plastic nexus in Asia and the efforts of groups on the ground to counter the false solutions being promoted by corporate polluters to justify the continuing production and use of throwaway plastic. Alice Mah (University of Warwick) shared her research into the environmental and social impact of the growing petrochemical pollution in China's Yangtze River Basin. Rosa Pritchard (Client Earth) reported on her organization's work pushing for new laws that limit unnecessary single-use plastics and bringing legal cases in Europe that make plastic producers responsible for the environmental costs of dealing with plastic waste.

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Plastics continue to release GHGs, including methane, even after production and use, as they break down in the environment

Muffett 21 –[The Climate Footprint of Plastics: Search for Solutions in Asia, Europe, and the United States. (2023). *Selected* Quotes. Retrieved January 2, 2024, from Wilson Center website: https://www.wilsoncenter.org/event/climate-footprint-plastics-search-solutions-asia-europe-and-united-states]

[Carroll Muffett is President and CEO of the Center for International Environmental Law, a nonprofit organization that uses the power of law to protect the environment, promote human rights and ensure a just and sustainable society. Carroll has authored numerous articles and textbook chapters on national and international environmental policy. He is a recognized expert on the international law of wildlife and timber trade, and a leader in the emerging field of international legal responses to climate change.]

"It's really important to recognize that these emissions are cumulative, they add up in the atmosphere and that means between now and 2050, the plastics life cycle could add fifty-six gigatons of carbon to the atmosphere. This is equivalent to thirteen or more percent of the Earth's entire remaining carbon budget in a 1.5-degree world. But as I emphasized, **our estimates were conservative and the real picture continues to accelerate**."

"**An even more insidious and potentially even more dangerous threat from that life cycle; plastics do not stop emitting once they leave our homes, once they leave our economy, once they enter the environment. Research has shown that plastics continue to emit greenhouse gases even when they are in the environment including high-impact greenhouse gases like methane**. Beyond those direct emissions, however, there are now more than fifty-seven trillion particles of microplastics accumulating in the ocean surface and that number continues to grow."
"Put more succinctly, what this evidence is showing is that **the plastic crisis could be accelerating the climate crisis not only by contributing to and accelerating the emissions themselves, but by impairing the Earth's ability to store and sequester potentially enormous amounts of carbon**."

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Plastics are a part of the fossil fuel infrastructure—if governments are regulating fossil fuels, they should also regulate plastics, which are part of the same system

Pritchard 21 –[The Climate Footprint of Plastics: Search for Solutions in Asia, Europe, and the United States. (2023). *Selected* Quotes. Retrieved January 2, 2024, from Wilson Center website: https://www.wilsoncenter.org/event/climate-footprint-plastics-search-solutions-asia-europe-and-united-states]

[Rosa is a plastics lawyer at ClientEarth. Prior to joining ClientEarth, Rosa worked as a corporate lawyer for clients in the energy and infrastructure sectors at an international law firm, having trained as a solicitor in the London and Paris offices of the same firm. During this this time, Rosa spent several months on secondments to the legal teams of companies operating in the insurance and offshore energy sectors. Before commencing her legal training, Rosa studied Modern Languages at the University of Oxford. She subsequently spent some time working for a Mexican NGO dedicated to equipping civil society organisations with advocacy skills to influence the public policy agenda in Mexico.]

"These risks don't just relate to plastic waste and plastic pollution, which are probably the most widely recognized and well-understood manifestations of the plastic crisis but also from the links between plastics and climate. So for example we talk about E.U. regulatory conditions which to date have shielded plastic producers from the carbon price and these are starting to be phased out, and obviously, fossil fuel markets are facing very uncertain market conditions, and we make the argument that plastic packaging is likely increasingly to embed the carbon price and to therefore represent an increased cost for these big users of plastic packaging."

"At every point, we're trying to integrate those arguments into our work on these topics because we really want companies, investors, financial institutions, and governments and decision-makers as well to recognize that single-use plastics is really a piece of the fossil fuel infrastructure, and that **it doesn't make any sense to have robust policies and laws that are tough on fossil fuels but remain silent and inactive on single-use plastics."**

Environment

Plastic pollution is found everywhere in the biosphere, and levels of environmental waste could double by 2050—this harms animals, especially aquatic animals, as well as human health

Lau et al. 20—[Evaluating scenarios toward zero plastic pollution. (2020). Retrieved January 1, 2024, from Science website: https://www.science.org/doi/10.1126/science.aba9475?intcmp=trendmd-sci]

[Winnie Lau directs Pew's preventing ocean plastics project, which aims to implement science- and evidence-based solutions and policies to reduce the global plastic pollution problem. Before joining Pew, she was the climate change science and technology adviser with the U.S. Agency for International Development's mission to Sri Lanka and the Maldives. She also managed the Marine Ecosystem Services Program at Forest Trends and was a science and technology policy fellow for the American Association for the Advancement of Science at the U.S. State Department. Lau holds a bachelor's degree in integrative biology and environmental sciences from the University of California, Berkeley and a doctorate in oceanography from the University of Washington.]

Plastic pollution is globally ubiquitous. It is found throughout the oceans, in lakes and rivers, in soils and sediments, in the atmosphere, and in animal biomass. This proliferation has been driven by rapid growth in plastic production and use combined with linear economic models that ignore the externalities of waste (1, 2). **A sharp rise in single-use plastic consumption and an expanding "throw-away" culture** (1) **have exacerbated the problem.** Waste management systems do not have sufficient capacity at the global level to safely dispose of or recycle waste plastic (3, 4), resulting in an inevitable increase in plastic pollution into the environment. Previous studies estimated that ~8 million metric tons (Mt) of macroplastic (5) and 1.5 Mt of primary microplastic (6) enter the ocean annually. Comparable estimates for terrestrial plastic pollution have yet to be quantified. **If plastic production and waste generation continue to grow at current rates, the annual mass of mismanaged waste has been projected to more than double by 2050** (1, 2**), and the cumulative mass of ocean plastic could increase by an order of magnitude from 2010 levels by 2025** (5). Despite the magnitude of these flows, the efficacy and economic costs of solutions proposed to solve the plastic waste problem—the uncontrolled release of plastic waste into the environment resulting from ineffective management—remain unknown.

A growing body of evidence points to a broad range of detrimental effects of plastic pollution. **Nearly 700 marine species and more than 50 freshwater species are known to have ingested or become entangled in macroplastic** (7, 8), **and there is growing evidence that plastic is ingested by a wide range of terrestrial organisms** (9). Plastic pollution affects many aspects of human well-being: affecting the aesthetics of beaches (10), blocking drainage and wastewater engineering systems (11), and providing a breeding ground for disease vectors (10, 12). **The lower-bound estimate of the economic impact on costs of plastic pollution to fishing, tourism, and shipping have been estimated at $13 billion annually** (13). **Although harmful effects of microplastic** (here defined as plastics <5 mm) **have not been consistently demonstrated, ingestion has been documented across trophic levels and at all depths of the ocean**, in individual organisms and species assemblages (8, 14) and in terrestrial organisms (15). **Microplastics are also increasingly found in the human food system**, although their impacts on human health are difficult to assert and require further research (16, 17). **Plastic production, collection, and disposal are also major sources of greenhouse gas** (GHG) **emissions** (18).

Food Insecurity

Plastics harm aquatic species, farm animals, and humans alike, leading to food insecurity and human health issues like cancer, endocrine and immune disruptions

Kurtz & Sample 21 –[To build food security, reduce plastic use | IFPRI : International Food Policy Research Institute. (2023). Retrieved January 1, 2024, from Ifpri.org website: https://www.ifpri.org/blog/build-food-security-reduce-plastic-use]

[Julie Kurtz is a Research Analyst with IFPRI's Markets, Trade, and Institutions Division and Chair of the IFPRI Sustainability Task Force; Drew Sample is IFPRI's Manager of Media Engagement.]

This problem won't be solved by campaigns to change consumer littering habits or to encourage recycling; the issues are systemic. For example, wealthy countries that produce the most plastic waste per capita often export much of it to poorer countries, which have even weaker recycling infrastructure if any at all. Since markets do not incentivize recycling, most plastic waste continues to be dumped or burned.

Plastic waste pollution of aquatic and agricultural systems threatens food security. Oceans and marine life (and those dependent on fisheries) bear much of this brunt, with an estimated negative annual impact of $13 billion on ocean ecosystems. Marine life suffers from ingesting plastic (where it also enters the human food chain), or by being entrapped or suffocated. Ruminant livestock regularly ingest plastic waste, posing a growing threat to human health, particularly in low-income countries. Slaughterhouses around world have reported finding plastics inside livestock; the prevalence is particularly high among African countries. **Indigestible plastics lead to many adverse health effects, including low milk yield, reduced weight gain, reduced draft ability, and other comorbid diseases and mortality, costing some farmers millions of dollars annually in lost productivity. As with seafood, these chemicals enter the human food chain through milk and meat products.**

Humans ingest or inhale around 50,000 microscopic plastic particles a year; the health effects of chronic plastic exposure are not fully known, but the evidence so far indicates it likely has negative impacts, particularly on human endocrine and immune systems.

For communities living near plastic production facilities (and other kinds of petrochemical plants) the health risks are clear: Higher rates of cancer and other serious health problems. These risks disproportionately impact vulnerable populations. In the U.S., that often means African American communities, like those within the hub of industrial plants in Louisiana nicknamed "Cancer Alley."

To counter the destructive impact of plastics on livelihoods, public health, and nature, more than 127 countries have instituted some form of regulation on single-use plastics, according to a report from UN Environment (graphic). However, many of these laws only partially regulate and/or contain exceptions. Only one country, Cape Verde, puts any limits on plastic production. Under this patchwork and laissez-faire system, companies continue producing an estimated five trillion plastic bags each year.

IFPRI's mission is to end hunger and malnutrition, and to sustainably reduce poverty. Given the food security risks posed by plastic production and pollution, and the unfortunate trend of low income countries becoming dumping grounds for plastic trash from wealthy countries, solving the plastic crisis and eliminating its impacts on food systems globally is integral to achieving that mission. **We also recognize the connection between the rise of packaged, cheap processed foods and the accompanying spike in global obesity and diet-related non-communicable diseases. Along with our partners, we must advocate for policies to reduce plastic waste, including:**

- **Regulatory bans, restricting production and distribution on unneeded plastic items like bags.**
- Consumer incentives to encourage reusable alternatives.

Additional Ideas List

Plastic waste pollutes the world's bodies of water; breaks down into microplastics; poisons the air, water and blood; and causes 10% of global greenhouse gas emissions

Baker 23—[Baker, A. (2023, November 28). The Dirty Secret of Alternative Plastics. Retrieved January 1, 2024, from TIME website: https://time.com/6339914/plastic-alternatives-pollute/]

[Aryn Baker is the senior international climate and environment correspondent at TIME. She covers the human impacts of climate change, as well as food security, oceans, climate migration, and extreme heat.]

In the three decades since it was first introduced, the plastic, coin-sized sticker you see on fruit and vegetables has become a staple of modern agriculture, imparting essential information about the grower, brand, country of origin, and even price of fresh produce as it crisscrosses the globe. **The Product Look Up (PLU) label is designed to be briefly scanned then discarded, destined for landfill. There, it might last for hundreds of years, joining an endless accumulation of plastic packaging also intended to be removed after purchase and immediately jettisoned.**

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.**

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.

Macroplastics

Macroplastics kill up to 22% of cetaceans and 50% of turtles that consume them, as well as large numbers of other oceanic megafauna – this poses a major threat to marine conservation

Roman et al. 20—[Roman, L., Schuyler, Q., Wilcox, C., & Britta Denise Hardesty. (2020, December 3). Plastic pollution is killing marine megafauna, but how do we prioritize policies to reduce mortality? Retrieved January 1, 2024, from ResearchGate website: https://www.researchgate.net/publication/346968135_Plastic_pollution_is_killing_marine_megafauna_but_how_do_we_prioritize_policies_to_reduce_mortality]

Marine debris is becoming increasingly recognized as an important threat to megafauna. Stranded animals with debris-induced mortality rates of up to 22% in cetaceans (Baulch & Perry, 2014) **and nearly half of sea turtles** (Rosolem Lima et al., 2018) **have been observed, and high mortality has been estimated in seabirds** (Roman, Hardesty et al., 2019**). Debris ingestion is a significant conservation threat to numerous marine taxa, including threatened species, signifying the importance of reducing input of lethal items.**

We identified three classes of debris—film-like plastics, fishing debris, and latex/balloons—that are disproportionately responsible for megafauna death**. To reduce megafauna mortality, we recommend policymakers focus on reduction through regulation, prohibition, and replacement of high-mortality risk large items such as plastic bags, plastic packaging, plastic sheets, fishing rope, nets, tackle, and balloons** (Table 2). **Reducing the abundance of these items in the environment would directly reduce mortality of marine megafauna through lesser megafauna–debris encounters and interactions.**

While policies targeting these items are likely to result in reduced mortality to marine fauna, we also recognize the importance and role of behavior change and awareness raising campaigns. Previous work showed that a combination of policies, practices, and behavior change social activities were most successful in reducing coastal litter at a national scale (Willis et al., 2018), with investments in campaigns resulting in larger waste reduction than did investment in policies alone (Brown, Ham, & Hughes, 2010). Furthermore, the campaign message and its delivery style influence social behavior (Brown et al., 2010), with personal interaction acknowledged as a preferred, though typically more costly approach (Lewin, Weltersbach, Denfeld, & Strehlow, 2020; Roggenbuck, Williams, & Bobinski, 1992). **A combination of policies that legislates reduction, prohibition, and replacement of high-risk items, with targeted investment in behavior change and awareness campaigns, will likely generate the largest reductions in plastic related mortality of charismatic megafauna.**

Scale

Humans have produced 11 billion tons of plastic, and continue to produce 430 million tons per year—more than the weight of all human beings combined—95% of this plastic is discarded after one use, with fully 1/3 of this waste finding its way into the natural environment

Main 23 –[Main, D. (2023, October 12). Think that your plastic is being recycled? Think again. Retrieved January 1, 2024, from MIT Technology Review website: https://www.technologyreview.com/2023/10/12/1081129/plastic-recycling-climate-change-microplastics/]

[Douglas Main is a journalist and former senior editor and writer at National Geographic.]

Indeed, the scale of the problem is hard to internalize. **To date, humans have created around 11 billion metric tons of plastic. This amount surpasses the biomass of all animals, both terrestrial and marine, according to a 2020 study published in Nature.**

Currently, about 430 million tons of plastic is produced yearly, according to the United Nations Environment Programme (UNEP)—significantly more than the weight of all human beings combined. One-third of this total takes the form of single-use plastics, which humans interact with for seconds or minutes before discarding.

A total of 95% of the plastic used in packaging is disposed of after one use, a loss to the economy of up to $120 billion annually, concludes a report by McKinsey. (Just over a quarter of all plastics are used for packaging.) **One-third of this packaging is not collected, becoming pollution that generates "significant economic costs by reducing the productivity of vital natural systems such as the ocean." This causes at least $40 billion in damages, the report states, which exceeds the "profit pool" of the packaging industry.**

These numbers are understandably hard to make concrete sense of, even at the scale of specific companies, such as Coca-Cola, which produced 3 million tons of plastic packaging in 2017. That's the equivalent of making 200,000 bottles per minute.

Notably**, what doesn't get reused or recycled does not chemically degrade but rather becomes a fixture of our world; it breaks apart to form microplastics, pieces smaller than five millimeters in diameter**. In the past few years, scientists have found significant quantities of microplastics in the further reaches of the ocean; in snow and rainfall in seemingly pristine places worldwide; in the air we breathe; and in human blood, colons, lungs, veins, breast milk, placentas, and fetuses.

One paper estimated that the average person consumes five grams of plastic every week—mostly from water. About 95% of the tap water in the United States is contaminated. Microplastics are also widely found in beer, salt, shellfish, and other human foods. Significant quantities of these plastic bits have turned up in common fruits and vegetables, as one recent study in Italy found.

All this meant that our journey in the kayaks, picking up plastic waste along the way, looking after our local environment, was—while a genuinely helpful service to our fellow humans—only fixing a symptom of a larger problem.

The solution to that problem lies further upstream: to address plastic pollution, those who produce plastics need to pay for the damage it causes, and the world will also have to make less of it. We'll have to develop better, more recyclable products. We'll also have to find sustainable alternatives and increase what ecologists call circularity—keeping those products in use as long as possible and finding ways to reuse their materials after that. While these are not exactly new ideas, they've received renewed attention from global policymakers, innovators, and companies looking to make a sustainable future profitable.

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Plastics Good

Additional Ideas List

Single-use plastics are necessary in medicine, scientific research, food & water packaging for emergency relief, and for people with disabilities

Harvey 18 –[Harvey, P. (2018, July 6). Sometimes We Really Need Single-Use Plastics. Retrieved January 2, 2024, from Oceans website: https://deeply.thenewhumanitarian.org/oceans/community/2018/07/06/sometimes-we-really-need-single-use-plastics]

[Paul Harvey is an environmental science researcher at Australia's Macquarie University. He is also co-owner of The Wonky Carrot, a small company focused on sustainable and plastic-free products.]

Most of us will get along just fine without throwaway plastic in our daily lives. **But there are nevertheless many legitimate applications for single-use plastics.**

Take medicine, for example, where single-use plastics are a key part of infection control. Having a blood test requires gloves made from plastic, a plastic syringe, and a plastic vial – all of which are single-use to control contamination and infection. While glass is often suggested as an alternative, this introduces challenges in cleaning, transport and availability, particularly in emergency situations where resources may be limited.

Single-use plastics also play a role in scientific research. Many scientists cringe as they look at their waste bin at the end of a session in the lab. Typically, it will be filled with pipettes, gloves, vials, sample bags … the list goes on.

These items are used for their strength and resilience, and because they prevent cross-contamination of sampling. As with medical applications, **many substitute materials do not provide the protection or stability that single-use plastics do.**

Single-use plastics are often used to package food and water. While this is unnecessary in most settings, certain situations do require single-use packaging to ensure food and water safety. Domestic food aid, emergency responses and international aid efforts all require food and water that can be stored without refrigeration and distributed when and where it's needed. Often this means packaging it in lightweight, single-use plastics.

While the proposed bans on single-use plastics should be recognized and applauded as an important step forward in the global fight to prevent plastic pollution, **we should ensure that we have thought through all the scenarios where single-use plastic may be a legitimate necessity.**

Consider the case of someone with a disability who can only be fed with the aid of a flexible plastic straw. Without appropriate exemptions, a federal legislative ban on single-use plastic straws could prevent people in need from accessing a basic medical aid.

Sanitary

Emergency-room visits and deaths rose by 50% in California counties that banned plastic bags

Click & Wright 12 –[Klick, J., & Wright, J. D. (2012). Grocery Bag Bans and Foodborne Illness. Social Science Research Network. https://doi.org/10.2139/ssrn.2196481]

[Jonathan Klick is an American economist who has written numerous works on empirical law and economics. His scholarship addresses tort liability and moral hazard, criminal punishment, health regulation, and business regulation.

Joshua Daniel Wright is an American economist and legal scholar who served as a commissioner of the Federal Trade Commission from 2013 to 2015. At the time of his nomination, Wright was the fourth economist to serve as a commissioner of the FTC]

State and local governments have recently imposed bans or levied taxes upon plastic grocery bags. This trend is in response to environmental concerns that plastic bags contribute to litter and endanger marine animals. San Francisco County was the first major US jurisdiction to enact such a regulation, implementing a ban in 2007 and extending it to all retailers in 2012. There has been little empirical evidence proffered illuminating the costs and benefits of these bag bans. **We undertake such an analysis in light of concerns that consumers might substitute from the banned or taxed bags toward reusable grocery bags, a common substitute and potential carrier of harmful bacteria such as E. coli.** We examine deaths and emergency room admissions related to these bacteria in the wake of the San Francisco ban. We find that **both deaths and ER visits spiked as soon as the ban went into effect. Relative to other counties, deaths in San Francisco increase by almost 50 percent, and ER visits increase by a comparable amount. Subsequent bans by other cities in California appear to be associated with similar effects.** Conservative estimates of the costs and benefits of the San Francisco plastic bag ban suggest the health risks they impose are not likely offset by environmental benefits.

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Aff

Bioplastics

Fill-in: Bioplastics can 'fill in' for 90% of petroleum-derived plastics after a federal ban, thus reducing the climate impacts of plastics

Hottle et al. ND –[Bioplastics @ProjectDrawdown #ClimateSolutions. (2020, February 6). Retrieved January 1, 2024, from Project Drawdown website: https://drawdown.org/solutions/bioplastics]

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Bioplastics (also referred to as biopolymers) are plastic materials made from biomass. **Project Drawdown's Bioplastics solution replaces traditional plastics made from petroleum with bioplastics.**

Globally, we produce roughly 365 million metric tons of plastic each year. Almost all of it is made from fossil fuels. **Experts estimate that 90 percent of current plastics could be derived from plants instead. Substituting bioplastics for conventional plastics reduces climate emissions because it uses carbon from the atmosphere rather than from fossil fuels, keeping climate impacts low**. **For bioplastics to be more sustainable than conventional plastics, however, we need to be able to separate them from other waste and process them appropriately.**

To estimate the climate and financial impacts of our Bioplastics solution, we 1) forecasted plastics production from 2014 to 2050; 2) determined current (2014) demand for bioplastics; 3) forecast future adoption through 2050; 4) derived an emissions mitigation value; and 5) calculated emissions mitigated and costs in comparison with a reference scenario that keeps bioplastics at its current percentage of global plastics production.

Bans Effective

Canada: a recent Single Use Plastics ban would cut plastic waste by 4% and plastic pollution by 7%

Government of Canada 21—[Canada,. (2021). Canada Gazette, Part 1, Volume 155, Number 52: Retrieved January 3, 2024, from Gazette.gc.ca website: https://www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html]

Rationale: **Plastics are among the most universally used materials in modern society. Single-use consumer items are often the most commonly collected items in litter clean-ups, with plastic being the most common material recovered in both domestic and international clean-up efforts**. The six categories of SUPs subject to the proposed Regulations represented an estimated 160 000 tonnes sold in 2019, or an estimated 5% of the total plastic waste generated in Canada in 2019.

The proposed Regulations would support the federal, provincial, and territorial governments' Strategy on Zero Plastic Waste. Several provincial, territorial, and munici4pal jurisdictions have already enacted prohibitions or standards for certain SUPs. On October 7, 2020, the Department of the Environment (the Department) published a discussion paper on the Canadian Environmental Protection Act Registryfootnote1 outlining a proposed integrated management approach to plastic products to prevent waste and pollution. During the ensuing 60-day public comment period, the Department received 205 written submissions representing the views of 251 stakeholder groups (156 industry members; 38 provincial, territorial, or municipal governments; 3 Indigenous groups; 32 non-governmental organizations; and 22 other groups). In addition, the Department received over 24 000 emails from individual Canadians, and an online petition started by a civil society group that received over 100 000 signatures. Overall, support for the proposed Regulations has been mostly positive from environmental non-governmental organizations and local governments and negative from some industry stakeholders. Other industry stakeholders have announced or have begun transitioning away from using SUPs. Support for the proposed Regulations from provincial and territorial governments has been mixed.

The proposed Regulations are expected to result in a net decrease of approximately 1.4 million tonnes in plastic waste over a 10-year period (2023–2032), which would represent around 4% of the total estimated plastic waste generated in Canada each year. It would also result in a decrease of around 23 000 tonnes in plastic pollution over the same period, which would represent 7% of the total plastic pollution generated each year. The proposed Regulations are expected to result in $1.9 billion in present value costs over the analytical period. While these costs are significant in aggregate, they would be widely dispersed across Canadian consumers (around $5 per capita per year). The proposed Regulations would also result in $619 million in present value monetized benefits over the analytical period, stemming mainly from the avoided cost of terrestrial litter clean-up. The costs and monetized benefits of the proposed Regulations would therefore be $1.3 billion in present value net cost over the analytical period. **Given the extent of ecological harm that can be inflicted to wildlife and their habitats from the plastic pollution of the six categories of SUPs, and the reduction of enjoyment of ecosystem goods and services by Canadians, the associated non-monetized benefits are expected to be significant.**

China: bans on plastic bags led to a 46% reduction in new plastic bag use, and an increase in the use of reusable and old plastic bags instead

Wang et al. 21—[Wang, B., Zhao, Y., & Li, Y. (2021). How Do Tougher Plastics Ban Policies Modify People's Usage of Plastic Bags? A Case Study in China. International Journal of Environmental Research and Public Health, 18(20), 10718–10718. https://doi.org/10.3390/ijerph182010718]

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This research is a field study of people's bag usage in Shanghai, China before and after China's tougher 2021 plastics ban measures. Our results reveal several valuable insights as follows.

The first key finding is the positive results produced by the tougher 2021 measures. The usage of charged carrier bags has decreased by almost 46%. As the cost for charged carrier bags becomes much higher than before, more people start to use old plastic bags and reusable bags as alternatives. Second, despite the existence of execution loopholes, the spill-over effects from tougher-measure-executing supermarkets could do some fix. As mentioned above, two of our investigated supermarkets do not follow the tougher rules and continue to offer plastic carrier bags. However, surprisingly similar increased usage of reusable bags and old plastic bags, and decreased usage of charged bags are also observed in these two markets, which we ascribe to the spill-over effects from tougher-measure-executing supermarkets.

Finally, our study shows that tougher measures are not always the largest determining factor on people's usage of each type of bag. For instance, the usage of inner bags is most impacted by packaging style. It is therefore suggested that the demand for free inner bags is elastic as people would naturally reduce their usage when products are packaged for selling. Therefore, simply imposing higher fees and legislation measures would not necessarily produce the best anti-plastics results. In this regard, other bag-targeted measures are necessary.

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Vermont: a single-use plastics bag ban in Vermont resulted in 91% few bags being used and some positive effects on revenue and cleanliness in food businesses

Belarmino et al. 23—[Belarmino, E. H., Ryan, C., Wang, Q., Niles, M. T., & Torness, M. (2023). Impact of Vermont's Single-Use Plastics Ban on Consumers and Food Businesses. Retrieved January 3, 2024, from UVM ScholarWorks website: https://scholarworks.uvm.edu/calsfac/197/]

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To mitigate the harmful effects of single-use plastic products and lessen the burden of plastics on Vermont's landfill, in 2019, Vermont's State Government passed a single-use products law (Act 69 of 2019). **The law**, which went into effect on July 1, 2020, **prohibits stores and food service establishments from providing single-use plastic carryout bags at the point of sale**, expanded polystyrene (commonly called Styrofoam) food and beverage containers, plastic straws (except upon customer request), and plastic stirrers. **Additionally, the law permits stores to provide single-use paper bags at the point of sale if the customer is charged at least 10 cents per bag**. To study the impact of the single-use products law, we conducted two statewide online surveys in 2021 and 2022: a general population survey and a food business survey. This report summarizes the findings of both surveys relevant to Vermont's single-use products law. Key findings include: 1. Following implementation of the law, **Vermonters reported using, on average, 91% fewer plastic bags (6 per week). This does not appear to have been offset by substantially greater use of single-use paper bags.** 2. Most respondents to the consumer survey (66%) agreed that the environmental benefits of the plastic bag ban outweigh the economics costs. 3. Few consumers (18%) or food business professionals (18%) reported feeling confused about the requirements of the law. 4. Charging for paper bags was identified by food business owners and managers as the most challenging requirement to comply with. 5. **Across food businesses, the law has a mostly neutral or positive effect on revenue and cleanliness**. 6. Food service owners and managers report more negative impacts on operating costs, customer satisfaction, and employee satisfaction than food retailers.

February 2024: The United States federal government should ban single-use plastics.

Ban Single-use Items

A ban on single-use items—which includes single-use plastics—would help to curb consumption and therefore pollution

Herberz 20—[Timo Herberz, Barlow, C. Y., & Finkbeiner, M. (2020). Sustainability Assessment of a Single-Use Plastics Ban. Sustainability, 12(9), 3746–3746. https://doi.org/10.3390/su12093746]

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Governments around the world are introducing single-use plastics bans to alleviate plastic marine pollution. This paper investigates whether banning single-use plastic items is an appropriate strategy to protect the environment. Product life cycle assessment was conducted for single-use plastic and single-use non-plastic alternatives. The life cycle impacts of the two product categories were compared and scaled according to EU consumption of 2016. **The results show that a single-use plastics ban would decrease plastic marine pollution in the EU by 5.5% which equates to a 0.06% decrease globally. However, such a ban would increase emissions contributing to marine aquatic toxicity in the EU by 1.4%.** This paper concludes that **single-use items are harmful to the environment regardless of their material. Therefore, banning or imposing a premium price on single-use items in general and not only single-use plastic items is a more effective method of reducing consumption and thereby pollution**. The plastics ban only leads to a small reduction of global plastic marine pollution and thus provides only a partial solution to the problem it intends to solve.

Gradual Ban

A ban wouldn't have to be implemented overnight – a federal plastics ban could start with a ban on plastic bags, which could be proceeded by a tax on plastic bags

Kolcon 21—[Kolcon, M. (2021). Plastic Prohibition: The Case For A National Single-Use Plastic Plastic Prohibition: The Case For A National Single-Use Plastic Ban In The United States Ban In The United States Penn State Journal of Law & International Affairs PLASTIC PROHIBITION: THE CASE FOR A NATIONAL SINGLE-USE PLASTIC BAN IN THE UNITED STATES. Retrieved from https://elibrary.law.psu.edu/cgi/viewcontent.cgi?article=1302&context=jlia]

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A ban is also an option; however, it is important to be specific in order to make any real progress. For instance, China's ban on plastic bags specified that only nonbiodegradable bags thinner than .025 millimeters are prevented from being produced, sold, or used. However, there is a critique from environmental experts that China's ban has not curbed consumers' wasteful habits because most shoppers do not bring their own reusable bags when they go to the store. Instead, they just purchase a plastic bag for a small fee that equates to about $.04 American. It is important to recognize that consumers found a way around the ban in China, proving that it may not be effective at changing the behavior of enough people to truly make an impact on the environment. If the United States chose to ban single-use plastic bags, it would be prudent to recognize the intent of the ban is not to use bags that are more durable than those that are .025 millimeters, instead the goal is to stop consumers from using plastic bags one time and then throwing them in the trash. Therefore, a potential ban should likely not specify the thickness of the bags that are banned because it is easy to come up with other plastic alternatives once a thickness is mentioned in the law. Additionally, nonbiodegradable products have been falsely marketed as biodegradable and used in Chinese marketplaces, showing that qualifying bags based on environmental friendliness may make legal and illegal products hard to distinguish. If plastic bags are to be banned, it seems as though the only alternatives that grocery stores or other retail outlets should allow are paper or reusable options. Qualifying shopping bags based on thickness or environmental friendliness make enforcing the ban difficult.

In light of the United States' overwhelming plastic bag consumption, it seems like a ban may be the best option for the environment. If the 100 billion single-use plastic bags that Americans use every year can be reduced even slightly, they will not clog recycling machines, end up in oceans, or be burned after being sent to other countries without the infrastructure to handle the recycling process. In Great Britain, use of plastic bags has fallen 80% since taxes were implemented in Wales, Northern Ireland, and Scotland. If the United States could have a similar drop in plastic bag use, it would significantly impact the entire world. Realistically, the United States could start off by implementing a tax on single-use plastic bags that would be high enough to deter consumers from using too many.

Then, after several years, once consumer behavior patterns have changed, the country could move to an outright ban on plastic bags. While single-use plastic bags are not the only plastic product that is problematic, they would be the easiest product to tax and outlaw, as there are viable alternatives like paper or reusable bags. Other countries have implemented bans or taxes on the product, so the United States can study their successes and missteps in order to draft a law that would be effective. **Once single-use plastic bag consumption has been reduced, the country can look towards other single-use plastic products, but the United States needs to start somewhere, and plastic bags are the most viable choice at this time.**

Great Lakes

The Great Lakes are polluted with 22 million pounds of plastic pollution each year—mostly single-use plastics – banning plastics can help

Environment America 20—[Banning Single-use Plastics: Protecting our Health and the Great Lakes. Retrieved January 3, 2024. https://environmentamerica.org/center/resources/banning-single-use-plastics-great-lakes/]

[Environment America is a national network of 30 state environmental groups. Our staff work together for clean air, clean water, clean energy, wildlife and open spaces, and a livable climate. Our members across the United States put grassroots support behind our research and advocacy.]

Plastic pollutes the Great Lakes

- A Rochester Institute of Technology study estimates that **nearly 22 million pounds of plastic pollution enter the Great Lakes every year** – enough to fill more than 16,300 garbage trucks.
- **More than 85% of the trash picked up in Great Lakes beach cleanups is made of plastic. Among the most common items are plastic pieces, foam pieces, straws and drink stirrers.**
- One study found plastics in all 107 water samples collected from 29 Great Lakes tributaries in six states.

Plastic threatens our health

- **Microplastics have been found in the food we eat, the water we drink, and the air we breathe.** A recent study estimates that humans could be ingesting up to a credit card's worth of microplastics every week.
- **Some plastic additives and chemicals have been found to interfere with brain development and disrupt the hormone system, and some chemicals that cling to plastics can cause cancer and birth defects.**

Solution: Ban single-use plastics

- We can't recycle our way out of this problem – most plastic can only be recycled a few times before it becomes too degraded.
- **Nearly half (47%) of U.S. plastic waste is from single-use products and packaging. So banning and limiting plastic products like bags, foam cups and containers, straws, and utensils could significantly reduce plastic pollution.**
- **We don't need single-use plastics**. There are plenty of readily recyclable, compostable and, better yet, reusable alternatives available.

February 2024: The United States federal government should ban single-use plastics.

Impact: The Great Lakes comprise 9/10ths of the US' freshwater, and 40 million people rely on the Great Lakes for drinking water

Great Lakes Commission ND—[About the Lakes - Great Lakes Commission. (2022, January 25). Retrieved January 4, 2024, from Great Lakes Commission website: https://www.glc.org/lakes]

The Great Lakes — Superior, Michigan, Huron, Erie and Ontario — and their connecting channels form the largest fresh surface water system on earth. **They cover more than 94,000 square miles and hold an estimated six quadrillion gallons of water – about one-fifth of the world's fresh surface water supply and nine-tenths of the U.S. supply.**

The system is invaluable as the source of drinking water for more than 40 million people in the U.S. and Canada. The lakes directly generate more than 1.5 million jobs and $60 billion in wages annually. **They're also home for more than 3,500 plant and animal species**, some of which are found nowhere else on Earth.

The lakes provide the backbone for a $6 trillion regional economy that would be one of the largest in the world if it stood alone as a country. Recreation on the Great Lakes – including world-renown boating, hunting and fishing opportunities – generate more than $52 billion annually for the region.

The Great Lakes shape our region and our way of life. **Healthy lakes are critical for our economy, and our culture, the environment, but they require constant care.** Since 1955 the Great Lakes Commission has worked with its member states and provinces to address issues of common concern, develop shared solutions and collectively advance an agenda to protect and enhance the region's economic prosperity and environmental health.

Industry Message

A SUP ban can send a message to the plastics industry than a solution to the plastics crisis is needed

Parker 19—[Parker, L. (2019, April 17). Plastic bag bans are spreading. But are they truly effective? Retrieved January 2, 2024, from Environment website: https://www.nationalgeographic.com/environment/article/plastic-bag-bans-kenya-to-us-reduce-pollution]

[Laura Parker is an Award-winning editor and writer at National Geographic, covering cover climate change and water troubles. She has a BA from the University of Washington, and was a Nieman Fellow at Harvard University.]

Even the most ardent proponents of bans are aware of the limitations.

"As important as banning single-use plastic bags is in terms of reducing it as a source, it's not going to change the world," says Mark Murray, executive director of Californians Against Waste. "The main point, frankly, is to communicate to policy makers, the public, and to the industry that we've got to do something serious to reduce plastic packaging and if you all can't figure out how to do it, we're going to start banning your products one at a time."

It took less than four decades for plastic bags to make the transition from marvel to menace. Plastic bags were born in the post-World War II explosion of manufactured plastic household goods and became popular in the 1970s. By the end of the 1980s, grocery stores in the United States had switched from paper to plastic; plastic bags proliferated after that by the millions.

February 2024: The United States federal government should ban single-use plastics.

Paris Plus

The US has supported the Paris Plus UN plan, which will require countries to clean up their plastic pollution—a ban on single-use plastics can help the US to fulfill its treaty obligations

Oceana 22—[8 in 10 American Voters Support a National Policy Reducing Single-Use Plastic. (2023, April 26). Retrieved January 1, 2024, from Oceana USA website: https://usa.oceana.org/8-in-10-american-voters-support-a-national-policy-reducing-single-use-plastic/]

[Oceana was established by a group of leading foundations — The Pew Charitable Trusts, Oak Foundation, Marisla Foundation (formerly Homeland Foundation), Sandler Foundation, and the Rockefeller Brothers Fund — after a 1999 study they commissioned discovered that less than 0.5 percent of all resources spent by environmental nonprofit groups in the United States went to ocean advocacy.]

The United Nations approved a landmark agreement to create the world's first ever global plastic pollution treaty on Wednesday, **describing it as the most significant environmental deal since the 2015 Paris climate accord.**

Member states held talks for more than a week in Nairobi to agree the outline of a pact to rein in soaring plastic pollution, an environmental crisis that extends from ocean trenches to mountain tops.

Government officials cheered and punched the air after the adoption of **a resolution to create a legally binding plastic pollution treaty, which is due to be finalised by 2024.**

"We're making history today and you should all be proud," said Espen Barth Eide, President of the UN Environment Assembly (UNEA). "Plastic pollution has grown into an epidemic. With today's resolution we are officially on track for a cure."

The resolution, which UNEA calls "the most significant environmental deal since the Paris accord", is written in broad strokes and an intergovernmental committee is now tasked with negotiating a deal that will have ripple effects on businesses and economies around the world.

Any treaty that puts restrictions on plastic production, use or design would affect oil and chemicals companies that make raw plastic, as well as consumer goods giants that sell thousands of products in single-use packaging.

It would also affect the economies of major plastic-producing countries, including the United States, China, India, Saudi Arabia and Japan.

Although U.N. officials were united in celebrating the agreement to have a plastic treaty, disagreements remain over what should be included in a final pact, Switzerland's ambassador for the environment Franz Perrez said.

"This is a division between those who are ambitious and want to find a solution and those who don't want to find a solution for whatever reasons," he said.

There is overwhelming public support for a U.N. treaty on plastic pollution, according to an Ipsos poll released this month, and delegates were quick to celebrate what they had achieved in Nairobi.

"This is only the end of the beginning, we have a lot of work ahead of us," said a tearful Monica Medina, the head of the U.S. delegation. "But **it is the beginning of the end of the scourge of plastic waste for this planet."**

Juliet Kabera, lead negotiator for Rwanda, hailed the resolution as a "great victory in the global quest to reverse the rapidly worsening impacts of plastic pollution."

If the treaty cannot put the brakes on plastic pollution, there will be widespread envionmental damage over the coming decades, putting some marine species at risk of extinction and destroying sensitive ecosystems such as coral reefs and mangroves, according to a WWF study released this month.

Preemptive Bans

17 states have 'plastic ban' bans that prevent local ordinances against plastics – a federal ban would overrule these state laws and allow cities to begin to combat plastic waste

EarthDay 19 –[EARTHDAY.ORG. (2019, November 4). How preemptive laws in the U.S. are trashing the planet - Earth Day. Retrieved January 3, 2024, from Earth Day website: https://www.earthday.org/how-preemptive-laws-in-the-us-are-trashing-the-planet/]

When it comes to plastic pollution, many cities want to clean up their act. But current laws make that impossible.

In 17 states, not only is there no statewide ban or fee on single-use plastics — there's a law that makes it illegal to pass such rules at the local level. This law is grouped into a category called preemptive legislation, and not surprisingly, it's a strategy favored by plastic industry lobbyists.

These lobbyists find more favorable ears in state legislatures than in local governments where "traditionally, the strongest and most innovative… control policies have emerged… often after long and hard-fought grassroots community efforts," according to the Public Healthcare Law Center. This is a problem because **progressive towns and cities, facing the brunt of the impacts of plastic pollution, are blocked from doing anything to solve their own problems on a local level by more backward-thinking state governments.**

This strategy of statewide laws preventing local ordinances on specific issues is not new, but it's a tactic used by a somewhat unsavory group of characters throughout recent history.

As anti-tobacco groups around the country started to gain power and influence, lobbyists for the tobacco industry pushed for states to pass preemption laws that prohibited local municipalities from passing their own rules regarding indoor air quality, product labeling requirements and taxation.

Similarly, the National Rifle Association has long frustrated gun regulation advocates by passing state-level laws preempting municipalities from passing more stringent reforms.

In an opinion piece published in USA Today, three mayors — then Mayor of Tallahassee Andrew Gillum, Mayor of Pittsburgh Bill Peduto and Mayor of Portland Ted Wheeler — wrote, "There's no doubt about the need for thoughtful new gun ordinances. Mayors across the country are ready to pass them, enhancing public safety in our cities. But we can't — because our states have banned us from enacting local gun laws."

In another example, natural gas companies have successfully pushed for state laws preempting local governments from preventing fracking operations within their borders. Small towns with limited financial resources have little sway with state lawmakers that are heavily influenced by powerful special interests. These towns are left to deal with unsafe water and dangerous emissions while any challenges to the opposed developments play out in court.

Across the country, preemption legislation has been used to interfere with "local efforts to raise wages, pass paid sick time and non-discrimination ordinances and adopt fracking and environmental regulations. Lawmakers are using preemption to overturn elections, perpetuate racial and economic inequality, and silence local voices" according to the three mayors.

Plastic pollution is a problem that impacts every corner of the planet. Microplastic particles have been found in the Rocky Mountains, the Pyrenees, and the remote arctic. A recent study estimates that we consume the equivalent of one credit card worth of plastic every week. Marine wildlife continues to die from entrapment in and accidental consumption of plastic waste. The carbon footprint associated with plastic production and disposal is enormous and only growing.

We can't continue to allow billion-dollar corporations to influence our plastic legislation so drastically. Our laws don't align with our ideals because we are misled about our options in the voting booth or because we are not allowed any options at all. It's imperative to continue to educate ourselves and our communities as much as possible and to use resources to push back against the plastics industry every chance we get.

Public Support

80% of the American public support policies to reduce single-use plastic

Oceana 22—[8 in 10 American Voters Support a National Policy Reducing Single-Use Plastic. (2023, April 26). Retrieved January 1, 2024, from Oceana USA website: https://usa.oceana.org/8-in-10-american-voters-support-a-national-policy-reducing-single-use-plastic/]

[Oceana was established by a group of leading foundations — The Pew Charitable Trusts, Oak Foundation, Marisla Foundation (formerly Homeland Foundation), Sandler Foundation, and the Rockefeller Brothers Fund — after a 1999 study they commissioned discovered that less than 0.5 percent of all resources spent by environmental nonprofit groups in the United States went to ocean advocacy.]

In February 2022, Oceana released a nationwide poll (link to results below) revealing that most Republican and Democratic voters are concerned about single-use plastics and support policies that reduce them. Included among the key findings: **84% of American voters are concerned about plastic pollution and its impact on the environment and our oceans; 86% are concerned about single-use plastic products; and 81% support local, state, and national policies that reduce single-use plastic.**

The poll, conducted by the nonpartisan polling company Ipsos, surveyed 1,000 American adults from across the U.S. between Nov. 5 and 9, 2021, and **found broad bipartisan support for policies that reduce products like single-use plastic bags, foam foodware, takeout containers, and packaging from online shopping.**

Solvency

There are known ways to make a SUP ban work, including making alternatives easy to use, phasing in a ban gradually, and involving the public

March, Fletcher & Evans 20—[Evaluating scenarios toward zero plastic pollution. (2020). Retrieved January 1, 2024, from Science website: https://www.science.org/doi/10.1126/science.aba9475?intcmp=trendmd-sci]

[Antaya March is a Senior Research Associate at the Centre for Blue Governance. She is the lead researcher of the Global Plastics Policy Centre. She led the development of a globally recognized plastics policy assessment framework and the delivery of the global review of plastics policies published in 2022.

Steve Fletcher is Director of the Global Plastics Policy Centre and Professor of Ocean Policy and Economy at the University of Portsmouth, UK. He is a member of the UN International Resource Panel and a Fellow of the UN Environment World Conservation Monitoring Centre, Cambridge.

Tegan Evans PhD Candidate in Ocean Governance, University of Portsmouth]

While the forthcoming ban is a step in the right direction, the production, use and disposal of plastics typically spans several countries and continents. **The success of any policy aimed at restricting the use of plastic products in one country should not be taken for granted.**

Our research continues to highlight that policies which influence what consumers buy, such as bans, taxes or charges, lack the reach to confront the global scale of pollution. The effect of banning single-use plastic items is limited to the jurisdiction in which it is implemented, unless it inspires a wider shift in public or commercial behaviour across international boundaries.

Without supporting measures, or by failing to treat the ban as the beginning of a broader phase-down of plastic, banning some items does little to change the attitudes which reinforce a throwaway culture.

The Global Plastics Policy Centre of the University of Portsmouth reviewed 100 policies aimed at tackling plastic pollution worldwide in 2022 to understand what makes them successful. Here are three key lessons which can make the new English ban more effective.

1. Make it easy to use alternatives

Consumers and businesses are less likely to comply with a ban if they are expected to go entirely without plastic overnight. Ensuring businesses can source affordable alternatives is critical. Antigua and Barbuda did this by investing in the research of more sustainable materials and listing approved alternatives to plastic, such as bagasse, a byproduct of sugar-cane processing.

To maintain public support, it helps if there are measures which prevent cost hikes being passed directly on to consumers.

Alternative materials or products must have a lower environmental impact than the banned product, but this isn't always guaranteed. Substituting plastic bags for paper, for example, may not be the best idea when the entire life cycle of a product is accounted for.

2. Phase in a ban

A phased approach to a ban improves how well it works but requires consistent and clear messaging about what products are banned and when. In Antigua and Barbuda, phased plastic bag bans in 2016 and 2017 generated support for banning other plastic products between 2017 and 2018.

In both cases, importing these products was restricted first, followed by a ban on distributing them, which gave suppliers time to find alternatives and use up existing stock.

This approach was used to good effect in an English ban on plastic straws, cotton buds and stirrers in 2020, allowing retailers to use up their supplies during the six months following the ban's introduction.

3. Involve the public

Information campaigns which explain why a ban is needed, what it means for the public and businesses and what alternatives are available serve to support a ban. This was evident from Vanuatu, where the inclusion of diapers in a ban was postponed due to public concerns around the availability of sustainable alternatives.

Working closely with the public like this can also encourage innovation. For example, in Vanuatu in 2018, weavers and crafting communities filled the gap left by banned plastic bags and polystyrene takeaway containers with natural alternatives made locally, including bags and food containers woven from palm leaves.

Single-use plastic bans can inspire wider changes to social systems and the relationship each person has with plastic. But without planned access to alternatives, a phased introduction, efforts to nurture public support and broader consideration of the entire life cycle of plastic, product bans have a limited effect on plastic pollution, and can even give the false impression of progress.

Urgency

Plastic-reduction interventions need to be implemented now—a delay of only 5 years could cause an additional 300 million tons of additional plastic waste to enter the environment

Lau et al. 20—[Evaluating scenarios toward zero plastic pollution. (2020). Retrieved January 1, 2024, from Science website: https://www.science.org/doi/10.1126/science.aba9475?intcmp=trendmd-sci]

[Winnie Lau directs Pew's preventing ocean plastics project, which aims to implement science- and evidence-based solutions and policies to reduce the global plastic pollution problem. Before joining Pew, she was the climate change science and technology adviser with the U.S. Agency for International Development's mission to Sri Lanka and the Maldives. She also managed the Marine Ecosystem Services Program at Forest Trends and was a science and technology policy fellow for the American Association for the Advancement of Science at the U.S. State Department. Lau holds a bachelor's degree in integrative biology and environmental sciences from the University of California, Berkeley and a doctorate in oceanography from the University of Washington.]

Our results underline the urgency with which extensive interventions are needed. Despite a considerable reduction in annual plastic production and an increase in the proportion of MSW that is effectively managed under the best-case System Change scenario, a substantial amount of plastic waste remained mismanaged (not collected and sorted, recycled, or safely disposed) between 2016 and 2040. When implementation of interventions begins in 2020, the cumulative mass of plastic pollution added between 2016 and 2040 amounts to 250 Mt [190, 310] in aquatic systems (Fig. 4A) and 460 Mt [300, 640] in terrestrial systems (Fig. 4B), which are approximately 1 and 2 times the total annual plastic production in 2016, respectively. **If implementation of interventions is delayed by only 5 years, an additional 300 Mt of mismanaged plastic waste is expected to accumulate in the environment.**

United States

Biggest Producer: The US is the world's #1 producer of plastic waste—more than all EU countries combined—up to 2.2 million tons of this plastic leeches into the environment each year

Milman 21— [Milman, O. (2021, December). "Deluge of plastic waste": US is world's biggest plastic polluter. Retrieved January 4, 2024, from the Guardian website: https://www.theguardian.com/environment/2021/dec/01/deluge-of-plastic-waste-us-is-worlds-biggest-plastic-polluter]

[Oliver Milman is an environment reporter for Guardian US]

The US is the world's biggest culprit in generating plastic waste and the country urgently needs a new strategy to curb the vast amount of plastic that ends up in the oceans, a new report submitted to the federal government has found.

The advent of cheap, versatile plastics has created "a global scale deluge of plastic waste seemingly everywhere we look", the report states, with **the US a leading contributor of disposable plastics that ends up entangling and choking marine life, harming ecosystems and bringing harmful pollution up through the food chain.**

Plastic waste has increased sharply in the US since 1960, with the country now generating about 42m metric tons of plastic waste a year, amounting to about 130kg of waste for every person in America. This total is more than all European Union member countries combined. The overall amount of municipal waste created in the US is also two to eight times greater than comparable countries around the world, the report found.

Recycling infrastructure has failed to keep pace with the huge growth in American plastic production. Littering, dumping and inefficient waste disposal in landfills has caused **up to 2.2m tons of plastic – including everything from plastic bottles and straws to packaging – to "leak" into the environment each year. The total waste may be even greater than this due to data gaps in tracking it.**

Much of this plastic ends up, via rivers and streams, in the world's oceans.

Worldwide, at least 8.8m tons of plastic waste enters the marine environment each year, the equivalent of dumping a garbage truck filled with plastic into the ocean every single minute. If current trends continue, scientists have estimated this total could leap to 53m tons annually by 2030, which is roughly half of the weight of all fish caught from the oceans globally each year.

"Plastic waste is an environmental and social crisis that the US needs to affirmatively address from source to sea," said Margaret Spring, chief conservation and science officer at Monterey Bay Aquarium. Spring chaired a committee of experts who compiled the congressionally mandated report for the National Academies of Sciences, Engineering, and Medicine.

Spring added: **"Plastic waste generated by the US has so many consequences, impacting inland and coastal communities, polluting our rivers, lakes, beaches, bays, and waterways, placing social and economic burdens on vulnerable populations, endangering marine habitats and wildlife and contaminating waters upon which humans depend for food and livelihoods."**

The committee's report recommends that a new national strategy is required by the end of next year to stem the flow of plastics into the ocean. The strategy, the report states, should aim to slash plastic production, particularly for plastics not reusable or recyclable, help promote alternative materials that can be reused and set better standards for waste collection and capture.

February 2024: The United States federal government should ban single-use plastics.

No Regulation: The US is behind the rest of the world in enacting anti-plastic laws

Seo 21— [Seo, H. (2021, October 4). The US falls behind most of the world in plastic pollution legislation. Retrieved January 4, 2024, from EHN website: https://www.ehn.org/plastic-pollution-2655191194.html]

[Hannah Seo is a science journalist, essayist, podcast writer, and poet based in Brooklyn.]

In recent years, countries across the globe have implemented laws to mitigate plastic production and pollution.

In the past two years, both large developed nations like Australia and smaller developing countries like Sri Lanka and Belize have passed ambitious national laws to phase out a number of plastic products like bags, cutlery, and straws.

But **the U.S., a leading producer and consumer of plastics, remains woefully behind, even as it stands as one of the world's biggest polluters.** According to the Environmental Protection Agency, the country produced 35.7 million tons of plastic waste in 2018, more than 90% of which was either landfilled or burned. The U.S. ranks second in the world in total plastic waste generated per year, behind only China — though w**hen measured per capita, the U.S. outpaces China.** In 2019, the U.S. also opted not to join the United Nations' updated Basel Convention, a legally binding agreement aimed at preventing and minimizing plastic waste generation that was signed by about 180 other countries.

More than 90 countries have established (or have imminent plans to establish) either bans or fees on single-use plastic bags or other products, according to data from the non-profit ocean conservation organization Oceana. The U.S. is not one of them. Though Americans have been aware of plastic pollution as an environmental concern as early as the mid-20th century, U.S. action against plastics has been piecemeal — the federal government has left it up to individual cities, counties, and states to decide whether and how to regulate plastics.

The plastic problem is growing increasingly urgent. More than 1 million plastic bags are used every minute, with an average "working life" of only 15 minutes. Experts believe the ocean will contain one ton of plastic for every three tons of fish by 2025 and, by 2050, more plastics than fish (by weight).

Not only does the ocean (and all life reliant on it) suffer from plastic pollution, but human health is also at risk. Microplastics have well-documented impacts on human health, and have been found in 90% of bottled water and 83% of tap water. Our incessant plastic consumption is cultivated by "throwaway" culture, fueled by the plastic and oil and gas industries' efforts to sustain high plastics consumption while distracting people with recycling campaigns.

Aff Blocks

AT: AEPW

Argument: Plastics companies are offsetting their impact on the environment through the AEPW

The Alliance to End Plastic Waste is simply a greenwashing mechanism for the plastics industry, allowing them to divert attention from the billions invested in new plastics manufacturing capacity each year

Gore-Langton 23—[Alliance to End Plastic Waste defends failures after achieving 0.2% of its targets. (2023, February 10). Retrieved January 2, 2024, from .packaginginsights.com/ website: https://www.packaginginsights.com/news/alliance-to-end-plastic-waste-defends-failures-after-achieving-02-of-its-targets.html]

[Louis Gore-Langton is a journalist and editor at CNS Media Group]

The Alliance to End Plastic Waste (AEPW) has reportedly achieved 0.2% of its plastic diversion target, equating to roughly 34,000 tons, despite pledging US$1.5 billion to fight waste since 2019. Financial think tank Planet Tracker says **the organization's members, which include major petrochemical corporations, use the AEPW to divert attention from the continued expansion of plastic production globally.**

An AEPW spokesperson tells *Packaging Insights* the organization's original target of diverting 15 million tons of plastic waste "was just too ambitious" and that its projects are "beginning to scale and deliver impact."

However**, Planet Tracker asserts the AEPW is simply a "sophisticated greenwashing" scheme and warns that many of its 77 members could soon be open to legal action**, which is expected to increase as legislation like the UN's Global Treaty on Plastic Pollution, comes into force.

"Currently, **many AEPW members are choosing to invest heavily in the expansion of plastic production while failing to fund even meager recovery and recycling targets through the AEPW**," a Planet Tracker spokesperson tells us.

"**The US$1.5 billion pledged by AEPW members over a five-year period represents only a fraction of its members' financial capacity and is trivial compared to the US$400 billion the oil, gas and chemical industry plans to spend on new plastic manufacturing capacity."**

Planet Tracker says the top ten producers of single-use plastic in the AEPW generated almost 32 million tons of waste in 2019, equal to approximately 128 million tons in a four-year period.

"This compares to the 34,000 tons of plastic waste the AEPW has now confirmed has been removed and recycled for the first four years, showing that t**he major plastic producers in the AEPW do not even remove or recycle 99.97% of their own plastic waste**. This goal surely cannot be merely called 'too ambitious,'" the spokesperson says.

A recent report by the Minderoo Foundation found that **virgin plastics production increased by 6 million metric tons globally between 2019 and 2021 – outpacing recycling rates by a factor of 15.**

Minderoo also forecasts that corporate liabilities from plastics litigation triggered in 2022-2030 could exceed US$20 billion in the US alone. **"Corporates and investors need to be very careful not to use greenwashing techniques directly or indirectly through organizations like AEPW**," continues the spokesperson.

The AEPW has been criticized for the inadequacy of some of its projects, such as a donation of "Sweepy Hydro" machines to Sri Lanka after a mass plastic pellet spill polluted the island last year. A spokesperson for the organization says this was not a project but a donation made in response to a crisis.

"Before deployment in Sri Lanka, the manufacturer tested and adjusted the machines to maximize their effectiveness under local conditions. Once the machines were handed over, the government took over full responsibility and accountability for their operation," they explain.

AT: California Bag Ban

Argument: the California Bag Ban just resulted in consumers buying more trash bags, for which grocery bags had previously been repurposed

Even when accounting for the increase in trash bag purchases, the California ban resulted in a plastic waste reduction of 28 million pounds

Parker 19—[Parker, L. (2019, April 17). Plastic bag bans are spreading. But are they truly effective? Retrieved January 2, 2024, from Environment website: https://www.nationalgeographic.com/environment/article/plastic-bag-bans-kenya-to-us-reduce-pollution]

[Laura Parker is an Award-winning editor and writer at National Geographic, covering cover climate change and water troubles. She has a BA from the University of Washington, and was a Nieman Fellow at Harvard University.]

Political opposition to bans in the United States has gained a boost from a handful of studies that highlight the limitations of bans. In California, for example, Rebecca Taylor, **an economist at the University of Sydney, found that shoppers in cities that banned bags before the 2016 statewide ban took effect used fewer shopping bags, leading to a reduction of about 40 million pounds of plastic waste. But she found in her study that sales of trash bags rose, offsetting the reduction in plastic bags to 28 million pounds.**

AT: CEI

Argument (to be refuted): the Competitive Enterprise Institute is a reputable source

The CEI is a climate-change-denial thinktank funded by fossil fuel companies like ExxonMobil that aims to protect corporate interests over the health of our planet

Scoffield 23—[Scoffield, J. (2023, July 17). The Climate Denialist Think Tank That Might Produce the Next FTC Commissioner. Retrieved January 3, 2024, from The American Prospect website: https://prospect.org/power/2023-07-17-climate-denialist-think-tank-ftc/]

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During last week's House Judiciary Committee oversight hearing, the chair Jim Jordan chose to attack Khan, accusing her of "harassing" corporations the FTC is charged with regulating (though some Republicans on the committee supported her, to be fair). These accusations are nothing new. Since Khan was sworn in over two years ago, right-wing politicians and pundits alike have attacked her endlessly about her supposed injection of radical ideology into the otherwise apolitical realm of antitrust enforcement. (The mile-long record of previous FTC officials having a vested interest in the companies the agency oversees mysteriously gets no attention from Republicans.)

But conservatives' heated accusations of bias against Khan make for an interesting contrast with Holyoak's nomination. She previously worked as a senior attorney for **the Competitive Enterprise Institute—a libertarian think tank "arguably best known for its work disputing the science of climate change.**" It seems that radical ideologues are allowed at the FTC after all!

A brief glimpse under the hood of the D.C.-based organization makes it clear that this outfit is a straightforward business mouthpiece. Not only does CEI take funding from fossil fuel interests (ExxonMobil and the Charles Koch Institute), Big Tech (Alphabet, Amazon, and Meta), **and Big Pharma** (the Pharmaceutical Research and Manufacturers of America), **but it also takes money from Big Tobacco** (Philip Morris and Altria). It's 2023 and Big Tobacco is apparently not deemed pernicious by some.

And all these corporations and lobbying groups are getting what they paid for. As a "factory for global warming skepticism," CEI has produced a number of studies, books, advertisements, and documentaries against what it dubs "climate alarmism"—that is, anything that acknowledges, let alone attempts to mitigate, our ongoing climate catastrophe. Myron Ebell, the director of CEI's Center for Energy and Environment, was even credited as being influential in former President Donald Trump's decision to withdraw the U.S. from the Paris climate accords.

It doesn't stop there. The organization's broader deregulatory agenda—it was formed during Ronald Reagan's first presidential term, after all—also includes loud opposition to actions that limit the power of big business, especially Big Tech.

During her five-year tenure at CEI's Center for Class Action Fairness (CCAF), Holyoak represented the organization in a number of lawsuits, including one against the Federal Communications Commission in 2019. In that case, she successfully argued to remove language that provided discounted broadband service rates to low-income consumers in a merger deal between Charter, Bright House, and Time Warner. It's hard to see how this aligns with CCAF's purported mission to safeguard consumers and the general public, but that goes to show how much one should trust CEI's word.

You would imagine that any organization with such a corporate pedigree would have their opinions on the actions of regulatory agencies taken with a grain of salt. Yet, **for some reason, CEI is still offered space in major media outlets to act as a legitimate voice on antitrust issues—often without having to acknowledge**

their industry ties. Whether it be quotes in The New York Times, or full op-eds in The Hill, Fortune, or Forbes, CEI researchers are regularly defending the likes of Facebook, Google, Apple, and Amazon against the increasing scrutiny of regulators and legislators at both the federal and state level.

CEI's sympathy for the tech industry's flagship monopolists **ostensibly comes from a place of concern for consumers. Being big isn't necessarily bad, they've argued, so long as consumers continue to benefit from innovation, product availability, and**—most importantly of all—**low prices**. (Unless, of course, low prices are mandated for low-income consumers, as seen in their case against the FCC.)

Such deference to the consumer welfare standard of competition, however, ignores all the ways in which the anti-competitive nature of monopoly power harms consumers both in terms of their personal privacy and the availability of products. It's also not remotely clear that the consumer welfare standard actually leads to lower prices—some research suggests the opposite is true.

It also places CEI at odds with growing concerns from Democrats and some Republicans alike over the sheer size of these firms and their dominance over daily life. This ardently pro-monopoly position is in direct conflict with the resurgence of more expansive antitrust enforcement, typified by Khan and DOJ Antitrust Assistant Attorney General Jonathan Kanter. It should therefore be unsurprising to learn that CEI finds Khan and Kanter's penchant for antitrust enforcement via litigation, rather than negotiated settlement, particularly offensive. The former especially seems to have drawn CEI's ire, sparking the launch of an "Eye on FTC" campaign earlier this year to "raise awareness about overreach and a lack of transparency at Chairman Lina Khan's Federal Trade Commission." Holyoak will presumably be carrying on that torch, supplanting former Commissioner Christine Wilson as the resident Khan hater of the FTC.

To those inclined to want to live on a habitable planet free of monopoly dominance—that is, the majority of Americans—CEI's politics are obviously an issue. But a larger problem is the ostensible neutrality they are offered by the media in debates over public policy.

Take this recent Greenwire article on the Supreme Court's invocation of the so-called "major questions doctrine" to strike down Biden's student debt relief plan, for example. In examining the potential implications this legal theory may have on current and future climate-focused regulatory policy, an attorney at CEI, Devin Watkins, was quoted. However, there was no mention of CEI's fossil fuel ties or the deregulatory agenda of its corporate funders. To be fair, all of the quoted individuals in the article received this same courtesy, but **the fact that a corporate-funded climate denialist organization was even solicited for their opinion on climate policy is concerning.**

Watkins was again quoted in a Washington Post piece that similarly analyzed the major questions doctrine's implications on attempts to regulate auto emissions. Although the Post was at least willing to describe CEI as a "conservative group," this characterization still lends credibility to an organization with objectively crackpot views produced by large corporate donations.

Or consider antitrust. Any sensible person would brush off a Mark Zuckerberg–penned op-ed defending Meta's practice of "innovating" by buying up smaller competitors. But you might be less skeptical when Iain Murray, CEI's vice president for strategy and senior fellow, made the same argument in a 2021 Fortune piece. But that's only because neither Fortune nor Murray disclosed that CEI receives funding from Meta. Whether or not Murray actually believes that antitrust enforcement against Facebook represents an "assault on entrepreneurs" is immaterial to the fact that his judgment on the issue is compromised by financial ties to the firm. Fortune's failure to acknowledge this conflict of interest effectively allows monopolists like Zuckerberg to launder their talking points through an ostensibly independent third party.

The Competitive Enterprise Institute is a perfect example of an unfortunate reality in our current political landscape: that there are plenty of individuals and organizations willing to defend the rights of corporations over the public. I, for one, feel that such a blatant disregard for public interests would render these actors unfit to weigh in on public policy. But if media outlets insist on taking CEI and its ilk seriously in this regard, they should also take seriously the conflicts of interest that contextualize, if not directly shape, their analyses.

AT: Coronavirus

Argument: Plastic bags help to stop the spread of Covid and other viruses

This argument is propaganda manufactured by the conservative thinktanks and that are backed by industry money, including fossil fuel companies

Ho 20— [Ho, S. (2020, March 31). Anti-Climate Groups Are Using Coronavirus Fear To Fight Plastic Bag Bans. Retrieved January 4, 2024, from Green Queen website: https://www.greenqueen.com.hk/anti-climate-groups-are-using-coronavirus-fear-to-fight-plastic-bag-bans/]

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A number of conservative think tanks and lobbying groups are now using the coronavirus pandemic to stoke fears about reusable products in order to fight plastic bag bans in the United States. Articles misrepresenting studies are now being circulated to convince readers that reusable cloth bags are worse than plastic ones in terms of spreading the coronavirus, and have been found to be linked to Republican groups such as the Manhattan Institute.

Campaigners from Greenpeace USA are warning that this is exacerbating environmental threats on top of the current public health emergency.

Every year, the world tosses out an estimated 1 trillion single-use plastic bags – the majority of which do not end up being collected or recycled, and instead end up polluting oceans, rivers and add to overflowing landfills. Amid the coronavirus, Greenpeace USA is warning that **some articles linked to a number of right-wing organisations are misrepresenting scientific evidence to convince people that reusable cloth bags can help to spread the disease in order to fight anti-plastic laws.**

John Hocevar, ocean campaigner at Greenpeace USA, told the Guardian that **such tactics are using the current public health emergency as an "opportunity to exploit people's fears around Covid-19 to push their pro-pollution agendas."**

Some of these stories that exploit current fear about the coronavirus have been linked to major right-wing organisations such as leading free-market think tank Manhattan Institute, and are aimed at opposing plastic bag legislation. One story, for example, is headlined "Greening our way to infection", and refers to unnamed research that the author claims shows that bacteria and viruses can survive on tote bags for 9 days.

Existing scientific research finds that Covid-19 could be stable on plastic and steel for as long as 3 days, compared to 1 day on cardboard materials and 4 hours on copper. However, these studies have not examined how long viruses stay on cloth, and there is little data that compares the stability of Covid-19 on reusable bags against plastic bags.

However, despite lacking in scientific evidence**, lobbying efforts by groups including the Manhattan Institute and libertarian pro-Trump organisation Competitive Enterprise Institute (CEI) have managed to persuade a number of states and cities in the United States to annul plastic bag bans, citing the coronavirus pandemic as a reason.**

While New York is choosing to delay enforcing the plastic bag ban until June, Maine and Massachusetts have repealed anti-plastic bag legislation and New Hampshire has gone further by banning reusable bags altogether.
Both the organisations in question have been reportedly linked to fossil fuel companies, according to the New York Times. The CEI's gala last year, for instance, was sponsored by the Koch Industries-owned Charles Koch Institute and the Petrochemical Manufacturers association.

AT: Economics

Argument: Banning single-use plastics will hurt the economy

A nationwide ban on single-use plastics in Trinidad & Tobago resulted in an economic hit of less than 1/10th of 1% of GDP

Willard et al. 20—[America. (2020). Economic implications of the ban on single-use plastics in the Caribbean: A case study of Trinidad and Tobago. Retrieved January 3, 2024, from Cepal.org website: https://www.cepal.org/en/publications/46280-economic-implications-ban-single-use-plastics-caribbean-case-study-trinidad-and]

[Willard Phillips is Economic Affairs Officer at UN Economic Commision for Latin America and the Caribbean, and holds masters degrees from the University of Georgia and the University of Guelph]

Over the past 50 years, the global annual production of plastics has increased dramatically, from 15 million tons in 1964 to roughly 311 million tons by 2014. This spectacular growth has occurred due to its unrivalled physical properties, which allow it to be widely applied in diverse economic production processes, at low cost. One of its main appplications has been in the packaging industry where roughly 26% of the global volume of plastics is used. More importantly, as much as 95% of plastic packaging – estimated at USD 80 – 120 billion annually - is for single-use, either as packaging or as items intended to be used only once before they are discarded as waste or recycled. Of this amount, only 5% is routinely recycled, and with the bulk ending up either in landfills, water courses or even oceans. Single-use plastics have become a major global threat to public health and the natural environment. On this basis, many countries have implemented various legal and policy sanctions to limit and or control the use of single-use plastics in their economies. **Within the Caribbean subregion, as many as twenty-seven countries and territories have legislated or proposed some form of policy controls on reducing the use of plastics over the past decade. The present study examines the economic implications of a ban on single-use plastics proposed for implementation in Trinidad and Tobago in 2020**. **Applying a cross-section analysis, the potential direct impacts to the economy were assesed at roughly 0.058% of annual GDP, to be borne by six key economic subsectors.** A revised incentive framework, enhanced waste management infrastructure, public education and awareness raising initiatives were identified as important policy elements to be undertaken in the implementation of the ban. Given several limitations of the research, this economic assessment is deemed to be at best a lower bound estimate of the total potential economic impacts.

AT: Ineffective

Argument: National plastic bans are an ineffective tool to combat environmental waste

National-scale plastic bans are part of the multi-dimensional transformation needed to tackle the global plastics crisis

Borrelle et al. 20—[Evaluating scenarios toward zero plastic pollution. (2020). Retrieved January 1, 2024, from Science website: https://www.science.org/doi/10.1126/science.aba9475?intcmp=trendmd-sci]

[Stephanie currently works at BirdLife International as the Pacific Marine Regional Coordinator. From 2018-2020, Stephanie held a David H. Smith Postdoctoral Research Fellow based at the University of Toronto in the Rochman Lab, and affiliated with the University of Georgia and the Jambeck Research Group. Stephanie's research is focused on plastic pollution, Marine Biology, Ecology and Seabird Conservation and Restoration.]

Our results show that the efforts required to meaningfully reduce plastic emissions by 2030 are extraordinary (Fig. 1 and Table 1). Increased waste management capacity alone cannot keep pace with projected growth in plastic waste generation. Further, without major technological innovation, it is inconceivable that efforts to recover plastic waste from the environment could reach even 10% of annual emissions (~2.4 to 6 Mt in 2030), whereas our model shows that 40% recovery is required to reduce emissions to <8 Mt (Table 1). These findings emphasize that **unless growth in plastic production and use is halted, a fundamental transformation of the plastic economy to a circular framework is essential, where end-of-life plastic products are valued rather than becoming waste.**

Increasing global efforts to manage plastic waste must consider plastic pollution as a multidimensional issue. This includes evaluating the financial and social costs of implementing (or not implementing) mitigation strategies and also the impacts of different mitigation strategies on economies, social justice, and human and environmental health to achieve global sustainable development goals. For example, waste-to-energy processing (i.e., incineration) reduces plastic waste volumes but may cause human health impacts from hazardous byproducts, create social justice issues, and increase greenhouse gas emissions (25, 26). Without such considerations, we risk creating perverse outcomes from the transformational shifts needed to address plastic pollution.

Plastic pollution is a burgeoning threat to the sustainability of our planet (7, 8, 27). **The world is responding at an already impressive scale, with grassroots action, national-level product bans, public-private partnerships for investment in waste management infrastructure, innovative alternatives to leakage-prone plastic products, and greater transparency in the trade of plastic waste** (7, 10, 13). Still, our results show that achieving substantial reductions in global plastic emissions to the environment requires an urgent transformative change. **Key policies to achieve such a transition include reducing or eliminating the use of unnecessary plastics, setting global limits for virgin plastic production, creating globally aligned standards for commodity plastics to be practically recoverable and recyclable by design, and developing and scaling plastic processing and recycling technologies.** Such harmonized policies can enable plastics to remain a valuable and useful commodity (10, 12). Further, some plastics will inevitably be emitted to the environment. Thus, recovery of plastic waste has to be a sustained priority to minimize adverse impacts on species and ecosystems (28) and to limit harmful waste management practices such as open burning (25). Without this transformation, we risk continuing to invest large amounts of human capital and financial resources with little to no hope of reducing plastic pollution in the world's rivers, lakes, and oceans.

AT: LCA

Argument: Lifecycle Analyses show that plastic has a smaller carbon footprint than other materials like glass, metal or paper

The environmental impact of plastic waste on the natural environment and animals isn't captured in LCAs

Pearson & Khare 20— [Pearson, M., Khare, E., & Tantawi, O. (2022). Addressing the single-use plastic proliferation problem. MIT Science Policy Review, 3, 85–93. https://doi.org/10.38105/spr.ro3uhoc2lz]

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However**, as critics of LCA studies will point out, LCA studies on plastic materials do not account for the environmental consequences of marine wildlife ingesting or becoming entangled in plastic waste, broader environmental impacts of waste that ends up in uncontrolled environments** (i.e., litter), **or upstream effects of plastics production such as oil spills** [35, 40, 41]. **By these metrics, alternatives to plastic, such as paper, become the more environmentally favorable material**. Therefore, when designing policies to address the plastic waste problem, policymakers are left facing trade-offs between competing environmental impact categories—whether it be climate change impact, land or water use, or ecological impacts on wildlife—underscoring the importance of setting policy goals from the outset. For example, **if the policy goal were to address the consequences of single-use plastic bag litter on marine wildlife, a policy might be designed to reduce single-use plastic bag consumption**. Furthermore, instituting mechanisms to evaluate the total consumption of bags and the resulting effect on marine wildlife a set time after implementation could help determine such a policy's efficacy towards the intended goal. **It is also worth noting that, because single-use items are harmful to the environment irrespective of the specific material, it has been suggested that policy solutions also consider reducing consumption in addition to alternative material solutions** [42].

AT: Recycling

Argument: Recycling can help to offset the waste from single use plastics

Only 9% of plastic is recycled, with 72% ending up in landfills or the environment

Main 23 –[Main, D. (2023, October 12). Think that your plastic is being recycled? Think again. Retrieved January 1, 2024, from MIT Technology Review website: https://www.technologyreview.com/2023/10/12/1081129/plastic-recycling-climate-change-microplastics/]

[Douglas Main is a journalist and former senior editor and writer at National Geographic.]

Making less is the most important goal—and the most politically charged one, given the immense profits and political power of plastic producers. "What's the best way to manage waste?" says Jenna Jambeck, an environmental engineer at the University of Georgia. "To not produce it in the first place."

Because consider this: most of the plastic we make, **72%, ends up in landfills or the environment, according to a 2022 report from the Organisation for Economic Co-operation and Development. Only 9% of the plastic ever produced has been recycled, and 19% has been incinerated. Some of it reaches the sea; estimates suggest that between 8 million and 11 million tons of plastic waste enter the ocean each year. According to the National Academy of Sciences, that's the equivalent of dumping a garbage truck of plastic into the ocean every minute.**

AT: Sanitary

Argument: Plastic bags are more sanitary than cloth or other reusable bags

Plastic bags aren't safer than reusable bags, and viruses like Covid can live on plastic for more than a week—yet, Petroleum companies continue to push the narrative that plastic is safe and sanitary

McVeigh 20—[McVeigh, K. (2020, March 27). Rightwing thinktanks use fear of Covid-19 to fight bans on plastic bags. Retrieved January 2, 2024, from the Guardian website: https://www.theguardian.com/environment/2020/mar/27/rightwing-thinktanks-use-fear-of-covid-19-to-fight-bans-on-plastic-bags]

[Karen McVeigh has been a senior news reporter for the Guardian since December 2006. Before that, she freelanced for the Times following a five-year stint as The Scotsman's London correspondent]

The fight to ban plastic bags, many of which end up polluting oceans and rivers, has taken a step backward as conservative US think-tanks exploit the fear of Covid-19, campaigners have said.

Articles warning that reusable tote bags are worse than plastic ones for spreading coronavirus have been linked to major rightwing nonprofits such as the Manhattan Institute, and contain misinformation aimed at defeating or repealing plastic bag bans, said Greenpeace USA.

The effort "risks further confusion" amid a global public health crisis, it said.

Recent studies have found that Covid-19 could be stable on plastic and steel for up to three days, compared with 24 hours for cardboard and four hours for copper. The studies have not examined how long the virus remained on tote bags and there is little scientific evidence comparing reusable bags with plastic.

Last week a number of US states and cities nevertheless took the decision to roll back plastic bag bans, citing the coronavirus. Maine repealed its ban. The governor of New Hampshire went further by issuing an order banning reusable bags, saying they risk spreading coronavirus. The governor of Massachusetts banned reusable bags and lifted plastic bag bans. And New York state, which implemented its plastic bag ban on 1 March, will delay enforcement until June.

The moves follow articles by researchers at the Competitive Enterprise Institute (CEI) – a libertarian nonprofit instrumental in persuading the Trump administration to abandon the Paris climate agreement – suggesting reusable grocery bags are riskier than plastic, and in a journal published by the Manhattan Institute suggesting sustainable bags can carry viruses for up to nine days.

While nonprofits are not required to disclose their donors, both have reportedly received money from fossil fuel companies. Among the sponsors for a CEI gala last year were the Charles Koch Institute and the American Fuel and Petrochemical Manufacturers association, the New York Times reported.

Greenpeace USA criticised the Manhattan Institute and the CEI for a series of articles suggesting that reusable bags are a higher risk for transmitting coronavirus than plastic bags, misrepresenting recent research that shows the virus survives at least as long on plastic.

Such misinformation is already being used to lobby state legislatures to defeat or repeal plastic bag ban legislation, it said.

John Hocevar, Greenpeace USA's oceans campaigner, condemned what he described as industry groups that have "seen the crisis as an opportunity to exploit people's fears around Covid-19 to push their pro-pollution agendas".

"Even in the short term, plastic does not inherently make something clean and safe, and we should not confuse corporate public relations with factual medical research," Hocevar said.

Similar moves are under way in Britain, where the environment secretary, George Eustice, has waived the 5p charge on plastic bags for supermarket shoppers online. Eustice said it was a temporary measure aimed at reducing potential cross-infection between delivery workers and those in isolation, and to speed up deliveries.

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Plans to further reduce single-use plastic, under the environment bill, have been put on hold due to Covid-19.
The timing of the Welsh government's plans to restrict single-use plastics is also under review, it told the Guardian.

In the US, the misinformation campaign against reusable bags ramped up after two recent studies. The first, from the University of California, published last month in the Journal of Hospital Infection, reported that viruses similar to Covid-19 could remain on plastic for up to nine days. The second, published on 17 March in the New England Journal of Medicine, found that Covid-19 could be stable on plastic for up to three days. The viruses could be inactivated by disinfection. Neither study examined reusable bags.

However, the day after the first study was published**, the Plastics Industry Association wrote to the US Department for Health and Human Services, urging the government to make a pronouncement supporting single-use plastic.** The association claimed "study after study" showed reusable bags to be a health risk. It did not mention the University of California study.

Then on 12 March, the City Journal, published by the MI, ran an article claiming: "The 'sustainable' bags that environmentalists and politicians have been so eager to impose on the public … can sustain the Covid-19 and flu viruses and spread the virus throughout the store."

The piece, headlined "Greening our way to infection" and written by John Tierney, cites unnamed research that Tierney claims showed viruses and bacteria can survive on tote bags for nine days. It offers no evidence to back this claim – in fact, it links to a study showing viruses can remain on plastic for nine days.

The piece also quotes a 2018 study published in the Journal of Environmental Health where researchers found traces of a surrogate virus on surfaces and the hands of shoppers and store staff high enough "to risk transmission". They recommended in-store hand hygiene and washing reuseable bags. They did not compare the risk of reusable bags with new plastic bags.

Another piece by Tierney, with a similar argument, appeared in the New York Post entitled "Using tote bags instead of plastic could help spread coronavirus".

Meanwhile, the Washington Examiner published a piece by Angela Logomasini of the Competitive Enterprise Institute on 18 March, a day after **the New England Journal of Medicine study, headlined: "Plastic bag bans aren't helping us fight against coronavirus".**

Logomasini quotes the same 2018 study as Tierney, as well as a 2011 study on reusable and plastic bags that looked at bacteria, not viruses, and was partly funded by the American Chemistry Council.

Ivy Schlegel, a researcher at Greenpeace USA, said: **"This is a classic PR tactic. After new studies showing Covid-19 lasts longer on plastic, they have pulled back into their bag of tricks to redeploy old studies, linking them to legitimate public fear of the coronavirus."**

Hocevar said: "The truth is that we don't have all of the answers to this Covid-19 emergency yet, and for industry to use this as an opportunity to increase profits for the fossil fuel and plastics sectors is dangerous and irresponsible.

"What we do know is that there is no substitute for strict hygiene. Just because a material is made from single-use plastic does not make it less likely to transmit viral infections during use; in fact, plastic surfaces appear to allow coronaviruses to remain infectious for particularly long periods compared to other materials."

"**The decisions we make for our families in this health crisis should be based on science and the advice of medical professionals, not lobbyists for the fossil fuel and plastics industries**. Wherever reusables are an option, it is incumbent upon all of us to do our part to protect one another by washing them thoroughly after every use."

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Neg

Alternative Policies

NOTE: do not run these as counterplans. They're just meant to demonstrate to the judge that the Neg side has plenty of policy options to reduce plastic pollution.

Several policy options, including fees & levies, producer responsibility, and education programs, can all be used to reduce plastic waste without resorting to a federal ban

Pearson & Khare 20— [Pearson, M., Khare, E., & Tantawi, O. (2022). Addressing the single-use plastic proliferation problem. MIT Science Policy Review, 3, 85–93. https://doi.org/10.38105/spr.ro3uhoc2lz]

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Clearly stated goals, proper enforcement, and measurable analysis metrics are all imperative for successful implementation and improvement of single-use plastic bans. **However, such bans are not the only policy option;** depending on the environmental goals, whether to reduce the release of macro/microplastic waste into the environment or reduce greenhouse gas emissions, **additional policies—including targeted or federal bans, the implementation of fees and levies, extended producer responsibility, and education programs—can be considered in tandem with or in lieu of extant single-use plastic bans.** Furthermore, while some policies are more easily implemented at the state and local levels, harmonized federal guidelines or standards could ease enforcement and compliance and combat laws preemptively restraining localities from instituting policies to address plastic proliferation.

Ultimately, in addition to effective regulatory and economic government policy, new innovations in waste management technology, movement to closed loop systems with new sustainable plastic chemistries, research and development into sustainable materials, and more resource-efficient business models could help resolve the environmental consequences of plastic production [60]. Long-term investments into sustainable materials research and the necessary innovations and infrastructure along the plastic value-chain are important avenues by which policies can spur these changes.

Alternatives Worse

Plastic Alternatives: A simple ban on products will release a flood of untested alternatives into the marketplace, leading to "unquantified environmental, social and economic impacts"—and many alternatives policies exist to help with the growing plastics problem

Meidl 20 –[Baker Institute. (2020, January 27). China's Countrywide Ban On Plastics: Good Intentions Do Not Equate To Good Policies. Forbes. Retrieved from https://www.forbes.com/sites/thebakersinstitute/2020/01/27/chinas-countrywide-ban-on-plastics-good-intentions-do-not-equate-to-good-policies]

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A fundamental problem of the escalating plastic waste dilemma is that society is approaching it as a *product-based solution*, rather than a *system-based solution*. Simply banning a product and encouraging the use of understudied alternative products that have unintended and unquantified environmental, social and economic impacts throughout its life cycle is not enough. After all, we want to ensure we are supplementing or replacing plastics with materials that are safe for the environment, people and the economy and do not exacerbate the global waste problem. A longer-term, sustainable solution is investing in R&D to engineer higher quality polymers with end-of-life management in mind; technology and solid waste systems that manage a wide array of plastic polymers on the market mechanically as well as chemically, including biodegradable or compostable biopolymers; consumer education to increase awareness; and cooperative mechanisms throughout the supply chain. All of this requires the underpinning of an informed and balanced regulatory framework that keeps pace with technologies across the life cycle, accounts for impacts along the supply chain, and encourages innovation**. Banning plastics prior to understanding and embarking upon these critical elements sets the system up for failure and takes us further away from achieving sustainability and global circularity goals.**

Bans and partial bans serve a purpose and can be warranted, especially when a chemical or product poses unnecessary risk to public health or the environment such as lead paint, polychloride biphenyls and asbestos. Bans also demonstrate public engagement and political awareness of social and environmental issues that stimulate robust dialogue. They reinforce our civic rights and values in the democratic system. These are all great things. **However, bans also need to be informed by data and science that is methodical, collaborative and practical so it does not disincentivize and stifle innovation to create better alternatives, technologies and infrastructure — or convey the illusion that this singular action solves or substantially reduces the plastic pollution problem. Prohibitions are not the only avenue to tackle the plastic waste issue. There are many pathways to consider outside of command-and-control methodologies. Market-based arrangements in the form of taxes, charges, subsidies, deposit-refund systems, recycling rate targets and behavior change programs are all vehicles that can, with an understanding of local and regional characteristics, effectively move the needle on improving the ever-increasing plastic waste problem.**

Glass & Metal packaging both have higher carbon footprint that plastic packaging – plastics bans would cause customers to shift to these more carbon-intensive materials

Miller 20—[Five Misperceptions Surrounding the Environmental Impacts of Single-Use Plastic. (2020). Retrieved January 3, 2024, from Environmental Science & Technology website: https://pubs.acs.org/doi/epdf/10.1021/acs.est.0c05295]

[Dr. Miller's research interests center around the life cycle impacts of emerging energy systems. Recent work focuses on the non-carbon aspects of biofuels, such as disruptions to the nitrogen cycle and changes in land use. Interests also include advancing Life Cycle Assessment methods to analyze dynamic and emerging systems, such as hydraulic fracturing in the US and electricity grids in developing countries. She holds a PhD in Civil and Materials Engineering from the University of Illinois at Chicago]

Literature has shown that consumers' perceptions of the environmental impacts of packaging are largely based on intuition and do not necessarily correspond to actual environmental impact. **Consumers tend to rate plastic as more environmentally harmful compared to other types of packaging, regardless of the actual environmental attributes of the materials**. Although individual packaging systems can vary, **LCA studies have shown plastic generally has lower environmental impacts than single-use glass or metal in the majority of environmental impact categories measured**. **When compared to single-use paperboard cartons, the relative environmental impacts of plastic containers are mixed and largely depend on the specific product as assumptions within the study. The smaller emissions burdens associated with plastics are largely due to less materials needed for effective packaging performance, lower transport emissions due to lower mass, and lower energy and material associated with the production of plastic relative to other materials. The misperception of the relative environmental impacts of plastic is particularly important to recognize given potential environmental problem-shifting as consumers adopt substitutes with less favorable attributes, which has been shown to occur as a result of plastic bans.**

An increasing trend to substitute single-use plastic packaging with single-use glass-based packaging is particularly troublesome from a life cycle energy and GHG perspective. When comparing the relative environmental impacts of single-use glass and plastic, plastic has been shown to be significantly better in terms of energy use, greenhouse gas emissions, and multiple other environmental impact categories. Glass containers are a higher energy-intensity material to produce and are significantly heavier than their plastic counterparts, increasing associated transportation emissions. Recycling of glass can also be problematic, since it is logistically and energetically prohibitive to remanufacture into new glass product. Reclaimed glass is increasingly used as aggregate in construction materials in order to avoid high energy recycling operations. It should be noted that substituting reusable, refillable glass bottles for single-use plastic is likely to offer environmental benefits, although these results vary depending on a number of assumptions regarding the actual reuse rate of the bottles.

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Plastic Bag Alternatives: While plastic bags *are* harmful to the environment, the alternatives—paper bags and canvas bags—may be even worse

Xiong 19 –[Guest Blogger. (2019, May 9). How Banning Plastic Bags Could Help New York Mitigate Climate Change. Retrieved January 1, 2024, from State of the Planet website: https://news.climate.columbia.edu/2019/05/09/banning-plastic-bags-climate-change/]

[Yunhai Xiong is product engineer who specializes in climate change impacts. He was a student in Columbia's Master of Arts program in Climate and Society]

New Yorkers use a lot of plastic bags. The city of 8 million goes through 23 billion plastic bags annually. It's a stat that would've seemed unbelievable to me before I moved here until I walked out of a C-Town grocery store with $30 of groceries in six plastic bags. Plastic pollution is a severe environmental problem, but some have suggested that focusing on cleaning up plastic pollution is distracting us from other more challenging risks like climate change. But there are ways to combat both, and the recent plastic ban in New York sets a perfect example.
Plastic bags do contribute to global warming. Plastic needs anywhere from decades up to 1,000 years to decompose, and recent research shows that plastic can release methane and ethylene early on in the decomposition process if it's exposed to ultraviolet light. Both are problematic greenhouse gases, which have a much stronger warming effect than carbon dioxide.

Low-density polyethylene—the type of plastic used in grocery bags—is the major emitter. That means the recently announced ban on plastic bags in New York can help address climate change.

However, when the plastic bags are banned, we will have to turn to other alternative choices like paper bags and reusable bags. That raises the question of whether these bags are any better.

It turns out paper bags can have a more substantial harmful impact on the environment. Because paper is made from trees, more bags means more deforestation. Life cycle assessments show that paper bags have a much higher global warming potential because the growing need for paper bags reduce the forest carbon sink. Manufacturing paper bags is much more resource intensive than plastic, consuming more energy and water. A 2014 report shows that paper bag production requires double the energy and five times as much water as plastic bags while emitting approximately three times the greenhouse gases and acid gases in the manufacturing process. Moreover, paper bags are also seven times heavier than plastic bags, which means they can come with higher transportation costs and carbon emissions.

There are also issues with reusable bags. They are usually made from cotton, which requires not only abundant water but also more energy to produce, meaning higher carbon dioxide emissions. A cotton bag needs to be reused 131 times before it yields more climate benefits than single-use plastic bags. To generate the maximum environmental benefit in using reusable bags, many consumers will need to change their behavior. If they forget to bring their bags when they shop, then not only will it cost them money to buy another bag but it will lead to more wasted carbon emissions and resources.

To help nudge people to bring reusable bags, New York has suggested charging a fee of 5 cents on every paper bag. Without the extra cost, paper bags might be the alternative choice for the plastic bag, which could end up making climate change and other environmental issues worse.

While the plastic bag ban can be good for the environment, the policies need to be carefully considered to ensure its effectiveness. And whether the legislation really works to address these issues still depends on everyone's actions. If the new policy can successfully transform New York residents' shopping behavior, it could be a significant step for leading the way in mitigating climate change and plastic pollution.

Bans Fail

NOTE: The Canada ban has since been struck down by Canada's supreme court

Canada: a nationwide SUP ban would do almost nothing to impact pollution, while exacting a high cost on Canadians

Green 22—[Green, Kenneth P. (2022, June 23). Canada's Wasteful Plan to Regulate Plastic Waste. Retrieved January 4, 2024, from Fraser Institute website: https://www.fraserinstitute.org/studies/canadas-wasteful-plan-to-regulate-plastic-waste]

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At the end of 2021, **the government of Canada launched a regulatory campaign against plastic waste**—Zero-Plastic Waste 2030 (ZPW2030)—**that will, in the estimation of its own Regulatory Impact Assessment, impose costs on Canadian society exceeding projected benefits. This fails the first, and arguably most important, test of sound public policy.**

Environmental Impacts

ZPW2030 will produce little or no environmental benefit because Canada's plastics economy poses a very small environmental risk either locally or globally. Only one percent of Canada's plastic wastes are ever released into the environment. The other 99% is disposed off safely from an environmental perspective: some incinerated, some recycled, but **most discarded in landfills, an environmentally benign endpoint.**

Canada's contribution to global aquatic plastic pollution, when assessed in 2016, was between 0.02% and 0.03% of the global total. If observed market trends were to continue in the absence of ZPW2030, the government's Regulatory Impact Assessment estimates plastic waste and plastic pollution could increase (from 2016 levels) by roughly one third by 2030. Thus, if ZPW2030 eliminated all the predicted increase, it would prevent an increase from 0.02%–0.03% to 0.023%–0.033% of the global total, an undetectable reduction of three thousandths of one percent.

Even that small reduction in environmental harm is likely to be offset by increased environmental harms stemming from replacements for the plastic products banned under ZPW2030. As government acknowledges, "the proposed Regulations are expected to increase the waste generated from substitutes by 298,054 tonnes in the first year of full policy stringency (2024) and **by around 3.2 million tonnes over the analytical period** (2023 to 2032), **almost all of which is driven by paper substitutes**". And, the government observes: "**The proposed Regulations would prevent approximately 1.6 million tonnes of plastics from entering the waste stream over the analytical period but would also add about 3.2 million tonnes of other materials to the waste stream from the use of substitutes".** The potential for this kind of regulatory "backfire" fails another important test of sound health and environment-related public policy, which is "First, do no harm".

Economic impacts

As the government's Regulatory Impact Analysis shows, the monetized costs of the proposed single-use plastics regulations—CA$1.3 billion—will outstrip the monetized benefits—CA$619 million—by nearly 2:1. According to a report the government contracted Deloitte to produce, over the course of the initiative estimated benefits of the overall ZPW2030 regime are estimated to be up to CA$10.5 billion, but would require investment in new facilities of up to CA$8.3 billion to achieve it. Even then, in 2030, annual costs of the program are estimated to exceed benefits by CA$300 million per year.

These costs will ultimately be borne by consumers, as the government observes: the increased volume of wastes discussed above will "represent additional costs for municipalities and provincial authorities, as they are usually responsible for managing collection, transportation, and landfilling of plastic waste, and would assume most of the associated costs, which would ultimately be passed on to taxpayers".

February 2024: The United States federal government should ban single-use plastics.

Kenya: a nationwide plastic bag ban created a plastic-bag black market

Parker 19—[Parker, L. (2019, April 17). Plastic bag bans are spreading. But are they truly effective? Retrieved January 2, 2024, from Environment website: https://www.nationalgeographic.com/environment/article/plastic-bag-bans-kenya-to-us-reduce-pollution]

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In Kenya, the bag ban has faced a sequence of rocky challenges. The Kenya Association of Manufacturers unsuccessfully opposed the ban in court, warning that as many as 100,000 jobs in the plastics manufacturing industry could be lost.

Once it took effect, the ban prompted the creation of "bag cartels" that smuggled illegal plastic bags from neighboring Uganda and Tanzania.

Geoffrey Wahungu, director general of Kenya's National Environment Management Authority, conceded in an interview that **the government failed, at first, to consider what alternative products could be used to replace plastics that were banned. Eventually, plastics used to wrap various fresh foods, such as meat, were exempted from the ban, along with other products.**

Although the arrest of a roadside fruit seller caught with his apples in a plastic bag was featured in media accounts, most of the enforcement has focused on distributors, not lone sellers or consumers. Even so, **enforcement has been spotty and incomplete, as has a clear accounting of the numbers of arrests and fines levied so far.**

"The ban had to be drastic and harsh, otherwise Kenyans would have ignored it," says Walibia, the activist.
On that, he may have a point**. Litter still collects in abundant amounts on the Kenyan landscape.** Still, the country appears in some ways visibly cleaner. Bags that once hung like windblown shrouds from tree branches are fewer in number, as are clumps of bags that clogged drainage systems and created breeding pools for malaria-bearing mosquitoes.

"Everyone is watching Kenya now because of the bold step we took," Wahungu says. "We are not looking back. We are not relenting."

But the government moved to widen the ban, it is confronting new challenges. The government now wants to ban non-woven shopping bags, those very "eco-friendly" bags that replaced the flimsy bags in 2017. The ban was to begin this month, but has been blocked by the court while manufacturers seek to stop it.

Circular Economy

NOTE: This *may* be run as an argument, as a federal plastics ban definitionally precludes a circular economy. Please consult with your coach or seniors to stay out of trouble.

Circular Economy: rethinking the plastic economy is necessary to stop plastic waste – merely switching to alternatives like glass, metal, or untested bio-alternatives will cause a larger carbon footprint

Ellen MacArthur Foundation 16— [Plastics and the circular economy. (2016). Retrieved January 3, 2024, from Ellenmacarthurfoundation.org website: https://www.ellenmacarthurfoundation.org/plastics-and-the-circular-economy-deep-dive]

[The Ellen MacArthur Foundation is a charity committed to creating a circular economy, which is designed to eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature. It's an economic system that delivers better outcomes for people, and the environment.]

The circular economy is an economic system in which materials are designed to be used, not used up. From the outset, products and the systems they sit within should be designed to ensure no materials are lost, no toxins are leaked, and the maximum use is achieved from every process, material, and component. If applied correctly, the circular economy benefits society, the environment, and the economy.

All packaging should be designed to fit within a system, whether a reuse, recycling or composting system.

Eliminate the plastics we don't need.

Plastic brings many benefits. At the same time, there are some problematic items on the market that need to be eliminated to achieve a circular economy, and sometimes, **plastic packaging can be avoided altogether while maintaining utility.**

While improving recycling is crucial, we cannot recycle our way out of the plastic issues we currently face. Wherever relevant, reuse business models should be explored as a preferred solution (or 'inner loop' in circular economy terms), **reducing the need for single-use plastic packaging**. **Reuse models, which provide an economically attractive opportunity for at least 20% of plastic packaging, need to be implemented in practice and at scale**.

Innovate to ensure that the plastics we do need are reusable, recyclable, or compostable.

This requires a combination of redesign and innovation in business models, materials, packaging design, and reprocessing technologies.

Compostable plastic packaging is not a blanket solution, but rather one for specific, targeted applications, because an effective collection and composting infrastructure is essential but often not in place.

Circulate all the plastic items we use to keep them in the economy and out of the environment.

No plastic should end up in the environment. Landfill, incineration, and waste-to-energy are not long term solutions that support a circular economy.

Governments are essential in setting up effective collection infrastructure, facilitating the establishment of related self-sustaining funding mechanisms, and providing an enabling regulatory and policy landscape.

Businesses producing and/or selling packaging have a responsibility beyond the design and use of their packaging, which includes contributing towards it being collected and reused, recycled, or composted in practice.

What is the vision for a circular economy for plastic?

The vision for a circular economy for plastic has six key points:

1. **Elimination of problematic or unnecessary plastic packaging** through redesign, innovation, and new delivery models is a priority
2. **Reuse models are applied where relevant,** reducing the need for single-use packaging
3. **All plastic packaging is 100% reusable, recyclable, or compostable**
4. **All plastic packaging is reused, recycled, or composted in practice**
5. **The use of plastic is fully decoupled from the consumption of finite resources**
6. **All plastic packaging is free of hazardous chemicals, and the health, safety, and rights of all people involved are respected**

Elimination, reuse, and material circulation

In a new plastics economy, plastic never becomes waste or pollution. Three actions are required to achieve this vision and create a circular economy for plastic. **Eliminate all problematic and unnecessary plastic items. Innovate to ensure that the plastics we do need are reusable, recyclable, or compostable. Circulate all the plastic items we use to keep them in the economy and out of the environment.**

Without elimination, achieving a circular economy for plastic will not be possible. With the demand for plastic packaging set to double over the coming two decades, it will be impossible to keep this ever-growing flow of plastics in the economy and out of the environment. To achieve a circular economy we need to reduce the amount of material that needs to be circulated.

Until recently, reuse models were broadly considered to be burdensome or a thing of the past. In the last year, there has been a significant increase in business and government interest, commitments and action on reuse in the form of pilots, research initiatives, and reuse-focused startups**. Globally, replacing just 20% of single-use plastic packaging with reusable alternatives is conservatively estimated to be an opportunity worth at least USD 10 billion.**

Material circulation refers to keeping the material that packaging is made from in circulation in the economy. This is achieved through the development of a dedicated system which includes collecting and sorting, a physical chemical or biological breakdown process, and then the rebuilding of a material that is reintroduced. Packaging materials re-entering the economy in packaging applications is material circulation, while converting packaging materials into roads is not. Material circulation differs from reuse in that reuse circulates the in tact packaging (i.e. packaging shape is maintained and circulation occurs through washing) whereas material circulation circulates the packaging material (i.e. packaging shape is not maintained and circulation occurs through a breakdown process).

Climate Compensation

People psychologically treat the environment like a social relationship, and acts that seem to help the environment (like banning plastic) may be balanced by acts that hurt the environment

Sörqvist & Langeborg 19—[Patrik Sörqvist, & Langeborg, L. (2019). Why People Harm the Environment Although They Try to Treat It Well: An Evolutionary-Cognitive Perspective on Climate Compensation. Frontiers in Psychology, 10. https://doi.org/10.3389/fpsyg.2019.00348]

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The proposed framework in this paper suggests that **several examples of unsustainable behavior and effects (negative footprint illusions, rebound effects, compensatory green beliefs, quantity insensitivity, etc.) have their roots in mental heuristics shaped by natural selection to handle social exchange**. **We have tried to show how moral accounting and the balancing heuristic, apparently present in social exchange processes, can explain how people and decision makers think and act in response to environmental and climatic change issues**, as well as to marketing devices, pro-environmental political policies and economic systems that involve the idea of "climate compensation." Specifically**, a reason why people sometimes harm the environment although they try to do good, is that the balancing heuristic makes them believe "environmentally friendly" behavior can compensate for unsustainable behavior.** The strategies proposed can hopefully help toward reducing the negative effects of this inherited cognitive handicap.

Depolymerization

New Depolymerization technology promises effective recycling that produces plastic at the same quality as virgin plastic

Chrobak 22—[Chrobak, U. (2022, March 5). The Atlantic. Retrieved January 4, 2024, from The Atlantic website: https://www.theatlantic.com/science/archive/2022/03/false-promise-plastic-recycling/626553/]

[Ula Chrobak is a science writer & editor]

This pollution problem is made worse, experts say, by the fact that even the small share of plastic that does get recycled is destined to end up, sooner or later, in the trash heap. Conventional, thermomechanical recycling—in which old containers are ground into flakes, washed, melted down, and then reformed into new products—inevitably yields products that are more brittle, and less durable, than the starting material. At best, material from a plastic bottle might be recycled this way about three times before it becomes unusable. More likely, it will be "downcycled" into lower-value materials such as clothing and carpeting—materials that will eventually be disposed of in landfills.

"Thermomechanical recycling is not recycling," says Alain Marty, the chief science officer at Carbios, a French company that is developing alternatives to conventional recycling.

"At the end," he adds, **"you have exactly the same quantity of plastic waste."**

Carbios is among a contingent of start-ups that are attempting to commercialize a type of chemical recycling known as **depolymerization, which breaks down polymers—the chainlike molecules that make up a plastic—into their fundamental molecular building blocks, called monomers. Those monomers can then be reassembled into polymers that are, in terms of their physical properties, as good as new. In theory, proponents say, a single plastic bottle could be recycled this way until the end of time.**

But some experts caution that **depolymerization and other forms of chemical recycling may face many of the same issues that already plague the recycling industry, including competition from cheap virgin plastics made from petroleum feedstocks.** They say that to curb the tide of plastic flooding landfills and the oceans, what's most needed is not new recycling technologies but stronger regulations on plastic producers—and stronger incentives to make use of the recycling technologies that already exist.

Buoyed by potentially lucrative corporate partnerships and tightening European restrictions on plastic producers, however, Carbios is pressing forward with its vision of a circular plastic economy—one that does not require the extraction of petroleum to make new plastics**. Underlying the company's approach is a technology that remains unconventional in the realm of recycling: genetically modified enzymes.**

Enzymes catalyze chemical reactions inside organisms. In the human body, for example, enzymes can convert starches into sugars and proteins into amino acids. For the past several years, Carbios has been refining a method that uses an enzyme found in a microorganism to convert polyethylene terephthalate (PET), a common ingredient in textiles and plastic bottles, into its constituent monomers, terephthalic acid, and monoethylene glycol.

Equity & Access

Disabled: People with disabilities often rely on single-use plastics for everyday life—a ban would result in othering of both poor and disabled people, who are unable to afford and use alternatives to plastic straws

Jenks & Obringer 20—[Jenks, A. B. (2020). The poverty of plastics bans: Environmentalism's win is a loss for disabled people - Andrew B. Jenks, Kelsey M. Obringer, 2020. Retrieved January 3, 2024, from Critical Social Policy website: https://journals.sagepub.com/doi/full/10.1177/0261018319868362]

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Ableism persists as a non-visible form of systemic bias. We have internalised the notion that there is some kind of corporeal standard and deviance from this 'normal' way of interacting with our environment is not only extraordinary, but peripheral to the concerns of broader justice movements. The fears of disabled people needing to out themselves are very real. When you have to disclose your disability, people talk down to you, as if the labelling of disabled transforms you into someone qualitatively different. One of the co-authors of this piece has a non-discernible physical disability, meaning they pass as an able-bodied person and receive the 'benefit' of not being stereotyped or the subject of different prejudices in their daily lives (Brune and Wilson, 2013). Once they disclose their disability, however, they are treated differently, infantilised, or asked if their disability can be cured. Placing the burden of proving one is disabled enough to warrant an exception to a straw ban, or even having to ask for a plastic straw at a restaurant or bar is an example of the larger ableism endemic to movements aimed at eliminating single-use plastics carte blanche. The alternative, outwardly displaying your disability, avoids questioning and doubt, but, nevertheless, garners stares of pity and objectification.

As noted earlier, **the most significant critique of the straw ban craze has come from the disability community, which publicly decried straw bans as being ableist**, though such views have been relegated as a fringe issue. **The common and repeated narrative of, 'well, can't they just use paper/glass/silicone/metal straws', makes three key assumptions. The first is that disabled people can easily use alternatives.** With help from writer and artist sb. smith in recreating a graphic they created in 2018, we show in Figure 1 the myriad complications 'just using a ____ straw' presents to disabled people. **Disabled people's inability to position certain straws, their risk as choking hazards, the inability to use them for hot liquids, and possible injury from the poking of one's mouth are just some problems disabled people face when presented with plastic straw alternatives**.

The second assumption is that these straws are simply a convenience for disabled people, like they are for able-bodied people. However, **straws and other 'convenience' plastic items allow people the freedom and ability to nourish themselves. Plastic straws make restaurants and bars, largely inaccessible until the passage of the ADA, more accessible to disabled people. They enable disabled children, who would have been institutionalised just forty years ago, to live at home with their parents and grow up to live independent lives. The poverty of plastics bans is that they are exclusionary without being purposefully so – they are not saying we do not want straws, they are saying we do not want you,** and that is their greatest flaw.

The third assumption, and perhaps one which most closely aligns with extant literature on poverty and social policy, is that people can simply access alternatives to plastic straws. Disabled people are disproportionately poorer than non-disabled people and the nexus between disability and poverty, that the two begat each other, is well documented (Yeo and Moore, 2003). **Metal, glass, and plastic reusable straws are expensive, in addition to being non-positionable, or a choking hazard, and possibly difficult to clean**. Access to alternative straw materials, and the ability to use them safely, is a privilege many disabled people cannot afford. To perpetuate the 'can't they use something else' narrative places an onus on disabled people to overcome yet another structural barrier to their existence. Further, it fails to recognise the inherent issues of ableist environmental policy, in favour of looking for retroactive solutions to an issue that, from the stance of environmental justice, should have been substantively addressed during the initial stages of policy deliberation.

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Poor: People in poverty, often in rural locations, rely on food packaged in single-use plastic, and often can't afford the more-expensive alternatives to SUPs

Calvin Lakhan 22—[Single use plastics is not a dirty word: Why the war on plastics can do more harm than good LinkedIn. (2024). Retrieved January 4, 2024, from Linkedin.com website: https://www.linkedin.com/pulse/single-use-plastics-dirty-word-why-war-can-do-more-lakhan-ph-d/]

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The issue of equity and access is also a critical but neglected dimension of the single use plastics conversation. **For anyone that has ever called for the elimination of single use plastics, I would encourage them to go to a remote area or spend time in a developing economy. For some communities, the use of plastic packaging isn't a choice, but a necessity. Lack of access, distance to markets, lack of refrigeration, sanitation concerns, product shelf life etc. are all very real challenges that single use plastics can help address. Even if we set aside the fact that the way we consume and what we consume is centered on single use, there are economic barriers that can also impede an individual's ability to opt for alternatives to plastic packaging. The vast majority of alternatives to single use plastic packaging comes at a premium – one which many people simply can't afford.** Economic barriers to access speaks to broader issues associated with environmental affluism, equity and inclusiveness, but generally speaking, **calls to ban plastic packaging often fail to address the socio-economic impacts of doing so.**

Single use plastics and sustainability do not have to be mutually incompatible pursuits. **Our goal should be focused on promoting sustainable outcomes, using evidence and data to inform our decisions and policy.** Emphasis should be placed on developing the infrastructure to recover and divert single use plastics, and explore new technologies beyond mechanical recycling to help maximize the value of plastics as a resource. **A blanket ban on single use plastics does not take into consideration the pivotal role that plastics plays in a sustainable economy,** and it is imperative that we have a nuanced conversation surrounding the "how, why, when, where" they should be used moving forward.

Products vs Packaging

Packaging usually only represents a few percent of the total product's environmental footprint.

More Packaging can actually DECREASE the environmental footprint for perishable food items, as the food items will last longer and won't be wasted—prominent examples include coffee pods and pre-packaged meal kits

Miller 20—[Five Misperceptions Surrounding the Environmental Impacts of Single-Use Plastic. (2020). Retrieved January 3, 2024, from Environmental Science & Technology website: https://pubs.acs.org/doi/epdf/10.1021/acs.est.0c05295]

[Dr. Miller's research interests center around the life cycle impacts of emerging energy systems. Recent work focuses on the non-carbon aspects of biofuels, such as disruptions to the nitrogen cycle and changes in land use. Interests also include advancing Life Cycle Assessment methods to analyze dynamic and emerging systems, such as hydraulic fracturing in the US and electricity grids in developing countries. She holds a PhD in Civil and Materials Engineering from the University of Illinois at Chicago]

On a life cycle basis, the resource extraction, manufacturing, and use phases of a product generally dominate the environmental impacts of most products, whereas the production of packaging and packaging disposal often represent only a few percent of total life cycle impact. Meanwhile, studies have shown that consumers' perceptions of environmental impacts do not correspond with scientific evidence, and consumers tend to focus on the impact of the packaging rather than the impact of the product itself. Further, consumer perception regarding the environmental friendliness of packaging influences their perceptions of the environmental attributes of the product inside.

Food systems are one of the dominant sectors for the use of single-use plastics. Due to the environmental intensity of agricultural production, the environmental impacts associated with food production far surpass the environmental impacts of packaging. Counterintuitively, increasing the amount of packaging can decrease total life cycle impact of a food product by reducing food waste via improved shelf life, quality, and freshness of perishable foods. This is particularly true for environmentally intensive foods such cheese, high breakage rate items such as eggs, or high spoilage items such as bread. In such cases, the package's ability to protect food against loss or spoilage tends to avoid greater environmental impacts than those incurred by the production of the actual packaging material.

A number of LCA studies show that when compared to their traditional counterparts, consumer products that reduce food waste and energy use tend to have lower aggregate greenhouse gas (GHG) emissions, despite generating a higher quantity of solid waste through single-use plastic packaging. For example, a study on coffee pods showed that the use of coffee pods could have lower environmental impacts than coffee brewed via traditional drip coffee makers. Similarly, a study on direct-to-consumer meal kits showed that the meal kits had fewer greenhouse gas emissions than the same meals purchased at a grocery store, despite having greater amounts of packaging.

Neg Blocks

AT: Bioplastics

Argument: Bioplastics can fill-in for single-use plastics after a ban

Bioplastics are great in theory, but face a number of issues:

i. **there isn't enough supply capacity to replace traditional plastics**
ii. **When put in a landfill, as most are, bioplastics create methane, which is a far more potent greenhouse gas than carbon**
iii. **Bioplastics are often confused for normal plastics, thus complicating recycling and disposal efforts**
iv. **Bioplastics can take just as long to break down as traditional plastics**
v. **Some plant-derived plastics are chemically indistinguishable from traditional plastics**

Baker 23—[Baker, A. (2023, November 28). The Dirty Secret of Alternative Plastics. Retrieved January 1, 2024, from TIME website: https://time.com/6339914/plastic-alternatives-pollute/]

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."

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.

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.**

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.**

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.

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.

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.

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."

AT: Oceans

Argument: A ban on single-use plastics is needed to clean up the world's oceans

Wrong Focus – United States: SUP ban in the US won't save the world's oceans—less than 5% of ocean plastic comes from OECD countries, a collection of 38 countries that includes the US—the only effective approach to ending ocean pollution is to focus on the developing countries that actually produce ocean pollution, and on the fishing industry, where 70% of ocean pollution comes from

Lomborg 19—[Bjørn Lomborg. (2019, June 17). Sorry, banning plastic bags won't save our planet. Retrieved January 1, 2024, from The Globe and Mail website: https://www.theglobeandmail.com/opinion/article-sorry-banning-plastic-bags-wont-save-our-planet/]

[Bjørn Lomborg is a Danish author and the president of the think tank Copenhagen Consensus Center. He is the former director of the Danish government's Environmental Assessment Institute (EAI) in Copenhagen. He holds a PhD in Political Science from the University of Copenhagen.]

But even if every country banned plastic bags it would not make much of a difference, since plastic bags make up less than 0.8 per cent of the mass of plastic currently afloat on the world's oceans.

Rather than trying to save the oceans with such bans in rich countries, we need to focus on tackling the inferior waste management and poor environmental policies in developing regions.

Research from 2015 shows that less than 5 per cent of land-based plastic waste going into the ocean comes from OECD countries, with half coming from just four countries: China, Indonesia, Philippines and Vietnam. While **China** already in 2008 banned thin plastic bags and put a tax on thicker ones, **it is estimated to contribute more than 27 per cent of all marine plastic pollution originating from land.**

Moreover, banning plastic bags can have unexpected, inconvenient results. A new study shows California's ban eliminates 40 million pounds of plastic annually. However, many banned bags would have been reused for trash, so consumption of trash bags went up by 12 million pounds, reducing the benefit. It also increased consumption of paper bags by twice the saved amount of plastic – 83 million pounds. This will lead to much larger emissions of CO_2.

When Kenya banned plastic bags, people predictably shifted to thicker bags made of synthetic fabric – which now may be banned. But Kenya had to relent and exempt plastics used to wrap fresh foods such as meat and other products.

We also need to consider the wider environmental impact of our bag choices. A 2018 study by the Danish Ministry of Environment and Food looked not just at plastic waste, but also at climate-change damage, ozone depletion, human toxicity and other indicators. It found you must reuse an organic cotton shopping bag 20,000 times before it will have less environmental damage than a plastic bag.

If we use the same shopping bag every single time we go to the store, twice every week, it will still take 191 years before the overall environmental effect of using the cotton bag is less than if we had just used plastic.

Even a simple paper bag requires 43 reuses to be better for the environment – far beyond the point at which the bag will be fit for the purpose.

The study clearly shows that a simple plastic bag, reused as a trash bag, has the smallest environmental impact of any of the choices.

If we want to reduce the impact of plastic bags while still allowing for their efficient use, a tax seems like a much better idea. A 2002 levy in Ireland reduced plastic bag use from 328 bags a person per year to just 21 bags.

And if we really want to make a meaningful impact on ocean plastics coming from land, we should focus on the biggest polluters such as China, Indonesia, Philippines and Vietnam, and emphasize the most effective ways to cut the plastic load, namely better waste management in the developing world.

We should also recognize that more than 70 per cent of all plastics floating on oceans today – about 190,000 tonnes – come from fisheries, with buoys and lines making up the majority. That tells us clearly that concerted action is needed to clean up the fishing industry.

If our goal is to get a cleaner ocean, we should by all means think about actions we can take as consumers in rich countries to reduce our use of unnecessary plastic bags. But we need to keep a sense of proportion and, if we're serious, focus on change where it's really needed.

February 2024: The United States federal government should ban single-use plastics.

Wrong Focus – Single Use Plastics: The fishing industry is a far bigger polluter of the world's oceans than single-use plastics, by a factor of more than 1500

Woolfe 21—[Woolfe, S. (2021, April 19). The Inefficacy of Bans on Single-Use Plastics. Retrieved January 3, 2024, from Sam Woolfe website: https://www.samwoolfe.com/2021/04/the-inefficacy-of-bans-on-single-use-plastics.html]

[Sam Woolfe is a London-based writer, blogger, and journalist with a penchant for complex and challenging subjects that involve a multitude of perspectives.]

With all of this talk and concern about single-use plastics, I want to reiterate a point I made in a previous post: **environmental campaigns related to plastic waste in the oceans are focused on single-use plastics, despite the fact that these plastics account for only 0.03% of such waste. Meanwhile, a study published in Scientific Reports found that 46% of the debris in the ocean is comprised of discarded fishing equipment** (lines, ropes, and nets), **which are made of plastic. But this much more problematic source of plastic is not getting enough attention**. I was glad to see this issue raised in the recent documentary Seaspiracy, produced by Kip Anderson, who was behind Cowspriacy (which revealed the failings of major environmental groups to draw attention to the harm caused by the beef industry).

In a similar vein to Cowspiracy, Seaspiracy highlighted how the **big marine organisations are hyper-focused on single-use plastics, recommending avoidance of them and alternatives while ignoring the issue of the fishing industry.** Seaspiracy's ending recommendation was the same as Cowspiracy's: stop consuming the products (e.g. meat, fish) that are major contributors to severe environmental damage. Sea Shepherd, a marine conservation charity that features in S**easpiracy, has gone further than these recommendations for personal change, calling for a worldwide ban on commercial fishing, in light of the devastating and far-reaching actions of the fishing industry.**

It is interesting to note that another similarity with Cowspiracy, namely that one of the major claims made in Seaspiracy is wrong. Viewers were shocked to see the claim that the oceans will be "virtually empty" by 2048 – but this is based on a poor 2006 study, which has been rejected by many experts. Cowspiracy, likewise, asserted that animal agriculture is responsible for 51% of all greenhouse gas emissions, a claim that also comes from a discredited study. These mistakes don't mean that the documentaries as a whole are in disrepute, however. The majority of claims about the problem of overfishing in Seaspiracy are accurate, including how much of the ocean's waste is made up of single-use plastics versus fishing gear.

Based on the true nature of plastic pollution, banning single-use plastics will be an ineffective solution. Cutting out fish from one's diet or banning commercial fishing, on the other hand, would realistically prevent an appreciable amount of plastic waste from entering the oceans. However, this sort of radical change needs to be accompanied by measures that reduce existing plastic (and microplastics) from the ocean, as these will continue to threaten marine life if left alone. The evidence on how to make a difference exists. Governments just need to act on it.

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No Solvency: Even with immediate lobal action, 740 million more tons of plastic waste will enter the ecosystem

Lau et al. 20—[Evaluating scenarios toward zero plastic pollution. (2020). Retrieved January 1, 2024, from Science website: https://www.science.org/doi/10.1126/science.aba9475?intcmp=trendmd-sci]

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Plastic pollution is a pervasive and growing problem. To estimate the effectiveness of interventions to reduce plastic pollution, we modeled stocks and flows of municipal solid waste and four sources of microplastics through the global plastic system for five scenarios between 2016 and 2040. Implementing all feasible interventions reduced plastic pollution by 40% from 2016 rates and 78% relative to "business as usual" in 2040. **Even with immediate and concerted action, 710 million metric tons of plastic waste cumulatively entered aquatic and terrestrial ecosystems.** To avoid a massive build-up of plastic in the environment, coordinated global action is urgently needed to reduce plastic consumption; increase rates of reuse, waste collection, and recycling; expand safe disposal systems; and accelerate innovation in the plastic value chain.

AT: Plant-based Materials

Argument: Plastics can be replaced with plant-based materials

Plant-based materials require plants, which grow on finite land, already being over-exploited for bio-fuels, meat production, and crops

Harrabin 18—[Harrabin, R. (2018, March 14). War on plastic may do more harm than good, warns think tank. Retrieved January 4, 2024, from Bbc.com website: https://www.bbc.com/news/business-43383607]

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But it warned that rejecting all plastic food packaging could prove counter-productive.

Agriculture is a major source of greenhouse gas emissions, so reducing food waste is vital.

Well-packed food - perhaps in plastic - helps protect food from damage, so it can actually save on greenhouse gases.

The other potential area of concern is the substitution of plastics with plant-based materials.

Forests are already being felled to grow crops to feed the world's booming demand for meat production and wild land is also disappearing to produce bio-fuels for cars and electricity generation. But there is a finite amount of land.

The Green Alliance fears that a demand for plastic substitutes could also increase the pressure for deforestation.

This would, in turn, lead to more greenhouse gases that would warm and acidify the oceans people are anxious to protect.

The Green Alliance's Libby Peake told BBC News: "Plastics are clearly a huge problem but we have concerns that legitimate public outrage will lead businesses and governments to rush into the wrong decisions.

"We must ensure that whatever solutions we design don't increase emissions, damage world ecosystems or result in more waste."

The public backlash against plastics led Lego to announce that in future it will make its toys from plastics derived not from oil, but from sugar cane.

It won the headline: "Lego goes green one brick at a time". But the firm confirmed to me that the "eco" bricks would be made from polyethylene - that's exactly the same chemical compound as plastic derived from oil (which, of course, came from plants millions of years ago).

The environment-friendly bricks will last just as long and be just as hard when you tread on them in bare feet.

AT: Plastic Bag Bans

Argument: Plastic bag bans have worked

Plastic bag bans in the US will be worse for the environment, and result in more landfill usage, without putting a dent in ocean pollution

Logomasini 19—[Baker, A. (2023, November 28). The Dirty Secret of Alternative Plastics. Retrieved January 1, 2024, from TIME website: https://time.com/6339914/plastic-alternatives-pollute/]

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An anti-plastics craze has swept the country and the globe, prompting lawmakers to propose and impose bans on various plastic products—from straws to shopping bags to polystyrene foam cups—all in the name of saving the environment. CEI has already detailed why such bans can actually lead to increased energy usage and wasted resources, and why straw bans won't achieve their intended purpose of reducing ocean pollution.

Now, let's take a closer look at plastic bag bans.

This year, several states are considering statewide plastic shopping bag bans, including New York, Washington, and New Hampshire. But **before imposing bans, politicians should stop and think about why consumers like plastic bags. They are lightweight, easy to carry, sanitary, and don't fall apart if they get wet. These attributes are particularly valuable for commuters—especially for senior citizens and disabled people who might find themselves hauling groceries home on a rainy day.**

Plastic bags are also inexpensive compared to alternatives because plastic products require far fewer resources over their lifecycles—from energy to water to storage and disposal space—than the alternatives. According to researchers at Heriot-Watt University in Scotland, if we banned all plastic packaging and replaced it with glass and metals, global energy consumption would double.

One would think that conserving resources is environmentally good, but ban advocates completely overlook these realities. For example, here are some overlooked points they really need to consider:

- **Reusable cloth bags are not necessarily better for the environment. Research demonstrates that alternative products use significantly more energy over each product's lifecycle. Studies show cloth bags must be used more than 100 times before they yield environmental benefits, which is likely far more uses than most people get before they lose or toss the bags.**
- **Cloth bags can harbor deadly bacteria**. Lawmakers should not ignore the fact that there are potential health risks related to reusable cloth bags. In fact, **university researchers have found significant amounts of potentially deadly coliform and E. coli living in used cloth grocery bags.**
- **Paper bags use significantly more energy to make**. For example, **one study reports that plastic grocery bags consume 40 percent less energy during production and generate 80 percent less solid waste than paper bags.**
- **Plastic bag bans could increase solid waste. Plastic bag bans do not necessarily reduce waste and can increase the waste going to landfills because replacement products—both paper and reusable bags—take up more landfill space. Paper does biodegrade in the environment, but not in a landfill as such waste is basically mummified.**
- **Plastic bag bans won't have much of an impact on ocean pollution. Research shows that the overwhelming majority of plastics in the ocean come from Asia and Africa; less than 1 percent is from the United States.** Proper disposal—not government bans—is the key to keeping plastics and other litter out of the ocean.

- **Bag bans can close small businesses and put employees out of work. Many small businesses that sell and distribute plastic bags would be put out of business and their employees would be out of a job.** And if some companies switch to selling paper bags, it won't be easy. One distributor told me that paper bags consume four to eight times the space. This means they require more warehouse space for storage, more trucks for distribution, and more fuel to distribute the same number of bags. This also would increase traffic and cause more wear and tear to city streets.

Lawmakers and others need to wake up to reality. **Banning plastics isn't a solution to anything, and will waste resources in the end. If lawmakers are concerned about liter, they should focus on policies to promote proper waste disposal rather than ban valuable products.**