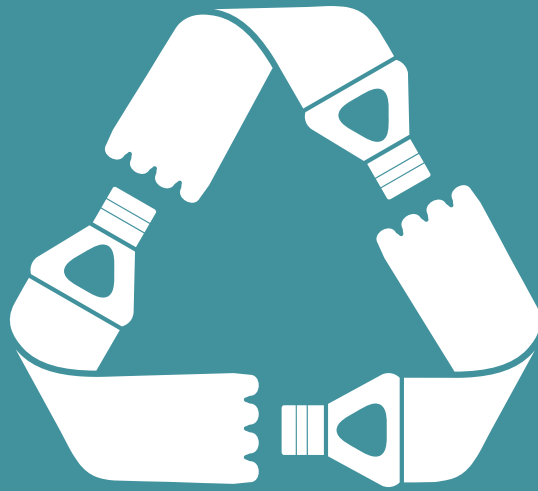


PACKAGING 101 GUIDE



ONE
STEP
CLOSER

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OUR RELIANCE ON SINGLE-USE PACKAGING

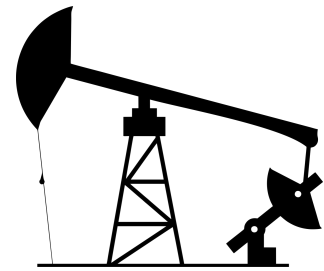
Think about your last meal or drink: Was your food boxed in a container or covered in paper? Did you sip your beverage out of a plastic bottle or disposable cup? Maybe some of your ingredients were sealed in a cellophane pouch, or your snack bar was encased in a plastic wrapper... Our daily reliance on single-use packaging has become so prevalent in our lives, it's hard to imagine an alternative. We've been taught not to think much of it, because that packaging will eventually find its way into one of two places after its use: a recycling facility or landfill - right? The reality is, it's not always that simple. A more *likely* scenario is that those wrappers, bottle caps and food containers will wind up in our oceans or the natural environment - **all places they shouldn't be.**



¹
**IN 2018, THE UNITED STATES
PRODUCED 292 MILLION TONS OF
MUNICIPAL SOLID WASTE**



²
**GLOBALY, MORE THAN 10
MILLION TONS OF PLASTIC
ENTER THE OCEANS EACH YEAR**



³
**IN 2019, 10% OF GLOBAL OIL
EXTRACTION WAS USED FOR
PLASTIC PRODUCTION**

Plastics destroy and disrupt our planet's natural habitats. While this clearly creates a threat to ecological systems and wildlife, it also poses serious health risks for all living beings - including humans. Of all the single-use packaging out there, **virgin plastics are the worst offender.** Chemicals found in plastics have been associated with countless diseases,⁴ including certain cancers, developmental disorders, and reproductive abnormalities. Studies have shown that ingestion of microplastics by marine organisms, birds and mammals can cause a range of negative effects,⁵ including intestinal tract blockage, inflammation, hormone disruption, reproductive implications, and metabolic and behavioral changes.

CREATING A PARADIGM SHIFT

In order to transition to more sustainable, and ideally regenerative materials, we must shift our mindsets and behaviors as consumers. More importantly, businesses, organizations and government entities must collaborate on solutions. Change cannot happen without investment, innovation and legislative action. We believe the most effective and long-lasting changes happen with participatory engagement from all stakeholders. **That's the power of the collaborative.** And with your help, we can drive paradigm shifts that prioritize people and planet. *Let's dive into some of the existing challenges and solutions...*

UPSTREAM CHALLENGES

Many issues associated with plastic packaging can be traced way upstream to the earliest stages of the packaging lifecycle; raw material production and extraction. The most common types of plastic used for food and beverage packaging are made from oil or natural gas. The procurement of these materials involves highly disruptive and perilous extraction from the natural environment, disturbing the ecosystems from which they are taken. To make matters worse, these are non-renewable resources with dwindling reserves, making them susceptible to volatility in the market. Common bioplastics made from plant-based inputs like corn and sugarcane - despite being made from renewable resources - require us to transform large swaths of land in order to keep up with plastic demand. As you're probably starting to realize, there's no one easy solution...

UPSTREAM

DOWNSTREAM



DOWNSTREAM CHALLENGES

The widespread production, consumption, and disposal of single-use plastic products has overwhelmed recycling infrastructure across the globe. The plastic pollution problem in the US has been aggravated by recent policy changes in China that limit the exportation of recycled materials. Until recently, the US exported nearly all of its recycling waste to foreign nations. Recent changes have left our recycling systems overwhelmed, and the backlog of waste has caused recycling costs to spike, in turn becoming a very costly issue for consumers and cities alike.⁶ These setbacks have placed a disproportionate burden on municipalities and an unwarranted responsibility to manage local waste streams. Even the plastic that does end up in collection facilities must be separated and sorted before recycling can take place. This is becoming increasingly more difficult, because the structures of common plastics are becoming more complex and require specialized forms of technology in order to break down properly. Currently, intensive sorting technologies are not economically attractive. It is actually more cost-effective to create single-use products using new, virgin plastic than it is to use recycled materials.

PLASTIC POLLUTION IS SOCIAL INJUSTICE



THE PLASTIC PROBLEM IS A SOCIAL JUSTICE PROBLEM

At OSC, we advocate for minimizing plastic use because we know how harmful plastic is to our health and our environment. We also recognize that the ability to minimize plastic use is a privilege not everyone can afford, and there are many who lack the purchasing power to participate.

Food insecurity and food apartheid are realities faced by many American consumers today. One aspect of this inequity means that shopping plastic free or finding fresh, unwrapped produce is virtually impossible. Historically disenfranchised and low-income communities are at a particular disadvantage, due to the low costs and convenience associated with single-use plastics.

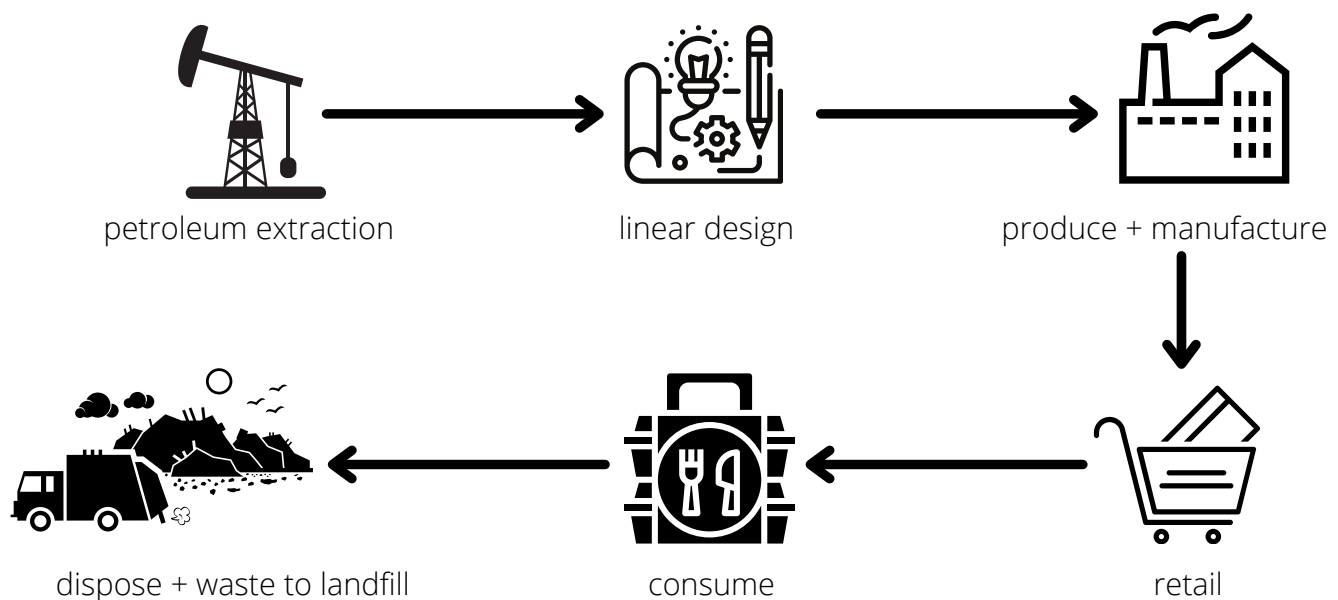
Our current end-of-life solutions are equally unjust. According to a report released by the Tishman Environment and Design Center, "landfills have historically been placed in or near BIPOC communities."⁷ What's more, "79% of incinerators are located in BIPOC communities."⁸ The fumes and gases released by burning plastics are toxic when inhaled, so destroying plastics by incineration (a more common occurrence than you might think) only perpetuates a vicious cycle.⁹ Additionally, abundant plastic pollution in our oceans disproportionately impact indigenous, coastal communities whose livelihoods depend on healthy, thriving marine ecosystems.



THE LINEAR ECONOMY

Traditional food plastic packaging solutions are based on linear economies. If current consumption trends continue, the use of single-use plastic will inevitably lead to the depletion of nonrenewable resources, an increase in greenhouse gas emissions, and an uncontrollable amount of solid waste¹⁰ unless we find alternative solutions. Our wasteful culture is financially beneficial to extractive industries like oil and gas,¹¹ but it is counterproductive for consumers and taxpayers, not to mention detrimental to our environment.

A LINEAR PACKAGING ECONOMY



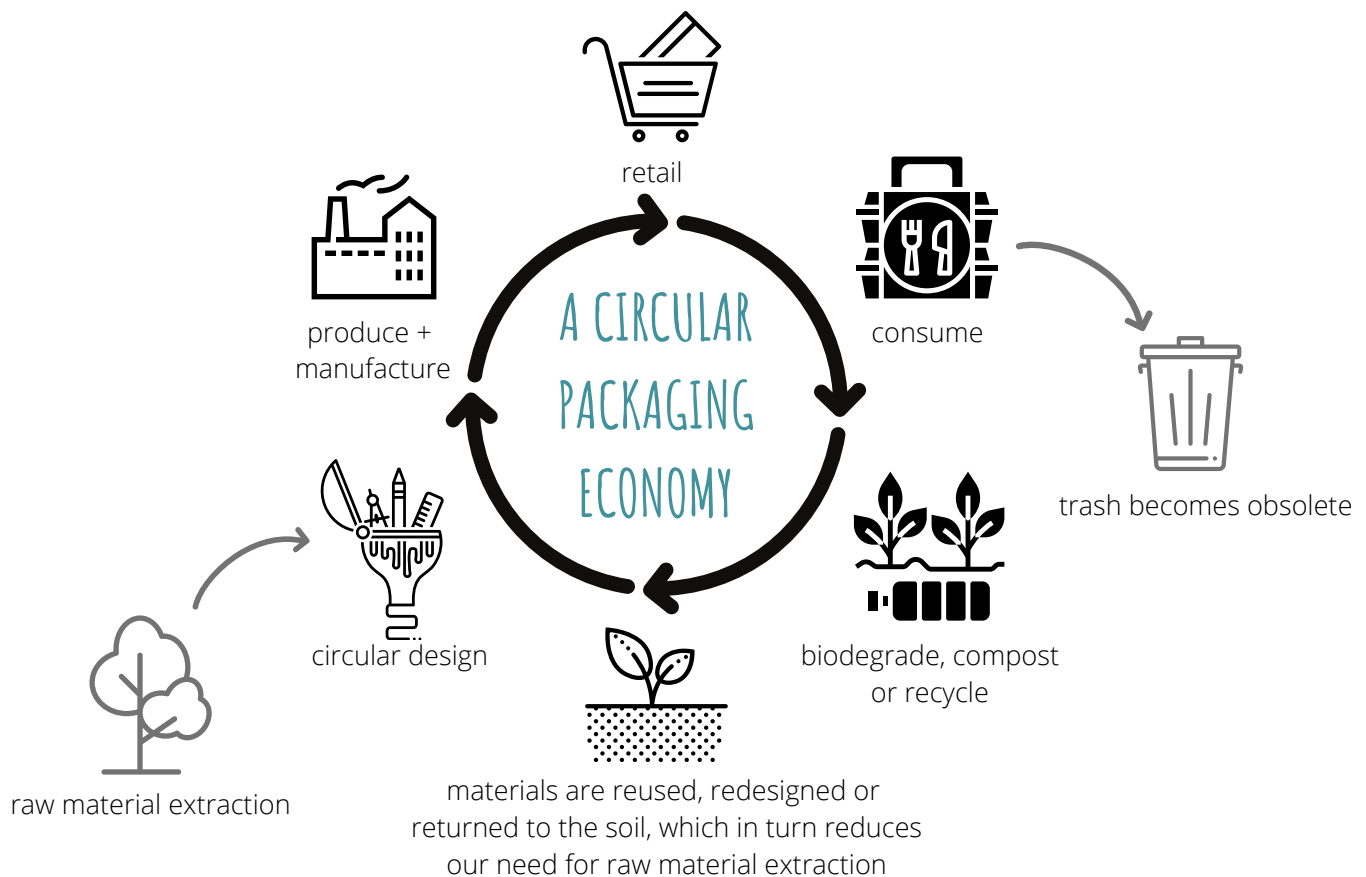
HOW DID WE GET HERE?

Believe it or not, circular mindsets were the norm in the early 20th century. The recycling and reuse of materials and resources was just the typical way of doing things. It was even seen as an act of patriotism during the first and second World Wars. But the late 1940s saw the explosion of plastic production on an industrial scale. Since then, the generation of plastic waste has increased substantially. According to the United Nations, **less than 10% of all plastic trash ever produced has actually been recycled**. That's a staggeringly low percentage!¹² Today, the United States is solely responsible for the generation of 20% of all solid plastic waste around the globe.¹³ The 'take, make, waste' model requires the constant and perpetual extraction of raw materials and natural resources in order to keep up with current rates of production and consumption. What if, instead of designing for disposal, we created a global economy in which products - namely, consumer packaged goods, food and beverage products - were designed to be reused, recycled or decompose into organic matter that replenishes the earth's soils?

WHAT IS THE CIRCULAR ECONOMY?

DEFINING THE CIRCULAR ECONOMY

As defined by the Ellen MacArthur Foundation, a circular economy "is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems."¹⁴ To achieve a circular economy, we must restructure our current economic system to one in which waste is no longer accepted. **A circular model is based on regenerative principles;** it keeps products and materials in use indefinitely, thereby minimizing pollution and waste. It's a model that respects natural and social capital.¹⁵ Moreover, it offers society a chance to take advantage of previously missed economic and business opportunities. There are several theories that have inspired and defined the circular economy, some of which you may have heard of, including: Walter Stahel's **performance economy**, William McDonough and Michael Braungart's **Cradle to Cradle** philosophy, Janine Benyus' **biomimicry design**, Ried Lift and Thomas Graedel's **industrial ecology**, Amory and Hunter Loving and Paul Hawken's **natural capitalism**, Gunter Pauli's **blue economy**, and John T. Lye's **regenerative design**.



Transitioning to a circular economy will require a shift in the way we operate and design our societies, and we must act now! It's time to focus on longterm gains, to prioritize environmental and social resilience, and to abandon the "take, make, waste" ideology which we all have become so accustomed to.

PACKAGING CLAIMS & CERTIFICATIONS



Making responsible purchasing decisions can be challenging due to a lack of standardization and available information. Trying to understand the abundance of symbols, letters, and claims can feel like decoding a secret language. While labels and certifications are an effective way to highlight various sustainable attributes of a product, they often cause confusion and frustration. That's why we've created this easy-to-use resource to help you understand some of the most common material claims and certifications.



HOME COMPOSTABLE:

These materials can biodegrade in temperatures ranging from 68-86° F and are practical for homemade compost piles/bins. You can learn how to create your own bin [here](#). Keep in mind, there are some items you should never throw into your compost at home. Check with [your local composter](#) to learn what they do and do not accept.



DURABLE REUSABLE:

Reusable packaging is created with durable materials that allow for reuse, without impeding functionality. Broadly, this refers to any packaging that can be refilled, returned or repurposed. [Loop](#) is helping to drive the reusable material market and zero waste business model.



INDUSTRIALLY COMPOSTABLE:

Specific types of compostable materials that require high heat (temperatures over 136° F) in order to break down, therefore requiring the use of an industrial composter. BPI is the gold standard of compostable certifications.



POST CONSUMER RECYCLED (PCR):

Recycled materials that are created using components collected from local recycling programs. PCR may not be a perfect solution, but by pushing a market demand for it, we can help to create a recycling system that works the way it is intended to.



BIODEGRADABLE:

A material that is able to undergo biological anaerobic/aerobic degradation depending on certain environmental factors. Caution: this term is widely used but lacks standardized parameters which leads to greenwashing. Technically, nearly all materials are biodegradable, but they do so at *vastly* different rates and some leave behind toxic pollutants.



RECYCLABLE:

A material that can be collected, sorted, reprocessed, and ultimately reused to make another item. Just because a material upholds these qualities does not guarantee its recyclability. Unfortunately, our current recycling system is broken and is in need of a complete overhaul. Learn more about how to recycle [here](#).



FOREST STEWARDSHIP CERTIFIED:

Signifies that paper/wood products were procured from responsibly managed forests which in turn provides environmental, social and economic benefits.



BIO-BASED/BIOPLASTIC:

Products that are composed, in whole or in significant part, of biological products, including renewable agricultural materials, plant-based inputs, chemicals, and forestry materials.

CONSUMERS

ZeroWasteStore

The Zero Waste Store is an online platform devoted to providing consumers with essential items that are sustainably sourced, eco-friendly, and plastic free.

superstar
spotlight

Grove COLLABORATIVE

Grove Collaborative, one of the largest eco-friendly e-commerce platforms, has committed to becoming 100% Plastic Free by 2025. You can find various items dressed in low or zero waste packaging on Grove's platform.

EDUCATE yourself on the meanings of various certifications, labels, and end of life claims

ADVOCATE for policies and legislation that regulate plastic manufacturing and reduce single-use packaging, such as the Break Free From Plastic Pollution Act

When shopping, opt for products with zero or **ECO-FRIENDLY** packaging

Follow and **SUPPORT** brands that are already using circular packaging or are in the process of transitioning to more sustainable packaging

INDUSTRY

SUN & SWELL foods

Sun & Swell designs packaging with circularity in mind, using 100% compostable materials. They even have a packaging send-back program for consumers who don't have access to composting facilities.

alter eco

Organic chocolate brand Alter Eco is on track to remove all plastic packaging from their products by 2021. Currently, their truffle wrappers are industrially compostable, and will soon be home compostable!

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spotlight

Design packaging with **CIRCULARITY** in mind

EDUCATE consumers on how to properly use and dispose of your products and packaging

MINIMIZE overall material used in your packaging

Pursue certifications that ensure product **ACCOUNTABILITY**

Communicate packaging **IMPACT** to consumers through storytelling and strategic marketing tactics

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