Chapter 22 — What a Waste!

Out of Sight—But Not Gone, Pitch It!, Single-Use Containers, The Plastocene, The Worst of the Worst, This Not That, The Hard Road, Knock It Off, A Bit of Hope, Our Zero Waste Status

Out of Sight—But Not Gone

In the U.S., we send 266 million metric tonnes (mmt) of waste to landfill annually,[1] pretty much all of which is either recyclable or compostable. That works out to 1,765 LBS per person, nearly a ton every single year, almost 5 LBS per day. I mean, for crying in the night, how absolutely absurd is that? Our landfills take up 44,500 acres of land and emit 109 mmt per year in CO_2e, in the form of lost CO_2 uptake of the land itself and anaerobic decomposition of biodegradable materials that could be composted. Collection and transportation of the waste from our trash cans to landfills emits yet more CO_2e from the fuel. And, unless the landfill is covered (trick question, they aren't), a portion of the trash gets strewn throughout the air and nearby land and waterways by wind and birds and other wildlife. Even in the trash collection and hauling processes, trash is "lost" in transfer. Just look down the street after trash pickup day. All this waste, in addition to the litter tossed out the car window by the truly clueless is playing big in decimating our wildlife in addition to the many other ways we kill.

Pitch It!

At this point, even though our waste is an obnoxious disaster that's playing big in our carbon footprint, the U.S. has no federal or national programs mandating recycling. Americans, despite being only 4.4% of global population, produce 20% of the world's garbage.[2,3,4] As you can see in Figure 1,[5] a huge portion of our waste is packaging, which is no wonder, since packaging is yet another gargantuan powerful big corp industry. Globally, it's valued at about $1 trillion. Not trivial, and a major reason why recycling and circular economy legislation at the federal level is unlikely any time soon since, as always, big corp prefers to keep selling us packaged products so they continue to profit from it.[6] Basically all that we toss could be kept within our circular economy, saving energy through recycling and reuse, rather than extracting yet more raw materials to constantly make more new, fresh packages and other products. However, it's not. Evidently we can't be bothered.

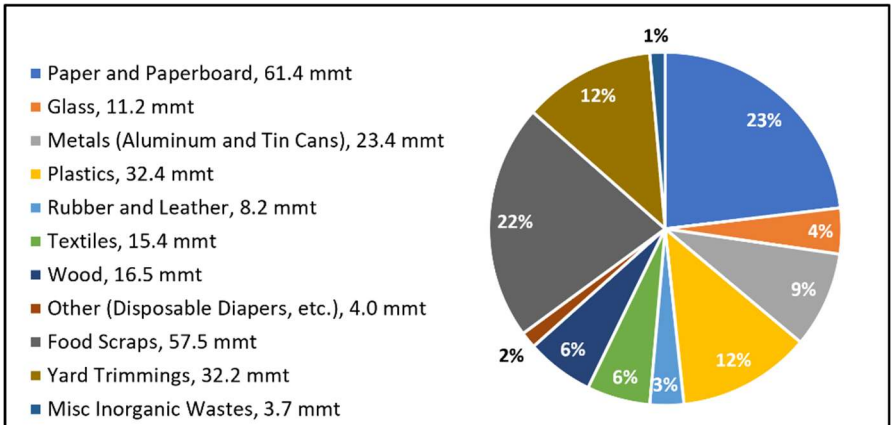


Figure 1 - Breakdown of waste in U.S. landfills.

The first four categories, shown in Figure 1, paper, glass, metals, and plastics, are all easily recyclable in single-stream recycling programs, which are available either curbside or at a recycling center, depending on where the city or town happens to be with respect to progressively joining the 21st century and demonstrating some level of responsibility for our planet. For plastics, that's not actually 100% true, because of the unnecessary plastic bags and films and Styrofoam that swath so much of the food and stuff we buy, none of which can be recycled with single-stream recyclables. We also have the endless array of plastic items and packaging that slip through the cracks, as it were, like the 900 million toothpaste tubes we pitch every year,[7] or all the toothbrushes, disposable razors, Brita filters, most personal care products, like creams and makeup containers, and all our pens and markers, just to name a few of the products we use regularly. You get the picture. Think about that. Just look around your house. What do you pitch?

If we assume that about half of the plastic that goes to landfill is recyclable in a single stream program, then it's safe to say that about 42% of landfill waste could be recycled in curb side programs. The rest of the plastic, along with the rubber, can be recycled with TerraCycle boxes,[8] and the leather can be composted. Textiles can be recycled with either TerraCycle or Ridwell.[9]

Food scraps and yard trimmings combined make up the second biggest mass of landfill waste, at 34%. These are the main contributors to landfill CO_2e emissions and should always be composted, where they can be used beneficially to nourish our food crops in a full circular economy instead of contributing to the warming of our planet. Wood and leather also biodegrade anaerobically in landfill, though much more slowly than the food. Paper and paperboard also contribute to CO_2e through anaerobic decomposition at a rate somewhere between rotting food and rotting wood. Adding it all up, about 66% of our landfill waste contributes to greenhouse gas emissions when it can and should be composted. Composting this waste instead would bring huge reductions in CO_2e, since the methane gas from anaerobic decomposition is more than 20 times more potent than the CO_2 from composting, which is an aerobic process. The final "Other" category shown in Figure 1 includes bits of dirt, pebbles, and rocks that find their way to the landfill, no real harm done other than a waste of transportation. But still.

Single-Use Containers

It turns out that the manufacturing of single-use packaging, including all the raw material extraction, industrial manufacturing, and final disposition to landfill, comprise nearly 6% of our carbon footprint in the U.S. That's right. 6%. Getting rid of this would be a decent next step in our journey towards 80% reduction in gross carbon footprint. Ya think? And the truth is, it's not hard. Unless you think you shouldn't have to bother since nobody else is. Or you have an aversion to doing the dishes. Which I would call out as pure, unabashed entitlement. And laziness. And I'll remind you that you're not royalty, so you might want to get over yourself and do a little work around the house. Which includes being responsible for stuff you just had to have and buy and use in your home. Like my mother was until the 70s, when big corp convinced her and all her friends that it was just so much easier to buy everything in single-use containers and then just chuck it and it's gone. The problem is, it's not. And now that there are three times more people on the planet than there were then, we have a very big problem on our hands. And we're going to have to unlearn all that corporate marketing brainwashing. It may not be easy, but it can be done. We've been a zero-waste household for about 10 years so far, and it took us about 20 years before that to get there, one small change at a time. If we can do it, so can you.

Table 1 shows a breakdown of the overall category of single-use containers. The entire embodied footprints from cradle to grave of single use containers in the U.S. are included.

Table 1 — Carbon footprint of single-use containers, mmt CO_2e (2020).

Non-combustion emissions	Electricity	Stationary combustion	Transportation on site	Land	Transportation to point of use/sale	Total	Percent of gross*
49	29	86	5.8	241	9.1	421	5.8

**Gross CO_2e emissions in the U.S. in 2020 were 7,286 mmt (million metric tons).*

When we use single-use containers, we are responsible for the carbon footprint of the mined and logged raw materials and fossil fuels production, their processing and refinement into industrial raw materials, the transportation of those raw materials to the manufacturing facility, and the energy consumed in the processing of the raw materials into the final container. This detailed level of carbon-footprint analysis was shown for glass production in chapter 16, Table 4, and I applied the same methodology to all the single-use containers that are used in the U.S., including aluminum, metal, paper, paperboard, cardboard, and plastic.

A more detailed breakdown of the carbon footprint of each of the packaging materials is shown in Table 2.[1,9,10,11,12,13,14,15,16] This includes only the quantity of product that is not recycled, which varies by material. For example, in the U.S., 31.3% of single-use glass is recycled, so the carbon emissions only accounts for the remaining 68.7% that isn't recycled but rather made from raw mined ingredients. This means that the carbon footprint of single-use packaging would be significantly more if we did no recycling at all, and would most certainly exceed 10% of our gross carbon emissions. Another point to consider is that collection and recycling of single-use containers has a carbon footprint associated with it, which depends on the specific commodity. This impact isn't trivial,

and is shown below in Table 3. In reality, our actual carbon footprint of single-use containers, with the recycling that we do, is around 7–8% of our gross emissions in the U.S.

Table 2 — Carbon footprint of components of single-use packaging, mmtCO_2e (2020).

Material	Recycled % of total	Non-combustion emissions	Electricity	Combustion	Transp. on-site	Land	Transp. off-site	Total, mmt CO_2e (% of gross)*
Glass	31.3 [17,21]	3.36	3.69	5.04	0.016	0.079	0.52	12.69 (0.17%)
Aluminum cans and foil	50 [18,21]	0.72	3.72	1.97	0.04	0.01	0.05	6.50 (0.09%)
Metal/tin cans	71 [19,21]	0.39	0.91	1.01	0.09	0.0005	0.21	2.60 (0.036%)
Plastic	8 [19,21]	7.6	5.8	36	0.01	1.39	1.57	53 (0.73%)
Pulp and paper	67 [20,21]	0.07	15.3	42	5.7	240	5.0	308 (4.2%)
Landfills	-	37	0	0	0	0.005	1.7	39 (0.53%)
Electricity and natural gas transmission	-	0.00003	0.05	0	0	0	0	0.05 (0.0007%)
Total	-	49	29	86	5.8	241	9.1	421 (5.8%)

** Gross EPA U.S. CO_2 emissions in 2020 were 7,286 mmt.*

Contrary to what one might expect, the lion's share by a long shot among our single-use packaging is pulp and paper, at 4.2% of gross carbon footprint. Whodda thunk? While we hear a lot about plastic in particular as well as metals and glass, our paper and cardboard are the biggest contributor, by a long shot. So, how can that be? Hmmmm. Well, for one thing, it's the sheer mass that we produce, 80 million metric tonnes, but worse than that is the 460 million metric tonnes of trees that are logged in the U.S., over 60% of which goes to paper and paperboard, the rest being used for wood for construction and other products. 80% of pulp and paper is used for single-use products. The carbon footprint of all that land that is scraped from logging it, in terms of CO_2 absorption sink loss, is the biggest contributor, bigger than all the energy used in the actual logging machinery and processes, and the industrial processes to make the final paper and cardboard.

Another reason that the pulp and paper category is so huge is that, in addition to single-use packaging, it includes all the printed single-use paper as well as idiotic and unnecessary paper like plates, cups, napkins, paper towels, tissue paper, and toilet paper. Yes, you read right. Toilet paper. Almost as big a marketing brainwash scam as bottled water. Seriously. And, the worst thing is, in addition to literally never hearing about that in general media, as pointed out in chapter 12, we get a huge amount of our

Our path to zero paper

About 20–30 years ago, we moved away from paper towels and paper napkins. Somewhere in there I had an epiphany that it was just so unbelievably stupid to waste all that money on all that paper when we could use cloth. I was a little slower to get away from printing everything, with my Boomer distrust of computers; I felt that I could lose my information if I didn't print it. That faded gradually as I developed a reliable filing system on my computer, with backup. Now I print very little, and I even use the blank backs of junk mail for mailing labels for Aspire, my personal care product business. I use strictly post-consumer waste paper for printing. We've never used disposable plates, utensils, or cups for large events, rather cabbaging together whatever we can find to accommodate everybody, and when we travel, we take our own dishes and stuff to avoid using all that single-use stuff in hotels. We moved from tissues to handkerchiefs, at which point we were down to the toilet paper. About five years ago I discovered "pee cloths" and began using those for number 1, followed a couple years later with a bidet, which eliminated the need for toilet paper for number 2. At least when we're home. We still end up with paper napkins when we go out to eat when we're traveling, so we keep those and use them for brown as needed. We keep one roll of toilet paper made from post-consumer waste at home for company, and we typically don't buy more than a roll every few months. Done and done.

paper in the U.S. from other countries, particularly from Canada, where Kimberly-Clark scrapes 100,000 acres annually of old-growth boreal forests[22] for Scott Tissue, destroying precious wildlife habitat so that we can blow our noses and wipe our butts and flush it away. This is yet another example of our true carbon footprint being higher than the EPA's numbers show, due to our endless exploitation of other countries' resources and lands. I'm aware that the other countries' leaders are often perfectly willing partners in the decimation, but it's still exploitation any way you rip the tissue.

Do you ever wonder how plastic actually gets into the environment? Or is that just me? Most of it originates from land-based activities. When waste is not collected, disposed of, or recycled properly, it often finds its way to storm drains, which are linked to local waterways. From there, it flows downhill all the way to the ocean, unless it gets caught on a bank somewhere. Or eaten by a fish. It turns out that 80% of ocean microplastics come from rivers, about 4 million tons per year.[23] In the ocean, it breaks down into microplastics that are ingested by marine animals, harming them and even entering our food chain![24] These days, microplastics are literally everywhere (pun intended),—in the clouds,[25] on top of Mt. Everest,[26] in algae growing under Arctic sea ice,[27] even in the rain in the foothills west of Denver, where I live.[28] A 2019 study estimated that 171 trillion plastic particles are in the world's oceans,[29] and this figure has probably topped 200 trillion by now. Scientists have discovered nanoplastics, which measure 1 nm (10^{-9} meter) to 1 µm (10^{-6} meter), in ocean water,[30] which is really freaking scary because their exceptionally small size allows nanoplastics to penetrate living organisms and potentially disrupt entire ecosystems. Seawater samples studied contained nanoplastics made of nylon, polystyrene, and polyethylene terephthalate (PET). The substances are plastic polymers used to make various items including clothing, food packaging, water bottles, and fish nets. And it's not just in the ocean. People in the U.S. consume about 39,000–52,000 particles of microplastics each year through food and water.[31] Everyday items like clothing, food packaging, cosmetics, and car tires shed tiny particles of plastics, which in turn find their way into our blood, baby poop, placentas, breastmilk, and the intricate, delicate tissue that makes up our lungs. We may breathe in up to 11.3 microplastic particles per hour, and they get lodged in our airways and stay there over time.[32] Think about that. If people are consuming it, all the wildlife are too.

The rest of the single-use packaging, glass, aluminum, metal, and even plastic make up about 1% of our gross carbon emissions in their manufacturing, which isn't trivial, but is only a fourth as much as single-use paper. And keep in mind that these carbon emissions are strictly for the production of these materials and do not account for the devastating impact that they have on our wildlife as we trash and poison our waterways, particularly with plastics, as discussed in chapters 9 and 10. The landfill emissions account for the lost carbon sink of the total land occupied by landfills in the U.S., 44,500 acres, and the emissions of the discarded pulp and paper that is not recycled, as it rots anaerobically. Similar to how flushing the toilet doesn't make wastewater disappear (chapter 14), single-use containers are not gone just because the trash truck took them away.

Table 3 — Comparison of carbon footprints of new materials and recycled materials.

Material	New material, LB CO_2e/LB material	Recycled material, LB CO_2e/LB material	CO_2e reduction of recycling, %
Glass	2.03	0.98	52
Aluminum cans and foil	30.2	0.9	97
Tin/metal	1.83	0.9	53
Plastic	2.57	1.3	51
Pulp and paper	4.56	1	79

Table 3 shows us that while recycling our single-use containers definitely saves carbon emissions compared with production of new materials from natural resources, it's still not completely free of impact. When glass, tin, and plastic are recycled, about 50% of the energy is saved, while with pulp and paper, it's about 80%. Aluminum has the highest energy savings, 97% compared to new materials. This is because of the intensive electricity and heat consumed in the electrolysis processes to separate and purify the aluminum from bauxite ore. This is why it kills me to see aluminum cans tossed on the side of the road, or restaurants and bars that don't bother to recycle. When I go to places that don't recycle (yes, I ask), I take the empties with me, though I do my best to choose places with taps for beer, for instance, to avoid the trash altogether. With taps, they pay a hefty deposit for the kegs, which are

returned, sanitized, and refilled. The Coors Brewery has an entire department for this. Obviously we'll never be able to capture and recycle all our paper, because of the toilet paper, although technically the toilet paper does get composted with the biosolids from the wastewater plants, which does at least keep it in the circular economy, or at least about 50% of it, the portion we land-apply in the U.S.

My method of presenting numbers as percentages of our gross CO_2e emissions for major categories in addition to actual pounds of CO_2e—and, as in Figure 1, pounds of actual materials—is intended to help the reader understand the specific impacts of their choices. This is the best way I know to take the guesswork out of this very complicated issue. If you know that we need to reduce our carbon emissions per capita by 80%, and that single-use packaging is 6% of our carbon footprint, then if you can reduce your single-use packaging, by, say half, then you've reduced your carbon emissions by 3% of gross, which is a nice dent in your overall emissions, leaving another 77% of reductions to work on. I hope it helps to think of it that way, and to drive action rather than despair. One of my biggest pet peeves is silly comparisons that we see in many articles about our footprint; to me, they just look confusing, and I don't see how they actually drive action. For example, on the American Beverage Association site,[33] a lobbying organization that represents the beverage industry with a goal of helping Pepsi, Keurig, Coca-Cola and the like to greenwash by going on about how easy it is to recycle plastic. They spew this nonsense about how recycling 10 plastic bottles saves as much energy as it takes to run a laptop. So what does that mean? What size are the plastic bottles? How big was the laptop? How much energy does it use? How long are we running it? An hour? I mean, could this little sound bite be any more useless? This is what I mean by the value of normalization. If everything is in mmt of CO_2e, then we can validly compare our specific actions by using percentages of the total. I hope this helps readers actually make a difference and understand the difference they're actually making. Then maybe they'll be excited to bite another 3%, and then reach 10%, and 20%, and so on, and tell their friends and inspire them to start changing and reducing. And feel better about themselves and the environment, because they know they're doing something about it and not just wringing their hands in horror and confusion. While wondering what kind of laptop Pepsi is talking about.

Globally, 18% of plastic is recycled, up from nearly zero in 1980.[34] Table 4 shows the actual recycling rates for different plastics, which are dismal. Plastic bottles are the most widely recycled. Other items, like drinking straws, are harder to recycle and often discarded.

Table 4 — Global recycling rates of various plastics.[34]

Resin number	Ease of recycling in U.S.A.	Abbreviation	Name	Products	Percent recycled globally
1	Easy	PET	Polyethylene terephthalate	Beverage bottles, food jars, clothing and carpet fiber, some shampoo and mouthwash bottles	11
2	Easy	HDPE	High-density polyethylene	Detergent and bleach bottles, snack boxes, milk jugs, toys, buckets, crates, plant pots, garden furniture, trash bins	14
3	Very difficult	PVC	Polyvinyl chloride	Credit cards, window and doorframes, gutters, pipes and fittings, wire and cable sheathing, synthetic leather	5
4	Manageable	LDPE	Low-density polyethylene	Packaging film, shopping bags, bubble wrap, flexible bottles, wire and cable insulation	20
5	Manageable	PP	Polypropylene	Bottle tops, drinking straws, lunch boxes, insulated coolers, fabric and carpet fiber, tarps, diapers	19
6	Difficult	PS	Polystyrene	Plastic-foam cups, egg boxes, meat trays, packing peanuts, coat hangers, yogurt containers, insulation, toys	6
7	Very difficult	Other	Everything else	Nylon fabrics, baby bottles, compact disks, medical storage containers, car parts, watercooler bottles	24

Biodegradable plastics, which seemed like a good idea for a while, are even worse than petroleum plastics. They are marketed as biodegradable only because they're made from renewable corn oil, but once they're polymerized into plastics, they don't break down any faster than petroleum plastics. They don't break down in the oceans, because it's too cold and there's no oxygen for the microbes that would, in theory, break them down, and they don't compost very well either, so industrial composting facilities are rejecting them. They can't be recycled with single-stream collection programs either because the corn-based plastic melts at a different temperature than the petroleum plastic. The UN Environment Programme wrote off biodegradables as an unrealistic solution that will neither reduce the amount of plastic flowing into the oceans nor prevent potential chemical or physical harm to marine life. It concluded that the label "biodegradable" may actually encourage littering.[35] What we really need to do is address the fundamental problem, which is our throw-away culture, and stop using plastic altogether.

And then there are the metals. If we fail to recycle metals, instead choosing to toss them in the trash, we support the ugly mining messes throughout the world that are polluting and killing wildlife. Same is true for glass. We may not think of it as a mined material, but it's made from soda ash, limestone, and sand, all of which are mined.

The Plastocene

In the early 1900s, there was no such thing as a disposable container. There were also no paper towels, napkins, or plates. People used cloth and porcelain. There were no disposable containers either. Then big oil figured out how to turn the bottoms from the refineries, basically the dregs that are too heavy for refining into gasoline and other fuels, into plastic, through cracking and reforming. Since this allowed them to make even more money by using the dregs instead of disposing of them, they hit the public hard with marketing and convinced us that we couldn't live without it. And the rest is history.

We went bat-nuts-crazy over convenience and throwaway. In 1955, Life magazine celebrated the liberation of the American housewife from drudgery.[34] Under the headline "Throwaway Living," a photograph showed a family joyfully flinging plates, cups, and cutlery into the air. The items would take 40 hours to clean, the text noted, "except no housewife need bother." Sixty years later, about 40% of the now more than 448 million tons of plastic produced every year is disposable, much of it packaging intended to be discarded within minutes after purchase.

Which brings us to the "Plastocene" era of today, an era in which we've dumped so much plastic into the world that not only is all land, water, and life permeated with microplastics that are probably slowly killing us all, the plastic is also reacting with Earth's sediment to form a new kind of rock. In the distant future, this rock will be recognizable as different from layers before, just like today's geologists recognize different depositional formations from millions of years ago. There are no more truly pristine environments on Earth. Even if there is a single tiny itty bitty little pocket of the planet where man has never set foot, or in the deepest depths of the sea, or the most remote ends of the Arctic, microplastic has made its mark. In the ocean, slicks on surface waters that make up the mats of nutritious algae that fish larvae feed on have about seven times more microplastics in them than baby fish.[36] Think about that. That's when you know it's bad.

As of 2017, globally we've managed to produce 8.3 billion metric tons of plastic, including 296 trillion plastic bottles, 1.66 quadrillion credit cards, 3.15 quadrillion bottle caps, and 6.15 quadrillion Lego blocks.[37] Half the plastic ever made was produced in the past 15 years. A whopping trillion plastic bags are used worldwide each year, with an average "working life" of about 15 minutes.[38]

Globally, more than 500 billion bottles of water are purchased every year, even though bottled water costs 10,000 times as much as tap water and leaches toxins from the insides of the bottles into our bodies when we drink it. 500 billion disposable cups are thrown away every single year, along with 24 billion pairs of shoes. Plastic bottle bans are being considered and implemented in some countries, but the plastics and beverage industries are fighting back.[39] In the U.S., our landfills contain 60 million tires, and we throw away 1 billion toothbrushes, millions of rolls of plastic food wrap, as well as endless plastic cutlery. And then there's the 390 million plastic straws annually that we just can't seem to live without, more than 7 million of which end up on beaches and coasts.[40]

Maximum plastic in LBS/gallon of seawater or sediment in different areas:[36]

Water:

- North Pacific — 0.18
- North Atlantic — 0.40
- Slicks off Hawaii — 0.58
- Hangzhou Bay — 3.75 (off coast of China)
- Mariana Trench — 51.14

Sediment:

- Polar Front — 151 (Pacific Ocean between Hawaii and West Coast of U.S.)
- Indian Ocean — 303
- Mediterranean — 2,850
- Bay of Biscay — 3,028 (off east coast of Spain)
- Mariana Trench — 8,328 (east of Indonesia)
- Fram Strait — 13,109 (north end of Greenland, east side)

4.5 trillion cigarette butts are littered annually, more than any other form of litter. They're made mainly from a plastic called cellulose acetate, which stunts plant growth, leaches chemicals and heavy metals into the environment, and, best of all, never breaks down in the environment. There is only one way to recycle them, and that's with a TerraCycle box.[41]

Clothing and textile waste is the fastest-growing waste stream in the U.S. and the world, and a large portion is from companies that regularly destroy overstocked clothing that doesn't sell.[42] "Fast fashion" has become a thing and, as usual, the U.S. is one of the worst countries in the world, where clothes are worn an average of 40 times before they're discarded compared to the global average, which is about 130 times. Less than 13% of clothes are recycled, and the rest is sent to landfill or incinerated. In U.S. landfills, textiles jumped by 67.7% by weight from 2000 to 2015.[43] What a waste! Do you do that? Do you simply get tired of your clothes and then just trash them? If you're going to be so spoiled, at least bother to take it to a thrift store instead of just pitching it. At home, we're basically past new clothes across the board. It's so much cheaper and so much better for the planet to just buy used clothes. Except for underwear. Ummm. The selection in thrift stores is fantastic, and I have yet to be denied when I go looking for

something. And if I don't find exactly what I'm looking for, I simply hit the place a couple more times, and eventually it shows up. And pretty much everything in thrift stores these days is like new. Probably because of fast fashion.

Plastic started being added to shoes in the 1950s. Shoes are hard to recycle because different types of plastic and other materials are glued and molded together, so they're a huge contributor to waste, and the shoes can't easily be broken down for recycling because there are so many complex components. TerraCycle is one company that recycles worn-out shoes, and you can always take shoes that you're bored with, but are still in decent shape, to the nearest thrift store. Shoes can also be reconditioned or resoled. We take ours to Rock and Resole in Boulder, and we turn to recycling if they tell us they can't fix them. Some companies, like Danner, will rework their own products if you send them back, and the more responsible producers like Columbia, Patagonia, and Birkenstock take their footwear back for recycling.

At the end of the day, it's best to avoid single-use completely, and while it may be unrealistic to completely get rid of it overnight, we can at least begin a systematic journey to reduce it and recycle what we can't quite avoid.

The Worst of the Worst

The Medical Industry

The medical industry in general is just ridiculous when it comes to single-use plastic. Pretty much everything is encased in multiple layers of plastic that's intended to be used once, only once, and then never seen again. All the gauze, bandages, gloves, needles, gowns, masks, bags, sterile this, that, and the other, all to keep us safe and sanitary while trashing the planet that we live on. They don't bother to recycle any of that even though they easily could, such as with a TerraCycle box. They normally at least collect sharps because of the disease-spreading potential, but I don't know of too many doctors or hospitals that bother to even recycle pens and markers or other office supplies, or, in the case of hospitals with food service, the plastic used for every meal served to patients or in the cafeteria, or the food waste, which could go to compost.

Masks and gloves are a more recent development in the world of waste, in the wake of the COVID pandemic, and are abundant along roads and paths and clogging stormwater gutters, as well as in landfills.[44] This is really pathetic and needless when we can easily use cloth masks and wash our gloves. I worked for many years in a sewer lab and wore the same pair of gloves, simply washing them with soap and water when I washed my hands, leaving the gloves on, then removing them at the end of my shift, when I would hang them to dry for the next day's work. I wouldn't change gloves until they leaked, maybe once or twice a month at most. I see people use a pair once and then pitch them. Again, what a waste. At home, I usually use a pair for a year or more before a glove fails, and then the failed glove goes in the TerraCycle box. And don't get me started on the overpackaged pills in bottles that are ten times the size needed for the pills themselves. I mean, why?

> Several years ago we were doing a climb on Mount Rainier, the highest mountain in Washington, and I broke my arm on the way up. We continued up to camp, and the rangers used a SAM splint wrapped with Ace bandages to keep my arm still until I could see a doctor. When I saw the doctor, he said I could keep the SAM splint because they can be used more than once. So, I put it in my backpack. A couple years later I broke my ankle while I was hiking alone on the mesa behind our house. I pulled out the SAM splint and wrapped it around my foot to keep it still, which helped a lot when Hilary came to rescue me and some other hikers helped me get down. After they set my ankle at the hospital, the SAM splint looked like it had at least a little more life in it, so I took it back yet again, and it's still back in my pack, along with the ACE bandages, ready for the next emergency.

Airplanes

I think most of us are aware that airplanes are obscenely wasteful consumers of plastic across the board. They mainly use plastics that can't be recycled in single stream; the only responsible recourse is a TerraCycle box, and basically none do that. Ever. Yes, I ask. They continue to serve coffee in those nasty, leachy plastic-lined paper cups, and some even still use Styrofoam. When we fly, we do our best to eat before we leave so we don't have to eat on the plane, and we'll fill our coffee cups in the airport ahead of time and carry them onto the plane. There are sometimes annoying security checks at the gates, and they'll go so far as to make us dump all liquids, including coffee, which is

just backwards and idiotic when we already had to pass through a security check to get to the gate by definition. When that happens I simply refuse to drink the coffee on the plane, knowing that I'll enjoy it all the more when I reach my destination. Even with all the plastic, paper is still the biggest waste on airplanes, and we also see a lot of aluminum and glass as well. And then there's all the food waste that doesn't get composted.

There's a consumer push for airlines to do better, and standards have been defined for the airline industry. Recycling is common in most airports, and a few airlines are recycling, like British Airways, Virgin Atlantic, Thomson Airlines, and EasyJet, which is a start.[45] Most others are doing a little of this and a little of that, but mainly greenwashing to look like they're doing more than they are. When we fly, we try not to eat at all, but on long flights we'll stash the plastic in our carry-on, where I keep a small bag for that purpose, then clean and recycle it when we get home. We always end up with plastic that we have to bring home to recycle when we travel. It's pretty much impossible to avoid completely.

Styrofoam

Americans throw away 25 billion Styrofoam cups every year. To me, Styrofoam is the height of ignorance and irresponsibility in today's world. It feels like businesses who still have Styrofoam are willfully choosing to be ignorant and in-your-face as far as planetary destruction as well as poisoning their customers. I mean, seriously. I think it's fair to say that pretty much every man, woman, and child in this country has heard about how horrible it is, how toxic it is to our bodies if we're stupid enough to consume food or drinks from it, and how horrible it is for the environment, yet it's still here. In Golden, a couple moronic restaurants still use it, and nationwide it seems to be everywhere. When I see a restaurant using it, I won't go there because I know they're the worst of the worst and are probably serving cheap, irresponsible food anyway. When we go out, we take our own containers for takeout if we don't finish our meals.

Make no mistake, Styrofoam is permanent garbage. People seem to think they can recycle it because of the "6" recycle stamp on the container, but that is just the required disclosure of the polymer resin it was made from and doesn't mean it's recyclable. It does not decompose; it is made from petroleum, it's very hard to find an outlet that will recycle Styrofoam, and food containers made from it are nearly impossible. It can be recycled in theory, but is not cost effective because it's so light that it takes more energy to collect it and get it to the proper facility than it takes to make a fresh new container from petroleum.

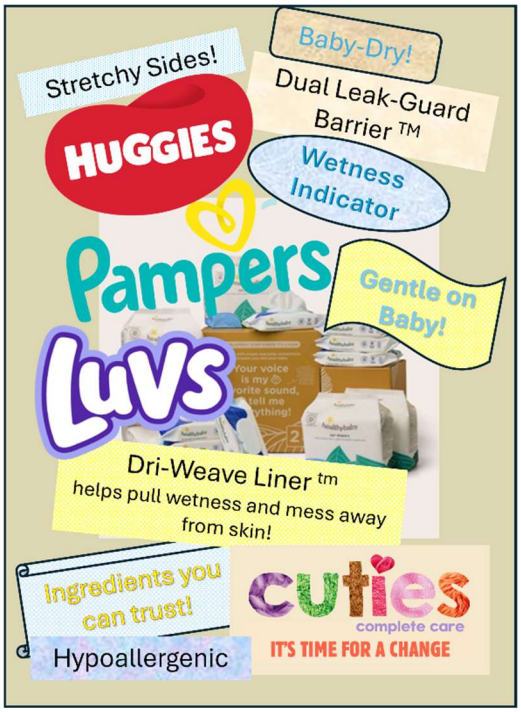
Styrofoam is also a hazard to wildlife. Birds, fish, and turtles in the ocean think it's food and then choke and get their digestive systems clogged, and eventually die when they ingest it. It is trashed everywhere in whole containers or in pieces, on the land and in oceans.

Shipping

When I mail order, I am very aggressive when I receive overpackaged mailings with irresponsible filling. I really get stinky if I order some little thing, like plastic tubing that you could drop off a 10-story building without damaging it, and it shows up in a quad-sized box all stuffed with bubble wrap. That really infuriates me because I know I'm paying more for shipping because of the oversized box, since as a shipper of my own products I know that shippers charge for both box size and weight. And then I have to pop all the bubble wrap completely so that it can be recycled. When this happens, I immediately send an email expressing my displeasure, and I'll also make sure to slam them on Google ratings and such. I have no patience for that nonsense in today's world. I also know that few, if any, of the other consumers who order stuff from them will bother to go to the trouble of popping a bunch of bubble wrap, so most of it undoubtedly ends up in landfill.

When I send packages for my small business, I reuse boxes and paper, as well as compostable peanuts, and I insist my suppliers do the same. With these practices we can keep our resources in a closed loop as long as possible, then recycle the paper and cardboard when it's worn out. The compostable peanuts really are compostable, so they should go in a compost stream if they're not going to be reused in shipping. If suppliers won't comply with my requirements, I'll find other suppliers that have better shipping practices.

Disposable Diapers



According to the EPA, an estimated 20 billion disposable diapers are dumped in landfills throughout the country annually. It's a $64 billion-a-year business, so I'm sure DuPont, Kimberly-Clark, and Procter & Gamble will fight like hell to keep those extra-absorbent, double-sealed Pampers on the shelves. Disposable diapers should be avoided completely. In the U.S., they are in the top 40 of plastic garbage found on land, and the top 25 of plastic found on the floor of the ocean.[10] Big corp got us into these in the 60s by using the gross factor of poop to brainwash us into the ease and convenience of them after we managed to get through the past two million years without them. DuPont led the way, advertising that there's less diaper rash, better sanitation, and other benefits designed to con the new mommy, even paying big for a nationally recognized pediatrician to advertise the benefits of plastic diapers over cloth. Now it's time once again to say "NO" to big corp and their cons and lose yet more plastic. You can use a diaper service with cloth diapers, or simply wash them yourself like my mother did for her four children. There are compostable diapers out there, and they should be used and composted if you must have the convenience.

I'm guilty as charged. I was honestly as clueless and brainwashed as anybody about the impact of disposable diapers when my kids came along. Sorry about that. Now I'm down to self-shame and educating new moms as best I can. These days, new mommies get the first couple months of TerraCycle compostable diaper service at their showers from me. It's actually cheaper than plastic diapers and more convenient because they're delivered and picked up from the home.

This Not That

Generally, we can make a lot of difference by simply thinking about what we're buying, whether or not we really need it, and how we'll dispose of it sustainably, preferably through recycling or composting, before we buy it. For things like party favors, we can get paper confetti rather than plastic glitter; if you get balloons, plan on getting a TerraCycle box to recycle them in, and don't just let them go into the atmosphere, where they're sure to ultimately kill wildlife. Buy tea in compostable bags, or in bulk, instead of in plastic tea bags.

Precycling: Purchasing only products that have minimum packaging, or packaging that can be recycled.

One of my biggest pet peeves (you mean I have more than one???) is restaurant supersizing. I mean WTF: ordering a simple pasta dish and getting three times as much as I can eat. They should offer at least small and large. It's really annoying to spend more money than necessary to get more food than I can eat. We always take our own takeout containers just in case, and if we're traveling with no way to heat the food back up, we'll get one meal and share it. It can be a challenge to agree on the same meal, but as long as I win, I'm happy. If we're staying in a hotel there's usually a microwave that we can use to reheat food and eat the next day. If we're on the road, we take our camp stove, and it's easy to heat things up when we camp along the way.

At the grocery store, look at the food and how it's packaged, and get this not that. Salt can come in a simple box or a complicated multilayered package. Salt is also readily available in bulk, which avoids the whole packaging issue entirely. Avoid complex containers with different materials, like a cardboard tube with a metal bottom and plastic cap, or a toothpaste tube with three different kinds of plastic and aluminum in between. If you end up with something like that, take the trouble to break it up into separate components that can be recycled. I bought some Almond Milk Ice Cream at Natural Grocers that looked like it was in a cardboard carton, but when I got it home I found that it had a hard plastic rim that didn't even have the resin number on it. REALLY? I had to take some scissors and cut the rim away from the cardboard, since the combined packaging is not recyclable. This is an example of what we want to avoid in packaging: combinations of different materials that will get picked off the conveyor belt at the

recycling center unless consumers dissect it into its different components (plastic and cardboard) in order to recycle it properly. Which they usually don't. If it's not easy, it won't happen. I sent a note to Natural Grocers about this too. I'm sure it never got past their spam box, but it made me feel better to at least say something.

Skip the single-use paper towels, napkins, cutlery, plates, and cups. Get back into the habit of washing the dishes. If you have a big event that requires more dishes than you have, find a service that can provide dishes, or get your friends to help by bringing theirs. If you have a catered event, choose a caterer that will bring real food service and not disposable. After all, you're the customer, so you can call the shots.

Say something. This is called activism. And it matters. My credit union sent me an order of checks in a plastic sleeve when they could have used cardboard. I told them so. Exped sent me a new inflatable camping mattress that had a simple cardboard cover, in a cardboard box with no plastic. I emailed them and thanked them. Encourage wins and discourage irresponsibility. If enough of us do it, it works. I had a long run training horses and dogs, and it gets down to comfort and rewards (the carrot) when they do the right thing, vs. discomfort and disapproval (the stick) when they don't. I found when we were raising our kids that It works with humans too. Easy peasy.

Are you sure you need that new, upgraded electronic gadget? Are you sure you're ready to update your cell phone or your computer? Can you not squeeze a little more life out of it? Naturally, big corp wants to sell you another, and they can be quick to remind you that you have enough points for a new one—but can you maybe hold off on it instead of just getting one because Samsung told you to? Americans throw out 350,000 cell phones per day, and only 15–20 percent of electronic waste is recycled.[46] That's just ridiculous, especially when so much electronic waste could be reused or refurbished, and at a time when we absolutely need to keep the components of our electronic gadgets within a circular economy. If it's really time to upgrade, at least be responsible and recycle it.

Halloween was a holiday I loved growing up, mainly because of the free-for-all candy fest. While we didn't know it at the time, our mother would remove the candy from the bags a little at a time while we were at school and get rid of it as part of her campaign to keep sugar out of our bodies. Also, mom made our costumes. When my kids were growing up, it became a little less about the candy, but we loved to go to haunted houses, and watch scary movies. I made my kids' costumes too, and their grandma got them a couple cool fabric costumes, which went to thrift when they outgrew them. And the mazes come out in the fall too. And the parties, where you go in disguise and see how imaginative everybody else is. My point is that there are plenty of options for reusable costumes without buying cheap, ugly, plastic bags with arm and head holes. It's cool to make your own costume these days anyway, and more and more of us do that.

> We use Clorox in our house even though it's a toxin. As a water engineer, I know that it has done far more good in preventing disease than harm to the environment. Also, when it goes down the drain, it's completely reduced to harmless salt by the time it reaches the wastewater plant. In the sewer, it actually helps keep the odors in check. It's not a petrochemical as it's made from mined sodium chloride that's oxidized in an electrolytic process.

I'm forever astounded by the incredible array of complicated gadgets for hand washing dishes. I mean, really? The sponges, combinations of sponge and scrubby, dispensers for dish soap, and so on. Seriously. All of these things fail or wear out in no time, then you need another. And it turns out sponges get really nasty with bacteria, and are in fact the worst source of germs in the kitchen. Yuck. You can clean them by soaking in extremely hot water or running them in the dishwasher on hot cycle, which in my view is a waste of energy and wouldn't work for us since we do all of our dishes with cold water. We prefer a simple life, so we use a cloth that we can wash when it gets grungy. We also have green scrubbies (no gross sponge attached) and an iron scrubber for more challenging tasks. We soak those in Clorox as needed.

Reuse plastic bags and aluminum foil and get reusable containers with snap tops for storing food. We haven't purchased plastic bags or aluminum foil for more than 10 years, and we still have a box of each in the pantry. We've basically stopped using it, so it just sits there. Our strategy for avoiding plastic film, bags, and foil is to find another way to cover food. My favorite is to simply put a plate over a bowl, which is great because it allows us to stack something else on top of the bowl if the fridge is really full. We use reusable beeswax food wraps for containers that we can't fit a plate on. We use reusable stasher bags and cloth bags instead of plastic bags. Plastic bags still appear in our house if we buy bread, and we recycle them. Most of our bread these days is purchased from Nude Foods in a returnable cloth bag.

At Christmas, if you decorate, use an artificial tree or a live one that can be planted after Christmas. Many artificial trees are made from recycled plastic. Americans use enough cut trees annually to plant a forest that could cover the state of Rhode Island. Let's not do that. Try either buying used ornaments and decorations, or make your own. Also, the holidays are known to be the time of year when the most trash by far goes to landfill from all the boxes and bags and paper and ribbons and wasted food. Figure out ways to mitigate. We haven't purchased wrapping paper or ribbons in at least 20 years because we reuse as much as we can of paper, and always reuse ribbons. We're transitioning largely to reusable gift bags, and bags made from cool fabrics leftover from sewing projects and old clothes that I love to cut up and repurpose either as pee cloths or gift bags. Hilary's dad, an artist, liked to use newsprint for wrapping, which looks very nice with a simple bow or even some string. Whatever you do, please make sure to get things that can be recycled, plan the food so that it doesn't get wasted, and compost anything that can't be consumed, like turkey bones and skin.

And, big time, don't get token useless gifts that people don't need or want just to give them something. Think through your giving and give something truly useful, educational, and easily passed along when the time comes. Like a book, a movie, a bottle of wine, a coupon for responsible groceries or an experience, like a coupon to go to a responsible restaurant, or a play, or the museum. I've been known to give boxes of LED lights, TerraCycle boxes, gallons of my Aspire refillable castile soap, jugs of organic olive oil, even snap tops and beeswax wrappers for sustainable food storage, just to help my loved ones reduce their carbon footprint just a little bit more. And I love to give books on sustainability and healthy eating and responsible purchasing. I can only hope that some of it sticks.

You can literally cut your carbon footprint by 4% just by using less paper and recycling what you do use, to avoid yet more trees being cut down. Use responsible forestry-certified paper such as Programme for Endorsement of Forest Certification (www.pefc.org) or post-consumer waste for paper products, including toilet paper and printer paper. Or at least bamboo, or something that grows faster than a tree. By the way, are you aware that bamboo is a grass? A very large grass, but it's definitely grass. Better yet, avoid the toilet paper completely by going to pee cloths if you're a girl, and getting a bidet for brown, where you just use a dedicated cloth to dab off the water. Your bunghole will never be cleaner. Trust me. Remember the COVID toilet paper shortage? We're just freaking idiots at the end of the day. We so don't need toilet paper at all. We should grow up.

If you must floss, use compostable floss. I actually do floss, but I don't do it every day like a brainwashed robot. In fact, there's absolutely no statistical evidence that daily flossing reduces plaque in any way. That's just yet more big corp brainwashing. I actually floss if I can feel something stuck in my teeth which, ironically, only happens if I eat meat. I'm serious. And what I'll do is, I'll actually try to pick it out with my metal dental pic, and if that doesn't do the trick, I'll floss it out. Mainly, my goal isn't to get rid of plaque, but to get rid of the food that's stuck there, which will most definitely lead to rotting of my teeth, because bacteria will feed off that morsel until it's consumed and grow a colony at the interface between gum and tooth. Just plain old brushing with toothpowder takes care of the rest. By the way, at 67 years old, I still have all my teeth. My pet peeve here (as if I don't have enough) are those stupid overpackaged little flosses with little handles that evidently make it easier to floss than simply wrapping it around your finger. So, with those, about 20 times as much plastic is involved. Really? What a marketing hoax. How needy have we become? Just buy some biodegradable floss and use it when you actually have something stuck in there. And don't just use it once. You can rinse it off and use it next time. It's been at least 10 years since we've bought floss. Think of the cost savings of just saying no.

Avoid fast fashion and buy textiles that will last and that are recyclable, recycled, or made from hemp, organic cotton, or organic wool. There are plenty of companies that strive to be responsible. Even Jockey offers organic cotton underwear. We don't need to be dumping millions of tons of textiles to landfill every year when we can buy responsible products made by Patagonia,

PrimaLoft, Helly Hanson and even L.L. Bean. These companies are making biodegradable insulation and reusing down to make high-performing, long-lasting products with a much lower carbon footprint of manufacturing as well as biodegradability after use. And always try to buy used because that's the only true way to reduce the carbon footprint of textiles.

Another thing that adds up fast in the landfills is feminine products. Use compostable products like Rif Care and Natracare, which are made from hemp and cotton. There are also plenty of choices out there for reusable cups and tampons.

Say no to plastic straws, and if you can't be happy without a straw, get your own reusable one. Stainless steel ones are easy to find and actually quite nice. They look classy too!

The Hard Road

Let's face it. Being responsible is not as easy as it is to simply use things once and then toss it out into the universe. Somebody has to do the dishes and wash those towels, cloths and napkins. When we buy bulk, we have to organize our containers, fill them ourselves at the bulk store, and clean some containers. The good news is, the extra work saves money since products in single-use containers tend to cost significantly more than the actual product that's in there, like two to three times and often more. What a rip off! My advice is simply to start somewhere, get used to that one action, and go from there. It worked for me. If I can do it, you can too.

Cooking with bulk ingredients obviously means more work because instead of simply opening a prepared meal or soup or pizza or whatever, you have to actually do some chopping and cooking. However, at the end of the day, we've found the time to be well spent because, as I've mentioned before, we are what we eat, and home-prepared meals are a lot healthier because they don't contain the synthetic additives and extra salt and sugar that we find in most common prepared foods. As busy as we've been in our lives, with two working parents raising kids, one parent also going to school, one parent coaching Little League, and both parents volunteering for school functions as well as hiking and other outdoor activities, we managed to prepare our meals mainly from scratch as we raised our sons. And now both of our sons, now grown, eat the same way that we taught them to eat, making their meals with basic ingredients. And we even found plenty of time for hanging out and evening TV time, keeping up with Lost and Seinfeld and South Park and such. What it gets down to is, where there's a will, there's a way. And it doesn't take much time, either. When you find some go-to meals that you love, you can throw those together in no time.

Certain things can't be recycled because they contain multiple layers of different types of materials. Take cardboard coffee cups that every coffee shop uses for to-go. They're lined with plastic that can't be separated easily from the cardboard, so they can't be recycled in single-stream collection programs. (By the way, that plastic lining is yet another way we allow plastic monomers to leach into our bodies through our food.) Bring your own metal or porcelain to-go cup and have them fill that. When we go on road trips, we always take our reusable stainless steel coffee cups. Same for Styrofoam to-go containers: they can't be recycled and they leach nasties into your food anyway, so we don't accept them. It's not uncommon for us to go to three different breakfast places when we're traveling, trying to find a place that doesn't have Styrofoam. We try to find places where we can just sit down and eat our meals from washable dishes, and we have our own containers in the car in case we don't finish our meals. It takes a little more time, but it is what it is.

It's shocking how many places provide condiments in little plastic cups or squeeze tubes, and sometimes it's almost impossible to avoid. We have to suck it up and use it, and then bring it home and recycle it in our TerraCycle kitchen waste box. I normally clean it in the hotel room, then

It was at least 30 years ago when I became convinced that I had to stop using plastic grocery bags, and it was a lot harder than I expected. I was constantly forgetting my bags, and they never seemed to be in the car when I was shopping. I finally started taking the grocery cart to the car, unloading the groceries directly into the car, and then when I got home, getting the bags from the house, putting the groceries in the bags, taking them to the house, and then *immediately* taking the bags to the car. After a few sessions like that, I finally got into the habit of remembering my bags, and now I can't leave the house without them. Now that I shop mainly in bulk, I'm in the habit of pulling all the containers that I need to return or refill together in a box; then I simply bring the filled containers back in the same box.

stash it in a dedicated collection bag, which can build up to quite a mountain of plastic by the end of the trip. We do our best to avoid as much of this as possible but we still end up dealing with it. And, what's really stupid, is the venues pay far more for this prepackaged nonsense than they would if they just put a bottle of ketchup on the table. And then recycle the bottle in single stream.

Cardboard tubes with a metal end and plastic cap, like with Pringles potato chips, can't be recycled because of the three different materials. These can be recycled if you pry the metal end off and place it in a separate container for metals and place the plastic lid in another plastic container of the same material, or the TerraCycle box. The tube will probably get recycled, but to increase the chance of it not getting lost in the industrial facility, you can cut the tube longitudinally and flatten it, so it's shaped like a square piece of cardboard. We take a box of metal one-offs from food containers, including bottle caps, to a metal recycler about once a year. Of course, it's much easier to just buy chips in bags and put the bags in a TerraCycle box. Better yet, buy local chips in recyclable paper bags or in returnable jars, which is what we do. Then there's nothing to deal with.

I plan events for non-profits on occasion and have learned to always ask. Make sure they're using washable dishes and serving bowls and dispensers for things like cream and coffee and condiments and butters. I ask if they recycle, and if they don't, I either move on and find a better venue, or work with them to collect recyclables and get them recycled. Once you bring it up, managers are typically very receptive.

When we go to a restaurant, we always ask if they recycle, and if they don't we take things that we consume like beer bottles and cans with us. We always reject straws and extra napkins, and we have to be quick; sometimes these just appear before you even know what's happening, and once it's on the table, it's yours. If you ask the staff to remove it, they'll simply toss it in the trash. I've had this happen right in front of me, and I had to remove it from the trash and take it home to recycle it. This can definitely be frustrating. If we're traveling and unfamiliar with a restaurant and their practices, we'll look inside to figure out how they do things, and if we don't like what we see, we'll move on and find another place. Avoiding and dealing with trash that isn't intended for recycling is not easy. It's hard. But it's worth it. Our planet does not need this waste.

Six-pack rings are really dangerous because fish and birds get tangled up in them. They can't be simply tossed into a single-stream collection bin because they tangle up the separation equipment, similar to plastic bags and film. However, since they are made from polyethylene, they can be stuffed into an HDPE (high density polyethylene) bottle, which is also made from polyethylene. That way, they'll go through the recycling facility without getting tangled up.

Mend clothing instead of tossing it if it gets torn. Obviously, all clothes will completely wear out sooner or later, and when they do, recycle them rather than just dump them in a landfill. Also, don't wash clothes unless they are actually dirty; washing too often wears them out faster. I have pants that have only been washed a couple times a year because they don't get dirty that often. Eventually I'll spill something on them, and then it's time to wash them. I can typically wear a shirt several times before washing it. I have sweaters that have never been washed.

Over 10 billion plastic pens are sent to landfills every year, and they can't be recycled in a single-stream collection system because they're made of random combinations of steel, plastics, and petrochemicals. Get a TerraCycle box for pens and markers and offer it to neighbors as a drop-off point. I've switched mainly to pencils and haven't bought a pen in years. Since I do art, I take any unusable paints and such to our local poison drop-off center.

Kitchen TerraCycle boxes take any kind of random plastic food trash that can't go in a single-stream collection system, like plastic inserts, chip bags, black plastic, plastic lids and anything that's used to package food. An 11" x 11" x 20" tall box costs $130 (2024) and will last a year or more for a family of four, and longer if you are really careful about packaging and precycling. Green-wash businesses like Starbuck's and even the Post Office like to make you think their containers are recyclable, but they're not. As an example, the Starbucks website has no recycling solution for plastic inserts for the coffee totes or lids, and they don't take anything back. They will, however, fill your own personal cup, so the best solution is to completely avoid single-use containers at Starbucks and any coffee shop in general. Same for the USPS bubble wrap envelopes. They're stamped recyclable, but the USPS doesn't take them back and they can't be recycled in single stream. In a word, we're on our own. All of this can be recycled in a TerraCycle kitchen box or with RidWell if you find yourself stuck holding the bag and ending up with this stuff.

Instead of bagging leaves and sending them to the landfill or the composting facility, try leaving them on the ground. There, they'll enrich the soil and you'll avoid the need for synthetic fertilizer. Sending leaves away is one of the silliest things we do. Yeeeesh. That's right, put leaves in a plastic bag and send them away in a gas-guzzling truck, then use your gas guzzling vehicle to go to Home Depot and buy fertilizer in a plastic bag. Wouldn't it be just so much easier and cheaper to do nothing? Hello? No raking, no bagging, no driving, no cost. How hard can that be? Think about that. You'd have that much more time to prepare your food from scratch. Or wash your dishes. And more money to buy organic food.

As the leading consumer of coffee on the planet, in the U.S. we consume 400 million cups of coffee every single day, and go through 136 million paper cups daily.[47] Is that ridiculous or what? Please don't be that obtuse loser who uses a single-use cup every time. We can make a big difference in our paper use by bringing our own cup. This should be a no-brainer.

Knock It Off

Do you ever get sick and tired of junk mail? I do. Of course. It turns out that, on average, in the U.S. we consume more paper per capita than any other country on Earth, which is why our carbon emissions from single-use paper is 4% of our gross carbon footprint. And our junk mail makes up about 41 LBS per capita,[48] which works out to a whopping 7.23 million metric tonnes per year. Worse, among U.S. manufacturing industries, paper-making is the first-ranked consumer of water per ton of product, the third-ranked energy consumer, and fourth-ranked emitter of toxic pollutants into water. So, here I am, scrupulously recycling and contemplating the climate impacts of my consumption, while L.L. Bean and its ilk are dumping gigantic slabs of paper in the form of catalogues in my mailbox that I never wanted or asked for as they try to pressure me to buy more more more. Just because I was stupid enough to buy a pair of socks from them using a credit card, innocently handing them all my contact information so they can nag and pester me forever while adding to my carbon footprint in the form of junk mail.

How to stop junk mail

Most of these work, at least for a time, and then may need to be renewed. Some businesses and institutions manage to find loopholes around these, and must be handled separately.

www.optoutprescreen.com

https://www.directmail.com/mail_preference/

http://www.dmachoice.org

https://east.fundreports.com/fundreports/login

https://www.paperkarma.com/

https://www.valpak.com/coupons/show/mailinglistsuppression

https://www.redplum.com/tools/redplum-postal-addremove.html

https://legal.epsilon.com/optout

I think junk mail should be illegal. End of story. At a time when we're mindlessly hurtling towards complete disaster on our planet, the last thing we need to be doing is throwing paper at people who don't want it. Paper that took carbon-storing trees to create, climate-polluting factories to mill, and carbon-belching trucks to haul. By the way, somebody is paying for all that junk mail. Who do you think that might be? Um, the customers? Ya think? Just like single-use packaging, when we purchase from irresponsible companies that throw copious amounts of junk mail at us, we're paying for that in the product price, which is marked up to account for the "marketing."

At this point, it's up to each and every one of us to put a stop to this nonsense if we want to reduce our carbon footprint. In my own view, I see the junk mail as part of my own footprint, since it was sent to me because I exist in the U.S., and since I can take actions to get rid of it. I suppose an equally valid argument can be made that the junk mail footprint belongs to the commercial businesses who are cramming our mailboxes with it, but at the end of the day, as consumers, we either choose to support them by buying their products and financing their marketing efforts, or we push back and tell them to knock it off. We can also choose to buy products from more responsible businesses that don't send junk mail. They're out there. My company, Aspire, is one of them. In ten years of business I've never sent out junk mail, and never will. When we first moved to Golden, 13 years ago, the previous owners must have been mail-order junkies, because we received endless catalogues as soon as we moved in, and it took months if not years to get rid of them. I began recording the mail by weight so that I could understand the sheer mass of the deluge, and the impacts of my efforts to get rid of it.

Following is a timeline of our reduction efforts:

2012 — As we moved into our new home in Golden we were inundated with junk mail, mainly catalogues, addressed to a variety of previous occupants. I called each and every one of the vendors and asked them to kindly remove me from their mailing list. I also got on line and searched for ways to get rid of the rest.

2015 — We were finally rid of the catalogues, although some didn't go away easily and took several phone calls to get them to knock it off. Don't get me started on Cabela's. It took many tries to get rid of their catalogues, and now that they're finally gone, we'll never again order from them for fear of yet more catalogues. The new rules are that if we simply MUST have something from Cabela's, we use cash and give them no contact information. Now that we don't buy new anymore, it's actually no longer an issue. At this point, our annual junk mail was reduced to 33 LBS/year. However, we were still getting unnecessary ground mail in the form of bank statements, bills, and finance statements and such, as well as some publications that we weren't really using, which added up to another 80 LBS/year, even more than the junk mail, adding up to a whopping 113 LBS/year for our household, or 56 LBS/year per capita, since there are two of us. Also, we were still receiving mail for our two sons, who listed our address when they were in college or in limbo with respect to permanent occupancy. For our personal e-mails, by far the worst were the gigantic volumes of investment reports, so I worked to get rid of those first using the fund reports site in the side box.

2025 — Fast-forward 10 more years to the present, and we seem to be at a point that I can't get below. We now have 15 LBS/year of "OK" mail and still get 12 LBS/year of junk, for a total of 30 LBS/year for our house, or 15 LBS/year per occupant. We literally do all our business virtually, including bill paying and banking, and all financial statements come in by email. The biggest components of the "OK" mail these days are three monthly magazines that I truly love and derive joy from, that I either share with others when I'm finished or recycle. We also get a couple quarterly publications from organizations that we belong to, and we read those too.

The junk mail that won't stop coming includes coupon books that the post office says we can't get rid of, so we use them for fire starter in winter, for wiping grease off pots to keep it from going down the drain, then we compost the soiled paper, or as paper packaging when filling mail orders for Aspire. Interestingly, these coupon mailings contain absolutely nothing that I find useful, either for myself or really anybody, just a bunch of useless stuff and junk that shouldn't even exist that big corp continues to relentlessly cram down our throats, like candy and pop and water in plastic bottles, as well as toxic sugary cereals and such. In a word, we absolutely don't need the coupons or the products they advertise. Yet here they are, wasting trees, energy and water, trying to convince us otherwise.

Tips and tricks

Use websites to block junk mail

Avoid placing your address on surveys, raffles, and warranty cards

Buy with cash, and don't provide contact information

When buying online, make sure the box requesting solicitations is unchecked

Ask individual senders to remove you from their lists

www.wikihow.com/Get-Rid-of-Junk-Mail

We still continue to get annoying flyers and solicitations and even catalogues when I buy supplies online for Aspire. The supply catalogues are really annoying because when I mail order, I always uncheck the default box for receiving solicitations, so I get really aggressive if my choice gets ignored and they send it anyway. I take the trouble to send them an email and tell them to knock it off and that I don't appreciate them not respecting my preferences. It's a constant uphill battle to be sure, but I refuse to let it go. I return large things to sender because I know they'll probably eat the cost of return shipping, and I recycle the small things. I've learned not to open mail that doesn't show a return address—yet another trick to make you open the mailing only to find out it's an insurance solicitation or some credit card. Once you open the envelope, return to sender doesn't work, so if you try, the post office will simply trash it. Which I find pathetic. As much paper as they handle, you'd think the U.S. Post Office, of all federal entities, would bother to recycle. But they don't.

A Bit of Hope?

Since it's clear that we can't expect the federal government to step up, there seems to be a little helpful action at the local and state levels. In California, voters upheld a statewide ban on plastic bags, and an additional nine states have followed suit as well as more than 200 counties and municipalities.[49,50] Several cities and companies have banned plastic straws. These include Seattle, Miami Beach, Alaska Airlines, Disney, Idea, Marriott, and Starbucks as well as the Queen of England, who declared them unfit for royal palaces.[40] With all these cities and big-corp institutions showing some responsibility, there's no excuse for plastic straws, and we consumers have choices when it comes to who we want to do business with. Personally, I find it impossible to respect any second-rate restaurant that continues to throw straws at me when all I want is a glass of water. In a glass. These are companies who aren't trying very hard, and actually not bothering at all to do the right thing, so who needs them? If half the plastic in the ocean is fishing nets, then we can choose not to eat ocean fish caught in nets, which aligns well with not eating ocean fish at all until they've had a chance to recover their populations.

Norway now recovers 97% of its plastic bottles using high deposits and machines at most supermarkets that take the bottles and provide refunds.[51] Some communities and states are taking the problem of microplastics into their own hands, with bans on glitter, artificial turf, and other products that are contaminating our food, drinking water, and air. Which is a good thing, since the U.S. federal government evidently can't be bothered.

Waste to energy incinerators can be a part of the solution to get rid of trash that can't be recycled, since we can at least recover energy from it. An incinerator in Copenhagen, Denmark, is converting 534,600 tons of waste a year into energy to electrify 30,000 homes and heat 72,000. It's clean-burning, and provides a solution to eliminate the waste as we transition to a full zero-waste, circular economy. The site is so clean that it is also being used as a recreational destination, with an all-season ski slope, a treelined hiking and running trail, and a 280-foot climbing wall, the world's tallest as of 2020.[52] Seriously. Now, how cool is that?

Our Zero-Waste Status

Despite our best efforts, we still have some carbon footprint with single-use containers. It's true that we could eat strictly bulk fresh and dried foods, always cook at home, and never buy bottled beer or wine and completely zero out single-use containers. But that's not the case. When we're home, which is most of the time, we do buy everything in bulk, and we cook our own food with fresh vegetables either from the store or our garden. We even either make or purchase our condiments, like mayonnaise, ketchup, salsa, and salad dressing in bulk. We get our ice cream in bulk as well as potato chips and tortilla chips. I even make my own kombucha and mead, so I don't have to buy that. However, we're just beginning to move towards getting beer in bulk, and it looks

like bulk wine might be available soon, but we've been getting it in bottles and boxes and then recycling those. We also continue to buy spirits in glass bottles. While we recycle all that, as Table 3 shows, there's still a carbon footprint associated with recycling, so it's not a clean slate. Given all that, I'm giving us about a 1.5% out of 5.8% for single-use containers, for a reduction of 4.3% of our CO_2e emissions against our goal of an 80% reduction in CO_2e by 2050.

When we add the 4.3% to the cumulative emissions reductions of 51.9% through chapter 21, we're now at 56.2% reduction in CO_2e. Woo Hoo! I'm feeling better already!